



3.4 Conducted Band Edge Measurement

3.4.1 Description of Conducted Band Edge Measurement

22.917(a) For Band 5

For operations in the 824 – 849 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a) For Band 2, 25

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (c) For Band 13

For operations in the 776-788 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (g) For Band 17

For operations in the 698 -746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h) For Band 4

For operations in the 1710 – 1755 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

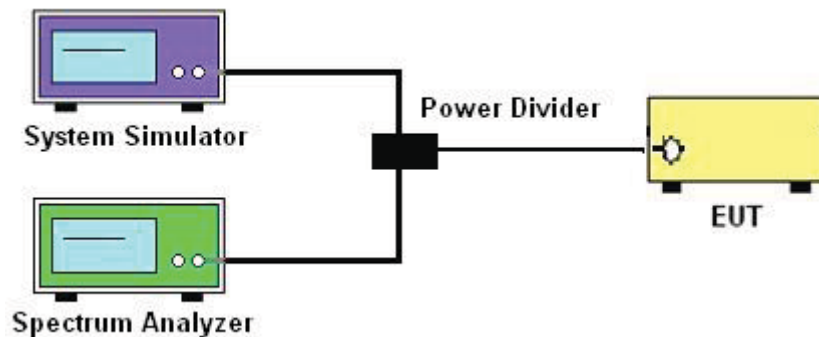
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Setting $RBW \geq 1\%$ EBW, and measuring bandwidth = 1MHz.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
4. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10\log(P)]$ (dB)
= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
= -13dBm.

3.4.4 Test Setup

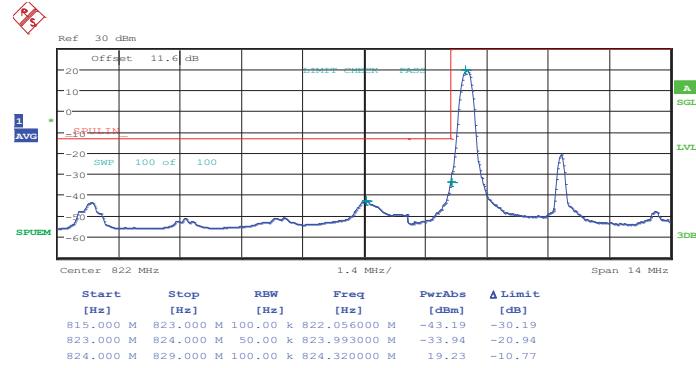




3.4.5 Test Result (Plots) of Conducted Band Edge

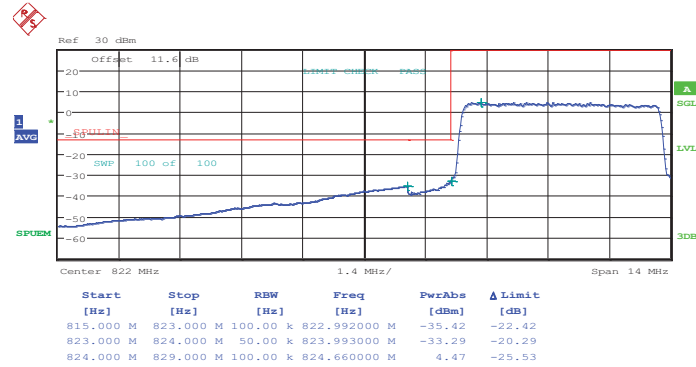
Band :	LTE Band 5	Band Width :	5MHz / QPSK
--------	------------	--------------	-------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:35:40

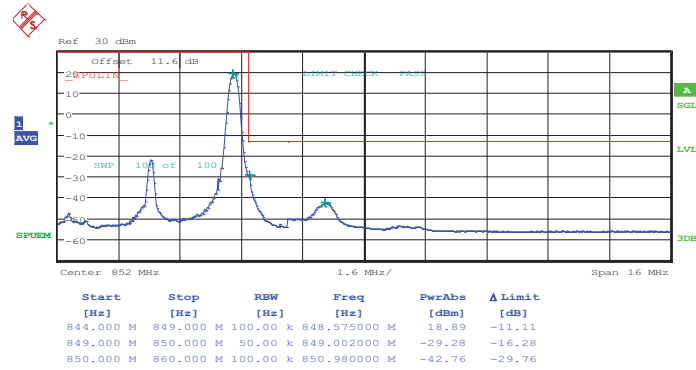
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 26.DEC.2013 21:37:05

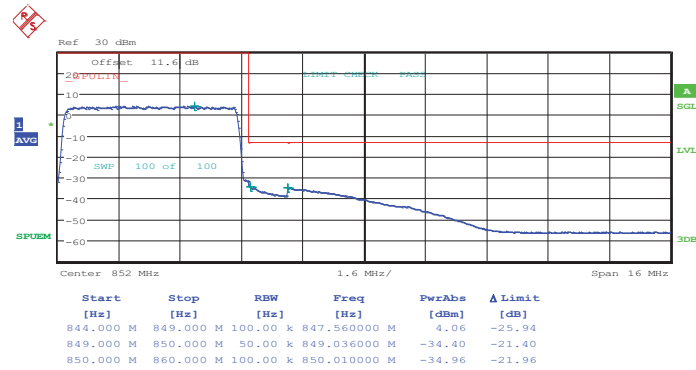


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 26.DEC.2013 21:43:18

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

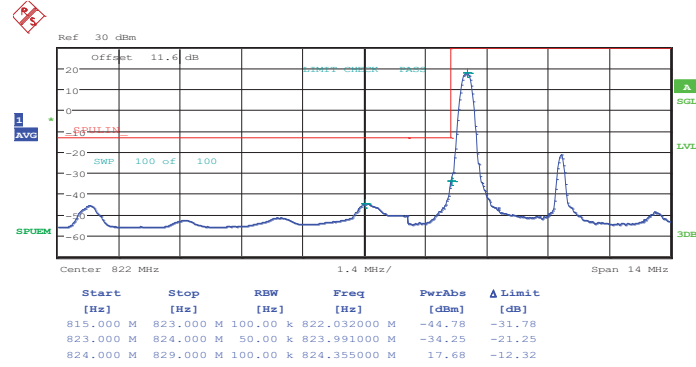


Date: 26.DEC.2013 21:44:43



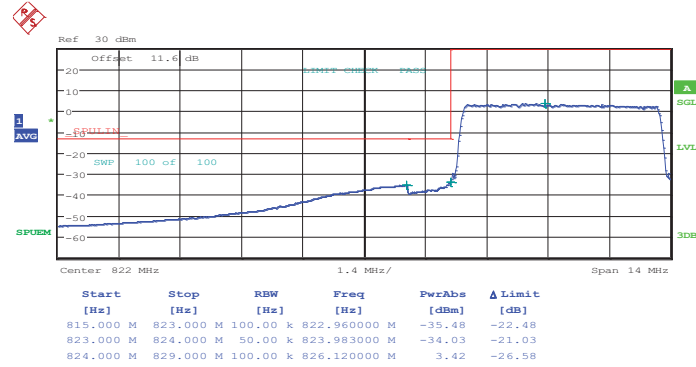
Band :	LTE Band 5	Band Width :	5MHz / 16QAM
--------	------------	--------------	--------------

Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:36:23

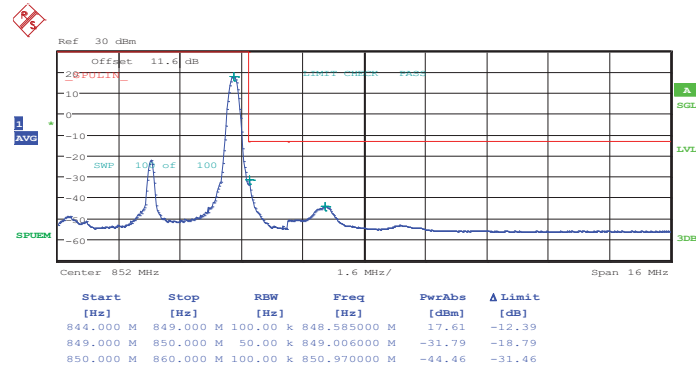
Lower Band Edge Plot for 16QAM -RB Size 25, RB Offset 0



Date: 26.DEC.2013 21:37:47

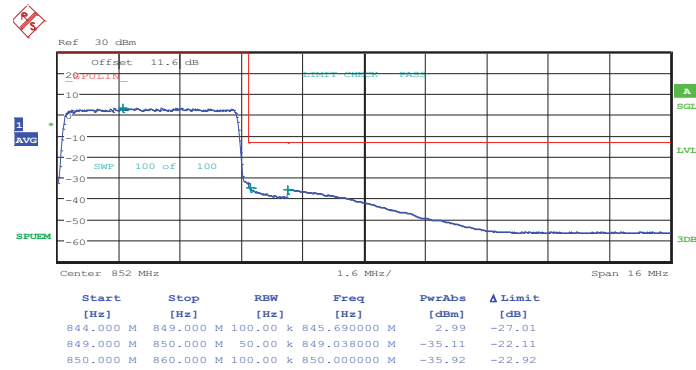


Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 24



Date: 26.DEC.2013 21:44:01

Higher Band Edge Plot for 16QAM -RB Size 25, RB Offset 0

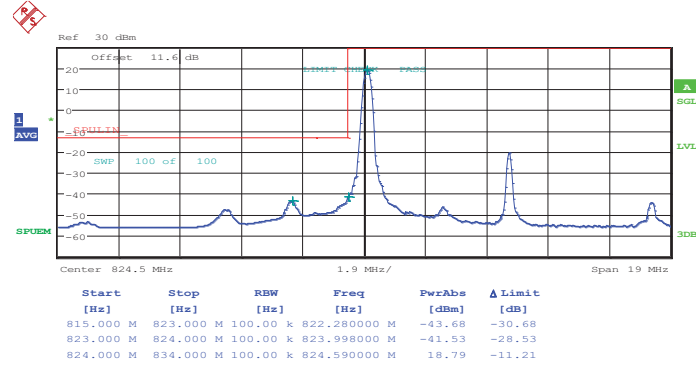


Date: 26.DEC.2013 21:45:25



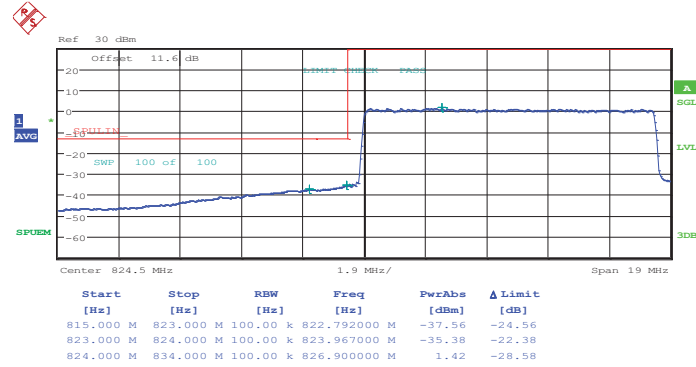
Band :	LTE Band 5	Band Width :	10MHz / QPSK
--------	------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:49:28

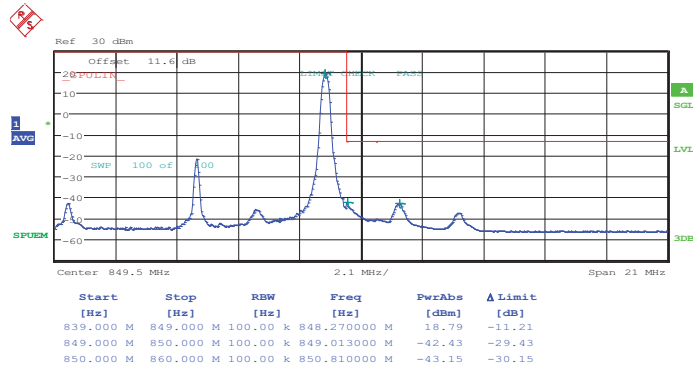
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 26.DEC.2013 21:50:52

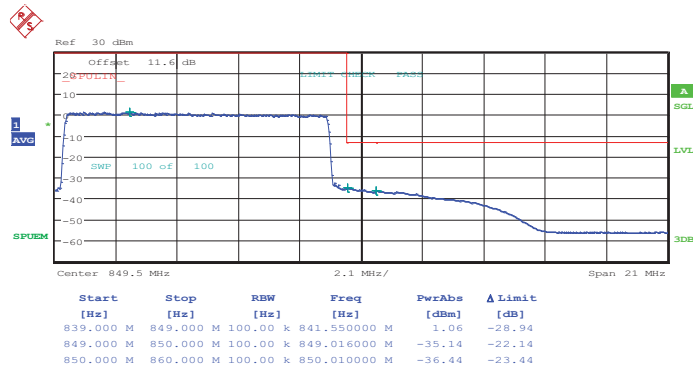


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Date: 26.DEC.2013 21:57:07

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

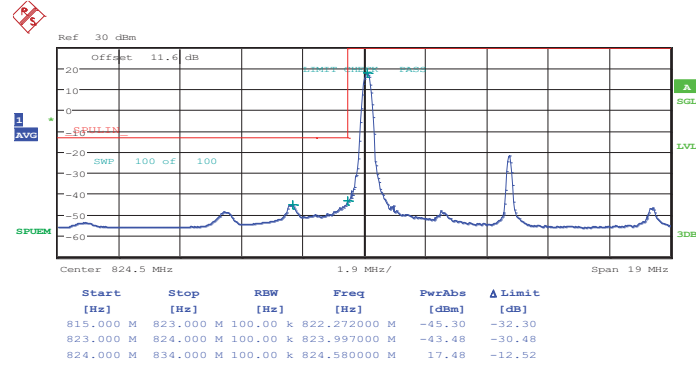


Date: 26.DEC.2013 21:58:32



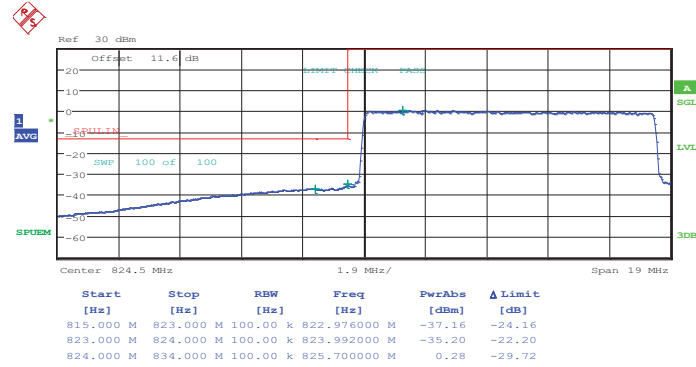
Band :	LTE Band 5	Band Width :	10MHz / 16QAM
--------	------------	--------------	---------------

Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:50:10

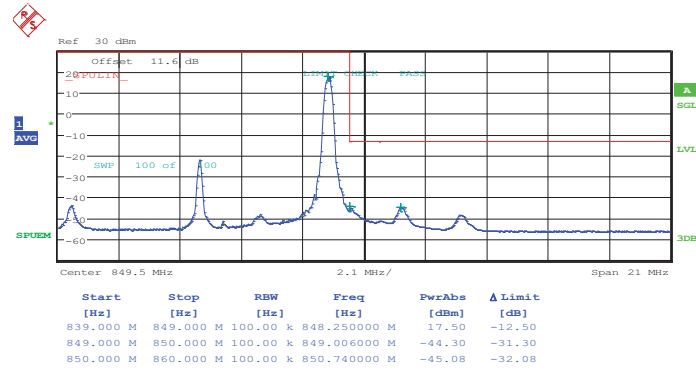
Lower Band Edge Plot for 16QAM -RB Size 50, RB Offset 0



Date: 26.DEC.2013 21:51:35

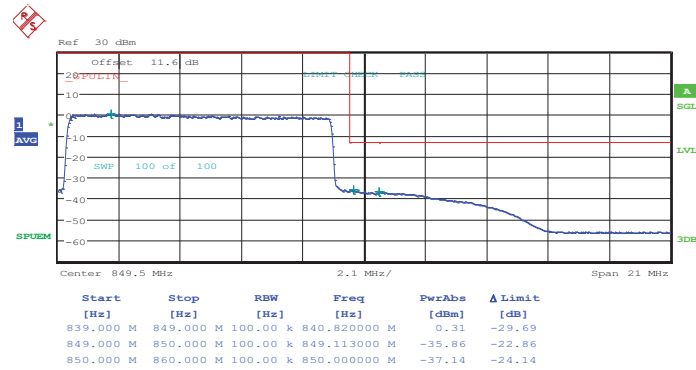


Higher Band Edge Plot for 16QAM -RB Size 1, RB Offset 49



Date: 26.DEC.2013 21:57:50

Higher Band Edge Plot for 16QAM -RB Size 50, RB Offset 0

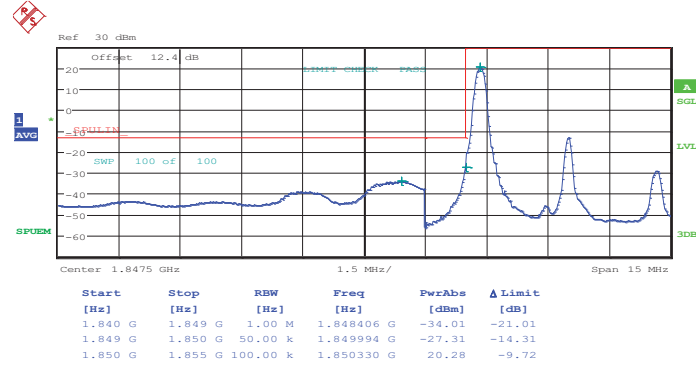


Date: 26.DEC.2013 21:59:15



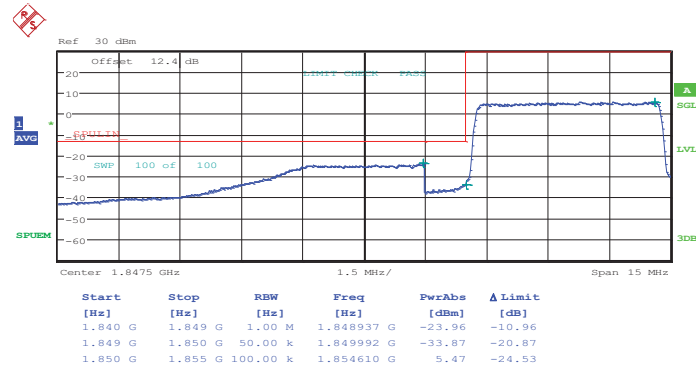
Band :	LTE Band 2	Band Width :	5MHz / QPSK
--------	------------	--------------	-------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



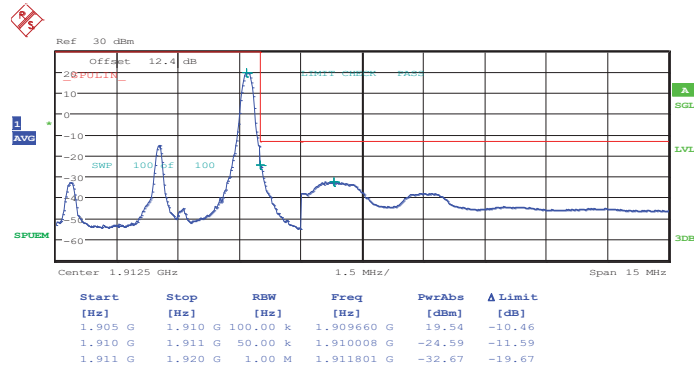
Date: 26.DEC.2013 18:36:26

Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



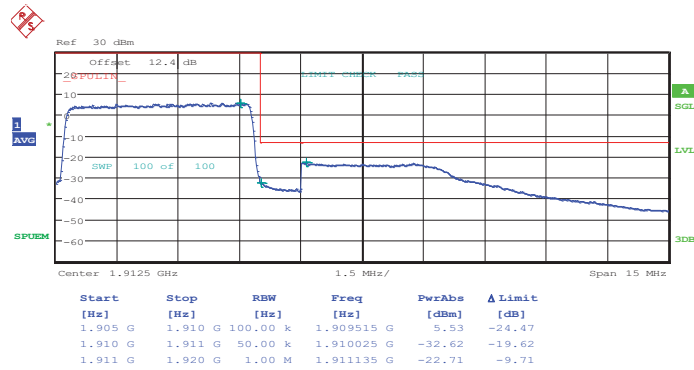
Date: 26.DEC.2013 18:37:50

Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 26.DEC.2013 18:44:22

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

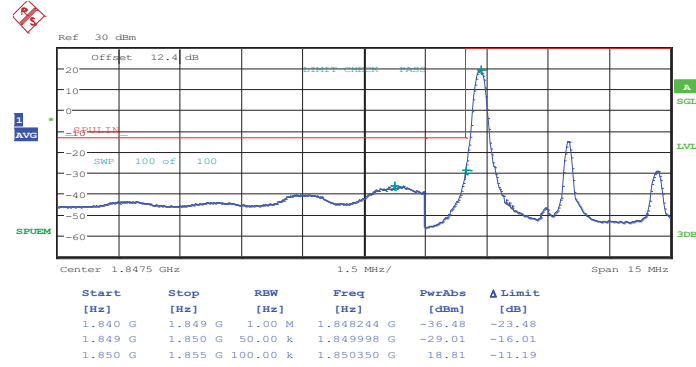


Date: 26.DEC.2013 18:45:47



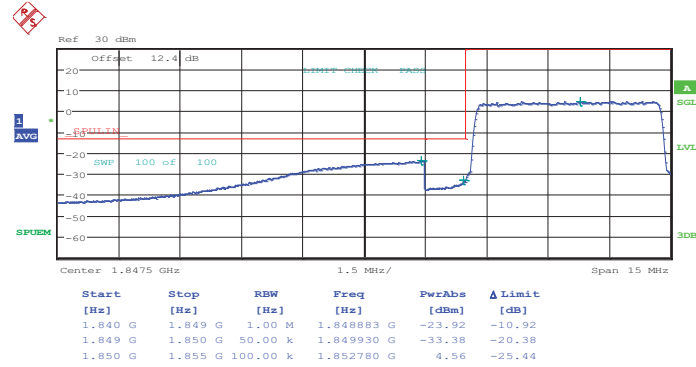
Band :	LTE Band 2	Band Width :	5MHz / 16QAM
--------	------------	--------------	--------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:37:08

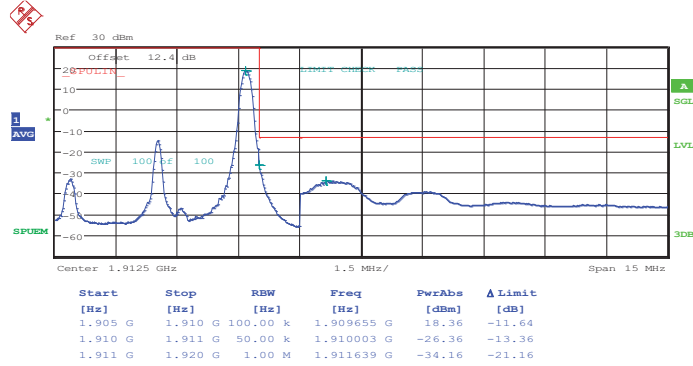
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 26.DEC.2013 18:38:33

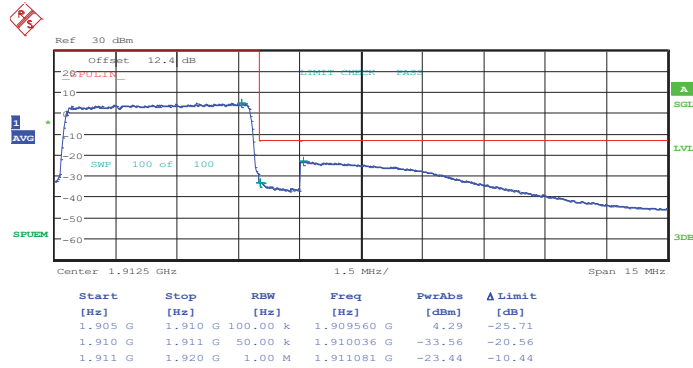


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Date: 26.DEC.2013 18:45:04

Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

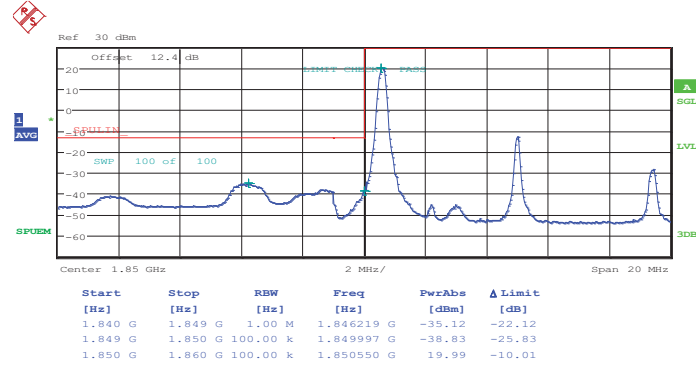


Date: 26.DEC.2013 18:46:29



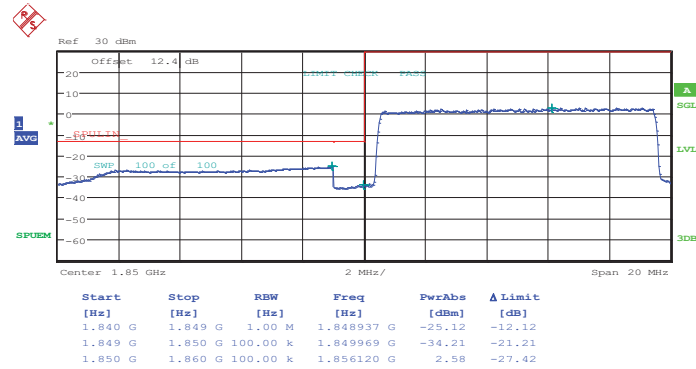
Band :	LTE Band 2	Band Width :	10MHz / QPSK
--------	------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:54:53

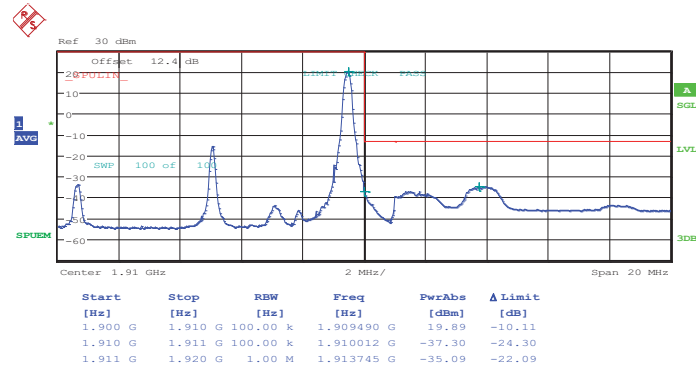
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 26.DEC.2013 18:56:18

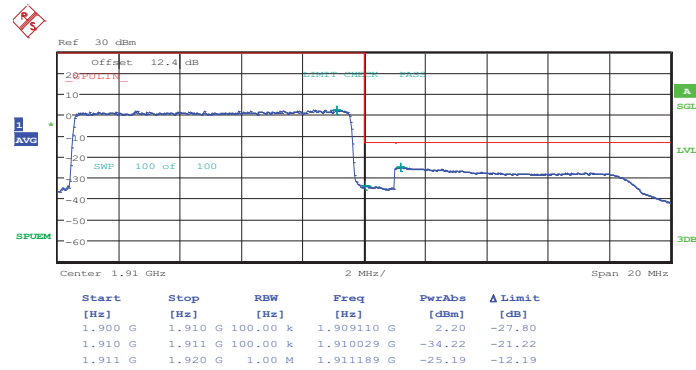


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Date: 26.DEC.2013 19:02:49

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

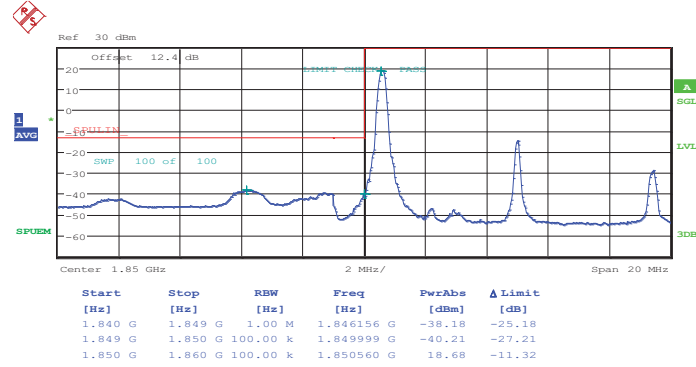


Date: 26.DEC.2013 19:04:14



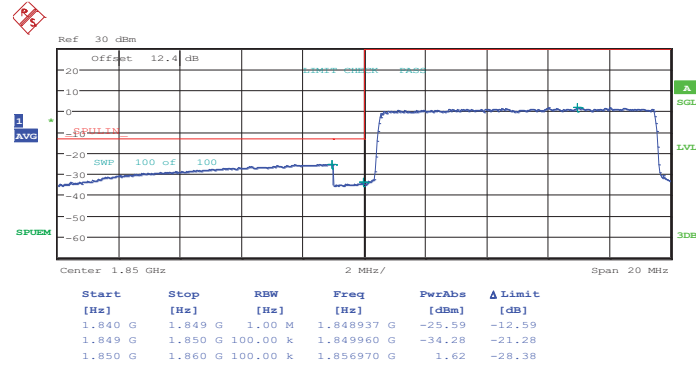
Band :	LTE Band 2	Band Width :	10MHz / 16QAM
--------	------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:55:36

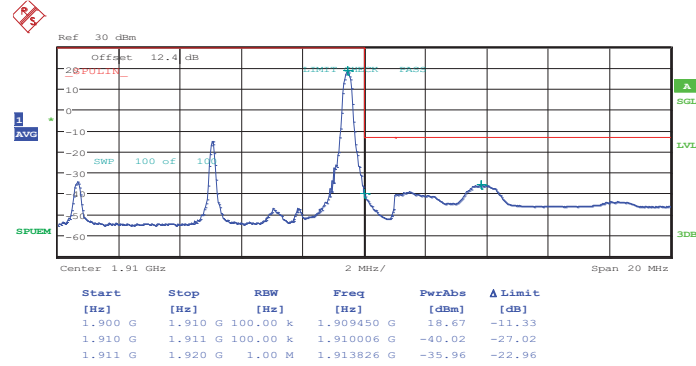
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 26.DEC.2013 18:57:00

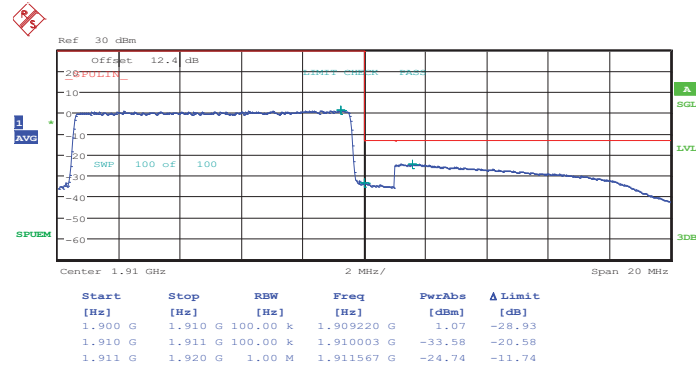


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Date: 26.DEC.2013 19:03:32

Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

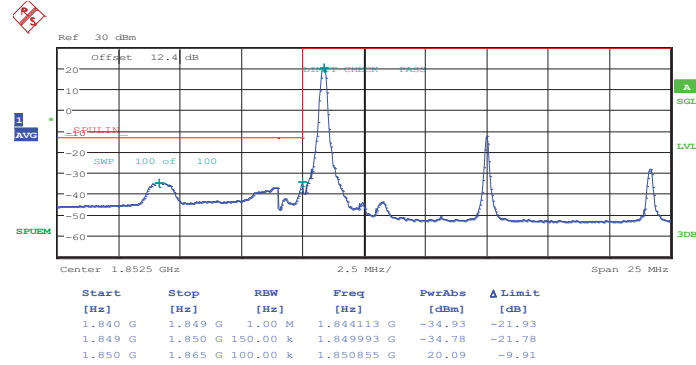


Date: 26.DEC.2013 19:04:56



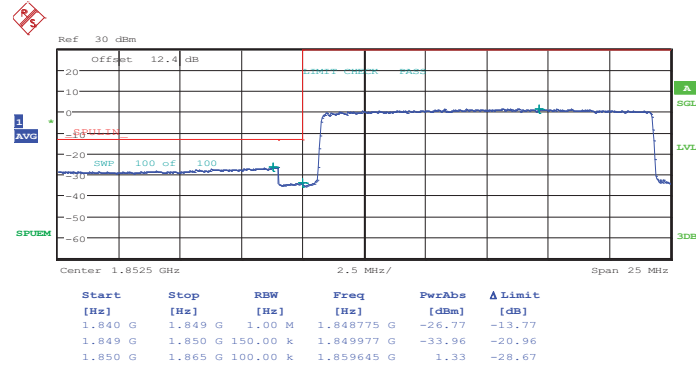
Band :	LTE Band 2	Band Width :	15MHz / QPSK
--------	------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:18:33

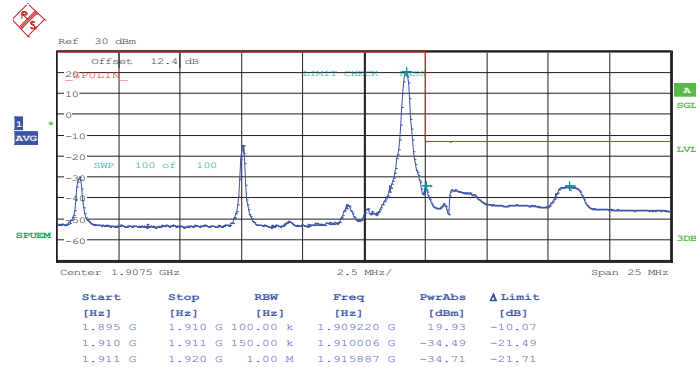
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 26.DEC.2013 20:19:58

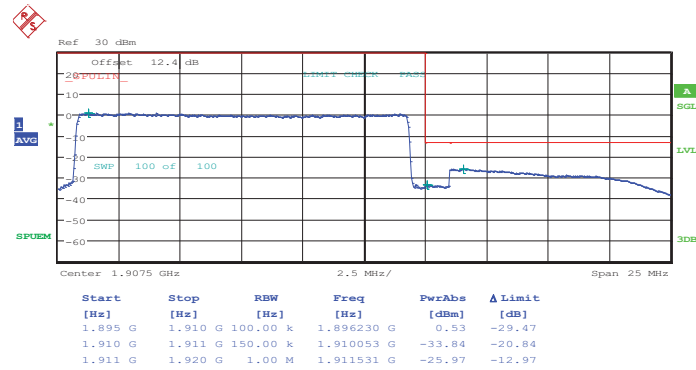


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



Date: 26.DEC.2013 20:26:30

Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0

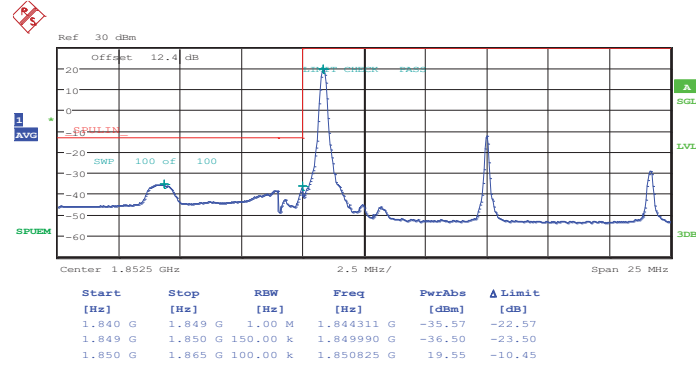


Date: 26.DEC.2013 20:27:54



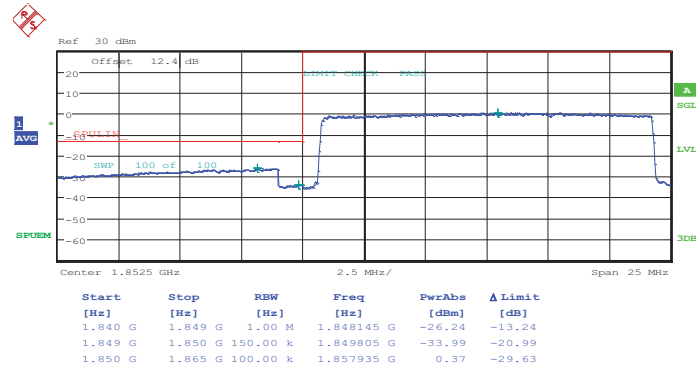
Band :	LTE Band 2	Band Width :	15MHz / 16QAM
--------	------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:19:16

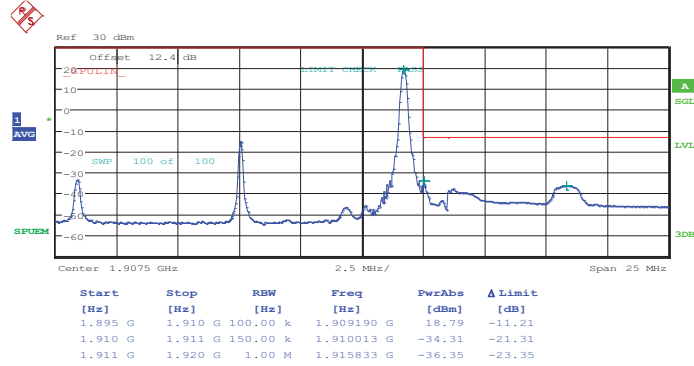
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Date: 26.DEC.2013 20:20:41

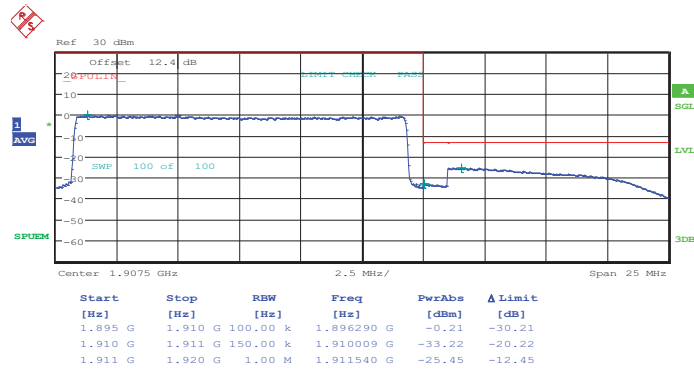


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Date: 26.DEC.2013 20:27:12

Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0

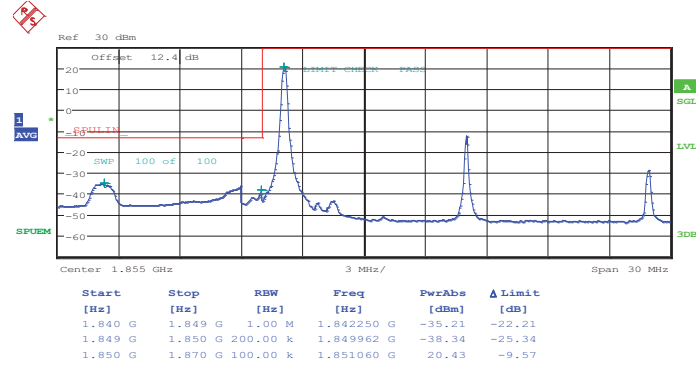


Date: 26.DEC.2013 20:28:37



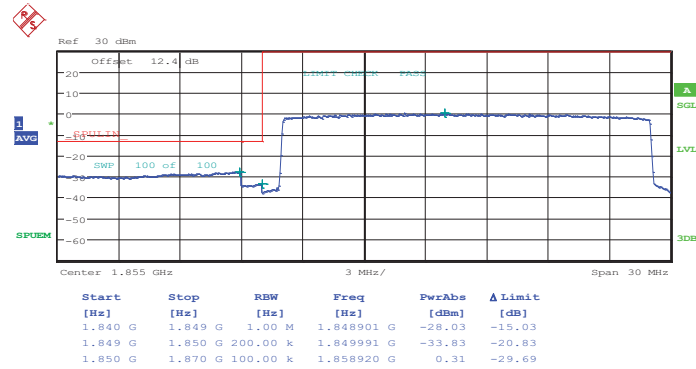
Band :	LTE Band 2	Band Width :	20MHz / QPSK
--------	------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:34:21

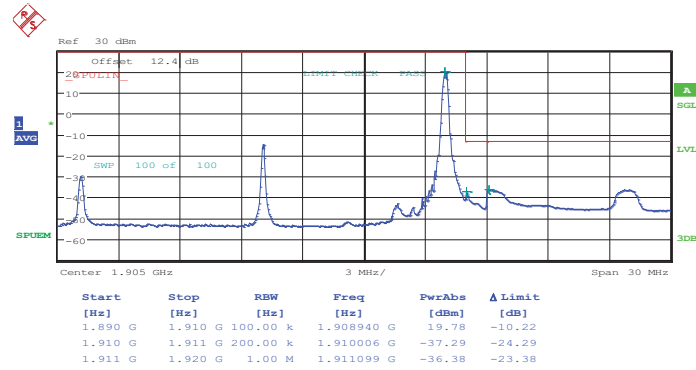
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 26.DEC.2013 20:35:46

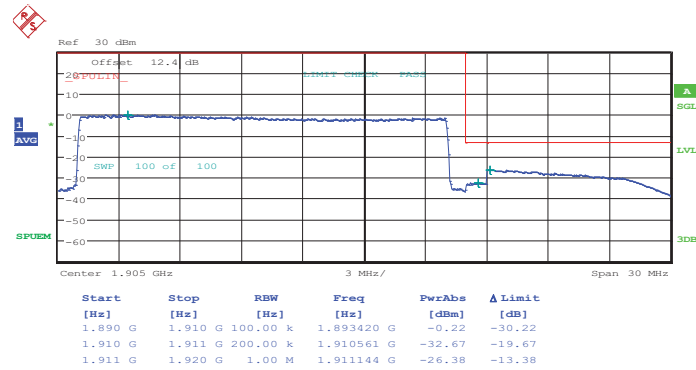


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



Date: 26.DEC.2013 20:42:18

Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0

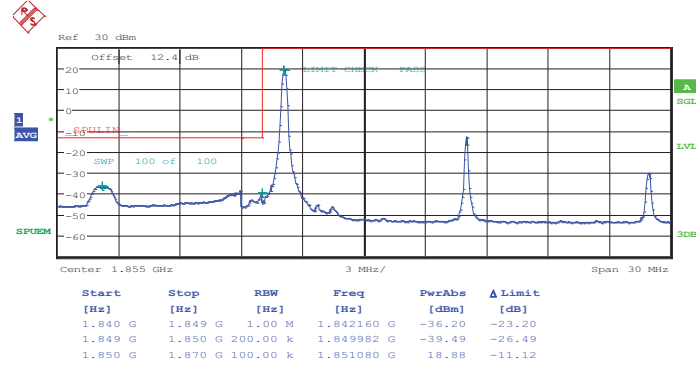


Date: 26.DEC.2013 20:43:43



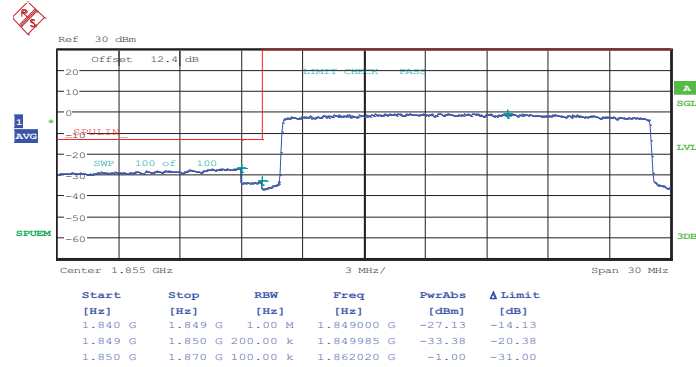
Band :	LTE Band 2	Band Width :	20MHz / 16QAM
--------	------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:35:04

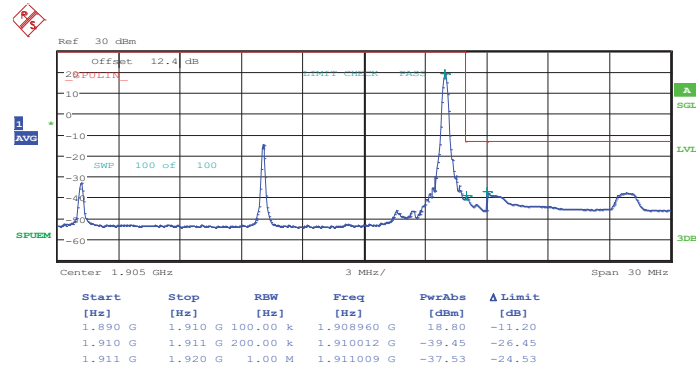
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 26.DEC.2013 20:36:29

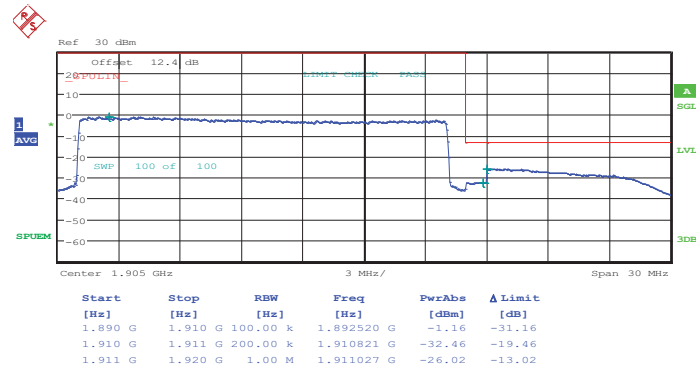


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99



Date: 26.DEC.2013 20:43:01

Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0

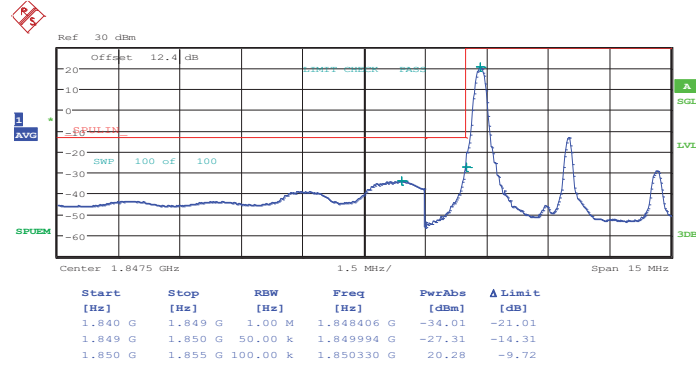


Date: 26.DEC.2013 20:44:26



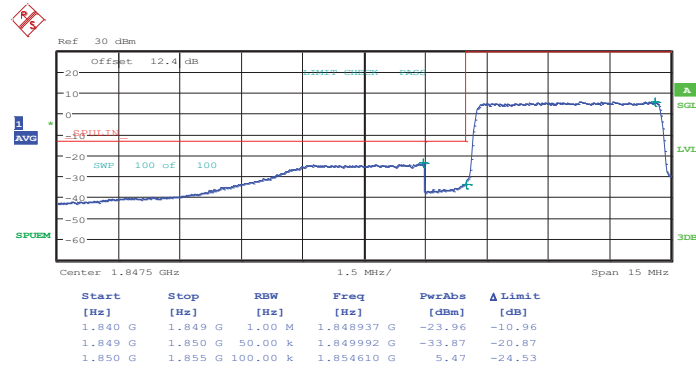
Band :	LTE Band 25	Band Width :	5MHz / QPSK
--------	-------------	--------------	-------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:36:26

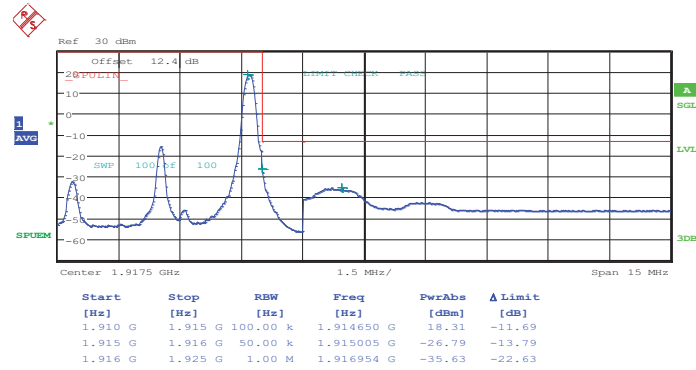
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 26.DEC.2013 18:37:50

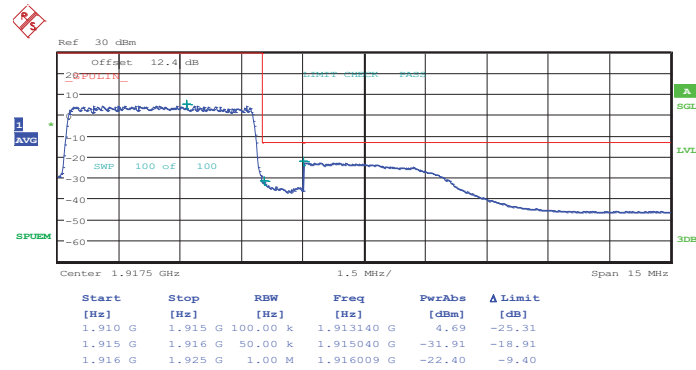


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 3.JAN.2014 16:21:48

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

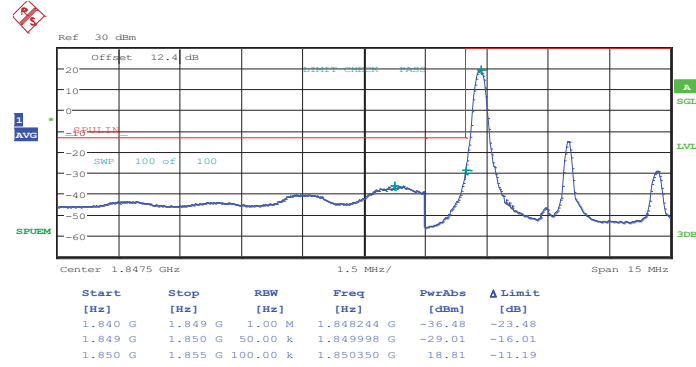


Date: 3.JAN.2014 16:19:36



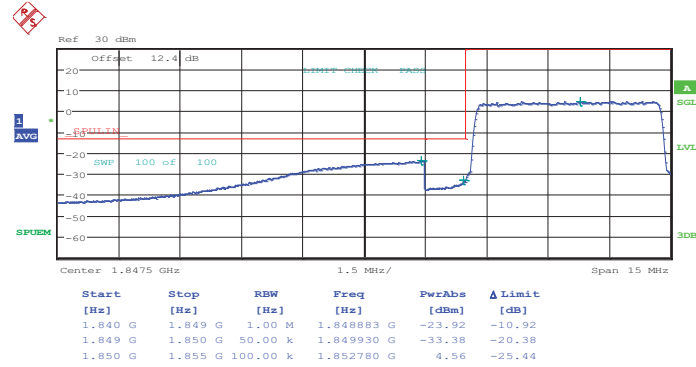
Band :	LTE Band 25	Band Width :	5MHz / 16QAM
--------	-------------	--------------	--------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:37:08

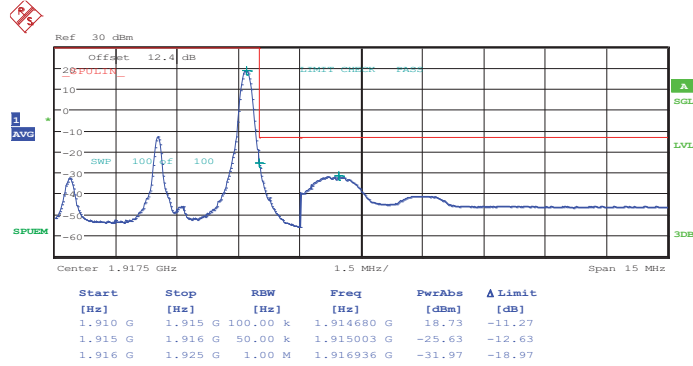
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 26.DEC.2013 18:38:33

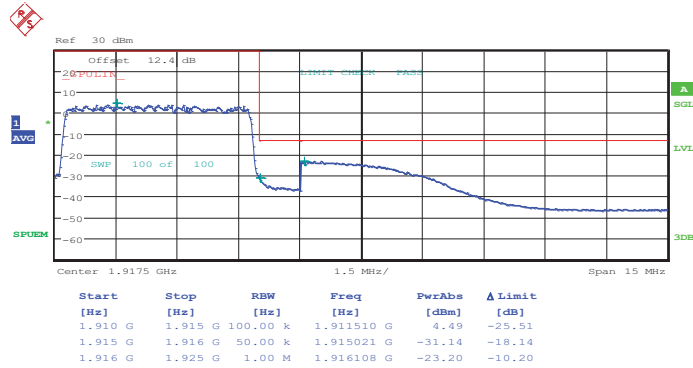


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Date: 3.JAN.2014 16:21:18

Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

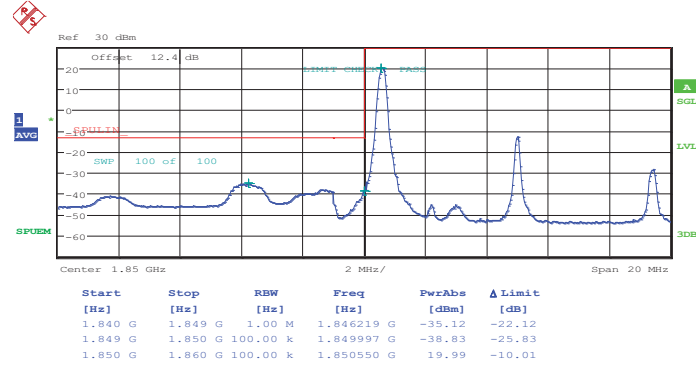


Date: 3.JAN.2014 16:20:38



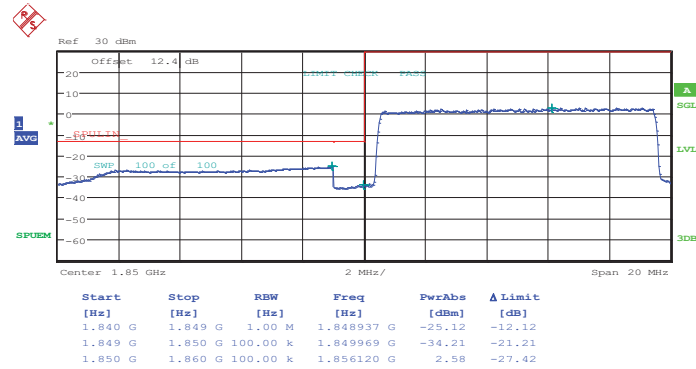
Band :	LTE Band 25	Band Width :	10MHz / QPSK
--------	-------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:54:53

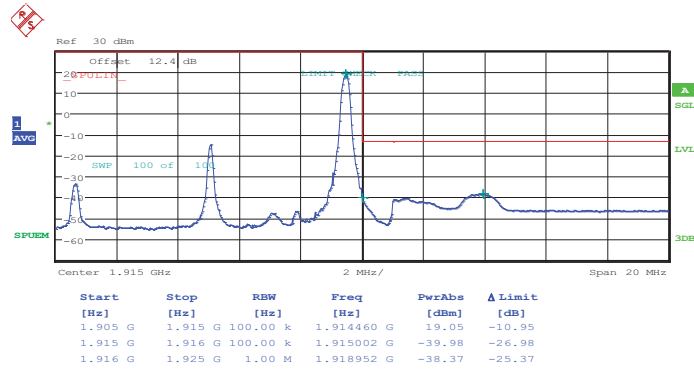
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 26.DEC.2013 18:56:18

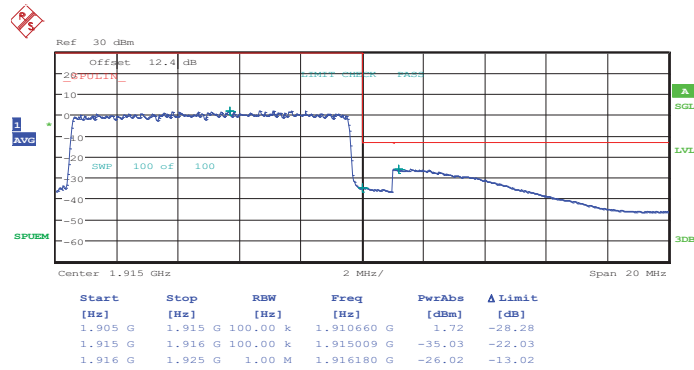


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Date: 3.JAN.2014 16:29:11

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

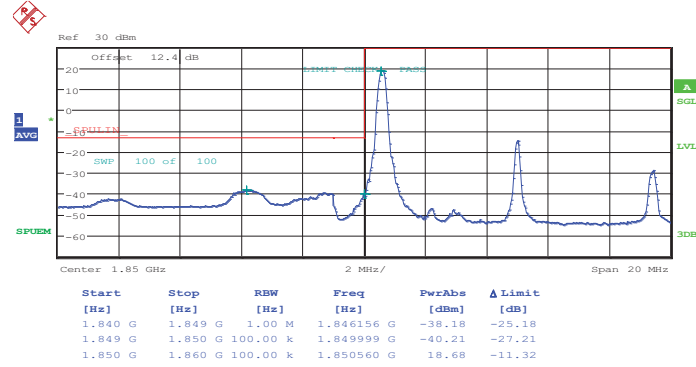


Date: 3.JAN.2014 16:26:10



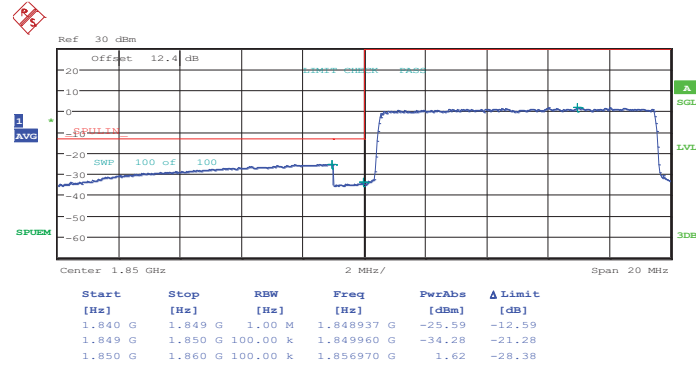
Band :	LTE Band 25	Band Width :	10MHz / 16QAM
--------	-------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 18:55:36

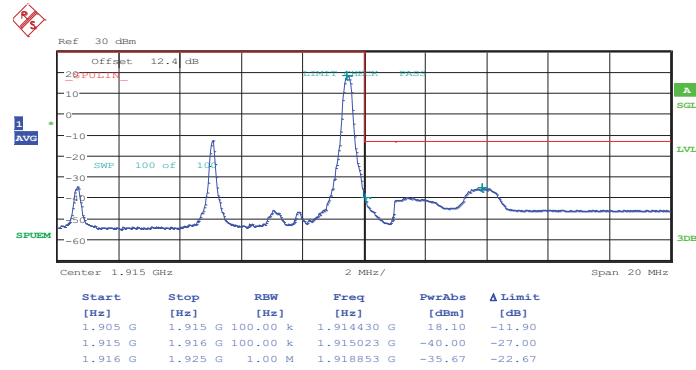
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 26.DEC.2013 18:57:00

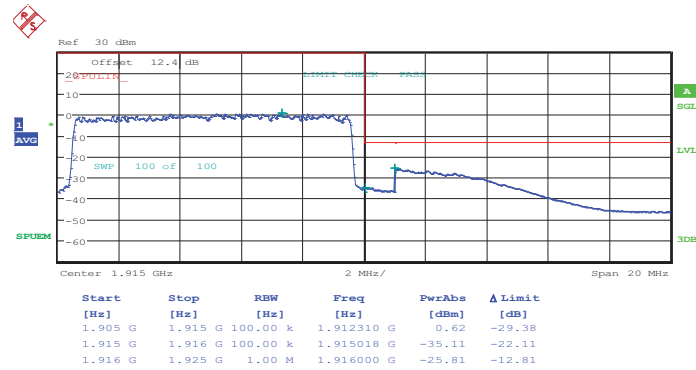


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Date: 3.JAN.2014 16:28:20

Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

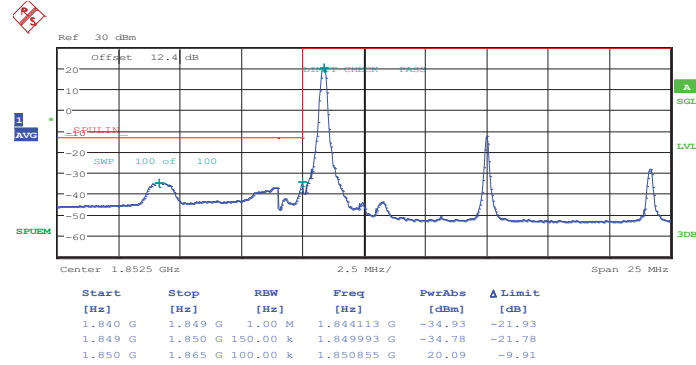


Date: 3.JAN.2014 16:27:47



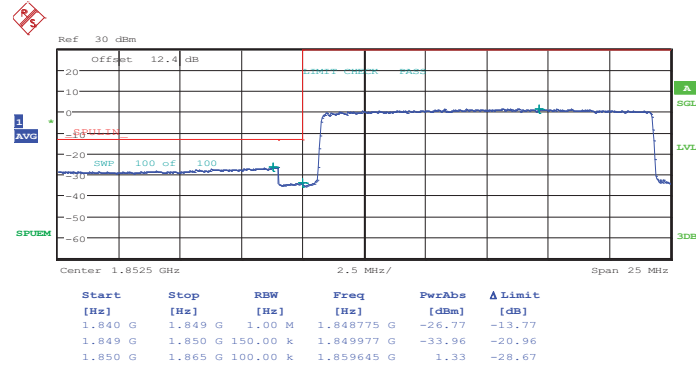
Band :	LTE Band 25	Band Width :	15MHz / QPSK
--------	-------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:18:33

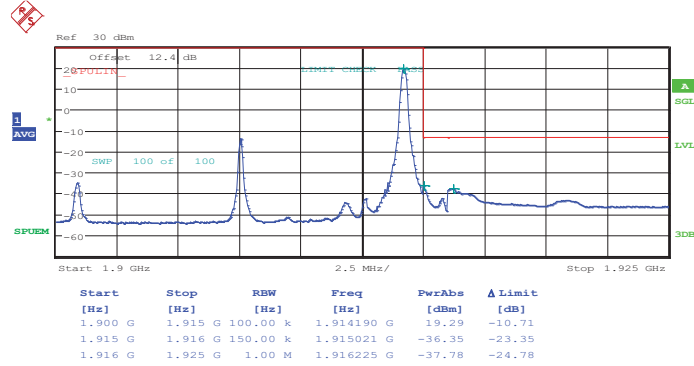
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 26.DEC.2013 20:19:58

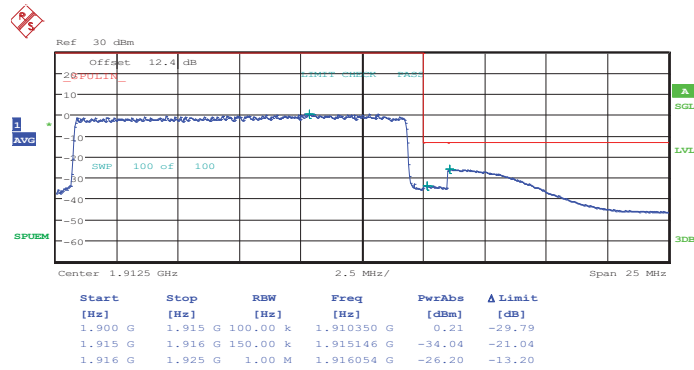


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



Date: 3.JAN.2014 16:37:51

Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0

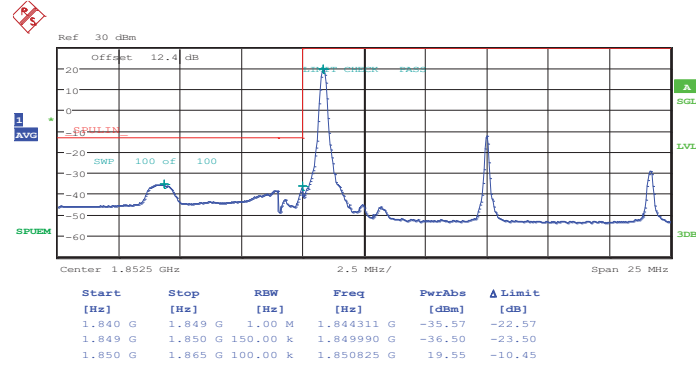


Date: 3.JAN.2014 16:34:07



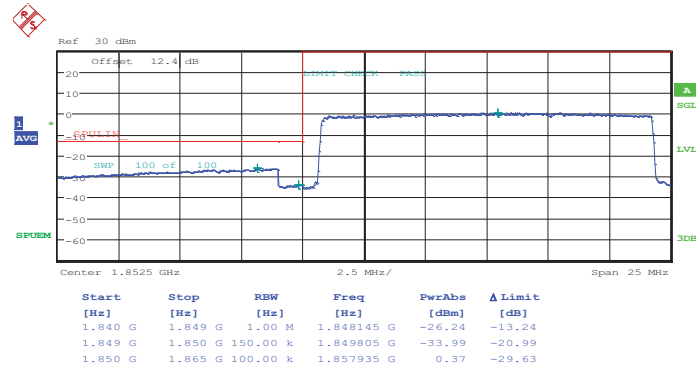
Band :	LTE Band 25	Band Width :	15MHz / 16QAM
--------	-------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:19:16

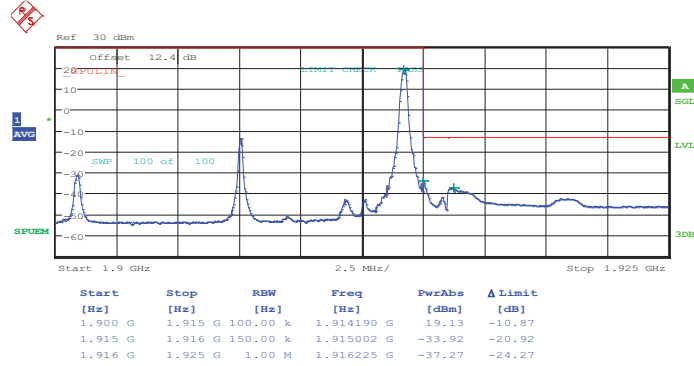
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Date: 26.DEC.2013 20:20:41

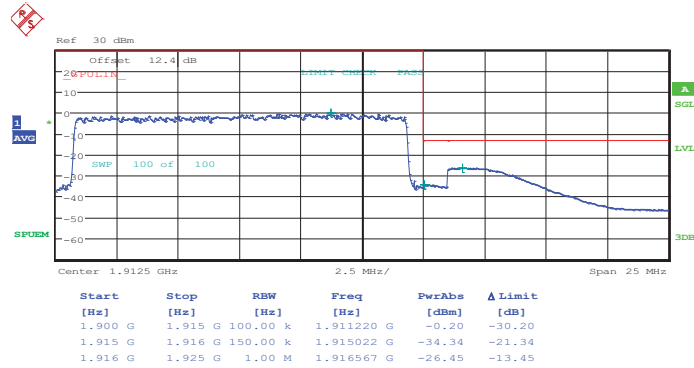


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Date: 3.JAN.2014 16:38:26

Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0

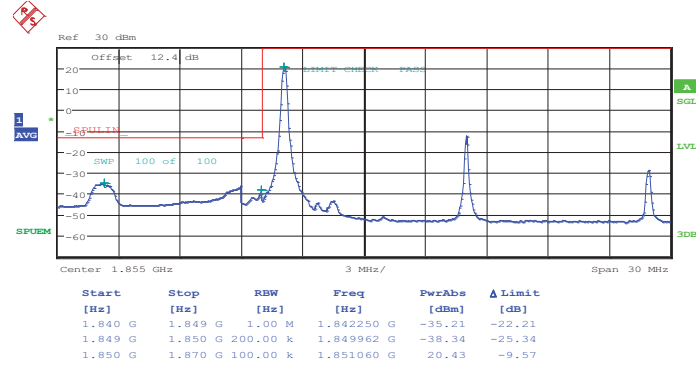


Date: 3.JAN.2014 16:35:08



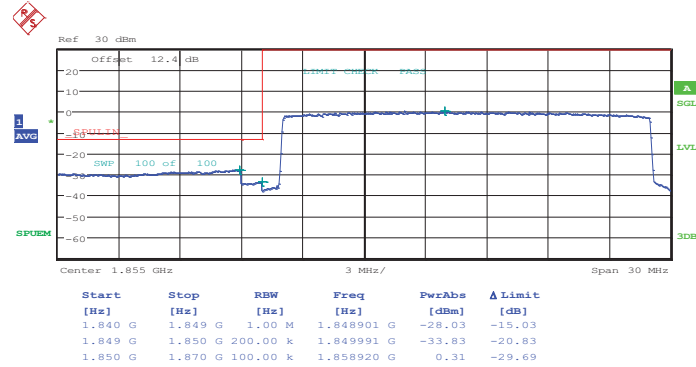
Band :	LTE Band 25	Band Width :	20MHz / QPSK
--------	-------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:34:21

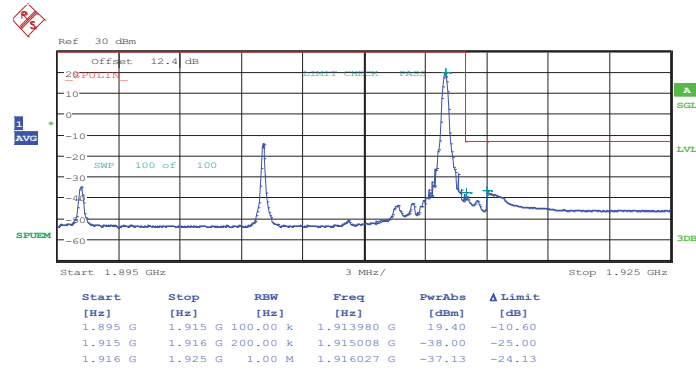
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 26.DEC.2013 20:35:46

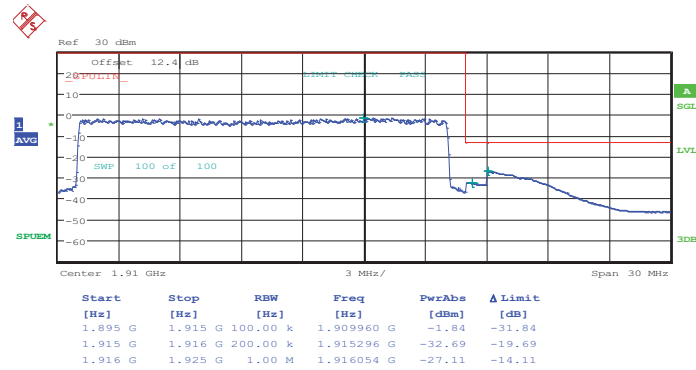


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



Date: 3.JAN.2014 16:44:08

Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0

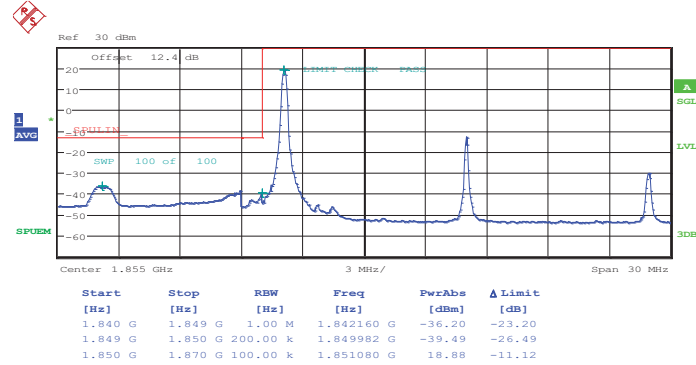


Date: 3.JAN.2014 16:40:18



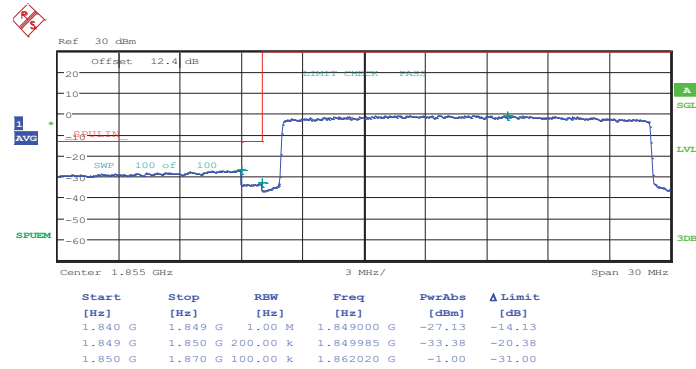
Band :	LTE Band 25	Band Width :	20MHz / 16QAM
--------	-------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:35:04

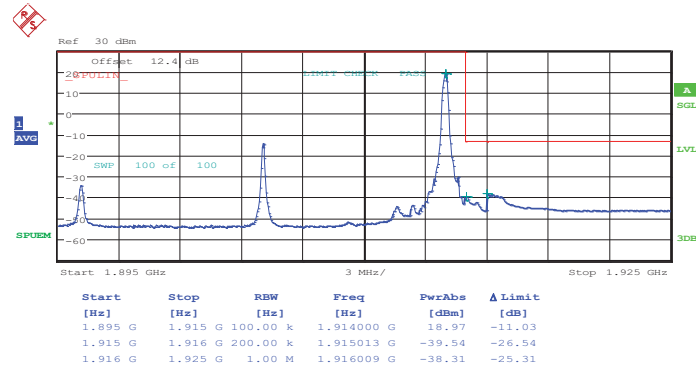
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 26.DEC.2013 20:36:29

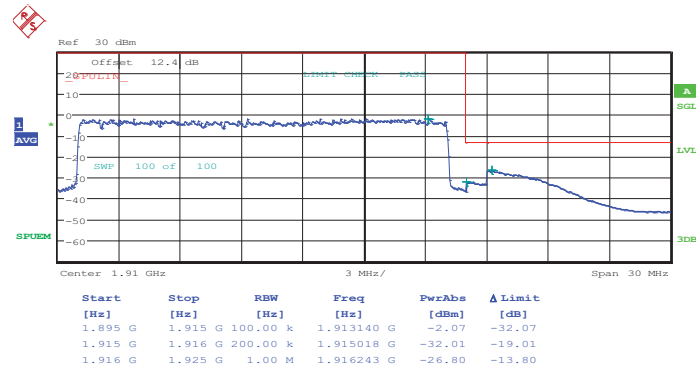


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99



Date: 3.JAN.2014 16:44:42

Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0

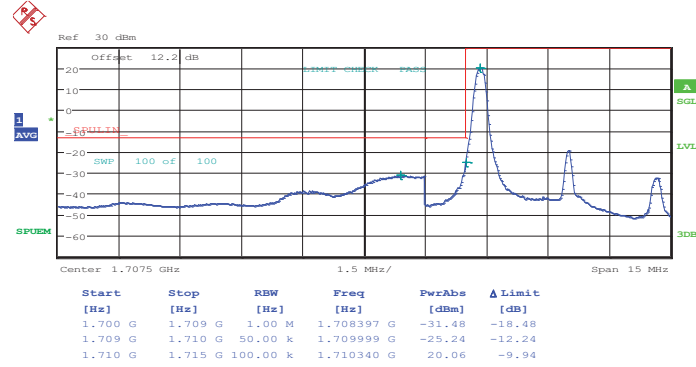


Date: 3.JAN.2014 16:41:20



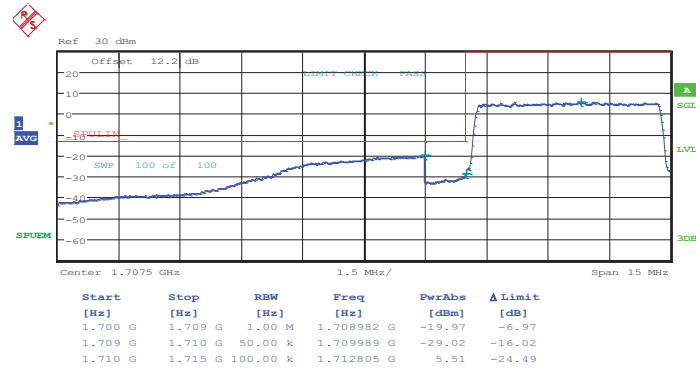
Band :	LTE Band 4	Band Width :	5MHz / QPSK
--------	------------	--------------	-------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:00:37

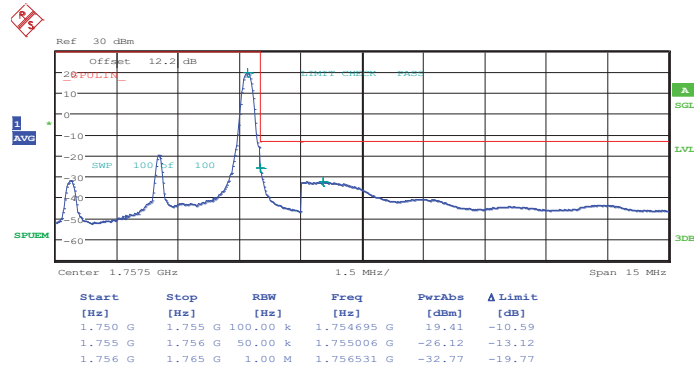
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 26.DEC.2013 20:02:02

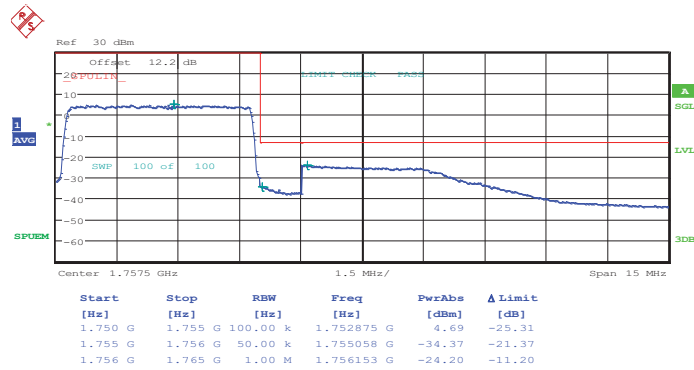


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 26.DEC.2013 20:08:29

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

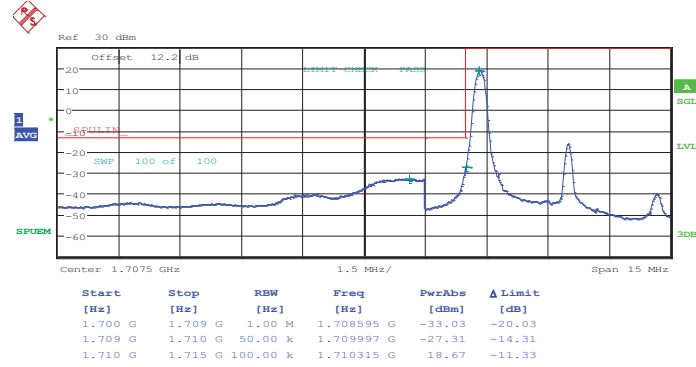


Date: 26.DEC.2013 20:09:54



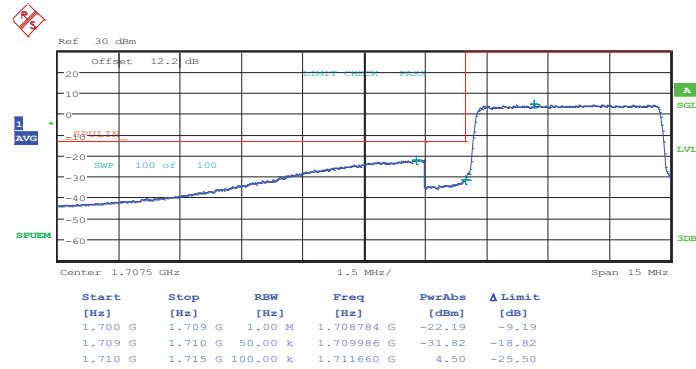
Band :	LTE Band 4	Band Width :	5MHz / 16QAM
--------	------------	--------------	--------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:01:19

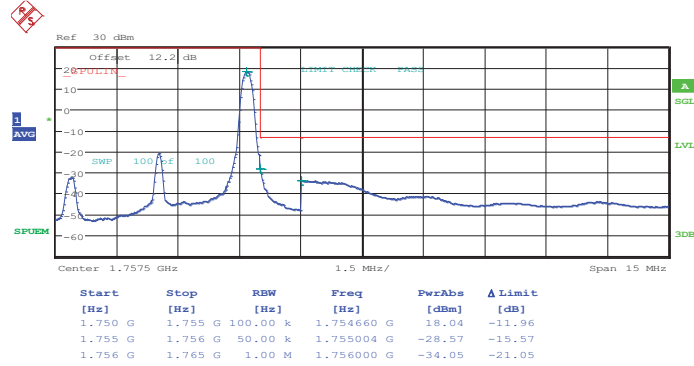
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 26.DEC.2013 20:02:44

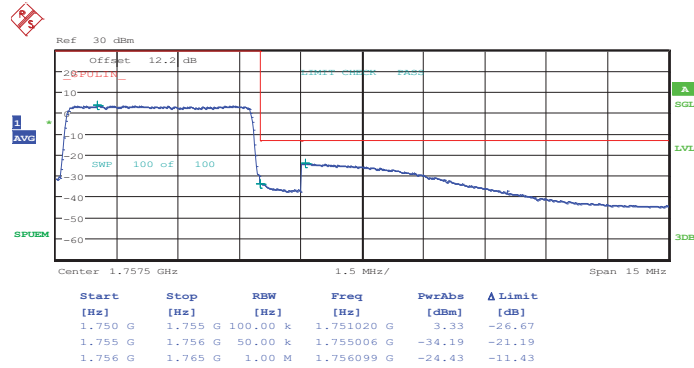


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Date: 26.DEC.2013 20:09:11

Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

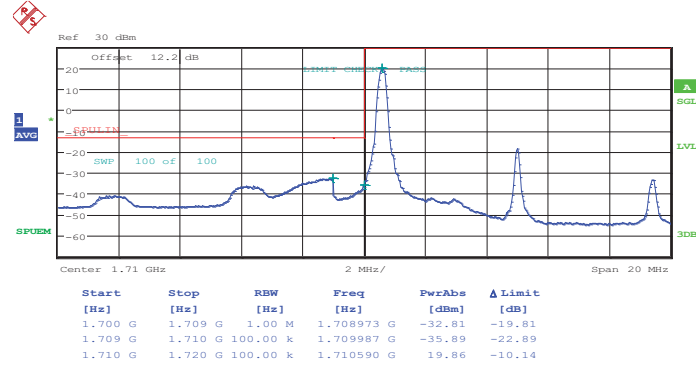


Date: 26.DEC.2013 20:10:36



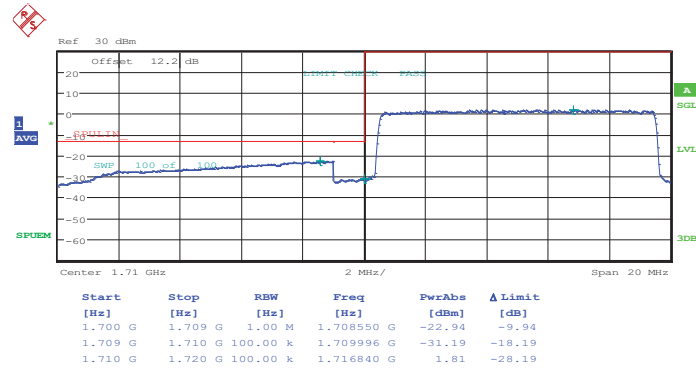
Band :	LTE Band 4	Band Width :	10MHz / QPSK
--------	------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:48:33

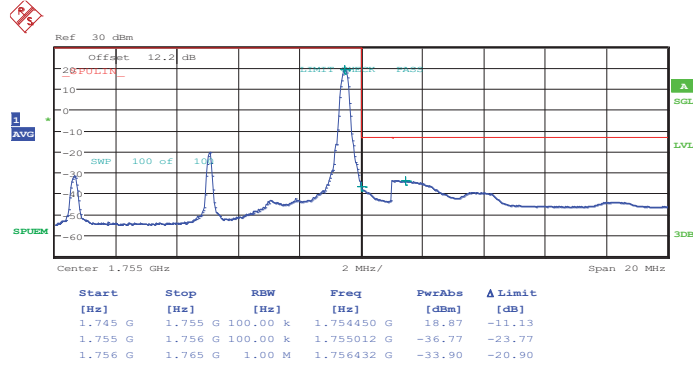
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 26.DEC.2013 20:49:57

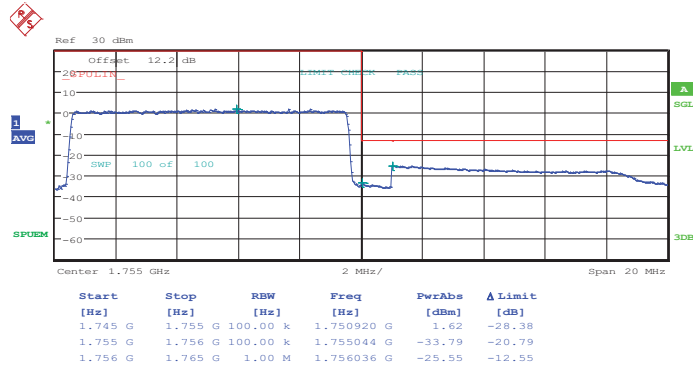


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Date: 26.DEC.2013 20:56:25

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

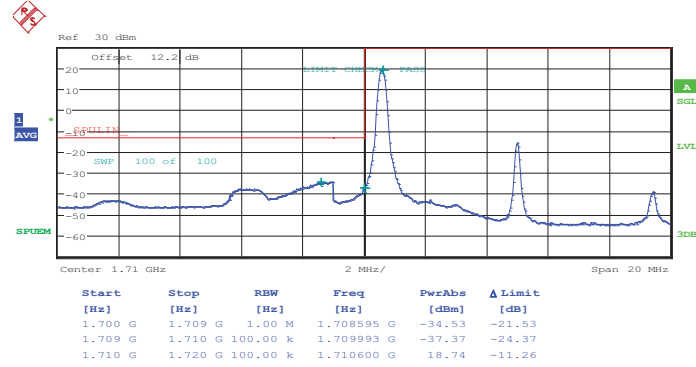


Date: 26.DEC.2013 20:57:50



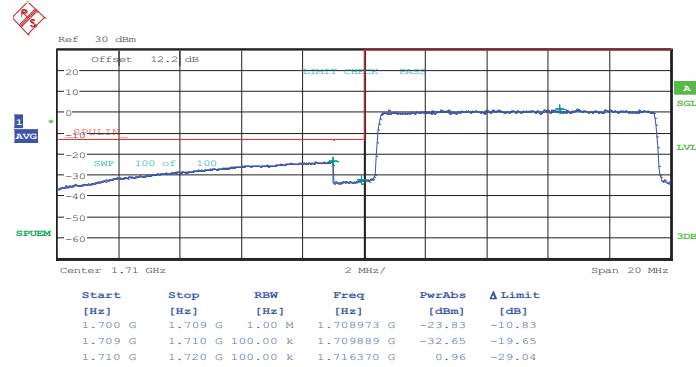
Band :	LTE Band 4	Band Width :	10MHz / 16QAM
---------------	------------	---------------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 20:49:15

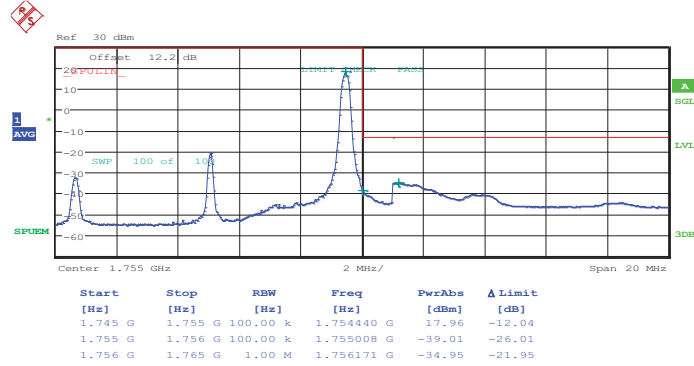
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 26.DEC.2013 20:50:40

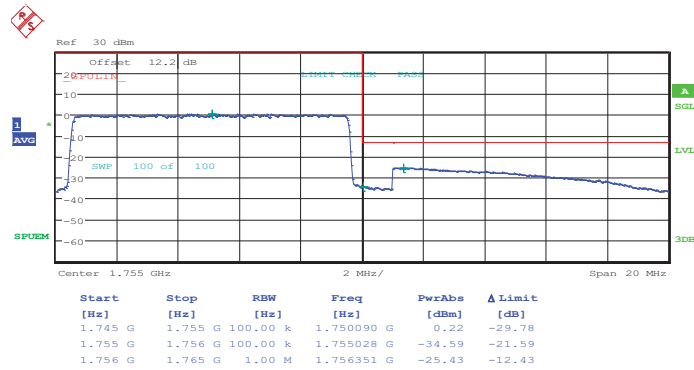


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Date: 26.DEC.2013 20:57:08

Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

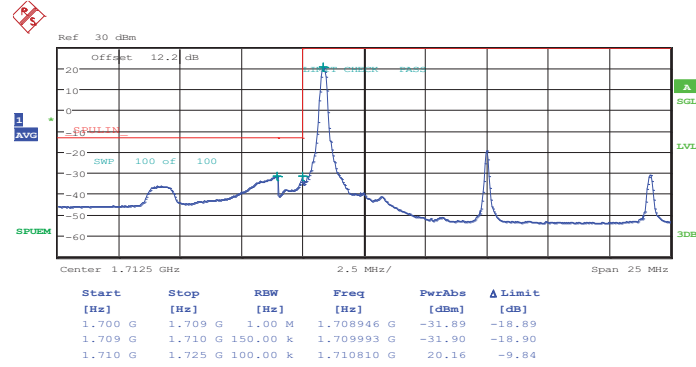


Date: 26.DEC.2013 20:58:32



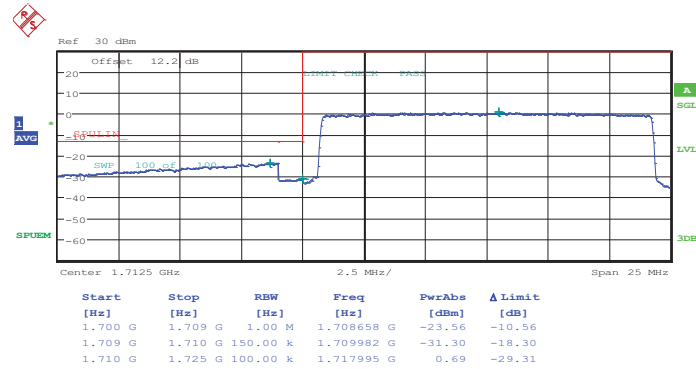
Band :	LTE Band 4	Band Width :	15MHz / QPSK
--------	------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:03:06

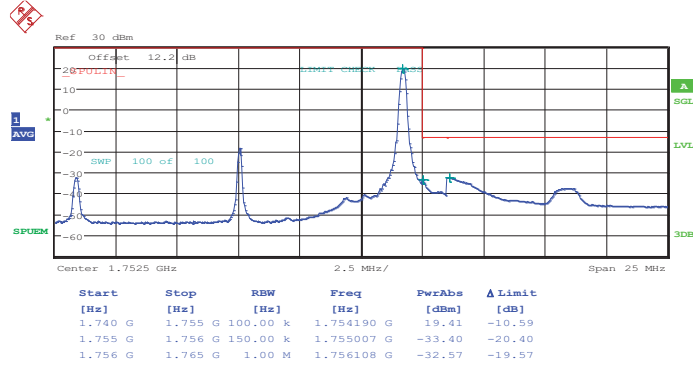
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



Date: 26.DEC.2013 21:04:31

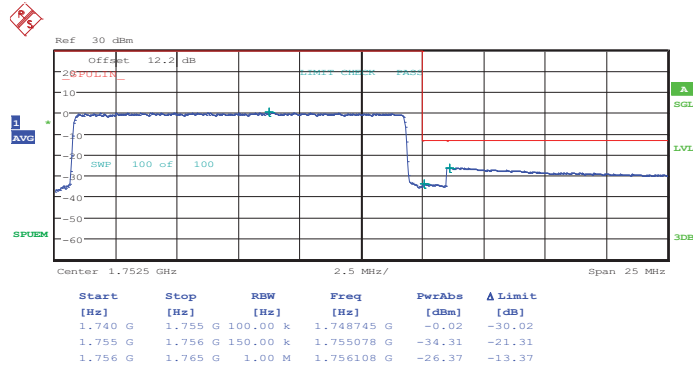


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



Date: 26.DEC.2013 21:10:58

Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0

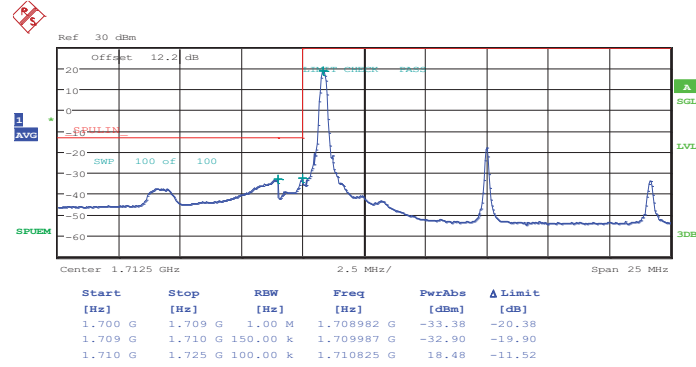


Date: 26.DEC.2013 21:12:23



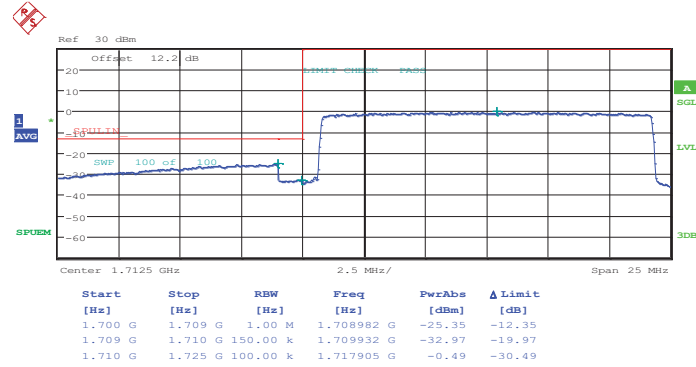
Band :	LTE Band 4	Band Width :	15MHz / 16QAM
--------	------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:03:49

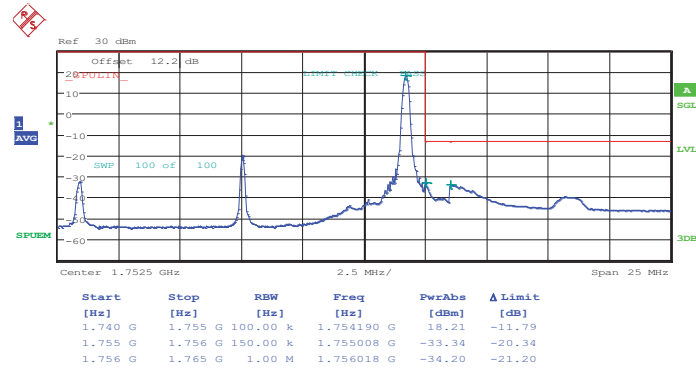
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



Date: 26.DEC.2013 21:05:13

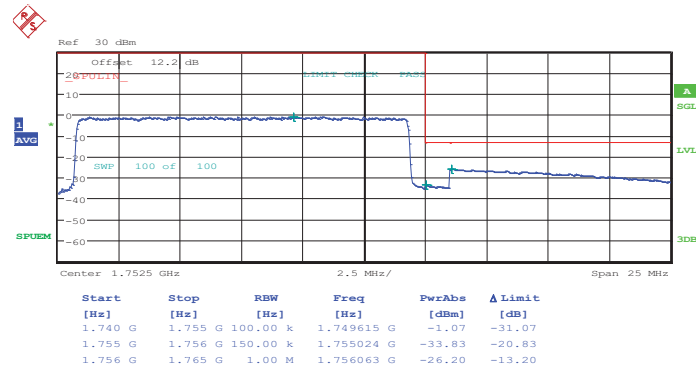


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



Date: 26.DEC.2013 21:11:41

Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0

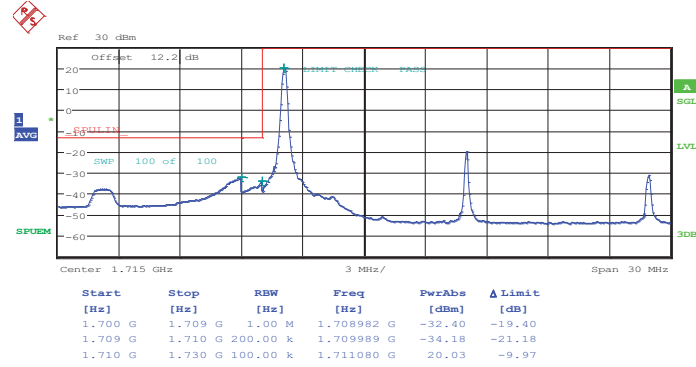


Date: 26.DEC.2013 21:13:05



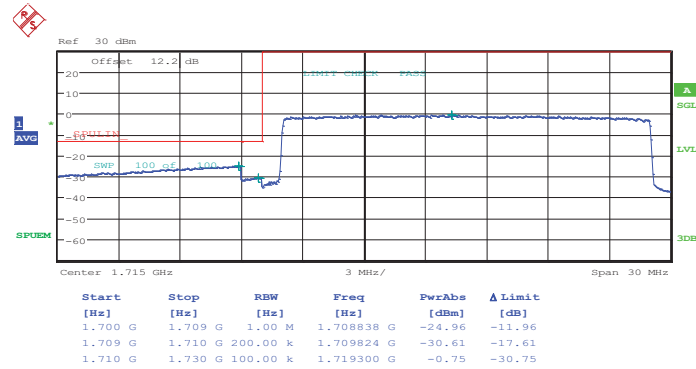
Band :	LTE Band 4	Band Width :	20MHz / QPSK
---------------	------------	---------------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:16:53

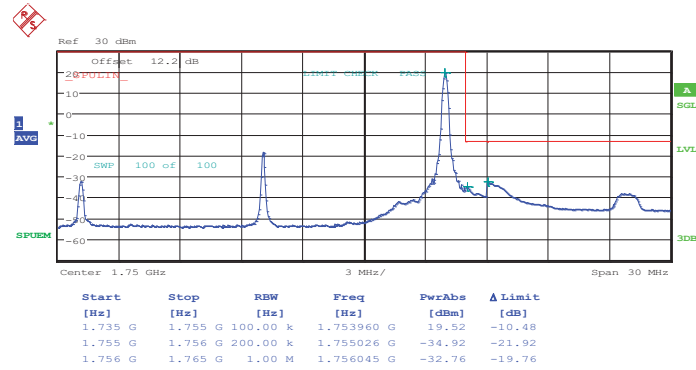
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



Date: 26.DEC.2013 21:18:18

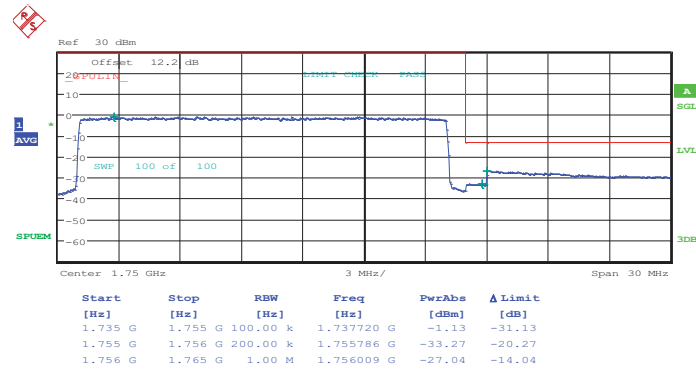


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



Date: 26.DEC.2013 21:24:46

Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0

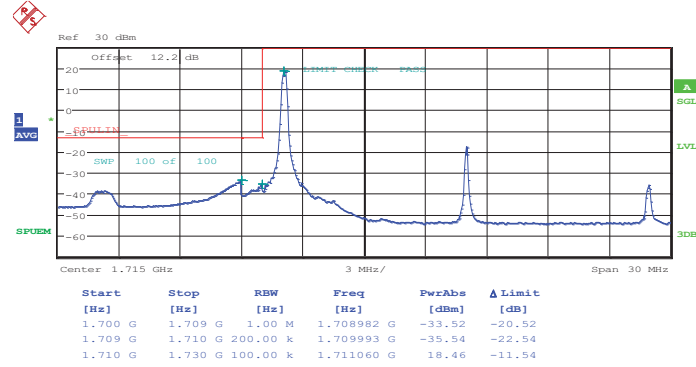


Date: 26.DEC.2013 21:26:11



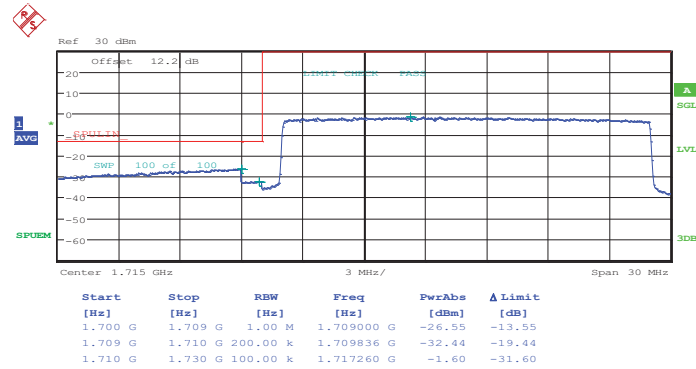
Band :	LTE Band 4	Band Width :	20MHz / 16QAM
--------	------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 21:17:36

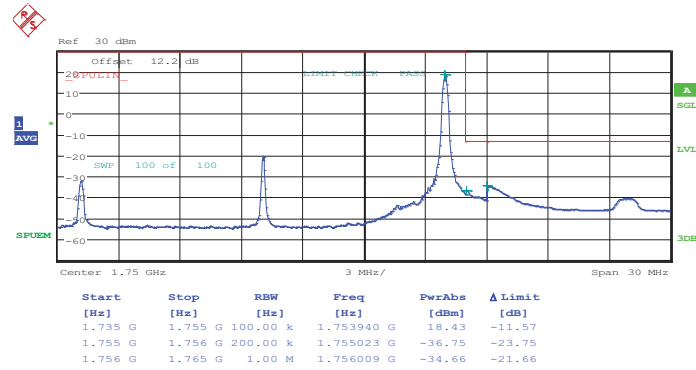
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



Date: 26.DEC.2013 21:19:00

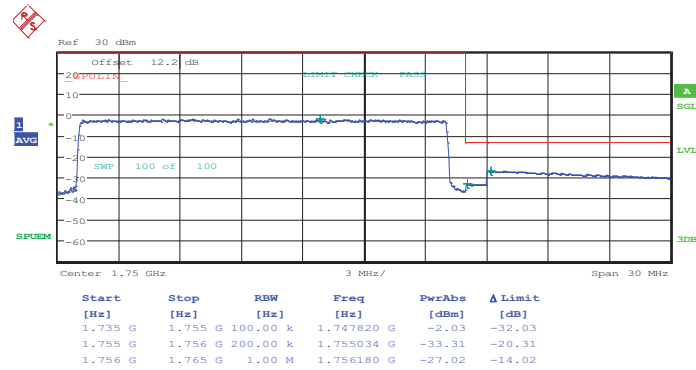


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99



Date: 26.DEC.2013 21:25:28

Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0

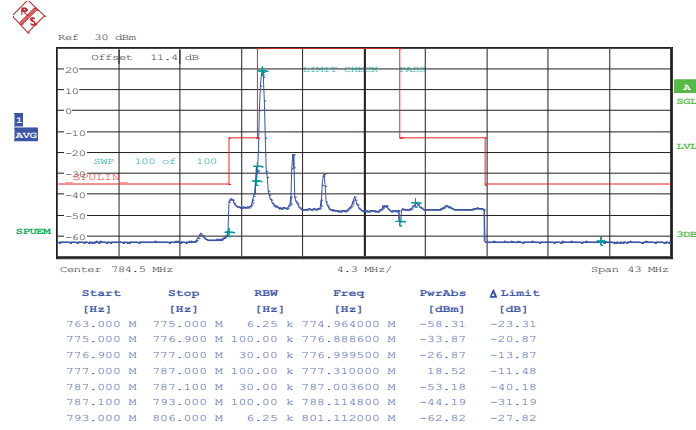


Date: 26.DEC.2013 21:26:53



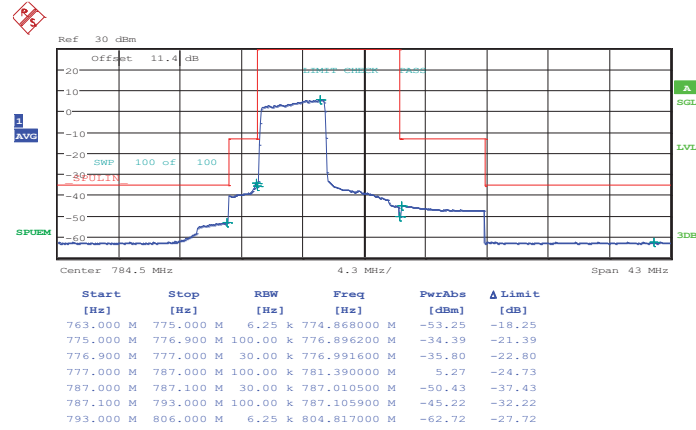
Band :	LTE Band 13	Band Width :	5MHz / QPSK
--------	-------------	--------------	-------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 30.DEC.2013 15:44:56

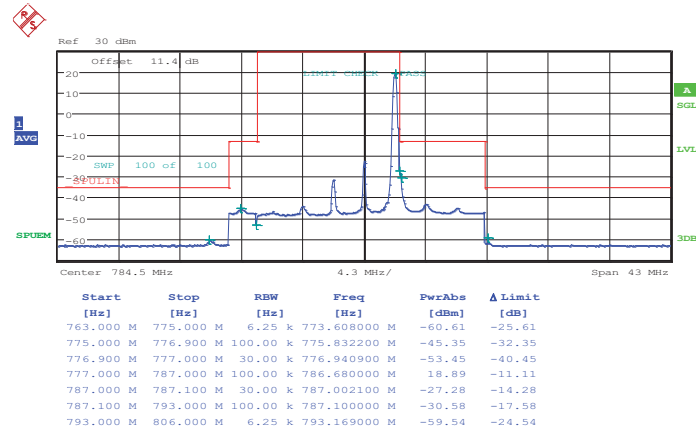
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 30.DEC.2013 15:16:25

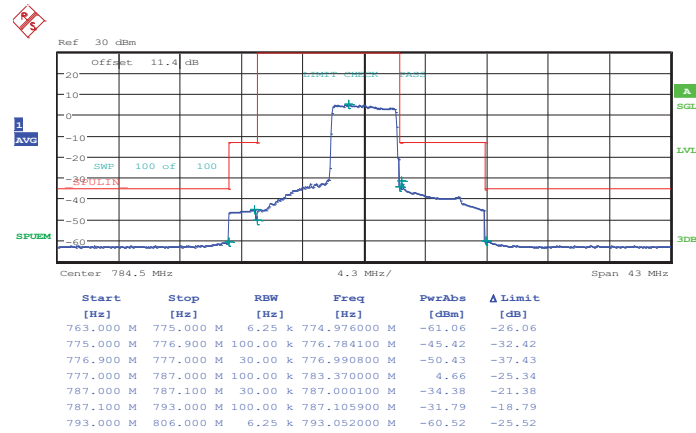


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 30.DEC.2013 15:24:47

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

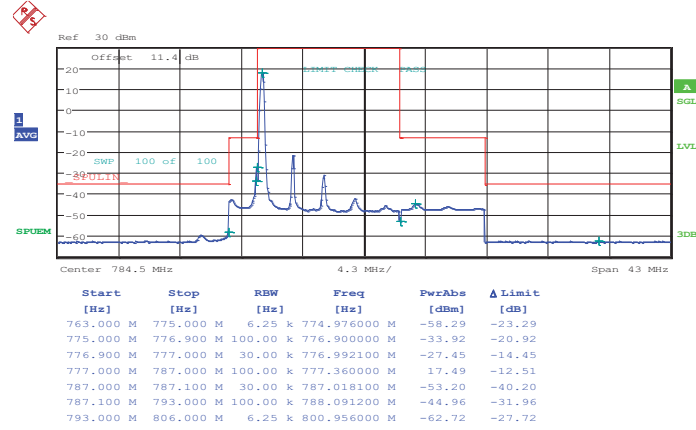


Date: 30.DEC.2013 15:18:58



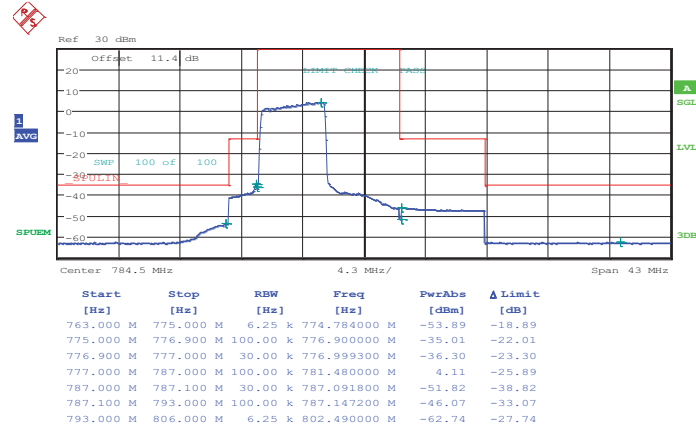
Band :	LTE Band 13	Band Width :	5MHz / 16QAM
--------	-------------	--------------	--------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 30.DEC.2013 15:48:14

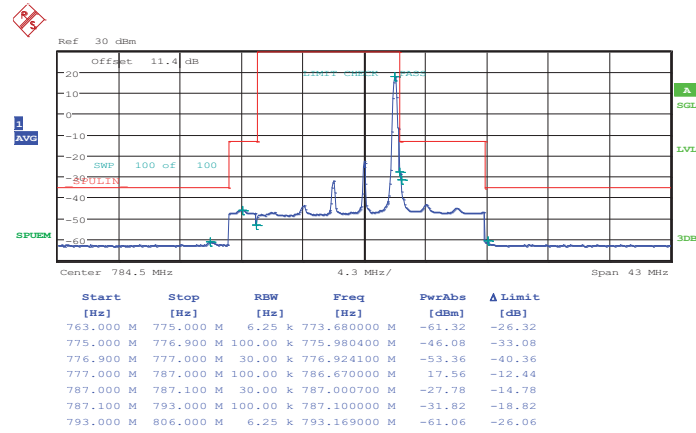
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 30.DEC.2013 15:50:35

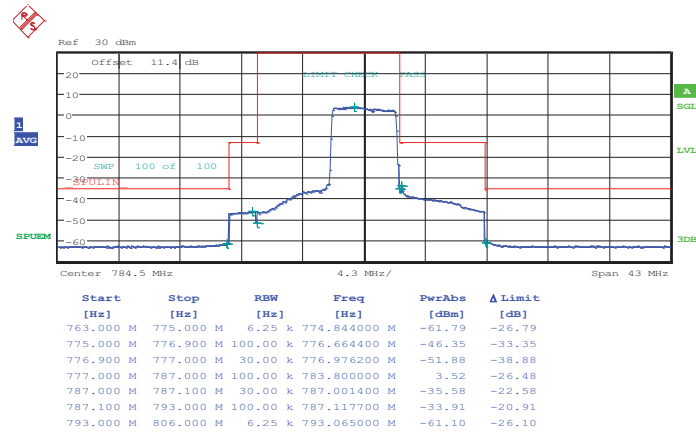


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Date: 30.DEC.2013 15:55:53

Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

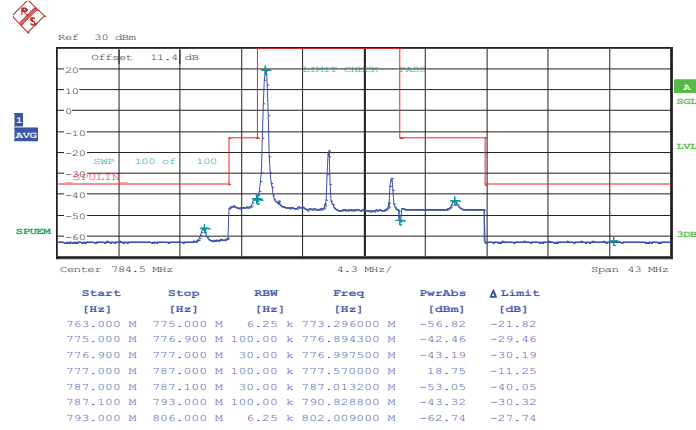


Date: 30.DEC.2013 15:52:57



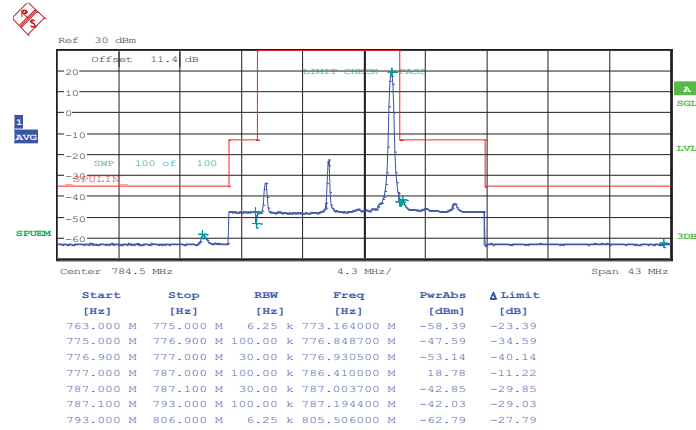
Band :	LTE Band 13	Band Width :	10MHz / QPSK
--------	-------------	--------------	--------------

Middle Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 30.DEC.2013 15:38:49

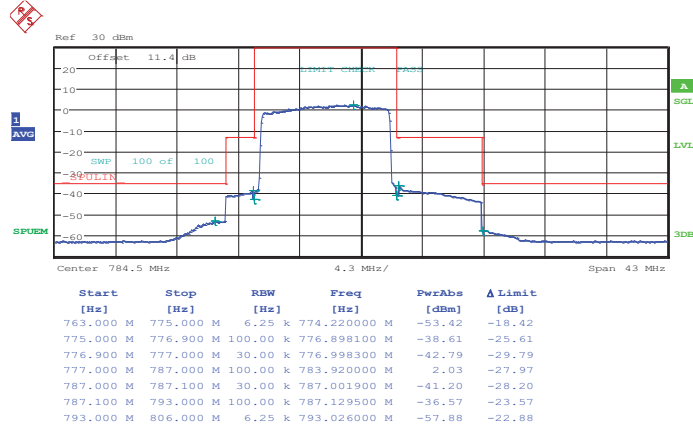
Middle Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 30.DEC.2013 15:41:28



Middle Band Edge Plot for QPSK-RB Size 1, RB Offset 49

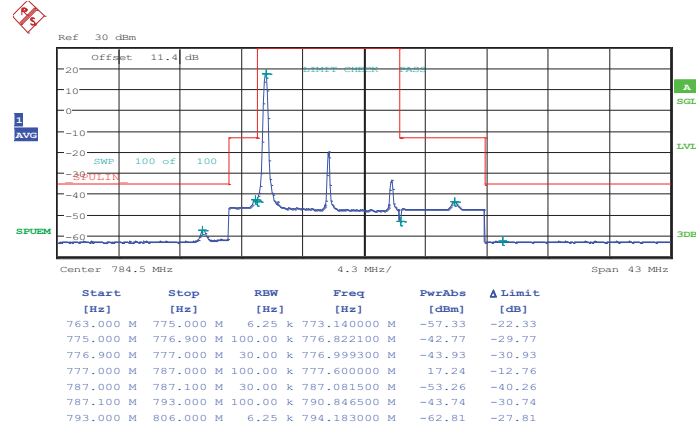


Date: 30.DEC.2013 15:35:11



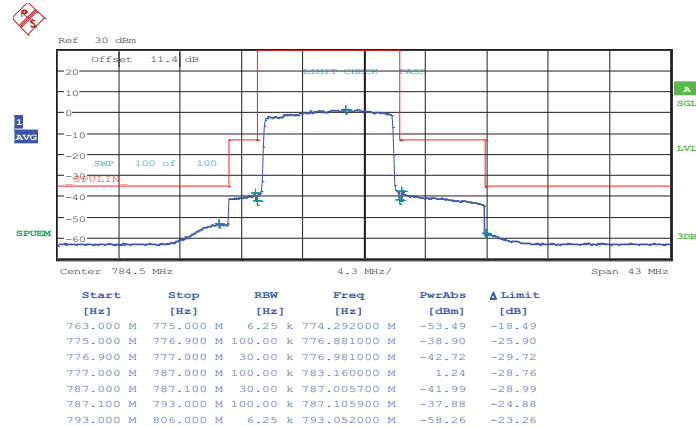
Band :	LTE Band 13	Band Width :	10MHz / 16QAM
--------	-------------	--------------	---------------

Middle Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 30.DEC.2013 15:59:03

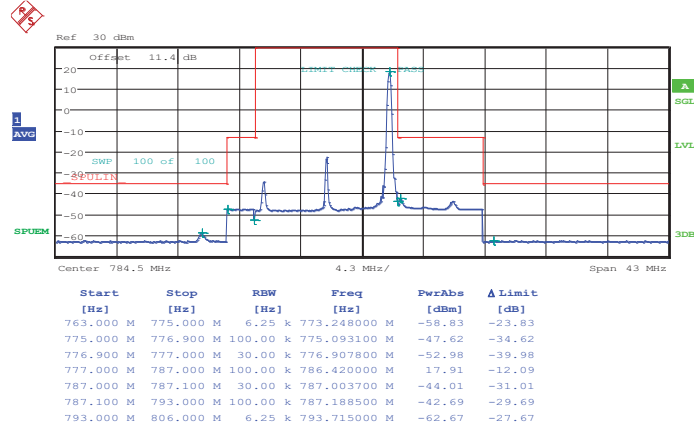
Middle Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 30.DEC.2013 16:06:23



Middle Band Edge Plot for 16QAM-RB Size 1, RB Offset 49

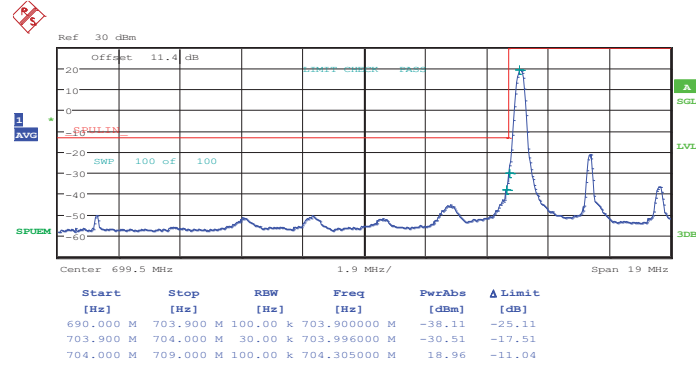


Date: 30.DEC.2013 16:03:54



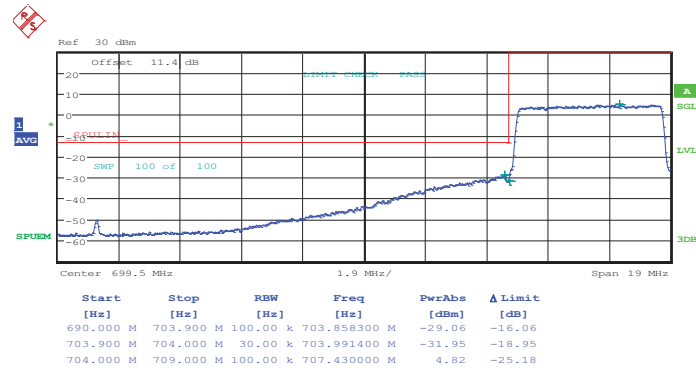
Band :	LTE Band 17	Band Width :	5MHz / QPSK
--------	-------------	--------------	-------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 22:03:33

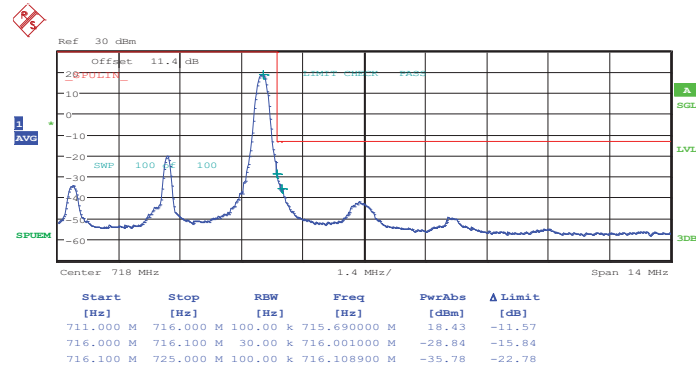
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 26.DEC.2013 22:04:57

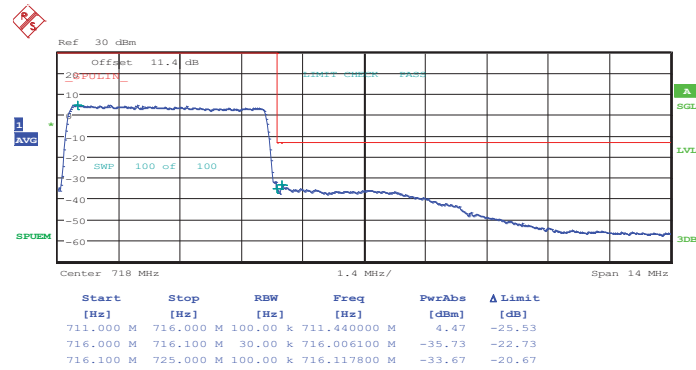


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 26.DEC.2013 22:11:12

Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

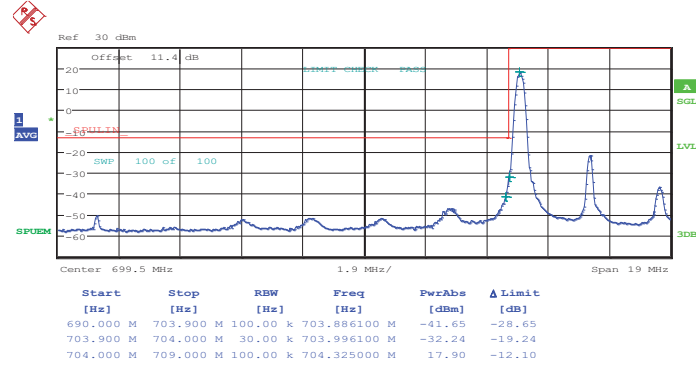


Date: 26.DEC.2013 22:12:37



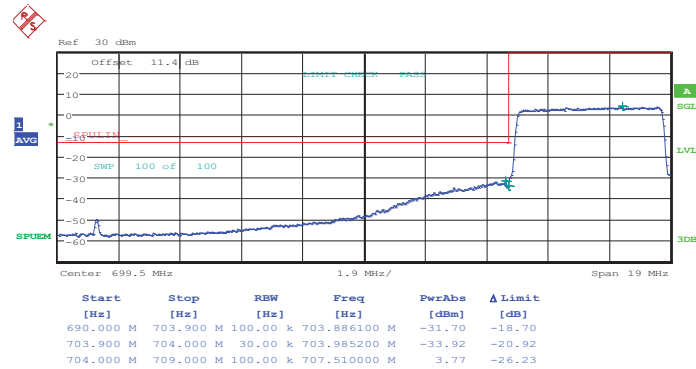
Band :	LTE Band 17	Band Width :	5MHz / 16QAM
--------	-------------	--------------	--------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 22:04:15

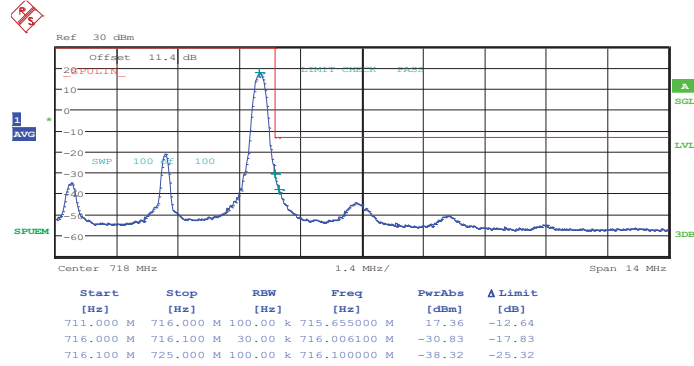
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 26.DEC.2013 22:05:40

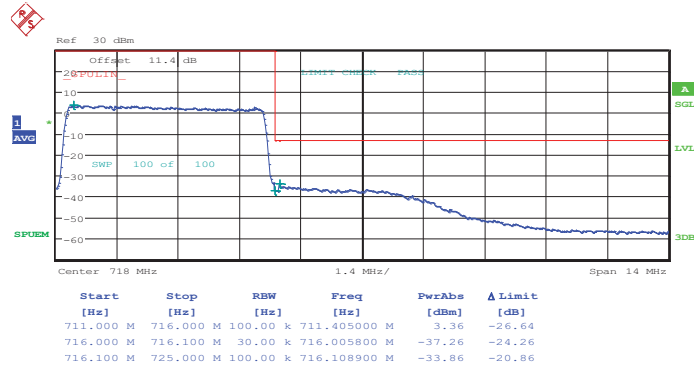


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



Date: 26.DEC.2013 22:11:55

Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

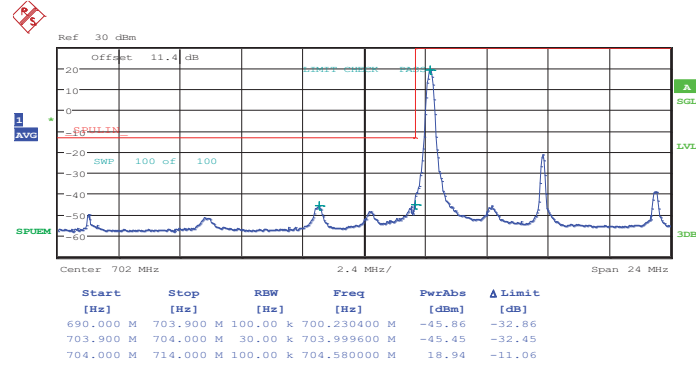


Date: 26.DEC.2013 22:13:20



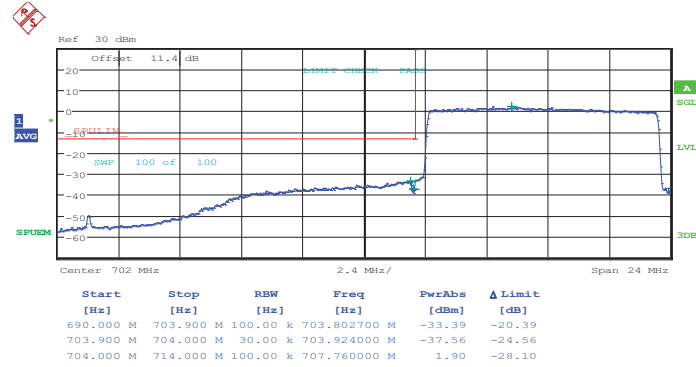
Band :	LTE Band 17	Band Width :	10MHz / QPSK
--------	-------------	--------------	--------------

Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



Date: 26.DEC.2013 22:20:59

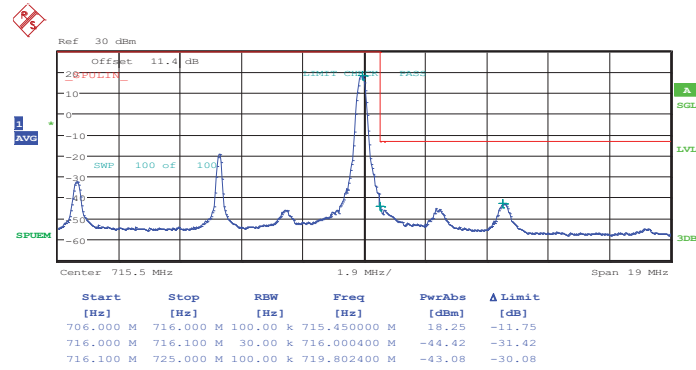
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



Date: 26.DEC.2013 22:22:24

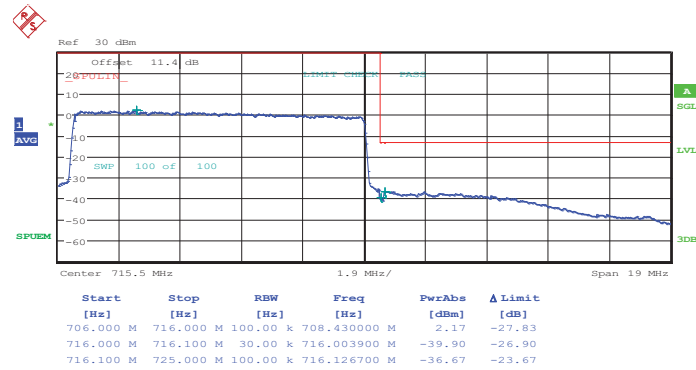


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



Date: 26.DEC.2013 22:28:39

Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

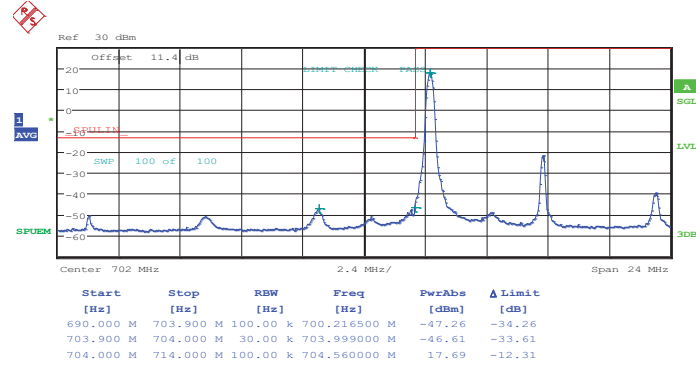


Date: 26.DEC.2013 22:30:04



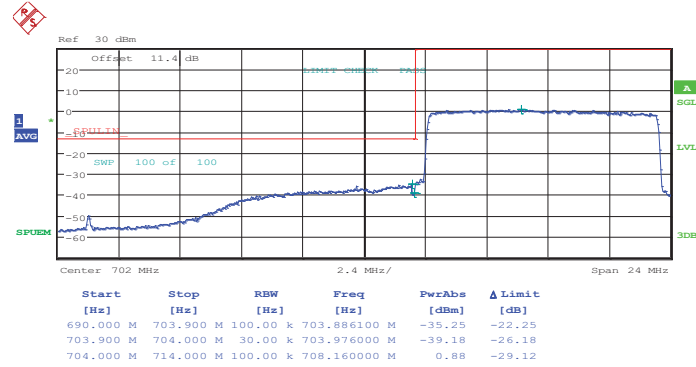
Band :	LTE Band 17	Band Width :	10MHz / 16QAM
--------	-------------	--------------	---------------

Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



Date: 26.DEC.2013 22:21:41

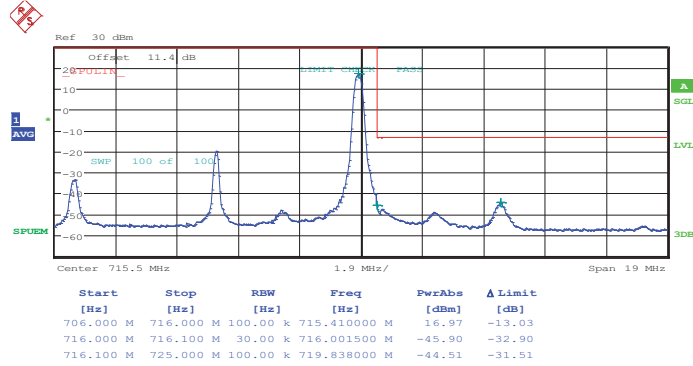
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 26.DEC.2013 22:23:06

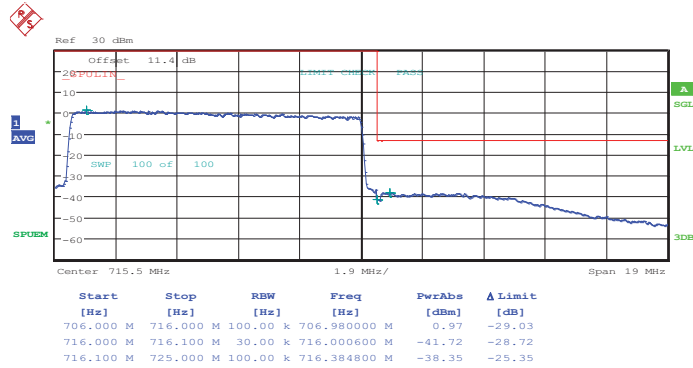


Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



Date: 26.DEC.2013 22:29:21

Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



Date: 26.DEC.2013 22:30:46

3.5 Conducted Spurious Emission Measurement

3.5.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 9 kHz up to a frequency including its 10th harmonic.

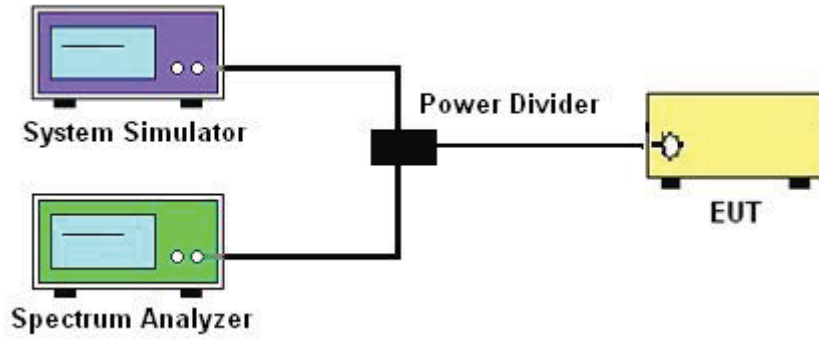
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.

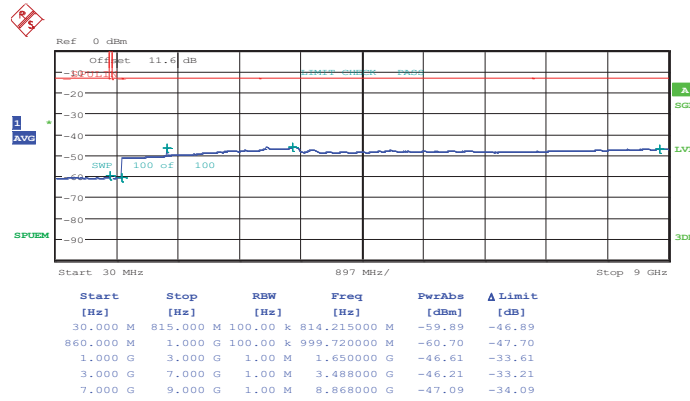
3.5.4 Test Setup



3.5.5 Test Result (Plots) of Conducted Spurious Emission

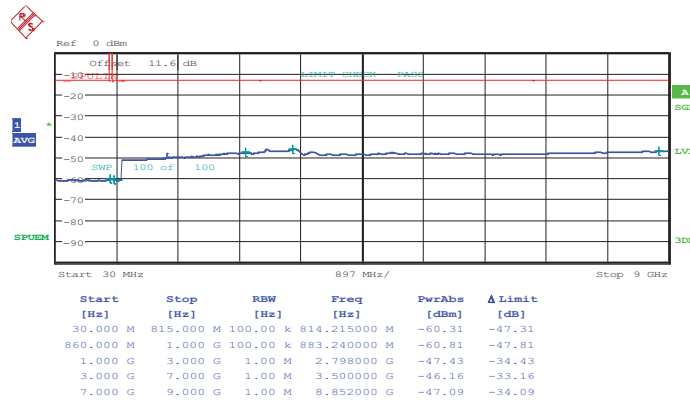
Band :	LTE Band 5	Channel :	CH20425 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:38:34

16QAM (RB Size 1, RB Offset 0)

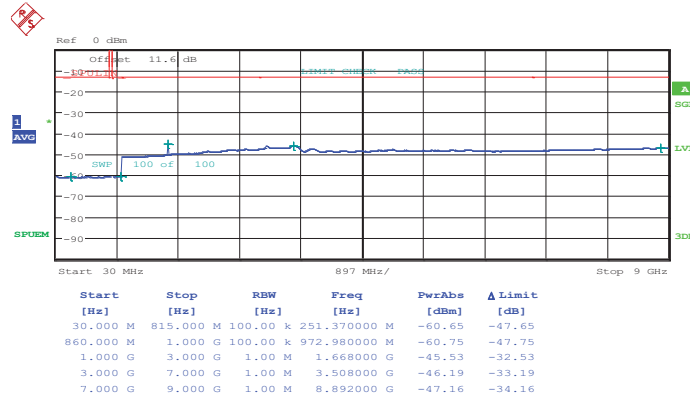


Date: 26.DEC.2013 21:39:21



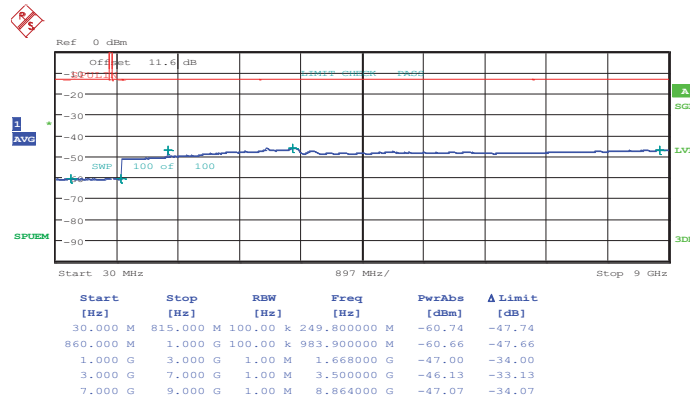
Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:40:58

16QAM (RB Size 1, RB Offset 0)

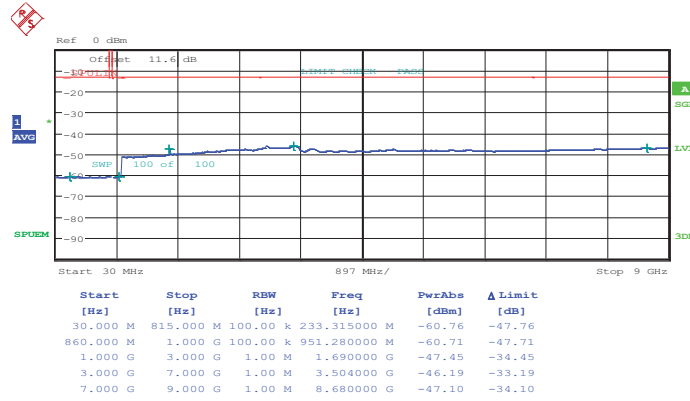


Date: 26.DEC.2013 21:41:46



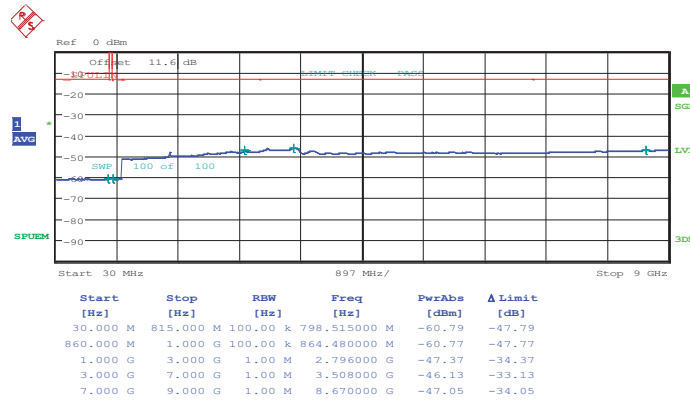
Band :	LTE Band 5	Channel :	CH20625 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:46:12

16QAM (RB Size 1, RB Offset 0)

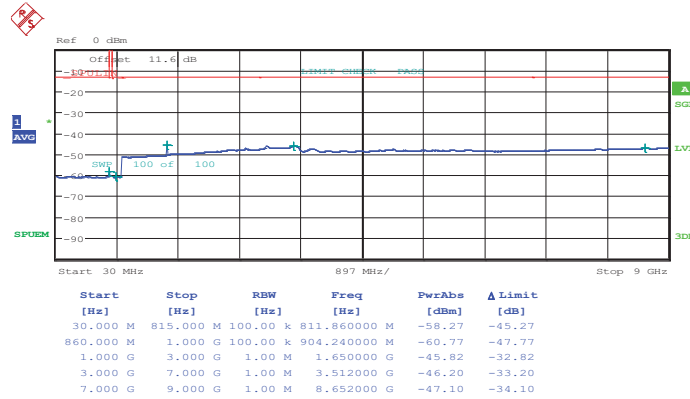


Date: 26.DEC.2013 21:46:59



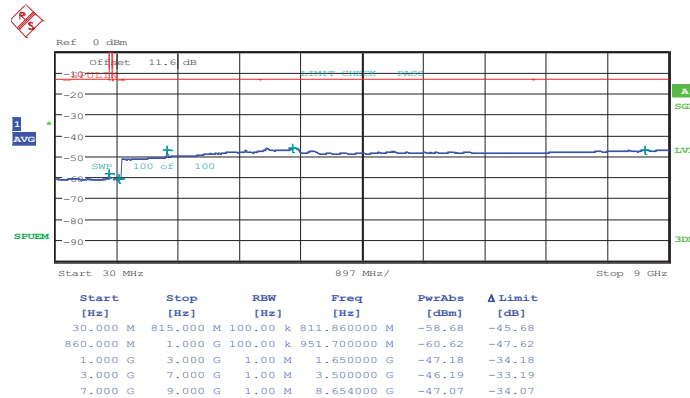
Band :	LTE Band 5	Channel :	CH20450 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:52:22

16QAM (RB Size 1, RB Offset 0)

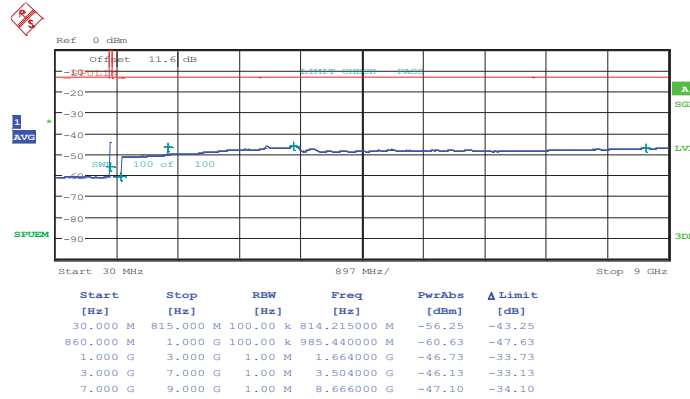


Date: 26.DEC.2013 21:53:09



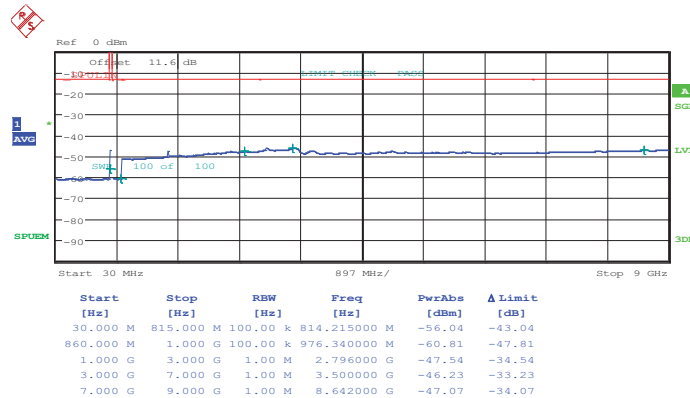
Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:54:47

16QAM (RB Size 1, RB Offset 0)

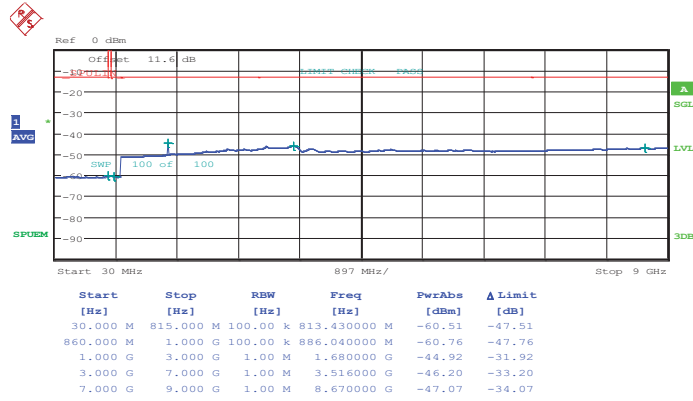


Date: 26.DEC.2013 21:55:34



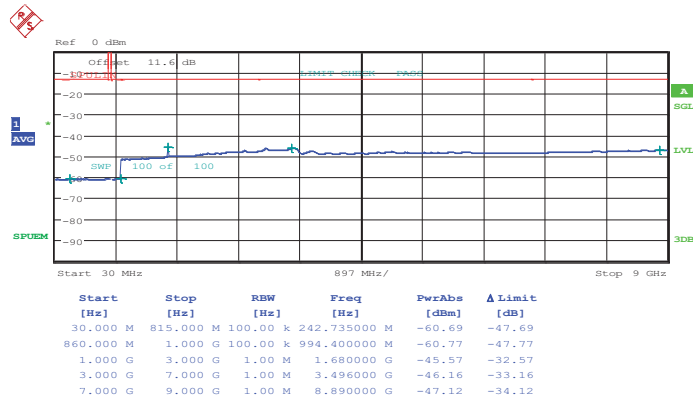
Band :	LTE Band 5	Channel :	CH20600 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:00:02

16QAM (RB Size 1, RB Offset 0)

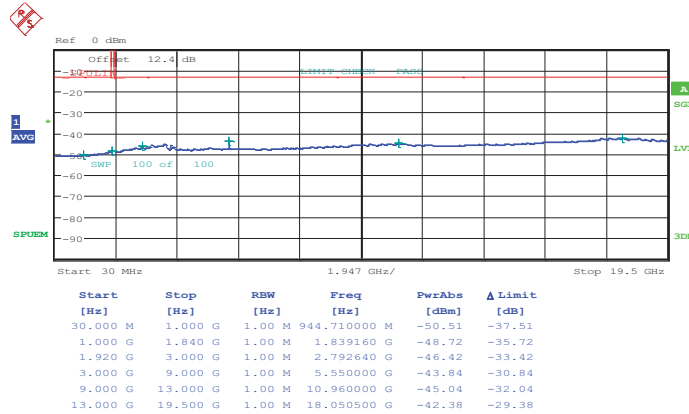


Date: 26.DEC.2013 22:00:49



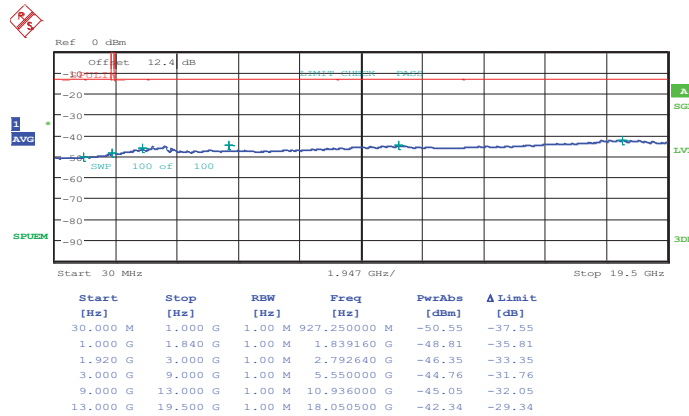
Band :	LTE Band 2	Channel :	CH18625 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:39:24

16QAM (RB Size 1, RB Offset 0)

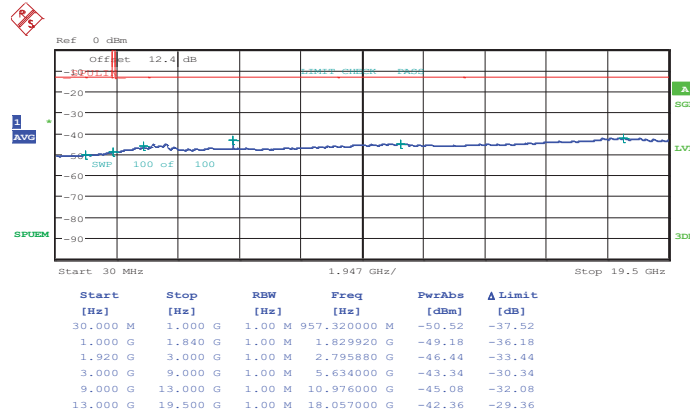


Date: 26.DEC.2013 18:40:16



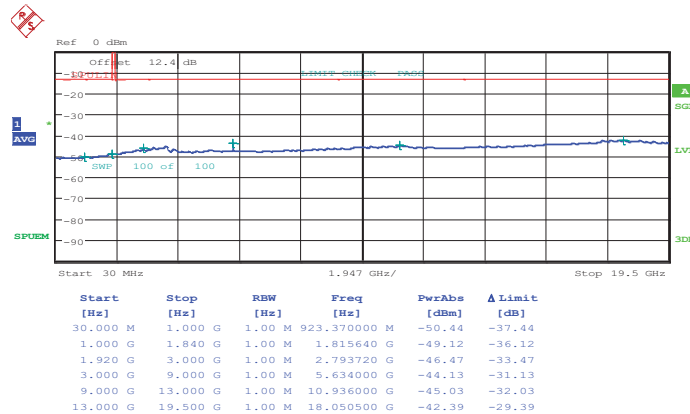
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:41:57

16QAM (RB Size 1, RB Offset 0)

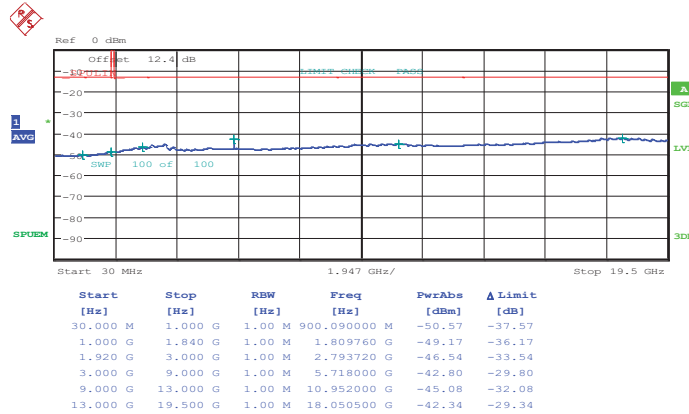


Date: 26.DEC.2013 18:42:49



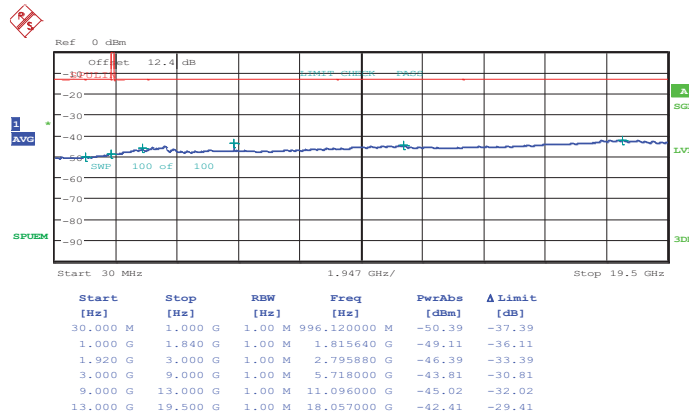
Band :	LTE Band 2	Channel :	CH19175 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:47:20

16QAM (RB Size 1, RB Offset 0)

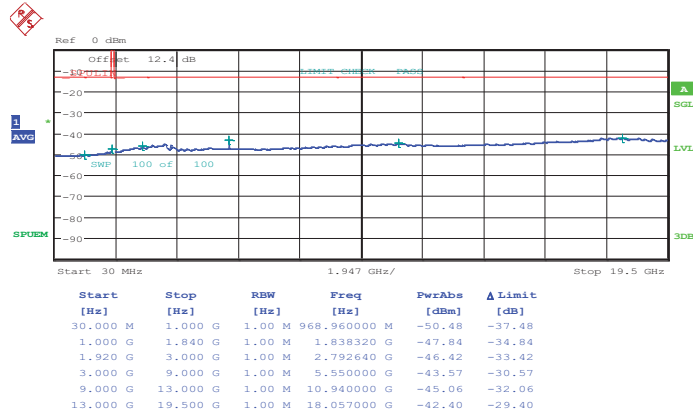


Date: 26.DEC.2013 18:48:12



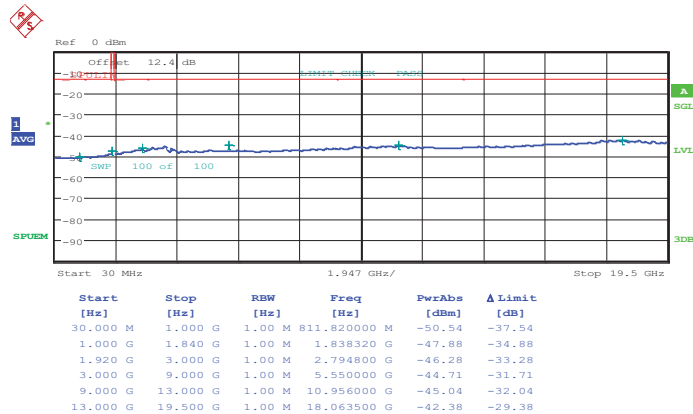
Band :	LTE Band 2	Channel :	CH18650 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:57:52

16QAM (RB Size 1, RB Offset 0)

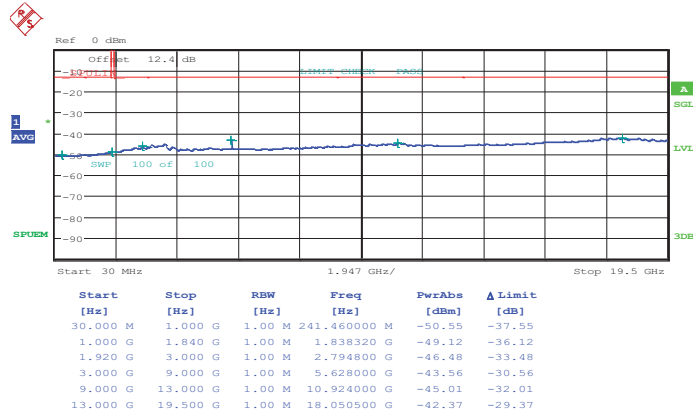


Date: 26.DEC.2013 18:58:43



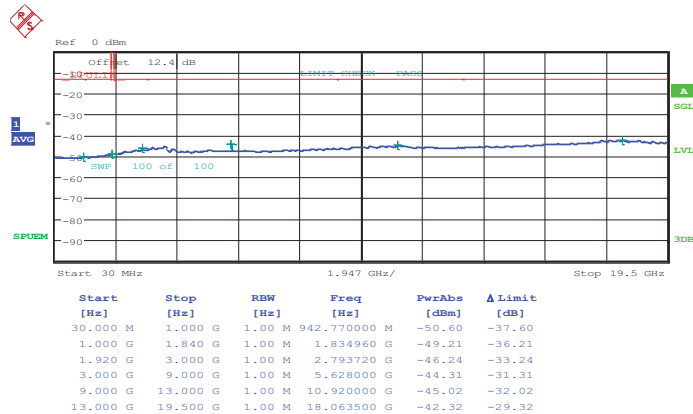
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 19:00:25

16QAM (RB Size 1, RB Offset 0)

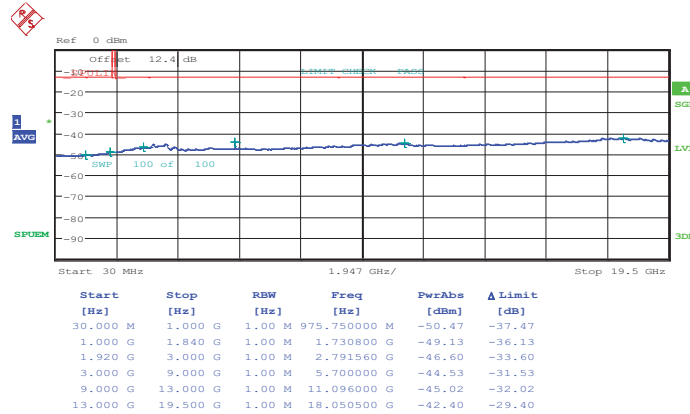


Date: 26.DEC.2013 19:01:17



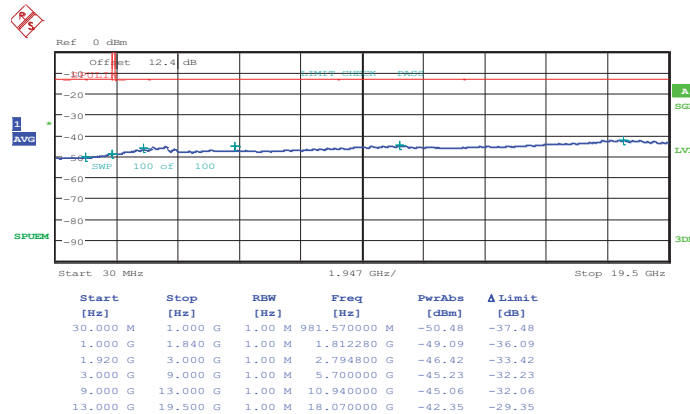
Band :	LTE Band 2	Channel :	CH19150 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 19:05:48

16QAM (RB Size 1, RB Offset 0)

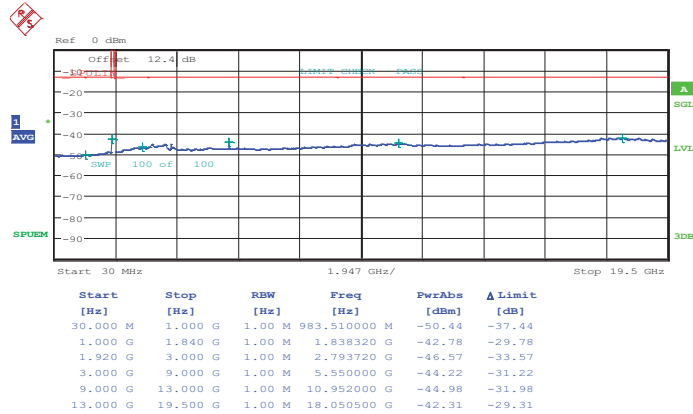


Date: 26.DEC.2013 19:06:40



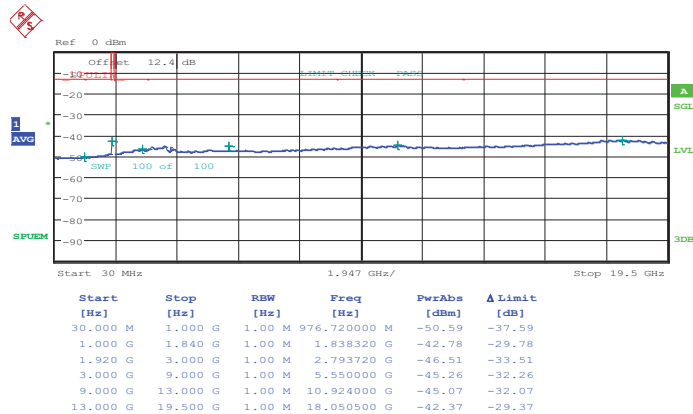
Band :	LTE Band 2	Channel :	CH18675 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:21:32

16QAM (RB Size 1, RB Offset 0)

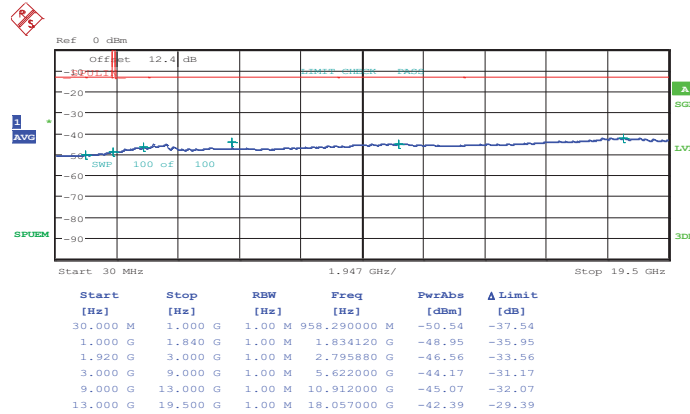


Date: 26.DEC.2013 20:22:24



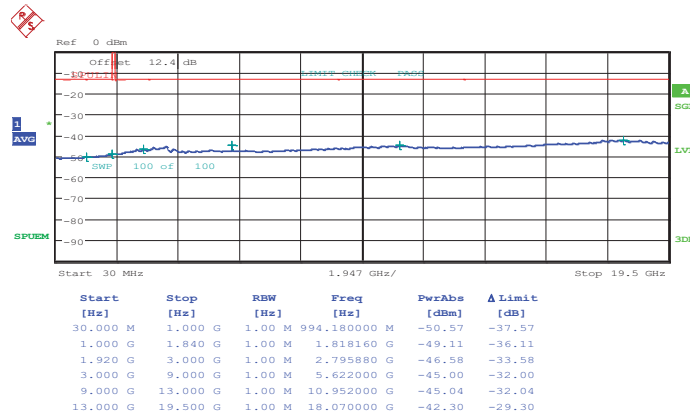
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:24:05

16QAM (RB Size 1, RB Offset 0)

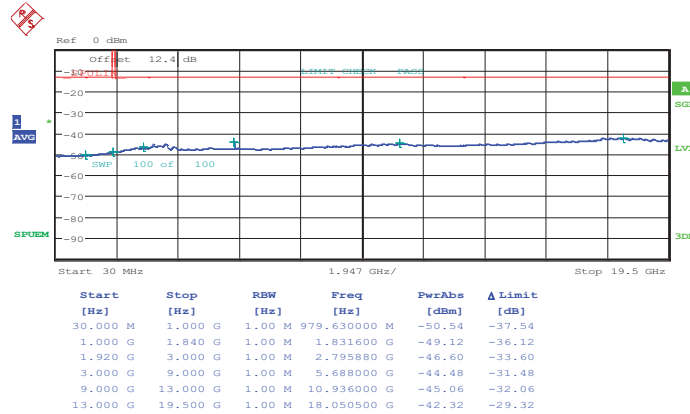


Date: 26.DEC.2013 20:24:57



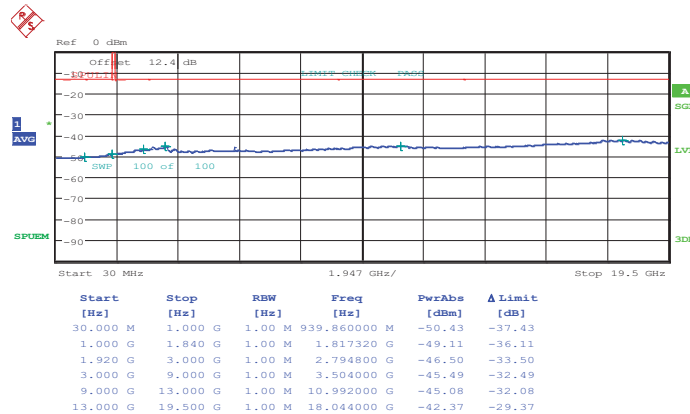
Band :	LTE Band 2	Channel :	CH19125 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:29:28

16QAM (RB Size 1, RB Offset 0)

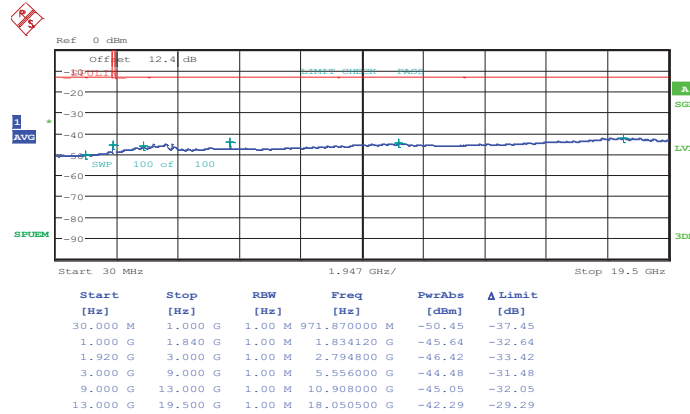


Date: 26.DEC.2013 20:30:20



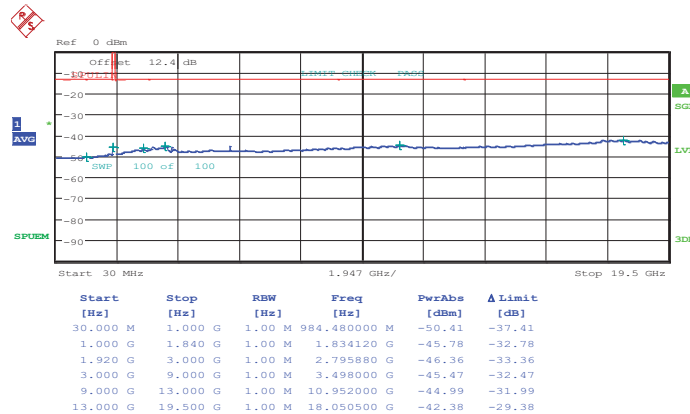
Band :	LTE Band 2	Channel :	CH18700 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:37:20

16QAM (RB Size 1, RB Offset 0)

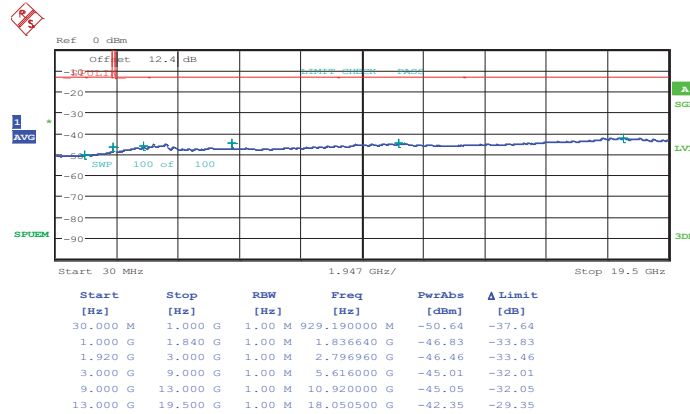


Date: 26.DEC.2013 20:38:12



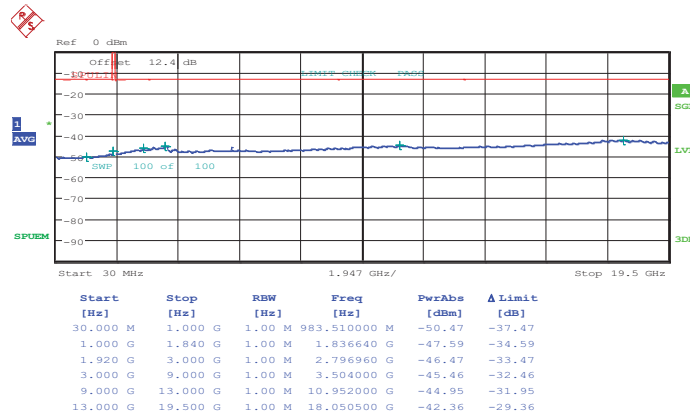
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:39:54

16QAM (RB Size 1, RB Offset 0)

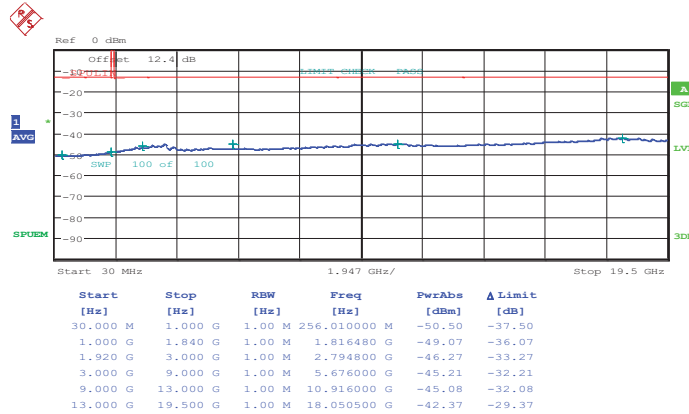


Date: 26.DEC.2013 20:40:46



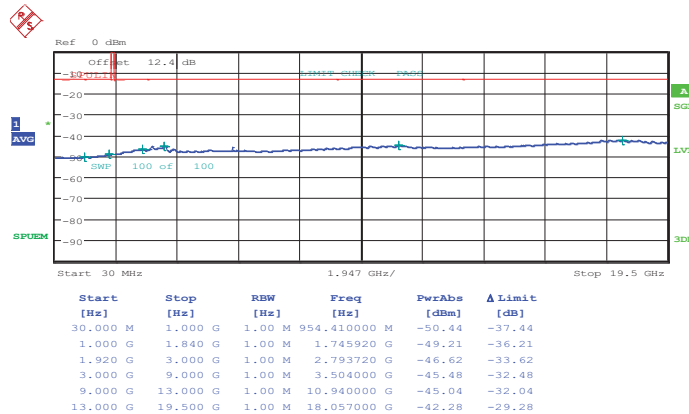
Band :	LTE Band 2	Channel :	CH19100 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:45:17

16QAM (RB Size 1, RB Offset 0)

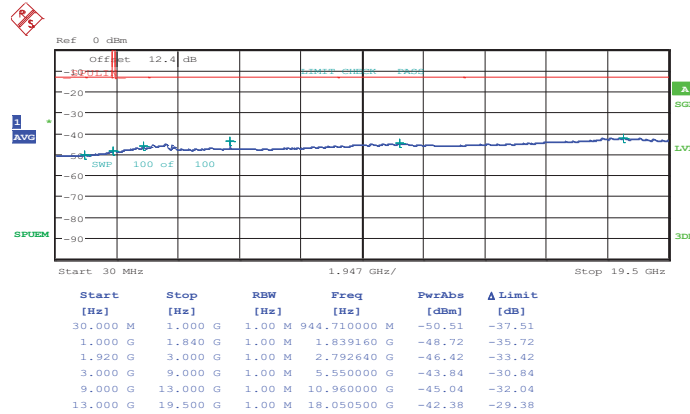


Date: 26.DEC.2013 20:46:09



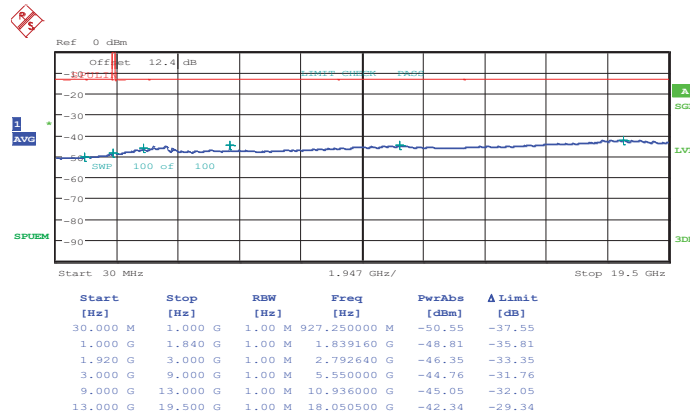
Band :	LTE Band 25	Channel :	CH26065 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:39:24

16QAM (RB Size 1, RB Offset 0)

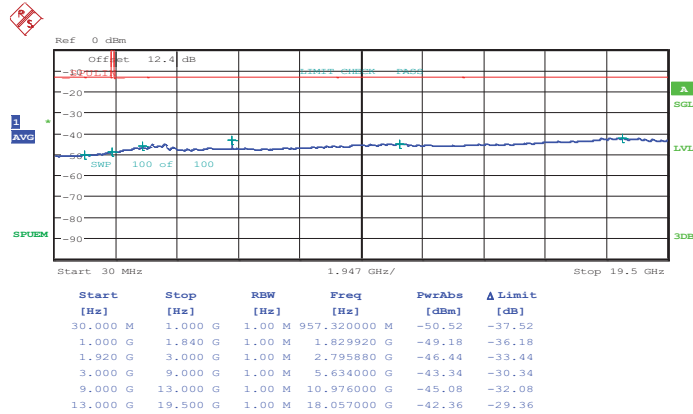


Date: 26.DEC.2013 18:40:16



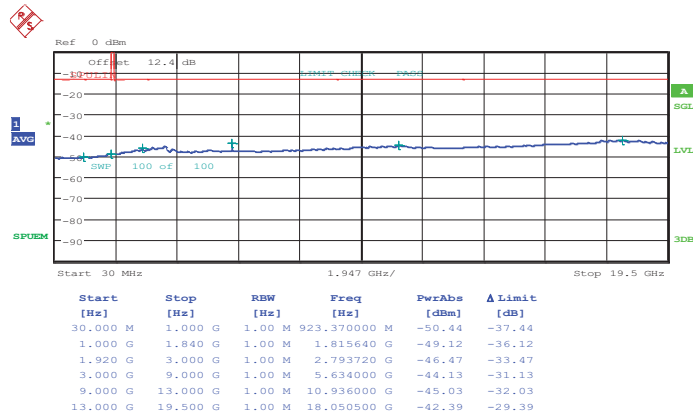
Band :	LTE Band 25	Channel :	CH26365 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:41:57

16QAM (RB Size 1, RB Offset 0)

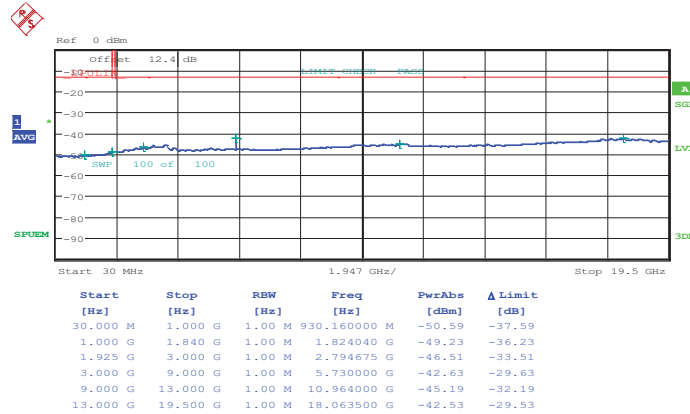


Date: 26.DEC.2013 18:42:49



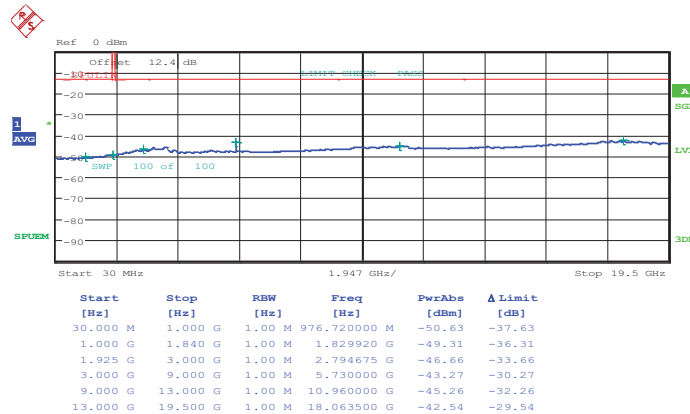
Band :	LTE Band 25	Channel :	CH26665 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 3.JAN.2014 16:22:55

16QAM (RB Size 1, RB Offset 0)

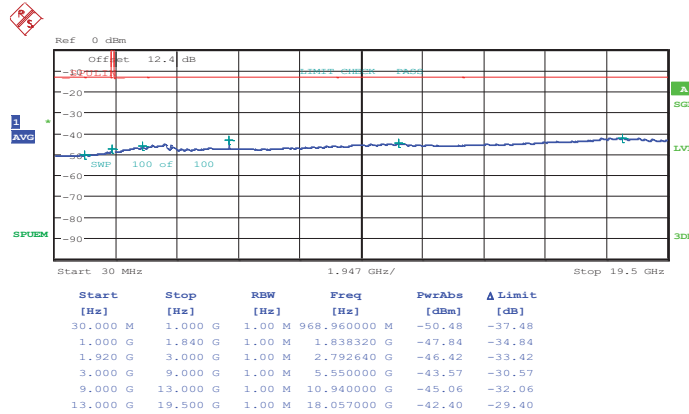


Date: 3.JAN.2014 16:23:54



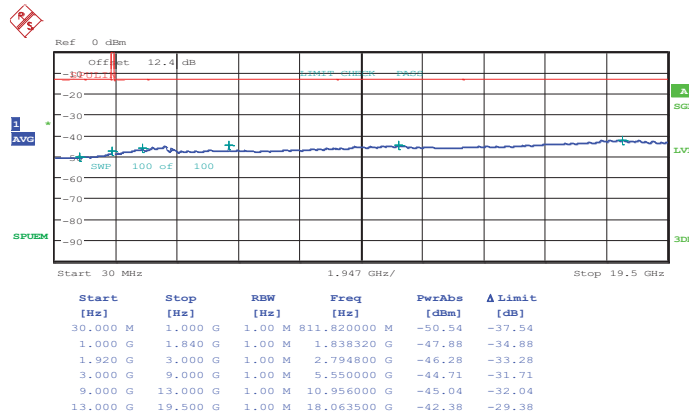
Band :	LTE Band 25	Channel :	CH26090 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 18:57:52

16QAM (RB Size 1, RB Offset 0)

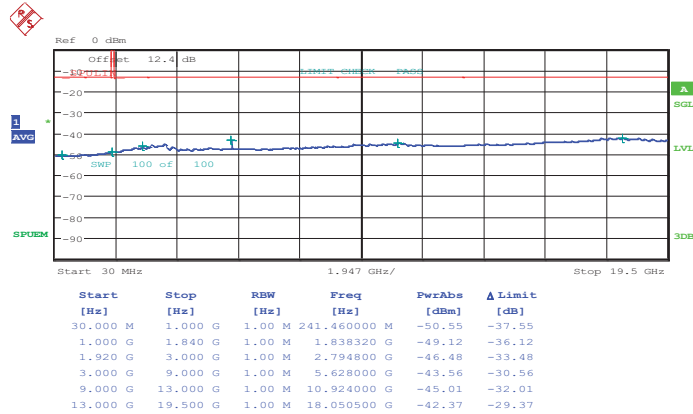


Date: 26.DEC.2013 18:58:43



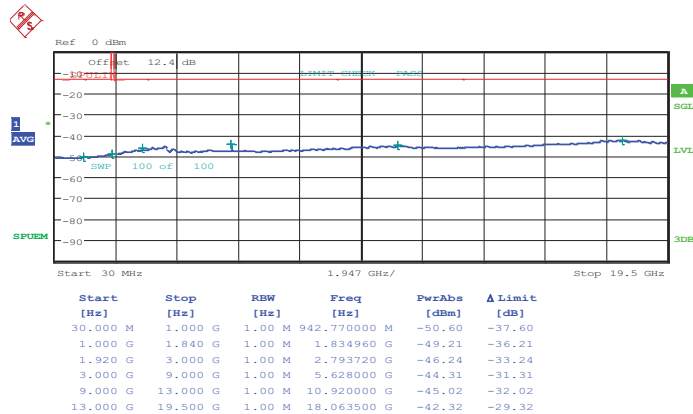
Band :	LTE Band 25	Channel :	CH26365 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 19:00:25

16QAM (RB Size 1, RB Offset 0)

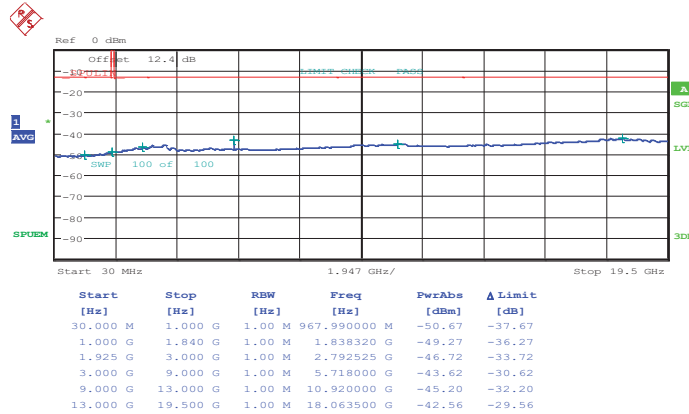


Date: 26.DEC.2013 19:01:17



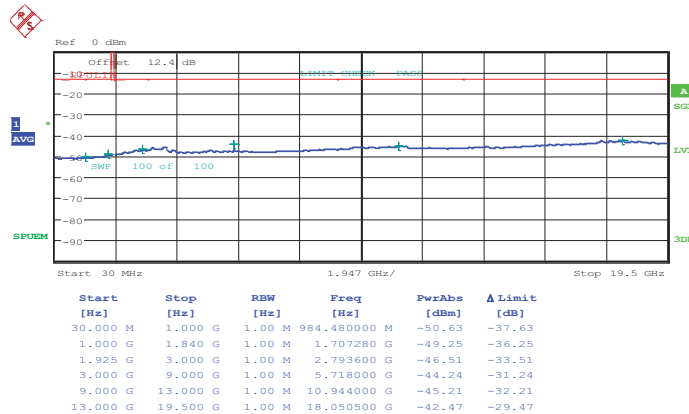
Band :	LTE Band 25	Channel :	CH26640 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 3.JAN.2014 16:30:15

16QAM (RB Size 1, RB Offset 0)

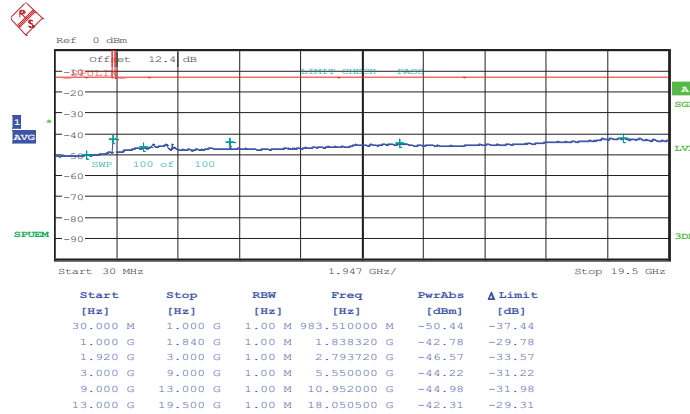


Date: 3.JAN.2014 16:31:16



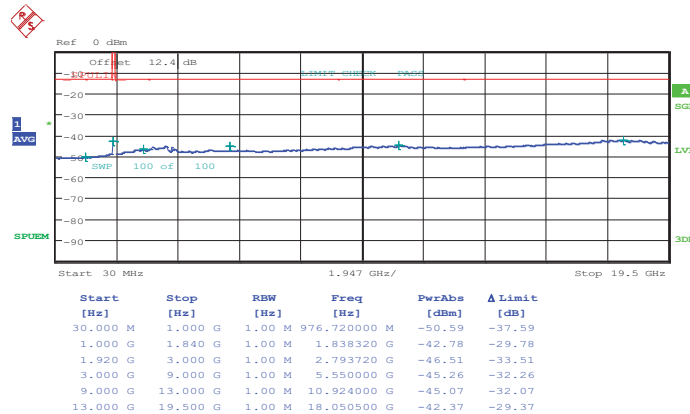
Band :	LTE Band 25	Channel :	CH26115 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:21:32

16QAM (RB Size 1, RB Offset 0)

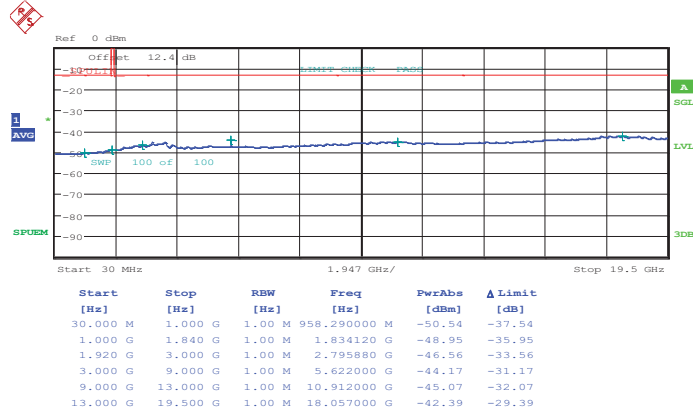


Date: 26.DEC.2013 20:22:24



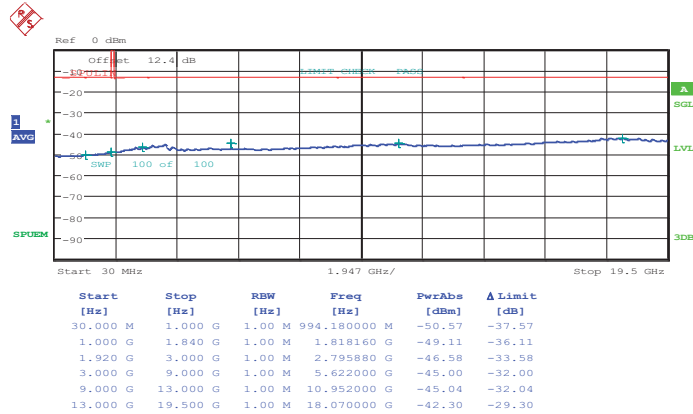
Band :	LTE Band 25	Channel :	CH26365 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:24:05

16QAM (RB Size 1, RB Offset 0)

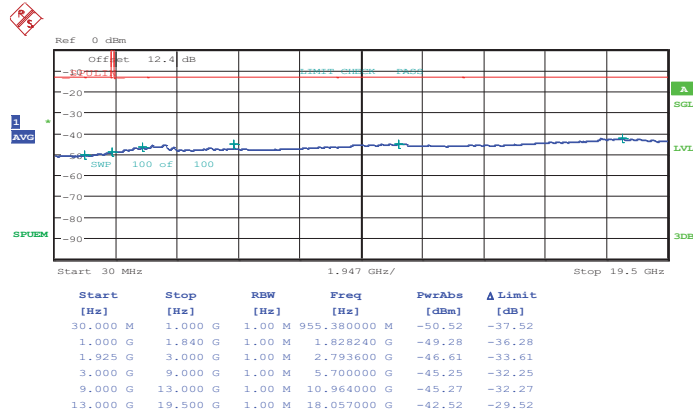


Date: 26.DEC.2013 20:24:57



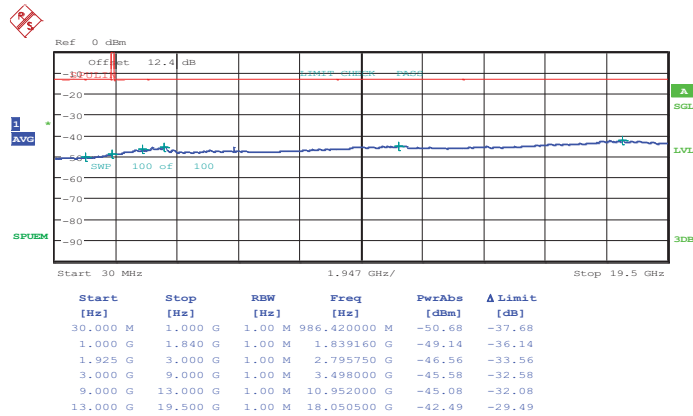
Band :	LTE Band 25	Channel :	CH26615 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 3.JAN.2014 16:37:13

16QAM (RB Size 1, RB Offset 0)

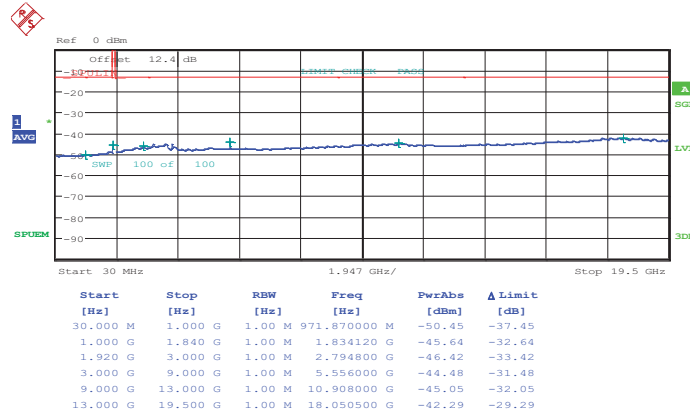


Date: 3.JAN.2014 16:36:12



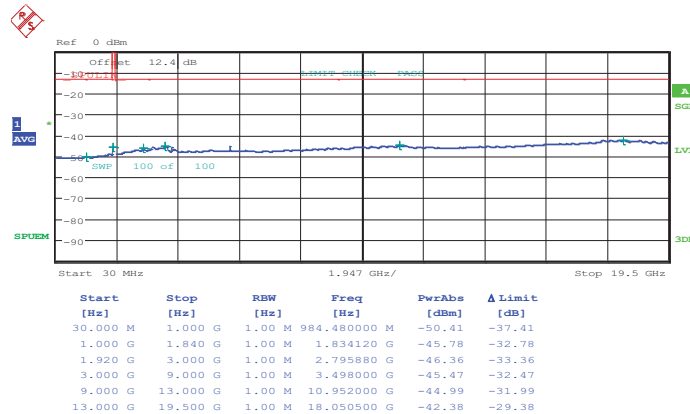
Band :	LTE Band 25	Channel :	CH26140 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:37:20

16QAM (RB Size 1, RB Offset 0)

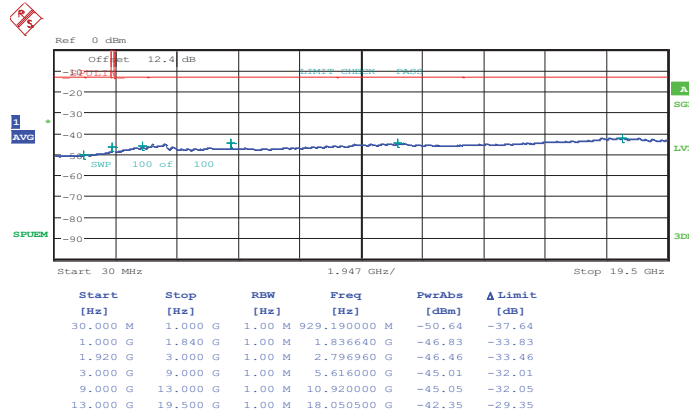


Date: 26.DEC.2013 20:38:12



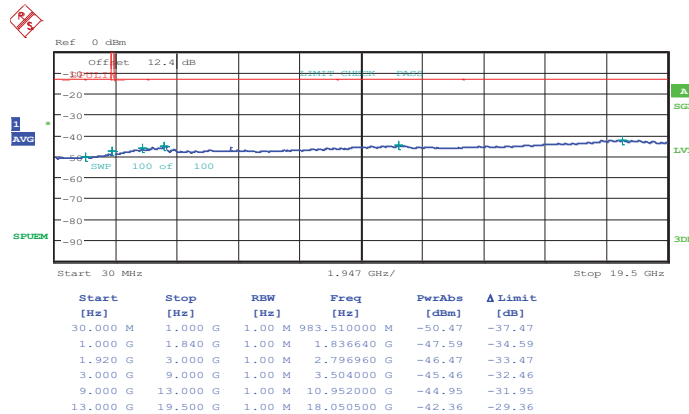
Band :	LTE Band 25	Channel :	CH26365 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:39:54

16QAM (RB Size 1, RB Offset 0)

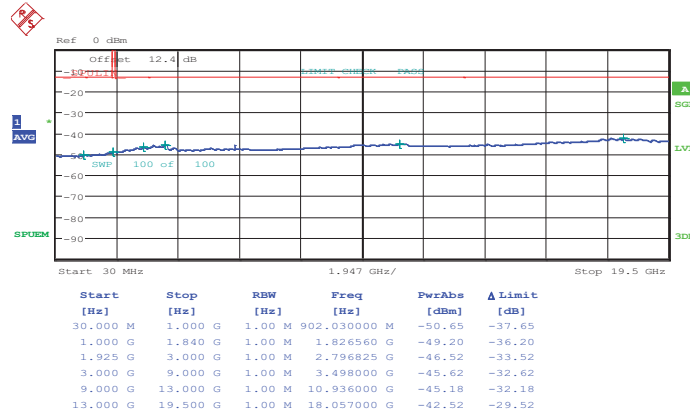


Date: 26.DEC.2013 20:40:46



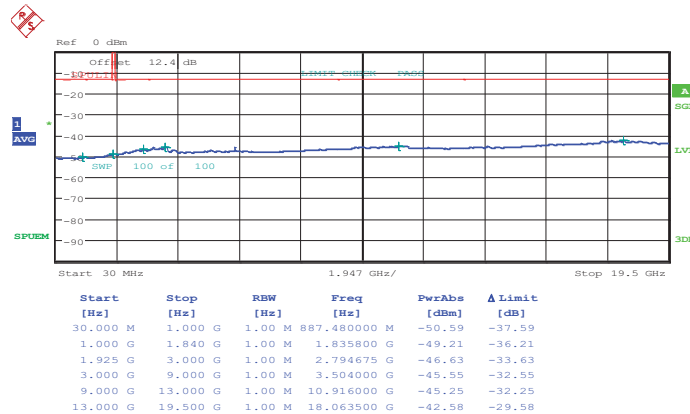
Band :	LTE Band 25	Channel :	CH26590 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 3.JAN.2014 16:43:27

16QAM (RB Size 1, RB Offset 0)

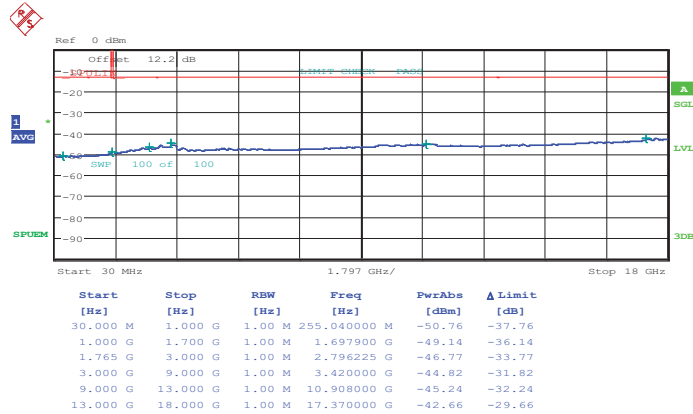


Date: 3.JAN.2014 16:42:25



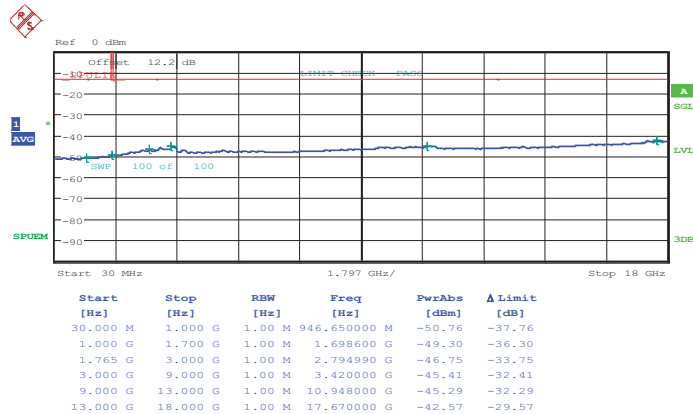
Band :	LTE Band 4	Channel :	CH19975 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:03:34

16QAM (RB Size 1, RB Offset 0)

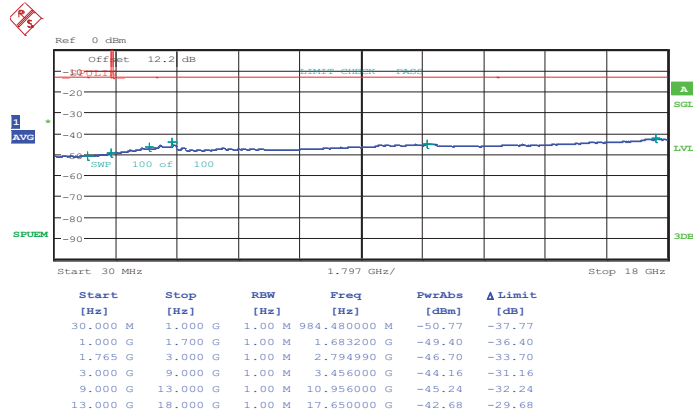


Date: 26.DEC.2013 20:04:25



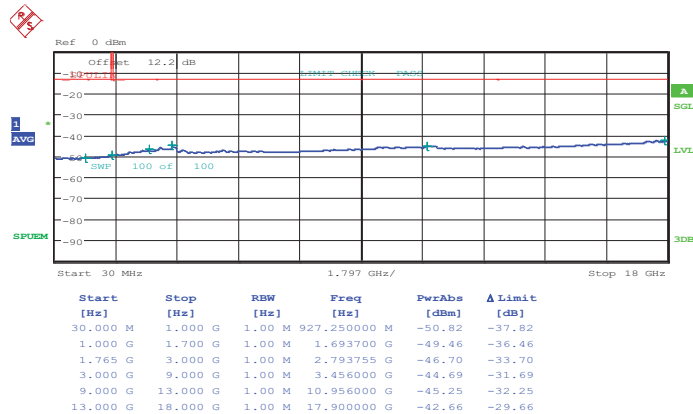
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:06:06

16QAM (RB Size 1, RB Offset 0)

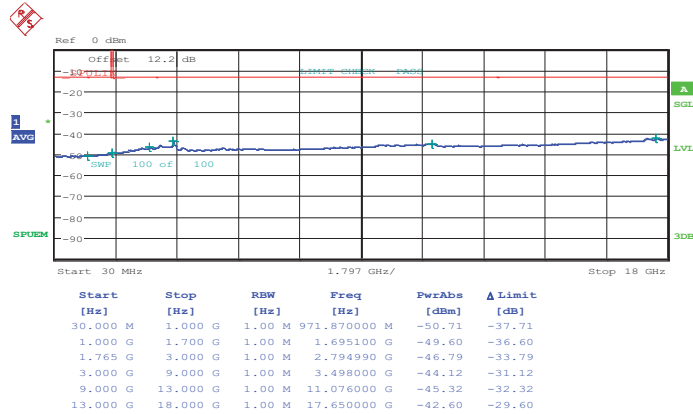


Date: 26.DEC.2013 20:06:56



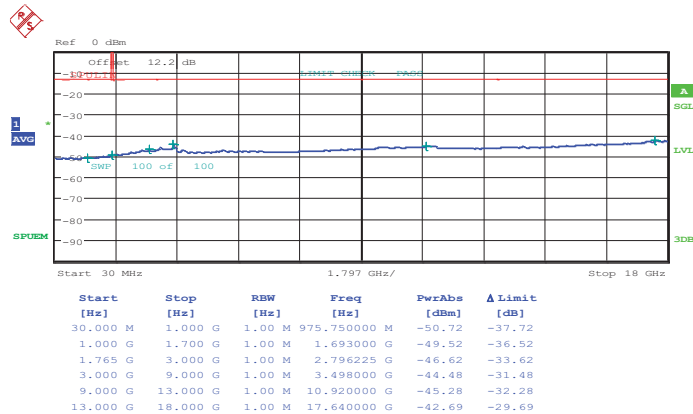
Band :	LTE Band 4	Channel :	CH20375 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:11:26

16QAM (RB Size 1, RB Offset 0)

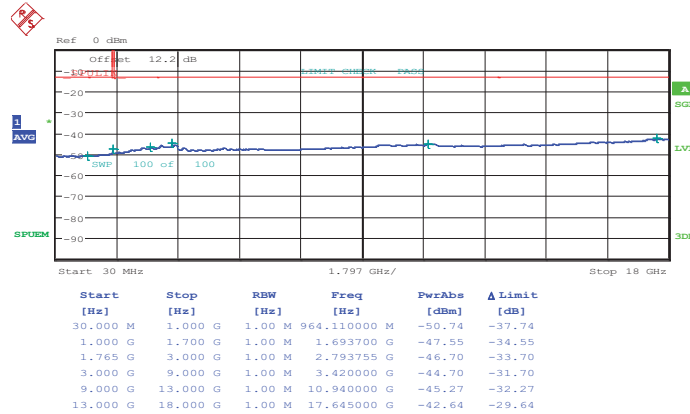


Date: 26.DEC.2013 20:12:16



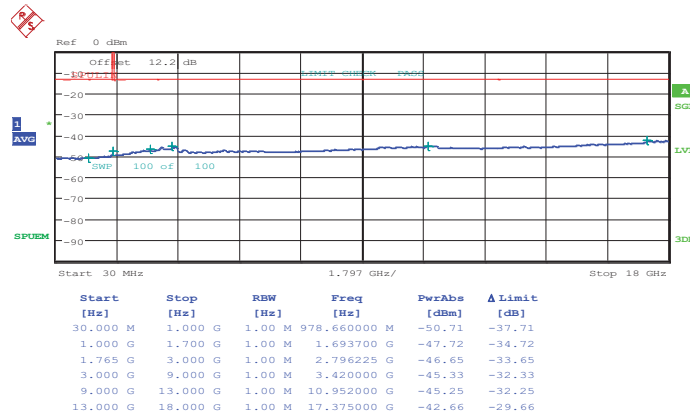
Band :	LTE Band 4	Channel :	CH20000 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:51:31

16QAM (RB Size 1, RB Offset 0)

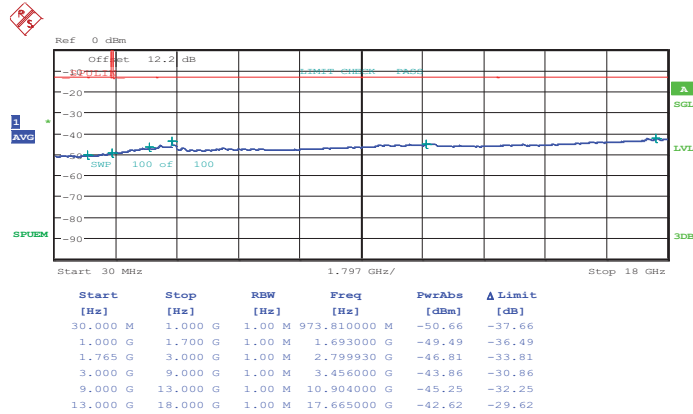


Date: 26.DEC.2013 20:52:21



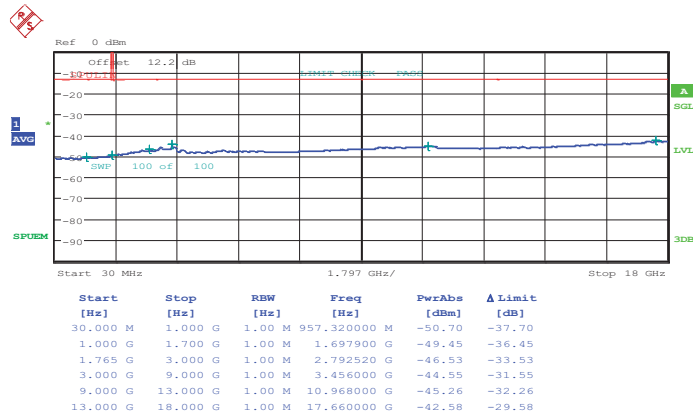
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:54:02

16QAM (RB Size 1, RB Offset 0)

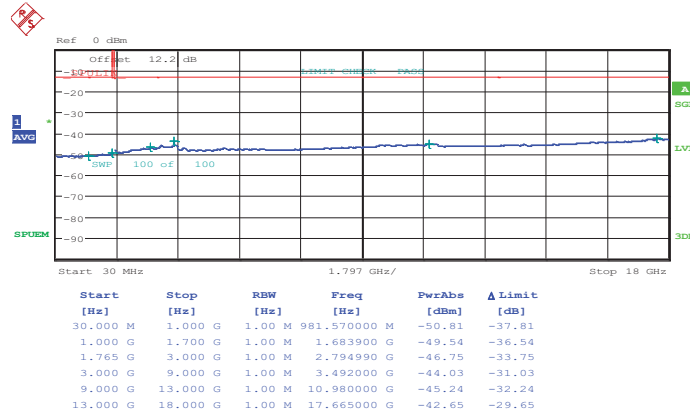


Date: 26.DEC.2013 20:54:53



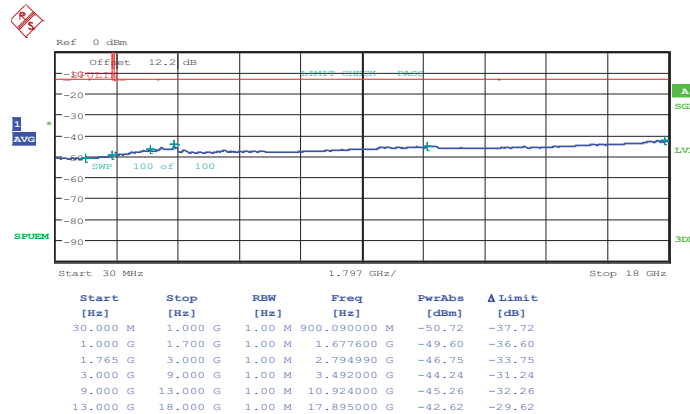
Band :	LTE Band 4	Channel :	CH20350 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 20:59:23

16QAM (RB Size 1, RB Offset 0)

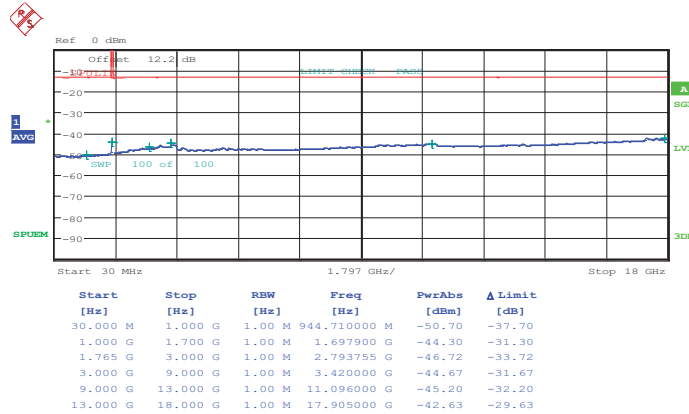


Date: 26.DEC.2013 21:00:13



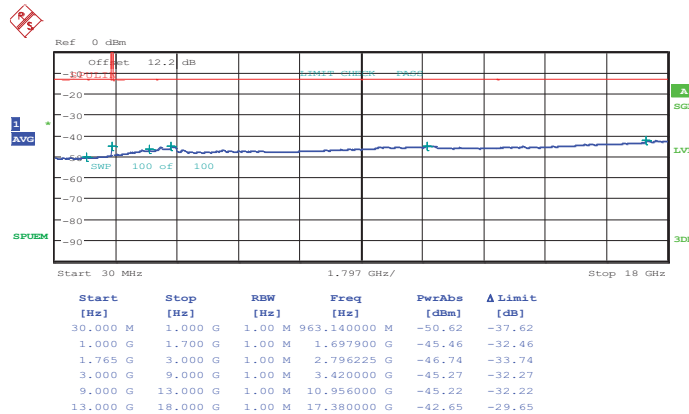
Band :	LTE Band 4	Channel :	CH20025 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:06:04

16QAM (RB Size 1, RB Offset 0)

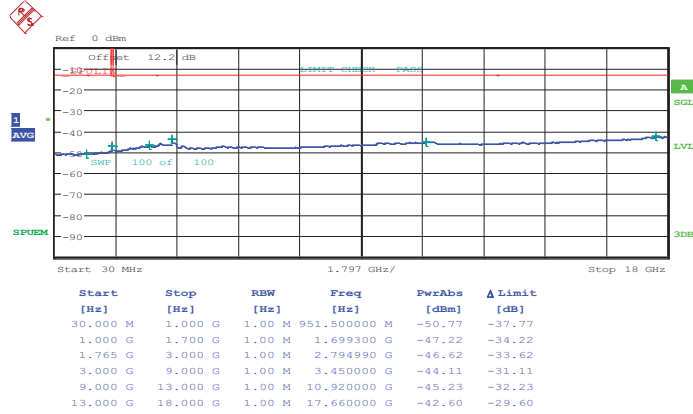


Date: 26.DEC.2013 21:06:54



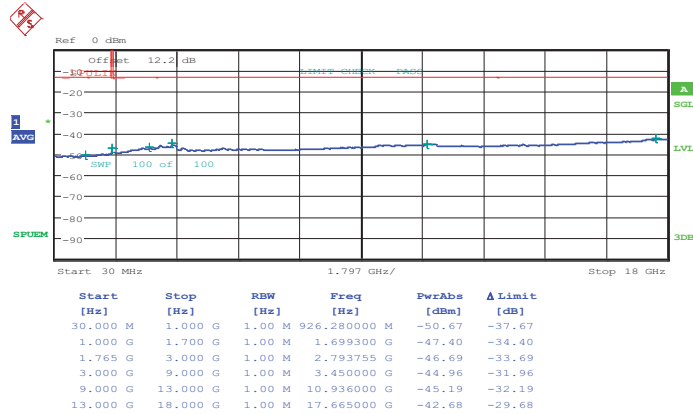
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:08:35

16QAM (RB Size 1, RB Offset 0)

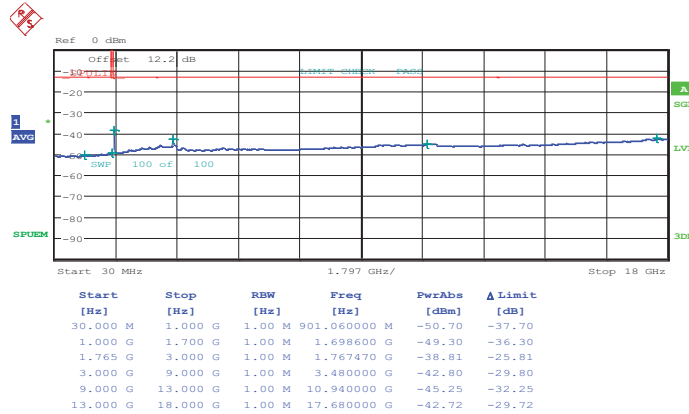


Date: 26.DEC.2013 21:09:26



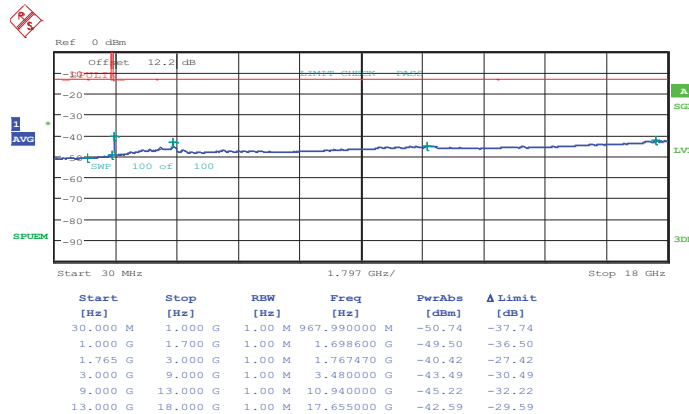
Band :	LTE Band 4	Channel :	CH20325 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:13:56

16QAM (RB Size 1, RB Offset 0)

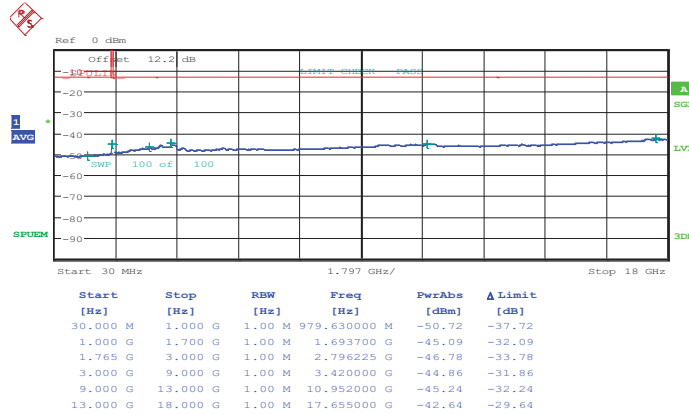


Date: 26.DEC.2013 21:14:46



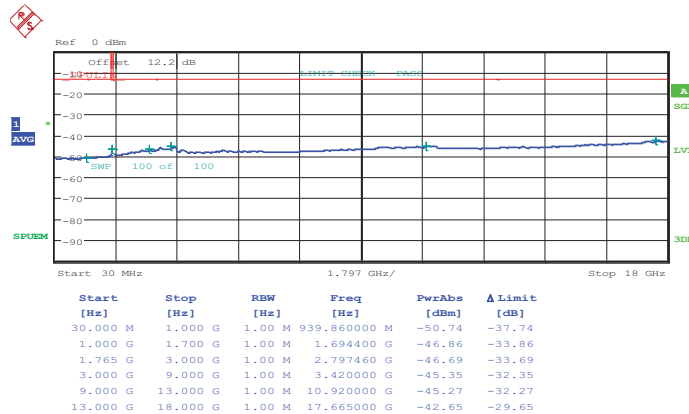
Band :	LTE Band 4	Channel :	CH20050 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:19:51

16QAM (RB Size 1, RB Offset 0)

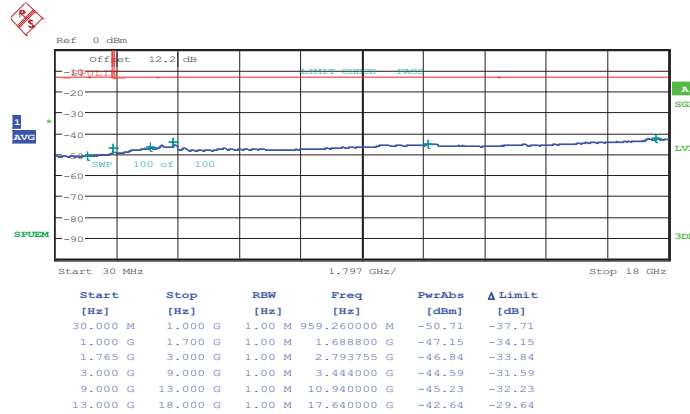


Date: 26.DEC.2013 21:20:41



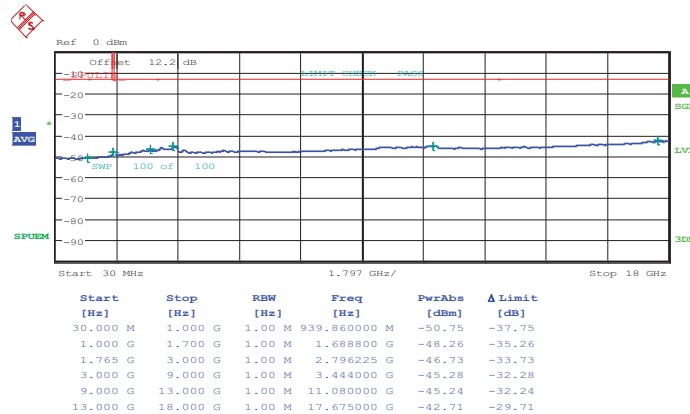
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:22:22

16QAM (RB Size 1, RB Offset 0)

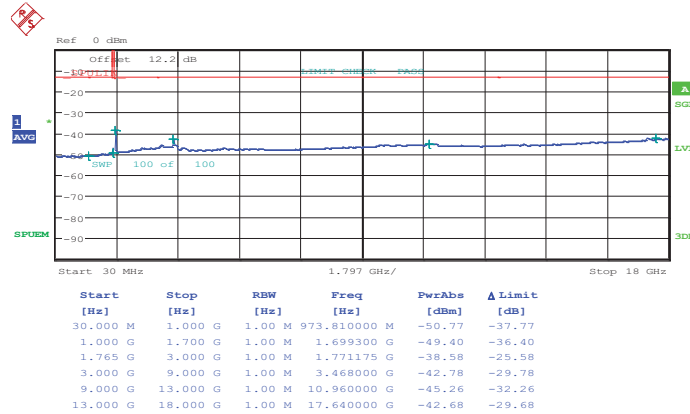


Date: 26.DEC.2013 21:23:13



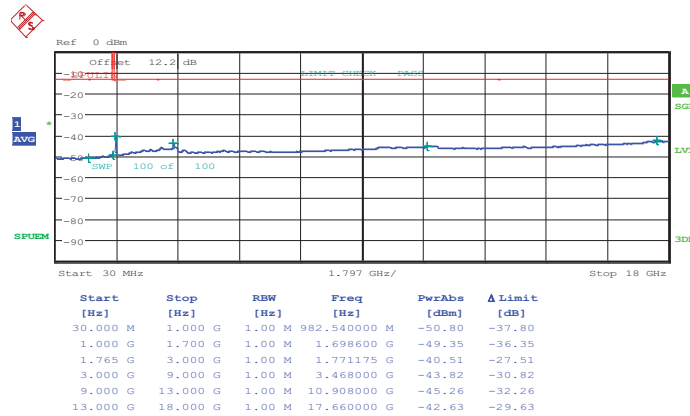
Band :	LTE Band 4	Channel :	CH20300 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 21:27:43

16QAM (RB Size 1, RB Offset 0)

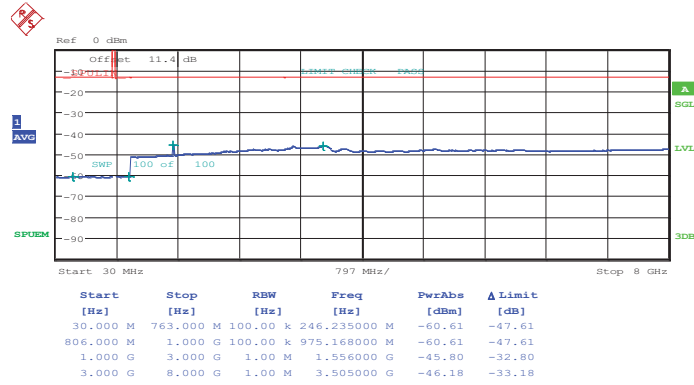


Date: 26.DEC.2013 21:28:34



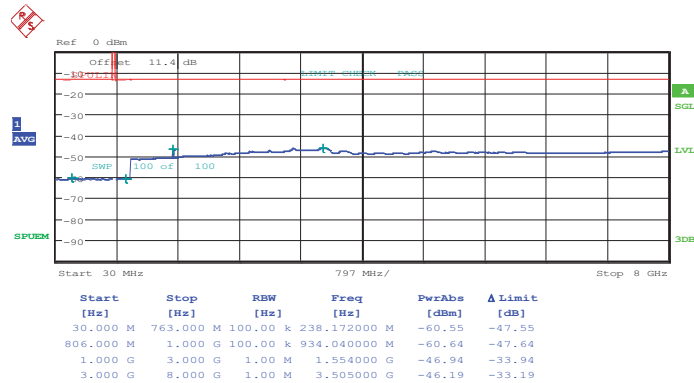
Band :	LTE Band 13	Channel :	CH23205 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 30.DEC.2013 16:14:53

16QAM (RB Size 1, RB Offset 0)

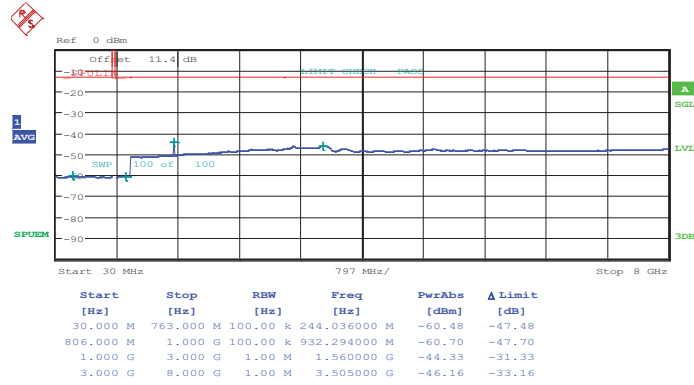


Date: 30.DEC.2013 16:26:07



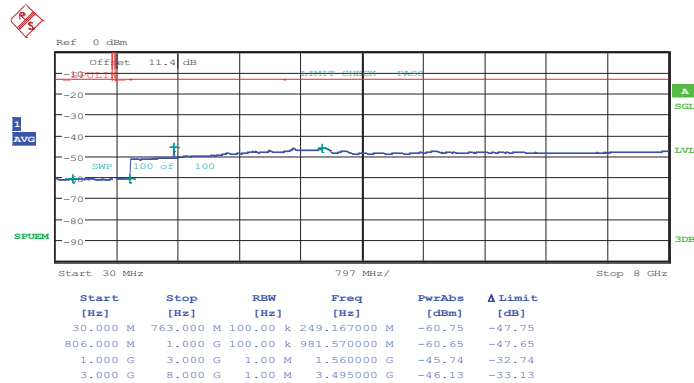
Band :	LTE Band 13	Channel :	CH23230 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 30.DEC.2013 16:17:31

16QAM (RB Size 1, RB Offset 0)

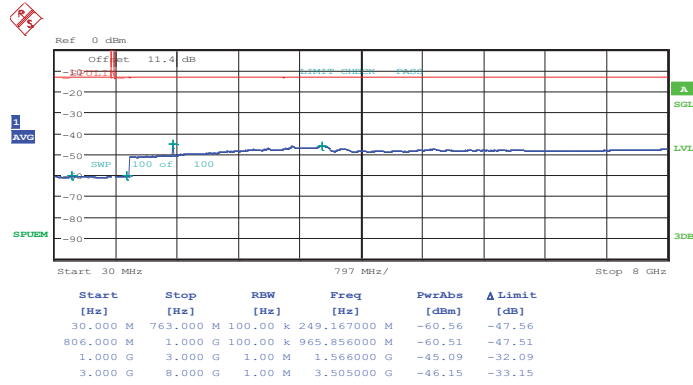


Date: 30.DEC.2013 16:28:35



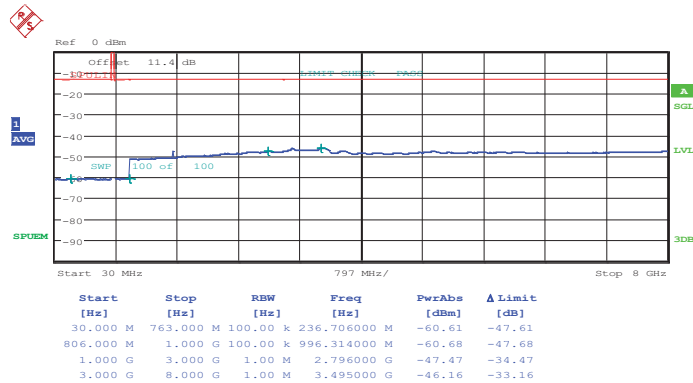
Band :	LTE Band 13	Channel :	CH23255 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 30.DEC.2013 16:20:51

16QAM (RB Size 1, RB Offset 0)

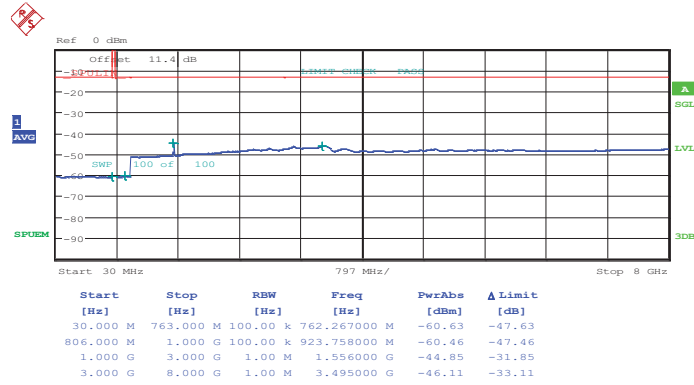


Date: 30.DEC.2013 16:34:03



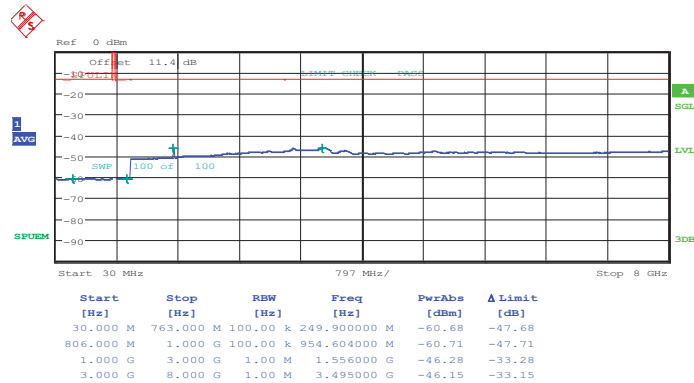
Band :	LTE Band 13	Channel :	CH23230 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 30.DEC.2013 16:23:36

16QAM (RB Size 1, RB Offset 0)

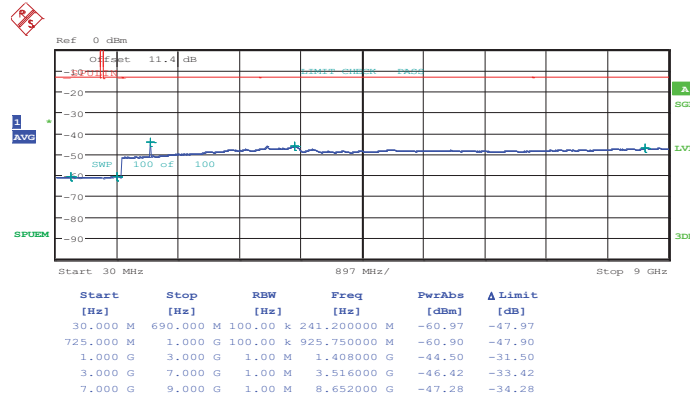


Date: 30.DEC.2013 16:36:50



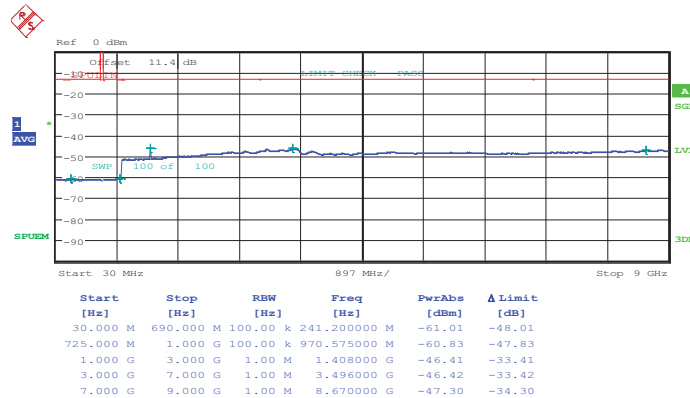
Band :	LTE Band 17	Channel :	CH23755 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:06:27

16QAM (RB Size 1, RB Offset 0)

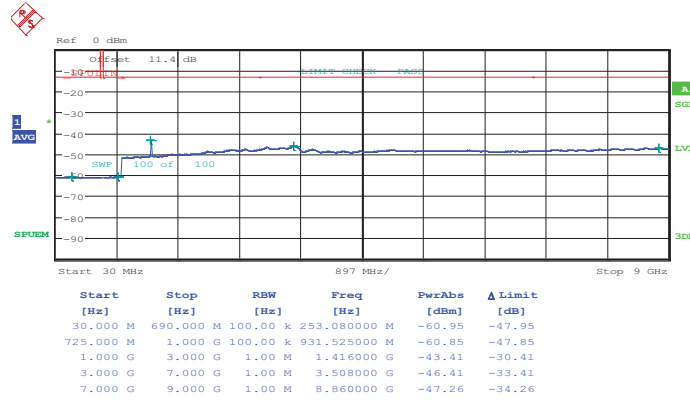


Date: 26.DEC.2013 22:07:15



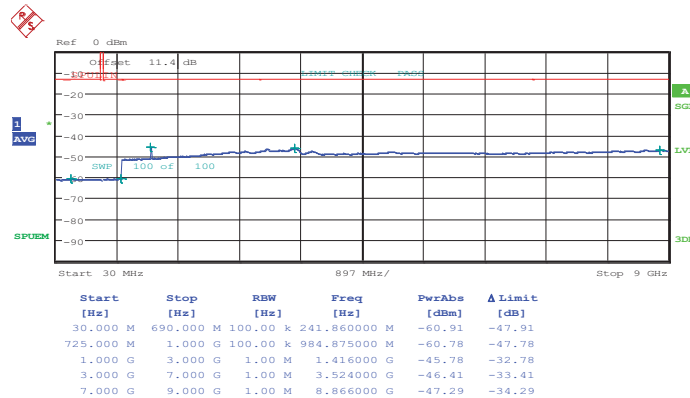
Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:08:52

16QAM (RB Size 1, RB Offset 0)

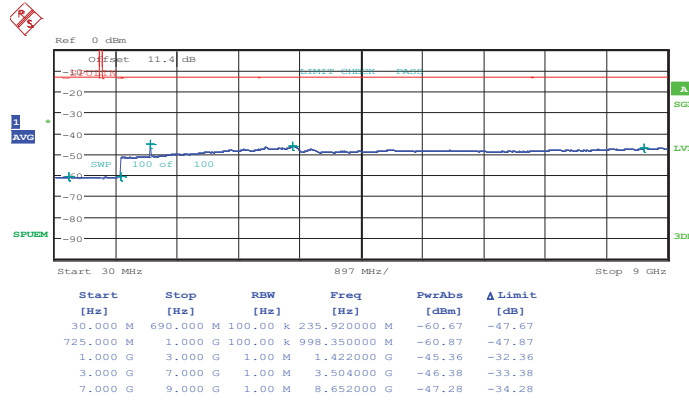


Date: 26.DEC.2013 22:09:39



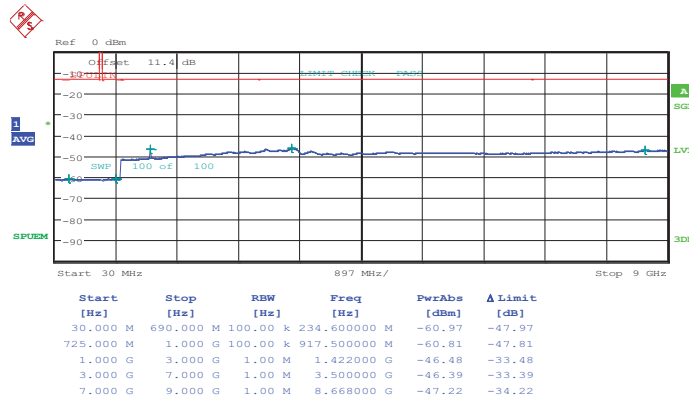
Band :	LTE Band 17	Channel :	CH23825 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:14:07

16QAM (RB Size 1, RB Offset 0)

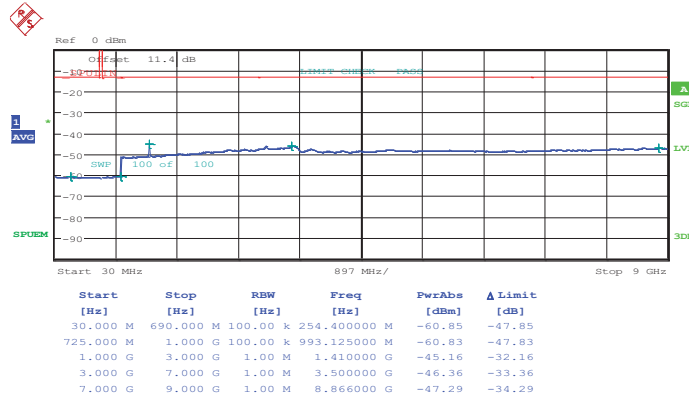


Date: 26.DEC.2013 22:14:55



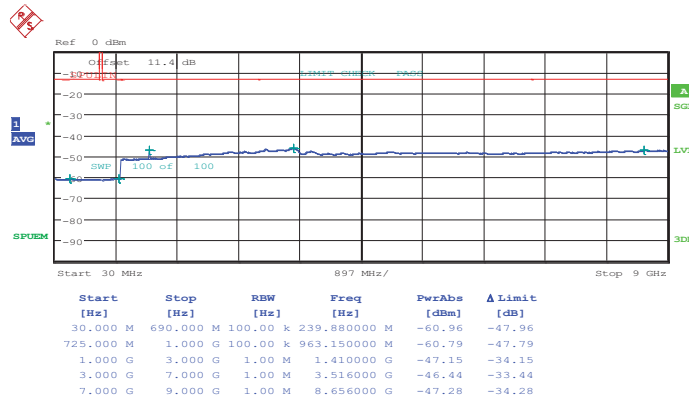
Band :	LTE Band 17	Channel :	CH23780 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:23:53

16QAM (RB Size 1, RB Offset 0)

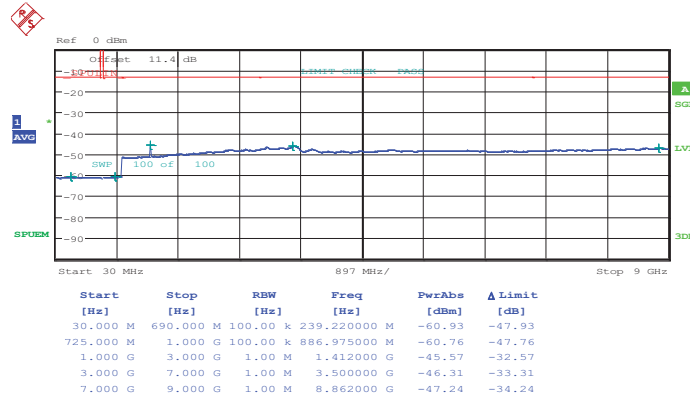


Date: 26.DEC.2013 22:24:41



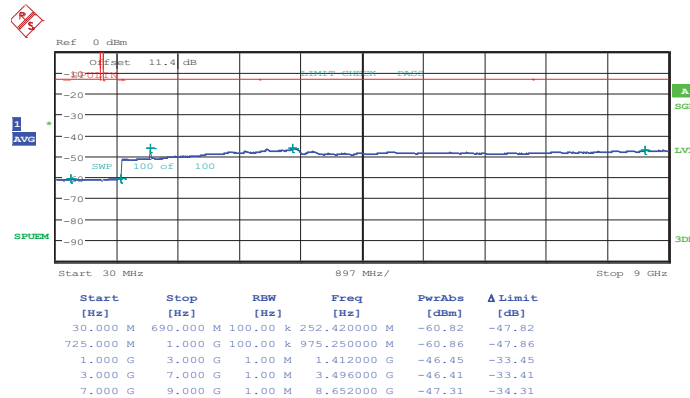
Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:26:19

16QAM (RB Size 1, RB Offset 0)

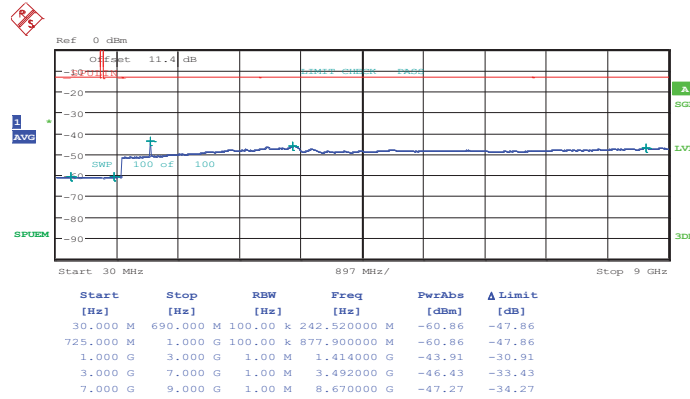


Date: 26.DEC.2013 22:27:06



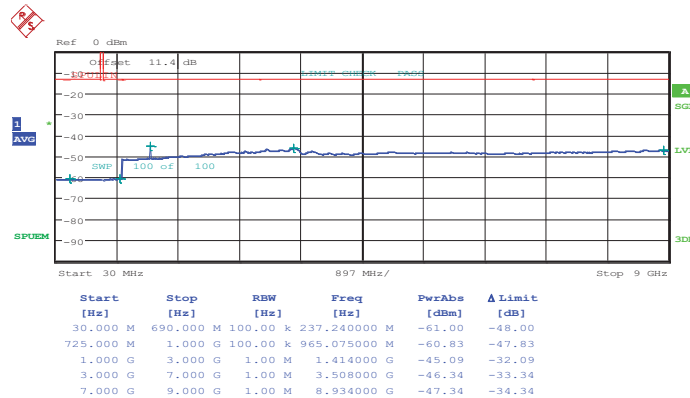
Band :	LTE Band 17	Channel :	CH23800 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:31:33

16QAM (RB Size 1, RB Offset 0)



Date: 26.DEC.2013 22:32:20

3.6 Radiated Spurious Emission Measurement

3.6.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

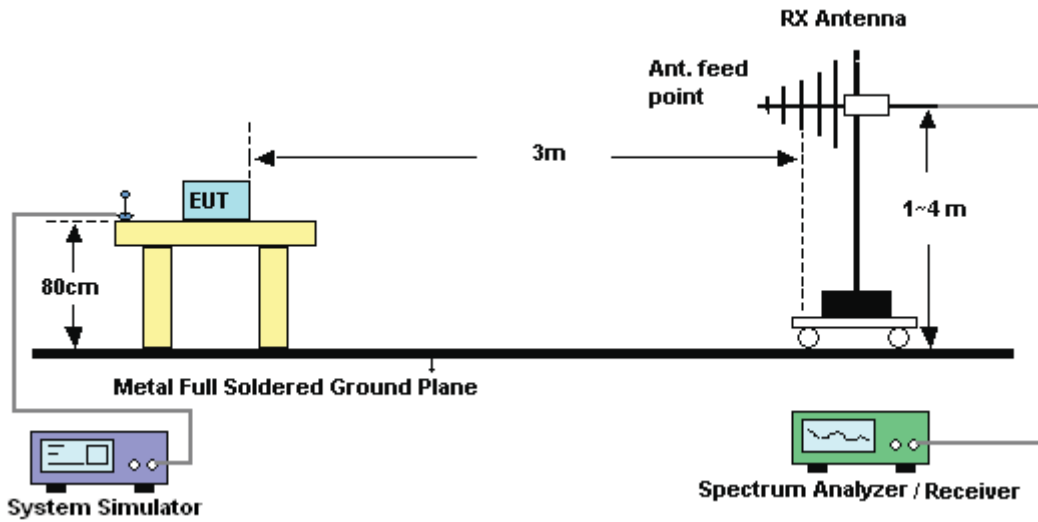
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.

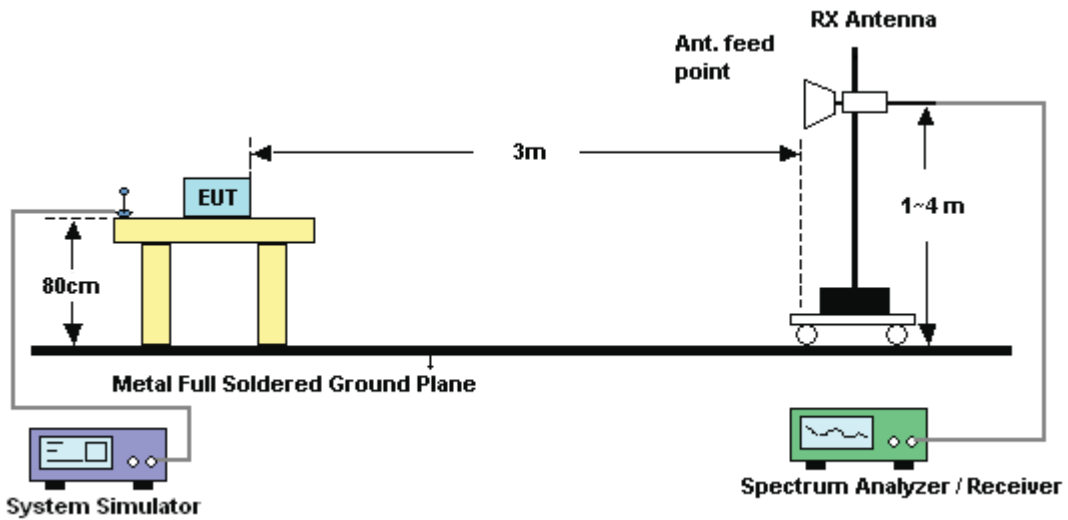
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

3.6.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

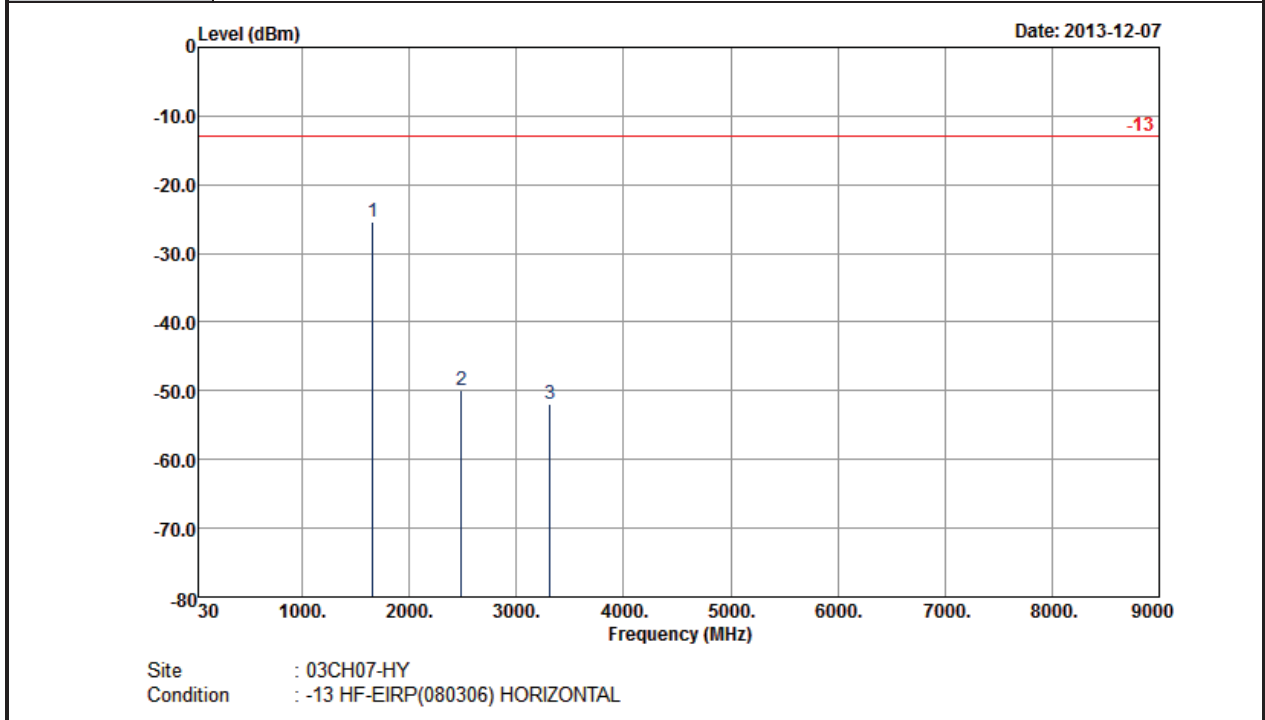




3.6.5 Test Result of Field Strength of Spurious Radiated

<Low Channel>

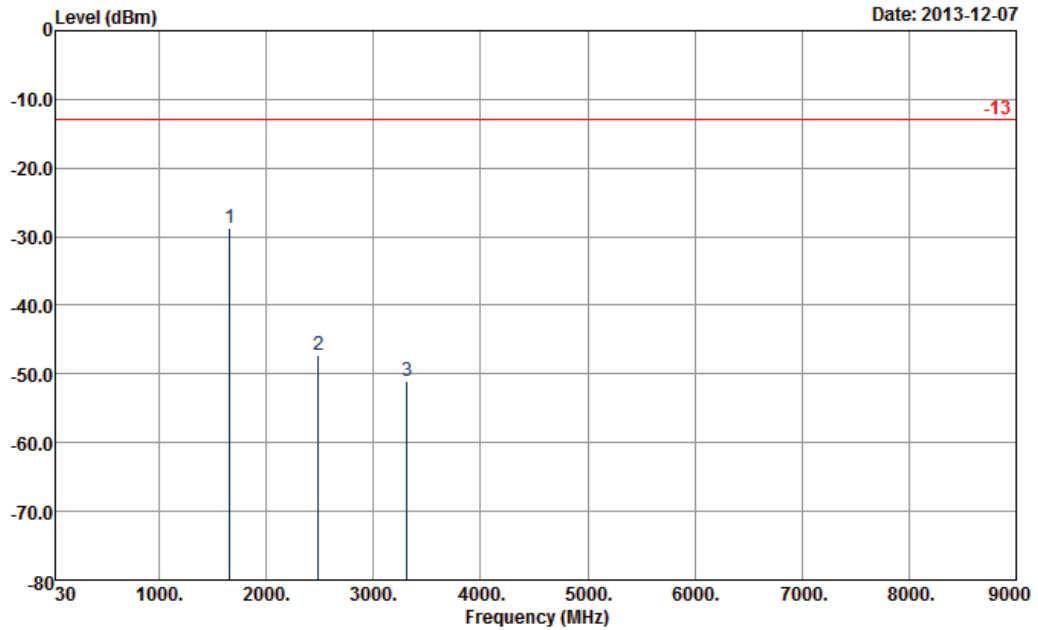
Band :	LTE Band 5	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 24	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1656	-25.47	-13	-12.47	-34.4	-29.42	1.63	5.58	H	Pass
2488	-49.90	-13	-36.90	-63.26	-54	2.21	6.31	H	Pass
3312	-51.84	-13	-38.84	-65.87	-56.87	3.1	8.13	H	Pass



Band :	LTE Band 5	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 24	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



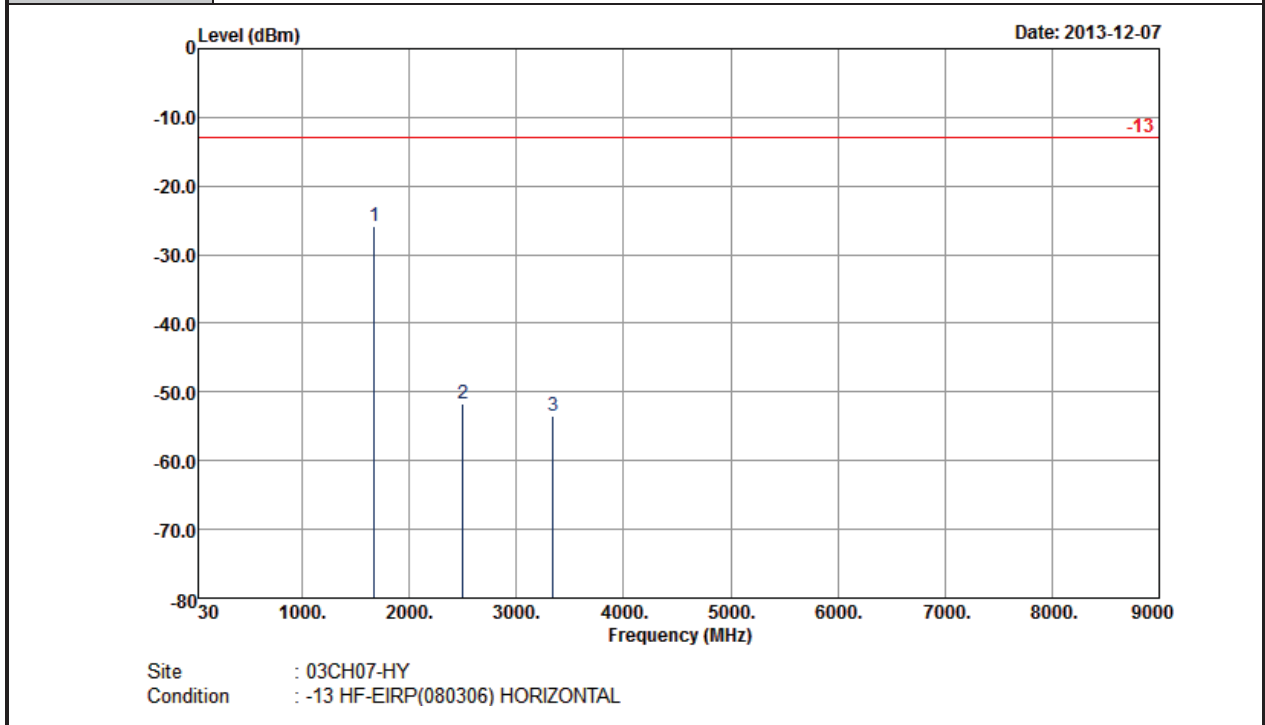
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1656	-28.73	-13	-15.73	-39.8	-32.68	1.63	5.58	V	Pass
2488	-47.23	-13	-34.23	-60.87	-51.33	2.21	6.31	V	Pass
3312	-50.96	-13	-37.96	-66.5	-55.99	3.1	8.13	V	Pass



<Middle Channel>

Band :	LTE Band 5	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 24	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

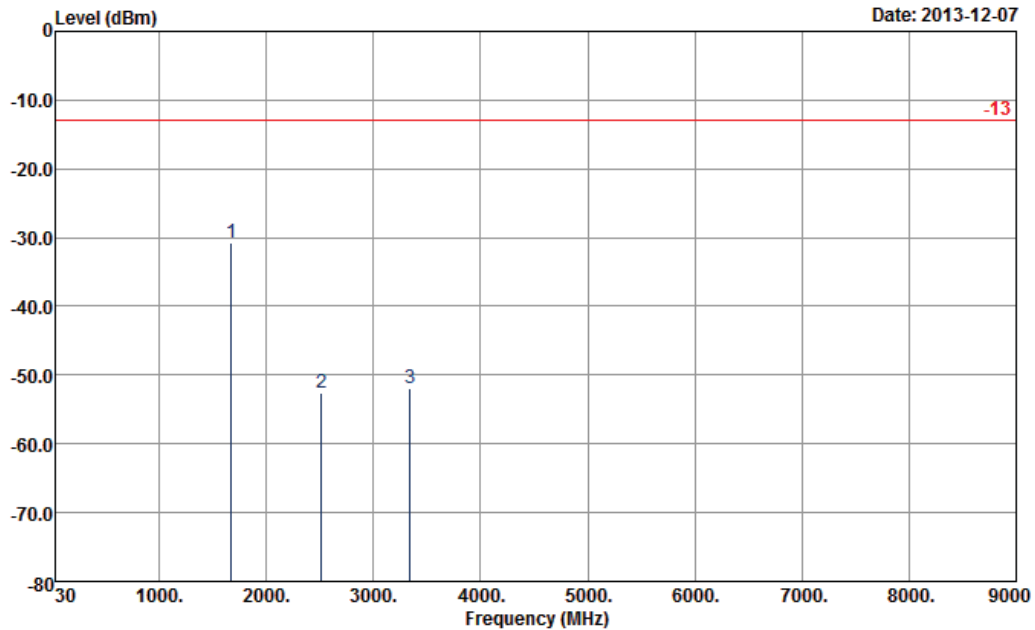


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-25.90	-13	-12.90	-34.76	-29.77	1.62	5.49	H	Pass
2504	-51.76	-13	-38.76	-65.03	-55.88	2.1	6.22	H	Pass
3344	-53.38	-13	-40.38	-67.33	-58.42	3.03	8.07	H	Pass



Band :	LTE Band 5	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 24	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



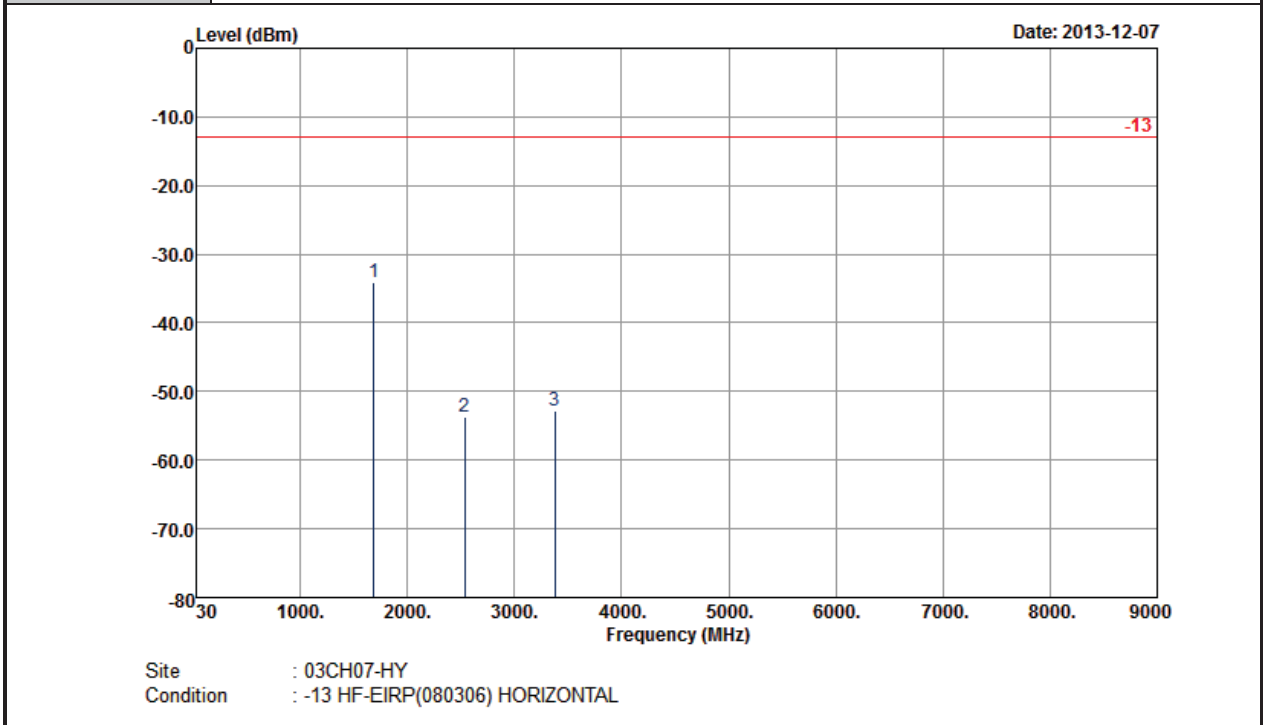
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-30.69	-13	-17.69	-41.87	-34.56	1.62	5.49	V	Pass
2512	-52.51	-13	-39.51	-66.33	-56.63	2.1	6.22	V	Pass
3344	-51.97	-13	-38.97	-67.47	-57.01	3.03	8.07	V	Pass



<High Channel>

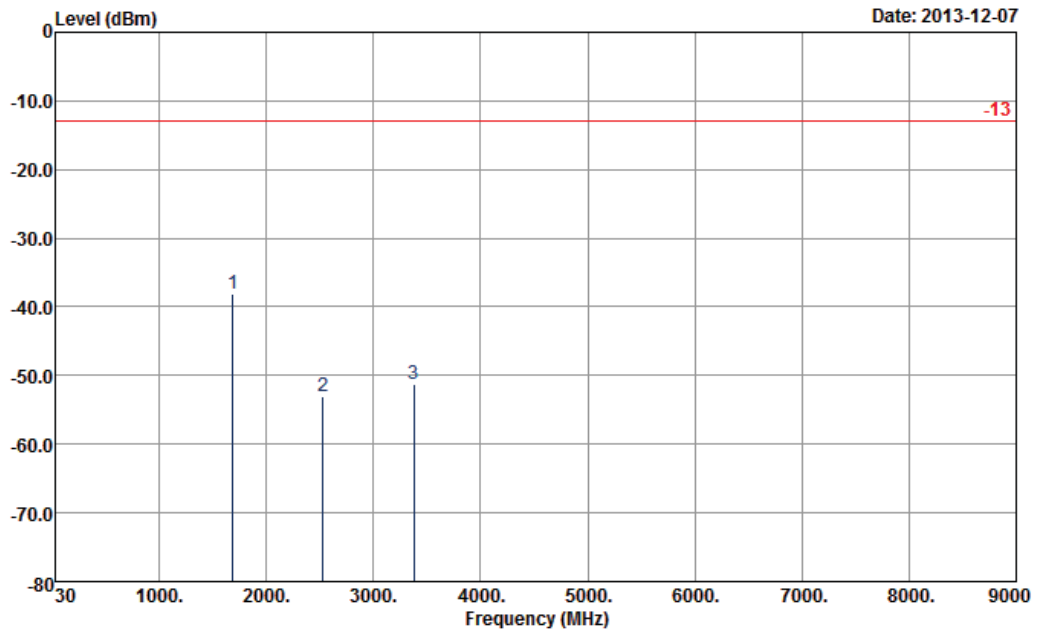
Band :	LTE Band 5	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 24	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1688	-34.10	-13	-21.10	-42.96	-38	1.52	5.42	H	Pass
2536	-53.63	-13	-40.63	-66.93	-57.89	1.99	6.25	H	Pass
3376	-52.78	-13	-39.78	-66.98	-58.78	2.14	8.14	H	Pass



Band :	LTE Band 5	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 24	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



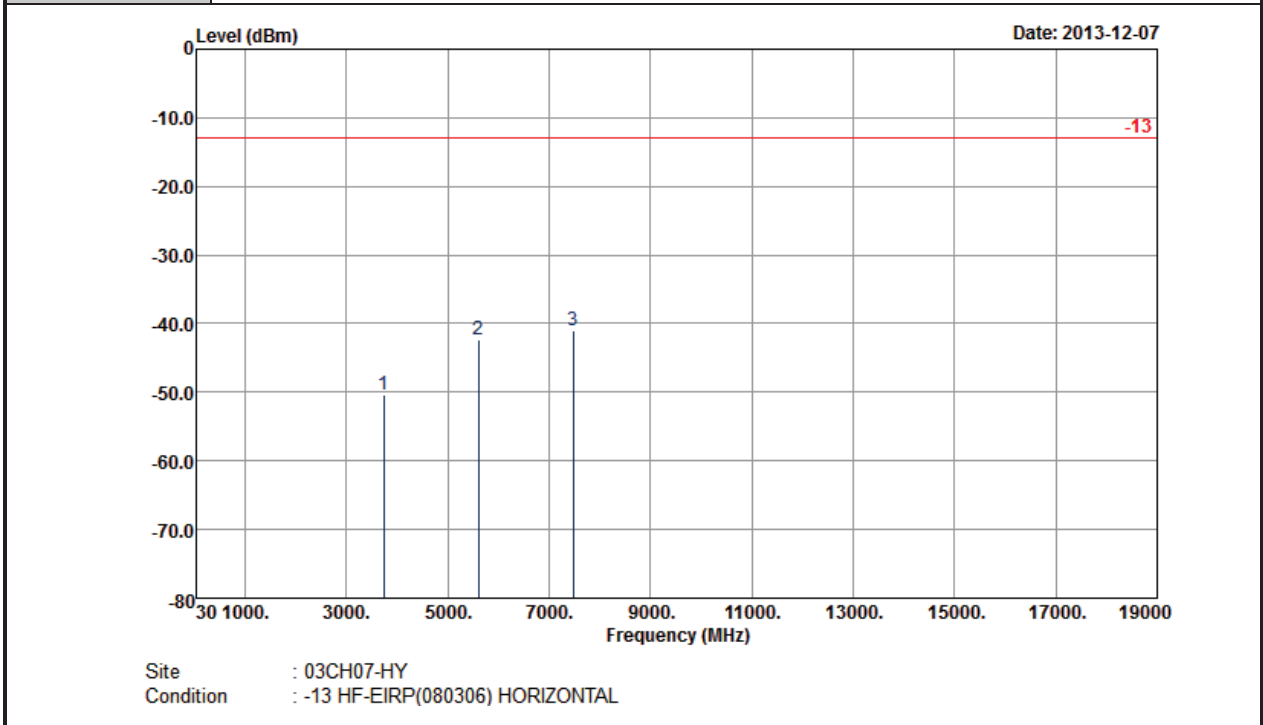
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1688	-38.02	-13	-25.02	-49.08	-41.92	1.52	5.42	V	Pass
2532	-53.00	-13	-40.00	-66.85	-57.26	1.99	6.25	V	Pass
3376	-51.23	-13	-38.23	-66.9	-57.23	2.14	8.14	V	Pass



<Low Channel>

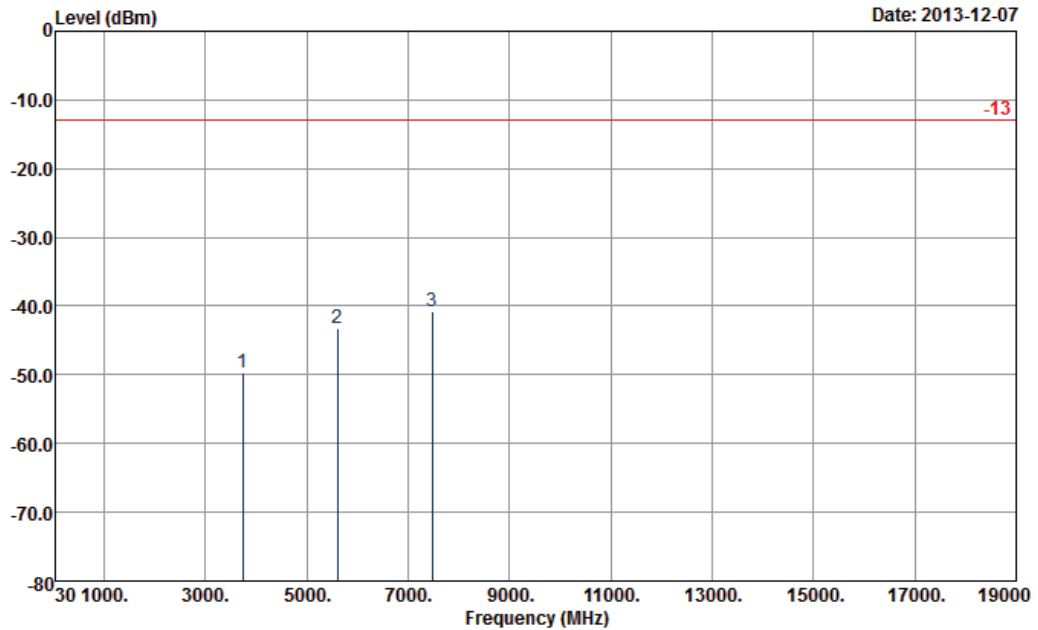
Band :	LTE Band 2	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 99	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3735	-50.38	-13	-37.38	-65.61	-56.76	2.51	8.89	H	Pass
5604	-42.37	-13	-29.37	-63.11	-50.23	3.03	10.89	H	Pass
7473	-41.11	-13	-28.11	-68.57	-50.25	3.24	12.38	H	Pass



Band :	LTE Band 2	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 99	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



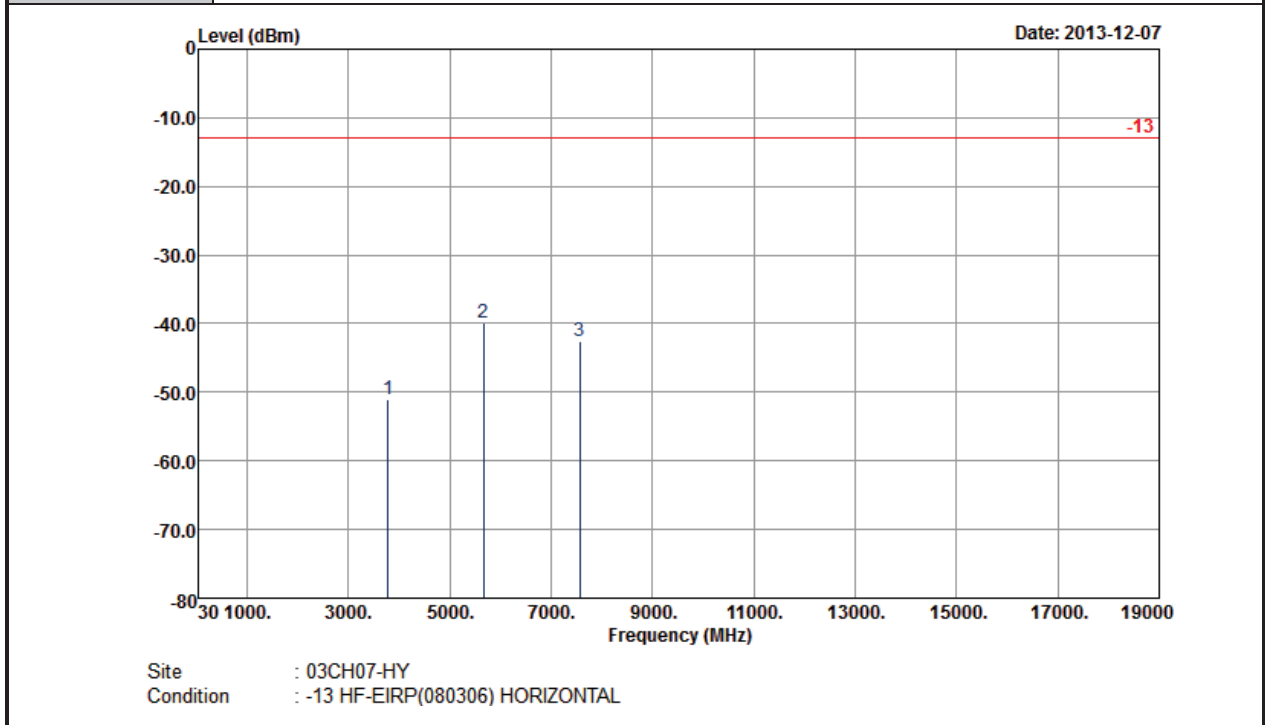
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3735	-49.63	-13	-36.63	-65.9	-56.01	2.51	8.89	V	Pass
5604	-43.14	-13	-30.14	-63.7	-51	3.03	10.89	V	Pass
7473	-40.88	-13	-27.88	-68.12	-50.02	3.24	12.38	V	Pass



<Middle Channel>

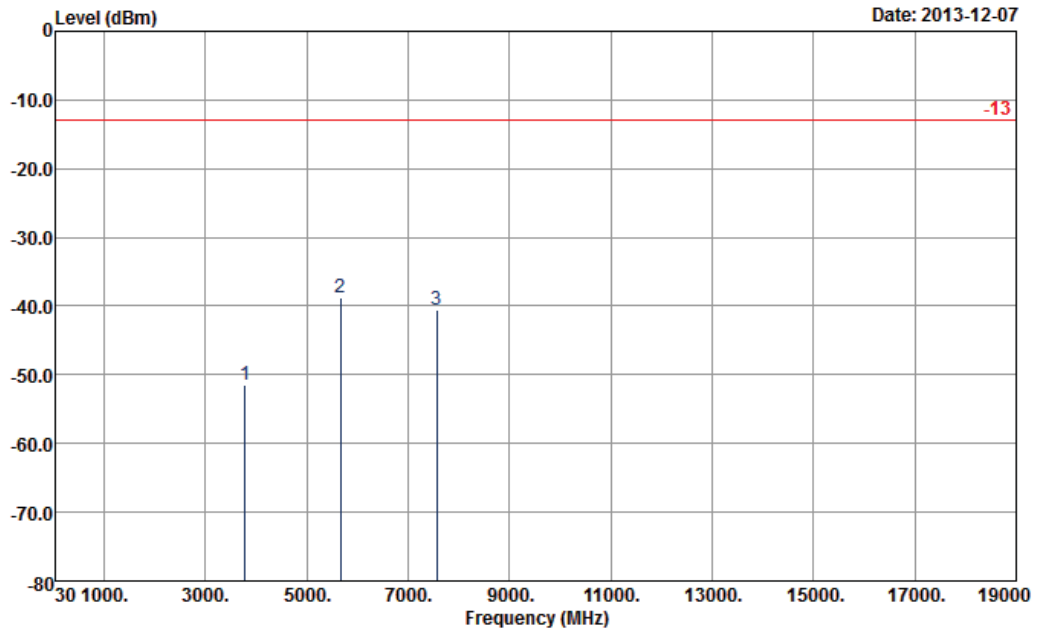
Band :	LTE Band 2	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 99	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3777	-51.06	-13	-38.06	-66.43	-57.36	2.51	8.81	H	Pass
5667	-39.95	-13	-26.95	-60.75	-47.66	2.99	10.70	H	Pass
7557	-42.59	-13	-29.59	-69.55	-51.12	3.59	12.12	H	Pass



Band :	LTE Band 2	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 99	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



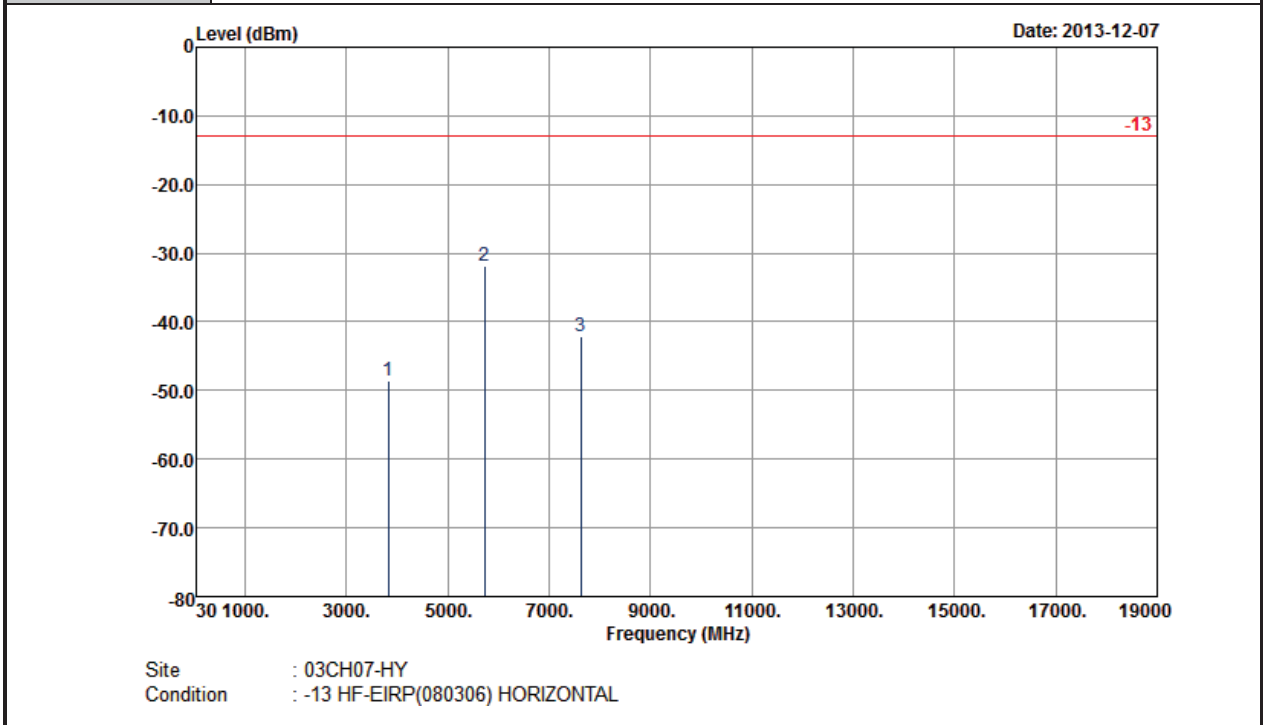
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3777	-51.57	-13	-38.57	-67.87	-57.87	2.51	8.81	V	Pass
5667	-38.81	-13	-25.81	-59.57	-46.52	2.99	10.70	V	Pass
7557	-40.47	-13	-27.47	-67.19	-49	3.59	12.12	V	Pass



<High Channel>

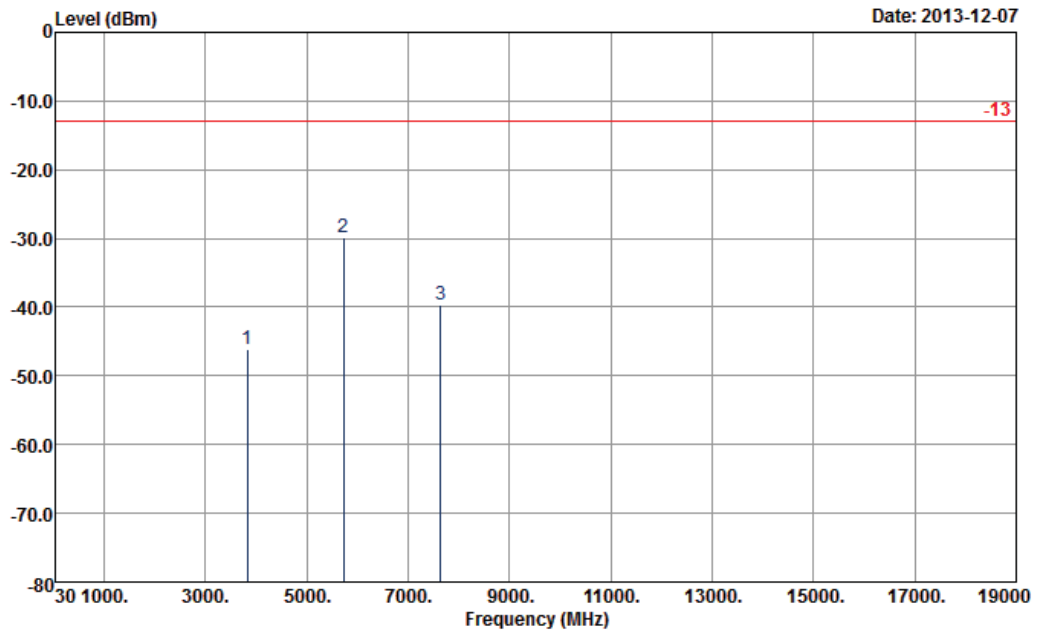
Band :	LTE Band 2	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 99	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-48.63	-13	-35.63	-64.29	-55.01	2.52	8.90	H	Pass
5723	-31.88	-13	-18.88	-52.96	-39.63	3.01	10.76	H	Pass
7627	-42.04	-13	-29.04	-68.54	-50.57	3.62	12.15	H	Pass



Band :	LTE Band 2	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 99	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



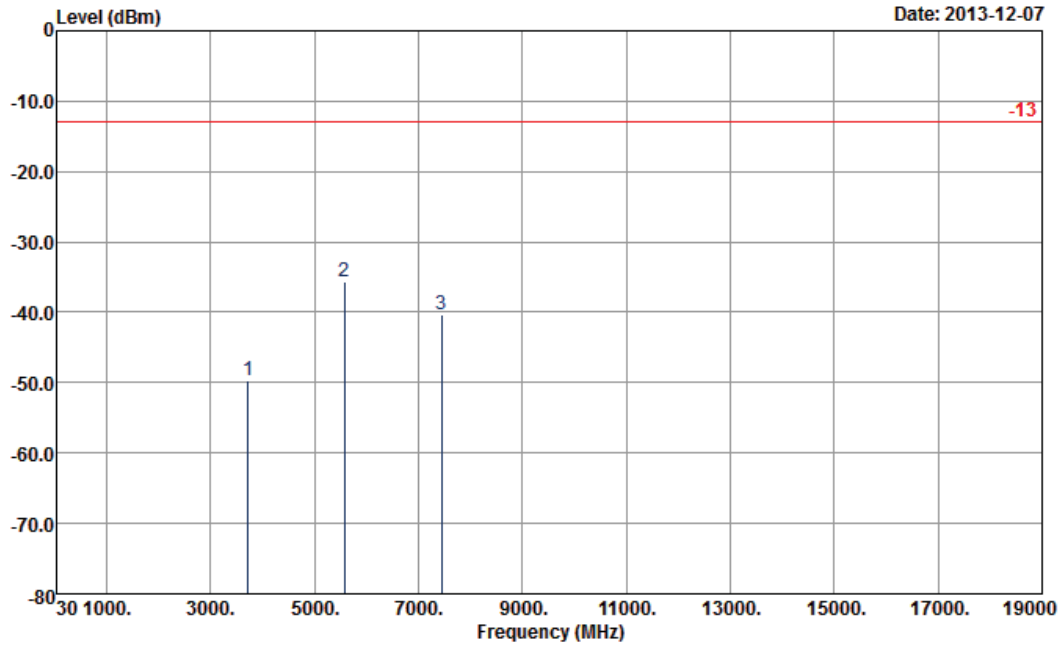
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3819	-46.10	-13	-33.10	-62.56	-52.48	2.52	8.90	V	Pass
5723	-29.80	-13	-16.80	-50.81	-37.55	3.01	10.76	V	Pass
7634	-39.62	-13	-26.62	-65.91	-48.15	3.62	12.15	V	Pass



<Low Channel>

Band :	LTE Band 25	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 49	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

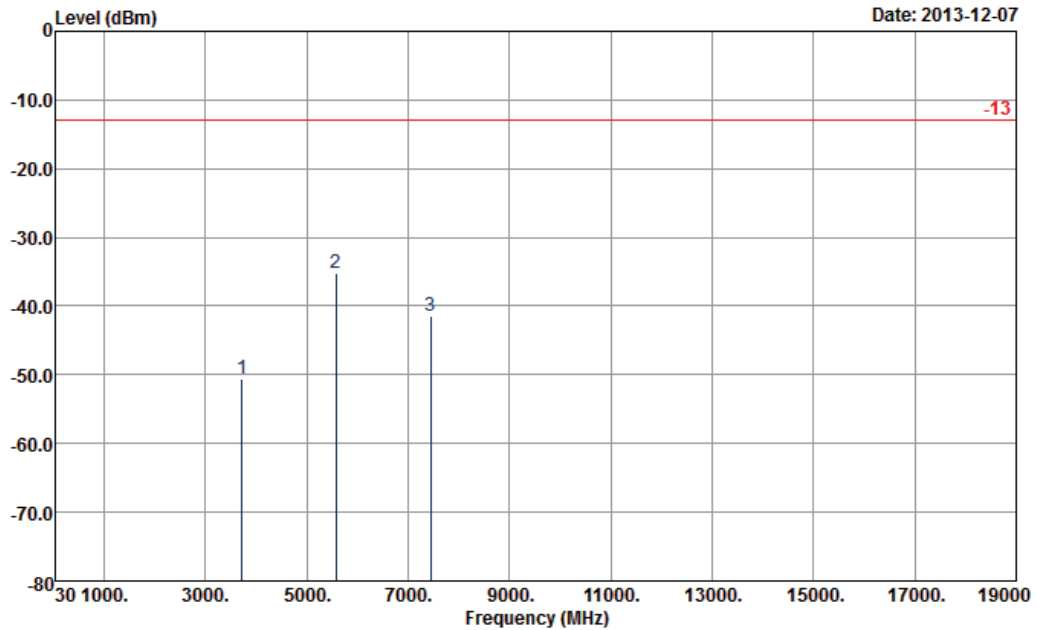


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3721	-49.73	-13	-36.73	-64.98	-56.11	2.51	8.89	H	Pass
5576	-35.56	-13	-22.56	-56.16	-43.42	3.03	10.89	H	Pass
7438	-40.43	-13	-27.43	-67.88	-49.57	3.24	12.38	H	Pass



Band :	LTE Band 25	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 49	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



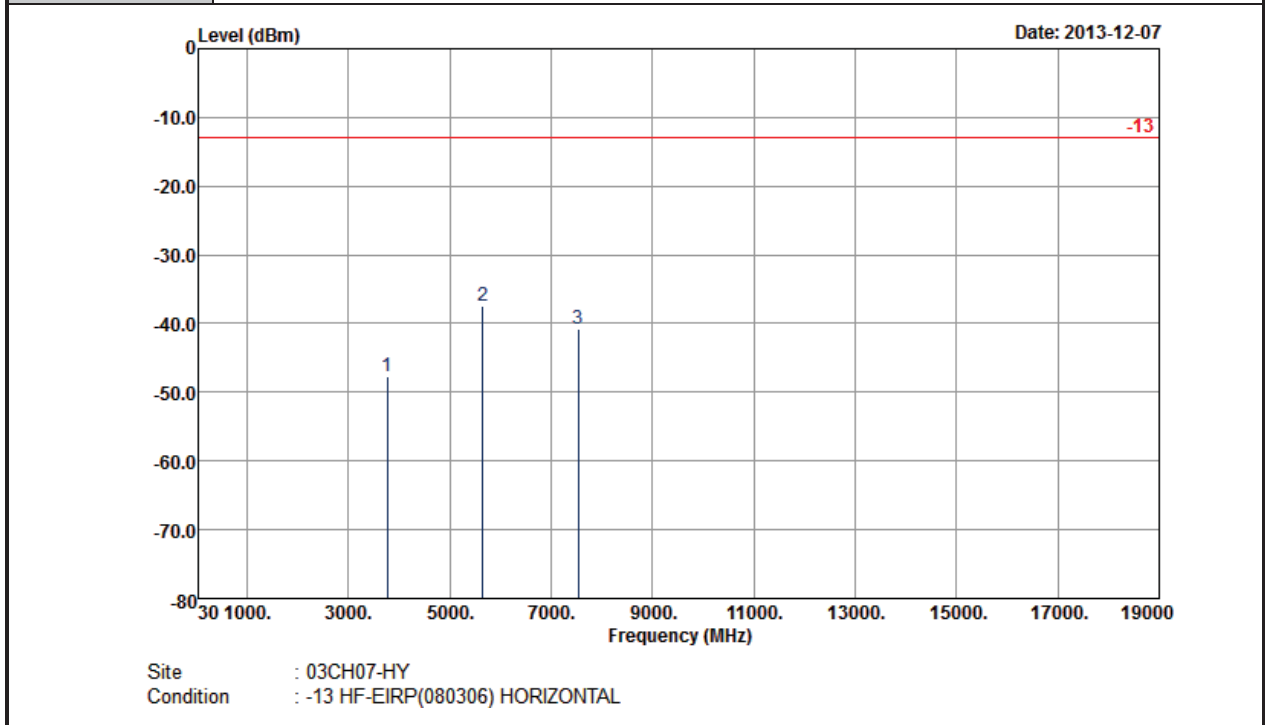
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3721	-50.62	-13	-37.62	-66.81	-57	2.51	8.89	V	Pass
5576	-35.15	-13	-22.15	-55.5	-43.01	3.03	10.89	V	Pass
7438	-41.52	-13	-28.52	-68.74	-50.66	3.24	12.38	V	Pass



<Middle Channel>

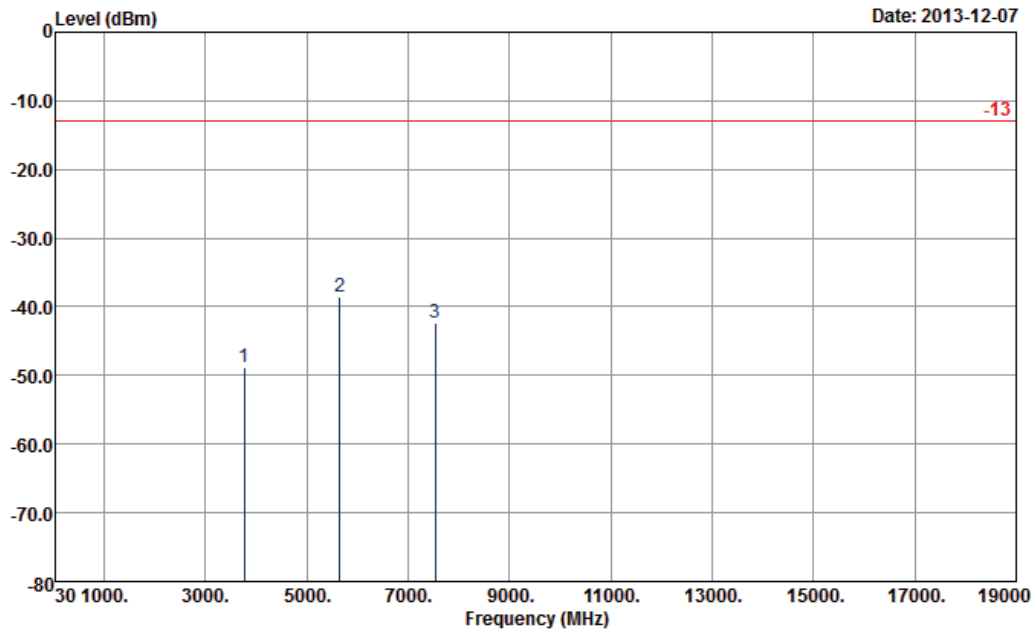
Band :	LTE Band 25	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 49	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-47.70	-13	-34.70	-63.08	-54	2.51	8.81	H	Pass
5646	-37.50	-13	-24.50	-58.29	-45.21	2.99	10.70	H	Pass
7529	-40.70	-13	-27.70	-68.08	-49.23	3.59	12.12	H	Pass



Band :	LTE Band 25	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 49	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



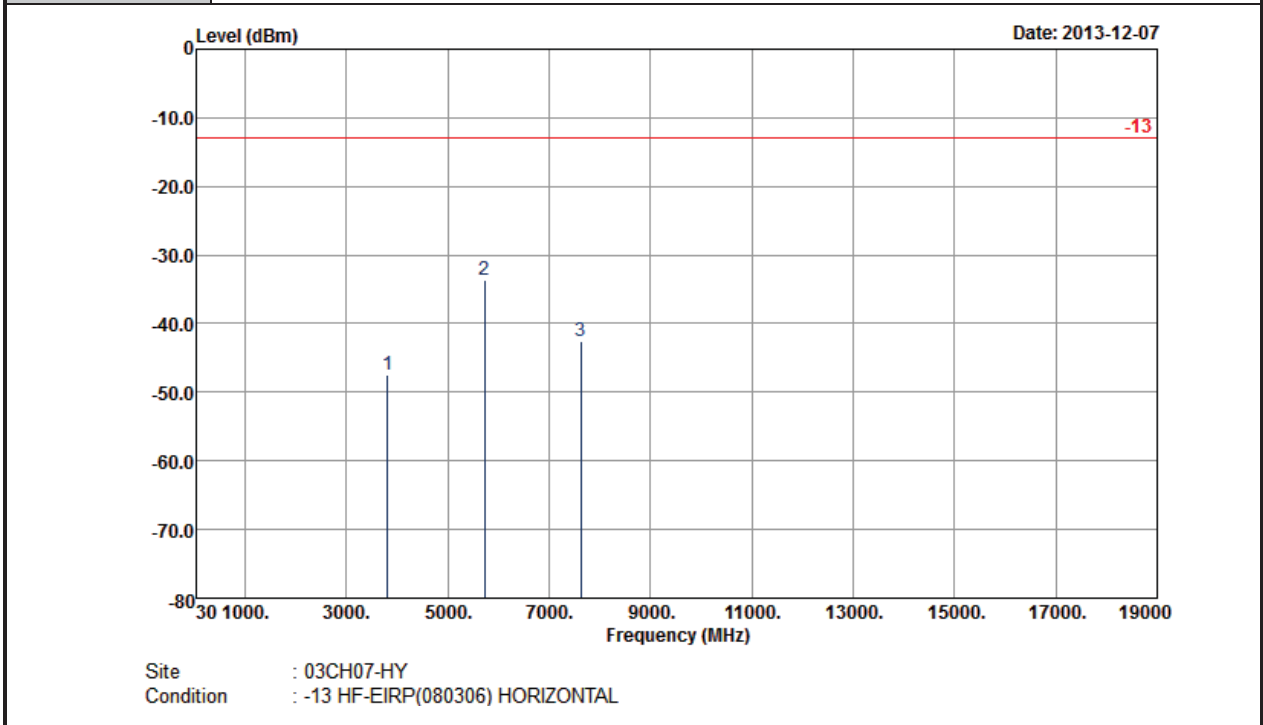
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3763	-48.88	-13	-35.88	-65.31	-55.18	2.51	8.81	V	Pass
5646	-38.60	-13	-25.60	-59.11	-46.31	2.99	10.70	V	Pass
7529	-42.34	-13	-29.34	-69.35	-50.87	3.59	12.12	V	Pass



<High Channel>

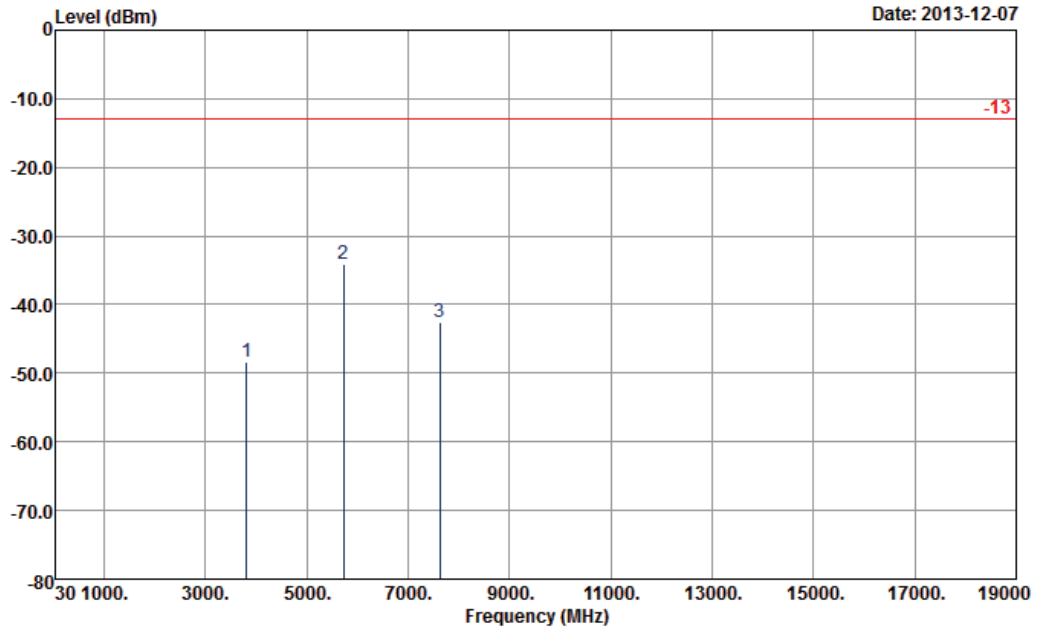
Band :	LTE Band 25	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 49	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3812	-47.54	-13	-34.54	-63.04	-53.92	2.52	8.90	H	Pass
5716	-33.58	-13	-20.58	-54.65	-41.33	3.01	10.76	H	Pass
7627	-42.47	-13	-29.47	-68.85	-51	3.62	12.15	H	Pass



Band :	LTE Band 25	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 49	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



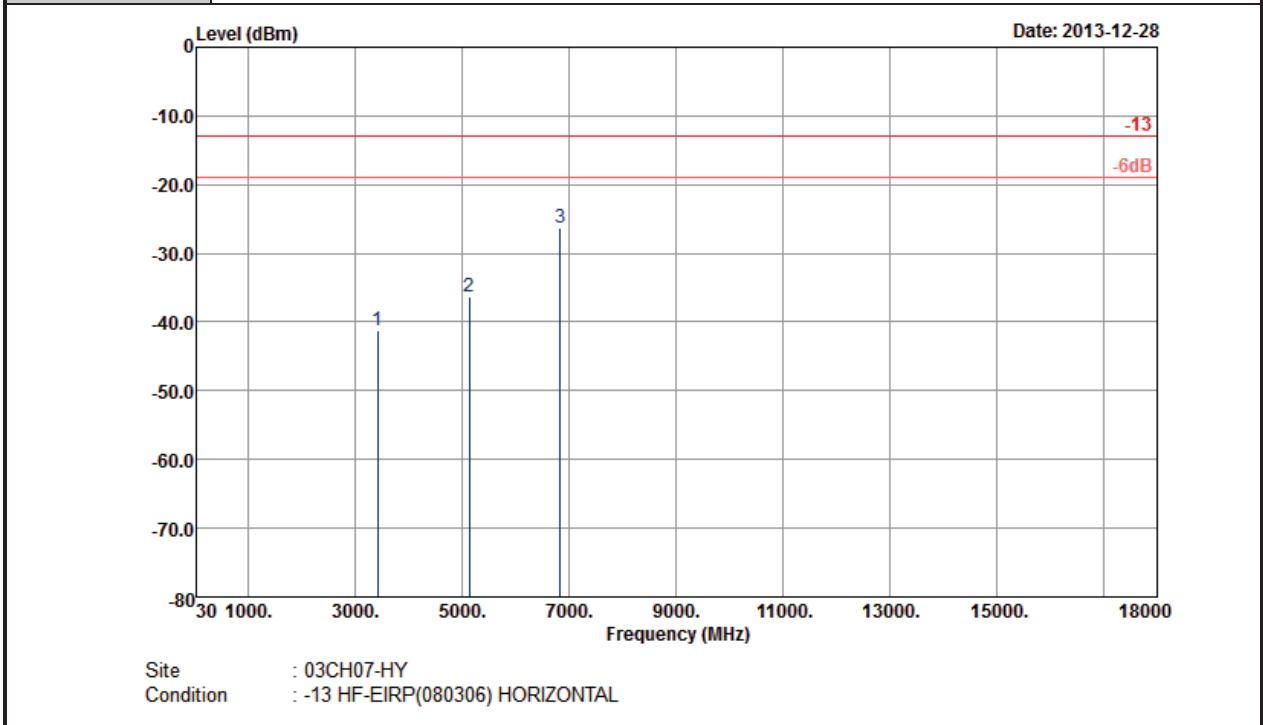
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3812	-48.38	-13	-35.38	-64.74	-54.76	2.52	8.90	V	Pass
5716	-34.03	-13	-21.03	-54.8	-41.78	3.01	10.76	V	Pass
7627	-42.61	-13	-29.61	-68.88	-51.14	3.62	12.15	V	Pass



<Low Channel>

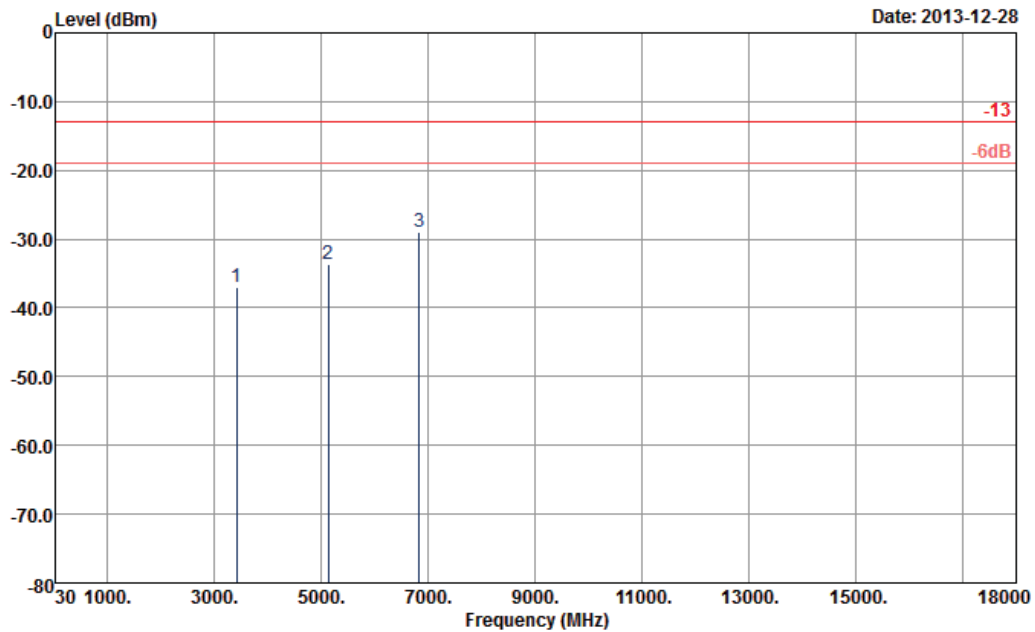
Band :	LTE Band 4	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3420	-41.21	-13	-28.21	-55.4	-44.98	4.59	8.36	H	Pass
5135	-36.37	-13	-23.37	-54.85	-41.01	5.41	10.05	H	Pass
6843	-26.21	-13	-13.21	-52.11	-31.45	6.15	11.39	H	Pass



Band :	LTE Band 4	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



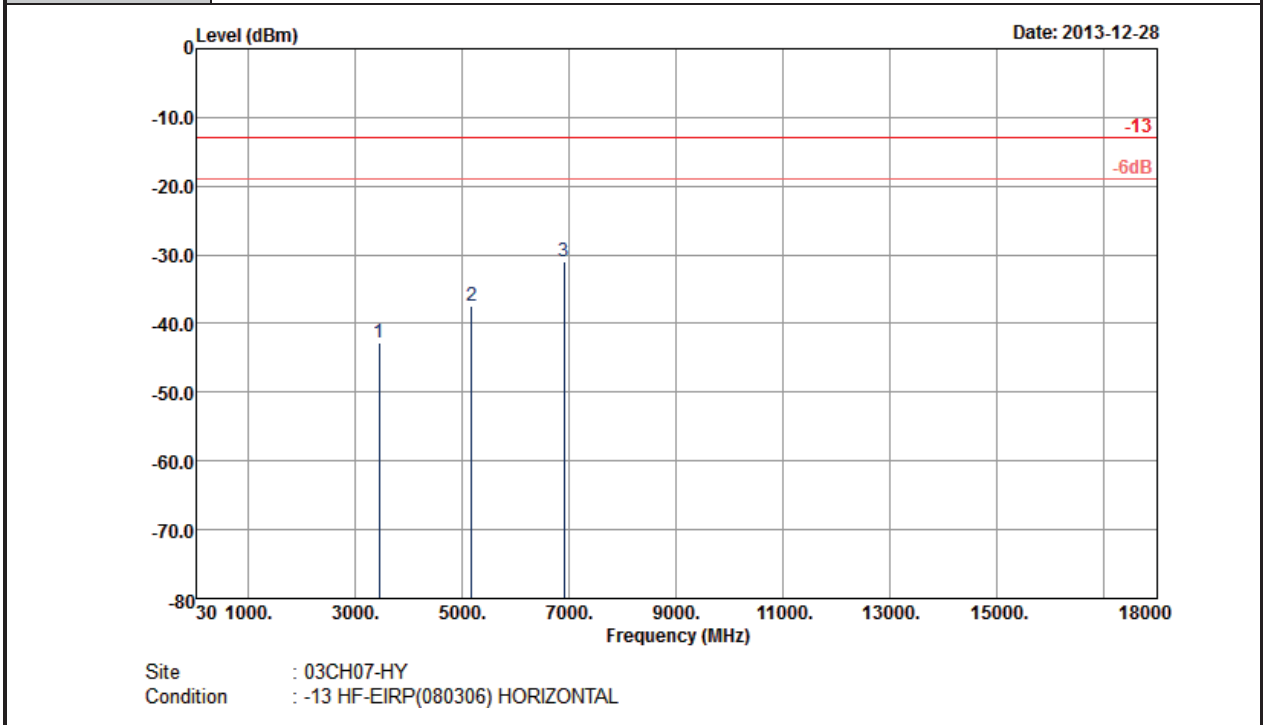
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3420	-36.89	-13	-23.89	-52.46	-40.66	4.59	8.36	V	Pass
5135	-33.70	-13	-20.70	-52.33	-38.34	5.41	10.05	V	Pass
6843	-28.91	-13	-15.91	-53.97	-34.15	6.15	11.39	V	Pass



<Middle Channel>

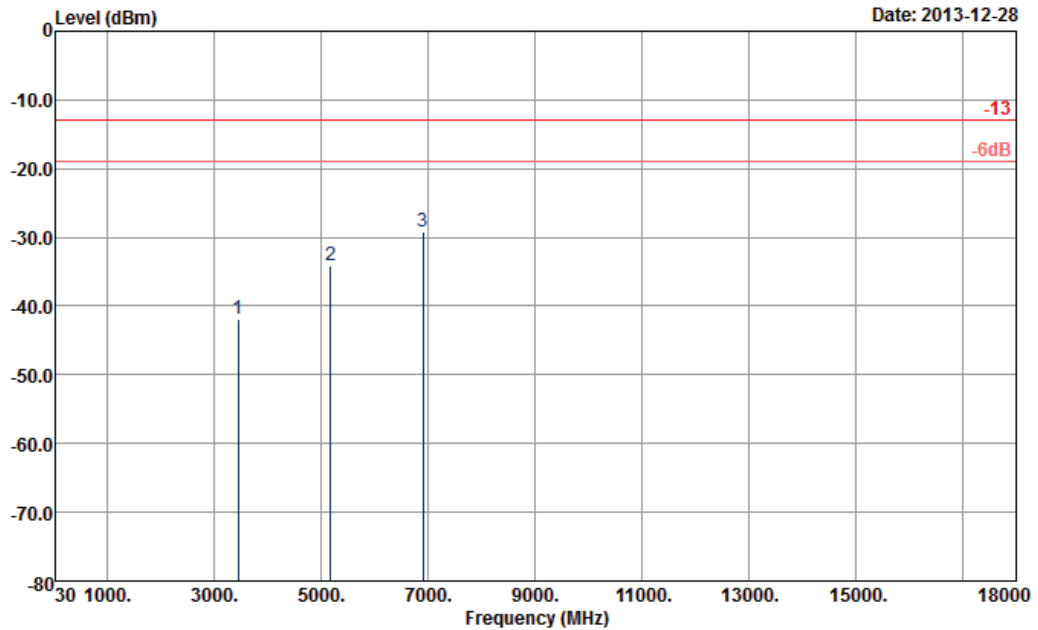
Band :	LTE Band 4	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3448	-42.80	-13	-29.80	-57.07	-46.63	4.48	8.31	H	Pass
5177	-37.36	-13	-24.36	-56.07	-42	5.332	9.98	H	Pass
6906	-30.98	-13	-17.98	-56.89	-36.22	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



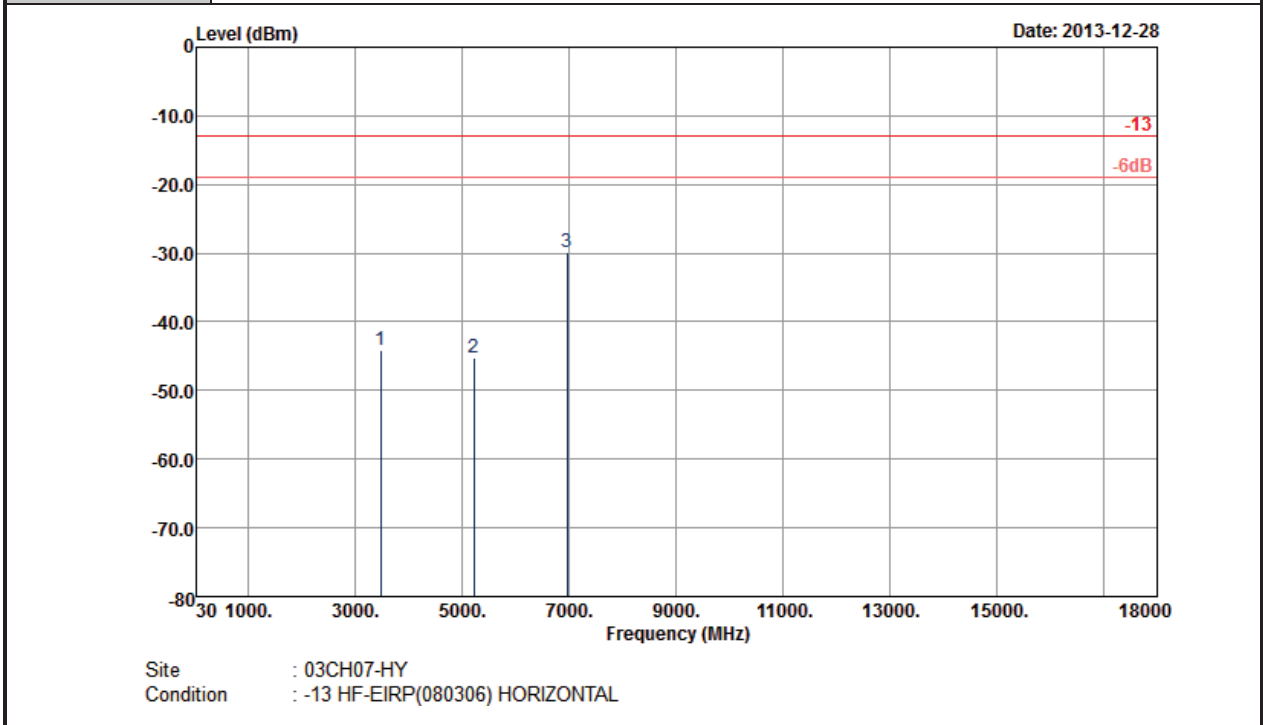
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3448	-41.85	-13	-28.85	-57.38	-45.68	4.48	8.31	V	Pass
5177	-34.20	-13	-21.20	-53.02	-38.84	5.332	9.98	V	Pass
6906	-29.02	-13	-16.02	-54.29	-34.26	6.1	11.34	V	Pass



<High Channel>

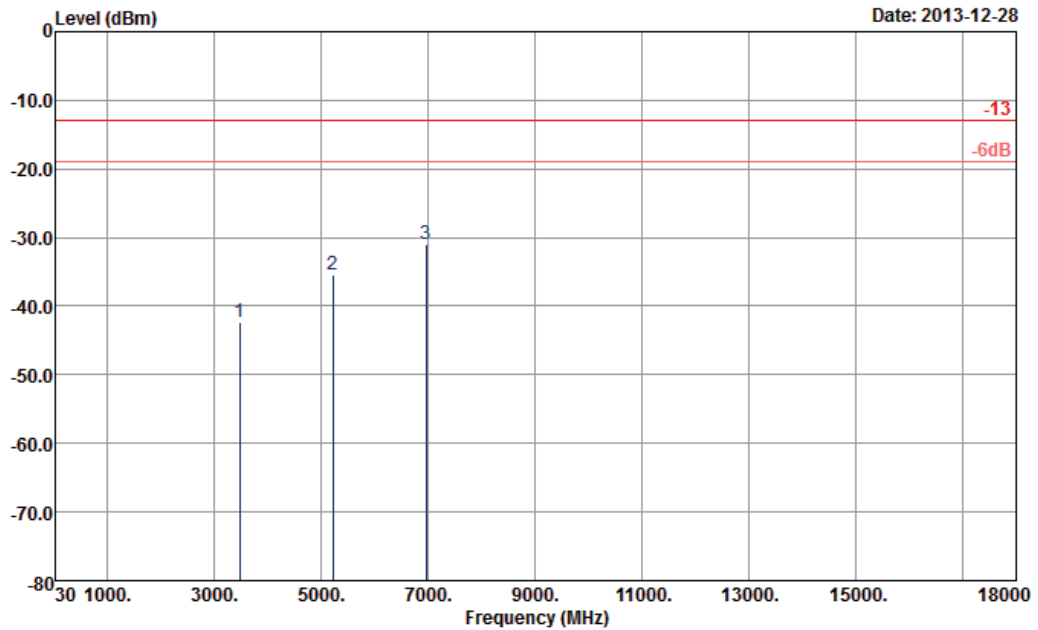
Band :	LTE Band 4	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3483	-44.08	-13	-31.08	-58.41	-48.22	4.24	8.38	H	Pass
5219	-45.31	-13	-32.31	-64.27	-50.18	5.18	10.05	H	Pass
6962	-29.81	-13	-16.81	-56.1	-35	6.19	11.38	H	Pass



Band :	LTE Band 4	Temperature :	21~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



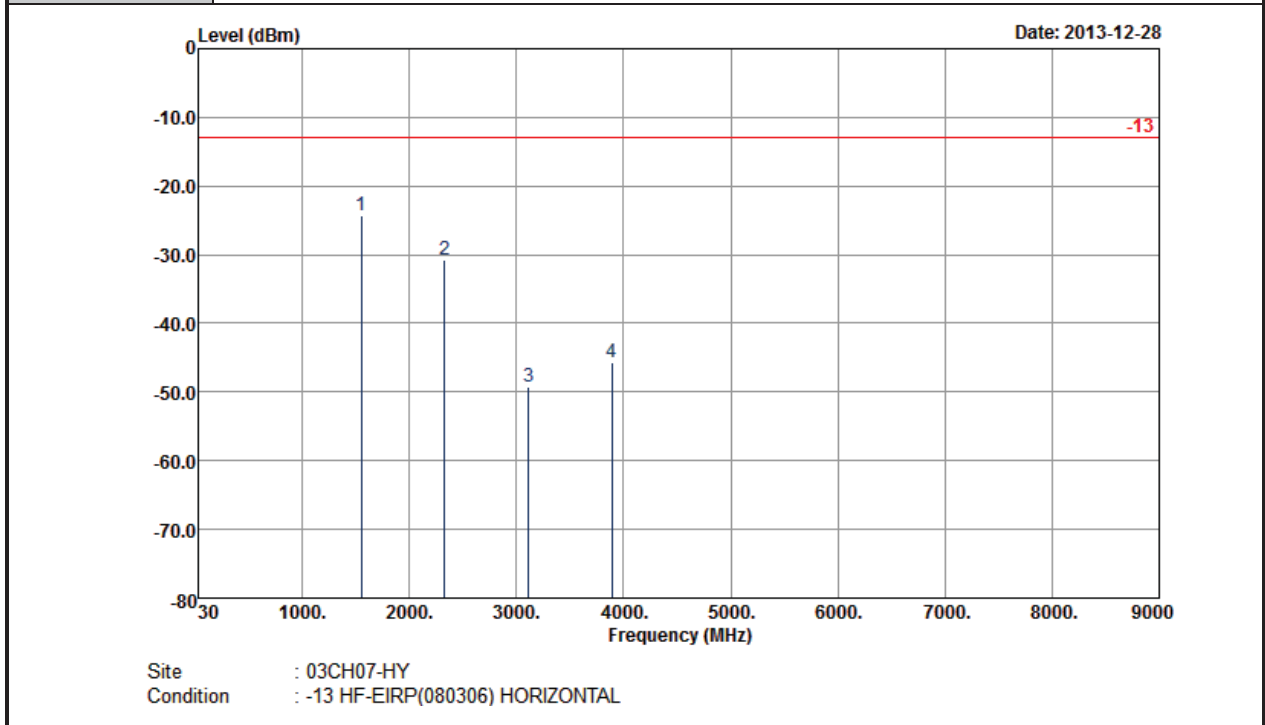
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3483	-42.33	-13	-29.33	-57.95	-46.47	4.24	8.38	V	Pass
5219	-35.45	-13	-22.45	-54.31	-40.32	5.18	10.05	V	Pass
6962	-30.95	-13	-17.95	-56.39	-36.14	6.19	11.38	V	Pass



<Low Channel>

Band :	LTE Band 13	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

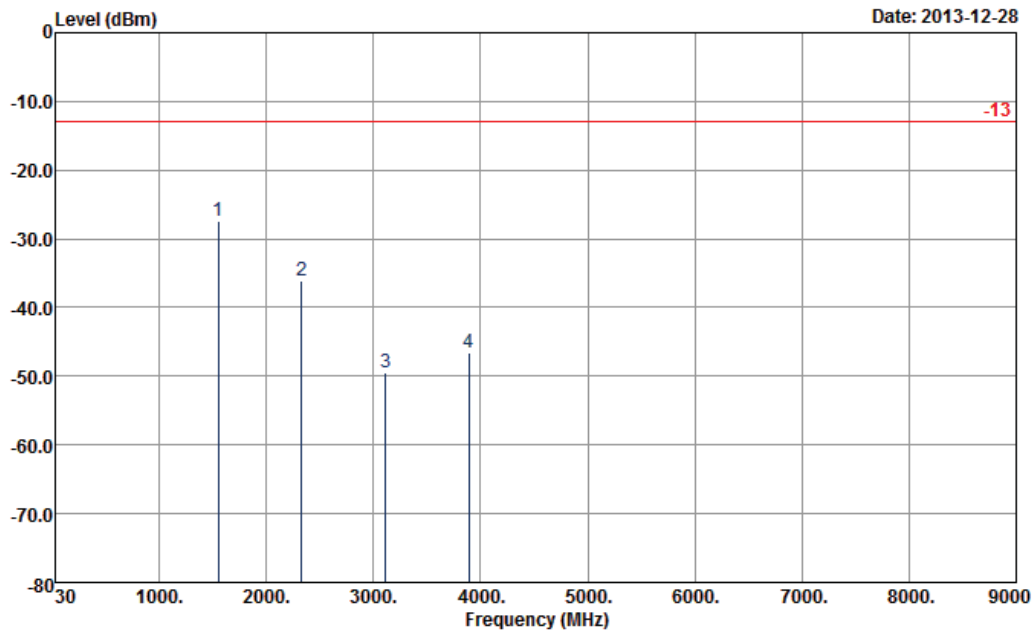


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1552	-24.37	-13	-11.37	-32.6	-28.32	1.47	5.42	H	Pass
2328	-30.79	-13	-17.79	-43.08	-34.96	1.85	6.02	H	Pass
3112	-49.30	-13	-36.30	-63.02	-54.56	2.22	7.48	H	Pass
3888	-45.77	-13	-32.77	-61.64	-52.13	2.41	8.77	H	Pass



Band :	LTE Band 13	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



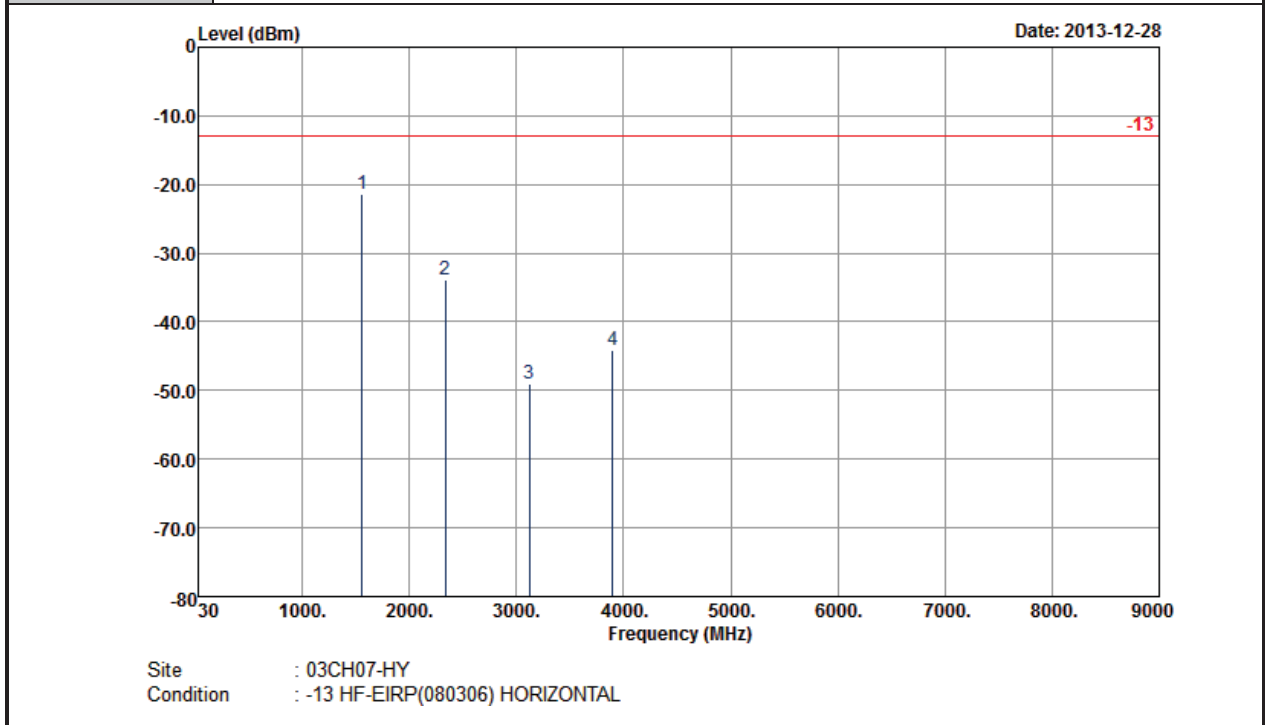
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1552	-27.30	-13	-14.30	-37.76	-31.25	1.47	5.42	V	Pass
2328	-36.15	-13	-23.15	-49.59	-40.32	1.85	6.02	V	Pass
3112	-49.37	-13	-36.37	-65.13	-54.63	2.22	7.48	V	Pass
3888	-46.64	-13	-33.64	-63.33	-53	2.41	8.77	V	Pass



<Middle Channel>

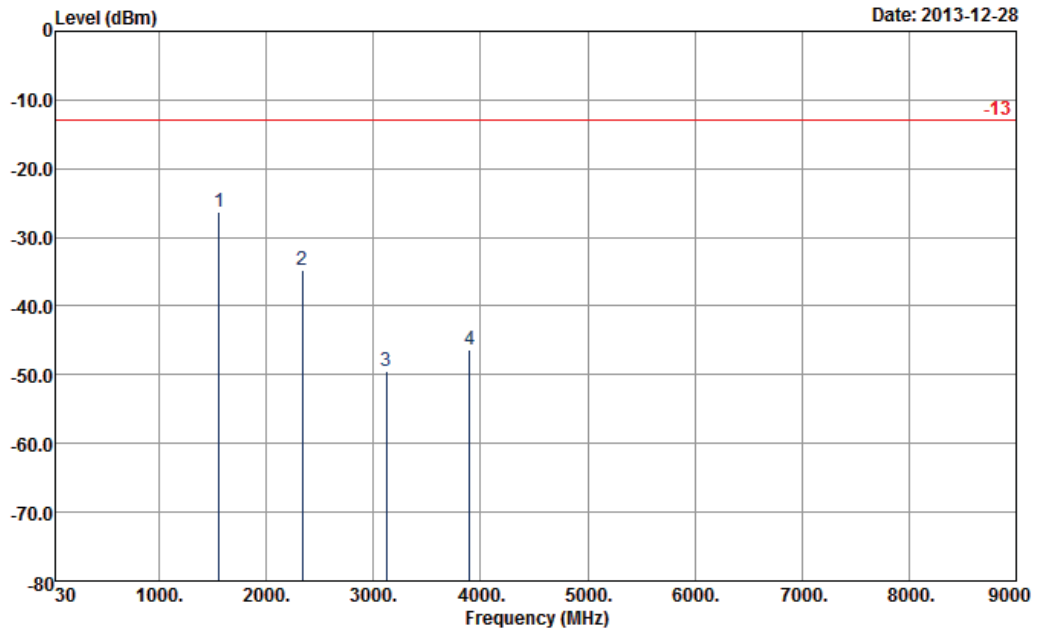
Band :	LTE Band 13	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1560	-21.47	-13	-8.47	-29.87	-25.45	1.51	5.49	H	Pass
2336	-33.77	-13	-20.77	-46.15	-37.84	1.98	6.05	H	Pass
3120	-48.99	-13	-35.99	-62.78	-54.16	2.39	7.56	H	Pass
3896	-44.08	-13	-31.08	-59.88	-50.41	2.52	8.85	H	Pass



Band :	LTE Band 13	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



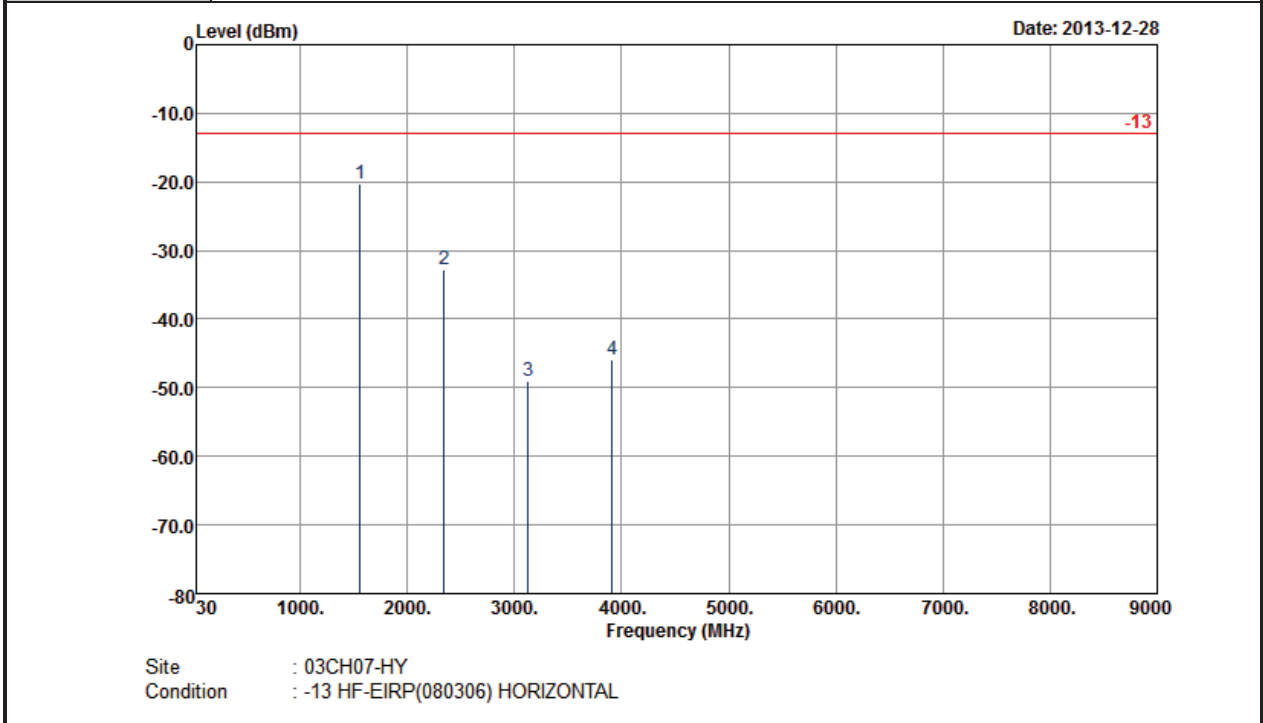
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1560	-26.31	-13	-13.31	-36.86	-30.29	1.51	5.49	V	Pass
2336	-34.78	-13	-21.78	-48.15	-38.85	1.98	6.05	V	Pass
3120	-49.42	-13	-36.42	-65.07	-54.59	2.39	7.56	V	Pass
3896	-46.28	-13	-33.28	-62.85	-52.61	2.52	8.85	V	Pass



<High Channel>

Band :	LTE Band 13	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

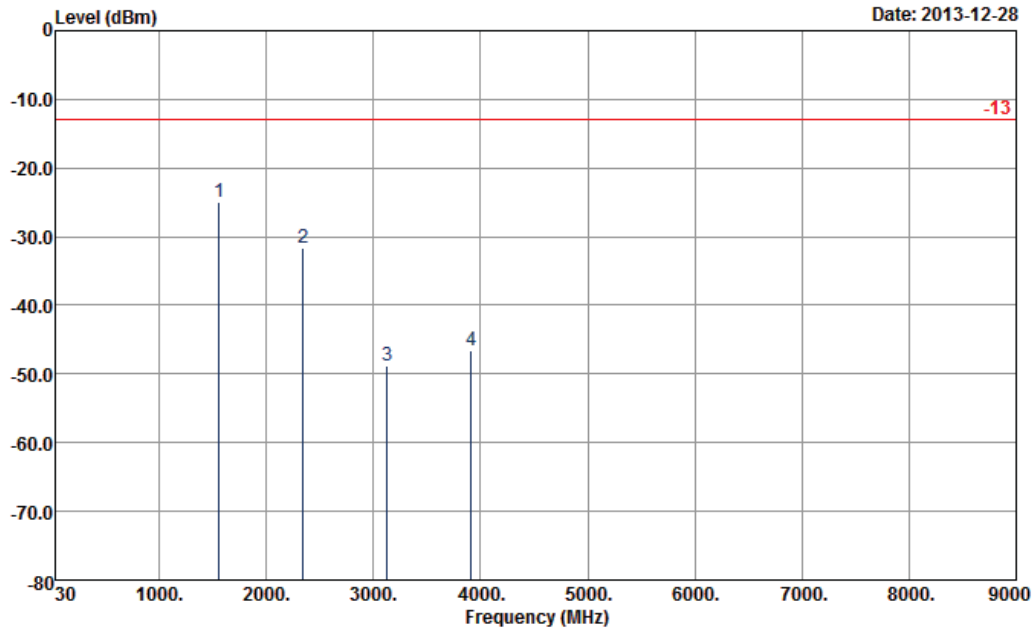


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1560	-20.32	-13	-7.32	-28.71	-24.32	1.56	5.56	H	Pass
2344	-32.67	-13	-19.67	-45.13	-36.75	2.03	6.11	H	Pass
3128	-49.02	-13	-36.02	-62.76	-54.23	2.43	7.64	H	Pass
3912	-45.81	-13	-32.81	-61.78	-52.19	2.58	8.96	H	Pass



Band :	LTE Band 13	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



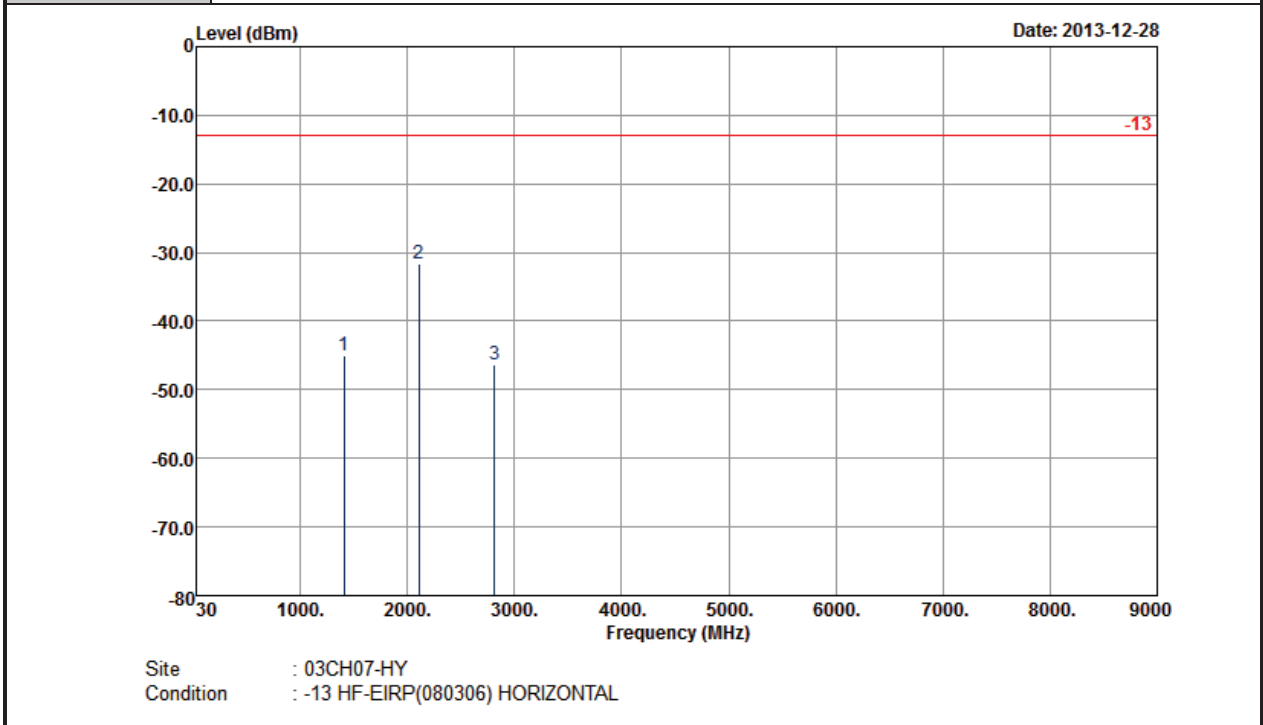
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1560	-24.88	-13	-11.88	-35.37	-28.88	1.56	5.56	V	Pass
2344	-31.67	-13	-18.67	-45.19	-35.75	2.03	6.11	V	Pass
3128	-48.90	-13	-35.90	-64.65	-54.11	2.43	7.64	V	Pass
3912	-46.58	-13	-33.58	-63.21	-52.96	2.58	8.96	V	Pass



<Low Channel>

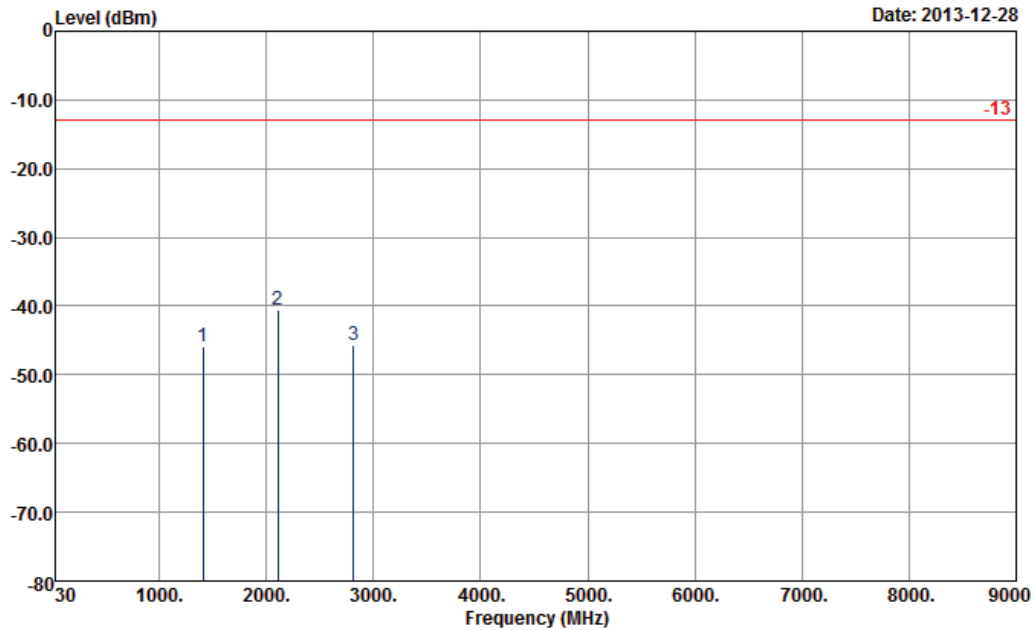
Band :	LTE Band 17	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1408	-45.03	-13	-32.03	-53.19	-49.12	1.51	5.60	H	Pass
2112	-31.64	-13	-18.64	-42.73	-35.82	1.82	6.00	H	Pass
2816	-46.45	-13	-33.45	-59.94	-51.23	2.2	6.98	H	Pass



Band :	LTE Band 17	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



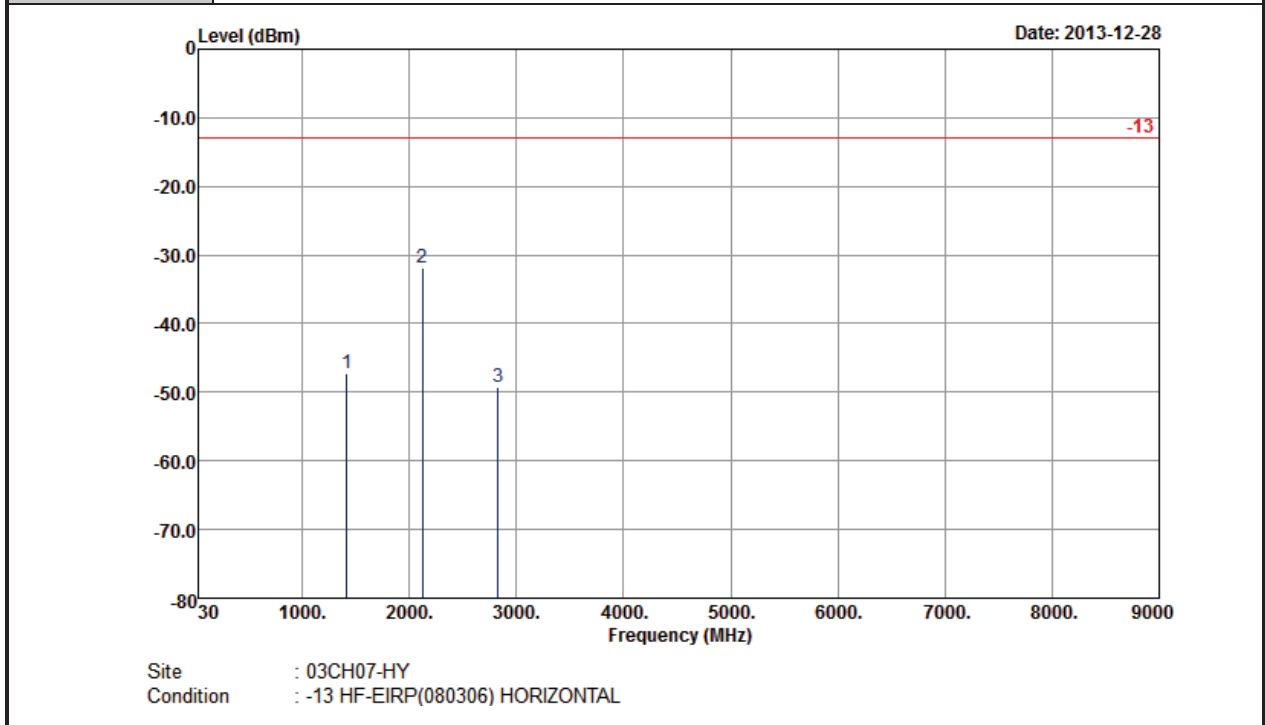
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1408	-45.91	-13	-32.91	-56.26	-50	1.51	5.60	V	Pass
2112	-40.59	-13	-27.59	-53.49	-44.77	1.82	6.00	V	Pass
2816	-45.64	-13	-32.64	-60.68	-50.42	2.2	6.98	V	Pass



<Middle Channel>

Band :	LTE Band 17	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

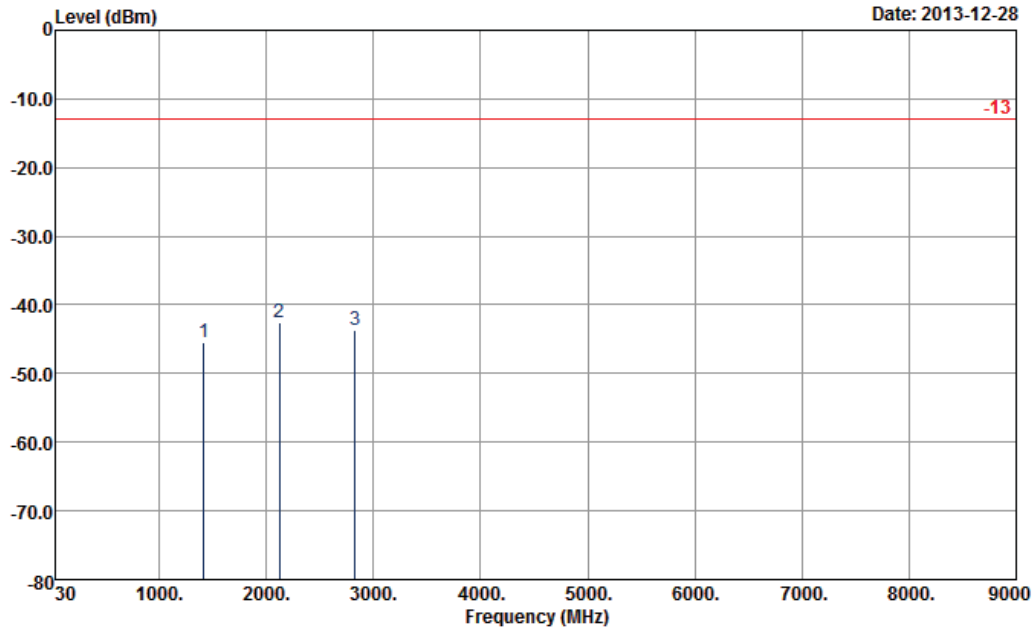


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1416	-47.24	-13	-34.24	-55.36	-51.32	1.53	5.61	H	Pass
2120	-31.84	-13	-18.84	-43.12	-36.01	1.85	6.02	H	Pass
2832	-49.18	-13	-36.18	-62.54	-53.94	2.24	7.00	H	Pass



Band :	LTE Band 17	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



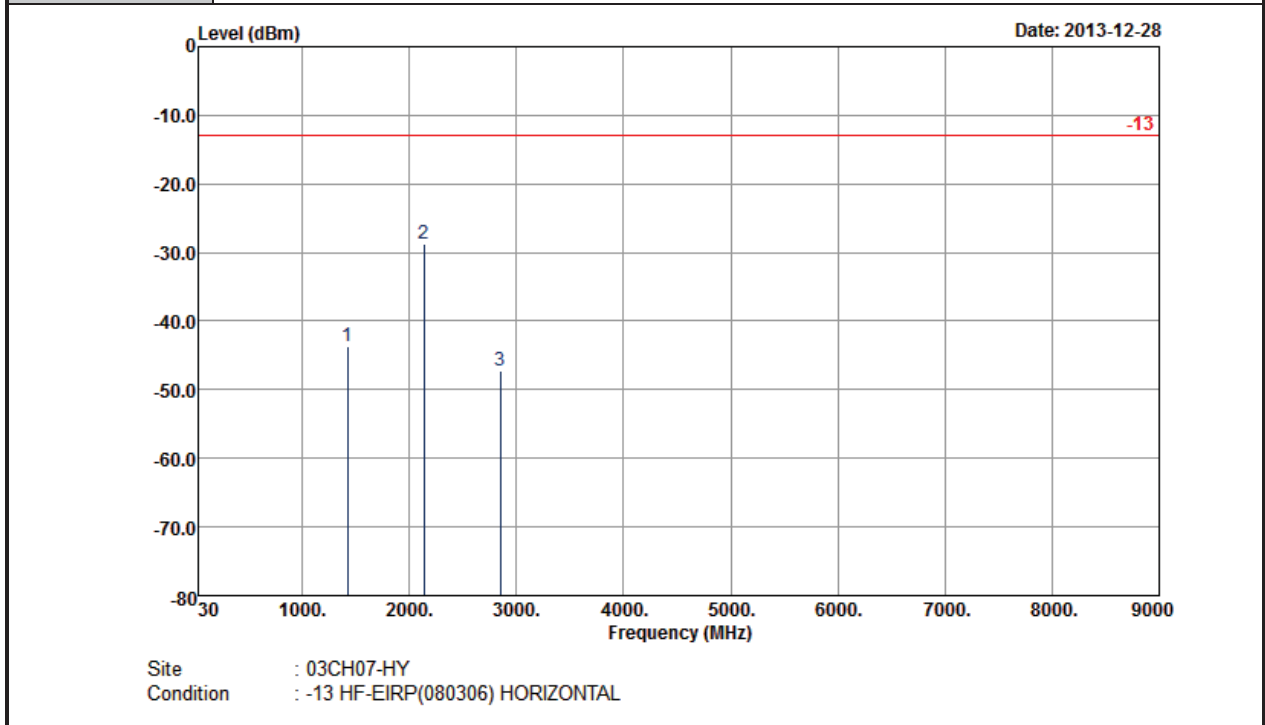
Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1416	-45.41	-13	-32.41	-55.87	-49.49	1.53	5.61	V	Pass
2120	-42.55	-13	-29.55	-55.68	-46.72	1.85	6.02	V	Pass
2832	-43.67	-13	-30.67	-58.84	-48.43	2.24	7.00	V	Pass



<High Channel>

Band :	LTE Band 17	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

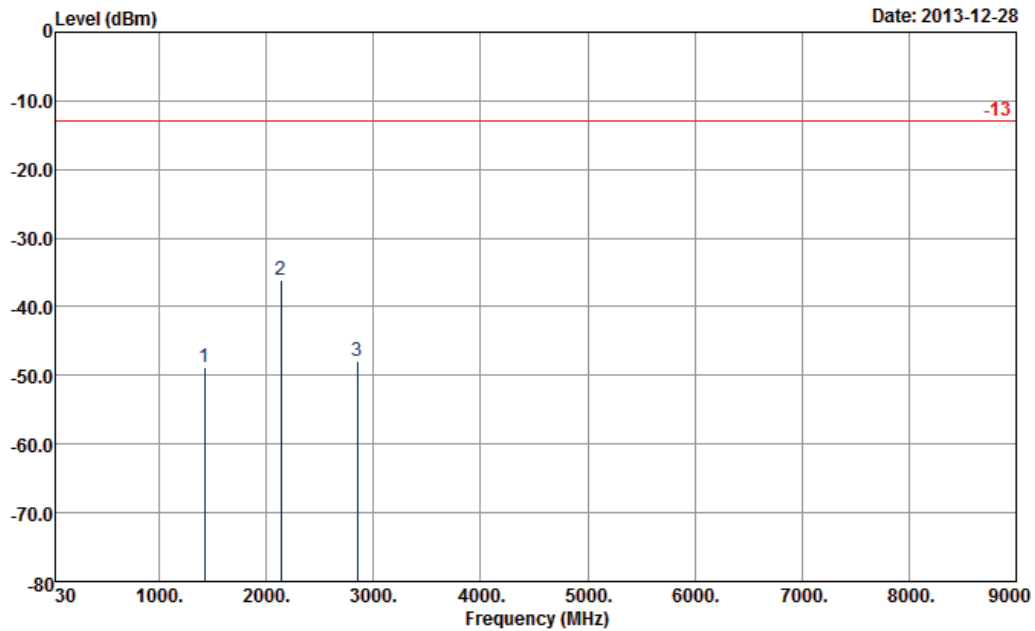


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1424	-43.71	-13	-30.71	-51.87	-47.81	1.54	5.64	H	Pass
2136	-28.79	-13	-15.79	-40.03	-33	1.87	6.08	H	Pass
2848	-47.16	-13	-34.16	-60.59	-52.01	2.26	7.11	H	Pass



Band :	LTE Band 17	Temperature :	21~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	53~56%
Test Engineer :	Stan Hsieh	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1424	-48.76	-13	-35.76	-59.07	-52.86	1.54	5.64	V	Pass
2136	-36.14	-13	-23.14	-49.28	-40.35	1.87	6.08	V	Pass
2848	-47.92	-13	-34.92	-63.03	-52.77	2.26	7.11	V	Pass

3.7 Frequency Stability Measurement

3.7.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

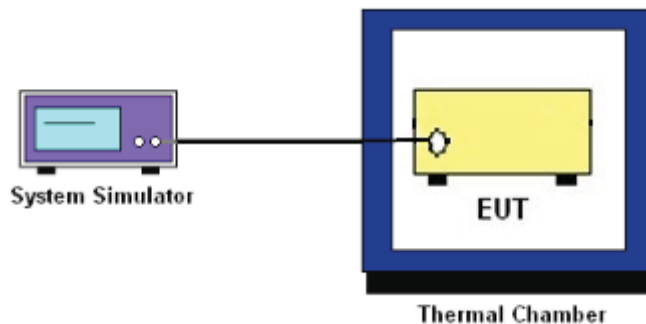
3.7.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.7.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the base station.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.7.5 Test Setup



3.7.6 Test Result of Temperature Variation (FCC)

Band :	LTE Band 5 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)		
50	0.0057		PASS
40	0.0055		
30	0.0061		
20	0.0062		
10	0.0056		
0	0.0051		
-10	0.0069		
-20	0.0053		
-30	0.0067		



Band :	LTE Band 2 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)		
50	0.0099		PASS
40	0.0105		
30	0.0100		
20	0.0087		
10	0.0095		
0	0.0107		
-10	0.0103		
-20	0.0098		
-30	0.0107		

Band :	LTE Band 25 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)		
50	0.0098		PASS
40	0.0094		
30	0.0096		
20	0.0090		
10	0.0092		
0	0.0094		
-10	0.0088		
-20	0.0099		
-30	0.0095		



Band :	LTE Band 4 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)		
50	0.0051		PASS
40	0.0054		
30	0.0054		
20	0.0044		
10	0.0041		
0	0.0045		
-10	0.0056		
-20	0.0055		
-30	0.0053		

Band :	LTE Band 13 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)		
50	0.0075		PASS
40	0.0079		
30	0.0069		
20	0.0064		
10	0.0084		
0	0.0068		
-10	0.0074		
-20	0.0065		
-30	0.0086		



Band :	LTE Band 17 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)		
50	-0.0079		PASS
40	-0.0052		
30	0.0044		
20	-0.0076		
10	-0.0075		
0	0.0068		
-10	0.0058		
-20	-0.0069		
-30	-0.0068		

3.7.7 Test Result of Voltage Variation (FCC)

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 5	10M	8.74	0.0056	2.5	PASS
		Normal	0.0061		
		6.46	0.0065		
LTE Band 2	10M	8.74	0.0084	2.5	PASS
		Normal	0.0096		
		6.46	0.0095		
LTE Band 25	10M	8.74	0.0089	2.5	PASS
		Normal	0.0091		
		6.46	0.0096		
LTE Band 4	10M	8.74	0.0043	2.5	PASS
		Normal	0.0046		
		6.46	0.0053		
LTE Band 13	10M	8.74	0.0070	2.5	PASS
		Normal	0.0077		
		6.46	0.0060		
LTE Band 17	10M	8.74	0.0059	2.5	PASS
		Normal	0.0065		
		6.46	-0.0082		

Remark:

1. Normal Voltage = 7.60V.
2. The manufacturer declared that the EUT could work properly between voltage 6.46V ~ 8.74V.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Rohde & Schwarz	CMW500	113998	MIMO TDD with 42/43 WCDMA	Oct. 04, 2013	Dec. 26, 2013 ~ Jan. 13, 2014	Oct. 03, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Dec. 26, 2013 ~ Jan. 13, 2014	Jun. 06, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	Dec. 26, 2013 ~ Jan. 13, 2014	Jul. 18, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 20, 2013	Dec. 06, 2013 ~ Dec. 28, 2013	Nov. 19, 2014	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Dec. 06, 2013 ~ Dec. 28, 2013	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Dec. 06, 2013 ~ Dec. 28, 2013	Aug. 21, 2014	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Dec. 06, 2013 ~ Dec. 28, 2013	Oct. 02, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Feb. 26, 2013	Dec. 06, 2013 ~ Dec. 28, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Aug. 12, 2013	Dec. 06, 2013 ~ Dec. 28, 2013	Aug. 11, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Dec. 06, 2013 ~ Dec. 28, 2013	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Dec. 06, 2013 ~ Dec. 28, 2013	N/A	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.50
---	------