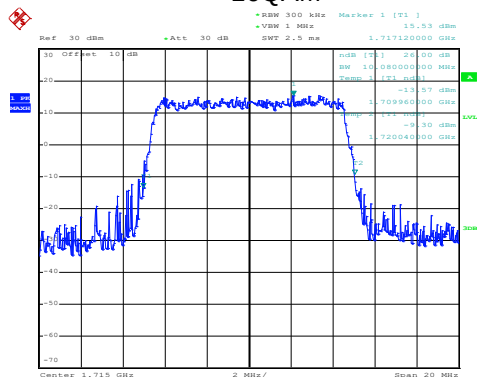


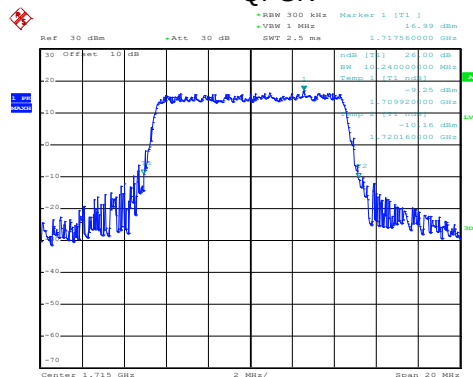
LTE Band 4: -26dBc bandwidth
BW: 10MHz

16QAM



Date: 6.AUG.2020 15:11:53

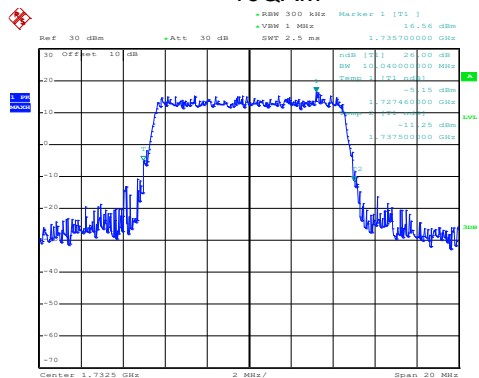
QPSK



Date: 6.AUG.2020 15:11:50

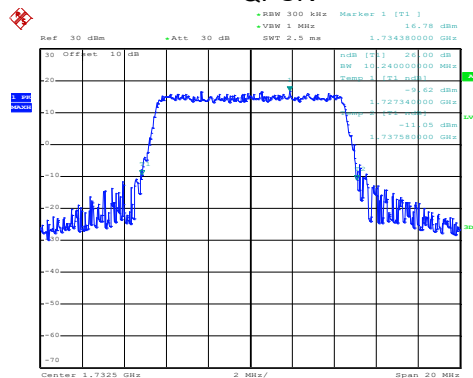
Lowest channel

16QAM



Date: 6.AUG.2020 15:12:25

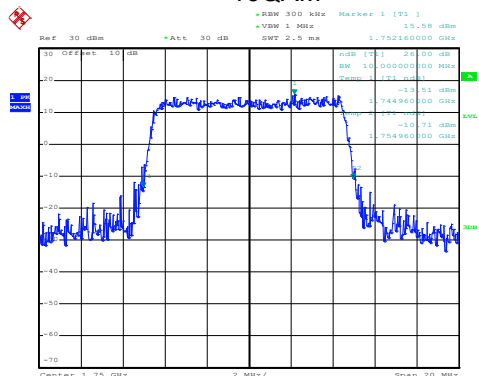
QPSK



Date: 6.AUG.2020 15:12:21

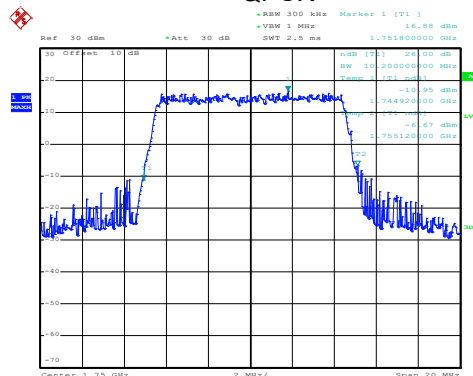
Middle channel

16QAM



Date: 6.AUG.2020 15:12:49

QPSK



Date: 6.AUG.2020 15:12:46

Highest channel

16QAM



QPSK



Lowest channel

16QAM



QPSK



Middle channel

16QAM



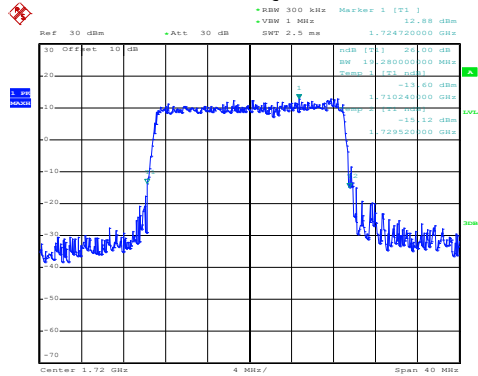
QPSK



Highest channel

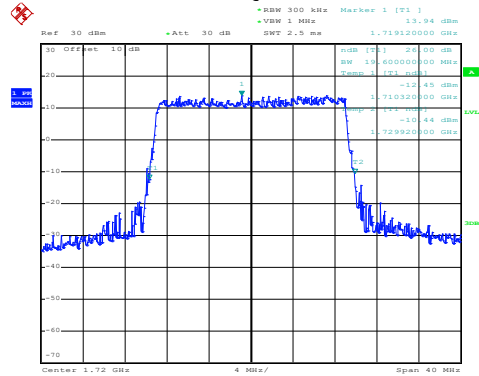
LTE Band 4: -26dBc bandwidth
BW: 20MHz

16QAM



Date: 6.AUG.2020 15:14:42

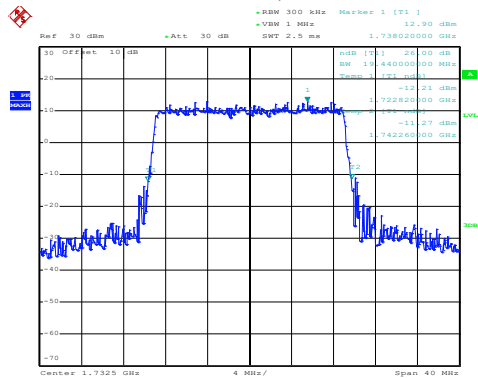
QPSK



Date: 6.AUG.2020 15:14:39

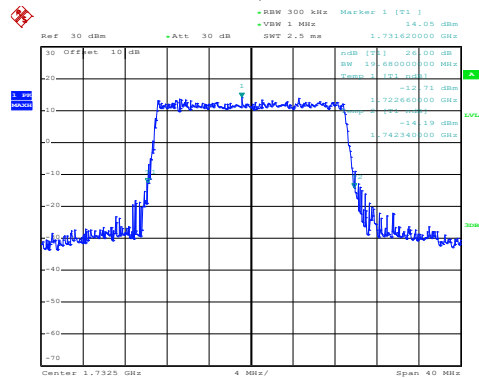
Lowest channel

16QAM



Date: 6.AUG.2020 15:15:13

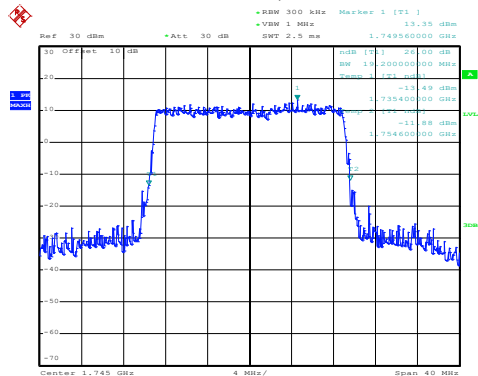
QPSK



Date: 6.AUG.2020 15:15:09

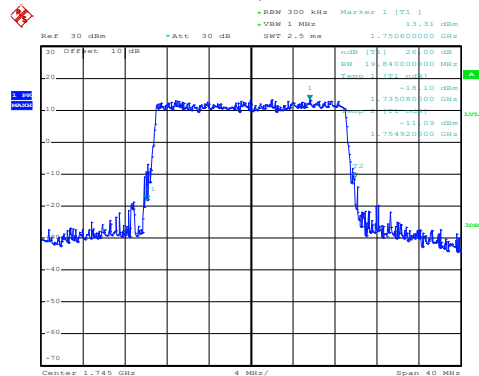
Middle channel

16QAM



Date: 6.AUG.2020 15:15:24

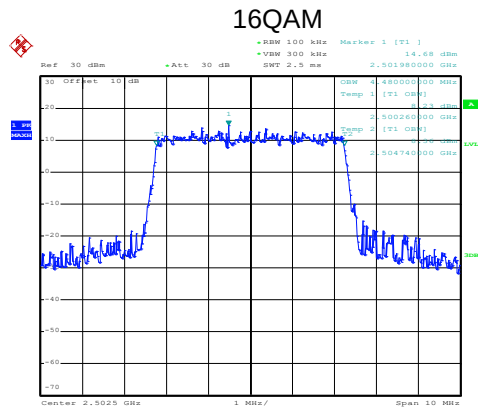
QPSK



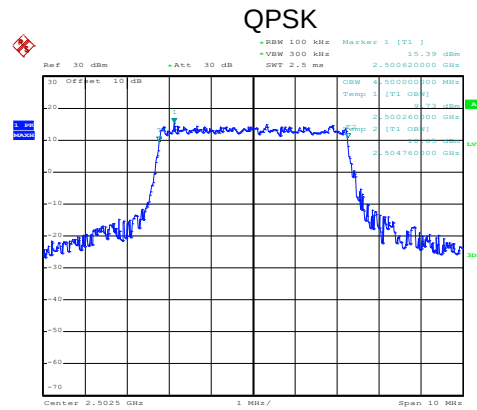
Date: 6.AUG.2020 15:15:20

Highest channel

LTE-Band 7 part:

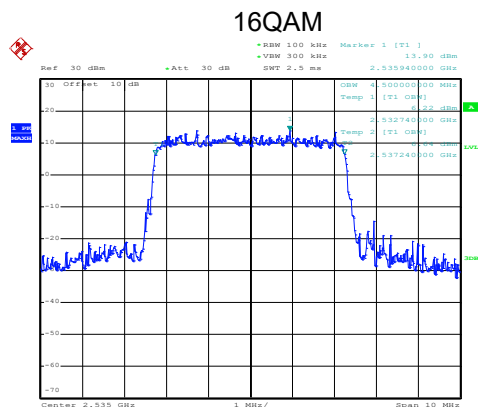
LTE Band 7: 99% Occupancy bandwidth
BW: 5MHz

Date: 6.AUG.2020 15:01:32

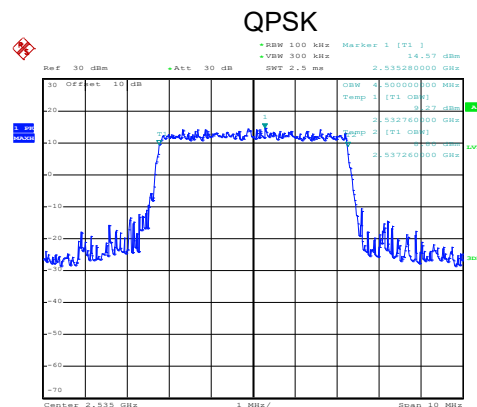


Date: 6.AUG.2020 15:01:29

Lowest channel

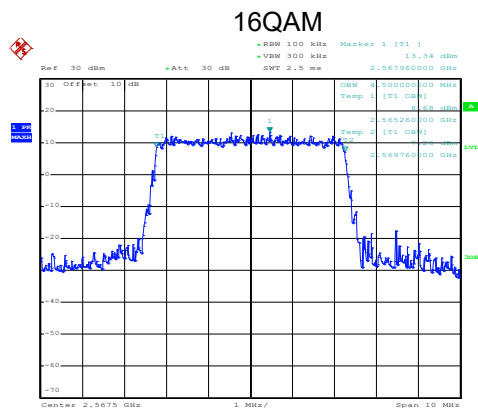


Date: 6.AUG.2020 15:02:01

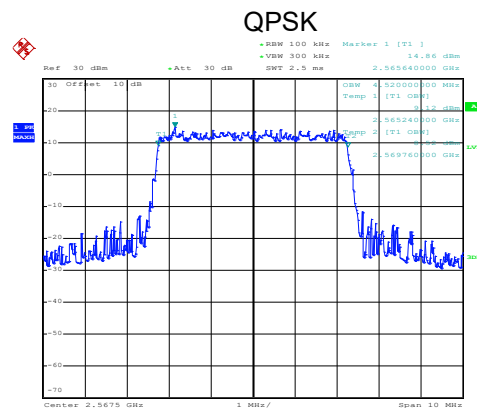


Date: 6.AUG.2020 15:01:57

Middle channel



Date: 6.AUG.2020 15:02:12

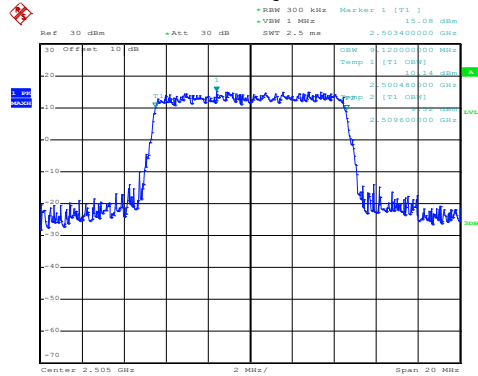


Date: 6.AUG.2020 15:02:09

Highest channel

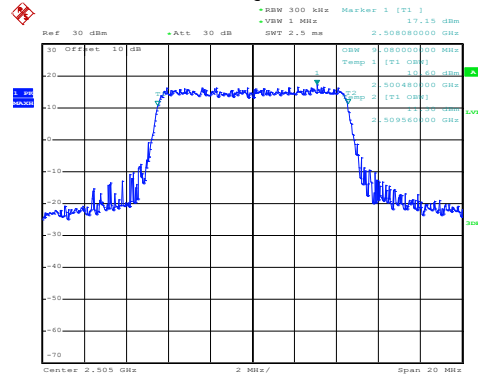
LTE Band 7: 99% Occupancy bandwidth
BW: 10MHz

16QAM



Date: 6.AUG.2020 15:02:54

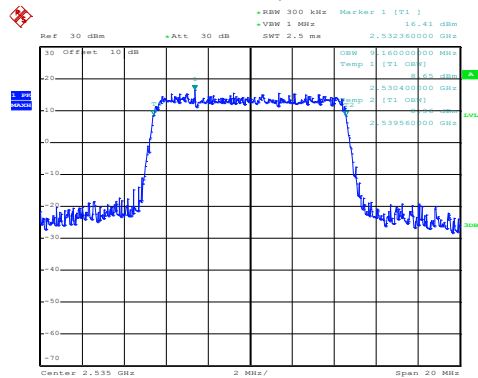
QPSK



Date: 6.AUG.2020 15:02:51

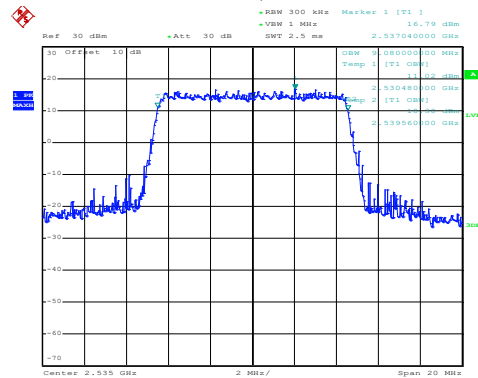
Lowest channel

16QAM



Date: 6.AUG.2020 15:03:05

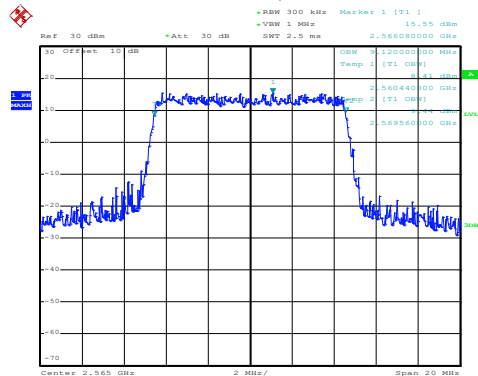
QPSK



Date: 6.AUG.2020 15:03:02

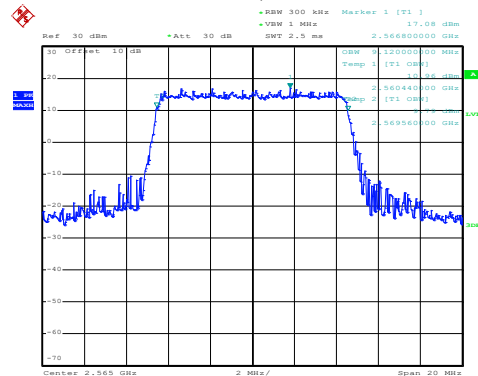
Middle channel

16QAM



Date: 6.AUG.2020 15:03:37

QPSK

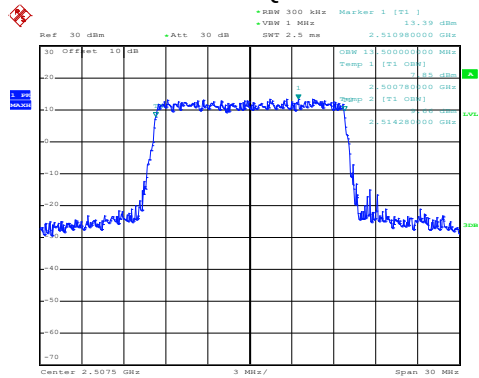


Date: 6.AUG.2020 15:03:34

Highest channel

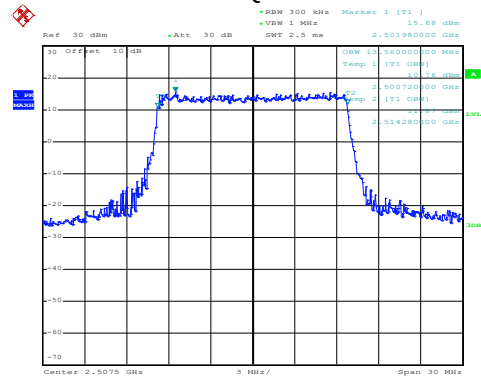
LTE Band 7: 99% Occupancy bandwidth
BW: 15MHz

16QAM



Date: 6.AUG.2020 15:04:04

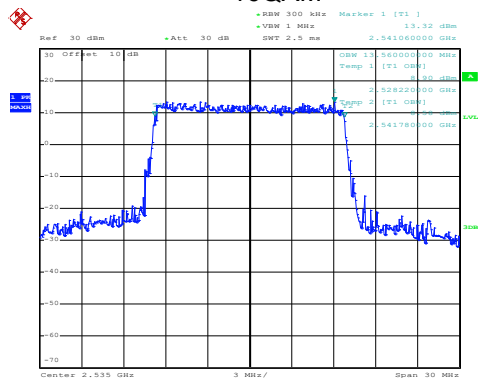
QPSK



Date: 6.AUG.2020 15:04:01

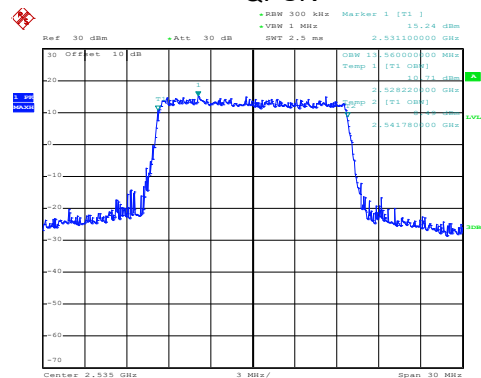
Lowest channel

16QAM



Date: 6.AUG.2020 15:04:31

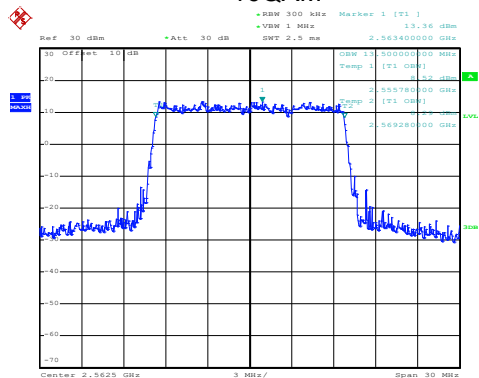
QPSK



Date: 6.AUG.2020 15:04:28

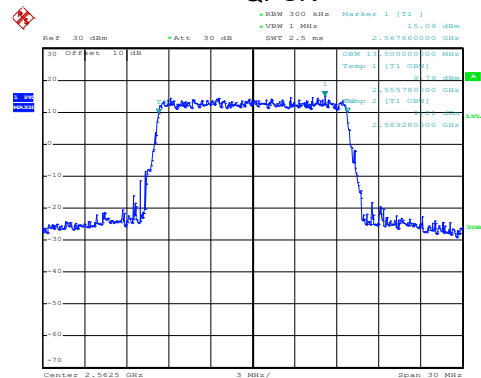
Middle channel

16QAM



Date: 6.AUG.2020 15:05:10

QPSK

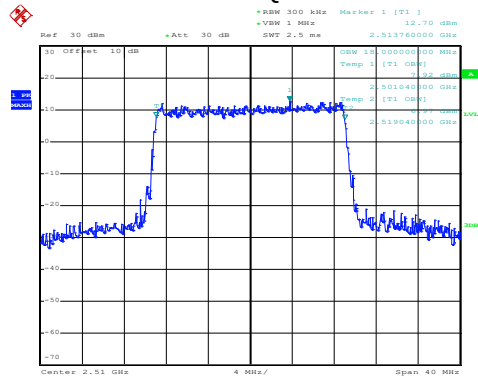


Date: 6.AUG.2020 15:05:07

Highest channel

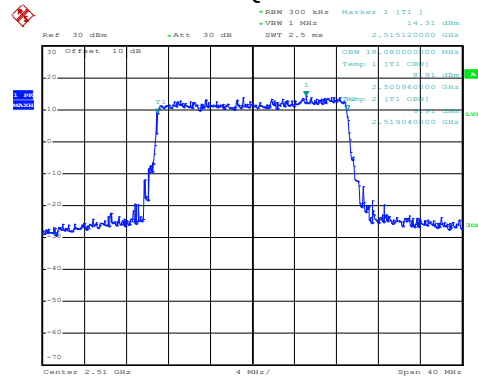
LTE Band 7: 99% Occupancy bandwidth
BW: 20MHz

16QAM



Date: 6.AUG.2020 15:05:45

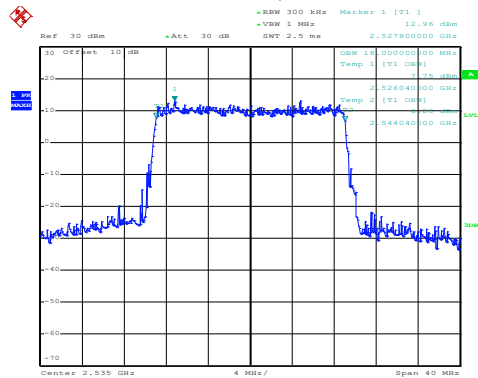
QPSK



Date: 6.AUG.2020 15:05:42

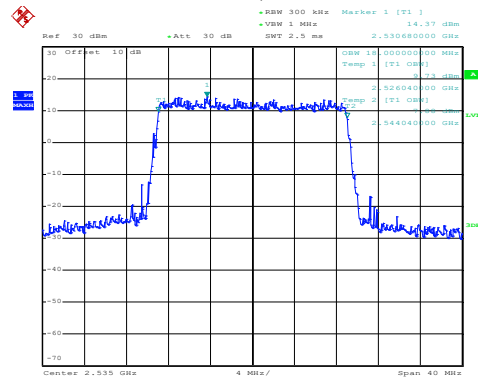
Lowest channel

16QAM



Date: 6.AUG.2020 15:06:06

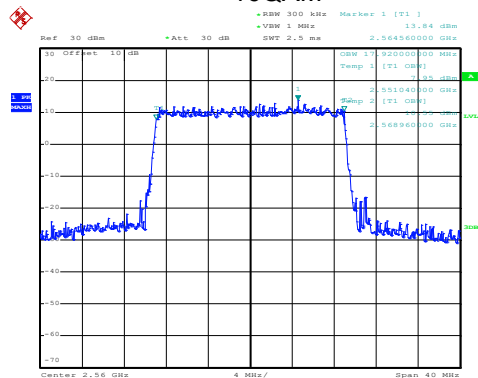
QPSK



Date: 6.AUG.2020 15:06:03

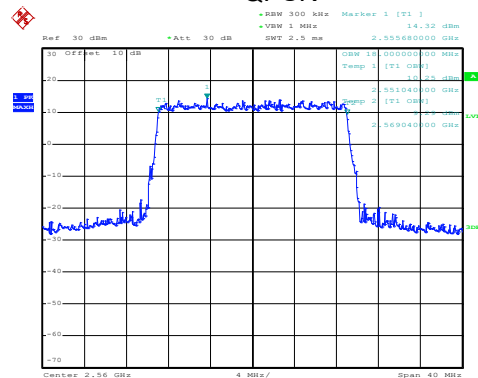
Middle channel

16QAM



Date: 6.AUG.2020 15:06:48

QPSK

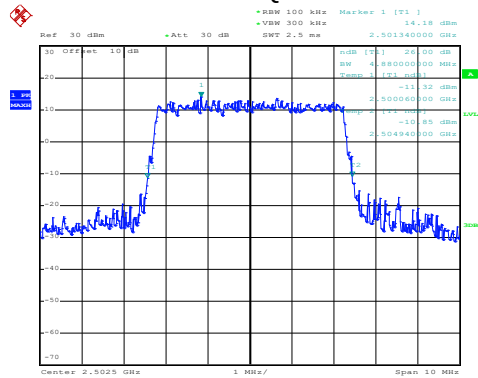


Date: 6.AUG.2020 15:06:45

Highest channel

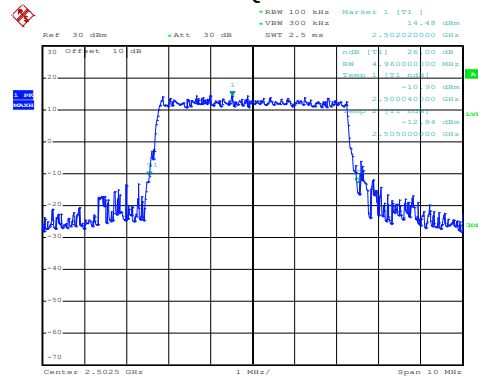
LTE Band 7: -26dBc bandwidth
BW: 5MHz

16QAM



Date: 6.AUG.2020 15:01:41

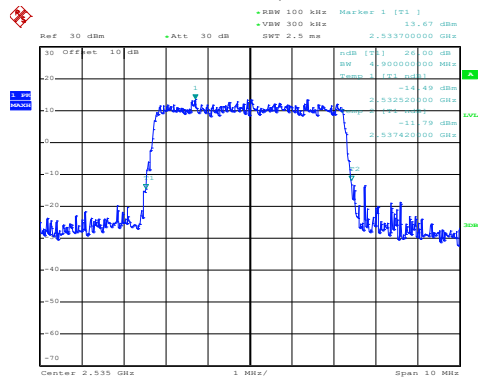
QPSK



Date: 6.AUG.2020 15:01:38

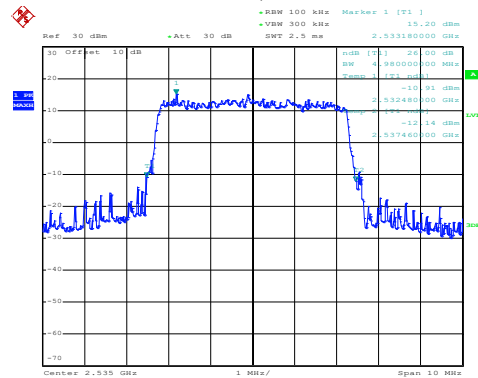
Lowest channel

16QAM



Date: 6.AUG.2020 15:01:52

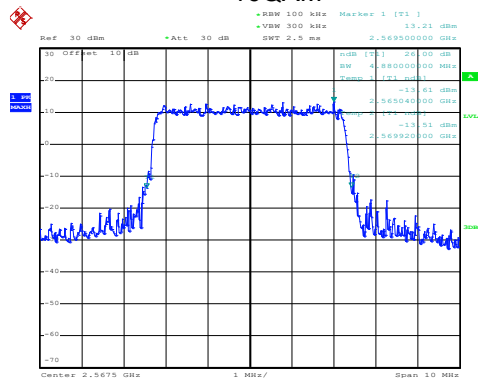
QPSK



Date: 6.AUG.2020 15:01:49

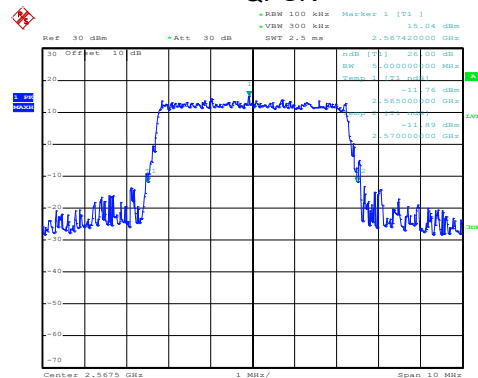
Middle channel

16QAM



Date: 6.AUG.2020 15:02:21

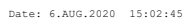
QPSK



Date: 6.AUG.2020 15:02:18

Highest channel

16QAM



Date: 6.AUG.2020 15:02:42

16QAM



Date: 6.AUG.2020 15:03:11

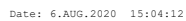
16QAM



Date: 6.AUG.2020 15:03:26

Page 57 of

16QAM



Date: 6.AUG.2020 15:04:09

16QAM



Date: 6.AUG.2020 15:04:20

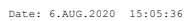
16QAM



Date: 6.AUG.2020 15:05:16

Page 58 of

16QAM



Date: 6.AUG.2020 15:05:33

16QAM



Date: 6.AUG.2020 15:06:24

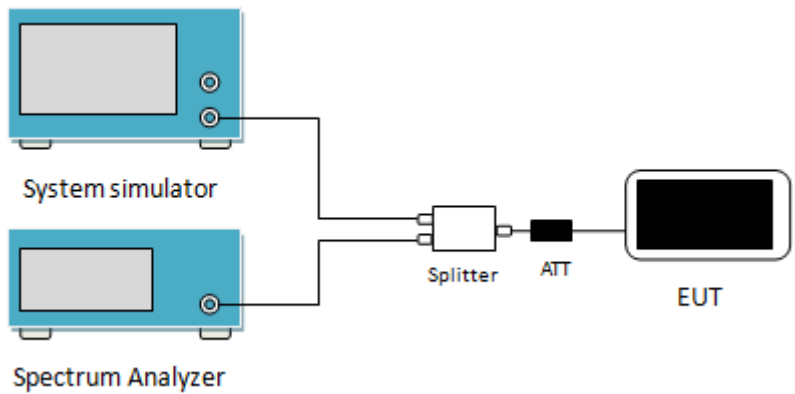
16QAM



Date: 6.AUG.2020 15:06:35

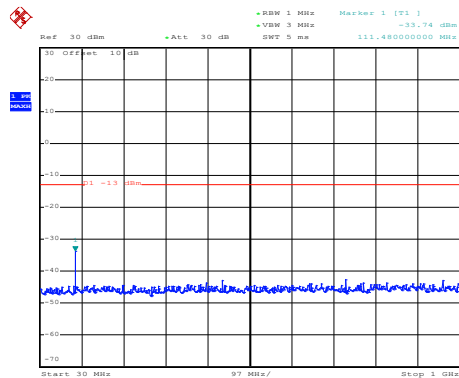
Page 59 of

6.4 Out of band emission at antenna terminals

Test Requirement:	Part 24.238 (a), part 27.53(h), Part 27.53(m)
Limit:	LTE Band 2 & 4 &: 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). 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.
Test Setup:	 The diagram illustrates the test setup. On the left, there are two blue rectangular units: the top one is labeled 'System simulator' and the bottom one is labeled 'Spectrum Analyzer'. Both have a single output port. These two ports are connected to a central 'Splitter' unit, which is a small white rectangle with two input ports and one output port. The output of the Splitter is connected to a black rectangular unit labeled 'ATT' (Attenuator). Finally, the output of the ATT is connected to a black rectangular unit labeled 'EUT' (Equipment Under Test).
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 For the out of band: For Band 5 & 12 & 17 set the RBW=100 kHz, VBW=300 kHz and for Band 2 & 4 & 7 set the RBW=1 MHz, VBW=3 MHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. 3 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 5.10 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.

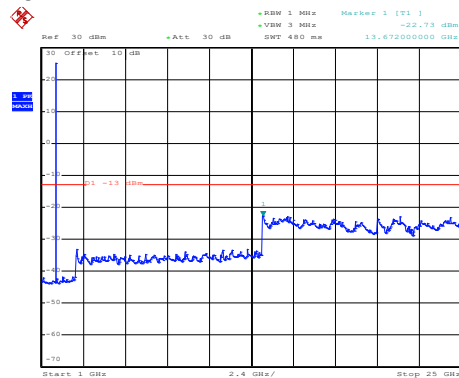
Test plots as follows (Conducted spurious emission) (worst case):
LTE Band 2 part:

LTE Band 2: 16 QAM & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 6.AUG.2020 15:27:09

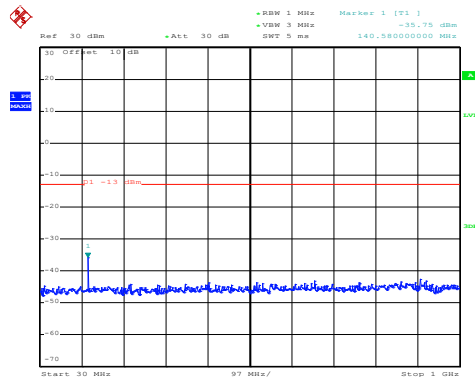
30MHz~1GHz



Date: 6.AUG.2020 15:29:02

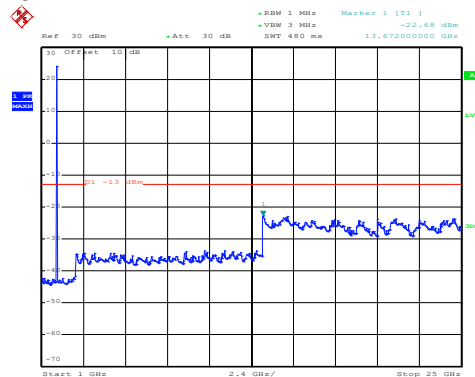
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:26:56

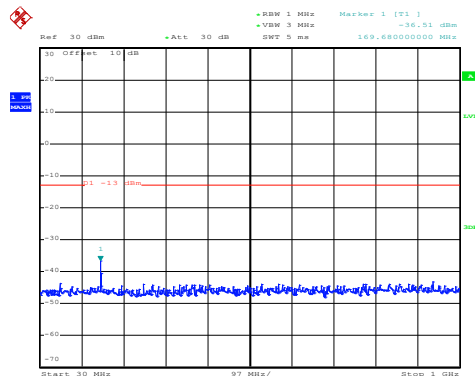
30MHz~1GHz



Date: 6.AUG.2020 15:29:42

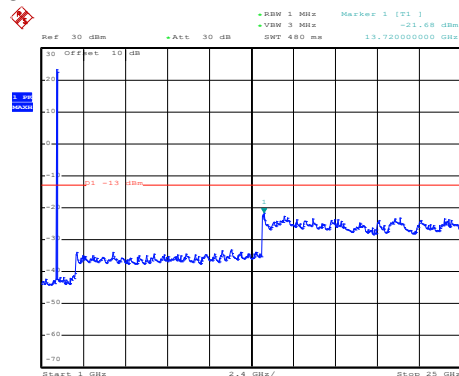
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:26:30

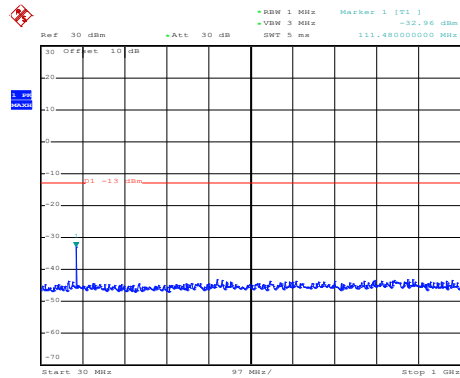
30MHz~1GHz



Date: 6.AUG.2020 15:30:04

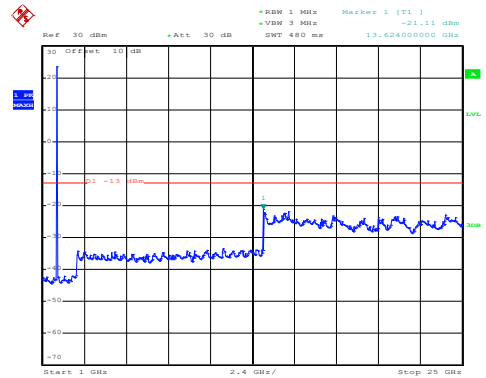
1GHz~25GHz

LTE Band 2: QPSK & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 6.AUG.2020 15:27:04

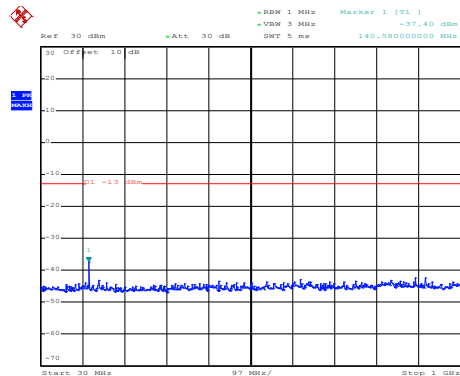
30MHz~1GHz



Date: 6.AUG.2020 15:28:54

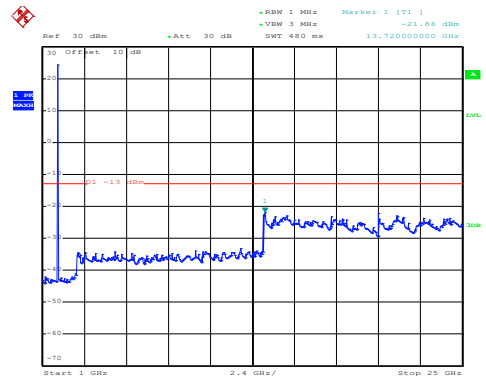
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:26:40

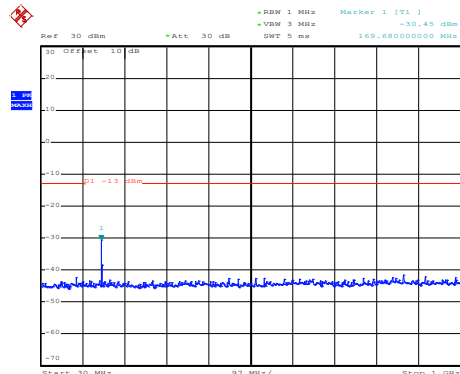
30MHz~1GHz



Date: 6.AUG.2020 15:29:35

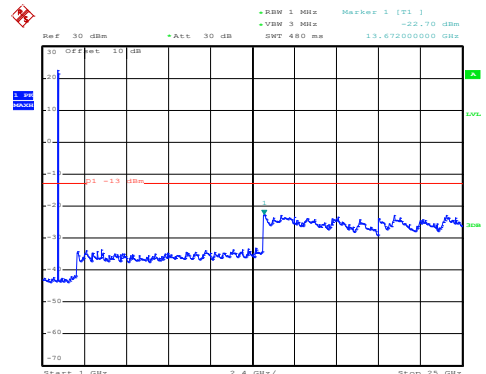
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:26:25

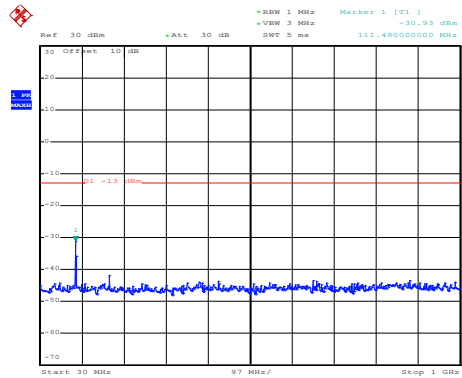
30MHz~1GHz



Date: 6.AUG.2020 15:29:56

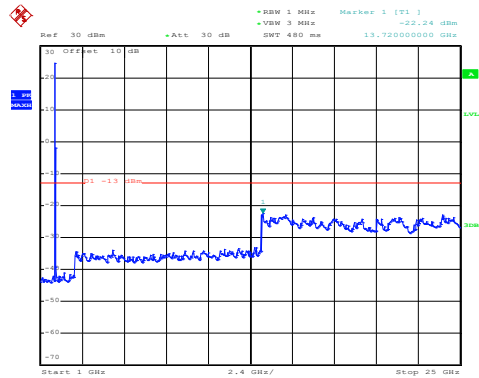
1GHz~25GHz

LTE Band 2: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 6.AUG.2020 15:33:41

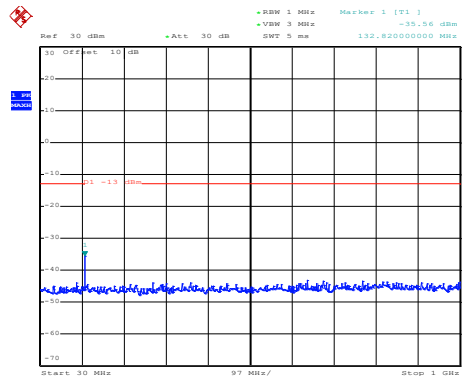
30MHz~1GHz



Date: 6.AUG.2020 15:31:00

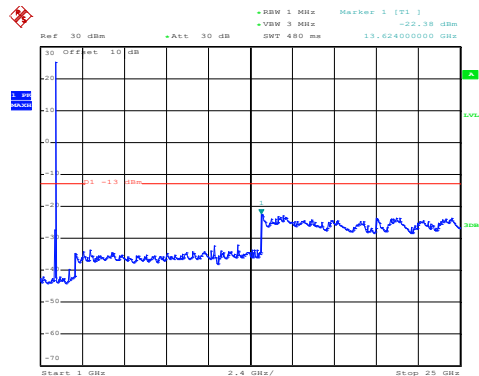
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:33:53

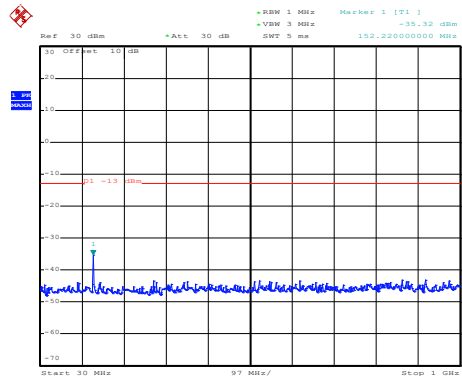
30MHz~1GHz



Date: 6.AUG.2020 15:31:20

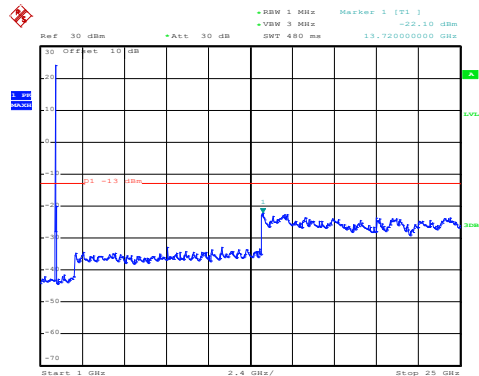
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:34:06

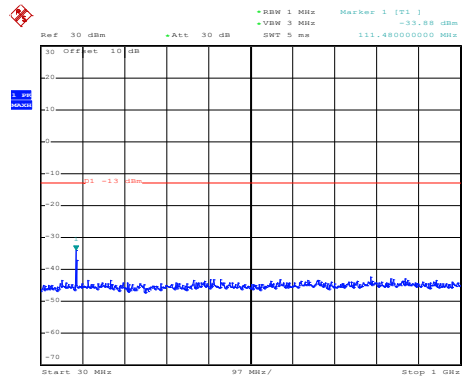
30MHz~1GHz



Date: 6.AUG.2020 15:31:38

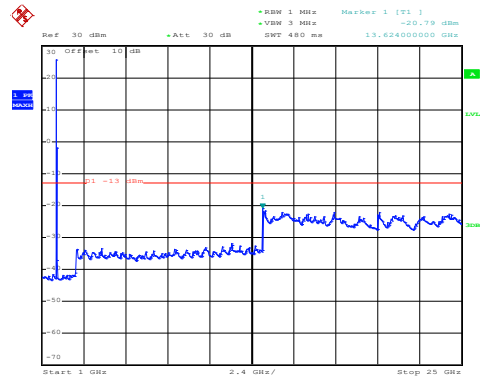
1GHz~25GHz

LTE Band 2: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 6.AUG.2020 15:33:36

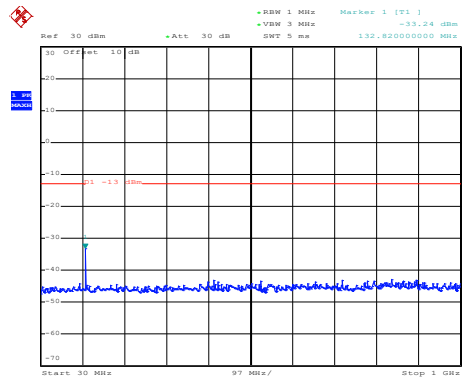
30MHz~1GHz



Date: 6.AUG.2020 15:30:51

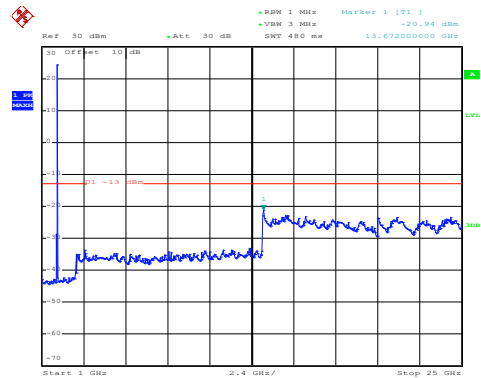
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:33:49

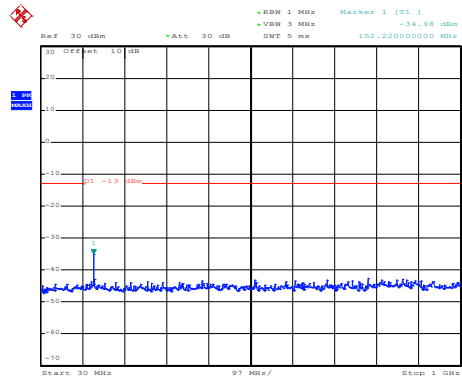
30MHz~1GHz



Date: 6.AUG.2020 15:31:12

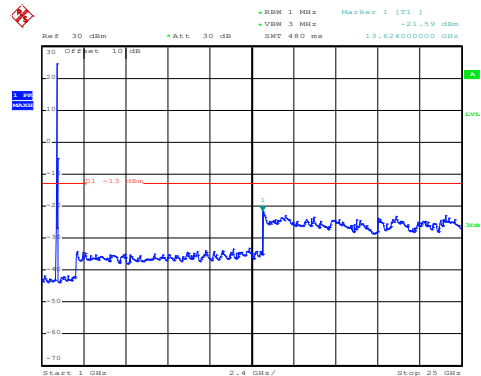
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:34:01

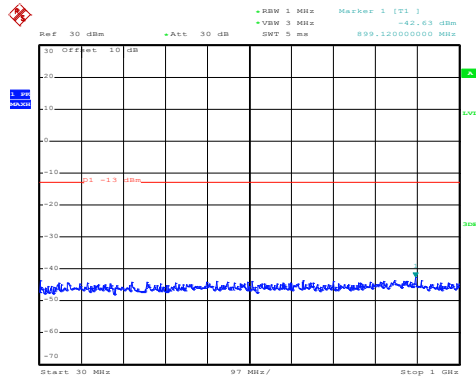
30MHz~1GHz



Date: 6.AUG.2020 15:31:30

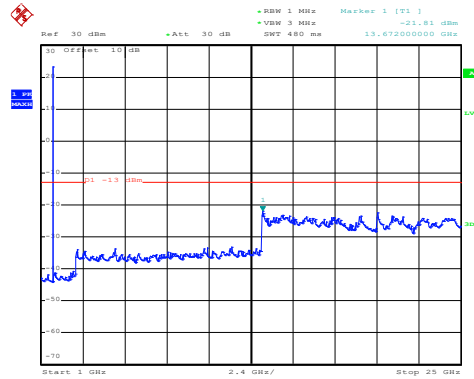
1GHz~25GHz

LTE Band 4 part:

LTE Band 4: 16 QAM & RB Size 1
BW: 1.4MHz
Lowest channel

Date: 6.AUG.2020 15:27:25

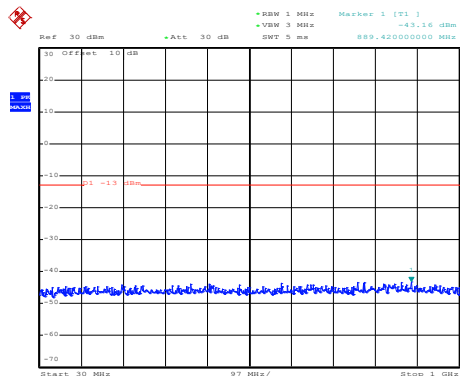
30MHz~1GHz



Date: 6.AUG.2020 15:28:43

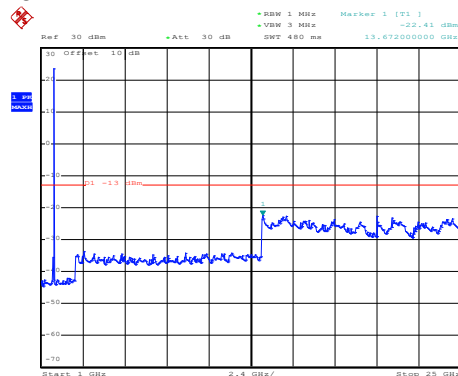
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:27:34

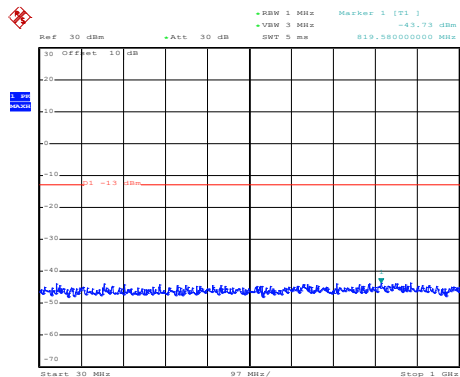
30MHz~1GHz



Date: 6.AUG.2020 15:28:25

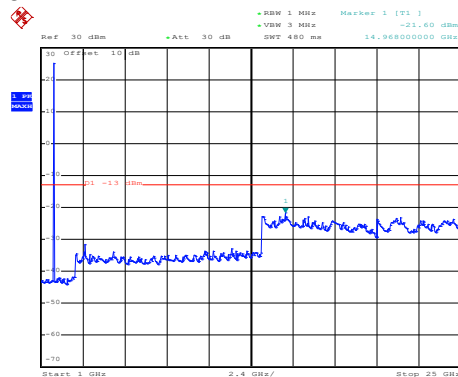
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:27:47

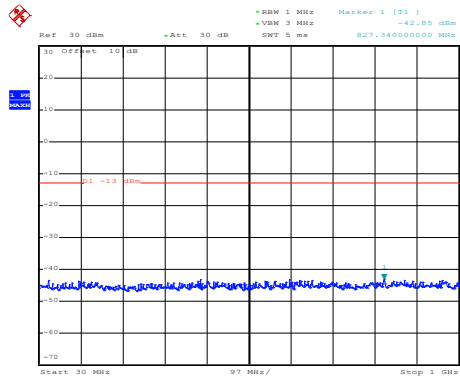
30MHz~1GHz



Date: 6.AUG.2020 15:28:09

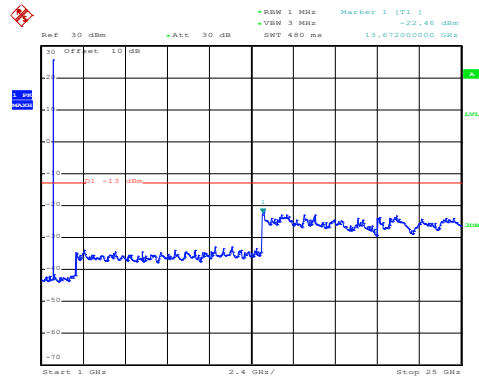
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 6.AUG.2020 15:27:21

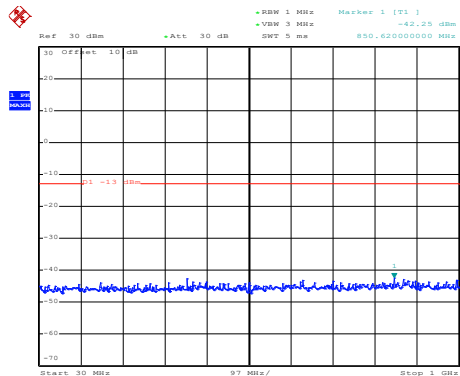
30MHz~1GHz



Date: 6.AUG.2020 15:28:35

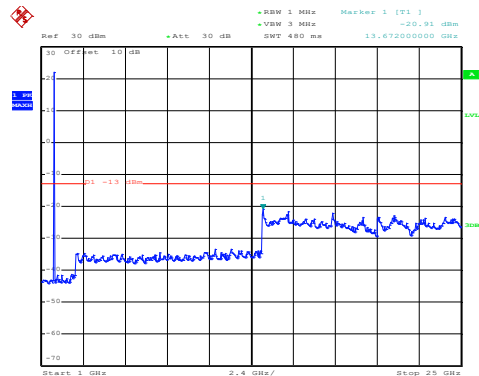
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:27:30

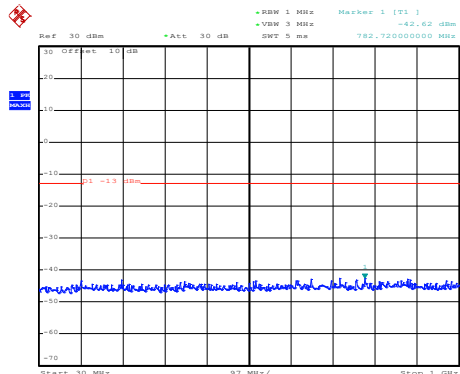
30MHz~1GHz



Date: 6.AUG.2020 15:28:19

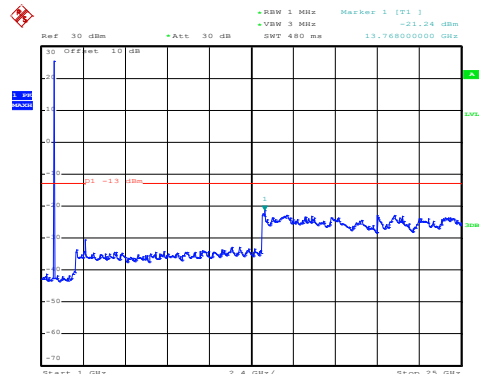
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:27:43

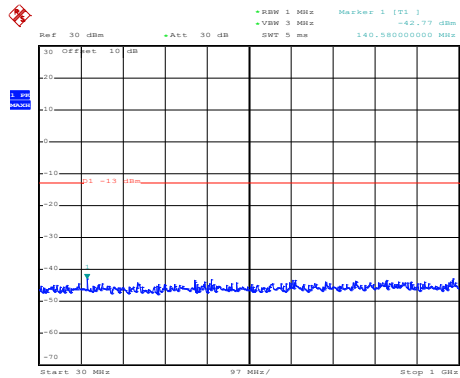
30MHz~1GHz



Date: 6.AUG.2020 15:28:02

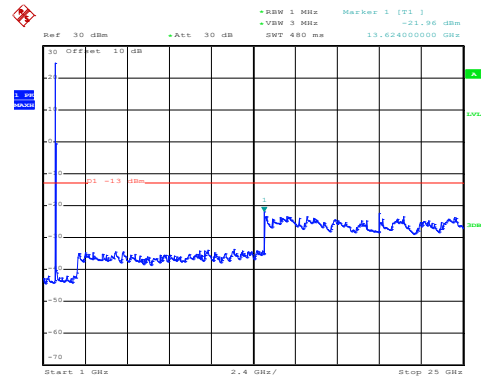
1GHz~25GHz

LTE Band 4: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 6.AUG.2020 15:33:27

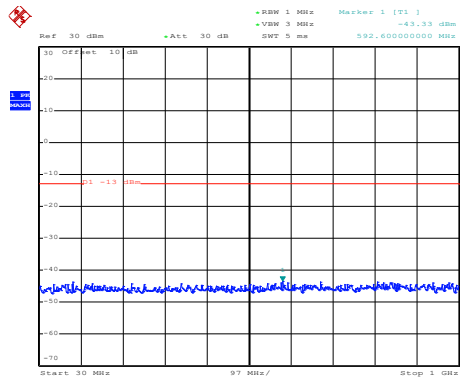
30MHz~1GHz



Date: 6.AUG.2020 15:32:00

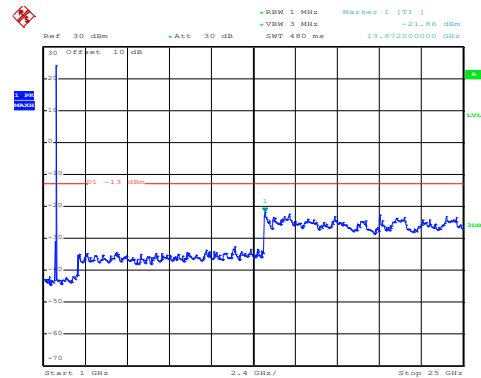
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:33:12

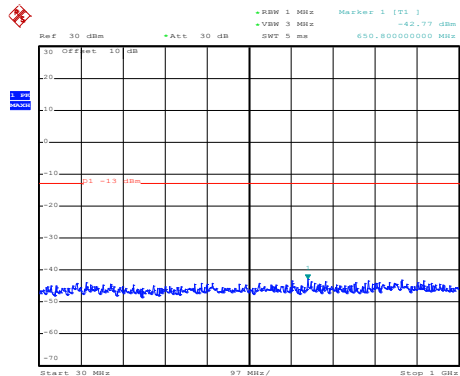
30MHz~1GHz



Date: 6.AUG.2020 15:32:21

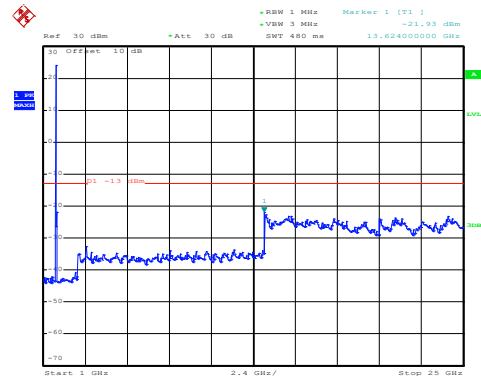
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:32:59

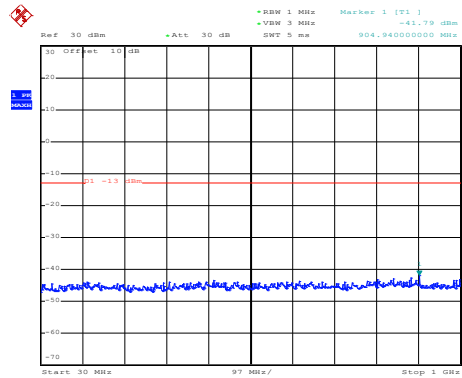
30MHz~1GHz



Date: 6.AUG.2020 15:32:41

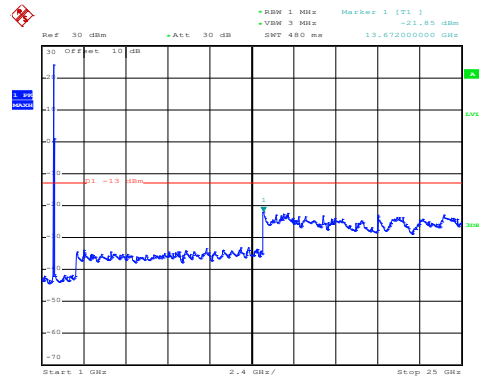
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 6.AUG.2020 15:33:21

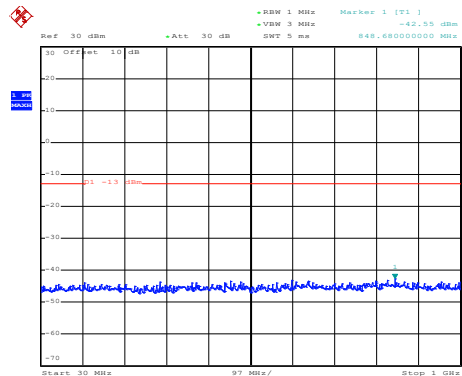
30MHz~1GHz



Date: 6.AUG.2020 15:31:54

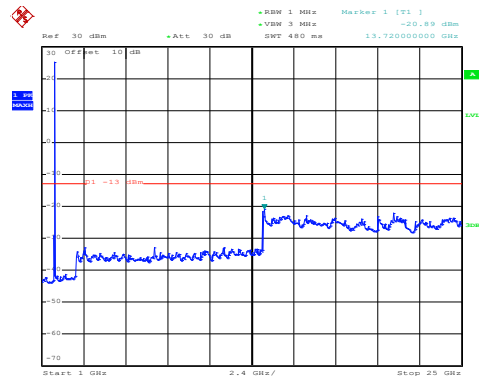
1GHz~25GHz

Middle channel



Date: 6.AUG.2020 15:33:07

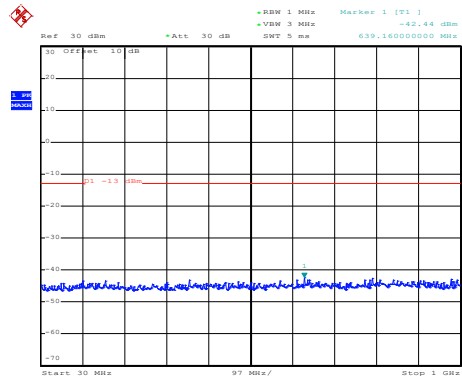
30MHz~1GHz



Date: 6.AUG.2020 15:32:14

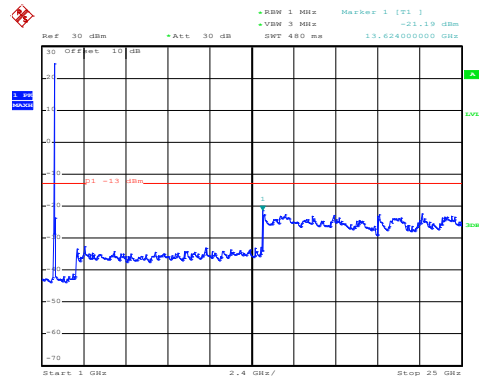
1GHz~25GHz

High channel



Date: 6.AUG.2020 15:32:54

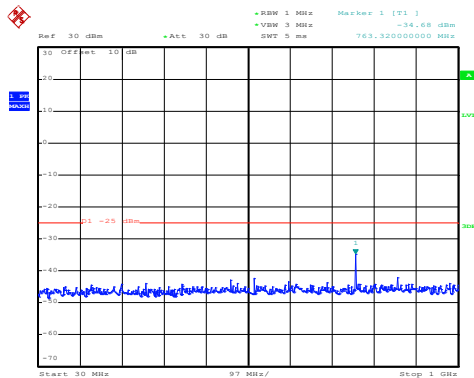
30MHz~1GHz



Date: 6.AUG.2020 15:32:34

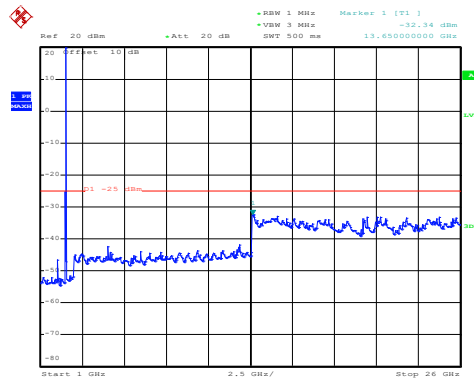
1GHz~25GHz

LTE Band 7 part:

LTE Band 7: 16 QAM & RB Size 1
BW: 5MHz
Lowest channel

Date: 6.AUG.2020 15:38:33

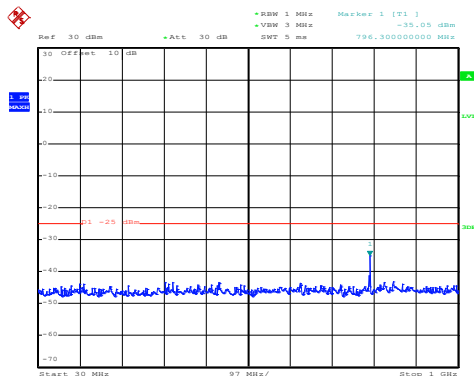
30MHz~1GHz



Date: 6.AUG.2020 15:37:14

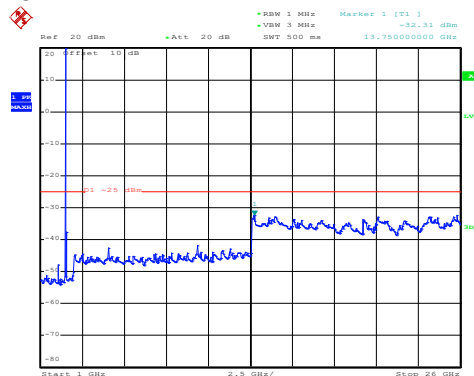
1GHz~26GHz

Middle channel



Date: 6.AUG.2020 15:38:20

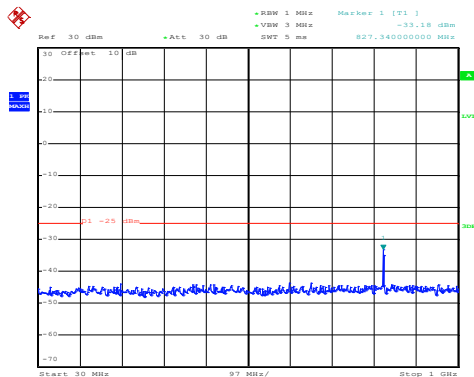
30MHz~1GHz



Date: 6.AUG.2020 15:37:30

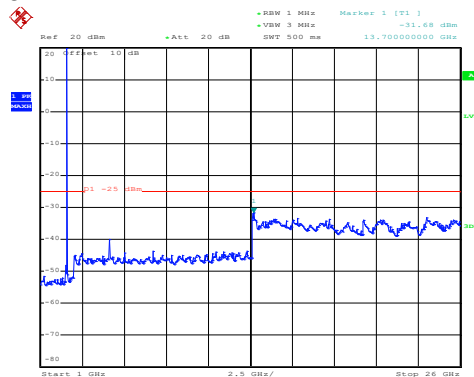
1GHz~26GHz

High channel



Date: 6.AUG.2020 15:38:06

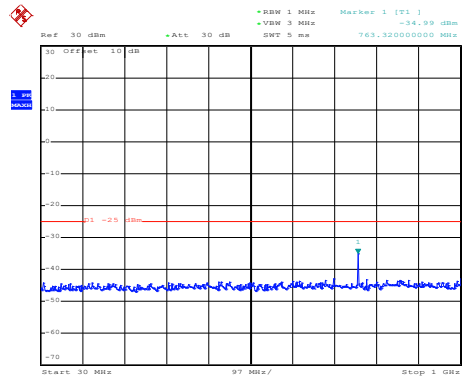
30MHz~1GHz



Date: 6.AUG.2020 15:37:46

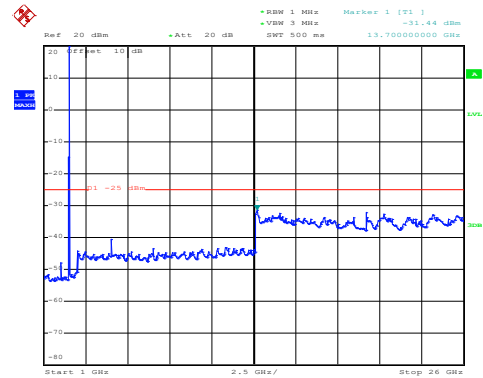
1GHz~26GHz

LTE Band 7: QPSK & RB Size 1
BW: 5MHz
Lowest channel



Date: 6.AUG.2020 15:38:28

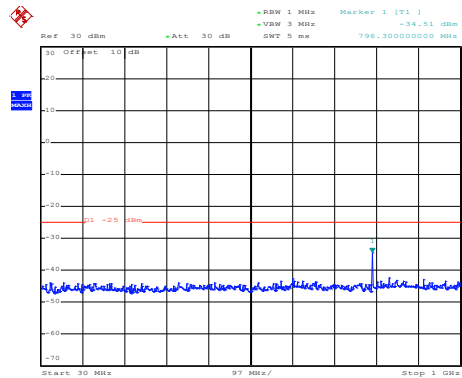
30MHz~1GHz



Date: 6.AUG.2020 15:37:07

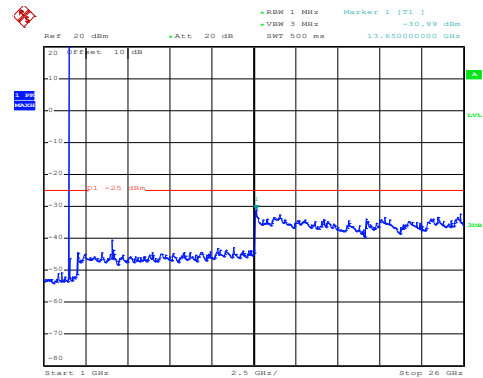
1GHz~26GHz

Middle channel



Date: 6.AUG.2020 15:38:15

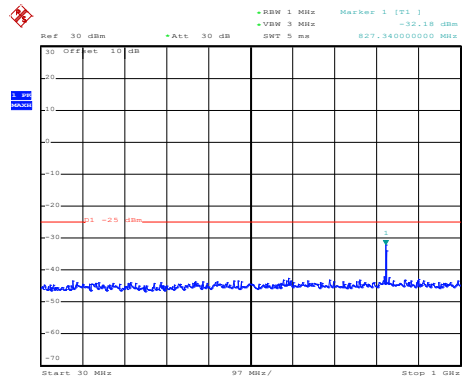
30MHz~1GHz



Date: 6.AUG.2020 15:37:23

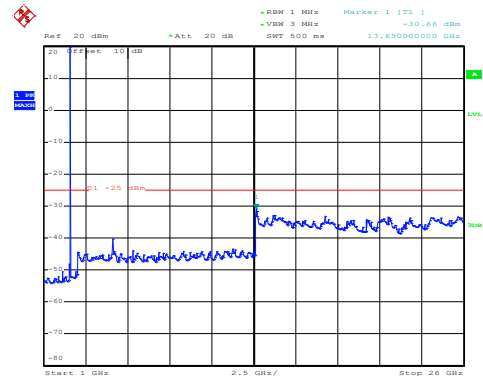
1GHz~26GHz

High channel



Date: 6.AUG.2020 15:38:02

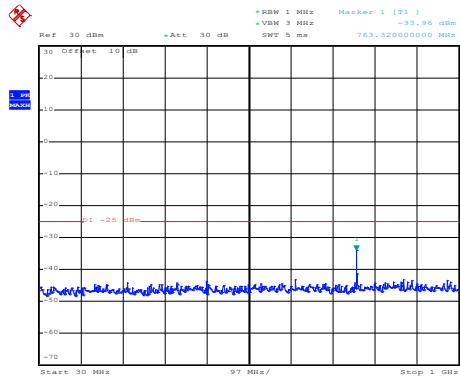
30MHz~1GHz



Date: 6.AUG.2020 15:37:40

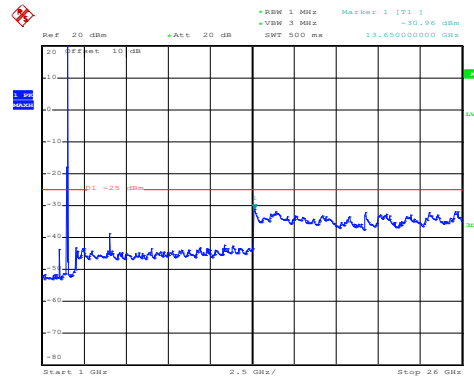
1GHz~26GHz

LTE Band 7: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 6.AUG.2020 15:34:27

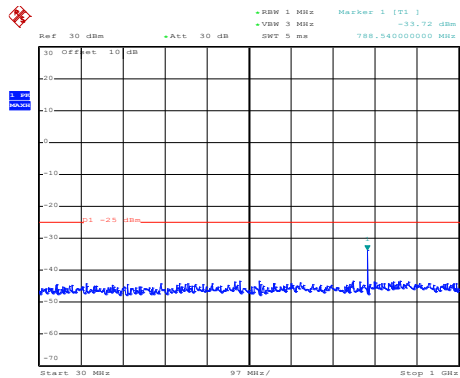
30MHz~1GHz



Date: 6.AUG.2020 15:36:27

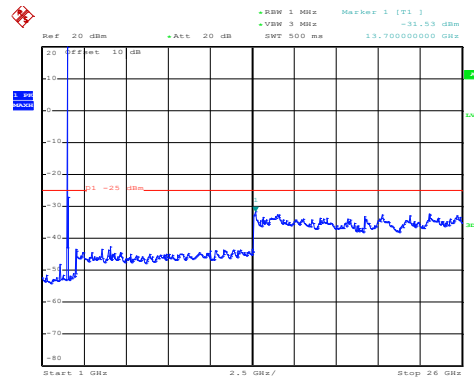
1GHz~26GHz

Middle channel



Date: 6.AUG.2020 15:34:40

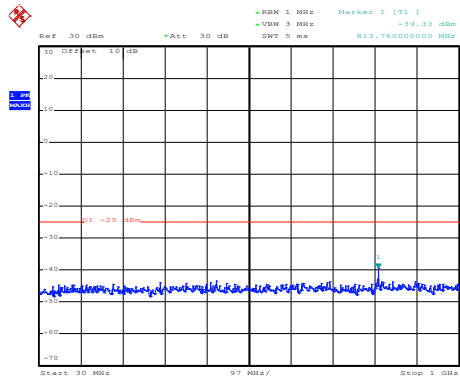
30MHz~1GHz



Date: 6.AUG.2020 15:35:39

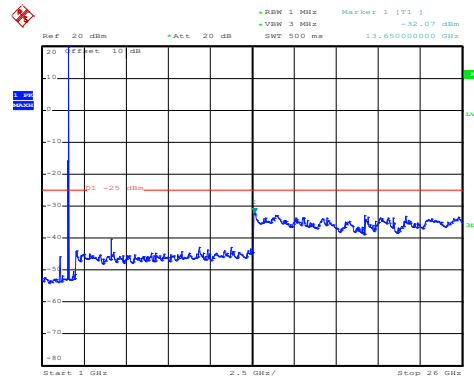
1GHz~26GHz

High channel



Date: 6.AUG.2020 15:34:52

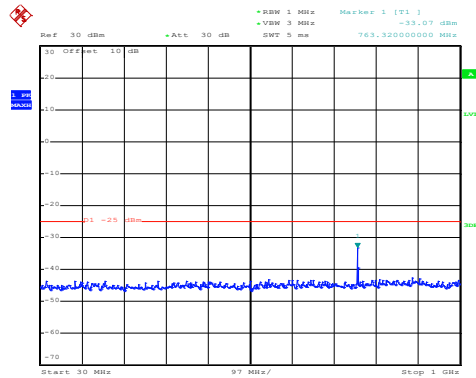
30MHz~1GHz



Date: 6.AUG.2020 15:35:18

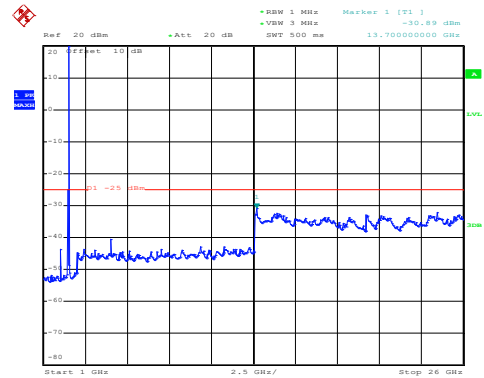
1GHz~26GHz

LTE Band 7: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 6.AUG.2020 15:34:23

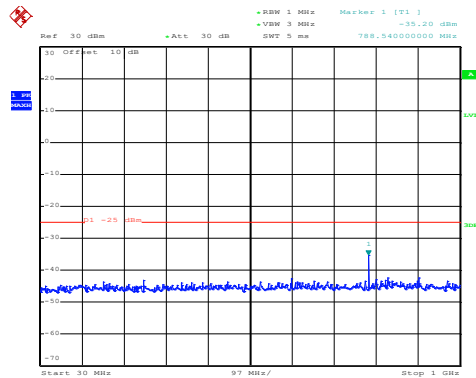
30MHz~1GHz



Date: 6.AUG.2020 15:35:56

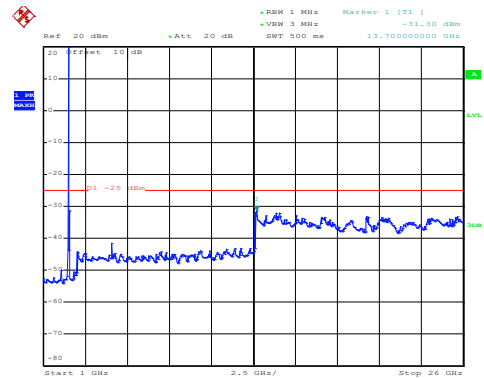
1GHz~26GHz

Middle channel



Date: 6.AUG.2020 15:34:35

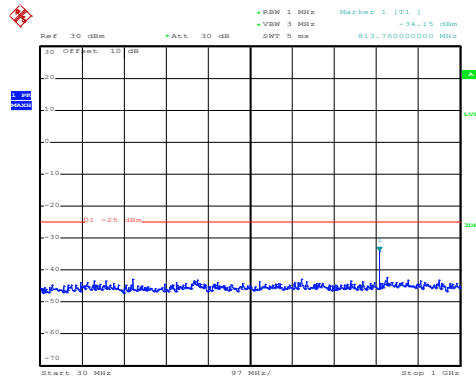
30MHz~1GHz



Date: 6.AUG.2020 15:35:29

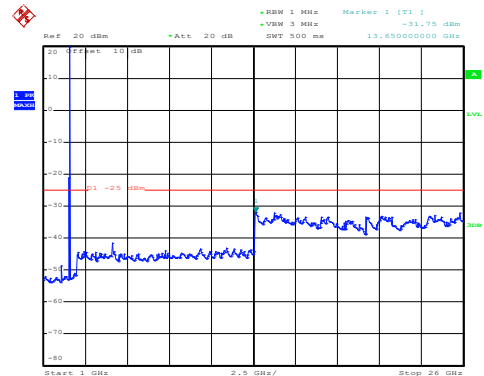
1GHz~26GHz

High channel



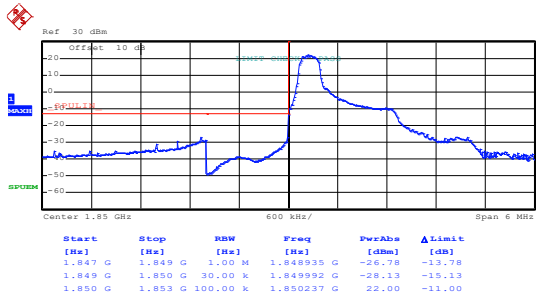
Date: 6.AUG.2020 15:34:48

30MHz~1GHz



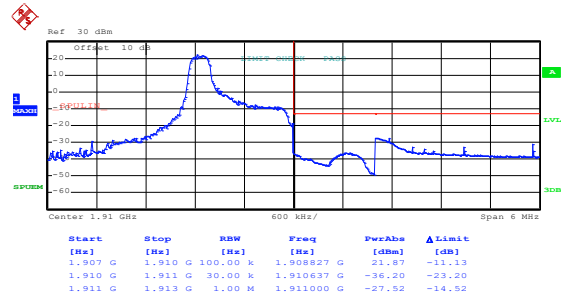
Date: 6.AUG.2020 15:35:09

1GHz~26GHz

Band edge emission:**LTE Band 2 part:****LTE Band 2, BW: 1.4MHz
16QAM & RB Size 1**

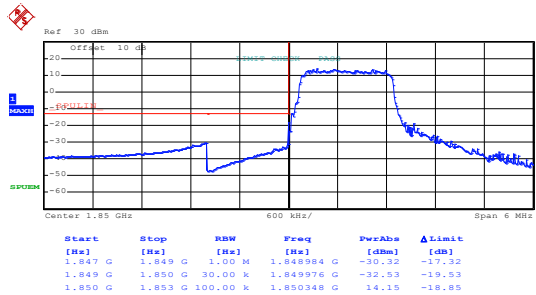
Date: 6.AUG.2020 15:53:16

Lowest channel



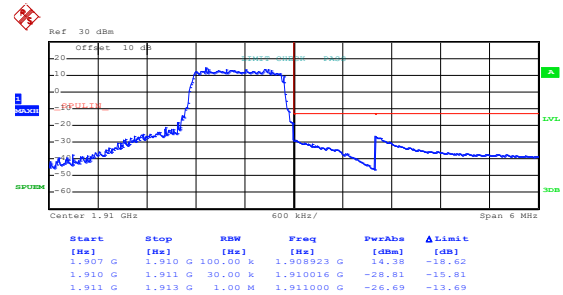
Date: 6.AUG.2020 15:51:45

Highest channel

16QAM & RB Size 6

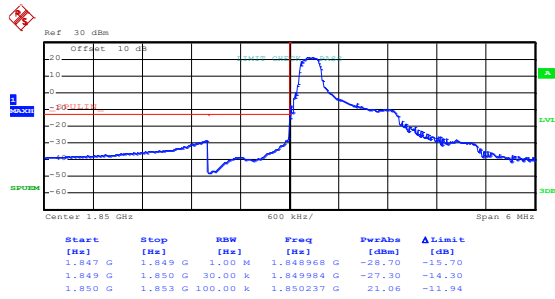
Date: 6.AUG.2020 15:52:18

Lowest channel



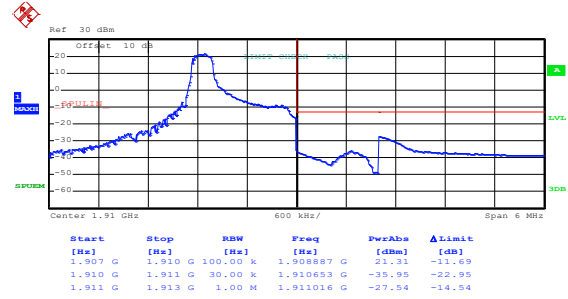
Date: 6.AUG.2020 15:51:57

Highest channel

LTE Band 2, BW: 1.4MHz
QPSK & RB Size 1

Date: 6.AUG.2020 15:52:44

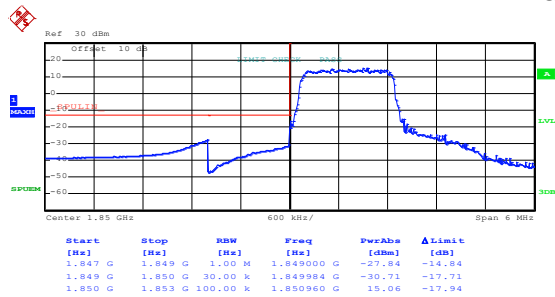
Lowest channel



Date: 6.AUG.2020 15:51:26

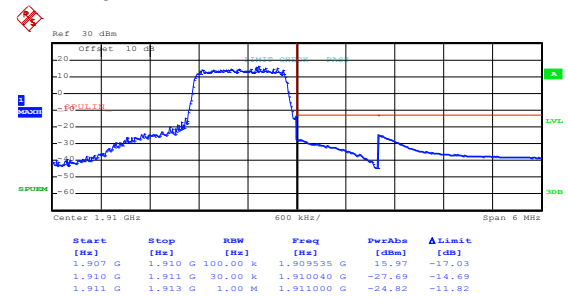
Highest channel

QPSK & RB Size 6



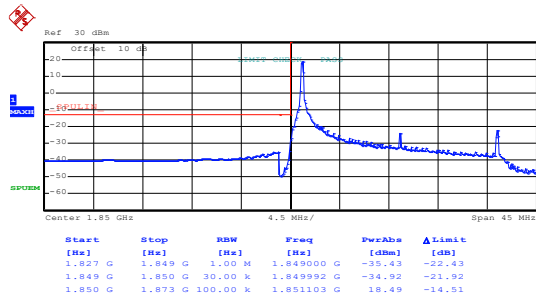
Date: 6.AUG.2020 15:52:10

Lowest channel



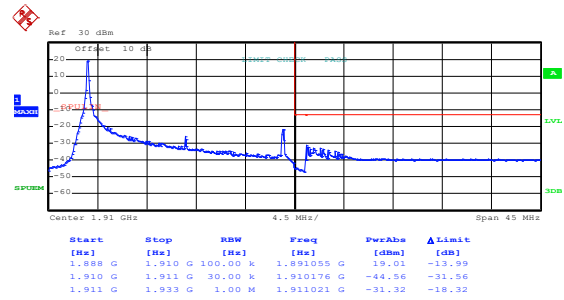
Date: 6.AUG.2020 15:51:52

Highest channel

LTE Band 2, BW: 20MHz
16QAM & RB Size 1

Date: 6.AUG.2020 15:48:35

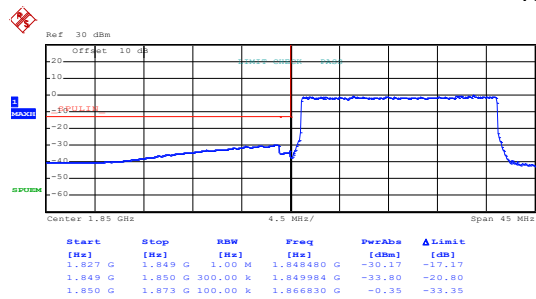
Lowest channel



Date: 6.AUG.2020 15:49:14

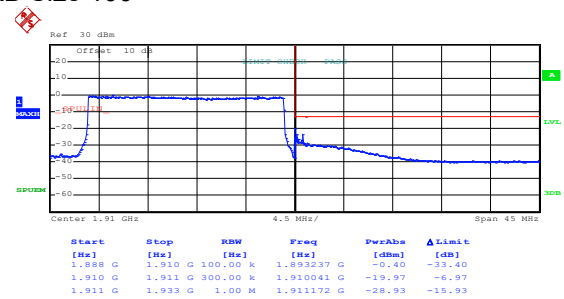
Highest channel

16QAM & RB Size 100



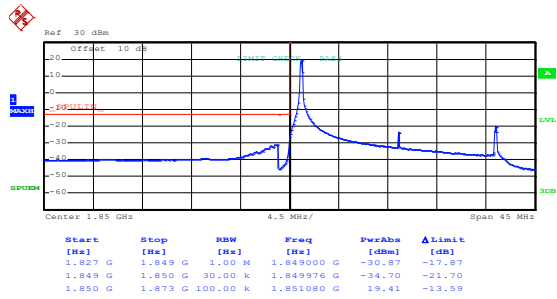
Date: 6.AUG.2020 15:48:52

Lowest channel



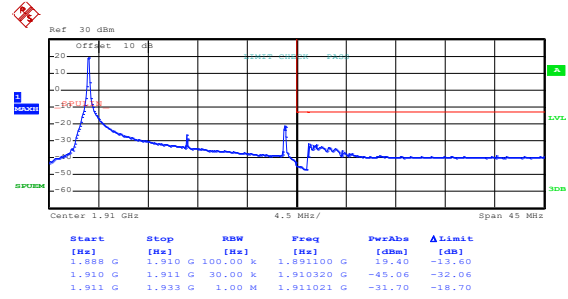
Date: 6.AUG.2020 15:49:34

Highest channel

LTE Band 2, BW: 20MHz
QPSK & RB Size 1

Date: 6.AUG.2020 15:48:29

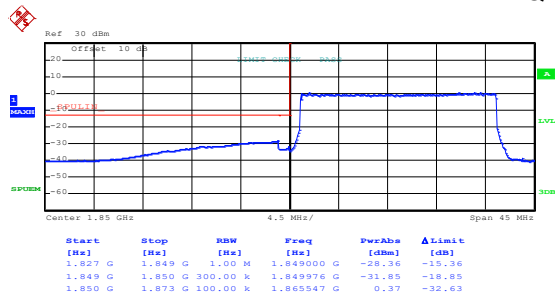
Lowest channel



Date: 6.AUG.2020 15:49:05

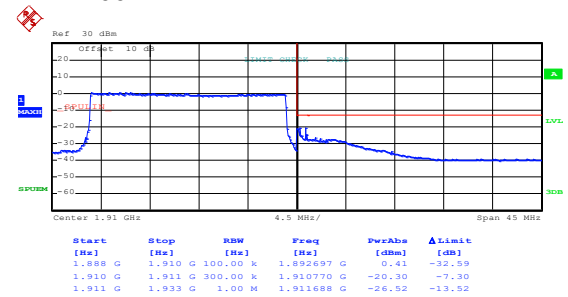
Highest channel

QPSK & RB Size 100



Date: 6.AUG.2020 15:48:48

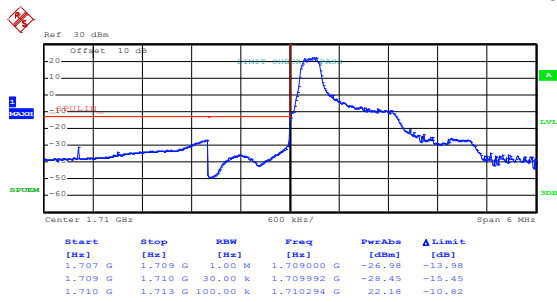
Lowest channel



Date: 6.AUG.2020 15:49:28

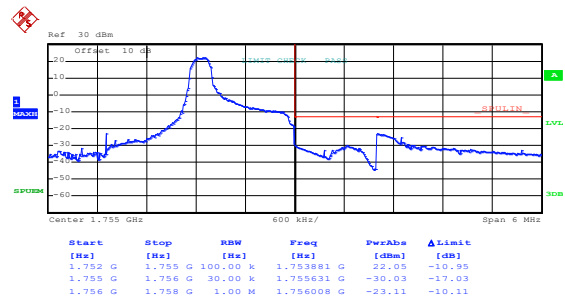
Highest channel

LTE Band 4 part:

LTE Band 4, BW: 1.4MHz
16QAM & RB Size 1

Date: 6.AUG.2020 15:54:22

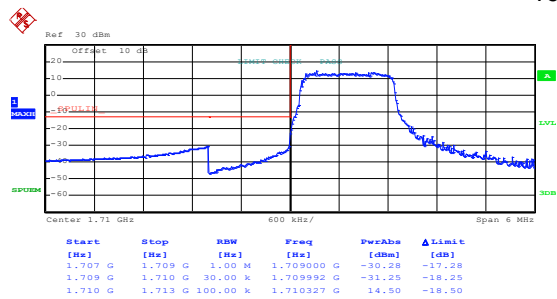
Lowest channel



Date: 6.AUG.2020 15:56:03

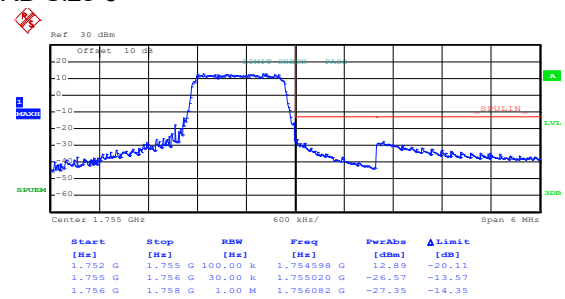
Highest channel

16QAM & RB Size 6



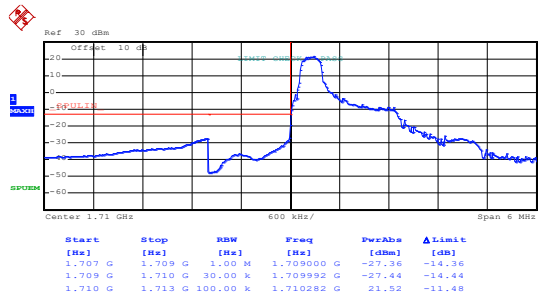
Date: 6.AUG.2020 15:54:38

Lowest channel



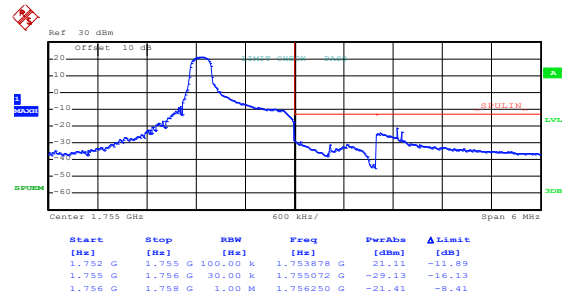
Date: 6.AUG.2020 15:54:56

Highest channel

LTE Band 4, BW: 1.4MHz
QPSK & RB Size 1

Date: 6.AUG.2020 15:54:03

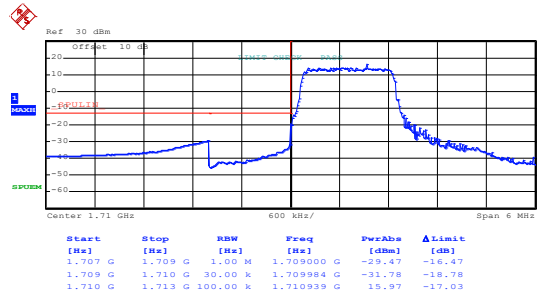
Lowest channel



Date: 6.AUG.2020 15:55:36

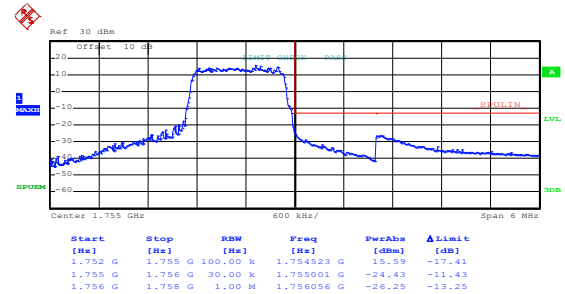
Highest channel

QPSK & RB Size 6



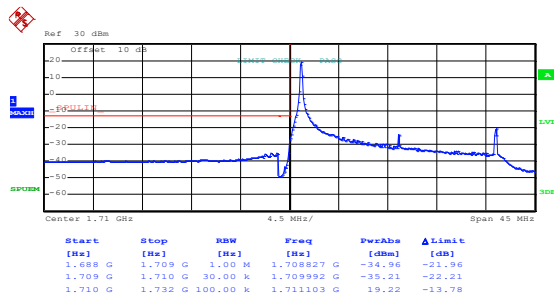
Date: 6.AUG.2020 15:54:30

Lowest channel



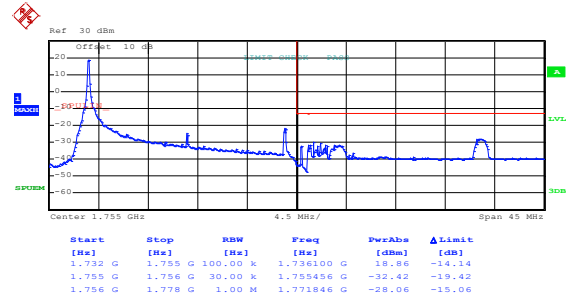
Date: 6.AUG.2020 15:54:51

Highest channel

LTE Band 4, BW: 20MHz
16QAM & RB Size 1

Date: 6.AUG.2020 15:57:26

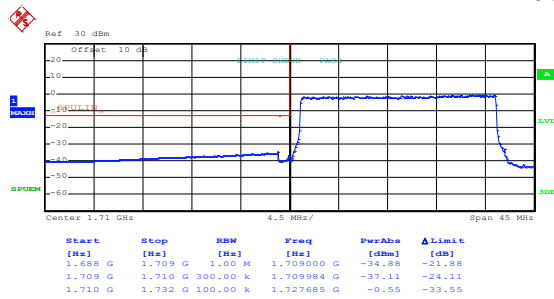
Lowest channel



Date: 6.AUG.2020 15:56:34

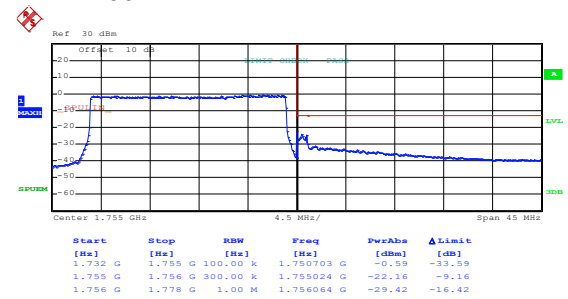
Highest channel

16QAM & RB Size 100



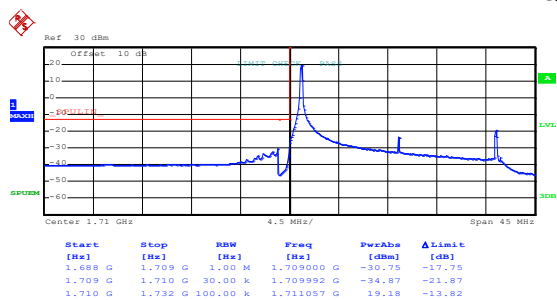
Date: 6.AUG.2020 15:57:48

Lowest channel



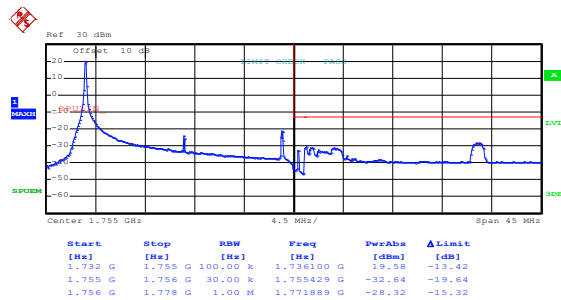
Date: 6.AUG.2020 15:57:04

Highest channel

LTE Band 4, BW: 20MHz
QPSK & RB Size 1

Date: 6.AUG.2020 15:57:17

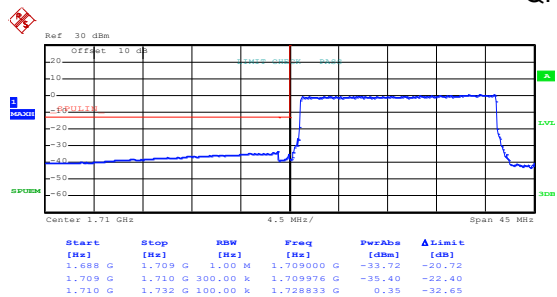
Lowest channel



Date: 6.AUG.2020 15:56:27

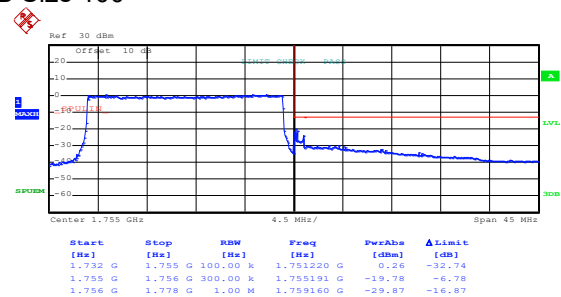
Highest channel

QPSK & RB Size 100



Date: 6.AUG.2020 15:57:43

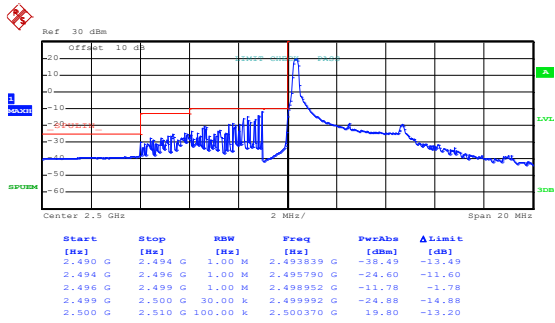
Lowest channel



Date: 6.AUG.2020 15:56:58

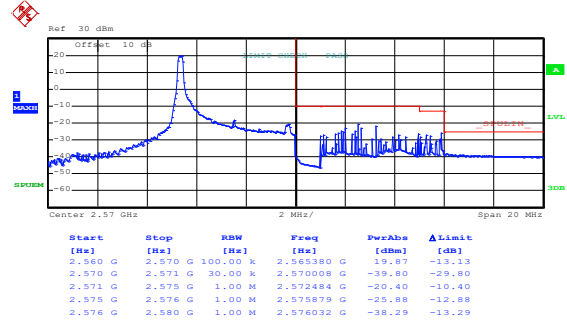
Highest channel

LTE Band 7 part:

LTE Band 7, BW: 5MHz
16QAM & RB Size 1

Date: 6.AUG.2020 15:40:14

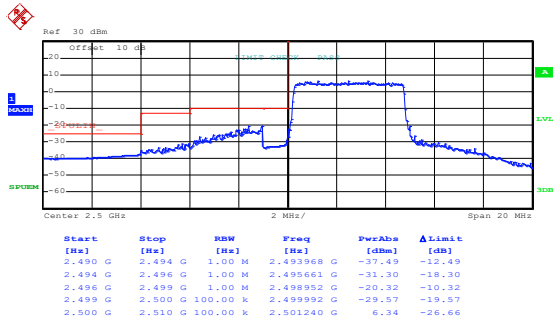
Lowest channel



Date: 6.AUG.2020 15:41:19

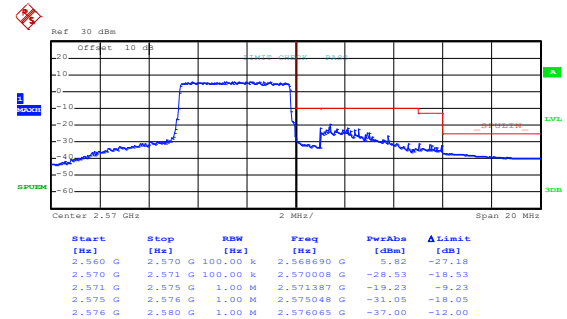
Highest channel

16QAM & RB Size 25



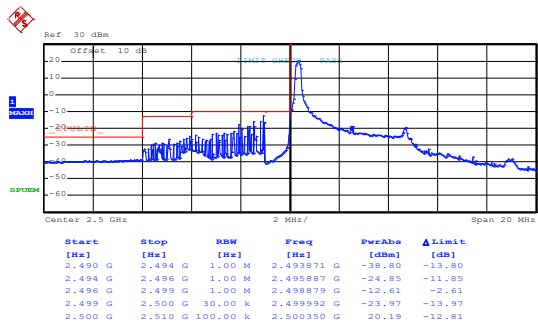
Date: 6.AUG.2020 15:40:35

Lowest channel



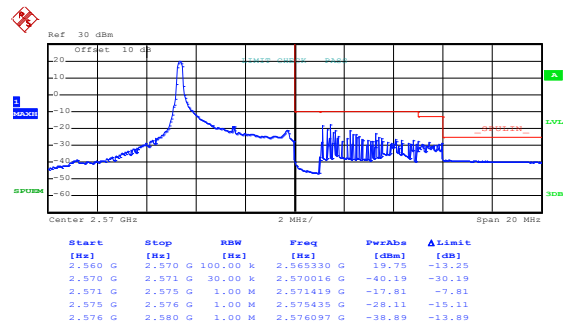
Date: 6.AUG.2020 15:41:39

Highest channel

LTE Band 7, BW: 5MHz
QPSK & RB Size 1

Date: 6.AUG.2020 15:39:55

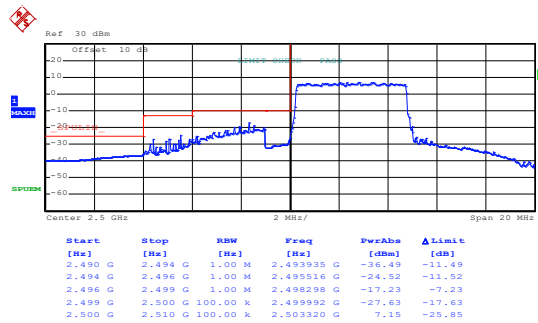
Lowest channel



Date: 6.AUG.2020 15:41:10

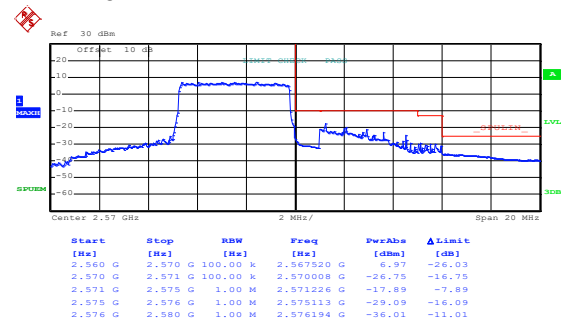
Highest channel

QPSK & RB Size 25



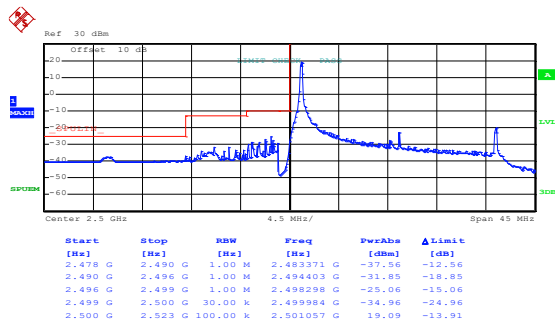
Date: 6.AUG.2020 15:40:29

Lowest channel



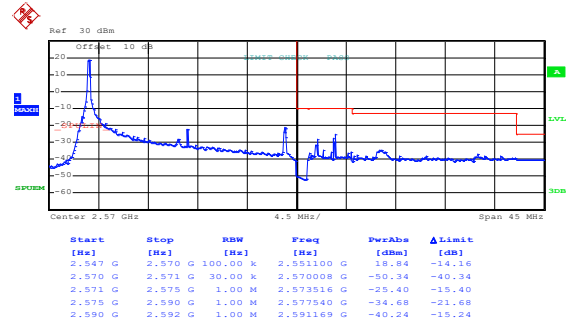
Date: 6.AUG.2020 15:41:32

Highest channel

LTE Band 7, BW: 20MHz
16QAM & RB Size 1

Date: 6.AUG.2020 15:42:49

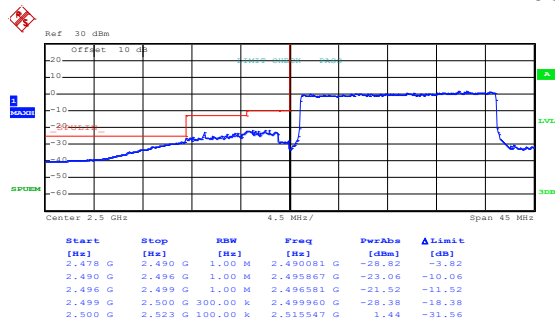
Lowest channel



Date: 6.AUG.2020 15:46:52

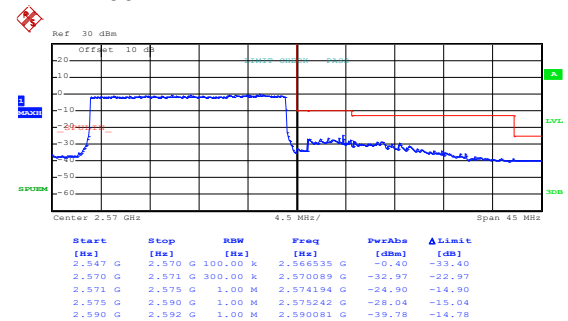
Highest channel

16QAM & RB Size 100



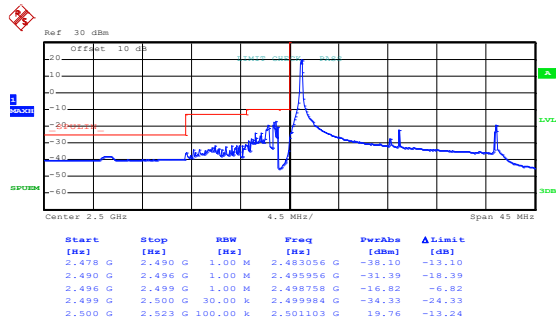
Date: 6.AUG.2020 13:45:14

Lowest channel



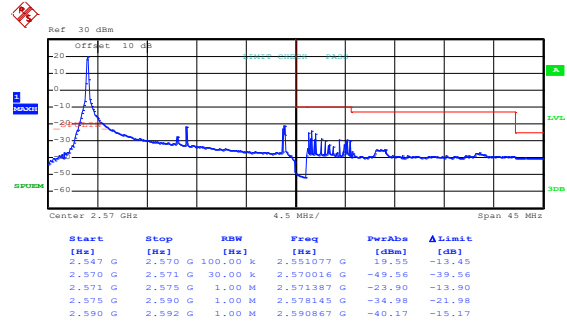
Date: 6.AUG.2020 15:47:11

Highest channel

LTE Band 7, BW: 20MHz
QPSK & RB Size 1

Date: 6.AUG.2020 15:42:40

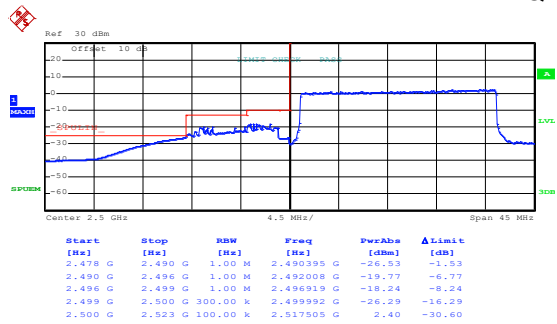
Lowest channel



Date: 6.AUG.2020 15:46:45

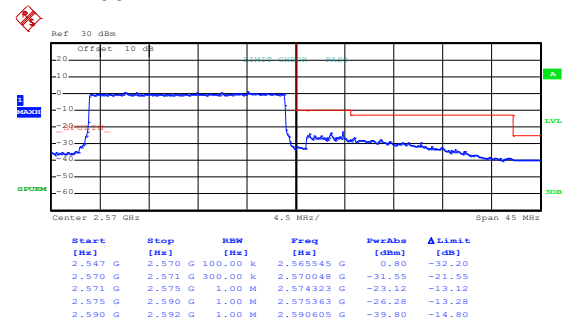
Highest channel

QPSK & RB Size 100



Date: 6.AUG.2020 13:45:08

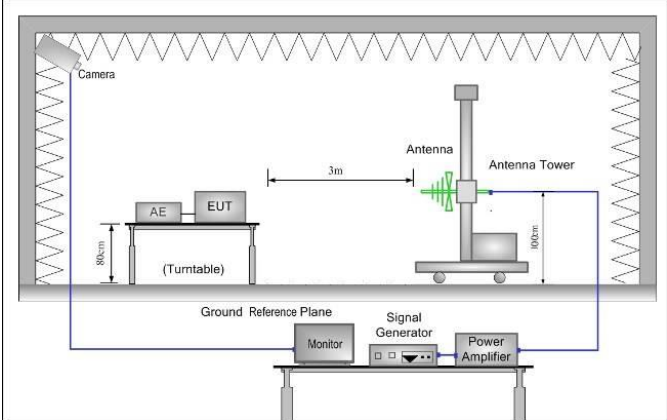
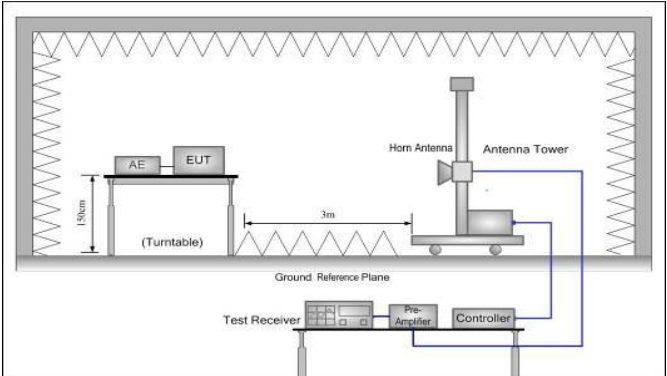
Lowest channel



Date: 6.AUG.2020 15:47:05

Highest channel

6.5 Field strength of spurious radiation measurement

Test Requirement:	Part 22.917(a), Part 24.238 (a), Part 27.53(g), Part 27.53(m), Part 27.53(h)
Limit:	LTE Band 2 & 4 & 5 & 12 & 17: 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). 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 that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.
Test setup:	Below 1GHz  Above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels).

	Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data:

LTE Band 2 part:

Band 2 (1.4MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3701.40	-63.09	12.64	0.75	-51.20	-13.00	-38.20	Vertical
5552.10	-55.16	12.76	1.13	-43.53	-13.00	-30.53	Vertical
7402.00	-49.57	11.44	1.63	-39.76	-13.00	-26.76	Vertical
3701.40	-60.31	12.64	0.75	-48.42	-13.00	-35.42	Horizontal
5552.10	-55.85	12.76	1.13	-44.22	-13.00	-31.22	Horizontal
7402.00	-49.87	11.44	1.63	-40.06	-13.00	-27.06	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3760.00	-62.17	12.71	0.79	-50.25	-13.00	-37.25	Vertical
5640.00	-53.34	12.87	1.15	-41.62	-13.00	-28.62	Vertical
7520.00	-49.47	11.48	1.66	-39.65	-13.00	-26.65	Vertical
3760.00	-59.63	12.71	0.79	-47.71	-13.00	-34.71	Horizontal
5640.00	-54.87	12.87	1.15	-43.15	-13.00	-30.15	Horizontal
7520.00	-49.79	11.48	1.66	-39.97	-13.00	-26.97	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3816.60	-61.62	12.78	0.81	-49.65	-13.00	-36.65	Vertical
5724.90	-54.33	12.97	1.19	-42.55	-13.00	-29.55	Vertical
7633.20	-47.79	11.34	1.71	-38.16	-13.00	-25.16	Vertical
3816.60	-58.59	12.78	0.81	-46.62	-13.00	-33.62	Horizontal
5724.90	-53.30	12.97	1.19	-41.52	-13.00	-28.52	Horizontal
7633.20	-49.80	11.34	1.71	-40.17	-13.00	-27.17	Horizontal
Remark:							
The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

Band 2 (20MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3720.00	-64.51	12.66	0.77	-52.62	-13.00	-39.62	Vertical
5580.00	-53.28	12.80	1.15	-41.63	-13.00	-28.63	Vertical
7440.00	-49.47	11.46	1.64	-39.65	-13.00	-26.65	Vertical
3720.00	-59.70	12.66	0.77	-47.81	-13.00	-34.81	Horizontal
5580.00	-57.16	12.80	1.15	-45.51	-13.00	-32.51	Horizontal
7440.00	-49.87	11.46	1.64	-40.05	-13.00	-27.05	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3760.00	-61.54	12.71	0.79	-49.62	-13.00	-36.62	Vertical
5640.00	-52.86	12.87	1.15	-41.14	-13.00	-28.14	Vertical
7520.00	-49.77	11.48	1.66	-39.95	-13.00	-26.95	Vertical
3760.00	-60.87	12.71	0.79	-48.95	-13.00	-35.95	Horizontal
5640.00	-54.24	12.87	1.15	-42.52	-13.00	-29.52	Horizontal
7520.00	-47.63	11.48	1.66	-37.81	-13.00	-24.81	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3800.00	-60.59	12.76	0.79	-48.62	-13.00	-35.62	Vertical
5700.00	-53.08	12.94	1.18	-41.32	-13.00	-28.32	Vertical
7600.00	-49.34	11.38	1.69	-39.65	-13.00	-26.65	Vertical
3800.00	-57.78	12.76	0.79	-45.81	-13.00	-32.81	Horizontal
5700.00	-53.90	12.94	1.18	-42.14	-13.00	-29.14	Horizontal
7600.00	-49.66	11.38	1.69	-39.97	-13.00	-26.97	Horizontal
Remark: The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

LTE Band 4 part:

Band 4 (1.4MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3421.40	-54.99	12.24	0.70	-43.45	-13.00	-30.45	Vertical
5132.10	-58.40	12.92	1.01	-46.49	-13.00	-33.49	Vertical
6842.80	-49.80	11.42	1.53	-39.91	-13.00	-26.91	Vertical
3421.40	-56.87	12.24	0.70	-45.33	-13.00	-32.33	Horizontal
5132.10	-57.66	12.92	1.01	-45.75	-13.00	-32.75	Horizontal
6842.80	-48.05	11.42	1.53	-38.16	-13.00	-25.16	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3465.00	-54.23	12.33	0.72	-42.62	-13.00	-29.62	Vertical
5197.50	-57.34	12.88	1.04	-45.50	-13.00	-32.50	Vertical
6930.00	-49.21	11.30	1.56	-39.47	-13.00	-26.47	Vertical
3465.00	-55.75	12.33	0.72	-44.14	-13.00	-31.14	Horizontal
5197.50	-55.46	12.88	1.04	-43.62	-13.00	-30.62	Horizontal
6930.00	-46.93	11.30	1.56	-37.19	-13.00	-24.19	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3508.60	-52.81	12.41	0.74	-41.14	-13.00	-28.14	Vertical
5262.90	-58.75	12.84	1.07	-46.98	-13.00	-33.98	Vertical
7017.20	-49.78	11.21	1.58	-40.15	-13.00	-27.15	Vertical
3508.60	-57.45	12.41	0.74	-45.78	-13.00	-32.78	Horizontal
5262.90	-54.42	12.84	1.07	-42.65	-13.00	-29.65	Horizontal
7017.20	-49.54	11.21	1.58	-39.91	-13.00	-26.91	Horizontal
Remark: The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

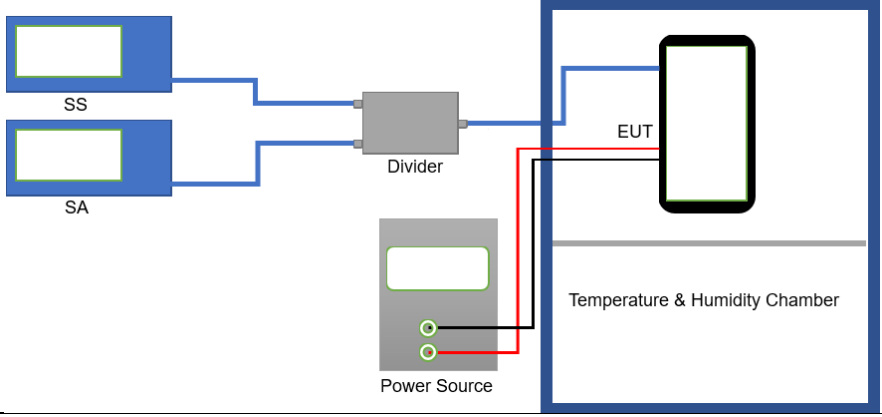
Band 4 (20MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3440.00	-53.19	12.28	0.71	-41.62	-13.00	-28.62	Vertical
5160.00	-57.82	12.90	1.03	-45.95	-13.00	-32.95	Vertical
6880.00	-48.54	11.37	1.54	-38.71	-13.00	-25.71	Vertical
3440.00	-56.08	12.28	0.71	-44.51	-13.00	-31.51	Horizontal
5160.00	-58.52	12.90	1.03	-46.65	-13.00	-33.65	Horizontal
6880.00	-48.14	11.37	1.54	-38.31	-13.00	-25.31	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3465.00	-53.23	12.33	0.72	-41.62	-13.00	-28.62	Vertical
5197.50	-57.79	12.88	1.04	-45.95	-13.00	-32.95	Vertical
6930.00	-49.91	11.30	1.56	-40.17	-13.00	-27.17	Vertical
3465.00	-56.56	12.33	0.72	-44.95	-13.00	-31.95	Horizontal
5197.50	-54.35	12.88	1.04	-42.51	-13.00	-29.51	Horizontal
6930.00	-49.72	11.30	1.56	-39.98	-13.00	-26.98	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3490.00	-53.79	12.38	0.73	-42.14	-13.00	-29.14	Vertical
5235.00	-59.32	12.86	1.06	-47.52	-13.00	-34.52	Vertical
6980.00	-49.61	11.23	1.57	-39.95	-13.00	-26.95	Vertical
3490.00	-55.96	12.38	0.73	-44.31	-13.00	-31.31	Horizontal
5235.00	-53.55	12.86	1.06	-41.75	-13.00	-28.75	Horizontal
6980.00	-48.60	11.23	1.57	-38.94	-13.00	-25.94	Horizontal
Remark: The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

LTE Band 7 part:

Band 7 (5MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5005.00	-57.38	13.00	0.94	-45.32	-25.00	-20.32	Vertical
7507.50	-49.22	11.49	1.65	-39.38	-25.00	-14.38	Vertical
10010.00	-43.95	11.69	1.91	-34.17	-25.00	-9.17	Vertical
5005.00	-56.87	13.00	0.94	-44.81	-25.00	-19.81	Horizontal
7507.50	-49.57	11.49	1.65	-39.73	-25.00	-14.73	Horizontal
10010.00	-46.40	11.69	1.91	-36.62	-25.00	-11.62	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5070.00	-56.13	12.96	0.98	-44.15	-25.00	-19.15	Vertical
7605.00	-50.28	11.37	1.69	-40.60	-25.00	-15.60	Vertical
10140.00	-45.37	11.62	1.94	-35.69	-25.00	-10.69	Vertical
5070.00	-57.12	12.96	0.98	-45.14	-25.00	-20.14	Horizontal
7605.00	-48.63	11.37	1.69	-38.95	-25.00	-13.95	Horizontal
10140.00	-46.29	11.62	1.94	-36.61	-25.00	-11.61	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5135.00	-56.53	12.92	1.01	-44.62	-25.00	-19.62	Vertical
7702.50	-49.19	11.26	1.72	-39.65	-25.00	-14.65	Vertical
10270.00	-45.73	11.54	1.95	-36.14	-25.00	-11.14	Vertical
5135.00	-59.76	12.92	1.01	-47.85	-25.00	-22.85	Horizontal
7702.50	-48.52	11.26	1.72	-38.98	-25.00	-13.98	Horizontal
10270.00	-46.73	11.54	1.95	-37.14	-25.00	-12.14	Horizontal
Remark:							
The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

Band 7 (20MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5020.00	-56.64	12.99	0.97	-44.62	-25.00	-19.62	Vertical
7530.00	-50.73	11.46	1.68	-40.95	-25.00	-15.95	Vertical
10040.00	-46.36	11.68	1.94	-36.62	-25.00	-11.62	Vertical
5020.00	-55.67	12.99	0.97	-43.65	-25.00	-18.65	Horizontal
7530.00	-48.63	11.46	1.68	-38.85	-25.00	-13.85	Horizontal
10040.00	-45.91	11.68	1.94	-36.17	-25.00	-11.17	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5070.00	-57.97	12.96	0.98	-45.99	-25.00	-20.99	Vertical
7605.00	-48.85	11.37	1.69	-39.17	-25.00	-14.17	Vertical
10140.00	-44.78	11.62	1.94	-35.10	-25.00	-10.10	Vertical
5070.00	-57.57	12.96	0.98	-45.59	-25.00	-20.59	Horizontal
7605.00	-47.67	11.37	1.69	-37.99	-25.00	-12.99	Horizontal
10140.00	-44.81	11.62	1.94	-35.13	-25.00	-10.13	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurious Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
5120.00	-57.14	12.93	1.00	-45.21	-25.00	-20.21	Vertical
7680.00	-48.21	11.28	1.72	-38.65	-25.00	-13.65	Vertical
10240.00	-46.20	11.56	1.95	-36.59	-25.00	-11.59	Vertical
5120.00	-58.10	12.93	1.00	-46.17	-25.00	-21.17	Horizontal
7680.00	-48.40	11.28	1.72	-38.84	-25.00	-13.84	Horizontal
10240.00	-46.26	11.56	1.95	-36.65	-25.00	-11.65	Horizontal
Remark: The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

6.6 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Limit:	Within authorized band for Band 2 & 4 & 7
Test setup:	
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	178	0.094681	Within authorized band for Band 2	Pass
	-20	169	0.089894		
	-10	163	0.086702		
	0	156	0.082979		
	10	149	0.079255		
	20	143	0.076064		
	30	137	0.072872		
	40	131	0.069681		
	50	120	0.063830		
16QAM					
3.80	-30	173	0.092021	Within authorized band for Band 2	Pass
	-20	114	0.060638		
	-10	123	0.065426		
	0	130	0.069149		
	10	137	0.072872		
	20	146	0.077660		
	30	153	0.081383		
	40	159	0.084574		
	50	166	0.088298		
Note: Only the worst case shown in the report.					

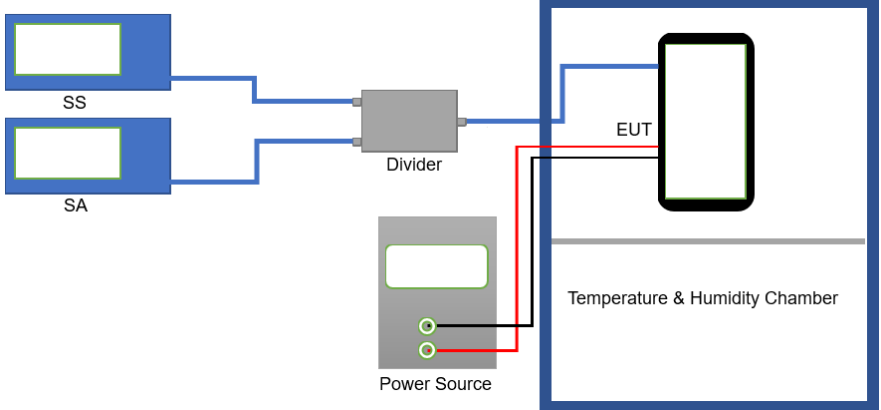
LTE Band 4 part:

Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	173	0.099856	Within authorized band for Band 4	Pass
	-20	143	0.082540		
	-10	136	0.078499		
	0	129	0.074459		
	10	150	0.086580		
	20	123	0.070996		
	30	113	0.065224		
	40	155	0.089466		
	50	160	0.092352		
16QAM					
3.80	-30	170	0.098124	Within authorized band for Band 4	Pass
	-20	162	0.093506		
	-10	153	0.088312		
	0	143	0.082540		
	10	134	0.077345		
	20	127	0.073304		
	30	120	0.069264		
	40	115	0.066378		
	50	108	0.062338		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7 (10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	180	0.071006	Within authorized band for Band 7	Pass
	-20	173	0.068245		
	-10	165	0.065089		
	0	159	0.062722		
	10	142	0.056016		
	20	138	0.054438		
	30	120	0.047337		
	40	130	0.051282		
	50	150	0.059172		
16QAM					
3.80	-30	176	0.069428	Within authorized band for Band 7	Pass
	-20	169	0.066667		
	-10	154	0.060750		
	0	149	0.058777		
	10	133	0.052465		
	20	126	0.049704		
	30	160	0.063116		
	40	116	0.045759		
	50	140	0.055227		
Note: Only the worst case shown in the report.					

6.7 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(d)(2)
Limit:	Within authorized band for Band 2 & 4 & 7
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer (SA) and a Signal Source (SS) are connected to a Divider. The Divider is connected to the EUT (Equipment Under Test) inside a Temperature & Humidity Chamber. A Power Source is also connected to the EUT.
Test procedure:	1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	89	0.047340	Within authorized band for Band 2	Pass
	3.80	76	0.040426		
	3.50	65	0.034574		
16QAM					
25	4.35	80	0.042553	Within authorized band for Band 2	Pass
	3.80	70	0.037234		
	3.50	59	0.031383		
Note: Only the worst case shown in the report.					

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	88	0.050794	Within authorized band for Band 4	Pass
	3.80	70	0.040404		
	3.50	60	0.034632		
16QAM					
25	4.35	80	0.046176	Within authorized band for Band 4	Pass
	3.80	74	0.042713		
	3.50	53	0.030592		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	90	0.035503	Within authorized band for Band 7	Pass
	3.80	79	0.031164		
	3.50	60	0.023669		
16QAM					
25	4.35	87	0.034320	Within authorized band for Band 7	Pass
	3.80	70	0.027613		
	3.50	58	0.022880		
Note: Only the worst case shown in the report.					