

Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/22
Test Band	Band 5		

Channel	Frequency	Channel	Peak to	Limit	Result	
No.	(MHz)	Bandwidth	Average Ratio	(dB)		
		(MHz)	(dB)			
QPSK						
20525	836.5	10	5.07	≤ 13.00	Pass	
16QAM						
20525	836.5	10	5.51	≤ 13.00	Pass	





Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/22
Test Band	LTE Band 7		

Channel	Frequency	Channel	Peak to	Limit	Result	
No.	(MHz)	Bandwidth	Average Ratio	(dB)		
		(MHz)	(dB)			
QPSK						
21100	2535.0	20	4.70	≤ 13.00	Pass	
16QAM						
21100	2535.0	20	5.60	≤ 13.00	Pass	

QPSK			16QAM		
Spectrum Analyzer 1 Cocupied BW KEYSIGHT Input: RF Couping DC Align: Auto	Ambyora 3 1 cocce 2 col 0 Loss 0 Atten: 16 dB ITgp Free Run Correct Free 2.55000000 GHz correct free 2.55000000 GHz Counts 100 Mt 10 Mpt Radio Std None	Frequency End Center Frequency Settings 2.53600000 GHz Settings	Spectrum Analyzet 1 Spectrum Analyzet 3 + + Coccupied BW KEYSIGHT Intel 68 m Spectrum Analyzet 3 + + KEYSIGHT Intel 6 m Spectrum Analyzet 3 + + *** Align Auto Freq Ref Int (5) Keysing DC	Center Frequency Center Frequency 2.53500000 GHz Settings	
1 Metrics v	2 Graph v	5.000000 MHz	1 Metrics v 2 Graph v	5.000000 MHz	
Average Rower	Gaussian	Auto	Gaussian 100 %	Auto	
22.22 dBm		Freq Offset	21.38 dBm	Freq Offset	
48.23 % at 0 dB	10 %	0 Hz	45.95 % at 0 dB 10 %	0 Hz	
10.0 % 2.29 dB	1%		10.0% 2.85 dB		
0.1% 470 dB			0.1% 560 dB		
0.01 % 5.05 dB	0.1 %		0.01 % 6.10 dB 0.1 %		
0.001 % 5.30 dB			0.001 % 6.27 dB		
0.0001 % 5.38 dB	0.01 %		0.0001 % 6.31 dB 0.01 %		
Peak 5.40 dB 27.62 dBm			Peak 6.56 dB 8 8 00 %		
	Info BW 25.000 MHz		0.00 dB 20.00 dB		
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5.7. Conducted Spurious Emission Measurement

5.7.1.Test Limit

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

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.

For Band 7, 38/41 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 55 + 10 log(P) dB.

5.7.2.Test Procedure

ANSI C63.26-2015 - Section 5.7

5.7.3.Test Setting

- 1. Set the analyzer frequency to low, mid, high channel.
- 2. RBW = 1MHz
- 3. VBW ≥ 3*RBW
- 4. Sweep time = auto
- 5. Detector = power averaging (rms)
- 6. Set sweep trigger to "free run."
- 7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full power.
- 8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.



5.7.4.Test Setup





5.7.5.Test Result

Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/21
Test Band	LTE Band 2_1RB_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
18607	1850.7	1.4	30 ~ 20000	-36.15	≤ -13.00	Pass
18900	1880.0	1.4	30 ~ 20000	-36.79	≤ -13.00	Pass
19193	1909.3	1.4	30 ~ 20000	-36.15	≤ -13.00	Pass
18615	1851.5	3	30 ~ 20000	-37.11	≤ -13.00	Pass
18900	1880.0	3	30 ~ 20000	-37.03	≤ -13.00	Pass
19185	1908.5	3	30 ~ 20000	-37.11	≤ -13.00	Pass
18625	1852.5	5	30 ~ 20000	-36.35	≤ -13.00	Pass
18900	1880.0	5	30 ~ 20000	-35.85	≤ -13.00	Pass
19175	1907.5	5	30 ~ 20000	-36.24	≤ -13.00	Pass
18650	1855.0	10	30 ~ 20000	-36.87	≤ -13.00	Pass
18900	1880.0	10	30 ~ 20000	-36.22	≤ -13.00	Pass
19150	1905.0	10	30 ~ 20000	-37.07	≤ -13.00	Pass
18675	1857.5	15	30 ~ 20000	-36.33	≤ -13.00	Pass
18900	1880.0	15	30 ~ 20000	-35.82	≤ -13.00	Pass
19125	1902.5	15	30 ~ 20000	-36.49	≤ -13.00	Pass
18700	1860.0	20	30 ~ 20000	-36.25	≤ -13.00	Pass
18900	1880.0	20	30 ~ 20000	-36.11	≤ -13.00	Pass
19100	1900.0	20	30 ~ 20000	-35.89	≤ -13.00	Pass















Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/21
Test Band	LTE Band 4/66_1RB_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
131979	1710.7	1.4	30 ~ 20000	-37.09	≤ -13.00	Pass
132322	1745.0	1.4	30 ~ 20000	-37.29	≤ -13.00	Pass
132665	1779.3	1.4	30 ~ 20000	-37.18	≤ -13.00	Pass
131987	1711.5	3	30 ~ 20000	-37.15	≤ -13.00	Pass
132322	1745.0	3	30 ~ 20000	-37.14	≤ -13.00	Pass
132657	1778.5	3	30 ~ 20000	-35.89	≤ -13.00	Pass
131997	1712.5	5	30 ~ 20000	-35.59	≤ -13.00	Pass
132322	1745.0	5	30 ~ 20000	-36.89	≤ -13.00	Pass
132647	1777.5	5	30 ~ 20000	-36.08	≤ -13.00	Pass
132022	1715.0	10	30 ~ 20000	-36.44	≤ -13.00	Pass
132322	1745.0	10	30 ~ 20000	-37.04	≤ -13.00	Pass
132622	1775.0	10	30 ~ 20000	-36.64	≤ -13.00	Pass
132047	1717.5	15	30 ~ 20000	-32.67	≤ -13.00	Pass
132322	1745.0	15	30 ~ 20000	-36.85	≤ -13.00	Pass
132597	1772.5	15	30 ~ 20000	-36.32	≤ -13.00	Pass
132072	1720.0	20	30 ~ 20000	-36.26	≤ -13.00	Pass
132322	1745.0	20	30 ~ 20000	-36.23	≤ -13.00	Pass
132572	1770.0	20	30 ~ 20000	-35.56	≤ -13.00	Pass



