



## LTE Band 13

### Peak-to-Average Ratio

| Mode       | LTE Band 13 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | -                   | -       | -     | -       | PASS        |
| Middle CH  | 3.57                | 5.01    | 4.7   | 5.8     |             |
| Highest CH | -                   | -       | -     | -       |             |



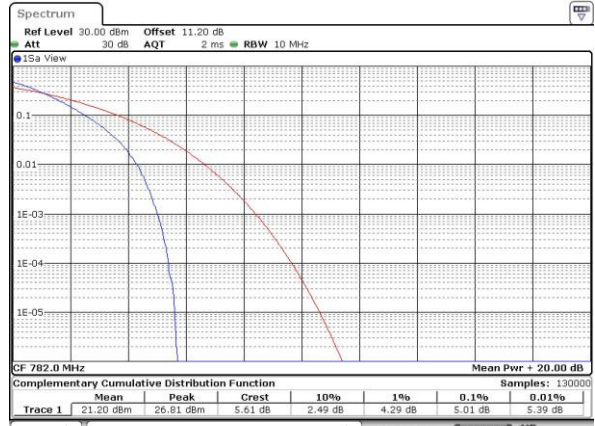
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 31.OCT.2016 14:44:54

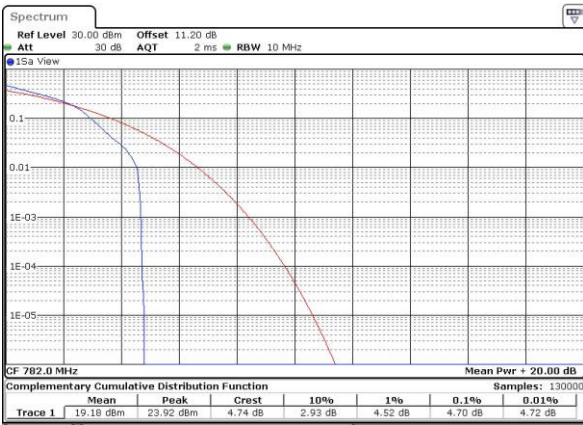
Middle Channel / Full RB



Date: 31.OCT.2016 14:45:05

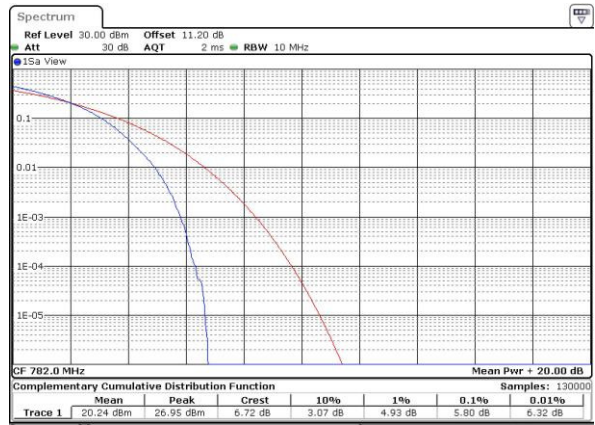
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 31.OCT.2016 14:44:29

Middle Channel / Full RB



Date: 31.OCT.2016 14:44:41



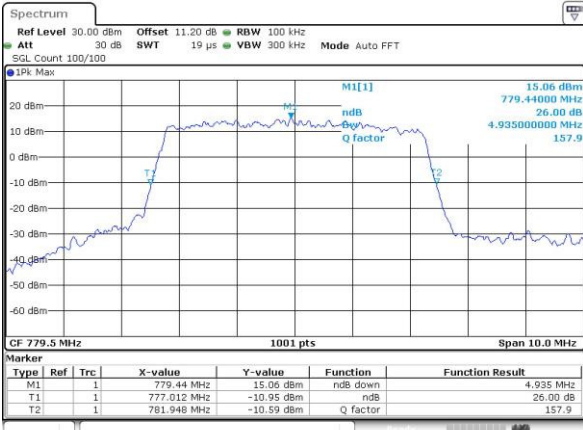
**26dB Bandwidth**

| Mode       | LTE Band 13 : 26dB BW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|----------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
|            | 1.4MHz                     |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| BW         | QPSK                       | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Mod.       | QPSK                       | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | -                          | -     | -    | -     | 4.94 | 4.84  | -     | -     | -     | -     | -     | -     |
| Middle CH  | -                          | -     | -    | -     | 4.94 | 4.94  | 9.71  | 9.75  | -     | -     | -     | -     |
| Highest CH | -                          | -     | -    | -     | 4.88 | 4.93  | -     | -     | -     | -     | -     | -     |



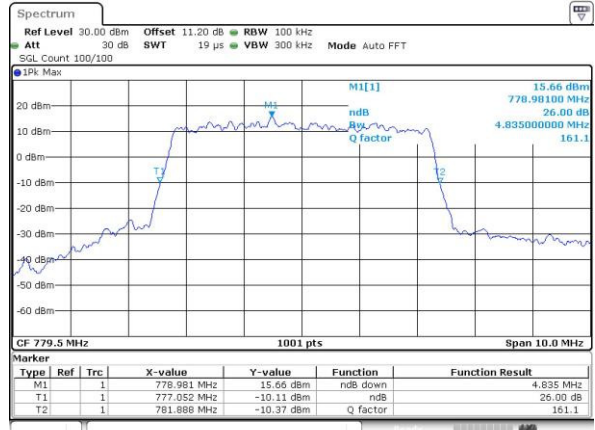
LTE Band 13

Lowest Channel / 5MHz / QPSK



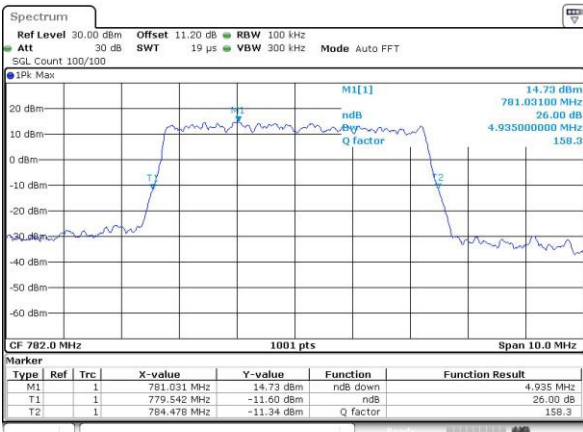
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Lowest Channel / 5MHz / 16QAM



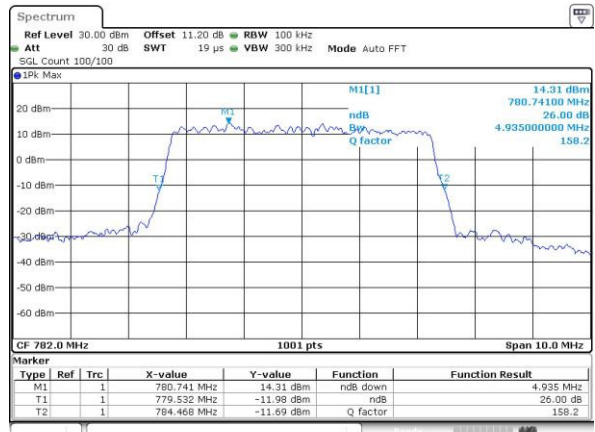
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Middle Channel / 5MHz / QPSK



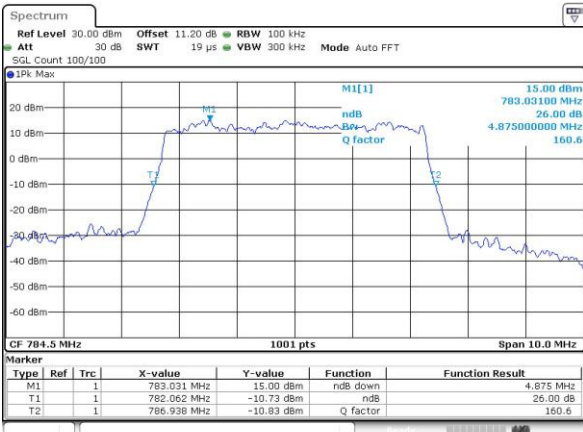
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Middle Channel / 5MHz / 16QAM



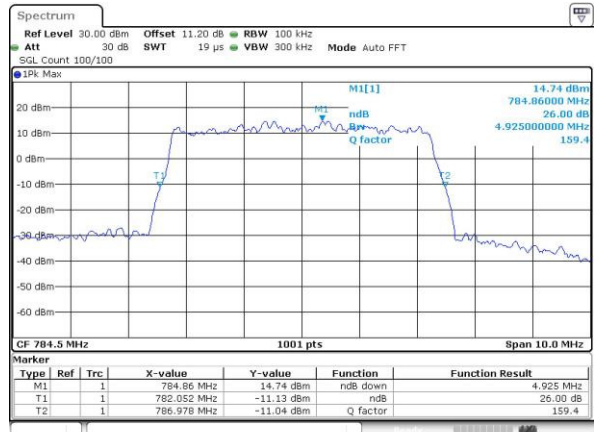
Date: 31.OCT.2016 14:14:57

Highest Channel / 5MHz / QPSK



Date: 31.OCT.2016 14:16:08

Highest Channel / 5MHz / 16QAM



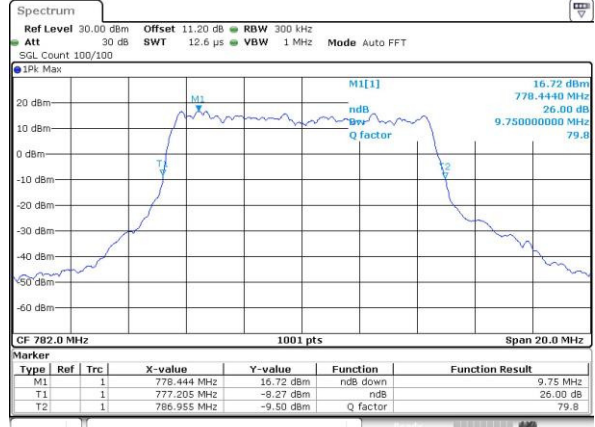
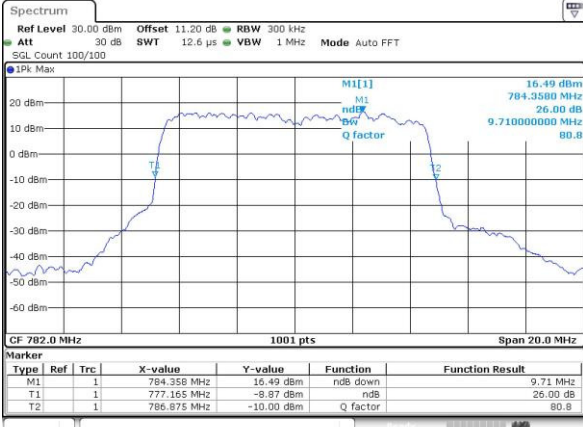
Date: 31.OCT.2016 14:15:56



LTE Band 13

Middle Channel / 10MHz / QPSK

Middle Channel / 10MHz / 16QAM



Date: 31.OCT.2016 14:25:29

Date: 31.OCT.2016 14:25:18



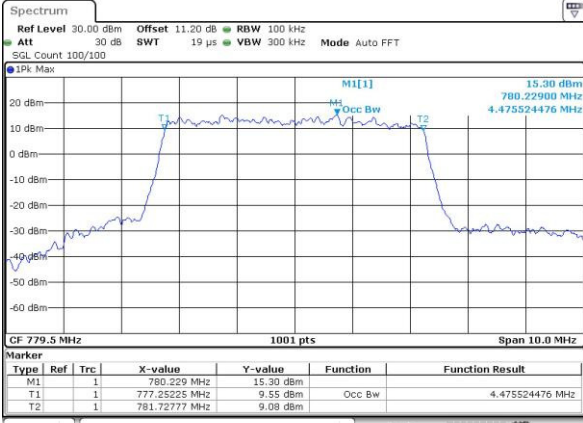
**Occupied Bandwidth**

| Mode       | LTE Band 13 : 99%OBW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|---------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
|            | 1.4MHz                    |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| BW         | QPSK                      | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Mod.       | QPSK                      | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | -                         | -     | -    | -     | 4.48 | 4.46  | -     | -     | -     | -     | -     | -     |
| Middle CH  | -                         | -     | -    | -     | 4.48 | 4.5   | 9.05  | 9.01  | -     | -     | -     | -     |
| Highest CH | -                         | -     | -    | -     | 4.47 | 4.48  | -     | -     | -     | -     | -     | -     |



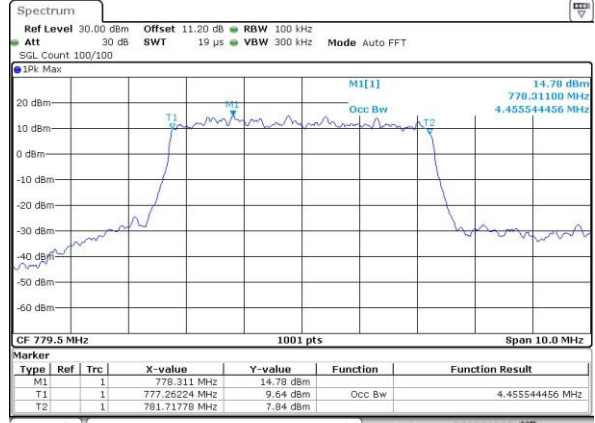
LTE Band 13

Lowest Channel / 5MHz / QPSK



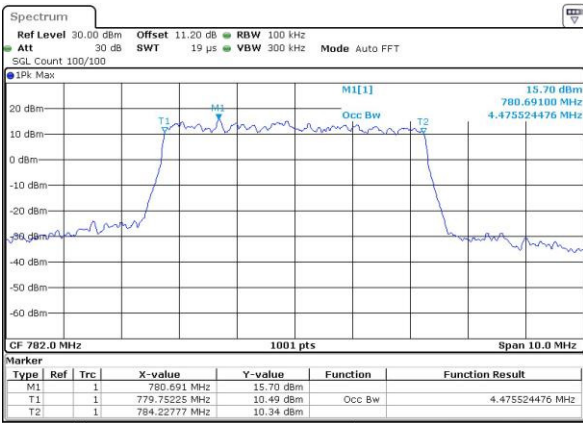
Date: 31.OCT.2016 14:03:29

Lowest Channel / 5MHz / 16QAM



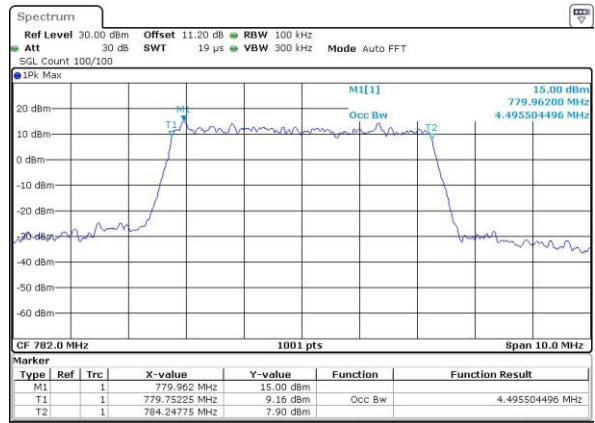
Date: 31.OCT.2016 14:03:41

Middle Channel / 5MHz / QPSK



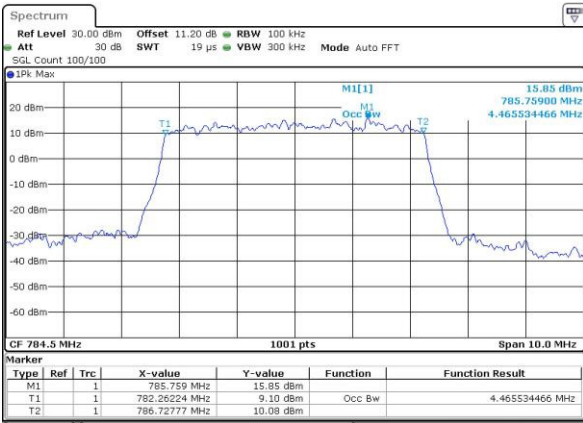
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Middle Channel / 5MHz / 16QAM



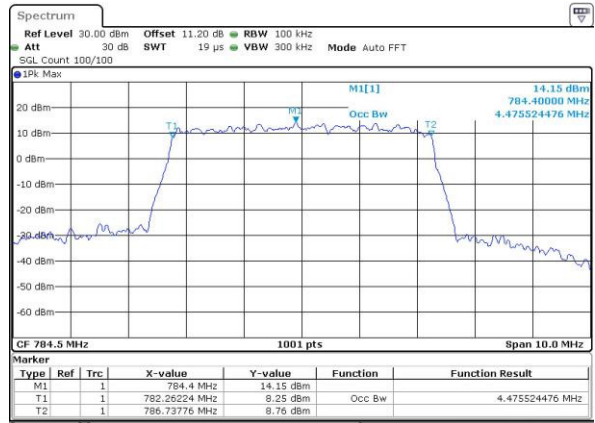
Date: 31.OCT.2016 14:15:09

Highest Channel / 5MHz / QPSK



Date: 31.OCT.2016 14:15:33

Highest Channel / 5MHz / 16QAM



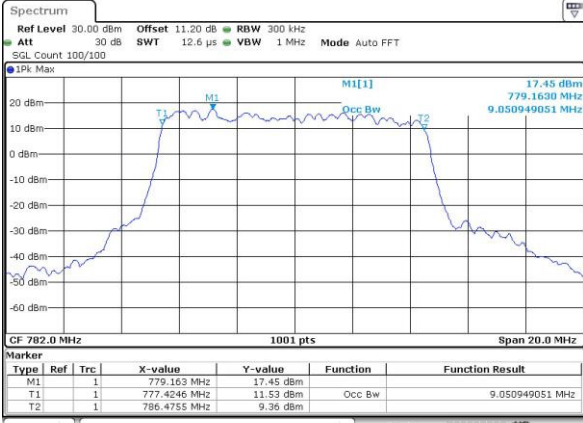
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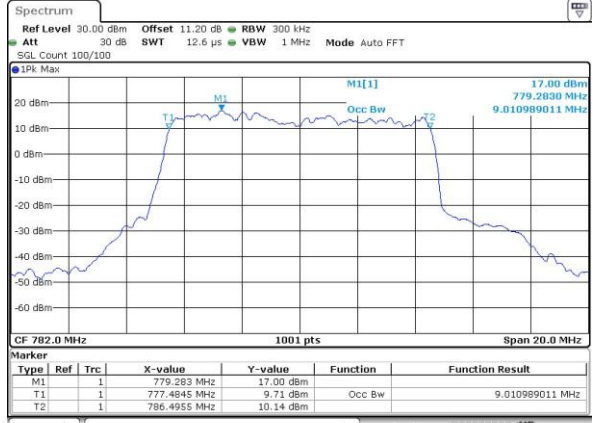
LTE Band 13

Middle Channel / 10MHz / QPSK

Middle Channel / 10MHz / 16QAM



Date: 31.OCT.2016 14:24:54

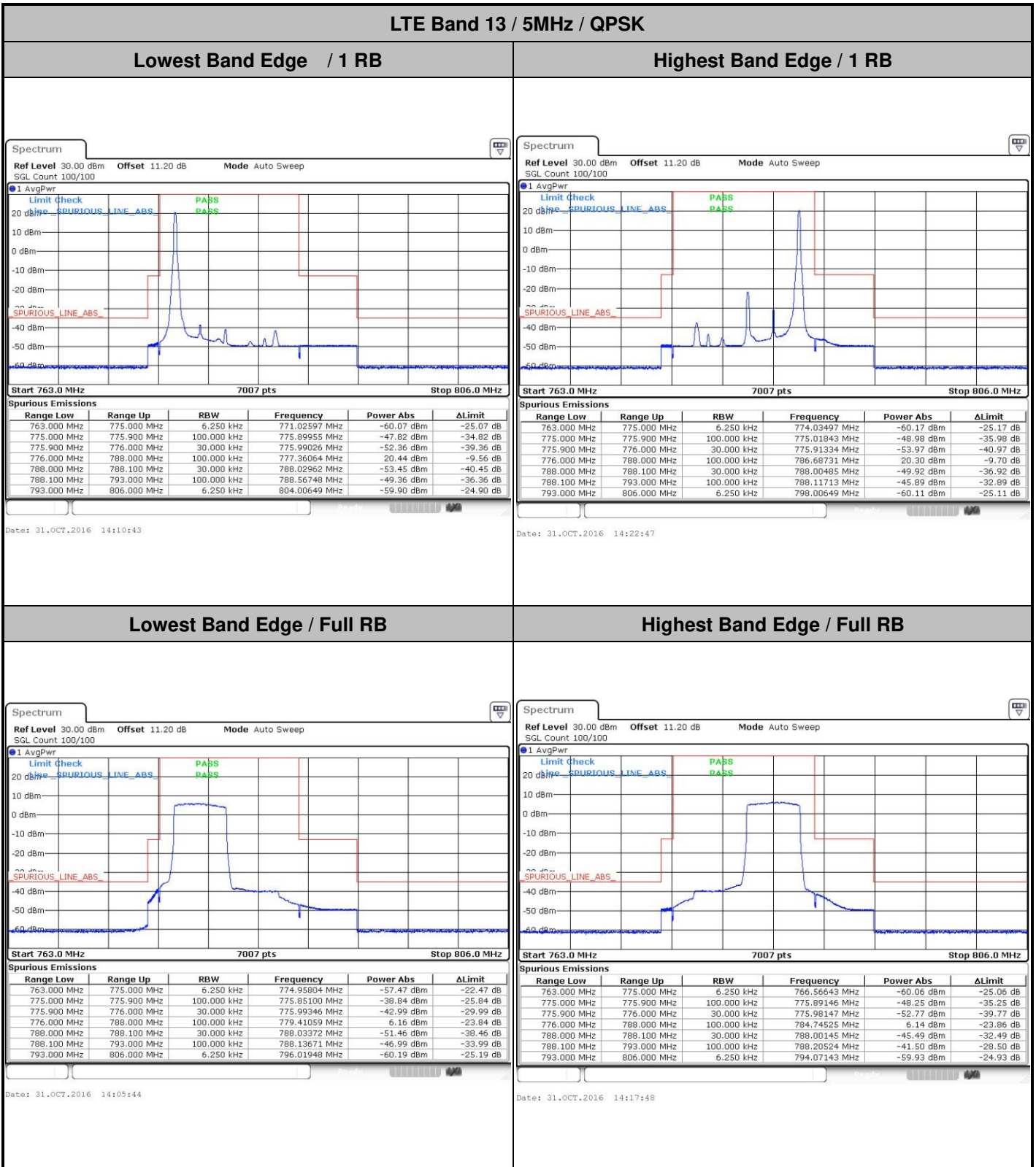


Date: 31.OCT.2016 14:25:06





# Conducted Band Edge

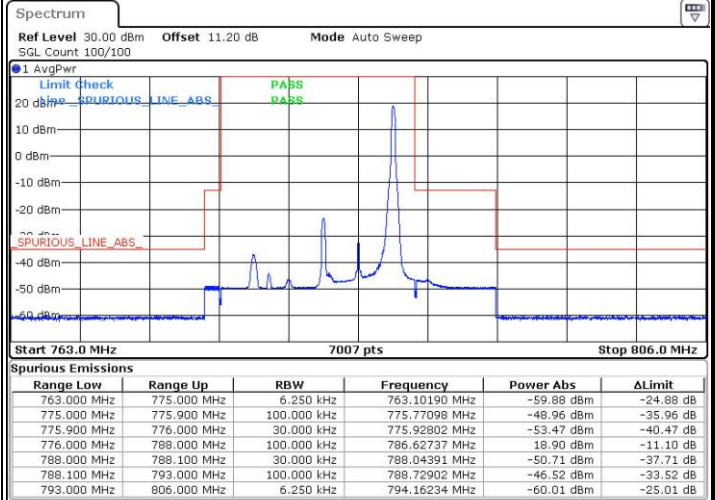
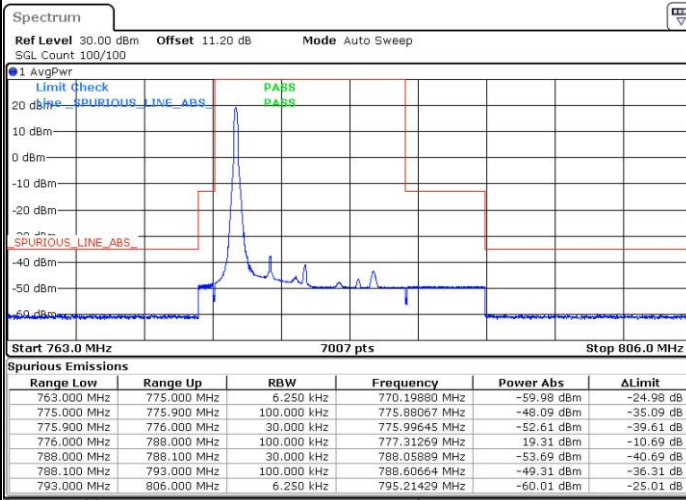




LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB

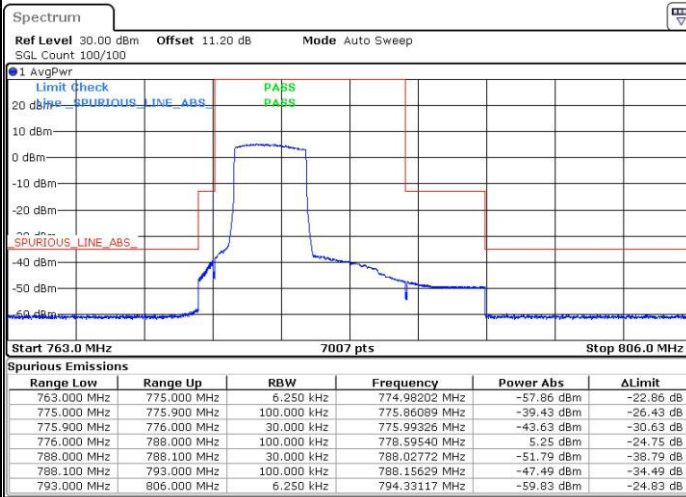


Date: 31.OCT.2016 14:09:03

Date: 31.OCT.2016 14:21:07

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 31.OCT.2016 14:07:23

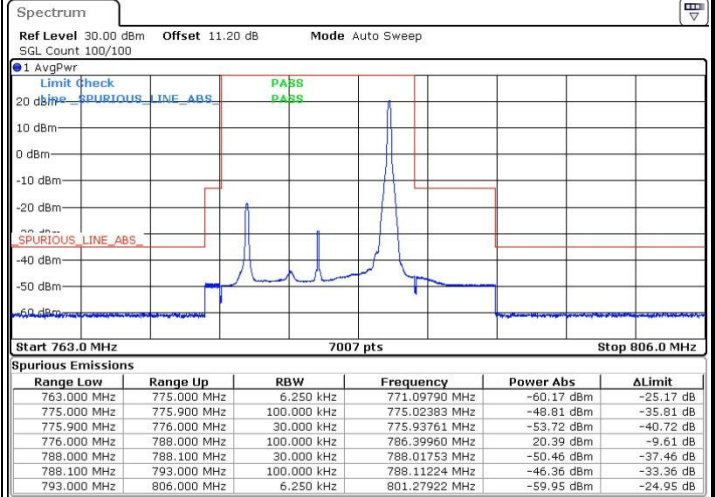
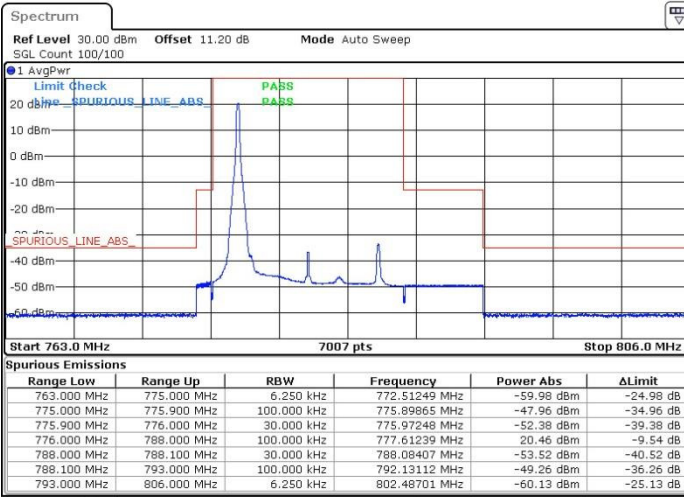
Date: 31.OCT.2016 14:19:27



LTE Band 13 / 10MHz / QPSK

Lowest Band Edge / 1 RB

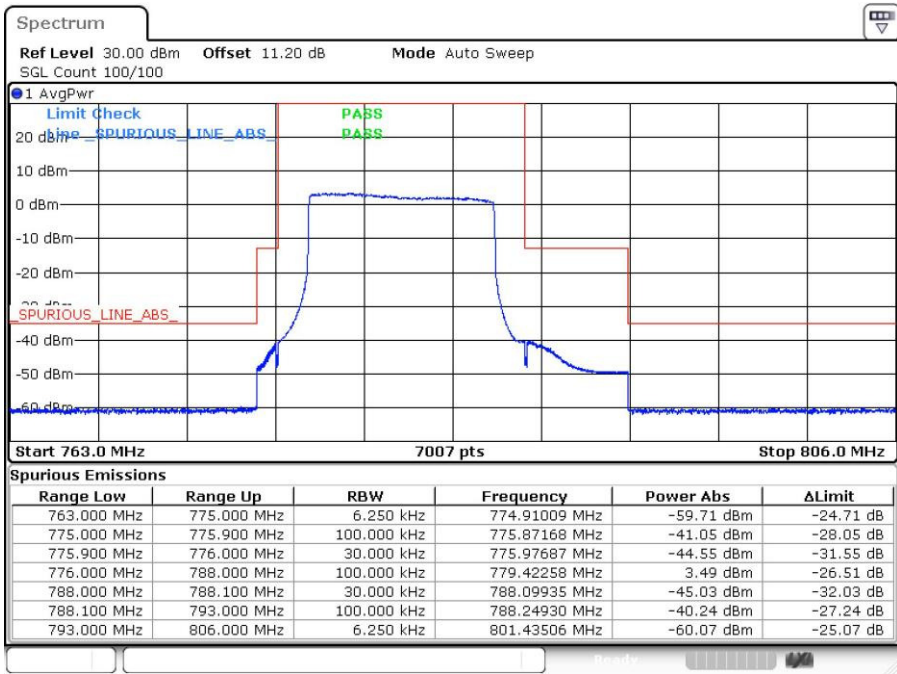
Highest Band Edge / 1 RB



Date: 31.OCT.2016 14:32:08

Date: 31.OCT.2016 14:33:48

Band Edge / Full RB

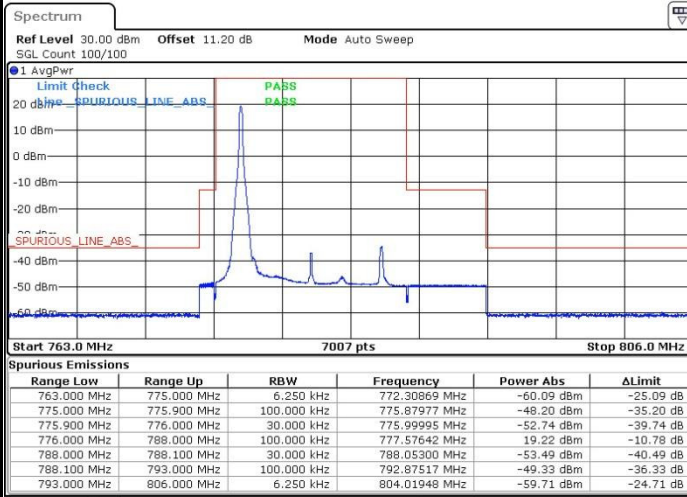


Date: 31.OCT.2016 14:27:09



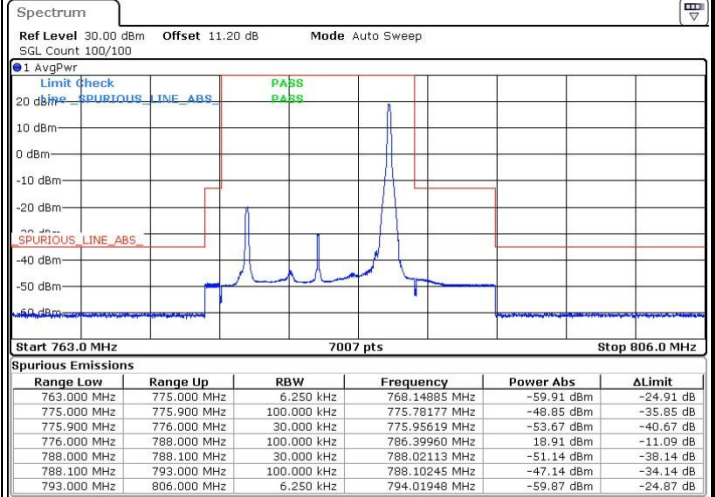
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



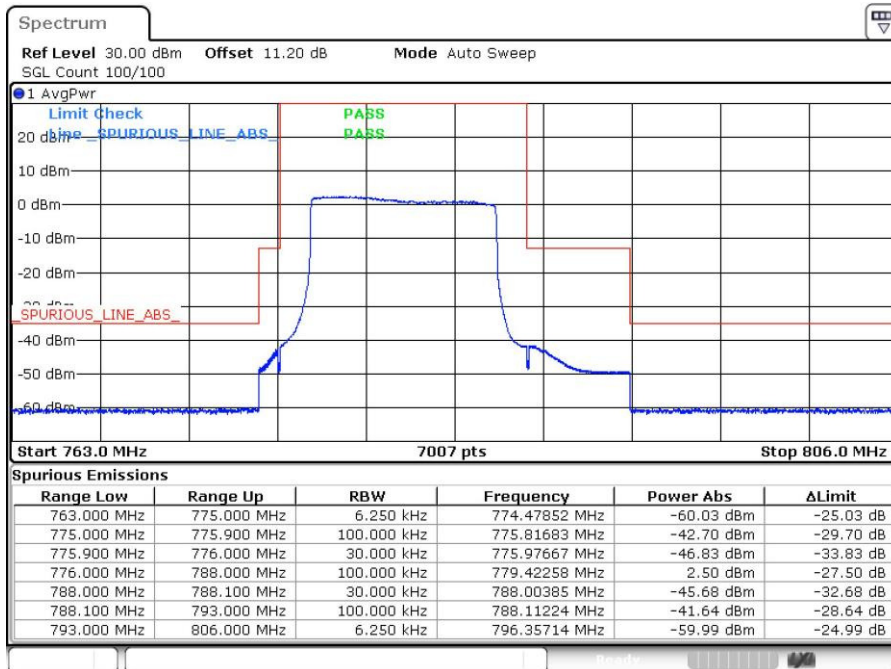
Date: 31.OCT.2016 14:30:28

Highest Band Edge / 1 RB



Date: 31.OCT.2016 14:35:27

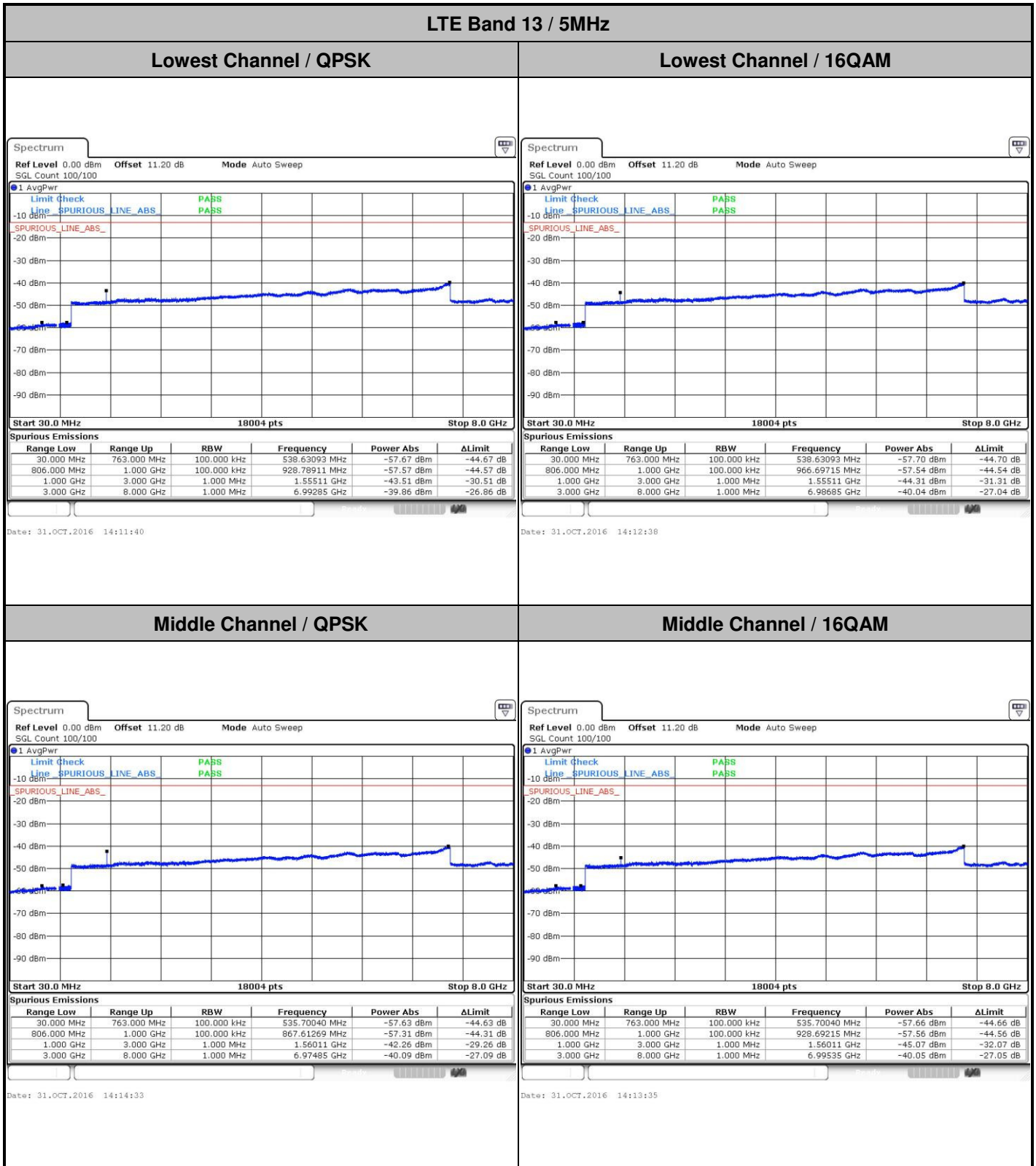
Band Edge / Full RB



Date: 31.OCT.2016 14:28:48



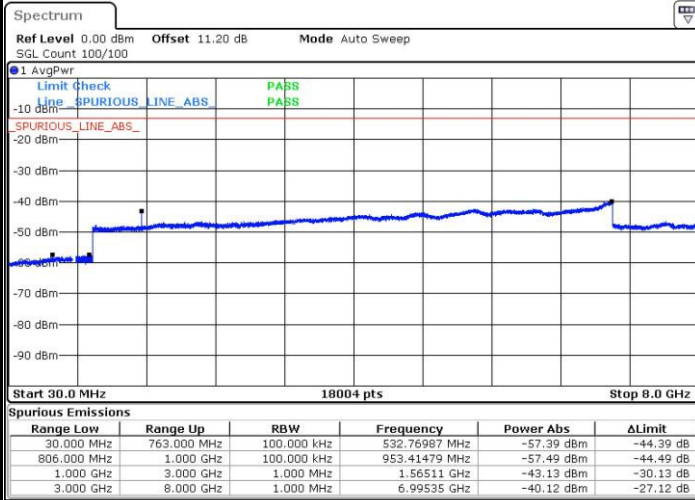
# Conducted Spurious Emission





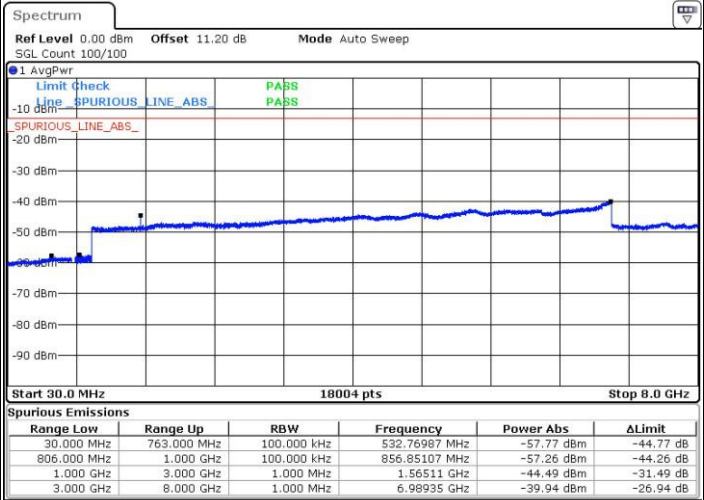
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 31.OCT.2016 14:23:44

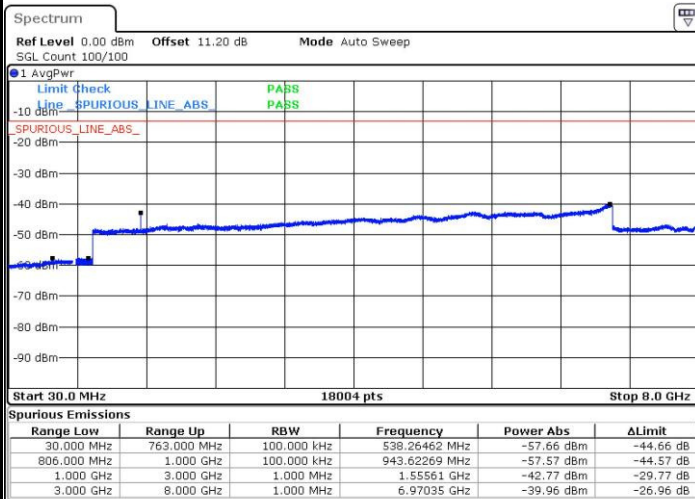
Highest Channel / 16QAM



Date: 31.OCT.2016 14:24:42

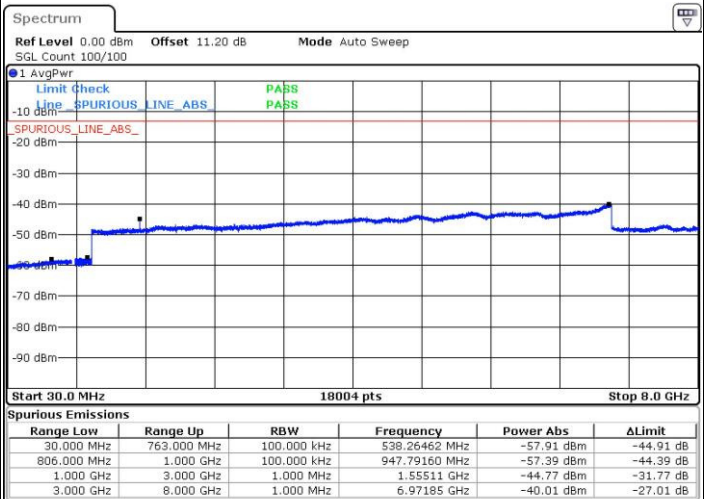
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 31.OCT.2016 14:37:22

Middle Channel / 16QAM



Date: 31.OCT.2016 14:36:24



Frequency Stability

| Test Conditions  |                   | LTE Band 13 (QPSK) / Middle Channel | Limit   |
|------------------|-------------------|-------------------------------------|---------|
| Temperature (°C) | Voltage (Volt)    | BW 10MHz                            | Note 2. |
|                  |                   | Deviation (ppm)                     | Result  |
| 50               | Normal Voltage    | 0.0001                              | PASS    |
| 40               | Normal Voltage    | 0.0018                              |         |
| 30               | Normal Voltage    | 0.0001                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0003                              |         |
| 0                | Normal Voltage    | 0.0003                              |         |
| -10              | Normal Voltage    | 0.0026                              |         |
| -20              | Normal Voltage    | 0.0091                              |         |
| -30              | Normal Voltage    | 0.0087                              |         |
| 20               | Maximum Voltage   | 0.0082                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0005                              |         |

Note:

1. Normal Voltage =3.6 V. ; Battery End Point (BEP) =3.45 V. ; Maximum Voltage =4.2 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.