

## 3.6 Conducted Spurious Emission Measurement

### 3.6.1 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 10<sup>th</sup> harmonic.

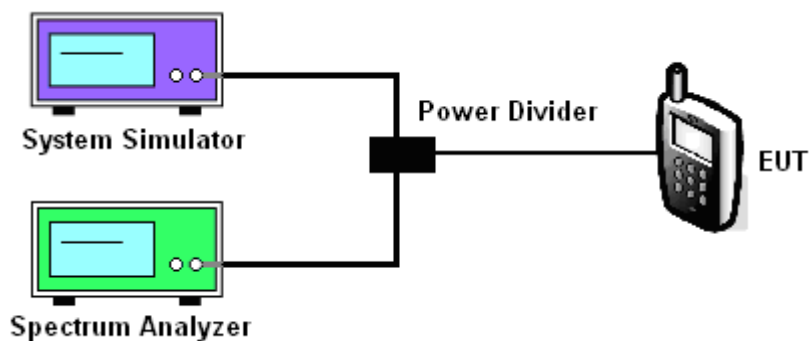
### 3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The middle channel for the highest RF power within the transmitting frequency was measured.
3. The conducted spurious emission for the whole frequency range was taken.

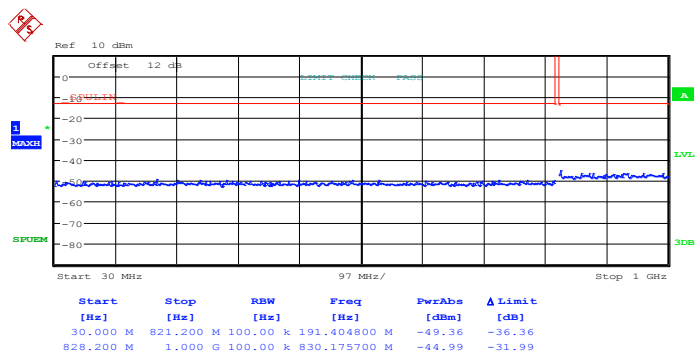
### 3.6.4 Test Setup



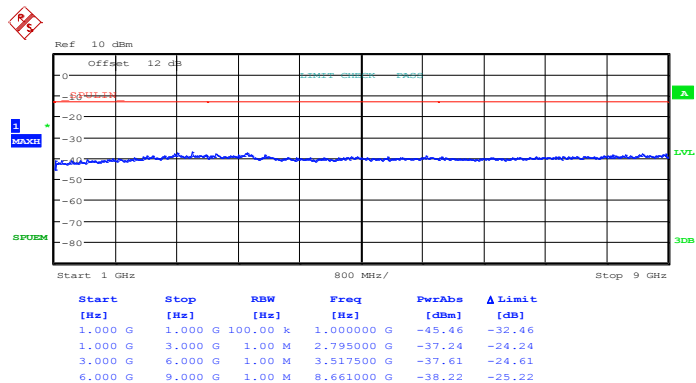
## 3.6.5 Test Result (Plots) of Conducted Spurious Emission

|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 5 | Channel : | CH20407 (Low) |
| Band Width : | 1.4MHz     |           |               |

### QPSK (RB Size 1, RB Offset 0)

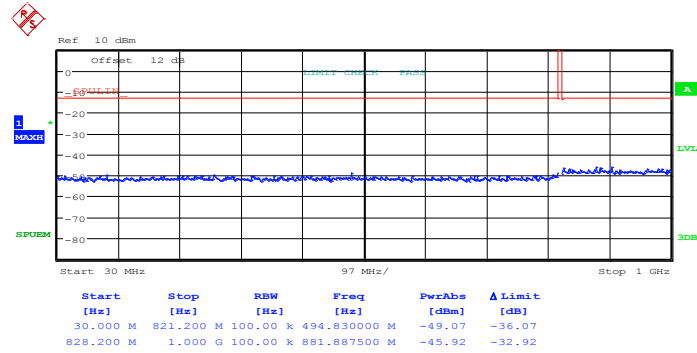


Date: 29.NOV.2012 17:39:40

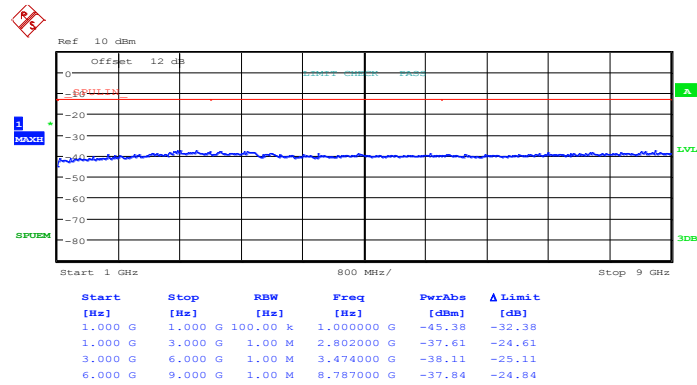


Date: 29.NOV.2012 17:39:10

## 16QAM (RB Size 1, RB Offset 0)



Date: 29.NOV.2012 17:39:54

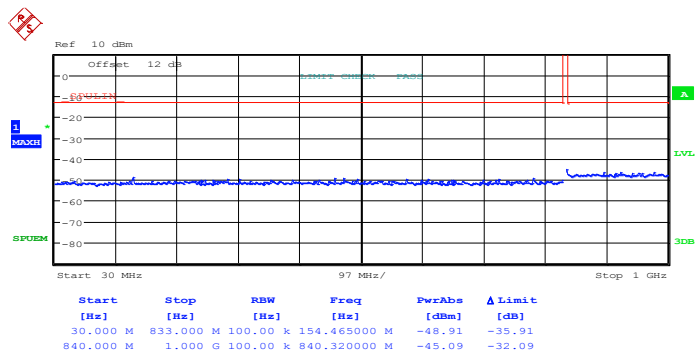


Date: 29.NOV.2012 17:38:02

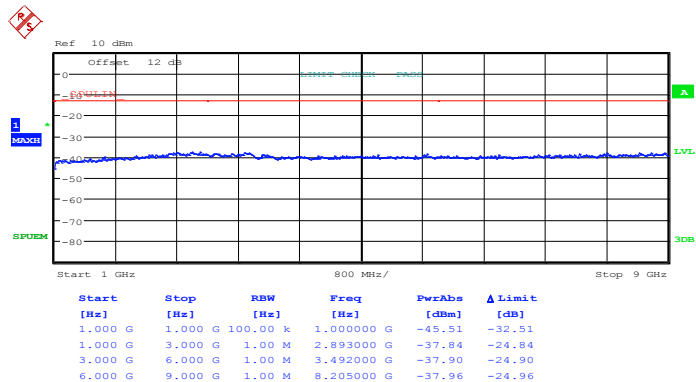


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 5 | Channel : | CH20525 (Middle) |
| Band Width : | 1.4MHz     |           |                  |

## QPSK (RB Size 1, RB Offset 5)

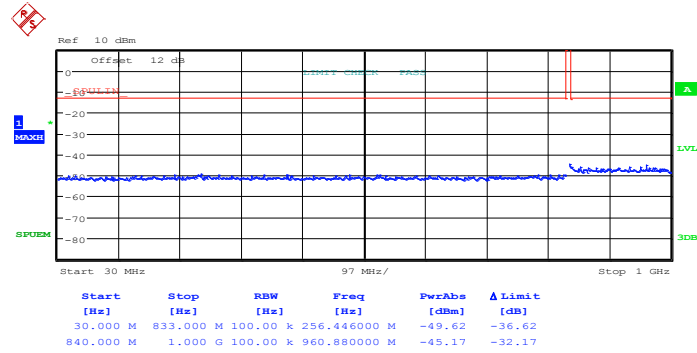


Date: 29.NOV.2012 17:34:52

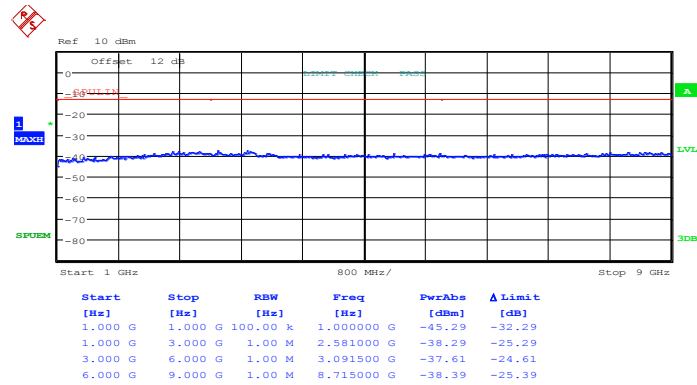


Date: 29.NOV.2012 17:35:41

## 16QAM (RB Size 3, RB Offset 0)



Date: 29.NOV.2012 17:34:21

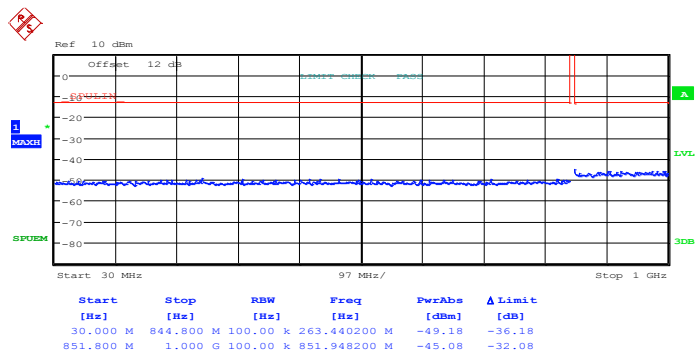


Date: 29.NOV.2012 17:36:31

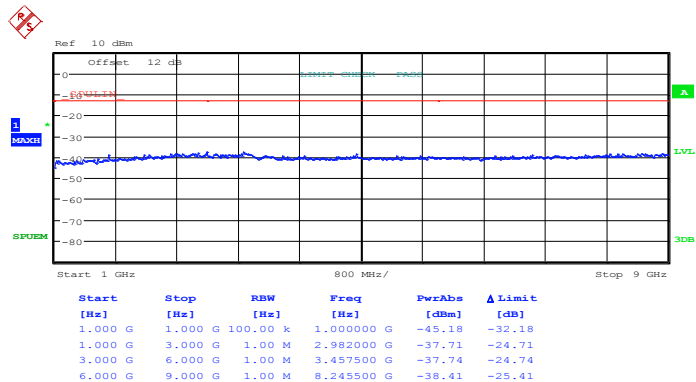


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 5 | Channel : | CH20643 (High) |
| Band Width : | 1.4MHz     |           |                |

QPSK (RB Size 1, RB Offset 5)

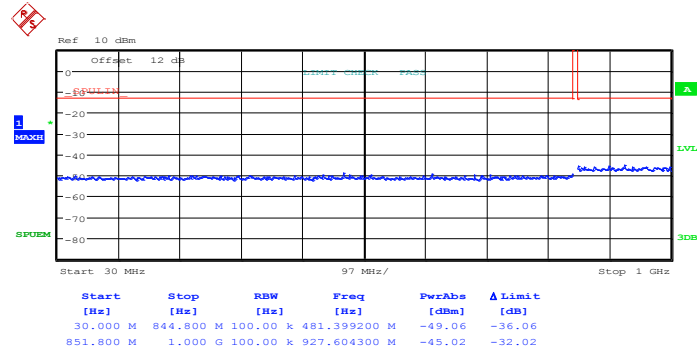


Date: 29.NOV.2012 17:43:30

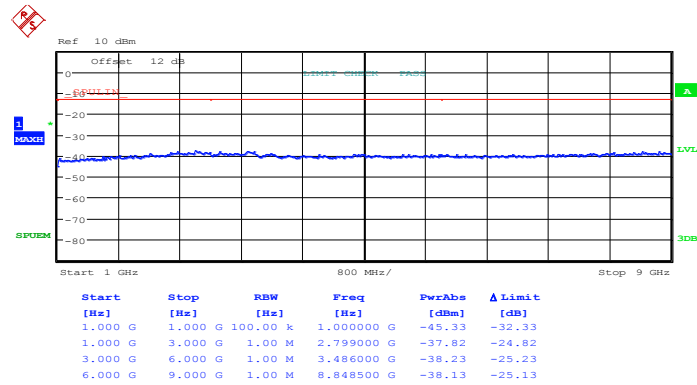


Date: 29.NOV.2012 17:44:04

## 16QAM (RB Size 3, RB Offset 1)



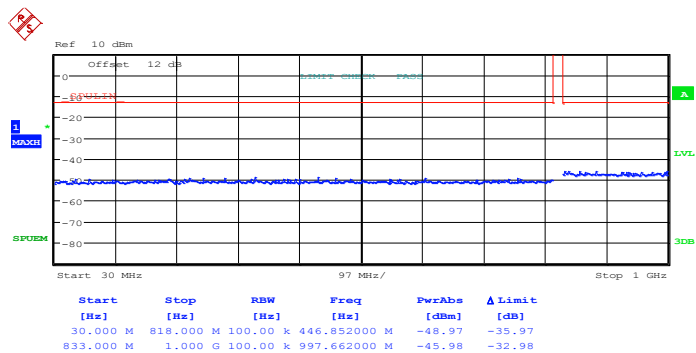
Date: 29.NOV.2012 17:43:05



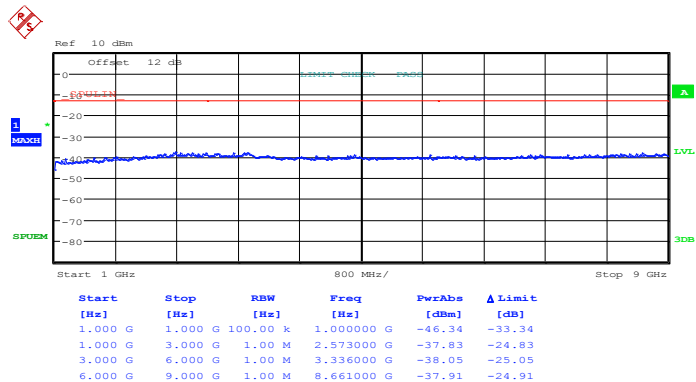
Date: 29.NOV.2012 17:44:41

|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 5 | Channel : | CH20415 (Low) |
| Band Width : | 3MHz       |           |               |

## QPSK (RB Size 1, RB Offset 7)



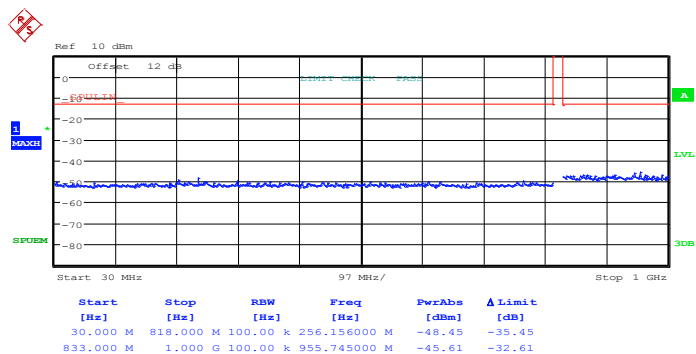
Date: 29.NOV.2012 17:20:46



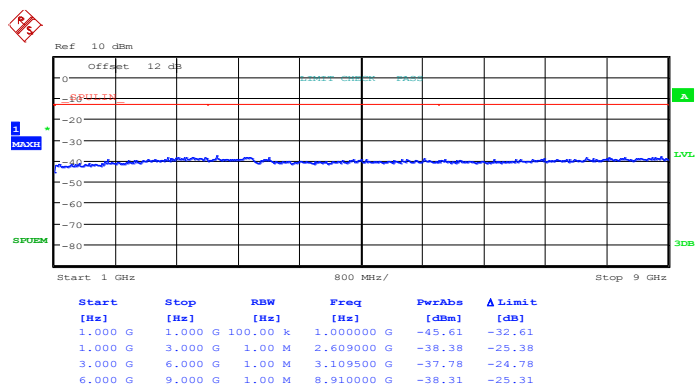
Date: 29.NOV.2012 17:21:35



16QAM (RB Size 1, RB Offset 7)



Date: 29.NOV.2012 17:20:59

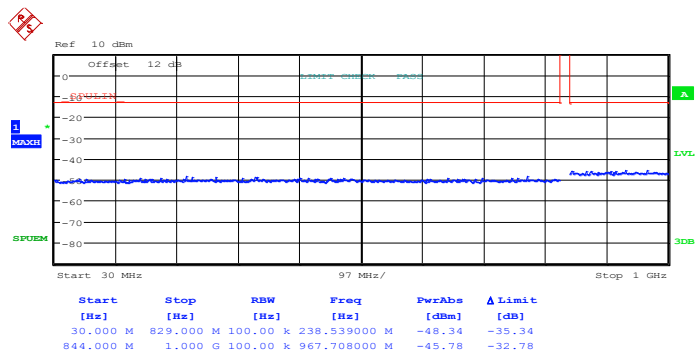


Date: 29.NOV.2012 17:21:16

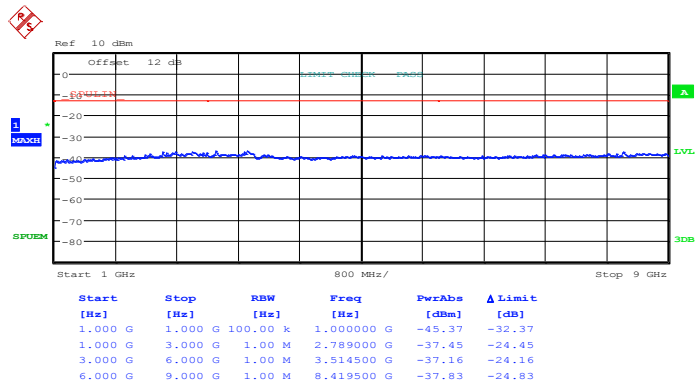


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 5 | Channel : | CH20525 (Middle) |
| Band Width : | 3MHz       |           |                  |

QPSK (RB Size 1, RB Offset 14)

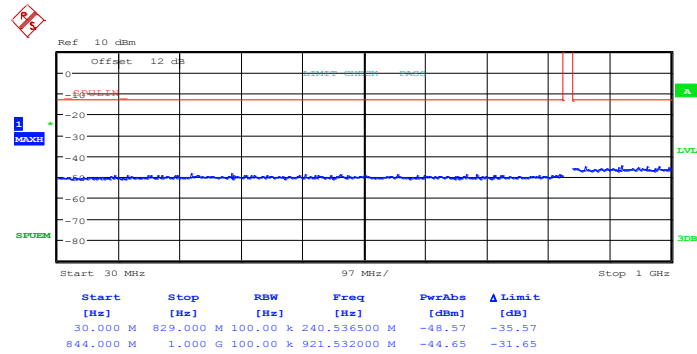


Date: 29.NOV.2012 17:16:31

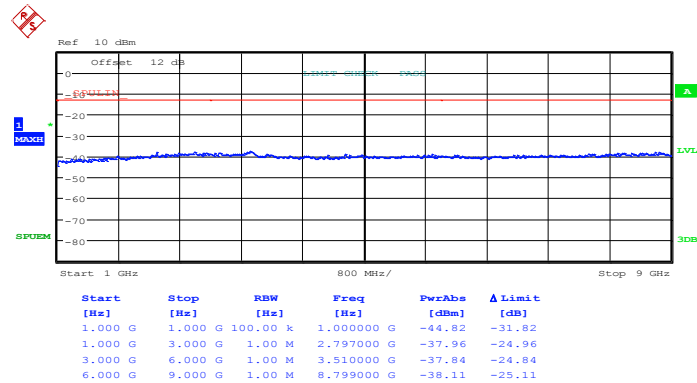


Date: 29.NOV.2012 17:00:38

## 16QAM (RB Size 1, RB Offset 7)



Date: 29.NOV.2012 17:05:41

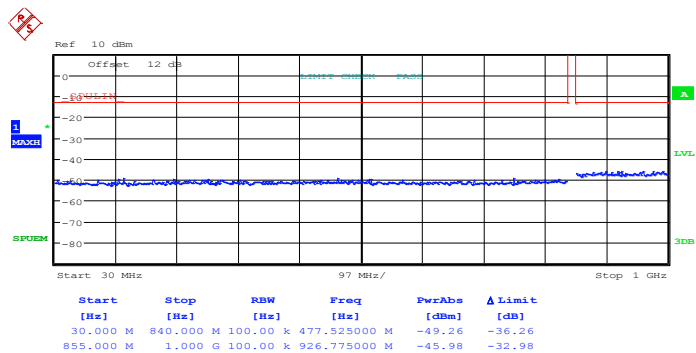


Date: 29.NOV.2012 17:01:20

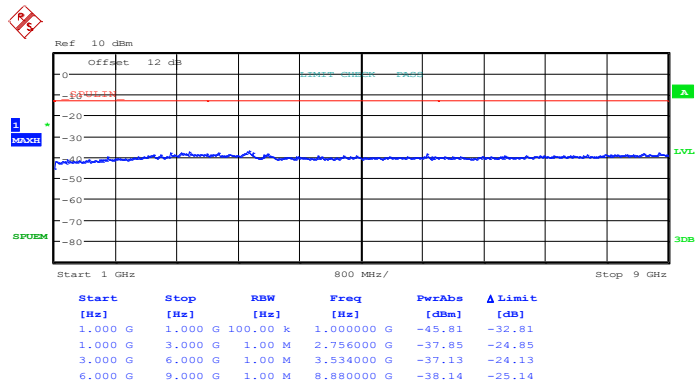


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 5 | Channel : | CH20635 (High) |
| Band Width : | 3MHz       |           |                |

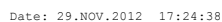
QPSK (RB Size 1, RB Offset 0)



Date: 29.NOV.2012 17:25:01



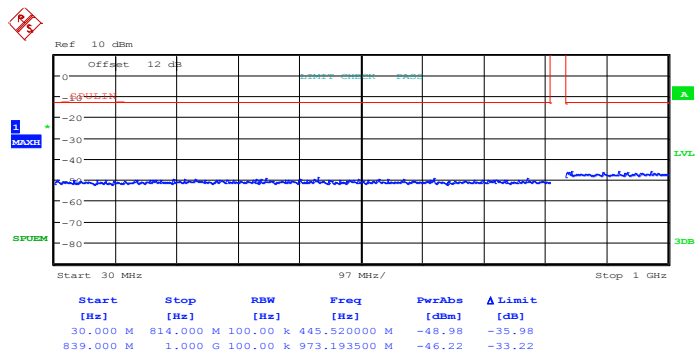
Date: 29.NOV.2012 17:23:47



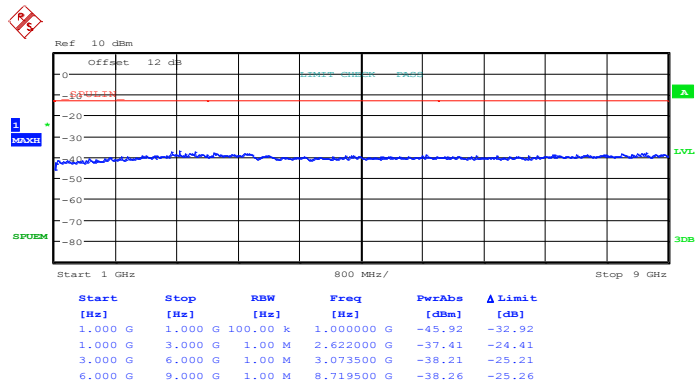


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 5 | Channel : | CH20425 (Low) |
| Band Width : | 5MHz       |           |               |

QPSK (RB Size 1, RB Offset 12)

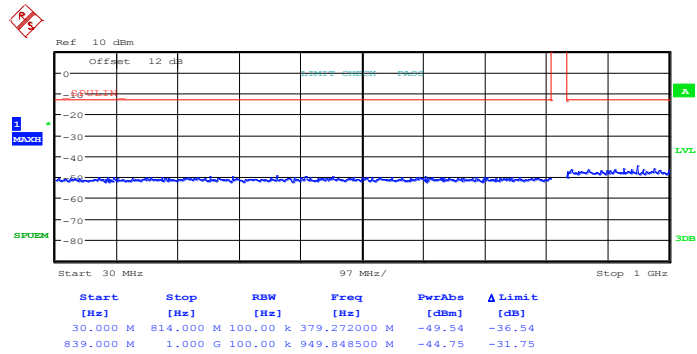


Date: 29.NOV.2012 16:45:12

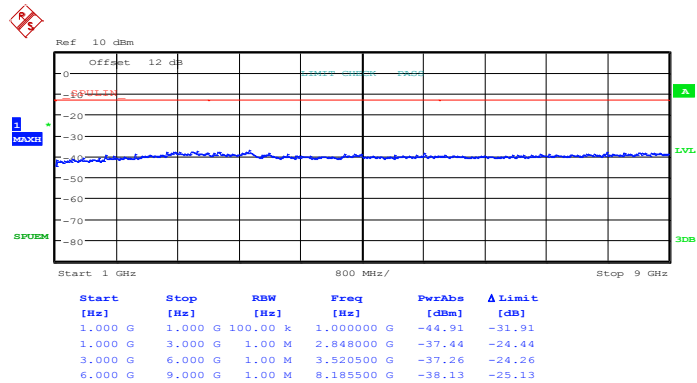


Date: 29.NOV.2012 16:47:18

## 16QAM (RB Size 1, RB Offset 24)



Date: 29.NOV.2012 16:46:01

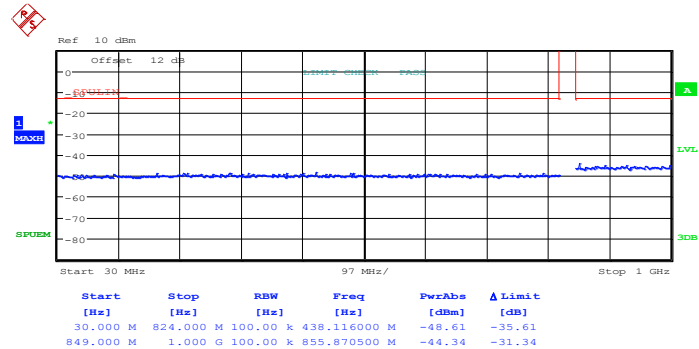


Date: 29.NOV.2012 16:46:46

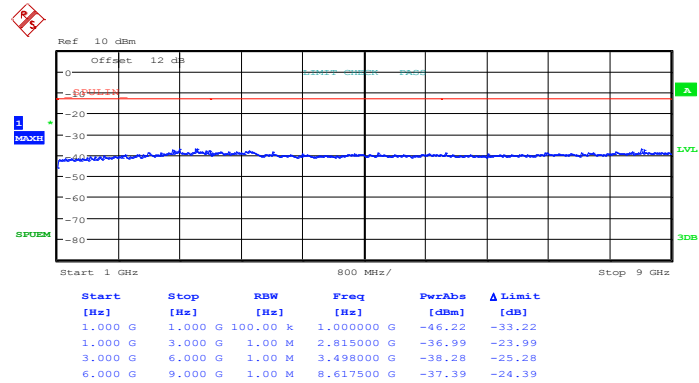


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 5 | Channel : | CH20525 (Middle) |
| Band Width : | 5MHz       |           |                  |

QPSK (RB Size 1, RB Offset 12)

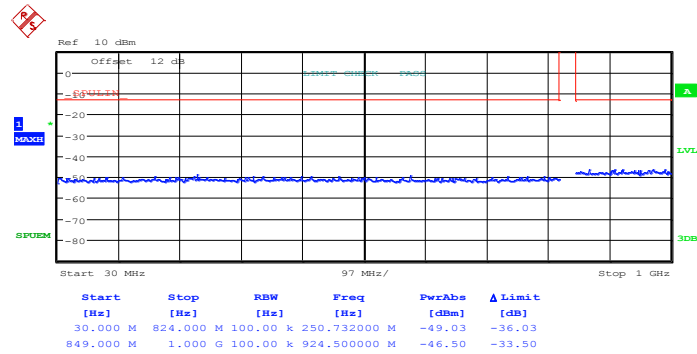


Date: 29.NOV.2012 16:57:23

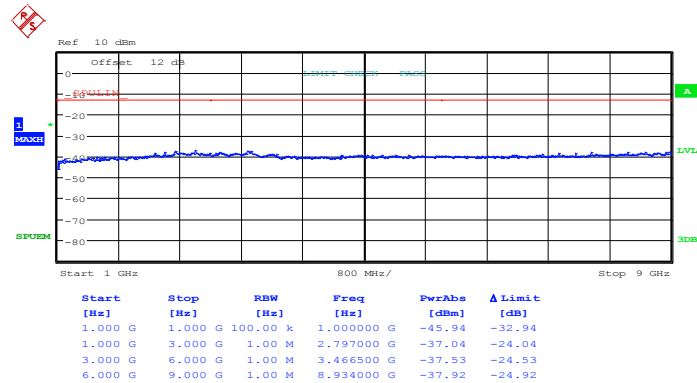


Date: 29.NOV.2012 16:58:55

## 16QAM (RB Size 1, RB Offset 24)



Date: 29.NOV.2012 16:57:54

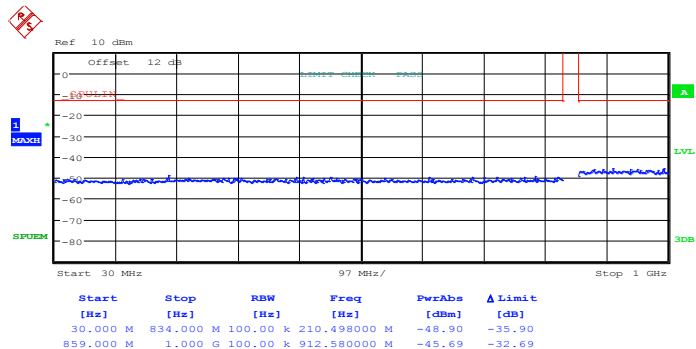


Date: 29.NOV.2012 16:58:27

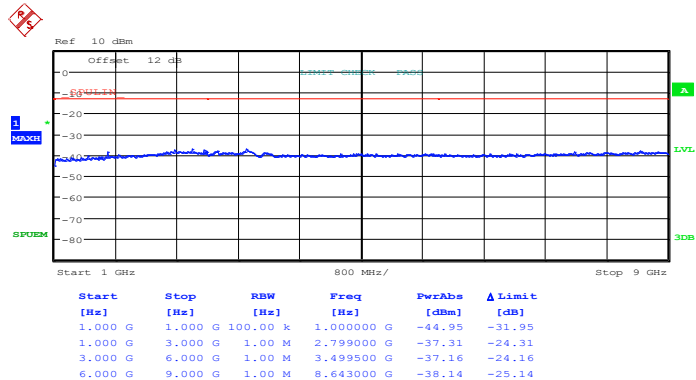


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 5 | Channel : | CH20625 (High) |
| Band Width : | 5MHz       |           |                |

QPSK (RB Size 1, RB Offset 0)

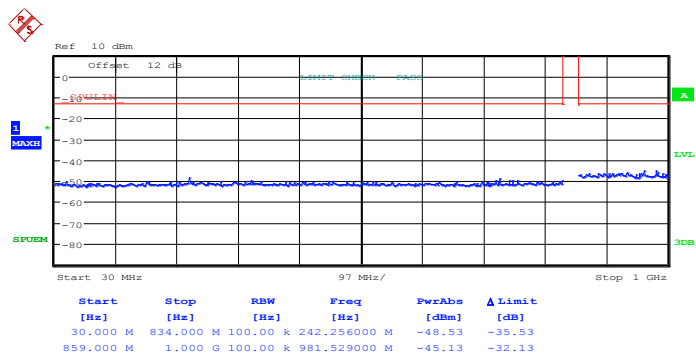


Date: 29.NOV.2012 16:50:43

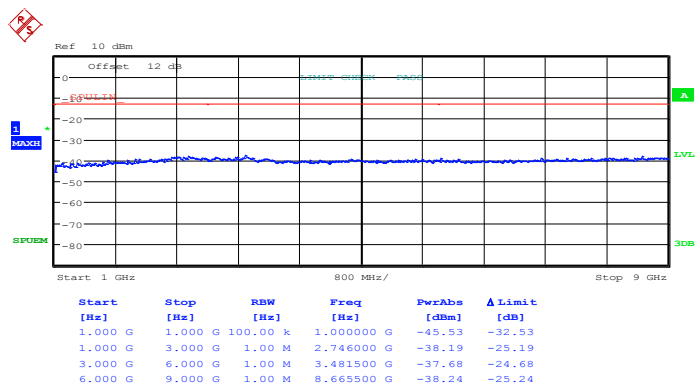


Date: 29.NOV.2012 16:49:37

## 16QAM (RB Size 1, RB Offset 12)



Date: 29.NOV.2012 16:50:19

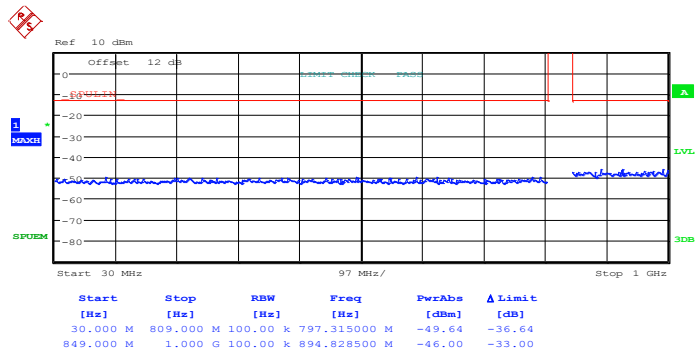


Date: 29.NOV.2012 16:49:56

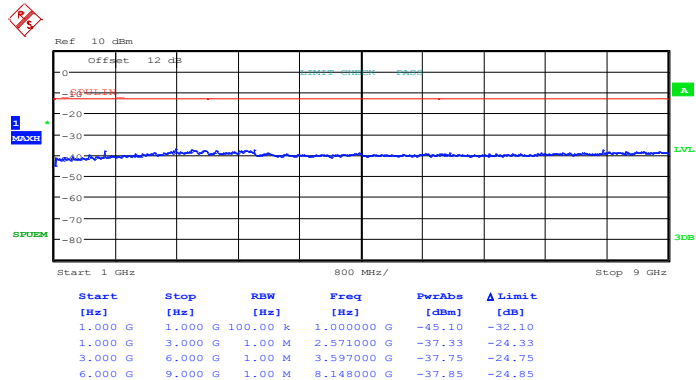


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 5 | Channel : | CH20450 (Low) |
| Band Width : | 10MHz      |           |               |

QPSK (RB Size 1, RB Offset 24)

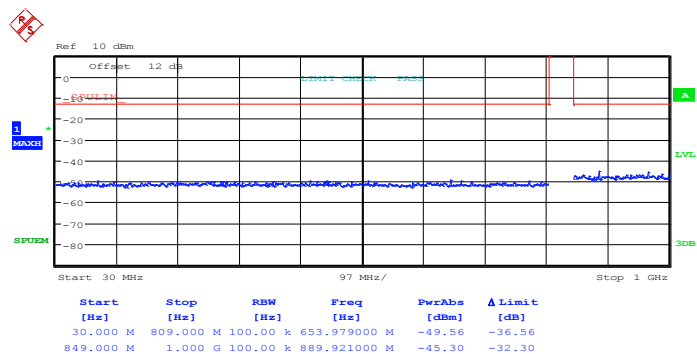


Date: 30.NOV.2012 09:47:49

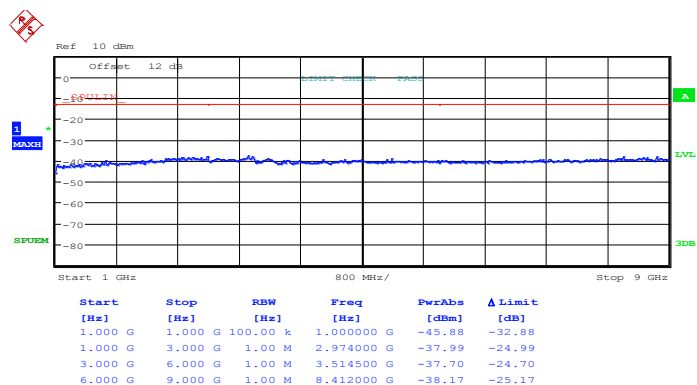


Date: 29.NOV.2012 16:40:49

## 16QAM (RB Size 1, RB Offset 24)



Date: 30.NOV.2012 09:47:32

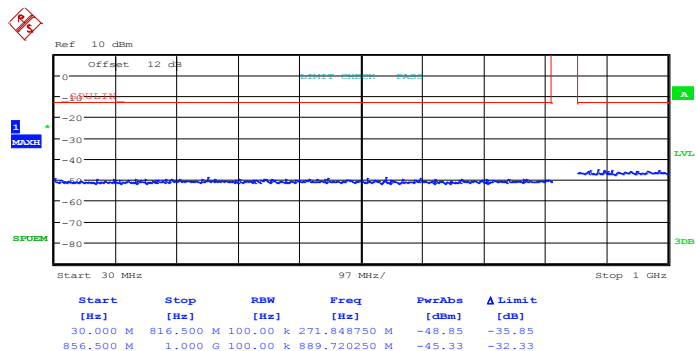


Date: 29.NOV.2012 16:41:05

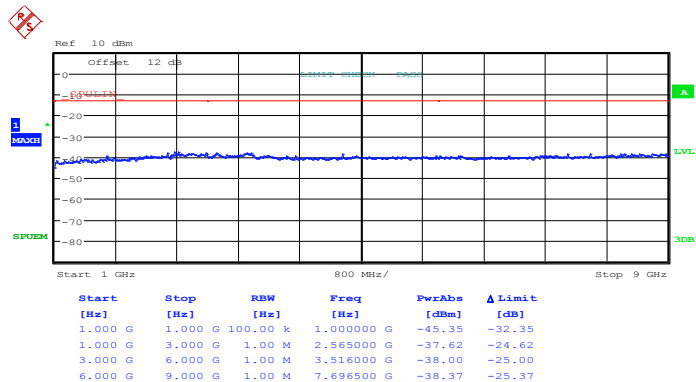


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 5 | Channel : | CH20525 (Middle) |
| Band Width : | 10MHz      |           |                  |

QPSK (RB Size 1, RB Offset 49)

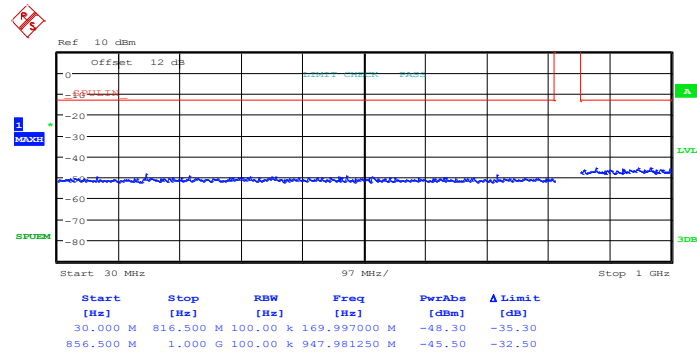


Date: 30.NOV.2012 09:44:25

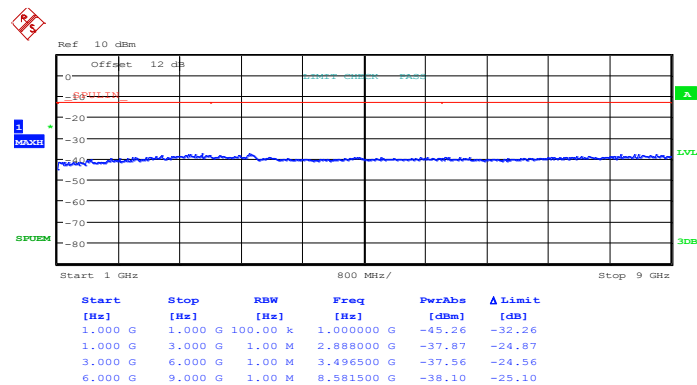


Date: 29.NOV.2012 16:38:35

## 16QAM (RB Size 1, RB Offset 24)



Date: 30.NOV.2012 09:44:50

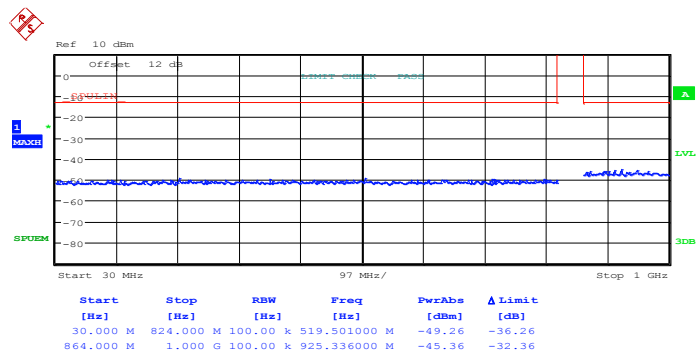


Date: 29.NOV.2012 16:38:12

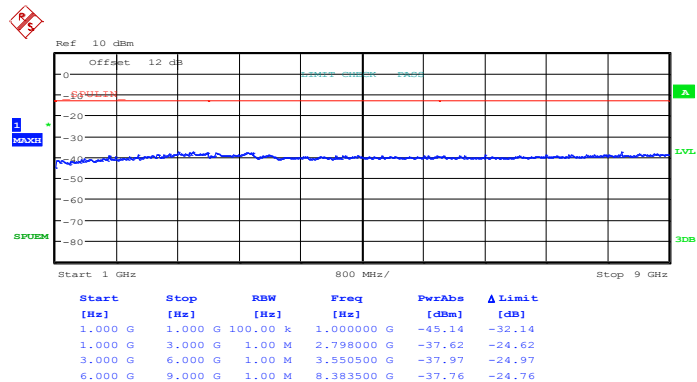


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 5 | Channel : | CH20600 (High) |
| Band Width : | 10MHz      |           |                |

## QPSK (RB Size 1, RB Offset 24)

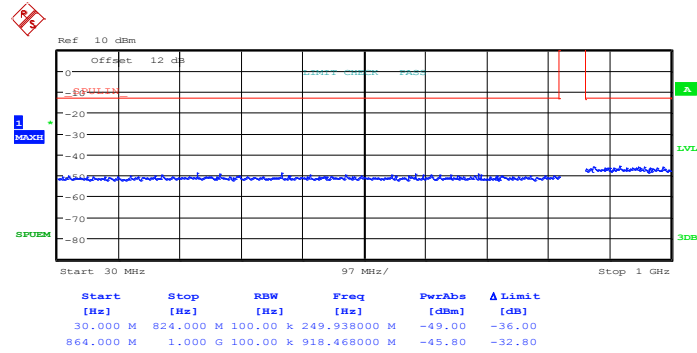


Date: 30.NOV.2012 09:48:46

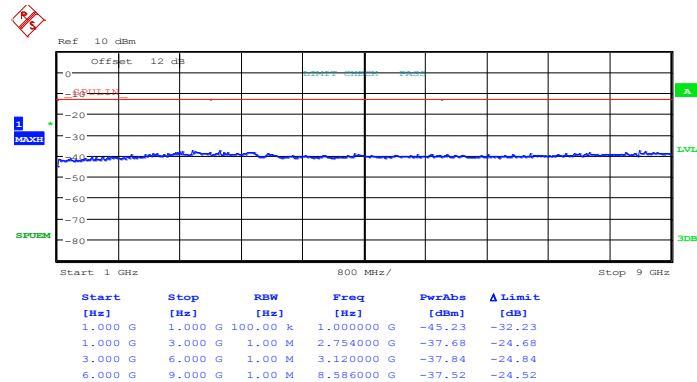


Date: 29.NOV.2012 16:31:47

## 16QAM (RB Size 1, RB Offset 49)



Date: 30.NOV.2012 09:49:08

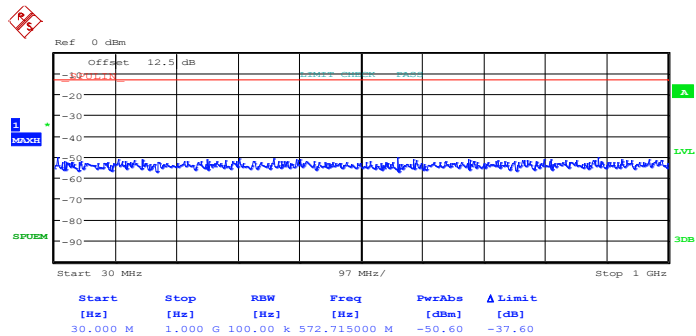


Date: 29.NOV.2012 16:32:44

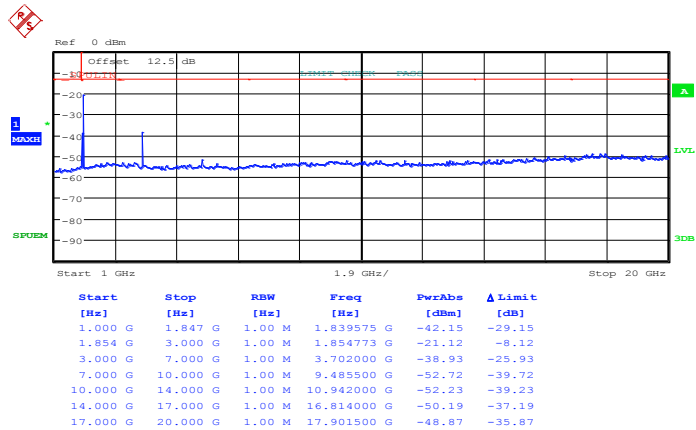


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 2 | Channel : | CH18607 (Low) |
| Band Width : | 1.4MHz     |           |               |

QPSK (RB Size 1, RB Offset 5)

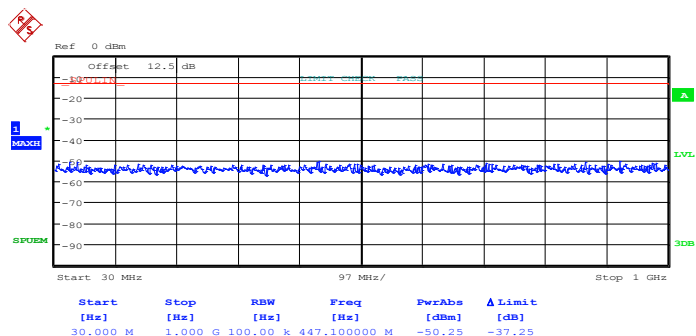


Date: 23.NOV.2012 15:28:42

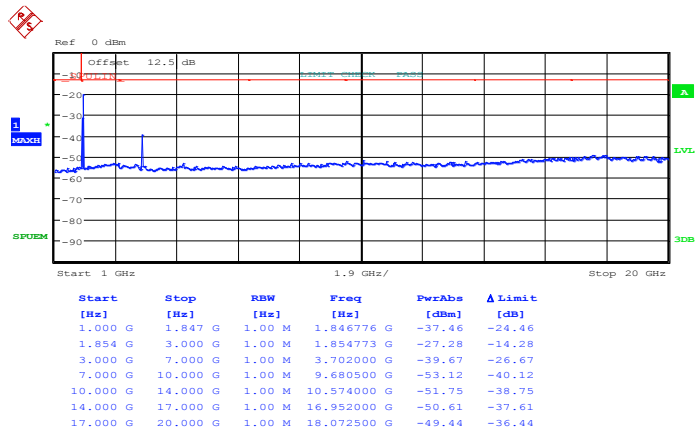


Date: 23.NOV.2012 15:20:10

## 16QAM (RB Size 3, RB Offset 2)



Date: 23.NOV.2012 15:33:34

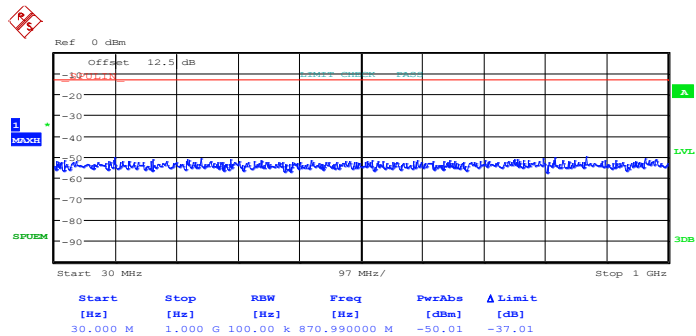


Date: 23.NOV.2012 15:21:40

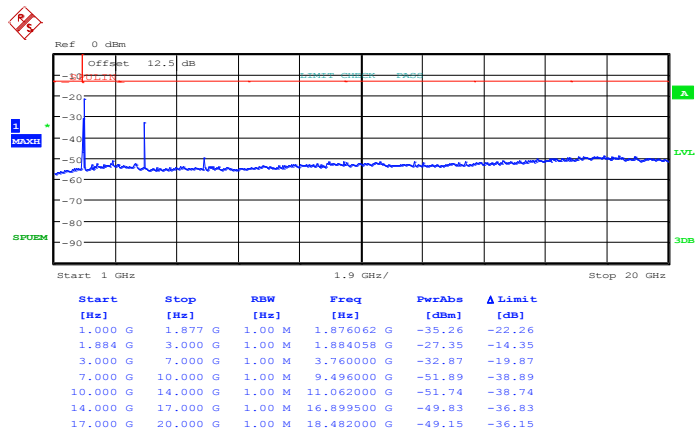


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 2 | Channel : | CH18900 (Middle) |
| Band Width : | 1.4MHz     |           |                  |

## QPSK (RB Size 3, RB Offset 1)

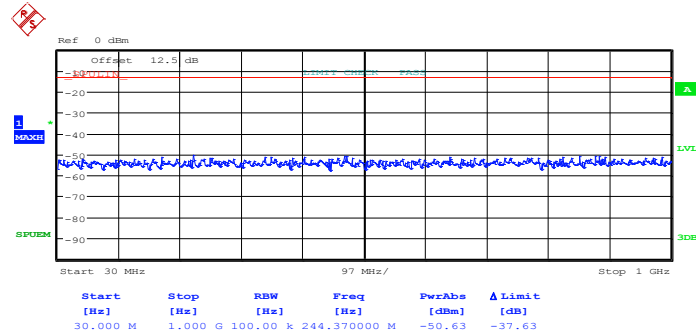


Date: 23.NOV.2012 14:55:48

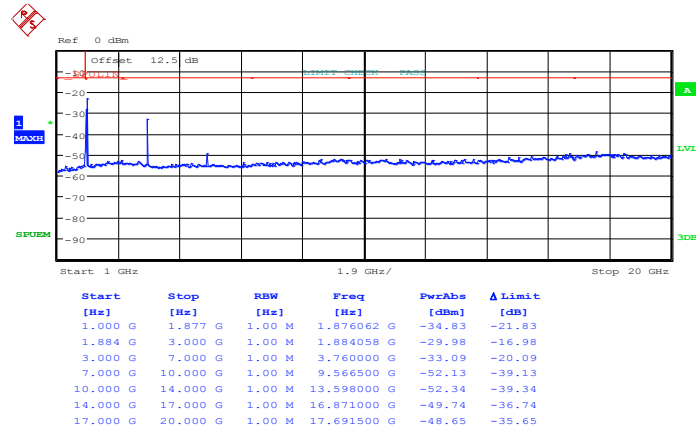


Date: 23.NOV.2012 15:24:03

## 16QAM (RB Size 1, RB Offset 2)



Date: 23.NOV.2012 14:56:07

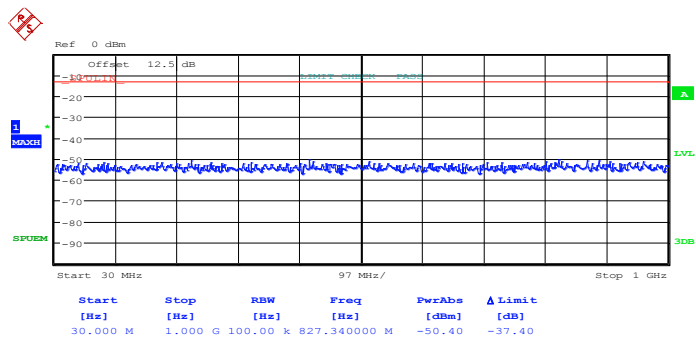


Date: 23.NOV.2012 15:24:25

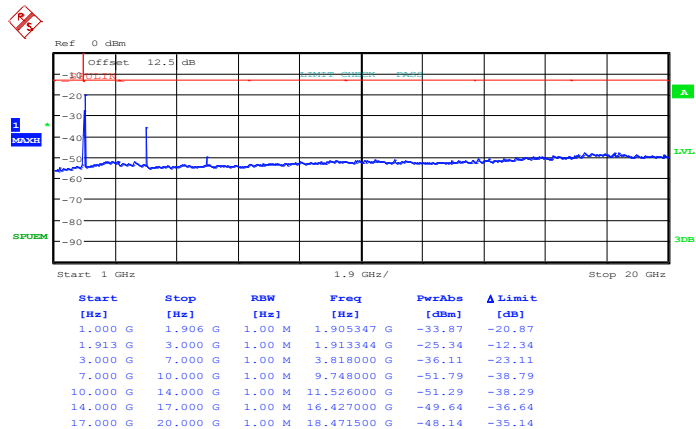


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 2 | Channel : | CH19193 (High) |
| Band Width : | 1.4MHz     |           |                |

## QPSK (RB Size 3, RB Offset 1)

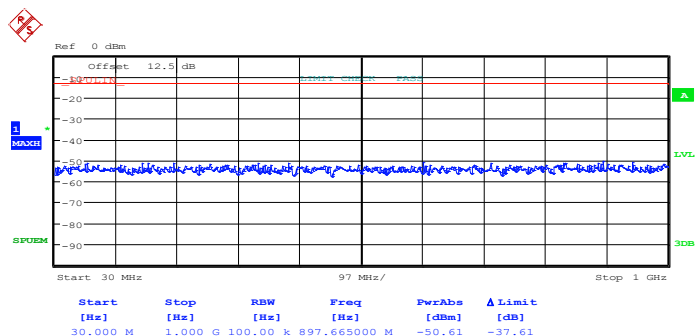


Date: 23.NOV.2012 14:56:34

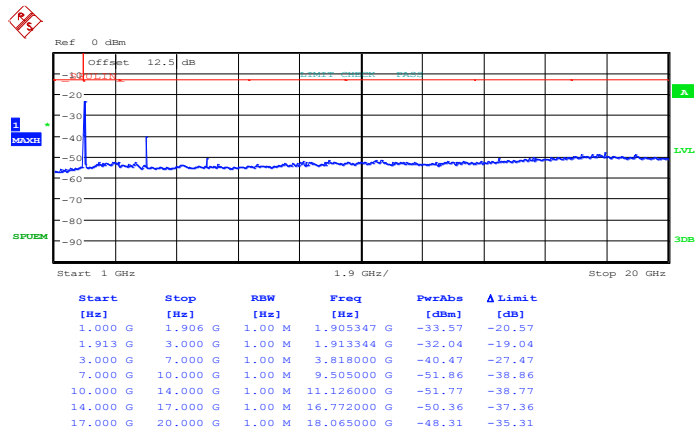


Date: 23.NOV.2012 15:25:52

## 16QAM (RB Size 1, RB Offset 0)



Date: 23.NOV.2012 14:56:49

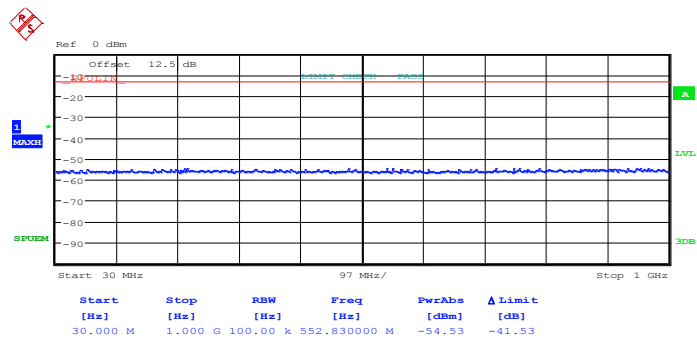


Date: 23.NOV.2012 15:26:47

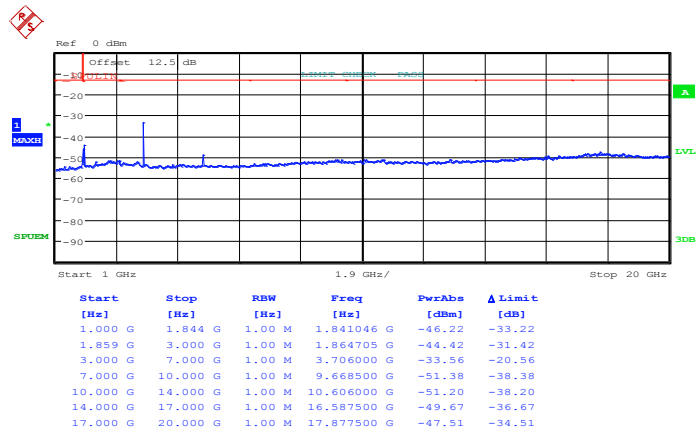


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 2 | Channel : | CH18615 (Low) |
| Band Width : | 3MHz       |           |               |

## QPSK (RB Size 1, RB Offset 14)

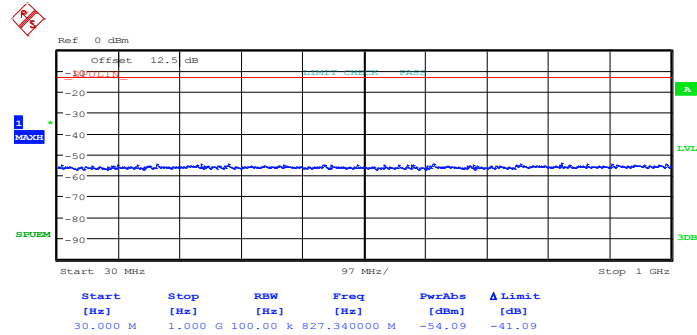


Date: 28.NOV.2012 14:54:59

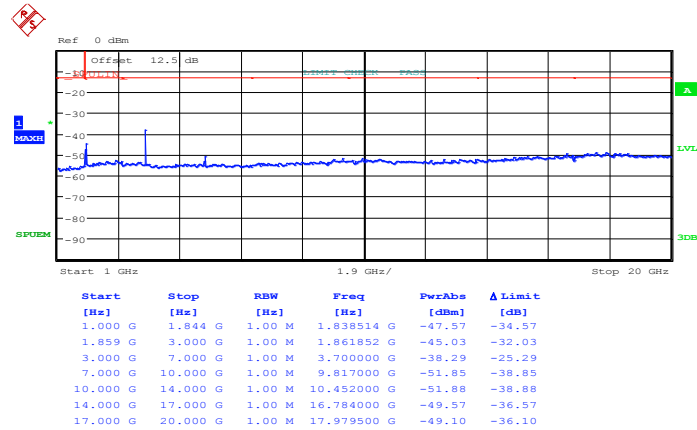


Date: 28.NOV.2012 15:01:53

## 16QAM (RB Size 1, RB Offset 0)



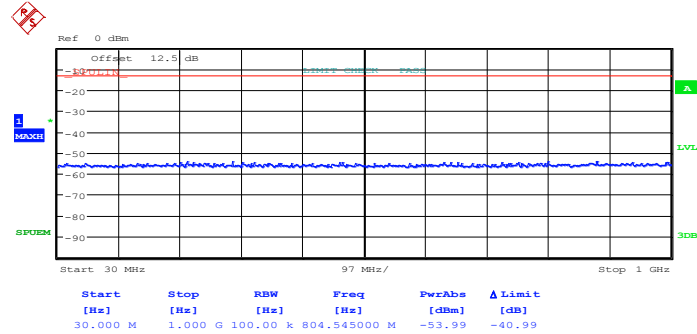
Date: 28.NOV.2012 14:55:19



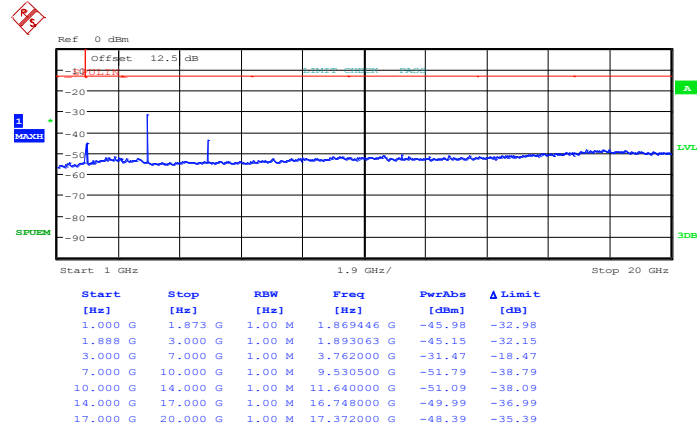
Date: 28.NOV.2012 15:02:36

|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 2 | Channel : | CH18900 (Middle) |
| Band Width : | 3MHz       |           |                  |

## QPSK (RB Size 1, RB Offset 14)

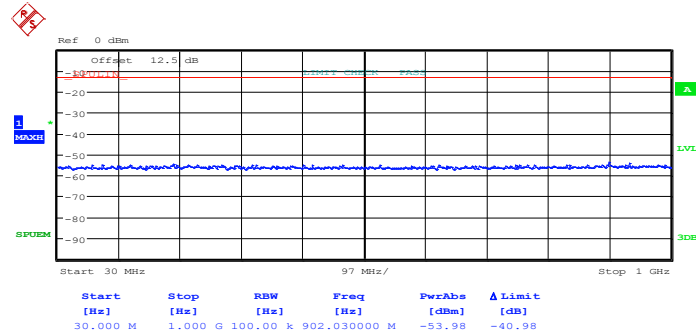


Date: 28.NOV.2012 14:55:59

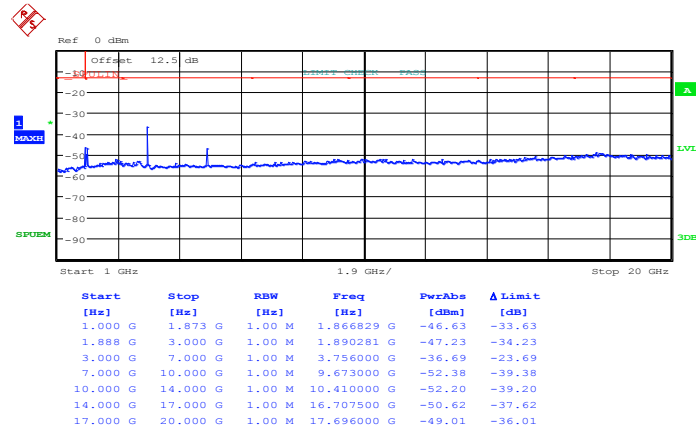


Date: 28.NOV.2012 15:04:38

## 16QAM (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 14:56:19

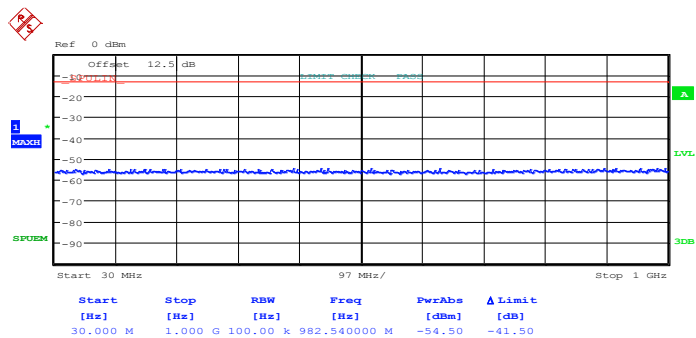


Date: 28.NOV.2012 15:05:27

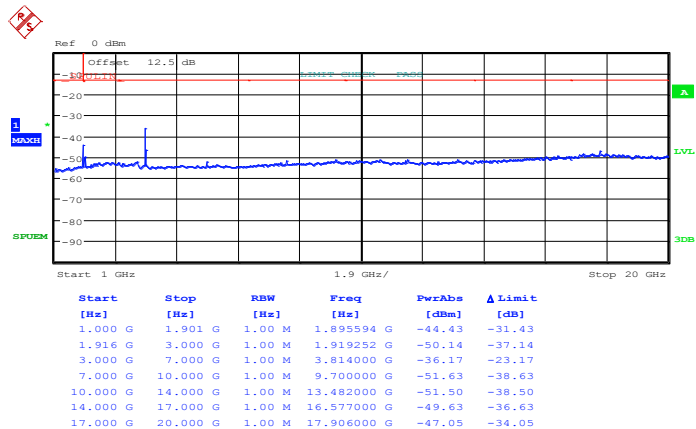


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 2 | Channel : | CH19185 (High) |
| Band Width : | 3MHz       |           |                |

## QPSK (RB Size 1, RB Offset 0)



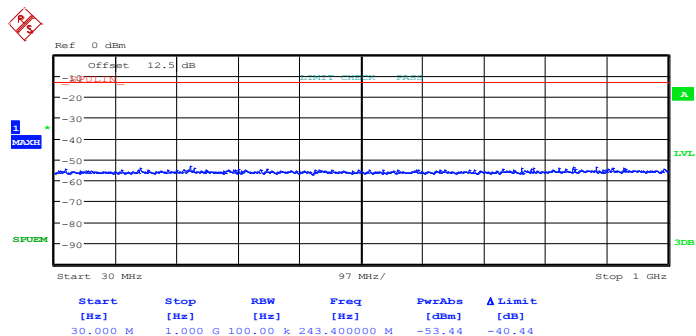
Date: 28.NOV.2012 14:56:42



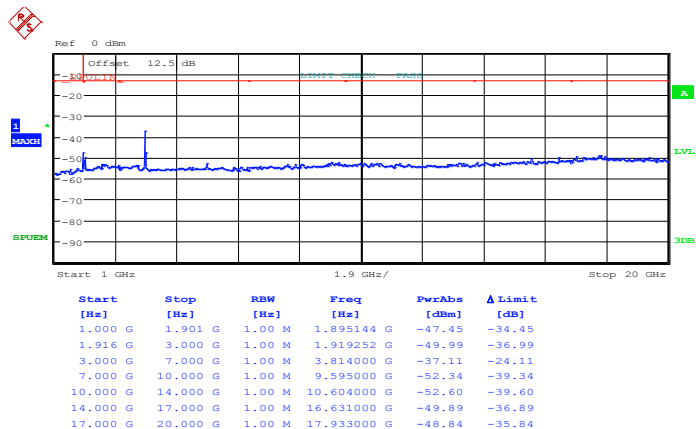
Date: 28.NOV.2012 15:06:50



16QAM (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 14:58:35

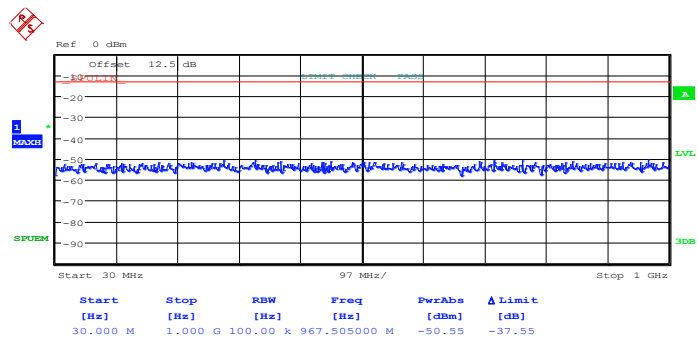


Date: 28.NOV.2012 15:07:03

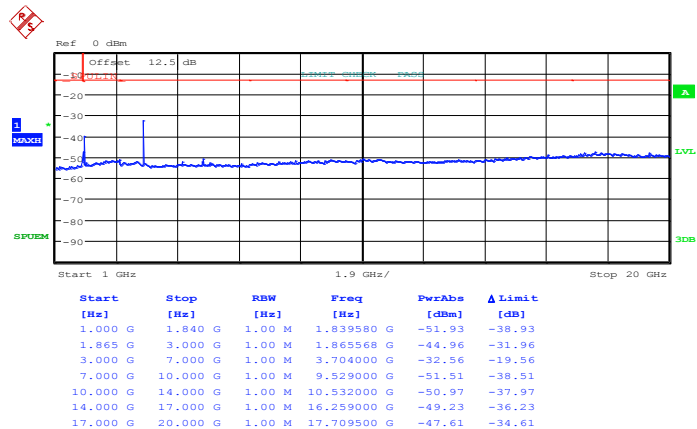


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 2 | Channel : | CH18625 (Low) |
| Band Width : | 5MHz       |           |               |

## QPSK (RB Size 1, RB Offset 12)



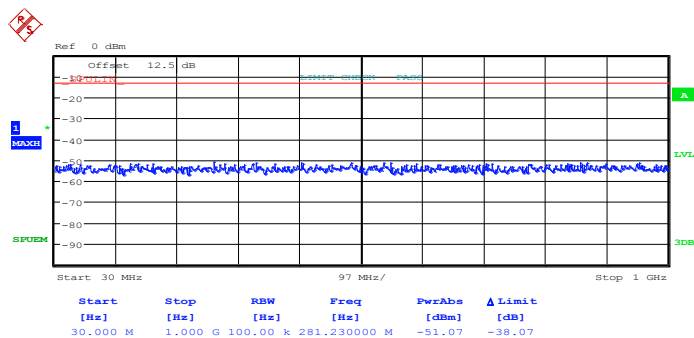
Date: 23.NOV.2012 14:49:38



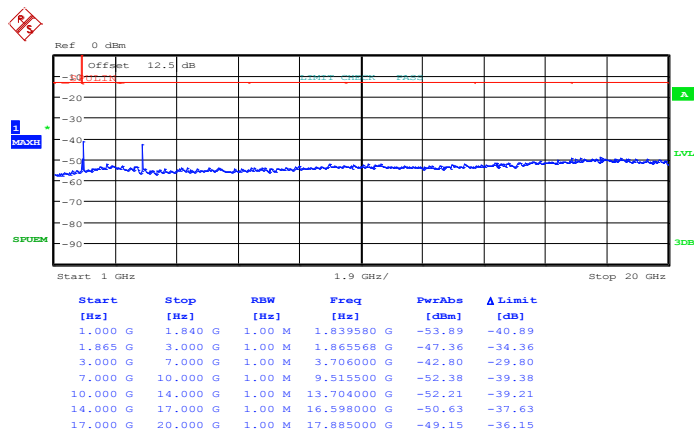
Date: 23.NOV.2012 14:39:17



16QAM (RB Size 1, RB Offset 12)



Date: 23.NOV.2012 14:49:49

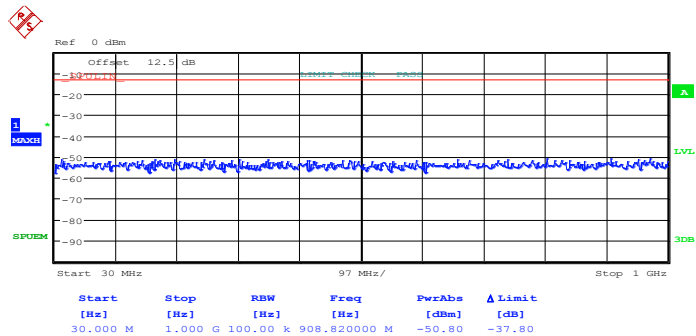


Date: 23.NOV.2012 14:39:33

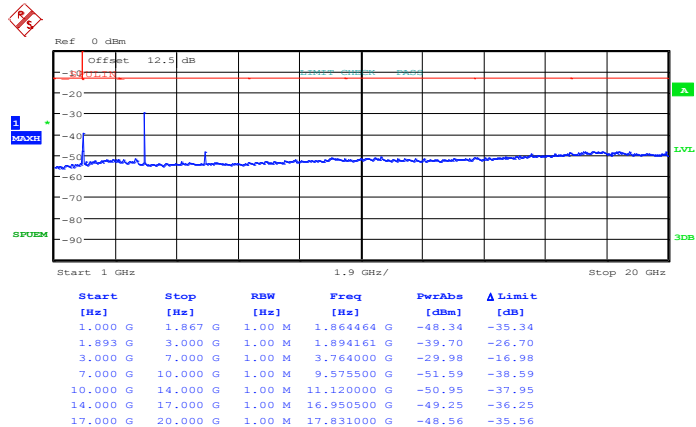


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 2 | Channel : | CH18900 (Middle) |
| Band Width : | 5MHz       |           |                  |

## QPSK (RB Size 1, RB Offset 24)

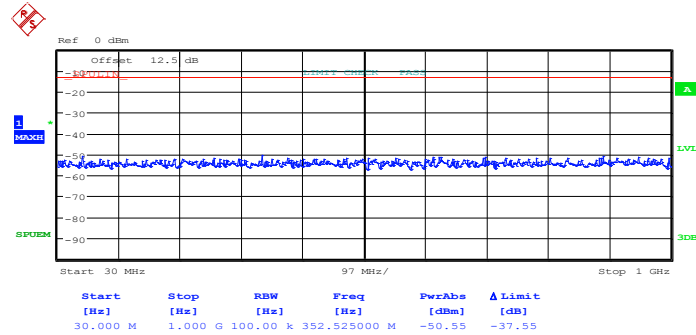


Date: 23.NOV.2012 14:48:39

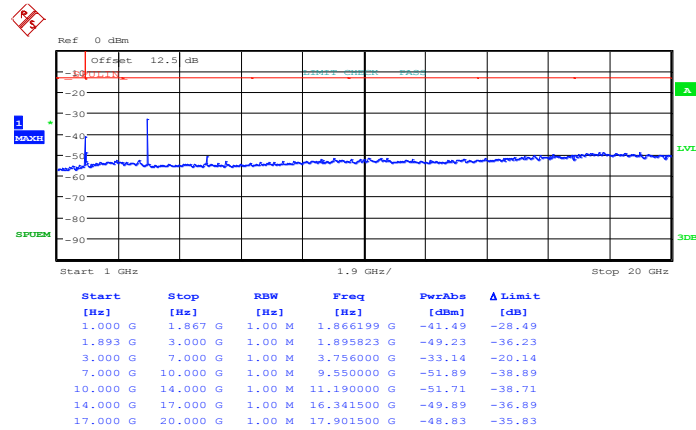


Date: 23.NOV.2012 14:41:04

## 16QAM (RB Size 1, RB Offset 0)



Date: 23.NOV.2012 14:48:53

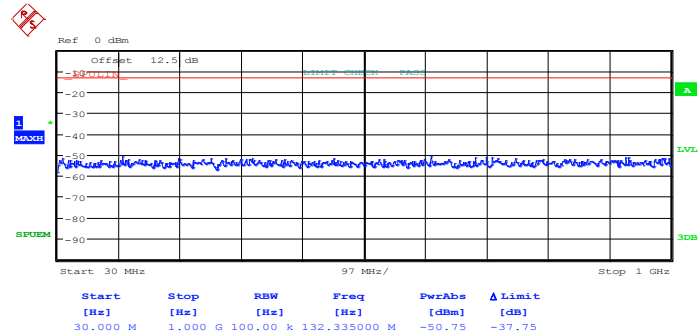


Date: 23.NOV.2012 14:41:21

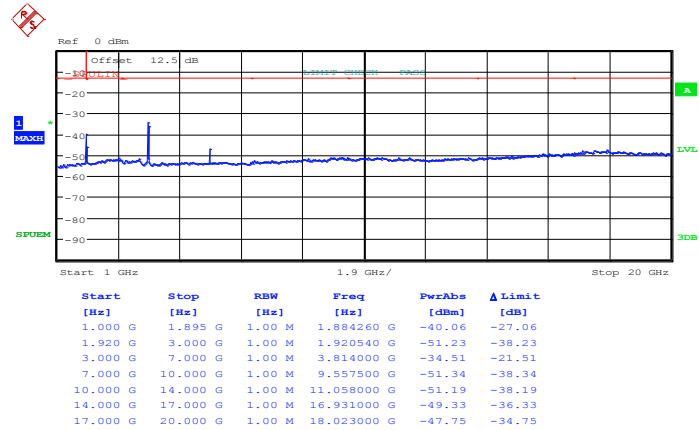


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 2 | Channel : | CH19175 (High) |
| Band Width : | 5MHz       |           |                |

## QPSK (RB Size 1, RB Offset 12)



Date: 23.NOV.2012 14:47:33



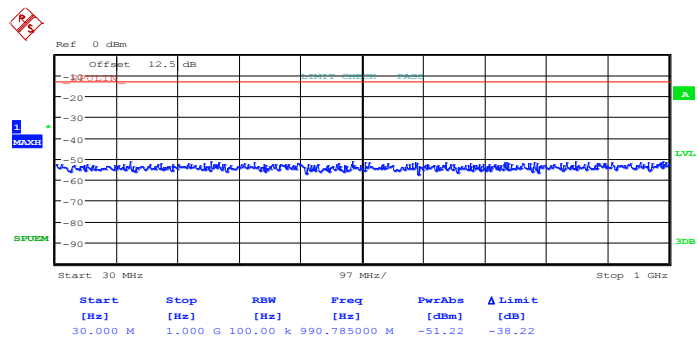
Date: 23.NOV.2012 14:43:55



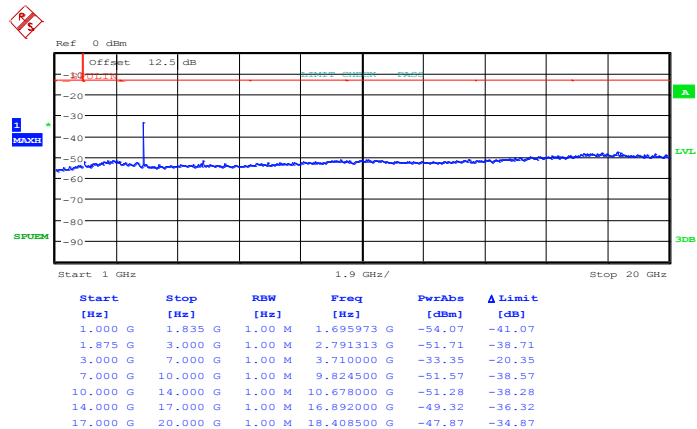


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 2 | Channel : | CH18650 (Low) |
| Band Width : | 10MHz      |           |               |

## QPSK (RB Size 1, RB Offset 24)

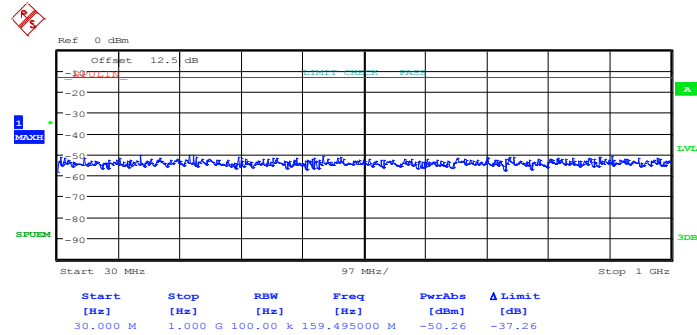


Date: 23.NOV.2012 14:21:51

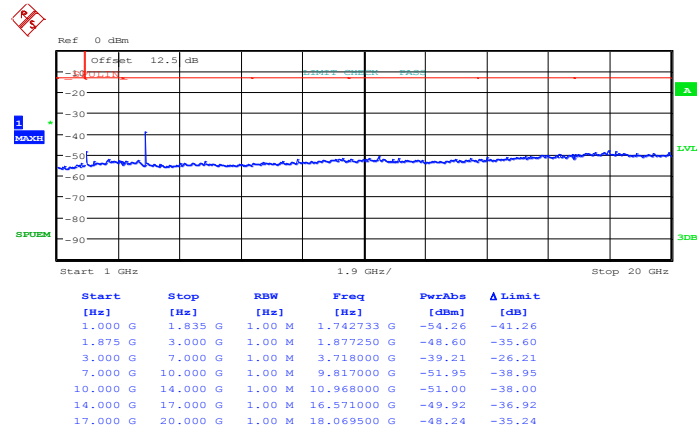


Date: 23.NOV.2012 14:26:57

## 16QAM (RB Size 1, RB Offset 49)



Date: 23.NOV.2012 14:22:13

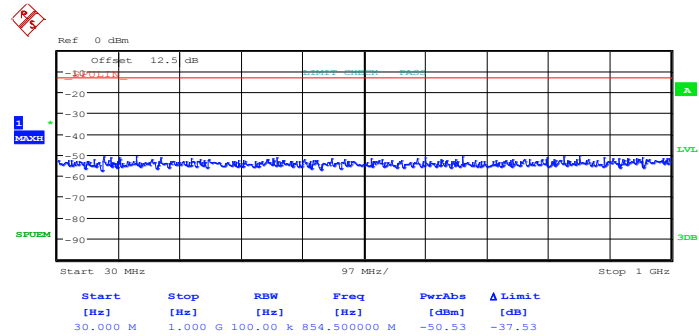


Date: 23.NOV.2012 14:27:18

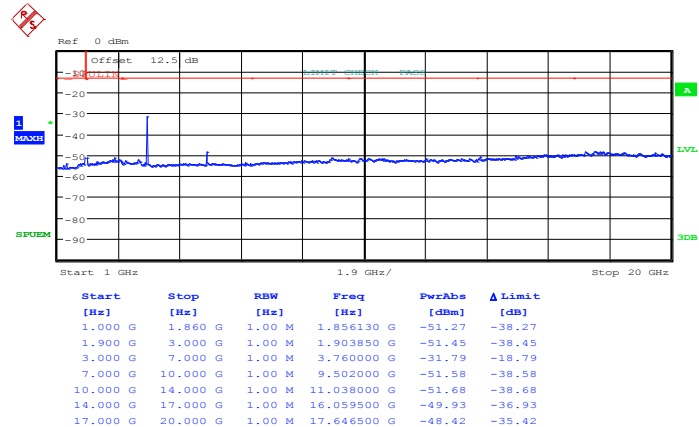


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 2 | Channel : | CH18900 (Middle) |
| Band Width : | 10MHz      |           |                  |

## QPSK (RB Size 1, RB Offset 24)

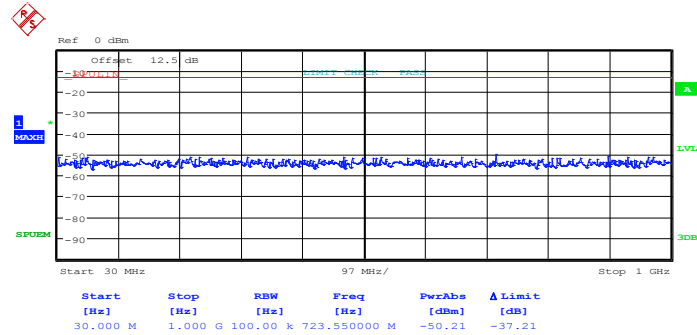


Date: 23.NOV.2012 14:22:56

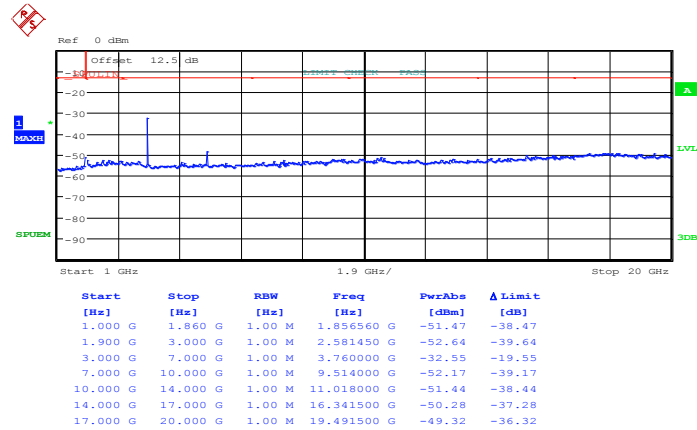


Date: 23.NOV.2012 14:29:24

## 16QAM (RB Size 1, RB Offset 24)



Date: 23.NOV.2012 14:23:05

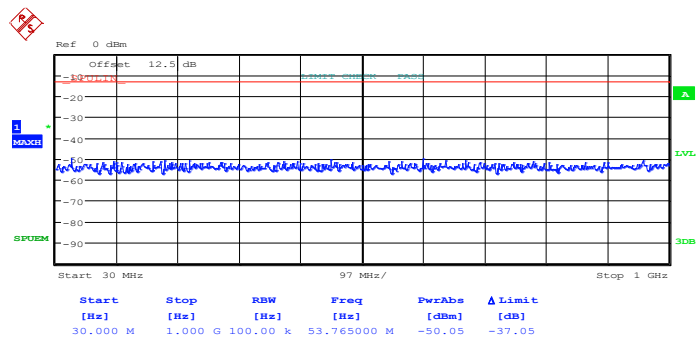


Date: 23.NOV.2012 14:29:40

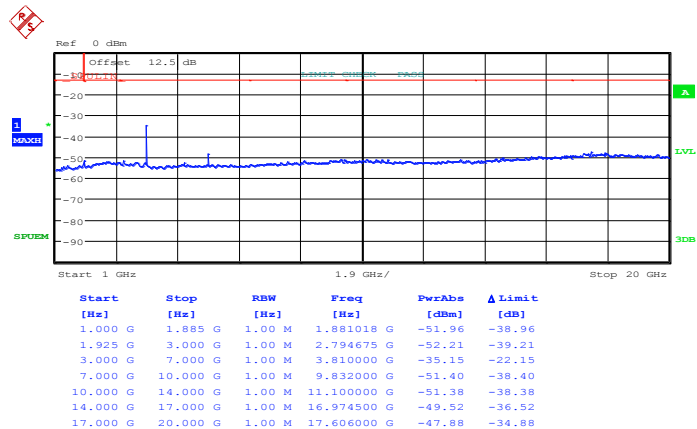


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 2 | Channel : | CH19150 (High) |
| Band Width : | 10MHz      |           |                |

## QPSK (RB Size 1, RB Offset 24)

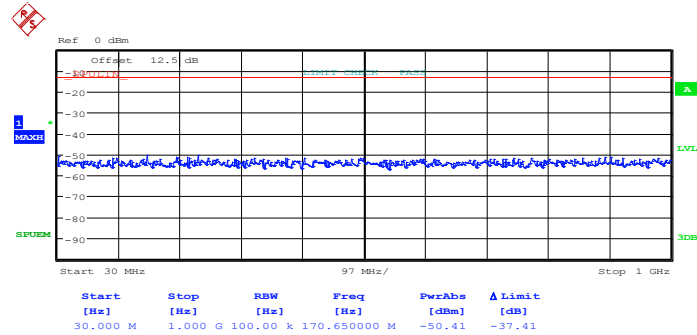


Date: 23.NOV.2012 14:23:37

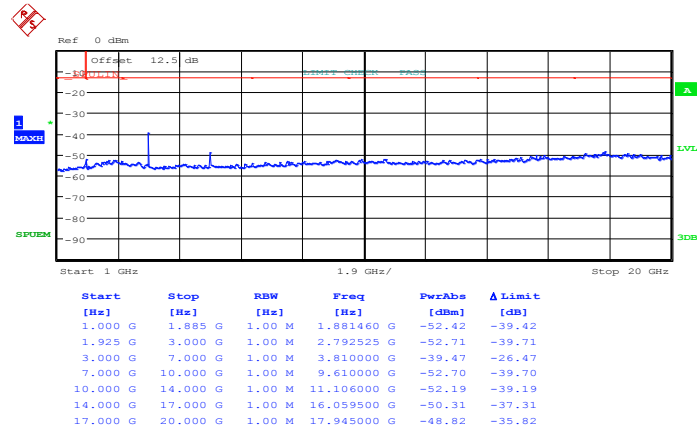


Date: 23.NOV.2012 14:32:58

## 16QAM (RB Size 1, RB Offset 24)



Date: 23.NOV.2012 14:23:47

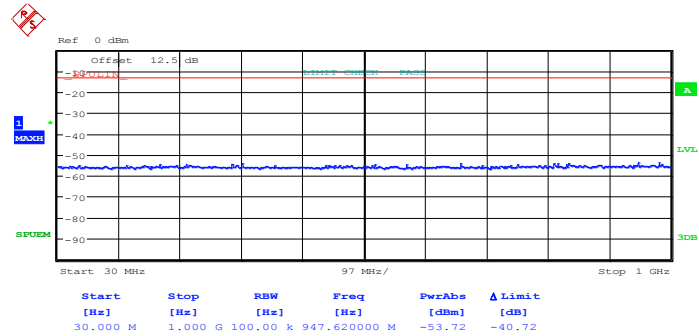


Date: 23.NOV.2012 14:33:10

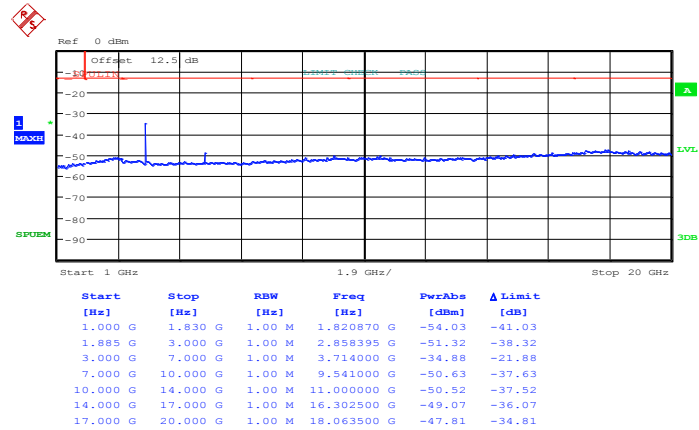


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 2 | Channel : | CH18675 (Low) |
| Band Width : | 15MHz      |           |               |

## QPSK (RB Size 1, RB Offset 37)

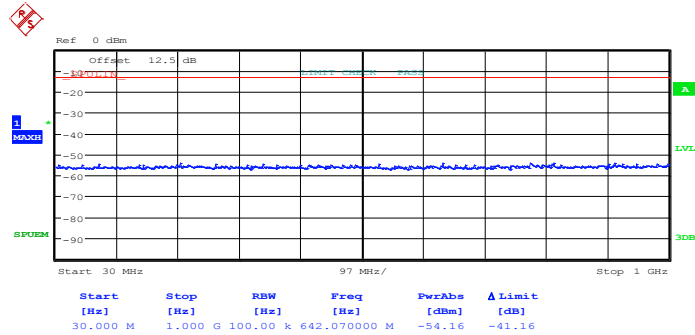


Date: 28.NOV.2012 14:51:50

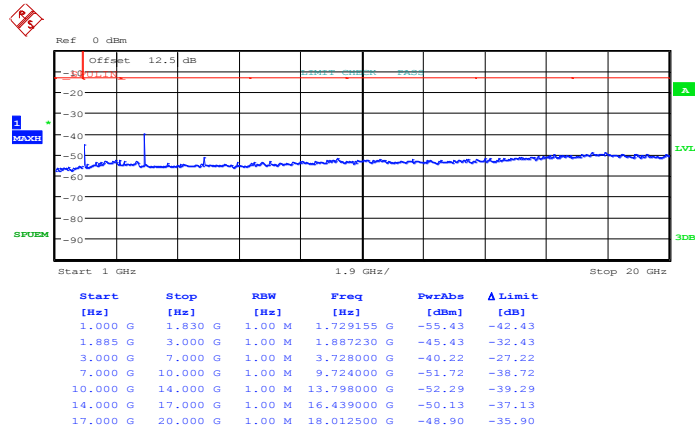


Date: 28.NOV.2012 14:40:21

## 16QAM (RB Size 1, RB Offset 74)



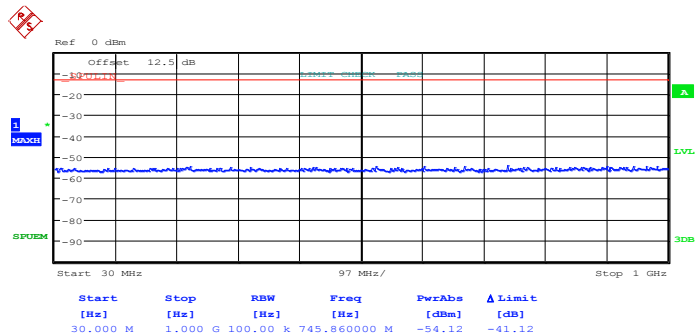
Date: 28.NOV.2012 14:52:14



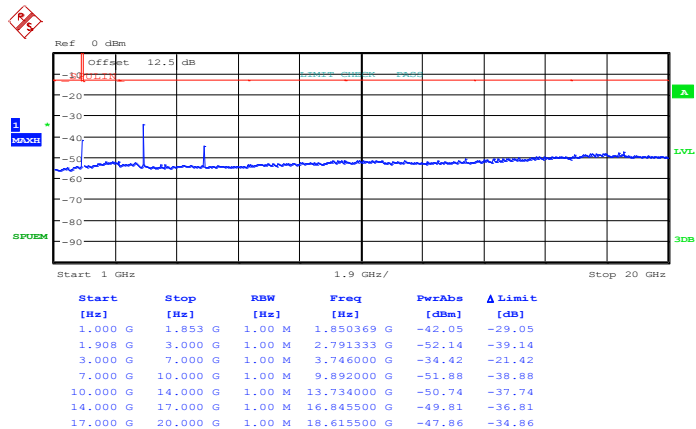
Date: 28.NOV.2012 14:41:36

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

## QPSK (RB Size 1, RB Offset 0)



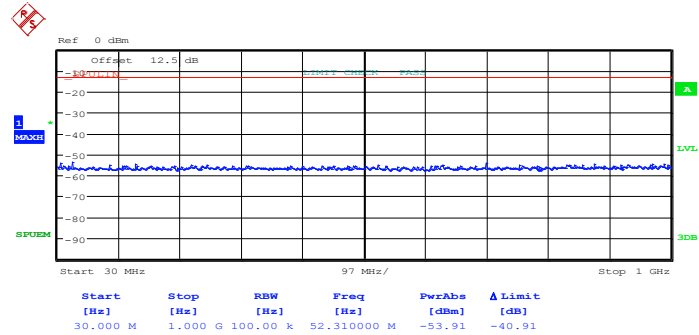
Date: 28.NOV.2012 14:51:07



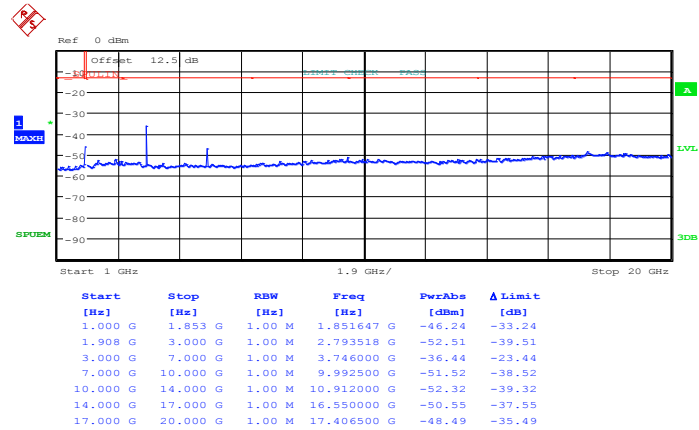
Date: 28.NOV.2012 14:43:12



16QAM (RB Size 1, RB Offset 37)



Date: 28.NOV.2012 14:51:16

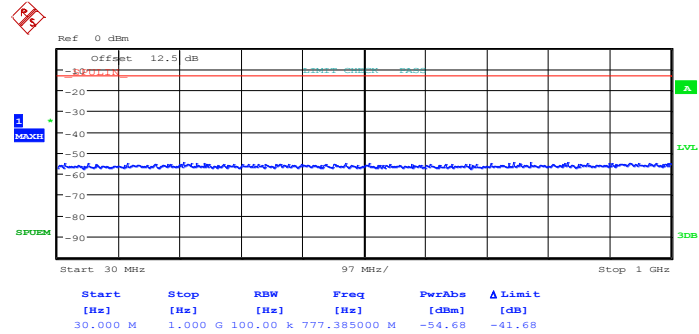


Date: 28.NOV.2012 14:43:27

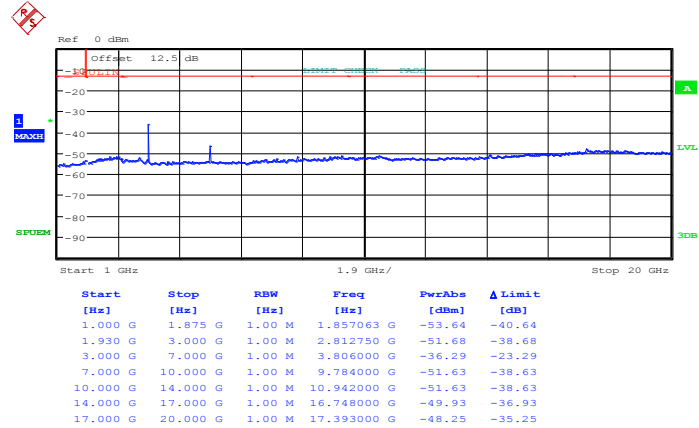


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 2 | Channel : | CH19125 (High) |
| Band Width : | 15MHz      |           |                |

## QPSK (RB Size 1, RB Offset 37)



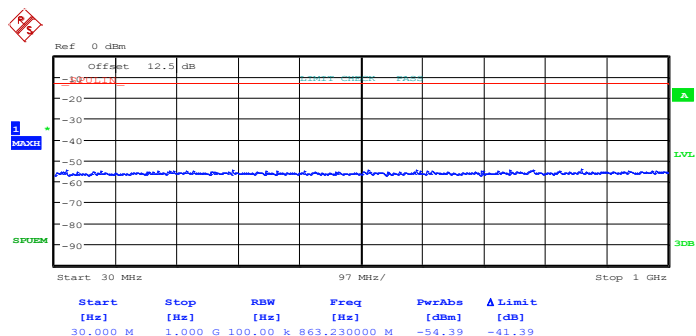
Date: 28.NOV.2012 14:50:51



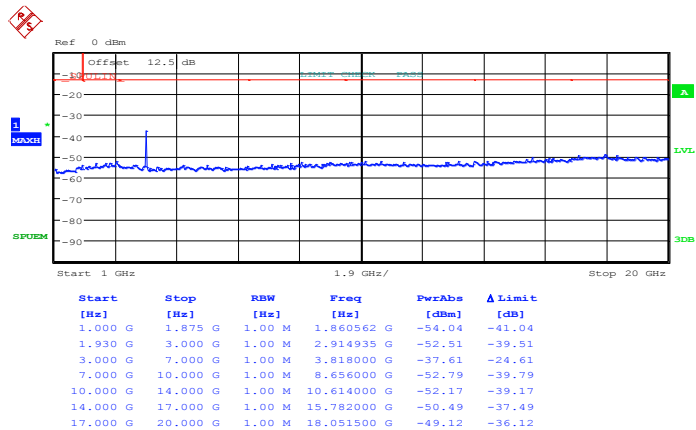
Date: 28.NOV.2012 14:45:12



16QAM (RB Size 1, RB Offset 74)



Date: 28.NOV.2012 14:50:39

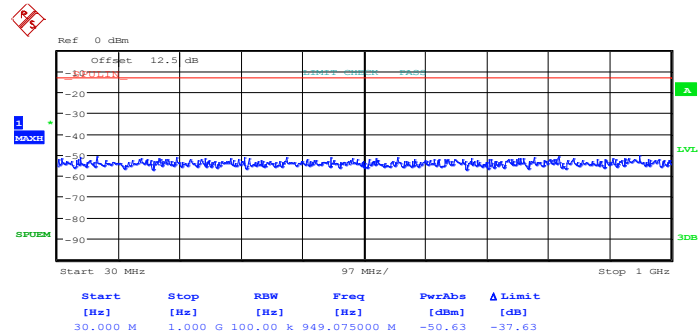


Date: 28.NOV.2012 14:45:52

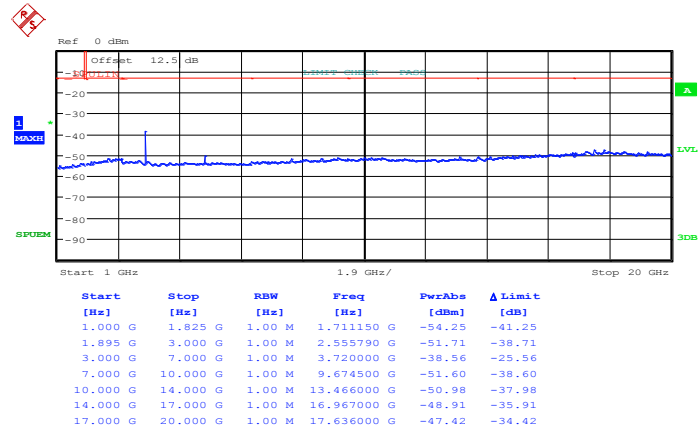


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 2 | Channel : | CH18700 (Low) |
| Band Width : | 20MHz      |           |               |

## QPSK (RB Size 1, RB Offset 49)

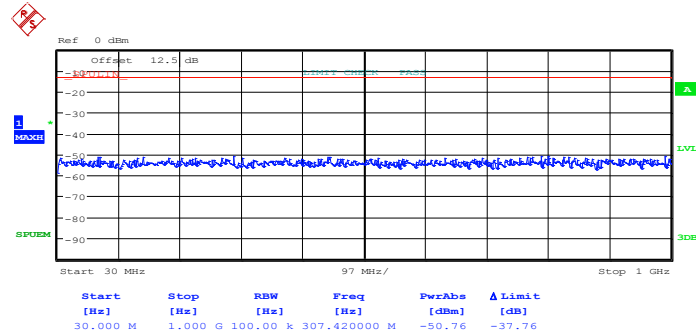


Date: 23.NOV.2012 14:18:36

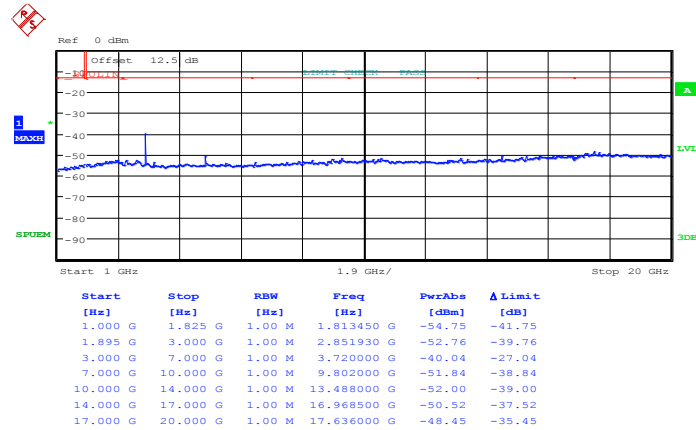


Date: 23.NOV.2012 14:11:16

## 16QAM (RB Size 1, RB Offset 49)



Date: 23.NOV.2012 14:19:46

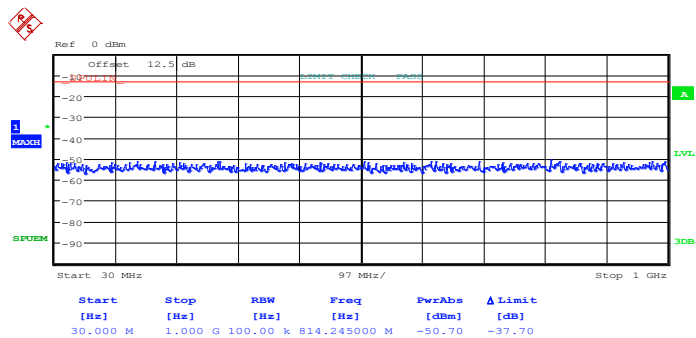


Date: 23.NOV.2012 14:11:48

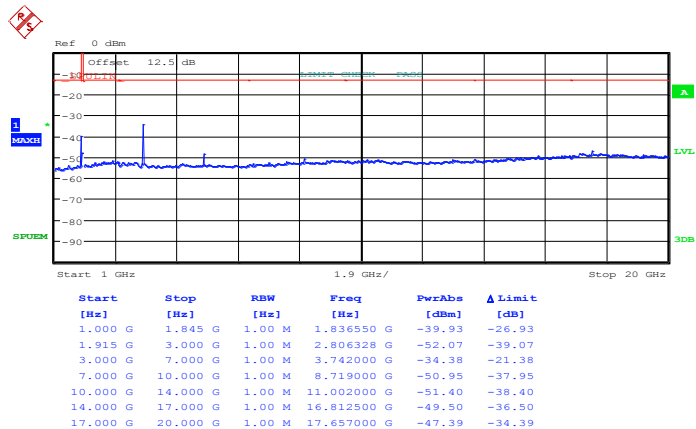


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 2 | Channel : | CH18900 (Middle) |
| Band Width : | 20MHz      |           |                  |

## QPSK (RB Size 1, RB Offset 0)



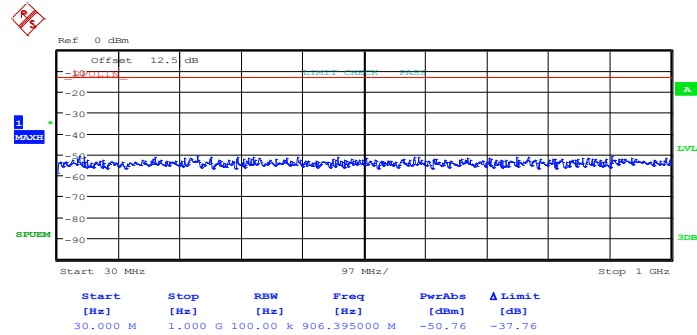
Date: 23.NOV.2012 14:17:31



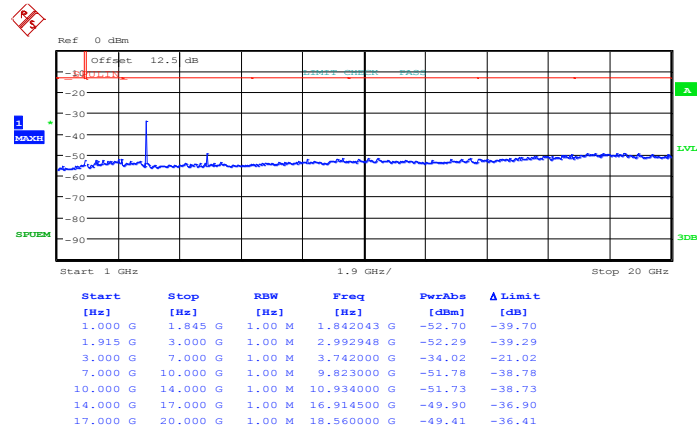
Date: 23.NOV.2012 14:13:55



16QAM (RB Size 1, RB Offset 0)



Date: 23.NOV.2012 14:17:42

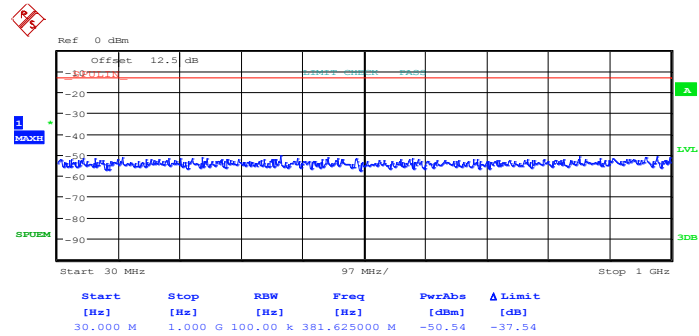


Date: 23.NOV.2012 14:14:08

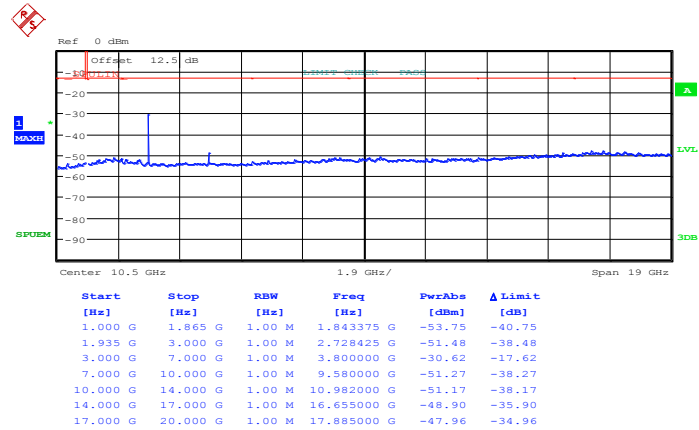


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 2 | Channel : | CH19100 (High) |
| Band Width : | 20MHz      |           |                |

## QPSK (RB Size 1, RB Offset 49)

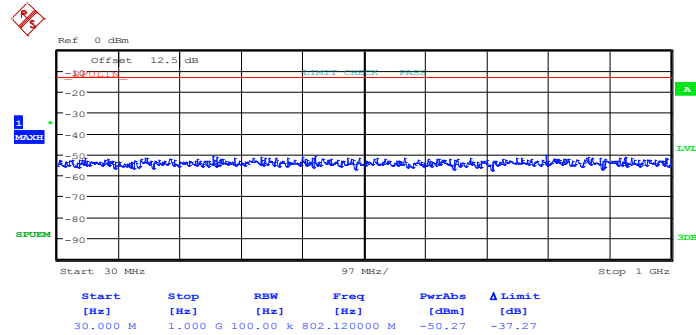


Date: 23.NOV.2012 14:17:05

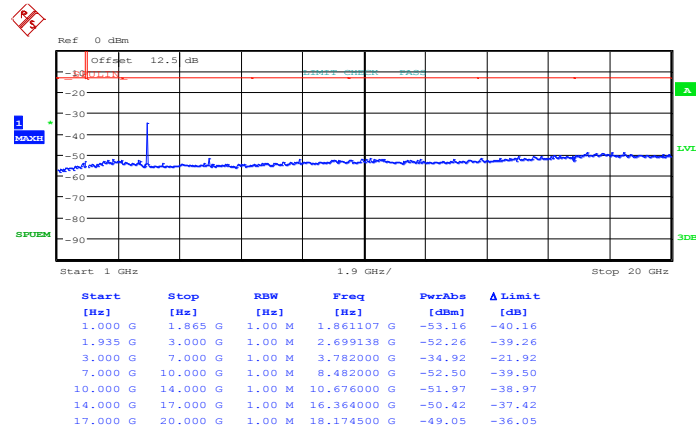


Date: 23.NOV.2012 14:15:36

## 16QAM (RB Size 1, RB Offset 0)



Date: 23.NOV.2012 14:16:50

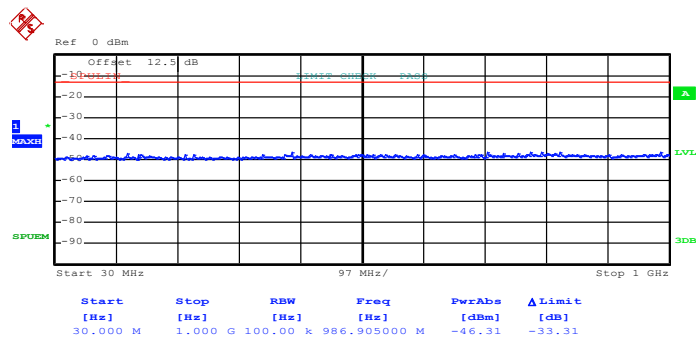


Date: 23.NOV.2012 14:15:59

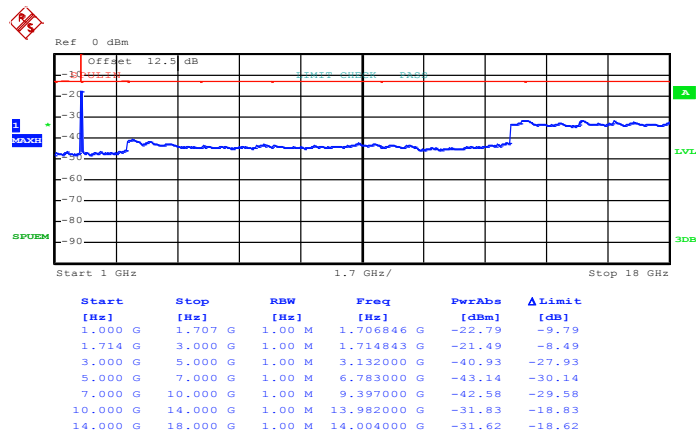


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 4 | Channel : | CH19957 (Low) |
| Band Width : | 1.4MHz     |           |               |

## QPSK (RB Size 3, RB Offset 1)

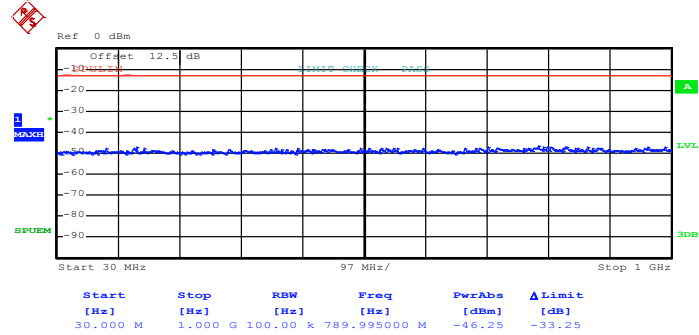


Date: 22.NOV.2012 16:40:14

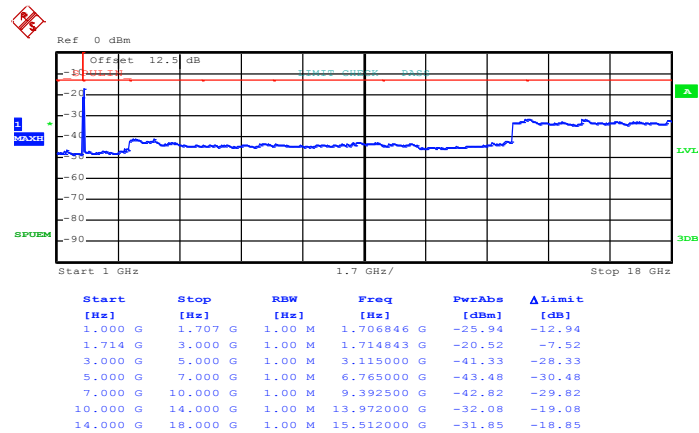


Date: 22.NOV.2012 18:52:42

### 16QAM (RB Size 3, RB Offset 0)



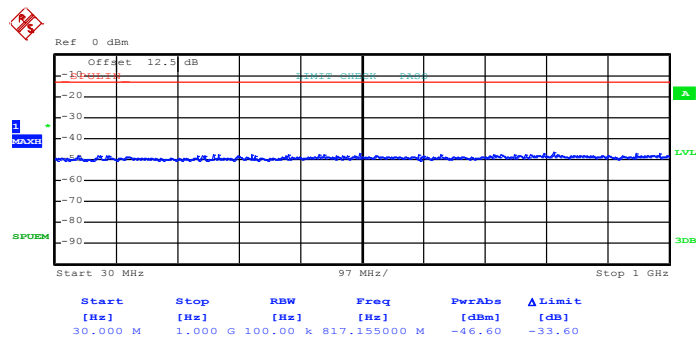
Date: 22.NOV.2012 16:40:28



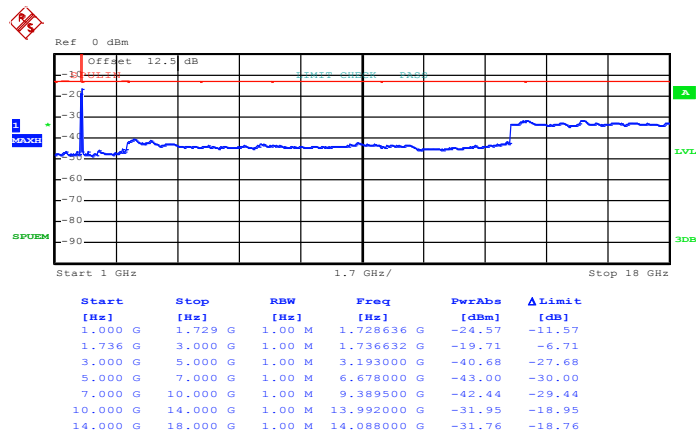
Date: 22.NOV.2012 18:53:09

|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 4 | Channel : | CH20175 (Middle) |
| Band Width : | 1.4MHz     |           |                  |

## QPSK (RB Size 3, RB Offset 1)

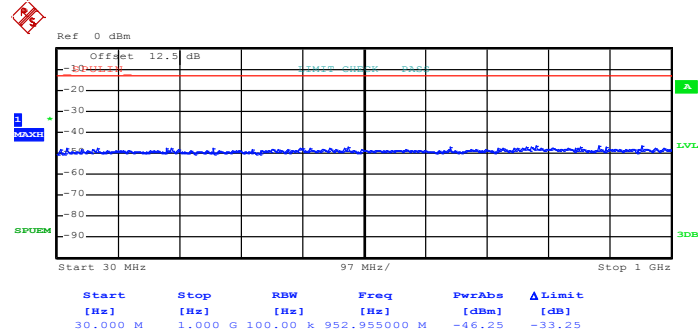


Date: 22.NOV.2012 16:41:13

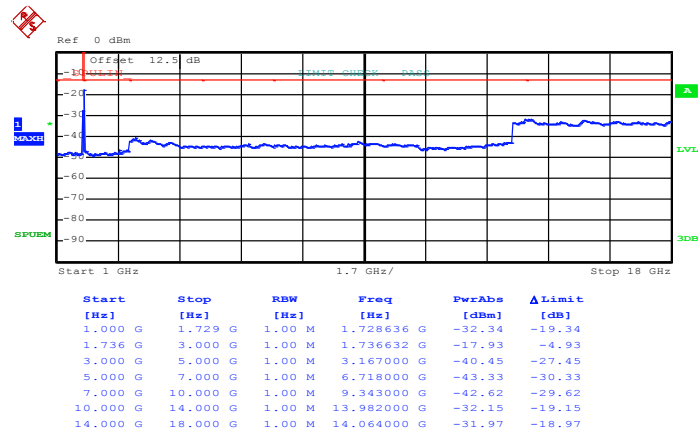


Date: 22.NOV.2012 19:01:21

## 16QAM (RB Size 3, RB Offset 0)



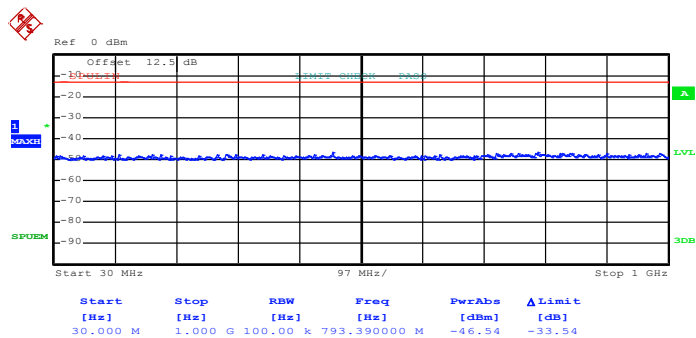
Date: 22.NOV.2012 16:41:00



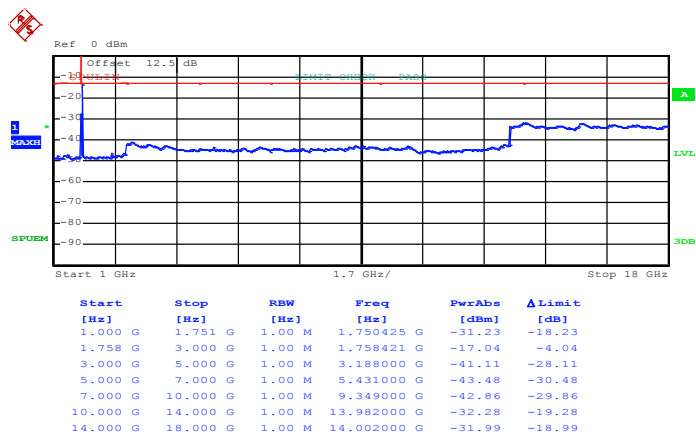
Date: 22.NOV.2012 19:01:50

|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 4 | Channel : | CH20393 (High) |
| Band Width : | 1.4MHz     |           |                |

## QPSK (RB Size 1, RB Offset 0)



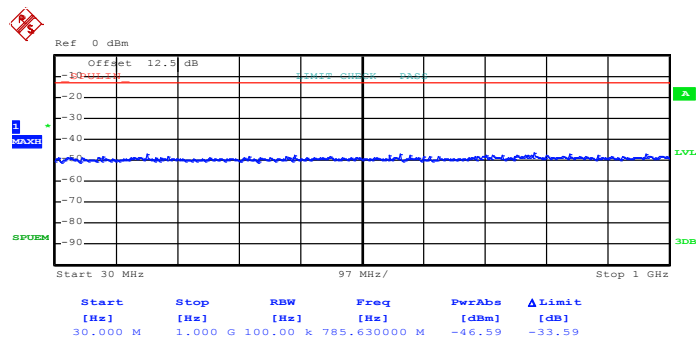
Date: 22.NOV.2012 18:48:33



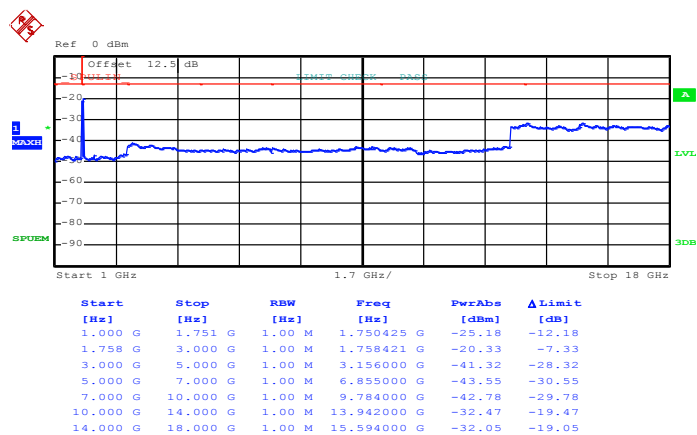
Date: 22.NOV.2012 18:59:16



## 16QAM (RB Size 1, RB Offset 0)



Date: 22.NOV.2012 18:48:53

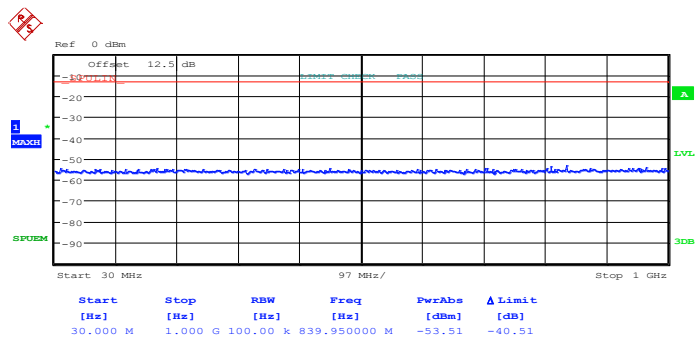


Date: 22.NOV.2012 19:00:08

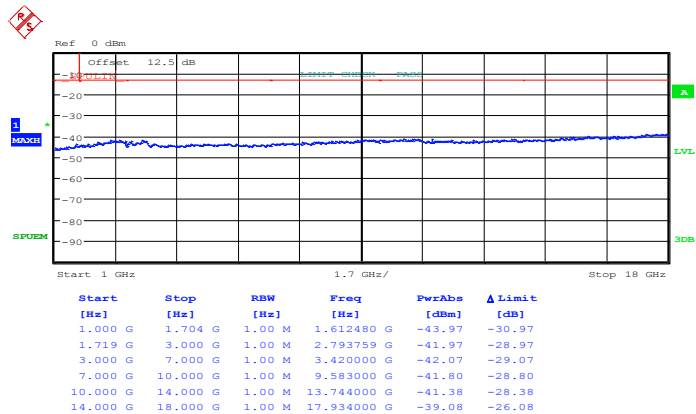


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 4 | Channel : | CH19965 (Low) |
| Band Width : | 3MHz       |           |               |

## QPSK (RB Size 1, RB Offset 7)

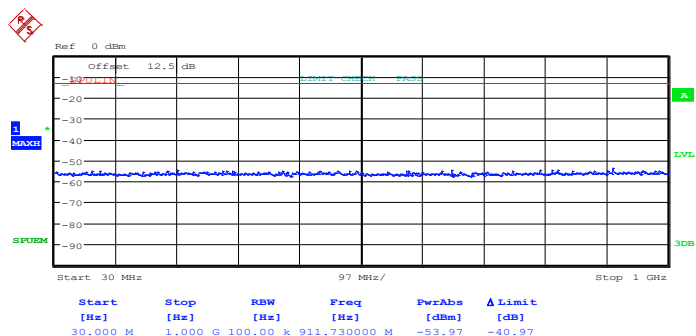


Date: 28.NOV.2012 16:29:13

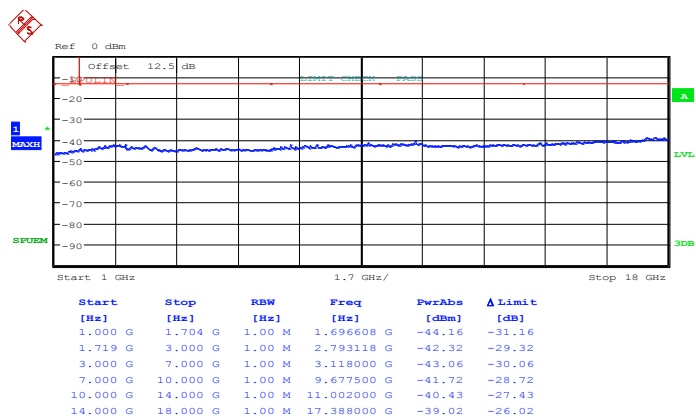


Date: 28.NOV.2012 16:34:22

## 16QAM (RB Size 1, RB Offset 7)



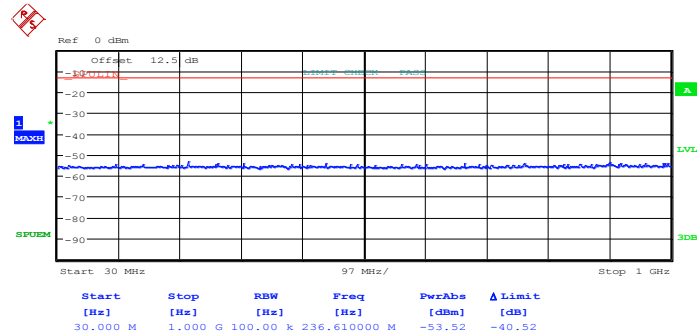
Date: 28.NOV.2012 16:29:26



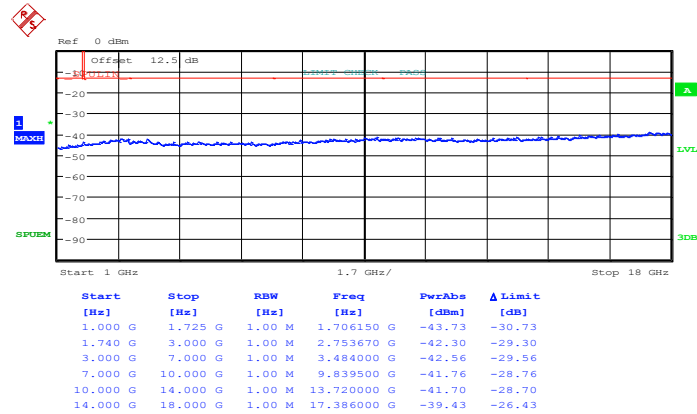
Date: 28.NOV.2012 16:35:08

|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 4 | Channel : | CH20175 (Middle) |
| Band Width : | 3MHz       |           |                  |

## QPSK (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 16:30:10



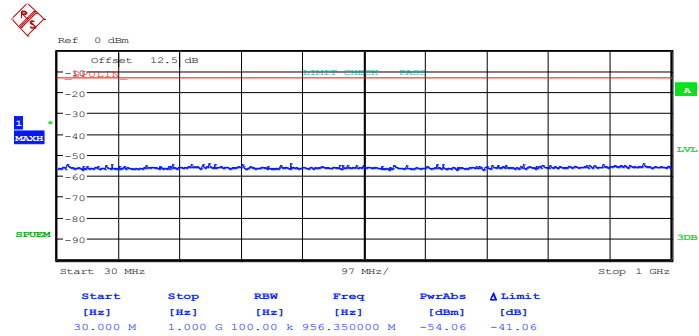
Date: 28.NOV.2012 16:36:03



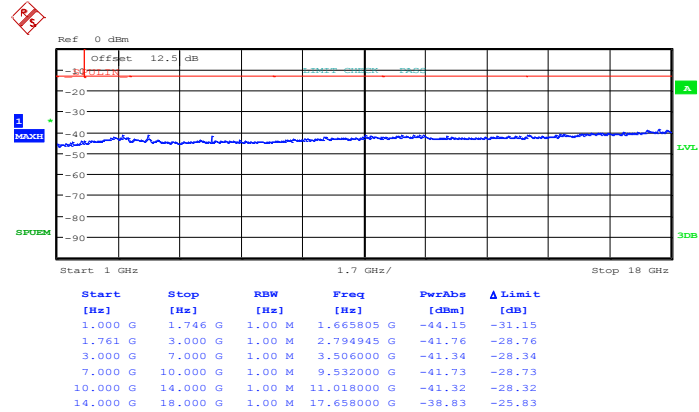


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 4 | Channel : | CH20385 (High) |
| Band Width : | 3MHz       |           |                |

QPSK (RB Size 1, RB Offset 7)

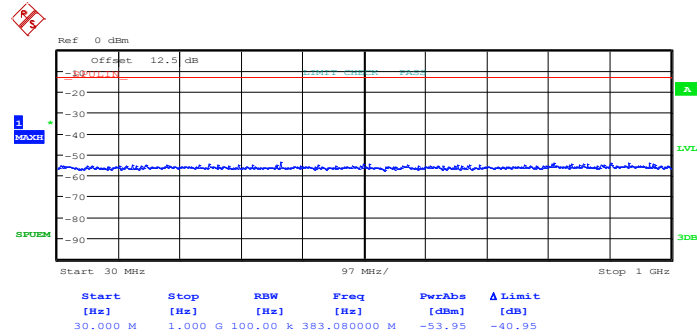


Date: 28.NOV.2012 16:30:38

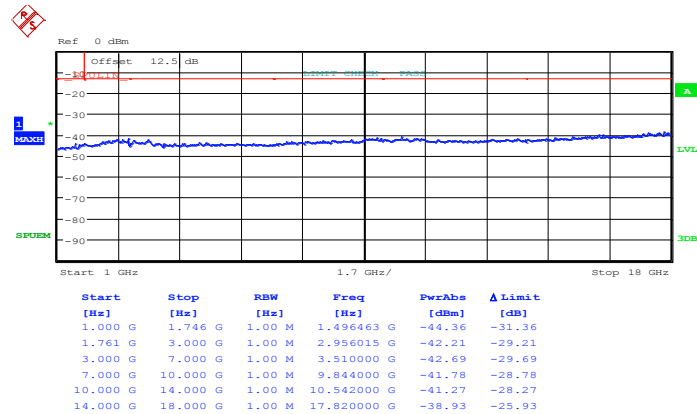


Date: 28.NOV.2012 16:58:57

## 16QAM (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 16:30:53

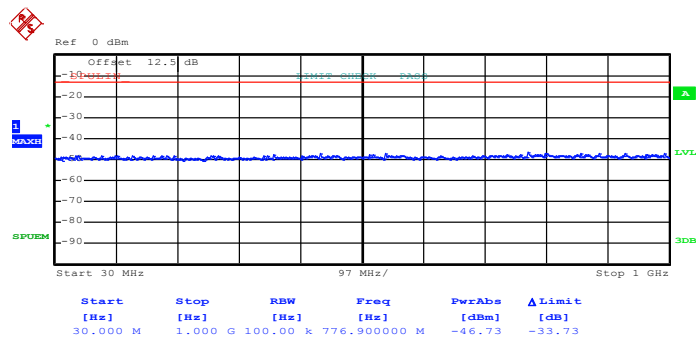


Date: 28.NOV.2012 16:59:20

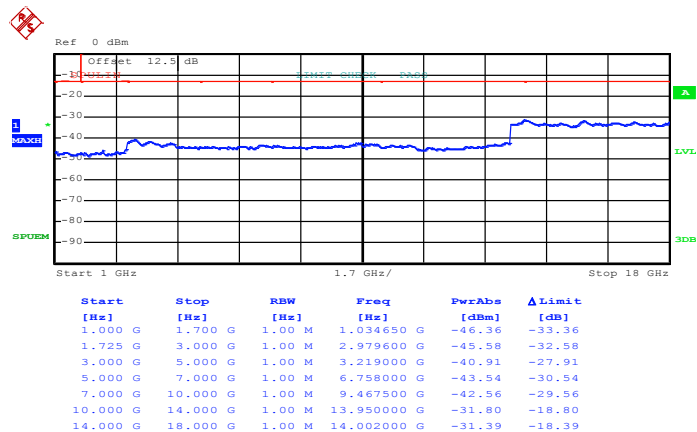


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 4 | Channel : | CH19975 (Low) |
| Band Width : | 5MHz       |           |               |

## QPSK (RB Size 1, RB Offset 0)

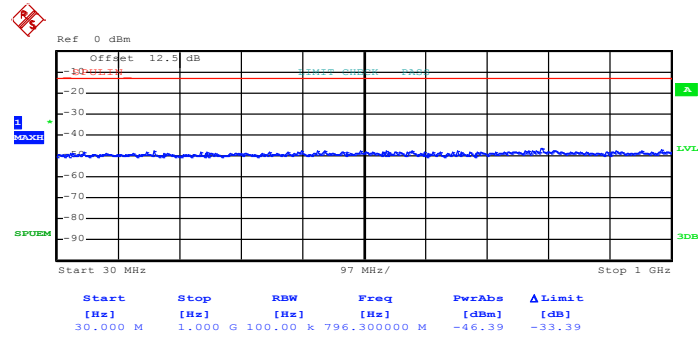


Date: 22.NOV.2012 16:36:00

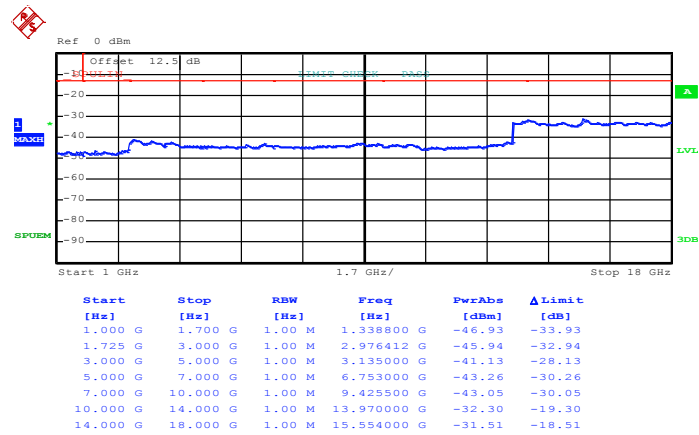


Date: 22.NOV.2012 16:26:25

## 16QAM (RB Size 1, RB Offset 24)



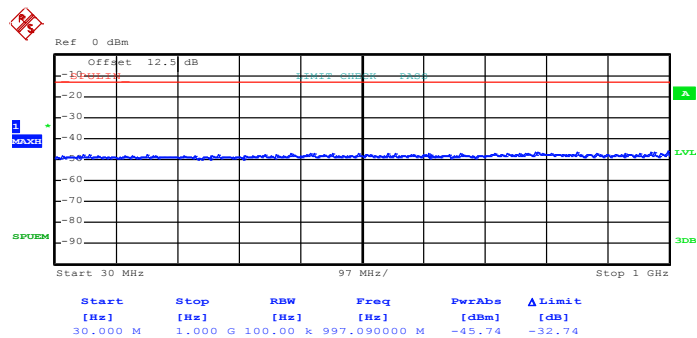
Date: 22.NOV.2012 16:36:12



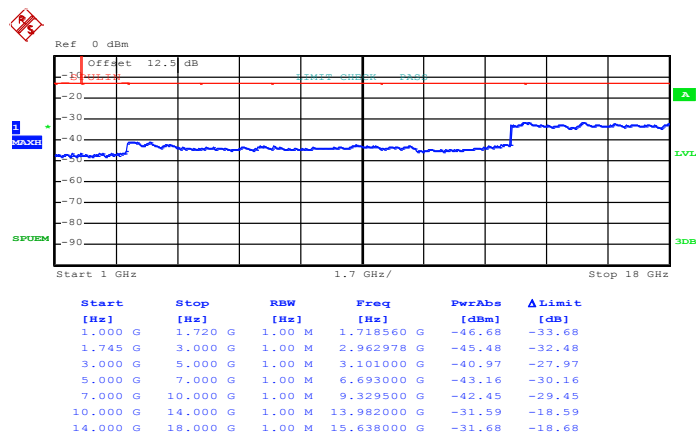
Date: 22.NOV.2012 16:27:31

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

## QPSK (RB Size 1, RB Offset 12)



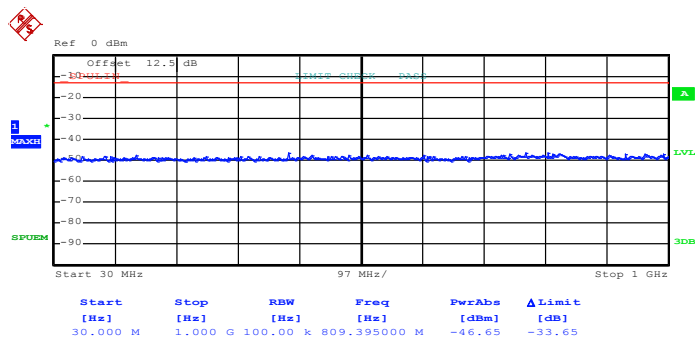
Date: 22.NOV.2012 16:35:29



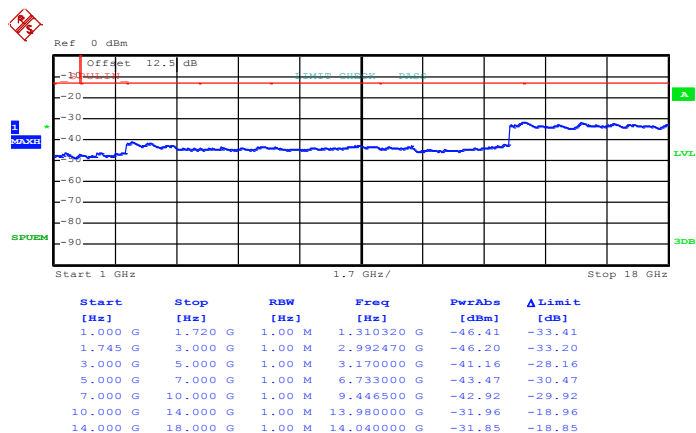
Date: 22.NOV.2012 16:29:22



16QAM (RB Size 1, RB Offset 0)



Date: 22.NOV.2012 16:35:42

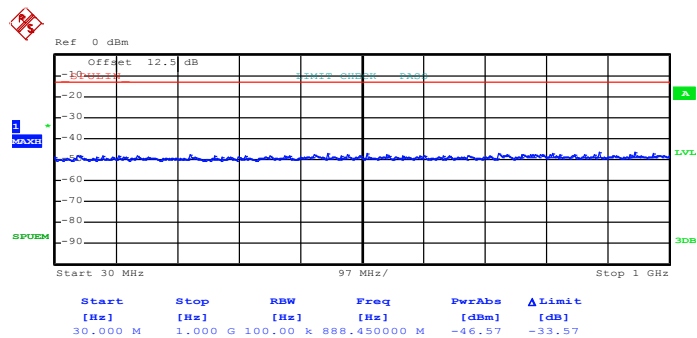


Date: 22.NOV.2012 16:29:44

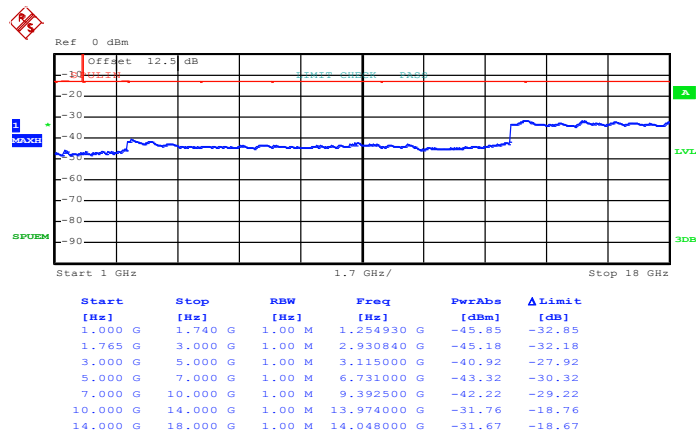


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 4 | Channel : | CH20375 (High) |
| Band Width : | 5MHz       |           |                |

## QPSK (RB Size 1, RB Offset 12)



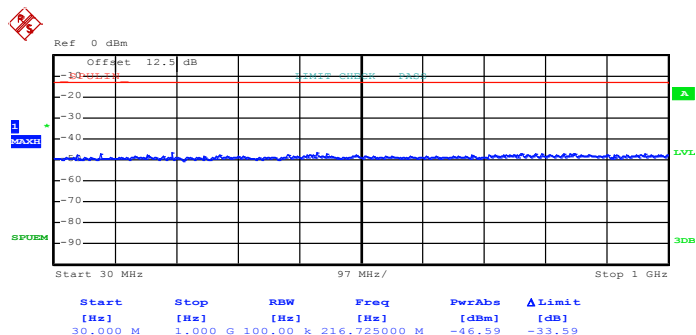
Date: 22.NOV.2012 16:34:23



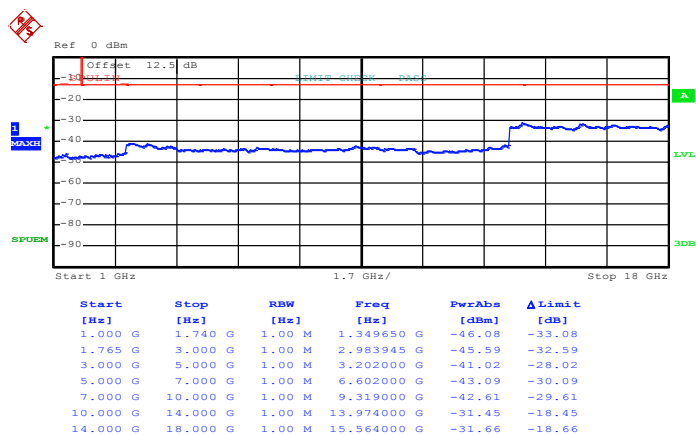
Date: 22.NOV.2012 16:31:32



16QAM (RB Size 1, RB Offset 12)



Date: 22.NOV.2012 16:34:11

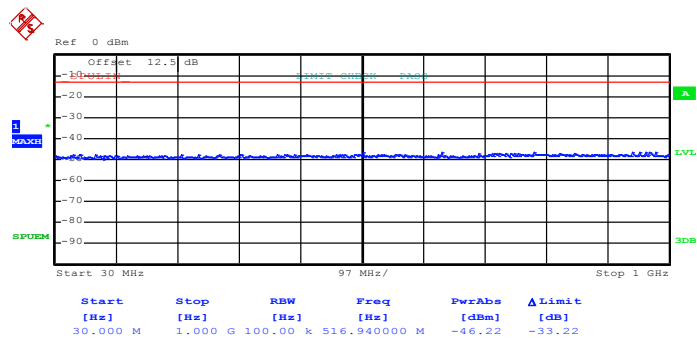


Date: 22.NOV.2012 16:32:44

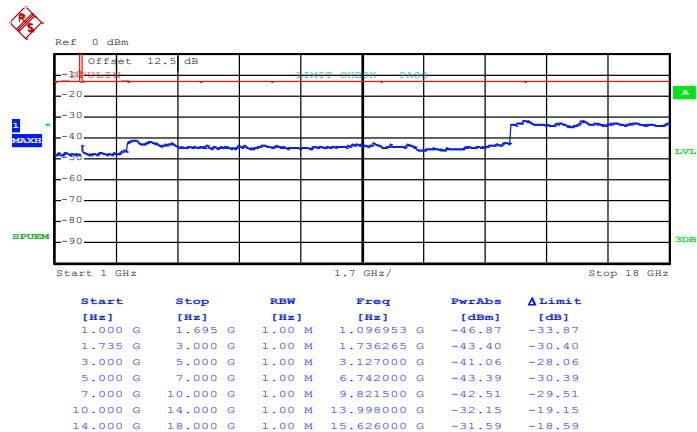


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 4 | Channel : | CH20350 (Low) |
| Band Width : | 10MHz      |           |               |

## QPSK (RB Size 1, RB Offset 24)



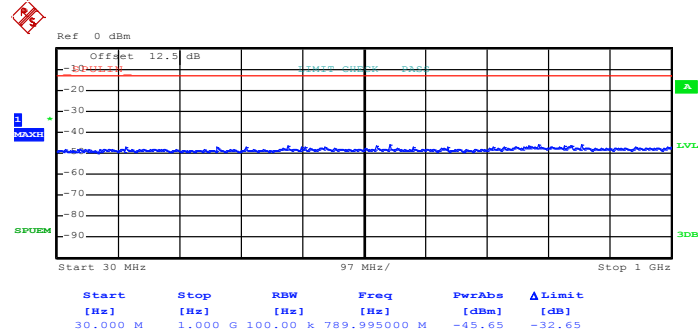
Date: 22.NOV.2012 16:08:15



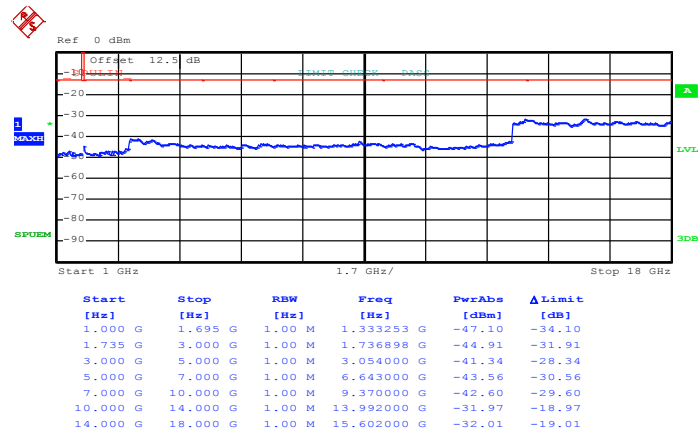
Date: 22.NOV.2012 16:14:01



16QAM (RB Size 1, RB Offset 0)



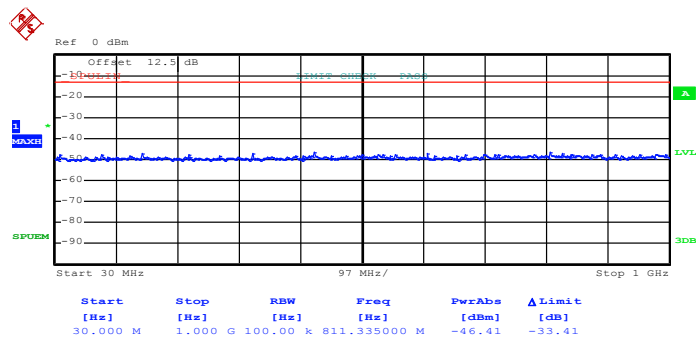
Date: 22.NOV.2012 16:09:09



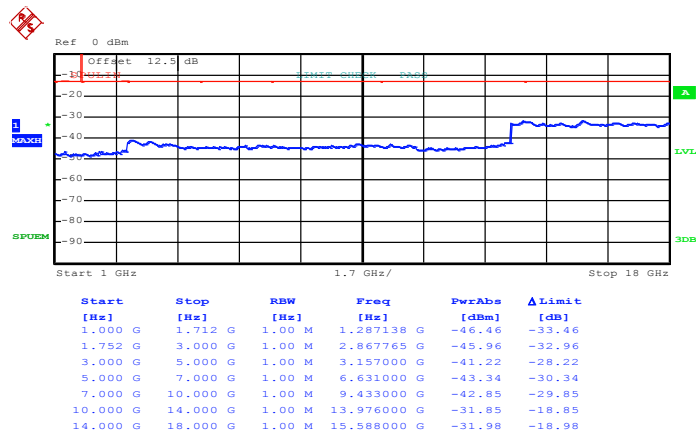
Date: 22.NOV.2012 16:16:15

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

## QPSK (RB Size 1, RB Offset 24)



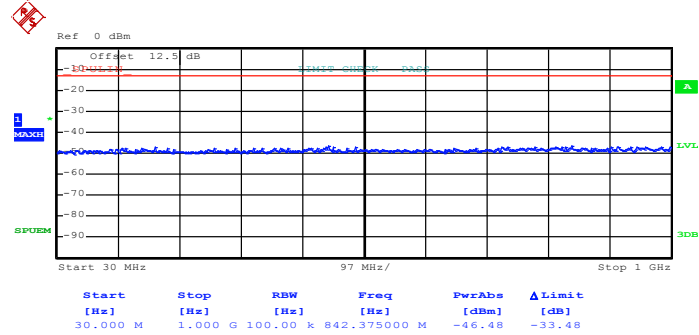
Date: 22.NOV.2012 16:10:52



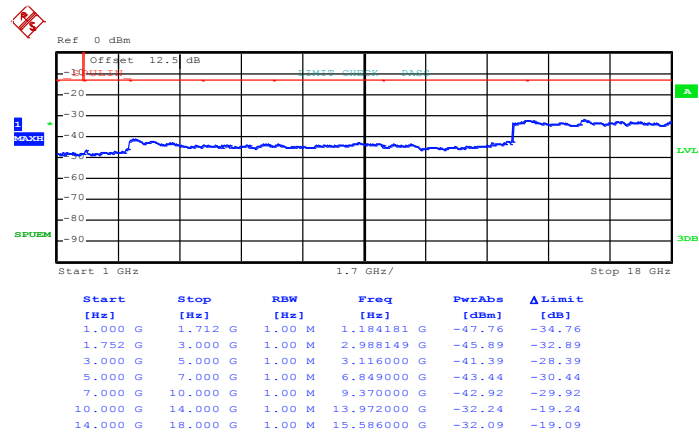
Date: 22.NOV.2012 16:17:25



16QAM (RB Size 1, RB Offset 0)



Date: 22.NOV.2012 16:10:40

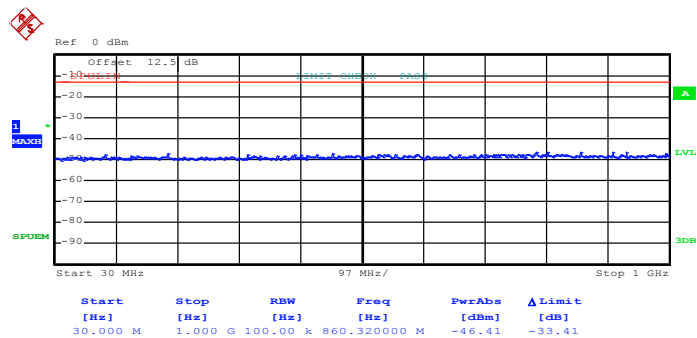


Date: 22.NOV.2012 16:17:37

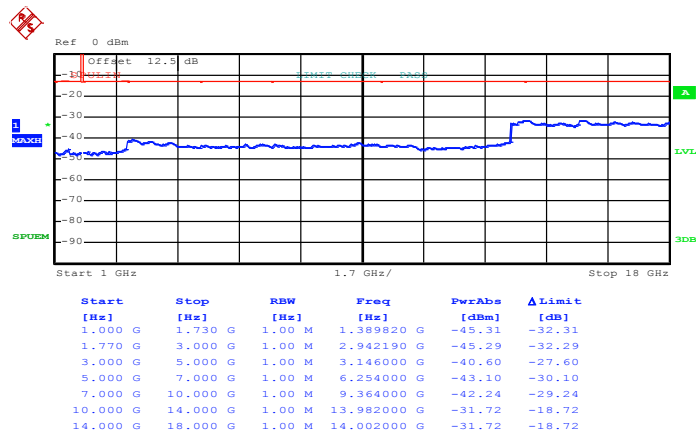


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 4 | Channel : | CH20350 (High) |
| Band Width : | 10MHz      |           |                |

## QPSK (RB Size 1, RB Offset 0)

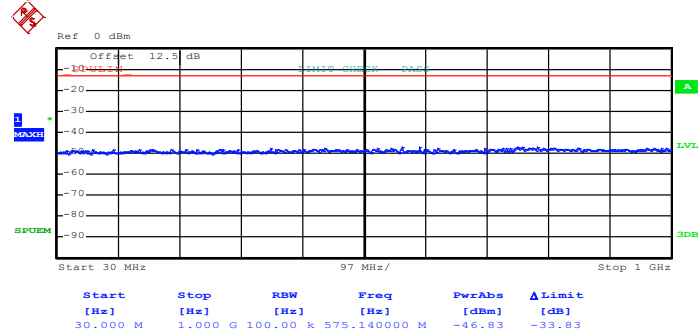


Date: 22.NOV.2012 16:11:27

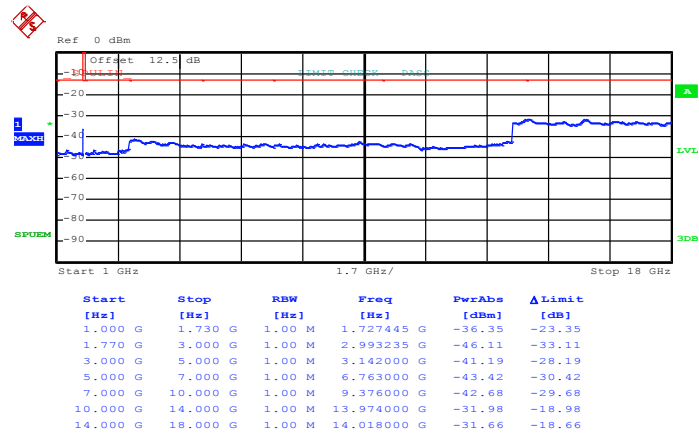


Date: 22.NOV.2012 16:22:01

## 16QAM (RB Size 1, RB Offset 0)



Date: 22.NOV.2012 16:11:43

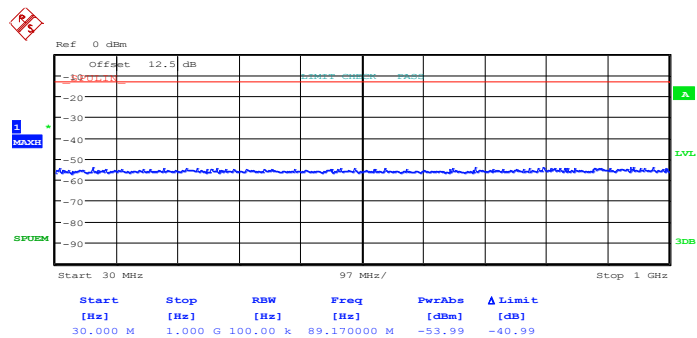


Date: 22.NOV.2012 16:22:22

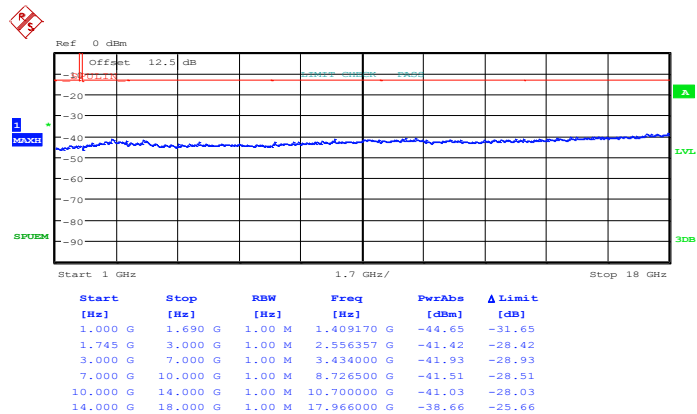


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 4 | Channel : | CH20025 (Low) |
| Band Width : | 15MHz      |           |               |

## QPSK (RB Size 1, RB Offset 0)

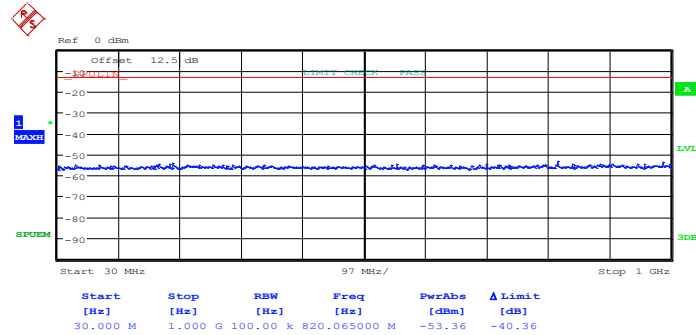


Date: 28.NOV.2012 16:25:51

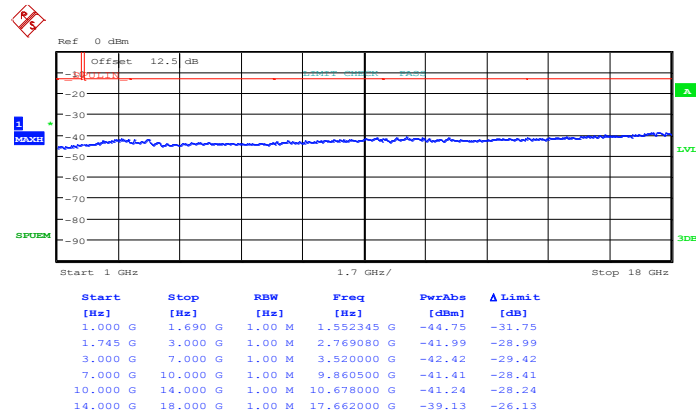


Date: 28.NOV.2012 16:15:14

## 16QAM (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 16:26:10

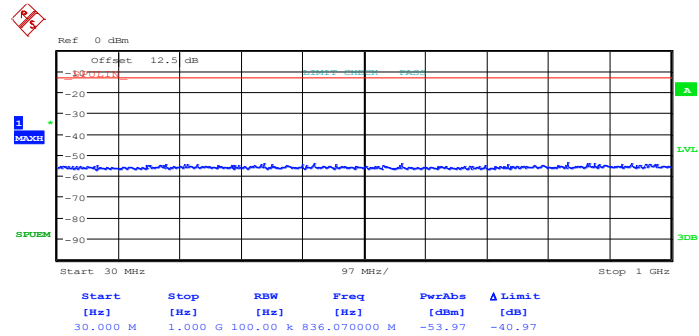


Date: 28.NOV.2012 16:16:04

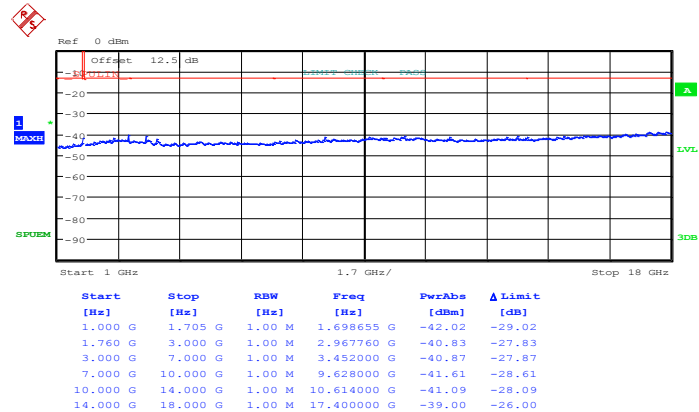


|              |            |           |                  |
|--------------|------------|-----------|------------------|
| Band :       | LTE Band 4 | Channel : | CH20175 (Middle) |
| Band Width : | 15MHz      |           |                  |

## QPSK (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 16:23:47



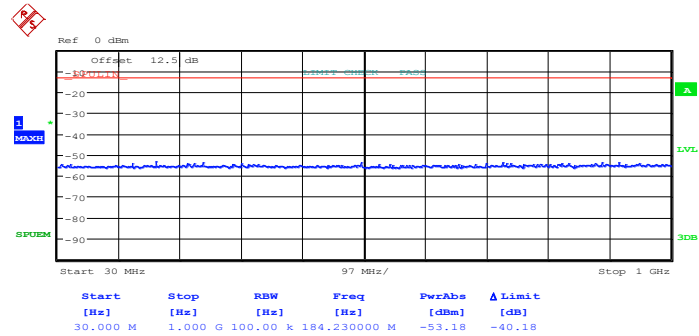
Date: 28.NOV.2012 16:17:20



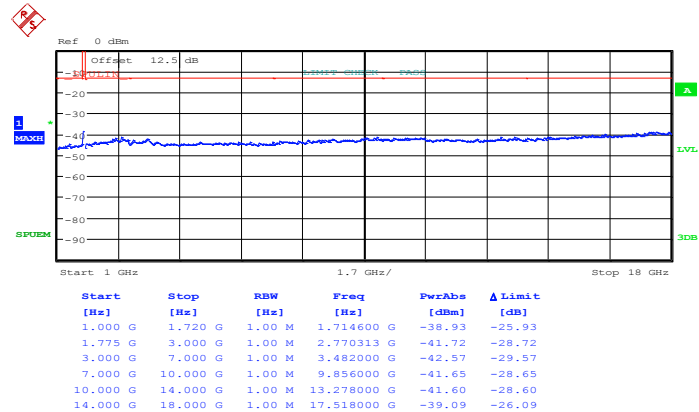


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 4 | Channel : | CH20325 (High) |
| Band Width : | 15MHz      |           |                |

QPSK (RB Size 1, RB Offset 0)



Date: 28.NOV.2012 16:22:22



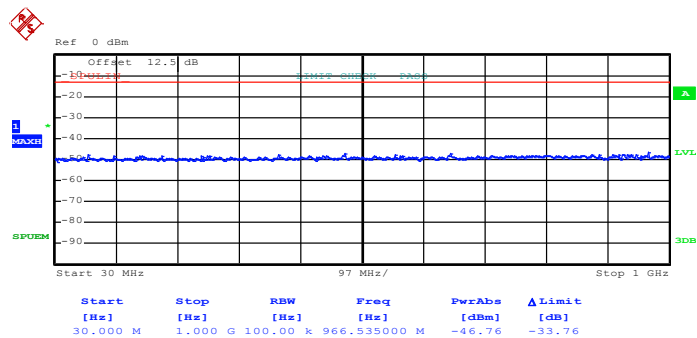
Date: 28.NOV.2012 16:19:55



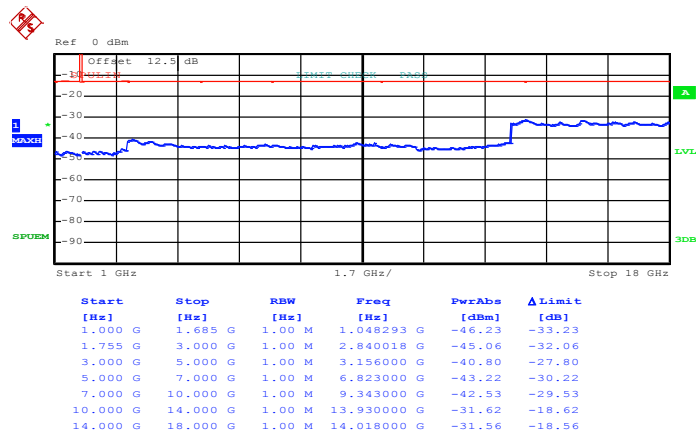


|              |            |           |               |
|--------------|------------|-----------|---------------|
| Band :       | LTE Band 4 | Channel : | CH20050 (Low) |
| Band Width : | 20MHz      |           |               |

## QPSK (RB Size 1, RB Offset 49)



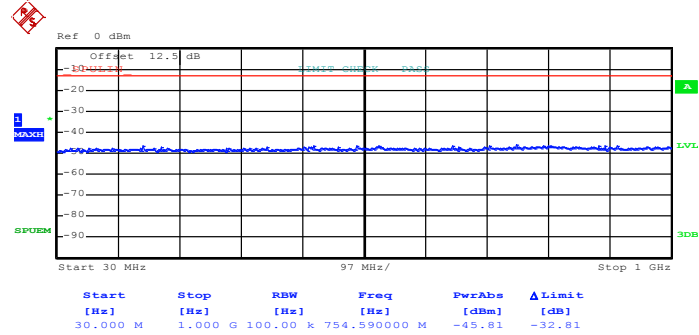
Date: 22.NOV.2012 16:04:53



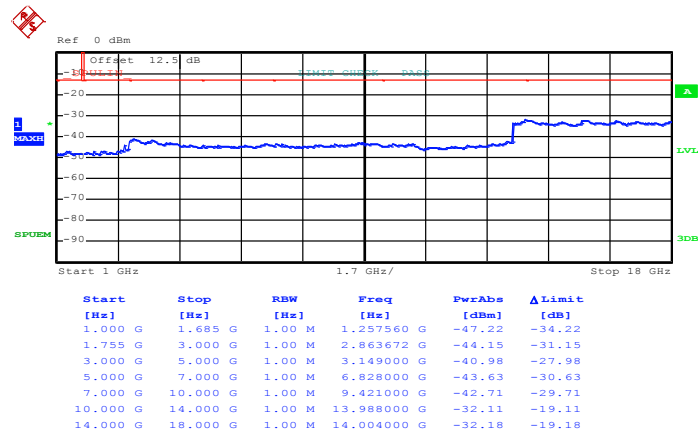
Date: 22.NOV.2012 15:29:04



## 16QAM (RB Size 1, RB Offset 99)



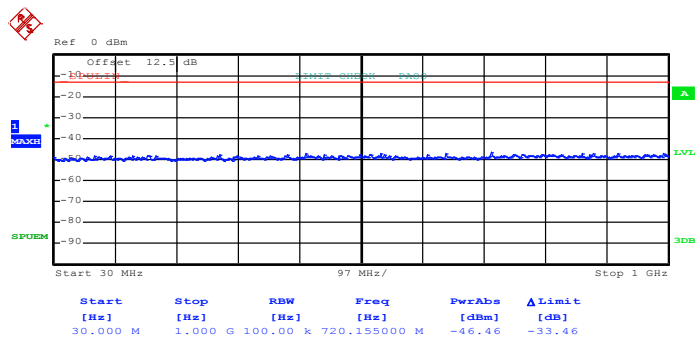
Date: 22.NOV.2012 16:04:43



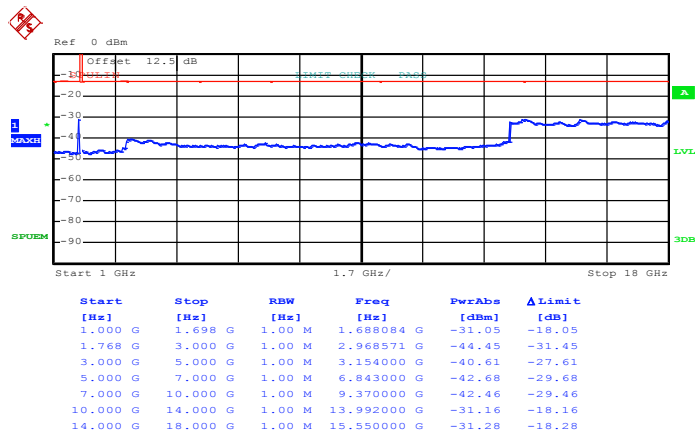
Date: 22.NOV.2012 15:29:22

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

## QPSK (RB Size 1, RB Offset 0)

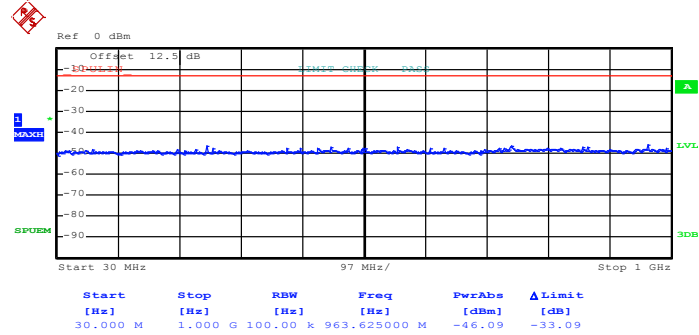


Date: 22.NOV.2012 15:59:03

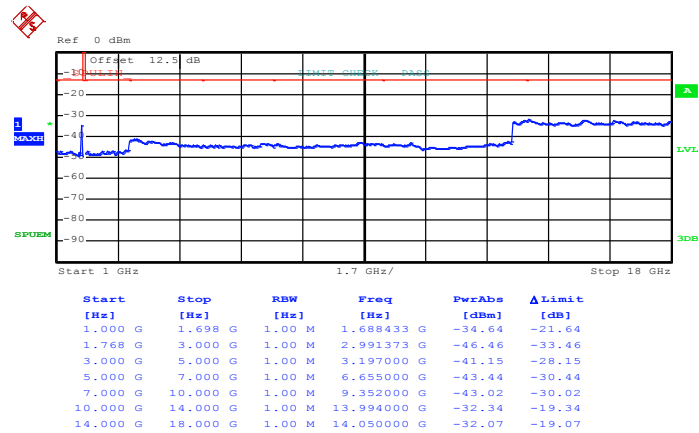


Date: 22.NOV.2012 15:53:01

### 16QAM (RB Size 1, RB Offset 0)



Date: 22.NOV.2012 15:59:15

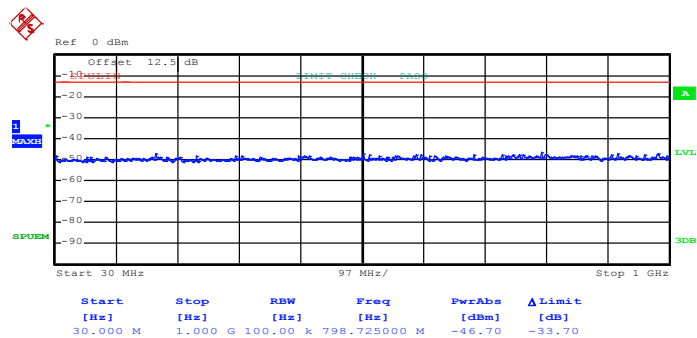


Date: 22.NOV.2012 15:55:14

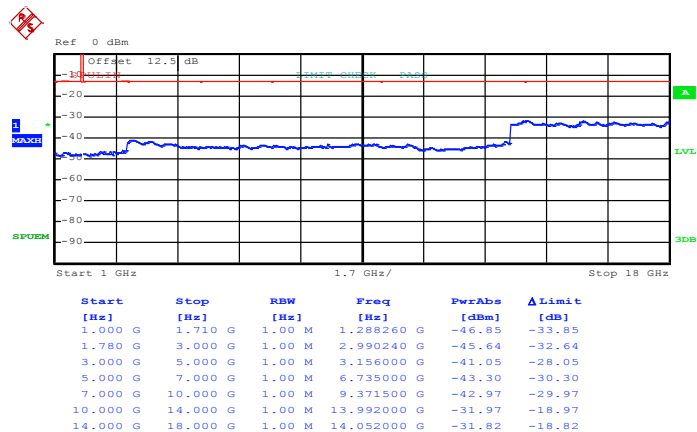


|              |            |           |                |
|--------------|------------|-----------|----------------|
| Band :       | LTE Band 4 | Channel : | CH20300 (High) |
| Band Width : | 20MHz      |           |                |

## QPSK (RB Size 1, RB Offset 99)



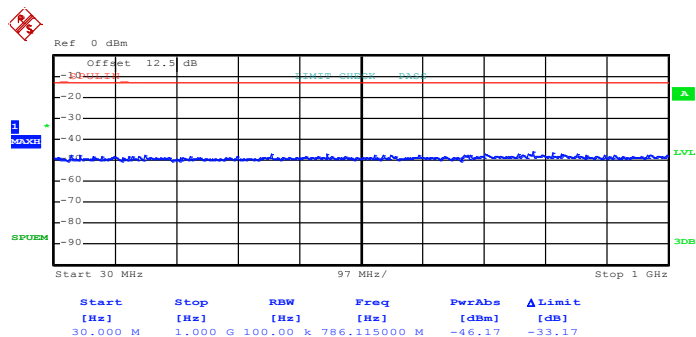
Date: 22.NOV.2012 15:58:17



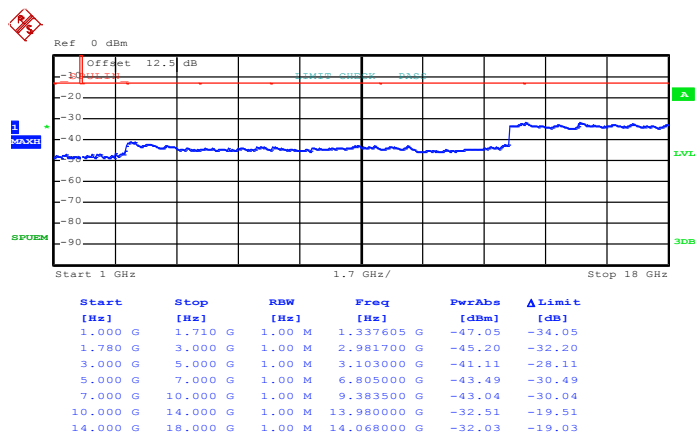
Date: 22.NOV.2012 15:56:25



16QAM (RB Size 1, RB Offset 49)



Date: 22.NOV.2012 15:58:09

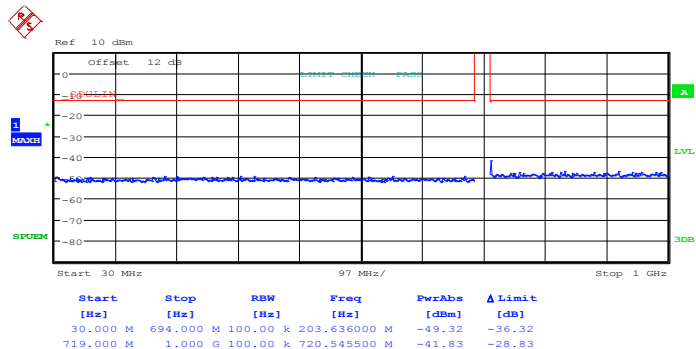


Date: 22.NOV.2012 15:56:37

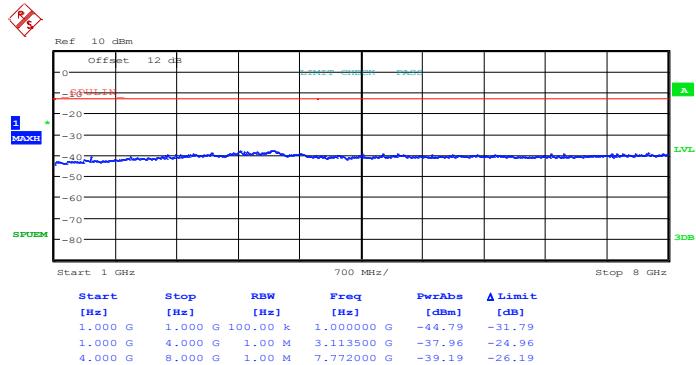


|              |             |           |               |
|--------------|-------------|-----------|---------------|
| Band :       | LTE Band 17 | Channel : | CH23755 (Low) |
| Band Width : | 5MHz        |           |               |

QPSK (RB Size 1, RB Offset 24)



Date: 29.NOV.2012 11:49:36



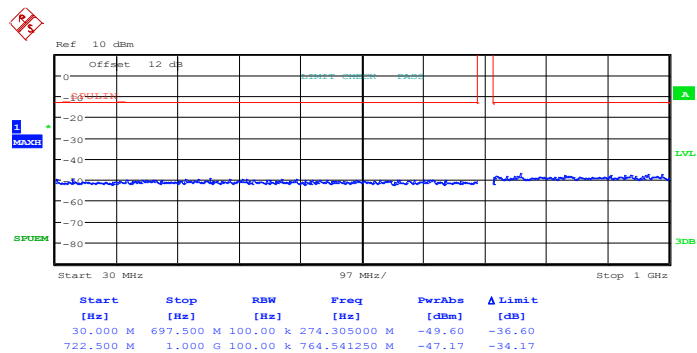
Date: 29.NOV.2012 11:51:01



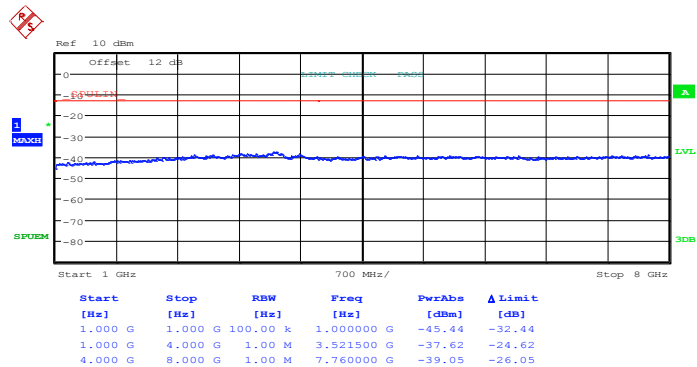


|              |             |           |                  |
|--------------|-------------|-----------|------------------|
| Band :       | LTE Band 17 | Channel : | CH23790 (Middle) |
| Band Width : | 5MHz        |           |                  |

## QPSK (RB Size 1, RB Offset 24)

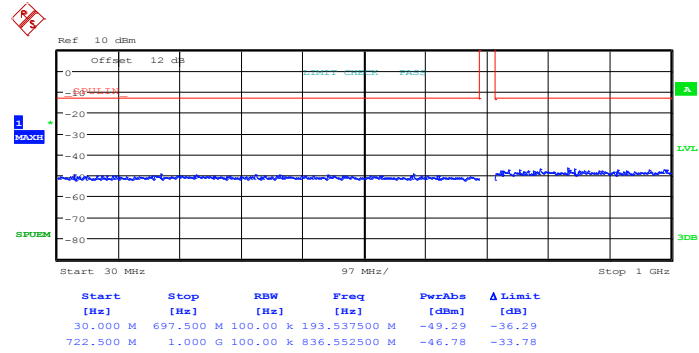


Date: 30.NOV.2012 09:20:06

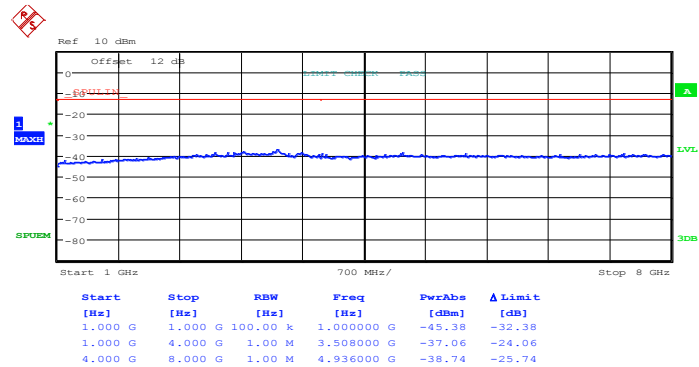


Date: 30.NOV.2012 09:21:45

## 16QAM (RB Size 1, RB Offset 12)



Date: 30.NOV.2012 09:20:36

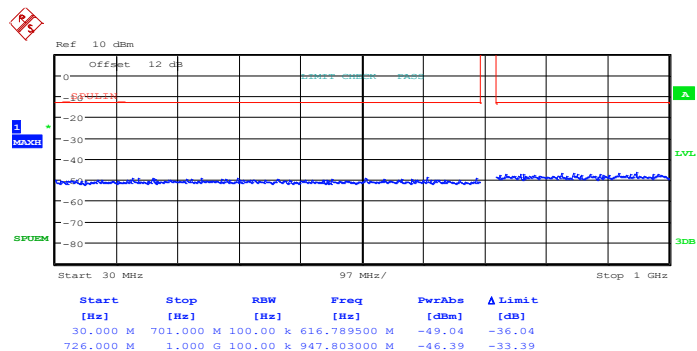


Date: 30.NOV.2012 09:21:05

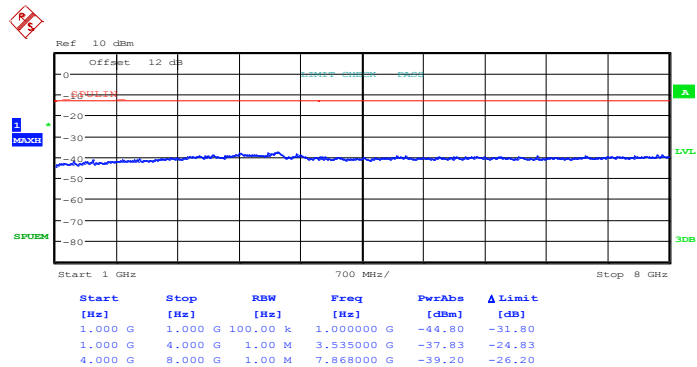


|              |             |           |                |
|--------------|-------------|-----------|----------------|
| Band :       | LTE Band 17 | Channel : | CH23825 (High) |
| Band Width : | 5MHz        |           |                |

## QPSK (RB Size 1, RB Offset 12)

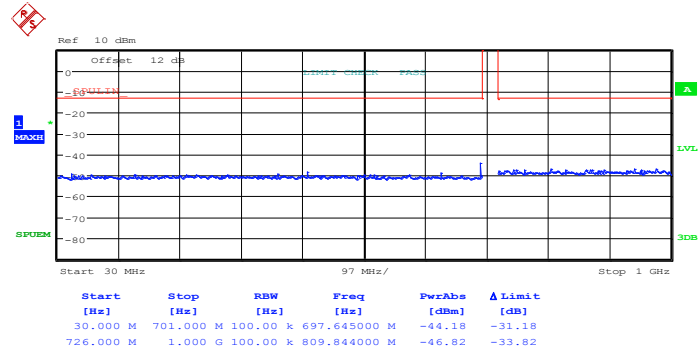


Date: 29.NOV.2012 11:43:51

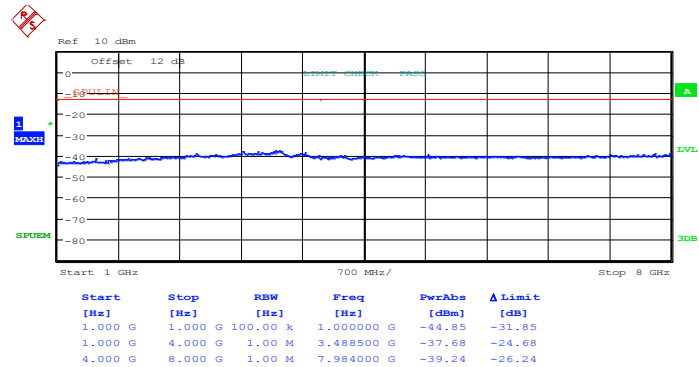


Date: 29.NOV.2012 11:44:12

## 16QAM (RB Size 1, RB Offset 24)



Date: 29.NOV.2012 11:43:24

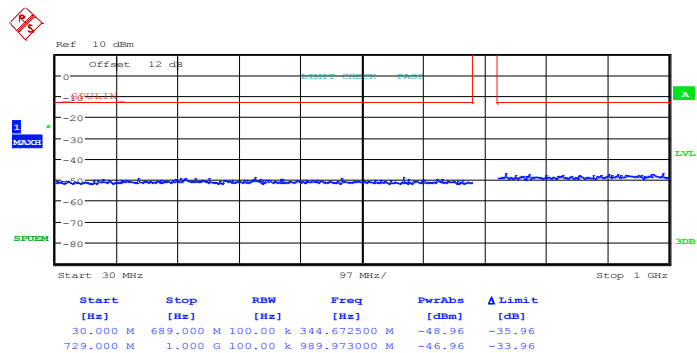


Date: 29.NOV.2012 11:44:40

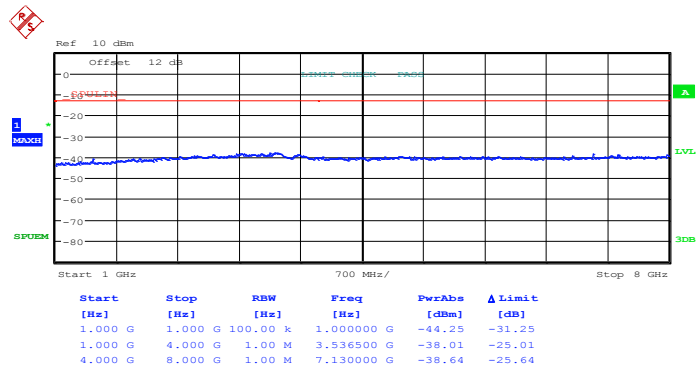


|              |             |           |               |
|--------------|-------------|-----------|---------------|
| Band :       | LTE Band 17 | Channel : | CH23780 (Low) |
| Band Width : | 10MHz       |           |               |

## QPSK (RB Size 1, RB Offset 49)

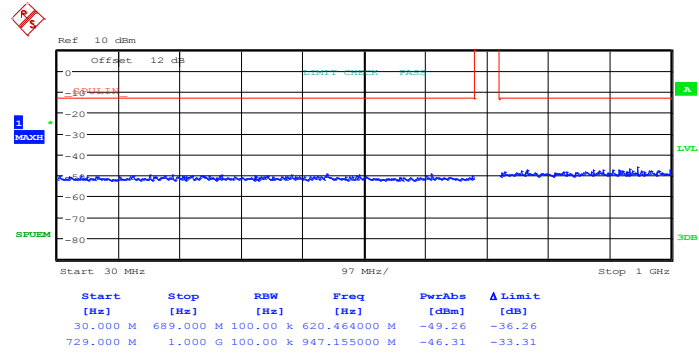


Date: 30.NOV.2012 09:33:32

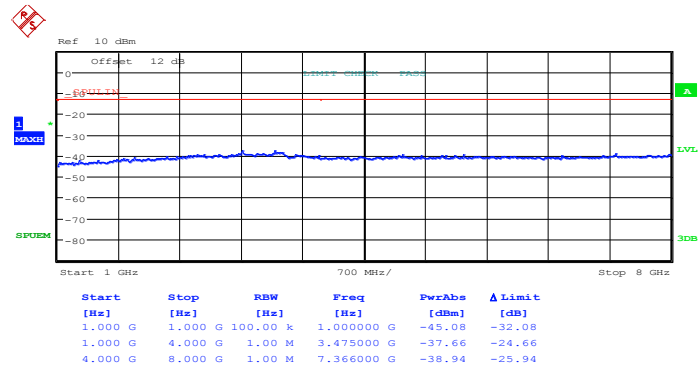


Date: 29.NOV.2012 11:52:55

## 16QAM (RB Size 1, RB Offset 49)



Date: 30.NOV.2012 09:33:46

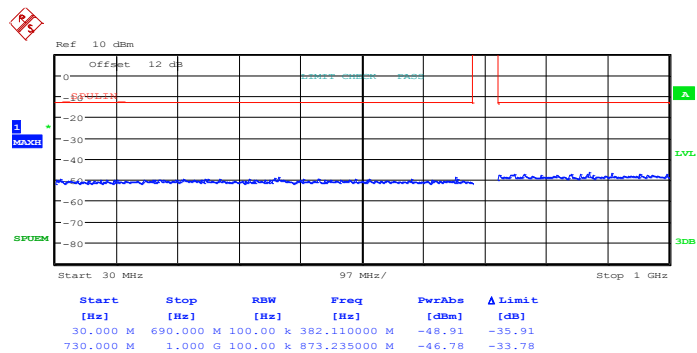


Date: 29.NOV.2012 11:53:10

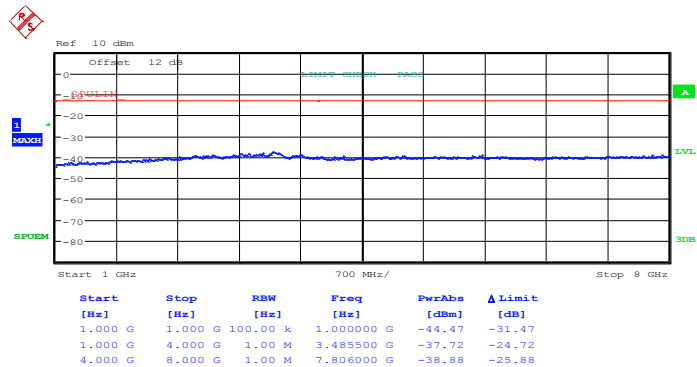


|              |             |           |                  |
|--------------|-------------|-----------|------------------|
| Band :       | LTE Band 17 | Channel : | CH23790 (Middle) |
| Band Width : | 10MHz       |           |                  |

## QPSK (RB Size 1, RB Offset 49)

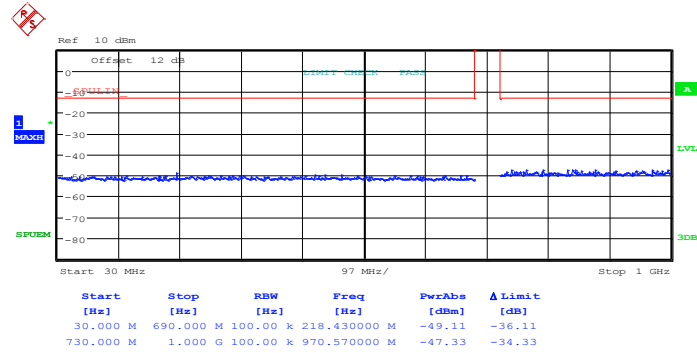


Date: 30.NOV.2012 09:24:17

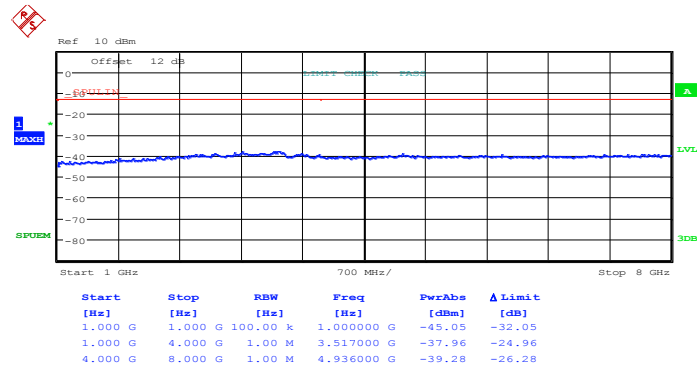


Date: 30.NOV.2012 09:22:59

## 16QAM (RB Size 1, RB Offset 24)



Date: 30.NOV.2012 09:23:45

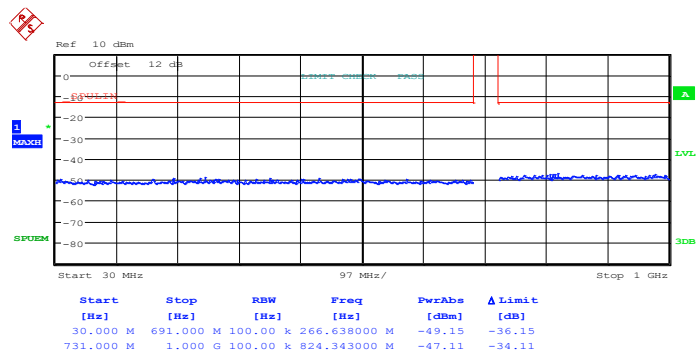


Date: 30.NOV.2012 09:23:27

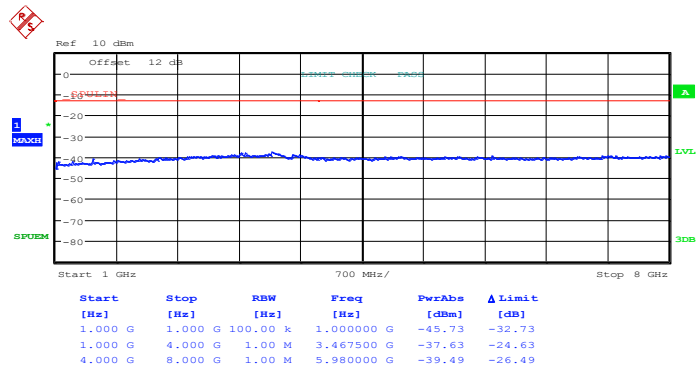


|              |             |           |                |
|--------------|-------------|-----------|----------------|
| Band :       | LTE Band 17 | Channel : | CH23800 (High) |
| Band Width : | 10MHz       |           |                |

## QPSK (RB Size 1, RB Offset 24)

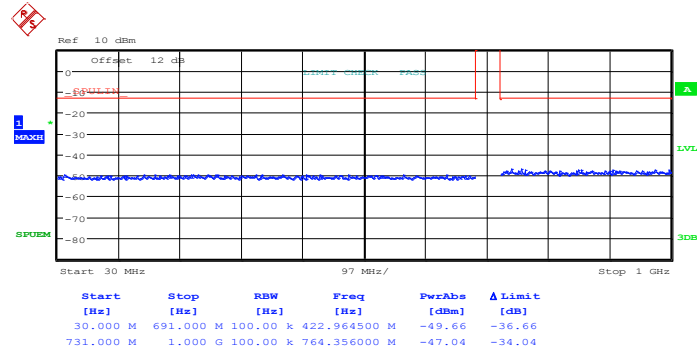


Date: 30.NOV.2012 09:32:17

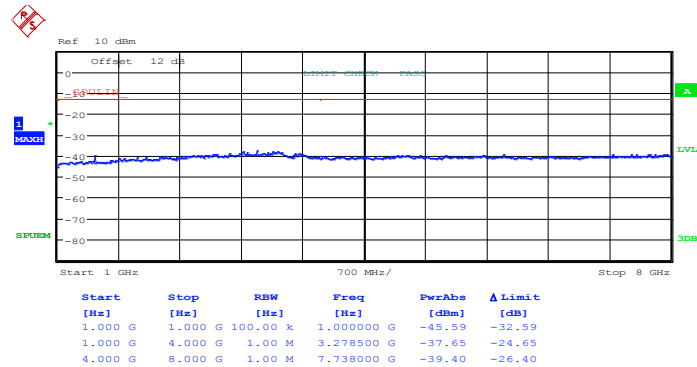


Date: 29.NOV.2012 11:58:09

## 16QAM (RB Size 1, RB Offset 24)



Date: 30.NOV.2012 09:31:52



Date: 29.NOV.2012 11:58:24

## 3.7 Radiated Spurious Emission Measurement

### 3.7.1 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.

### 3.7.2 Measuring Instruments

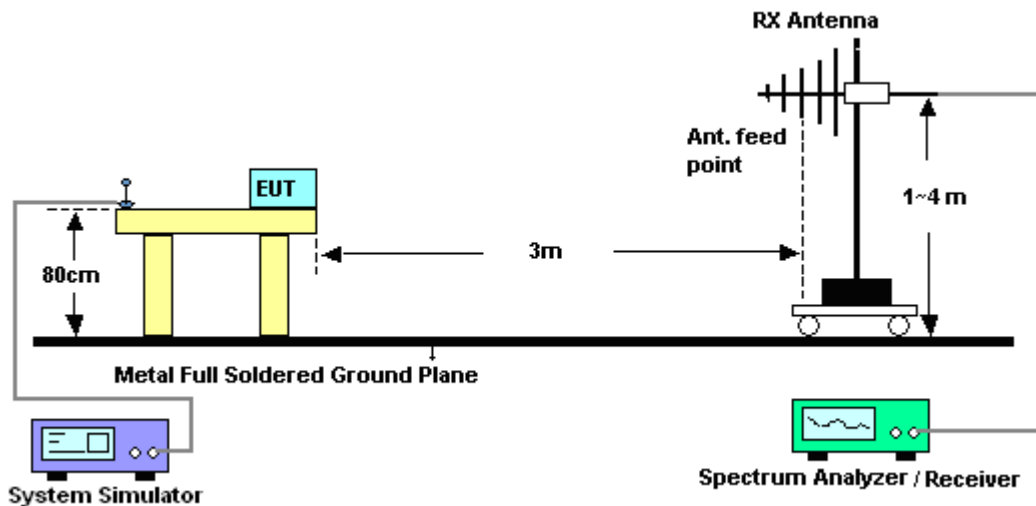
See list of measuring instruments of this test report.

### 3.7.3 Test Procedures

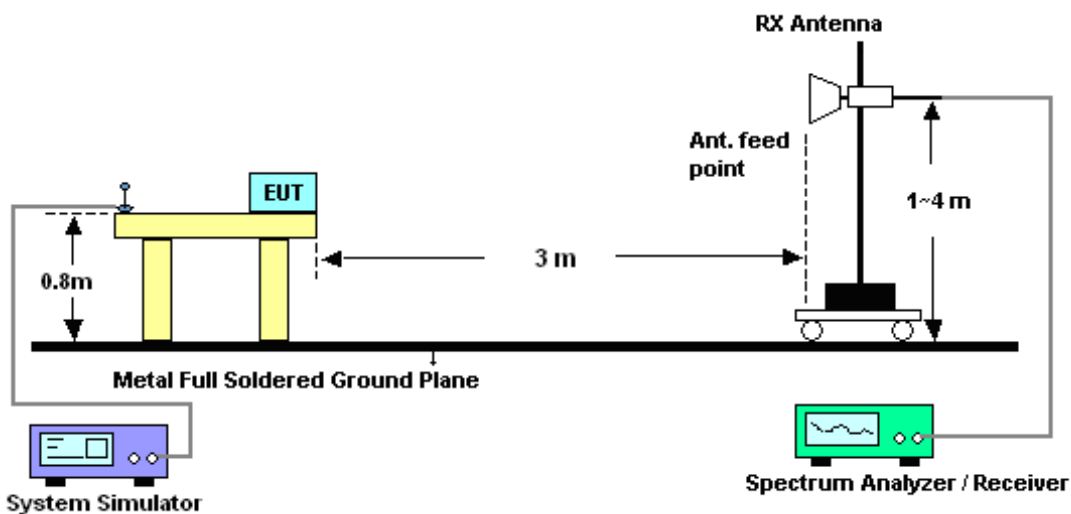
1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving 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, Sweep = 500ms, 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. Emission level (dBm) = output power + substitution Gain.
11. 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.

### 3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

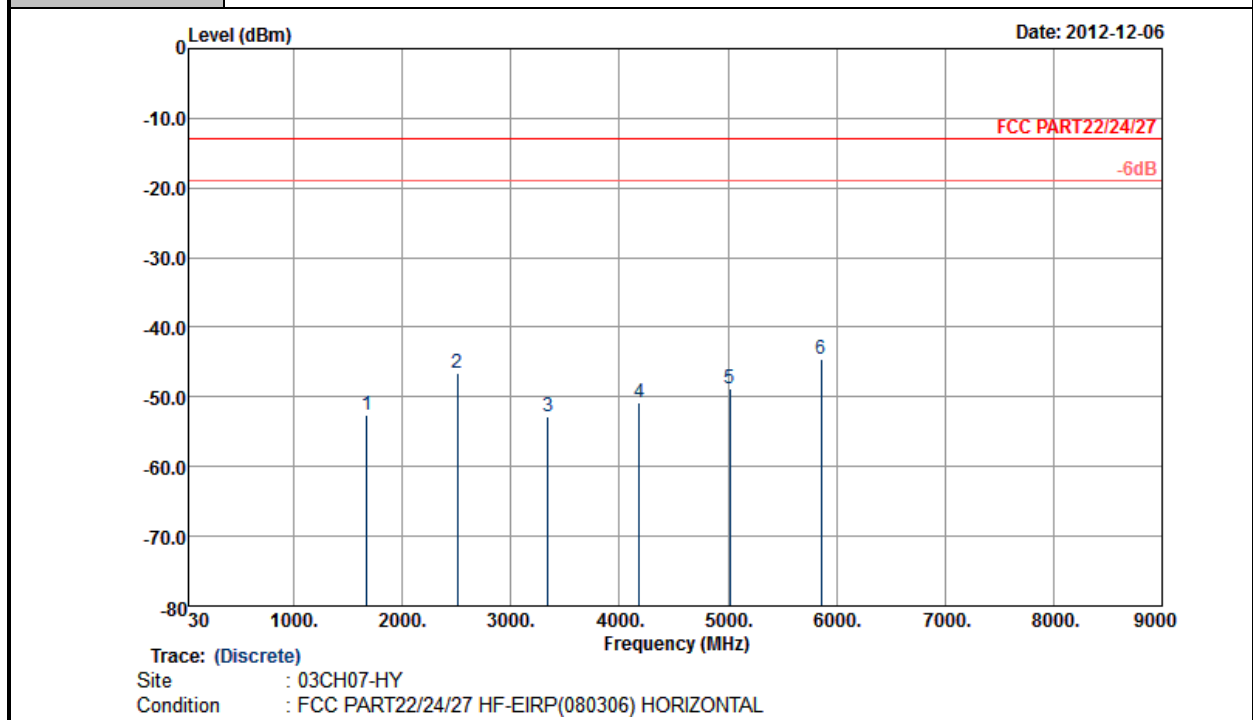


### 3.7.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

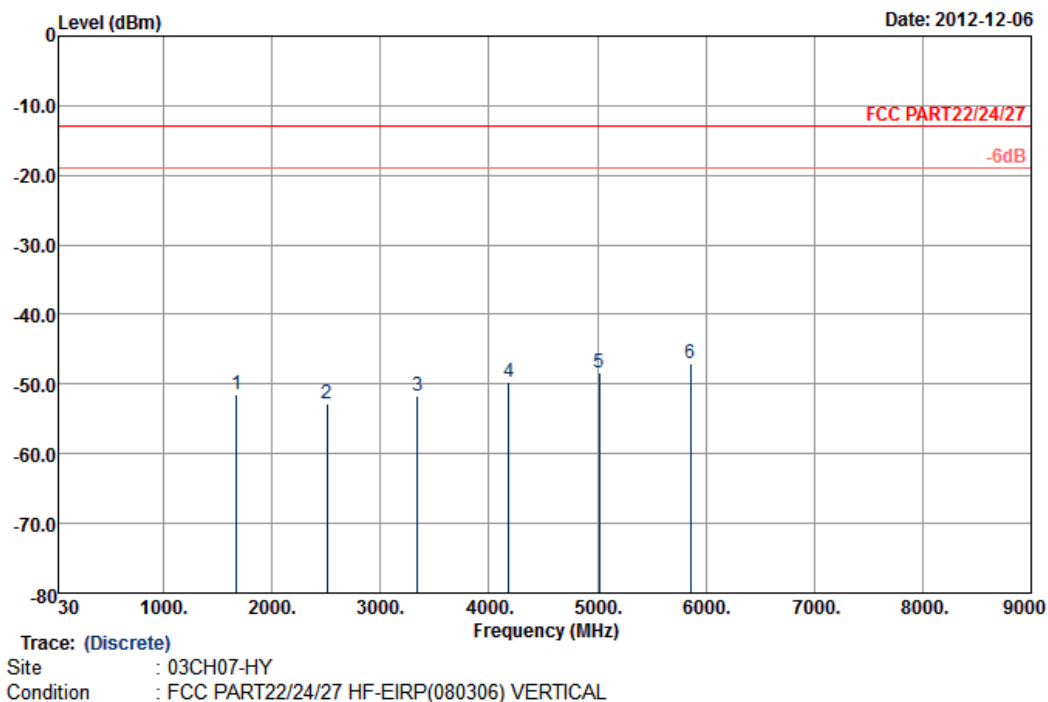
### 3.7.6 Test Result of Field Strength of Spurious Radiated

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 1.4MHZ QPSK RB Size 1                                                                  | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



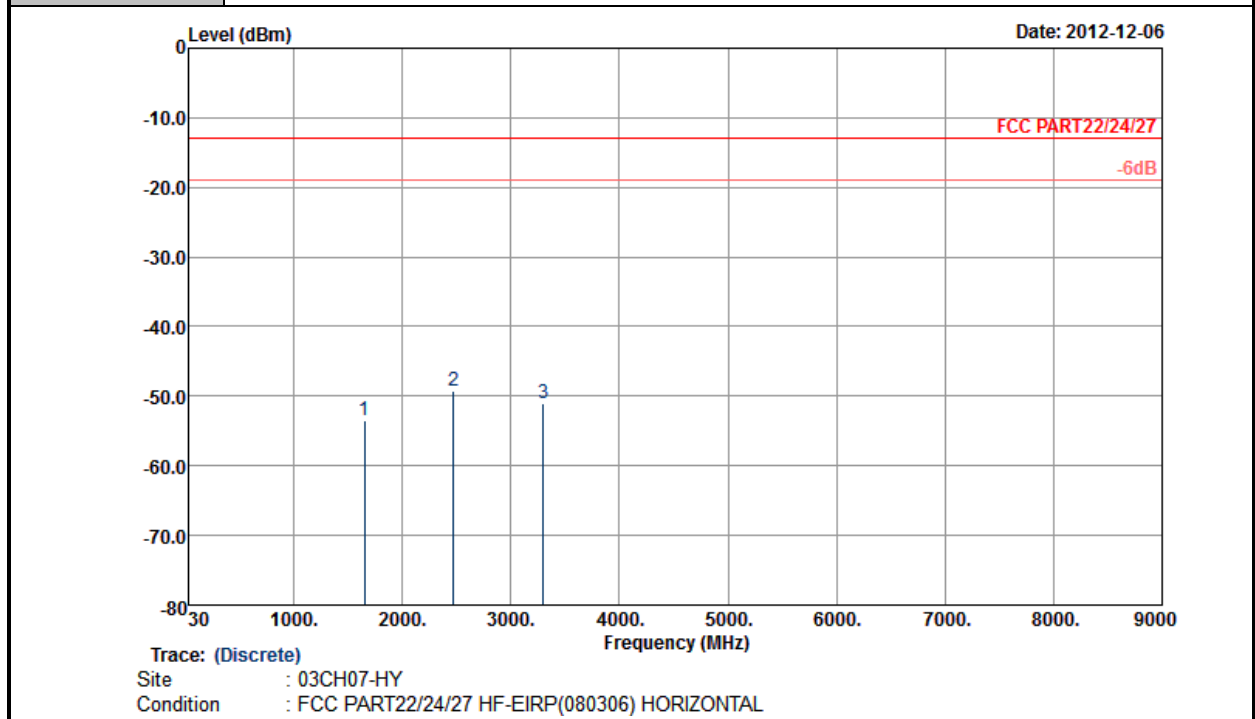
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>( dBm ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>( dBi ) | Polarization<br>( H/V ) | Result |
|----------------------|-----------------|------------------|-------------------------|---------------------------|--------------------------|----------------------------|-------------------------------|-------------------------|--------|
| 1672                 | -52.52          | -13              | -39.52                  | -60.96                    | -54.24                   | 1.62                       | 5.49                          | H                       | Pass   |
| 2509                 | -46.50          | -13              | -33.50                  | -59.56                    | -48.47                   | 2.1                        | 6.22                          | H                       | Pass   |
| 3345                 | -52.79          | -13              | -39.79                  | -67.05                    | -55.68                   | 3.03                       | 8.07                          | H                       | Pass   |
| 4182                 | -50.70          | -13              | -37.70                  | -66.5                     | -55.24                   | 2.52                       | 9.21                          | H                       | Pass   |
| 5018                 | -48.80          | -13              | -35.80                  | -66.13                    | -54.25                   | 3.1                        | 10.70                         | H                       | Pass   |
| 5860                 | -44.64          | -13              | -31.64                  | -67.08                    | -49.88                   | 2.92                       | 10.31                         | H                       | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 1.4MHZ QPSK RB Size 1                                                                  | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



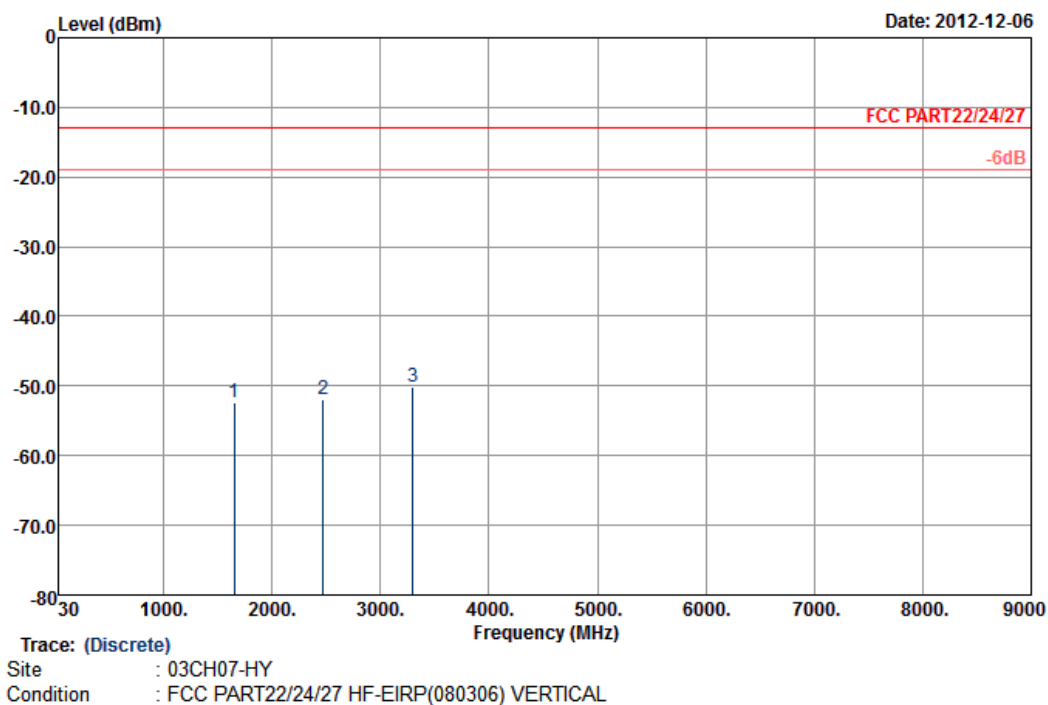
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1672                 | -51.52          | -13              | -38.52                  | -64                     | -53.24                   | 1.62                       | 5.49                        | V                     | Pass   |
| 2509                 | -52.80          | -13              | -39.80                  | -66.67                  | -54.77                   | 2.1                        | 6.22                        | V                     | Pass   |
| 3345                 | -51.79          | -13              | -38.79                  | -67.08                  | -54.68                   | 3.03                       | 8.07                        | V                     | Pass   |
| 4182                 | -49.67          | -13              | -36.67                  | -66.85                  | -54.21                   | 2.52                       | 9.21                        | V                     | Pass   |
| 5018                 | -48.32          | -13              | -35.32                  | -67.57                  | -53.77                   | 3.1                        | 10.70                       | V                     | Pass   |
| 5860                 | -46.91          | -13              | -33.91                  | -68.84                  | -52.15                   | 2.92                       | 10.31                       | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 3MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



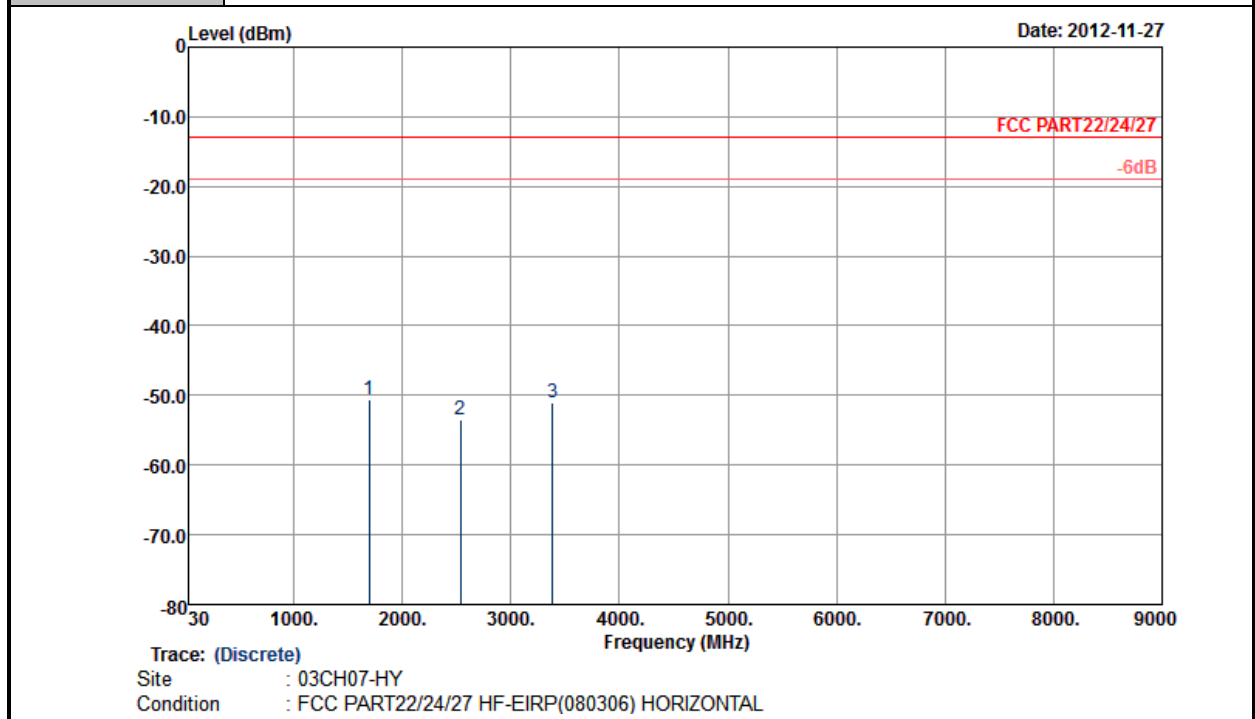
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1649                 | -53.39          | -13              | -40.39                  | -62.03                  | -55.24                   | 1.53                       | 5.53                        | H                     | Pass   |
| 2474                 | -49.30          | -13              | -36.30                  | -60.73                  | -51.24                   | 2.06                       | 6.15                        | H                     | Pass   |
| 3298                 | -51.12          | -13              | -38.12                  | -65.85                  | -54.42                   | 2.48                       | 7.93                        | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 3MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



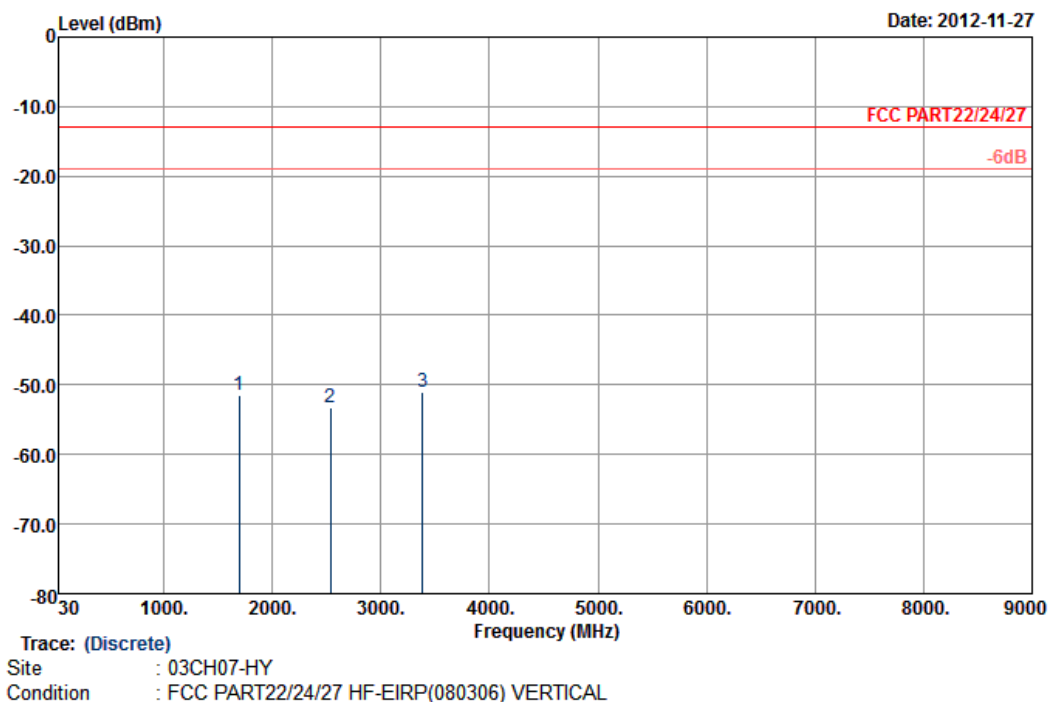
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1649                 | -52.39          | -13              | -39.39                  | -63.84                  | -54.24                   | 1.53                       | 5.53                        | V                     | Pass   |
| 2474                 | -51.83          | -13              | -38.83                  | -65.28                  | -53.77                   | 2.06                       | 6.15                        | V                     | Pass   |
| 3298                 | -50.14          | -13              | -37.14                  | -66.47                  | -53.44                   | 2.48                       | 7.93                        | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



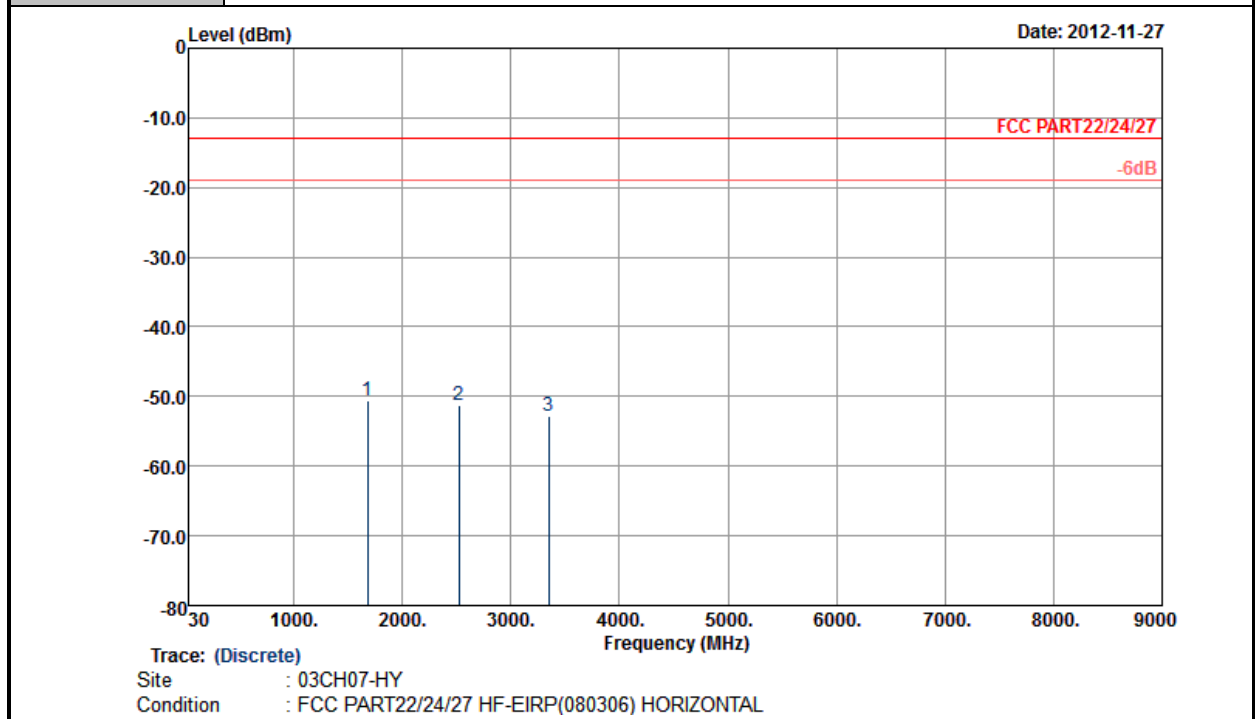
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1693                 | -50.52          | -13              | -37.52                  | -59.61                  | -52.25                   | 1.57                       | 5.45                        | H                     | Pass   |
| 2539                 | -53.43          | -13              | -40.43                  | -66.48                  | -55.54                   | 2.02                       | 6.28                        | H                     | Pass   |
| 3385                 | -51.12          | -13              | -38.12                  | -66.36                  | -54.87                   | 2.3                        | 8.20                        | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



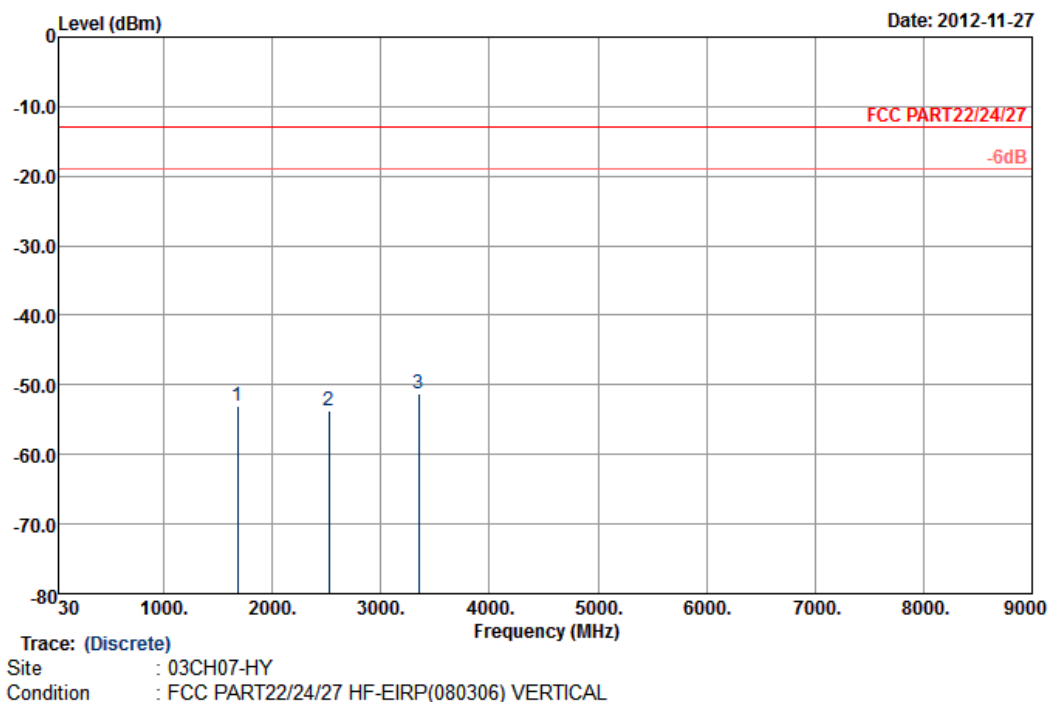
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1693                 | -51.51          | -13              | -38.51                  | -62.99                  | -53.24                   | 1.57                       | 5.45                        | V                     | Pass   |
| 2539                 | -53.36          | -13              | -40.36                  | -68.28                  | -55.47                   | 2.02                       | 6.28                        | V                     | Pass   |
| 3385                 | -51.02          | -13              | -38.02                  | -67.36                  | -54.77                   | 2.3                        | 8.20                        | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



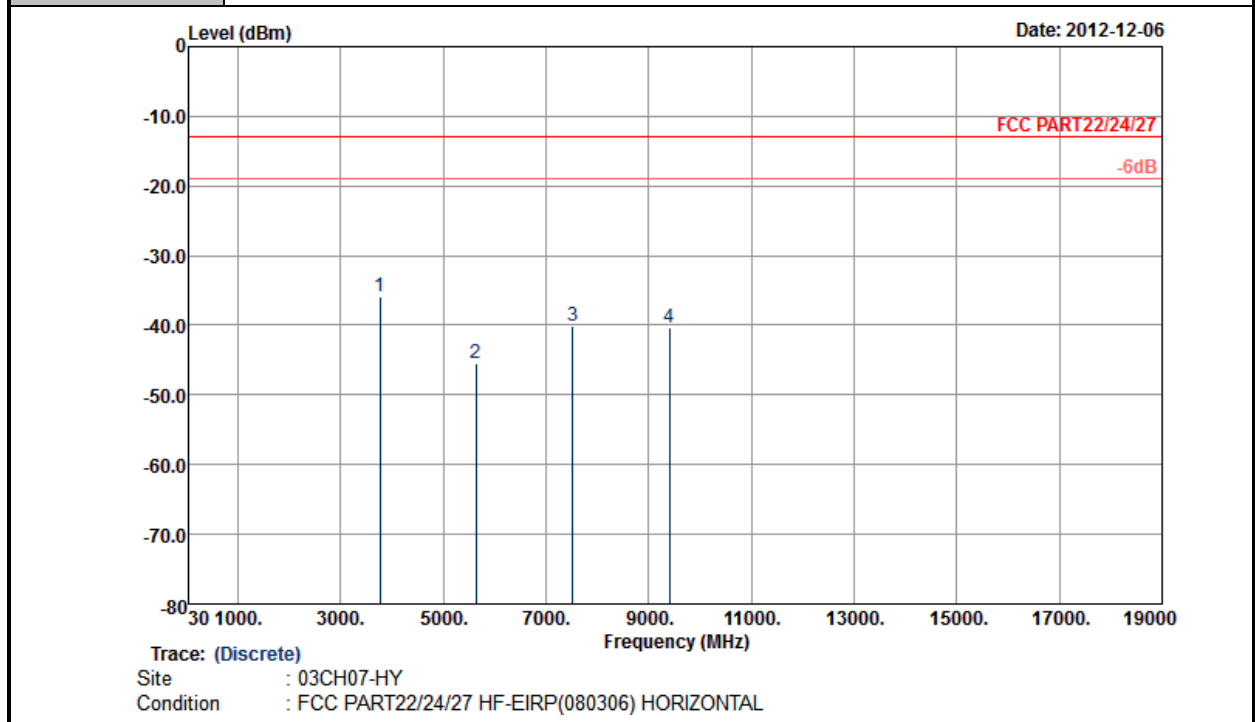
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1681                 | -50.52          | -13              | -37.52                  | -60.22                  | -52.24                   | 1.62                       | 5.49                        | H                     | Pass   |
| 2524                 | -51.28          | -13              | -38.28                  | -64.84                  | -53.25                   | 2.1                        | 6.22                        | H                     | Pass   |
| 3346                 | -52.88          | -13              | -39.88                  | -67.18                  | -55.77                   | 3.03                       | 8.07                        | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 5                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



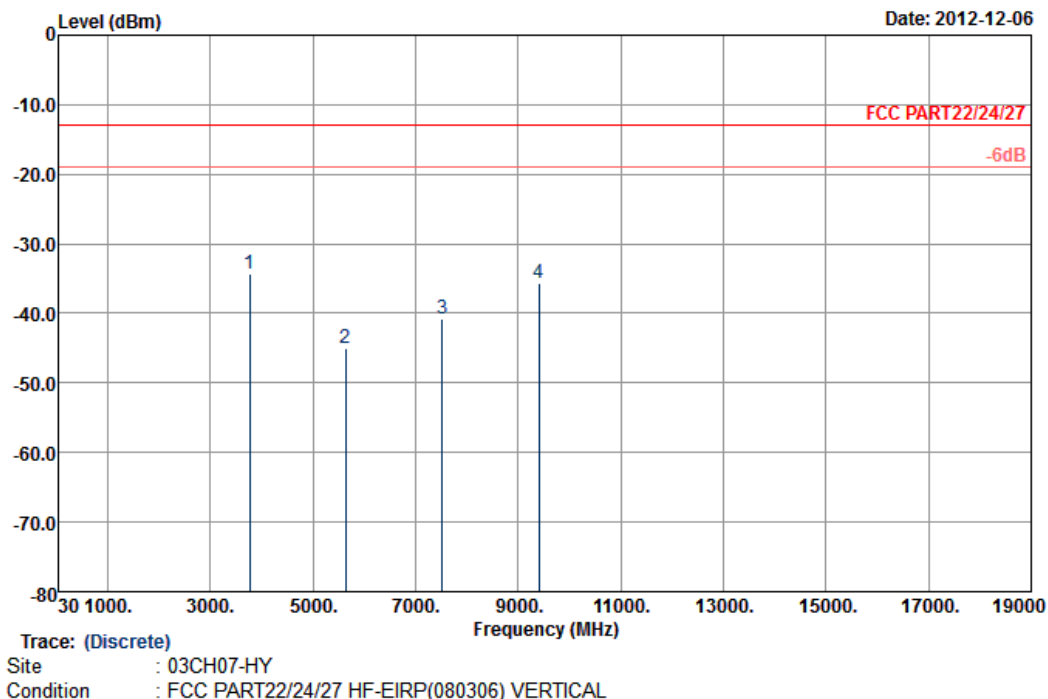
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1681                 | -52.96          | -13              | -39.96                  | -64.93                  | -54.68                   | 1.62                       | 5.49                        | V                     | Pass   |
| 2524                 | -53.81          | -13              | -40.81                  | -67.65                  | -55.775                  | 2.1                        | 6.22                        | V                     | Pass   |
| 3346                 | -51.22          | -13              | -38.22                  | -66.82                  | -54.11                   | 3.03                       | 8.07                        | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 1.4MHZ QPSK RB Size 3                                                                  | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3760                 | -35.95          | -13              | -22.95                  | -51.53                  | -42.25                   | 2.51                       | 8.81                        | H                     | Pass   |
| 5636                 | -45.53          | -13              | -32.53                  | -66.79                  | -53.24                   | 2.99                       | 10.70                       | H                     | Pass   |
| 7520                 | -40.15          | -13              | -27.15                  | -67.6                   | -48.68                   | 3.59                       | 12.12                       | H                     | Pass   |
| 9400                 | -40.44          | -13              | -27.44                  | -67.32                  | -49.54                   | 4.1                        | 13.20                       | H                     | Pass   |

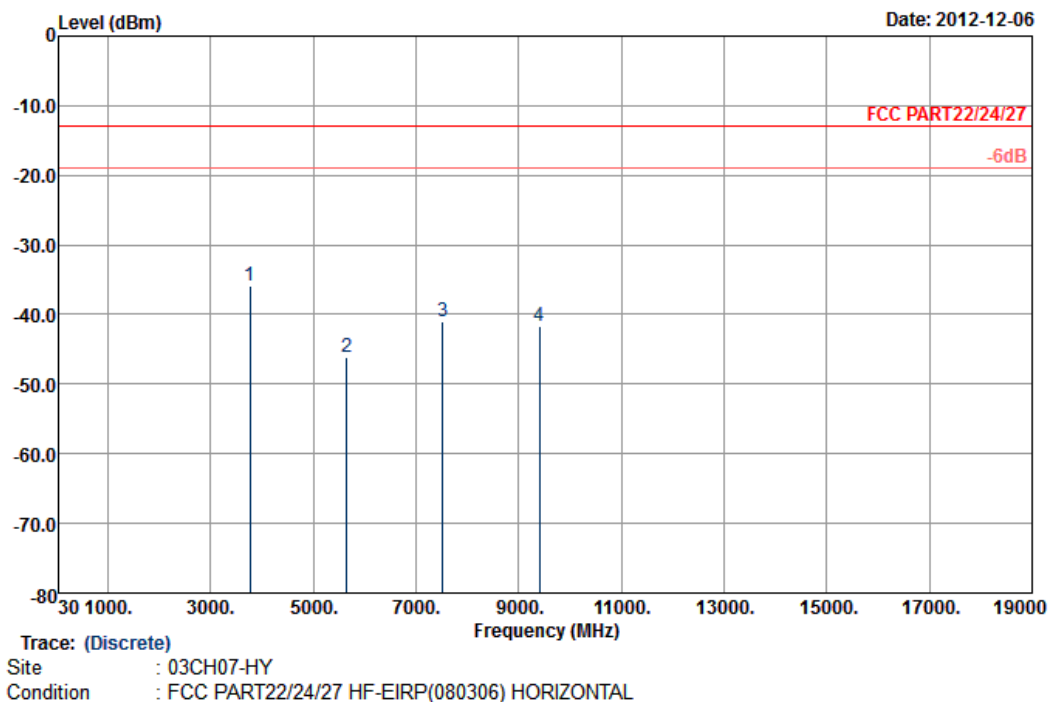
|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 1.4MHZ QPSK RB Size 3                                                                  | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3760                 | -34.26          | -13              | -21.26                  | -50.49                  | -40.56                   | 2.51                       | 8.81                        | V                     | Pass   |
| 5636                 | -45.07          | -13              | -32.07                  | -65.66                  | -52.78                   | 2.99                       | 10.70                       | V                     | Pass   |
| 7520                 | -40.71          | -13              | -27.71                  | -67.53                  | -49.24                   | 3.59                       | 12.12                       | V                     | Pass   |
| 9400                 | -35.68          | -13              | -22.68                  | -62.99                  | -44.78                   | 4.1                        | 13.20                       | V                     | Pass   |

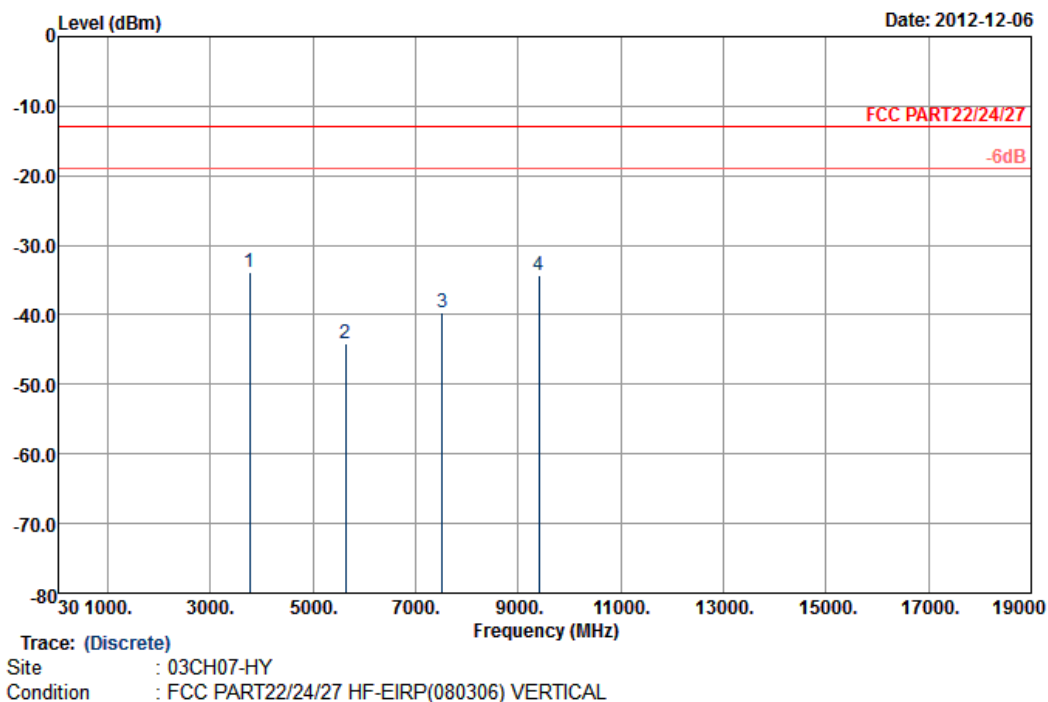


|                 |                                                                                        |                     |            |
|-----------------|----------------------------------------------------------------------------------------|---------------------|------------|
| Band :          | LTE Band 2                                                                             | Temperature :       | 23~24°C    |
| Test Mode :     | 3MHZ QPSK RB Size 1                                                                    | Relative Humidity : | 43~45%     |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Horizontal |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |            |



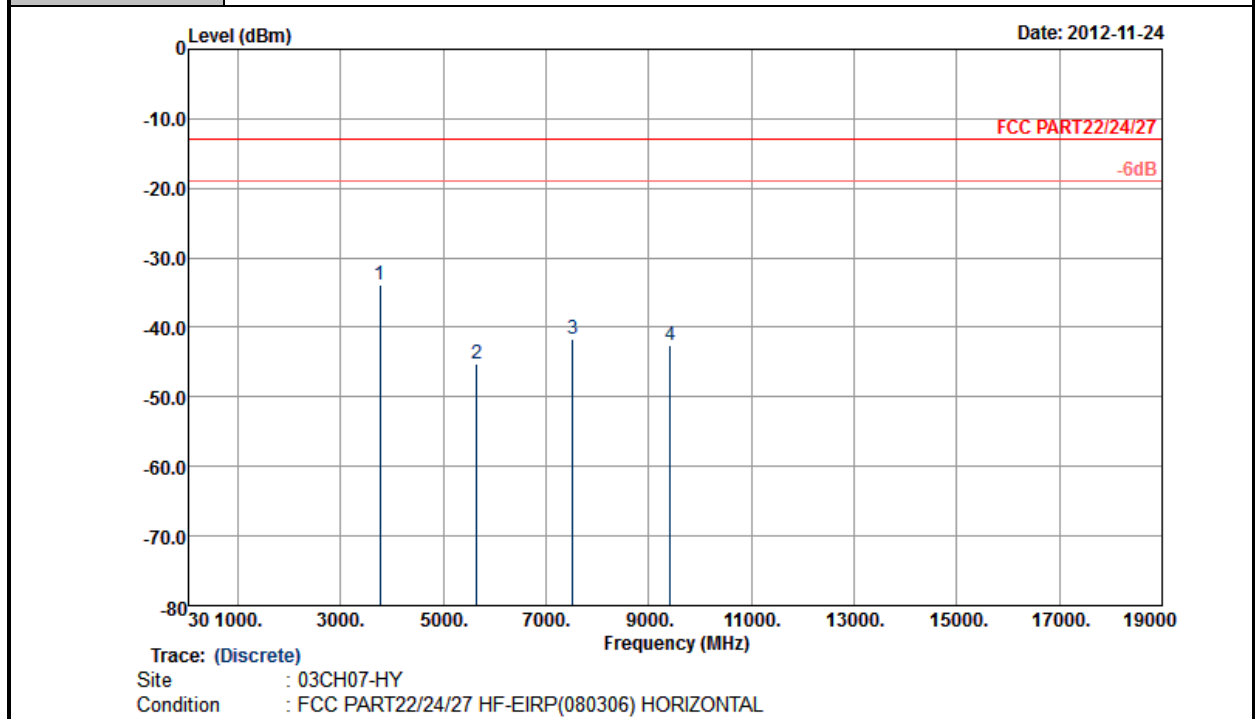
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3760                 | -35.91          | -13              | -22.91                  | -52.11                  | -42.21                   | 2.51                       | 8.81                        | H                     | Pass   |
| 5636                 | -46.03          | -13              | -33.03                  | -66.79                  | -53.74                   | 2.99                       | 10.70                       | H                     | Pass   |
| 7520                 | -40.94          | -13              | -27.94                  | -68.68                  | -49.47                   | 3.59                       | 12.12                       | H                     | Pass   |
| 9400                 | -41.75          | -13              | -28.75                  | -67.85                  | -50.85                   | 4.1                        | 13.20                       | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 3MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3760                 | -33.94          | -13              | -20.94                  | -50.21                  | -40.24                   | 2.51                       | 8.81                        | V                     | Pass   |
| 5636                 | -44.14          | -13              | -31.14                  | -65.67                  | -51.85                   | 2.99                       | 10.70                       | V                     | Pass   |
| 7520                 | -39.71          | -13              | -26.71                  | -66.29                  | -48.24                   | 3.59                       | 12.12                       | V                     | Pass   |
| 9400                 | -34.24          | -13              | -21.24                  | -61.04                  | -43.34                   | 4.1                        | 13.20                       | V                     | Pass   |

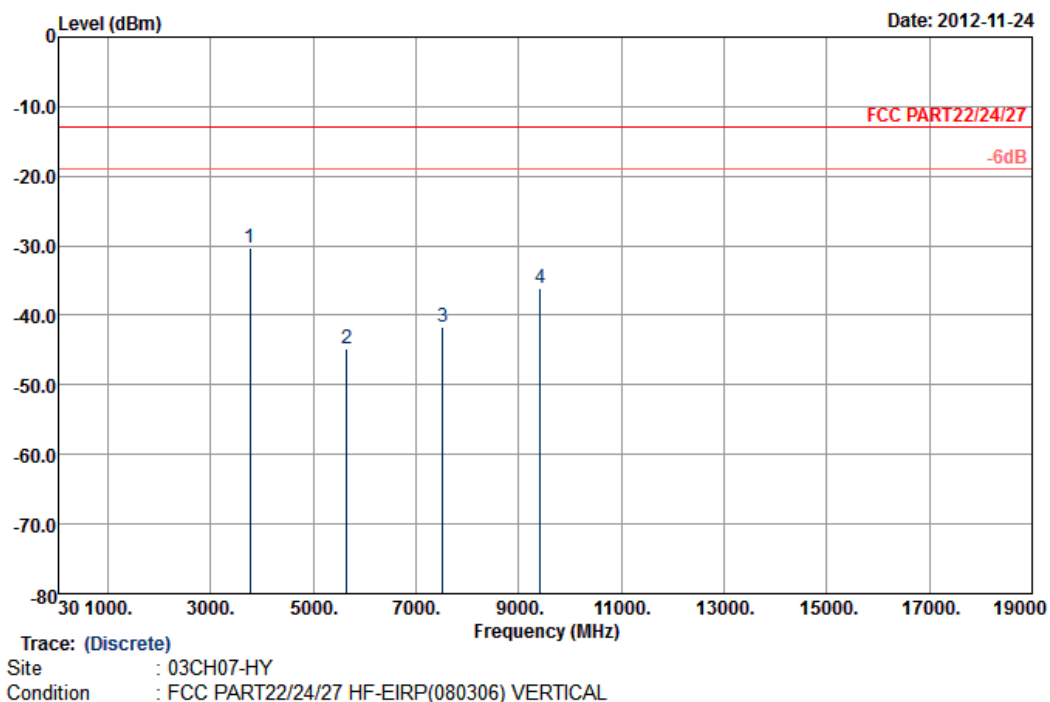
|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3764                 | -33.94          | -13              | -20.94                  | -50.05                  | -40.24                   | 2.51                       | 8.81                        | H                     | Pass   |
| 5648                 | -45.17          | -13              | -32.17                  | -67.53                  | -52.88                   | 2.99                       | 10.70                       | H                     | Pass   |
| 7520                 | -41.71          | -13              | -28.71                  | -68.78                  | -50.24                   | 3.59                       | 12.12                       | H                     | Pass   |
| 9412                 | -42.67          | -13              | -29.67                  | -68.86                  | -51.77                   | 4.1                        | 13.20                       | H                     | Pass   |

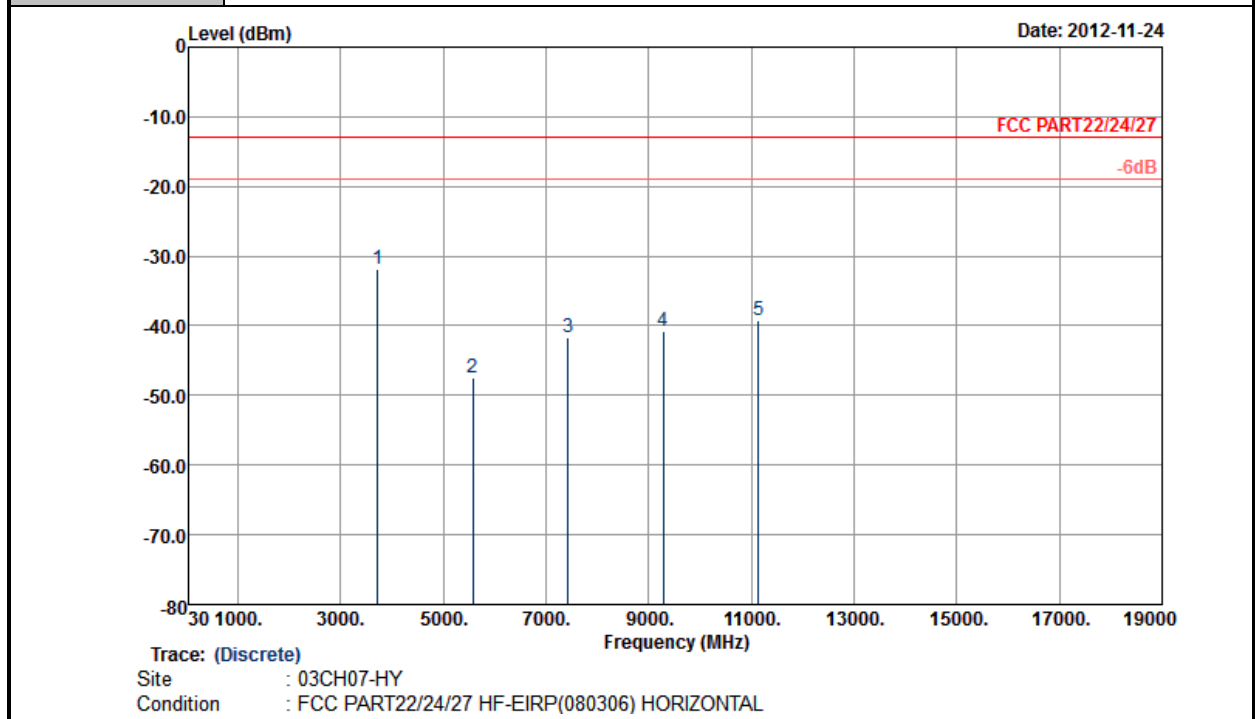


|                 |                                                                                        |                     |          |
|-----------------|----------------------------------------------------------------------------------------|---------------------|----------|
| Band :          | LTE Band 2                                                                             | Temperature :       | 23~24°C  |
| Test Mode :     | 5MHZ QPSK RB Size 1                                                                    | Relative Humidity : | 43~45%   |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Vertical |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |          |



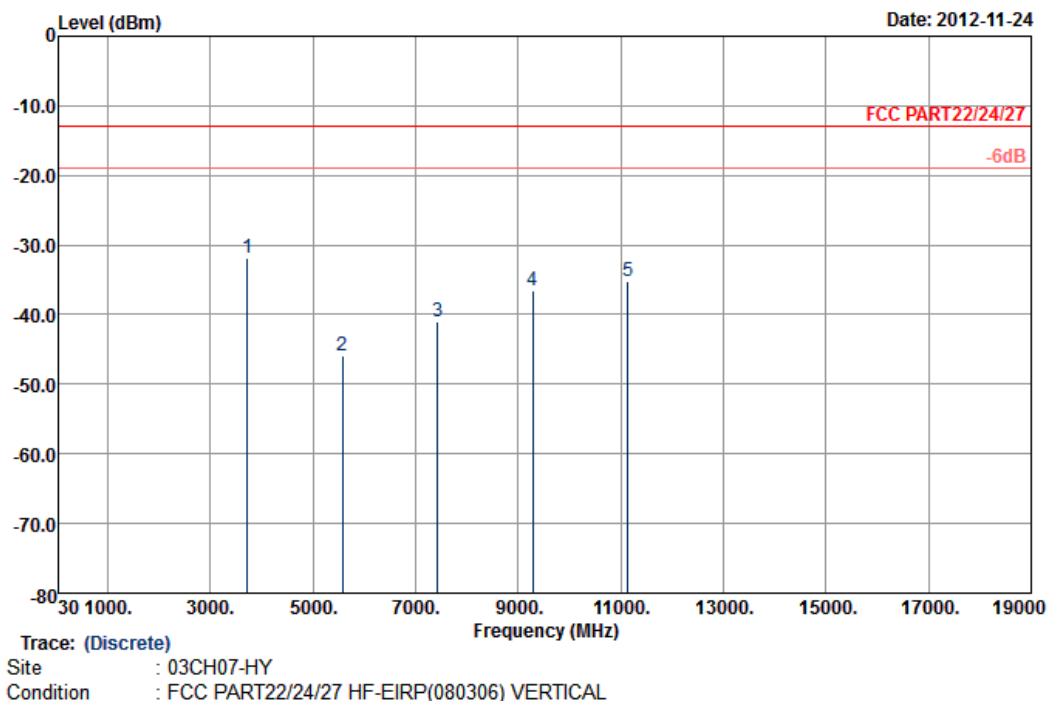
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3764                 | -30.25          | -13              | -17.25                  | -48.04                  | -36.55                   | 2.51                       | 8.81                        | V                     | Pass   |
| 5648                 | -44.86          | -13              | -31.86                  | -65.56                  | -52.57                   | 2.99                       | 10.70                       | V                     | Pass   |
| 7520                 | -41.71          | -13              | -28.71                  | -69.11                  | -50.24                   | 3.59                       | 12.12                       | V                     | Pass   |
| 9412                 | -36.15          | -13              | -23.15                  | -64.34                  | -45.25                   | 4.1                        | 13.20                       | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



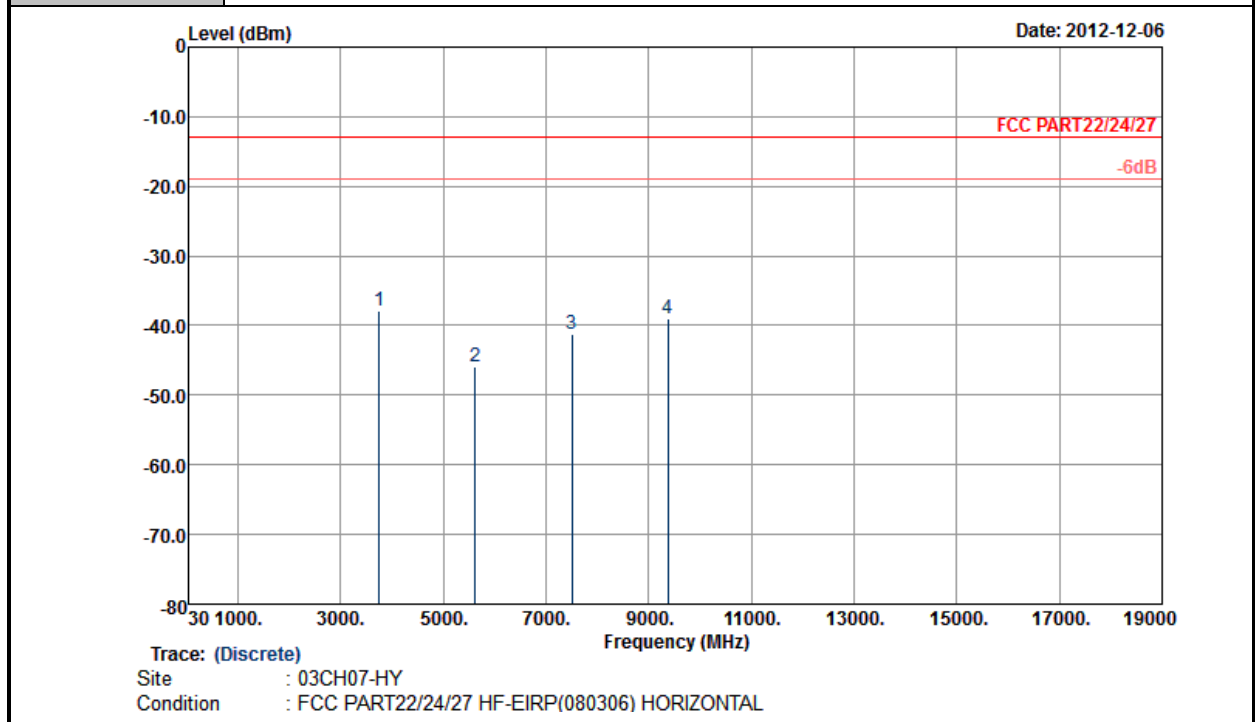
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3710                 | -31.95          | -13              | -18.95                  | -47.28                  | -38.25                   | 2.51                       | 8.81                        | H                     | Pass   |
| 5565                 | -47.54          | -13              | -34.54                  | -67.82                  | -55.25                   | 2.99                       | 10.70                       | H                     | Pass   |
| 7420                 | -41.71          | -13              | -28.71                  | -68.55                  | -50.24                   | 3.59                       | 12.12                       | H                     | Pass   |
| 9275                 | -40.67          | -13              | -27.67                  | -67.47                  | -49.77                   | 4.1                        | 13.20                       | H                     | Pass   |
| 11130                | -39.20          | -13              | -26.20                  | -69.73                  | -48.24                   | 4.27                       | 13.31                       | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3710                 | -31.94          | -13              | -18.94                  | -48.29                  | -38.24                   | 2.51                       | 8.81                        | V                     | Pass   |
| 5565                 | -45.86          | -13              | -32.86                  | -65.97                  | -53.57                   | 2.99                       | 10.70                       | V                     | Pass   |
| 7420                 | -41.03          | -13              | -28.03                  | -68.97                  | -49.56                   | 3.59                       | 12.12                       | V                     | Pass   |
| 9275                 | -36.44          | -13              | -23.44                  | -63.19                  | -45.54                   | 4.1                        | 13.20                       | V                     | Pass   |
| 11130                | -35.20          | -13              | -22.20                  | -65.16                  | -44.24                   | 4.27                       | 13.31                       | V                     | Pass   |

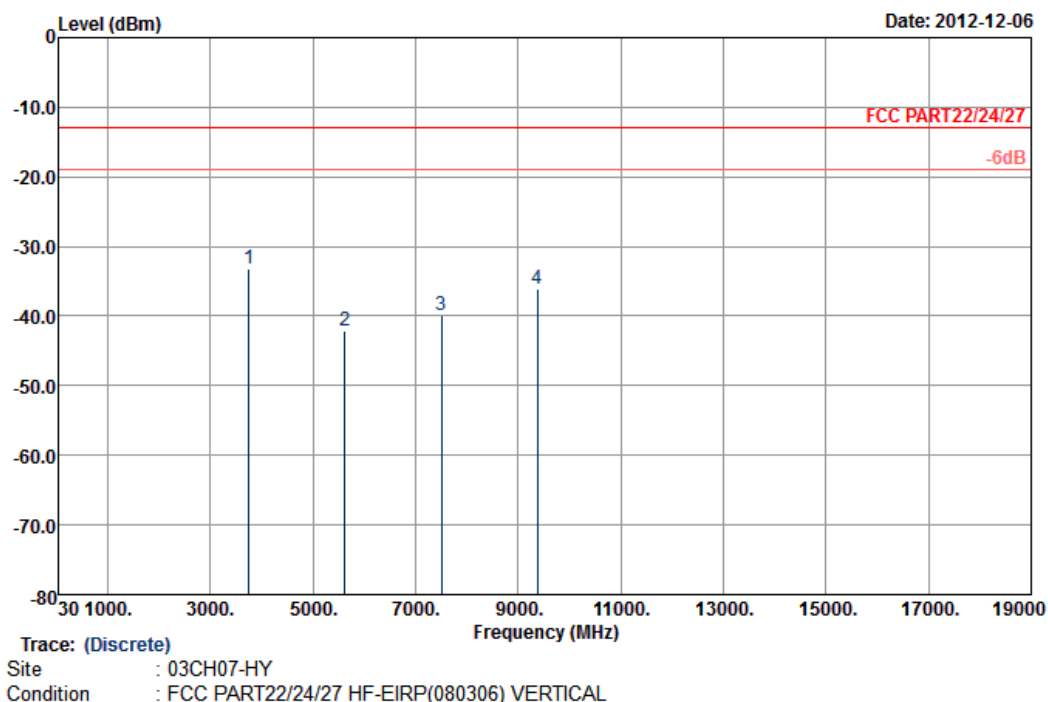
|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 15MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3744                 | -37.95          | -13              | -24.95                  | -52.7                   | -44.25                   | 2.51                       | 8.81                        | H                     | Pass   |
| 5620                 | -45.86          | -13              | -32.86                  | -65.87                  | -53.57                   | 2.99                       | 10.70                       | H                     | Pass   |
| 7504                 | -41.21          | -13              | -28.21                  | -68.51                  | -49.74                   | 3.59                       | 12.12                       | H                     | Pass   |
| 9368                 | -39.04          | -13              | -26.04                  | -65.82                  | -48.14                   | 4.1                        | 13.20                       | H                     | Pass   |



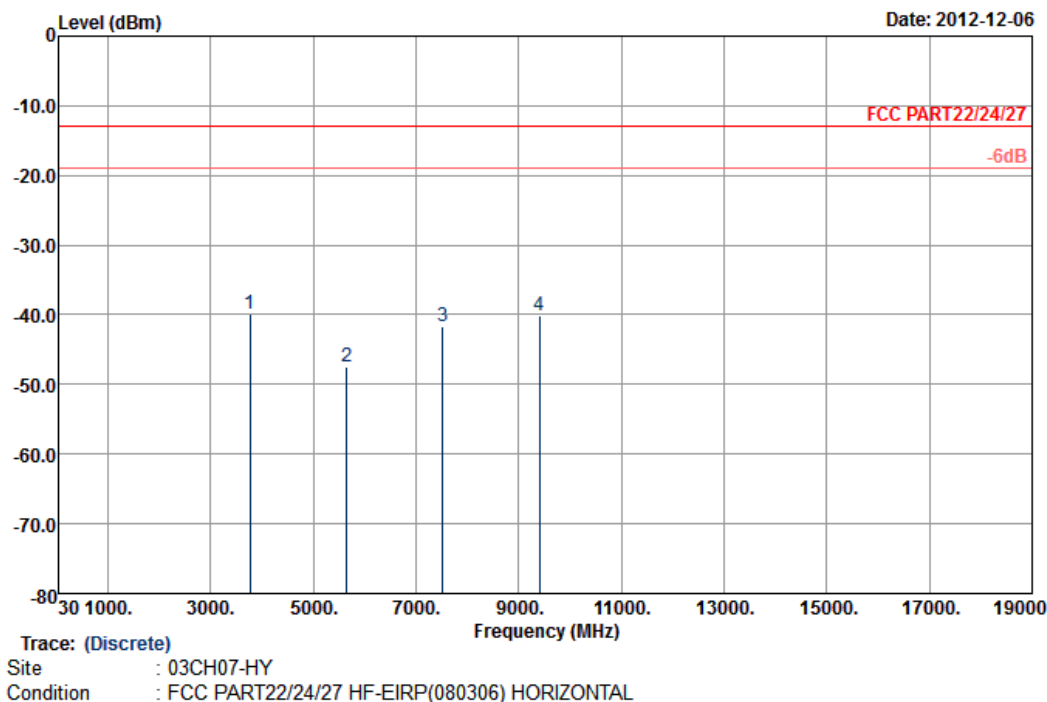
|                 |                                                                                        |                     |          |
|-----------------|----------------------------------------------------------------------------------------|---------------------|----------|
| Band :          | LTE Band 2                                                                             | Temperature :       | 23~24°C  |
| Test Mode :     | 15MHZ QPSK RB Size 1                                                                   | Relative Humidity : | 43~45%   |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Vertical |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3744                 | -33.21          | -13              | -20.21                  | -50.2                   | -39.51                   | 2.51                       | 8.81                        | V                     | Pass   |
| 5620                 | -42.16          | -13              | -29.16                  | -63.79                  | -49.87                   | 2.99                       | 10.70                       | V                     | Pass   |
| 7504                 | -39.94          | -13              | -26.94                  | -67.09                  | -48.47                   | 3.59                       | 12.12                       | V                     | Pass   |
| 9368                 | -36.05          | -13              | -23.05                  | -62.64                  | -45.15                   | 4.1                        | 13.20                       | V                     | Pass   |

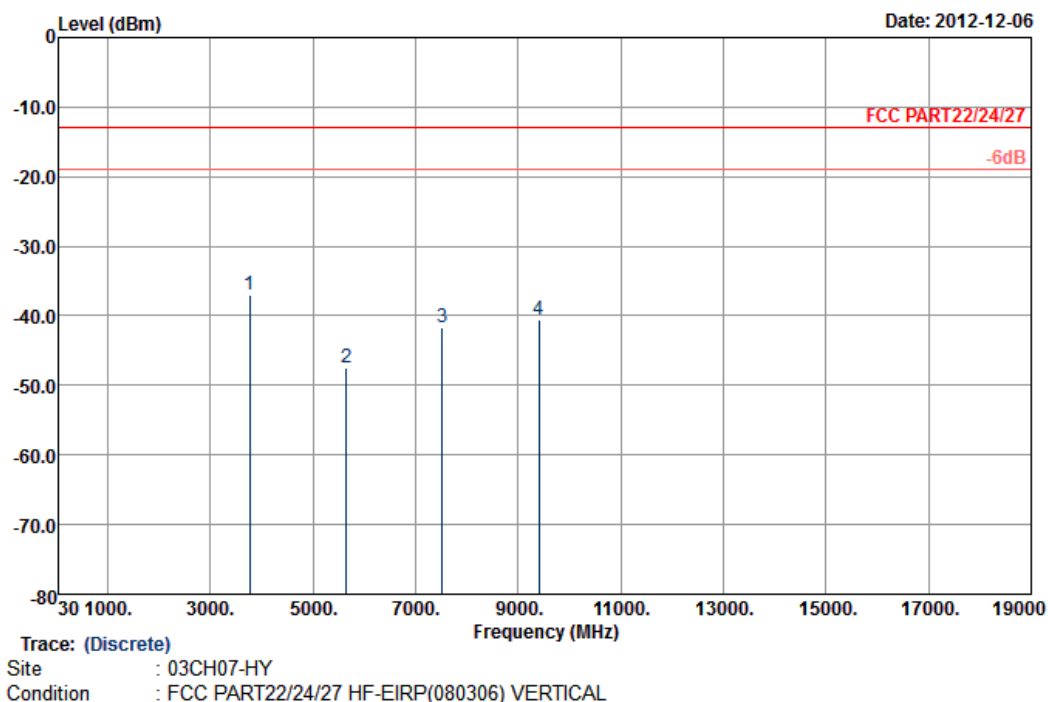


|                 |                                                                                        |                     |            |
|-----------------|----------------------------------------------------------------------------------------|---------------------|------------|
| Band :          | LTE Band 2                                                                             | Temperature :       | 23~24°C    |
| Test Mode :     | 20MHZ QPSK RB Size 1                                                                   | Relative Humidity : | 43~45%     |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Horizontal |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |            |



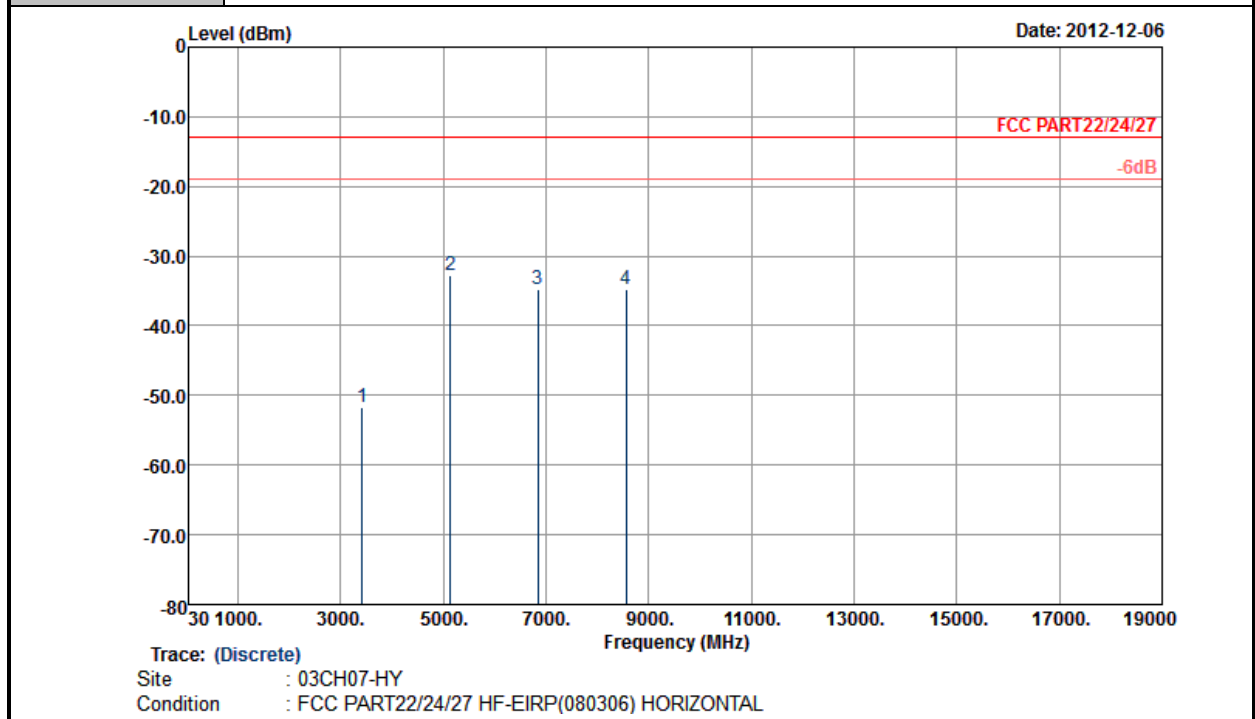
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3760                 | -39.94          | -13              | -26.94                  | -54.86                  | -46.24                   | 2.51                       | 8.81                        | H                     | Pass   |
| 5640                 | -47.53          | -13              | -34.53                  | -68.69                  | -55.24                   | 2.99                       | 10.70                       | H                     | Pass   |
| 7520                 | -41.61          | -13              | -28.61                  | -68.58                  | -50.14                   | 3.59                       | 12.12                       | H                     | Pass   |
| 9400                 | -40.14          | -13              | -27.14                  | -68.09                  | -49.24                   | 4.1                        | 13.20                       | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 2                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 20MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3760                 | -36.94          | -13              | -23.94                  | -52.99                  | -43.24                   | 2.51                       | 8.81                        | V                     | Pass   |
| 5640                 | -47.43          | -13              | -34.43                  | -69.07                  | -55.14                   | 2.99                       | 10.70                       | V                     | Pass   |
| 7520                 | -41.59          | -13              | -28.59                  | -68.34                  | -50.12                   | 3.59                       | 12.12                       | V                     | Pass   |
| 9400                 | -40.47          | -13              | -27.47                  | -67.55                  | -49.57                   | 4.1                        | 13.20                       | V                     | Pass   |

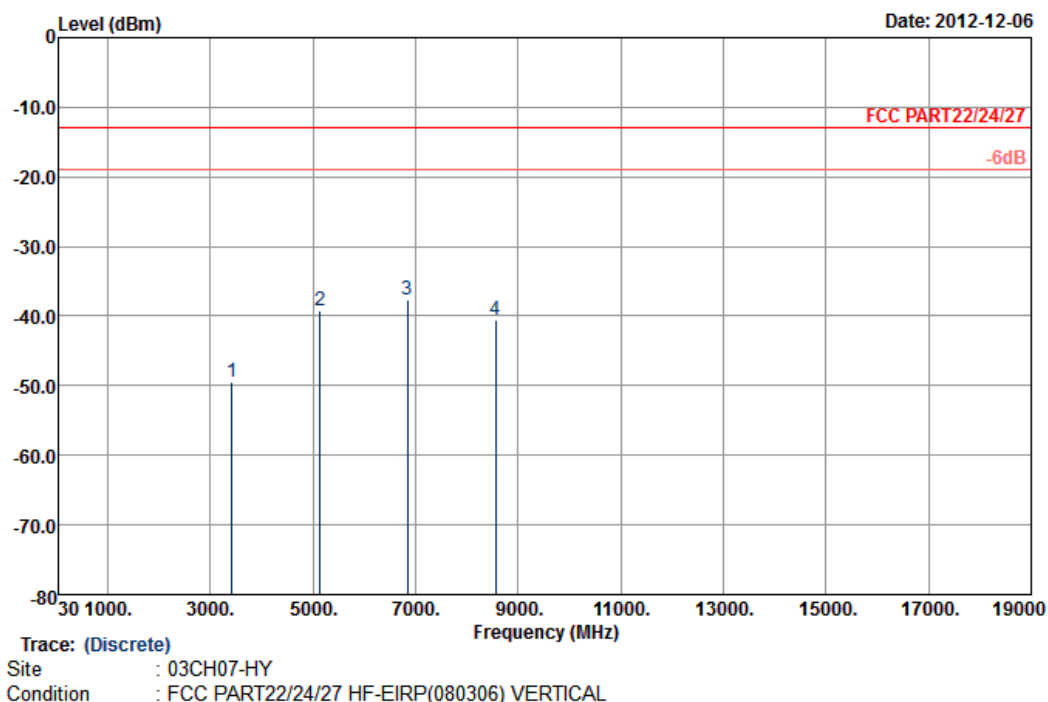
|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 1.4MHZ QPSK RB Size 3                                                                  | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3421                 | -51.74          | -13              | -38.74                  | -66.14                  | -53.42                   | 4.48                       | 8.31                        | H                     | Pass   |
| 5131                 | -32.75          | -13              | -19.75                  | -50.89                  | -35.24                   | 5.332                      | 9.98                        | H                     | Pass   |
| 6841                 | -34.68          | -13              | -21.68                  | -60.21                  | -37.77                   | 6.1                        | 11.34                       | H                     | Pass   |
| 8551                 | -34.68          | -13              | -21.68                  | -60.17                  | -37.45                   | 8.25                       | 13.17                       | H                     | Pass   |

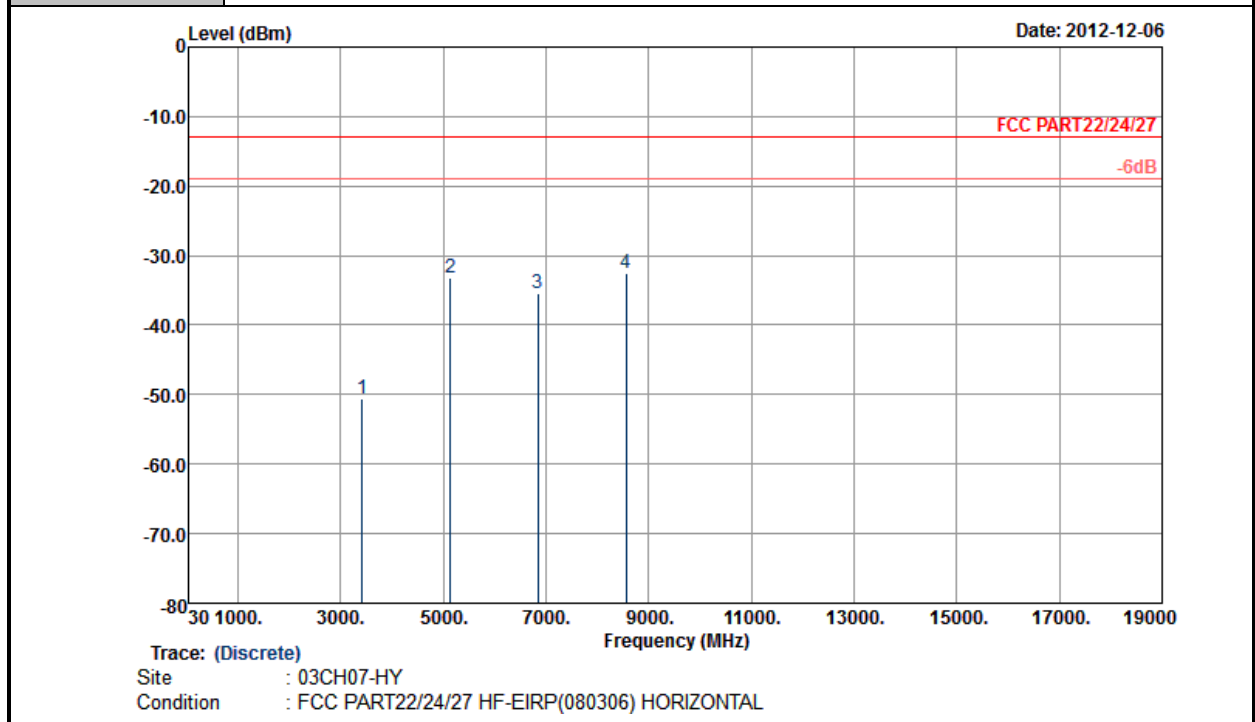


|                 |                                                                                        |                     |          |
|-----------------|----------------------------------------------------------------------------------------|---------------------|----------|
| Band :          | LTE Band 4                                                                             | Temperature :       | 23~24°C  |
| Test Mode :     | 1.4MHZ QPSK RB Size 3                                                                  | Relative Humidity : | 43~45%   |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Vertical |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3421                 | -49.56          | -13              | -36.56                  | -65.18                  | -51.24                   | 4.48                       | 8.31                        | V                     | Pass   |
| 5131                 | -39.17          | -13              | -26.17                  | -59.26                  | -41.66                   | 5.332                      | 9.98                        | V                     | Pass   |
| 6841                 | -37.69          | -13              | -24.69                  | -62.99                  | -40.78                   | 6.1                        | 11.34                       | V                     | Pass   |
| 8551                 | -40.47          | -13              | -27.47                  | -66.34                  | -43.24                   | 8.25                       | 13.17                       | V                     | Pass   |

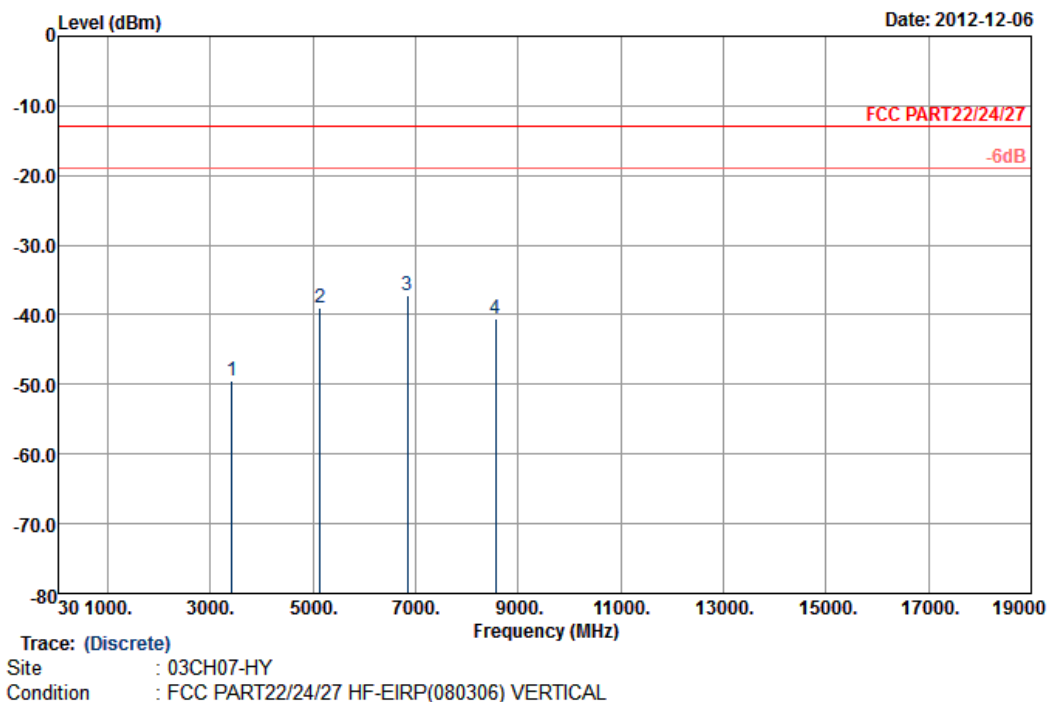
|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 3MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3420                 | -50.56          | -13              | -37.56                  | -64.83                  | -52.24                   | 4.48                       | 8.31                        | H                     | Pass   |
| 5134                 | -33.29          | -13              | -20.29                  | -52.01                  | -35.78                   | 5.332                      | 9.98                        | H                     | Pass   |
| 6845                 | -35.53          | -13              | -22.53                  | -61.6                   | -38.62                   | 6.1                        | 11.34                       | H                     | Pass   |
| 8556                 | -32.47          | -13              | -19.47                  | -58.86                  | -35.24                   | 8.25                       | 13.17                       | H                     | Pass   |

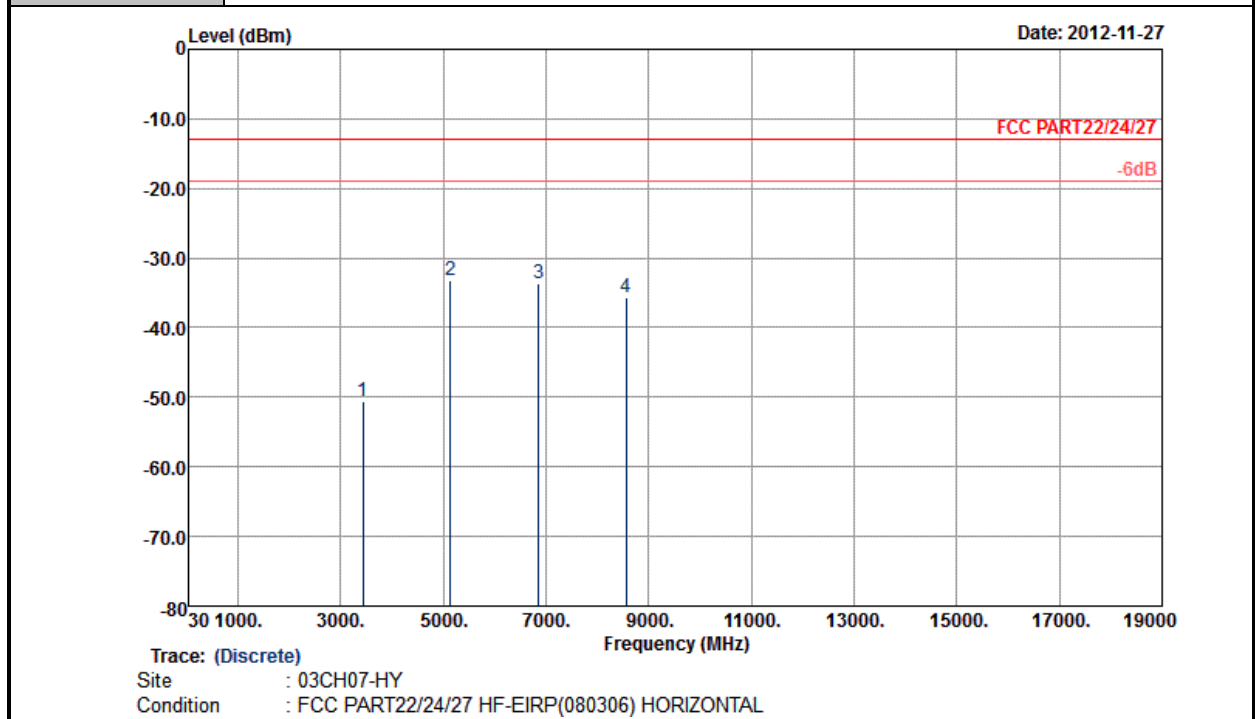


|                 |                                                                                        |                     |          |
|-----------------|----------------------------------------------------------------------------------------|---------------------|----------|
| Band :          | LTE Band 4                                                                             | Temperature :       | 23~24°C  |
| Test Mode :     | 3MHZ QPSK RB Size 1                                                                    | Relative Humidity : | 43~45%   |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Vertical |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |          |



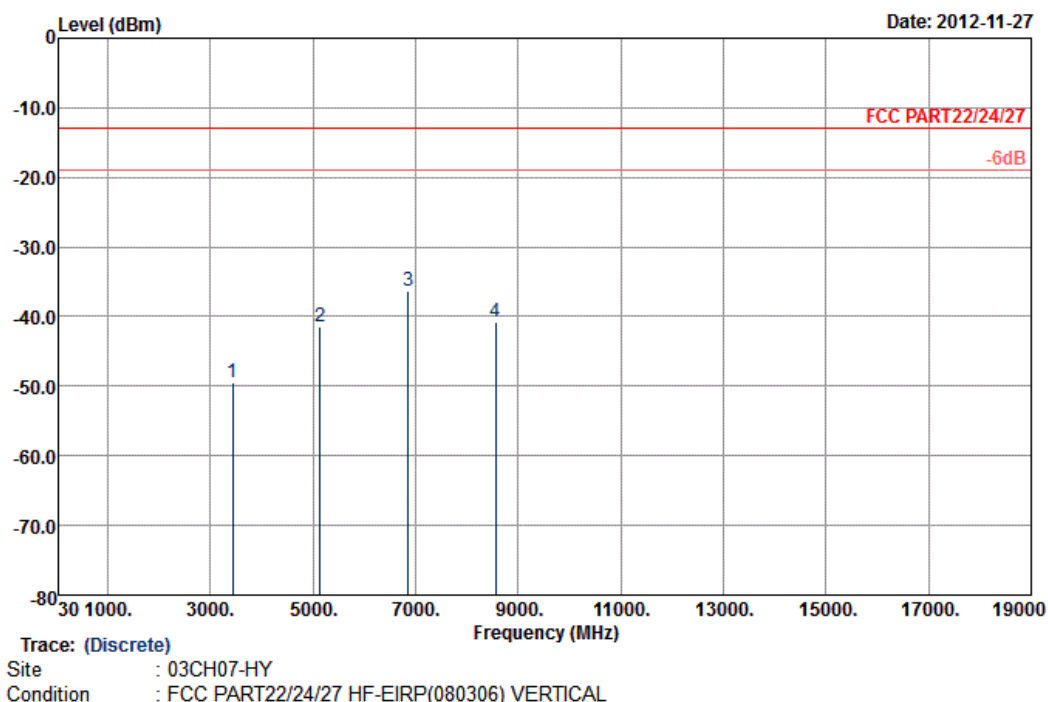
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3420                 | -49.56          | -13              | -36.56                  | -65.74                  | -51.24                   | 4.48                       | 8.31                        | V                     | Pass   |
| 5134                 | -38.92          | -13              | -25.92                  | -57.92                  | -41.41                   | 5.332                      | 9.98                        | V                     | Pass   |
| 6845                 | -37.12          | -13              | -24.12                  | -63.87                  | -40.21                   | 6.1                        | 11.34                       | V                     | Pass   |
| 8556                 | -40.47          | -13              | -27.47                  | -65.23                  | -43.24                   | 8.25                       | 13.17                       | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3425                 | -50.56          | -13              | -37.56                  | -64.93                  | -52.24                   | 4.48                       | 8.31                        | H                     | Pass   |
| 5137                 | -33.28          | -13              | -20.28                  | -52.15                  | -35.77                   | 5.332                      | 9.98                        | H                     | Pass   |
| 6850                 | -33.56          | -13              | -20.56                  | -60.67                  | -36.65                   | 6.1                        | 11.34                       | H                     | Pass   |
| 8562                 | -35.58          | -13              | -22.58                  | -62.02                  | -38.35                   | 8.25                       | 13.17                       | H                     | Pass   |

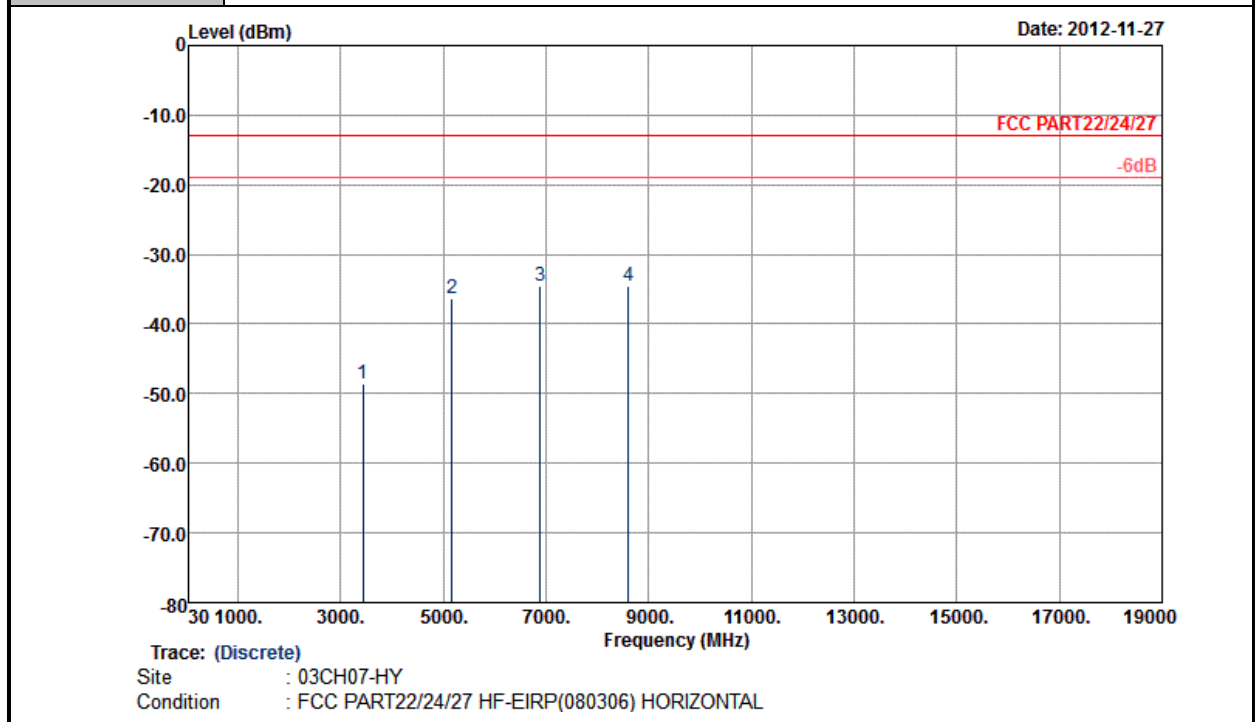
|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3425                 | -49.56          | -13              | -36.56                  | -65.37                  | -51.24                   | 4.48                       | 8.31                        | V                     | Pass   |
| 5137                 | -41.39          | -13              | -28.39                  | -60.63                  | -43.88                   | 5.332                      | 9.98                        | V                     | Pass   |
| 6850                 | -36.38          | -13              | -23.38                  | -62.65                  | -39.47                   | 6.1                        | 11.34                       | V                     | Pass   |
| 8562                 | -40.89          | -13              | -27.89                  | -65.8                   | -43.66                   | 8.25                       | 13.17                       | V                     | Pass   |

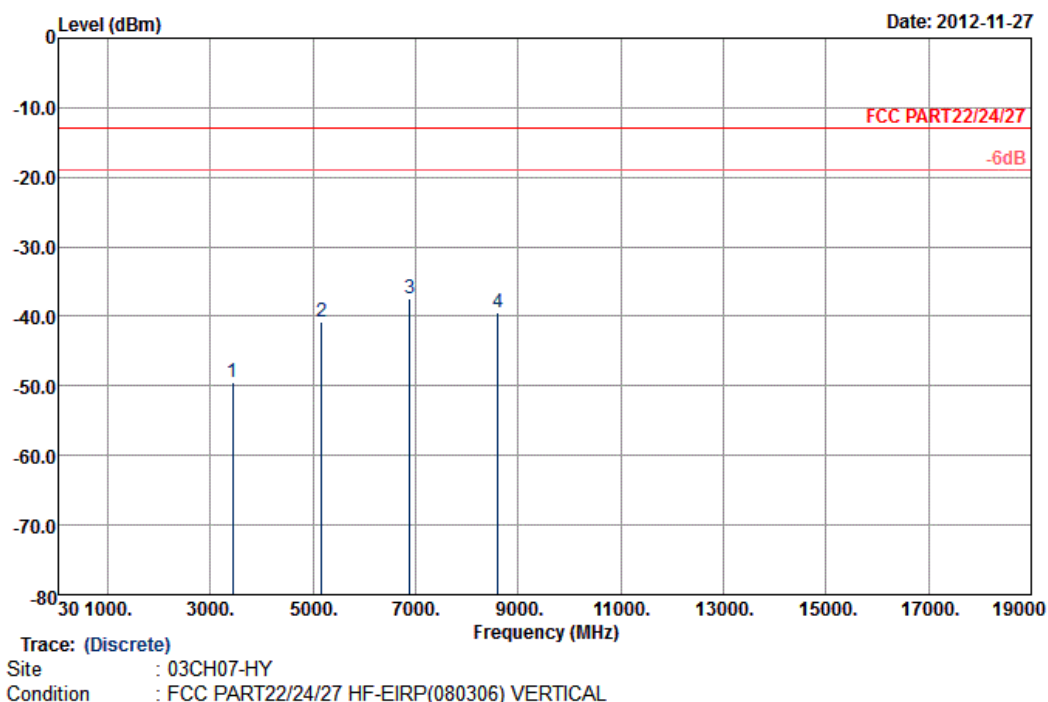


|                 |                                                                                        |                     |            |
|-----------------|----------------------------------------------------------------------------------------|---------------------|------------|
| Band :          | LTE Band 4                                                                             | Temperature :       | 23~24°C    |
| Test Mode :     | 10MHZ QPSK RB Size 1                                                                   | Relative Humidity : | 43~45%     |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Horizontal |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3436                 | -48.57          | -13              | -35.57                  | -63.66                  | -50.25                   | 4.48                       | 8.31                        | H                     | Pass   |
| 5160                 | -36.29          | -13              | -23.29                  | -54.7                   | -38.78                   | 5.332                      | 9.98                        | H                     | Pass   |
| 6880                 | -34.49          | -13              | -21.49                  | -61.89                  | -37.58                   | 6.1                        | 11.34                       | H                     | Pass   |
| 8596                 | -34.48          | -13              | -21.48                  | -60.86                  | -37.25                   | 8.25                       | 13.17                       | H                     | Pass   |

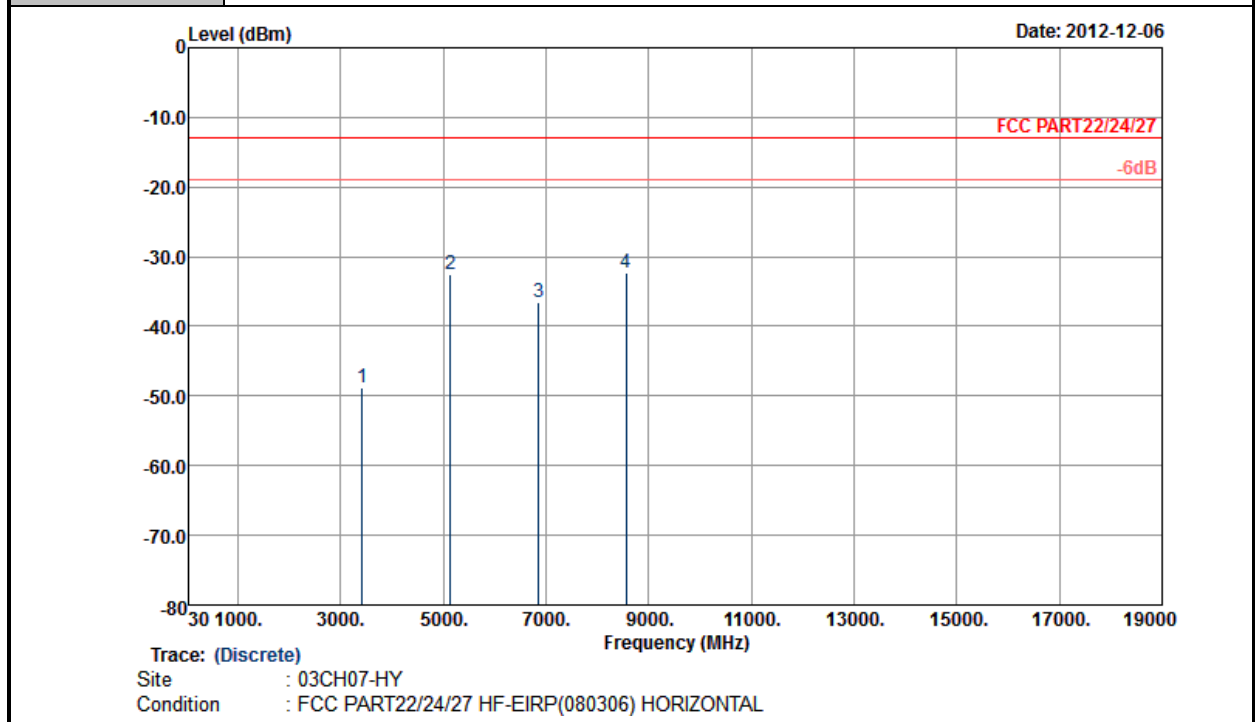
|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3425                 | -49.56          | -13              | -36.56                  | -66.08                  | -51.24                   | 4.48                       | 8.31                        | V                     | Pass   |
| 5160                 | -40.83          | -13              | -27.83                  | -60.35                  | -43.32                   | 5.332                      | 9.98                        | V                     | Pass   |
| 6880                 | -37.38          | -13              | -24.38                  | -64.01                  | -40.47                   | 6.1                        | 11.34                       | V                     | Pass   |
| 8596                 | -39.47          | -13              | -26.47                  | -66.02                  | -42.24                   | 8.25                       | 13.17                       | V                     | Pass   |



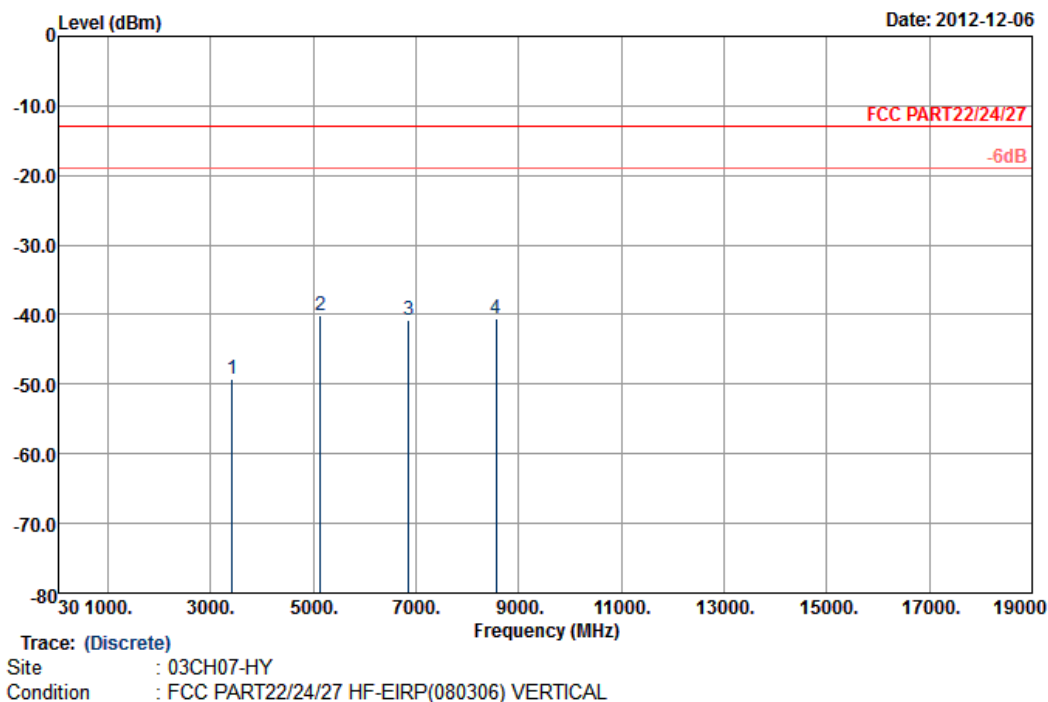
|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 15MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3420                 | -48.78          | -13              | -35.78                  | -63.09                  | -50.46                   | 4.48                       | 8.31                        | H                     | Pass   |
| 5132                 | -32.57          | -13              | -19.57                  | -51.06                  | -35.06                   | 5.332                      | 9.98                        | H                     | Pass   |
| 6848                 | -36.62          | -13              | -23.62                  | -62.48                  | -39.71                   | 6.1                        | 11.34                       | H                     | Pass   |
| 8556                 | -32.35          | -13              | -19.35                  | -57.96                  | -35.12                   | 8.25                       | 13.17                       | H                     | Pass   |

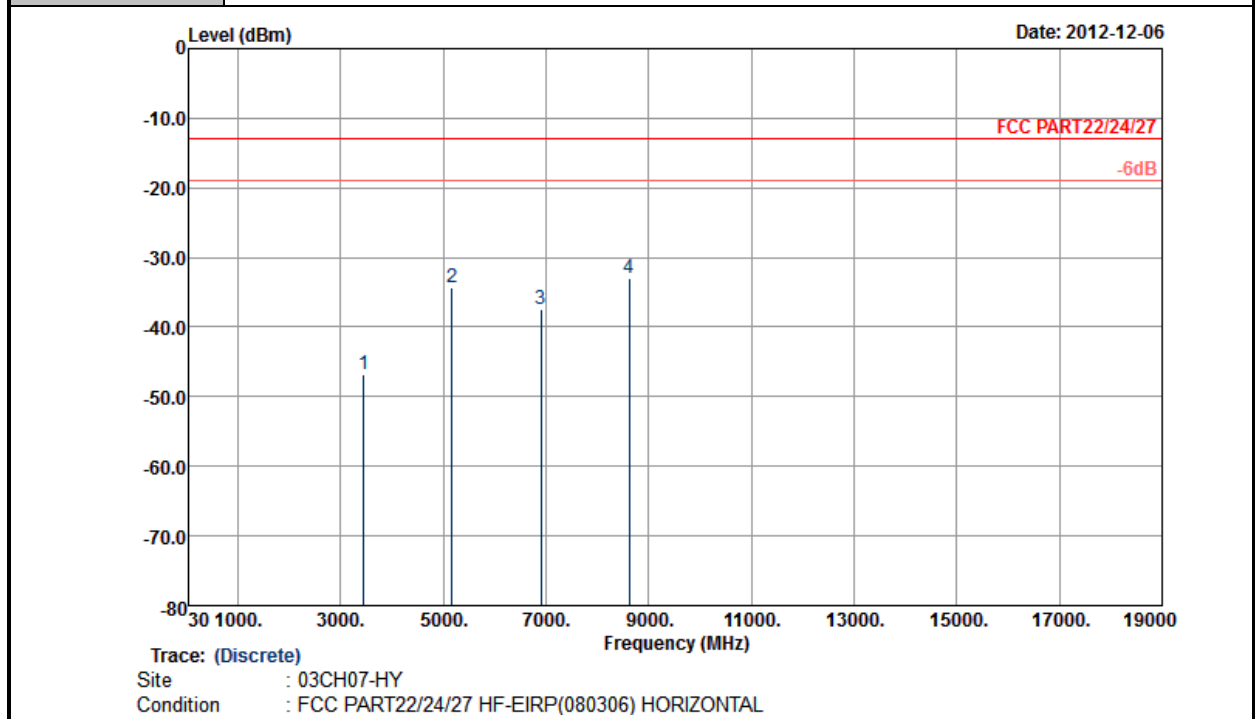


|                 |                                                                                        |                     |          |
|-----------------|----------------------------------------------------------------------------------------|---------------------|----------|
| Band :          | LTE Band 4                                                                             | Temperature :       | 23~24°C  |
| Test Mode :     | 15MHZ QPSK RB Size 1                                                                   | Relative Humidity : | 43~45%   |
| Test Engineer : | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | Polarization :      | Vertical |
| Remark :        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                     |          |



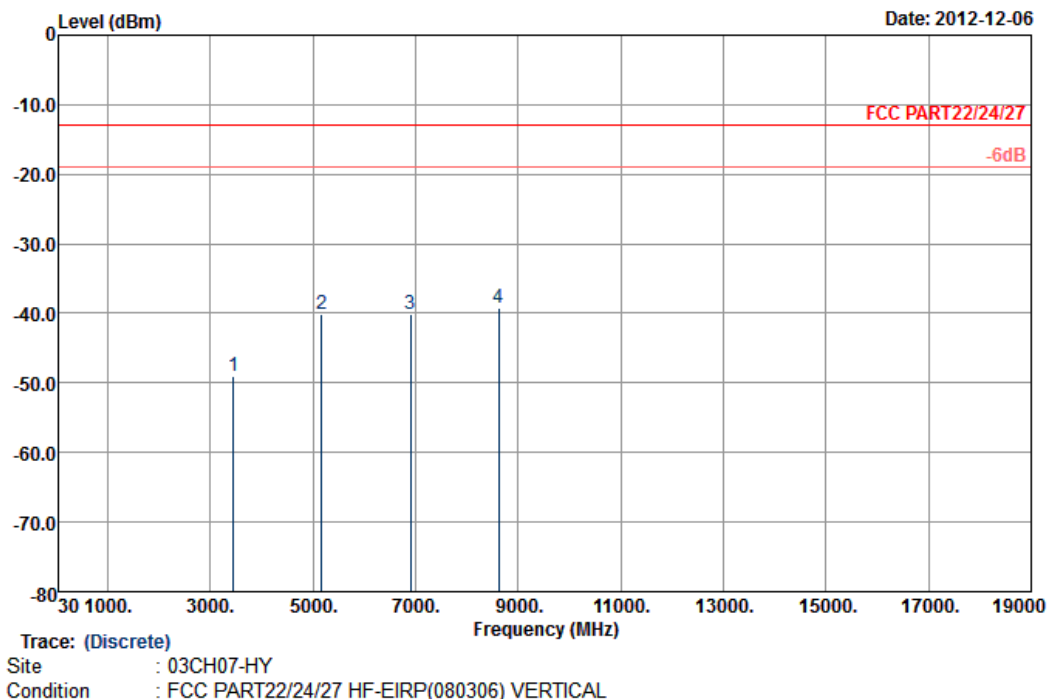
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3420                 | -49.35          | -13              | -36.35                  | -64.97                  | -51.03                   | 4.48                       | 8.31                        | V                     | Pass   |
| 5132                 | -40.06          | -13              | -27.06                  | -58.67                  | -42.55                   | 5.332                      | 9.98                        | V                     | Pass   |
| 6848                 | -40.83          | -13              | -27.83                  | -65.87                  | -43.92                   | 6.1                        | 11.34                       | V                     | Pass   |
| 8556                 | -40.66          | -13              | -27.66                  | -65.99                  | -43.43                   | 8.25                       | 13.17                       | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 20MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



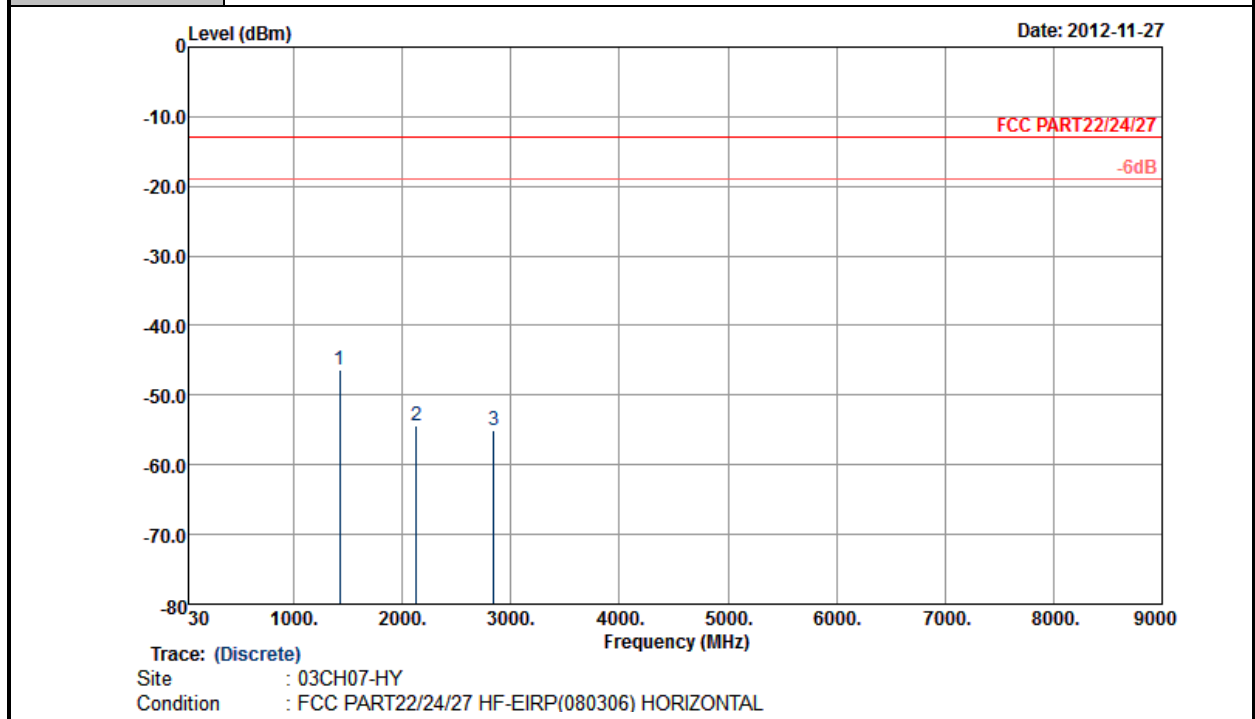
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>( dBm ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>( dBi ) | Polarization<br>( H/V ) | Result |
|----------------------|-----------------|------------------|-------------------------|---------------------------|--------------------------|----------------------------|-------------------------------|-------------------------|--------|
| 3448                 | -46.70          | -13              | -33.70                  | -60.99                    | -48.38                   | 4.48                       | 8.31                          | H                       | Pass   |
| 5172                 | -34.32          | -13              | -21.32                  | -53.04                    | -36.81                   | 5.332                      | 9.98                          | H                       | Pass   |
| 6896                 | -37.45          | -13              | -24.45                  | -63.62                    | -40.54                   | 6.1                        | 11.34                         | H                       | Pass   |
| 8616                 | -33.09          | -13              | -20.09                  | -58.66                    | -35.86                   | 8.25                       | 13.17                         | H                       | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 4                                                                             | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 20MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



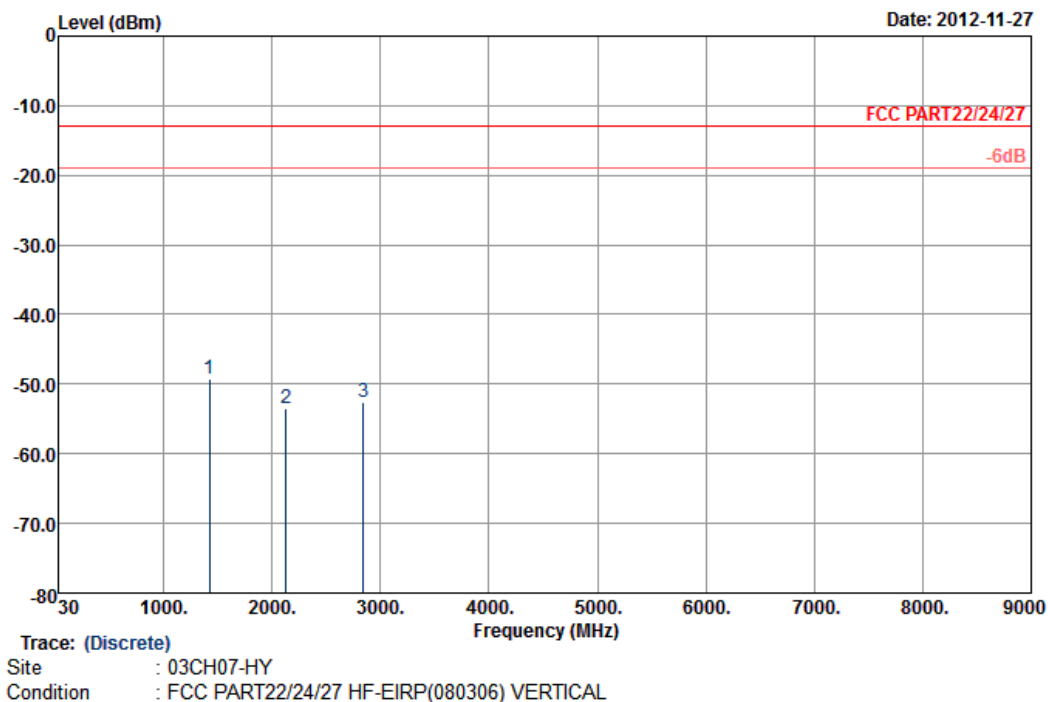
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 3448                 | -49.04          | -13              | -36.04                  | -64.76                  | -50.72                   | 4.48                       | 8.31                        | V                     | Pass   |
| 5172                 | -40.15          | -13              | -27.15                  | -58.91                  | -42.64                   | 5.332                      | 9.98                        | V                     | Pass   |
| 6896                 | -40.02          | -13              | -27.02                  | -65.3                   | -43.11                   | 6.1                        | 11.34                       | V                     | Pass   |
| 8616                 | -39.19          | -13              | -26.19                  | -64.69                  | -41.96                   | 8.25                       | 13.17                       | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 17                                                                            | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



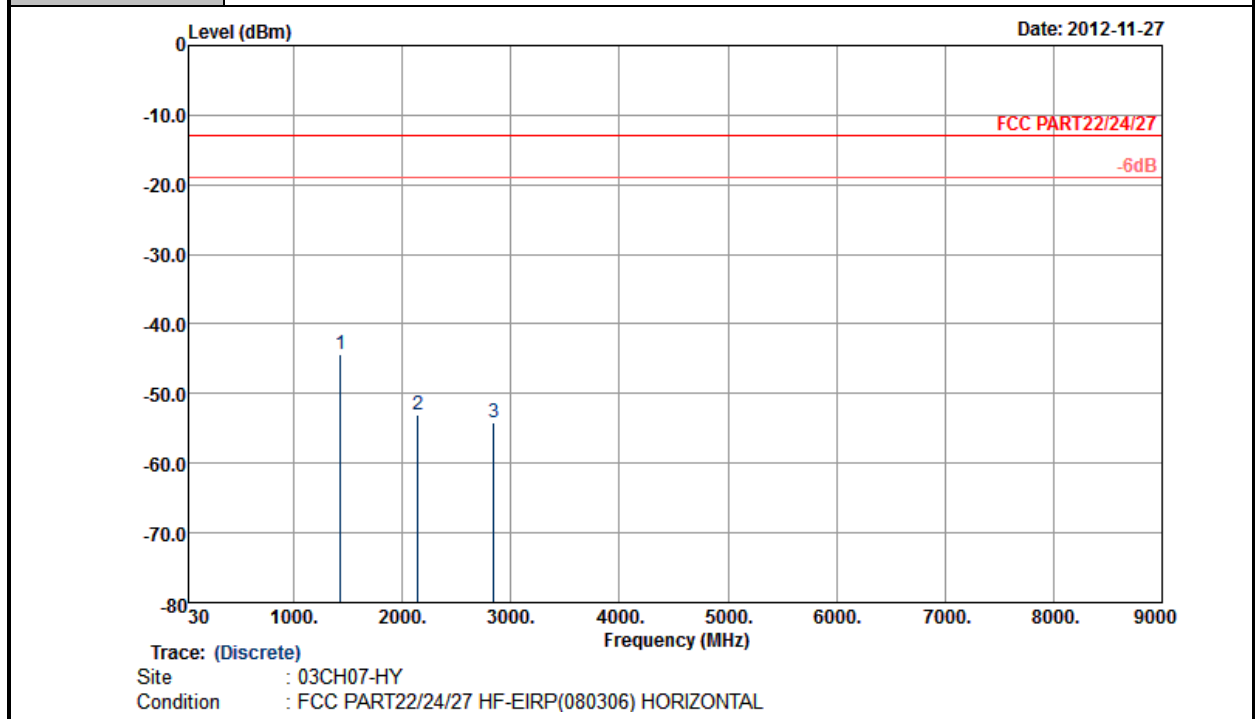
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1423                 | -46.31          | -13              | -33.31                  | -55.18                  | -48.24                   | 1.53                       | 5.61                        | H                     | Pass   |
| 2130                 | -54.45          | -13              | -41.45                  | -66.92                  | -56.47                   | 1.85                       | 6.02                        | H                     | Pass   |
| 2840                 | -54.99          | -13              | -41.99                  | -68.64                  | -57.6                    | 2.24                       | 7.00                        | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 17                                                                            | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 5MHZ QPSK RB Size 1                                                                    | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



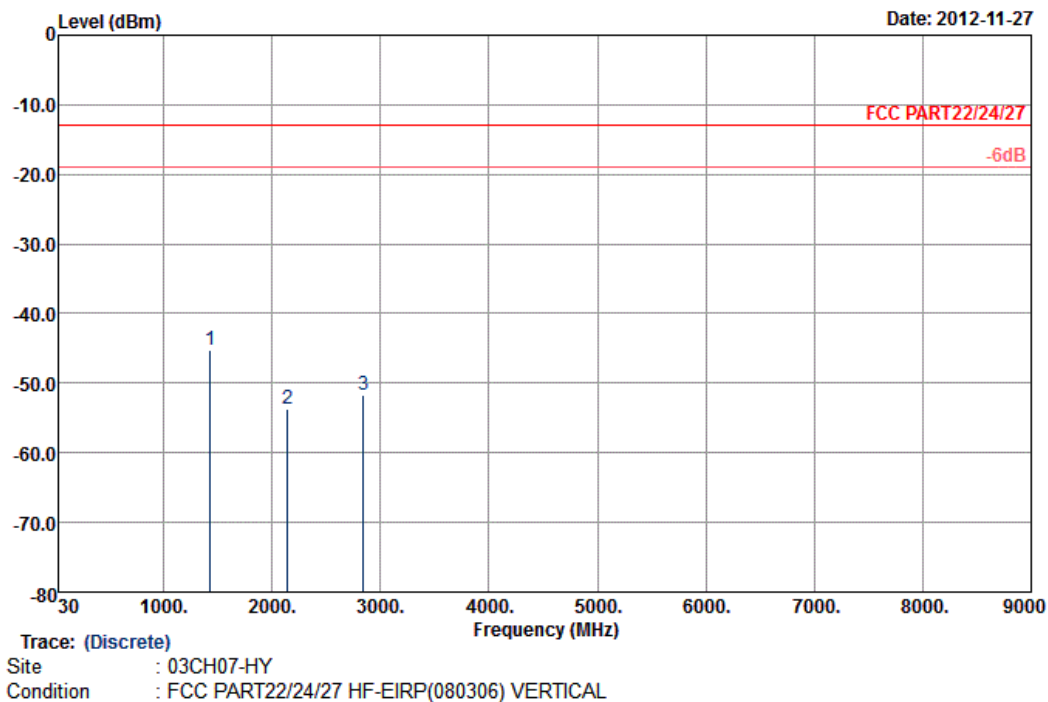
| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1423                 | -49.32          | -13              | -36.32                  | -60.78                  | -51.25                   | 1.53                       | 5.61                        | V                     | Pass   |
| 2130                 | -53.56          | -13              | -40.56                  | -68.01                  | -55.58                   | 1.85                       | 6.02                        | V                     | Pass   |
| 2840                 | -52.53          | -13              | -39.53                  | -68.26                  | -55.14                   | 2.24                       | 7.00                        | V                     | Pass   |

|                        |                                                                                        |                            |            |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| <b>Band :</b>          | LTE Band 17                                                                            | <b>Temperature :</b>       | 23~24°C    |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%     |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Horizontal |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |            |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|--------|
| 1429                 | -44.31          | -13              | -31.31                  | -53.78                  | -46.24                   | 1.53                       | 5.61                        | H                     | Pass   |
| 2143                 | -53.10          | -13              | -40.10                  | -66.12                  | -55.12                   | 1.85                       | 6.02                        | H                     | Pass   |
| 2840                 | -54.18          | -13              | -41.18                  | -67.79                  | -56.79                   | 2.24                       | 7.00                        | H                     | Pass   |

|                        |                                                                                        |                            |          |
|------------------------|----------------------------------------------------------------------------------------|----------------------------|----------|
| <b>Band :</b>          | LTE Band 17                                                                            | <b>Temperature :</b>       | 23~24°C  |
| <b>Test Mode :</b>     | 10MHZ QPSK RB Size 1                                                                   | <b>Relative Humidity :</b> | 43~45%   |
| <b>Test Engineer :</b> | Ivan Chiang, Gavin Wu, and Marlboro Hsu                                                | <b>Polarization :</b>      | Vertical |
| <b>Remark :</b>        | Spurious emissions within 30-10th harmonic were found more than 20dB below limit line. |                            |          |



| Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX<br>Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) | Result |
|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|-------------------------------|-----------------------------|-----------------------|--------|
| 1423                 | -45.31          | -13              | -32.31                  | -56.4                   | -47.24                   | 1.53                          | 5.61                        | V                     | Pass   |
| 2143                 | -53.76          | -13              | -40.76                  | -67.39                  | -55.78                   | 1.85                          | 6.02                        | V                     | Pass   |
| 2840                 | -51.63          | -13              | -38.63                  | -67.7                   | -54.24                   | 2.24                          | 7.00                        | V                     | Pass   |

### 3.8 Frequency Stability Measurement

#### 3.8.1 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.

#### 3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

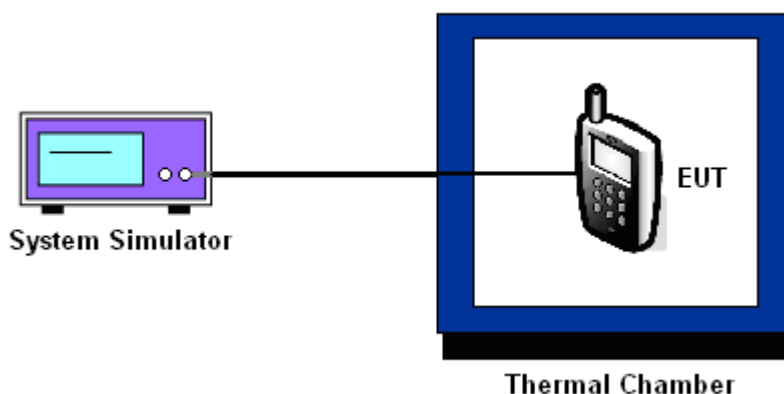
#### 3.8.3 Test Procedures for Temperature Variation

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  $-30^{\circ}\text{C}$  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  $10^{\circ}\text{C}$  step up to  $50^{\circ}\text{C}$ . 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.
4. If the EUT can not be turned on at  $-30^{\circ}\text{C}$ , the testing lowest temperature will be raised in  $10^{\circ}\text{C}$  step until the EUT can be turned on.

#### 3.8.4 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.

#### 3.8.5 Test Setup



**3.8.6 Test Result of Temperature Variation**

| <b>Band :</b>    | LTE Band 5 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 1.4MHz         |                 | BW 3MHz         |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | 10.2              | 0.012           | 8.4             | 0.010                |        |
| 0                | 8.5               | 0.010           | 8.1             | 0.010                |        |
| 10               | 7.7               | 0.009           | 8.9             | 0.011                |        |
| 20               | 5.8               | 0.007           | 8.5             | 0.010                |        |
| 30               | 6.8               | 0.008           | 7.6             | 0.009                |        |
| 40               | 6.0               | 0.007           | 6.9             | 0.008                |        |
| 50               | 5.5               | 0.007           | 4.9             | 0.006                |        |
| 55               | 5.4               | 0.006           | 4.8             | 0.006                |        |

| <b>Band :</b>    | LTE Band 5 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz           |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | 9.3               | 0.011           | 7.4             | 0.009                |        |
| 0                | 9.2               | 0.011           | 7.0             | 0.008                |        |
| 10               | 9.0               | 0.011           | 8.1             | 0.010                |        |
| 20               | 9.4               | 0.011           | 7.1             | 0.008                |        |
| 30               | 9.4               | 0.011           | 12.4            | 0.015                |        |
| 40               | 10.1              | 0.012           | 10.2            | 0.012                |        |
| 50               | 7.2               | 0.009           | 8.1             | 0.010                |        |
| 55               | 5.1               | 0.006           | 6.9             | 0.008                |        |

| <b>Band :</b>    | LTE Band 5 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 1.4MHz          |                 | BW 3MHz         |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | 9.5                | 0.011           | 8.5             | 0.010                |        |
| 0                | 7.7                | 0.009           | 8.1             | 0.010                |        |
| 10               | 9.1                | 0.011           | 7.7             | 0.009                |        |
| 20               | 8.5                | 0.010           | 9.5             | 0.011                |        |
| 30               | 7.2                | 0.009           | 10.1            | 0.012                |        |
| 40               | 7.0                | 0.008           | -8.5            | -0.010               |        |
| 50               | 8.0                | 0.010           | 6.3             | 0.008                |        |
| 55               | 8.2                | 0.010           | 5.4             | 0.006                |        |

| <b>Band :</b>    | LTE Band 5 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz            |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | 9.5                | 0.011           | 5.5             | 0.007                |        |
| 0                | 9.1                | 0.011           | 8.7             | 0.010                |        |
| 10               | 8.6                | 0.010           | 9.1             | 0.011                |        |
| 20               | 7.1                | 0.009           | 6.7             | 0.008                |        |
| 30               | 8.6                | 0.010           | 5.6             | 0.007                |        |
| 40               | 9.2                | 0.011           | 7.1             | 0.009                |        |
| 50               | 8.7                | 0.010           | 8.3             | 0.010                |        |
| 55               | 6.1                | 0.007           | 7.2             | 0.009                |        |

| <b>Band :</b>    | LTE Band 2 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 1.4MHz         |                 | BW 3MHz         |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | -15.4             | -0.008          | -26.8           | -0.014               |        |
| 0                | -12.1             | -0.006          | -20.1           | -0.011               |        |
| 10               | -13.8             | -0.007          | -17.5           | -0.009               |        |
| 20               | -14.8             | -0.008          | -14.9           | -0.008               |        |
| 30               | -17.1             | -0.009          | -16.7           | -0.009               |        |
| 40               | -14.7             | -0.008          | -15.2           | -0.008               |        |
| 50               | -20.1             | -0.011          | -23.6           | -0.013               |        |
| 55               | -23.7             | -0.013          | -24.8           | -0.013               |        |

| <b>Band :</b>    | LTE Band 2 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz           |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | -22.1             | -0.012          | -25.8           | -0.014               |        |
| 0                | -23.7             | -0.013          | -21.7           | -0.012               |        |
| 10               | -24.5             | -0.013          | -26.5           | -0.014               |        |
| 20               | -24.2             | -0.013          | -23.9           | -0.013               |        |
| 30               | -19.8             | -0.011          | -20.1           | -0.011               |        |
| 40               | -21.1             | -0.011          | -20.4           | -0.011               |        |
| 50               | -24.1             | -0.013          | -20.7           | -0.011               |        |
| 55               | -24.5             | -0.013          | -22.6           | -0.012               |        |

| <b>Band :</b>    | LTE Band 2 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 15MHz          |                 | BW 20MHz        |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | -25.3             | -0.013          | -25.1           | -0.013               |        |
| 0                | -23.6             | -0.013          | -20.2           | -0.011               |        |
| 10               | -20.1             | -0.011          | -16.6           | -0.009               |        |
| 20               | -23.4             | -0.012          | 15.0            | 0.008                |        |
| 30               | -19.7             | -0.010          | -19.8           | -0.011               |        |
| 40               | -19.7             | -0.010          | -21.1           | -0.011               |        |
| 50               | -17.7             | -0.009          | -26.8           | -0.014               |        |
| 55               | -19.6             | -0.010          | -25.0           | -0.013               |        |

| <b>Band :</b>    | LTE Band 2 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 1.4MHz          |                 | BW 3MHz         |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | -24.2              | -0.013          | -23.1           | -0.012               |        |
| 0                | -22.7              | -0.012          | -25.6           | -0.014               |        |
| 10               | -21.7              | -0.012          | -20.6           | -0.011               |        |
| 20               | -25.3              | -0.013          | -15.6           | -0.008               |        |
| 30               | -20.5              | -0.011          | -26.1           | -0.014               |        |
| 40               | -16.7              | -0.009          | -19.8           | -0.011               |        |
| 50               | -19.5              | -0.010          | -20.2           | -0.011               |        |
| 55               | -18.1              | -0.010          | -27.5           | -0.015               |        |

| <b>Band :</b>    | LTE Band 2 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz            |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | -18.5              | -0.010          | -21.7           | -0.012               |        |
| 0                | -19.7              | -0.010          | -22.3           | -0.012               |        |
| 10               | -17.5              | -0.009          | -24.3           | -0.013               |        |
| 20               | -19.6              | -0.010          | -23.7           | -0.013               |        |
| 30               | -17.7              | -0.009          | -23.6           | -0.013               |        |
| 40               | -22.6              | -0.012          | -17.7           | -0.009               |        |
| 50               | -21.6              | -0.011          | -19.6           | -0.010               |        |
| 55               | -25.0              | -0.013          | -21.5           | -0.011               |        |

| <b>Band :</b>    | LTE Band 2 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 15MHz           |                 | BW 20MHz        |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | -20.2              | -0.011          | -21.7           | -0.012               |        |
| 0                | -24.9              | -0.013          | -20.5           | -0.011               |        |
| 10               | -19.5              | -0.010          | -21.4           | -0.011               |        |
| 20               | -24.5              | -0.013          | -23.8           | -0.013               |        |
| 30               | -20.4              | -0.011          | -18.5           | -0.010               |        |
| 40               | -23.2              | -0.012          | -20.2           | -0.011               |        |
| 50               | -21.2              | -0.011          | -21.2           | -0.011               |        |
| 55               | -24.5              | -0.013          | -22.0           | -0.012               |        |

| <b>Band :</b>    | LTE Band 4 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 1.4MHz         |                 | BW 3MHz         |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | 17.5              | 0.010           | 17.2            | 0.010                |        |
| 0                | 12.3              | 0.007           | 12.4            | 0.007                |        |
| 10               | 14.3              | 0.008           | 16.7            | 0.010                |        |
| 20               | 13.8              | 0.008           | 11.3            | 0.007                |        |
| 30               | 16.7              | 0.010           | 15.5            | 0.009                |        |
| 40               | 14.2              | 0.008           | 11.2            | 0.006                |        |
| 50               | 15.1              | 0.009           | 12.4            | 0.007                |        |
| 55               | 13.3              | 0.008           | 11.5            | 0.007                |        |

| <b>Band :</b>    | LTE Band 4 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz           |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | 11.3              | 0.007           | 12.3            | 0.007                |        |
| 0                | 13.2              | 0.008           | 10.5            | 0.006                |        |
| 10               | 12.2              | 0.007           | 9.5             | 0.005                |        |
| 20               | 14.6              | 0.008           | 15.9            | 0.009                |        |
| 30               | 10.7              | 0.006           | 16.5            | 0.009                |        |
| 40               | 13.4              | 0.008           | 12.2            | 0.007                |        |
| 50               | 12.4              | 0.007           | 13.7            | 0.008                |        |
| 55               | 9.7               | 0.006           | 9.6             | 0.006                |        |

| <b>Band :</b>    | LTE Band 4 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|-------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 15MHz          |                 | BW 20MHz        |                      | Result |
|                  | Freq. Dev. (Hz)   | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A               | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A               | N/A             | N/A             | N/A                  |        |
| -10              | 12.8              | 0.007           | 16.1            | 0.009                |        |
| 0                | 8.0               | 0.005           | 11.7            | 0.007                |        |
| 10               | 9.1               | 0.005           | 13.5            | 0.008                |        |
| 20               | 10.4              | 0.006           | 12.1            | 0.007                |        |
| 30               | 8.0               | 0.005           | 16.4            | 0.009                |        |
| 40               | 8.6               | 0.005           | 11.1            | 0.006                |        |
| 50               | 10.0              | 0.006           | 9.5             | 0.005                |        |
| 55               | 8.9               | 0.005           | 7.4             | 0.004                |        |

| <b>Band :</b>    | LTE Band 4 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 1.4MHz          |                 | BW 3MHz         |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | 19.2               | 0.011           | 14.7            | 0.008                |        |
| 0                | 14.7               | 0.008           | 11.4            | 0.007                |        |
| 10               | 17.7               | 0.010           | 13.4            | 0.008                |        |
| 20               | 14.7               | 0.008           | 16.7            | 0.010                |        |
| 30               | 14.0               | 0.008           | 12.2            | 0.007                |        |
| 40               | 13.3               | 0.008           | 15.5            | 0.009                |        |
| 50               | 17.2               | 0.010           | 15.7            | 0.009                |        |
| 55               | 18.7               | 0.011           | 17.1            | 0.010                |        |

| <b>Band :</b>    | LTE Band 4 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz            |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | 15.5               | 0.009           | 12.1            | 0.007                |        |
| 0                | 16.4               | 0.009           | 13.4            | 0.008                |        |
| 10               | 11.4               | 0.007           | 16.3            | 0.009                |        |
| 20               | 10.4               | 0.006           | 17.7            | 0.010                |        |
| 30               | 12.3               | 0.007           | 11.3            | 0.006                |        |
| 40               | 11.7               | 0.007           | 10.4            | 0.006                |        |
| 50               | 10.4               | 0.006           | 16.7            | 0.010                |        |
| 55               | 12.7               | 0.007           | 14.3            | 0.008                |        |

| <b>Band :</b>    | LTE Band 4 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 15MHz           |                 | BW 20MHz        |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | 17.3               | 0.010           | 14.4            | 0.008                |        |
| 0                | 9.5                | 0.005           | 12.7            | 0.007                |        |
| 10               | 10.0               | 0.006           | 16.7            | 0.010                |        |
| 20               | 11.7               | 0.007           | 11.7            | 0.007                |        |
| 30               | 12.4               | 0.007           | 14.0            | 0.008                |        |
| 40               | 15.5               | 0.009           | 12.4            | 0.007                |        |
| 50               | 13.3               | 0.008           | 10.4            | 0.006                |        |
| 55               | 16.3               | 0.009           | 7.2             | 0.004                |        |

| <b>Band :</b>    | LTE Band 17 / QPSK |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|--------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz            |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)    | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                | N/A             | N/A             | N/A                  |        |
| -10              | -4.8               | -0.007          | 7.0             | 0.010                |        |
| 0                | -5.0               | -0.007          | 7.0             | 0.010                |        |
| 10               | -5.0               | -0.007          | 8.5             | 0.012                |        |
| 20               | -5.1               | -0.007          | -5.8            | -0.008               |        |
| 30               | -6.5               | -0.009          | 7.5             | 0.011                |        |
| 40               | -5.3               | -0.007          | 8.1             | 0.011                |        |
| 50               | -7.2               | -0.010          | -9.4            | -0.013               |        |
| 55               | -8.2               | -0.012          | -7.2            | -0.010               |        |

| <b>Band :</b>    | LTE Band 17 / 16QAM |                 |                 | <b>Limit (ppm) :</b> | 2.5    |
|------------------|---------------------|-----------------|-----------------|----------------------|--------|
| Temperature (°C) | BW 5MHz             |                 | BW 10MHz        |                      | Result |
|                  | Freq. Dev. (Hz)     | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm)      |        |
| -30              | N/A                 | N/A             | N/A             | N/A                  | PASS   |
| -20              | N/A                 | N/A             | N/A             | N/A                  |        |
| -10              | -5.1                | -0.007          | 5.5             | 0.008                |        |
| 0                | -6.1                | -0.009          | -6.1            | -0.009               |        |
| 10               | -5.4                | -0.008          | 4.8             | 0.007                |        |
| 20               | -4.2                | -0.006          | 9.5             | 0.013                |        |
| 30               | -7.8                | -0.011          | -7.2            | -0.010               |        |
| 40               | -6.9                | -0.010          | -5.2            | -0.007               |        |
| 50               | -7.4                | -0.010          | 5.0             | 0.007                |        |
| 55               | -8.9                | -0.013          | -6.5            | -0.009               |        |

**3.8.7 Test Result of Voltage Variation**

| Band              | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|-------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 5 / QPSK | 1.4M      | Normal         | 5.6             | 0.007           | 2.5         | PASS   |
|                   |           | 3.4            | 6.5             | 0.008           |             |        |
|                   |           | 4.2            | 7.5             | 0.009           |             |        |
|                   | 3M        | Normal         | 14.7            | 0.018           |             |        |
|                   |           | 3.4            | -5.4            | -0.006          |             |        |
|                   |           | 4.2            | 8.9             | 0.011           |             |        |
|                   | 5M        | Normal         | 7.0             | 0.008           |             |        |
|                   |           | 3.4            | 8.9             | 0.011           |             |        |
|                   |           | 4.2            | 5.8             | 0.007           |             |        |
|                   | 10M       | Normal         | 7.1             | 0.008           |             |        |
|                   |           | 3.4            | 5.7             | 0.007           |             |        |
|                   |           | 4.2            | 6.9             | 0.008           |             |        |

| Band               | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|--------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 5 / 16QAM | 1.4M      | Normal         | -6.4            | -0.008          | 2.5         | PASS   |
|                    |           | 3.4            | 5.9             | 0.007           |             |        |
|                    |           | 4.2            | 6.5             | 0.008           |             |        |
|                    | 3M        | Normal         | 7.6             | 0.009           |             |        |
|                    |           | 3.4            | 7.5             | 0.009           |             |        |
|                    |           | 4.2            | 7.1             | 0.008           |             |        |
|                    | 5M        | Normal         | 4.9             | 0.006           |             |        |
|                    |           | 3.4            | 7.3             | 0.009           |             |        |
|                    |           | 4.2            | 5.4             | 0.006           |             |        |
|                    | 10M       | Normal         | 8.7             | 0.010           |             |        |
|                    |           | 3.4            | 7.3             | 0.009           |             |        |
|                    |           | 4.2            | 7.3             | 0.009           |             |        |

| Band              | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|-------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 2 / QPSK | 1.4M      | Normal         | -34.8           | -0.019          | 2.5         | PASS   |
|                   |           | 3.4            | -29.5           | -0.016          |             |        |
|                   |           | 4.2            | -26.2           | -0.014          |             |        |
|                   | 3M        | Normal         | -19.2           | -0.010          |             |        |
|                   |           | 3.4            | -26.7           | -0.014          |             |        |
|                   |           | 4.2            | -27.1           | -0.014          |             |        |
|                   | 5M        | Normal         | -24.7           | -0.013          |             |        |
|                   |           | 3.4            | -28.1           | -0.015          |             |        |
|                   |           | 4.2            | -28.4           | -0.015          |             |        |
|                   | 10M       | Normal         | -25.5           | -0.014          |             |        |
|                   |           | 3.4            | -25.3           | -0.013          |             |        |
|                   |           | 4.2            | -24.3           | -0.013          |             |        |
|                   | 15M       | Normal         | -26.4           | -0.014          |             |        |
|                   |           | 3.4            | -24.2           | -0.013          |             |        |
|                   |           | 4.2            | -24.6           | -0.013          |             |        |
|                   | 20M       | Normal         | -26.1           | -0.014          |             |        |
|                   |           | 3.4            | -26.2           | -0.014          |             |        |
|                   |           | 4.2            | -28.7           | -0.015          |             |        |

| Band               | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|--------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 2 / 16QAM | 1.4M      | Normal         | -33.5           | -0.018          | 2.5         | PASS   |
|                    |           | 3.4            | -30.1           | -0.016          |             |        |
|                    |           | 4.2            | -27.2           | -0.014          |             |        |
|                    | 3M        | Normal         | -20.2           | -0.011          |             |        |
|                    |           | 3.4            | -26.4           | -0.014          |             |        |
|                    |           | 4.2            | -24.6           | -0.013          |             |        |
|                    | 5M        | Normal         | -27.3           | -0.014          |             |        |
|                    |           | 3.4            | -29.1           | -0.015          |             |        |
|                    |           | 4.2            | -23.2           | -0.012          |             |        |
|                    | 10M       | Normal         | -21.1           | -0.011          |             |        |
|                    |           | 3.4            | -27.0           | -0.014          |             |        |
|                    |           | 4.2            | -23.7           | -0.013          |             |        |
|                    | 15M       | Normal         | -27.1           | -0.014          |             |        |
|                    |           | 3.4            | -23.6           | -0.013          |             |        |
|                    |           | 4.2            | -23.3           | -0.012          |             |        |
|                    | 20M       | Normal         | -26.5           | -0.014          |             |        |
|                    |           | 3.4            | -23.1           | -0.012          |             |        |
|                    |           | 4.2            | -29.7           | -0.016          |             |        |



| Band              | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|-------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 4 / QPSK | 1.4M      | Normal         | 11.8            | 0.007           | 2.5         | PASS   |
|                   |           | 3.4            | 13.9            | 0.008           |             |        |
|                   |           | 4.2            | 14.1            | 0.008           |             |        |
|                   | 3M        | Normal         | 12.2            | 0.007           |             |        |
|                   |           | 3.4            | 14.4            | 0.008           |             |        |
|                   |           | 4.2            | 12.3            | 0.007           |             |        |
|                   | 5M        | Normal         | 10.8            | 0.006           |             |        |
|                   |           | 3.4            | -12.1           | -0.007          |             |        |
|                   |           | 4.2            | 9.2             | 0.005           |             |        |
|                   | 10M       | Normal         | 13.5            | 0.008           |             |        |
|                   |           | 3.4            | 13.7            | 0.008           |             |        |
|                   |           | 4.2            | 11.4            | 0.007           |             |        |
|                   | 15M       | Normal         | -9.8            | -0.006          |             |        |
|                   |           | 3.4            | 13.8            | 0.008           |             |        |
|                   |           | 4.2            | 9.8             | 0.006           |             |        |
|                   | 20M       | Normal         | 9.8             | 0.006           |             |        |
|                   |           | 3.4            | -10.3           | -0.006          |             |        |
|                   |           | 4.2            | 9.0             | 0.005           |             |        |



| Band               | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|--------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 4 / 16QAM | 1.4M      | Normal         | 15.1            | 0.009           | 2.5         | PASS   |
|                    |           | 3.4            | 11.6            | 0.007           |             |        |
|                    |           | 4.2            | 12.3            | 0.007           |             |        |
|                    | 3M        | Normal         | 8.5             | 0.005           |             |        |
|                    |           | 3.4            | 9.6             | 0.006           |             |        |
|                    |           | 4.2            | -10.1           | -0.006          |             |        |
|                    | 5M        | Normal         | 10.1            | 0.006           |             |        |
|                    |           | 3.4            | 11.3            | 0.006           |             |        |
|                    |           | 4.2            | 8.6             | 0.005           |             |        |
|                    | 10M       | Normal         | 12.4            | 0.007           |             |        |
|                    |           | 3.4            | 9.4             | 0.005           |             |        |
|                    |           | 4.2            | 9.7             | 0.006           |             |        |
|                    | 15M       | Normal         | 11.4            | 0.007           |             |        |
|                    |           | 3.4            | 13.2            | 0.008           |             |        |
|                    |           | 4.2            | 9.0             | 0.005           |             |        |
|                    | 20M       | Normal         | 7.7             | 0.004           |             |        |
|                    |           | 3.4            | 9.5             | 0.005           |             |        |
|                    |           | 4.2            | -8.8            | -0.005          |             |        |

| Band                | Bandwidth | Voltage (Volt) | Freq. Dev. (Hz) | Deviation (ppm) | Limit (ppm) | Result |
|---------------------|-----------|----------------|-----------------|-----------------|-------------|--------|
| LTE Band 17 / QPSK  | 5M        | Normal         | -6.3            | -0.009          | 2.5         | PASS   |
|                     |           | 3.4            | 5.5             | 0.008           |             |        |
|                     |           | 4.2            | -6.1            | -0.009          |             |        |
|                     | 10M       | Normal         | -6.3            | -0.009          |             |        |
|                     |           | 3.4            | 6.3             | 0.009           |             |        |
|                     |           | 4.2            | -7.7            | -0.011          |             |        |
| LTE Band 17 / 16QAM | 5M        | Normal         | -5.9            | -0.008          | 2.5         | PASS   |
|                     |           | 3.4            | -6.5            | -0.009          |             |        |
|                     |           | 4.2            | -6.6            | -0.009          |             |        |
|                     | 10M       | Normal         | -6.1            | -0.009          |             |        |
|                     |           | 3.4            | -6.3            | -0.009          |             |        |
|                     |           | 4.2            | -6.0            | -0.008          |             |        |

**Remark:**

1. Normal Voltage = 3.8V.
2. The manufacturer declared that the EUT could work properly between voltage 3.4V ~ 4.2V.

## 4 List of Measuring Equipments

| Instrument                | Manufacturer    | Model No.                | Serial No.      | Characteristics          | Calibration Date | Test Date                       | Due Date      | Remark                |
|---------------------------|-----------------|--------------------------|-----------------|--------------------------|------------------|---------------------------------|---------------|-----------------------|
| Spectrum Analyzer         | R&S             | FSP40                    | 100055          | 9kHz~40GHz               | Jun. 06, 2012    | Nov. 22, 2012~<br>Nov. 30, 2012 | Jun. 05, 2013 | Conducted (TH02-HY)   |
| Thermal Chamber           | Ten Billion     | TTH-D3SP                 | TBN-930701      | N/A                      | Jul. 23, 2012    | Nov. 22, 2012~<br>Dec. 30, 2012 | Jul. 22, 2013 | Conducted (TH02-HY)   |
| Bilog Antenna             | Schaffner       | CBL6111C                 | 2726            | 30MHz ~ 1GHz             | Oct. 06, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Oct. 05, 2013 | Radiation (03CH07-HY) |
| Spectrum Analyzer         | Rohde & Schwarz | FSP30                    | 101067          | 9KHz ~ 30GHz             | Dec. 06, 2011    | Nov. 27, 2012~<br>Nov.30, 2012  | Dec. 05, 2012 | Radiation (03CH07-HY) |
| Spectrum Analyzer         | Rohde & Schwarz | FSP30                    | 101067          | 9KHz ~ 30GHz             | Nov. 30, 2012    | Nov. 30, 2012~<br>Dec.06, 2012  | Nov. 29, 2013 | Radiation (03CH07-HY) |
| Double Ridge Horn Antenna | ESCO            | 3117                     | 00075962        | 1GHz ~ 18GHz             | Aug. 22, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Aug. 21, 2013 | Radiation (03CH07-HY) |
| Preamplifier              | Agilent         | 8449B                    | 3008A02362      | 1GHz~ 26.5GHz            | Dec. 05, 2011    | Nov. 27, 2012~<br>Dec.01, 2012  | Dec. 04, 2012 | Radiation (03CH07-HY) |
| Preamplifier              | Agilent         | 8449B                    | 3008A02362      | 1GHz~ 26.5GHz            | Dec. 01, 2012    | Dec. 01, 2012~<br>Dec.06, 2012  | Nov. 30, 2013 | Radiation (03CH07-HY) |
| Pre Amplifier             | MITEQ           | AMF-7D-00<br>101800-30-1 | 159088          | 1GHz ~ 18GHz             | Mar. 10, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Mar. 09, 2013 | Radiation (03CH07-HY) |
| Pre Amplifier             | COM-POWER       | PA-103A                  | 161241          | 10-1000MHz.<br>32dB.GAIN | Feb. 27, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Feb. 26, 2013 | Radiation (03CH07-HY) |
| EMI Test Receiver         | Rohde & Schwarz | ESCI 7                   | 100724          | 9kHz~7GHz                | Sep. 03, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Sep. 02, 2013 | Radiation (03CH07-HY) |
| SHF-EHF Horn Antenna      | SCHWARZBECK     | BBHA 9170                | BBHA917025<br>1 | 15GHz ~ 40GHz            | Sep. 28, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Sep. 27, 2013 | Radiation (03CH07-HY) |
| Loop Antenna              | R&S             | HFH2-Z2                  | 860004/001      | 9KHz ~ 30MHz             | Jul. 03, 2012    | Nov. 27, 2012~<br>Dec.06, 2012  | Jul. 02, 2013 | Radiation (03CH07-HY) |
| LTE Base Station          | Anritsu         | MT8820C                  | 6201074414      | N/A                      | Jan. 05, 2012    | Nov. 22, 2012~<br>Dec. 06, 2012 | Jan. 04, 2013 | -                     |

## 5 Uncertainty of Evaluation

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

| Contribution                                                                             | Uncertainty of $X_i$ |                          | $u(X_i)$ |
|------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                          | dB                   | Probability Distribution |          |
| Receiver Reading                                                                         | 0.41                 | Normal (k=2)             | 0.21     |
| Antenna Factor Calibration                                                               | 0.83                 | Normal (k=2)             | 0.42     |
| Cable Loss Calibration                                                                   | 0.25                 | Normal (k=2)             | 0.13     |
| Pre-Amplifier Gain Calibration                                                           | 0.27                 | Normal (k=2)             | 0.14     |
| RCV/SPA Specification                                                                    | 2.50                 | Rectangular              | 0.72     |
| Antenna Factor Interpolation for Frequency                                               | 1.00                 | Rectangular              | 0.29     |
| Site Imperfection                                                                        | 1.43                 | Rectangular              | 0.83     |
| Mismatch                                                                                 | +0.39 / -0.41        | U-Shape                  | 0.28     |
| <b>Combined Standard Uncertainty <math>U_c(y)</math></b>                                 | <b>1.27</b>          |                          |          |
| <b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b> | <b>2.54</b>          |                          |          |

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

| Contribution                                                                                                                         | Uncertainty of $X_i$ |                          | $u(X_i)$ | $C_i$ | $C_i * u(X_i)$ |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|-------|----------------|
|                                                                                                                                      | dB                   | Probability Distribution |          |       |                |
| Receiver Reading                                                                                                                     | $\pm 0.10$           | Normal (k=2)             | 0.10     | 1     | 0.10           |
| Antenna Factor Calibration                                                                                                           | $\pm 1.70$           | Normal (k=2)             | 0.85     | 1     | 0.85           |
| Cable Loss Calibration                                                                                                               | $\pm 0.50$           | Normal (k=2)             | 0.25     | 1     | 0.25           |
| Receiver Correction                                                                                                                  | $\pm 2.00$           | Rectangular              | 1.15     | 1     | 1.15           |
| Antenna Factor Directional                                                                                                           | $\pm 1.50$           | Rectangular              | 0.87     | 1     | 0.87           |
| Site Imperfection                                                                                                                    | $\pm 2.80$           | Triangular               | 1.14     | 1     | 1.14           |
| Mismatch<br>Receiver VSWR $\Gamma_1 = 0.197$<br>Antenna VSWR $\Gamma_2 = 0.194$<br>Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$ | +0.34 / -0.35        | U-Shape                  | 0.244    | 1     | 0.244          |
| <b>Combined Standard Uncertainty <math>U_c(y)</math></b>                                                                             | <b>2.36</b>          |                          |          |       |                |
| <b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>                                             | <b>4.72</b>          |                          |          |       |                |



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP203103 as below.