



5.6. Peak to Average Ratio

5.6.1.Test Limit

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

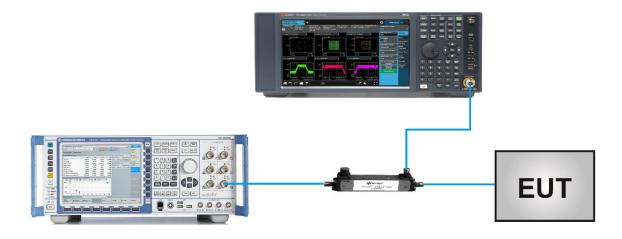
5.6.2.Test Procedure Used

ANSI C63.26-2015 - Section 5.2.3.4 (CCDF).

5.6.3.Test Setting

- 1. Set the resolution / measurement bandwidth ≥ signal's occupied bandwidth
- 2. Set the number of counts to a value that stabilizes the measured CCDF curve
- 3. Record the maximum PARR level associated with a probability of 0.1%

5.6.4.Test Setup





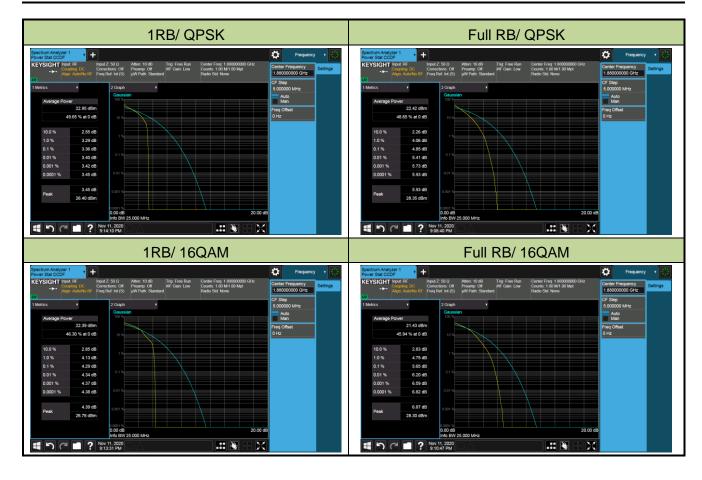
5.6.5.Test Result

Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 2		

Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK					
1880.0	20	1	3.36	≤ 13.00	Pass
1880.0	20	100	4.85	≤ 13.00	Pass
16QAM					
1880.0	20	1	4.29	≤ 13.00	Pass
1880.0	20	100	5.65	≤ 13.00	Pass

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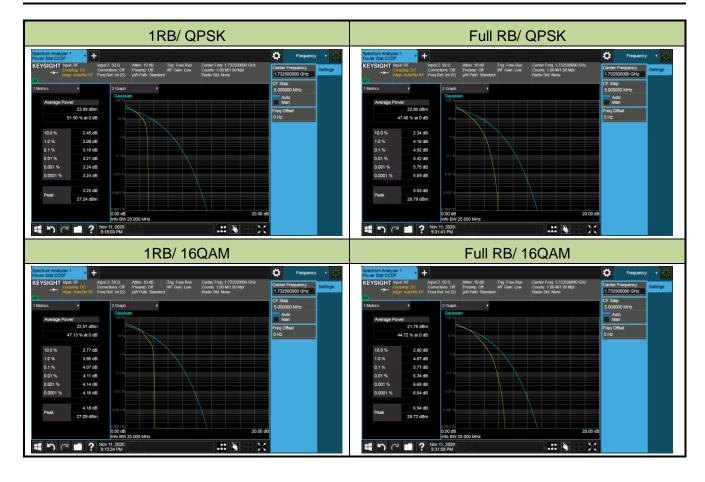


Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 4		

Frequency (MHz)	Channel Bandwidth	RB Size	Peak to Average Ratio	Limit (dB)	Result
(1711 12)	(MHz)	Size	(dB)	(db)	
ODCK	(1711 12)		(GD)		
QPSK					
1732.5	20	1	3.18	≤ 13.00	Pass
1732.5	20	100	4.92	≤ 13.00	Pass
16QAM					
1732.5	20	1	4.07	≤ 13.00	Pass
1732.5	20	100	5.77	≤ 13.00	Pass

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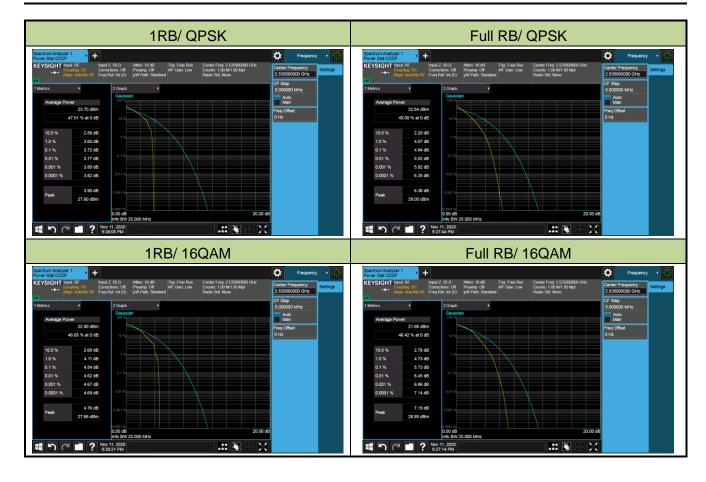




Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 7		

Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK	, ,		, ,		
2535.0	20	1	3.72	≤ 13.00	Pass
2535.0	20	100	4.94	≤ 13.00	Pass
16QAM					
2535.0	20	1	4.54	≤ 13.00	Pass
2535.0	20	100	5.73	≤ 13.00	Pass



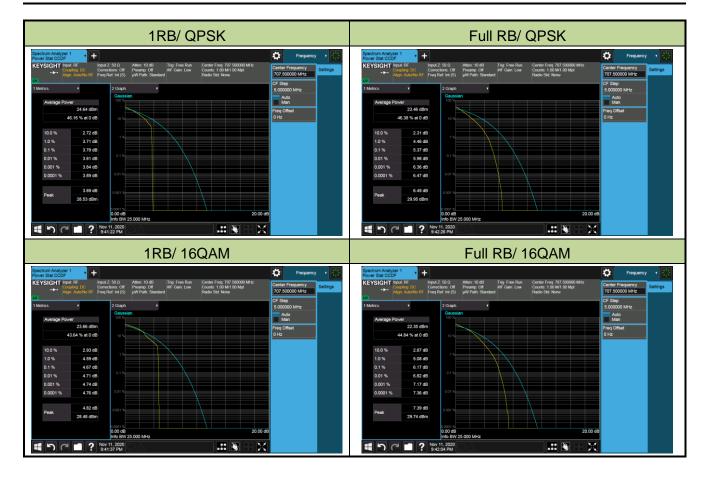




Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 12		

Frequency	Channel	RB	Peak to	Limit	Result
(MHz)	Bandwidth	Size	Average Ratio	(dB)	
	(MHz)		(dB)		
QPSK					
707.5	10	1	3.78	≤ 13.00	Pass
707.5	10	50	5.37	≤ 13.00	Pass
16QAM					
707.5	10	1	4.67	≤ 13.00	Pass
707.5	10	50	6.17	≤ 13.00	Pass



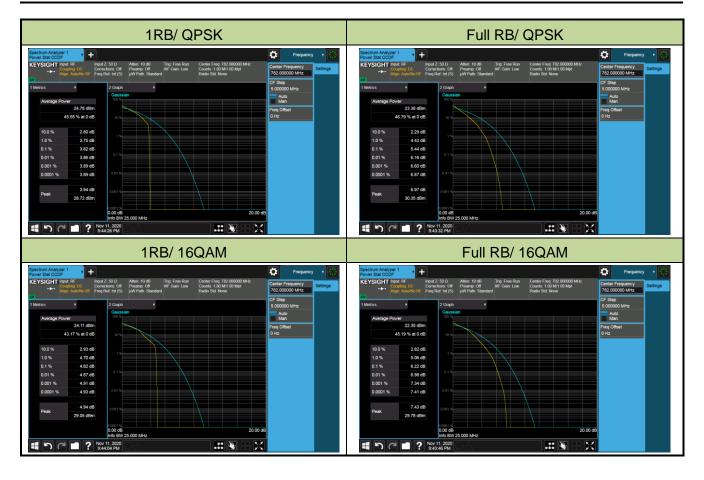




Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 13		

Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK					
782.0	10	1	3.82	≤ 13.00	Pass
782.0	10	50	5.44	≤ 13.00	Pass
16QAM					
782.0	10	1	4.82	≤ 13.00	Pass
782.0	10	50	6.22	≤ 13.00	Pass





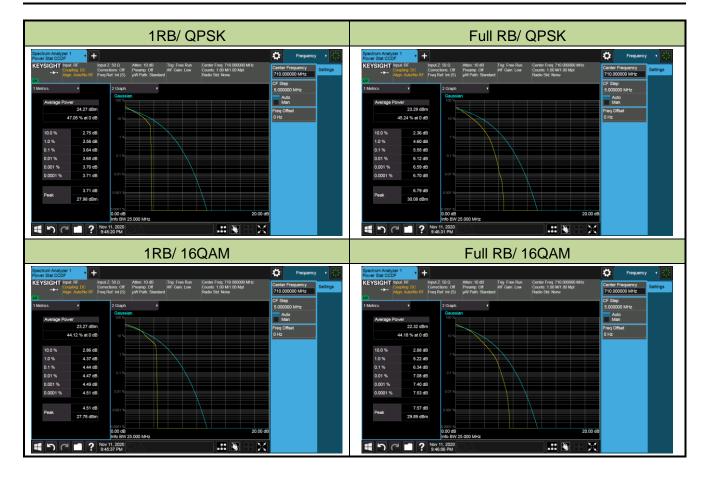


Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 17		

Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK					
710.0	10	1	3.64	≤ 13.00	Pass
710.0	10	50	5.55	≤ 13.00	Pass
16QAM					
710.0	10	1	4.44	≤ 13.00	Pass
710.0	10	50	6.34	≤ 13.00	Pass

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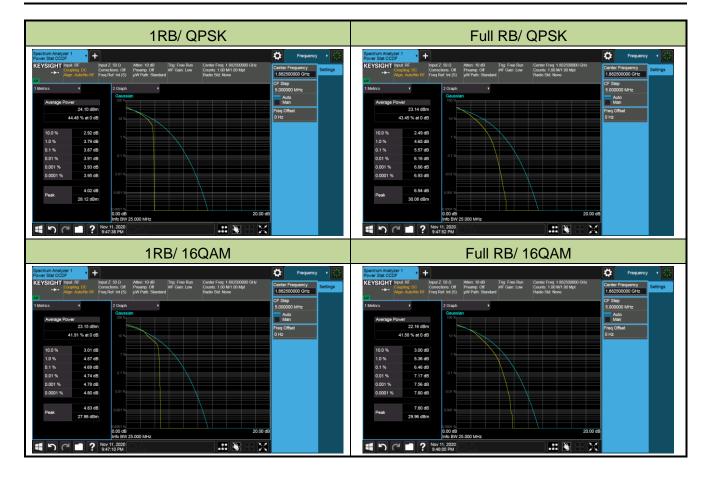


Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 25		

Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK	, ,		(- /		
1882.5	20	1	3.87	≤ 13.00	Pass
1882.5	200	100	5.57	≤ 13.00	Pass
16QAM					
1882.5	20	1	4.69	≤ 13.00	Pass
1882.5	200	100	6.46	≤ 13.00	Pass

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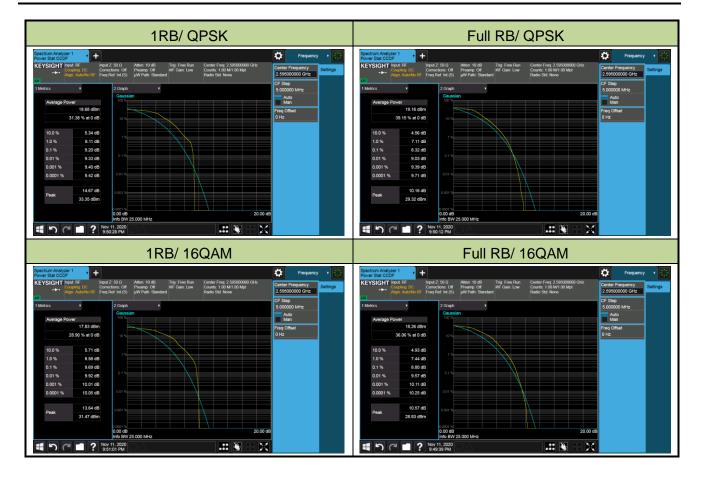




Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 38		

Frequency	Channel	RB	Peak to	Limit	Result
(MHz)	Bandwidth	Size	Average Ratio	(dB)	
	(MHz)		(dB)		
QPSK					
2595.0	20	1	9.20	≤ 13.00	Pass
2595.0	20	100	8.32	≤ 13.00	Pass
16QAM					
2595.0	20	1	9.69	≤ 13.00	Pass
2595.0	20	100	8.80	≤ 13.00	Pass





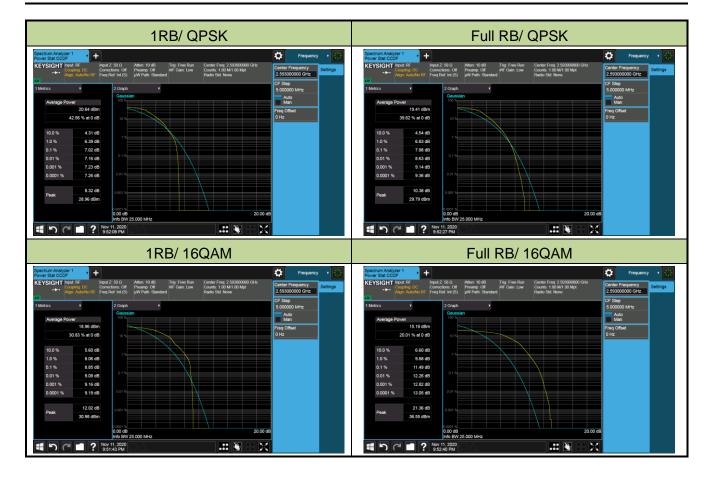


Product	Mobile Computer	Test Site	SIP-SR6
Test Engineer	Candy Luo	Test Date	2020/11/11
Test Band	Band 41		

Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK					
2593.0	20	1	7.02	≤ 13.00	Pass
2593.0	20	100	7.98	≤ 13.00	Pass
16QAM					
2593.0	20	1	8.85	≤ 13.00	Pass
2593.0	20	100	11.49	≤ 13.00	Pass

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5.7. Conducted Spurious Emissions

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 Used

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."
- 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

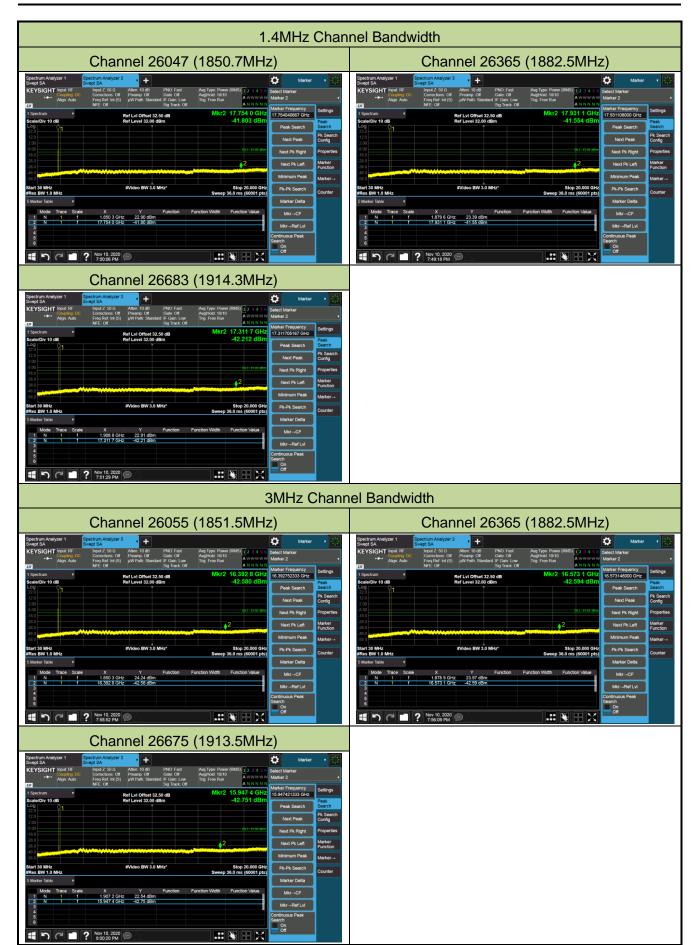
Product	Mobile Computer	Test Engineer	Candy Luo
Test Date	2020/11/10	Test Site	SIP-SR6
Test Band	Band 2	Test Result	Pass

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
18607	1850.7	1.4	30 ~ 20000	-41.80	≤ -13.00	Pass
18900	1882.5	1.4	30 ~ 20000	-41.55	≤ -13.00	Pass
19193	1914.3	1.4	30 ~ 20000	-42.21	≤ -13.00	Pass
18615	1851.5	3	30 ~ 20000	-42.58	≤ -13.00	Pass
18900	1882.5	3	30 ~ 20000	-42.59	≤ -13.00	Pass
19185	1913.5	3	30 ~ 20000	-42.75	≤ -13.00	Pass
18625	1852.5	5	30 ~ 20000	-42.40	≤ -13.00	Pass
18900	1882.5	5	30 ~ 20000	-42.31	≤ -13.00	Pass
19175	1912.5	5	30 ~ 20000	-41.87	≤ -13.00	Pass
18650	1855.0	10	30 ~ 20000	-41.30	≤ -13.00	Pass
18900	1882.5	10	30 ~ 20000	-42.63	≤ -13.00	Pass
19150	1910.0	10	30 ~ 20000	-42.33	≤ -13.00	Pass
18675	1857.5	15	30 ~ 20000	-41.23	≤ -13.00	Pass
18900	1882.5	15	30 ~ 20000	-41.44	≤ -13.00	Pass
19125	1907.5	15	30 ~ 20000	-41.40	≤ -13.00	Pass
26140	1860.0	20	30 ~ 20000	-41.88	≤ -13.00	Pass
26365	1882.5	20	30 ~ 20000	-41.77	≤ -13.00	Pass
26590	1905.0	20	30 ~ 20000	-41.86	≤ -13.00	Pass

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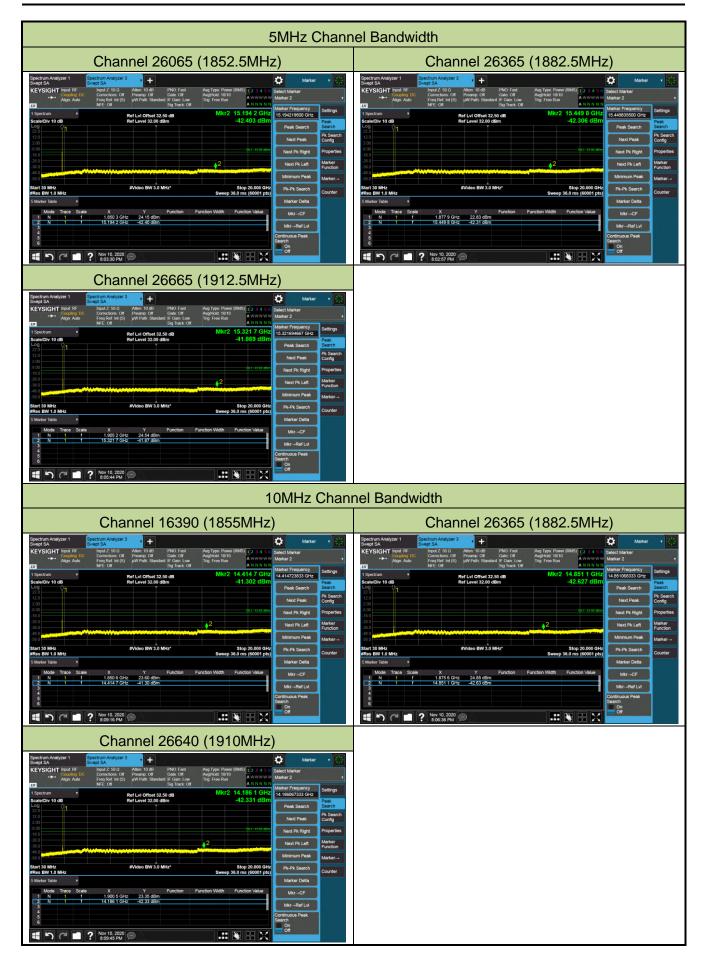




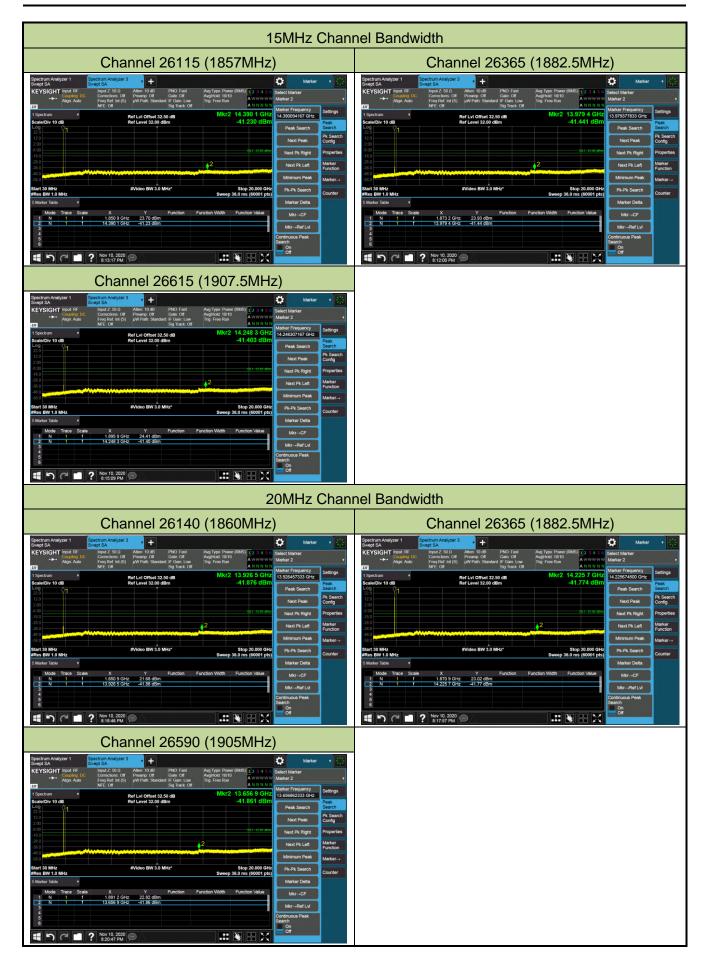














Product	Mobile Computer	Test Engineer	Candy Luo
Test Date	2020/11/10	Test Site	SIP-SR6
Test Band	Band 4	Test Result	Pass

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
19957	1710.7	1.4	30 ~ 20000	-41.48	≤ -13.00	Pass
20175	1745.0	1.4	30 ~ 20000	-41.36	≤ -13.00	Pass
20393	1779.3	1.4	30 ~ 20000	-41.64	≤ -13.00	Pass
19965	1711.5	3	30 ~ 20000	-41.32	≤ -13.00	Pass
20175	1745.0	3	30 ~ 20000	-41.64	≤ -13.00	Pass
20385	1778.5	3	30 ~ 20000	-40.87	≤ -13.00	Pass
19975	1712.5	5	30 ~ 20000	-41.19	≤ -13.00	Pass
20175	1745.0	5	30 ~ 20000	-41.81	≤ -13.00	Pass
20375	1777.5	5	30 ~ 20000	-41.30	≤ -13.00	Pass
20000	1715.0	10	30 ~ 20000	-41.16	≤ -13.00	Pass
20175	1745.0	10	30 ~ 20000	-41.31	≤ -13.00	Pass
20325	1775.0	10	30 ~ 20000	-41.60	≤ -13.00	Pass
20025	1717.5	15	30 ~ 20000	-41.60	≤ -13.00	Pass
20175	1745.0	15	30 ~ 20000	-40.97	≤ -13.00	Pass
20325	1772.5	15	30 ~ 20000	-40.61	≤ -13.00	Pass
20050	1720.0	20	30 ~ 20000	-42.56	≤ -13.00	Pass
20175	1745.0	20	30 ~ 20000	-41.62	≤ -13.00	Pass
20300	1770.0	20	30 ~ 20000	-41.70	≤ -13.00	Pass

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