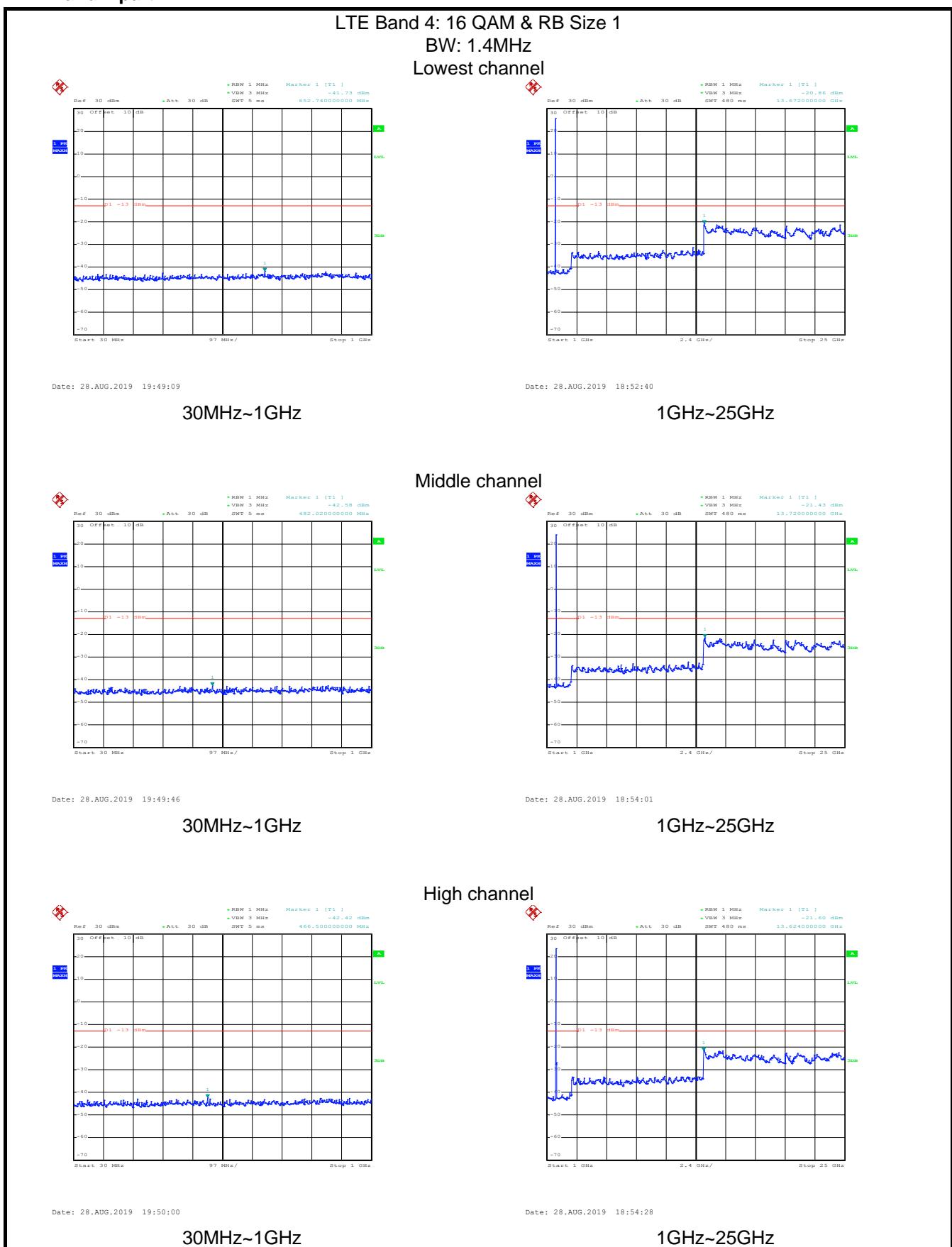
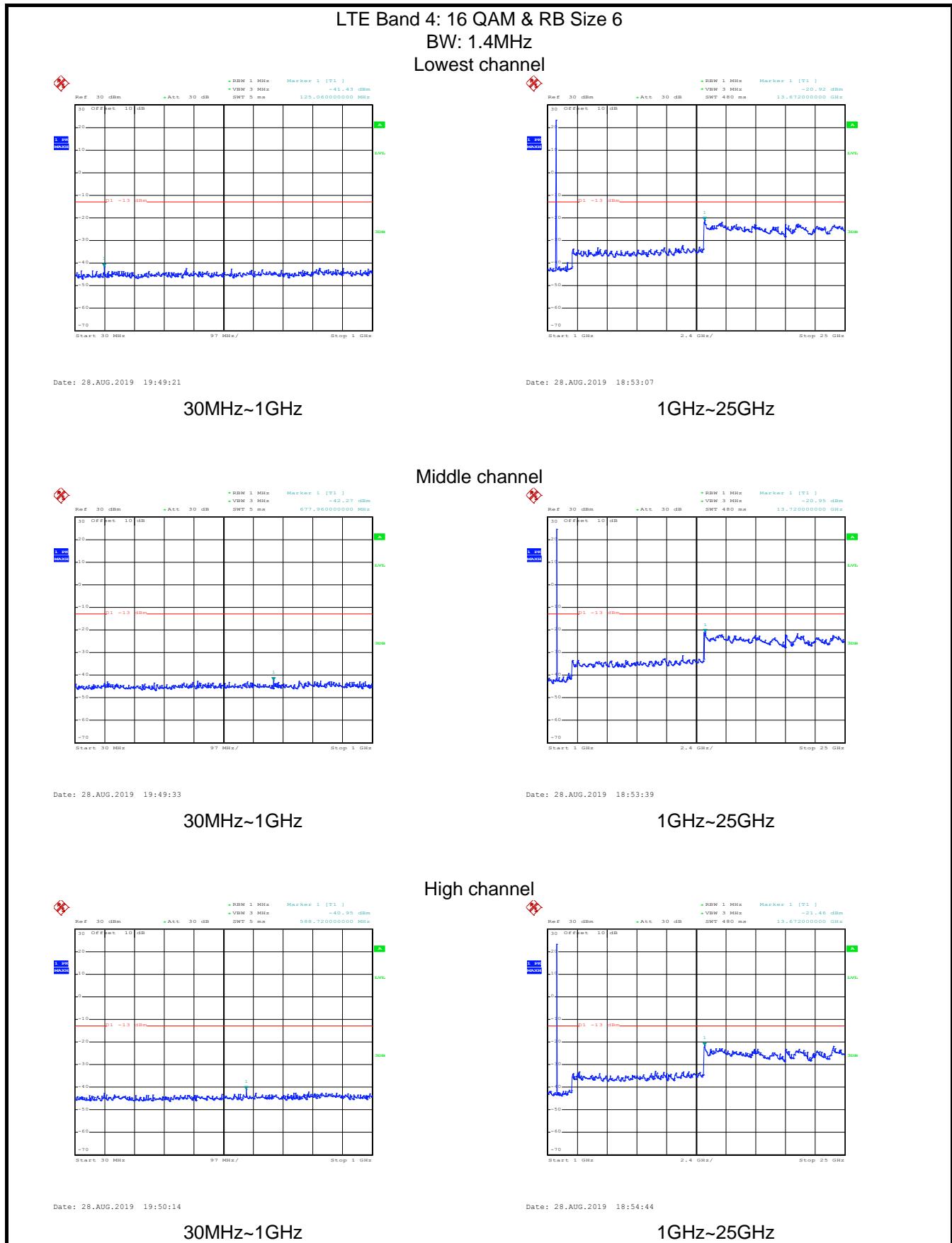


6.4 Out of band emission at antenna terminals

Test Requirement:	Part 22.917(b), part 27.53(h), Part 27.53(m)
Test Method:	ANSI/TIA-603-D 2010
Limit:	<p>LTE Band 4 & 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 (-13 dBm).</p> <p>LTE Band 7: For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB 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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.</p>
Test Setup:	<p>System simulator</p> <p>Spectrum Analyzer</p> <p>Splitter</p> <p>ATT</p> <p>EUT</p>
Test Procedure:	<ol style="list-style-type: none"> The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. For the out of band: For LTE Band 5 set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, for LTE Band 4&7 set the RBW=1 MHz, VBW=3 MHz when below 1 GHz, Set RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	Pre-scan all RB Size and offset, and found the RB Size and offset of worst case, so the report shows only the worst case test data.

**Test plots as follows (Conducted spurious emission) (worst case):
LTE Band 4 part:**

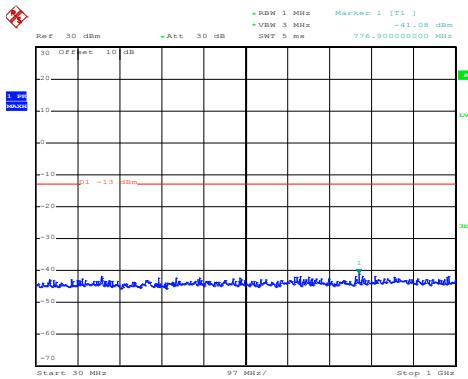




LTE Band 4: QPSK & RB Size 1

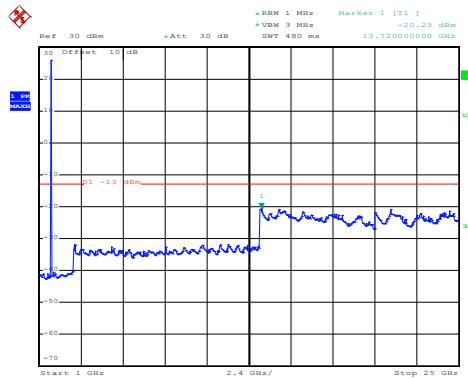
BW: 1.4MHz

Lowest channel



Date: 28.AUG.2019 19:49:01

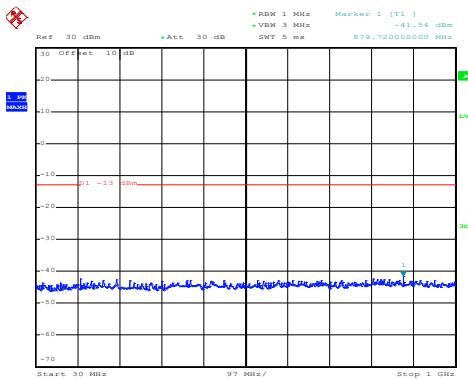
30MHz~1GHz



Date: 28.AUG.2019 18:52:23

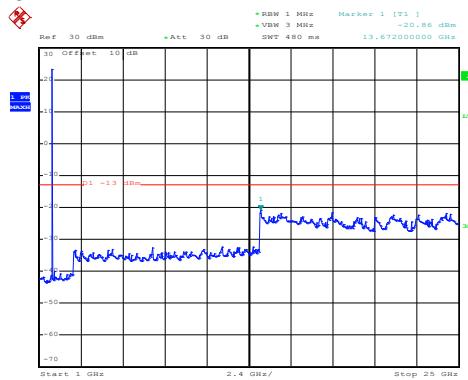
1GHz~25GHz

Middle channel



Date: 28.AUG.2019 19:49:41

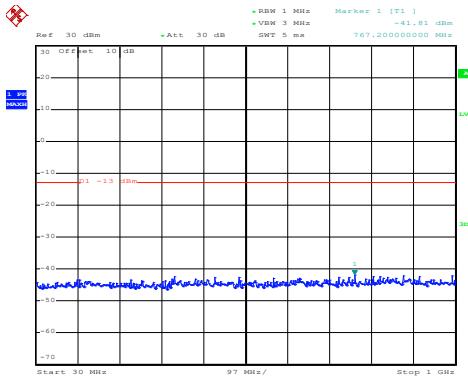
30MHz~1GHz



Date: 28.AUG.2019 18:53:54

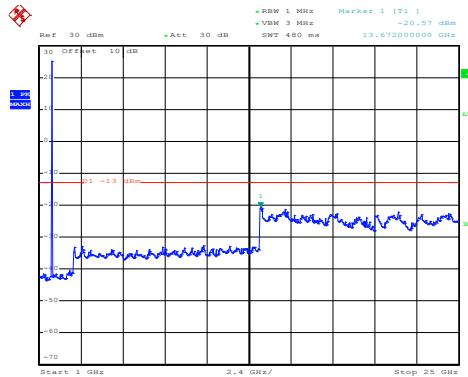
1GHz~25GHz

High channel



Date: 28.AUG.2019 19:49:54

30MHz~1GHz



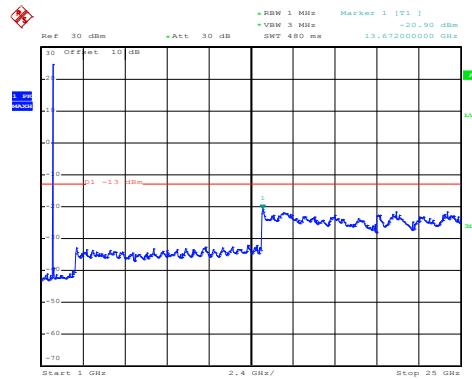
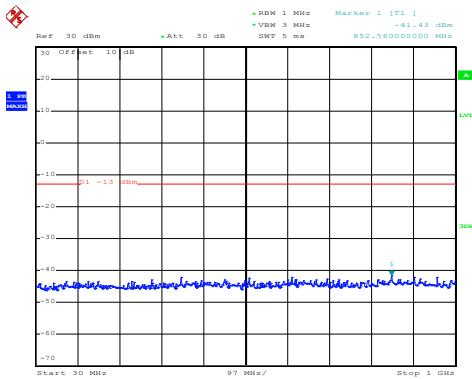
Date: 28.AUG.2019 18:54:14

1GHz~25GHz

LTE Band 4: QPSK & RB Size 6

BW: 1.4MHz

Lowest channel



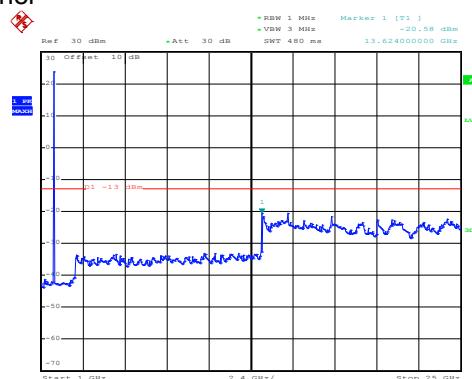
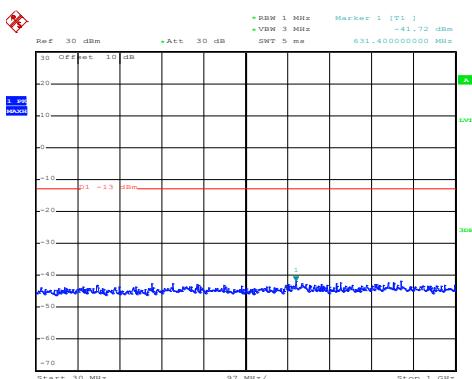
Date: 28.AUG.2019 19:49:16

30MHz~1GHz

Date: 28.AUG.2019 18:53:00

1GHz~25GHz

Middle channel



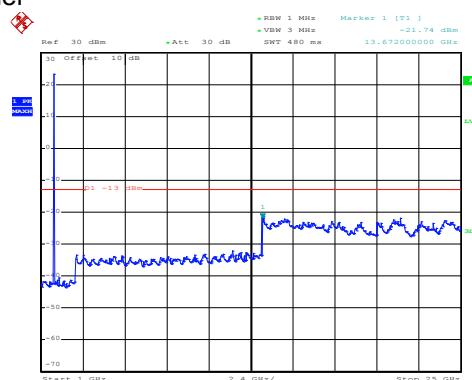
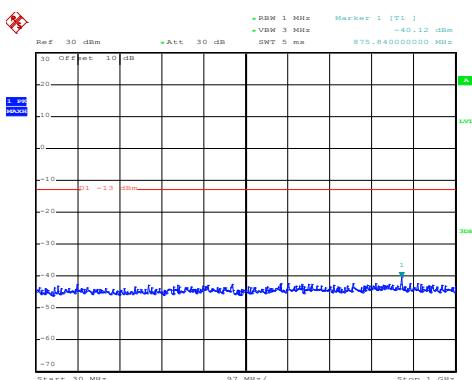
Date: 28.AUG.2019 19:49:28

30MHz~1GHz

Date: 28.AUG.2019 18:53:21

1GHz~25GHz

High channel

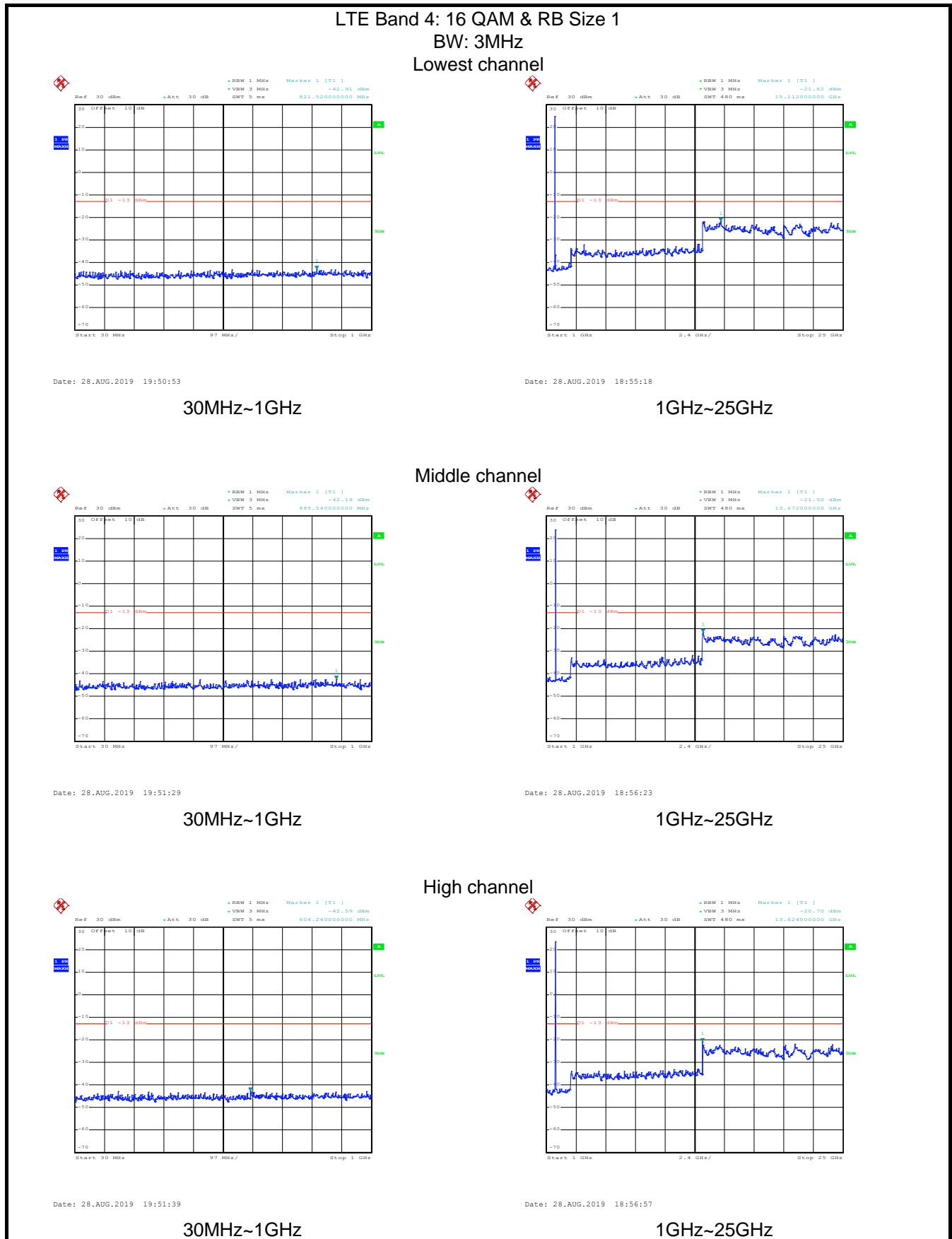


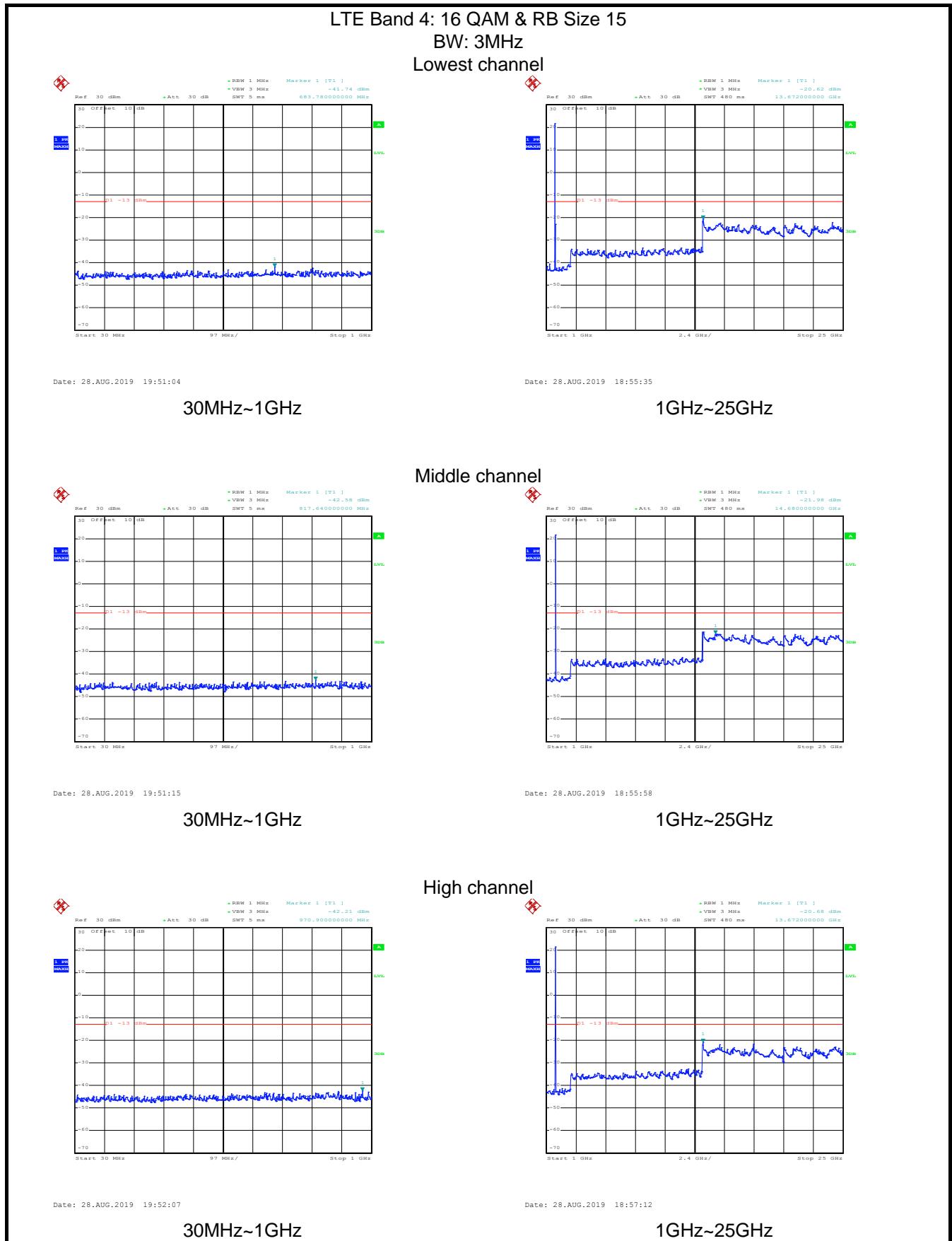
Date: 28.AUG.2019 19:50:07

30MHz~1GHz

Date: 28.AUG.2019 18:54:39

1GHz~25GHz

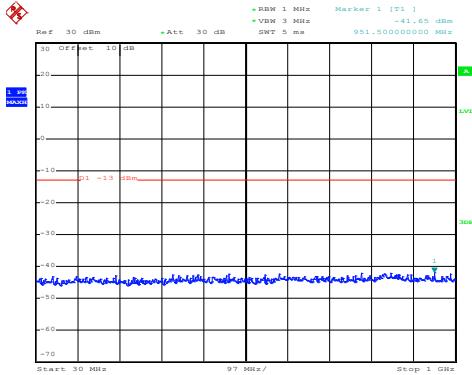


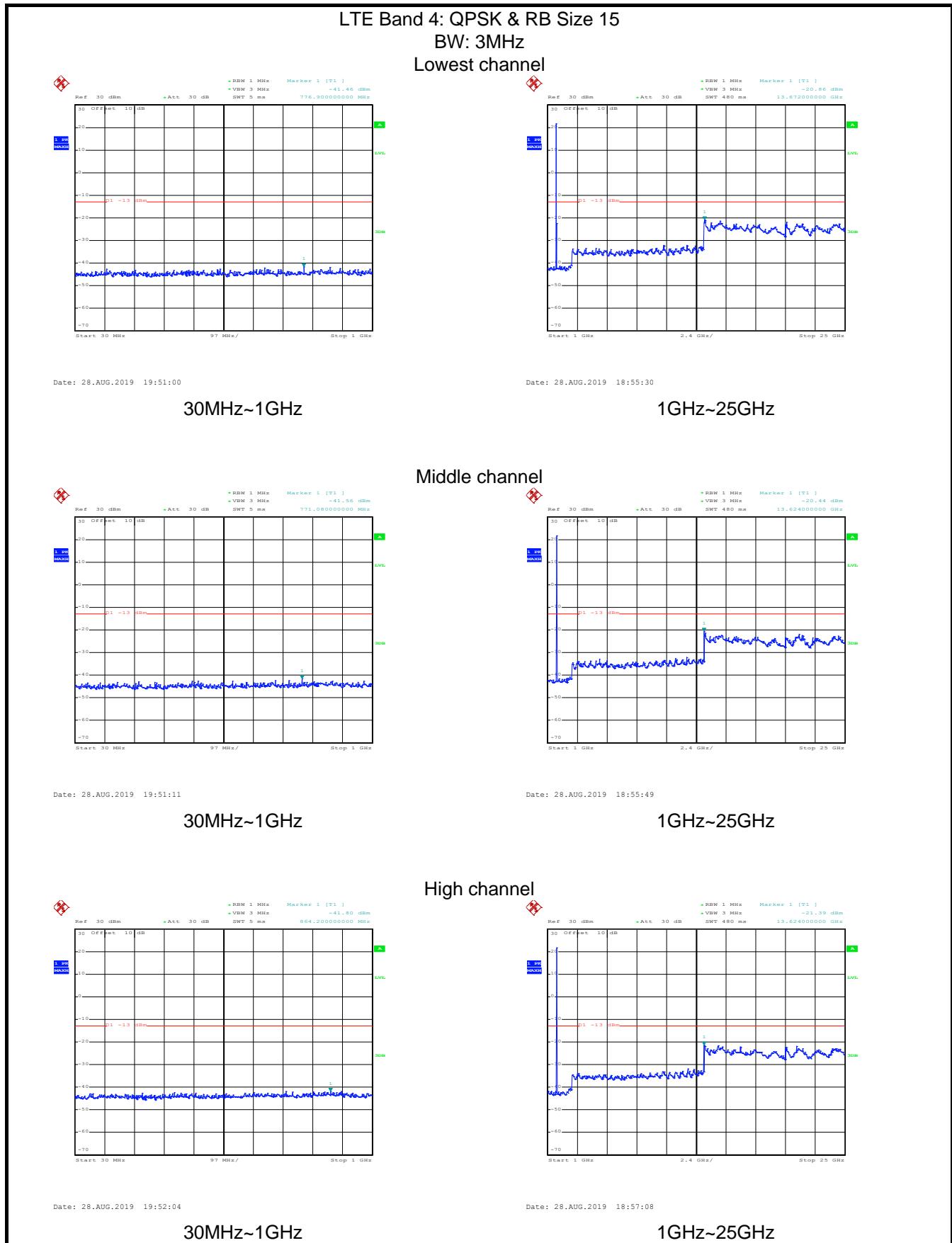


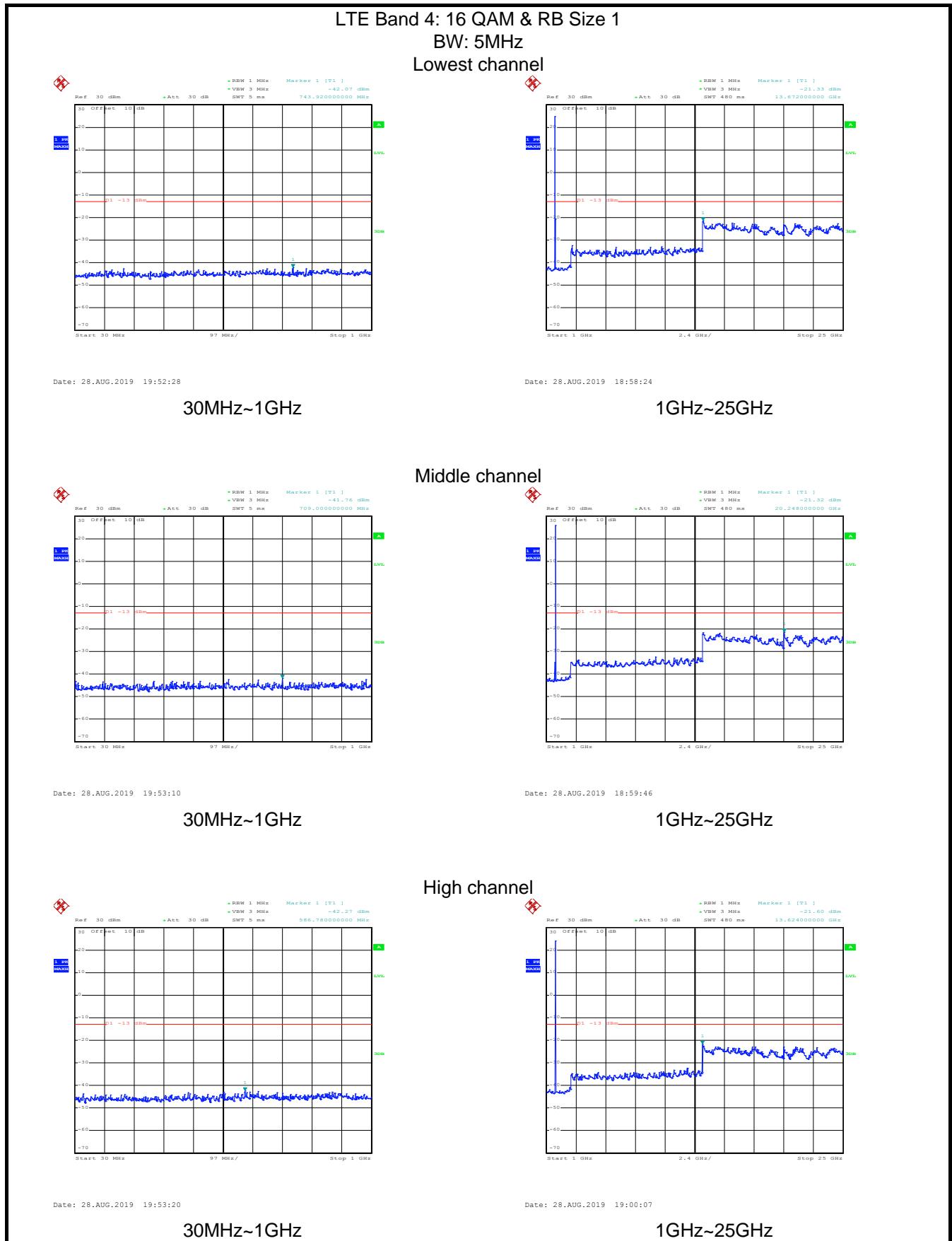
LTE Band 4: QPSK & RB Size 1

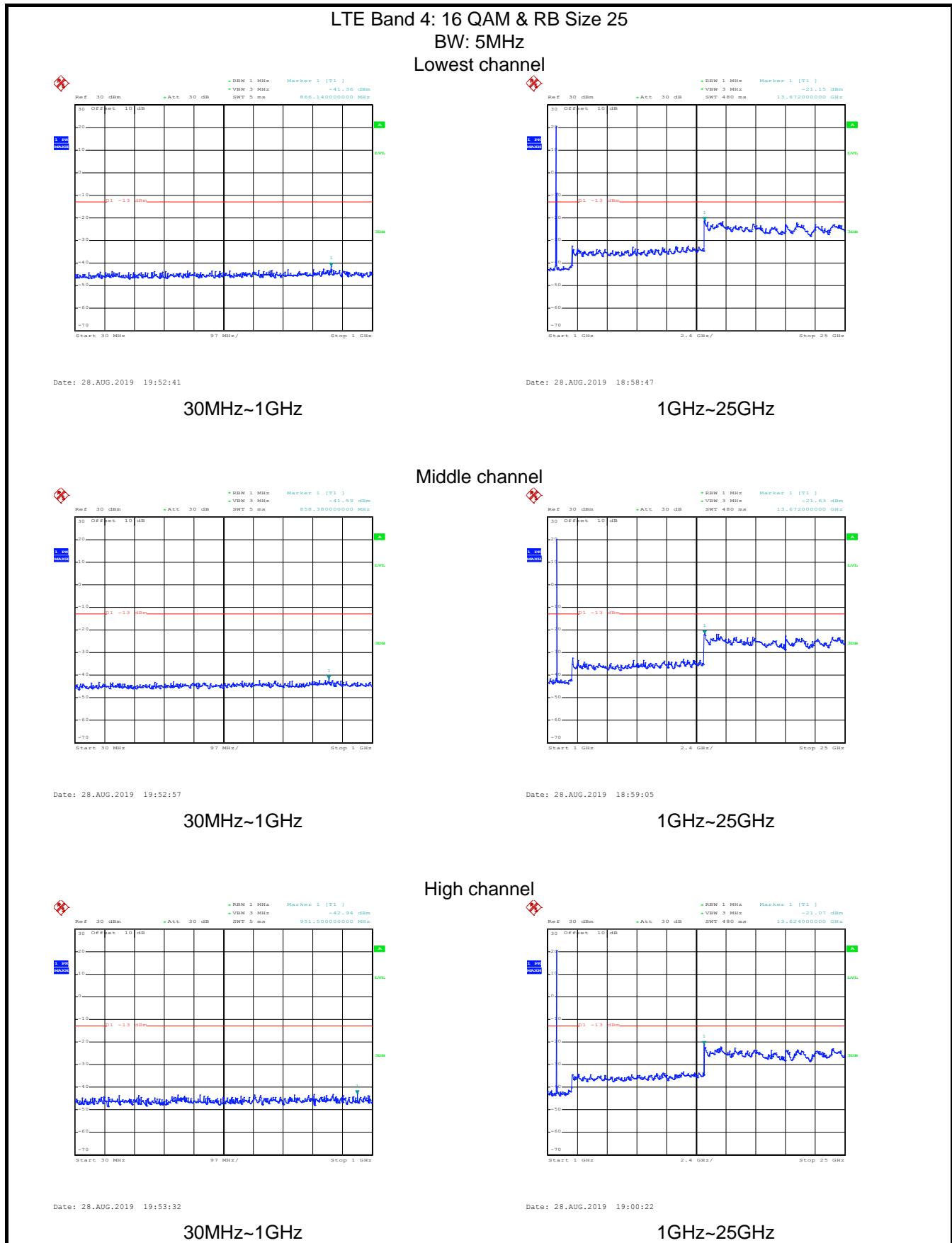
BW: 3MHz

Lowest channel





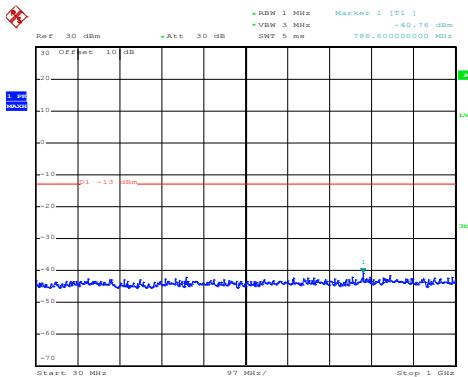




LTE Band 4: QPSK & RB Size 1

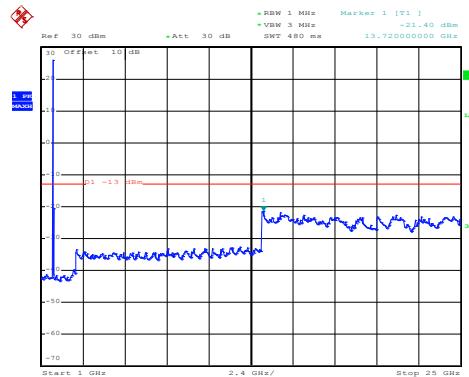
BW: 5MHz

Lowest channel



Date: 28.AUG.2019 19:52:23

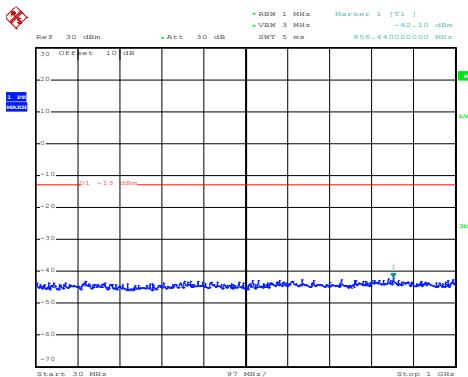
30MHz~1GHz



Date: 28.AUG.2019 18:58:17

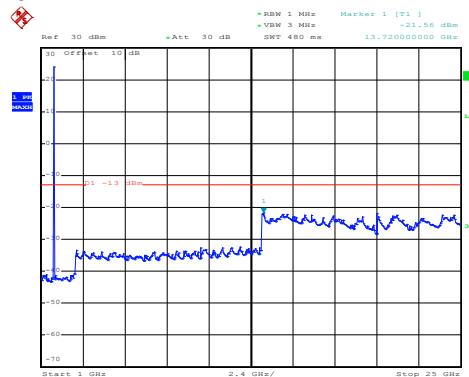
1GHz~25GHz

Middle channel



Date: 28.AUG.2019 19:53:06

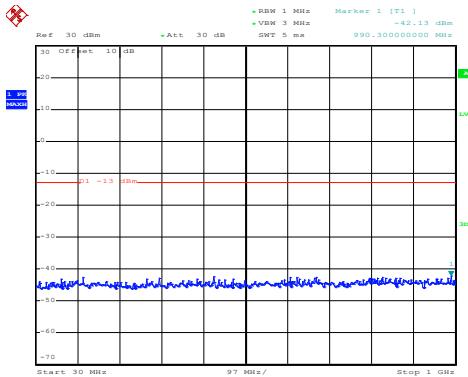
30MHz~1GHz



Date: 28.AUG.2019 18:59:37

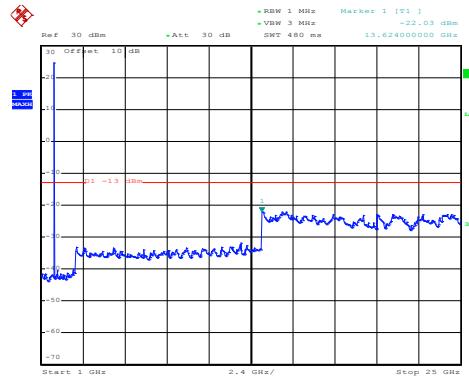
1GHz~25GHz

High channel



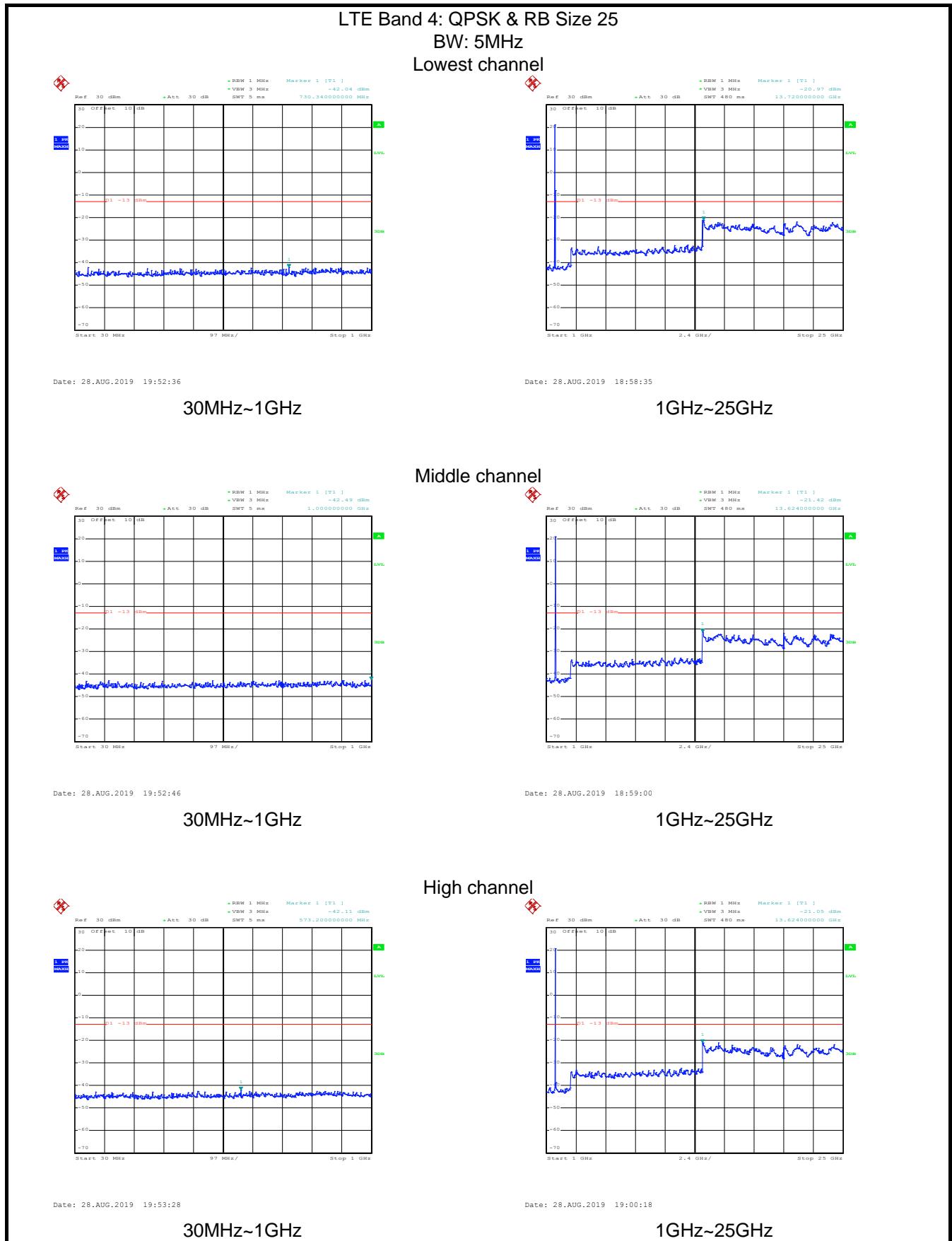
Date: 28.AUG.2019 19:53:16

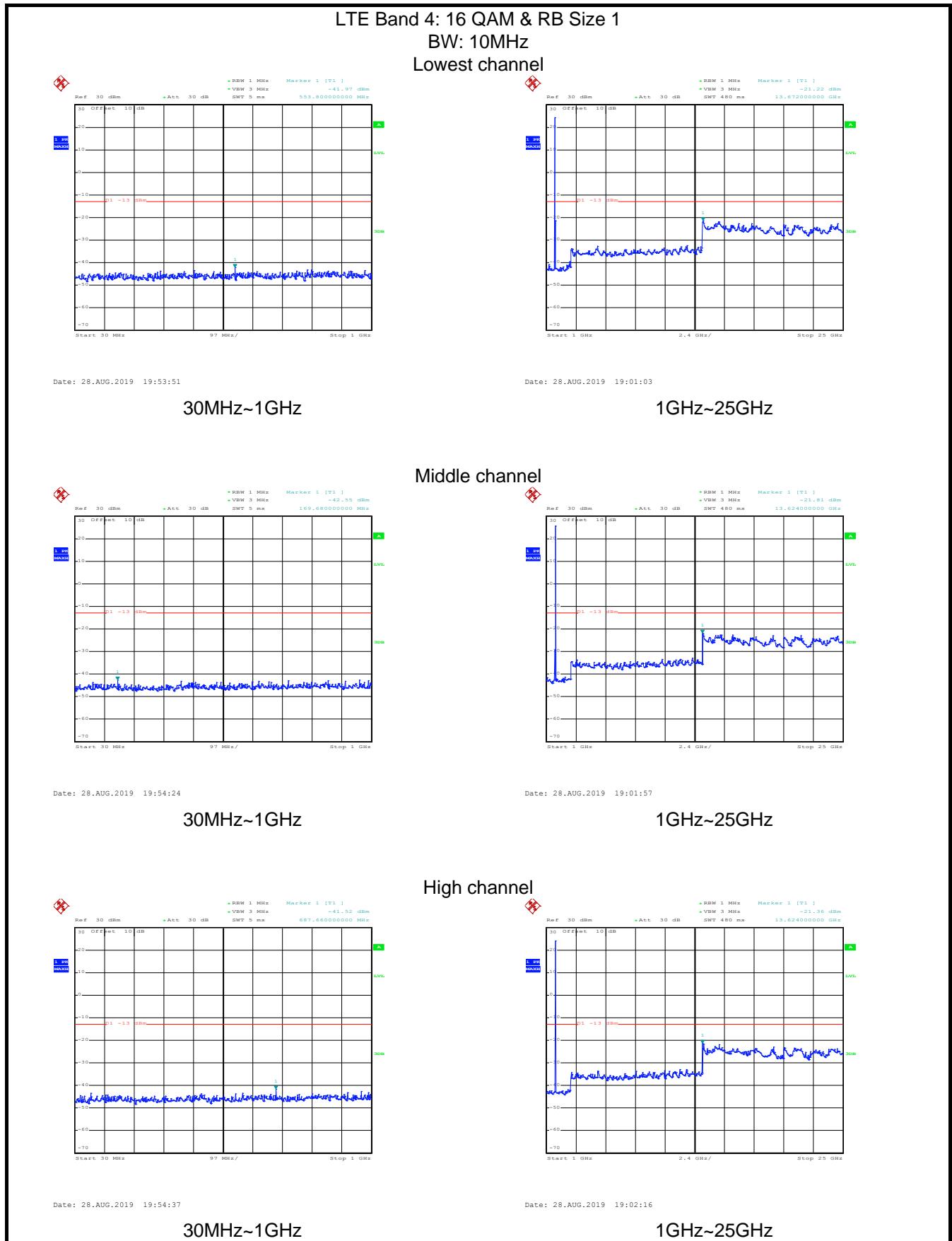
30MHz~1GHz

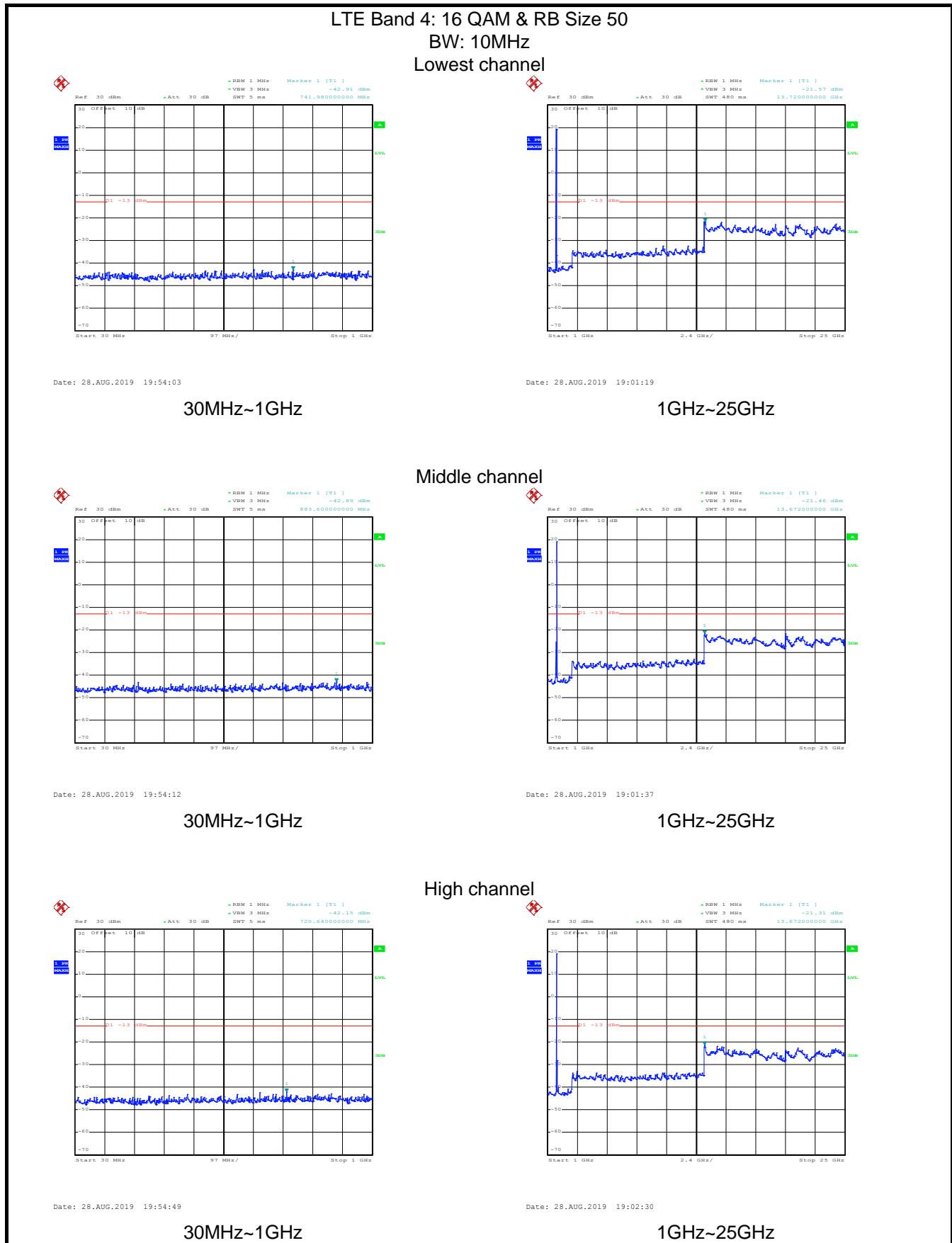


Date: 28.AUG.2019 19:00:02

1GHz~25GHz



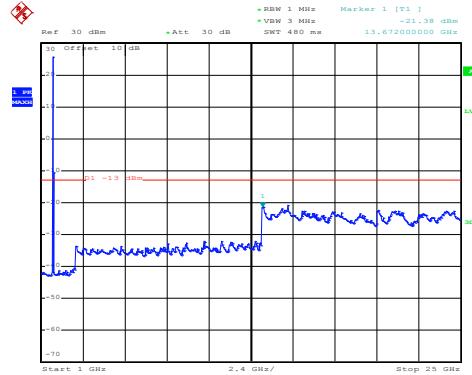
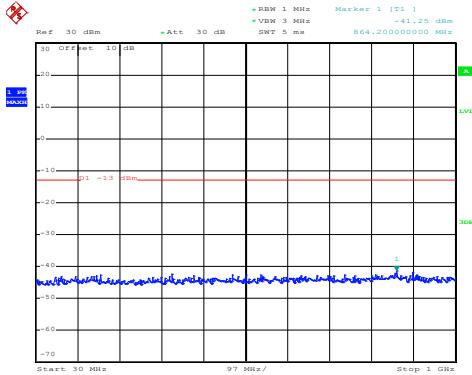




LTE Band 4: QPSK & RB Size 1

BW: 10MHz

Lowest channel



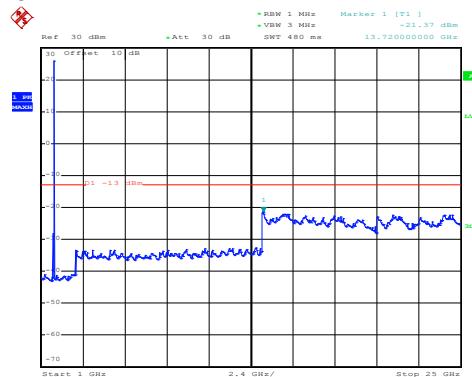
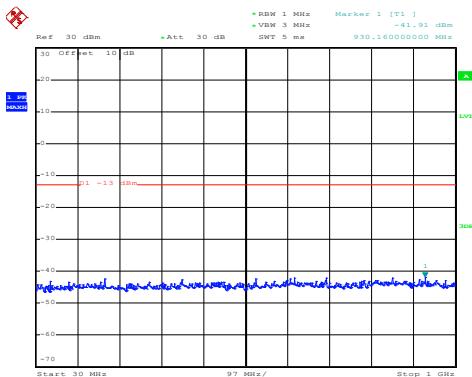
Date: 28.AUG.2019 19:53:47

30MHz~1GHz

Date: 28.AUG.2019 19:00:58

1GHz~25GHz

Middle channel



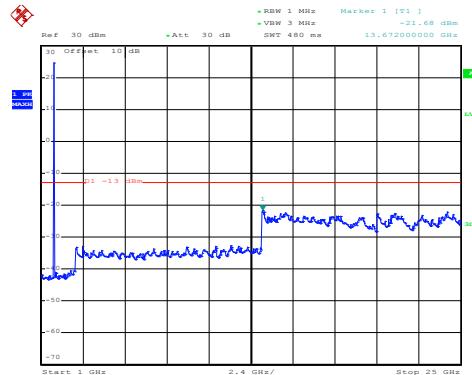
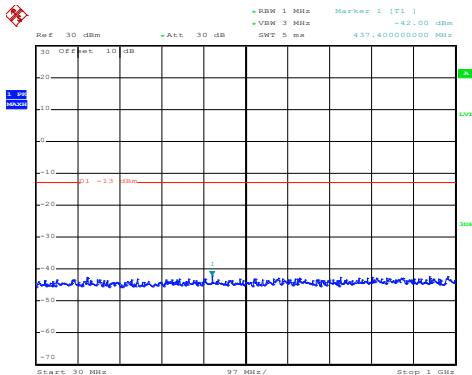
Date: 28.AUG.2019 19:54:21

30MHz~1GHz

Date: 28.AUG.2019 19:01:52

1GHz~25GHz

High channel

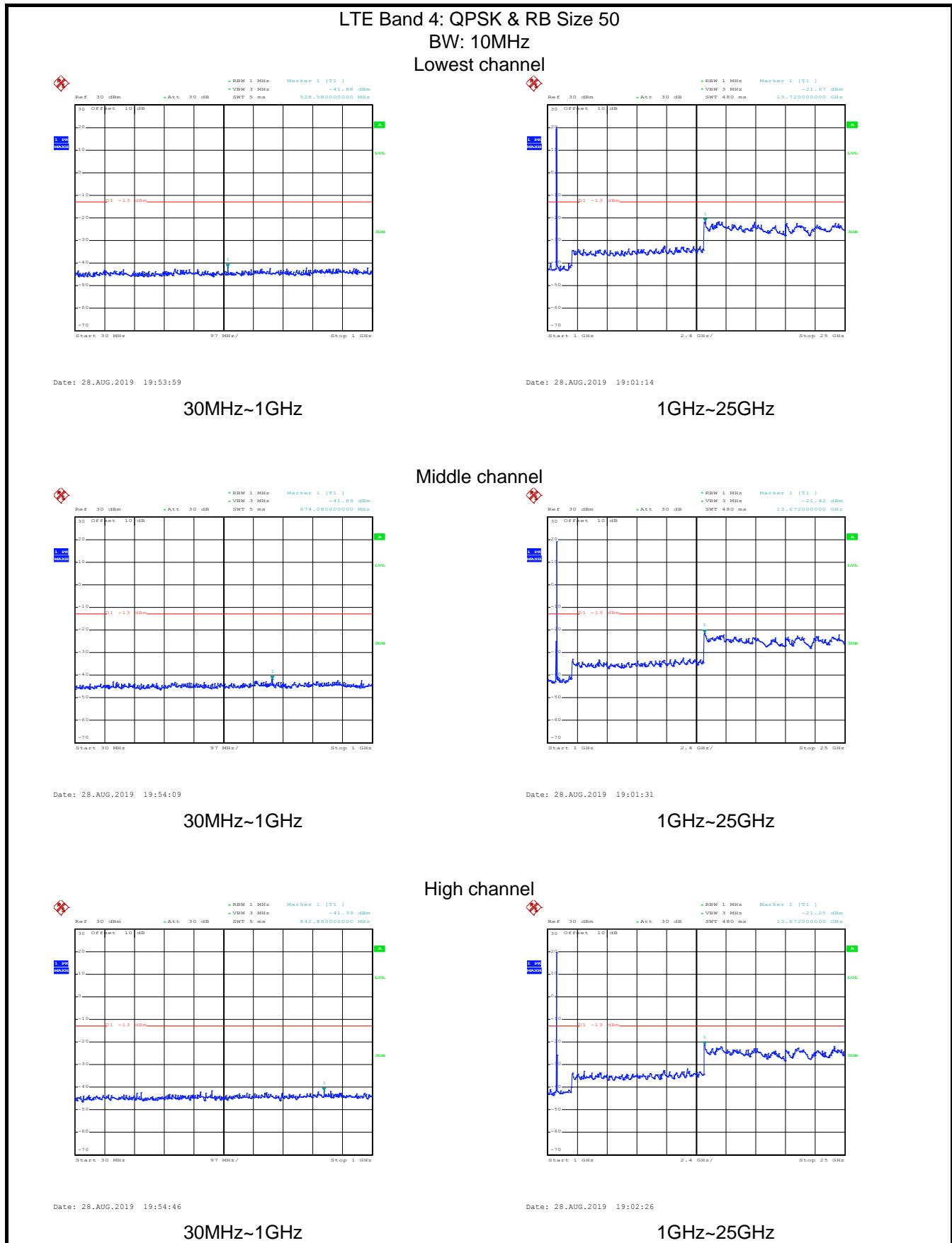


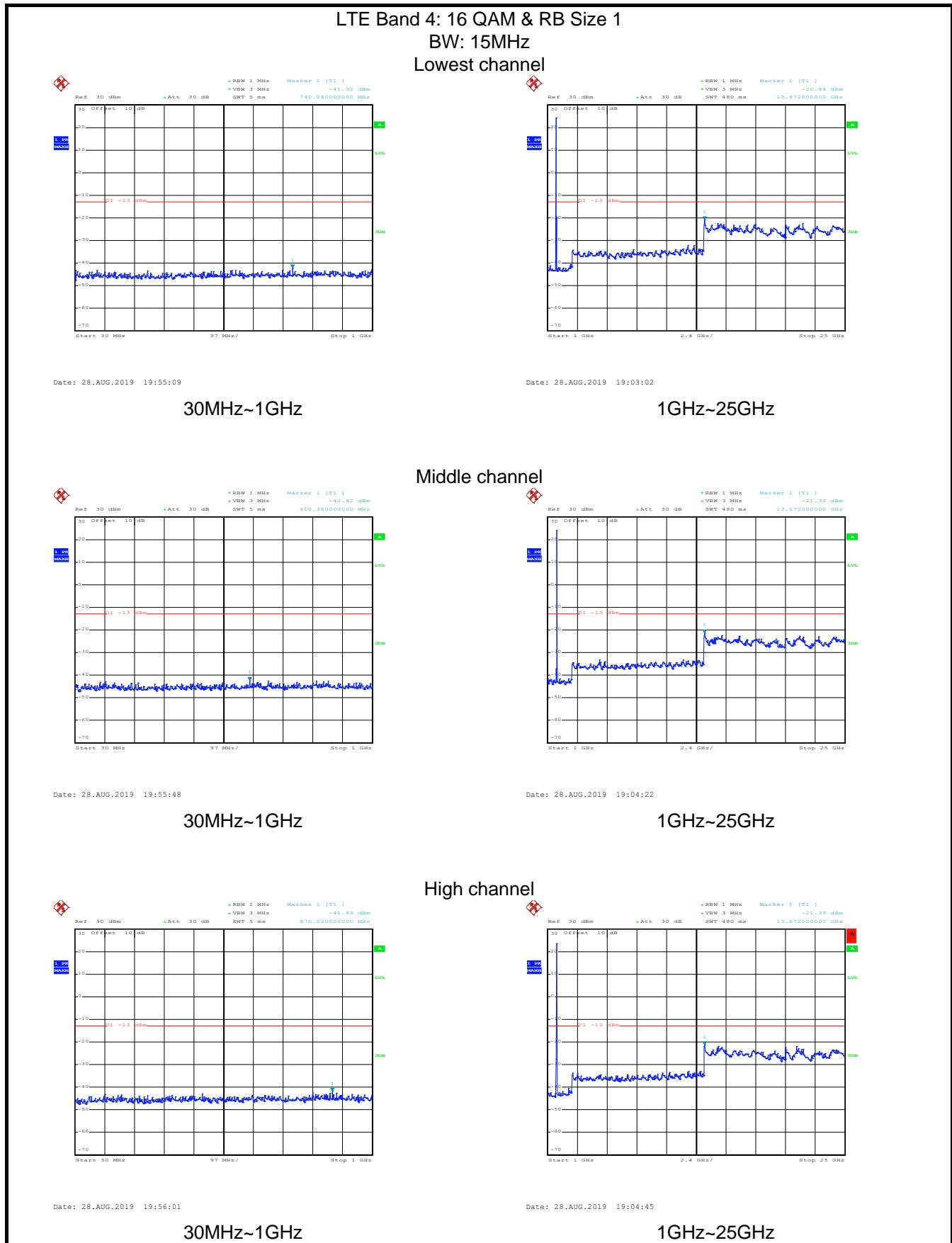
Date: 28.AUG.2019 19:54:34

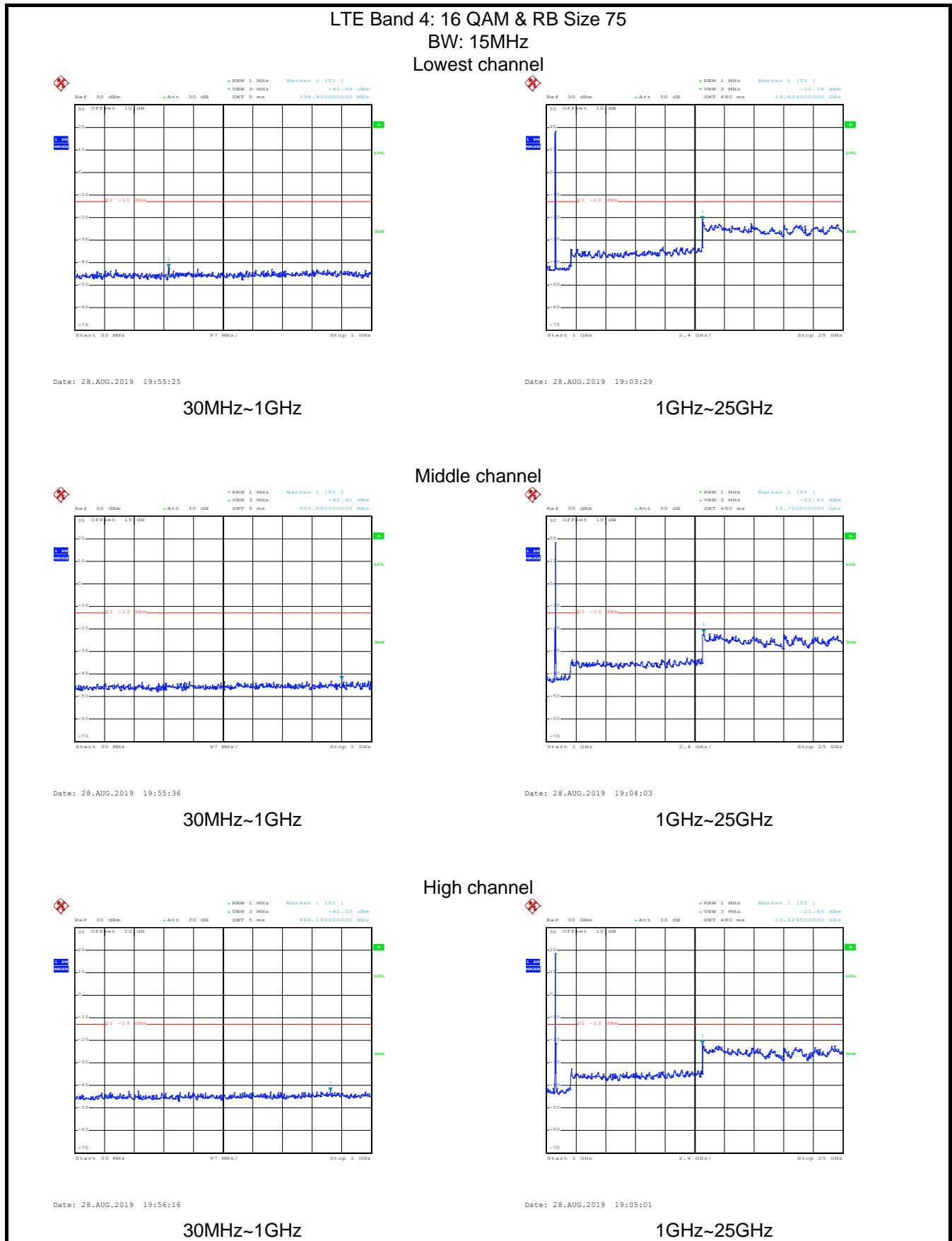
30MHz~1GHz

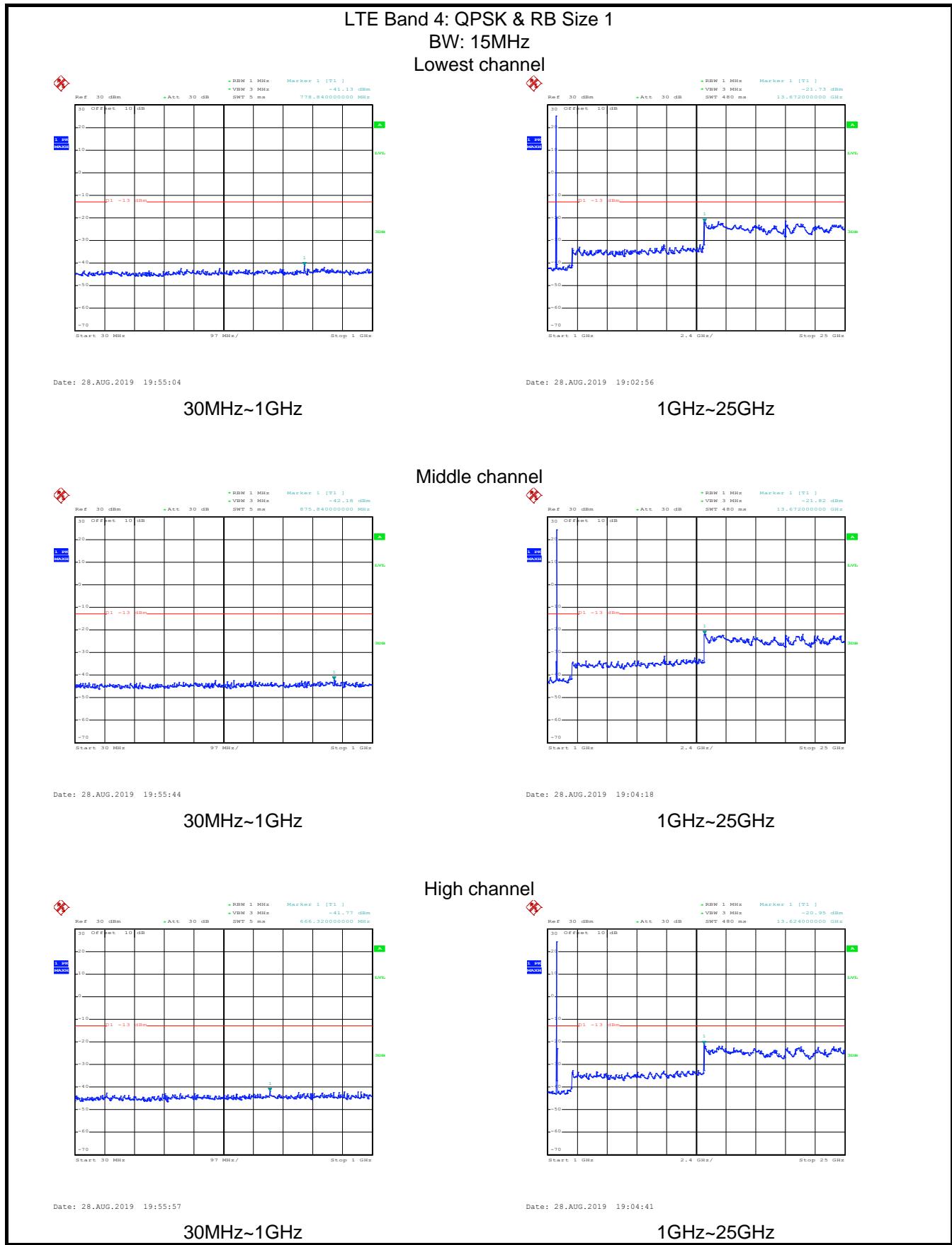
Date: 28.AUG.2019 19:02:12

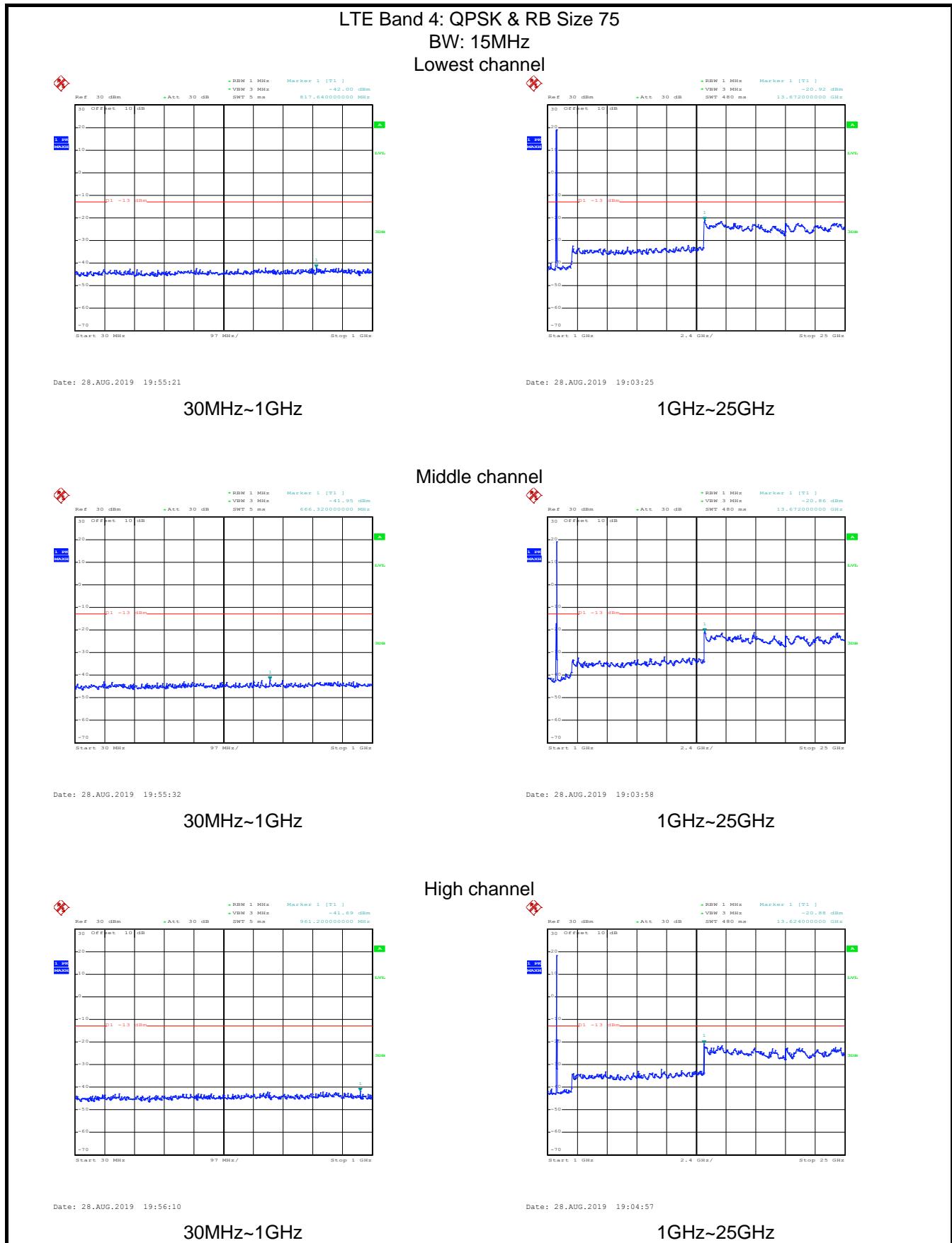
1GHz~25GHz

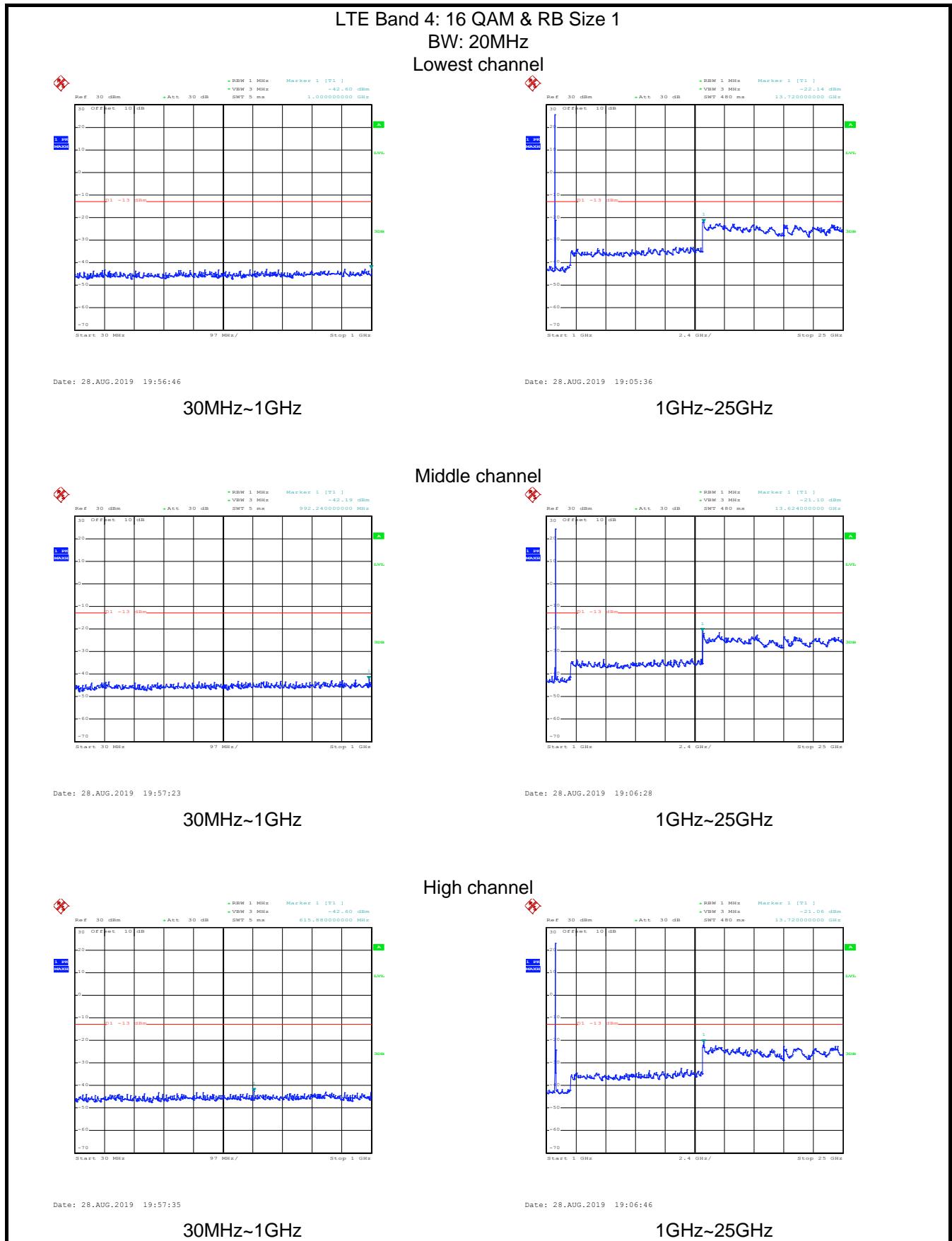


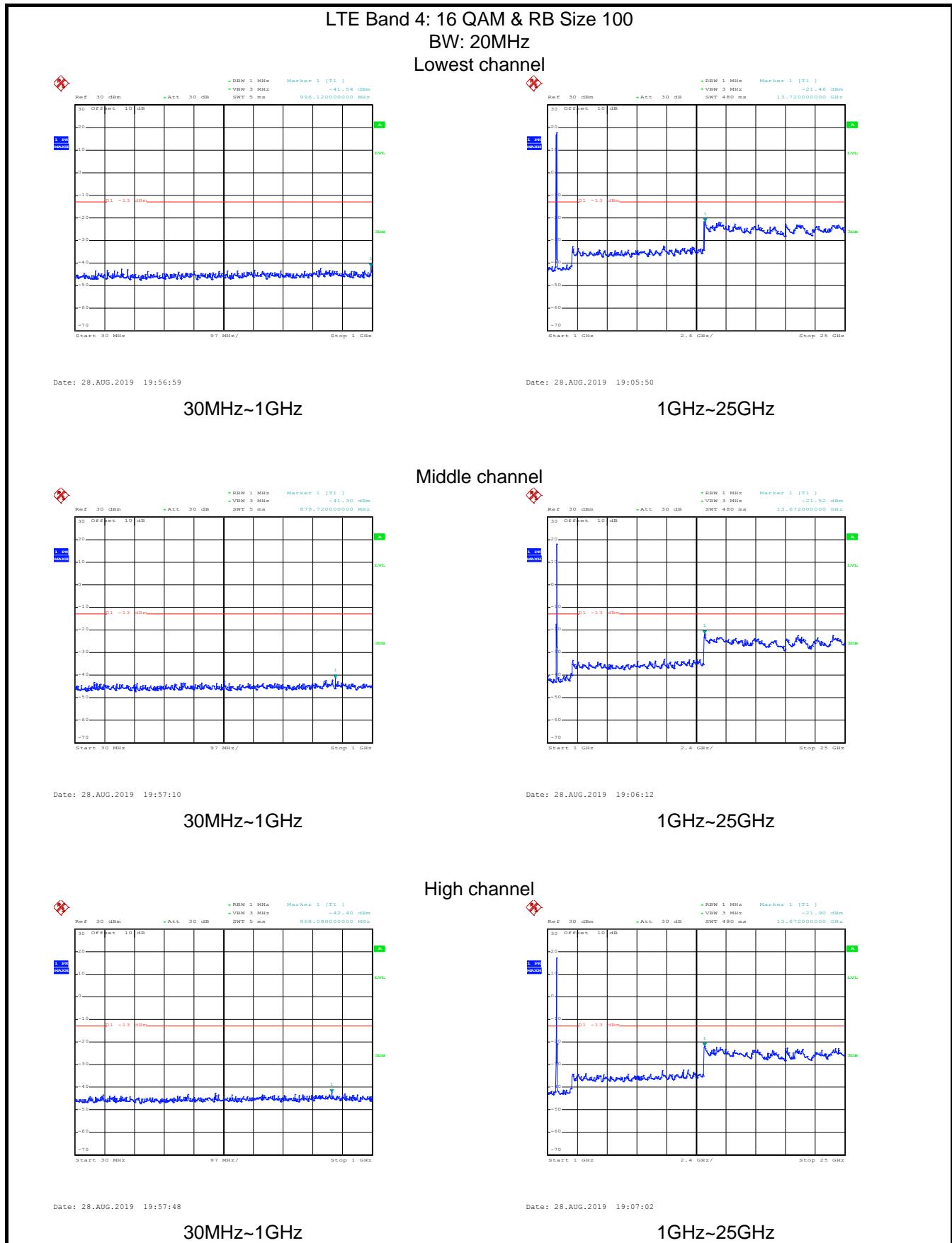








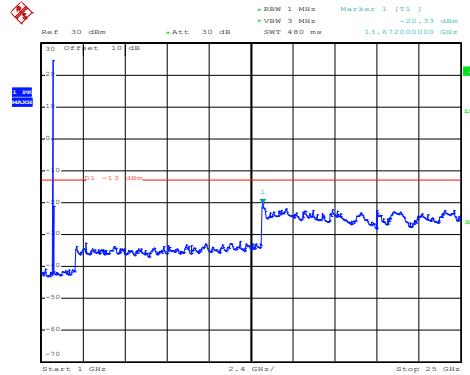
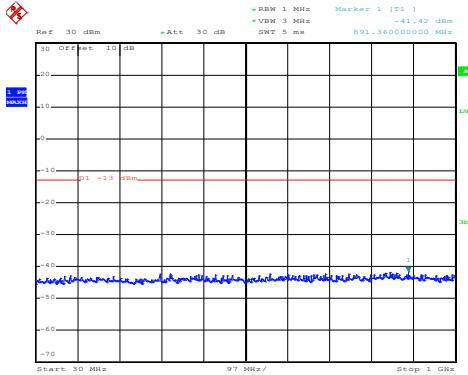




LTE Band 4: QPSK & RB Size 1

BW: 20MHz

Lowest channel



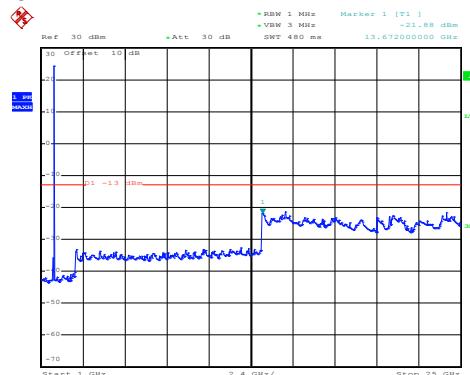
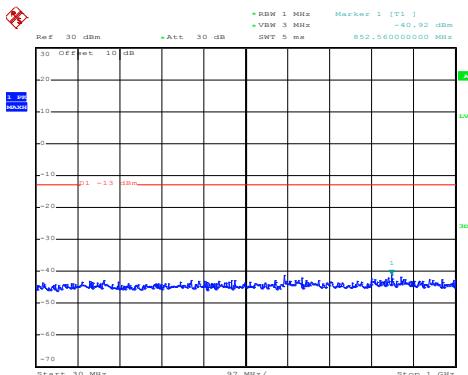
Date: 28.AUG.2019 19:56:42

30MHz~1GHz

Date: 28.AUG.2019 19:05:30

1GHz~25GHz

Middle channel



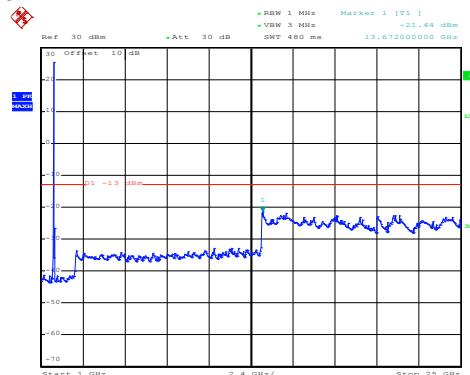
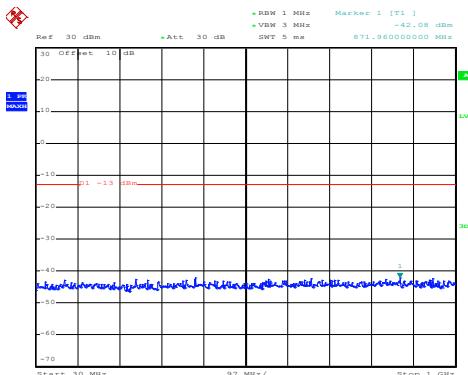
Date: 28.AUG.2019 19:57:18

30MHz~1GHz

Date: 28.AUG.2019 19:06:23

1GHz~25GHz

High channel

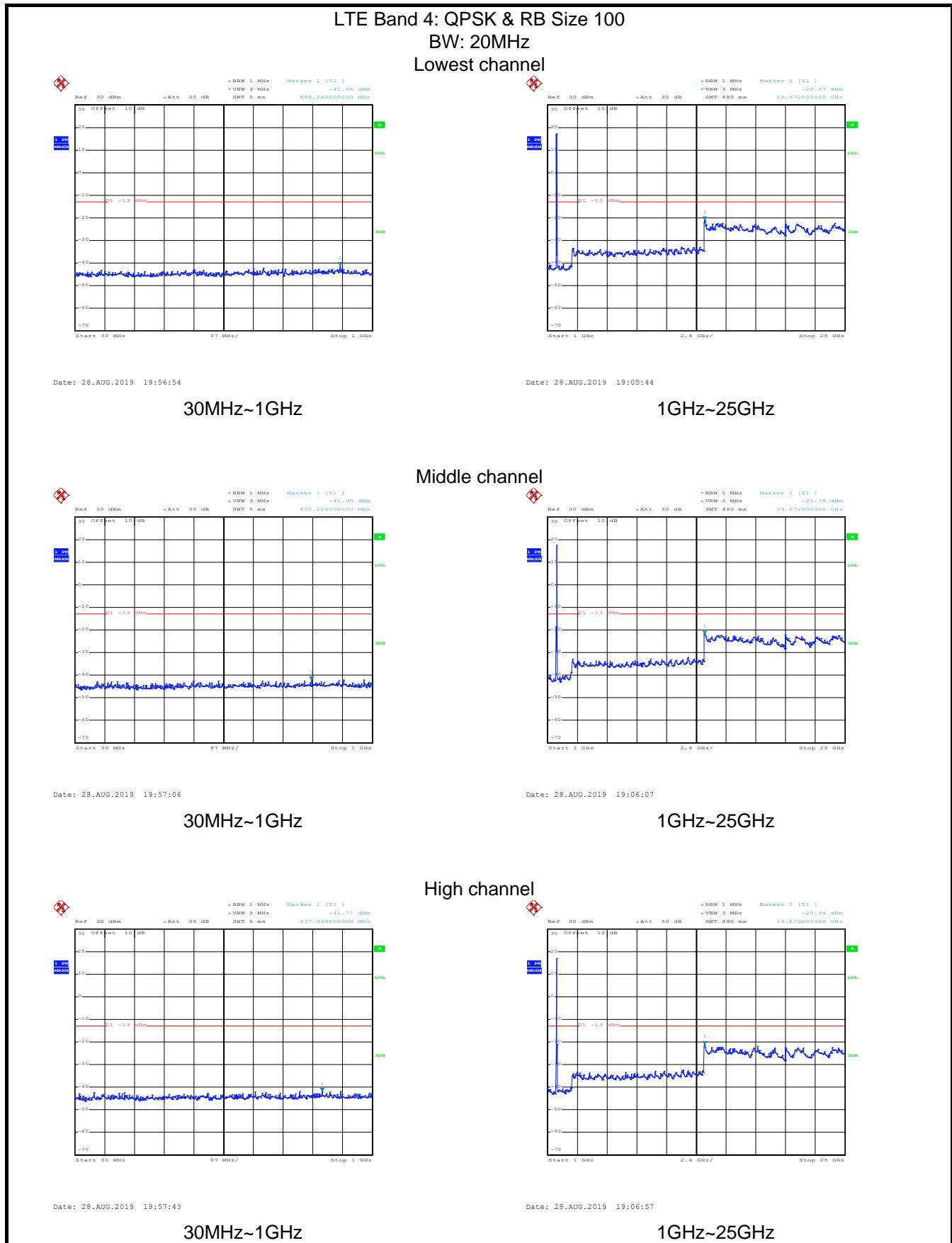


Date: 28.AUG.2019 19:57:30

30MHz~1GHz

Date: 28.AUG.2019 19:06:41

1GHz~25GHz

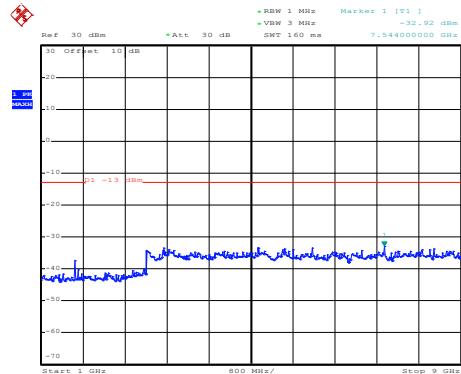
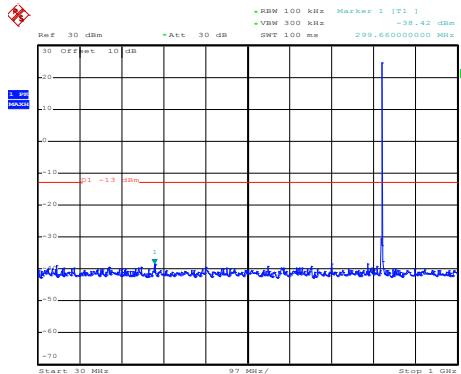


LTE Band 5 part:

LTE Band 5: 16 QAM & RB Size 1

BW: 1.4MHz

Lowest channel



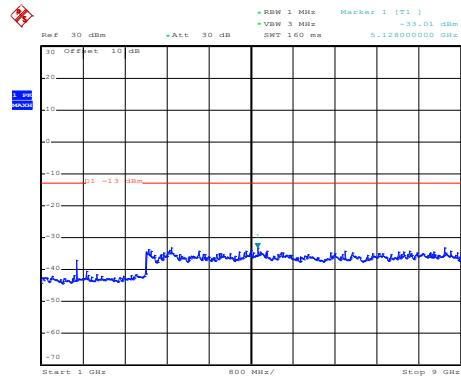
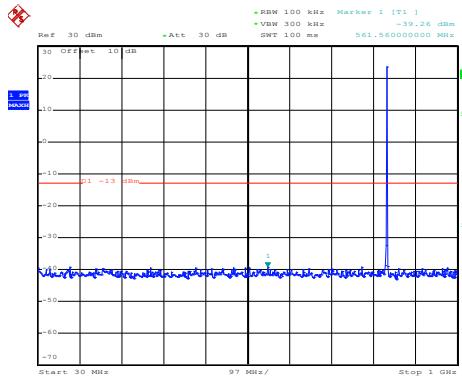
Date: 28.AUG.2019 19:58:49

30MHz~1GHz

Date: 28.AUG.2019 19:08:25

1GHz~9GHz

Middle channel



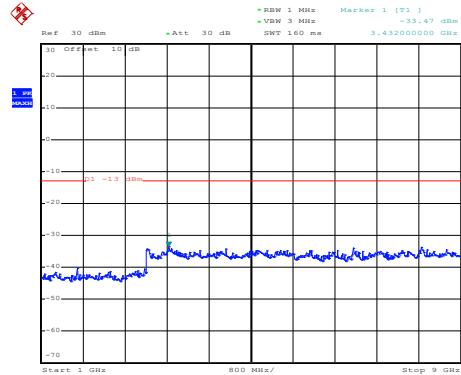
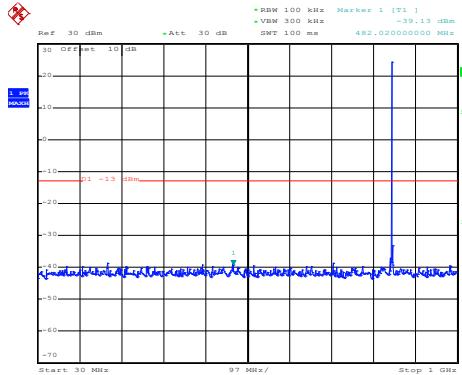
Date: 28.AUG.2019 20:00:11

30MHz~1GHz

Date: 28.AUG.2019 19:09:19

1GHz~9GHz

High channel

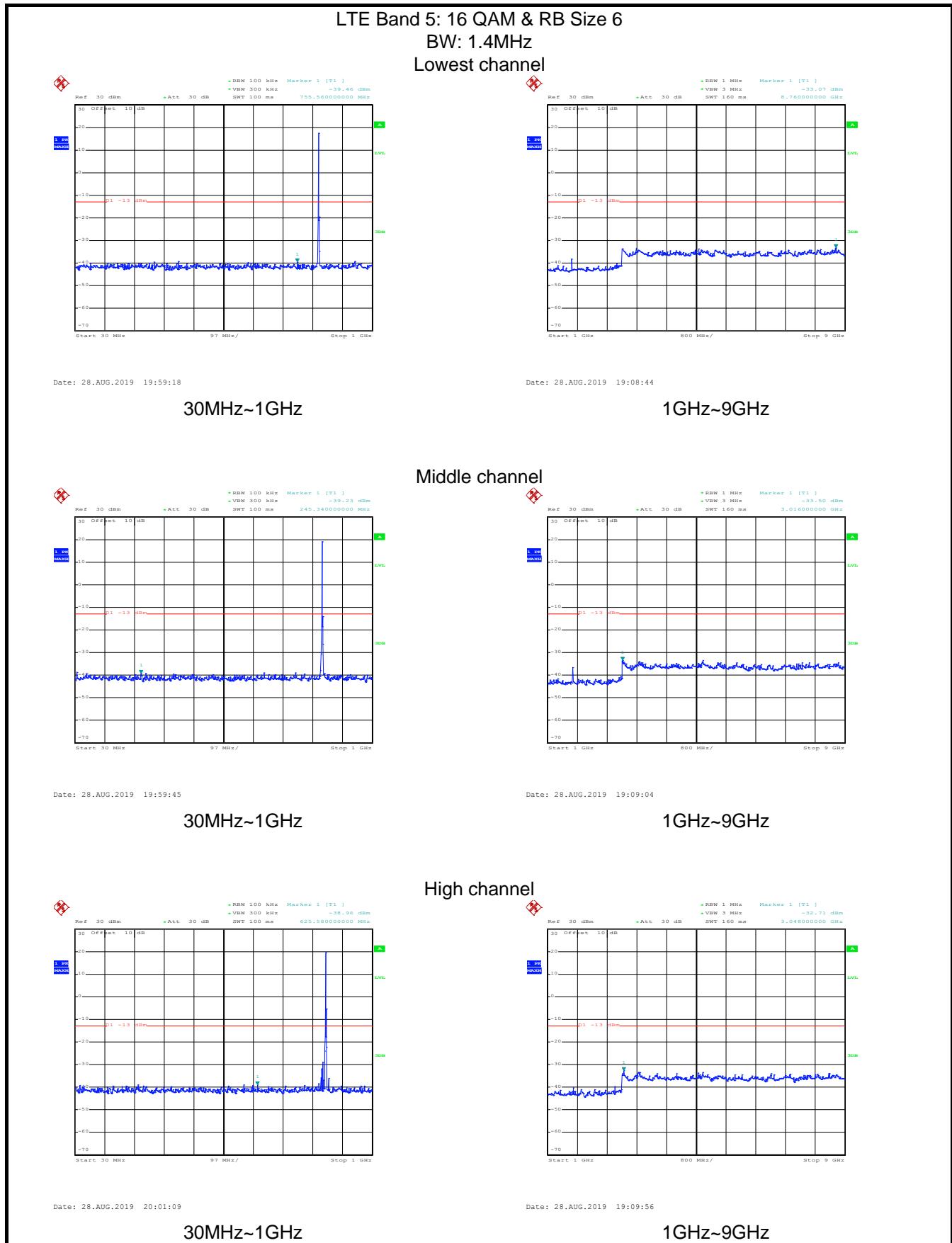


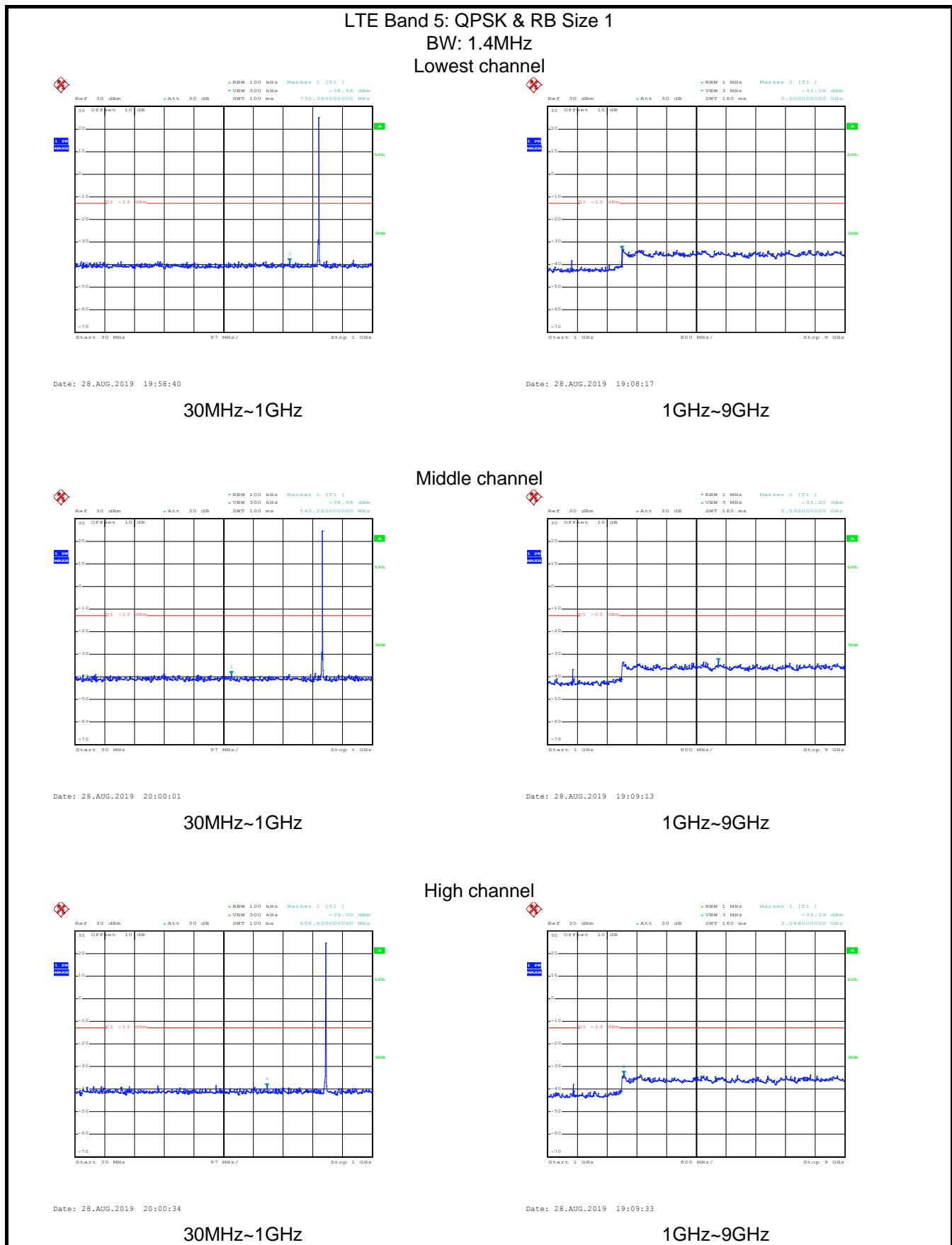
Date: 28.AUG.2019 20:00:41

30MHz~1GHz

Date: 28.AUG.2019 19:09:38

1GHz~9GHz

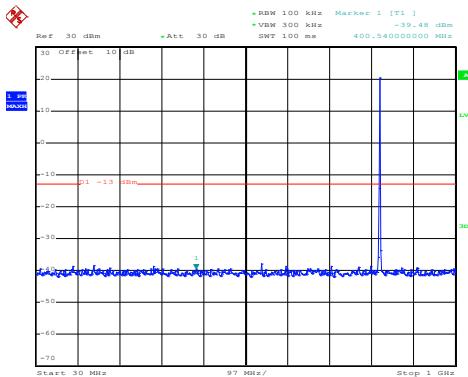




LTE Band 5: QPSK & RB Size 6

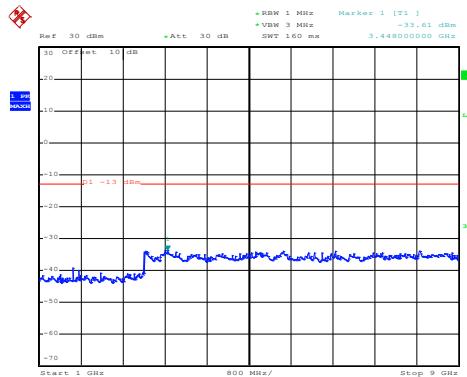
BW: 1.4MHz

Lowest channel



Date: 28.AUG.2019 19:59:08

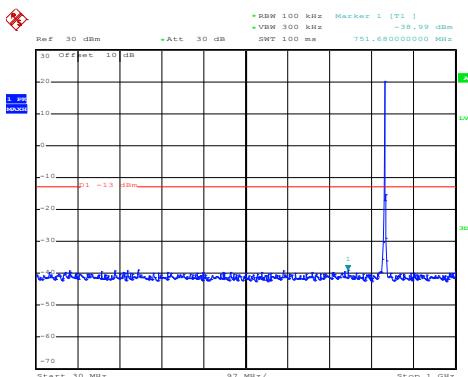
30MHz~1GHz



Date: 28.AUG.2019 19:08:35

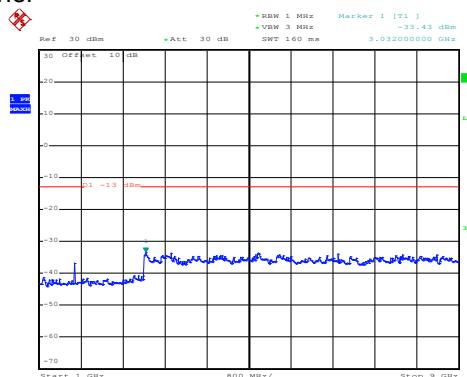
1GHz~9GHz

Middle channel



Date: 28.AUG.2019 19:59:34

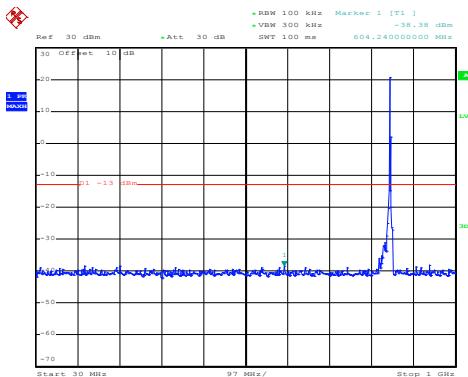
30MHz~1GHz



Date: 28.AUG.2019 19:08:59

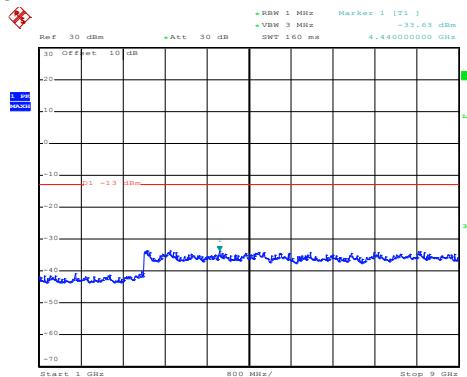
1GHz~9GHz

High channel



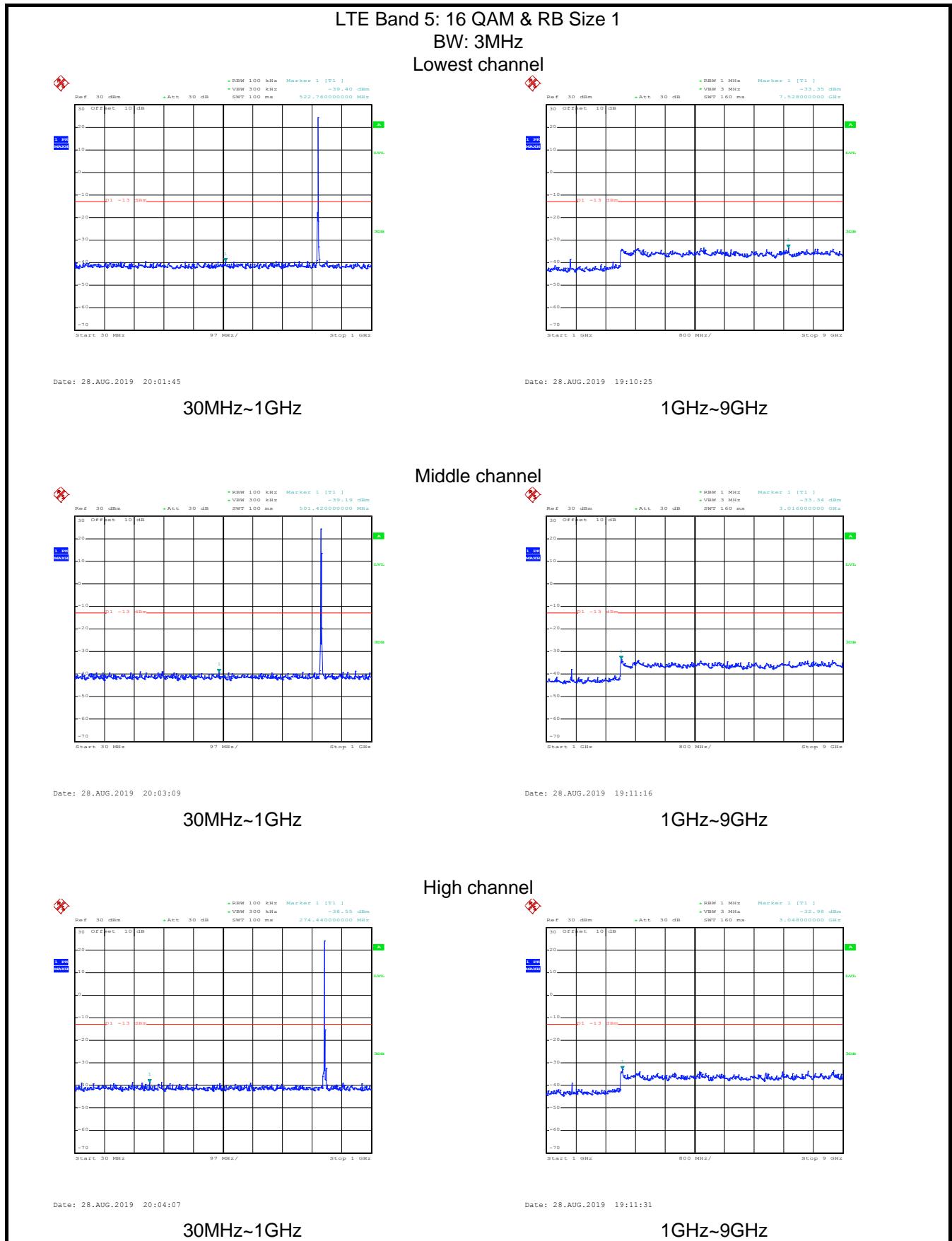
Date: 28.AUG.2019 20:01:01

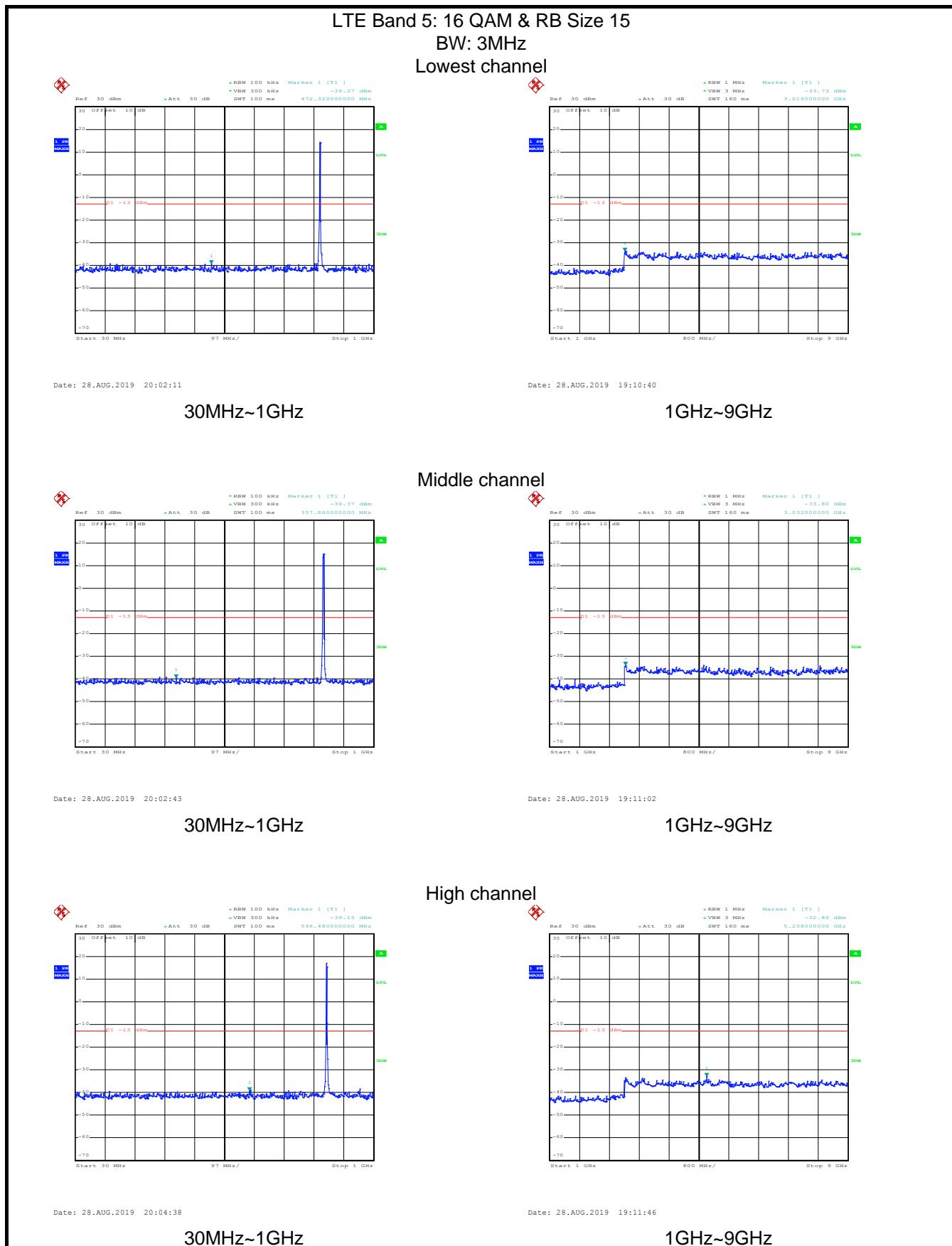
30MHz~1GHz

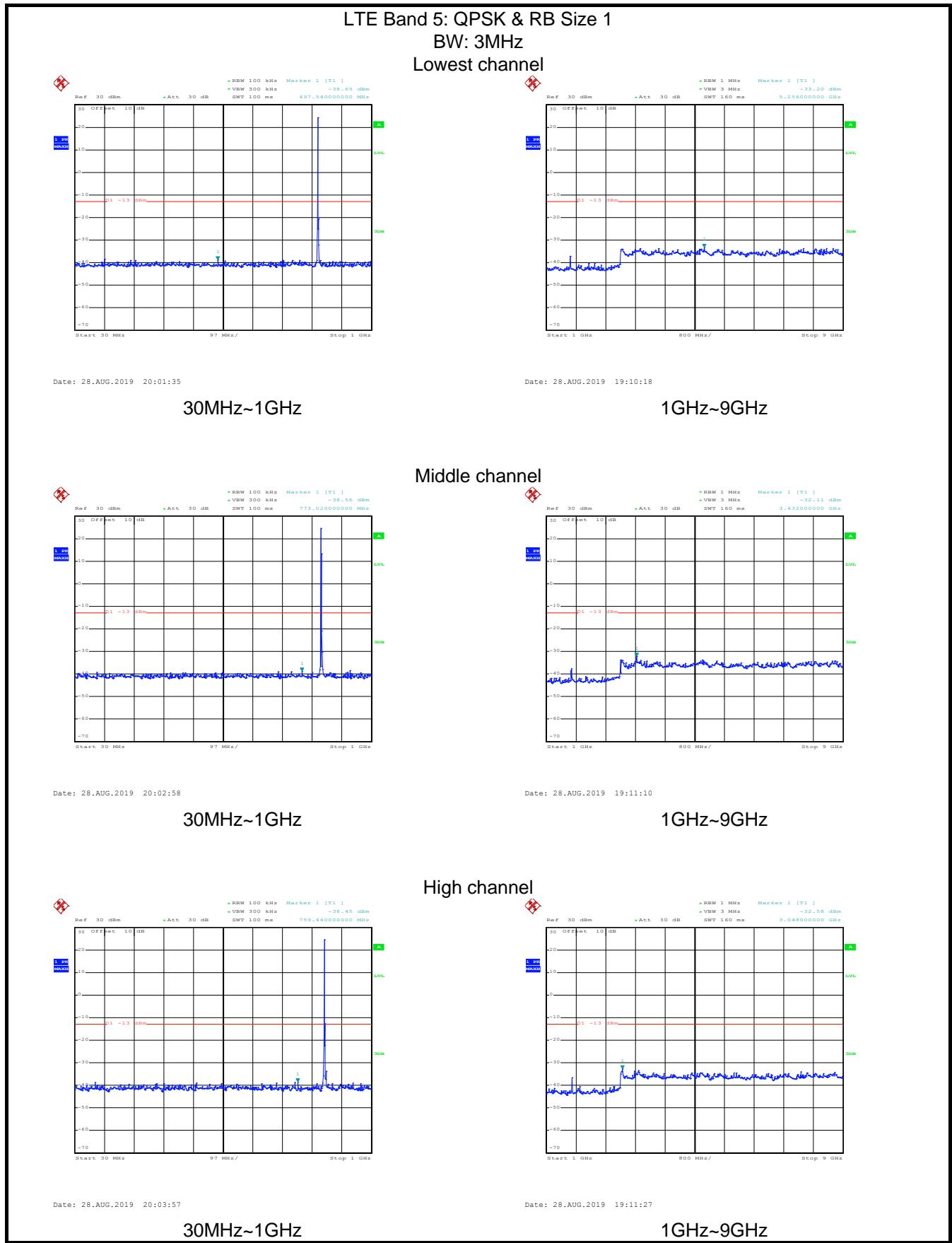


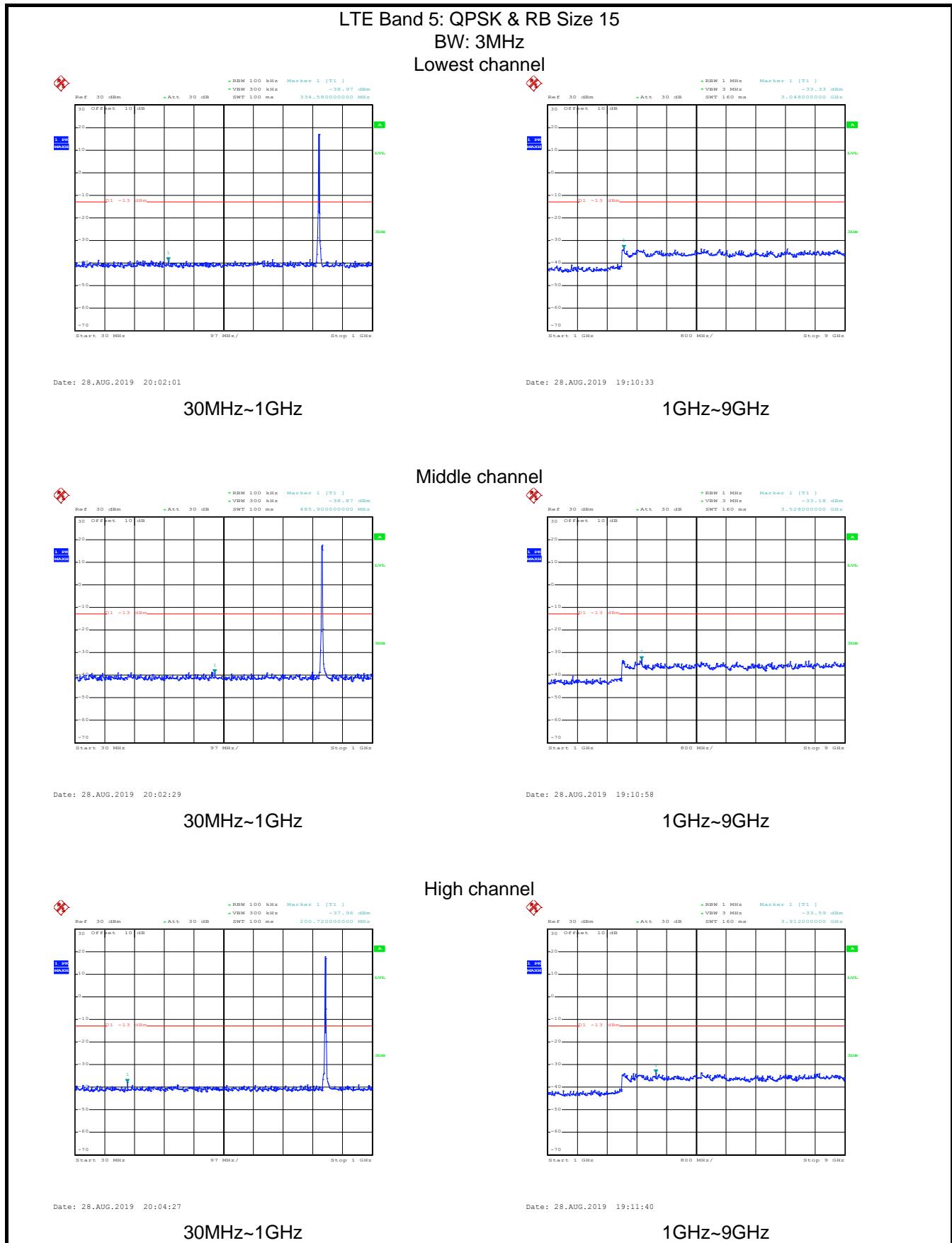
Date: 28.AUG.2019 19:09:49

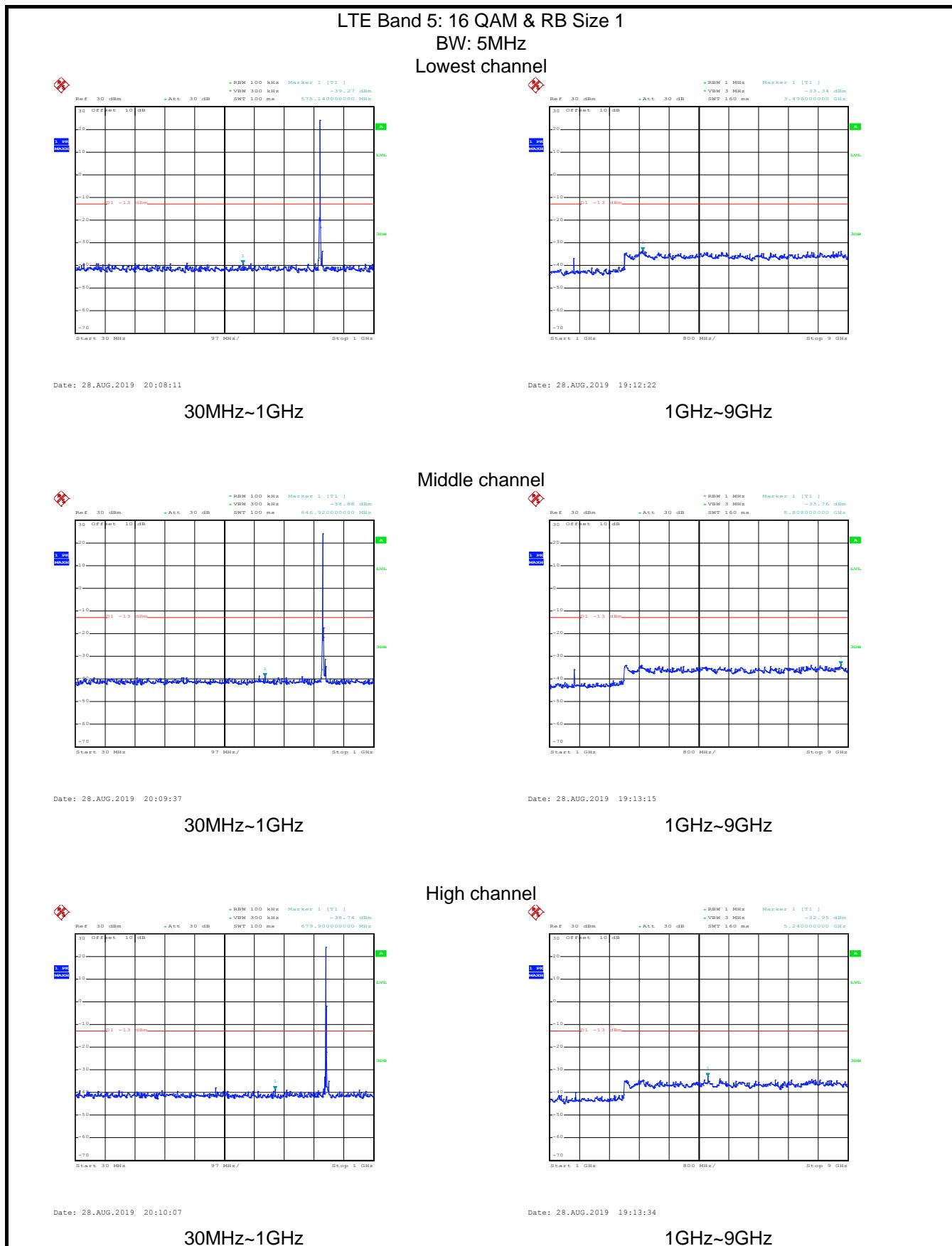
1GHz~9GHz

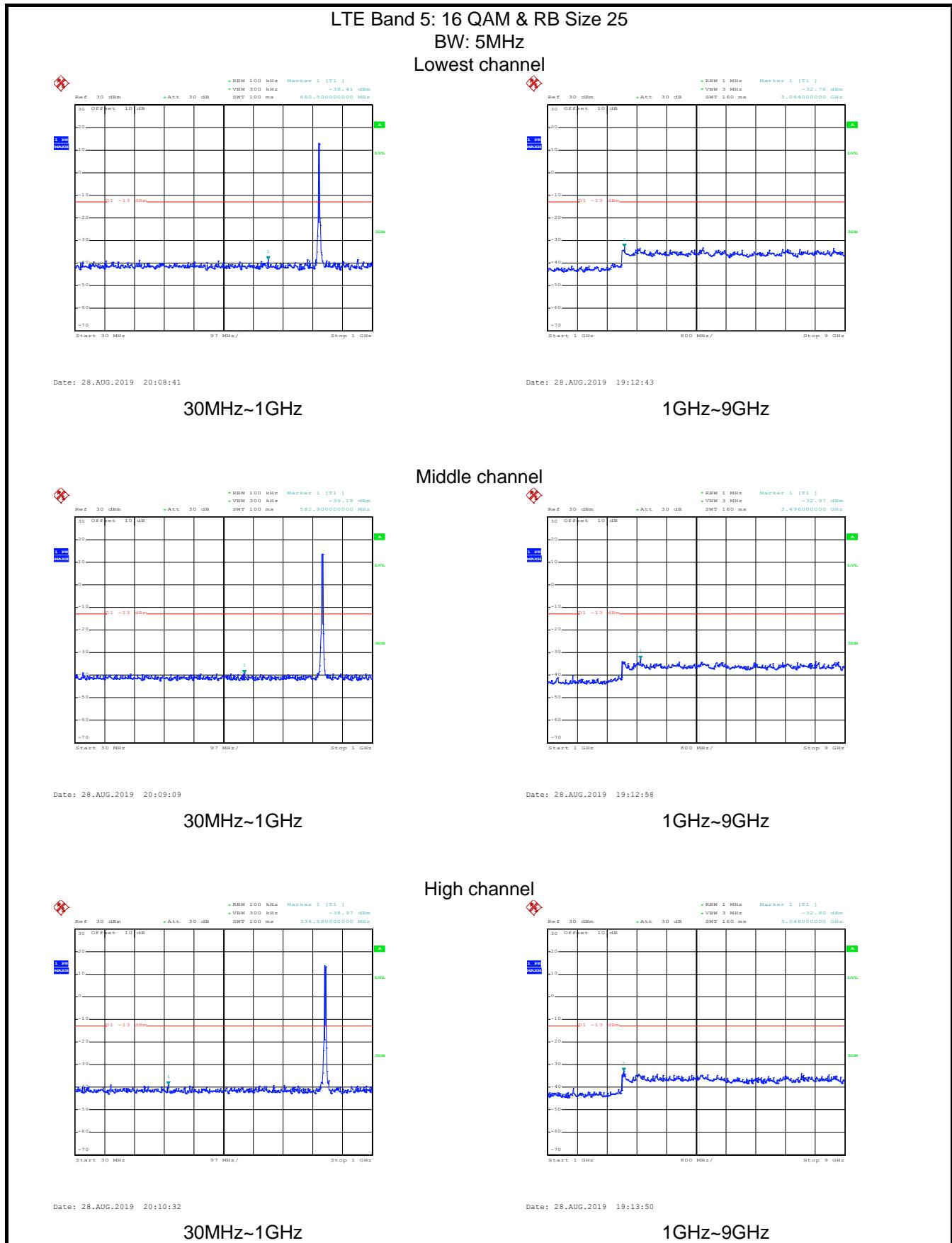


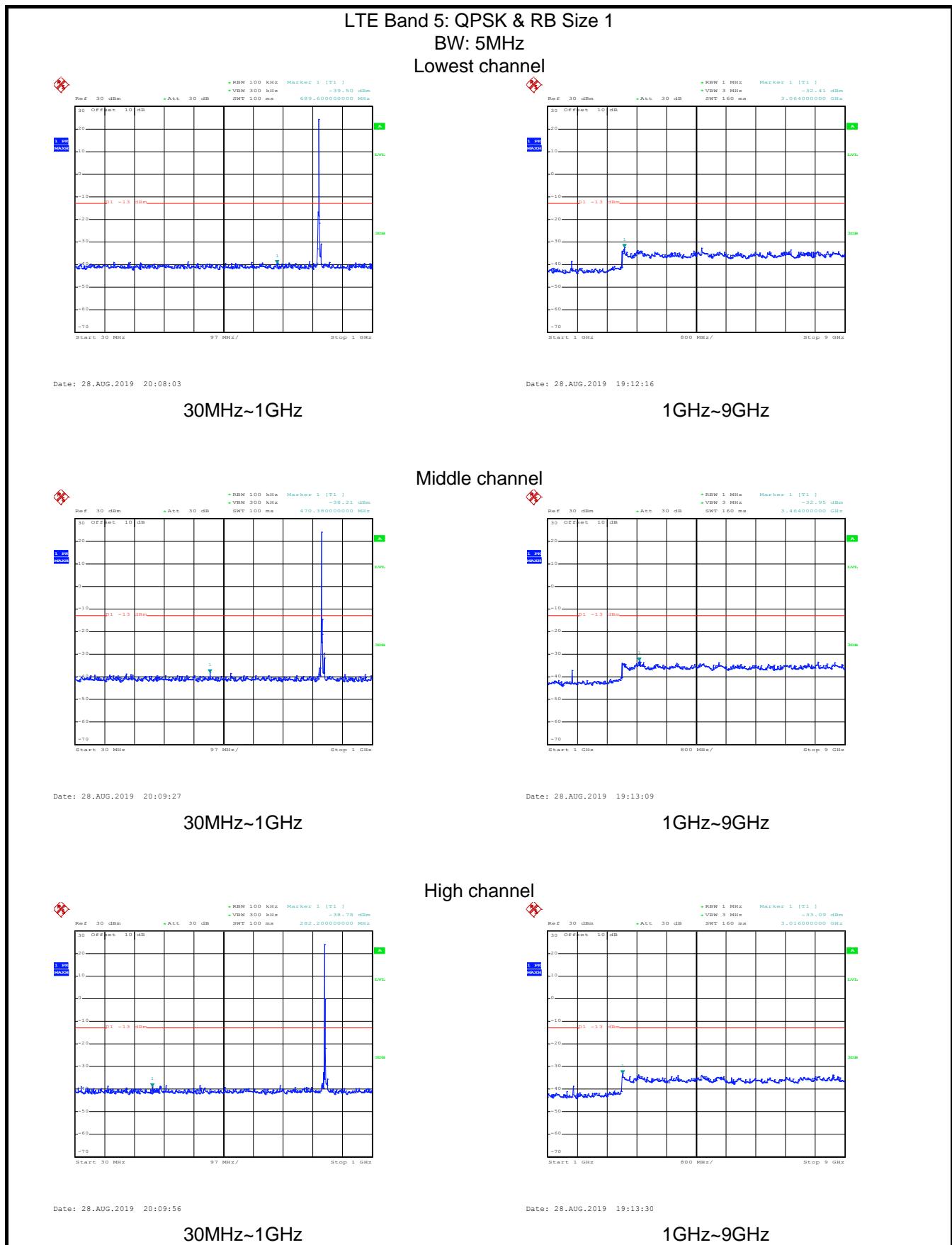


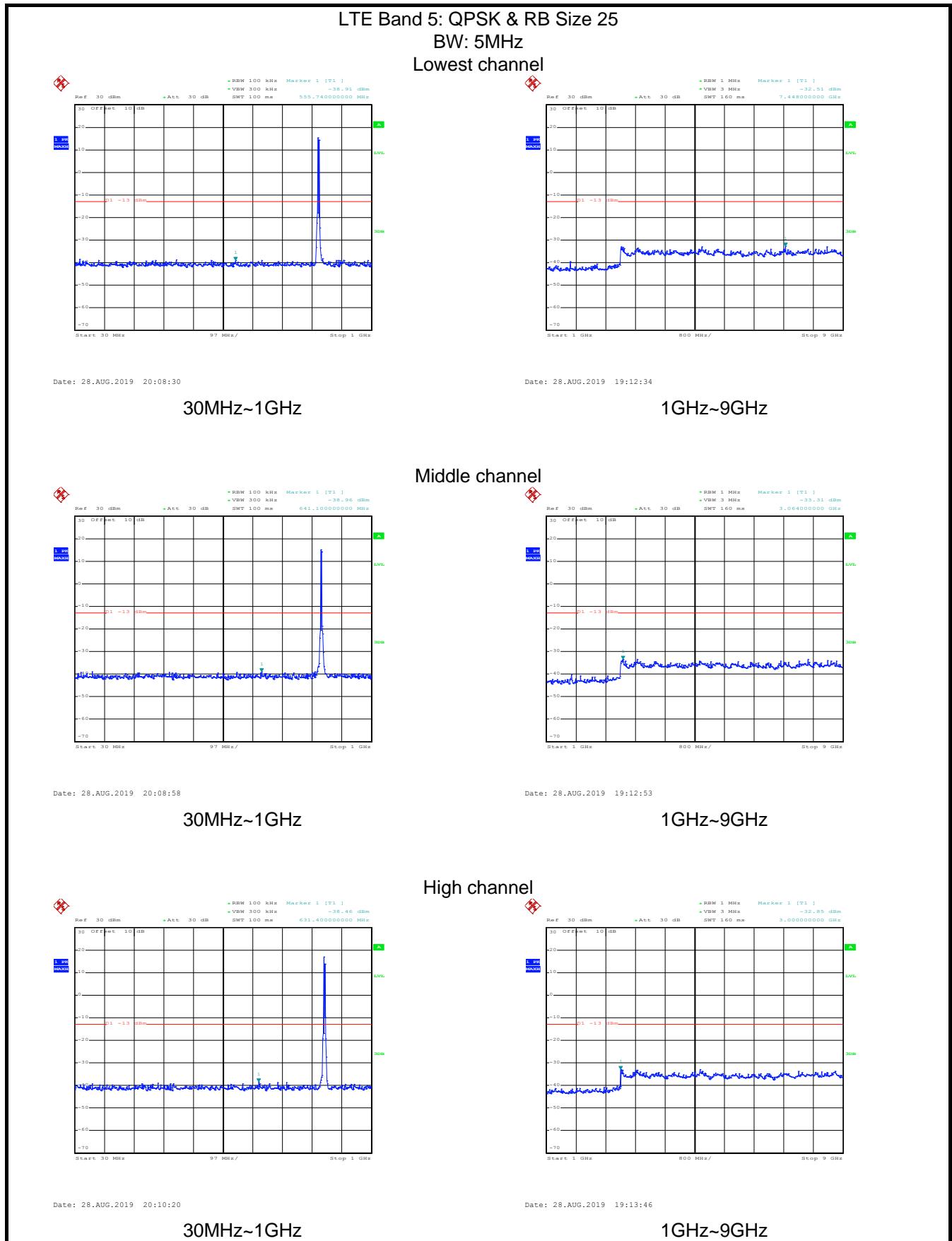


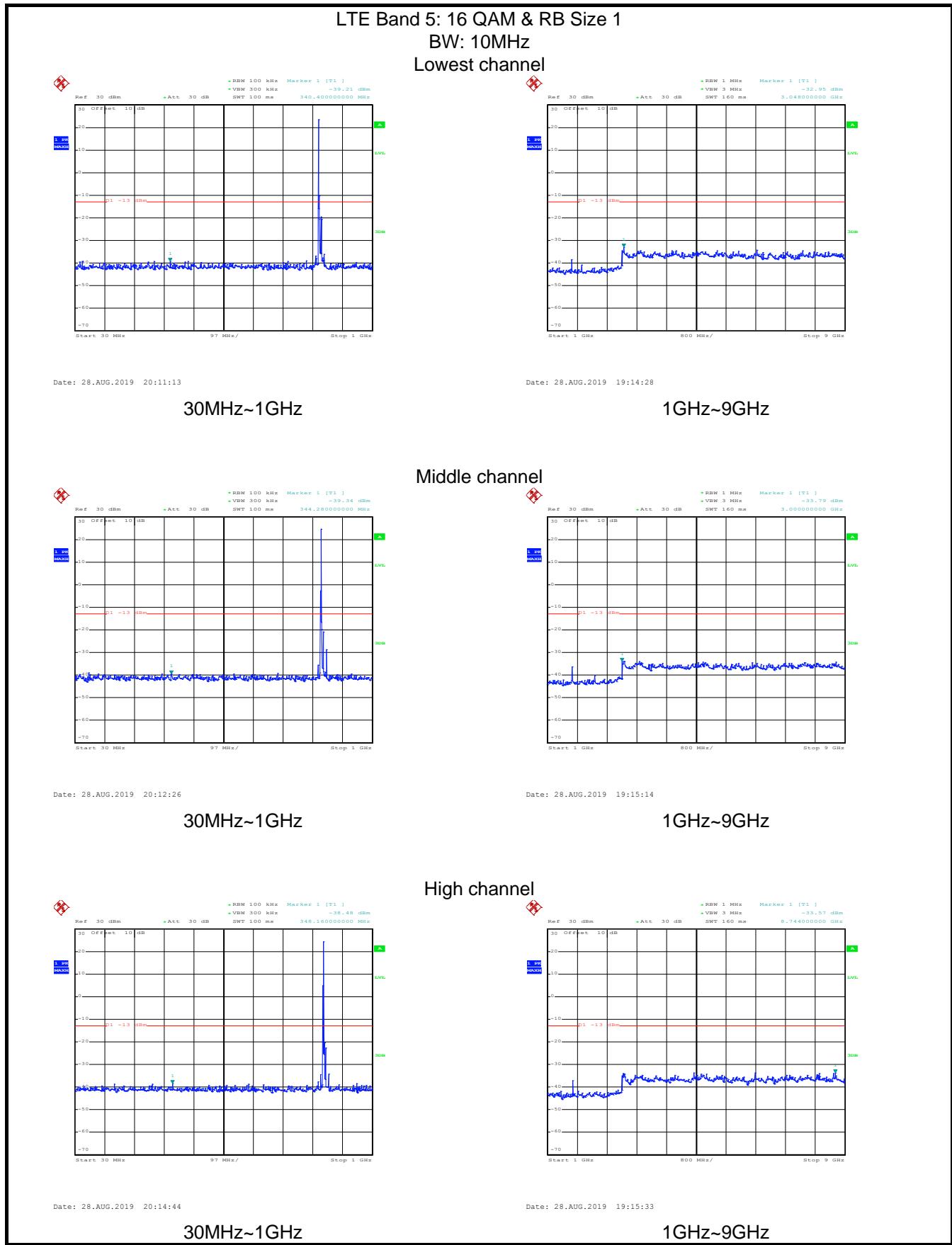


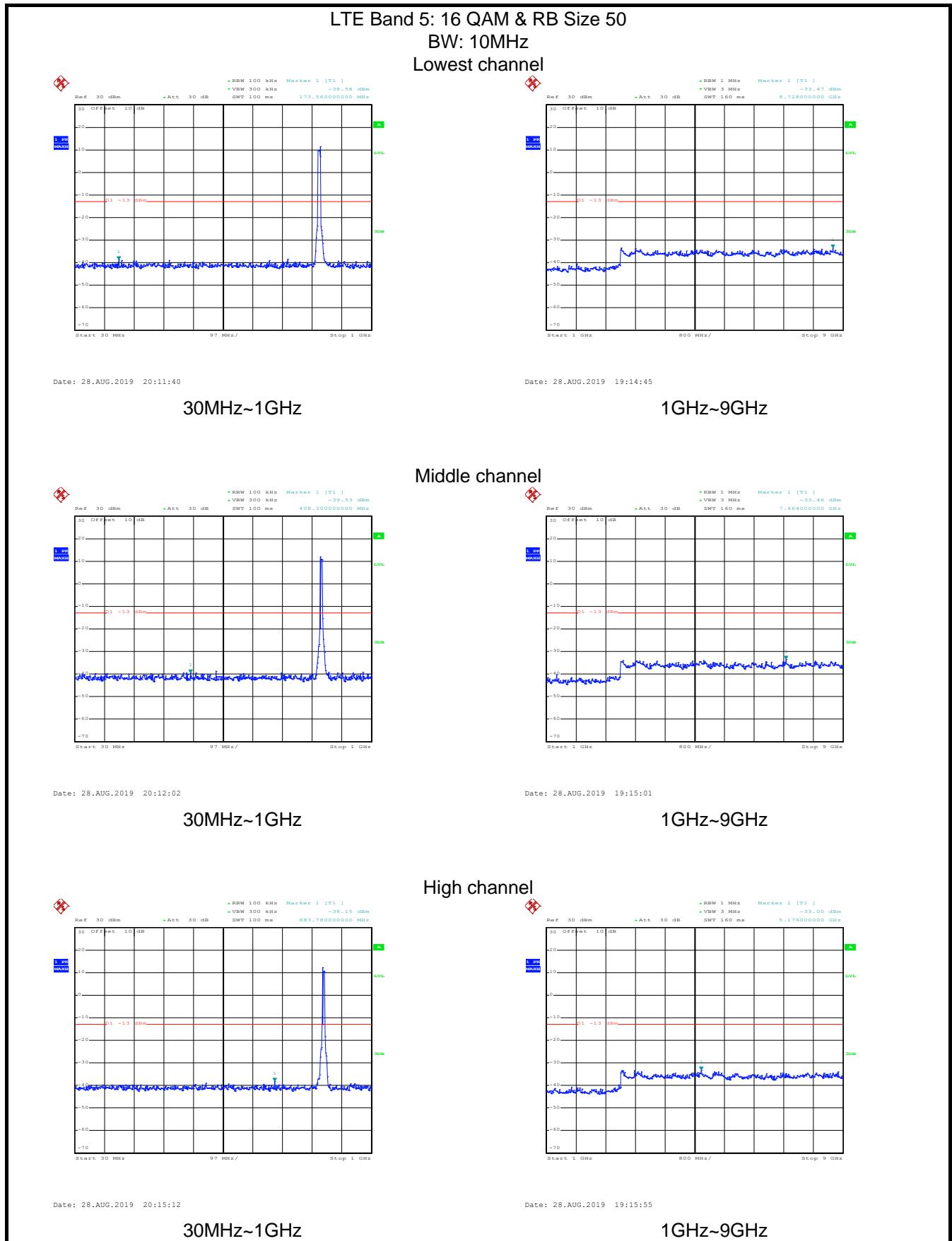


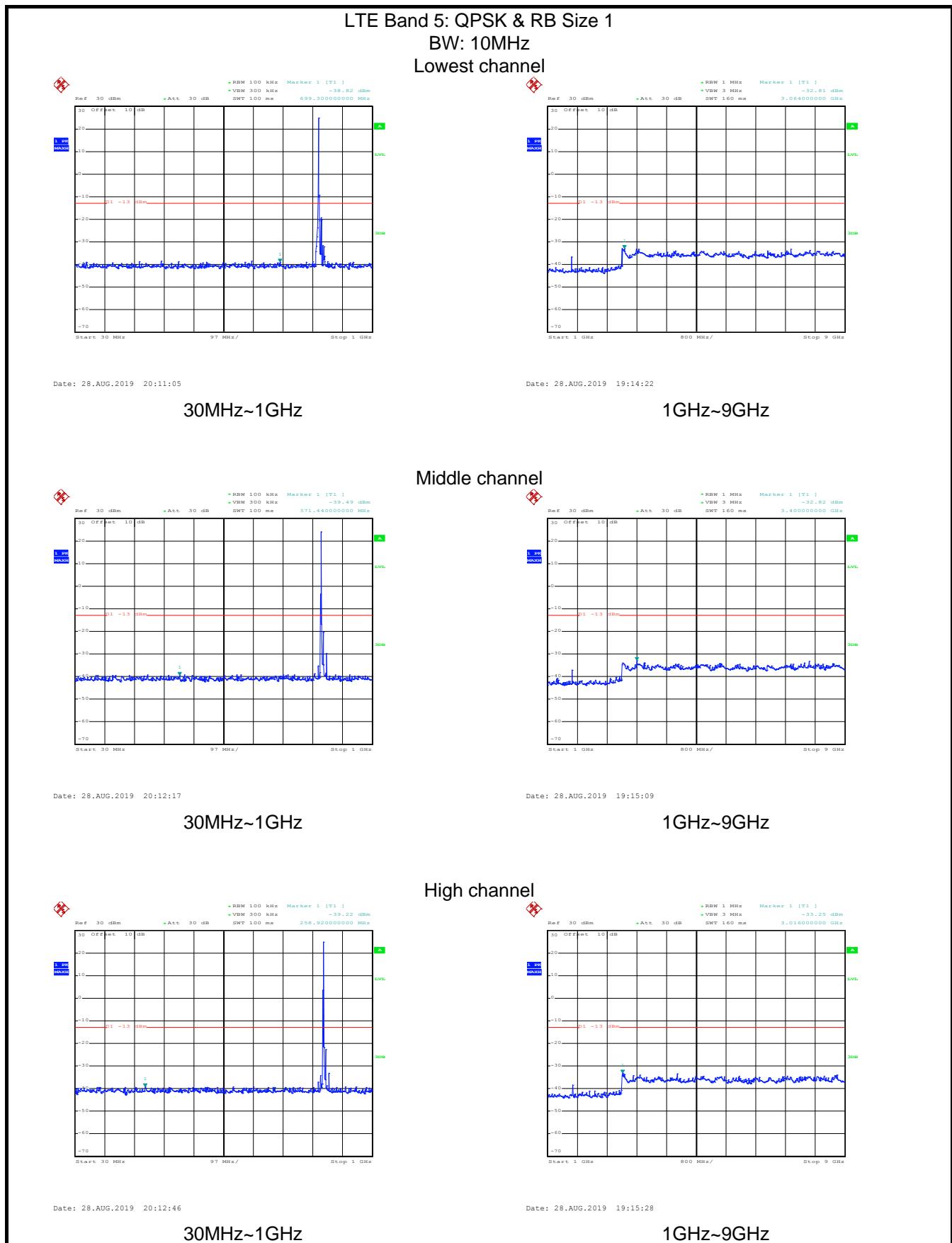


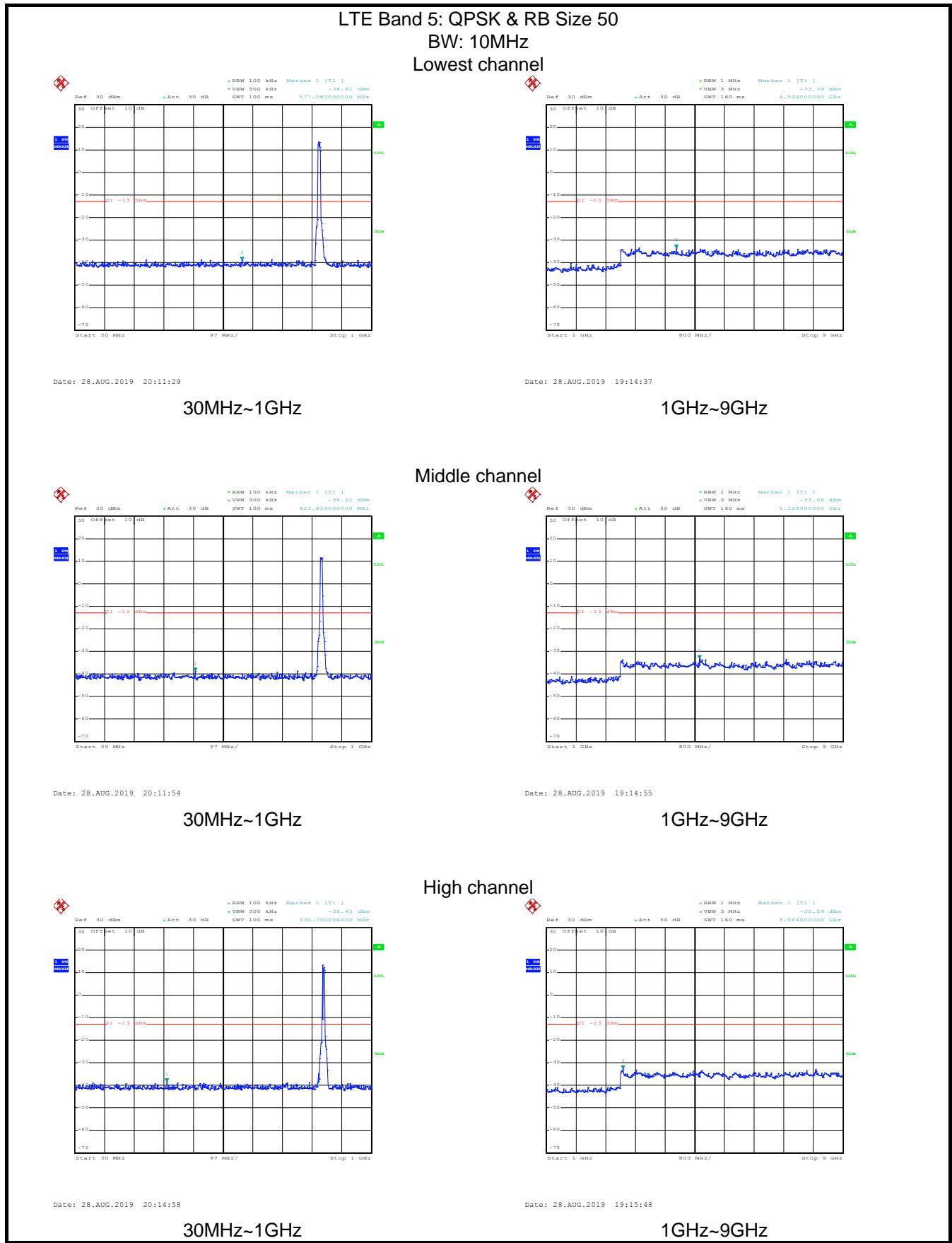




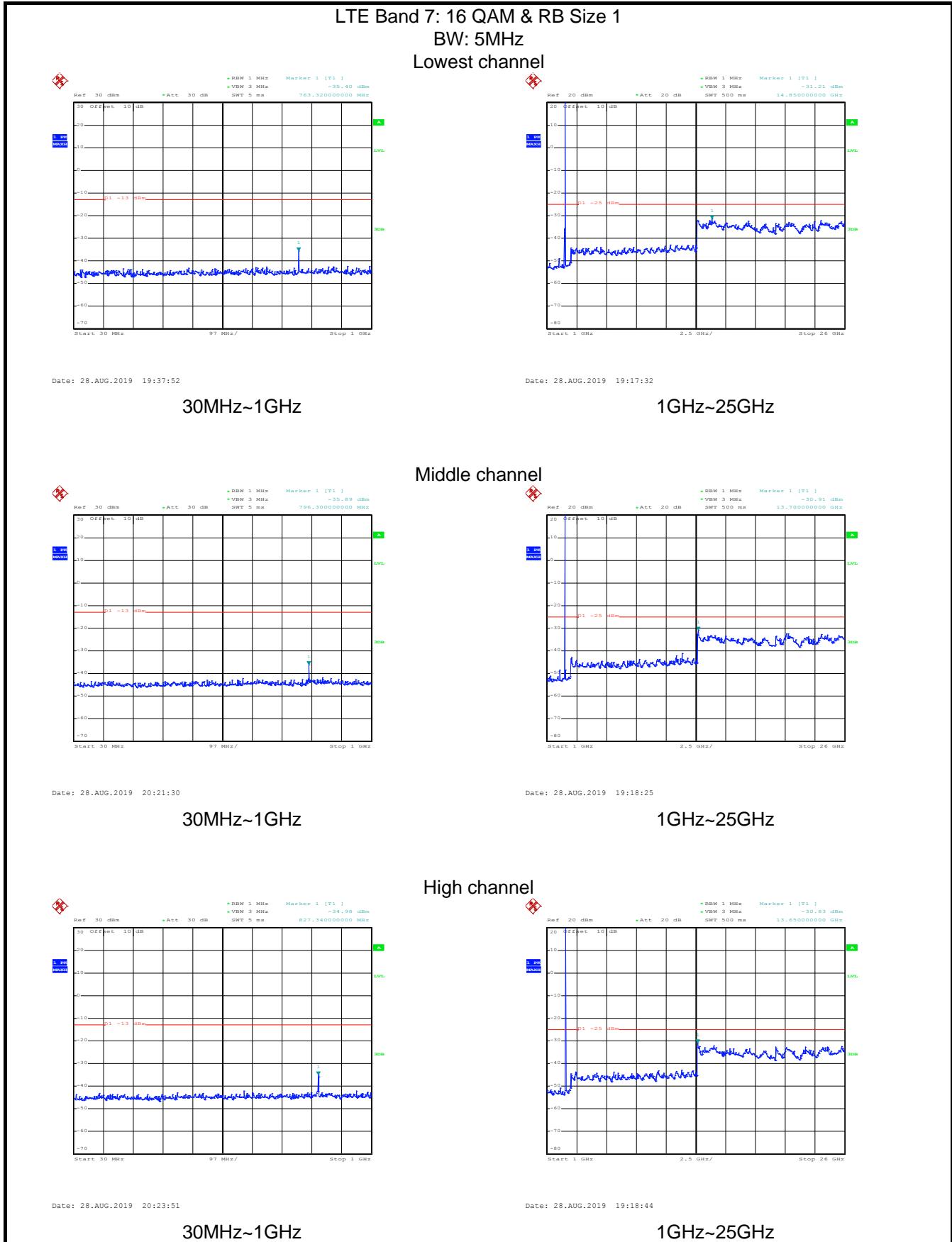


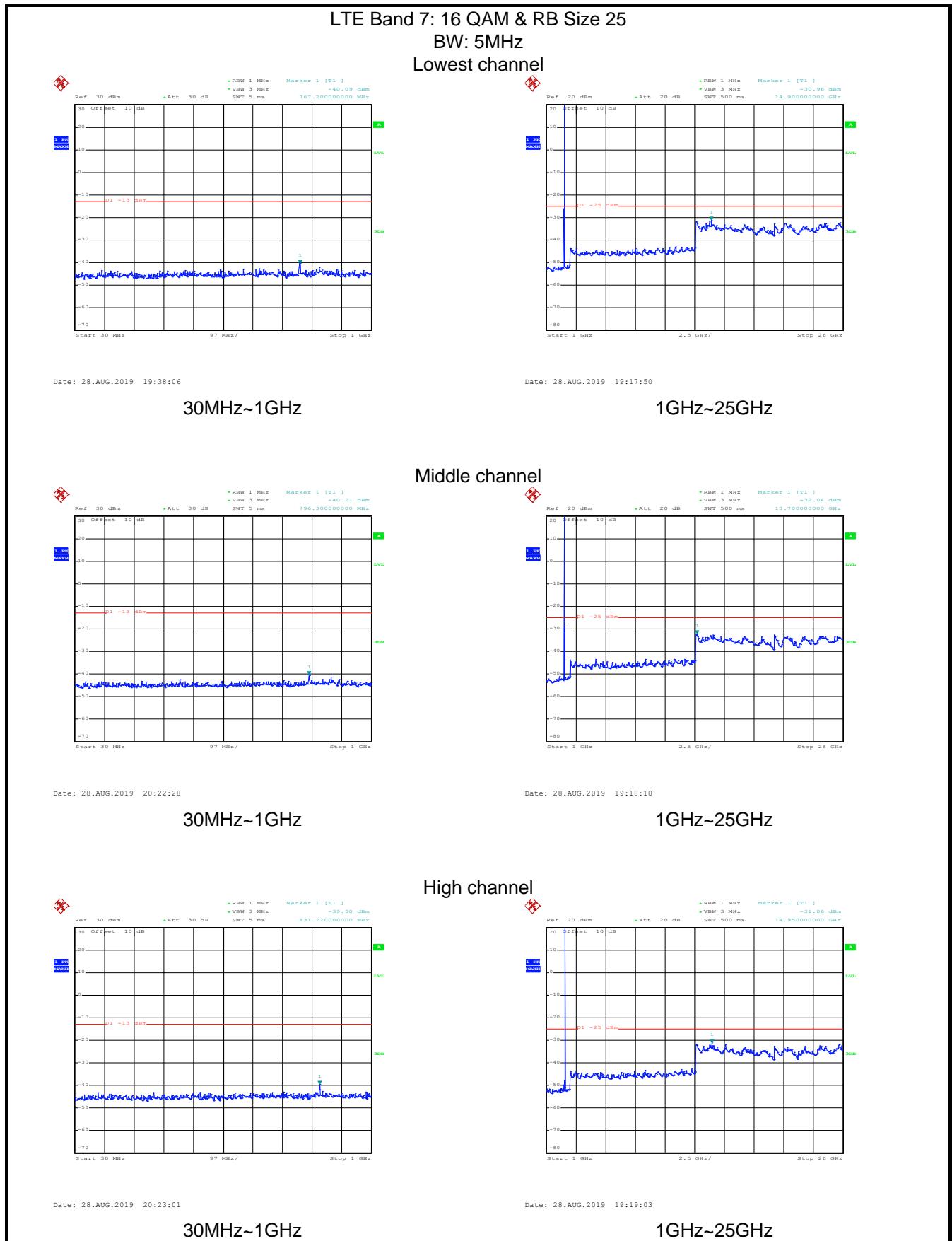






LTE Band 7 part:

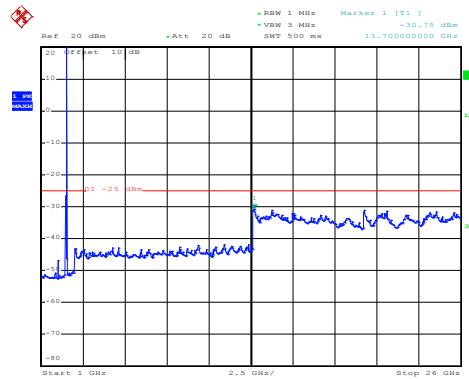
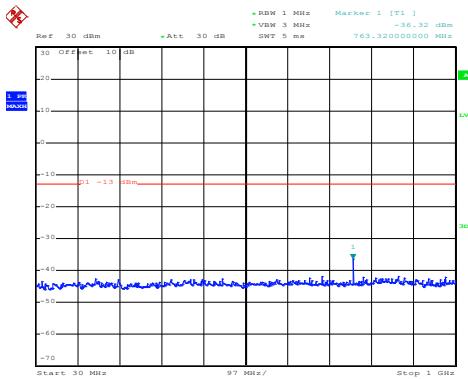




LTE Band 7: QPSK & RB Size 1

BW: 5MHz

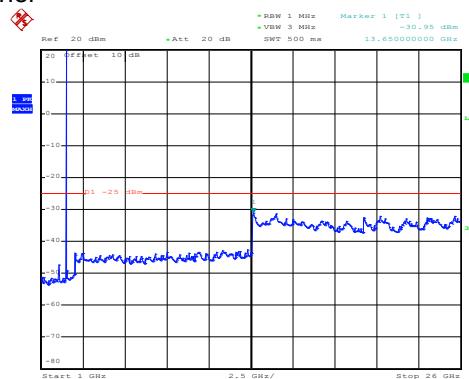
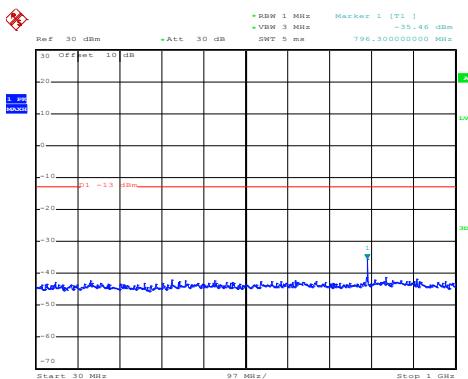
Lowest channel



30MHz~1GHz

1GHz~25GHz

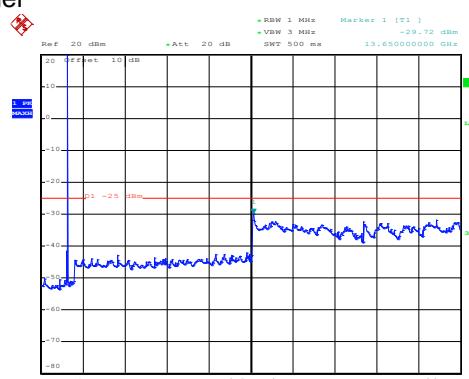
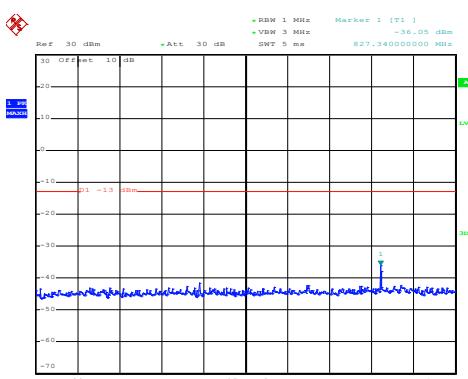
Middle channel



30MHz~1GHz

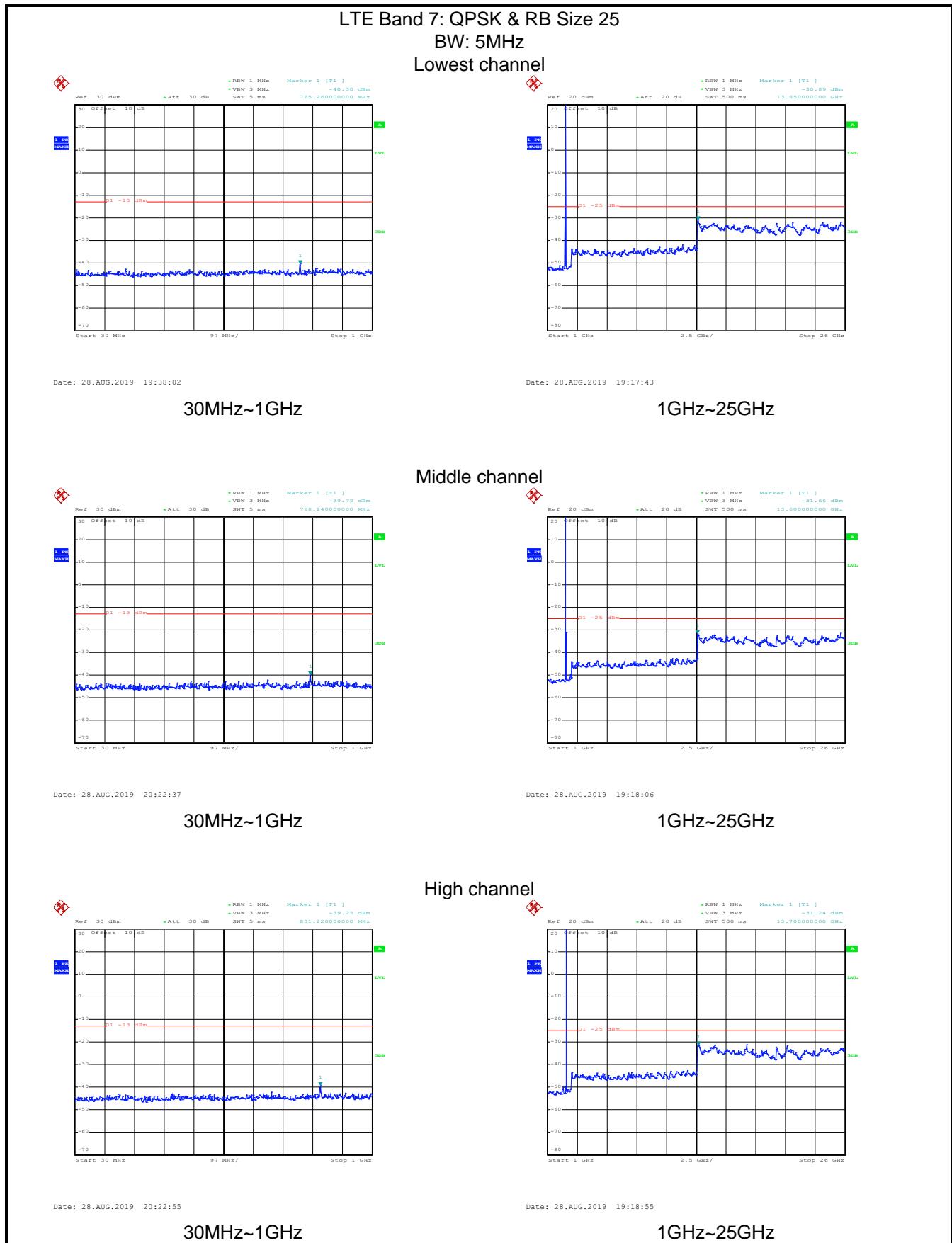
1GHz~25GHz

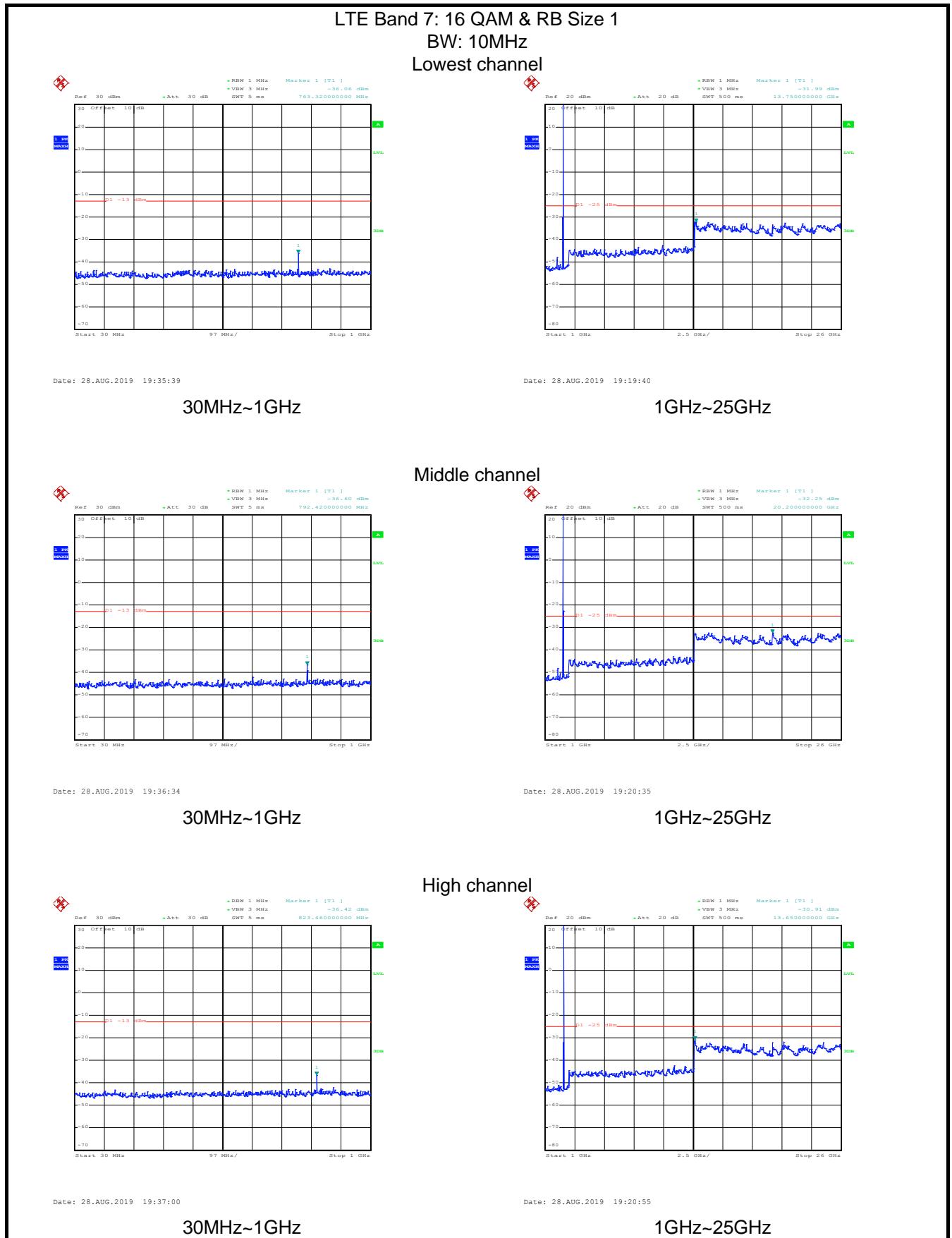
High channel

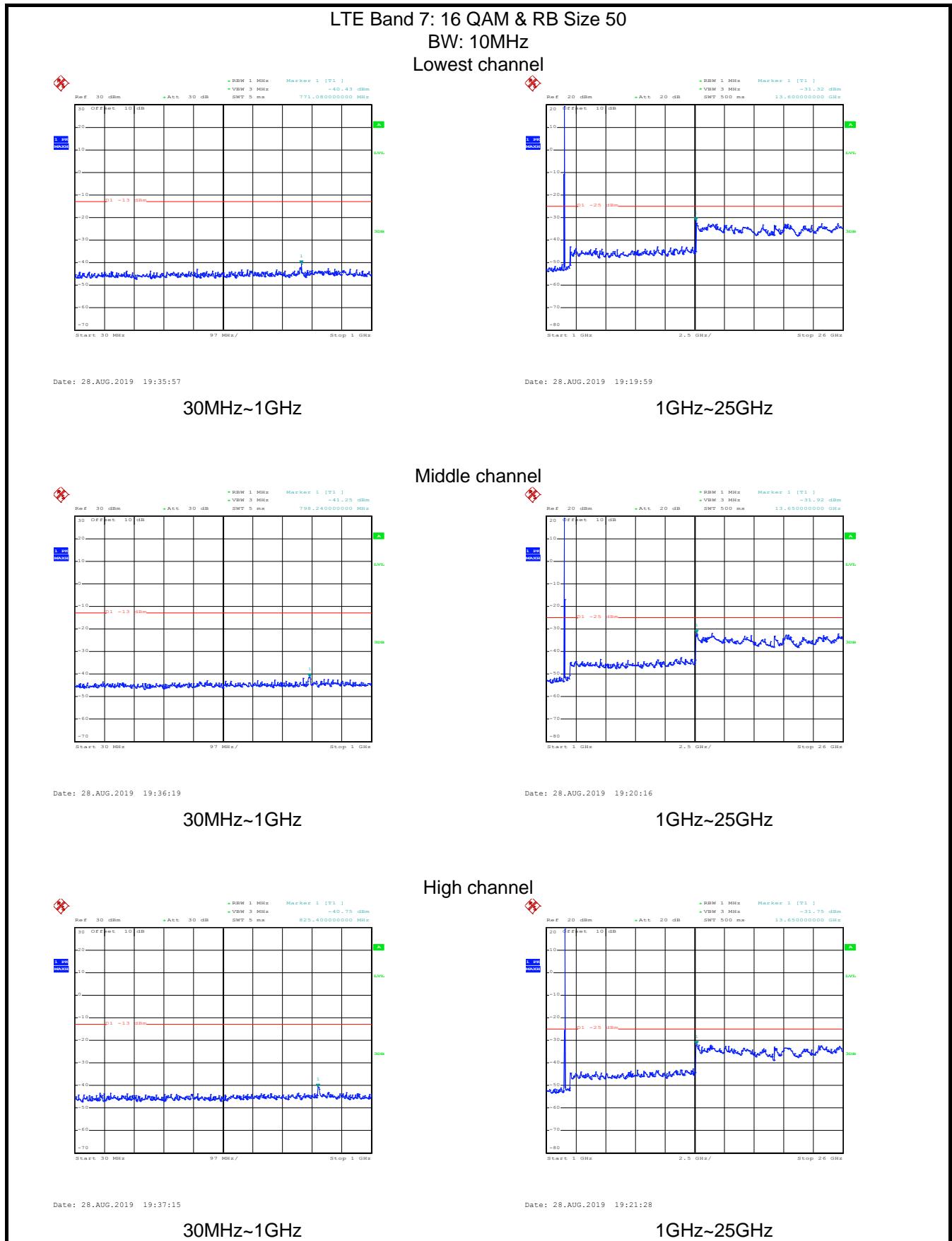


30MHz~1GHz

1GHz~25GHz



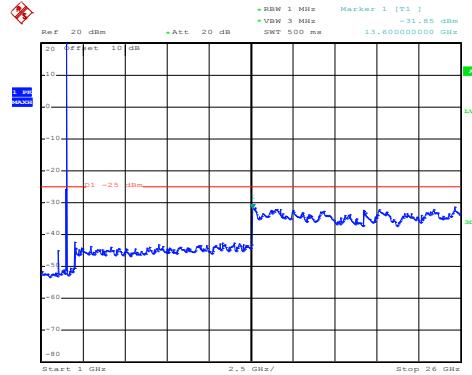
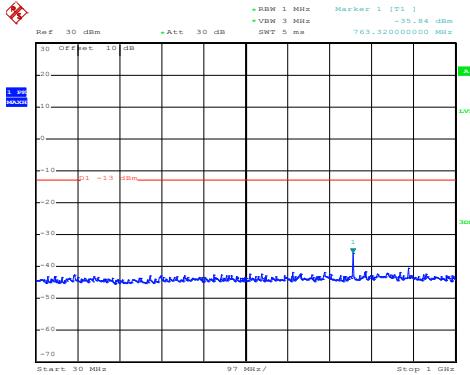




LTE Band 7: QPSK & RB Size 1

BW: 10MHz

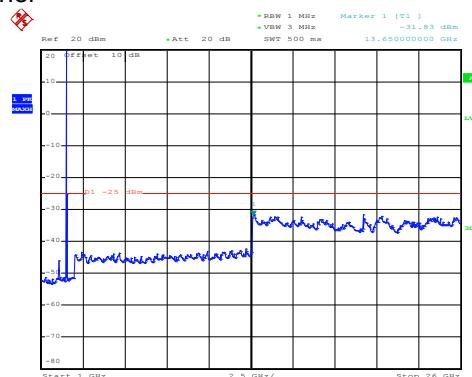
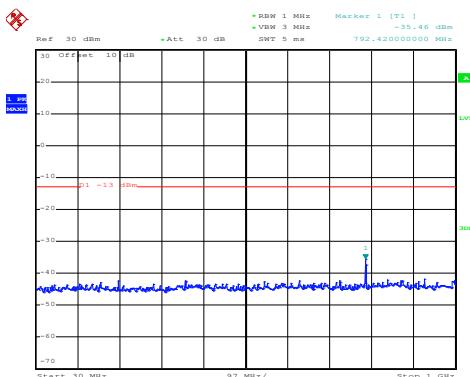
Lowest channel



30MHz~1GHz

1GHz~25GHz

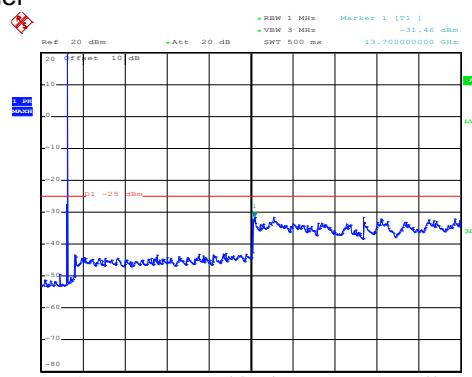
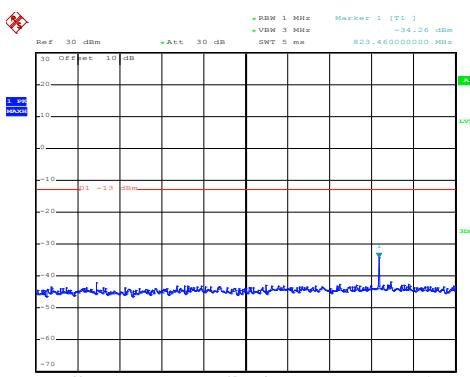
Middle channel



30MHz~1GHz

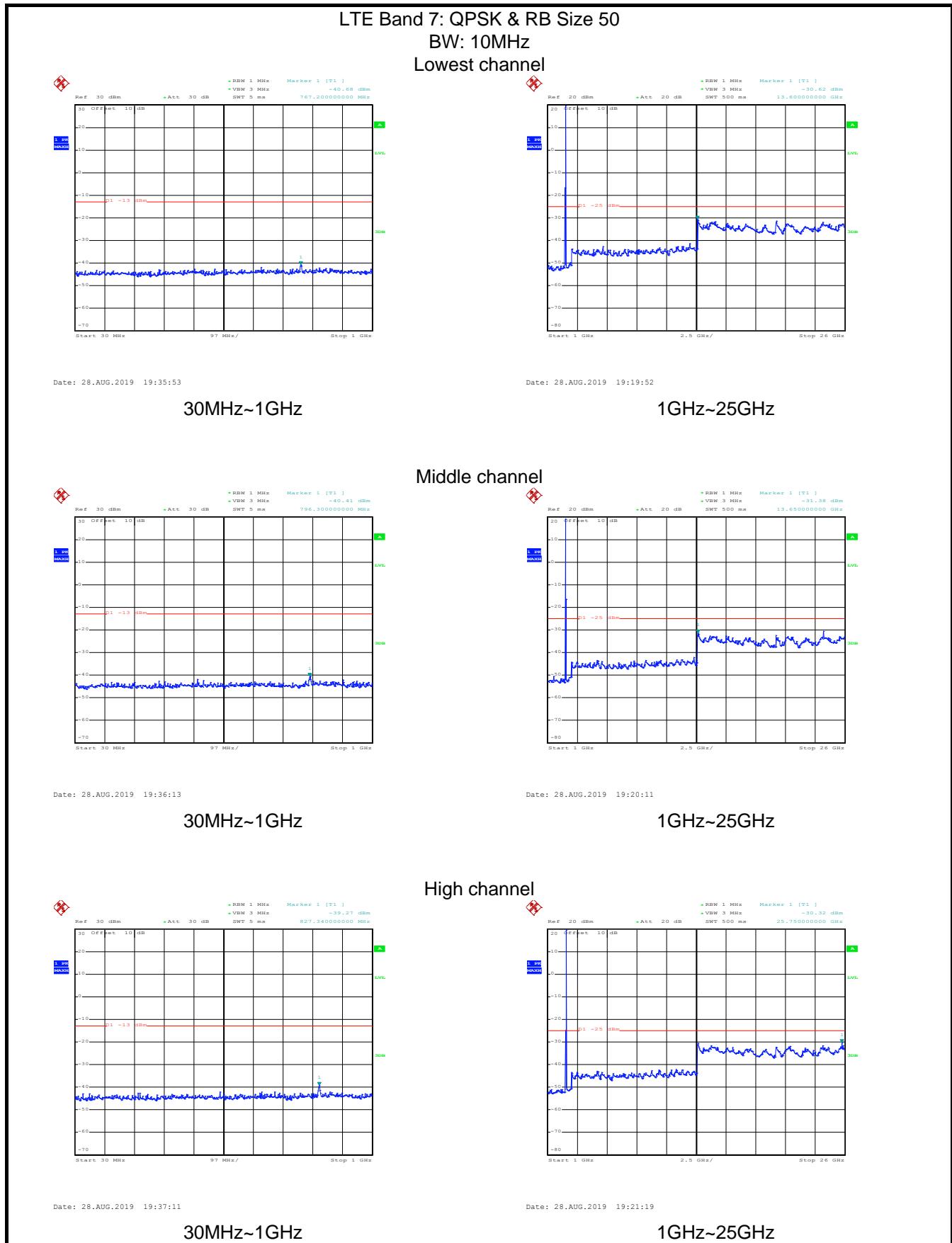
1GHz~25GHz

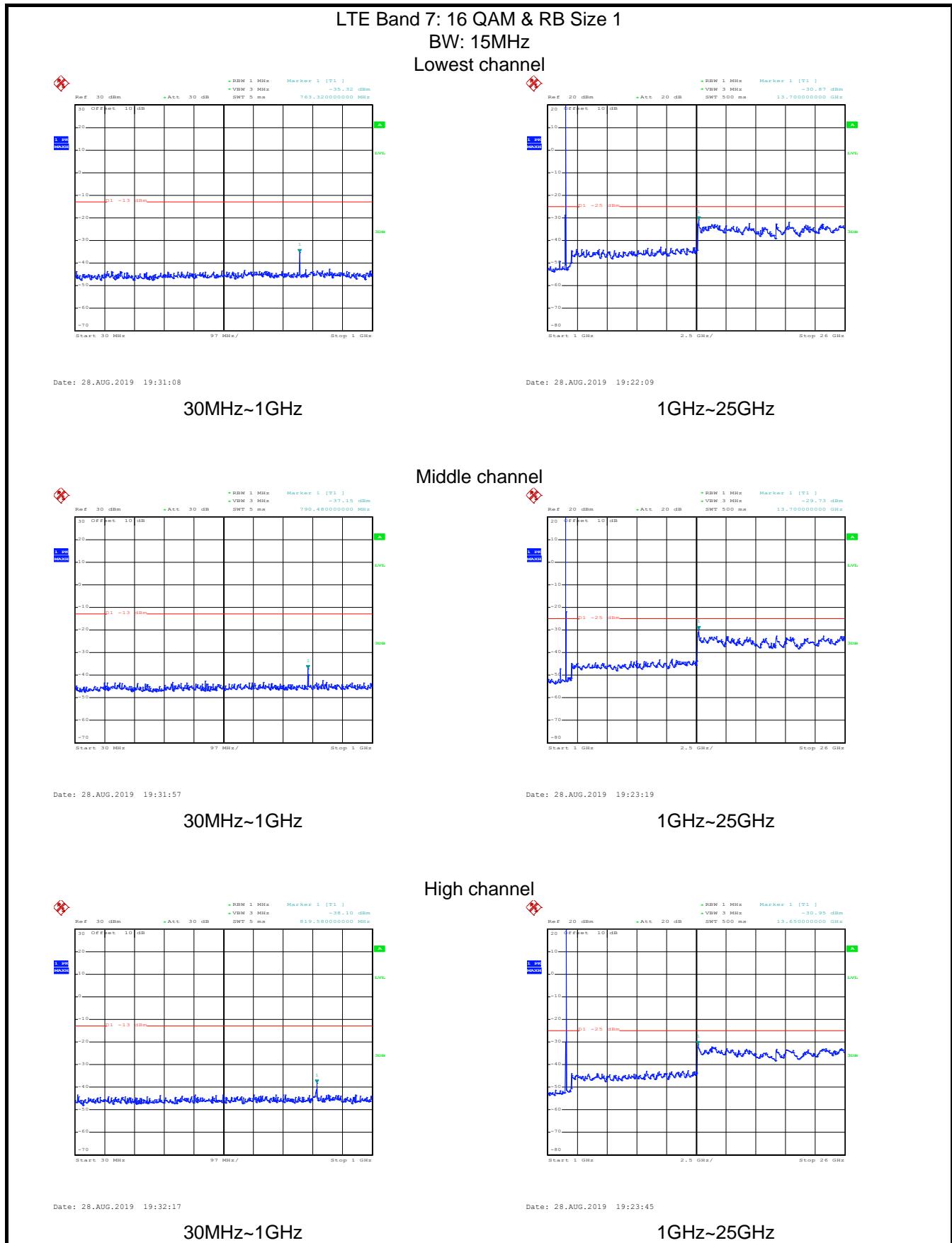
High channel

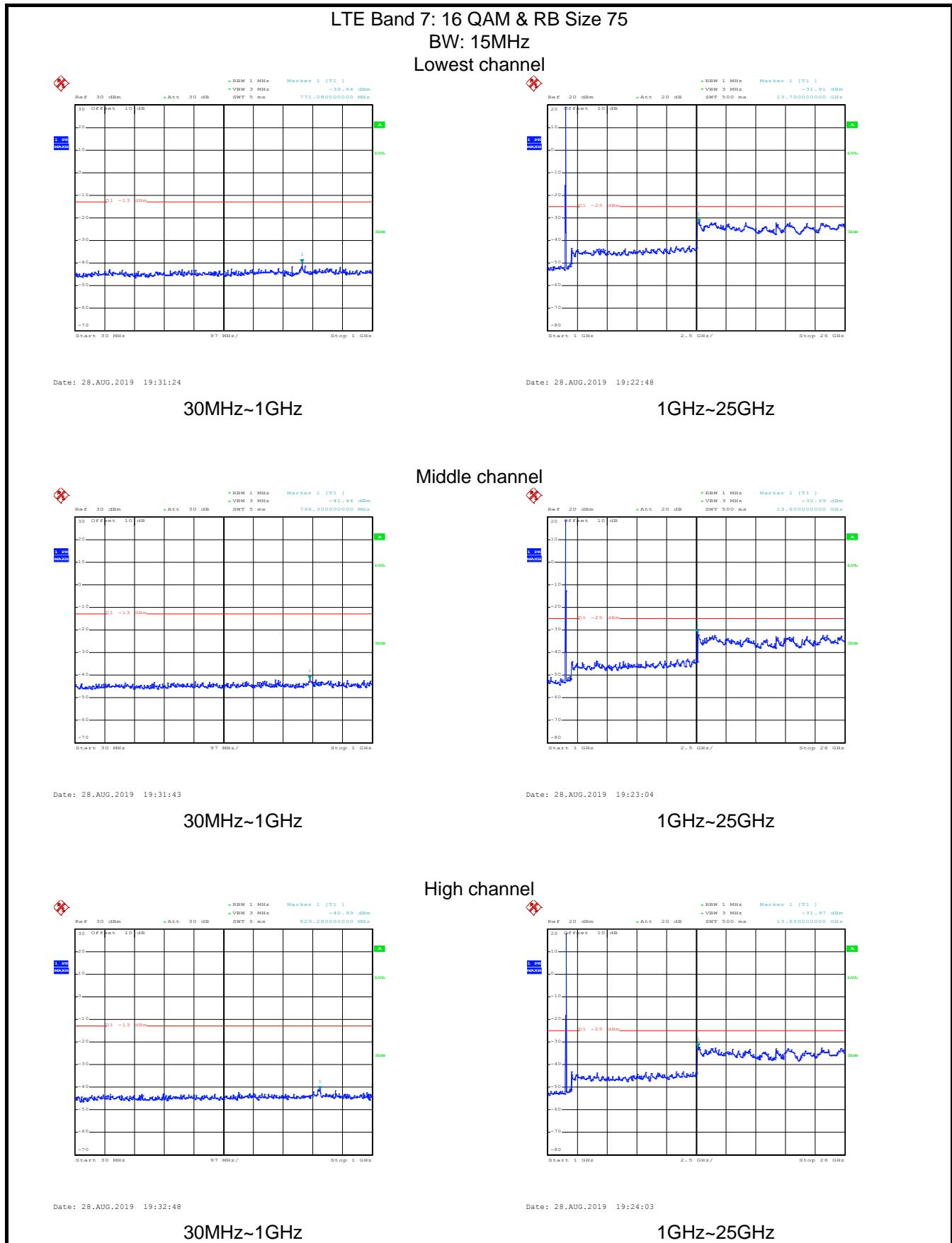


30MHz~1GHz

1GHz~25GHz



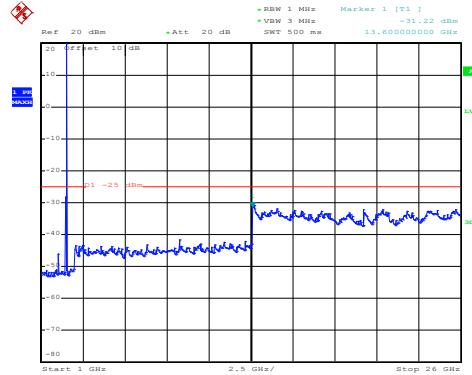
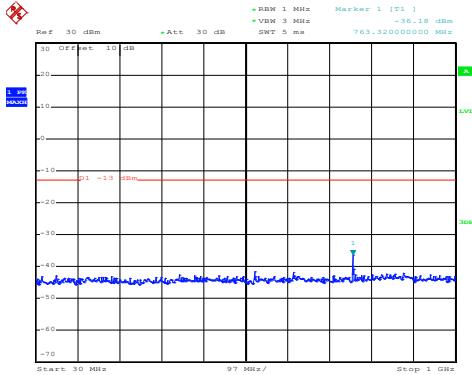




LTE Band 7: QPSK & RB Size 1

BW: 15MHz

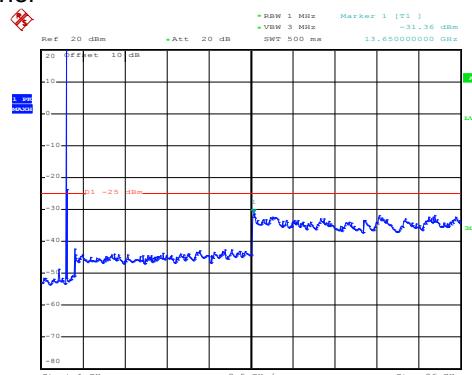
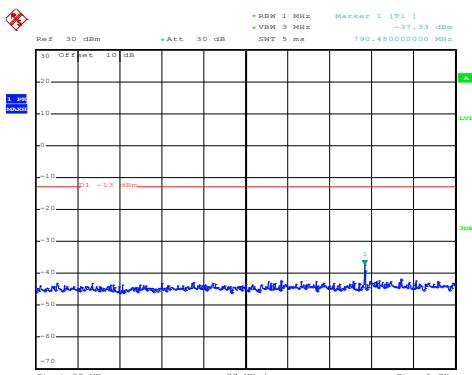
Lowest channel



30MHz~1GHz

1GHz~25GHz

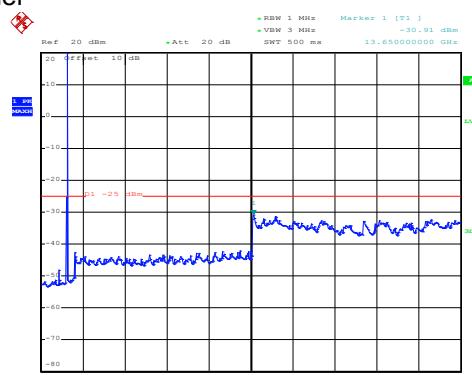
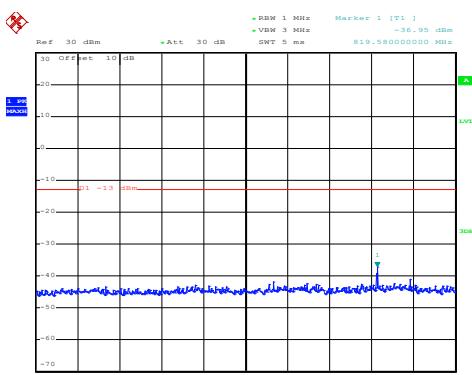
Middle channel



30MHz~1GHz

1GHz~25GHz

High channel



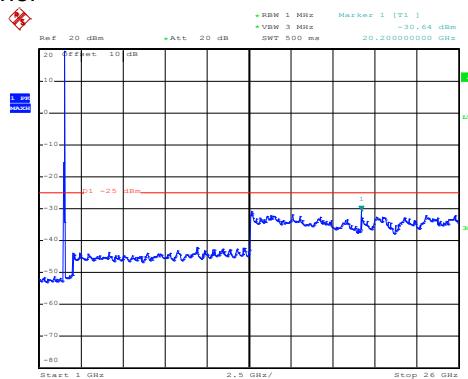
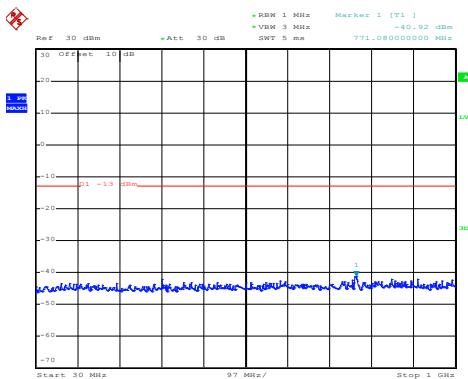
30MHz~1GHz

1GHz~25GHz



BW: 15MHz

Lowest channel

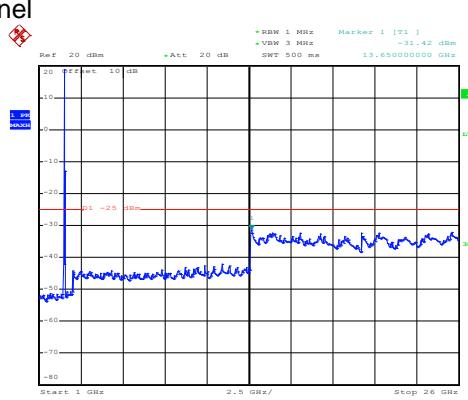
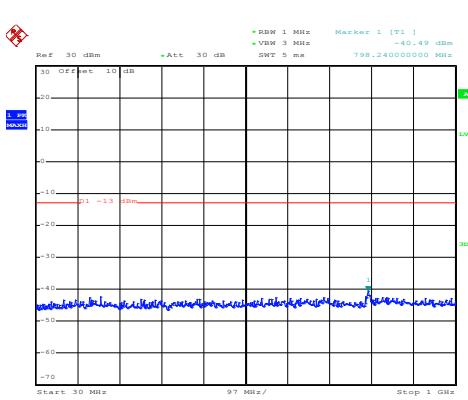
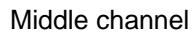


Date: 28.AUG.2019 19:31:16

30MHz~1GHz

Date: 28.AUG.2019 19:22:23

1GHz~25GHz

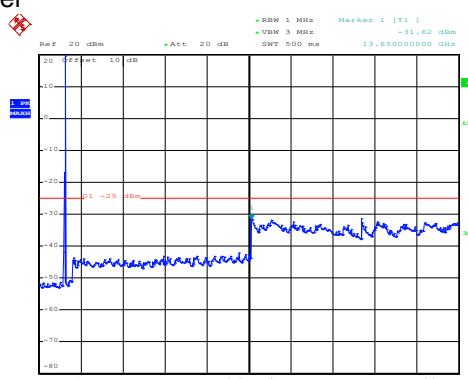
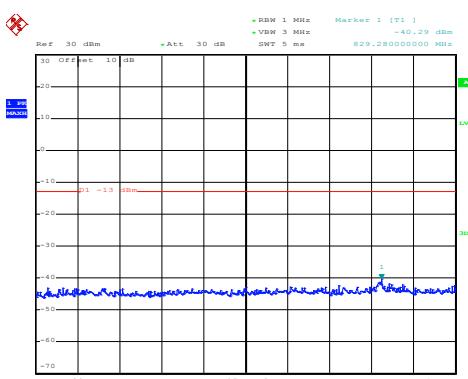
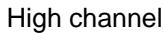


Date: 28.AUG.2019 19:31:36

30MHz~1GHz

Date: 28.AUG.2019 19:22:59

1GHz~25GHz



Date: 28.AUG.2019 19:32:26

30MHz~1GHz

Date: 28.AUG.2019 19:23:57

1GHz~25GHz