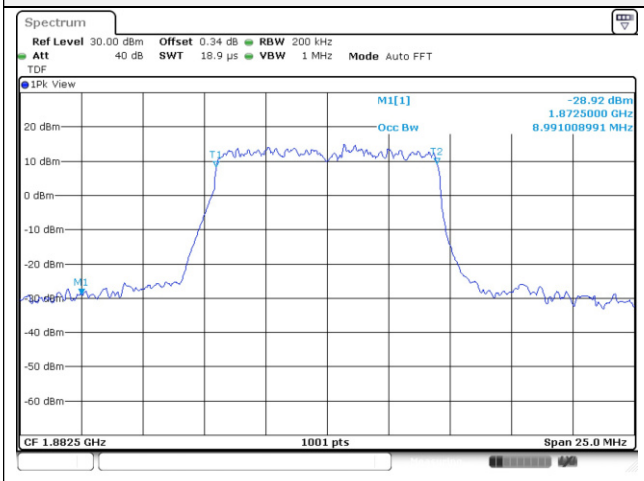
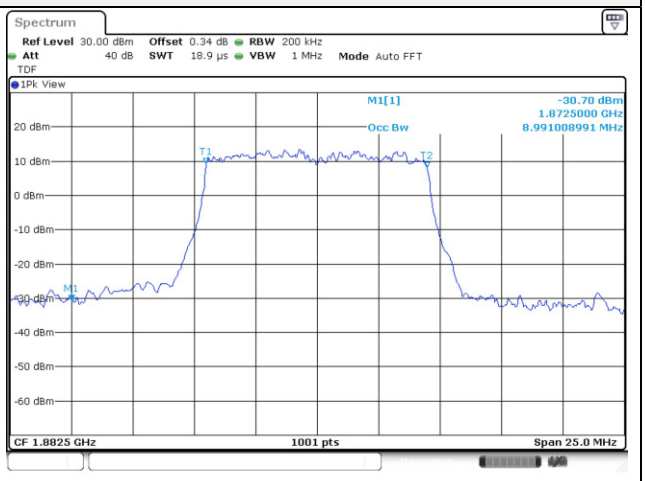
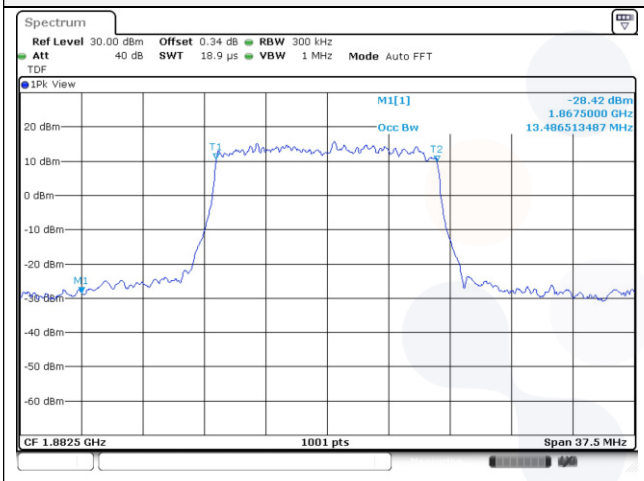
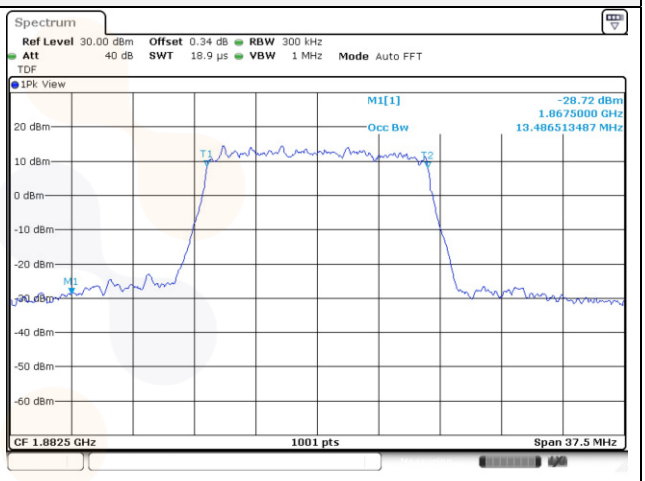
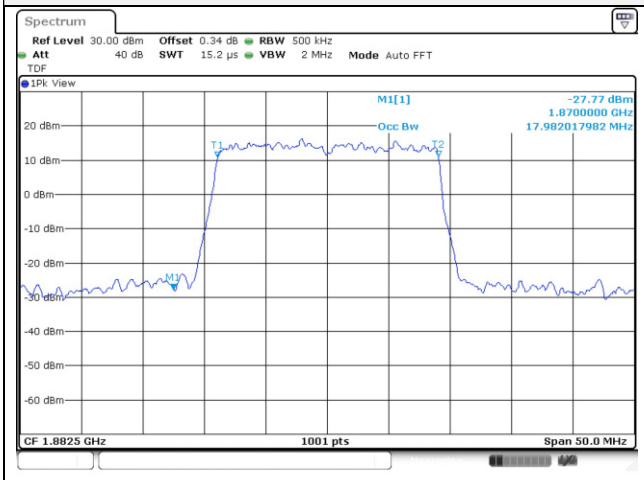
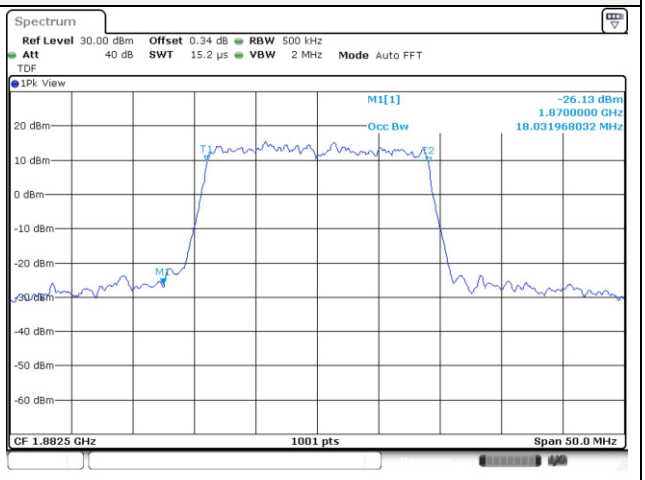
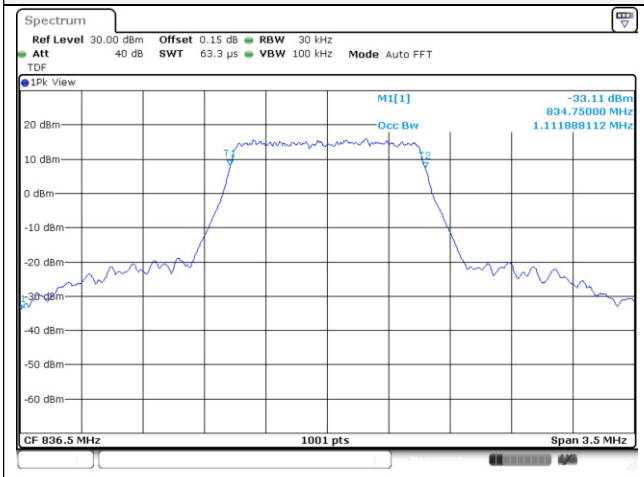
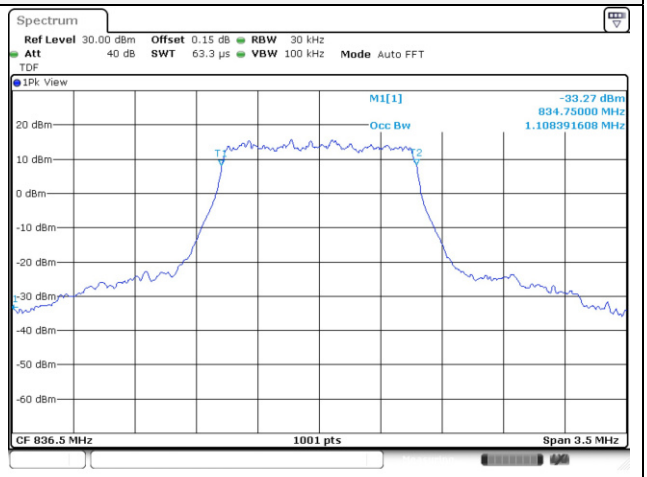
10M BW QPSK Mid ch.	10M BW 16QAM Mid ch.
	
15M BW QPSK Mid ch.	**15M BW 16QAM Mid ch.**
	
20M BW QPSK Mid ch.	**20M BW 16QAM Mid ch.**
	

Test mode: LTE Band 26

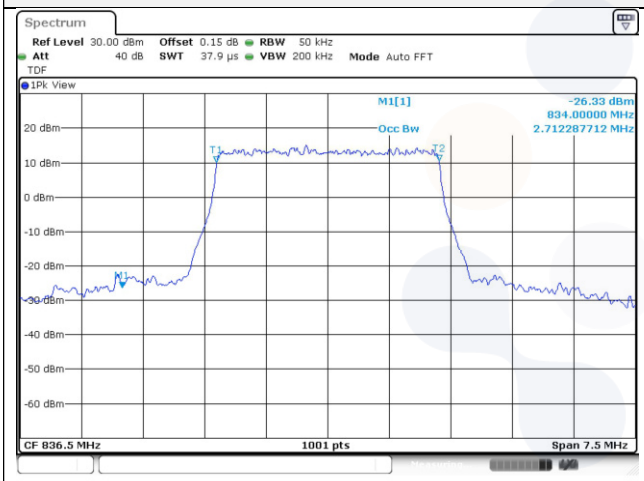
1.4M BW QPSK Mid ch.



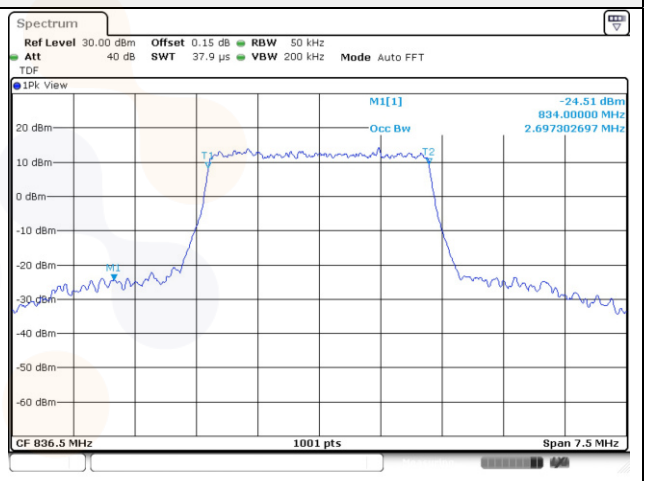
1.4M BW 16QAM Mid ch.



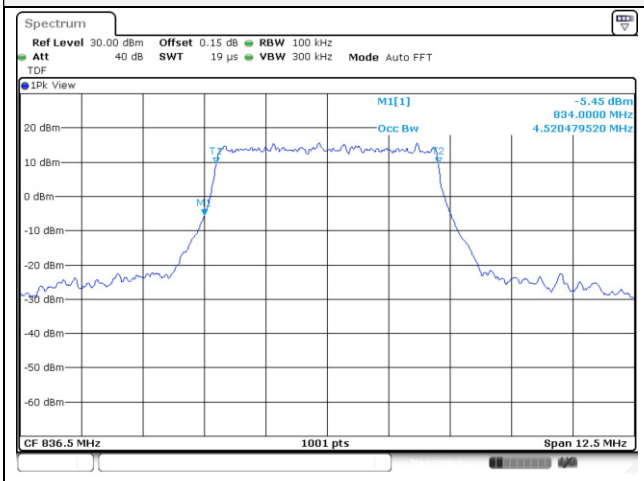
3M BW QPSK Mid ch.



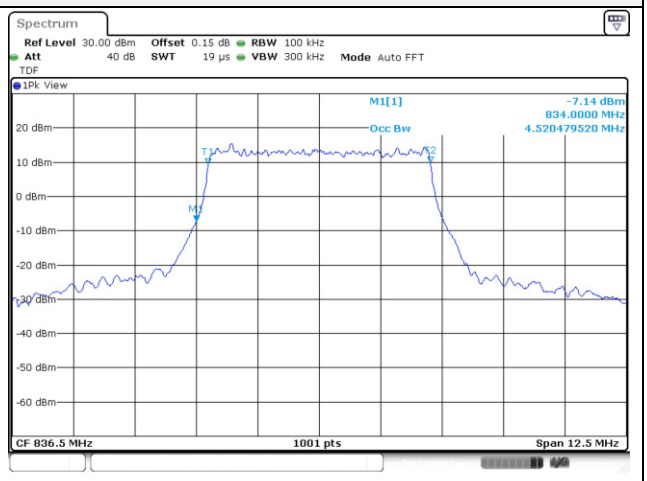
3M BW 16QAM Mid ch.

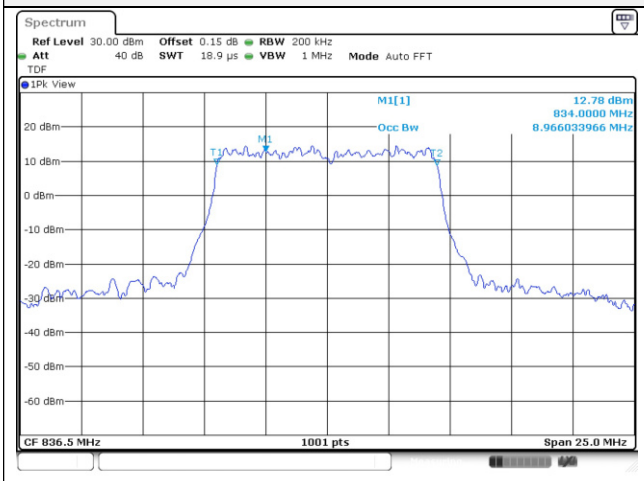
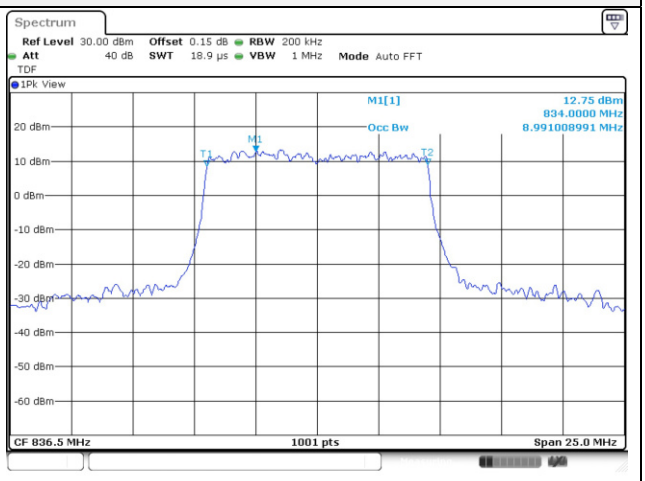
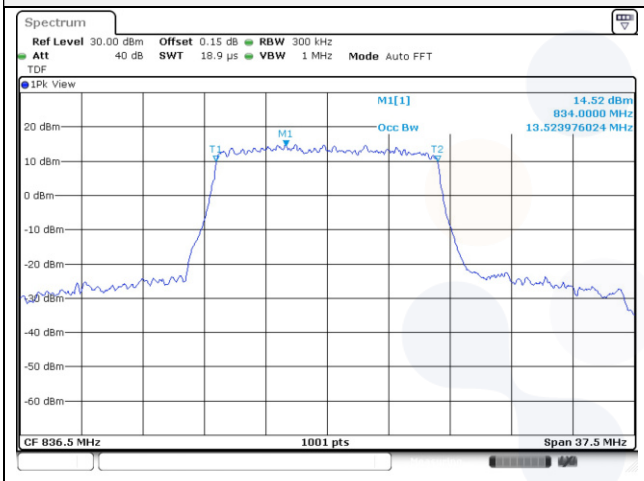
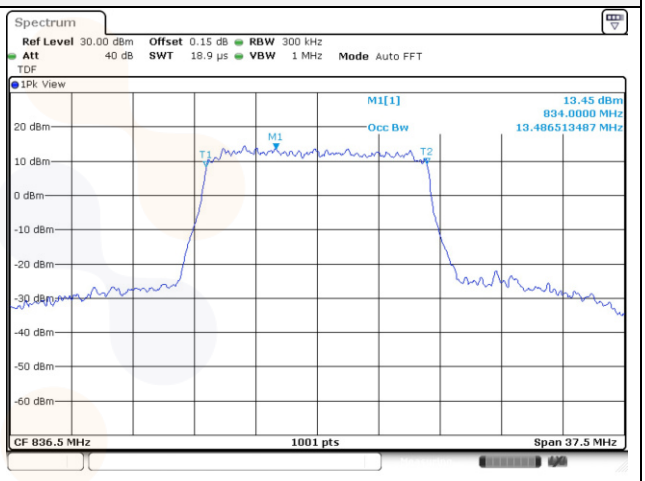


5M BW QPSK Mid ch.



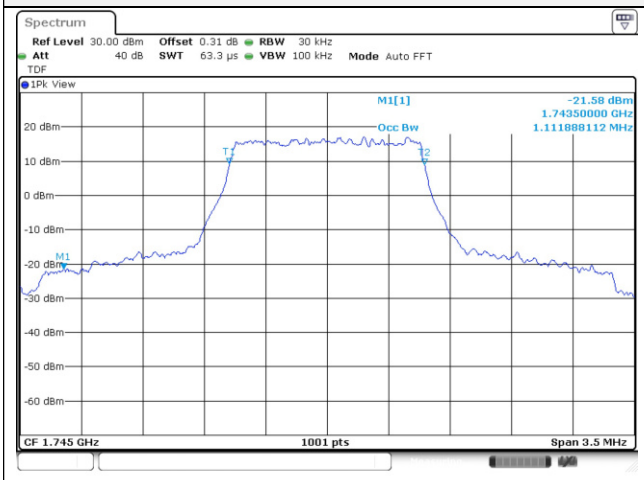
5M BW 16QAM Mid ch.



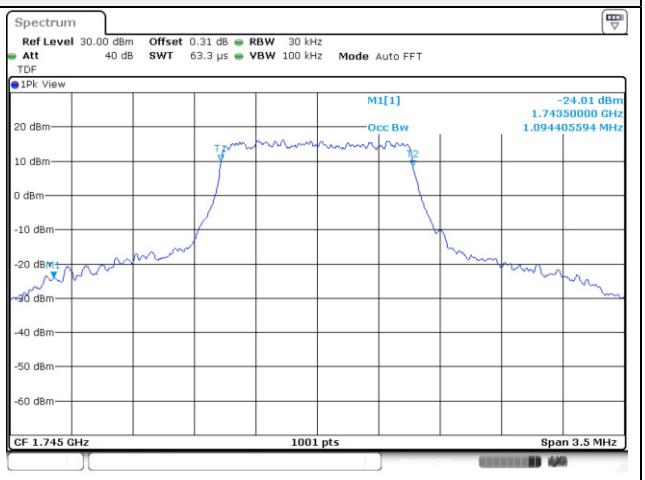
10M BW QPSK Mid ch.	10M BW 16QAM Mid ch.
	
15M BW QPSK Mid ch.	**15M BW 16QAM Mid ch.**
	

Test mode: LTE Band 66/4

1.4M BW QPSK Mid ch.



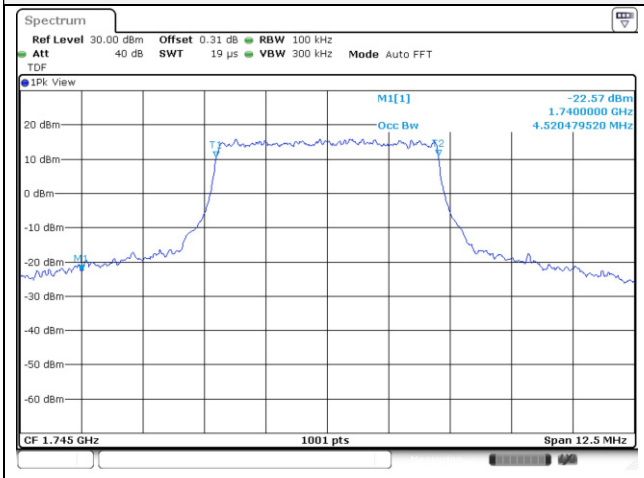
1.4M BW 16QAM Mid ch.



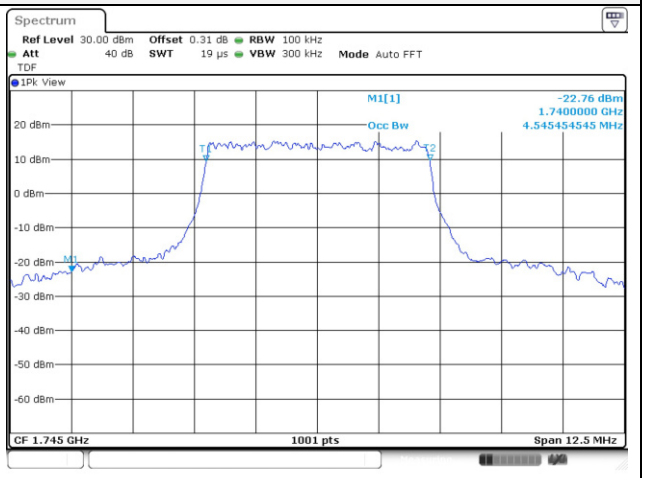
3M BW QPSK Mid ch.

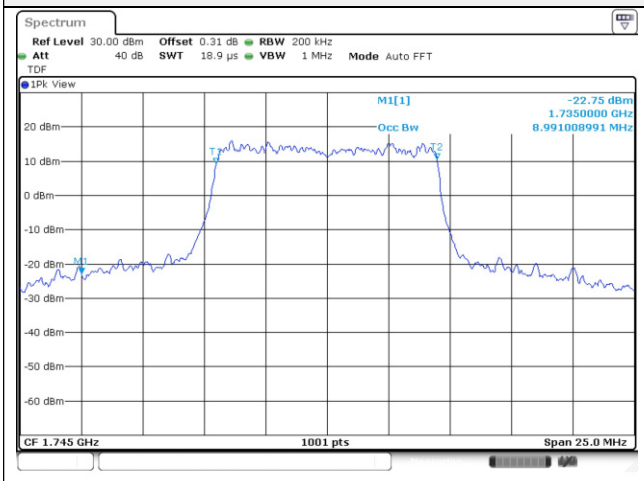
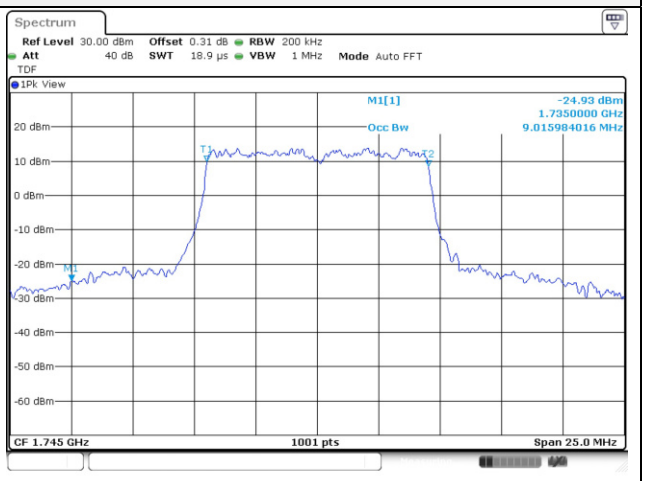
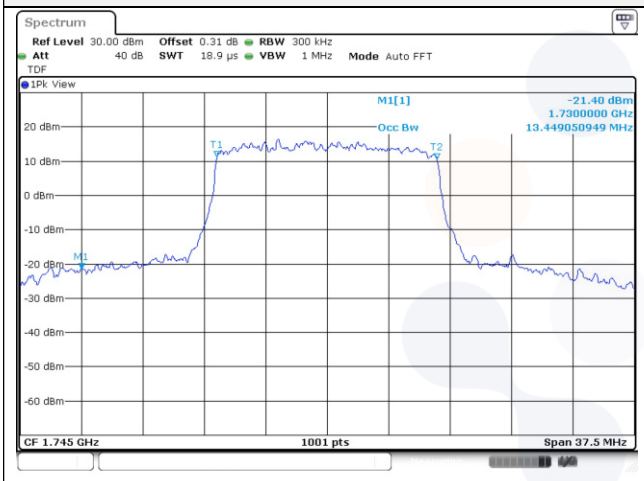
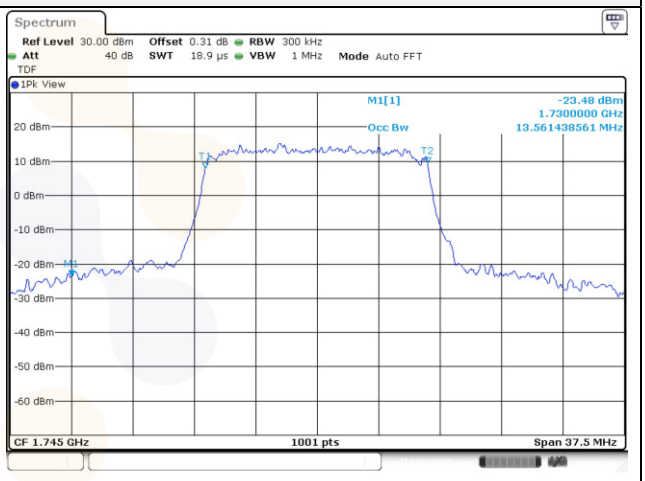
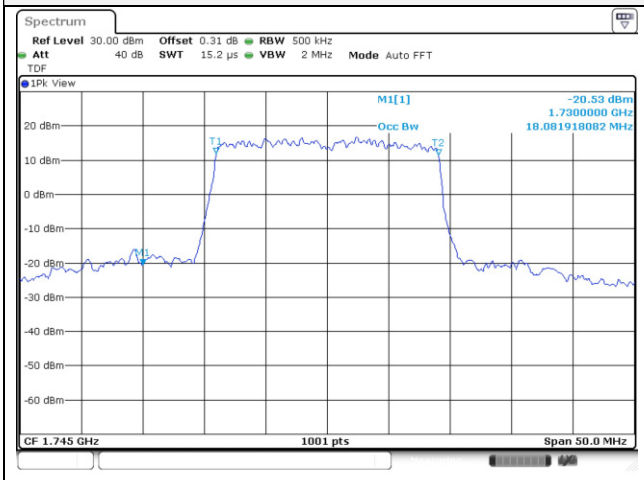
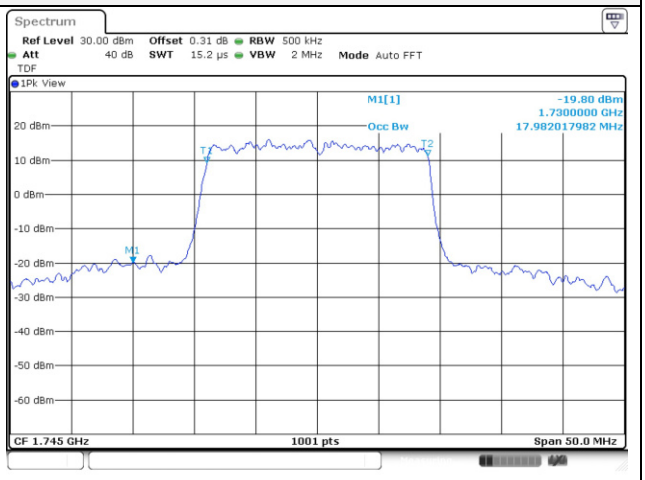
3M BW 16QAM Mid ch.

5M BW QPSK Mid ch.



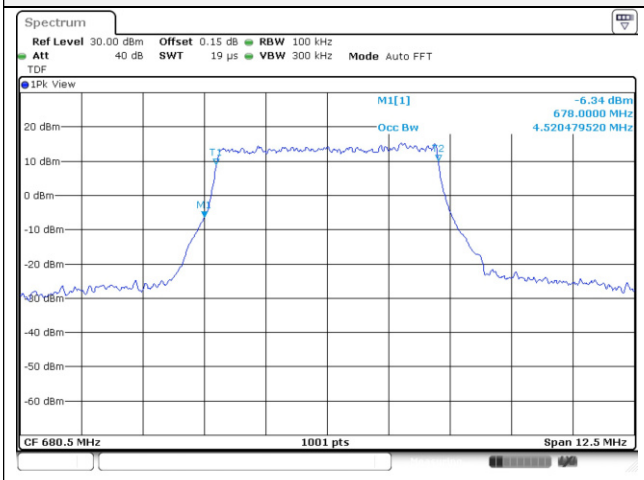
5M BW 16QAM Mid ch.



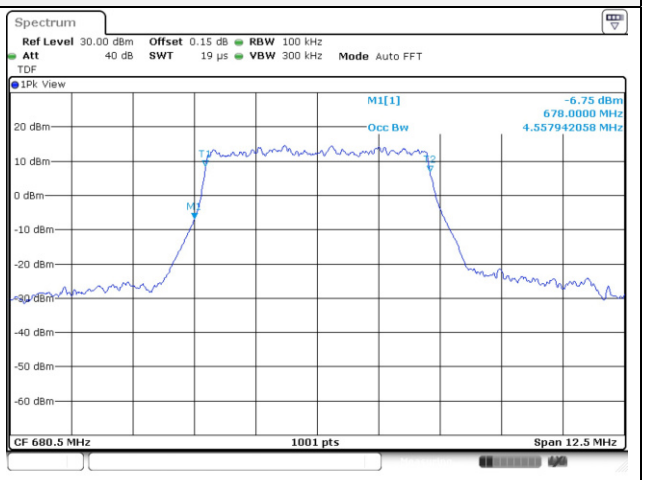
10M BW QPSK Mid ch.	10M BW 16QAM Mid ch.
	
15M BW QPSK Mid ch.	**15M BW 16QAM Mid ch.**
	
20M BW QPSK Mid ch.	**20M BW 16QAM Mid ch.**
	

Test mode: LTE Band 71

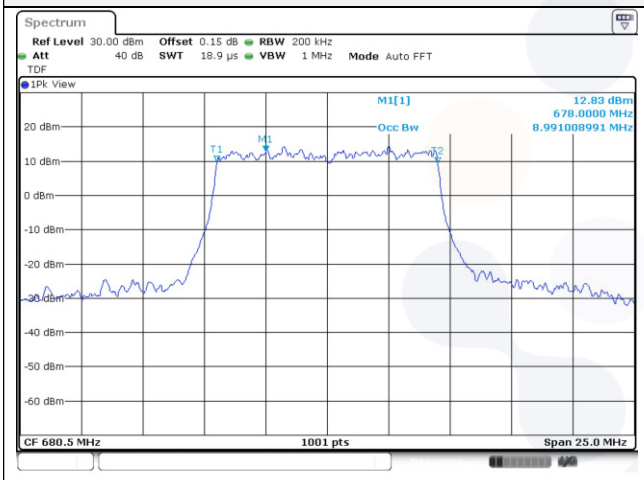
5M BW QPSK Mid ch.



5M BW 16QAM Mid ch.

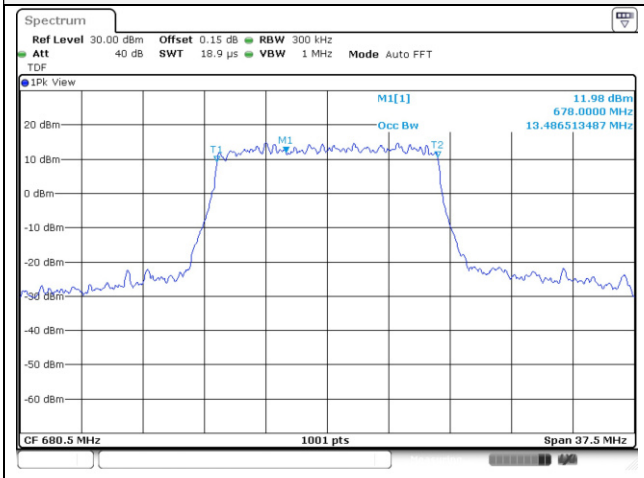


10M BW QPSK Mid ch.

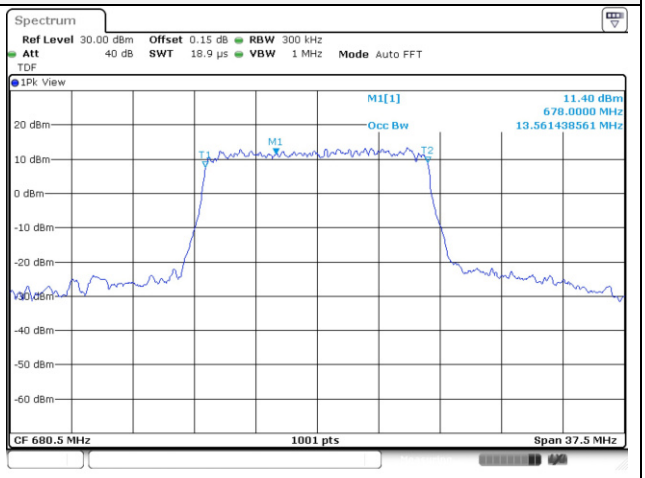


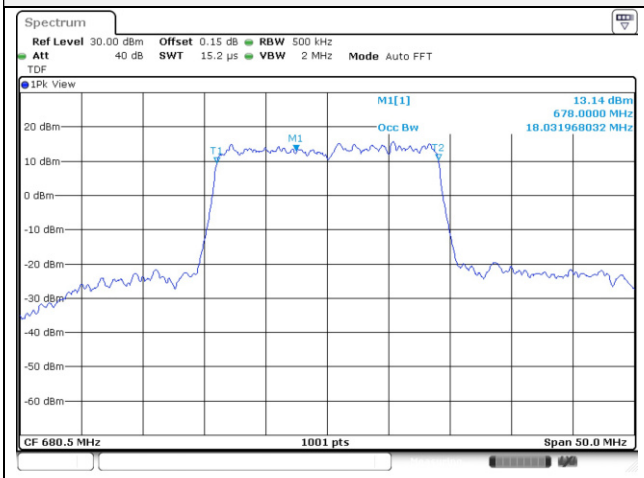
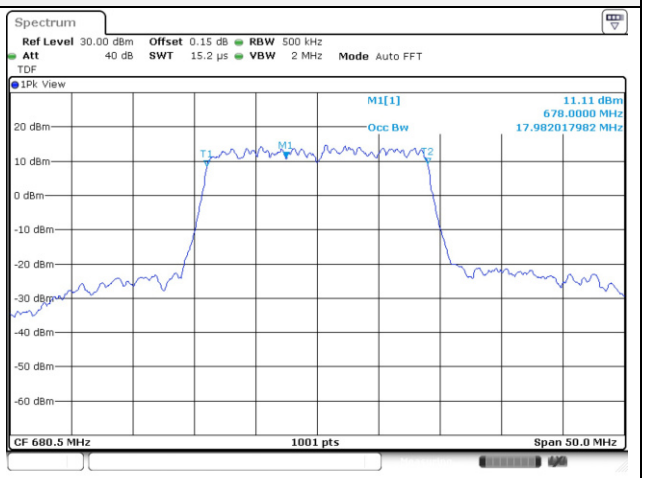
10M BW 16QAM Mid ch.

15M BW QPSK Mid ch.



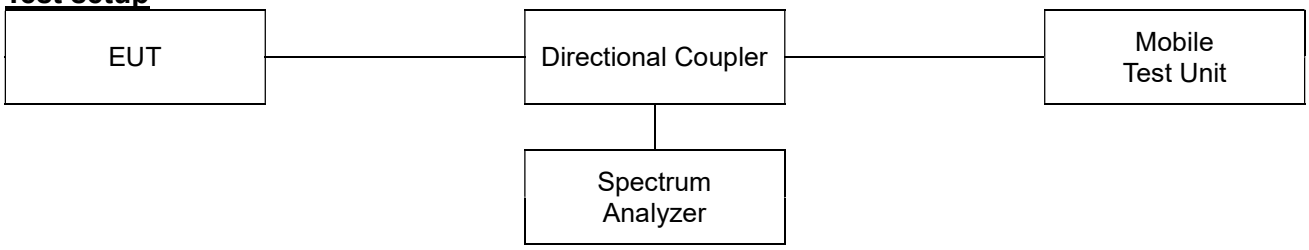
15M BW 16QAM Mid ch.



20M BW QPSK Mid ch.	20M BW 16QAM Mid ch.
	

7.3. Band Edge Emissions at Antenna Terminal

Test setup



Limit

According to §22.917(a), §24.238(a) and RSS-132(5.5), RSS-133(6.5), 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 + 10log($P_{[Watts]}$) ㏈.

According to §27.53(c)(2) and RSS-130(4.7), on any frequency outside the 776-788 ㎒ band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log ($P_{[Watts]}$) ㏈.

According to §27.53(g) and RSS-130(4.7), for operations in the 600 ㎒ band and the 698-746 ㎒ band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10log($P_{[Watts]}$) ㏈.

According to §27.53(h) and RSS-139(5.6), 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 + 10log($P_{[Watts]}$) ㏈.

According to §27.53(m)(4) and RSS-199(4.5), the attenuation factor shall be not less than 40 + 10log($P_{[Watts]}$) ㏈ on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10log($P_{[Watts]}$) ㏈ on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10log($P_{[Watts]}$) ㏈ on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10log($P_{[Watts]}$) ㏈ on all frequencies between 2490.5 ㎒ and 2496 ㎒ and 55 + 10log($P_{[Watts]}$) ㏈ at or below 2490.5 ㎒.

Test procedure

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ANSI C63.26-2015 – Section 5.7

Test settings

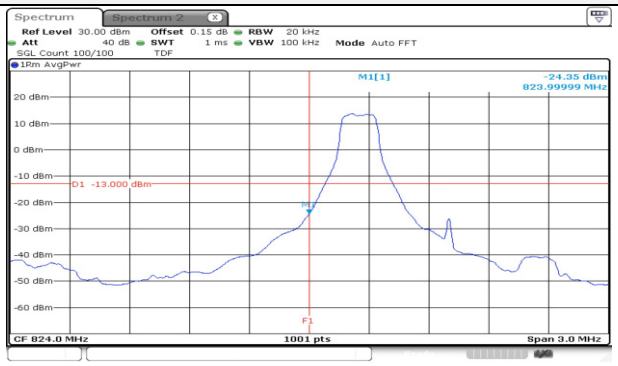
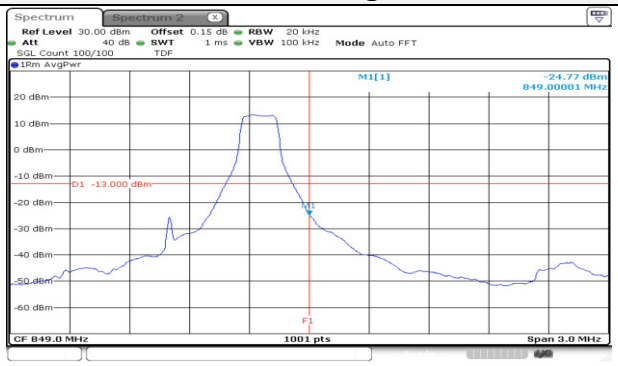
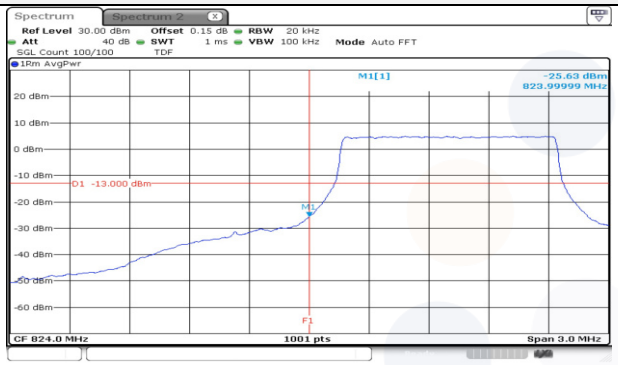
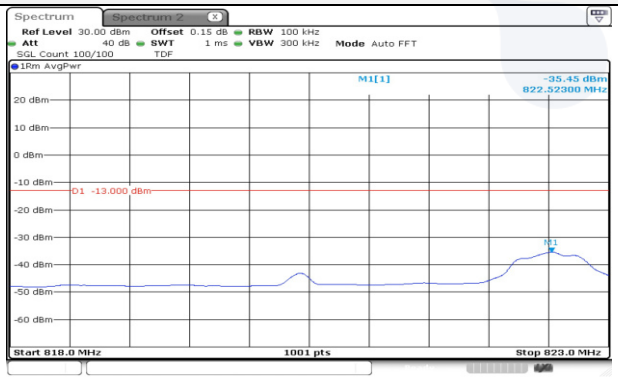
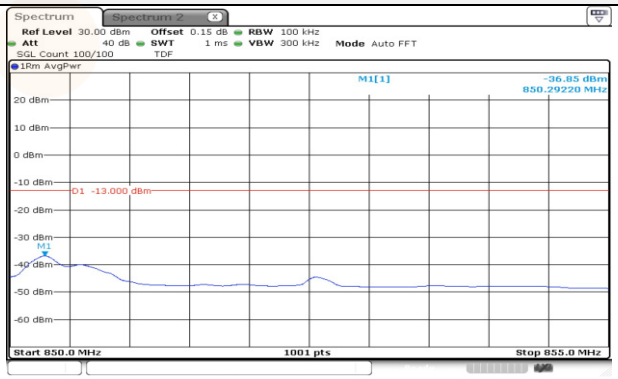
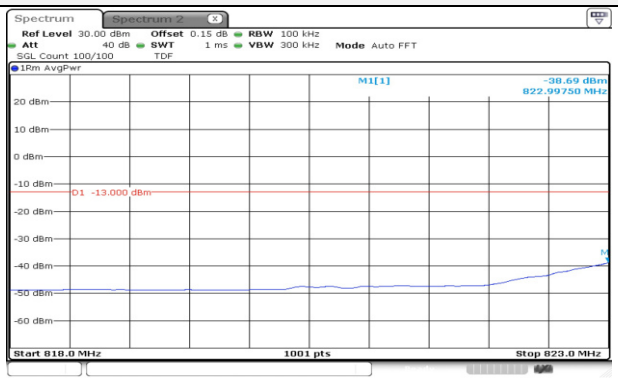
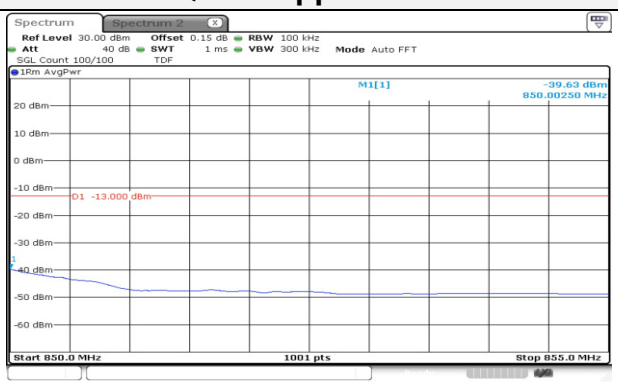
1) Start frequency was set to 30 ㎒ and stop frequency was set to at least 10th the fundamental frequency.
2) Span was set large enough so as to capture all out of band emissions near the band edge.
3) Set the RBW > 1% of the emission bandwidth.
4) Set the VBW ≥ 3 x RBW.
5) Set the number of sweep points ≥ 2 x Span/RBW
6) Detector = RMS
7) Trace mode = trace average
8) Sweep time should be auto for peak detection. For RMS detection the sweep time should be set as follows:
    a) If the device can be configured to transmit continuously (duty cycle ≥ 98%), set the (sweep time) > (number of points in sweep) x (symbol period) (e.g., by a factor of 10 x symbol period x number of points) Increasing the sweep time (i.e., slowing the sweep speed) will allow for averaging over multiple symbols.
    b) If the device cannot transmit continuously (duty cycle < 98%), a gated sweep shall be used when possible (i.e., gate triggered such that the analyzer only sweeps when the device is transmitting at full power), set the sweep time > (number of points in sweep) x (symbol period) but the sweep time shall always be maintained at a value that is less than or equal to the minimum transmission time
    c) If the device cannot be configured to transmit continuously (duty cycle > 98%), and a free-running sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time > (number of points in sweep) × (transmitter period) (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by [10 log (1/duty cycle)]. This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation ≤ ±2%).
    d) If the device cannot be configured to transmit continuously and a free-running sweep must be used, and if the transmissions exhibit a non-constant duty cycle (duty cycle variations > ±2%), set the sweep time so that the averaging is performed over the on-period by setting the sweep time > (symbol period) × (number of points), while also maintaining the sweep time < (transmitter on-time). The trace mode shall be set to max hold, since not every display point will be averaged only over just the on-time. Thus, multiple sweeps (e.g., 100) in maximum hold art necessary to ensure that the maximum power is measured.
9) Allow trace to fully stabilize.

Notes:

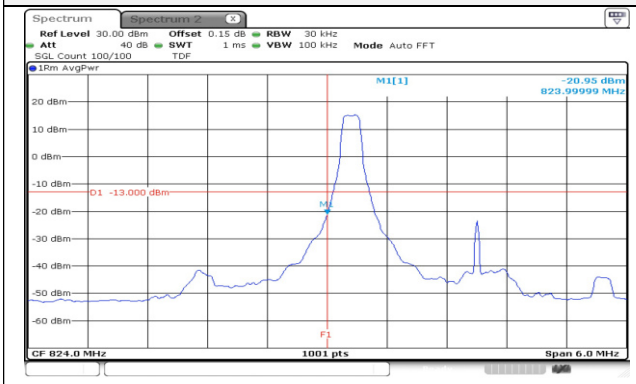
1. Per 22.917(b), 24.238(b), 27.53(h)(3) and RSS-132(5.5), RSS-133(6.5.1), RSS-139(5.6) compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 ㎒ or greater. however in the 1 ㎒ bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 ㏈ below the transmitter power.
2. Per 27.25(c)(5) and RSS-130(4.7), for operations in the 776-768 ㎒ band, in the 100 ㎑ bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 ㎑ may be employed.
3. Per 27.25(c)(6) and RSS-130(4.7), for operation in the 763-775 ㎒ and 793-805 ㎒, the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 ㎑ segment.
4. Per 27.25(g) and RSS-130(4.7), compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 ㎑ may be employed.
5. Per 27.53(m)(6) and RSS-199(4.5), in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 ㎒, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 ㎒).
6. The EUT was setup to maximum output power as its lowest and highest channel with all bandwidth, modulation and RB configurations.

Test results

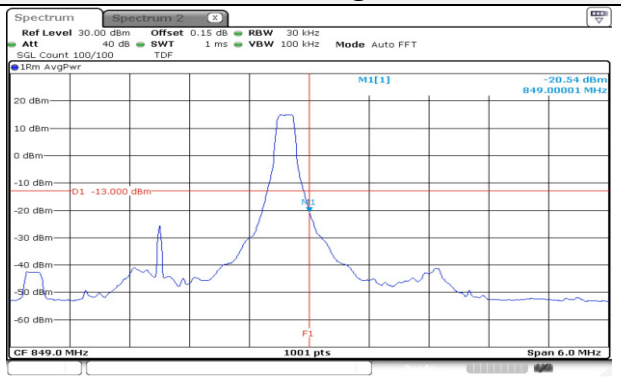
Test mode: LTE Band 5

1.4M BW QPSK Low ch. 1RB	1.4M BW QPSK High ch. 1RB
	
1.4M BW QPSK Low ch. FRB	**1.4M BW QPSK High ch. FRB**
	
1.4M BW QPSK Lower extended 1RB	**1.4M BW QPSK Upper extended 1RB**
	
1.4M BW QPSK Lower extended FRB	**1.4M BW QPSK Upper extended FRB**
	

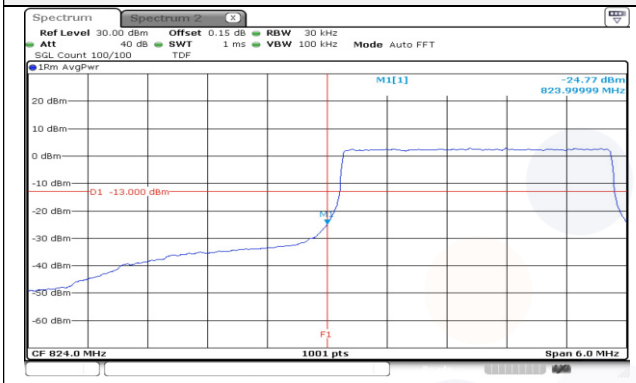
3M BW QPSK Low ch. 1RB



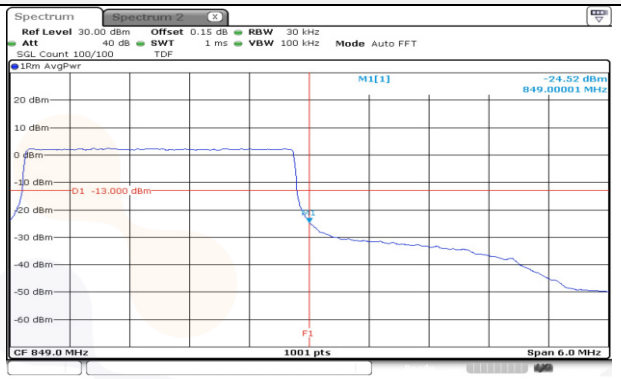
3M BW QPSK High ch. 1RB



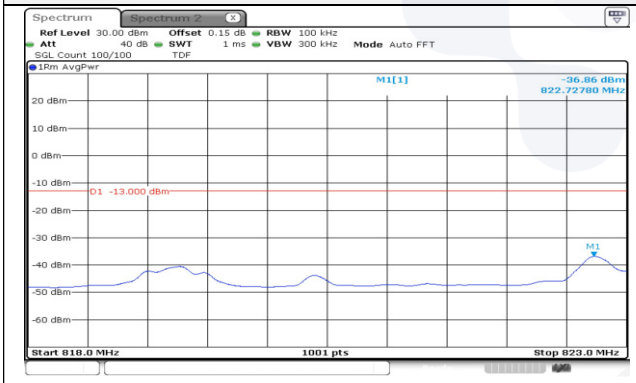
3M BW QPSK Low ch. FRB



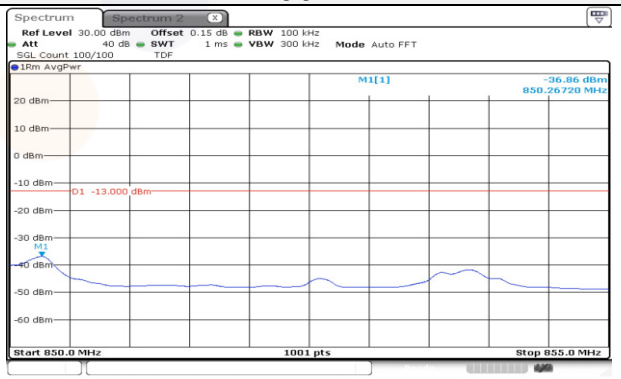
3M BW QPSK High ch. FRB



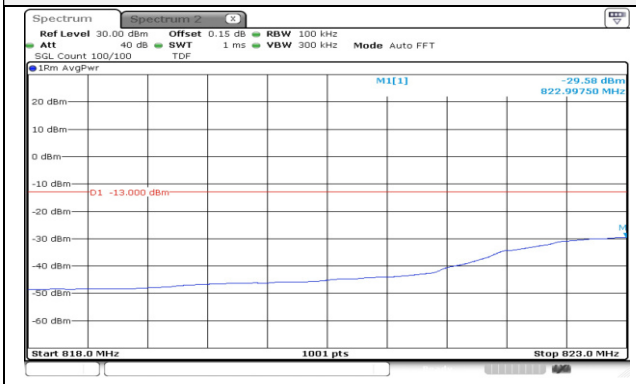
3M BW QPSK Lower extended 1RB



3M BW QPSK Upper extended 1RB



3M BW QPSK Lower extended FRB



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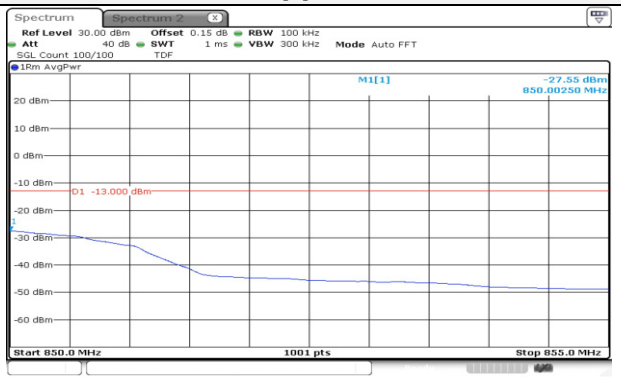
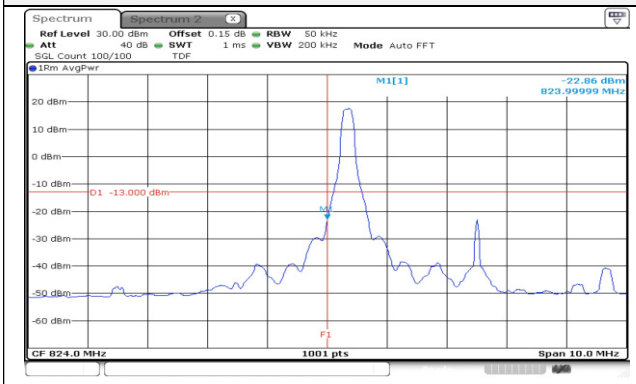
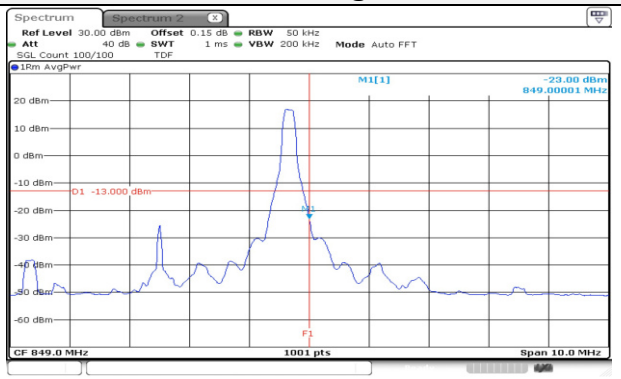


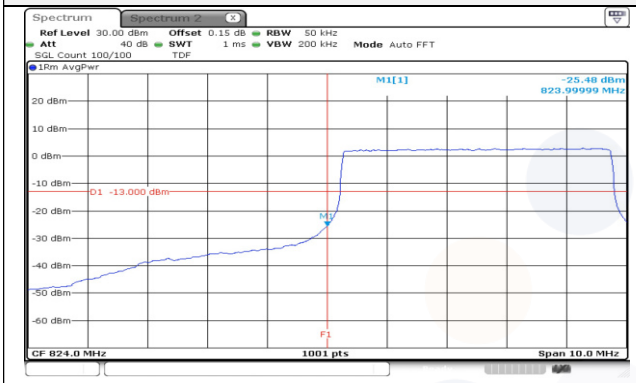
5M BW QPSK Low ch. 1RB



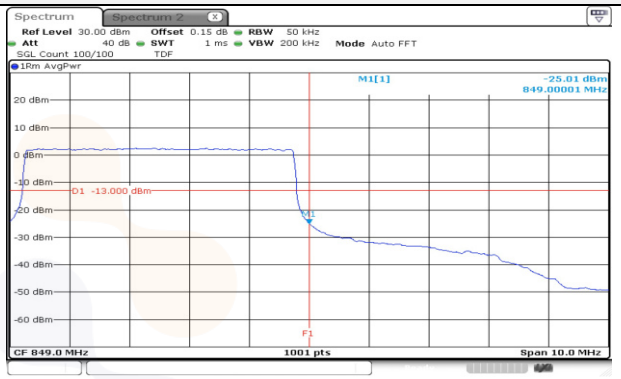
5M BW QPSK High ch. 1RB



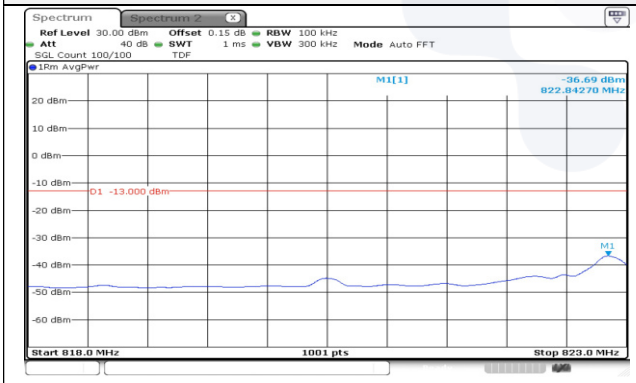
5M BW QPSK Low ch. FRB



5M BW QPSK High ch. FRB



5M BW QPSK Lower extended 1RB



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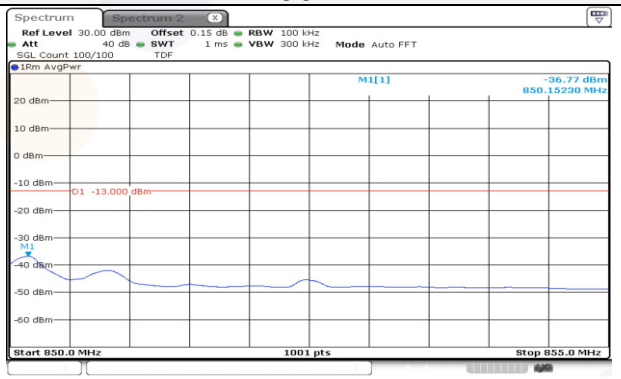

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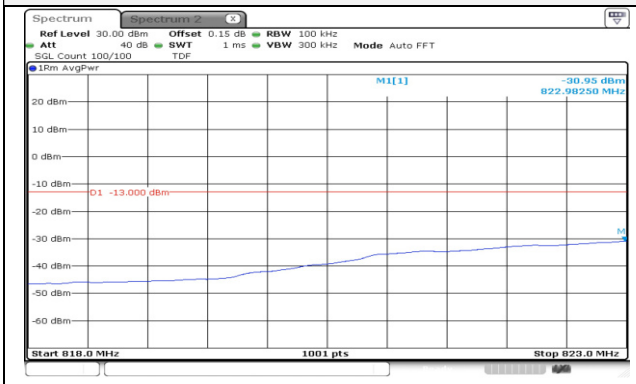
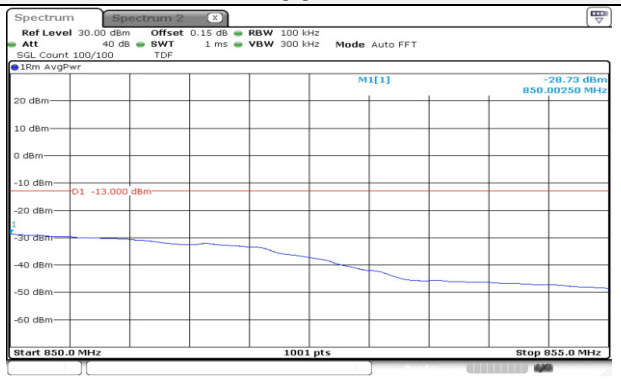
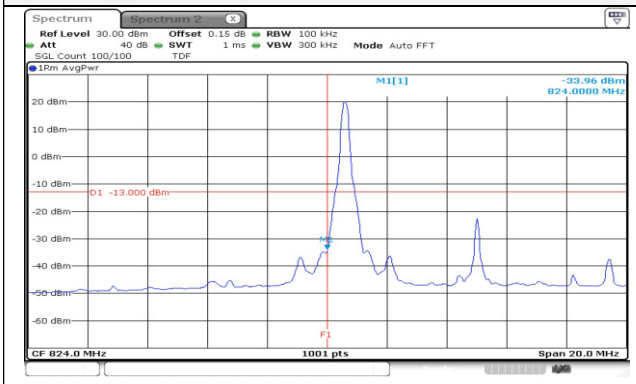


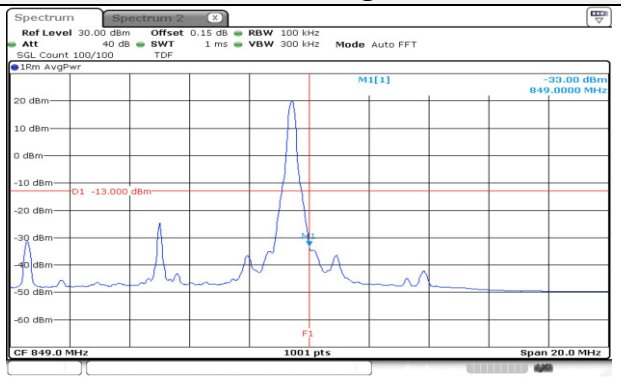
5M BW QPSK Upper extended FRB



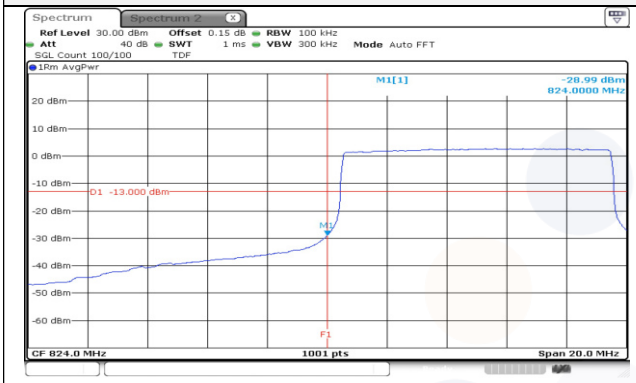
10M BW QPSK Low ch. 1RB



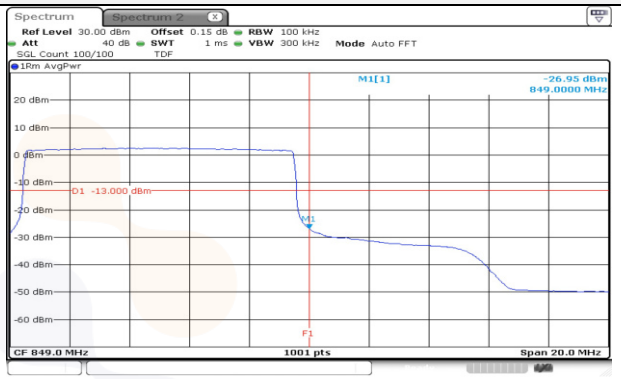
10M BW QPSK High ch. 1RB



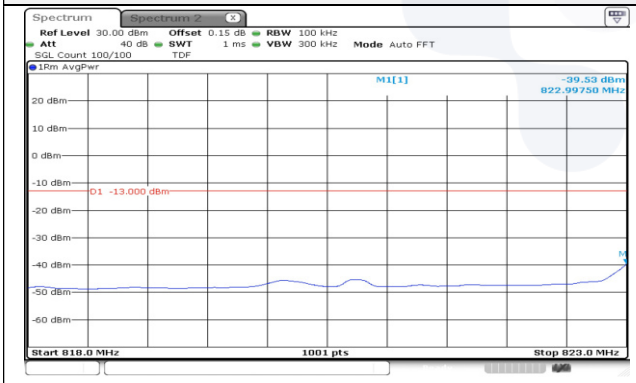
10M BW QPSK Low ch. FRB



10M BW QPSK High ch. FRB



10M BW QPSK Lower extended 1RB



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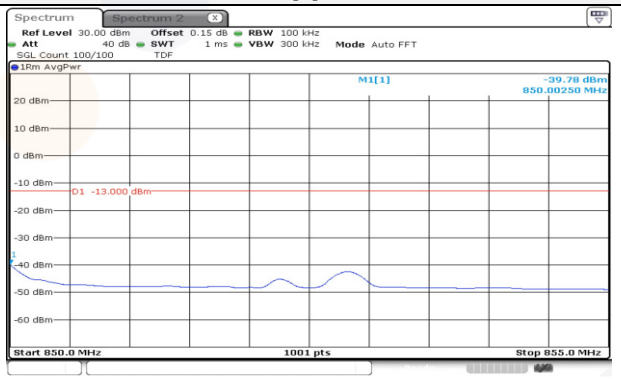

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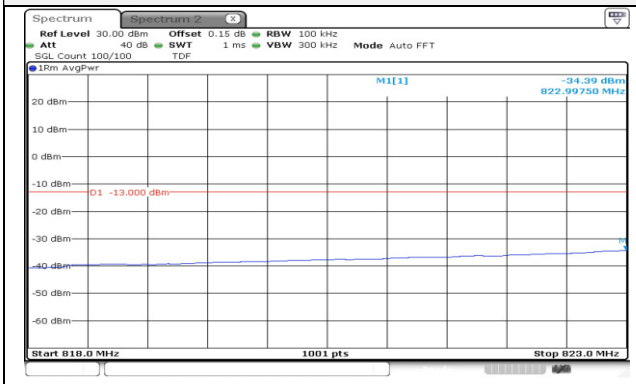

10M BW QPSK Upper extended FRB