



LTE Band 12

Peak-to-Average Ratio

| Mode | LTE Band 12 / 10MHz | | | | |
|------------|---------------------|---------|-------|---------|-------------|
| Mod. | QPSK | | 16QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 3.88 | 4.99 | 5.42 | 6 | PASS |
| Middle CH | 4.29 | 4.87 | 4.93 | 6 | |
| Highest CH | 4.03 | 4.78 | 5.22 | 5.83 | |



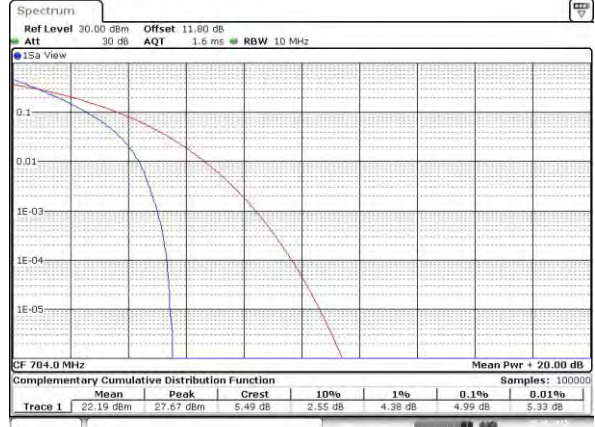
LTE Band 12 / 10MHz / QPSK

Lowest Channel / 1RB



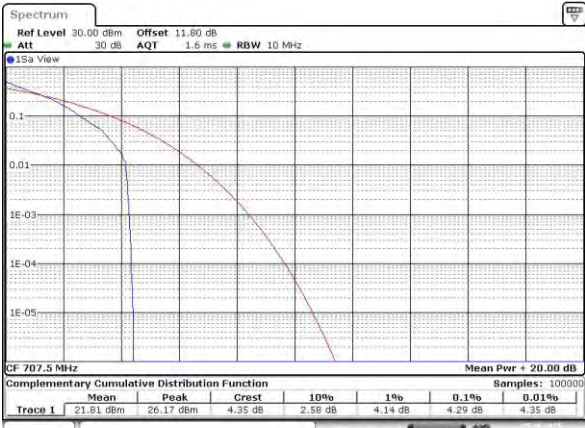
Date: 25 JUN 2015 17:12:10

Lowest Channel / Full RB



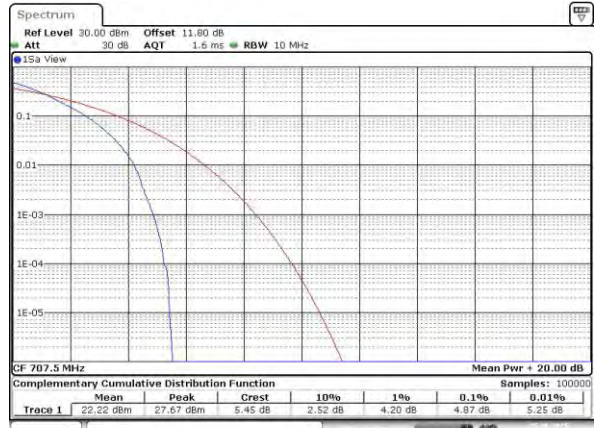
Date: 25 JUN 2015 17:11:50

Middle Channel / 1RB



Date: 25 JUN 2015 17:12:27

Middle Channel / Full RB



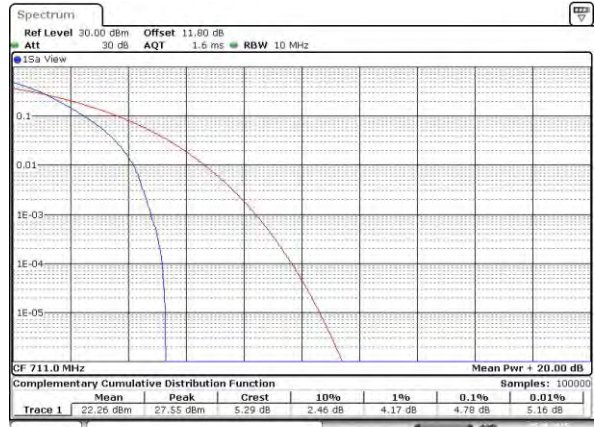
Date: 25 JUN 2015 17:12:37

Highest Channel / 1RB



Date: 25 JUN 2015 17:13:02

Highest Channel / Full RB

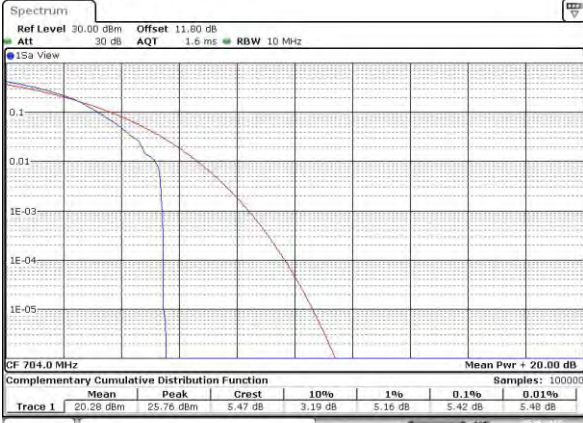


Date: 25 JUN 2015 17:12:52



LTE Band 12 / 10MHz / 16QAM

Lowest Channel / 1RB



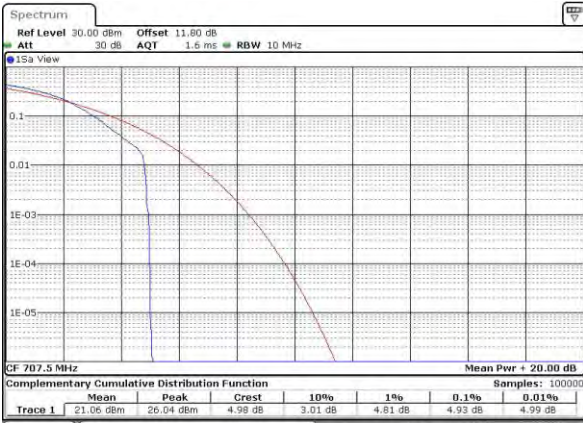
Date: 25 JUN 2015 17:08:06

Lowest Channel / Full RB



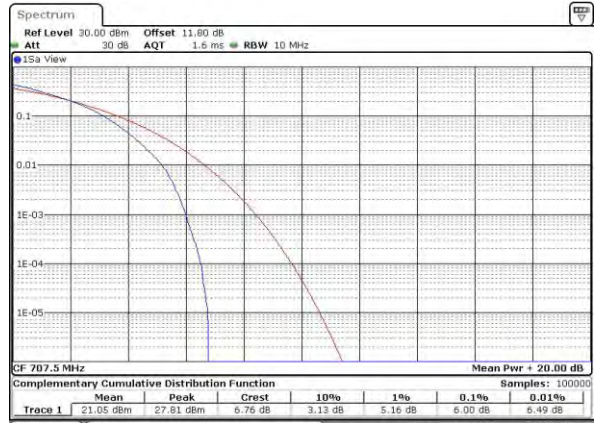
Date: 25 JUN 2015 17:07:56

Middle Channel / 1RB



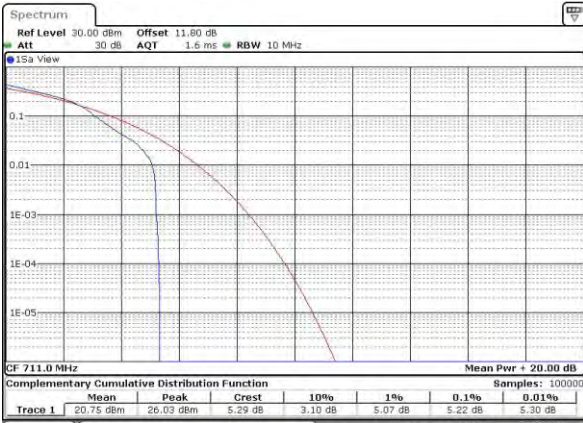
Date: 25 JUN 2015 17:08:42

Middle Channel / Full RB



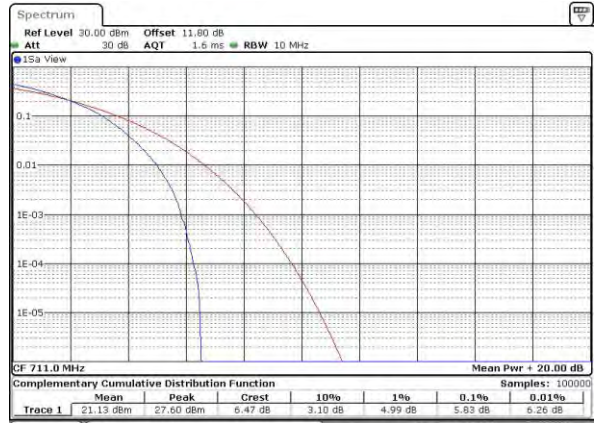
Date: 25 JUN 2015 17:08:56

Highest Channel / 1RB



Date: 25 JUN 2015 17:09:26

Highest Channel / Full RB



Date: 25 JUN 2015 17:09:13



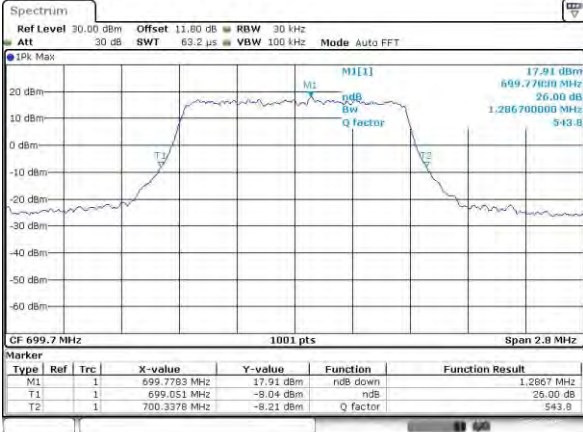
26dB Bandwidth

| Mode | LTE Band 12 : 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 | 1.29 | 1.3 | 3.05 | 2.97 | 5.05 | 5.06 | 10.01 | 10.09 | - | - | - | - |
| Middle CH | 1.28 | 1.3 | 3.04 | 3.05 | 5 | 5.05 | 9.93 | 9.99 | - | - | - | - |
| Highest CH | 1.28 | 1.3 | 3.05 | 3.06 | 5.07 | 5.08 | 10.03 | 9.99 | - | - | - | - |



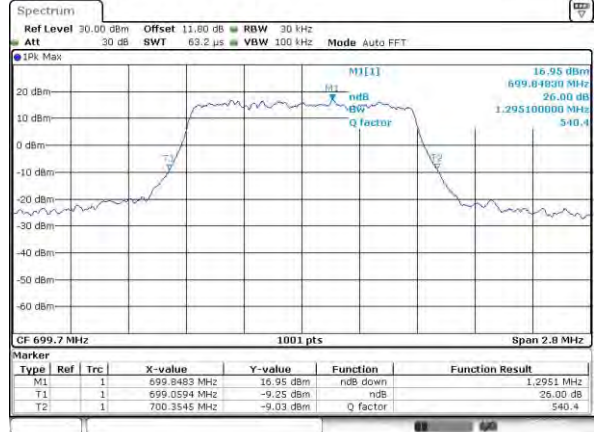
LTE Band 12

Lowest Channel / 1.4MHz / QPSK



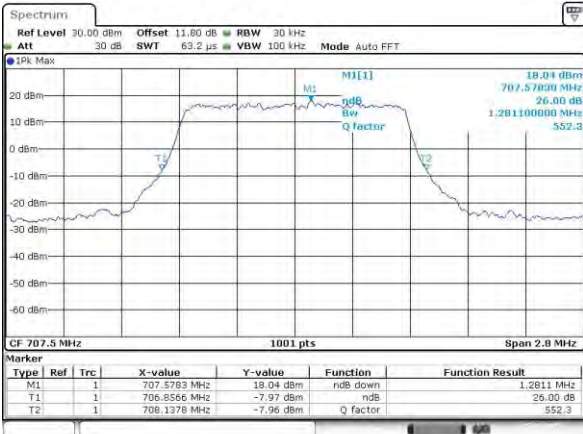
Date: 25 JUN 2015 16:44:49

Lowest Channel / 1.4MHz / 16QAM



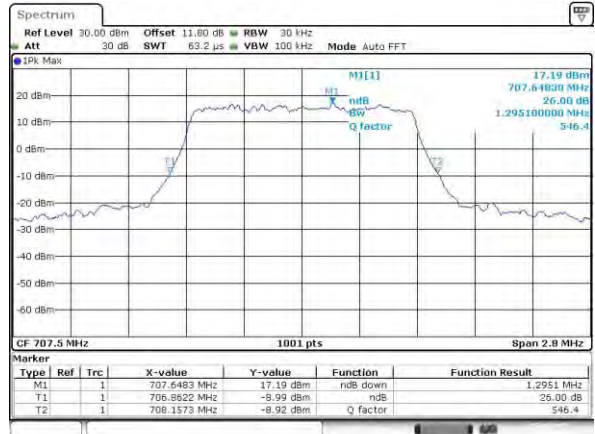
Date: 25 JUN 2015 16:44:36

Middle Channel / 1.4MHz / QPSK



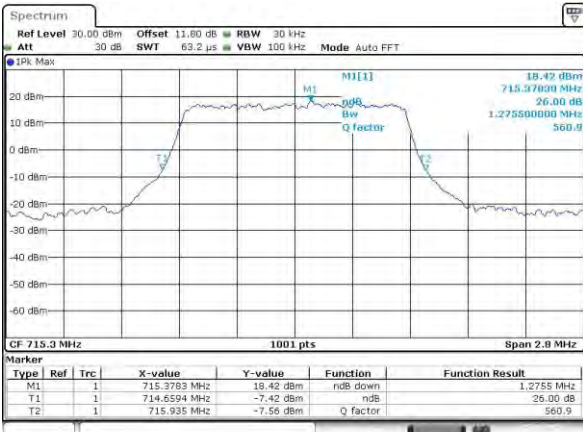
Date: 25 JUN 2015 16:52:22

Middle Channel / 1.4MHz / 16QAM



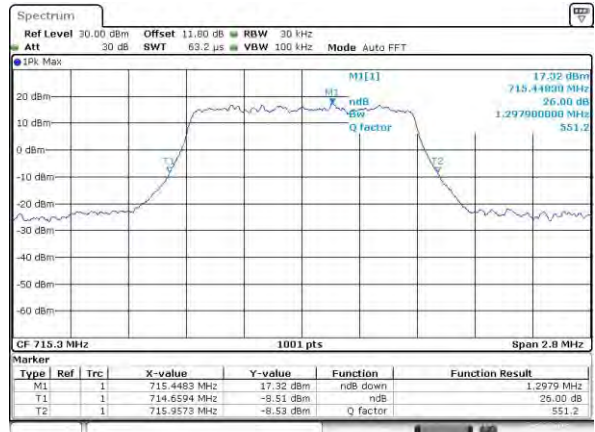
Date: 25 JUN 2015 16:52:35

Highest Channel / 1.4MHz / QPSK



Date: 25 JUN 2015 16:55:42

Highest Channel / 1.4MHz / 16QAM

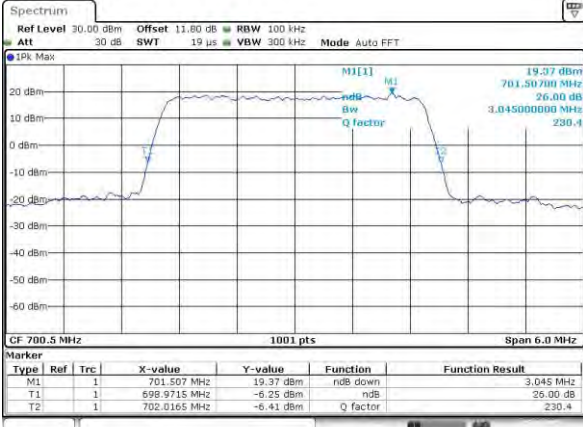


Date: 25 JUN 2015 16:55:29



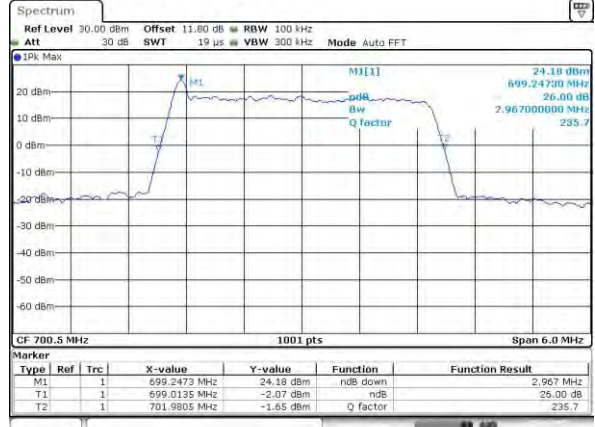
LTE Band 12

Lowest Channel / 3MHz / QPSK



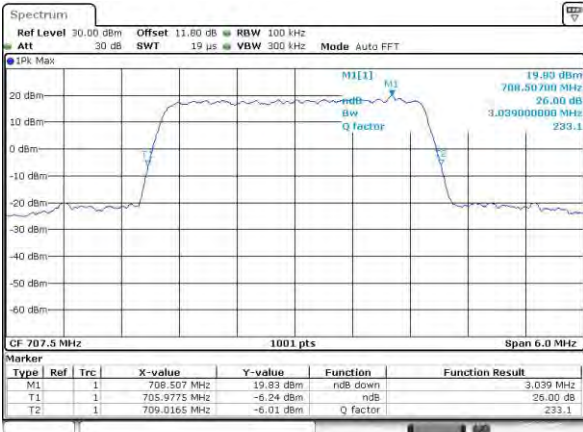
Date: 25 JUN 2015 15:48:51

Lowest Channel / 3MHz / 16QAM



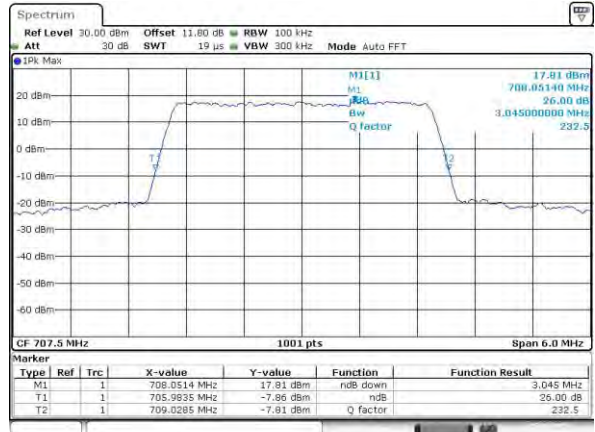
Date: 25 JUN 2015 15:48:38

Middle Channel / 3MHz / QPSK



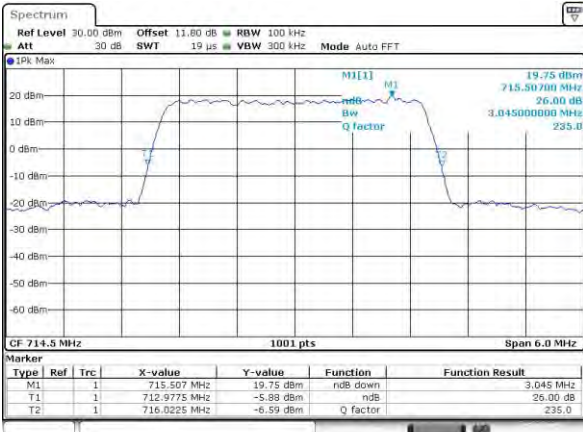
Date: 25 JUN 2015 15:56:24

Middle Channel / 3MHz / 16QAM



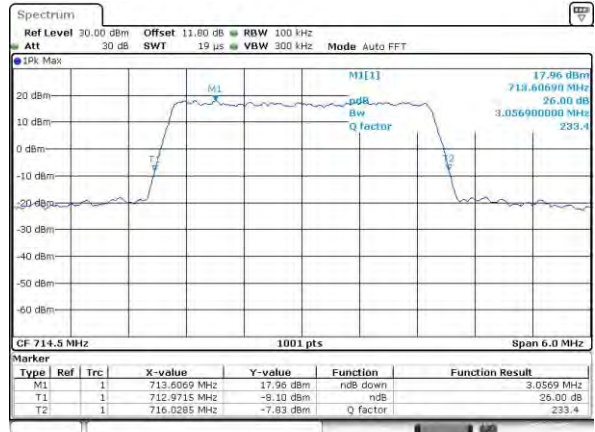
Date: 25 JUN 2015 15:56:37

Highest Channel / 3MHz / QPSK



Date: 25 JUN 2015 15:59:44

Highest Channel / 3MHz / 16QAM

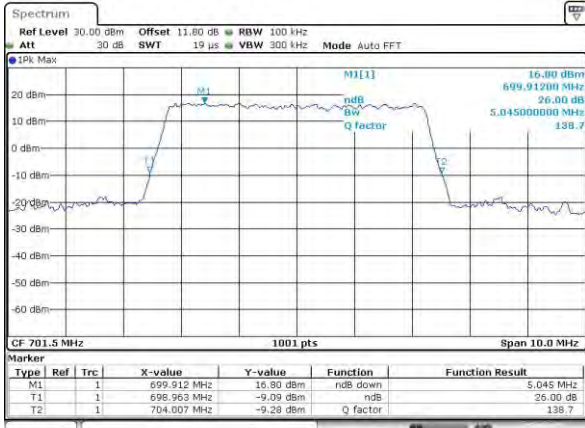


Date: 25 JUN 2015 15:59:31



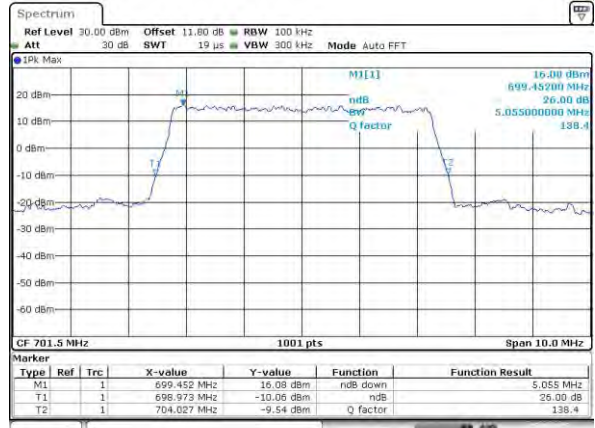
LTE Band 12

Lowest Channel / 5MHz / QPSK



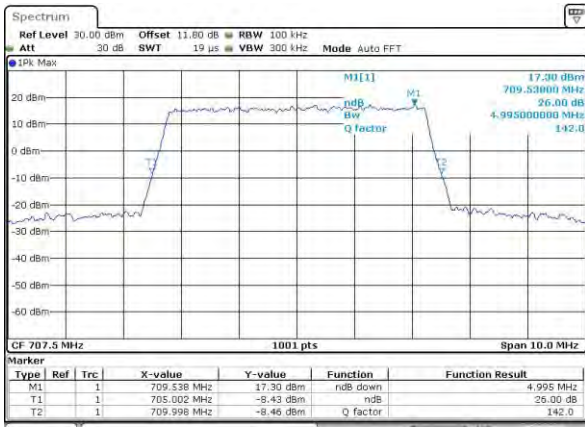
Date: 25 JUN 2015 18:07:30

Lowest Channel / 5MHz / 16QAM



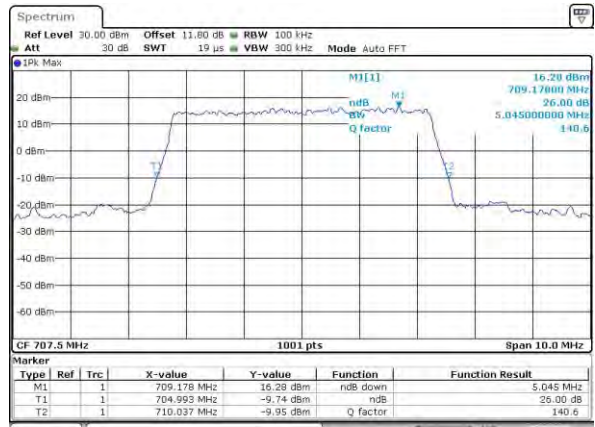
Date: 25 JUN 2015 18:07:17

Middle Channel / 5MHz / QPSK



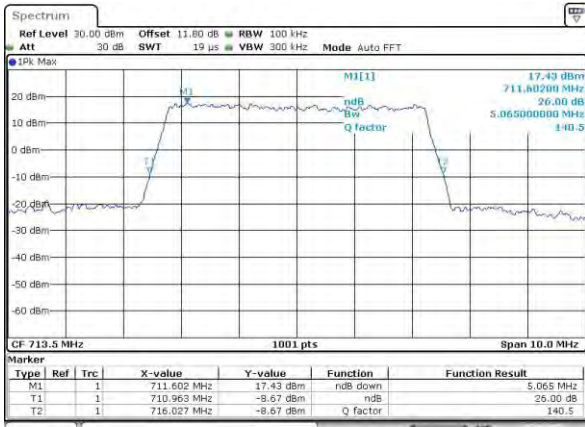
Date: 25 JUN 2015 18:15:03

Middle Channel / 5MHz / 16QAM



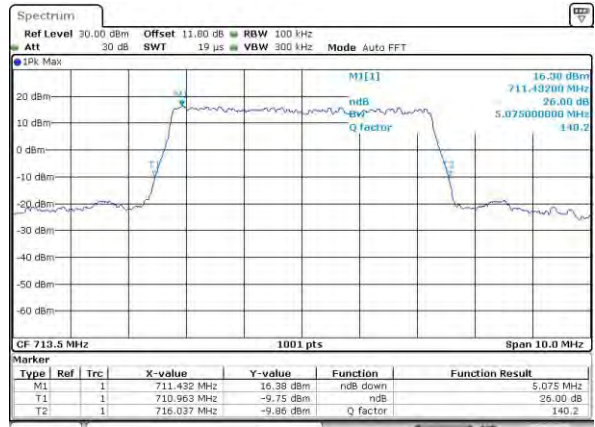
Date: 25 JUN 2015 18:15:16

Highest Channel / 5MHz / QPSK



Date: 25 JUN 2015 18:18:23

Highest Channel / 5MHz / 16QAM

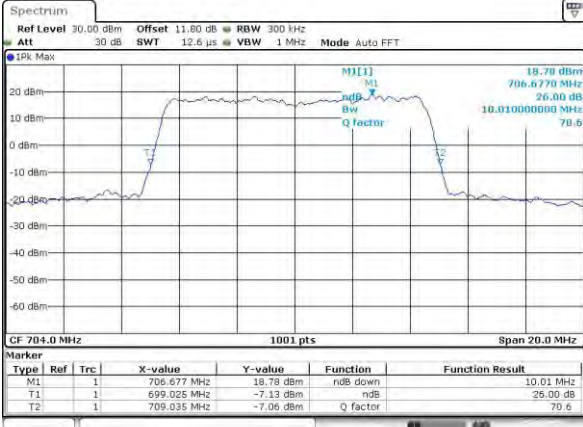


Date: 25 JUN 2015 18:18:10



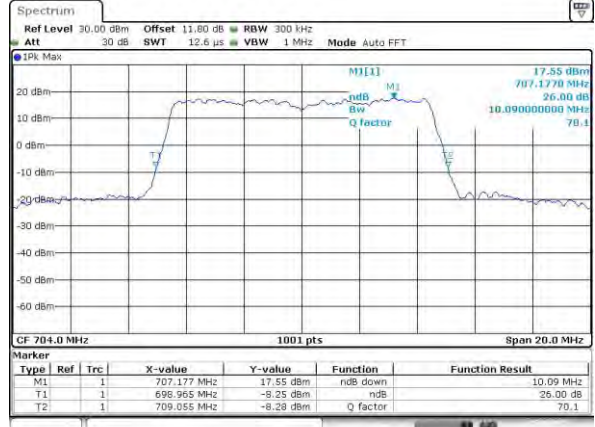
LTE Band 12

Lowest Channel / 10MHz / QPSK



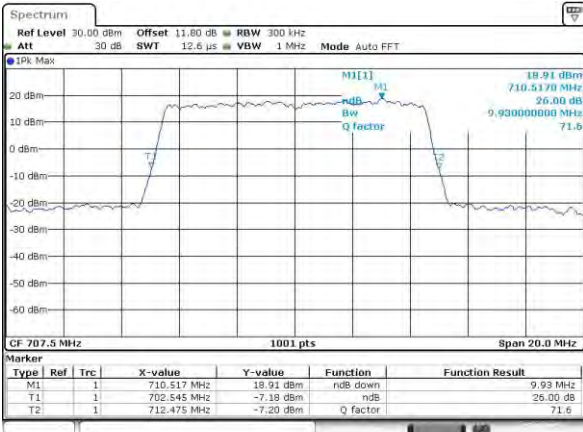
Date: 25 JUN 2015 16:28:08

Lowest Channel / 10MHz / 16QAM



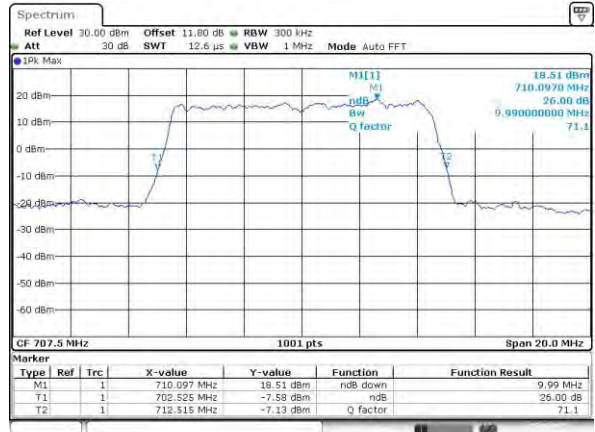
Date: 25 JUN 2015 16:25:56

Middle Channel / 10MHz / QPSK



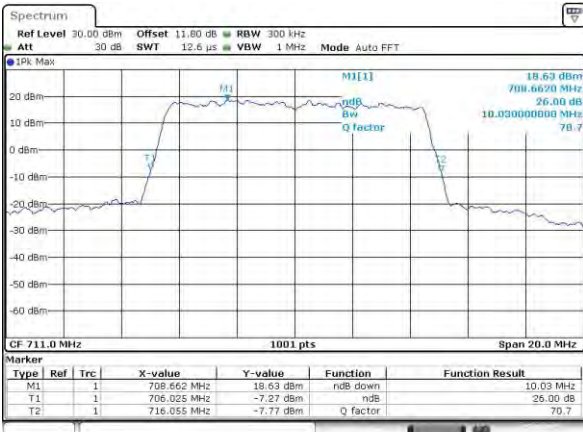
Date: 25 JUN 2015 16:33:42

Middle Channel / 10MHz / 16QAM



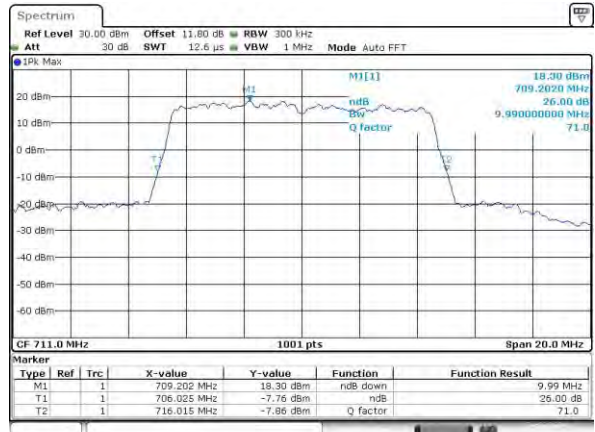
Date: 25 JUN 2015 16:33:55

Highest Channel / 10MHz / QPSK



Date: 25 JUN 2015 16:37:02

Highest Channel / 10MHz / 16QAM



Date: 25 JUN 2015 16:36:50



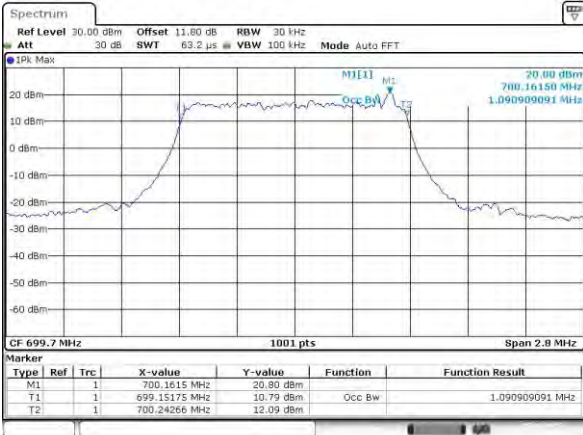
Occupied Bandwidth

| Mode | LTE Band 12 : 99%OBW(MHz) | | | | | | | | | | | |
|------------|---------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| BW | | | | | | | | | | | | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.09 | 1.09 | 2.73 | 2.73 | 4.5 | 4.51 | 9.09 | 9.03 | - | - | - | - |
| Middle CH | 1.09 | 1.09 | 2.72 | 2.73 | 4.5 | 4.5 | 9.01 | 9.01 | - | - | - | - |
| Highest CH | 1.09 | 1.1 | 2.73 | 2.74 | 4.51 | 4.51 | 9.01 | 9.03 | - | - | - | - |



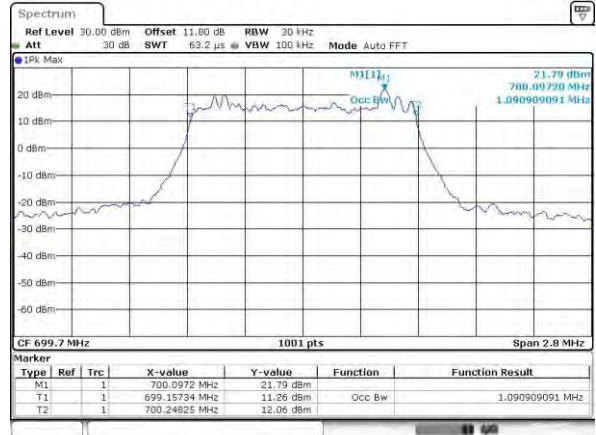
LTE Band 12

Lowest Channel / 1.4MHz / QPSK



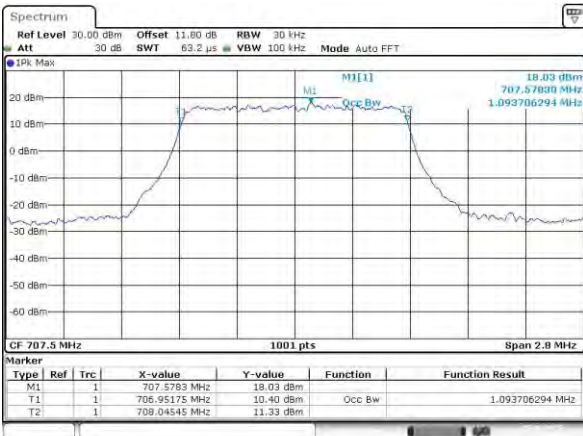
Date: 25 JUN 2015 16:44:13

Lowest Channel / 1.4MHz / 16QAM



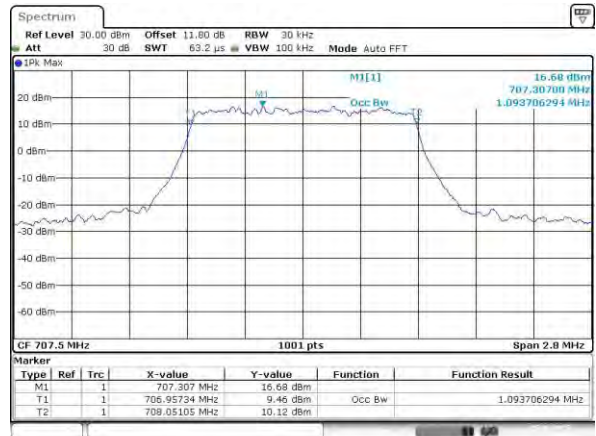
Date: 25 JUN 2015 16:44:23

Middle Channel / 1.4MHz / QPSK



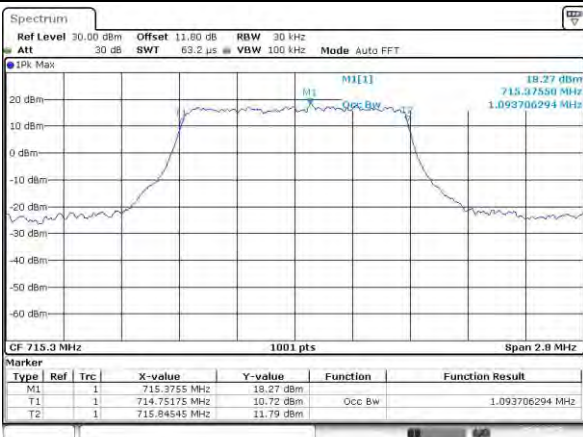
Date: 25 JUN 2015 16:52:09

Middle Channel / 1.4MHz / 16QAM



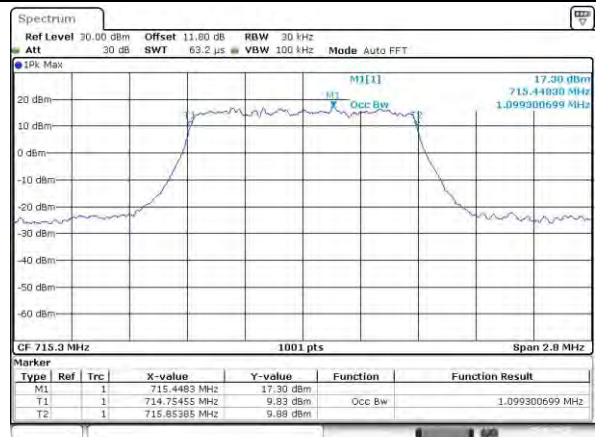
Date: 25 JUN 2015 16:51:59

Highest Channel / 1.4MHz / QPSK



Date: 25 JUN 2015 16:55:06

Highest Channel / 1.4MHz / 16QAM

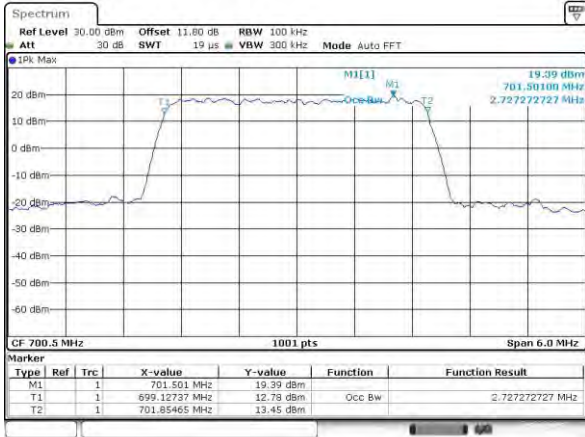


Date: 25 JUN 2015 16:55:16



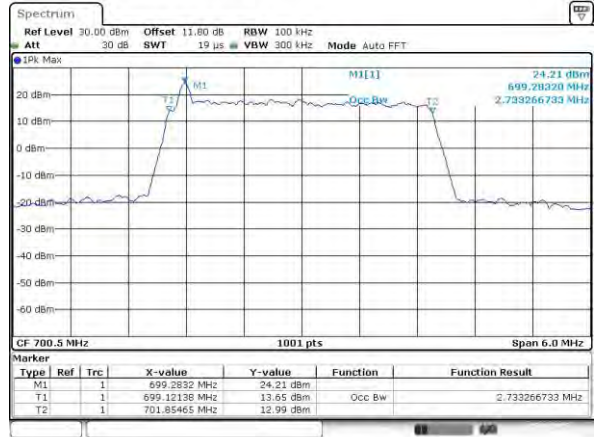
LTE Band 12

Lowest Channel / 3MHz / QPSK



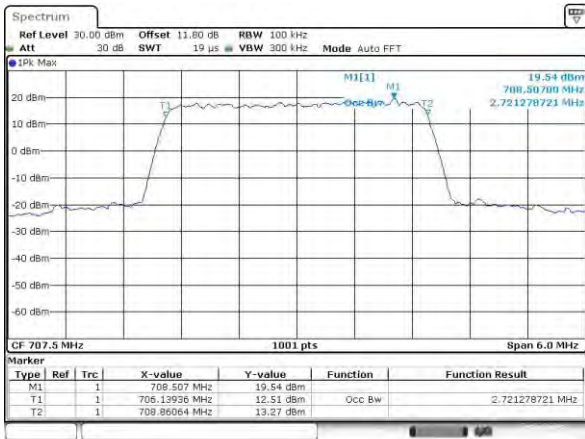
Date: 25 JUN 2015 15:48:14

Lowest Channel / 3MHz / 16QAM



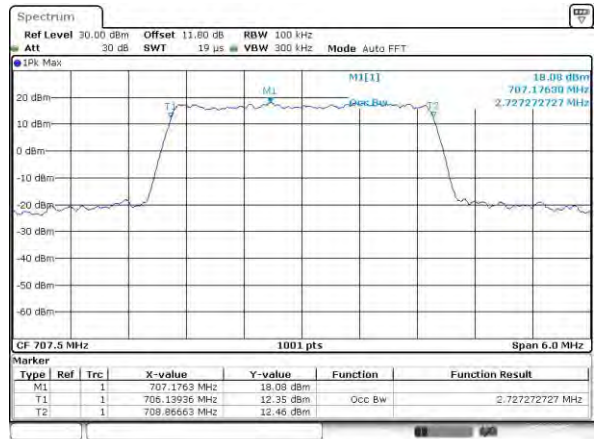
Date: 25 JUN 2015 15:48:25

Middle Channel / 3MHz / QPSK



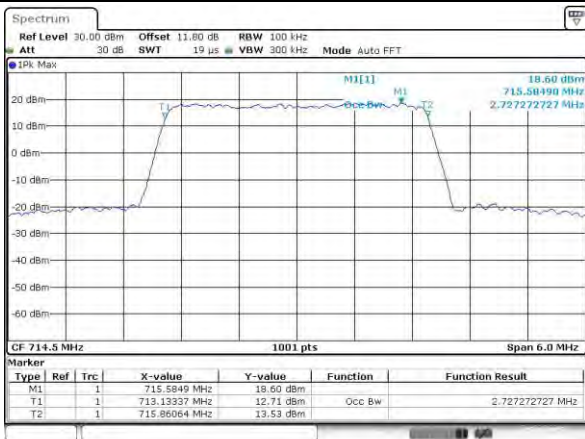
Date: 25 JUN 2015 15:56:11

Middle Channel / 3MHz / 16QAM



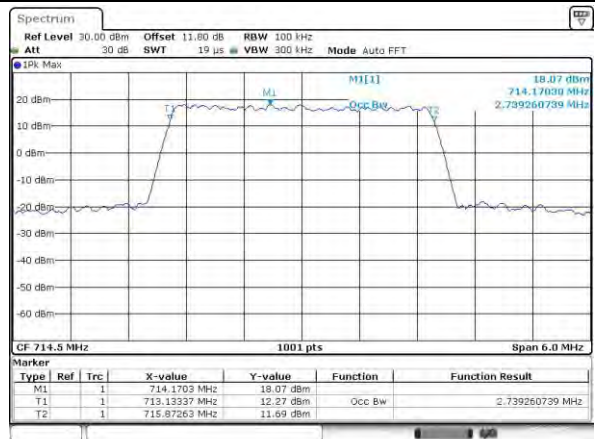
Date: 25 JUN 2015 15:56:01

Highest Channel / 3MHz / QPSK



Date: 25 JUN 2015 15:59:07

Highest Channel / 3MHz / 16QAM

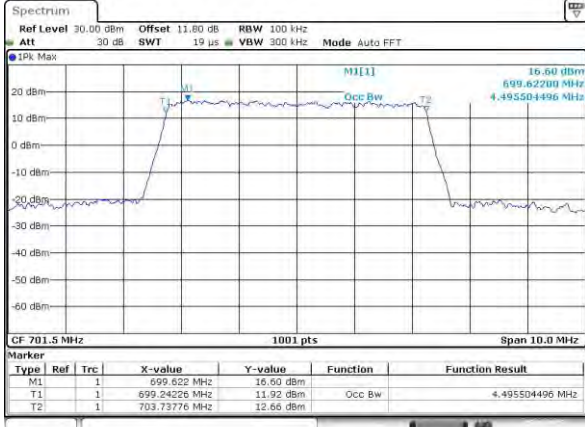


Date: 25 JUN 2015 15:59:18



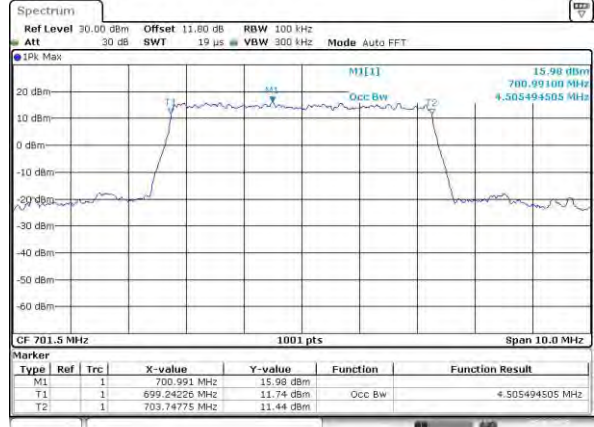
LTE Band 12

Lowest Channel / 5MHz / QPSK



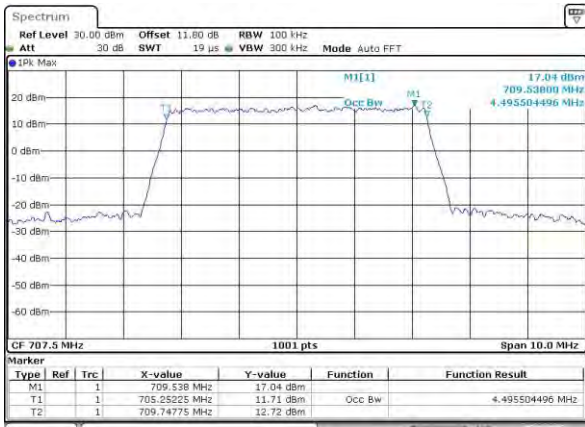
Date: 25 JUN 2015 18:06:53

Lowest Channel / 5MHz / 16QAM



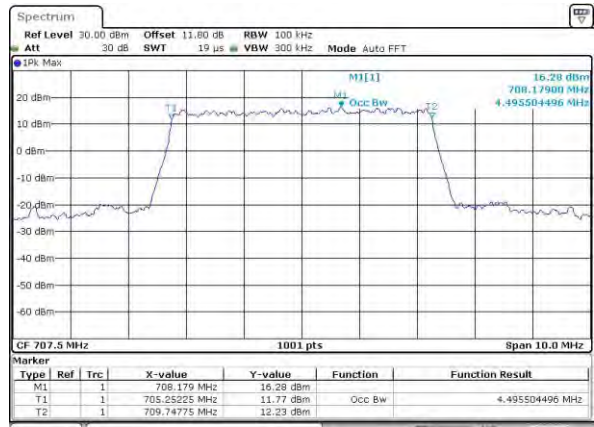
Date: 25 JUN 2015 18:07:04

Middle Channel / 5MHz / QPSK



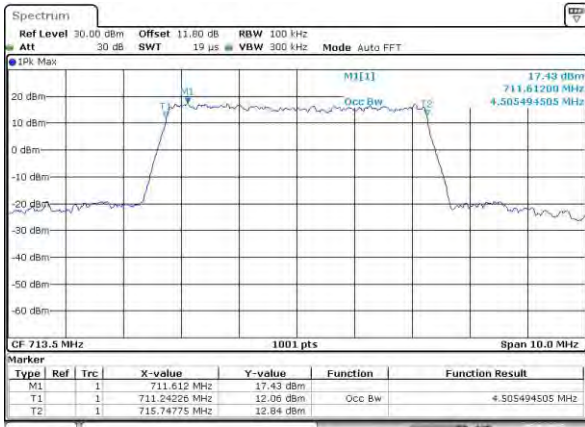
Date: 25 JUN 2015 18:14:51

Middle Channel / 5MHz / 16QAM



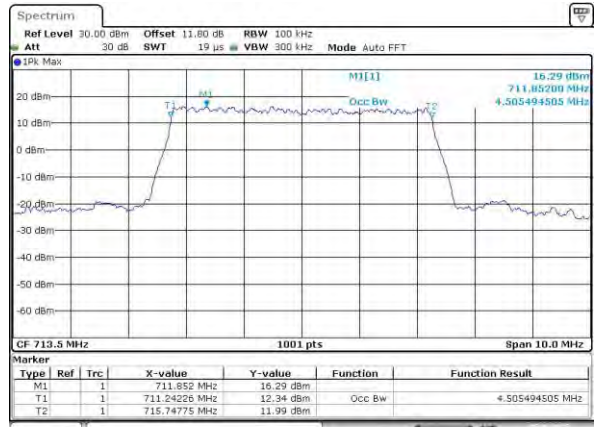
Date: 25 JUN 2015 18:14:40

Highest Channel / 5MHz / QPSK



Date: 25 JUN 2015 18:17:46

Highest Channel / 5MHz / 16QAM

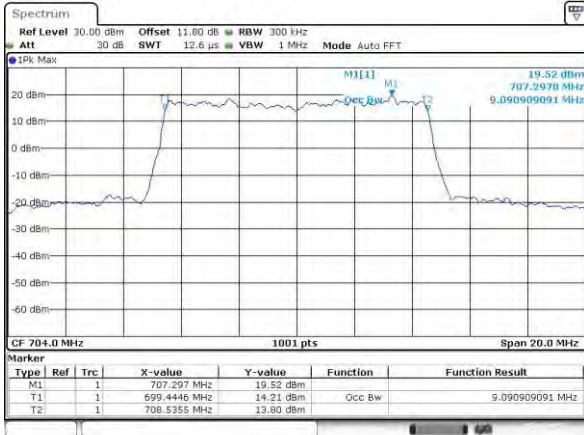


Date: 25 JUN 2015 18:17:57



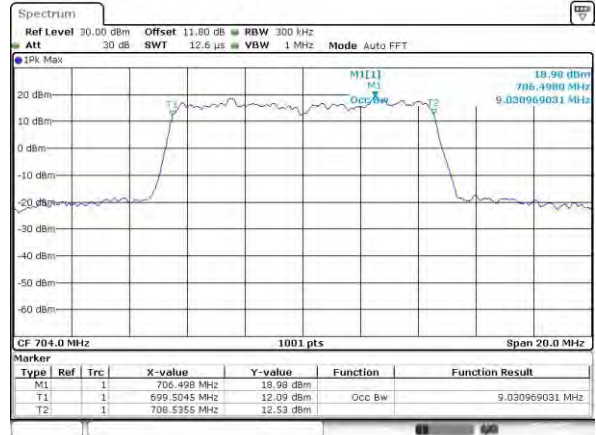
LTE Band 12

Lowest Channel / 10MHz / QPSK



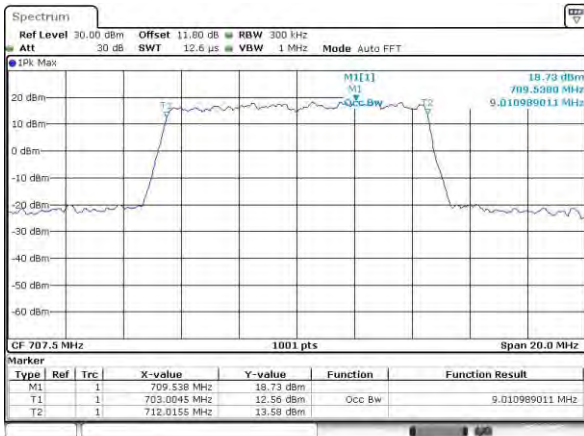
Date: 25 JUN 2015 16:25:32

Lowest Channel / 10MHz / 16QAM



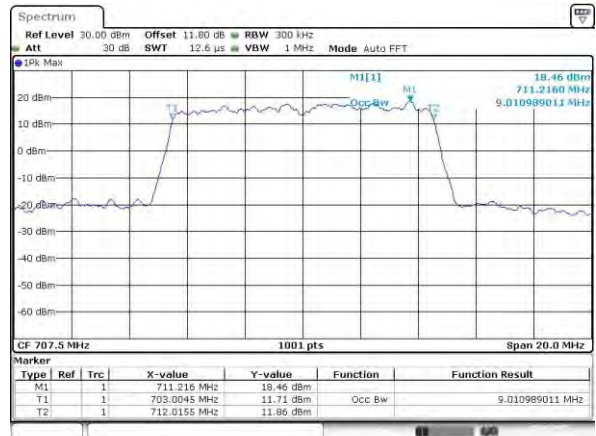
Date: 25 JUN 2015 16:25:43

Middle Channel / 10MHz / QPSK



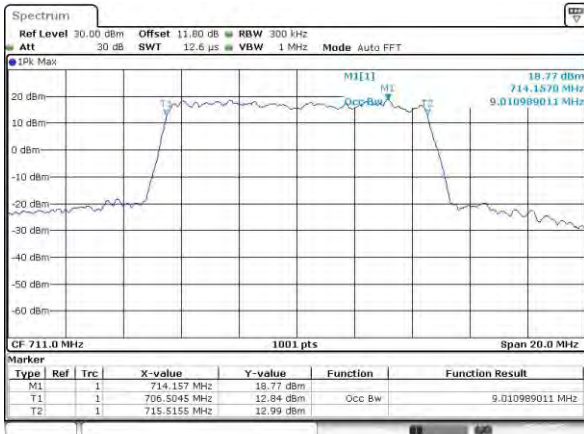
Date: 25 JUN 2015 16:33:29

Middle Channel / 10MHz / 16QAM



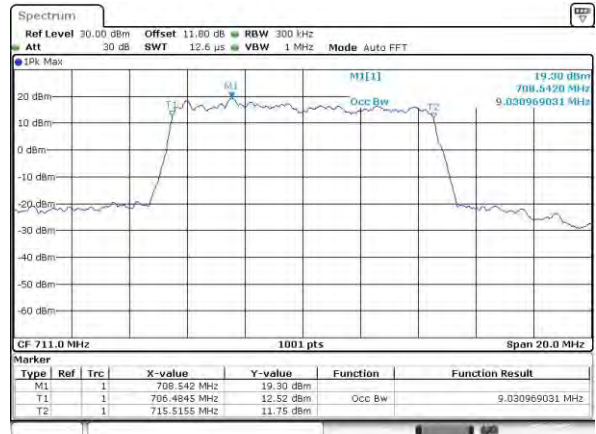
Date: 25 JUN 2015 16:33:16

Highest Channel / 10MHz / QPSK



Date: 25 JUN 2015 16:36:26

Highest Channel / 10MHz / 16QAM



Date: 25 JUN 2015 16:36:37



Conducted Band Edge



LTE Band 12 / 1.4MHz / QPSK

Lowest Band Edge / 1 RB



Date: 25 JUN 2015 16:49:27

Highest Band Edge / 1RB



Date: 25 JUN 2015 17:00:21

Lowest Band Edge / Full RB



Date: 25 JUN 2015 16:45:58

Highest Band Edge / Full RB



Date: 25 JUN 2015 16:56:51



LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



Date: 25 JUN 2015 16:48:17



Date: 25 JUN 2015 16:59:11

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 25 JUN 2015 16:47:07

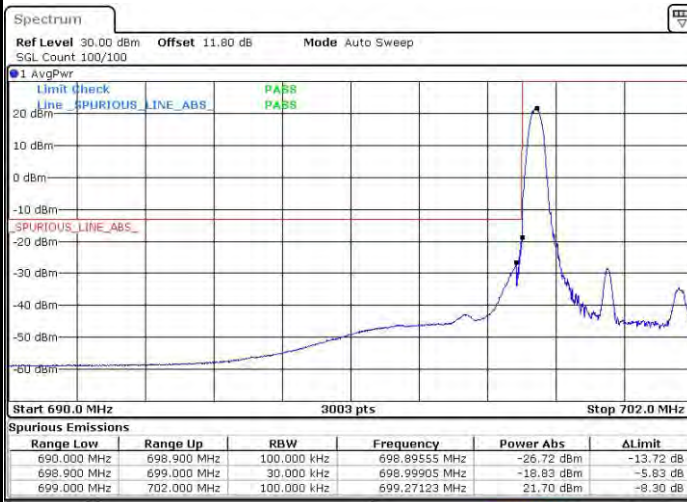


Date: 25 JUN 2015 16:58:01



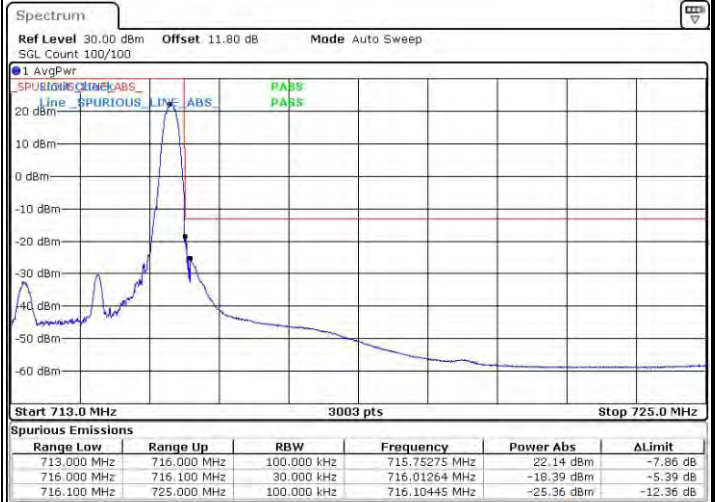
LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / 1RB



Date: 25 JUN 2015 15:53:29

Highest Band Edge / 1 RB



Date: 25 JUN 2015 16:04:22

Lowest Band Edge / Full RB



Date: 25 JUN 2015 15:50:00

Highest Band Edge / Full RB

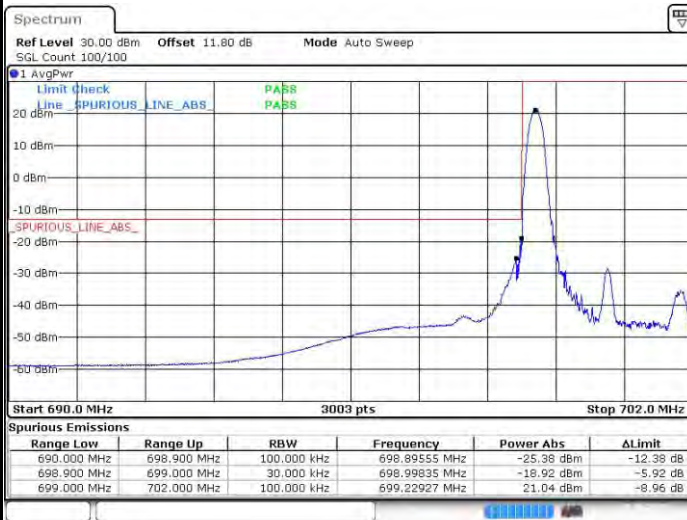


Date: 25 JUN 2015 16:00:53



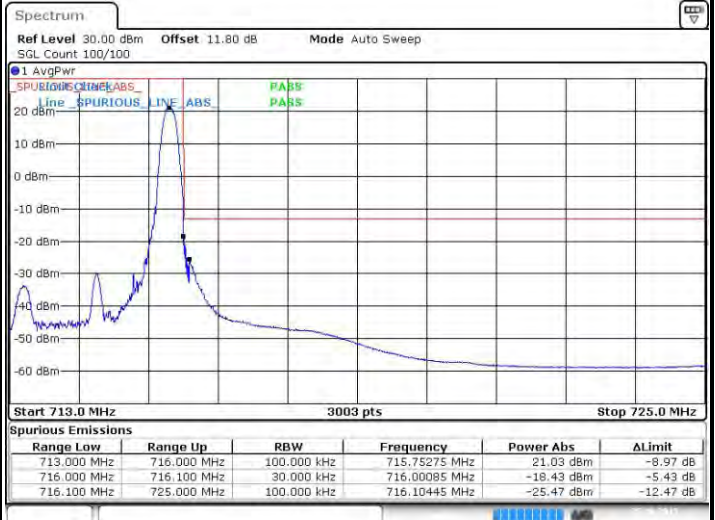
LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / 1 RB



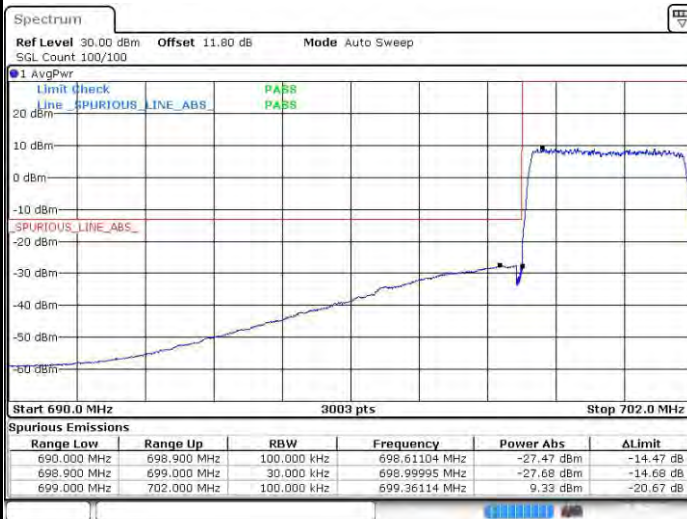
Date: 25 JUN 2015 15:52:19

Highest Band Edge / 1 RB



Date: 25 JUN 2015 16:03:12

Lowest Band Edge / Full RB



Date: 25 JUN 2015 15:51:10

Highest Band Edge / Full RB

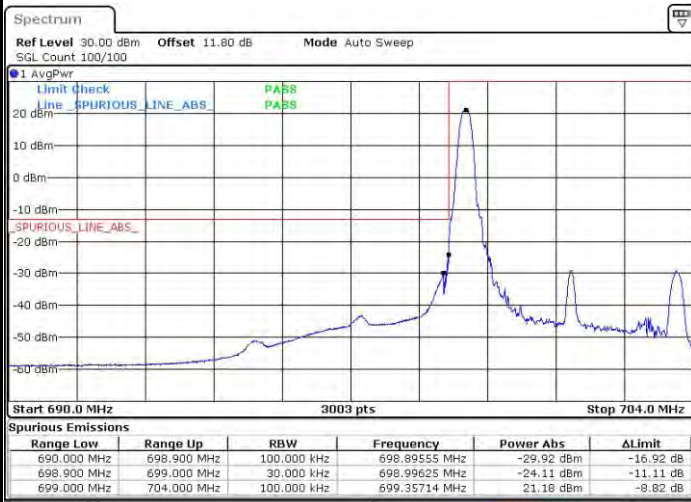


Date: 25 JUN 2015 16:02:02



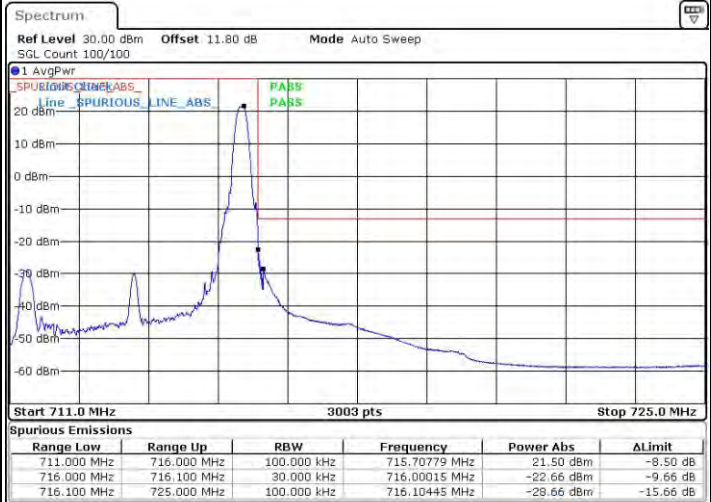
LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / 1 RB



Date: 25 JUN 2015 16:12:09

Highest Band Edge / 1 RB



Date: 25 JUN 2015 16:21:51

Lowest Band Edge / Full RB



Date: 25 JUN 2015 16:08:39

Highest Band Edge / Full RB

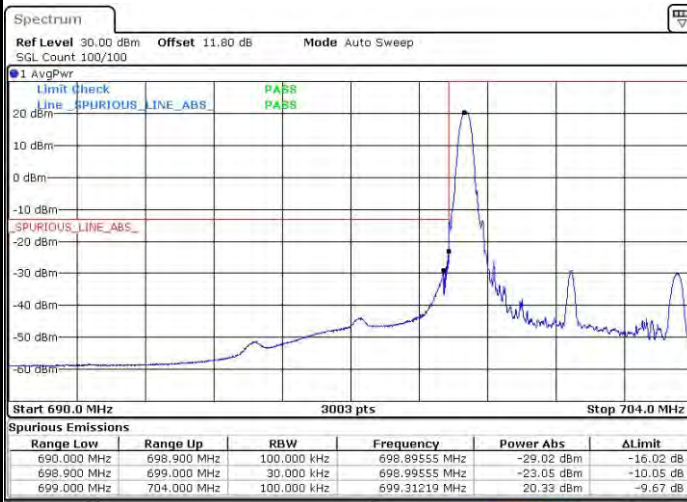


Date: 25 JUN 2015 16:19:32



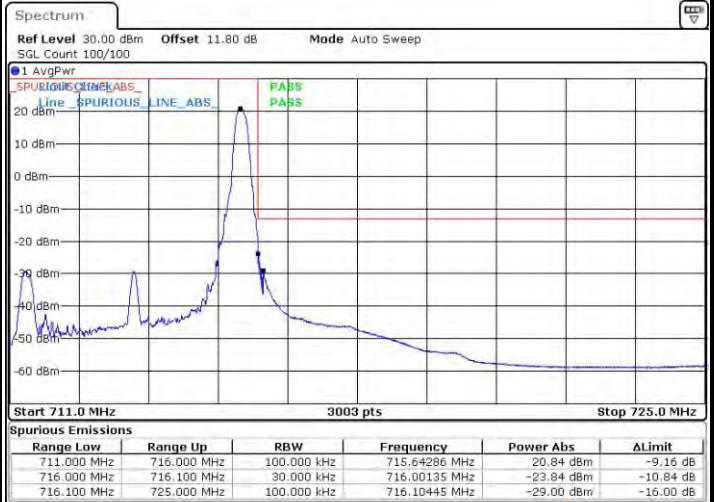
LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1RB



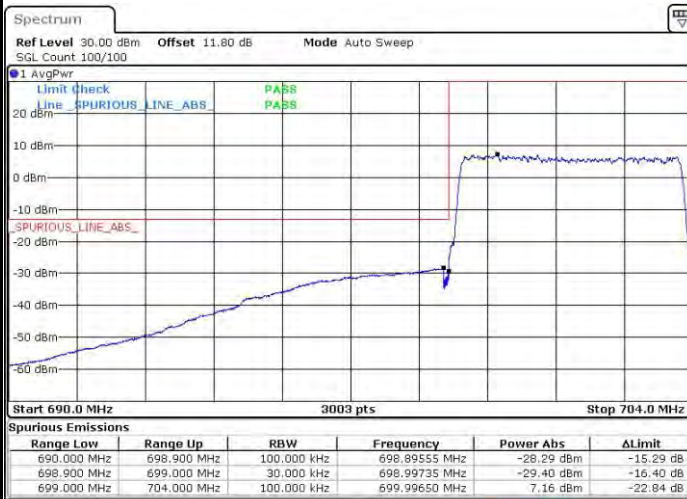
Date: 25 JUN 2015 16:10:59

Highest Band Edge / 1 RB



Date: 25 JUN 2015 16:23:01

Lowest Band Edge / Full RB



Date: 25 JUN 2015 16:09:49

Highest Band Edge / Full RB

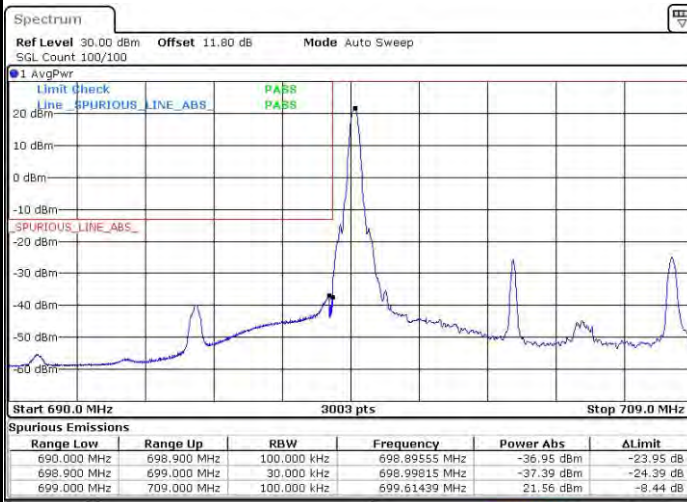


Date: 25 JUN 2015 16:20:41



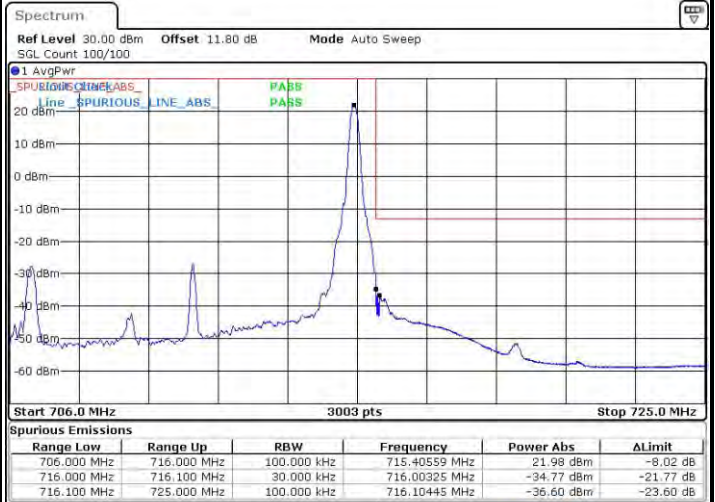
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



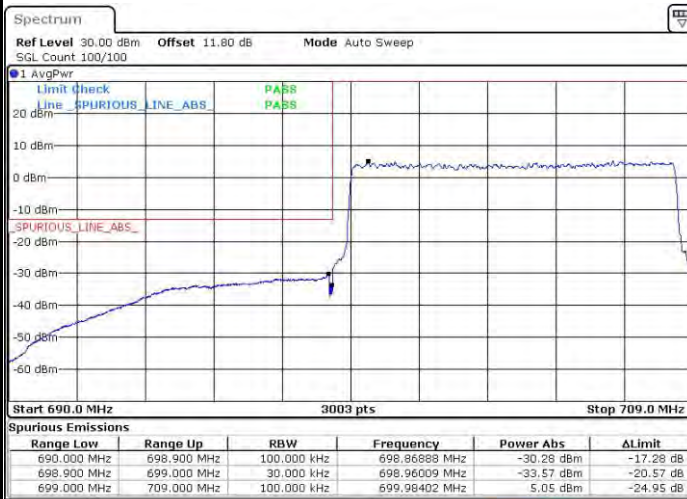
Date: 25 JUN 2015 16:30:47

Highest Band Edge / 1 RB



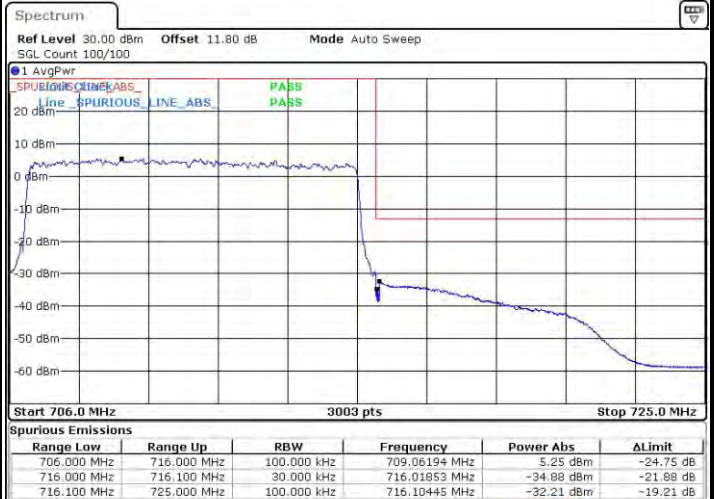
Date: 25 JUN 2015 16:41:41

Lowest Band Edge / Full RB



Date: 25 JUN 2015 16:27:17

Highest Band Edge / Full RB

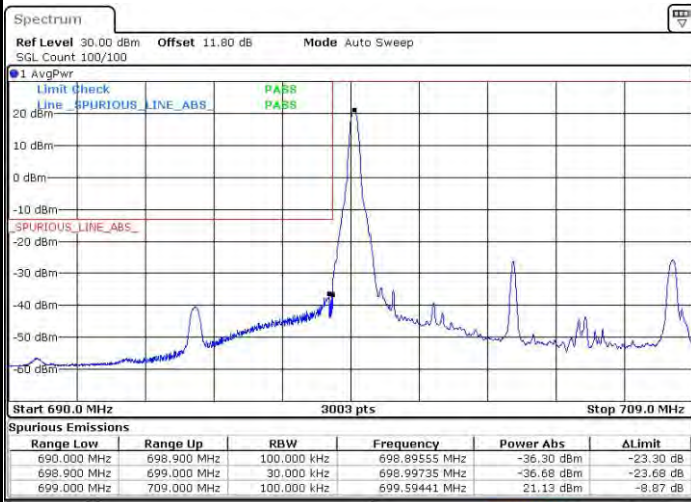


Date: 25 JUN 2015 16:38:12



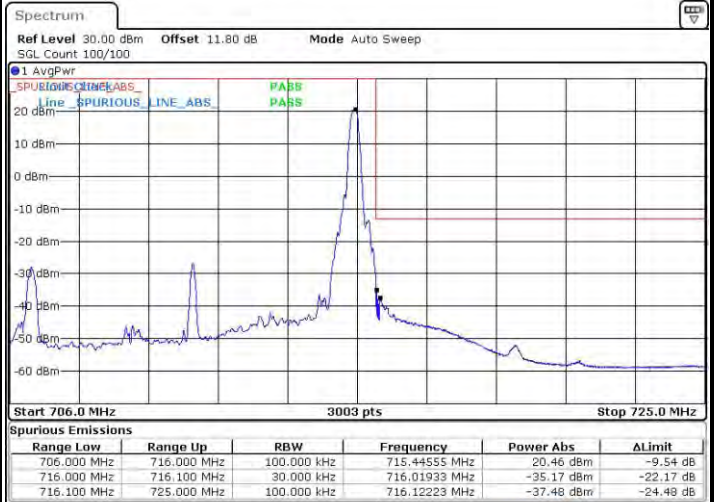
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



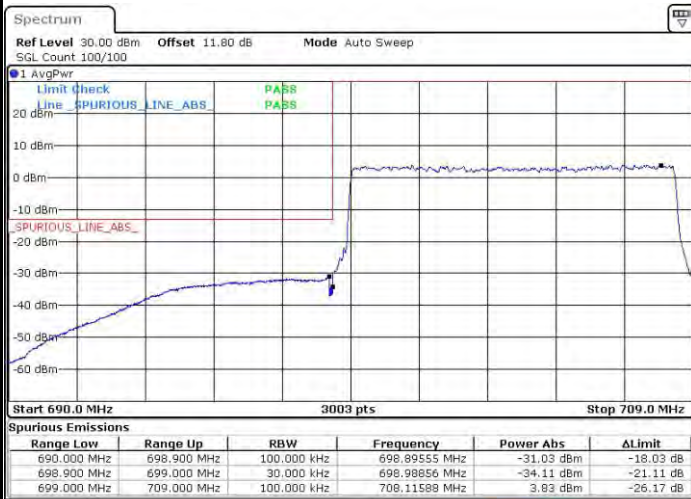
Date: 25 JUN 2015 16:29:37

Highest Band Edge / 1 RB



Date: 25 JUN 2015 16:40:31

Lowest Band Edge / Full RB



Date: 25 JUN 2015 16:28:27

Highest Band Edge / Full RB



Date: 25 JUN 2015 16:39:21

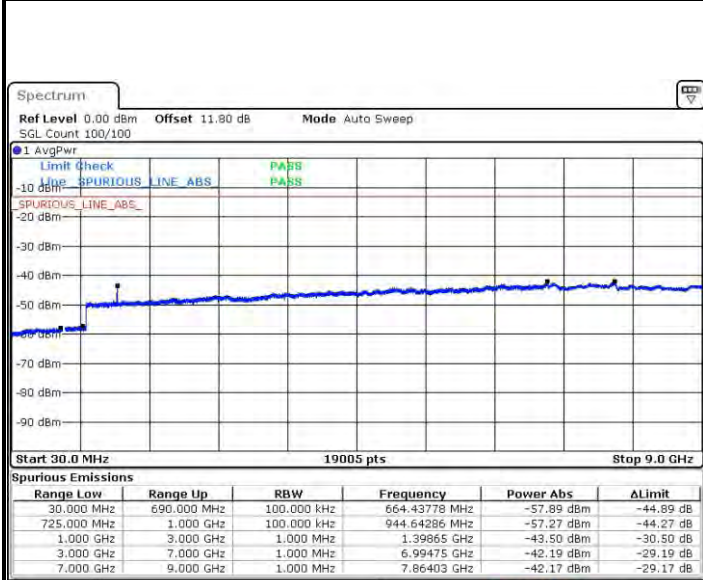


Conducted Spurious Emission



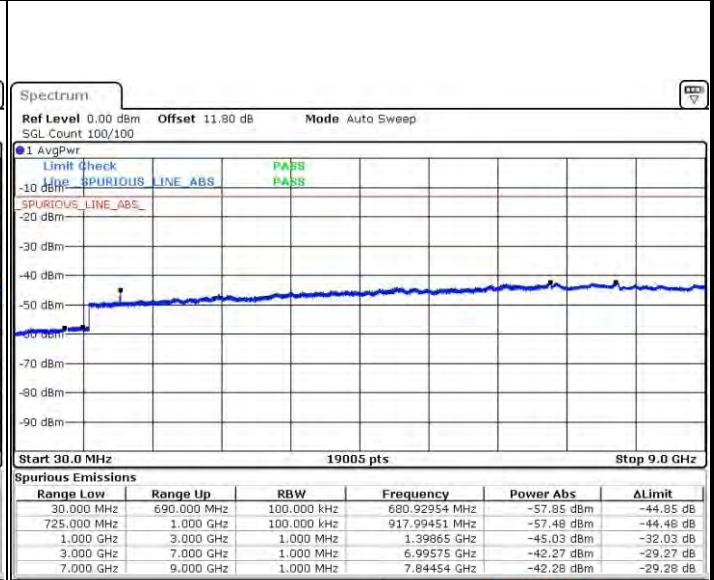
LTE Band 12 / 1.4MHz

Lowest Channel / QPSK



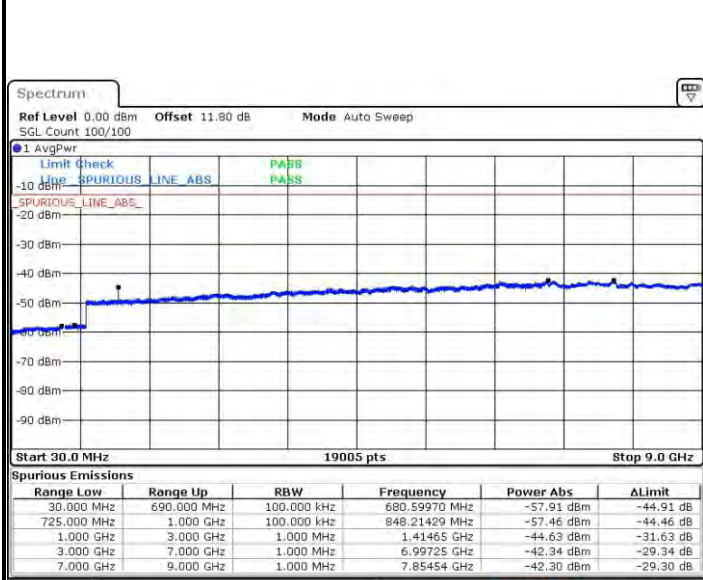
Date: 25 JUN 2015 16:50:38

Lowest Channel / 16QAM



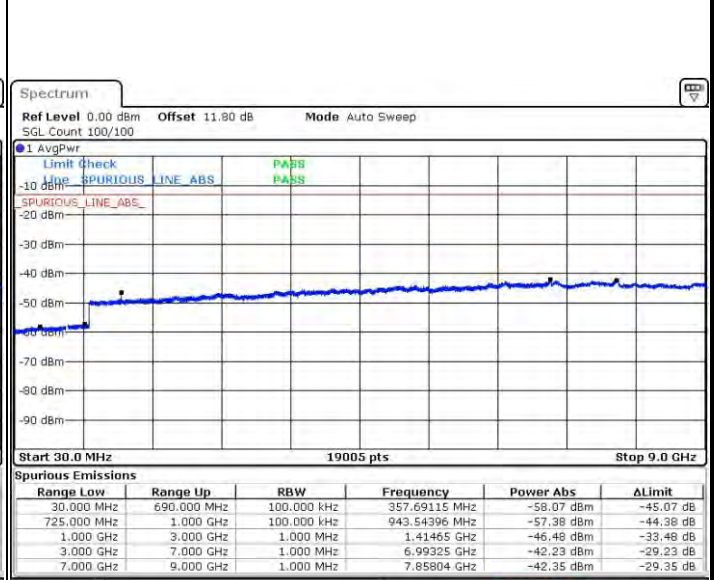
Date: 25 JUN 2015 16:51:48

Middle Channel / QPSK



Date: 25 JUN 2015 16:54:55

Middle Channel / 16QAM



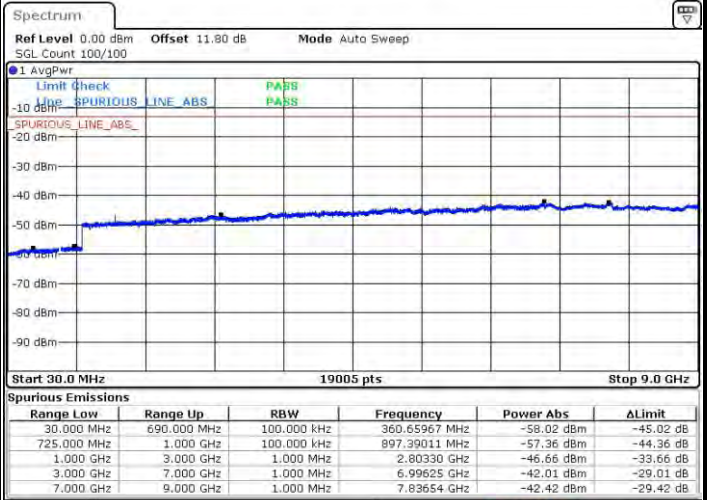
Date: 25 JUN 2015 16:53:45



LTE Band 12 / 1.4MHz

Highest Channel / QPSK

Highest Channel / 16QAM



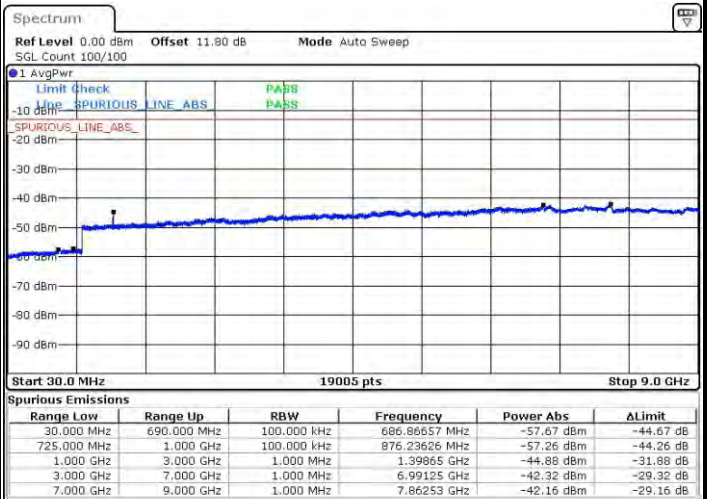
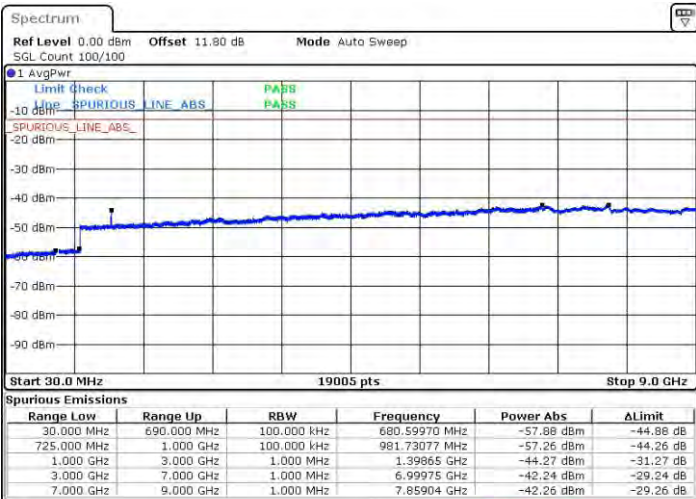
Date: 25 JUN 2015 17:01:31

Date: 25 JUN 2015 17:02:41

LTE Band 12 / 3MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM



Date: 25 JUN 2015 15:54:40

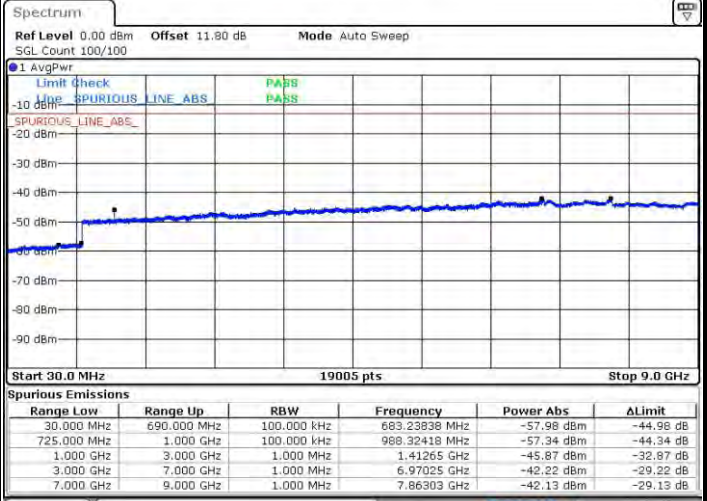
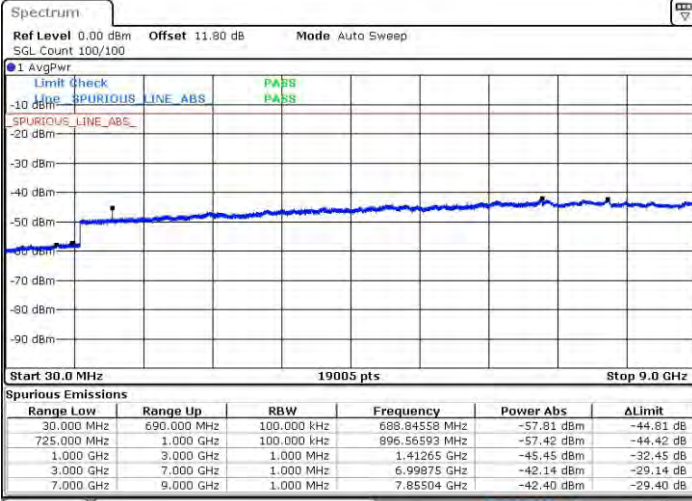
Date: 25 JUN 2015 15:55:50



LTE Band 12 / 3MHz

Middle Channel / QPSK

Middle Channel / 16QAM

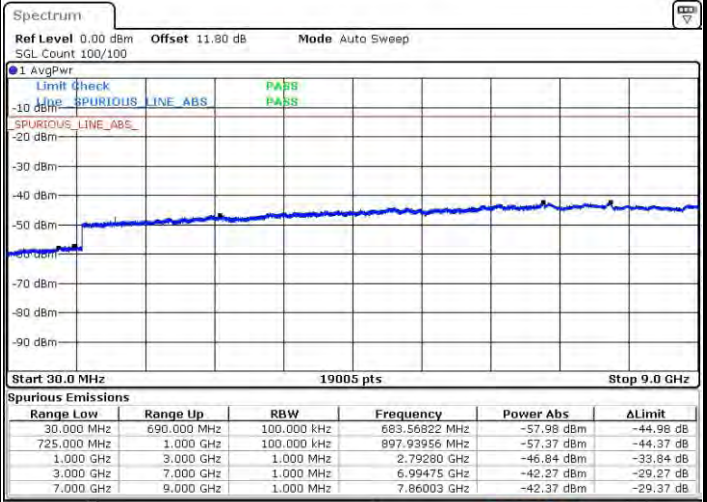
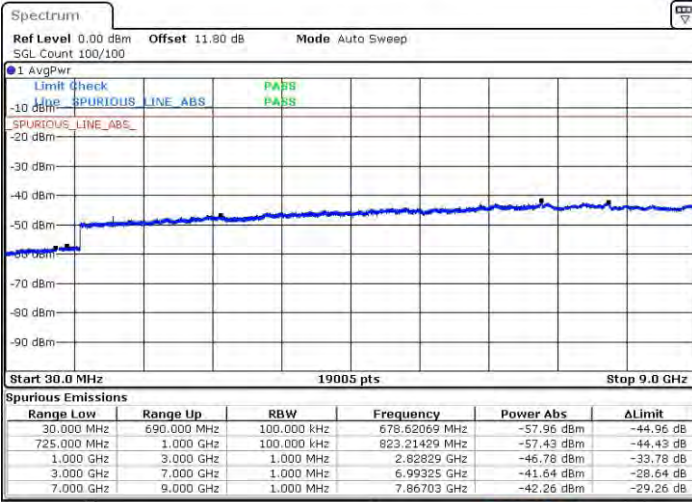


Date: 25 JUN 2015 15:58:56

Date: 25 JUN 2015 15:57:46

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 25 JUN 2015 16:05:33

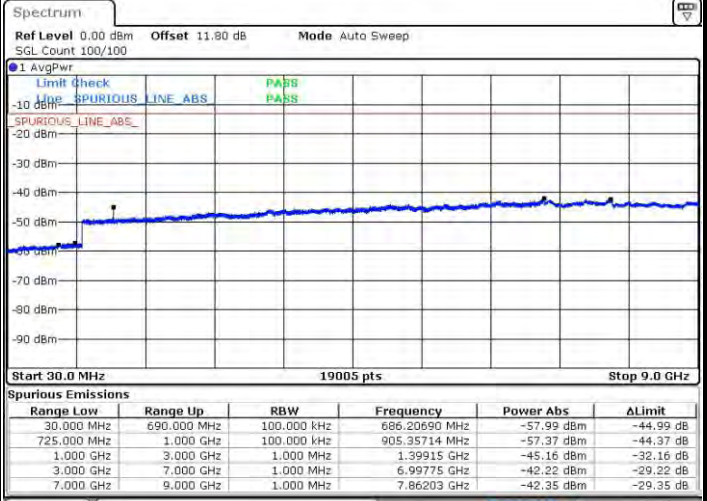
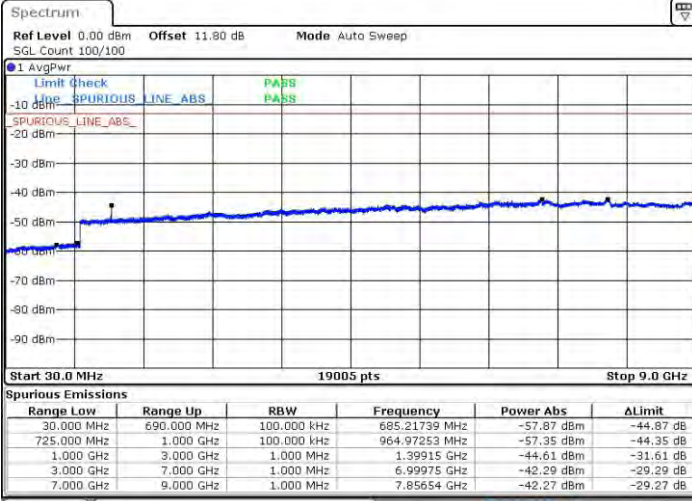
Date: 25 JUN 2015 16:06:43



LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

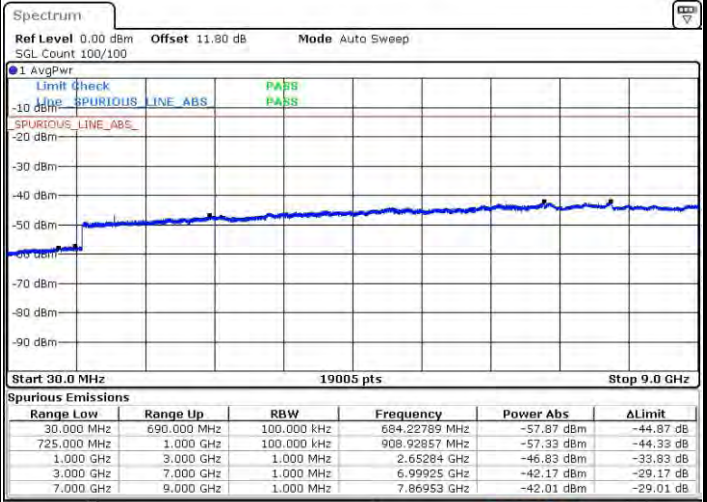
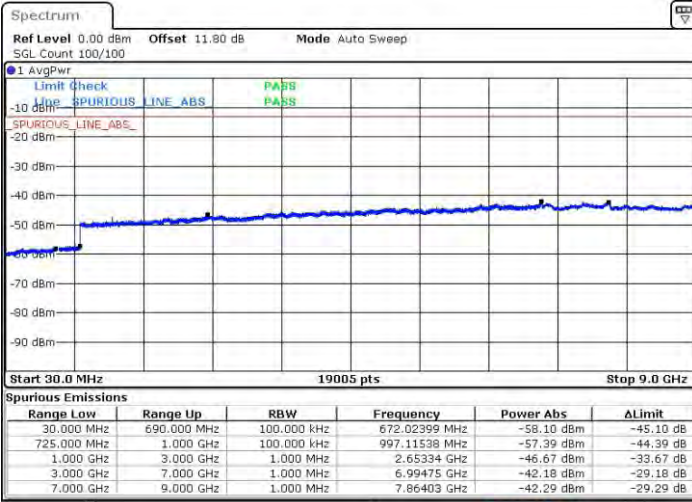


Date: 25 JUN 2015 16:13:19

Date: 25 JUN 2015 16:14:29

Middle Channel / QPSK

Middle Channel / 16QAM



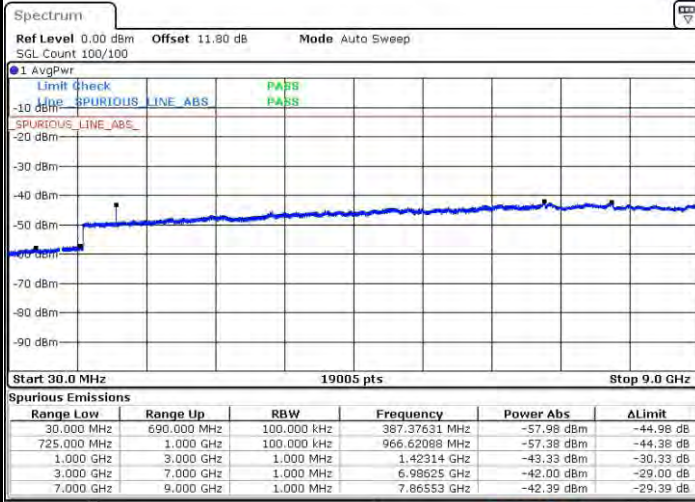
Date: 25 JUN 2015 16:17:35

Date: 25 JUN 2015 16:18:26



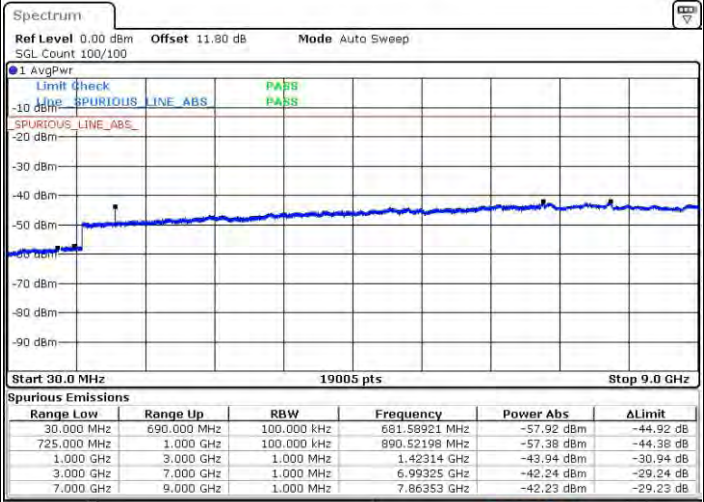
LTE Band 12 / 5MHz

Highest Channel / QPSK



Date: 25 JUN 2015 16:25:21

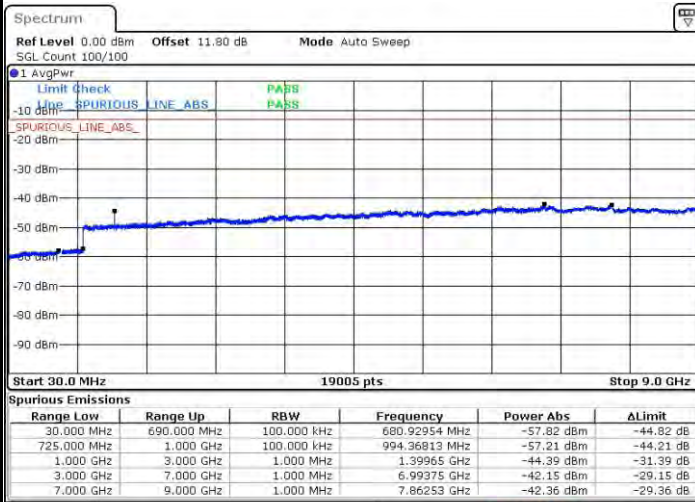
Highest Channel / 16QAM



Date: 25 JUN 2015 16:24:11

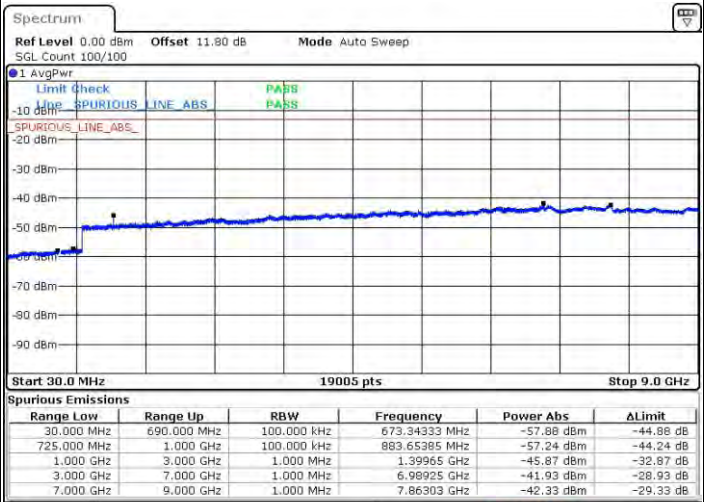
LTE Band 12 / 10MHz

Lowest Channel / QPSK



Date: 25 JUN 2015 16:31:57

Lowest Channel / 16QAM



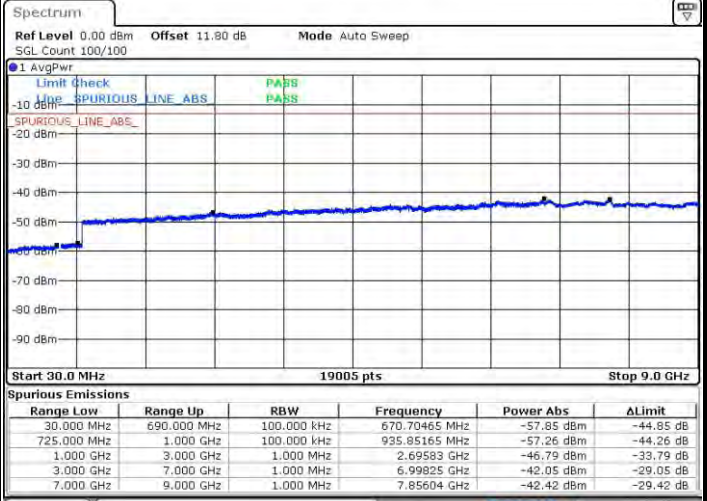
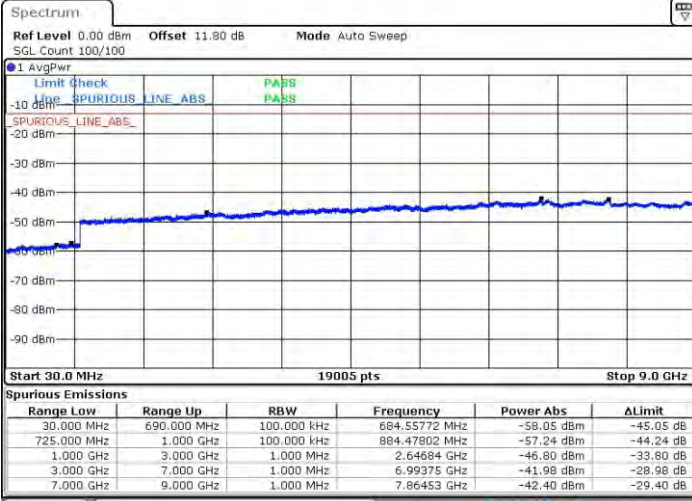
Date: 25 JUN 2015 16:33:07



LTE Band 12 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM

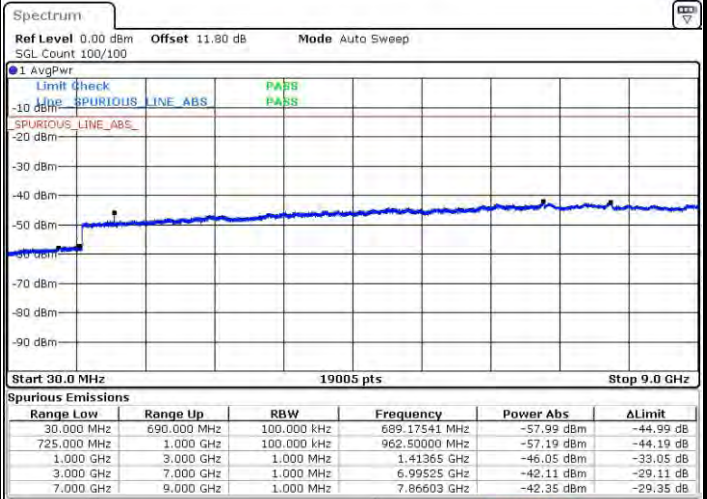
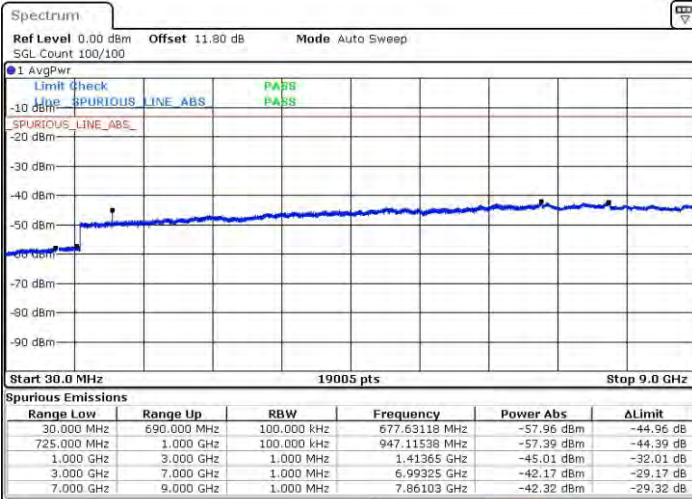


Date: 25 JUN 2015 16:36:15

Date: 25 JUN 2015 16:35:05

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 25 JUN 2015 16:42:52

Date: 25 JUN 2015 16:44:02



Frequency Stability

| Test Conditions | | LTE Band 12 (QPSK) / Middle Channel | Limit |
|------------------|-------------------|-------------------------------------|---------|
| Temperature (°C) | Voltage (Volt) | BW 10MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0082 | PASS |
| 40 | Normal Voltage | 0.0011 | |
| 30 | Normal Voltage | 0.0076 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0082 | |
| 0 | Normal Voltage | 0.0007 | |
| -10 | Normal Voltage | 0.0006 | |
| -20 | Normal Voltage | 0.0079 | |
| -30 | Normal Voltage | 0.0073 | |
| 20 | Maximum Voltage | 0.0014 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0086 | |

Note:

1. Normal Voltage = 3.9V. ; Battery End Point (BEP) = 3.4 V. ; Maximum Voltage =4.35 V
2. Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



| Test Conditions | | LTE Band 12 (QPSK) / Middle Channel | Limit |
|------------------|-------------------|--------------------------------------|-------------|
| Temperature (°C) | Voltage (Volt) | BW 5MHz | Within Band |
| | | Frequency Offset (Δf) (Hz) | Result |
| 50 | Normal Voltage | 5.8 | PASS |
| 40 | Normal Voltage | 0.8 | |
| 30 | Normal Voltage | 5.4 | |
| 20(Ref.) | Normal Voltage | 0 | |
| 10 | Normal Voltage | 5.8 | |
| 0 | Normal Voltage | 0.5 | |
| -10 | Normal Voltage | -0.4 | |
| -20 | Normal Voltage | 5.6 | |
| -30 | Normal Voltage | 5.2 | |
| 20 | Maximum Voltage | 1 | |
| 20 | Normal Voltage | 0 | |
| 20 | Battery End Point | 6.1 | |

$|\text{MAX}(\Delta f)| 6.1 = \text{Hz}$

| Frequency Stability | Frequency (MHz) | Limit Line | Result |
|--------------------------------|-----------------|------------------------|--------|
| $f_L - \text{MAX}(\Delta f) $ | 699.099994 | $\geq 698 \text{ MHz}$ | PASS |
| $f_H + \text{MAX}(\Delta f) $ | 715.896006 | $\leq 716 \text{ MHz}$ | |