

Appendix -

Test Data and Result for report

GZCR230500052402



1 Effective Radiated Power (ERP)

ERP							
Test Conf.		ANT	Test CH	Conducted power	MIMO Total ERP		Verdict
				(dBm)	(dBm)	(W)	
1 LTE	TC00	ANT1	B	46.45	55.33	341.19	Pass
		ANT1	M	46.26	55.14	326.59	Pass
		ANT1	T	46.10	54.98	314.77	Pass
	TC01	ANT1	B	46.43	55.31	339.63	Pass
		ANT1	M	46.18	55.06	320.63	Pass
		ANT1	T	46.24	55.12	325.09	Pass
	TC02	ANT1	B	46.26	55.14	326.59	Pass
		ANT1	M	46.41	55.29	338.06	Pass
		ANT1	T	46.15	55.03	318.42	Pass
	TC03	ANT1	B	46.20	55.08	322.11	Pass
		ANT1	M	46.34	55.22	332.66	Pass
		ANT1	T	46.11	54.99	315.50	Pass
	TC4	ANT1	B	46.34	55.22	332.66	Pass
		ANT1	M	46.30	55.18	329.61	Pass
		ANT1	T	46.36	55.24	334.20	Pass
	TC5	ANT1	B	46.35	55.23	333.43	Pass
		ANT1	M	46.28	55.16	328.10	Pass
		ANT1	T	46.45	55.33	341.19	Pass
	TC6	ANT1	B	46.17	55.05	319.89	Pass
		ANT1	M	46.18	55.06	320.63	Pass
		ANT1	T	46.45	55.33	341.19	Pass
	TC7	ANT1	B	46.44	55.32	340.41	Pass
		ANT1	M	46.38	55.26	335.74	Pass
		ANT1	T	46.34	55.22	332.66	Pass

Remark:

1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP=Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB.
2. The maximum antenna gain is 5dBi from the manufacturer. The output power is limited to an ERP of 500W. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design(Hardware & software) and radio output.



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ERP							
Test Conf.		ANT	Test CH	Conducted power	MIMO Total ERP		Verdict
				(dBm)	(dBm)	(W)	
1 LTE	TC8	ANT1	B	46.10	54.98	314.77	Pass
		ANT1	M	46.23	55.11	324.34	Pass
		ANT1	T	46.23	55.11	324.34	Pass
	TC9	ANT1	B	46.37	55.25	334.97	Pass
		ANT1	M	46.33	55.21	331.89	Pass
		ANT1	T	46.12	55.00	316.23	Pass
	TC10	ANT1	B	46.24	55.12	325.09	Pass
		ANT1	M	46.18	55.06	320.63	Pass
		ANT1	T	46.38	55.26	335.74	Pass
	TC11	ANT1	B	46.41	55.29	338.06	Pass
		ANT1	M	46.28	55.16	328.10	Pass
		ANT1	T	46.28	55.16	328.10	Pass
2 LTE	TC12	ANT1	B	46.24	55.12	325.09	Pass
		ANT1	M	46.38	55.26	335.74	Pass
		ANT1	T	46.10	54.98	314.77	Pass
	TC13	ANT1	B	46.23	55.11	324.34	Pass
		ANT1	M	46.29	55.17	328.85	Pass
		ANT1	T	46.35	55.23	333.43	Pass
	TC14	ANT1	B	46.20	55.08	322.11	Pass
		ANT1	M	46.11	54.99	315.50	Pass
		ANT1	T	46.15	55.03	318.42	Pass
	TC15	ANT1	/	46.41	55.29	338.06	Pass
	TC16	ANT1	/	46.26	55.14	326.59	Pass
	TC17	ANT1	/	46.38	55.26	335.74	Pass
Remark: 1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP= Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB. 2. The maximum antenna gain is 5dBi from the manufacturer. The output power is limited to an ERP of 500W. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design(Hardware & software) and radio output.							



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ERP							
Test Conf.		ANT	Test CH	Conducted power	MIMO Total ERP		Verdict
				(dBm)	(dBm)	(W)	
2 LTE	TC18	ANT1	B	46.26	55.14	326.59	Pass
		ANT1	M	46.11	54.99	315.50	Pass
		ANT1	T	46.21	55.09	322.85	Pass
	TC19	ANT1	B	46.24	55.12	325.09	Pass
		ANT1	M	46.21	55.09	322.85	Pass
		ANT1	T	46.19	55.07	321.37	Pass
	TC20	ANT1	B	46.19	55.07	321.37	Pass
		ANT1	M	46.39	55.27	336.51	Pass
		ANT1	T	46.20	55.08	322.11	Pass
	TC21	ANT1	/	46.40	55.28	337.29	Pass
	TC22	ANT1	/	46.35	55.23	333.43	Pass
	TC23	ANT1	/	46.31	55.19	330.37	Pass
	TC24	ANT1	B	46.22	55.10	323.59	Pass
		ANT1	M	46.27	55.15	327.34	Pass
		ANT1	T	46.16	55.04	319.15	Pass
	TC25	ANT1	B	46.19	55.07	321.37	Pass
		ANT1	M	46.18	55.06	320.63	Pass
		ANT1	T	46.35	55.23	333.43	Pass
	TC26	ANT1	B	46.09	54.97	314.05	Pass
		ANT1	M	46.19	55.07	321.37	Pass
		ANT1	T	46.20	55.08	322.11	Pass
	TC27	ANT1	/	46.14	55.02	317.69	Pass
	TC28	ANT1	/	46.21	55.09	322.85	Pass
	TC29	ANT1	/	46.23	55.11	324.34	Pass

Remark:

1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP= Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB.
2. The maximum antenna gain is 5dBi from the manufacturer. The output power is limited to an ERP of 500W. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design(Hardware & software) and radio output.



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ERP							
Test Conf.		ANT	Test CH	Conducted power	MIMO Total ERP		Verdict
				(dBm)	(dBm)	(W)	
1 GSM+ 1 LTE	TC30	ANT1	/	46.20	55.08	322.11	Pass
	TC31	ANT1	/	46.11	54.99	315.50	Pass
	TC32	ANT1	/	46.09	54.97	314.05	Pass
	TC33	ANT1	/	46.29	55.17	328.85	Pass
	TC34	ANT1	/	46.16	55.04	319.15	Pass
	TC35	ANT1	/	46.18	55.06	320.63	Pass
	TC36	ANT1	/	46.42	55.30	338.84	Pass
	TC37	ANT1	/	46.34	55.22	332.66	Pass
	TC38	ANT1	/	46.15	55.03	318.42	Pass
	TC39	ANT1	/	46.15	55.03	318.42	Pass
	TC40	ANT1	/	46.20	55.08	322.11	Pass
	TC41	ANT1	/	46.43	55.31	339.63	Pass
	TC42	ANT1	/	46.10	54.98	314.77	Pass
	TC43	ANT1	/	46.13	55.01	316.96	Pass
	TC44	ANT1	/	46.39	55.27	336.51	Pass
	TC45	ANT1	/	46.24	55.12	325.09	Pass
	TC46	ANT1	/	46.29	55.17	328.85	Pass
	TC47	ANT1	/	46.15	55.03	318.42	Pass
	TC48	ANT1	/	46.33	55.21	331.89	Pass
	TC49	ANT1	/	46.37	55.25	334.97	Pass
	TC50	ANT1	/	46.45	55.33	341.19	Pass
	TC51	ANT1	/	46.17	55.05	319.89	Pass
	TC52	ANT1	/	46.16	55.04	319.15	Pass
	TC53	ANT1	/	46.12	55.00	316.23	Pass
Remark: 1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP= Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB. 2. The maximum antenna gain is 5dBi from the manufacturer. The output power is limited to an ERP of 500W. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design(Hardware & software) and radio output.							



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ERP							
Test Conf.		ANT	Test CH	Conducted power	MIMO Total ERP		Verdict
				(dBm)	(dBm)	(W)	
2 GSM+ 1 LTE	TC54	ANT1	/	46.42	55.3	338.84	Pass
	TC55	ANT1	/	46.41	55.29	338.06	Pass
	TC56	ANT1	/	46.35	55.23	333.43	Pass
	TC57	ANT1	/	46.30	55.18	329.61	Pass
	TC58	ANT1	/	46.09	54.97	314.05	Pass
	TC59	ANT1	/	46.40	55.28	337.29	Pass
	TC60	ANT1	/	46.38	55.26	335.74	Pass
	TC61	ANT1	/	46.15	55.03	318.42	Pass
	TC62	ANT1	/	46.20	55.08	322.11	Pass
	TC63	ANT1	/	46.16	55.04	319.15	Pass
	TC64	ANT1	/	46.43	55.31	339.63	Pass
	TC65	ANT1	/	46.21	55.09	322.85	Pass
	TC66	ANT1	/	46.22	55.1	323.59	Pass
	TC67	ANT1	/	46.25	55.13	325.84	Pass
	TC68	ANT1	/	46.35	55.23	333.43	Pass
	TC69	ANT1	/	46.38	55.26	335.74	Pass
	TC70	ANT1	/	46.32	55.2	331.13	Pass
	TC71	ANT1	/	46.23	55.11	324.34	Pass
	TC72	ANT1	/	46.16	55.04	319.15	Pass
	TC73	ANT1	/	46.38	55.26	335.74	Pass
	TC74	ANT1	/	46.17	55.05	319.89	Pass
	TC75	ANT1	/	46.27	55.15	327.34	Pass
	TC76	ANT1	/	46.35	55.23	333.43	Pass
	TC77	ANT1	/	46.34	55.22	332.66	Pass
Remark: 1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP=Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB. 2. The maximum antenna gain is 5dBi from the manufacturer. The output power is limited to an ERP of 500W. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design(Hardware & software) and radio output.							



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ERP						
Test Conf.	ANT	Test CH	GSM carrier conducted power		GSM carrier MIMO Total ERP	
			(dBm)		(dBm)	(W)
1 GSM+ 1 LTE	TC30	ANT1	/	43.65	52.52	178.65
	TC31	ANT1	/	43.17	52.04	159.96
	TC32	ANT1	/	43.09	51.96	157.04
	TC33	ANT1	/	43.65	52.52	178.65
	TC34	ANT1	/	43.09	51.96	157.04
	TC35	ANT1	/	43.23	52.1	162.19
	TC36	ANT1	/	43.19	52.06	160.70
	TC37	ANT1	/	43.40	52.27	168.66
	TC38	ANT1	/	43.14	52.01	158.86
	TC39	ANT1	/	43.21	52.08	161.44
	TC40	ANT1	/	43.32	52.19	165.58
	TC41	ANT1	/	43.65	52.52	178.65
	TC42	ANT1	/	43.26	52.13	163.31
	TC43	ANT1	/	43.09	51.96	157.04
	TC44	ANT1	/	43.47	52.34	171.40
	TC45	ANT1	/	43.32	52.19	165.58
	TC46	ANT1	/	43.25	52.12	162.93
	TC47	ANT1	/	43.17	52.04	159.96
	TC48	ANT1	/	43.42	52.29	169.44
	TC49	ANT1	/	43.40	52.27	168.66
	TC50	ANT1	/	43.51	52.38	172.99
	TC51	ANT1	/	43.30	52.17	164.82
	TC52	ANT1	/	43.12	51.99	158.13
	TC53	ANT1	/	43.22	52.09	161.81
Remark: 1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP= Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB. 2. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design (Hardware & software) and radio output.						



ERP						
Test Conf.	ANT	Test CH	GSM carriers conducted power	GSM carriers MIMO Total ERP		
			(dBm)	(dBm)	(W)	
2 GSM+ 1 LTE	TC54	ANT1	/	43.65	52.52	178.65
	TC55	ANT1	/	43.57	52.44	175.39
	TC56	ANT1	/	43.32	52.19	165.58
	TC57	ANT1	/	43.41	52.28	169.05
	TC58	ANT1	/	43.18	52.05	160.33
	TC59	ANT1	/	43.56	52.43	174.99
	TC60	ANT1	/	43.44	52.31	170.22
	TC61	ANT1	/	43.23	52.1	162.19
	TC62	ANT1	/	43.32	52.19	165.58
	TC63	ANT1	/	43.24	52.11	162.56
	TC64	ANT1	/	43.61	52.48	177.02
	TC65	ANT1	/	43.19	52.06	160.70
	TC66	ANT1	/	43.34	52.21	166.35
	TC67	ANT1	/	43.30	52.17	164.82
	TC68	ANT1	/	43.43	52.3	169.83
	TC69	ANT1	/	43.40	52.27	168.66
	TC70	ANT1	/	43.45	52.32	170.61
	TC71	ANT1	/	43.37	52.24	167.50
	TC72	ANT1	/	43.28	52.15	164.06
	TC73	ANT1	/	43.46	52.33	171.01
	TC74	ANT1	/	43.33	52.2	165.96
	TC75	ANT1	/	43.37	52.24	167.50
	TC76	ANT1	/	43.41	52.28	169.05
	TC77	ANT1	/	43.45	52.32	170.61
Remark: 1. Transmitter output signals are completely uncorrelated declared from the manufacturer. For 4×4 MIMO, the MIMO Total ERP= Total conducted power (dBm)+ antenna gain (dBi)- 2.15dB. 2. The conducted test performed at antenna 1 port only due to the four MIMO ports with identical design (Hardware & software) and radio output.						



2 Peak-to-average ratio (PAR)

PAR						
Test Conf.		ANT	Test CH	PAR (dB)	Limit (dB)	Verdict
1 LTE	TC00	ANT1	B	8.17	≤13	Pass
		ANT1	M	8.16	≤13	Pass
		ANT1	T	8.20	≤13	Pass
	TC01	ANT1	B	8.18	≤13	Pass
		ANT1	M	8.01	≤13	Pass
		ANT1	T	8.12	≤13	Pass
	TC02	ANT1	B	8.18	≤13	Pass
		ANT1	M	8.09	≤13	Pass
		ANT1	T	8.11	≤13	Pass
	TC03	ANT1	B	8.15	≤13	Pass
		ANT1	M	8.15	≤13	Pass
		ANT1	T	8.13	≤13	Pass
	TC04	ANT1	B	8.12	≤13	Pass
		ANT1	M	8.03	≤13	Pass
		ANT1	T	8.01	≤13	Pass
	TC05	ANT1	B	8.12	≤13	Pass
		ANT1	M	8.22	≤13	Pass
		ANT1	T	8.13	≤13	Pass
	TC06	ANT1	B	8.12	≤13	Pass
		ANT1	M	8.19	≤13	Pass
		ANT1	T	8.09	≤13	Pass
	TC07	ANT1	B	8.11	≤13	Pass
		ANT1	M	8.06	≤13	Pass
		ANT1	T	8.05	≤13	Pass
	TC08	ANT1	B	8.02	≤13	Pass
		ANT1	M	8.07	≤13	Pass
		ANT1	T	8.13	≤13	Pass

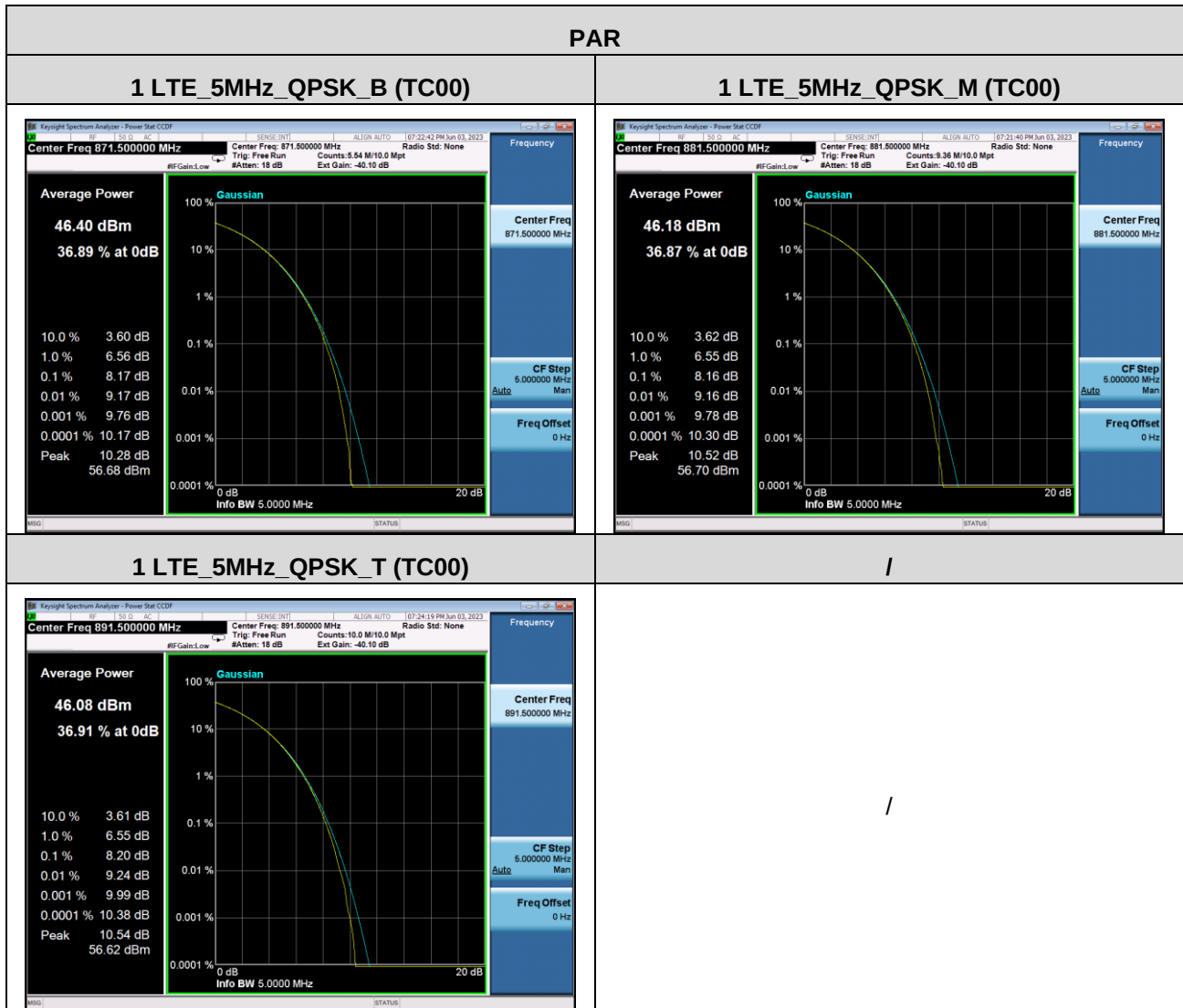


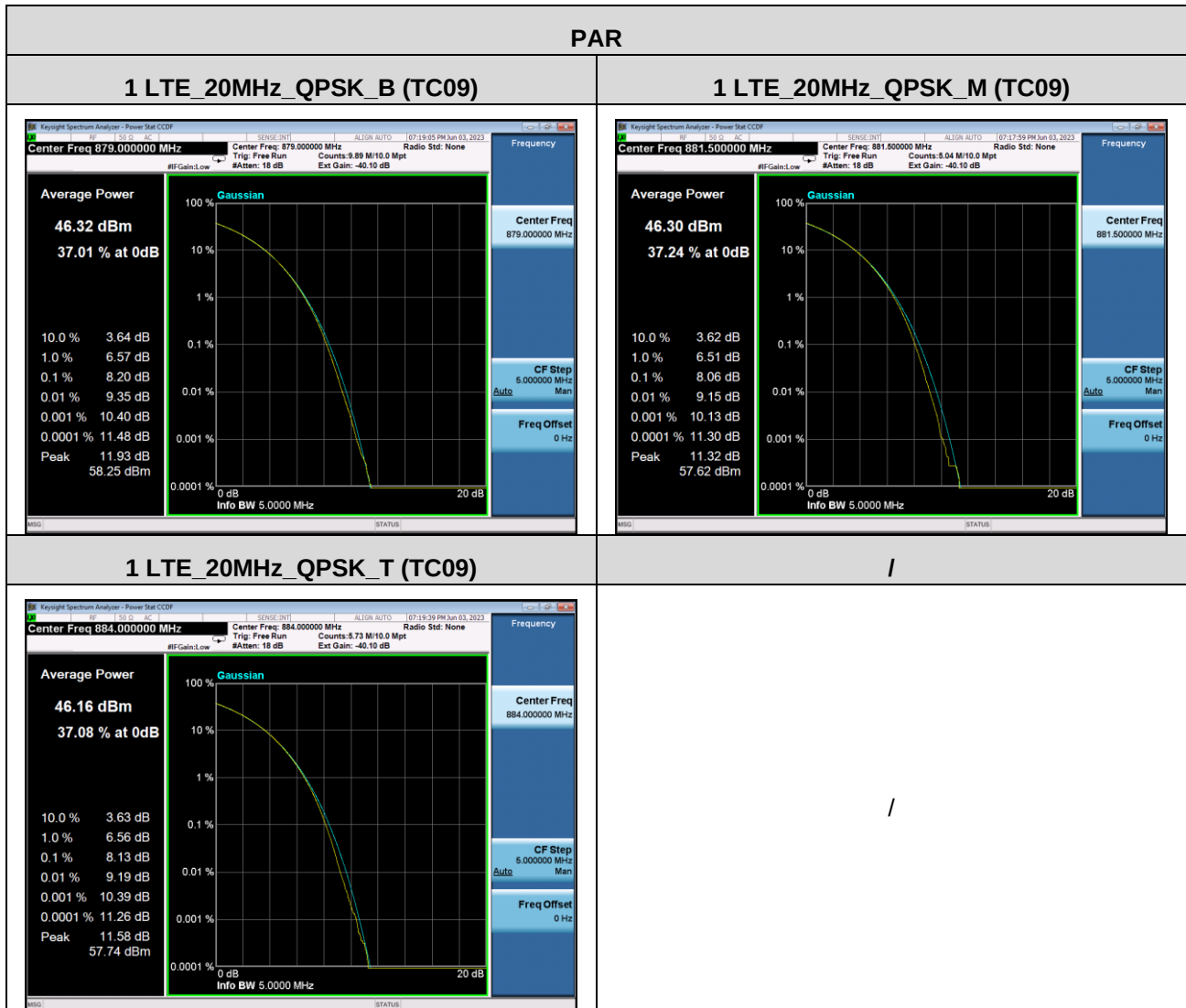
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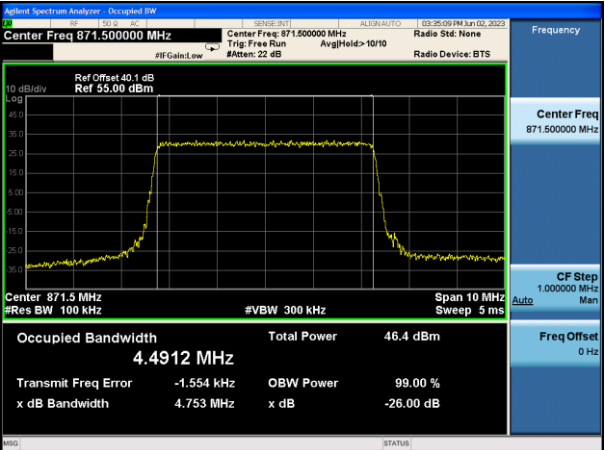
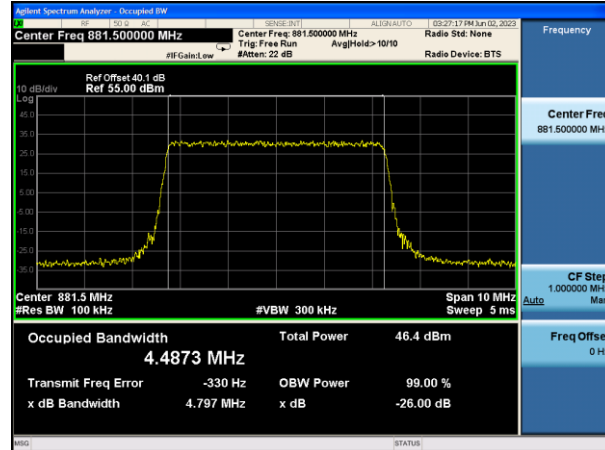
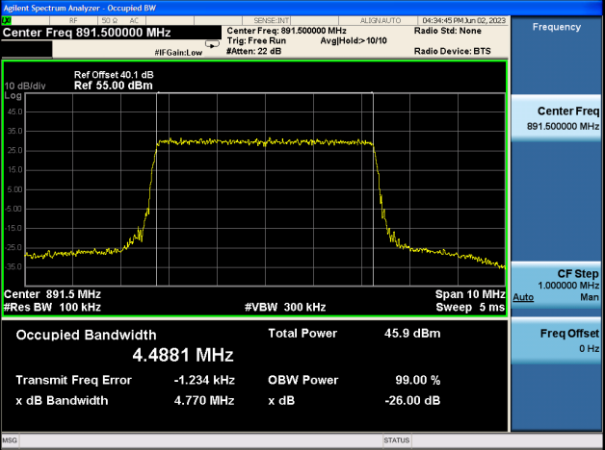
PAR						
Test Conf.		ANT	Test Channel	PAR (dB)	Limit (dB)	Verdict
1 LTE	TC09	ANT1	B	8.20	≤13	Pass
		ANT1	M	8.06	≤13	Pass
		ANT1	T	8.13	≤13	Pass
	TC10	ANT1	B	8.11	≤13	Pass
		ANT1	M	8.11	≤13	Pass
		ANT1	T	8.08	≤13	Pass
	TC11	ANT1	B	8.16	≤13	Pass
		ANT1	M	8.11	≤13	Pass
		ANT1	T	8.15	≤13	Pass

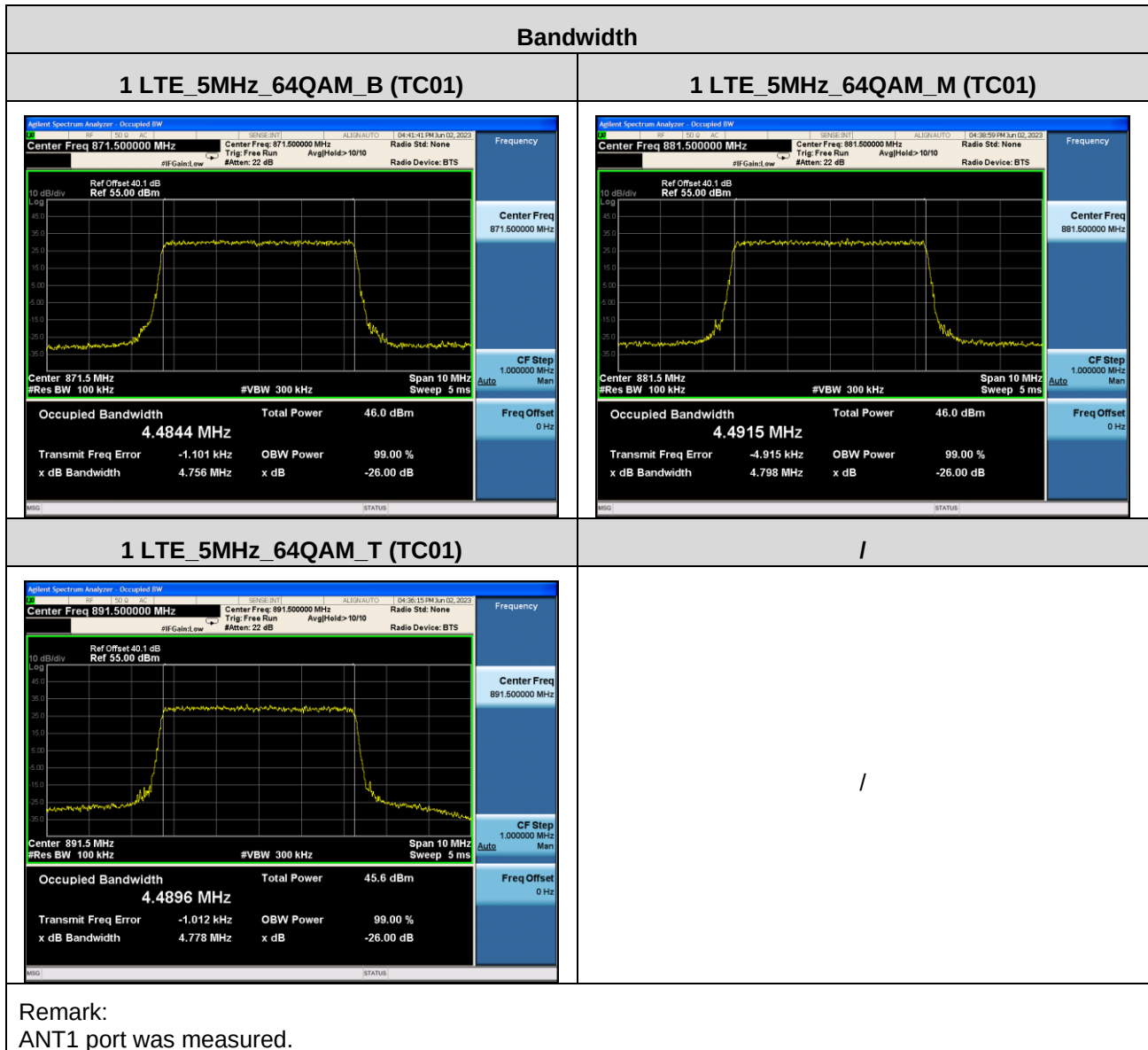
Test performed on all test configuration, since the GSM carrier is narrow band single with extremity low PAR values(The worst case is 0.6), and LTE multi-carriers with identical bandwidth and modulation type to the single LTE carrier, Therefore, only the test plot for single LTE carrier 5MHz bandwidth and 10MHz bandwidth ware record in the report for demonstrate PAR compliance.

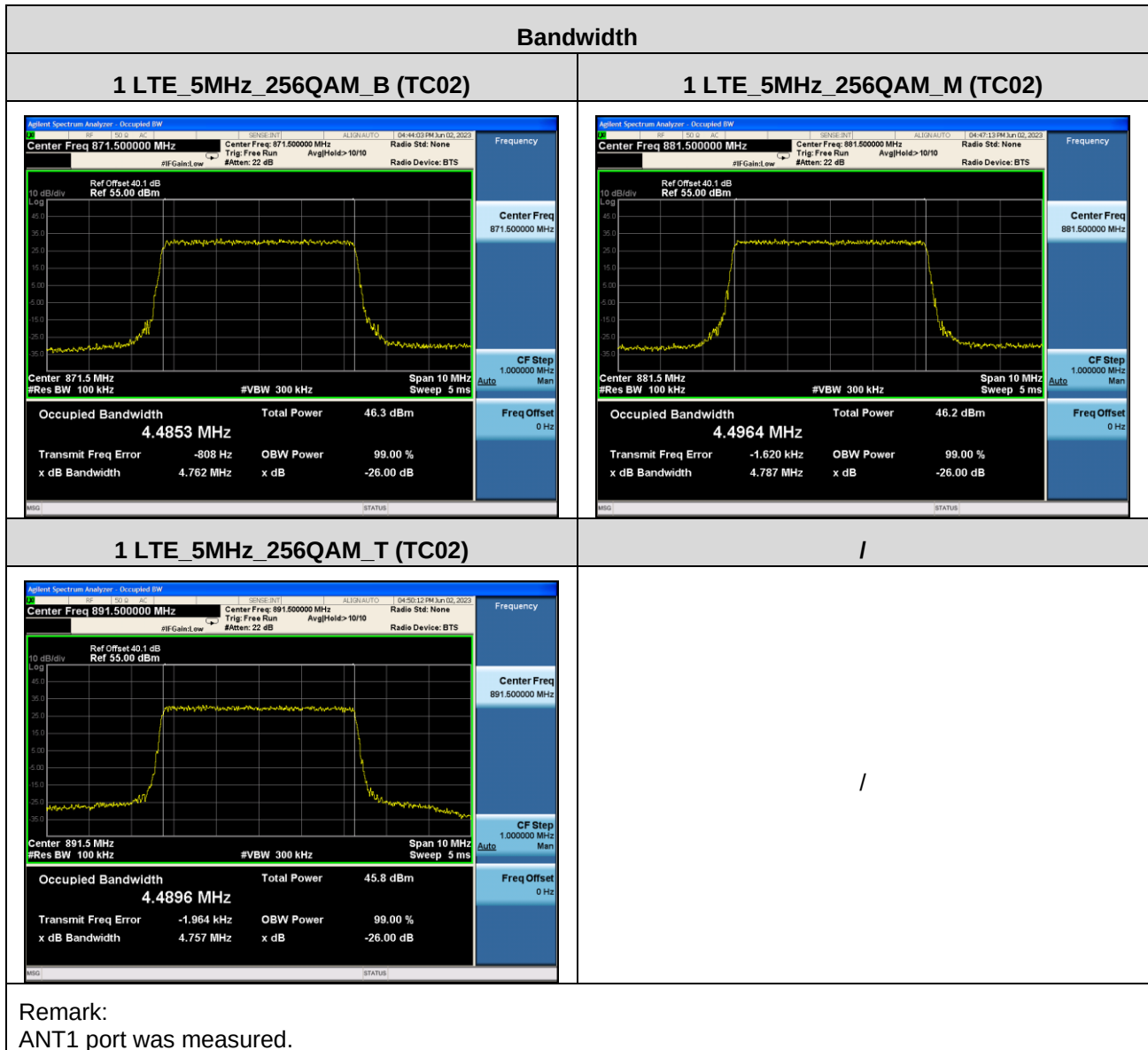


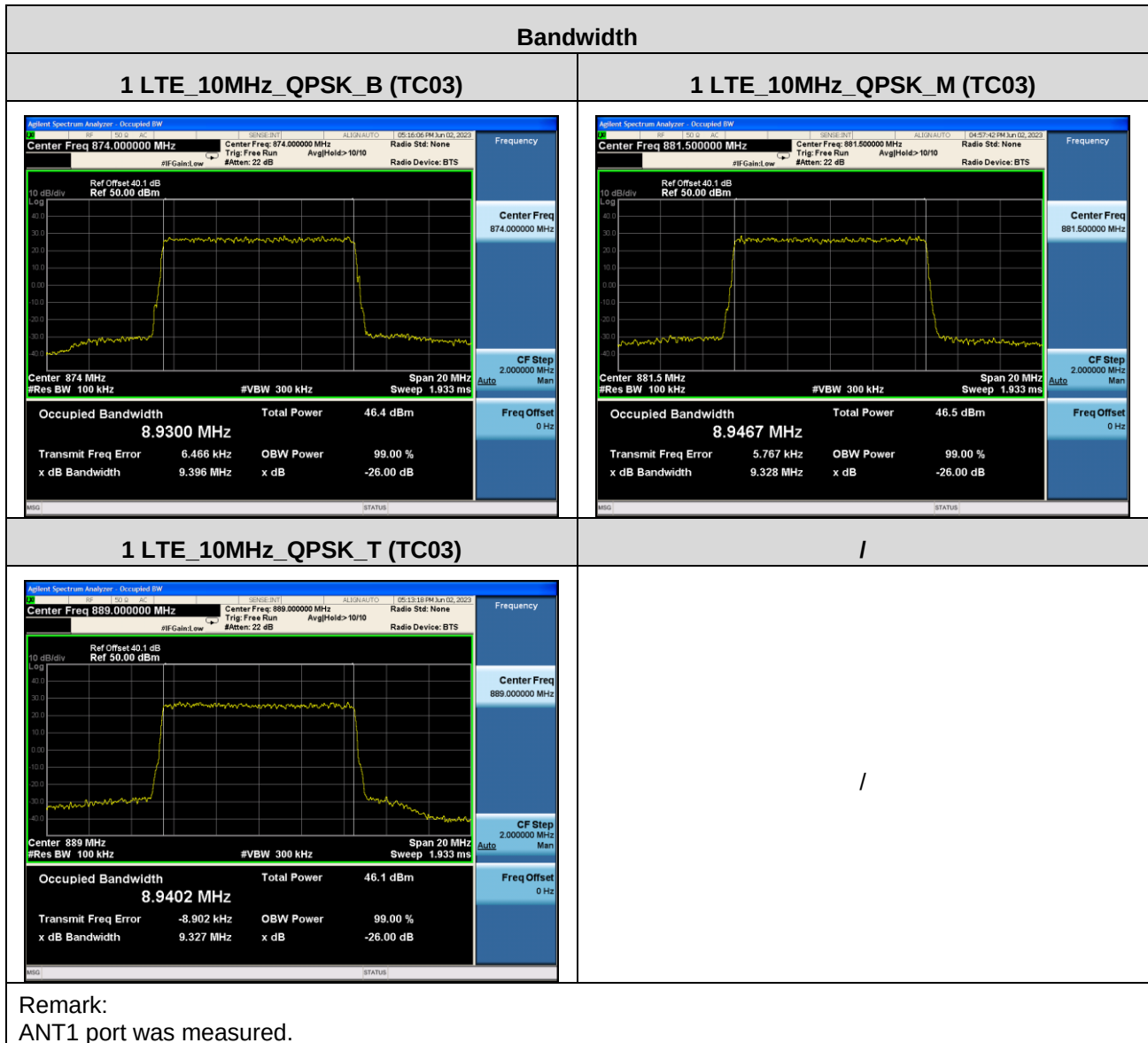


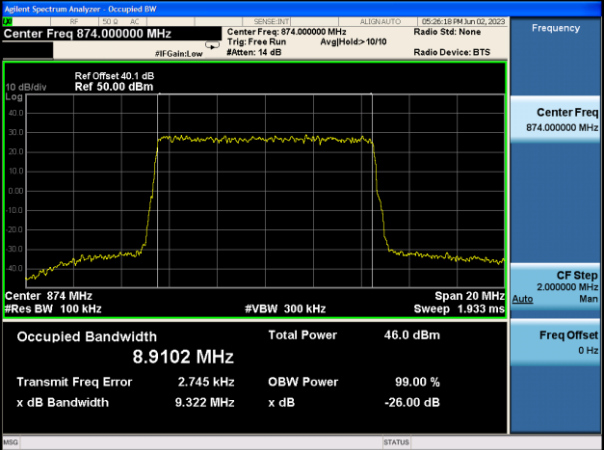
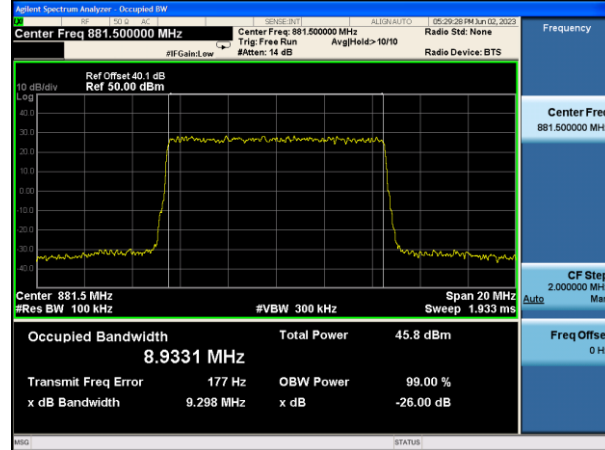
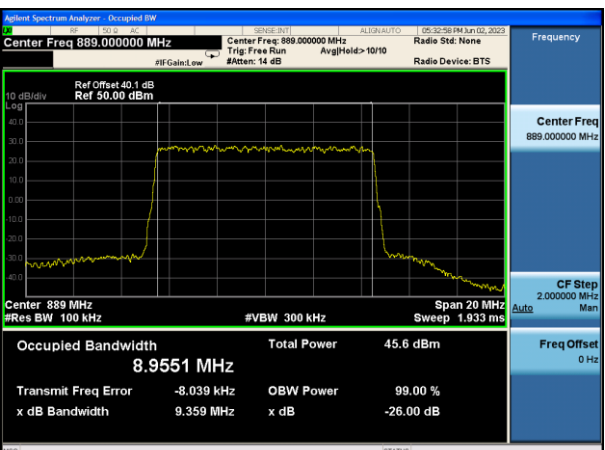
3 Occupied Bandwidth

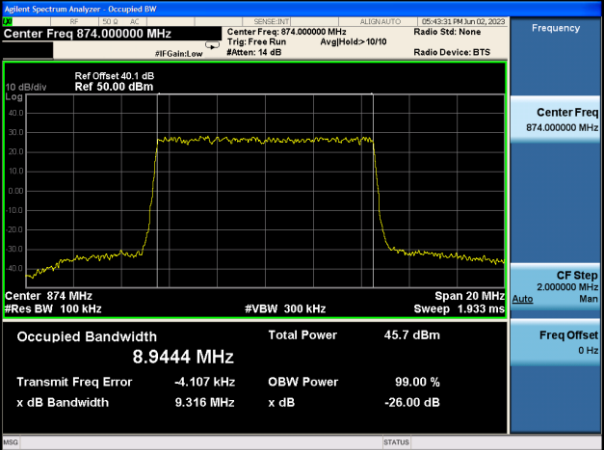
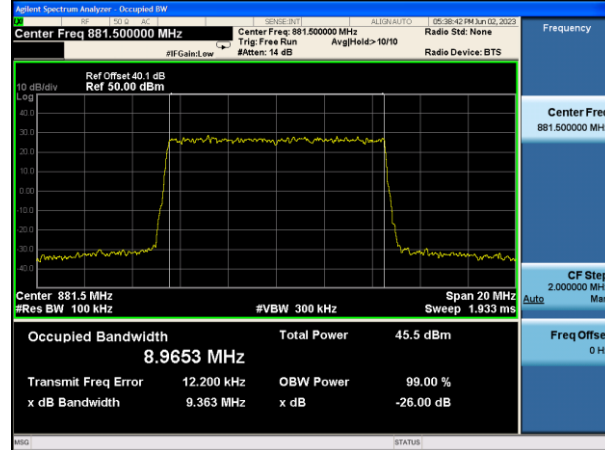
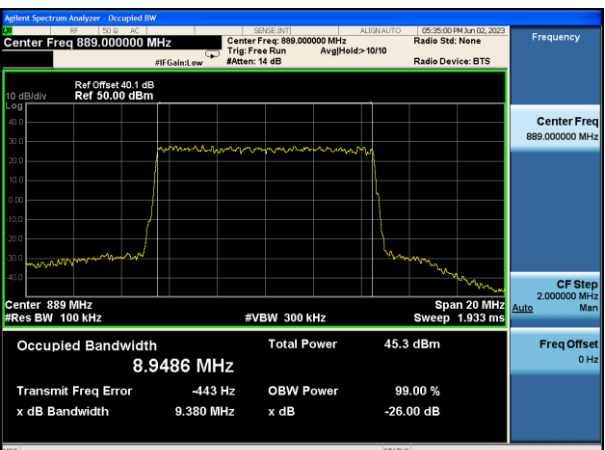
Bandwidth	
1 LTE_5MHz_QPSK_B (TC00)	1 LTE_5MHz_QPSK_M (TC00)
 Agilent Spectrum Analyzer - Occupied BW Center Freq 871.500000 MHz Ref Offset 40.1 dB Ref 55.00 dBm Center Freq 871.5 MHz #Res BW 100 kHz #VBW 300 kHz Span 10 MHz Sweep 5 ms Occupied Bandwidth 4.4912 MHz Total Power 46.4 dBm Transmit Freq Error -1.554 kHz OBW Power 99.00 % x dB Bandwidth 4.753 MHz x dB -26.00 dB	 Agilent Spectrum Analyzer - Occupied BW Center Freq 881.500000 MHz Ref Offset 40.1 dB Ref 55.00 dBm Center Freq 881.5 MHz #Res BW 100 kHz #VBW 300 kHz Span 10 MHz Sweep 5 ms Occupied Bandwidth 4.4873 MHz Total Power 46.4 dBm Transmit Freq Error -330 Hz OBW Power 99.00 % x dB Bandwidth 4.797 MHz x dB -26.00 dB
1 LTE_5MHz_QPSK_T (TC00)	/
 Agilent Spectrum Analyzer - Occupied BW Center Freq 891.500000 MHz Ref Offset 40.1 dB Ref 55.00 dBm Center Freq 891.5 MHz #Res BW 100 kHz #VBW 300 kHz Span 10 MHz Sweep 5 ms Occupied Bandwidth 4.4881 MHz Total Power 45.9 dBm Transmit Freq Error -1.234 kHz OBW Power 99.00 % x dB Bandwidth 4.770 MHz x dB -26.00 dB	/
Remark: ANT1 port was measured.	

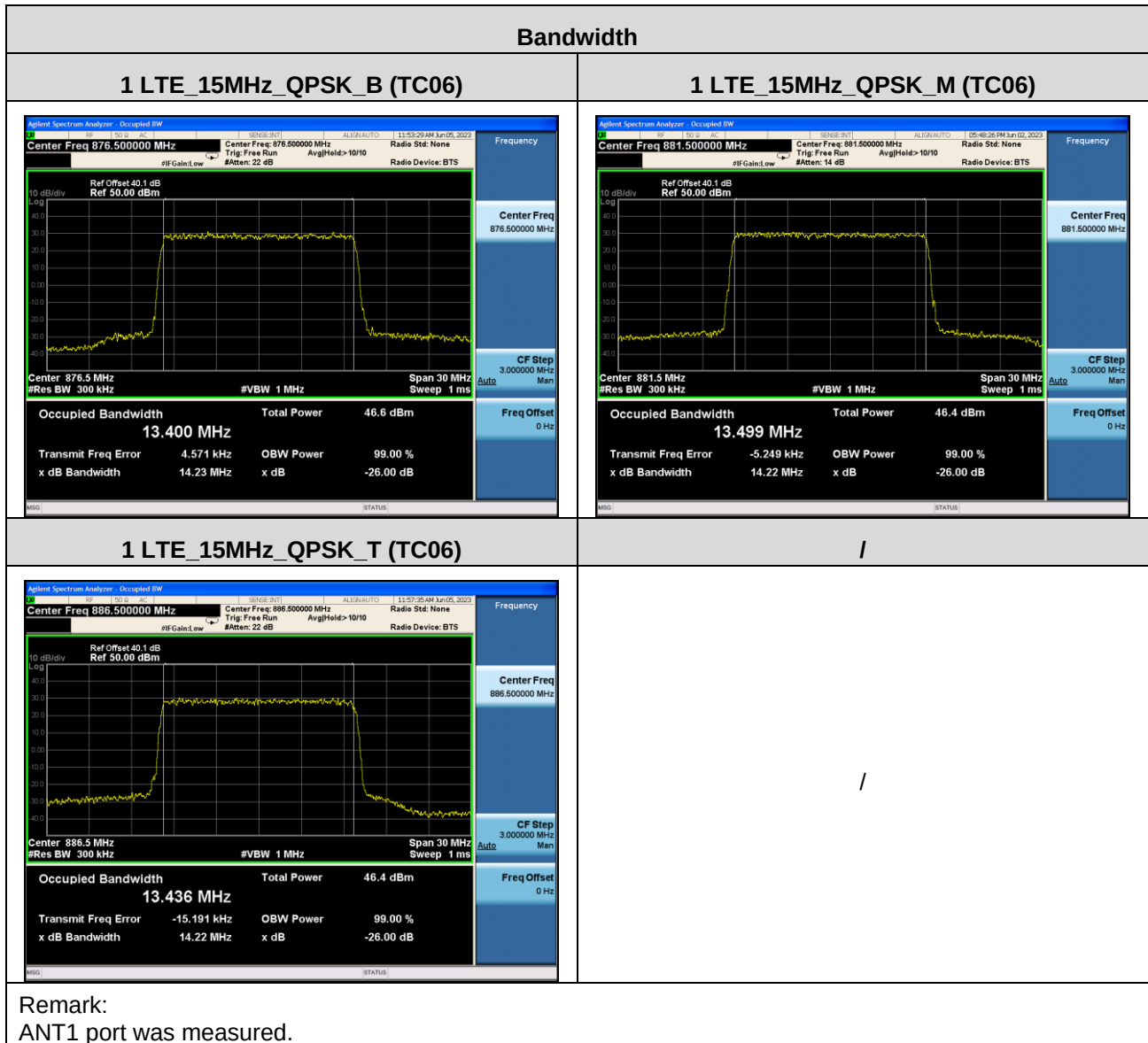




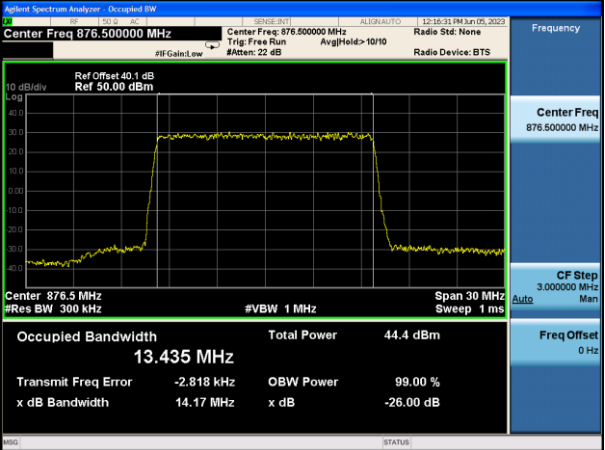
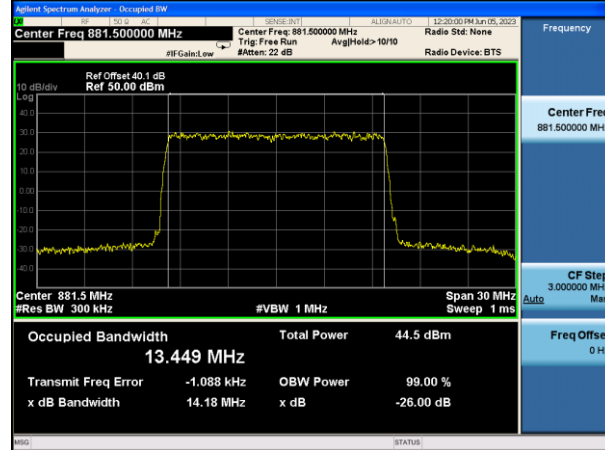
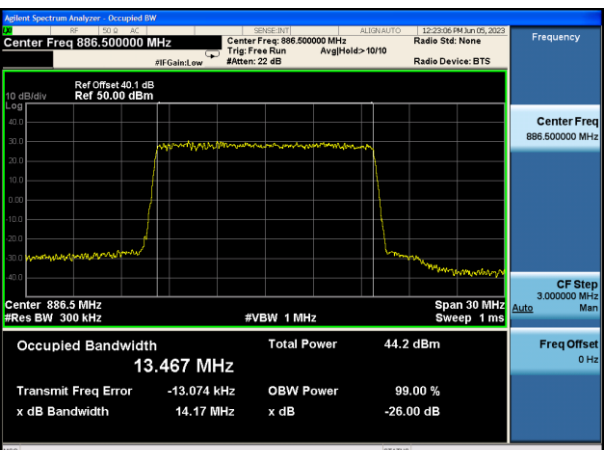


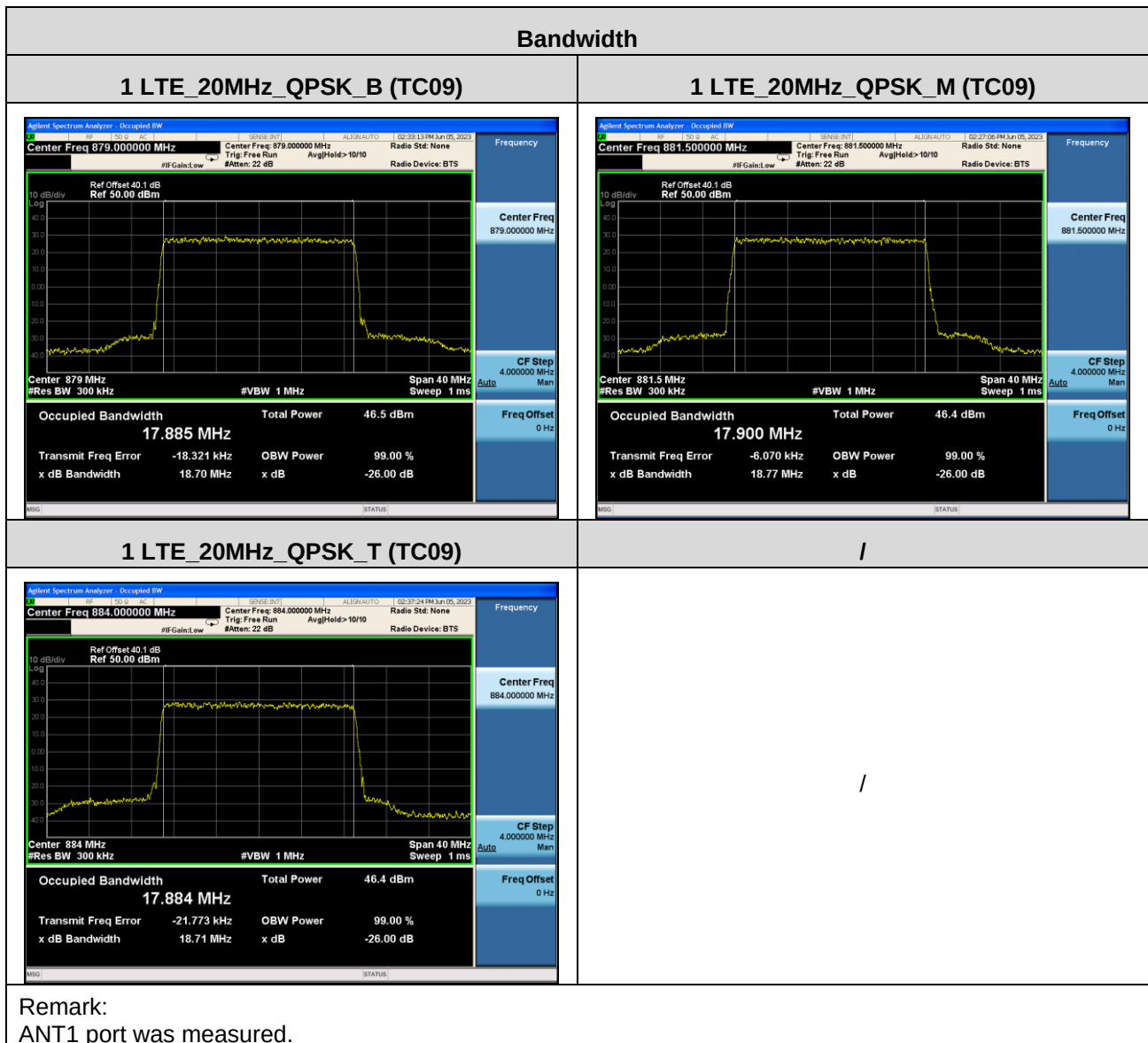
Bandwidth	
1 LTE_10MHz_64QAM_B (TC04) 	1 LTE_10MHz_64QAM_M (TC04) 
1 LTE_10MHz_64QAM_T (TC04) 	/
Remark: ANT1 port was measured.	

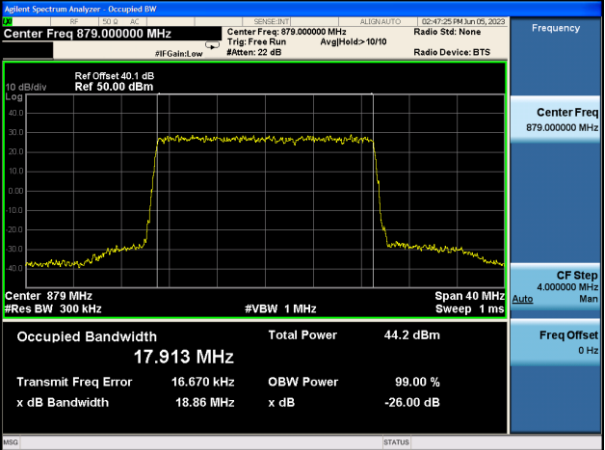
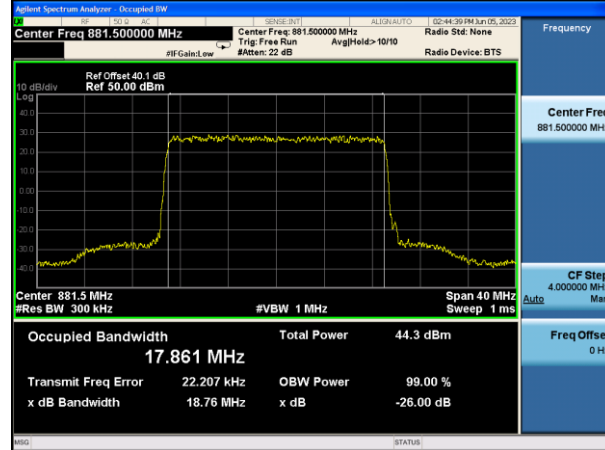
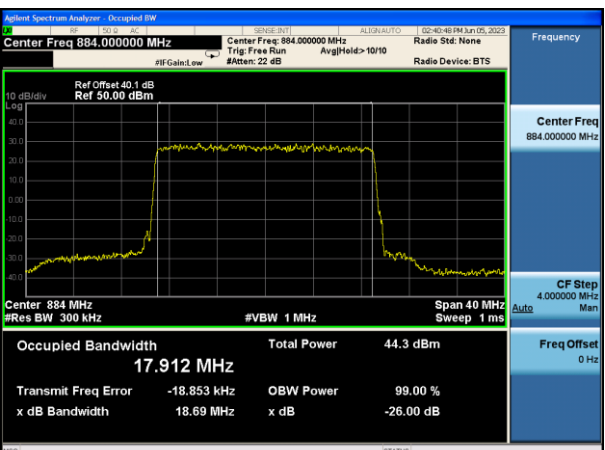
Bandwidth	
1 LTE_10MHz_256QAM_B (TC05)	1 LTE_10MHz_256QAM_M (TC05)
 Agilent Spectrum Analyzer - Occupied BW Center Freq 874.000000 MHz Ref Offset 40.1 dB Ref 50.00 dBm Center 874 MHz #Res BW 100 kHz #VBW 300 kHz Span 20 MHz Sweep 1.933 ms Occupied Bandwidth 8.9444 MHz Total Power 45.7 dBm Transmit Freq Error -4.107 kHz OBW Power 99.00 % x dB Bandwidth 9.316 MHz x dB -26.00 dB	 Agilent Spectrum Analyzer - Occupied BW Center Freq 881.500000 MHz Ref Offset 40.1 dB Ref 50.00 dBm Center 881.5 MHz #Res BW 100 kHz #VBW 300 kHz Span 20 MHz Sweep 1.933 ms Occupied Bandwidth 8.9653 MHz Total Power 45.5 dBm Transmit Freq Error 12.200 kHz OBW Power 99.00 % x dB Bandwidth 9.363 MHz x dB -26.00 dB
1 LTE_10MHz_256QAM_T (TC05)	/
 Agilent Spectrum Analyzer - Occupied BW Center Freq 889.000000 MHz Ref Offset 40.1 dB Ref 50.00 dBm Center 889 MHz #Res BW 100 kHz #VBW 300 kHz Span 20 MHz Sweep 1.933 ms Occupied Bandwidth 8.9486 MHz Total Power 45.3 dBm Transmit Freq Error -443 Hz OBW Power 99.00 % x dB Bandwidth 9.380 MHz x dB -26.00 dB	/
Remark: ANT1 port was measured.	



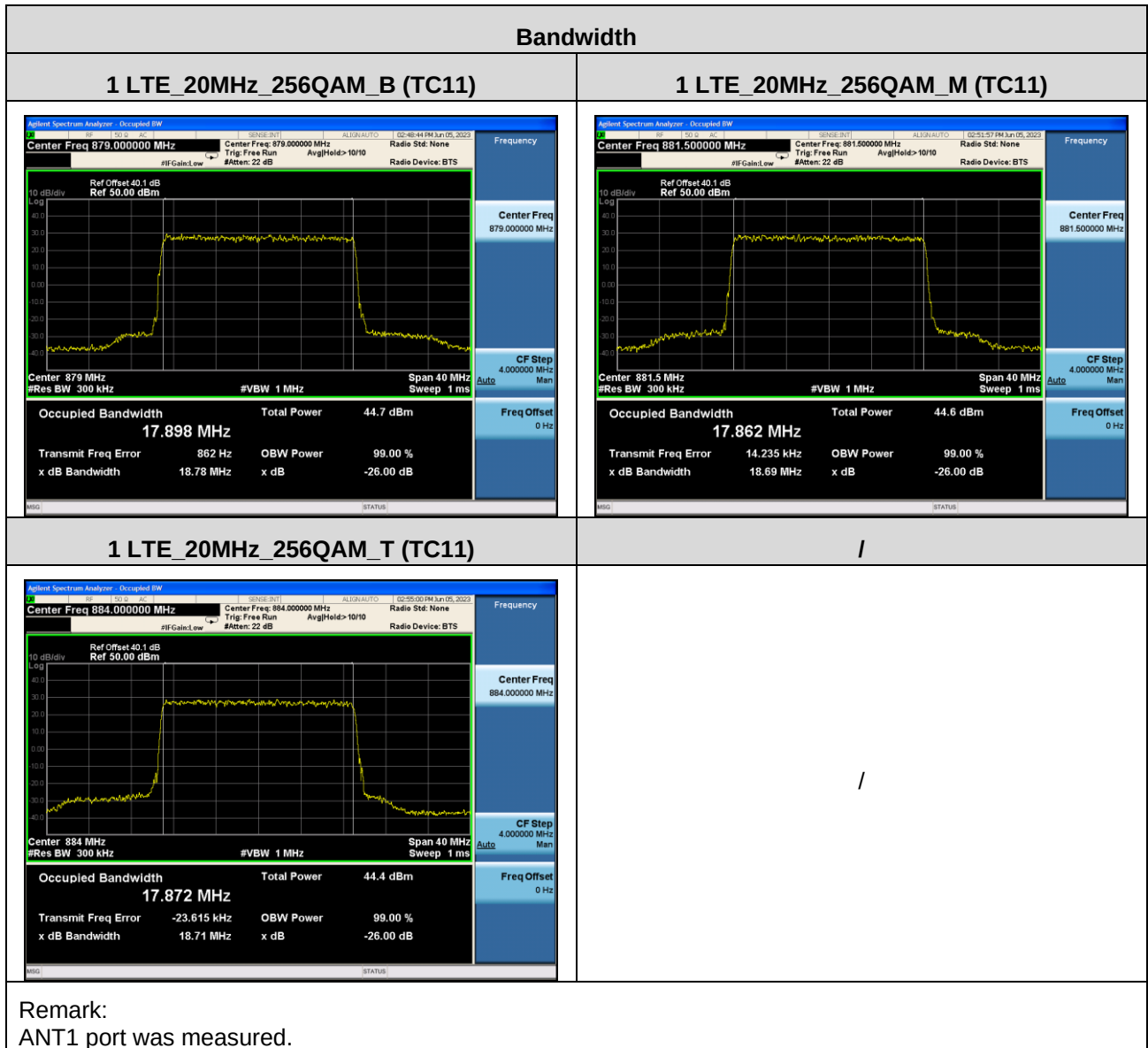


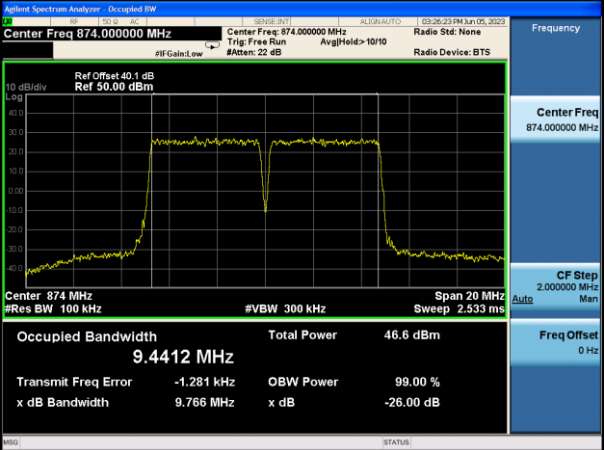
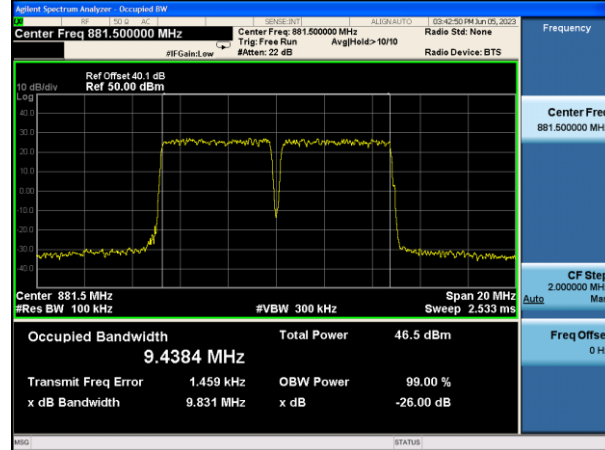
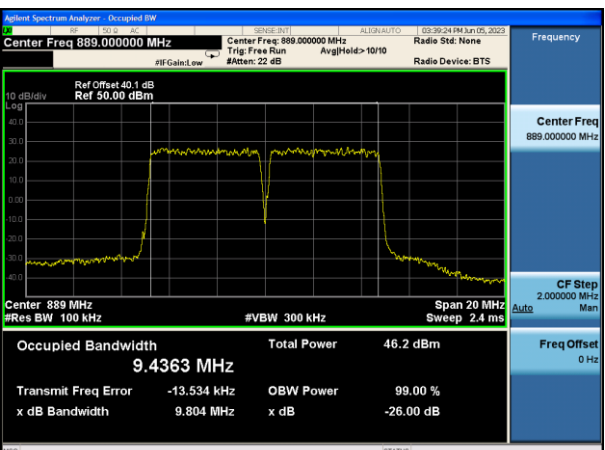
Bandwidth	
1 LTE_15MHz_256QAM_B (TC08) 	1 LTE_15MHz_256QAM_M (TC08) 
1 LTE_15MHz_256QAM_T (TC08) 	/
Remark: ANT1 port was measured.	

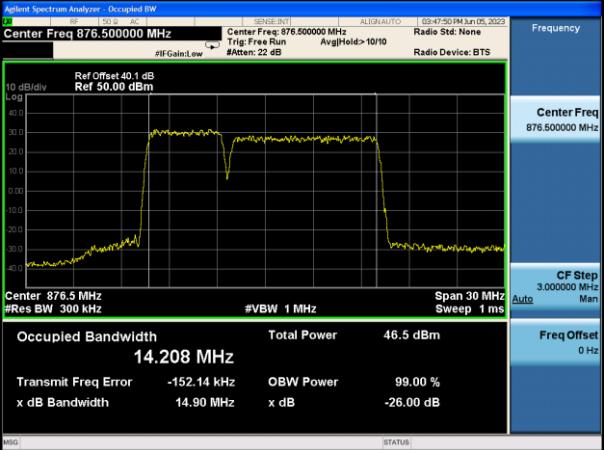
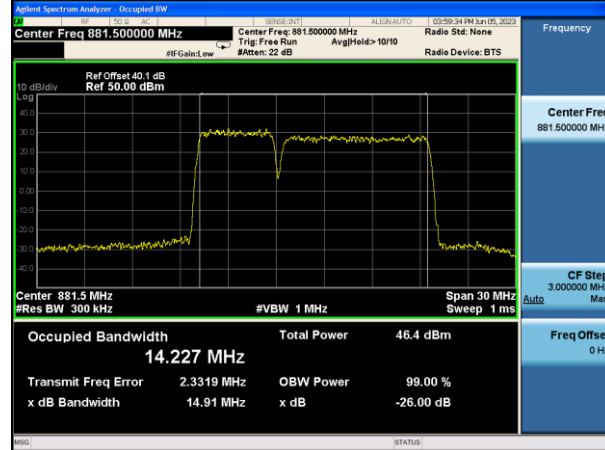
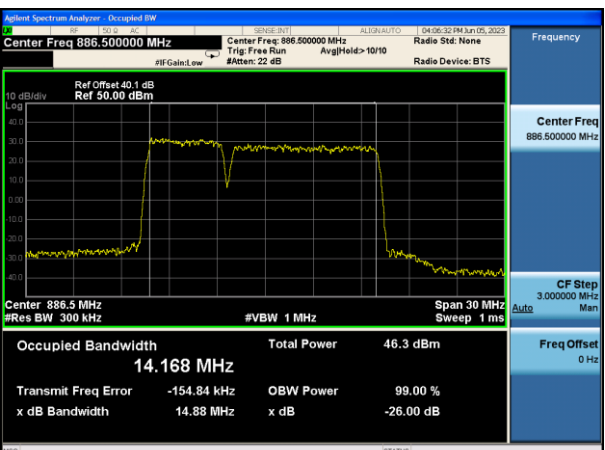


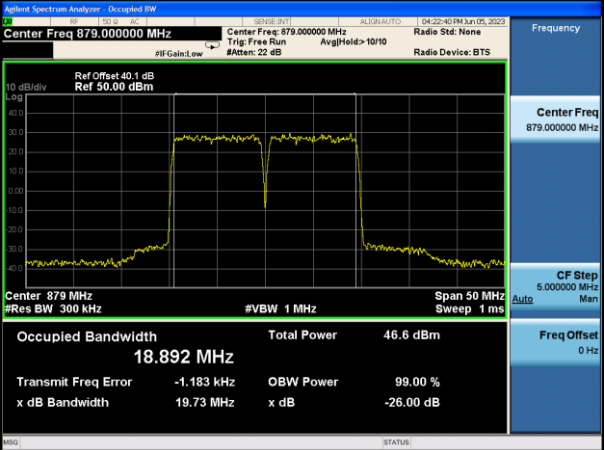
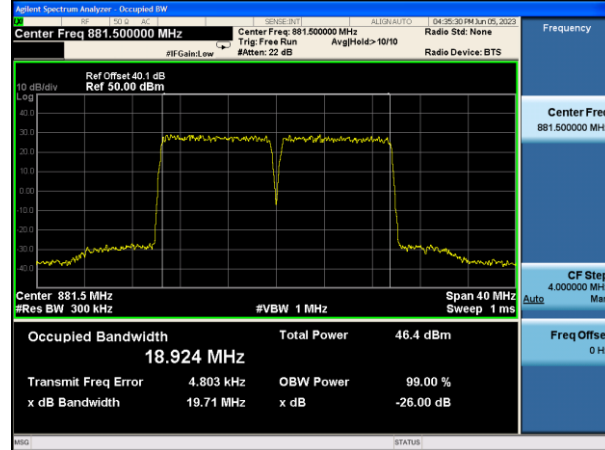
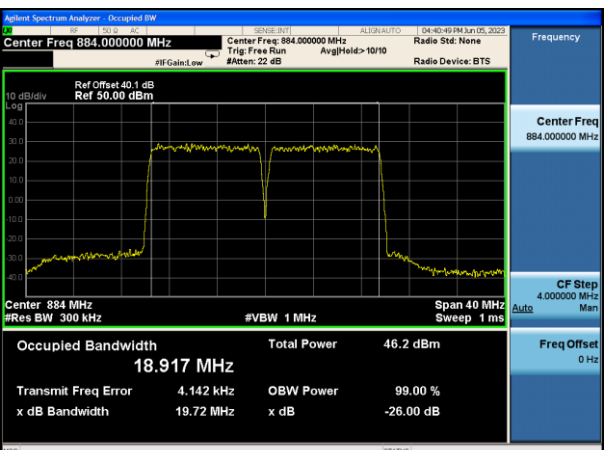
Bandwidth	
1 LTE_20MHz_64QAM_B (TC10) 	1 LTE_20MHz_64QAM_M (TC10) 
1 LTE_20MHz_64QAM_T (TC10) 	/

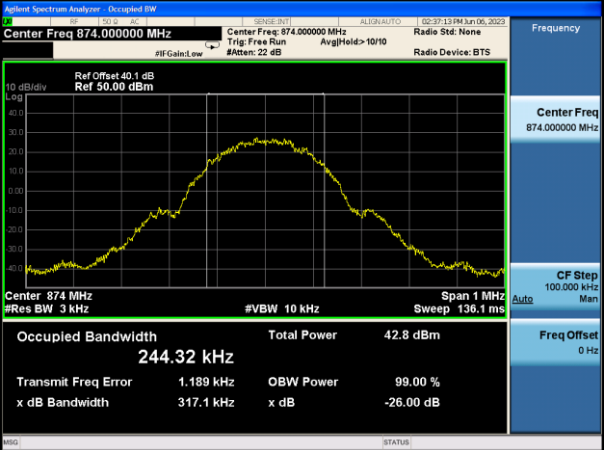
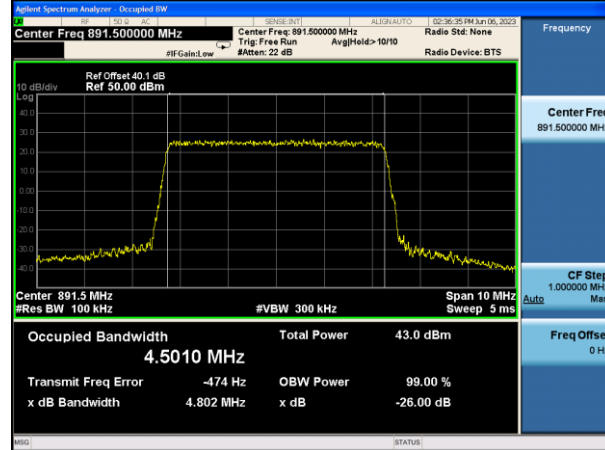
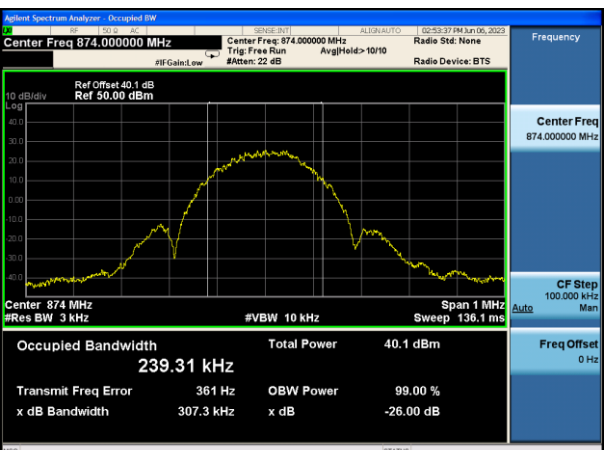
Remark:
ANT1 port was measured.



Bandwidth	
2 LTE_5+5MHz_QPSK_B (TC12)  Center Freq 874.000000 MHz Occupied Bandwidth: 9.4412 MHz Total Power: 46.6 dBm Transmit Freq Error: -1.281 kHz OBW Power: 99.00 % x dB Bandwidth: 9.766 MHz x dB: -26.00 dB	2 LTE_5+5MHz_QPSK_M (TC12)  Center Freq 881.500000 MHz Occupied Bandwidth: 9.4384 MHz Total Power: 46.5 dBm Transmit Freq Error: 1.459 kHz OBW Power: 99.00 % x dB Bandwidth: 9.831 MHz x dB: -26.00 dB
2 LTE_5+5MHz_QPSK_T (TC12)  Center Freq 889.000000 MHz Occupied Bandwidth: 9.4363 MHz Total Power: 46.2 dBm Transmit Freq Error: -13.534 kHz OBW Power: 99.00 % x dB Bandwidth: 9.804 MHz x dB: -26.00 dB	/
Remark: 1. All test configurations had been tested, only show the worst-case for 2 LTE carries(5MHz+5MHz) in this report. 2. ANT1 port was measured.	

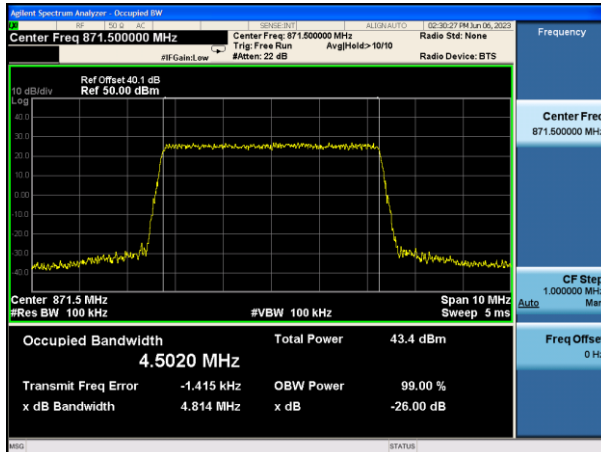
Bandwidth	
2 LTE_5+10MHz_QPSK_B (TC18)	2 LTE_5+10MHz_QPSK_M (TC18)
	
2 LTE_5+10MHz_QPSK_T (TC18)	/
	/
Remark: 1. All test configurations had been tested, only show the worst-case of 2 LTE carries(5MHz+10MHz) in this report. 2. ANT1 port was measured.	

Bandwidth	
2 LTE_10+10MHz_QPSK_B (TC24)  Center Freq 879.000000 MHz Ref Offset 40.1 dB Ref 50.00 dBm Center 879 MHz #Res BW 300 kHz #VBW 1 MHz Span 50 MHz Sweep 1 ms Occupied Bandwidth 18.892 MHz Total Power 46.6 dBm Transmit Freq Error -1.183 kHz OBW Power 99.00 % x dB Bandwidth 19.73 MHz x dB -26.00 dB	2 LTE_10+10MHz_QPSK_M (TC24)  Center Freq 881.500000 MHz Ref Offset 40.1 dB Ref 50.00 dBm Center 881.5 MHz #Res BW 300 kHz #VBW 1 MHz Span 40 MHz Sweep 1 ms Occupied Bandwidth 18.924 MHz Total Power 46.4 dBm Transmit Freq Error 4.803 kHz OBW Power 99.00 % x dB Bandwidth 19.71 MHz x dB -26.00 dB
2 LTE_10+10MHz_QPSK_T (TC24)  Center Freq 884.000000 MHz Ref Offset 40.1 dB Ref 50.00 dBm Center 884 MHz #Res BW 300 kHz #VBW 1 MHz Span 40 MHz Sweep 1 ms Occupied Bandwidth 18.917 MHz Total Power 46.2 dBm Transmit Freq Error 4.142 kHz OBW Power 99.00 % x dB Bandwidth 19.72 MHz x dB -26.00 dB	/
Remark: 1. All test configurations had been tested, only show the worst-case of 2 LTE carries(10MHz+10MHz) in this report. 2. ANT1 port was measured.	

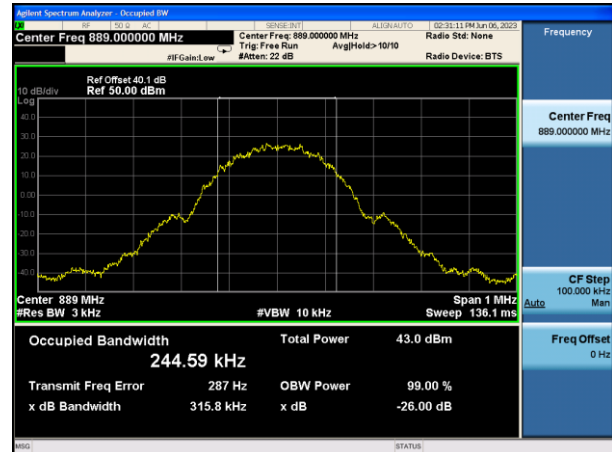
Bandwidth	
1 GSM+ 1 LTE_5MHz_GMSK+QPSK (TC30)  Center Freq 874.000000 MHz #Res BW 3 kHz Occupied Bandwidth 244.32 kHz Total Power 42.8 dBm Transmit Freq Error 1.189 kHz x dB Bandwidth 317.1 kHz	1 GSM+ 1 LTE_5MHz_GMSK+QPSK (TC30)  Center Freq 891.500000 MHz #Res BW 300 kHz Occupied Bandwidth 4.5010 MHz Total Power 43.0 dBm Transmit Freq Error -474 Hz x dB Bandwidth 4.802 MHz
1 GSM+ 1 LTE_5MHz_8PSK+QPSK (TC31)  Center Freq 874.000000 MHz #Res BW 3 kHz Occupied Bandwidth 239.31 kHz Total Power 40.1 dBm Transmit Freq Error 361 Hz x dB Bandwidth 307.3 kHz	/
Remark: 1. All test configurations had been tested, only show the worst-case of 2 carries (1 GSM+1 LTE) in this report. 2. ANT1 port was measured.	

Bandwidth

1 GSM+ 1 LTE_5MHz_QPSK+GMSK (TC36)

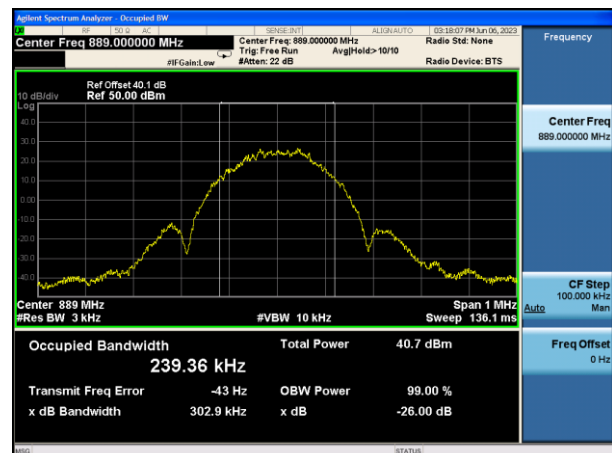


1 GSM+ 1 LTE_5MHz_QPSK+GMSK (TC36)



/

1 GSM+ 1 LTE_5MHz_8PSK+GMSK (TC37)



/

Remark:

1. All test configurations had been tested, only show the worst-case of 2 carries (1GSM+1 LTE) in this report.
2. ANT1 port was measured.



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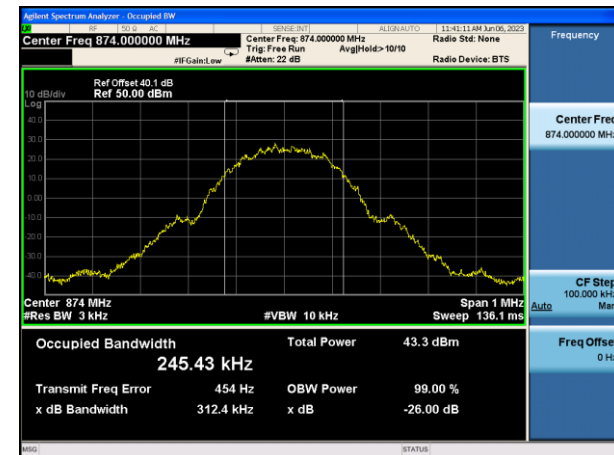
SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, EEC Laboratory

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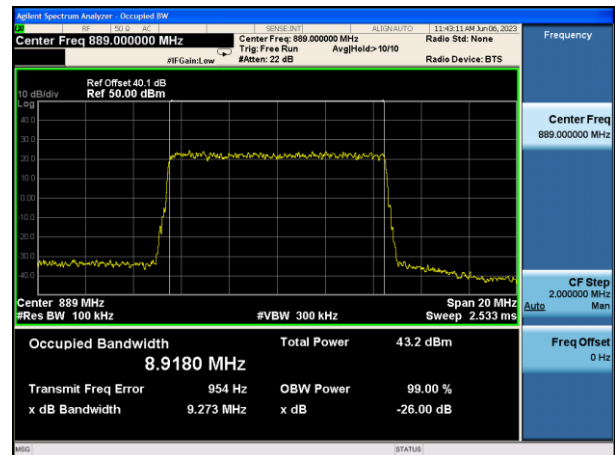
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sgs.china@sgs.com

Bandwidth

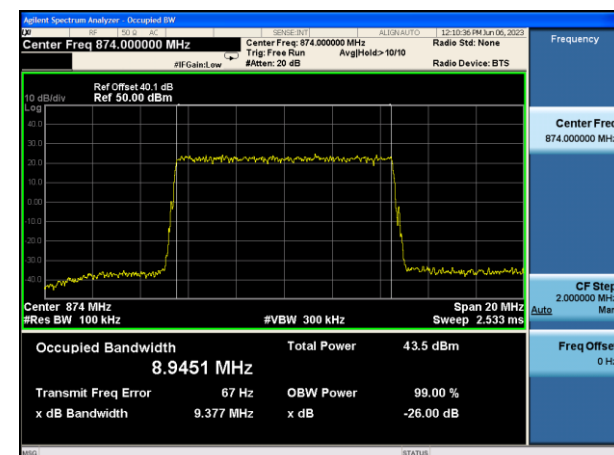
1 GSM+ 1 LTE_10MHz_GMSK+QPSK (TC42)



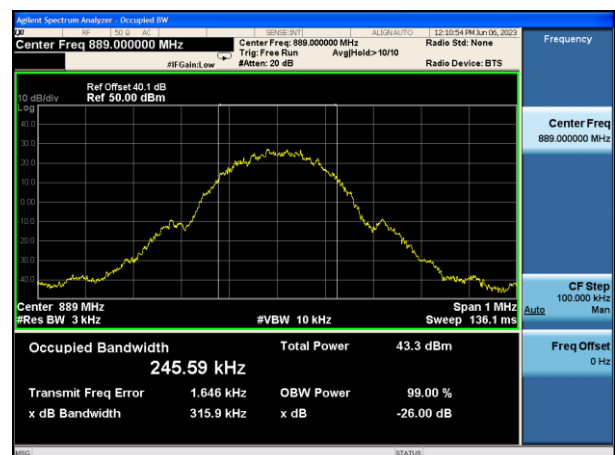
1 GSM+ 1 LTE_10MHz_GMSK+QPSK (TC42)



1 GSM+ 1 LTE_10MHz_QPSK+GMSK (TC48)

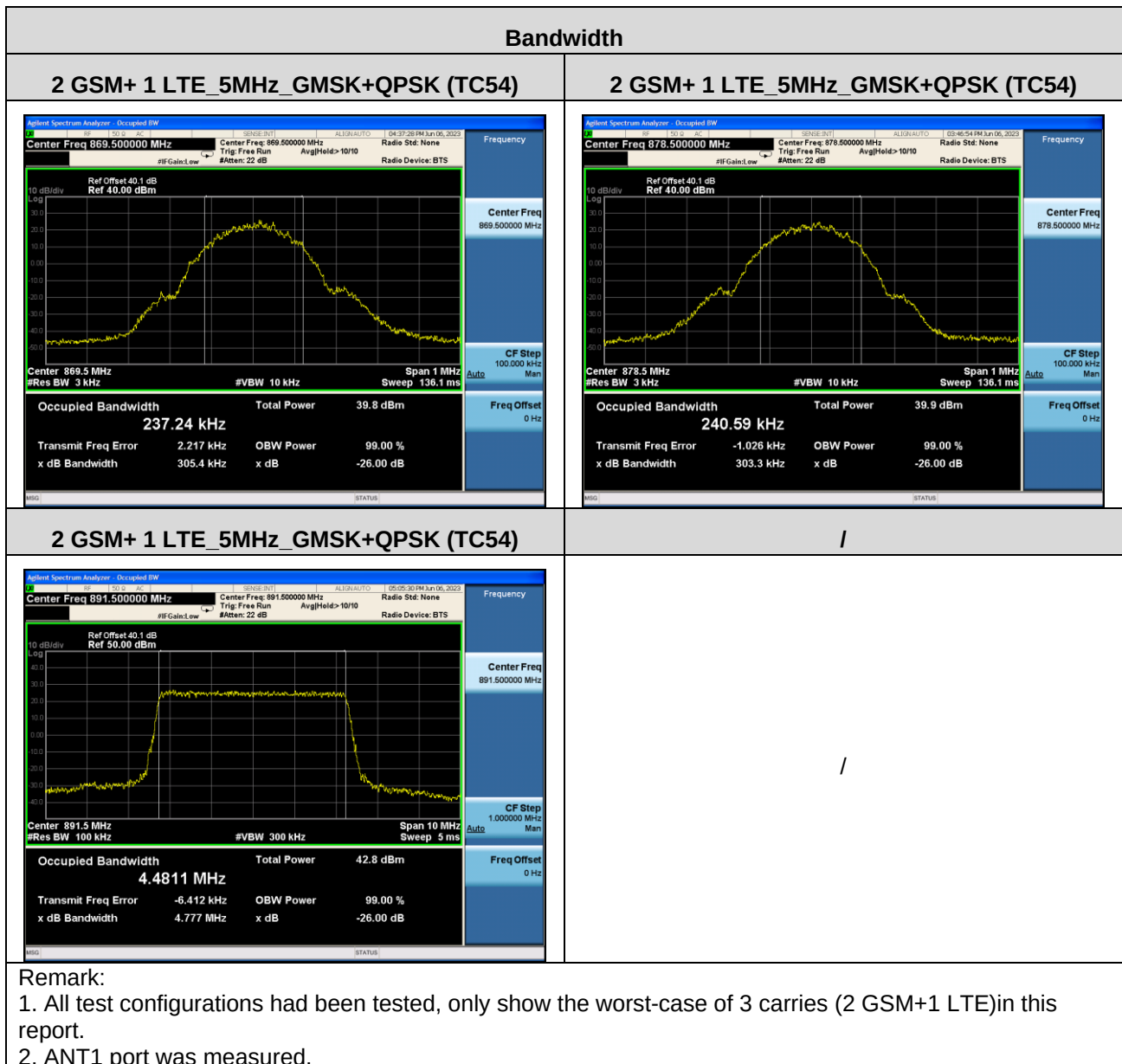


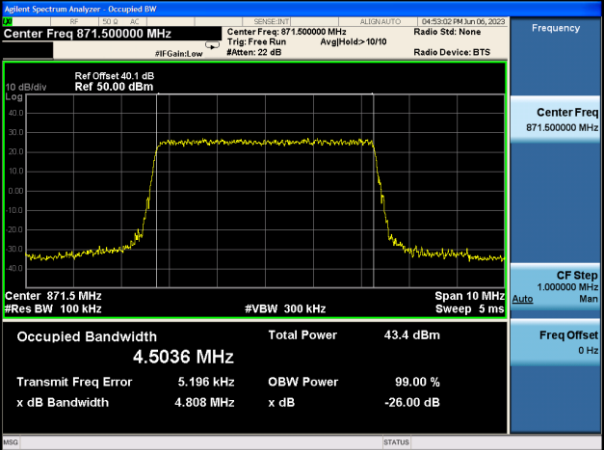
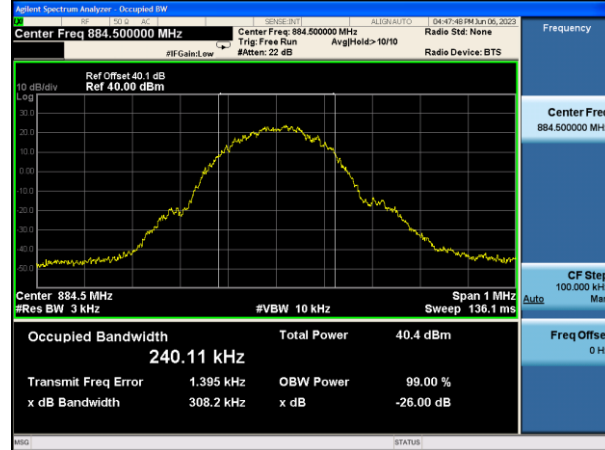
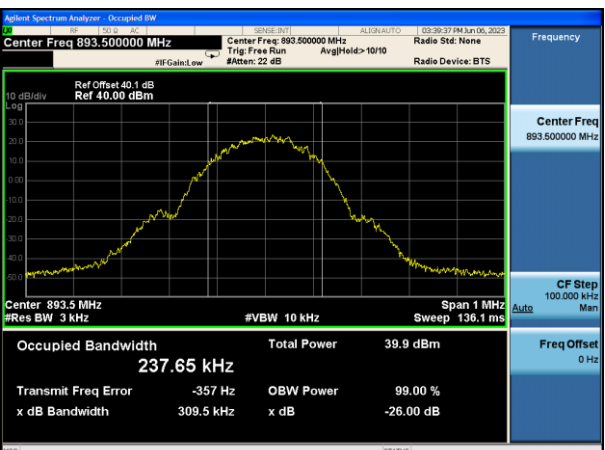
1 GSM+ 1 LTE_10MHz_QPSK+GMSK (TC48)



Remark:

1. All test configurations had been tested, only show the worst-case of 2 carries (1GSM+1 LTE) in this report.
2. ANT1 port was measured.



Bandwidth	
2 GSM+ 1 LTE_5MHz_QPSK+GMSK (TC60)  Center Freq 871.500000 MHz Occupied Bandwidth: 4.5036 MHz Total Power: 43.4 dBm Transmit Freq Error: 5.196 kHz OBW Power: 99.00 % x dB Bandwidth: 4.808 MHz x dB: -26.00 dB	2 GSM+ 1 LTE_5MHz_QPSK+GMSK (TC60)  Center Freq 884.500000 MHz Occupied Bandwidth: 240.11 kHz Total Power: 40.4 dBm Transmit Freq Error: 1.395 kHz OBW Power: 99.00 % x dB Bandwidth: 308.2 kHz x dB: -26.00 dB
2 GSM+ 1 LTE_5MHz_QPSK+GMSK (TC60)  Center Freq 893.500000 MHz Occupied Bandwidth: 237.65 kHz Total Power: 39.9 dBm Transmit Freq Error: -357 Hz OBW Power: 99.00 % x dB Bandwidth: 309.5 kHz x dB: -26.00 dB	/
Remark: 1. All test configurations had been tested, only show the worst-case of 3 carries (2 GSM+1 LTE)in this report. 2. ANT1 port was measured.	