

3.5 Conducted Spurious Emission Measurement

3.5.1 Description of Conducted Spurious Emission Measurement

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

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

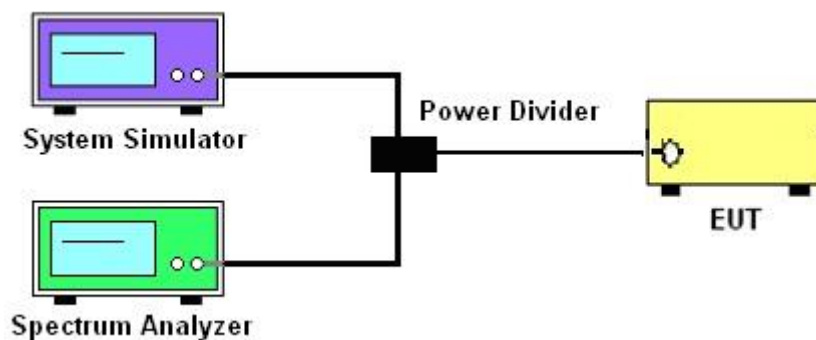
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

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

3.5.4 Test Setup

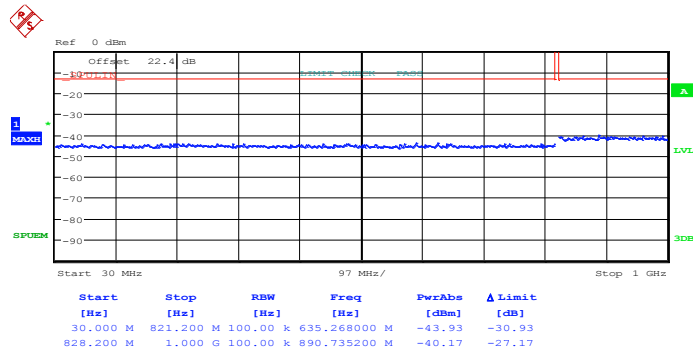




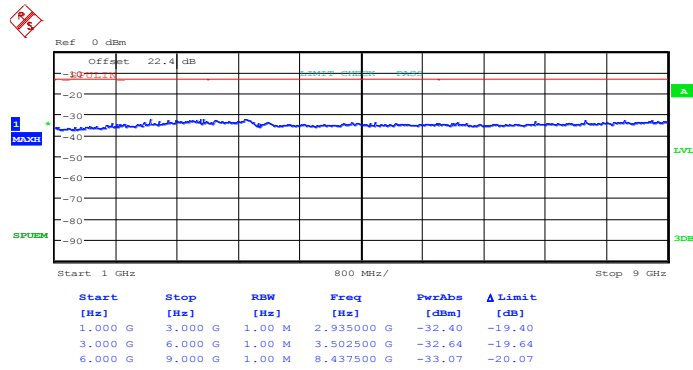
3.5.5 Test Result (Plots) of Conducted Spurious Emission

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

QPSK (RB Size 1, RB Offset 0)



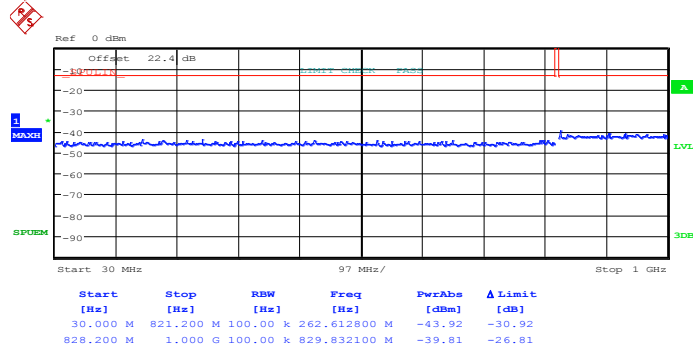
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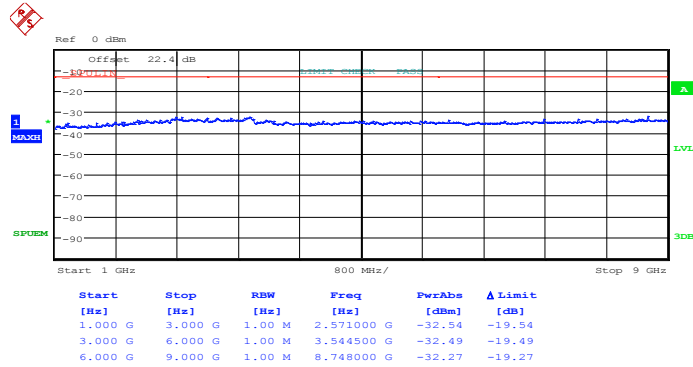
Date: 3.SEP.2013 14:36:03



16QAM (RB Size 3, RB Offset 2)



Date: 3.SEP.2013 14:35:32

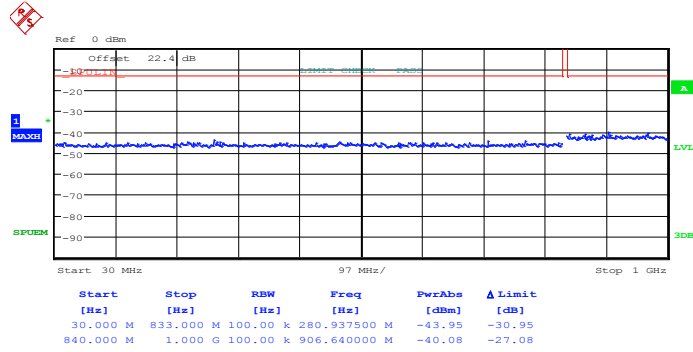


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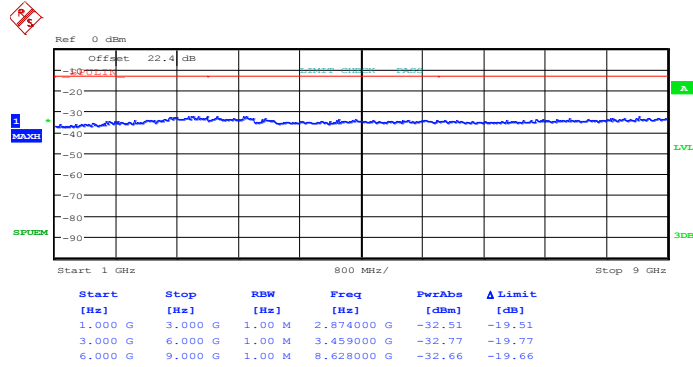


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



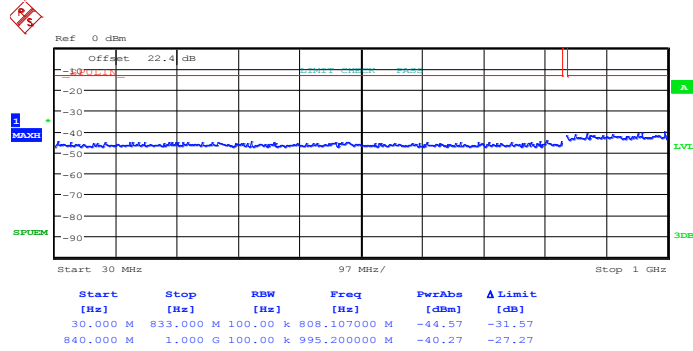
Date: 3.SEP.2013 14:39:13



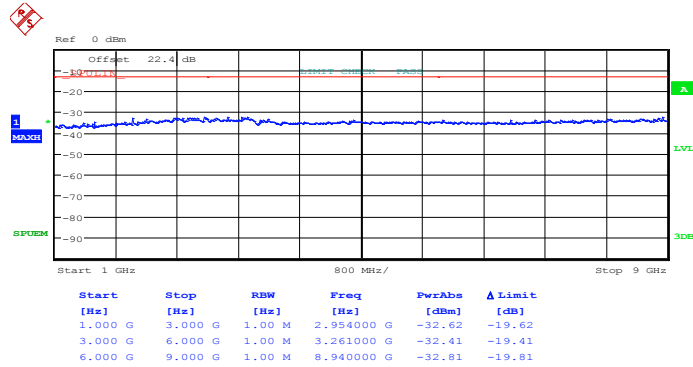
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16QAM (RB Size 3, RB Offset 1)



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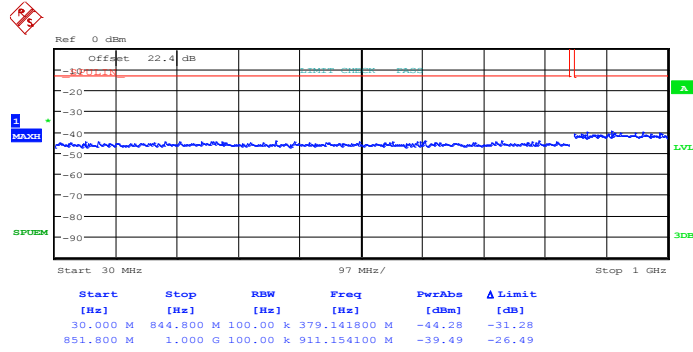


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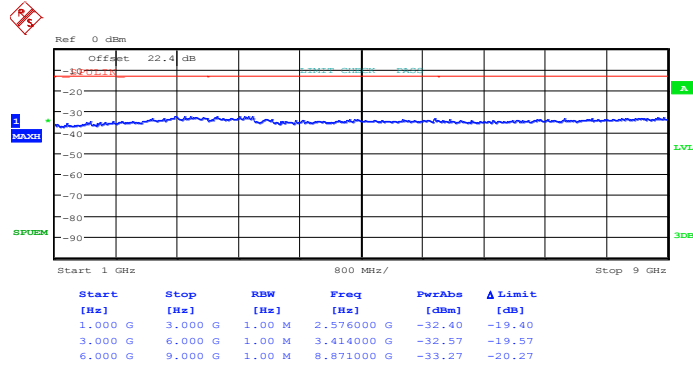


Band :	LTE Band 5	Channel :	CH20643 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



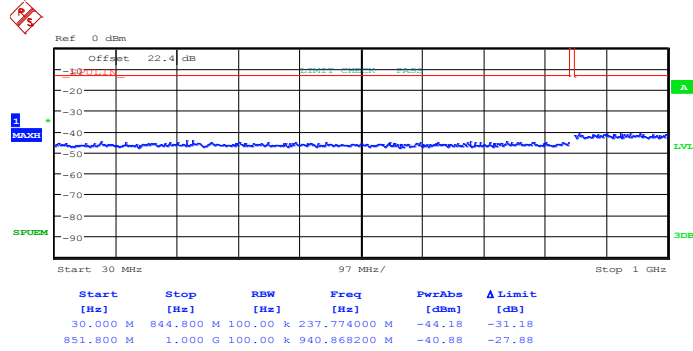
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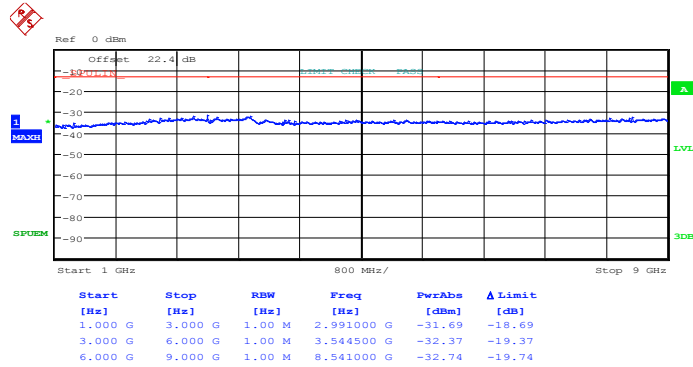
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16QAM (RB Size 3, RB Offset 2)



Date: 3.SEP.2013 14:37:52

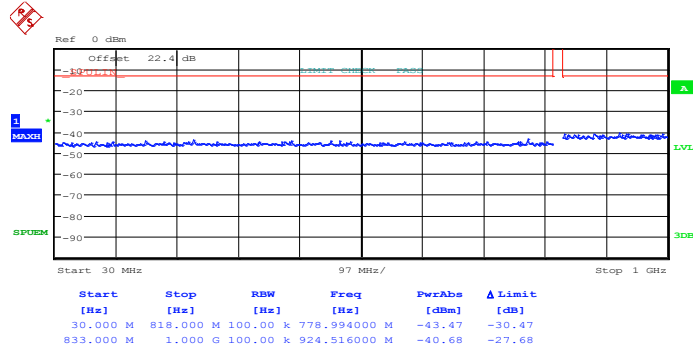


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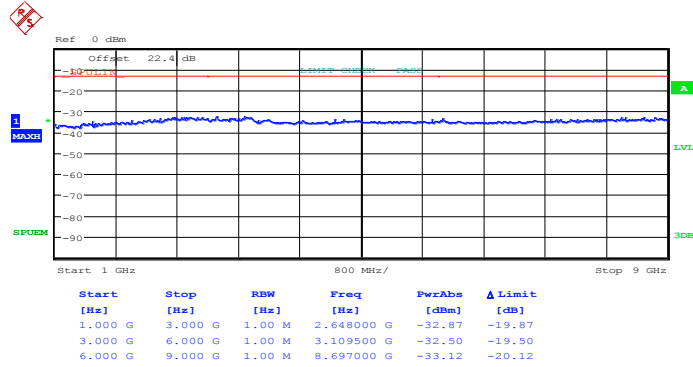


Band :	LTE Band 5	Channel :	CH20415 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



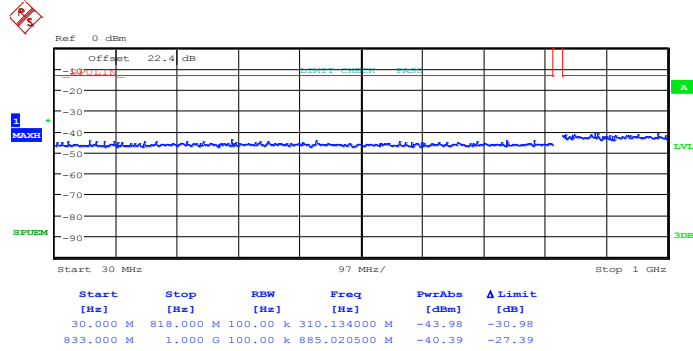
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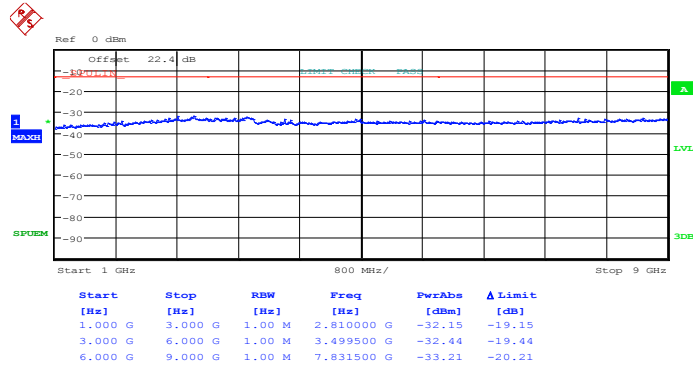
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16QAM (RB Size 1, RB Offset 0)



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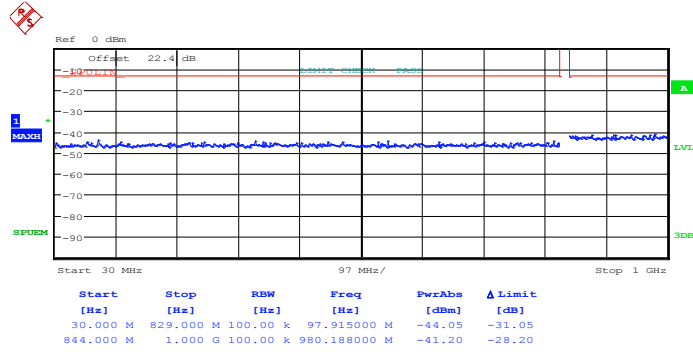


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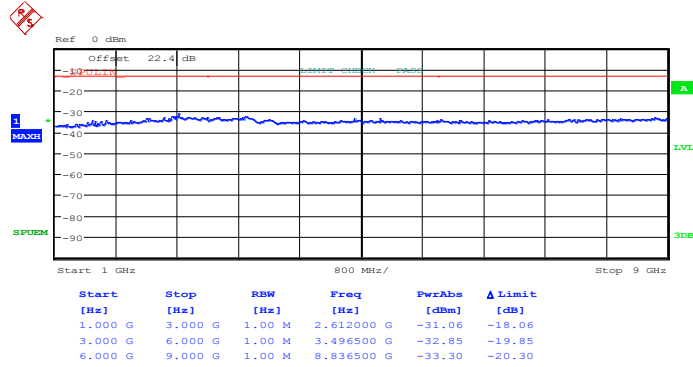


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 14)



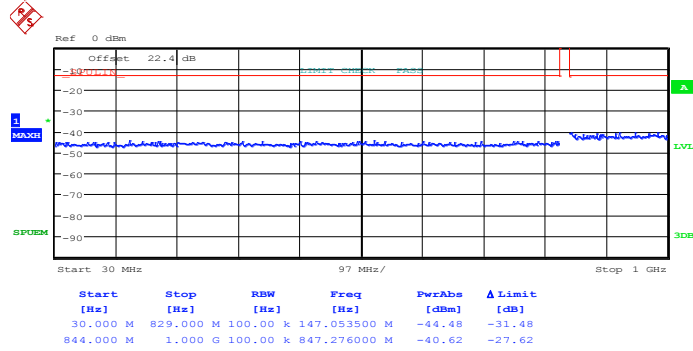
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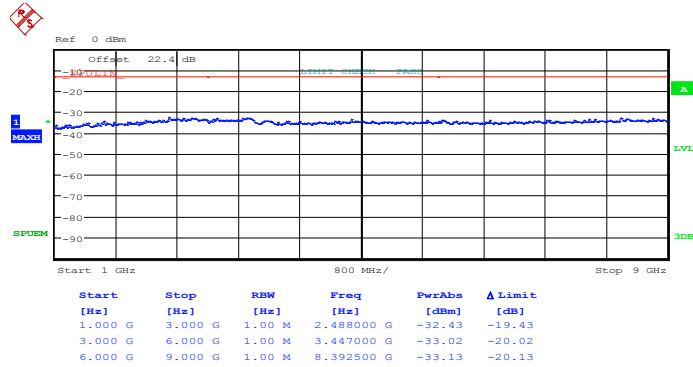
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16QAM (RB Size 1, RB Offset 14)



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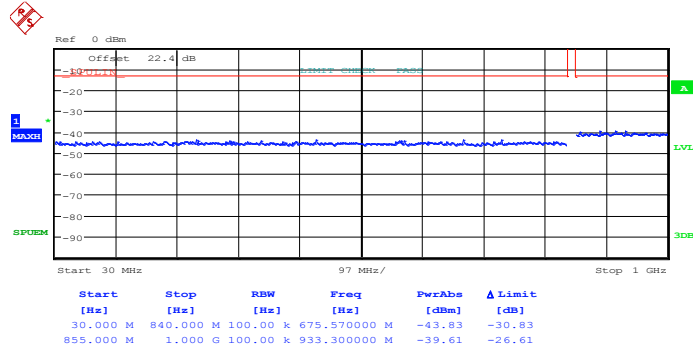


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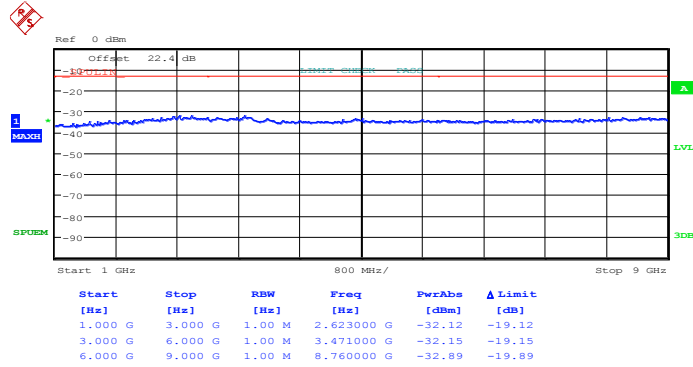


Band :	LTE Band 5	Channel :	CH20635 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 14)



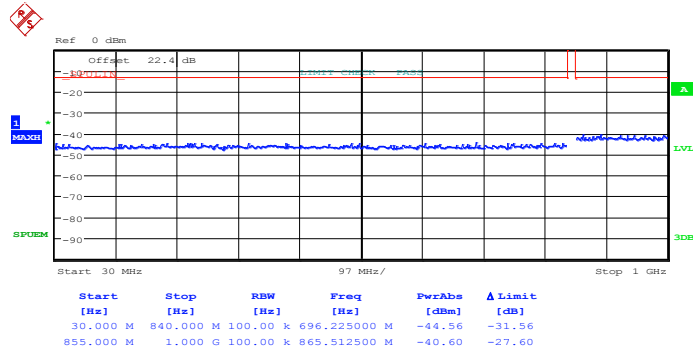
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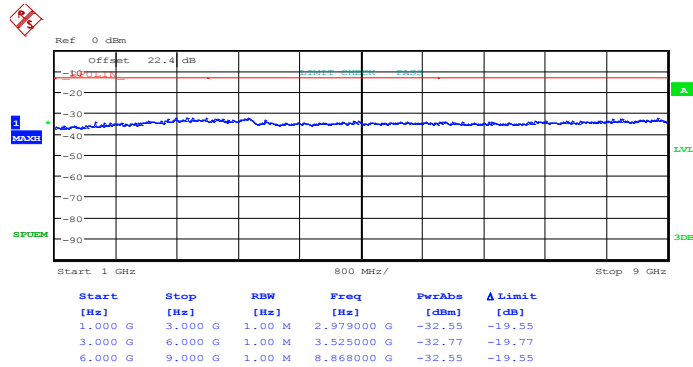
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16QAM (RB Size 1, RB Offset 7)



Date: 3.SEP.2013 14:47:17

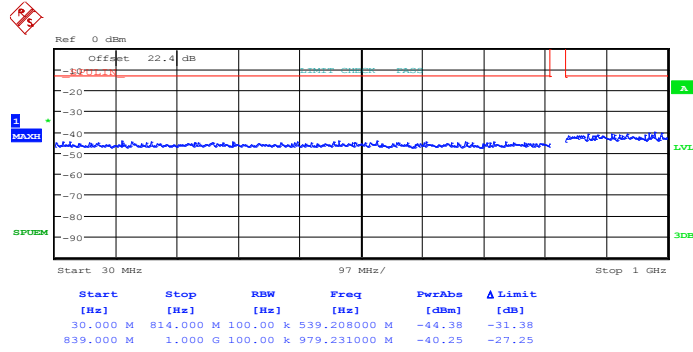


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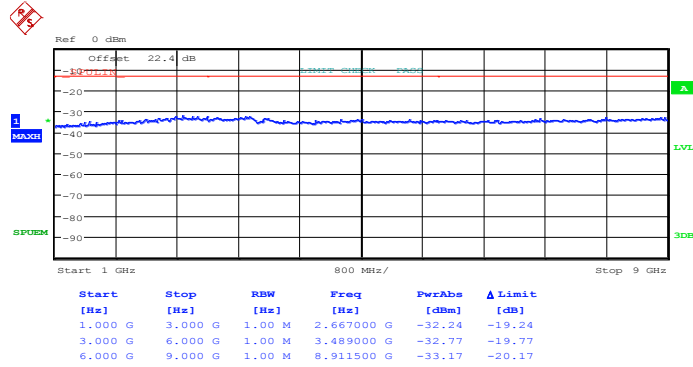


Band :	LTE Band 5	Channel :	CH20425 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



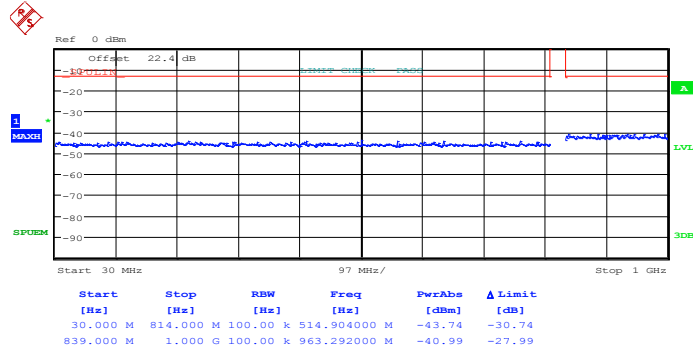
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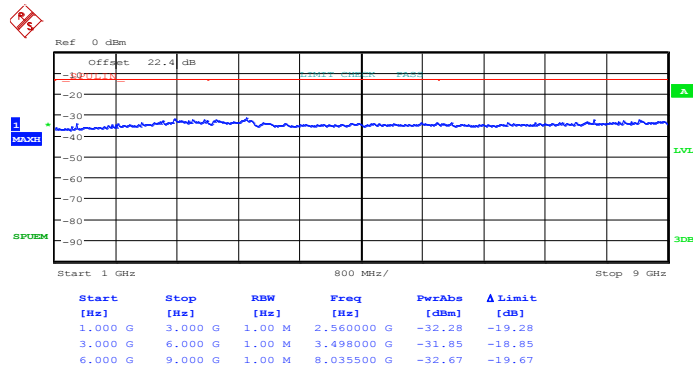
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16QAM (RB Size 1, RB Offset 0)



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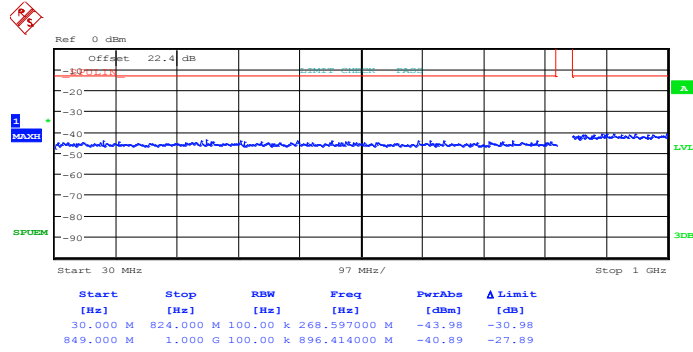


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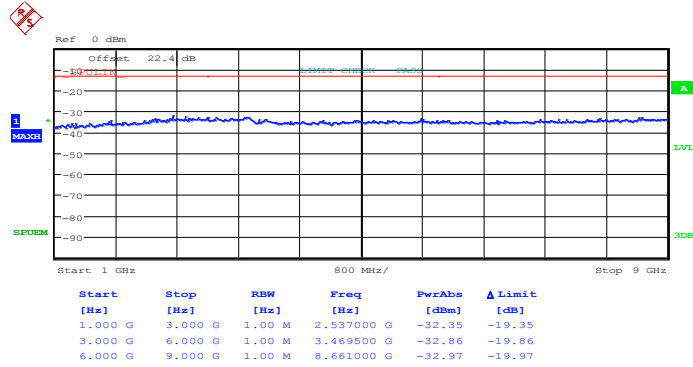


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



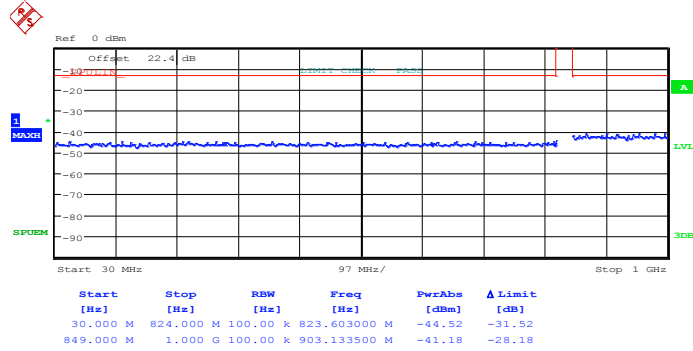
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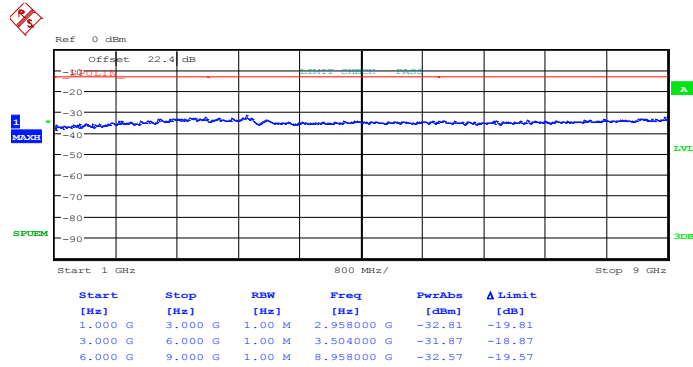
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16QAM (RB Size 1, RB Offset 24)



Date: 3.SEP.2013 14:53:34

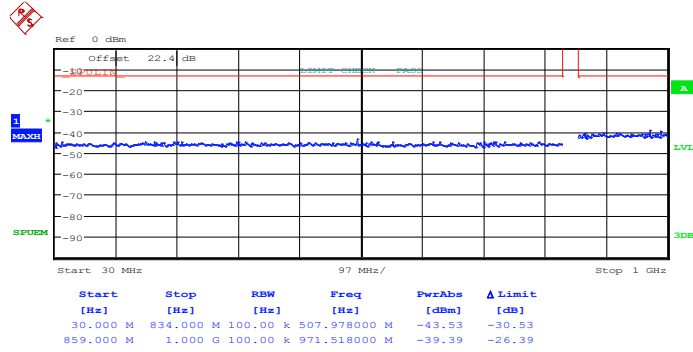


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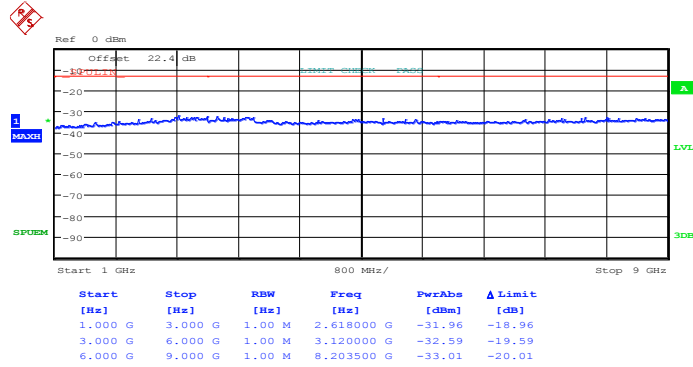


Band :	LTE Band 5	Channel :	CH20625 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



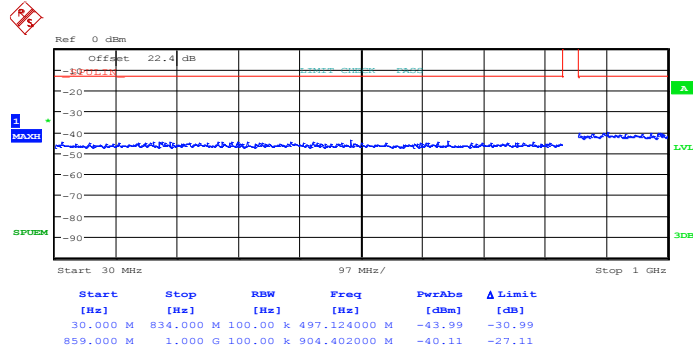
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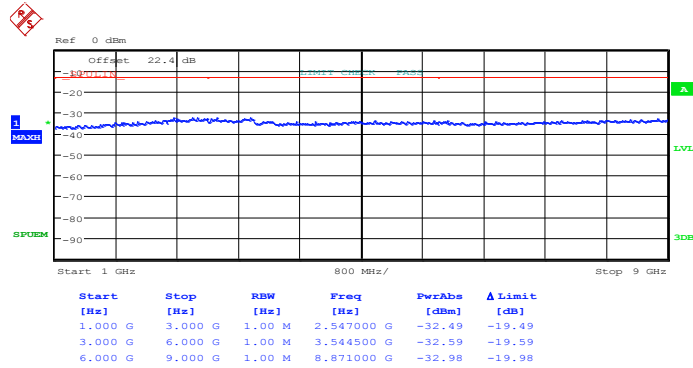
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16QAM (RB Size 1, RB Offset 24)



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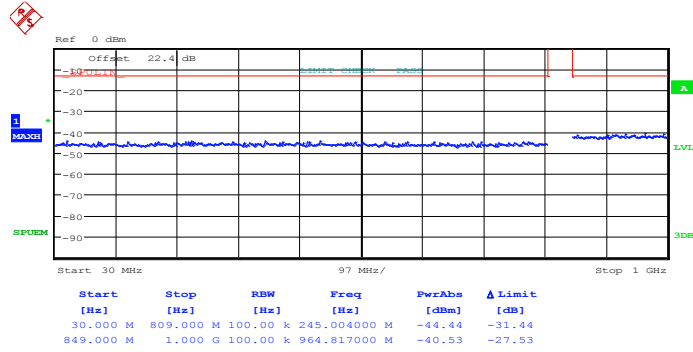


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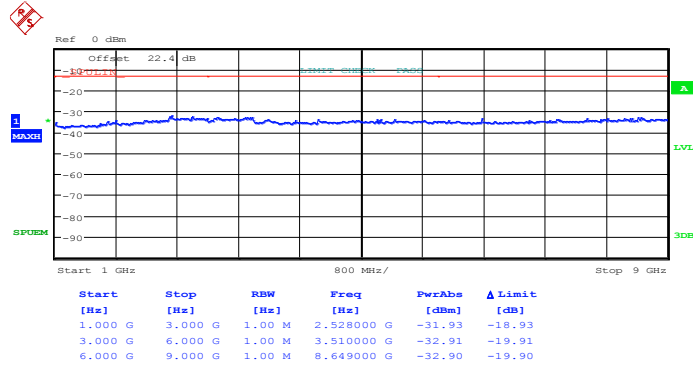


Band :	LTE Band 5	Channel :	CH20450 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



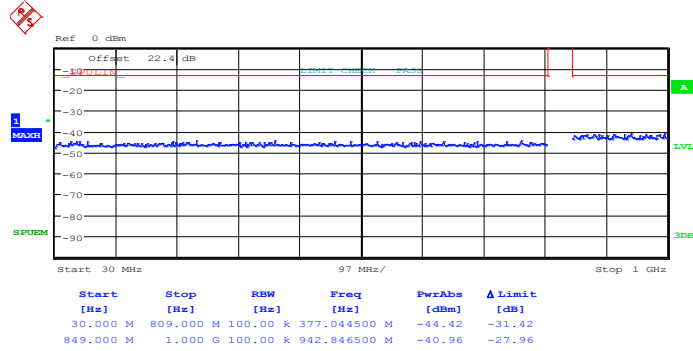
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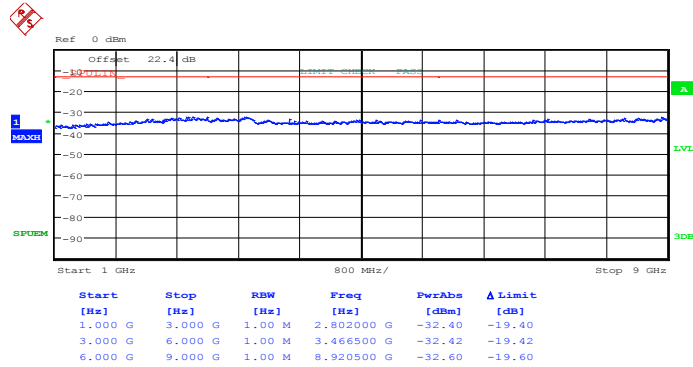
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16QAM (RB Size 1, RB Offset 0)



Date: 3.SEP.2013 14:56:34

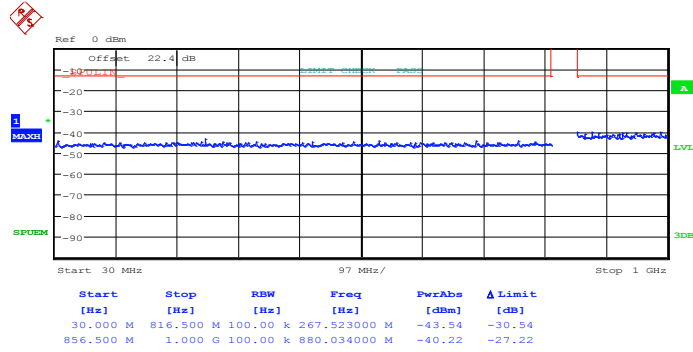


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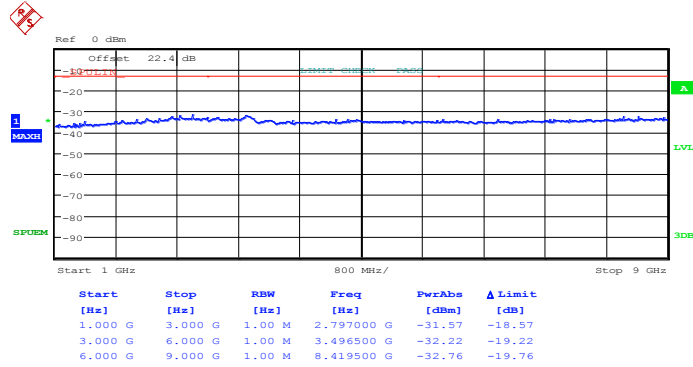


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



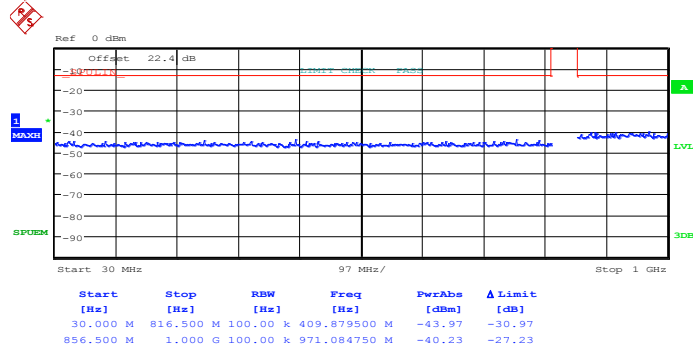
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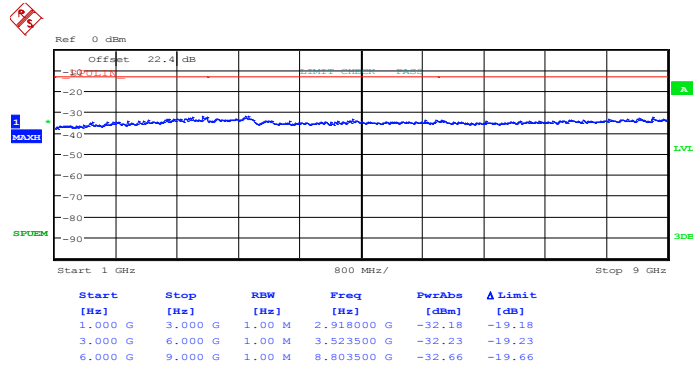
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16QAM (RB Size 1, RB Offset 24)



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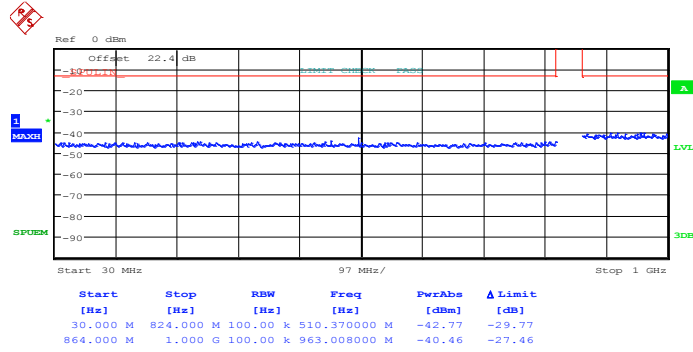


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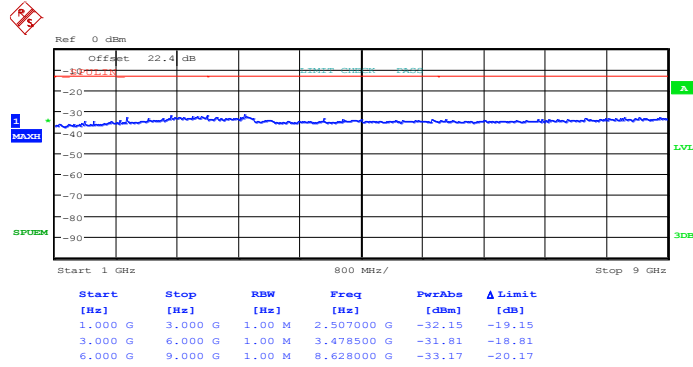


Band :	LTE Band 5	Channel :	CH20600 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



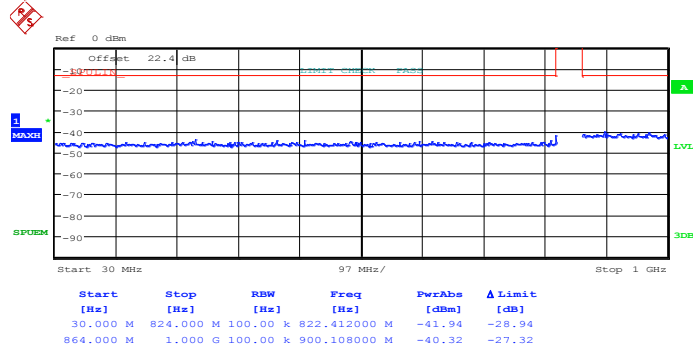
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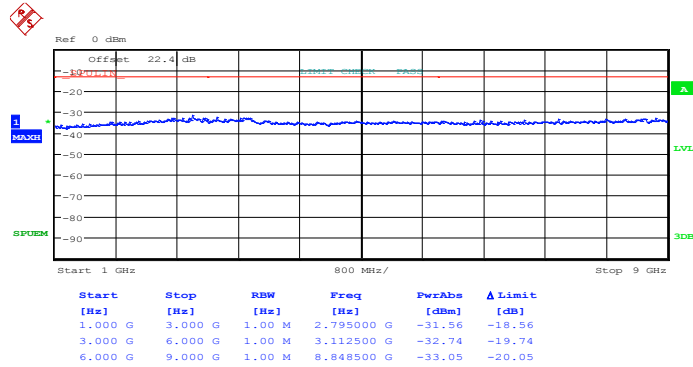
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16QAM (RB Size 1, RB Offset 0)



Date: 3.SEP.2013 14:58:58

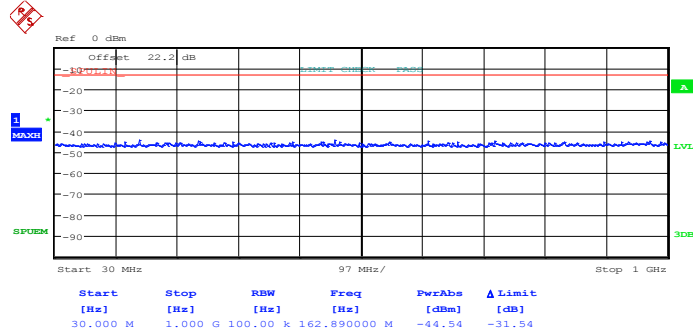


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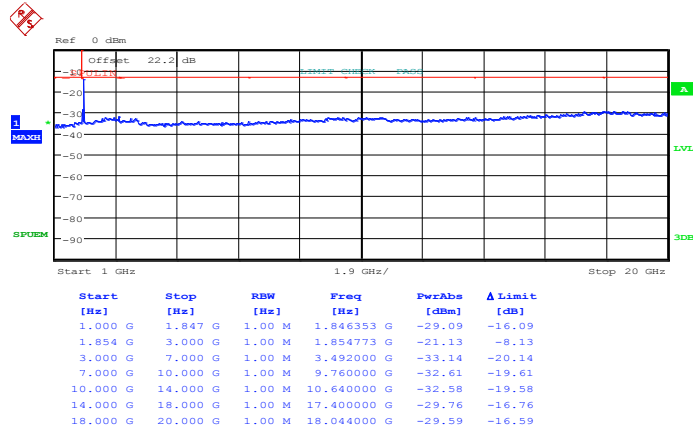


Band :	LTE Band 2	Channel :	CH18607 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 5)



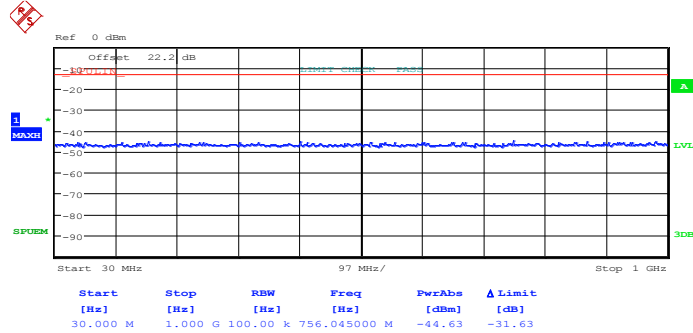
Date: 27.AUG.2013 17:43:40



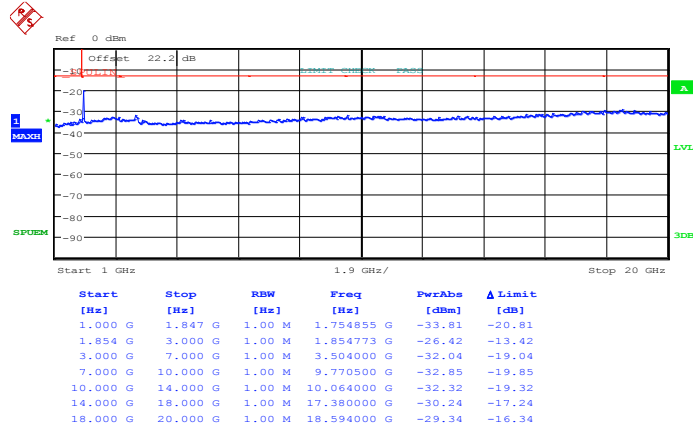
Date: 27.AUG.2013 17:42:42



16QAM (RB Size 3, RB Offset 2)



Date: 27.AUG.2013 17:43:17

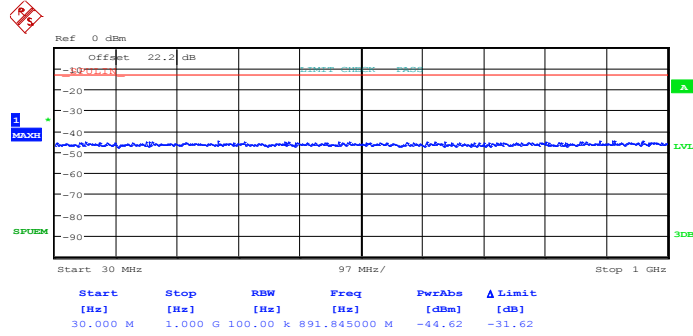


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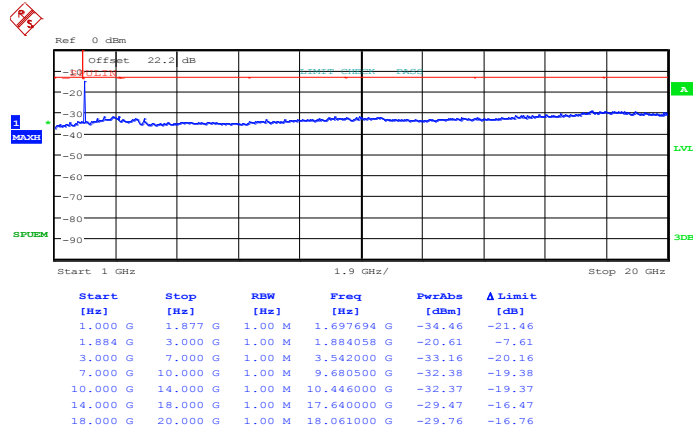


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 5)



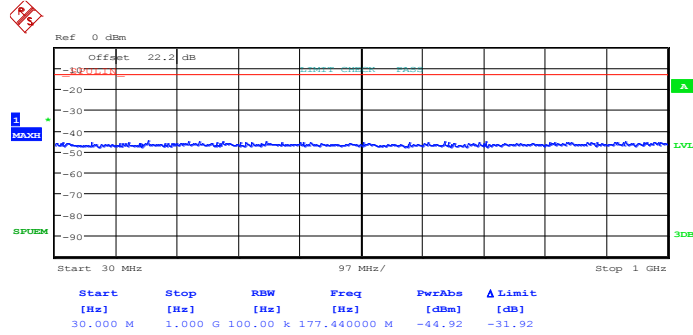
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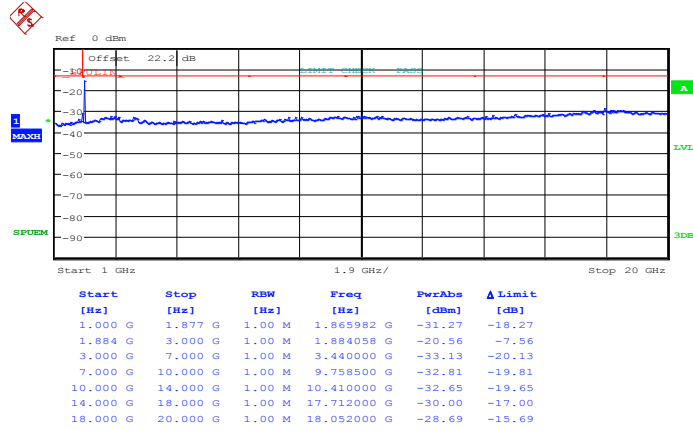
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16QAM (RB Size 1, RB Offset 5)



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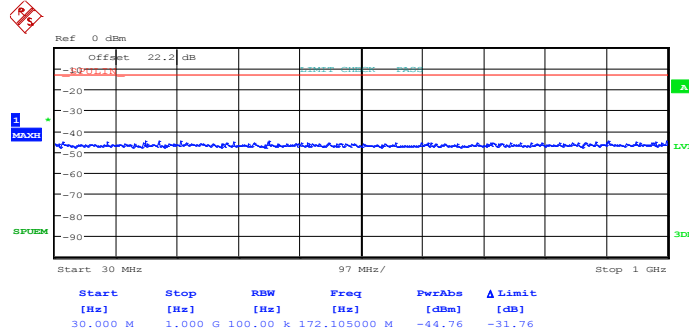


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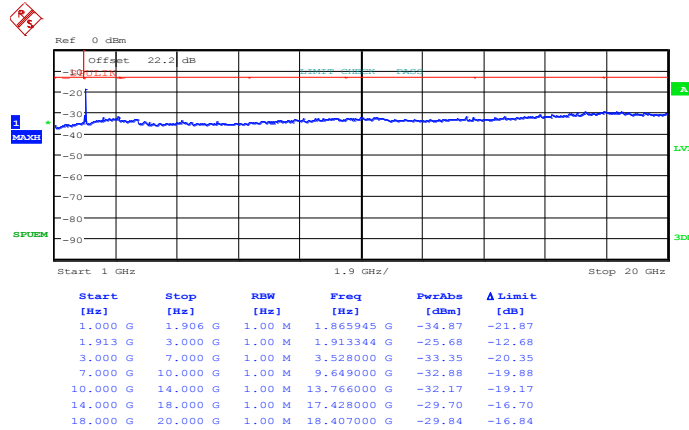


Band :	LTE Band 2	Channel :	CH19193 (High)
Band Width :	1.4MHz		

QPSK (RB Size 3, RB Offset 2)



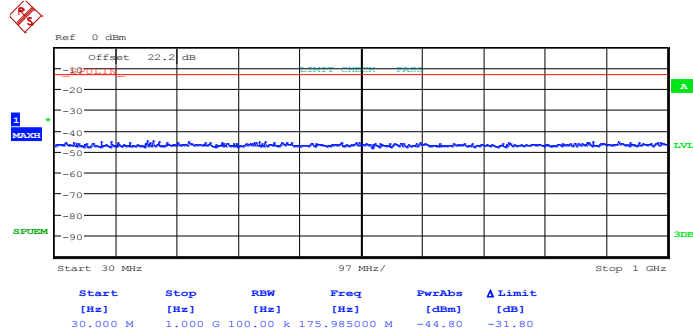
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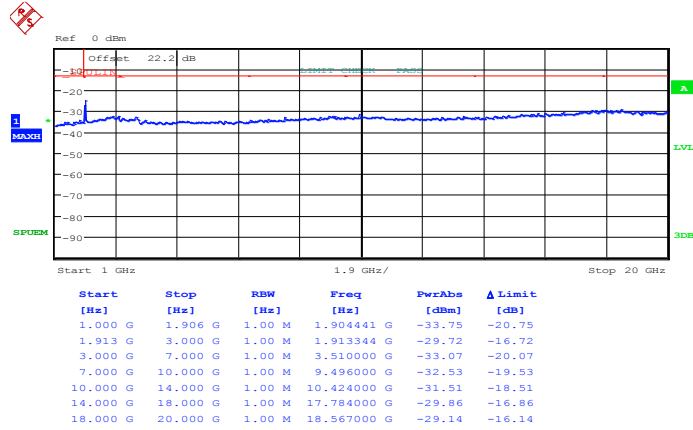
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16QAM (RB Size 3, RB Offset 0)



Date: 27.AUG.2013 17:31:30

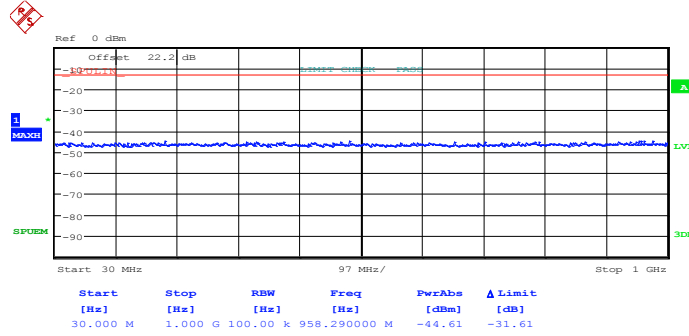


Date: 27.AUG.2013 17:30:43

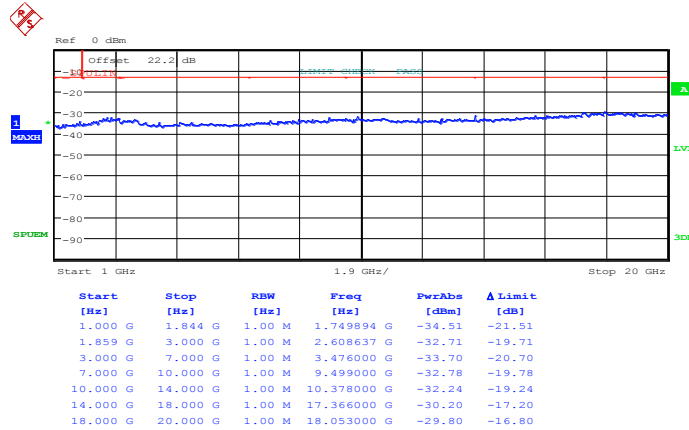


Band :	LTE Band 2	Channel :	CH18615 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 7)



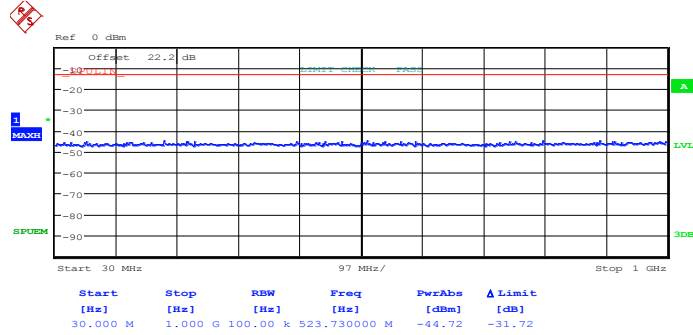
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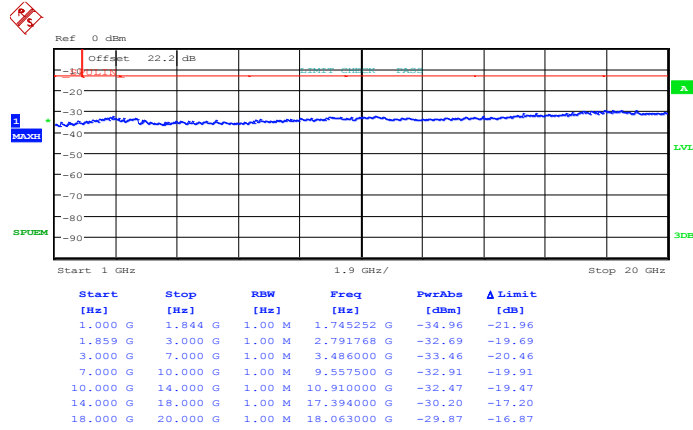
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16QAM (RB Size 1, RB Offset 7)



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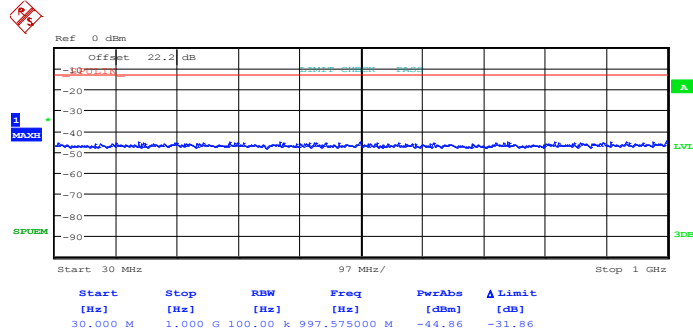


Date: 27.AUG.2013 17:23:39

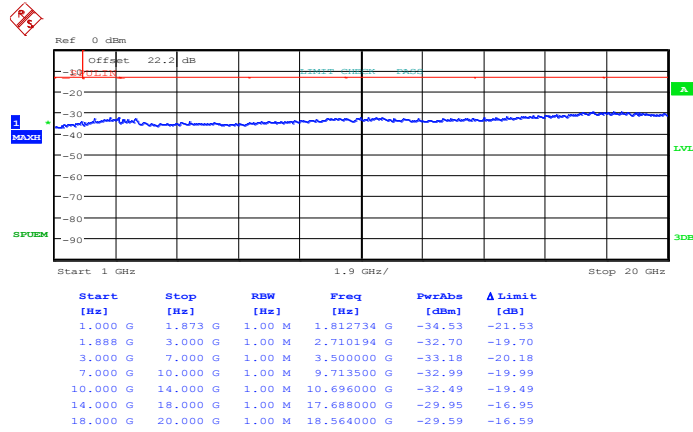


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 14)



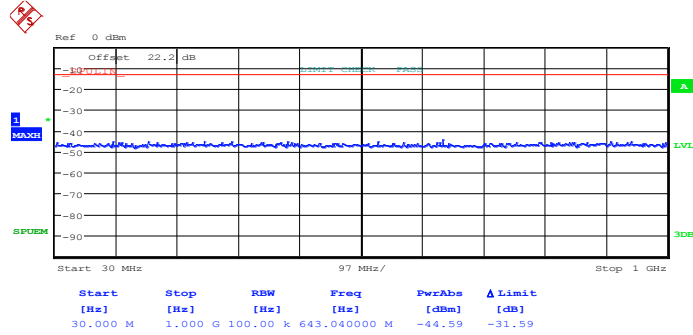
Date: 27.AUG.2013 17:25:11



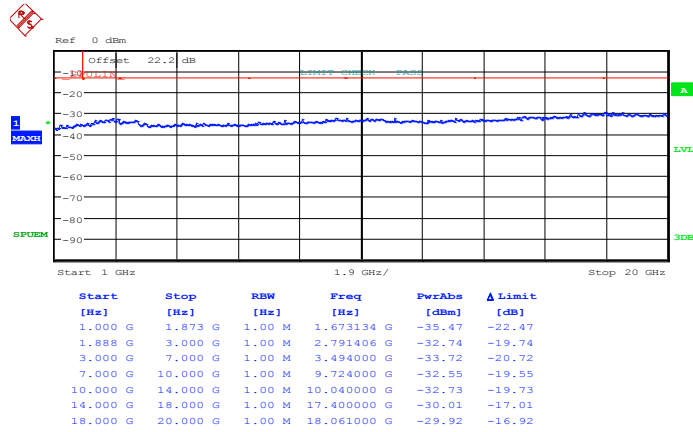
Date: 27.AUG.2013 17:24:41



16QAM (RB Size 1, RB Offset 14)



Date: 27.AUG.2013 17:25:02

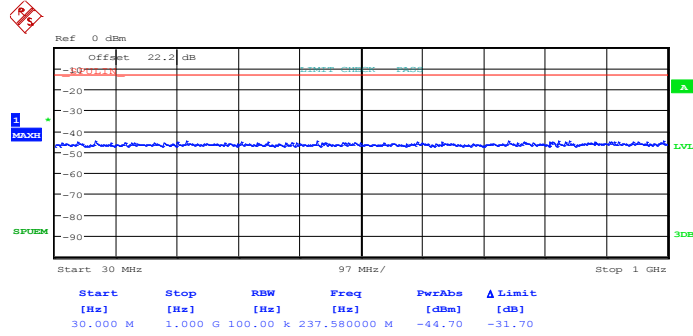


Date: 27.AUG.2013 17:24:52

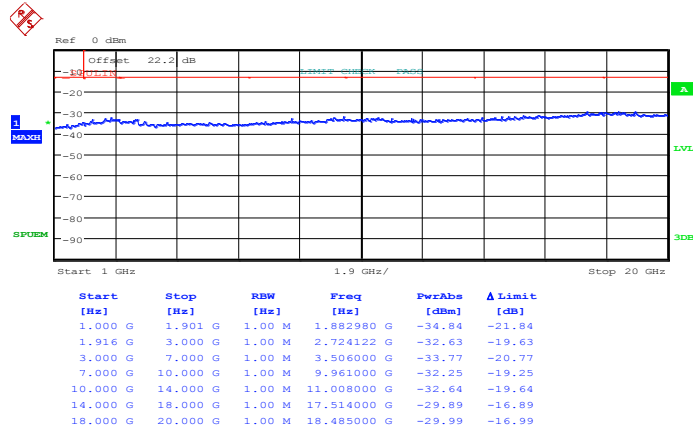


Band :	LTE Band 2	Channel :	CH19185 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



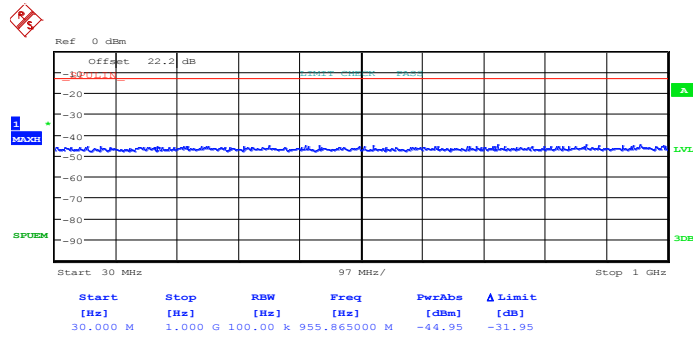
Date: 27.AUG.2013 17:25:58



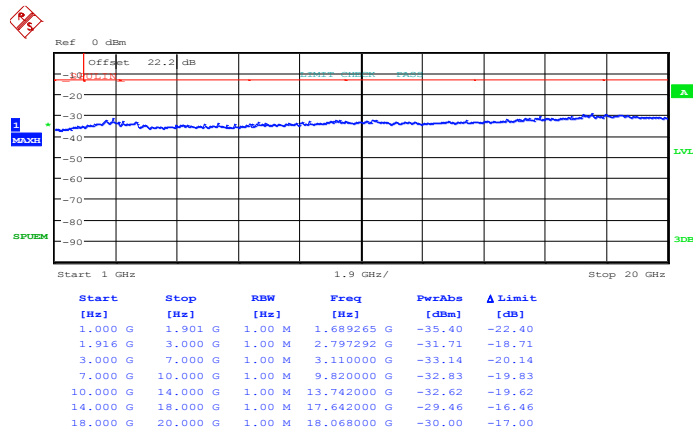
Date: 27.AUG.2013 17:26:31



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 17:26:07

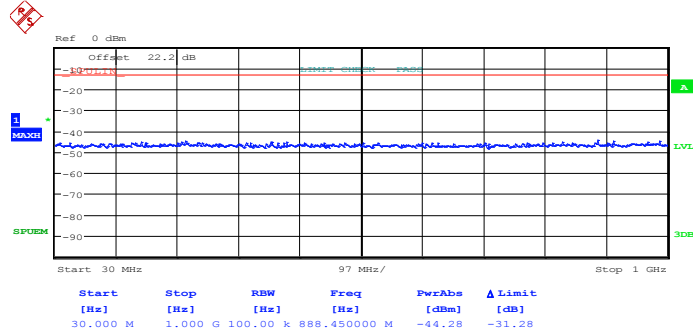


Date: 27.AUG.2013 17:26:20

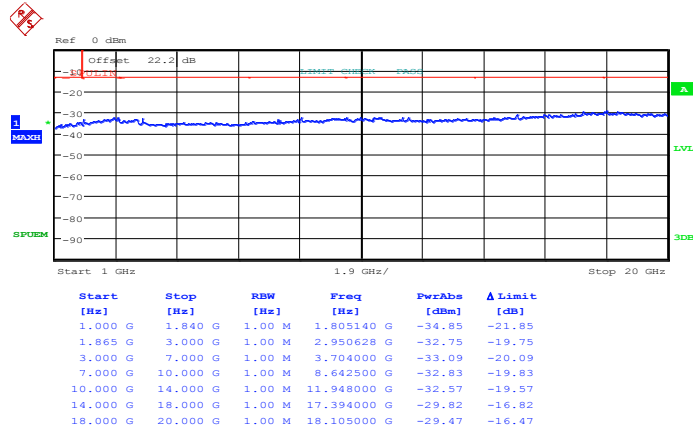


Band :	LTE Band 2	Channel :	CH18625 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 12)



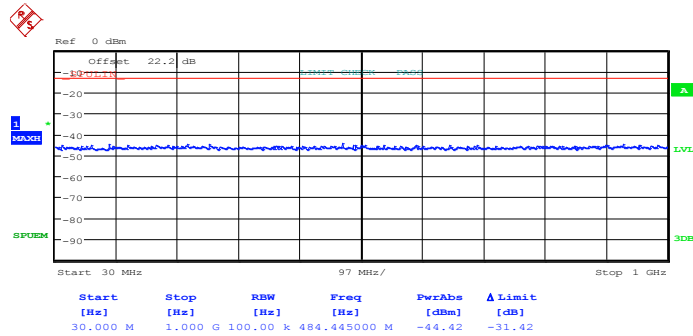
Date: 27.AUG.2013 17:21:47



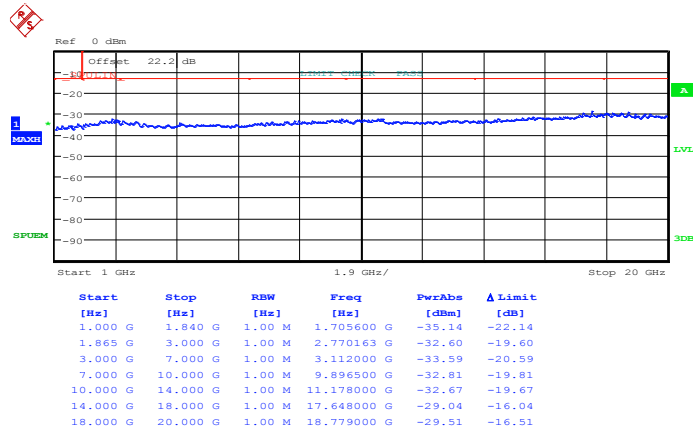
Date: 27.AUG.2013 17:21:12



16QAM (RB Size 1, RB Offset 12)



Date: 27.AUG.2013 17:21:38

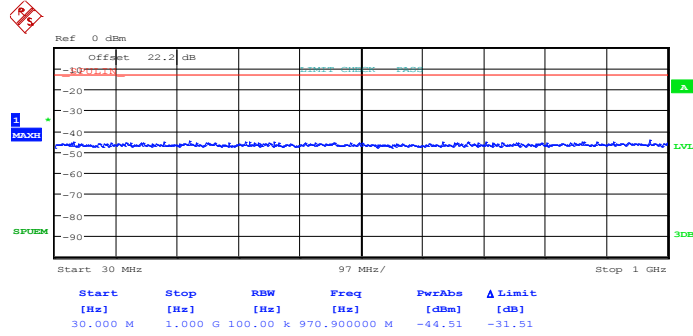


Date: 27.AUG.2013 17:21:22

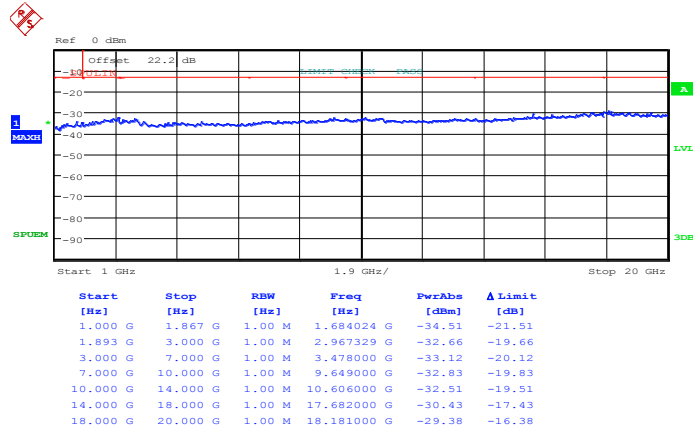


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



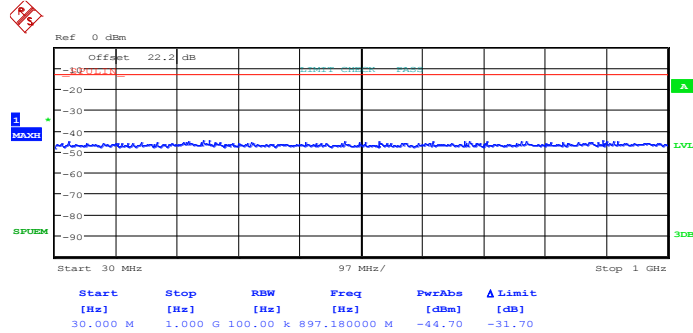
Date: 27.AUG.2013 17:19:53



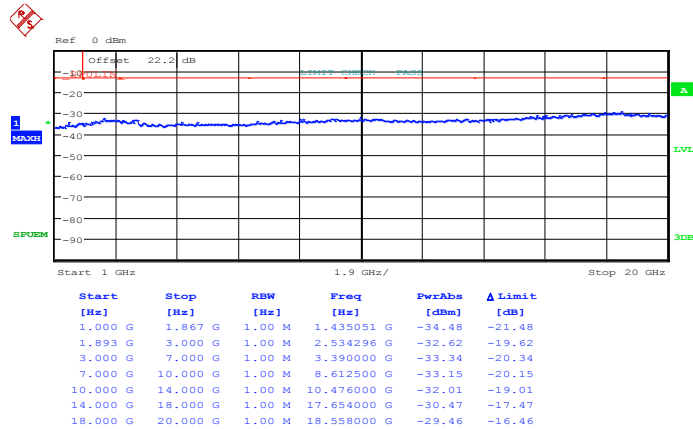
Date: 27.AUG.2013 17:20:26



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 17:20:02

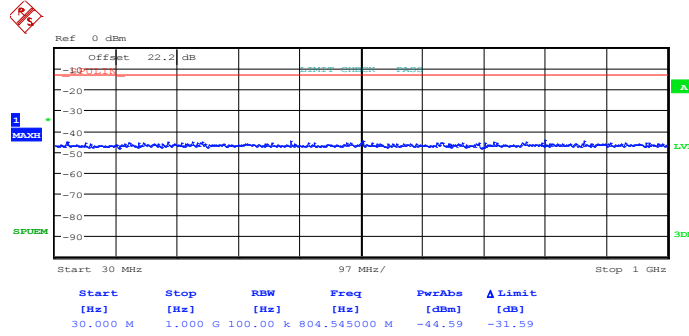


Date: 27.AUG.2013 17:20:17

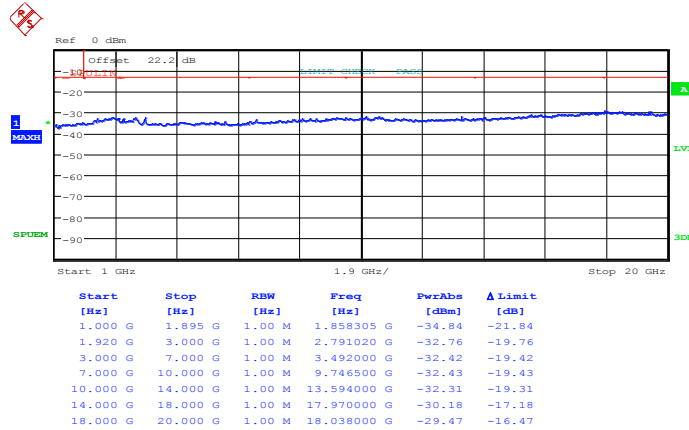


Band :	LTE Band 2	Channel :	CH19175 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



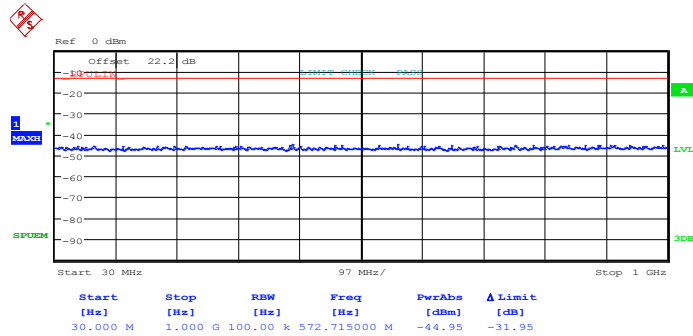
Date: 27.AUG.2013 17:19:13



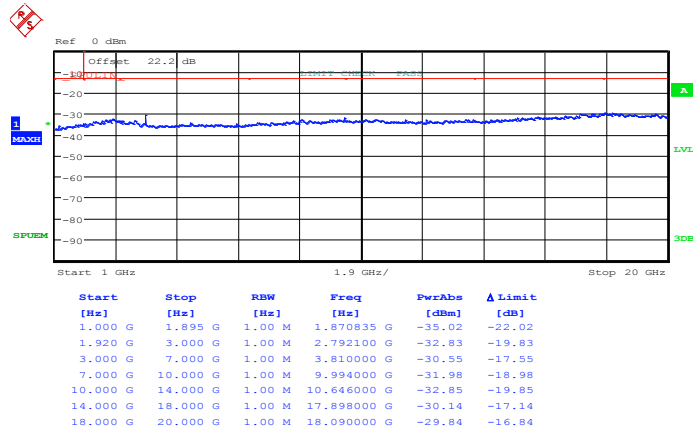
Date: 27.AUG.2013 17:18:31



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 17:19:04

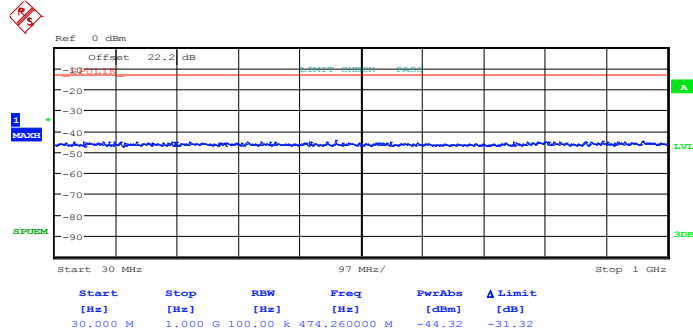


Date: 27.AUG.2013 17:18:44

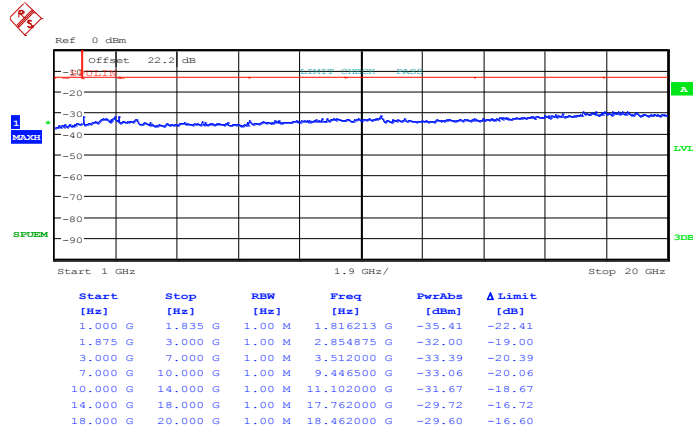


Band :	LTE Band 2	Channel :	CH18650 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



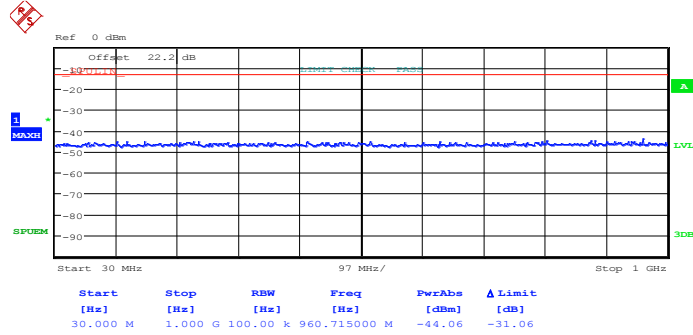
Date: 27.AUG.2013 17:11:37



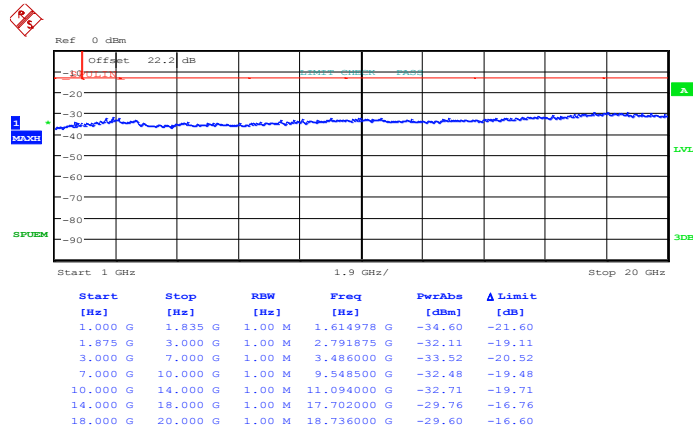
Date: 27.AUG.2013 17:12:11



16QAM (RB Size 1, RB Offset 49)



Date: 27.AUG.2013 17:11:50

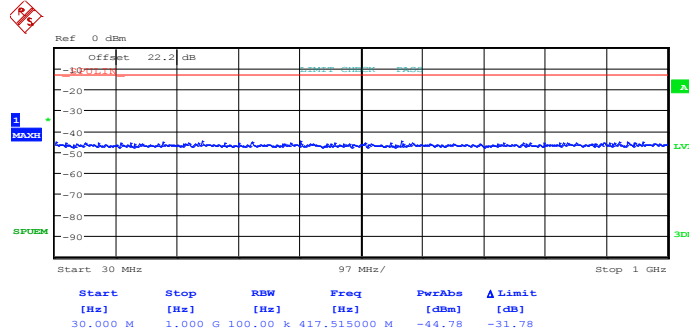


Date: 27.AUG.2013 17:12:01

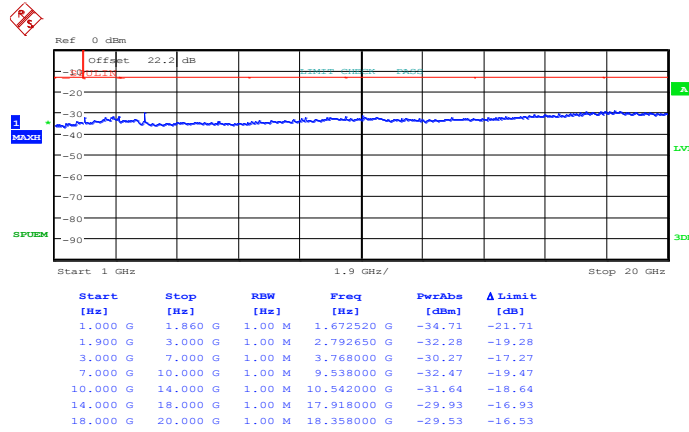


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



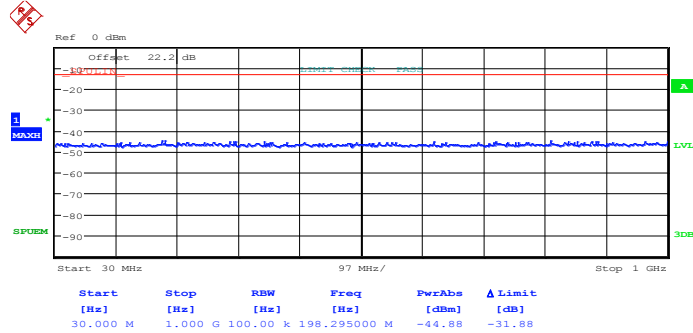
Date: 27.AUG.2013 17:14:06



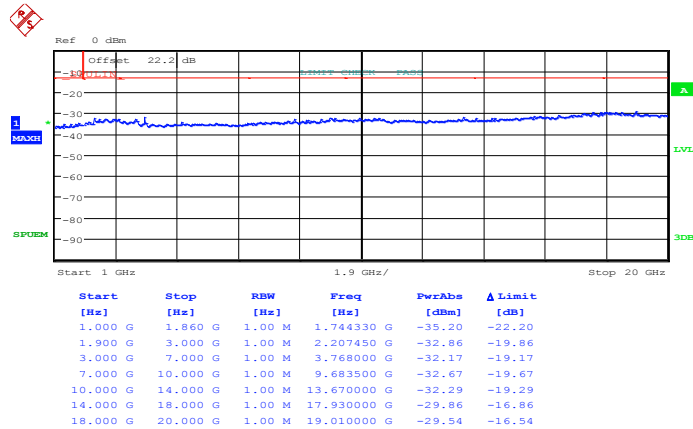
Date: 27.AUG.2013 17:13:30



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 17:13:56

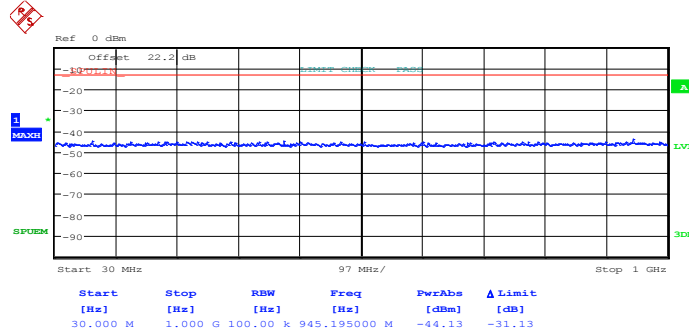


Date: 27.AUG.2013 17:13:44

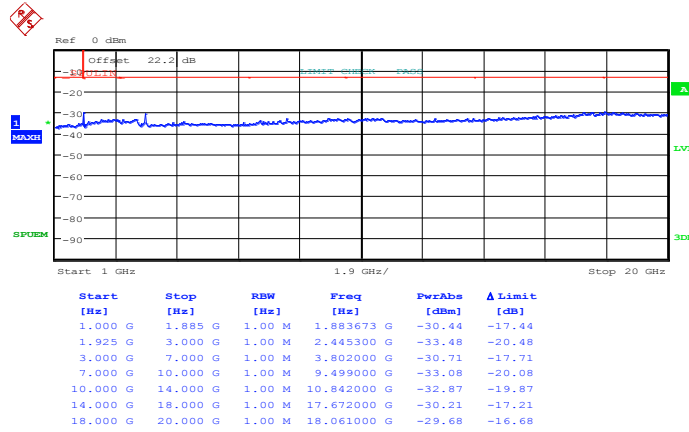


Band :	LTE Band 2	Channel :	CH19150 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



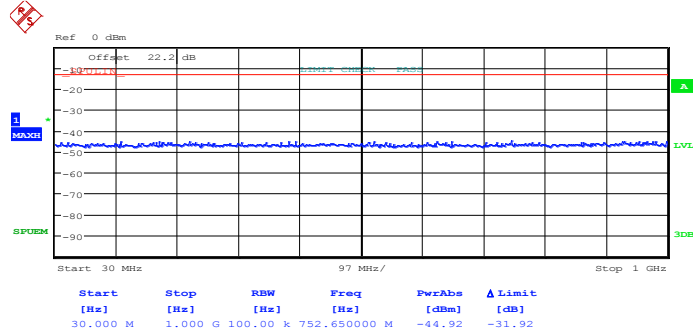
Date: 27.AUG.2013 17:14:55



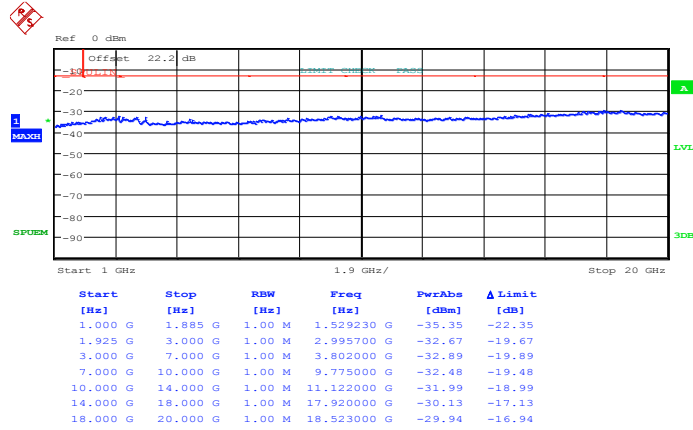
Date: 27.AUG.2013 17:15:26



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 17:15:05

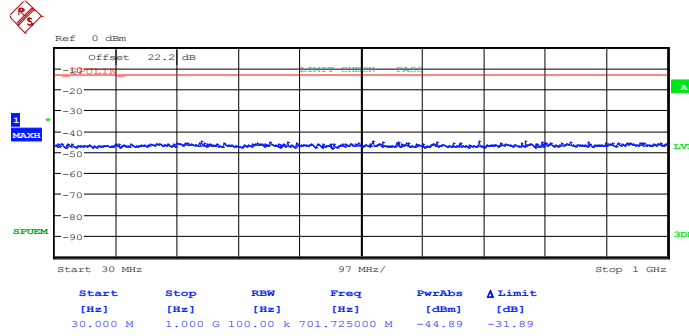


Date: 27.AUG.2013 17:15:16

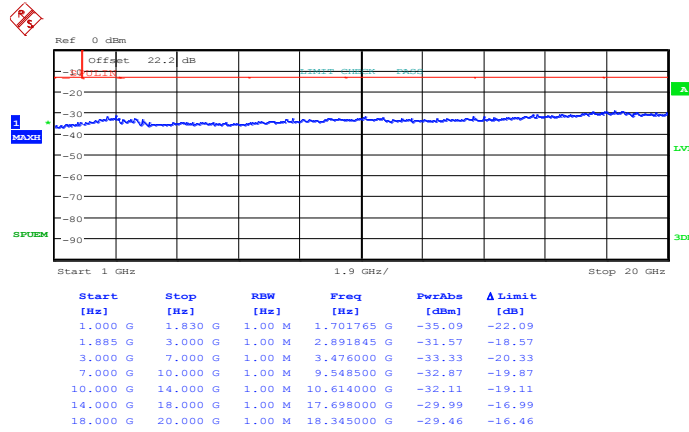


Band :	LTE Band 2	Channel :	CH18675 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



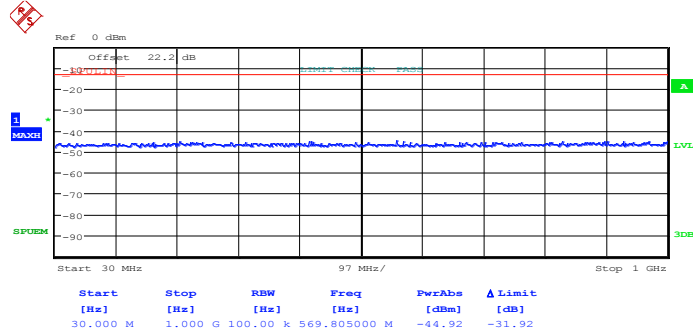
Date: 27.AUG.2013 17:10:10



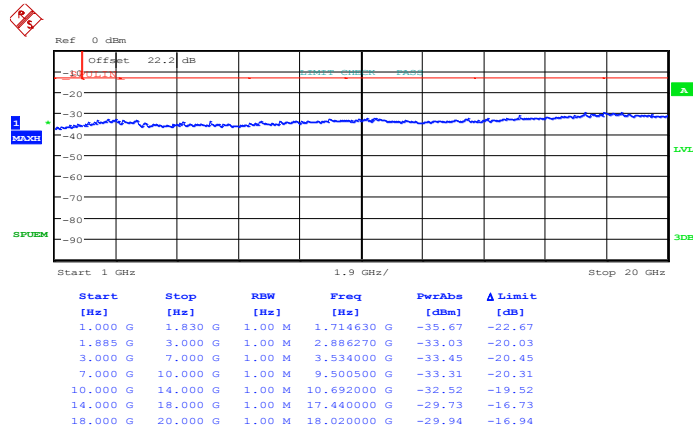
Date: 27.AUG.2013 17:08:50



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 17:09:11

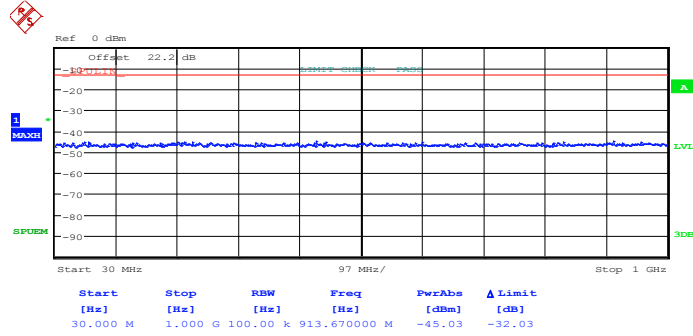


Date: 27.AUG.2013 17:08:59

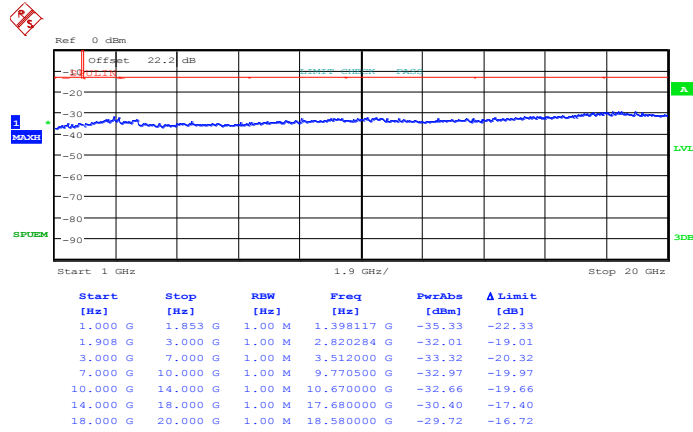


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



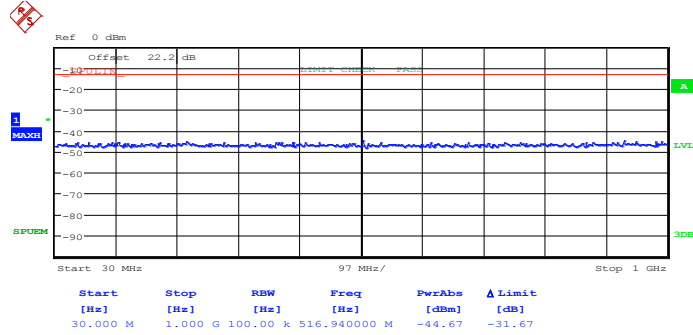
Date: 27.AUG.2013 16:51:19



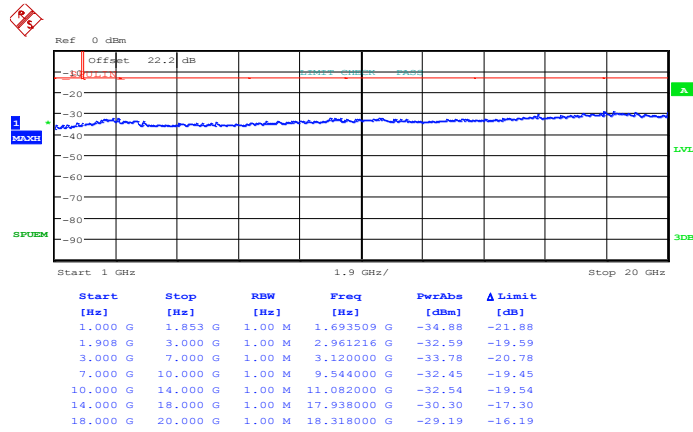
Date: 27.AUG.2013 16:51:51



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 16:51:30

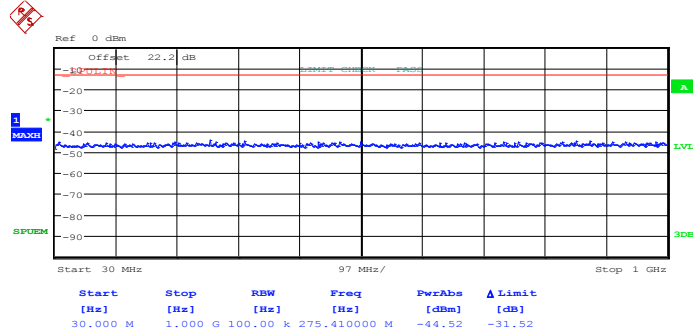


Date: 27.AUG.2013 16:51:43

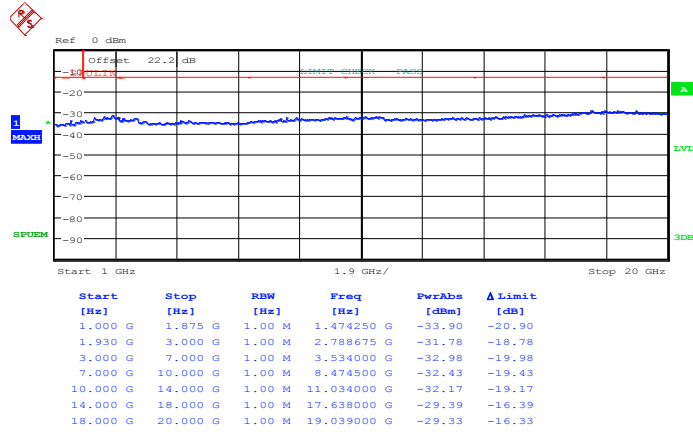


Band :	LTE Band 2	Channel :	CH19125 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



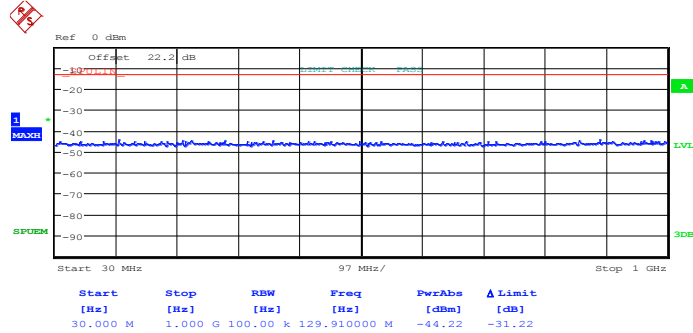
Date: 27.AUG.2013 16:46:59



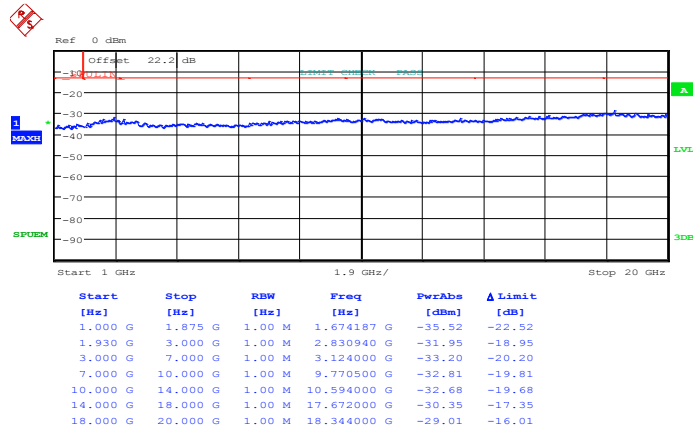
Date: 27.AUG.2013 16:46:16



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 16:46:49

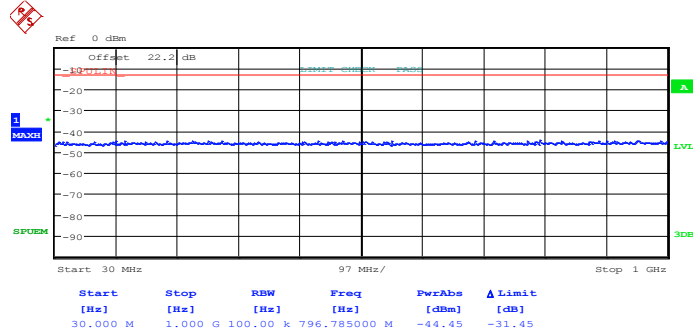


Date: 27.AUG.2013 16:46:27

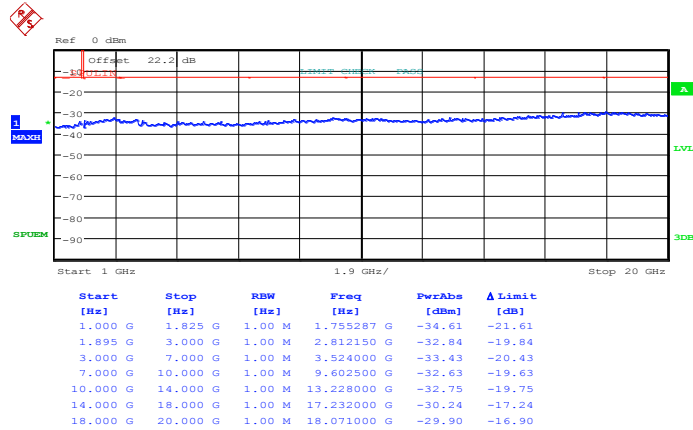


Band :	LTE Band 2	Channel :	CH18700 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



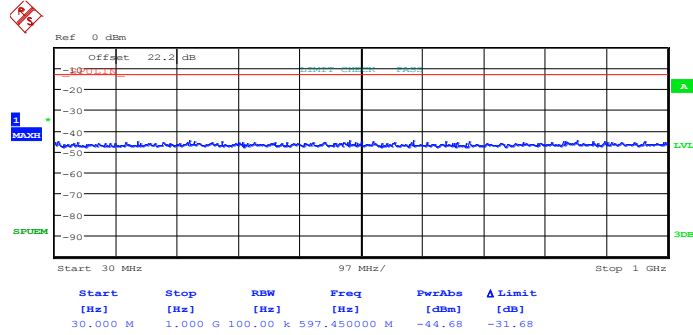
Date: 27.AUG.2013 16:36:52



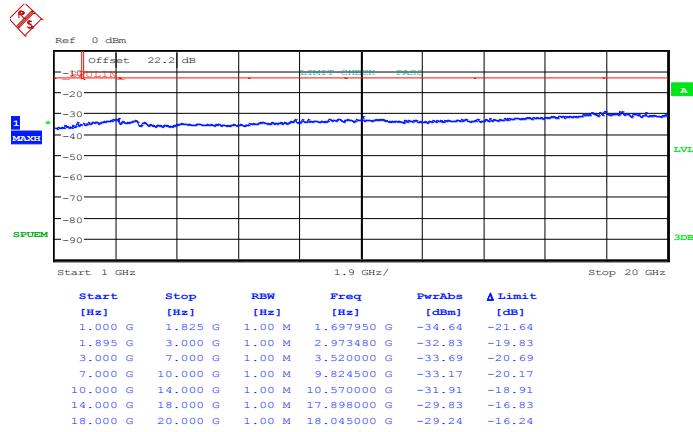
Date: 27.AUG.2013 16:35:34



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 16:36:04

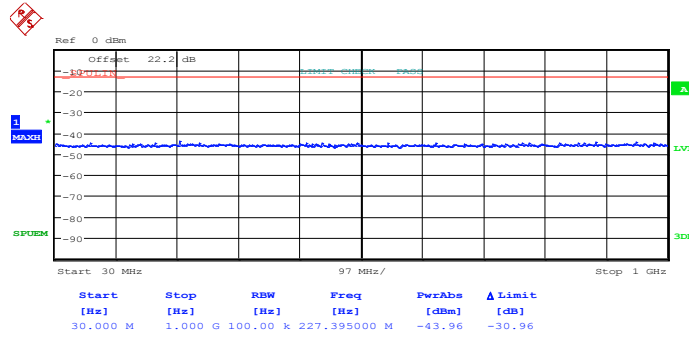


Date: 27.AUG.2013 16:35:46

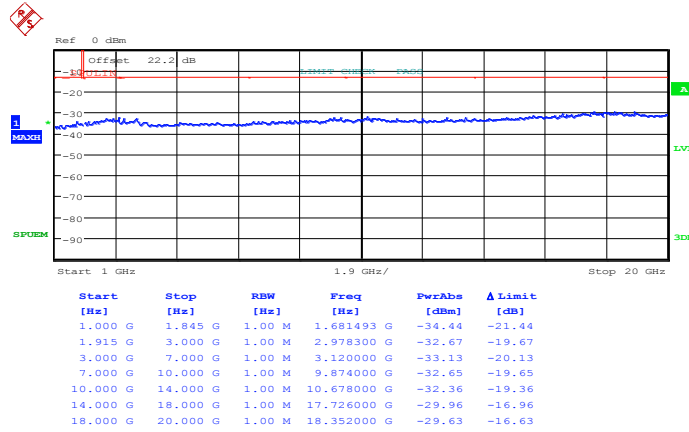


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



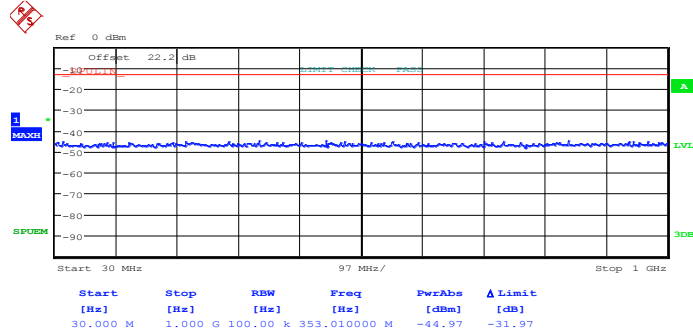
Date: 27.AUG.2013 16:34:16



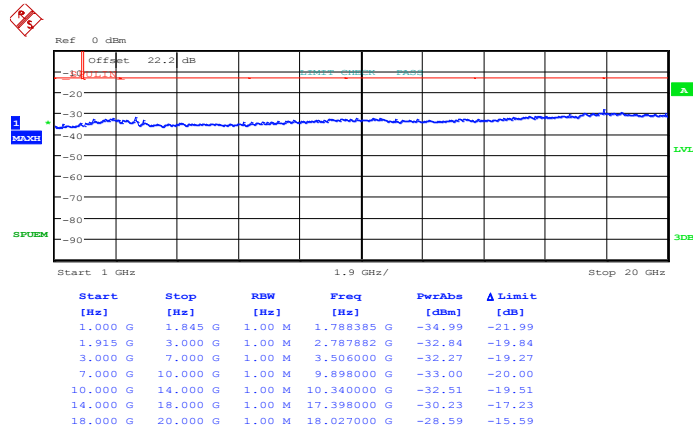
Date: 27.AUG.2013 16:34:59



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 16:34:26

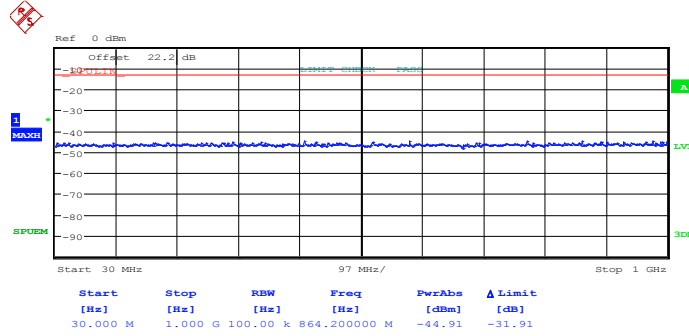


Date: 27.AUG.2013 16:34:45

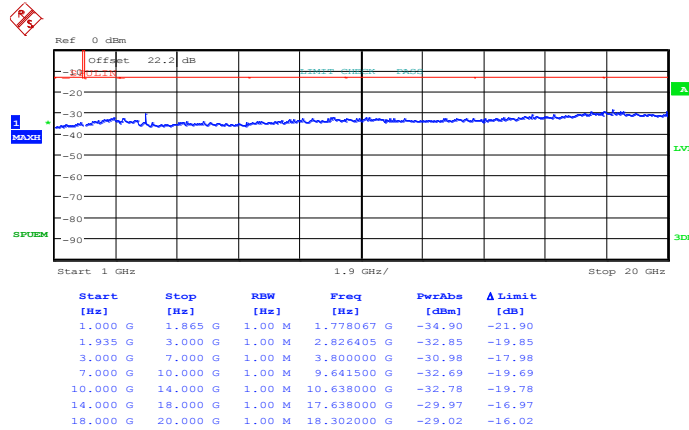


Band :	LTE Band 2	Channel :	CH19100 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 49)



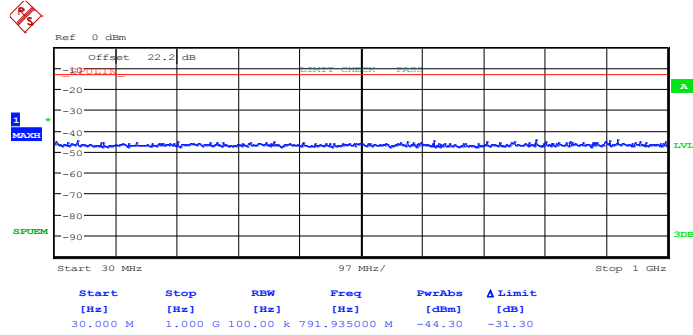
Date: 27.AUG.2013 16:38:24



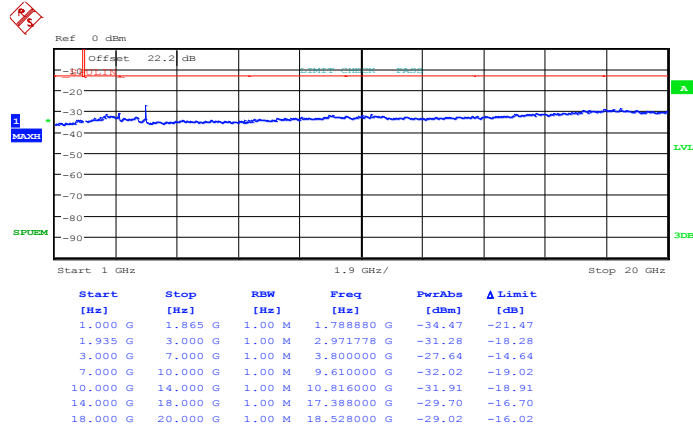
Date: 27.AUG.2013 16:39:35



16QAM (RB Size 1, RB Offset 49)



Date: 27.AUG.2013 16:38:33

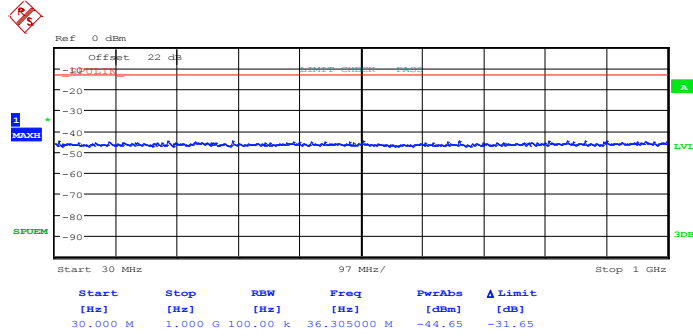


Date: 27.AUG.2013 16:39:25

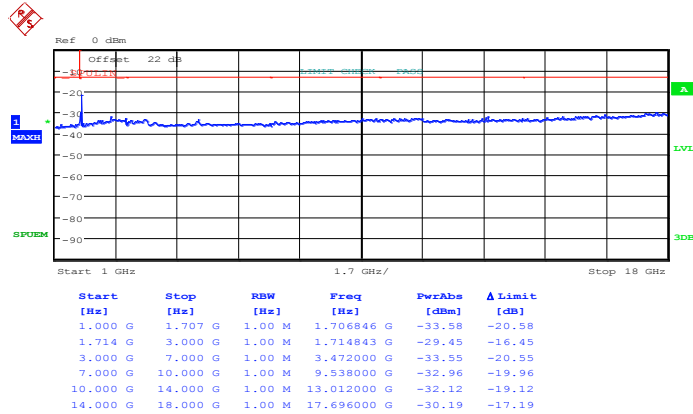


Band :	LTE Band 4	Channel :	CH19957 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 2)



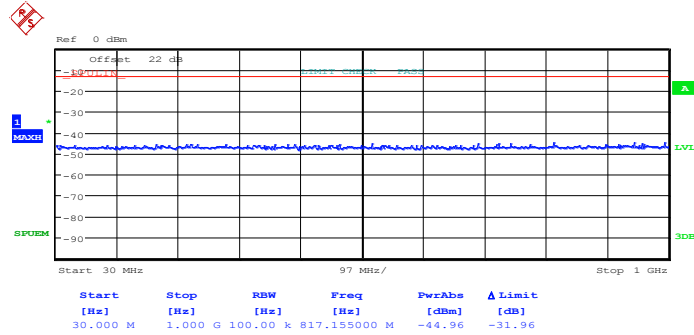
Date: 27.AUG.2013 15:25:24



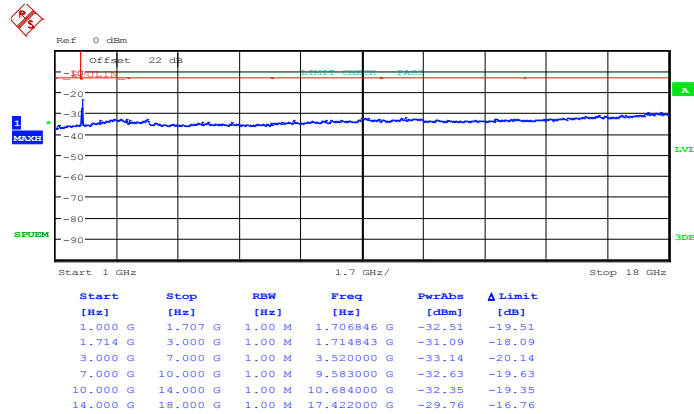
Date: 27.AUG.2013 15:26:19



16QAM (RB Size 3, RB Offset 0)



Date: 27.AUG.2013 15:25:40

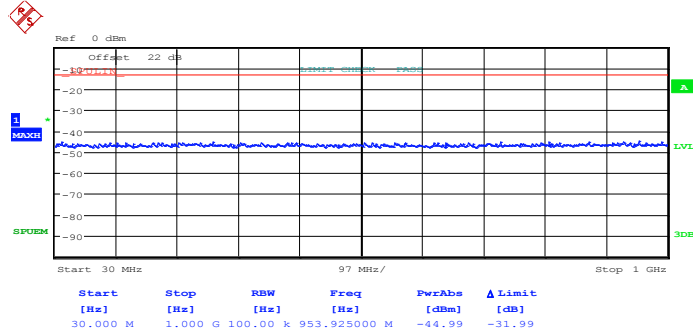


Date: 27.AUG.2013 15:26:02

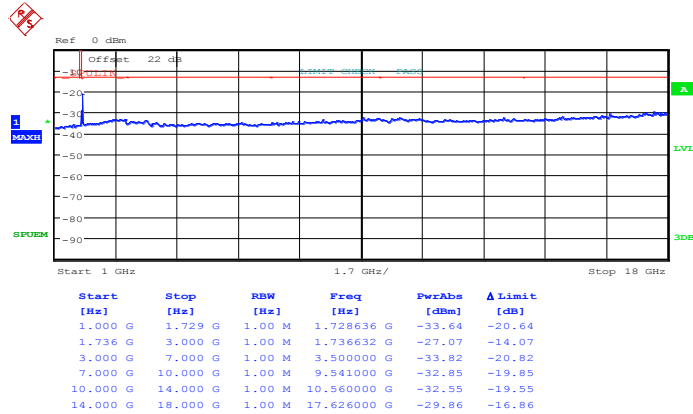


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 2)



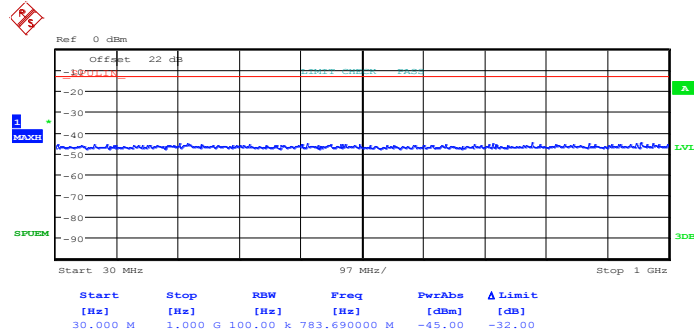
Date: 27.AUG.2013 15:28:33



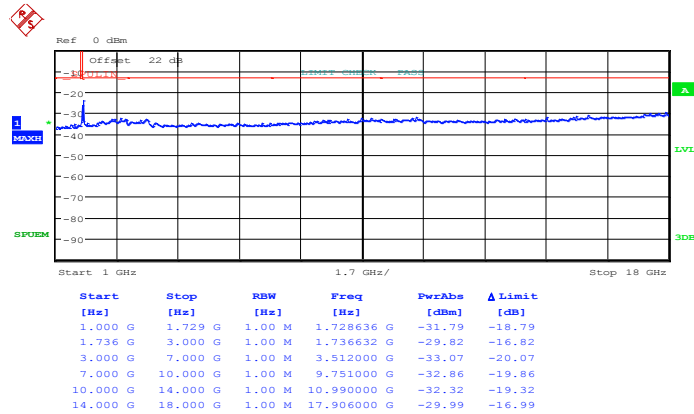
Date: 27.AUG.2013 15:27:42



16QAM (RB Size 3, RB Offset 0)



Date: 27.AUG.2013 15:28:16

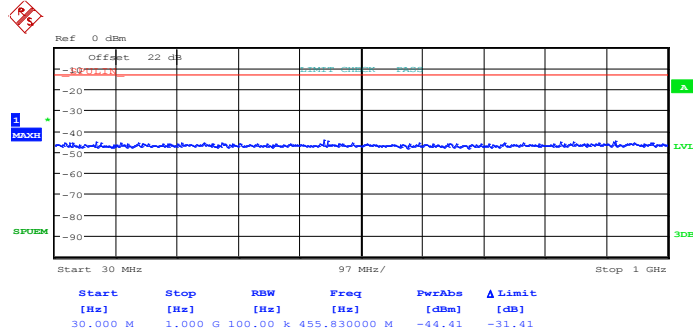


Date: 27.AUG.2013 15:28:00

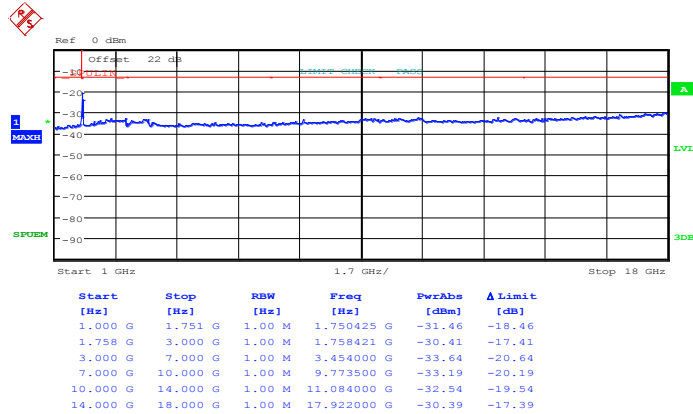


Band :	LTE Band 4	Channel :	CH20393 (High)
Band Width :	1.4MHz		

QPSK (RB Size 3, RB Offset 0)



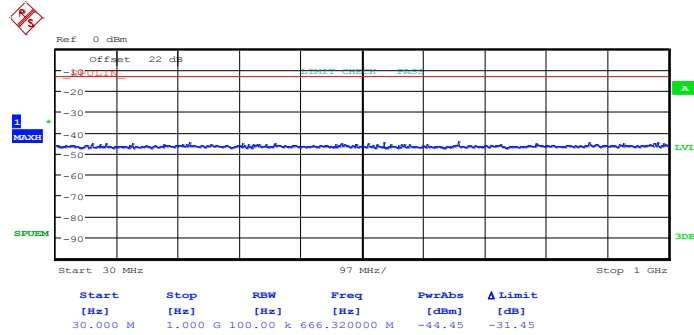
Date: 27.AUG.2013 15:29:21



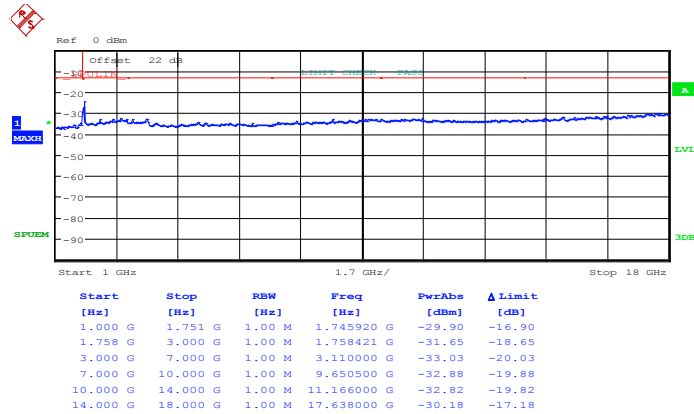
Date: 27.AUG.2013 15:31:16



16QAM (RB Size 3, RB Offset 0)



Date: 27.AUG.2013 15:29:46

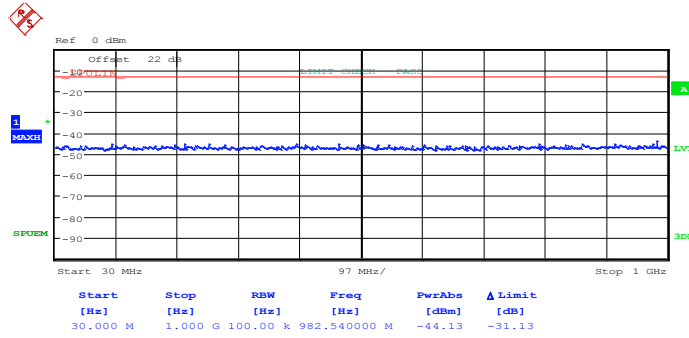


Date: 27.AUG.2013 15:31:06

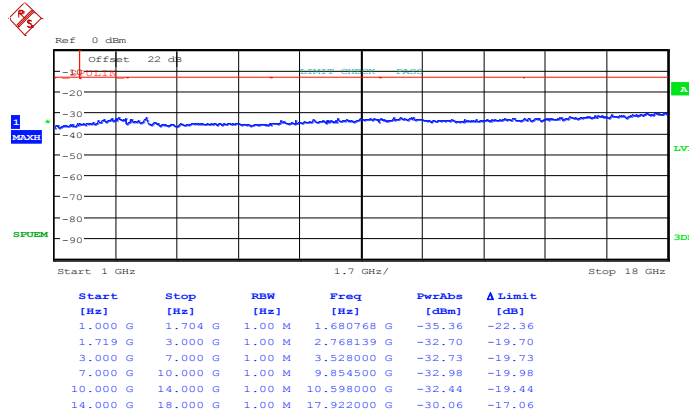


Band :	LTE Band 4	Channel :	CH19965 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 14)



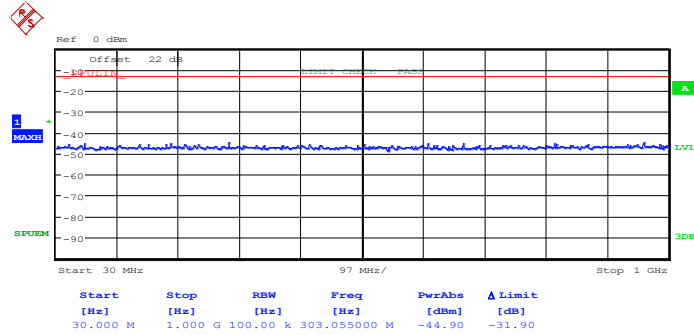
Date: 27.AUG.2013 15:35:57



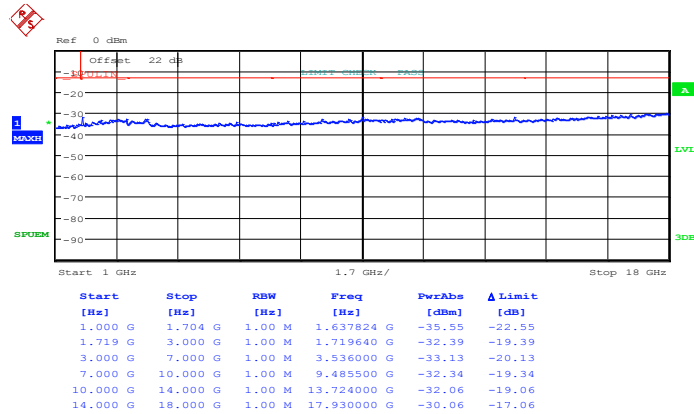
Date: 27.AUG.2013 15:35:16



16QAM (RB Size 1, RB Offset 7)



Date: 27.AUG.2013 15:35:45

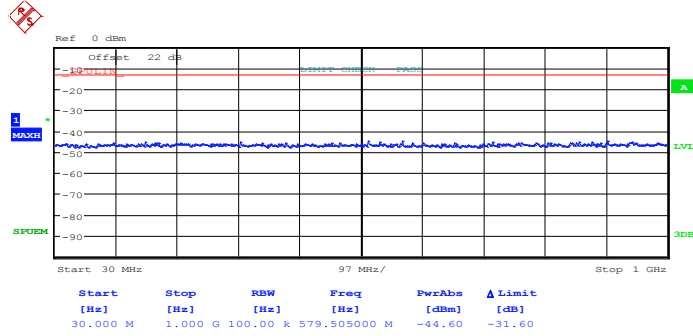


Date: 27.AUG.2013 15:35:35

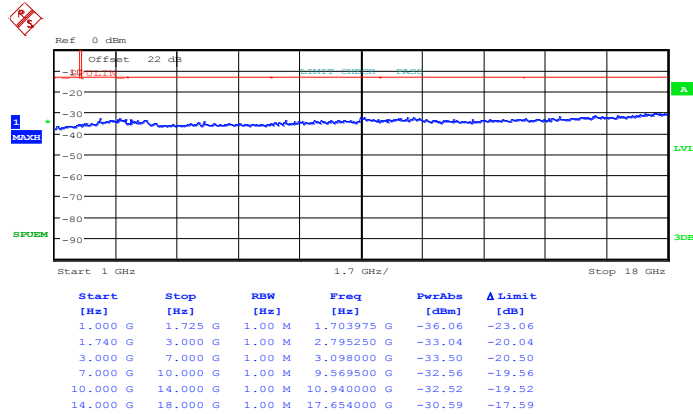


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 14)



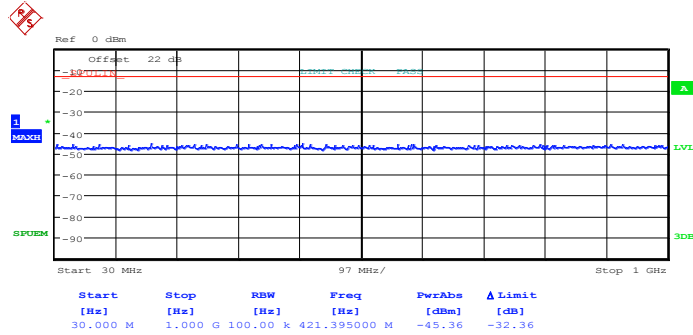
Date: 27.AUG.2013 15:33:50



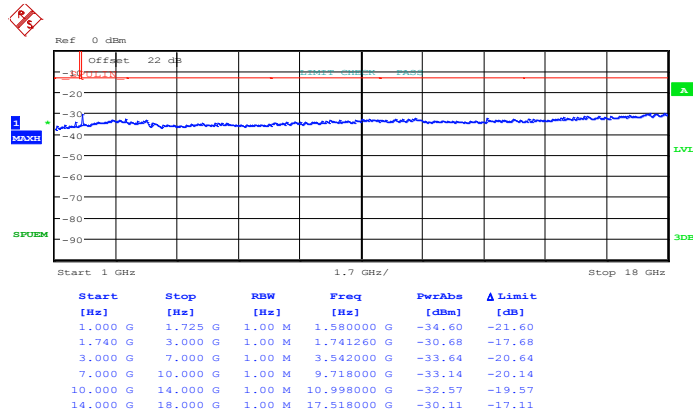
Date: 27.AUG.2013 15:34:26



16QAM (RB Size 1, RB Offset 14)



Date: 27.AUG.2013 15:34:00

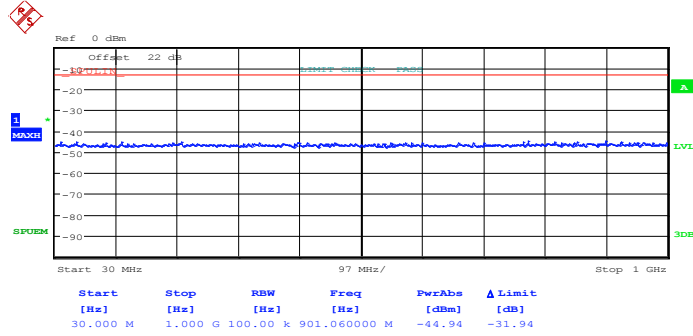


Date: 27.AUG.2013 15:34:15

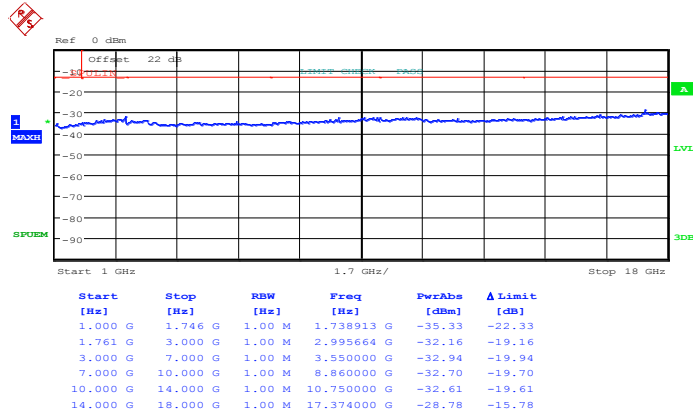


Band :	LTE Band 4	Channel :	CH20385 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



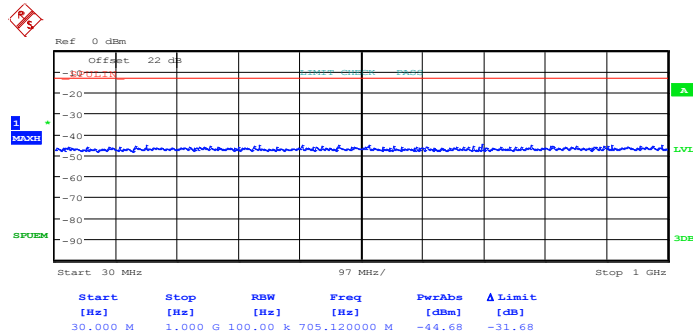
Date: 27.AUG.2013 15:33:07



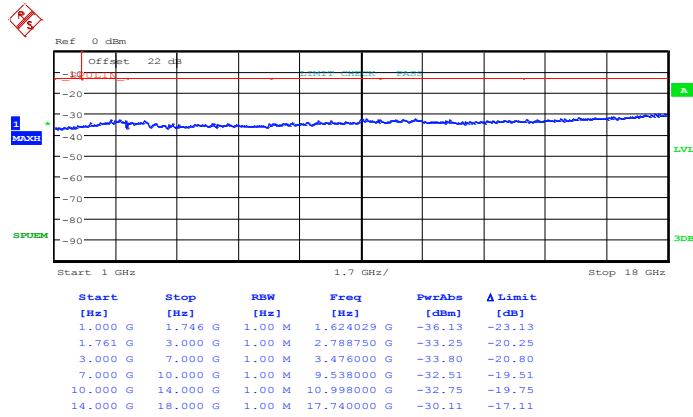
Date: 27.AUG.2013 15:32:27



16QAM (RB Size 1, RB Offset 7)



Date: 27.AUG.2013 15:32:52

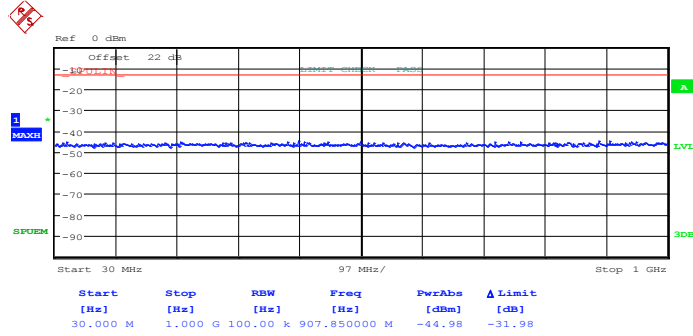


Date: 27.AUG.2013 15:32:42

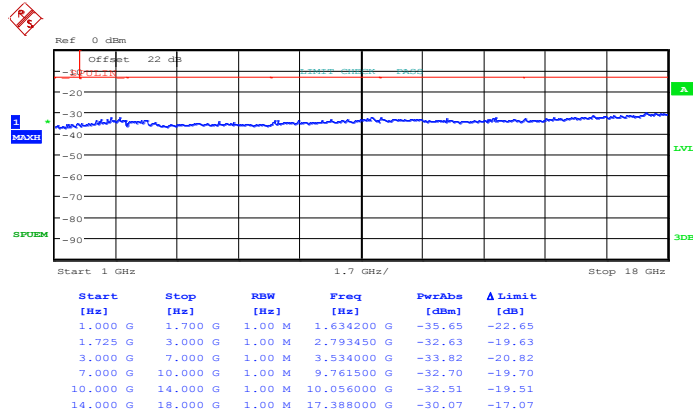


Band :	LTE Band 4	Channel :	CH19975 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



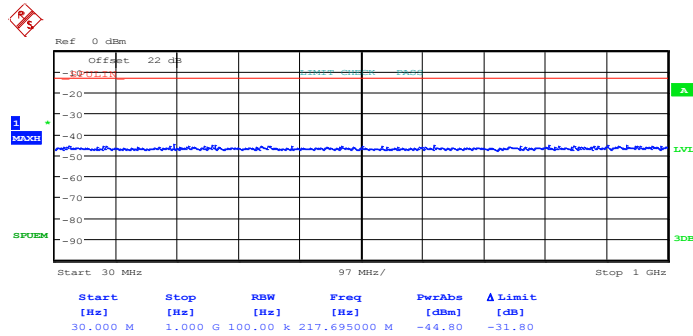
Date: 27.AUG.2013 15:36:55



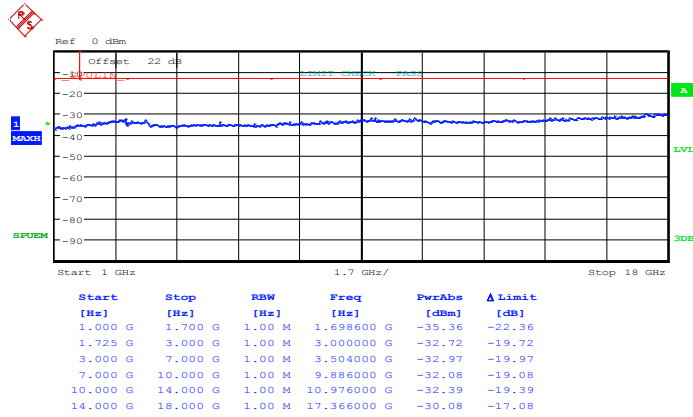
Date: 27.AUG.2013 15:43:00



16QAM (RB Size 1, RB Offset 12)



Date: 27.AUG.2013 15:37:13

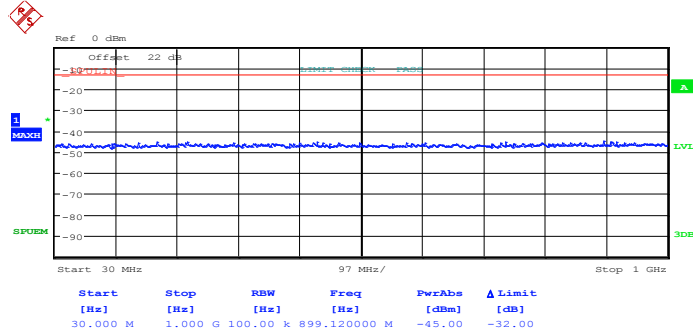


Date: 27.AUG.2013 15:42:45

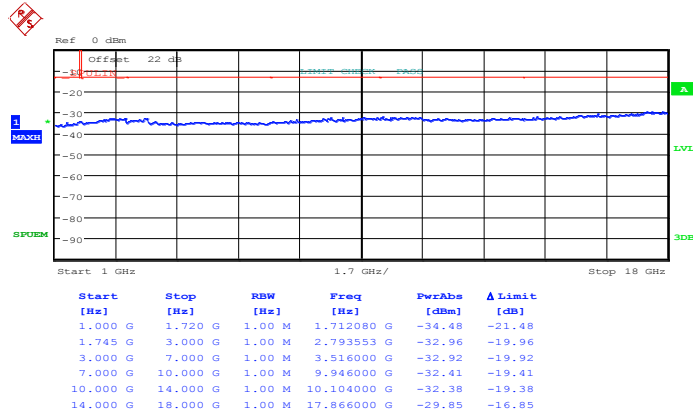


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



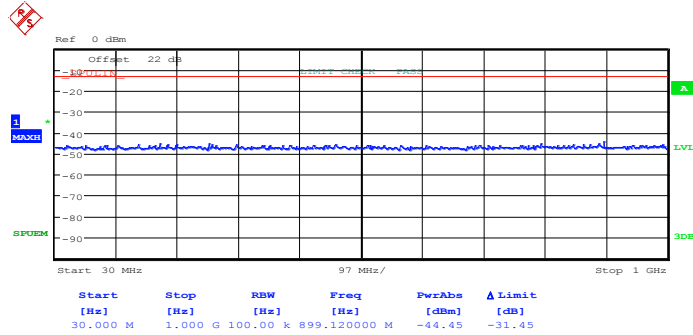
Date: 27.AUG.2013 15:45:11



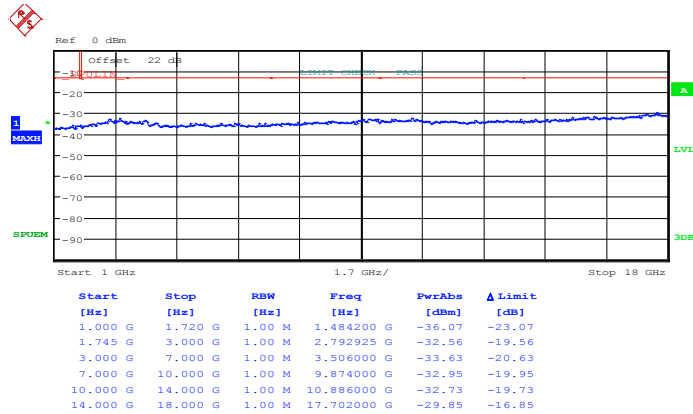
Date: 27.AUG.2013 15:44:38



16QAM (RB Size 1, RB Offset 24)



Date: 27.AUG.2013 15:44:59

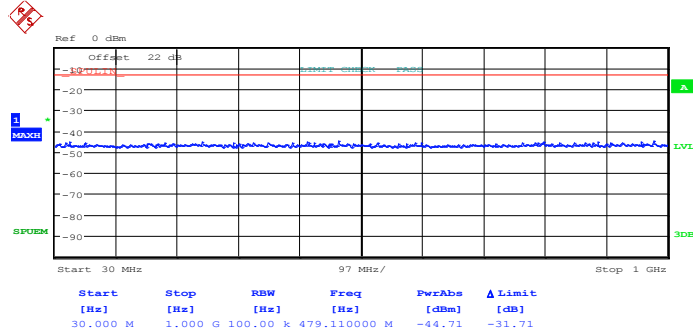


Date: 27.AUG.2013 15:44:48

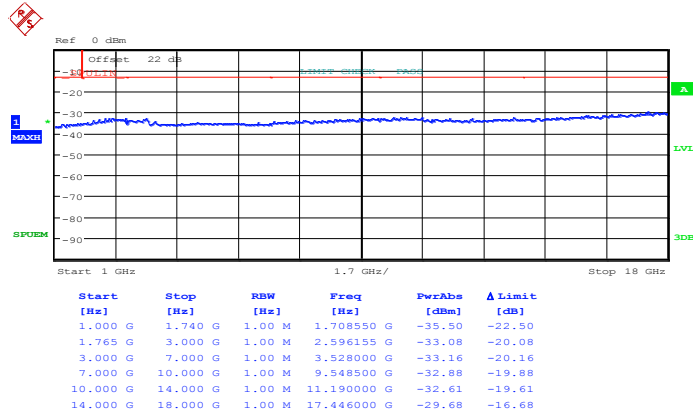


Band :	LTE Band 4	Channel :	CH20375 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 12)



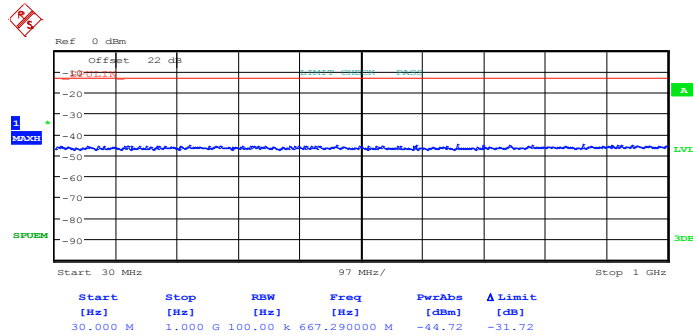
Date: 27.AUG.2013 15:48:00



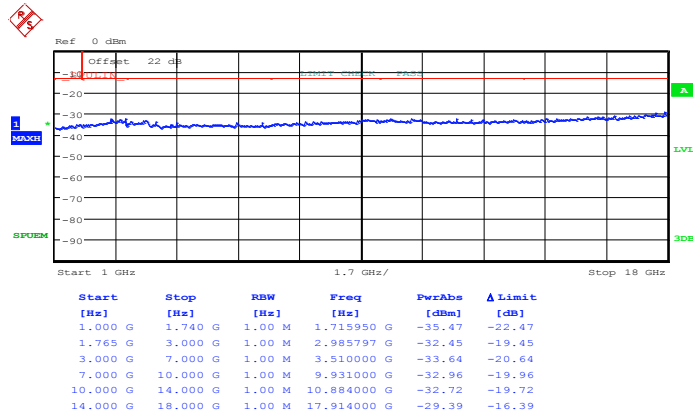
Date: 27.AUG.2013 15:48:27



16QAM (RB Size 1, RB Offset 12)



Date: 27.AUG.2013 15:47:47

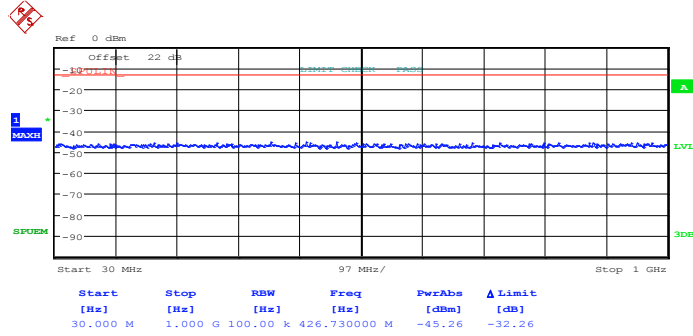


Date: 27.AUG.2013 15:48:39

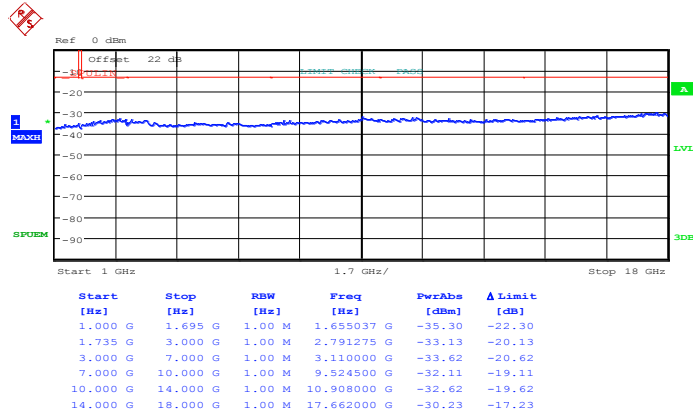


Band :	LTE Band 4	Channel :	CH20000 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



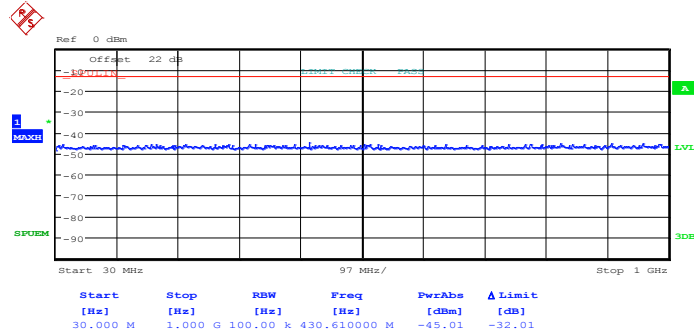
Date: 27.AUG.2013 15:55:47



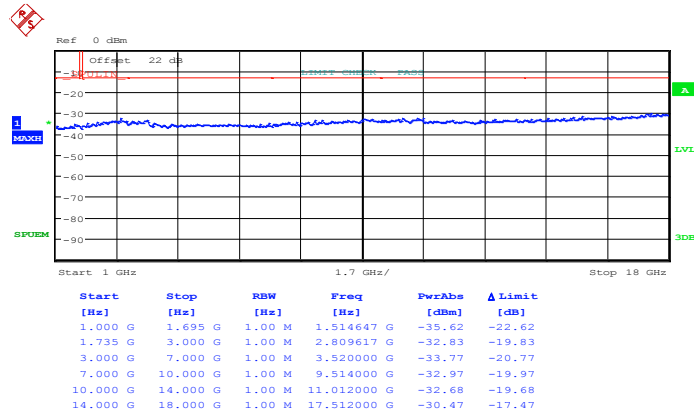
Date: 27.AUG.2013 15:55:17



16QAM (RB Size 1, RB Offset 49)



Date: 27.AUG.2013 15:55:38

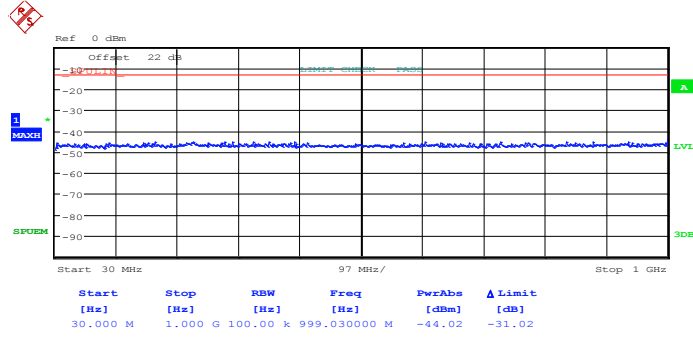


Date: 27.AUG.2013 15:55:27

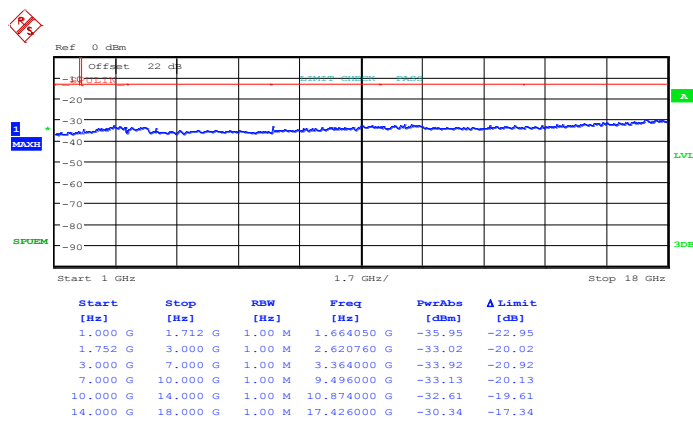


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



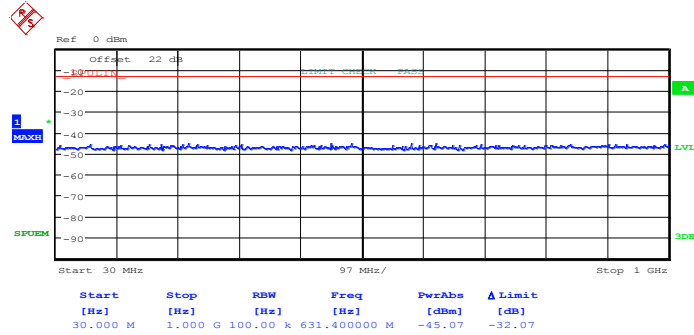
Date: 27.AUG.2013 15:54:13



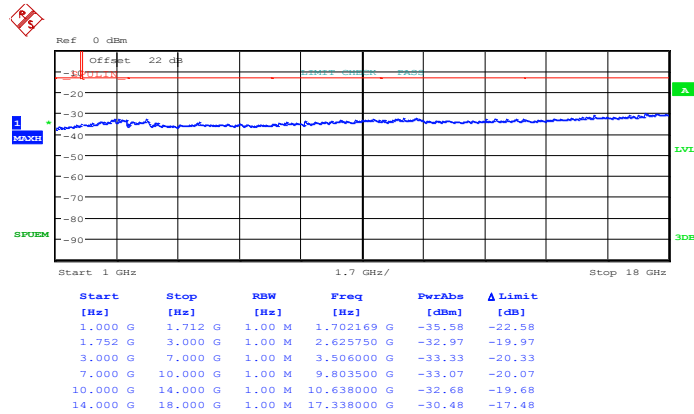
Date: 27.AUG.2013 15:54:43



16QAM (RB Size 1, RB Offset 49)



Date: 27.AUG.2013 15:54:22

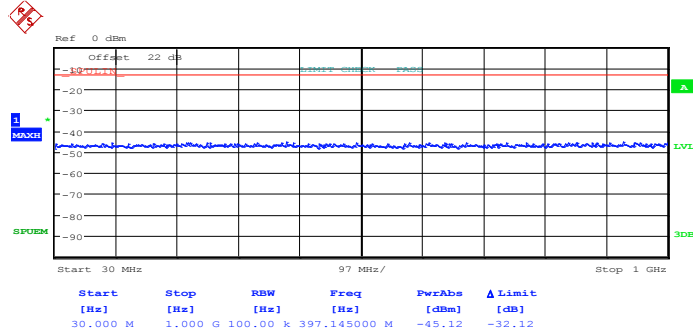


Date: 27.AUG.2013 15:54:34

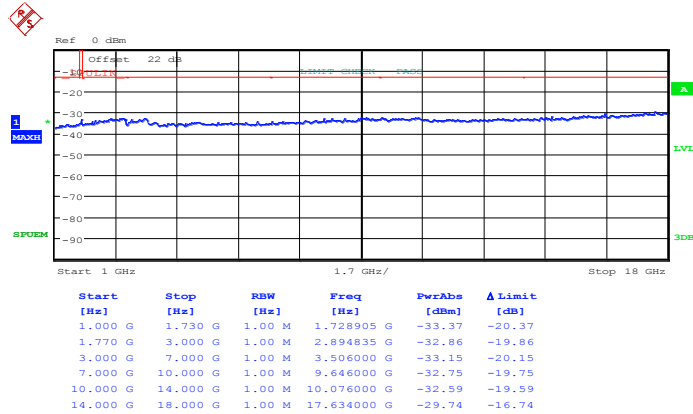


Band :	LTE Band 4	Channel :	CH20350 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



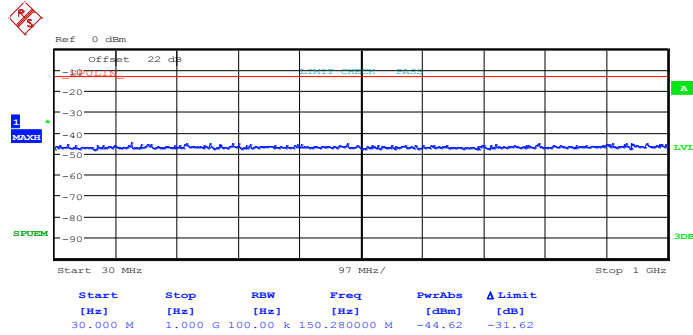
Date: 27.AUG.2013 15:53:35



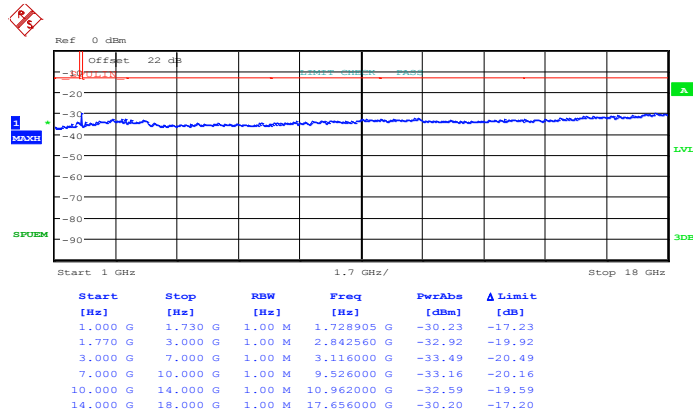
Date: 27.AUG.2013 15:52:55



16QAM (RB Size 1, RB Offset 24)



Date: 27.AUG.2013 15:53:24

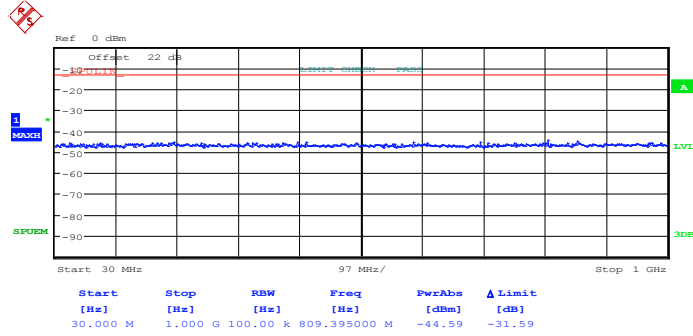


Date: 27.AUG.2013 15:53:12

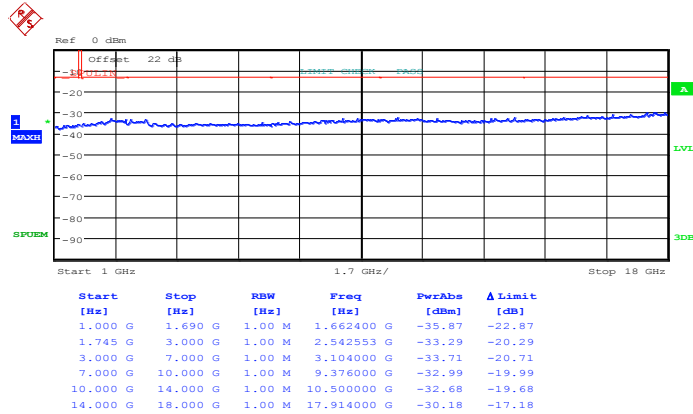


Band :	LTE Band 4	Channel :	CH20025 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 74)



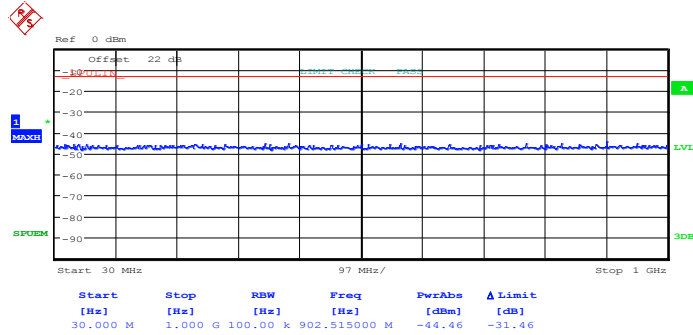
Date: 27.AUG.2013 15:56:53



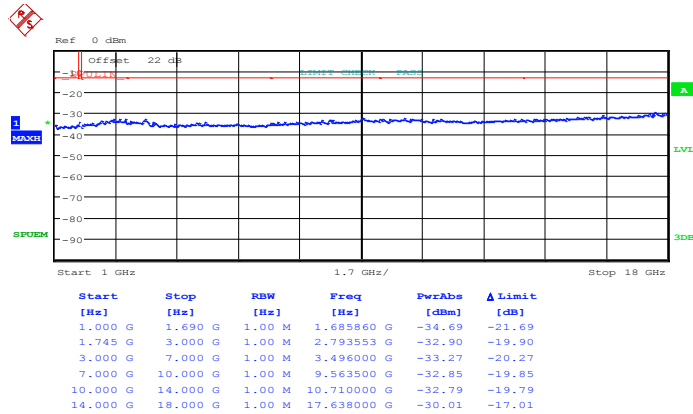
Date: 27.AUG.2013 15:57:25



16QAM (RB Size 1, RB Offset 74)



Date: 27.AUG.2013 15:57:03

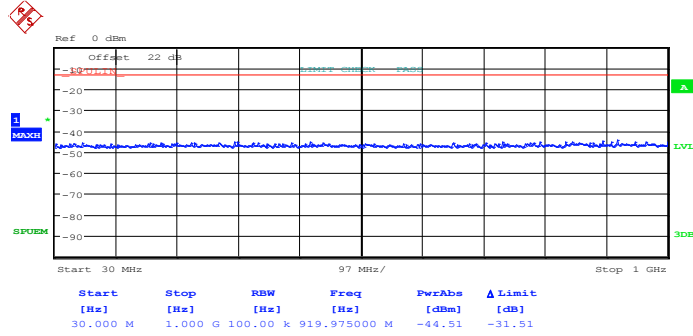


Date: 27.AUG.2013 15:57:15

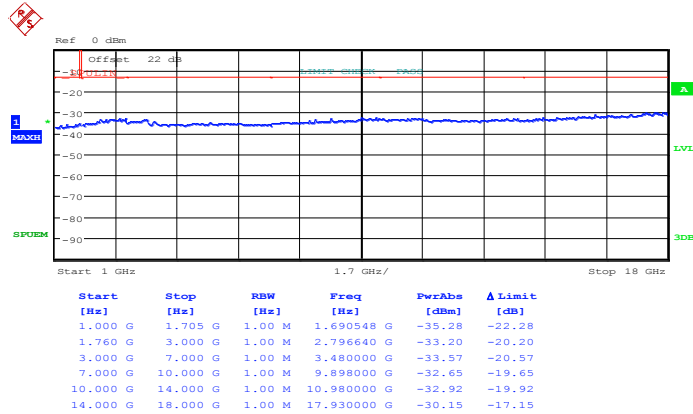


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 37)



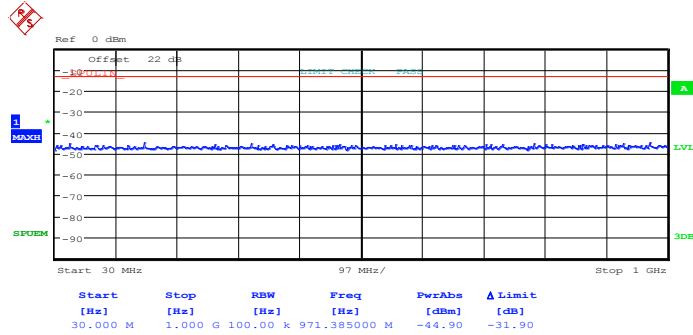
Date: 27.AUG.2013 15:58:38



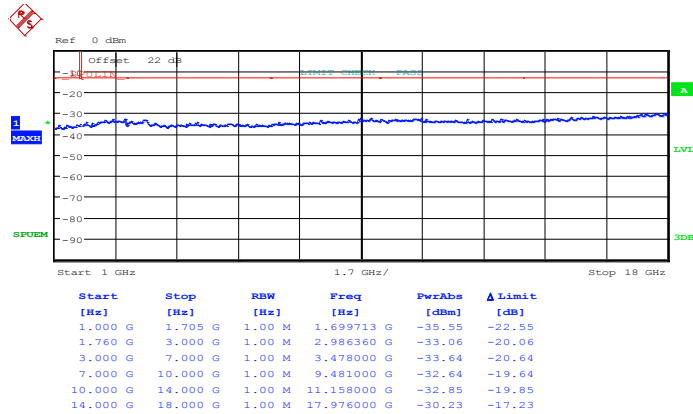
Date: 27.AUG.2013 15:58:06



16QAM (RB Size 1, RB Offset 74)



Date: 27.AUG.2013 15:58:27

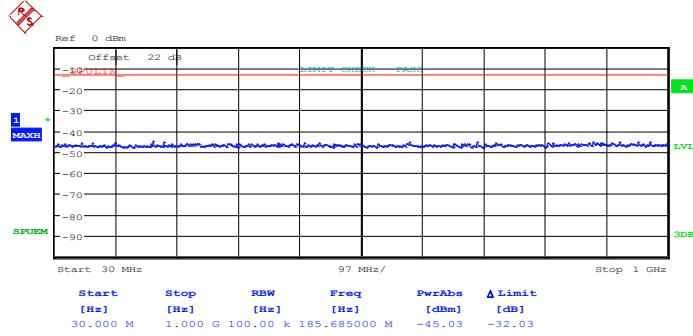


Date: 27.AUG.2013 15:58:19

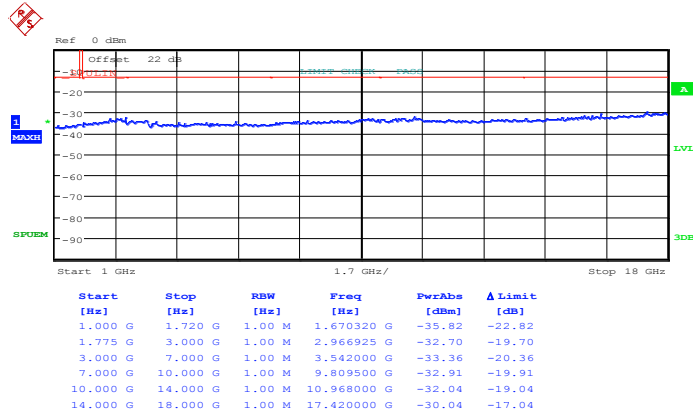


Band :	LTE Band 4	Channel :	CH20325 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 37)



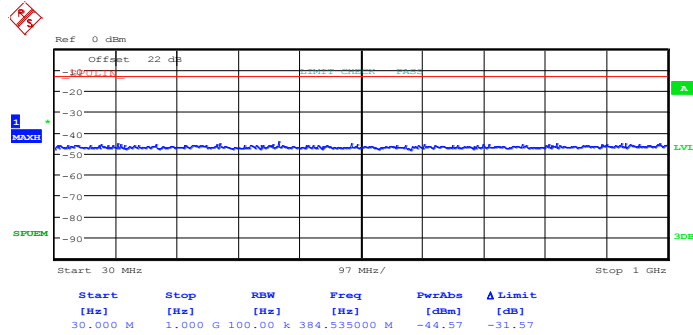
Date: 27.AUG.2013 15:59:47



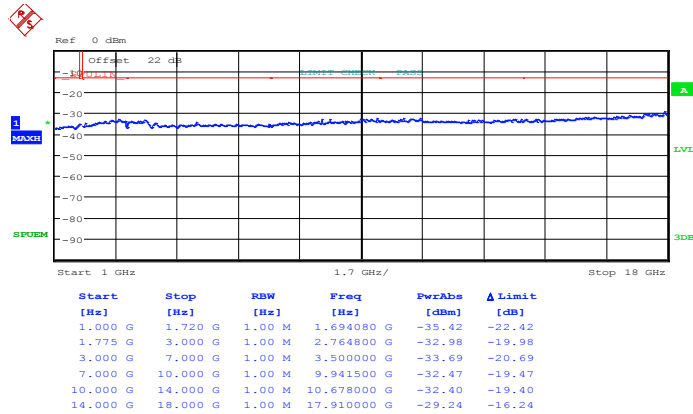
Date: 27.AUG.2013 16:00:23



16QAM (RB Size 1, RB Offset 74)



Date: 27.AUG.2013 15:59:59

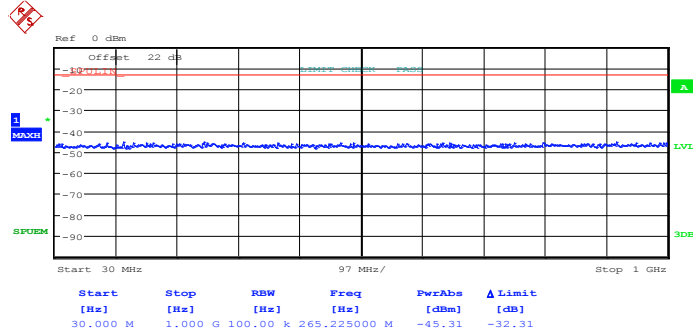


Date: 27.AUG.2013 16:00:13

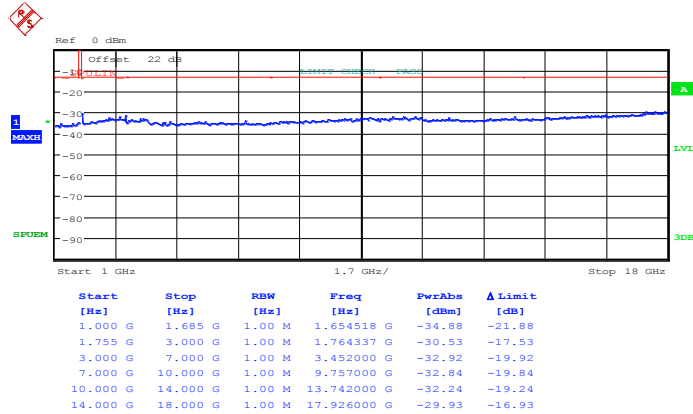


Band :	LTE Band 4	Channel :	CH20050 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 99)



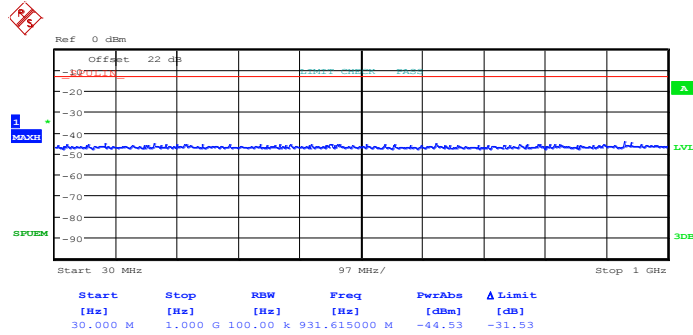
Date: 27.AUG.2013 16:29:39



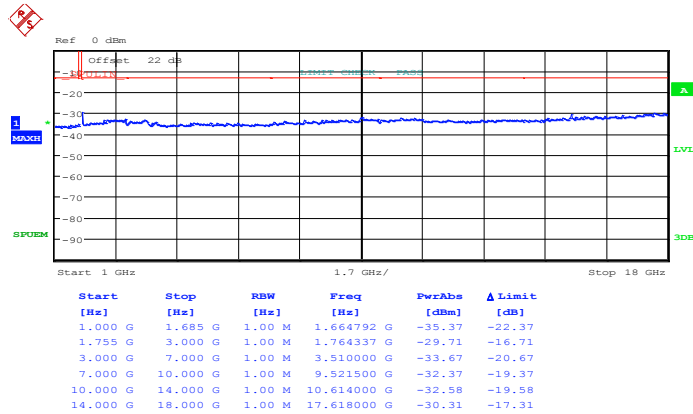
Date: 27.AUG.2013 16:28:56



16QAM (RB Size 1, RB Offset 99)



Date: 27.AUG.2013 16:29:31

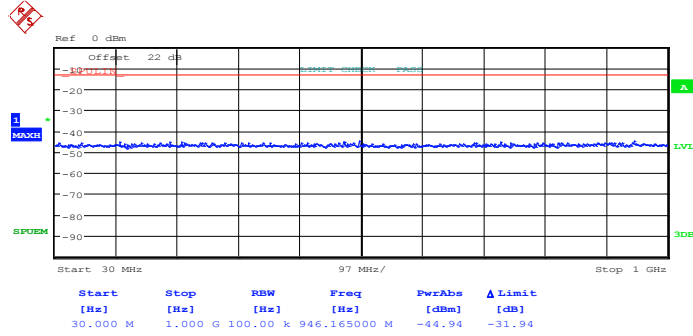


Date: 27.AUG.2013 16:29:17

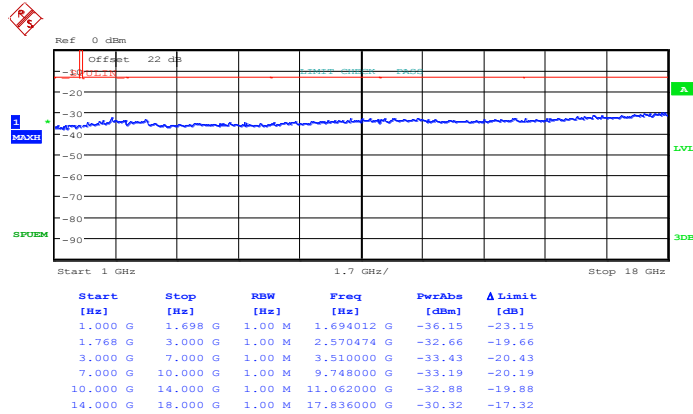


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



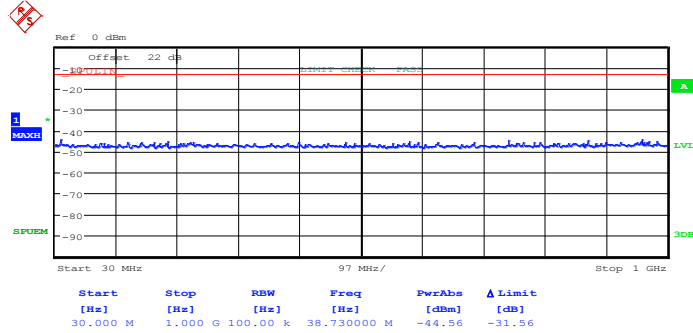
Date: 27.AUG.2013 16:02:12



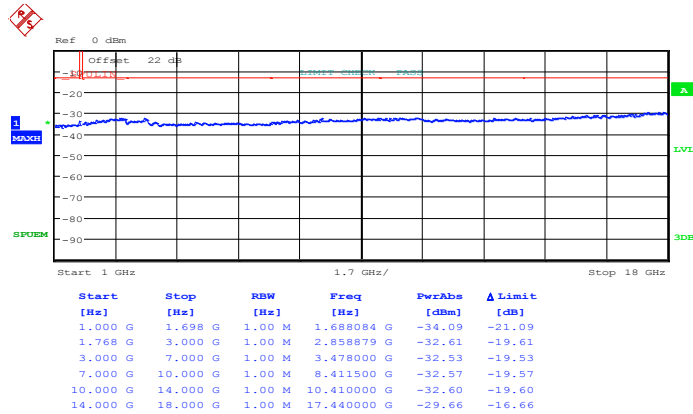
Date: 27.AUG.2013 16:27:34



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 16:02:22

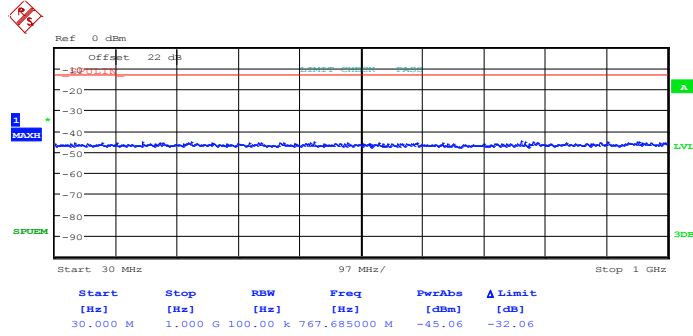


Date: 27.AUG.2013 16:27:25

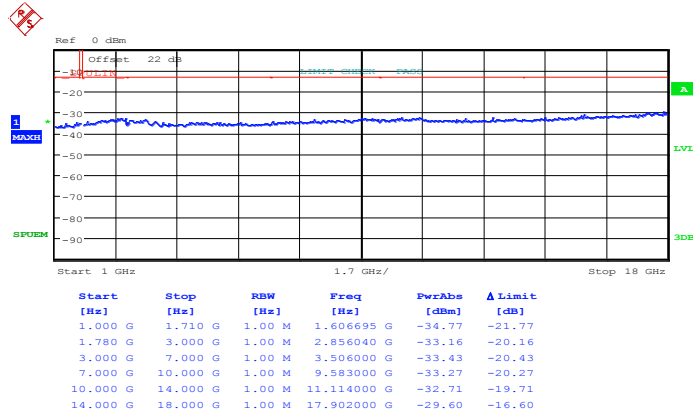


Band :	LTE Band 4	Channel :	CH20300 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



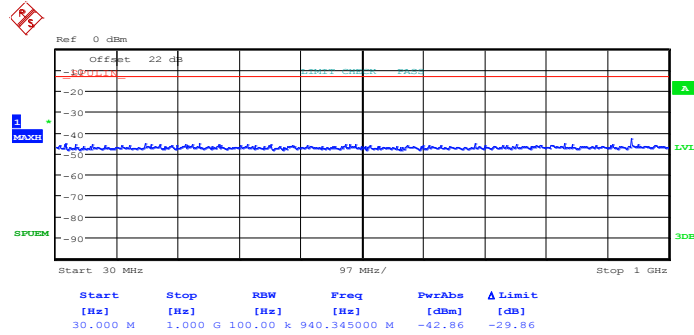
Date: 27.AUG.2013 16:01:38



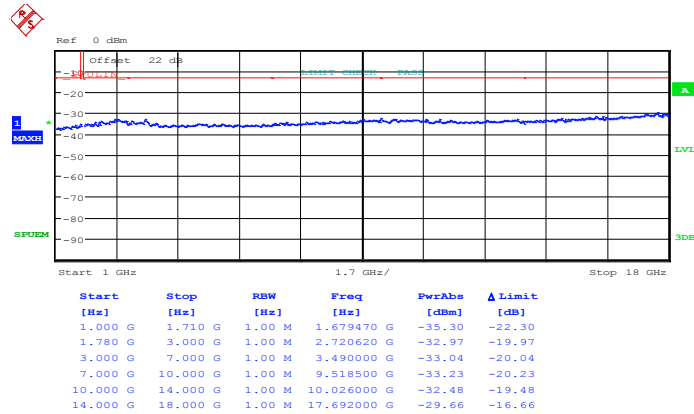
Date: 27.AUG.2013 16:01:04



16QAM (RB Size 1, RB Offset 0)



Date: 27.AUG.2013 16:01:24

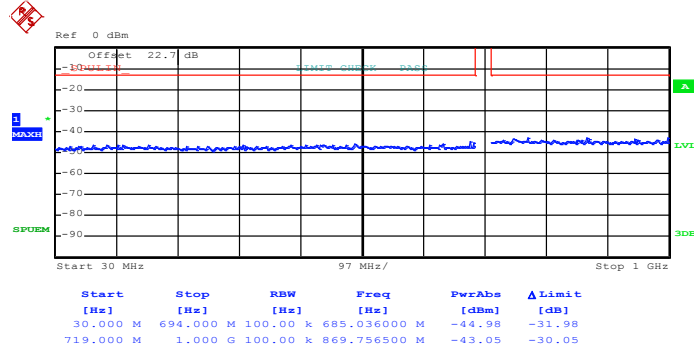


Date: 27.AUG.2013 16:01:15

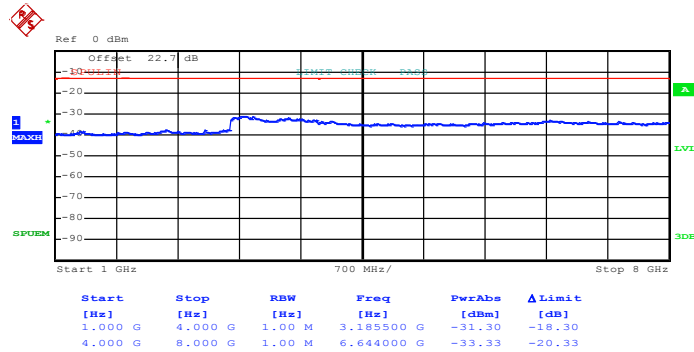


Band :	LTE Band 17	Channel :	CH23755 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



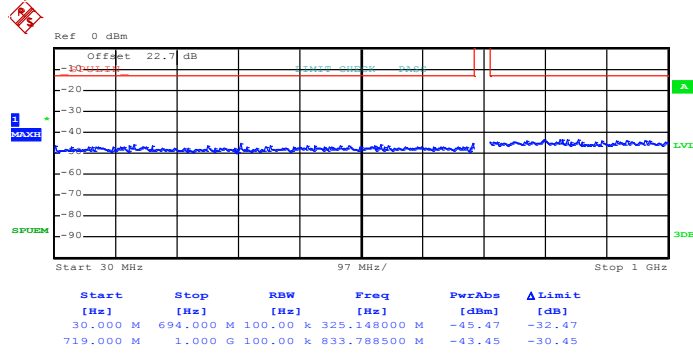
Date: 3.SEP.2013 10:43:40



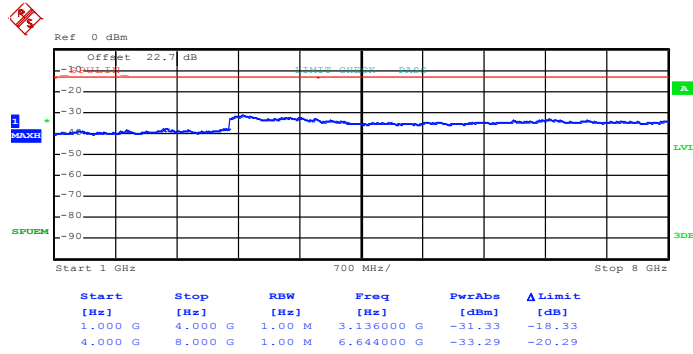
Date: 3.SEP.2013 10:47:04



16QAM (RB Size 1, RB Offset 12)



Date: 3.SEP.2013 10:44:09

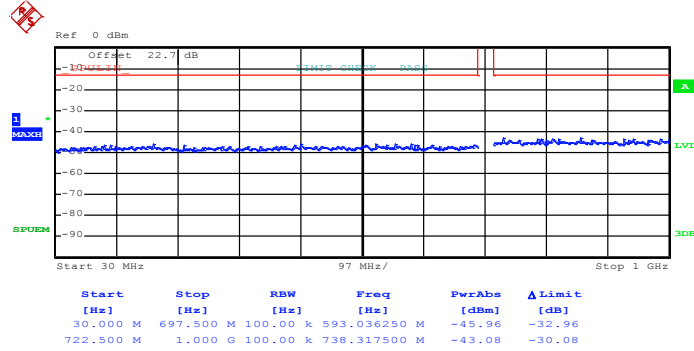


Date: 3.SEP.2013 10:46:28

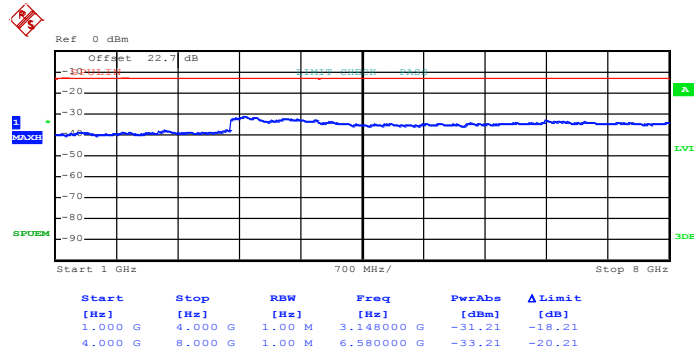


Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 24)



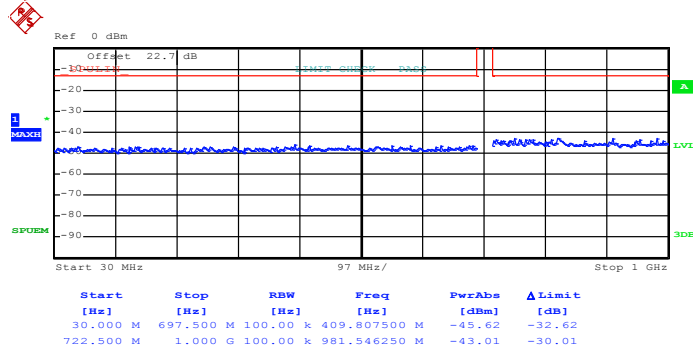
Date: 3.SEP.2013 10:51:41



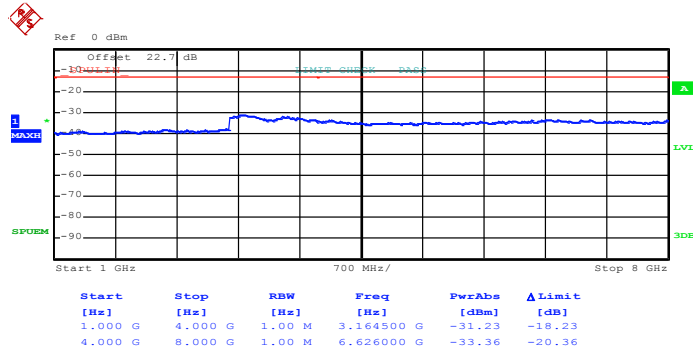
Date: 3.SEP.2013 10:52:44



16QAM (RB Size 1, RB Offset 24)



Date: 3.SEP.2013 10:51:59

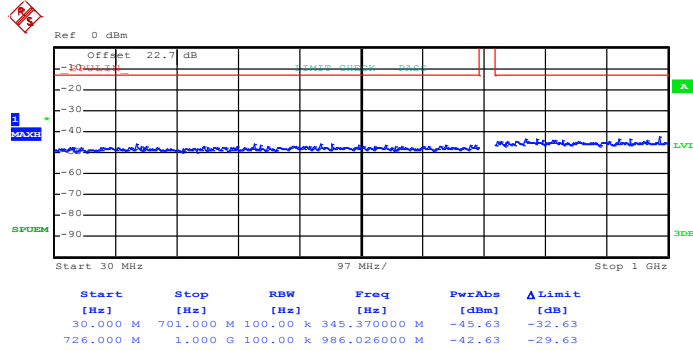


Date: 3.SEP.2013 10:52:21

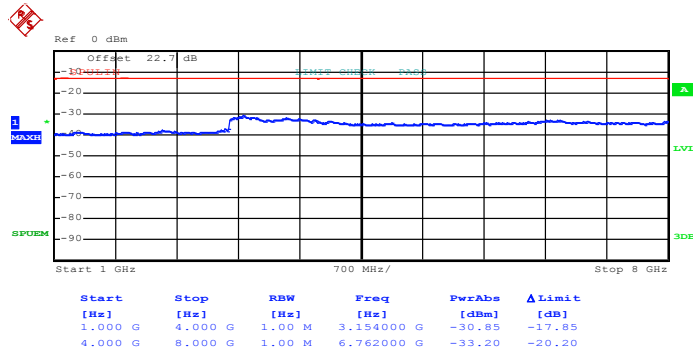


Band :	LTE Band 17	Channel :	CH23825 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



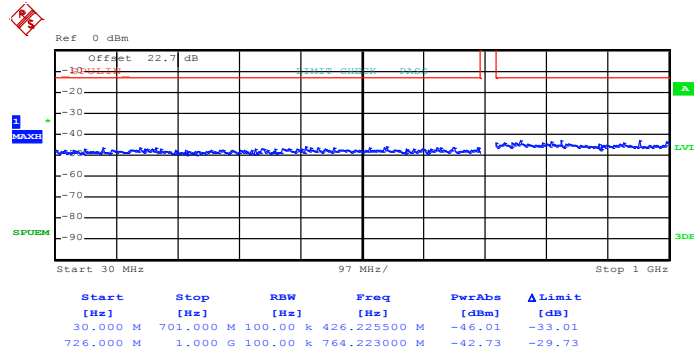
Date: 3.SEP.2013 10:49:35



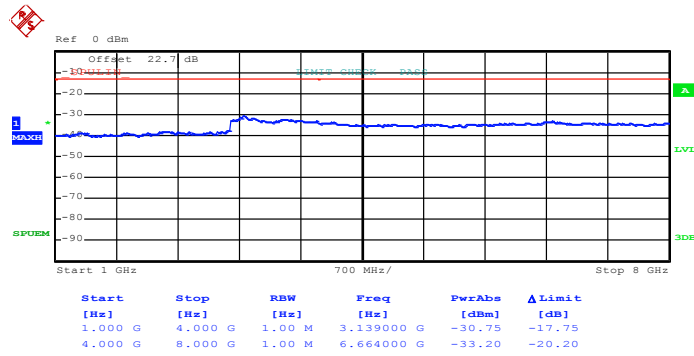
Date: 3.SEP.2013 10:48:27



16QAM (RB Size 1, RB Offset 0)



Date: 3.SEP.2013 10:49:14

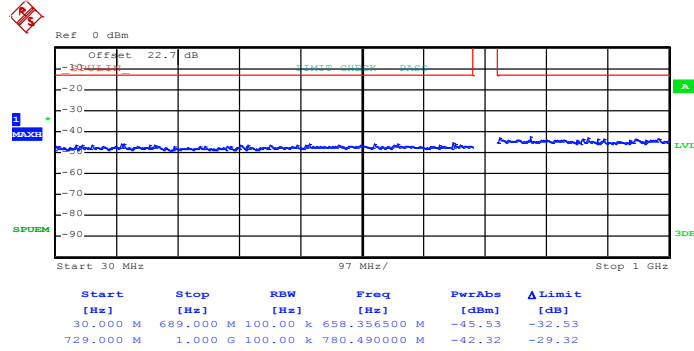


Date: 3.SEP.2013 10:48:47

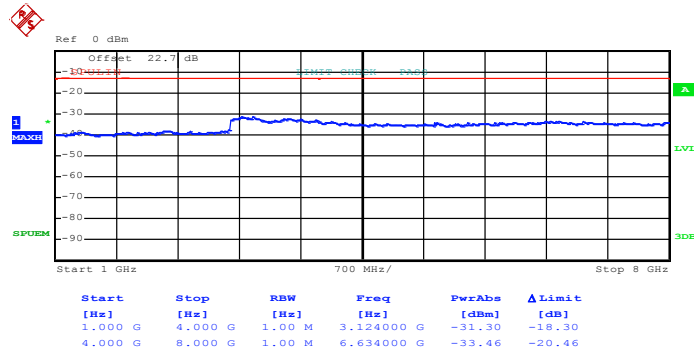


Band :	LTE Band 17	Channel :	CH23780 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 49)



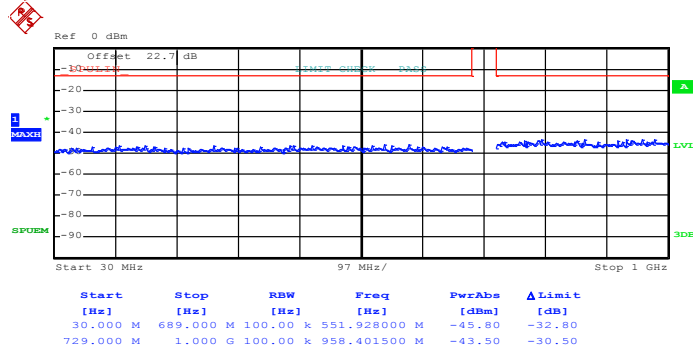
Date: 3.SEP.2013 10:56:40



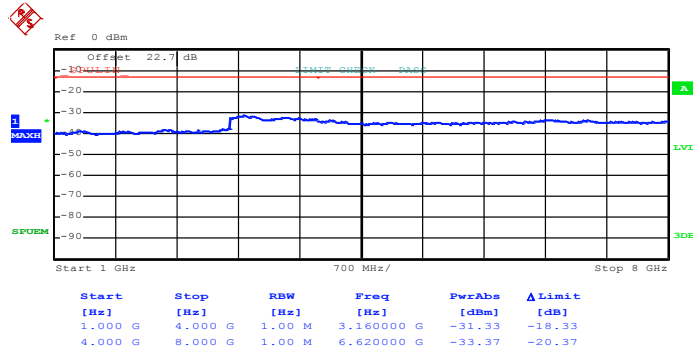
Date: 3.SEP.2013 10:58:04



16QAM (RB Size 1, RB Offset 49)



Date: 3.SEP.2013 10:57:15

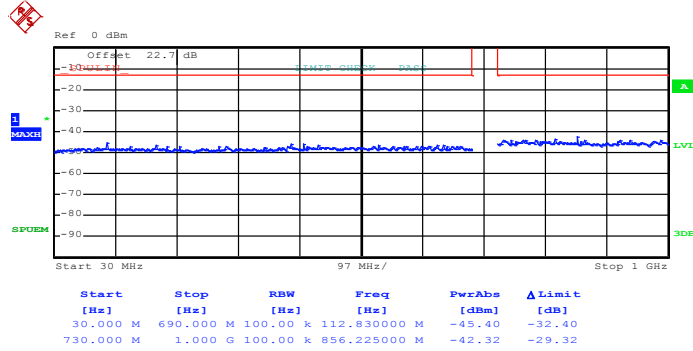


Date: 3.SEP.2013 10:57:47

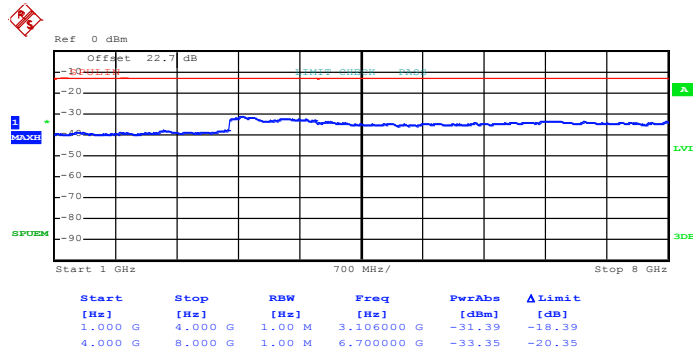


Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



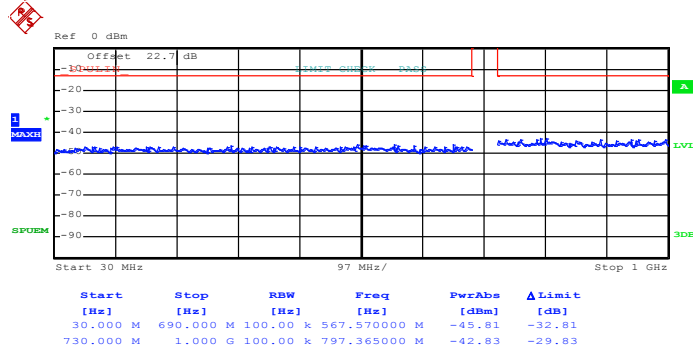
Date: 3.SEP.2013 10:55:21



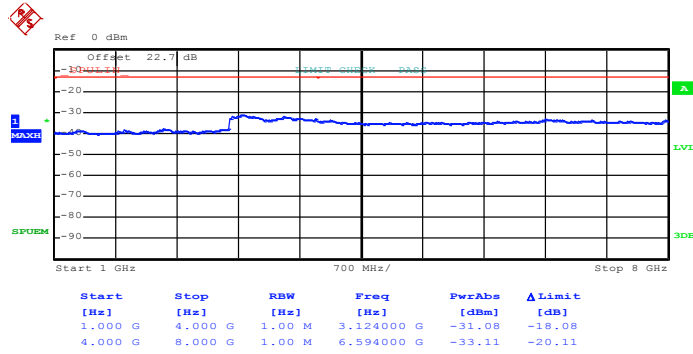
Date: 3.SEP.2013 10:54:25



16QAM (RB Size 1, RB Offset 24)



Date: 3.SEP.2013 10:55:05

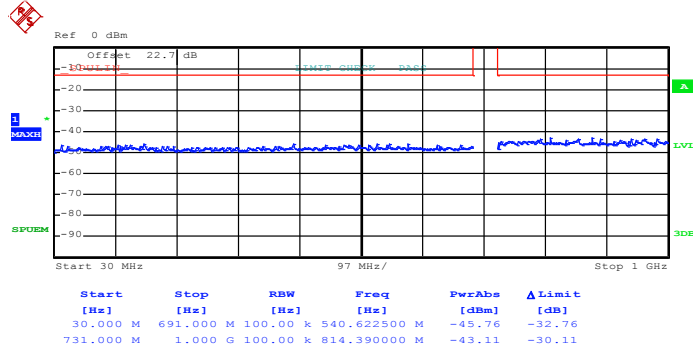


Date: 3.SEP.2013 10:54:45

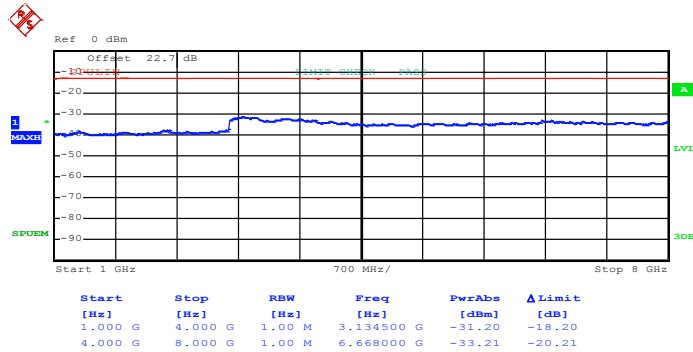


Band :	LTE Band 17	Channel :	CH23800 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 24)



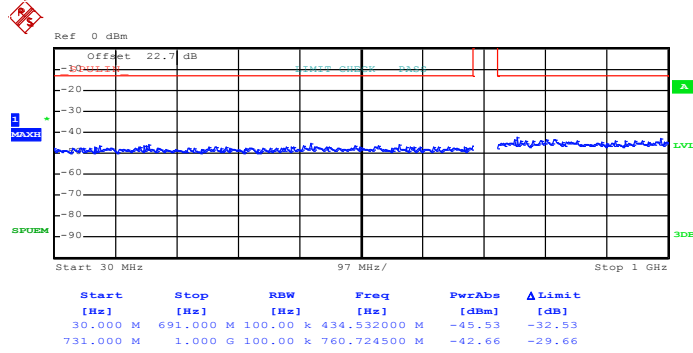
Date: 3.SEP.2013 11:01:25



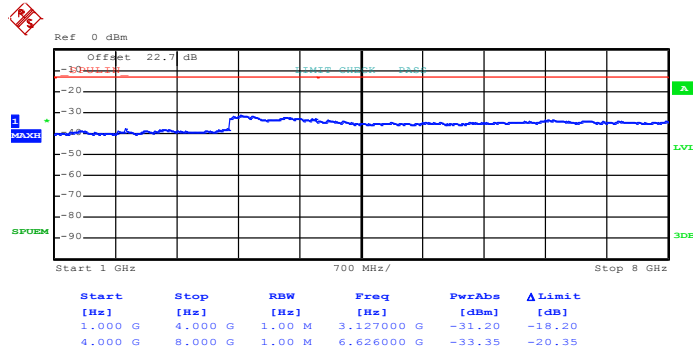
Date: 3.SEP.2013 11:00:23



16QAM (RB Size 1, RB Offset 24)



Date: 3.SEP.2013 11:01:06



Date: 3.SEP.2013 11:00:51



3.6 Radiated Spurious Emission Measurement

3.6.1 Description of Radiated Spurious Emission

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

3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

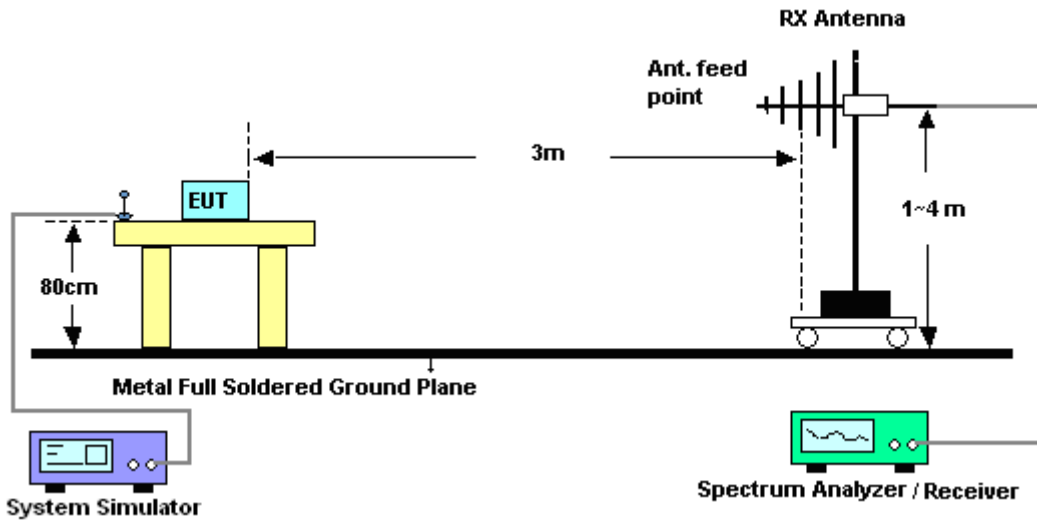
1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving 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. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

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

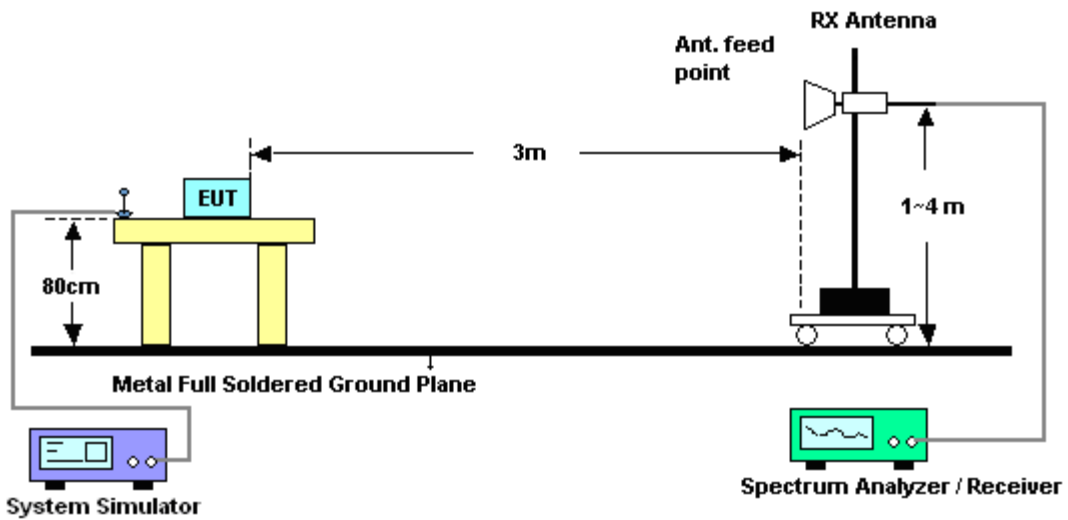
11. $EIRP$ (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = $EIRP - 2.15$

3.6.4 Test Setup

For radiated emissions from 30MHz to 1GHz



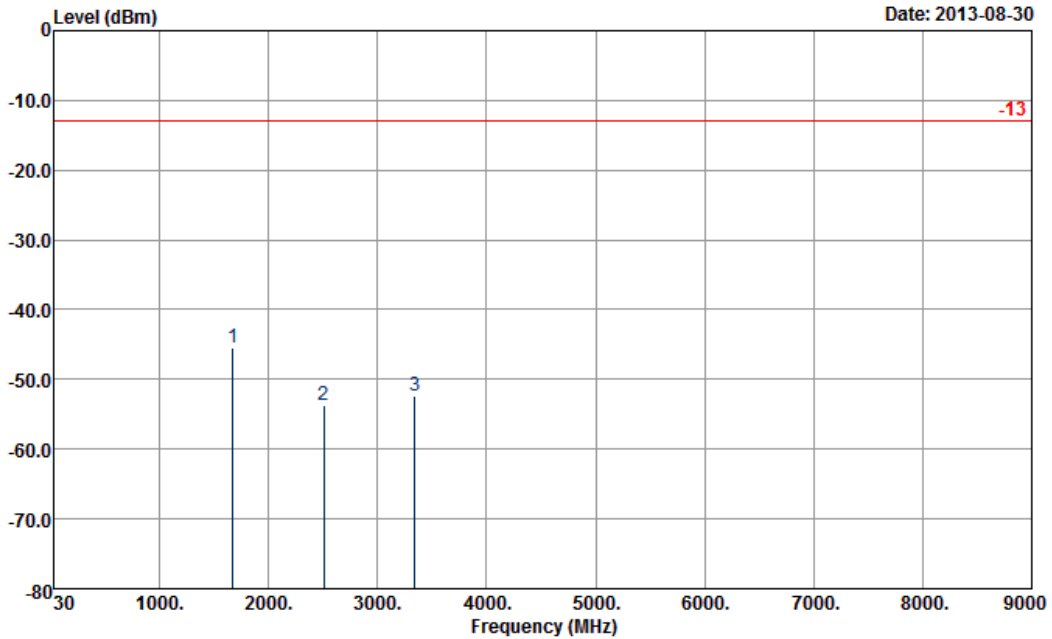
For radiated emissions above 1GHz





3.6.5 Test Result of Field Strength of Spurious Radiated

Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	1.4MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

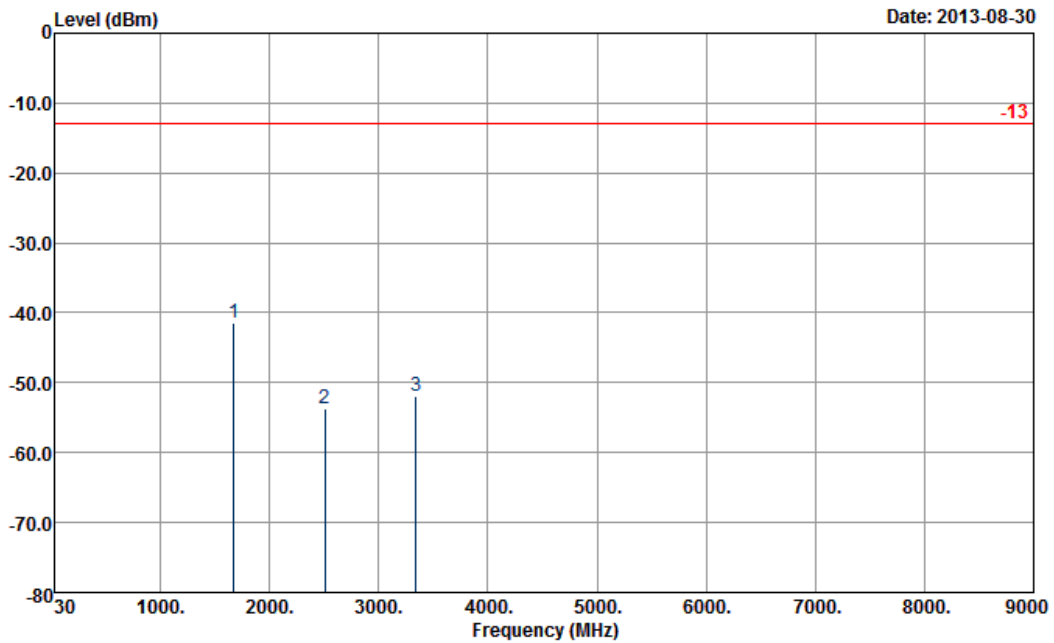


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-45.38	-13	-32.38	-53.48	-47.1	1.62	5.49	H	Pass
2509	-53.63	-13	-40.63	-66.28	-55.6	2.1	6.22	H	Pass
3345	-52.31	-13	-39.31	-66.86	-55.2	3.03	8.07	H	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	1.4MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

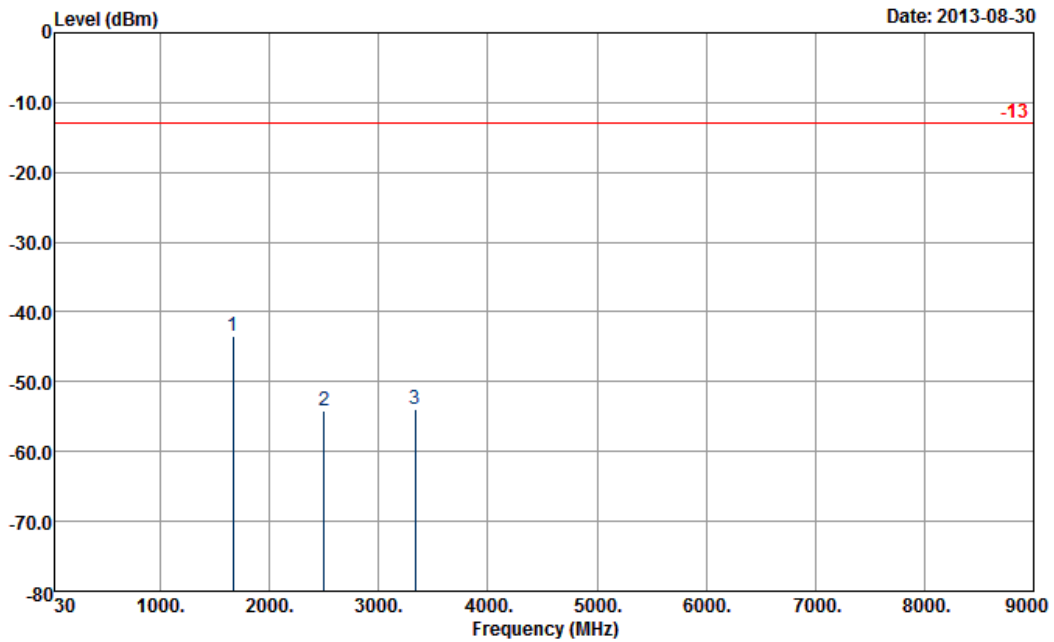


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-41.38	-13	-28.38	-51.53	-43.1	1.62	5.49	V	Pass
2509	-53.63	-13	-40.63	-66.89	-55.6	2.1	6.22	V	Pass
3345	-51.91	-13	-38.91	-67.1	-54.8	3.03	8.07	V	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	3MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

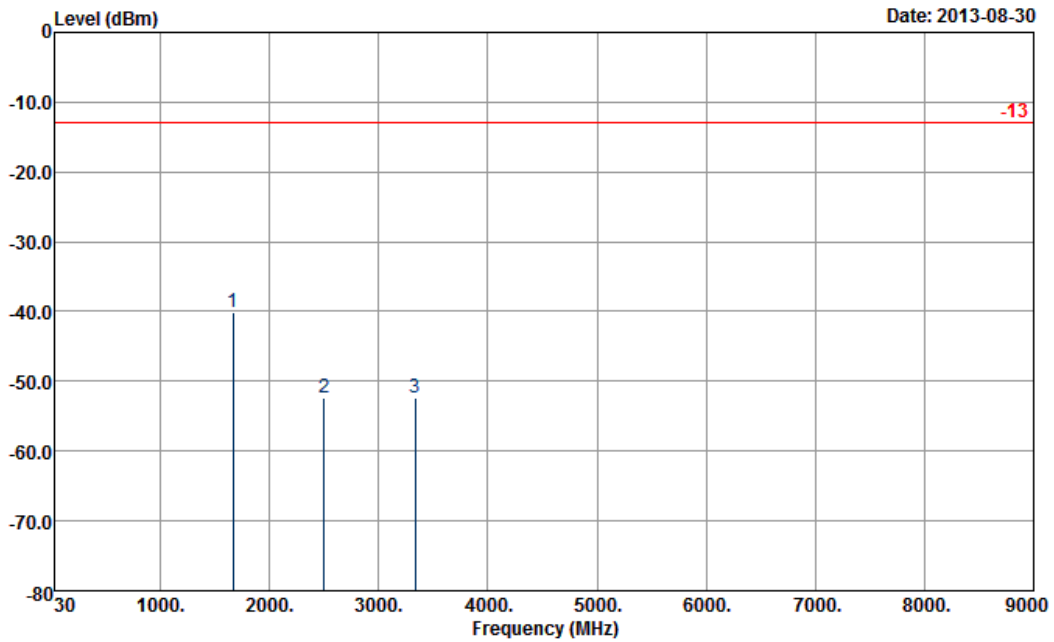


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-43.48	-13	-30.48	-52.8	-45.2	1.62	5.49	H	Pass
2503	-54.13	-13	-41.13	-67.12	-56.1	2.1	6.22	H	Pass
3337	-53.91	-13	-40.91	-67.71	-56.8	3.03	8.07	H	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	3MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

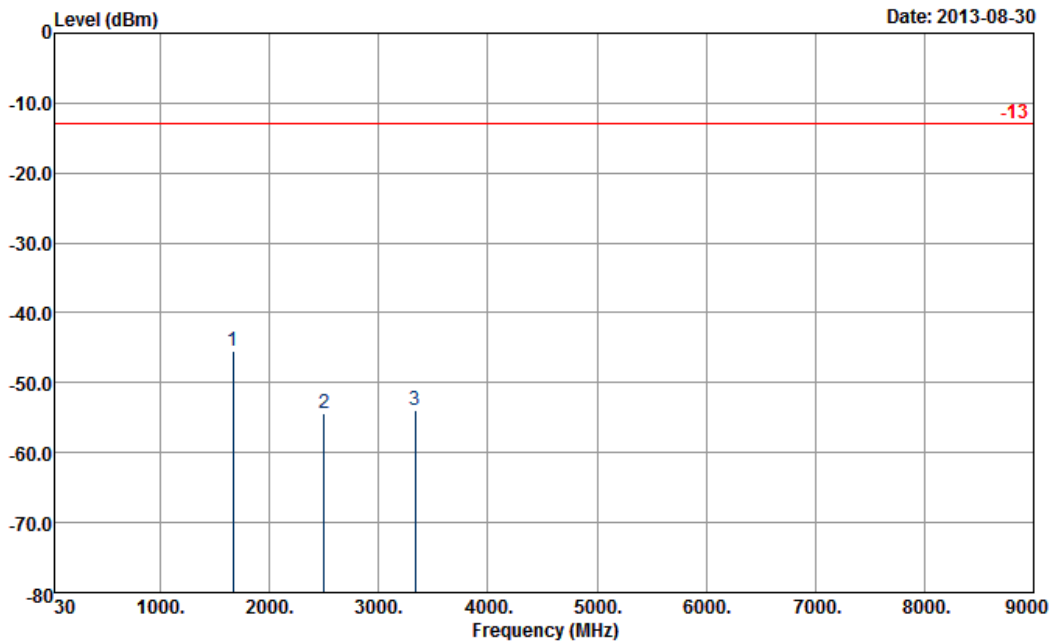


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-40.08	-13	-27.08	-50.4	-41.8	1.62	5.49	V	Pass
2503.5	-52.33	-13	-39.33	-65.45	-54.3	2.1	6.22	V	Pass
3338	-52.41	-13	-39.41	-67.65	-55.3	3.03	8.07	V	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

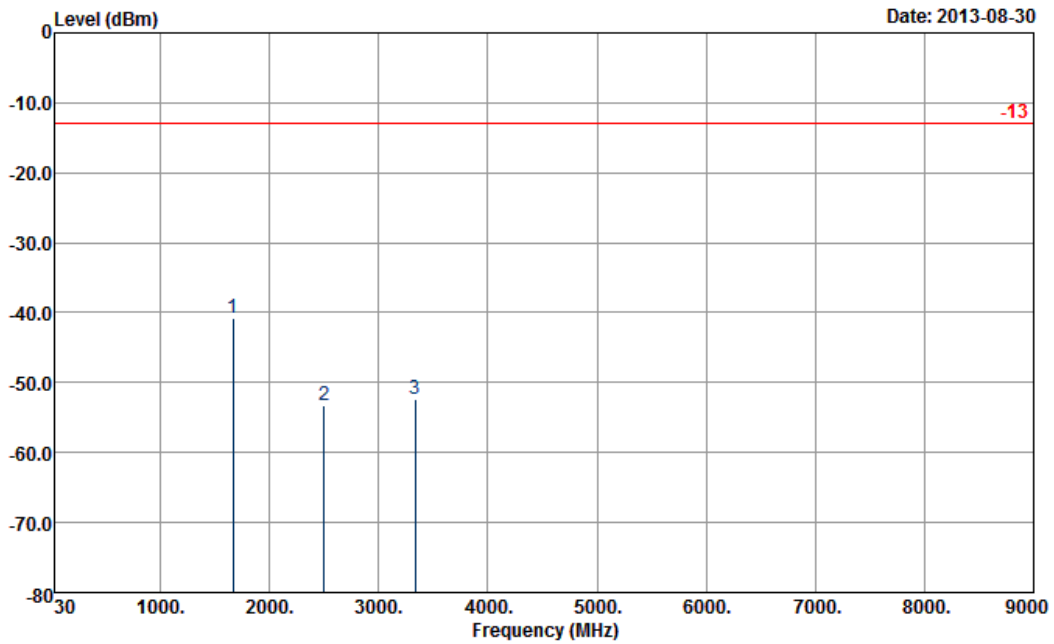


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-45.38	-13	-32.38	-53.32	-47.1	1.62	5.49	H	Pass
2503	-54.33	-13	-41.33	-66.93	-56.3	2.1	6.22	H	Pass
3338	-54.01	-13	-41.01	-67.24	-56.9	3.03	8.07	H	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

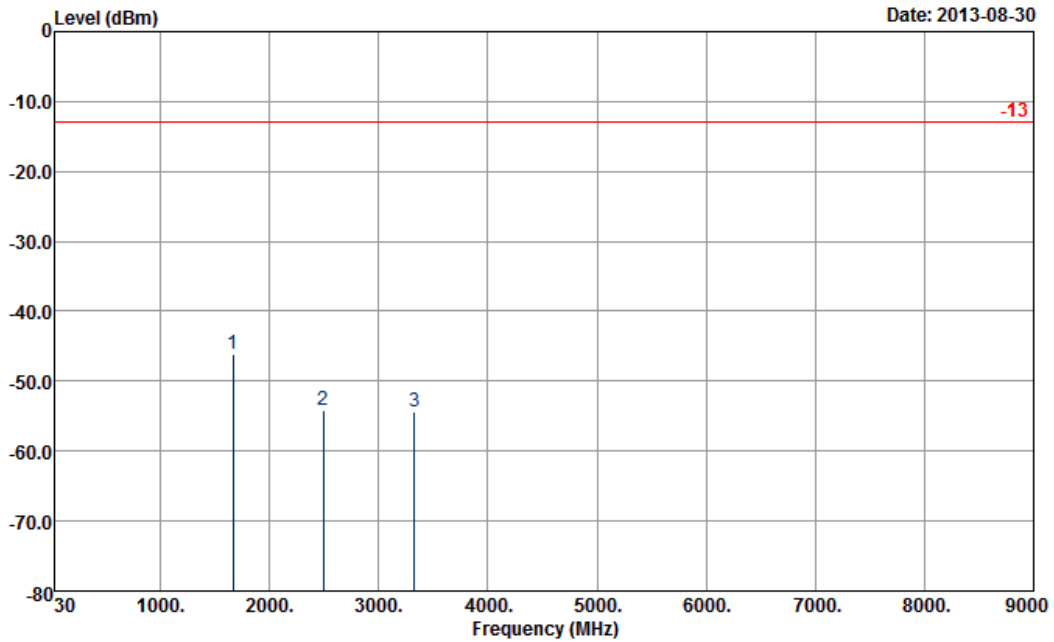


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-40.78	-13	-27.78	-51.08	-42.5	1.62	5.49	V	Pass
2503	-53.33	-13	-40.33	-66.8	-55.3	2.1	6.22	V	Pass
3338	-52.31	-13	-39.31	-67.4	-55.2	3.03	8.07	V	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

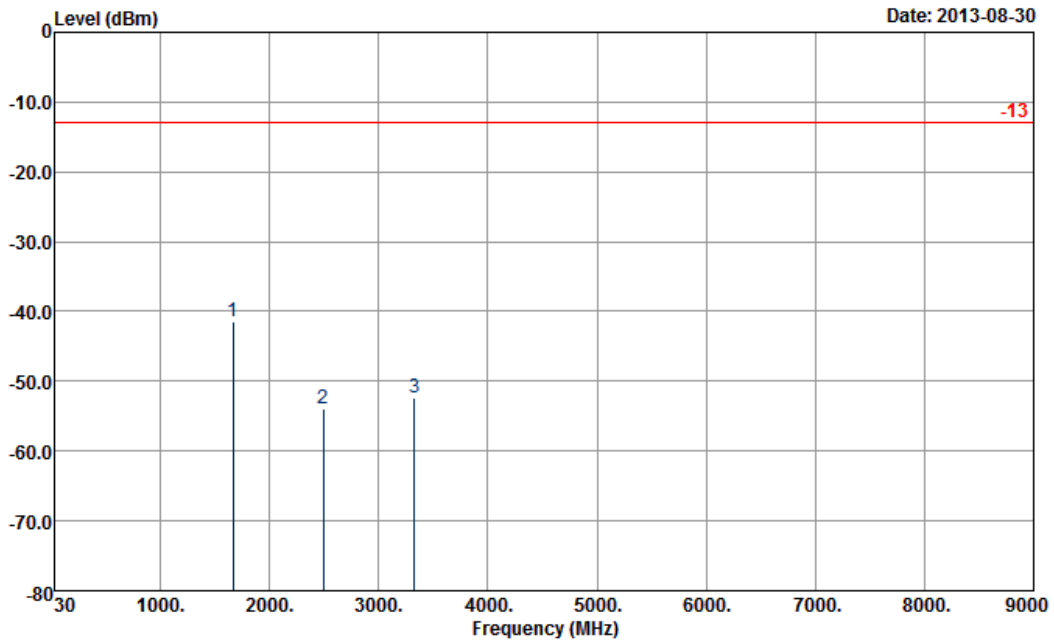


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1663	-46.08	-13	-33.08	-54.04	-47.8	1.62	5.49	H	Pass
2494	-54.13	-13	-41.13	-66.95	-56.1	2.1	6.22	H	Pass
3326	-54.31	-13	-41.31	-67.8	-57.2	3.03	8.07	H	Pass



Band :	LTE Band 5	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

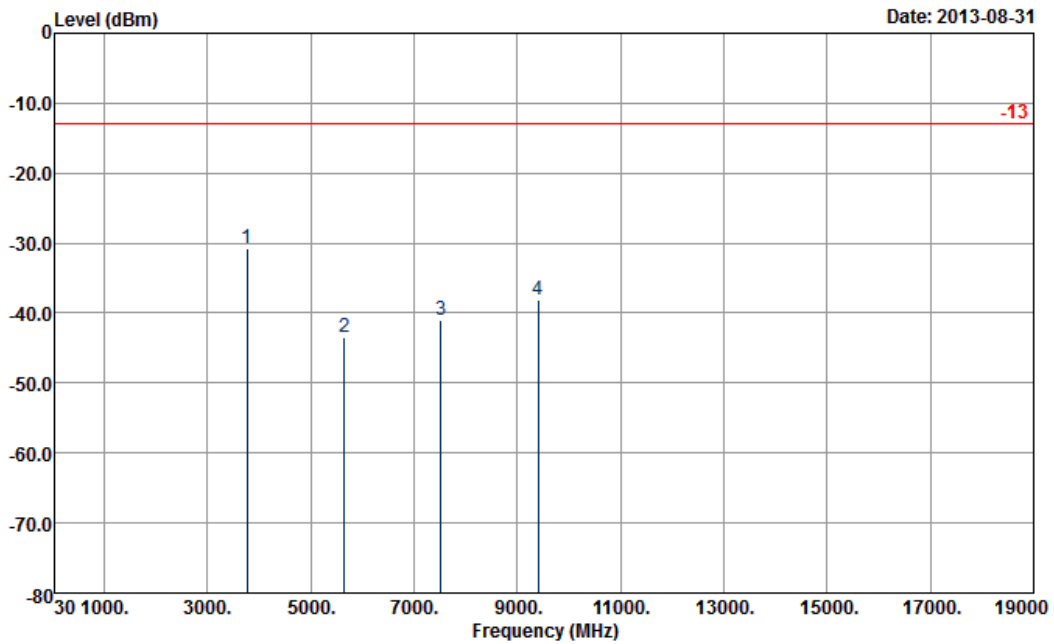


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1663	-41.38	-13	-28.38	-51.68	-43.1	1.62	5.49	V	Pass
2494	-53.93	-13	-40.93	-67.55	-55.9	2.1	6.22	V	Pass
3326	-52.31	-13	-39.31	-67.31	-55.2	3.03	8.07	V	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	1.4MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

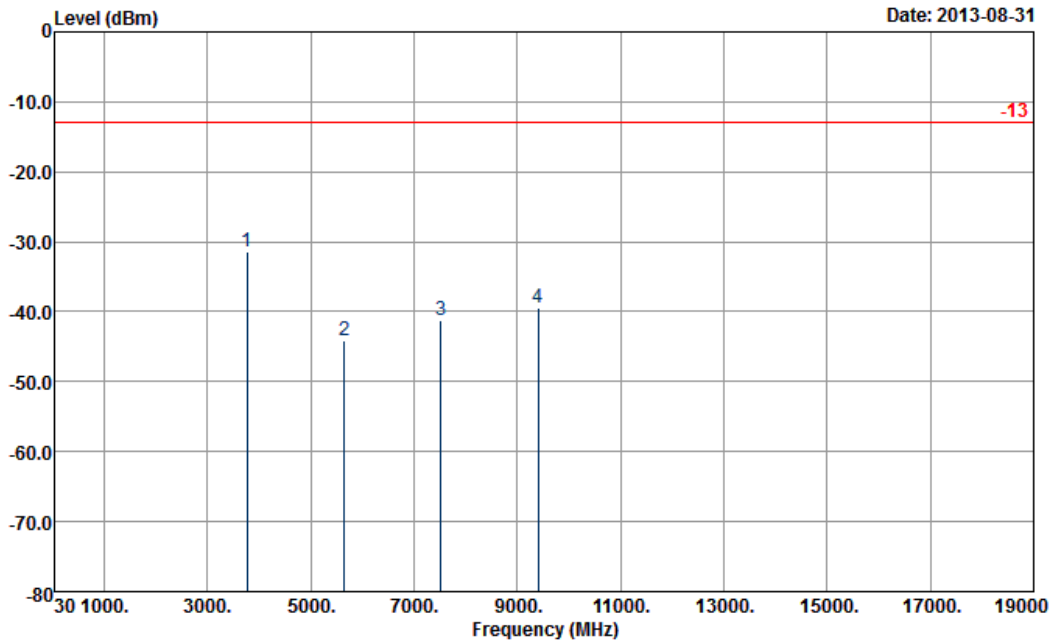


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-30.80	-13	-17.80	-46.34	-37.1	2.51	8.81	H	Pass
5640	-43.39	-13	-30.39	-64.41	-51.1	2.99	10.70	H	Pass
7520	-41.07	-13	-28.07	-68.28	-49.6	3.59	12.12	H	Pass
9400	-38.20	-13	-25.20	-65.04	-47.3	4.1	13.20	H	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	1.4MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

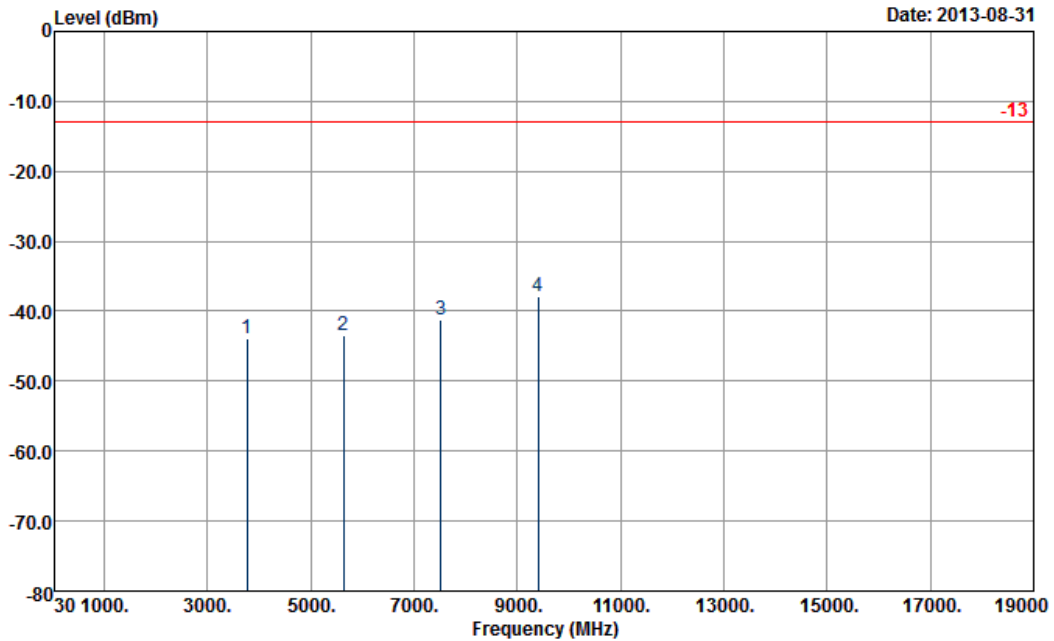


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-31.40	-13	-18.40	-47.93	-37.7	2.51	8.81	V	Pass
5640	-44.09	-13	-31.09	-65.05	-51.8	2.99	10.70	V	Pass
7520	-41.27	-13	-28.27	-68.51	-49.8	3.59	12.12	V	Pass
9400	-39.40	-13	-26.40	-65.97	-48.5	4.1	13.20	V	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	3MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

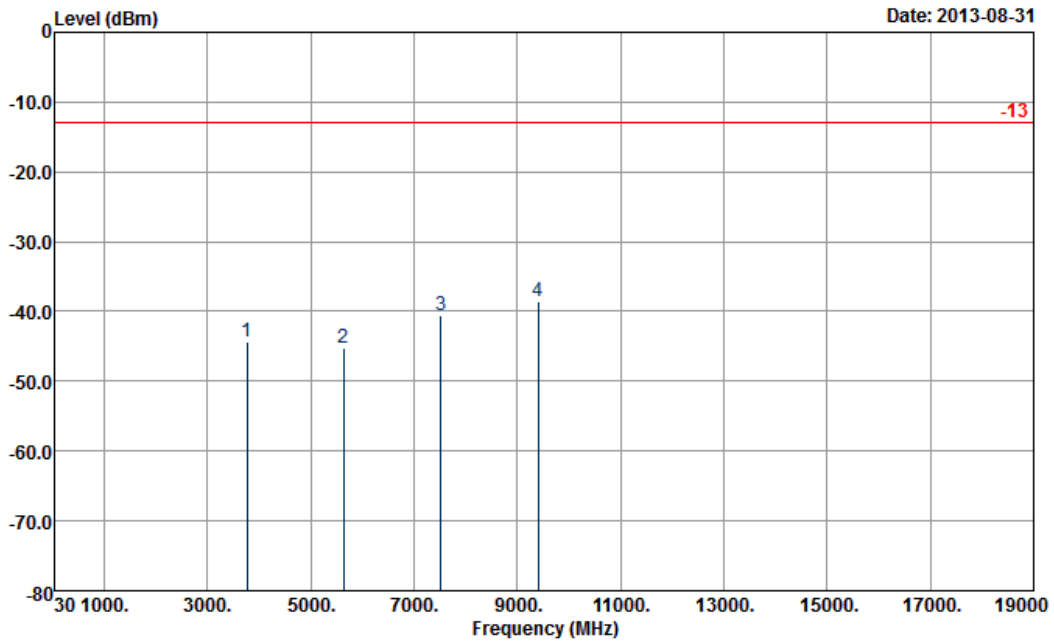


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-43.80	-13	-30.80	-59.2	-50.1	2.51	8.81	H	Pass
5636	-43.49	-13	-30.49	-64.59	-51.2	2.99	10.70	H	Pass
7512	-41.27	-13	-28.27	-68.75	-49.8	3.59	12.12	H	Pass
9396	-37.80	-13	-24.80	-64.62	-46.9	4.1	13.20	H	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	3MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

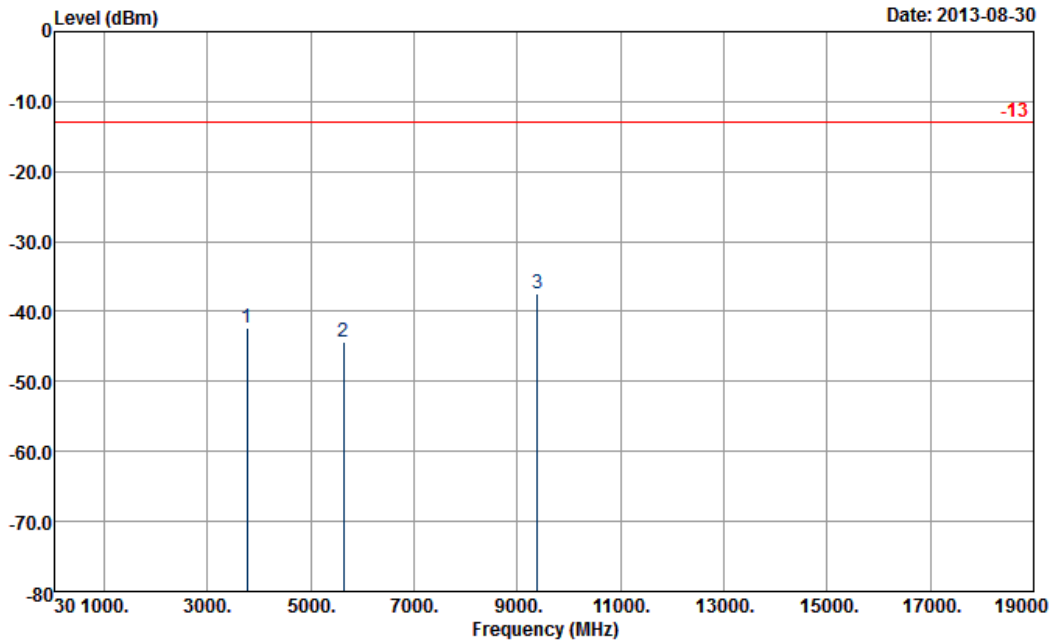


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-44.30	-13	-31.30	-60.86	-50.6	2.51	8.81	V	Pass
5636	-45.19	-13	-32.19	-65.8	-52.9	2.99	10.70	V	Pass
7512	-40.57	-13	-27.57	-67.94	-49.1	3.59	12.12	V	Pass
9396	-38.60	-13	-25.60	-65.05	-47.7	4.1	13.20	V	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

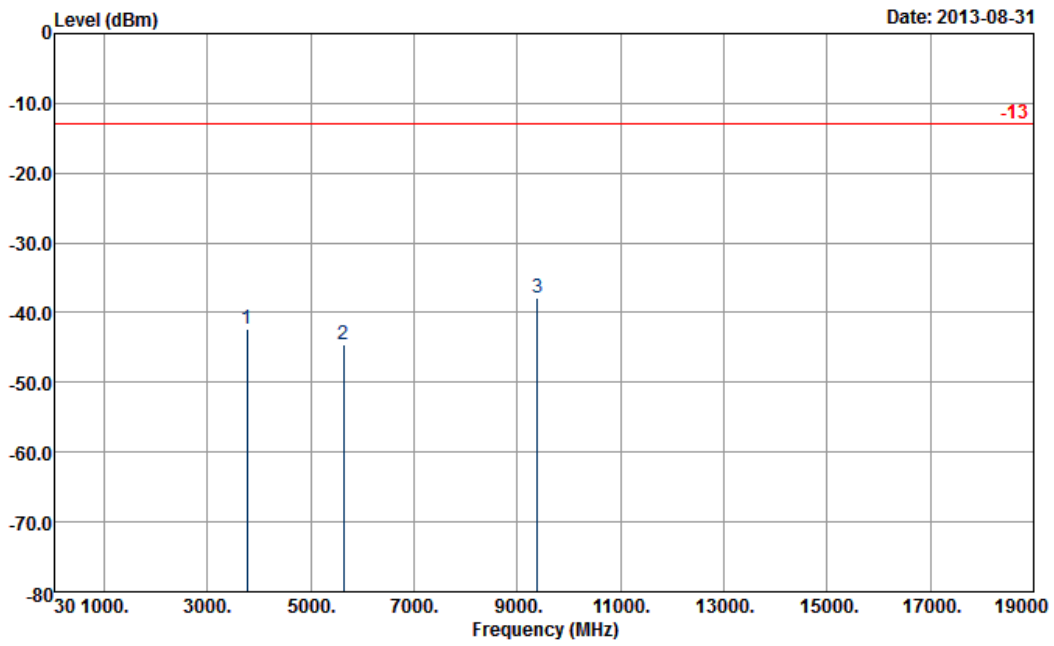


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-42.23	-13	-29.23	-57.46	-48.53	2.51	8.81	H	Pass
5636	-44.29	-13	-31.29	-65.01	-52	2.99	10.70	H	Pass
9388	-37.45	-13	-24.45	-63.85	-46.55	4.1	13.20	H	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

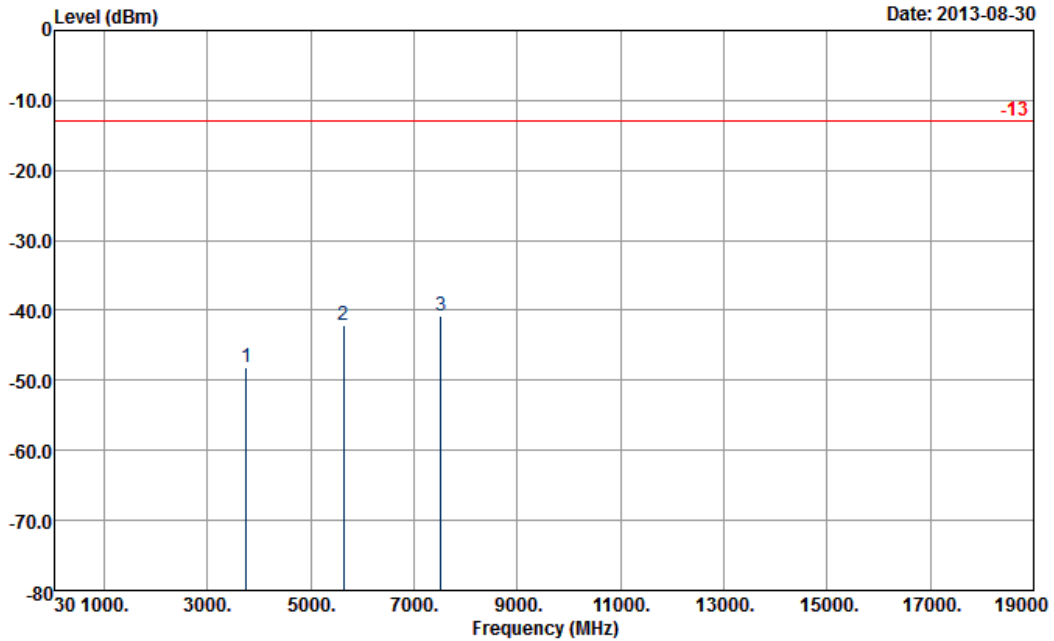


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-42.25	-13	-29.25	-58.43	-48.55	2.51	8.81	V	Pass
5636	-44.62	-13	-31.62	-65.27	-52.33	2.99	10.70	V	Pass
9388	-37.79	-13	-24.79	-64.26	-46.89	4.1	13.20	V	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

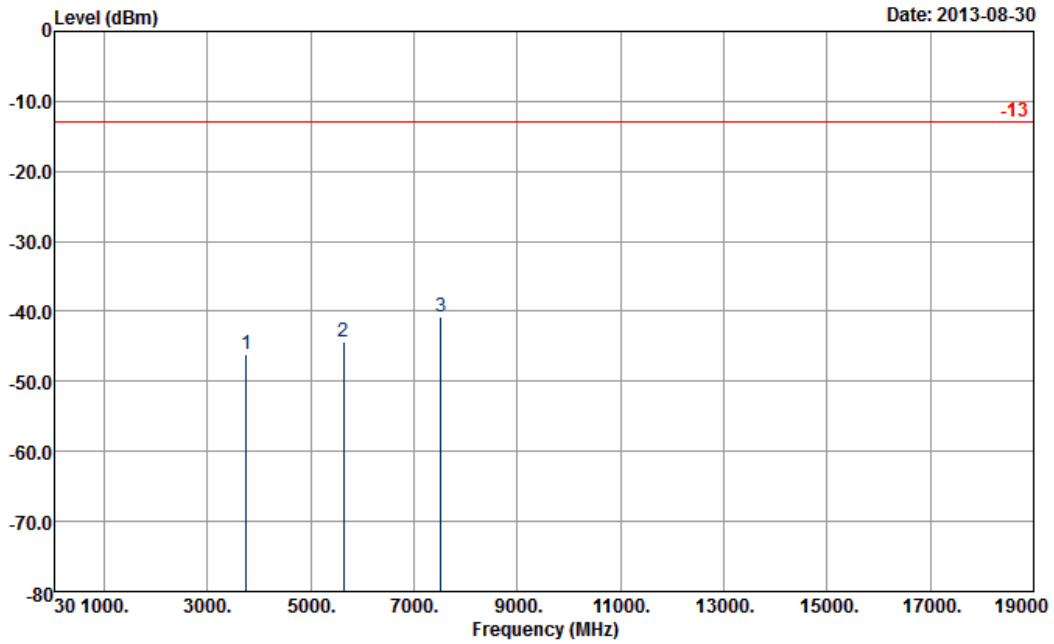


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3752	-48.03	-13	-35.03	-63.46	-54.33	2.51	8.81	H	Pass
5628	-42.17	-13	-29.17	-62.97	-49.88	2.99	10.70	H	Pass
7520	-40.69	-13	-27.69	-67.87	-49.22	3.59	12.12	H	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

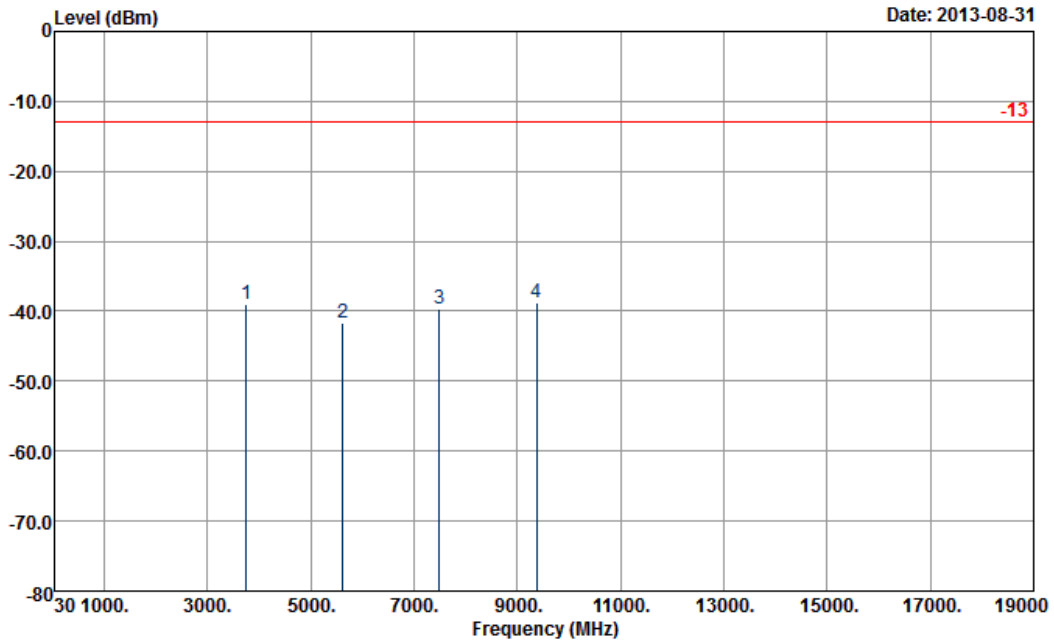


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3752	-46.06	-13	-33.06	-62.48	-52.36	2.51	8.81	V	Pass
5628	-44.29	-13	-31.29	-64.73	-52	2.99	10.70	V	Pass
7520	-40.80	-13	-27.80	-67.83	-49.33	3.59	12.12	V	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

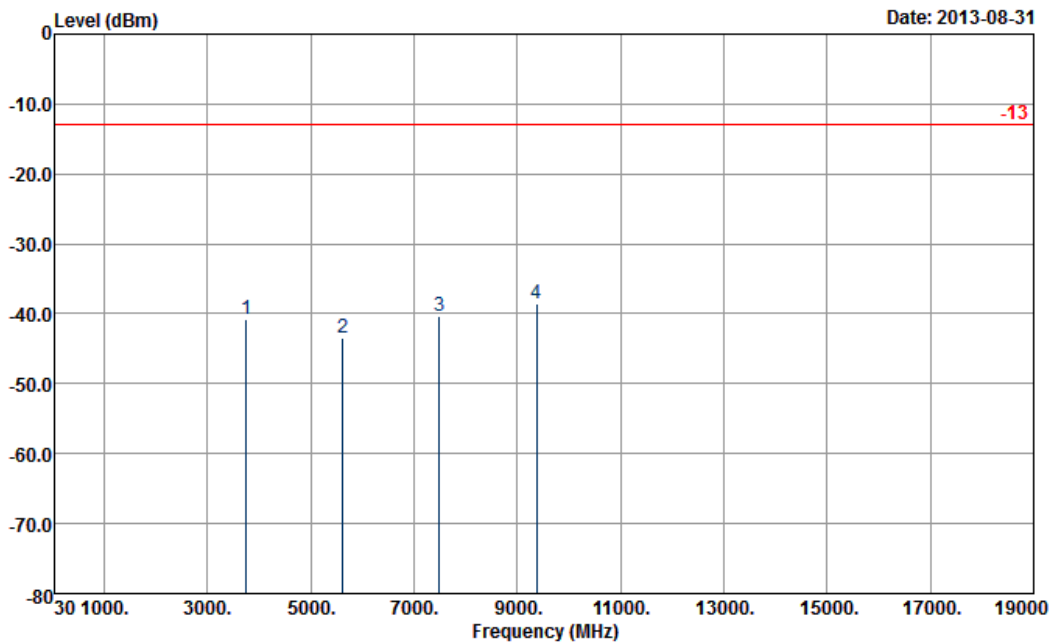


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3744	-39.10	-13	-26.10	-54.67	-45.4	2.51	8.81	H	Pass
5620	-41.59	-13	-28.59	-62.59	-49.3	2.99	10.70	H	Pass
7488	-39.57	-13	-26.57	-67.44	-48.1	3.59	12.12	H	Pass
9368	-38.80	-13	-25.80	-65.47	-47.9	4.1	13.20	H	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

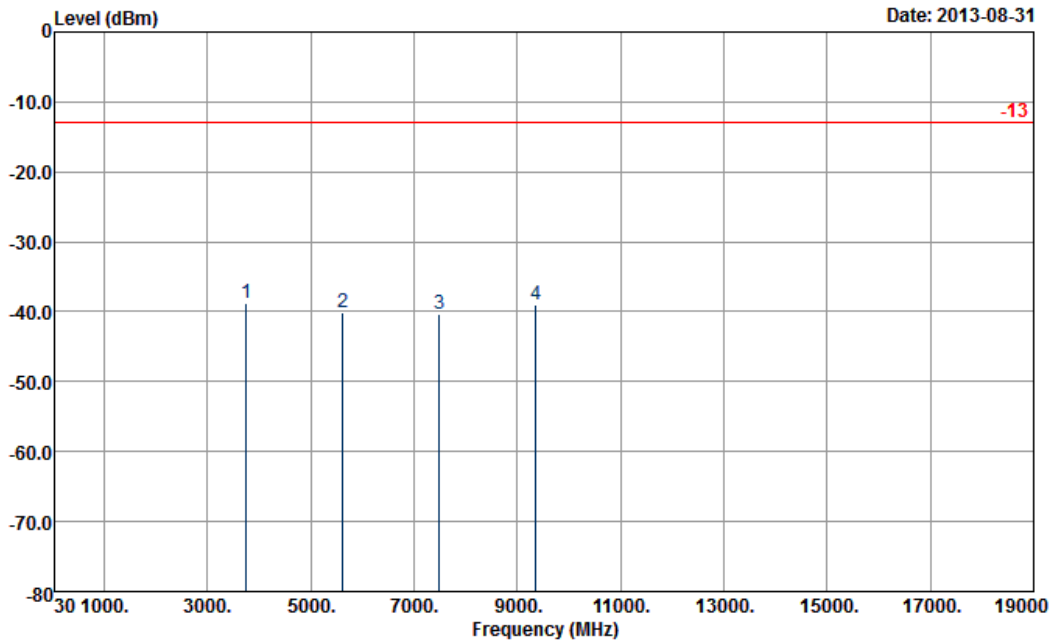


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3744	-40.80	-13	-27.80	-57.25	-47.1	2.51	8.81	V	Pass
5620	-43.39	-13	-30.39	-63.86	-51.1	2.99	10.70	V	Pass
7488	-40.27	-13	-27.27	-67.67	-48.8	3.59	12.12	V	Pass
9368	-38.60	-13	-25.60	-65.09	-47.7	4.1	13.20	V	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

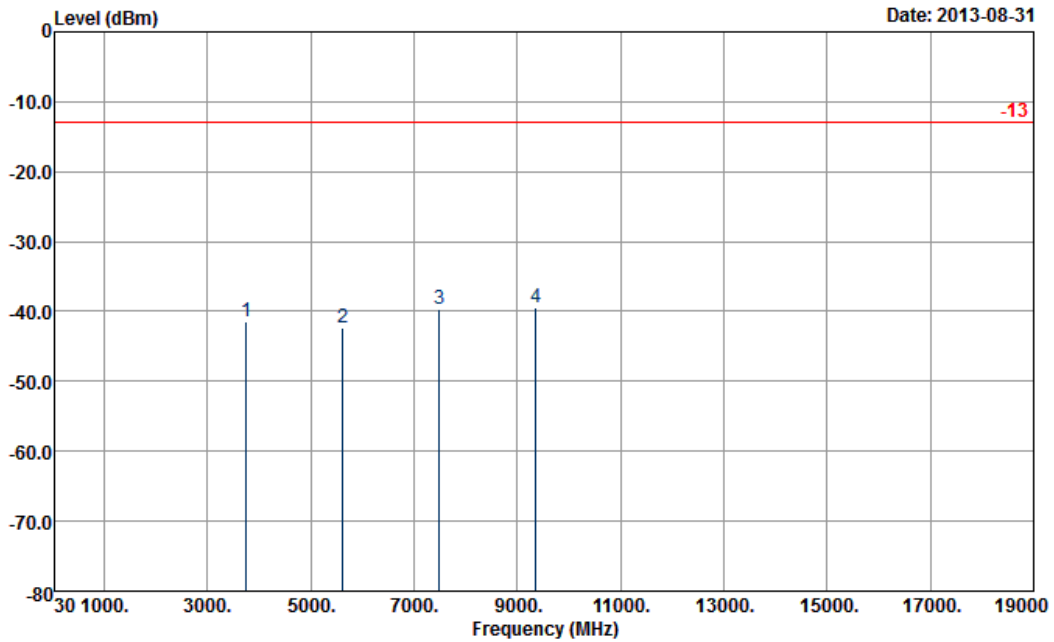


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3740	-38.80	-13	-25.80	-54.37	-45.1	2.51	8.81	H	Pass
5610	-40.09	-13	-27.09	-60.82	-47.8	2.99	10.70	H	Pass
7482	-40.27	-13	-27.27	-67.7	-48.8	3.59	12.12	H	Pass
9356	-39.10	-13	-26.10	-66.29	-48.2	4.1	13.20	H	Pass



Band :	LTE Band 2	Temperature :	20~25°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

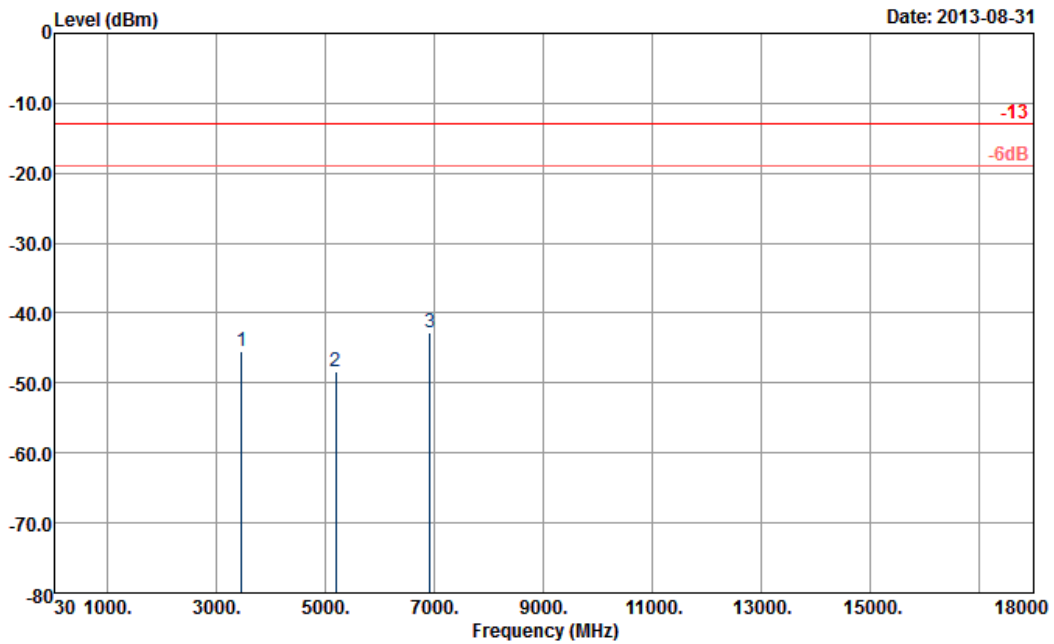


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3740	-41.40	-13	-28.40	-57.79	-47.7	2.51	8.81	V	Pass
5610	-42.39	-13	-29.39	-63.05	-50.1	2.99	10.70	V	Pass
7482	-39.57	-13	-26.57	-67.02	-48.1	3.59	12.12	V	Pass
9356	-39.40	-13	-26.40	-65.75	-48.5	4.1	13.20	V	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	1.4MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

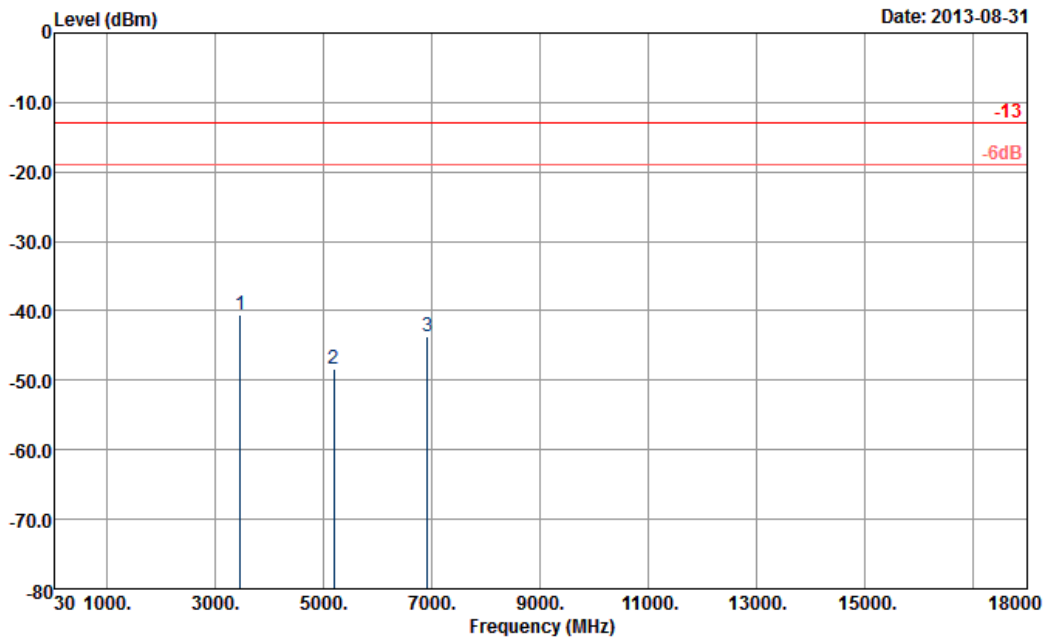


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-45.42	-13	-32.42	-59.93	-47.1	4.48	8.31	H	Pass
5196	-48.31	-13	-35.31	-67.31	-50.8	5.332	9.98	H	Pass
6928	-42.81	-13	-29.81	-69.3	-45.9	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	1.4MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

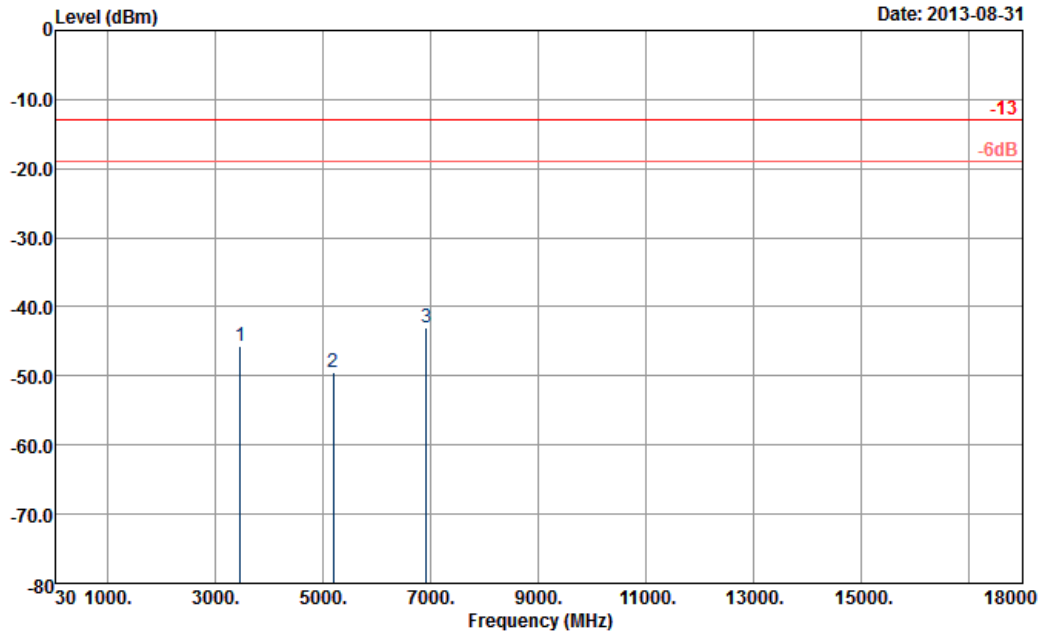


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3464	-40.52	-13	-27.52	-55.97	-42.2	4.48	8.31	V	Pass
5196	-48.41	-13	-35.41	-67.24	-50.9	5.332	9.98	V	Pass
6928	-43.61	-13	-30.61	-69.13	-46.7	6.1	11.34	V	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	3MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

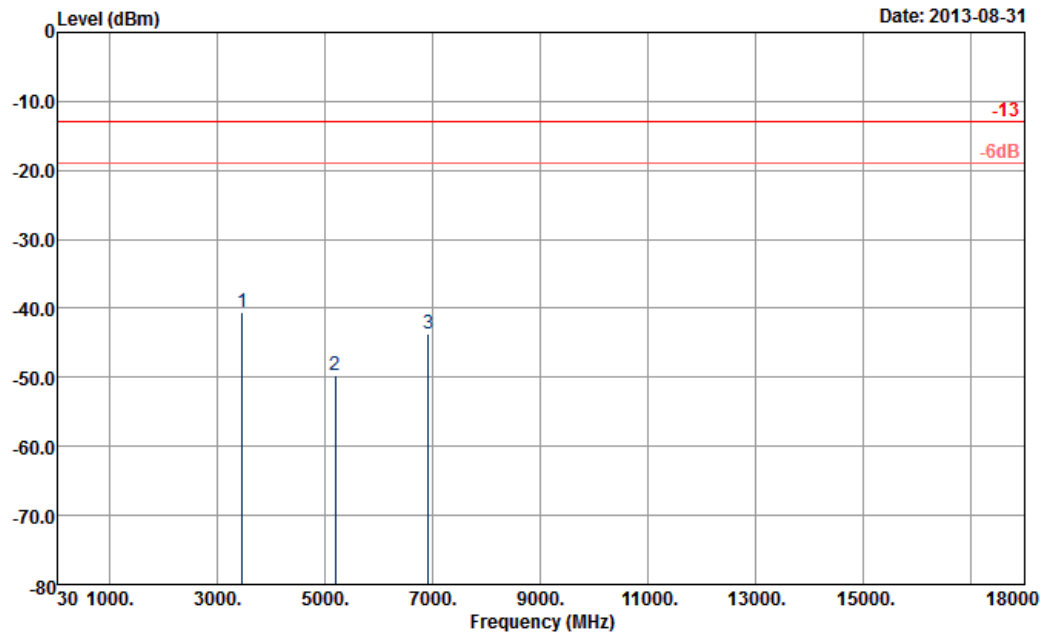


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3460	-45.72	-13	-32.72	-60.25	-47.4	4.48	8.31	H	Pass
5190	-49.41	-13	-36.41	-68.64	-51.9	5.332	9.98	H	Pass
6920	-43.11	-13	-30.11	-69.3	-46.2	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	3MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

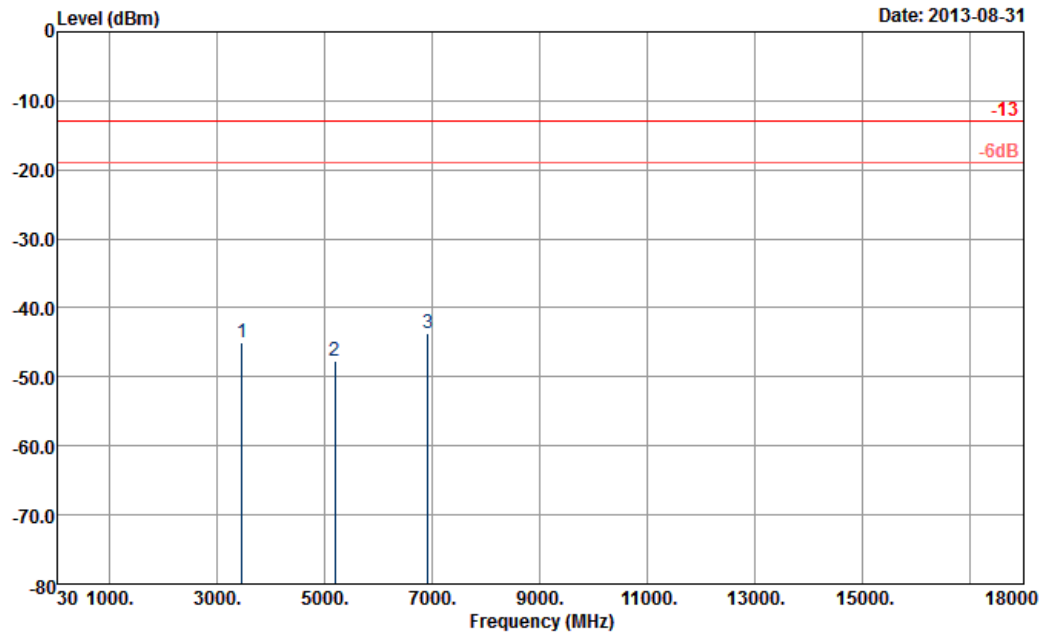


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3460	-40.52	-13	-27.52	-56.56	-42.2	4.48	8.31	V	Pass
5190	-49.71	-13	-36.71	-68.79	-52.2	5.332	9.98	V	Pass
6920	-43.71	-13	-30.71	-69.31	-46.8	6.1	11.34	V	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

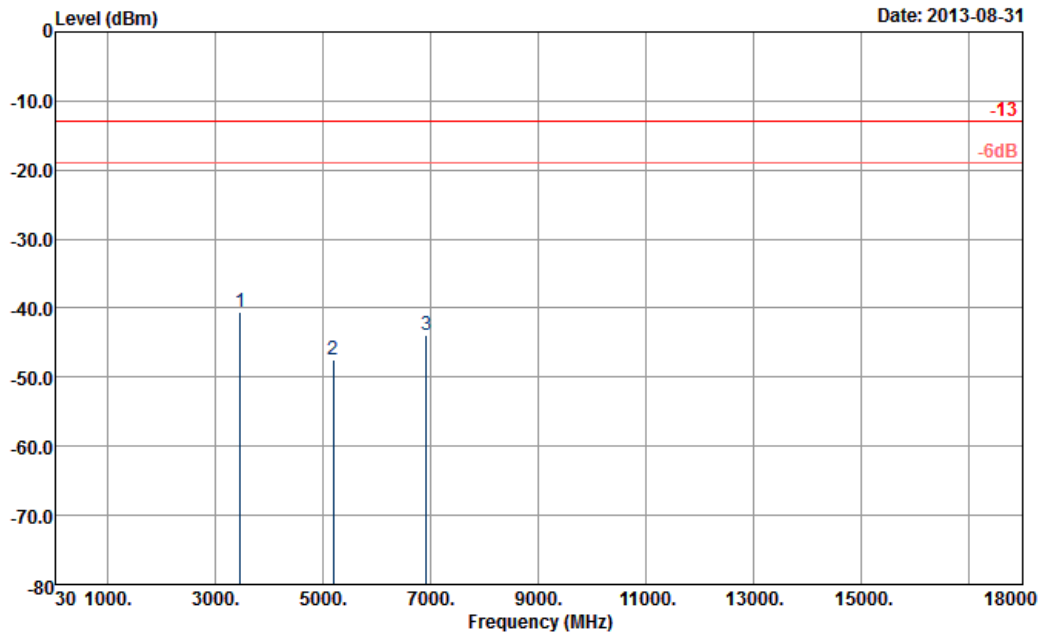


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3460	-45.12	-13	-32.12	-59.32	-46.8	4.48	8.31	H	Pass
5192	-47.61	-13	-34.61	-66.49	-50.1	5.332	9.98	H	Pass
6921	-43.61	-13	-30.61	-69.82	-46.7	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

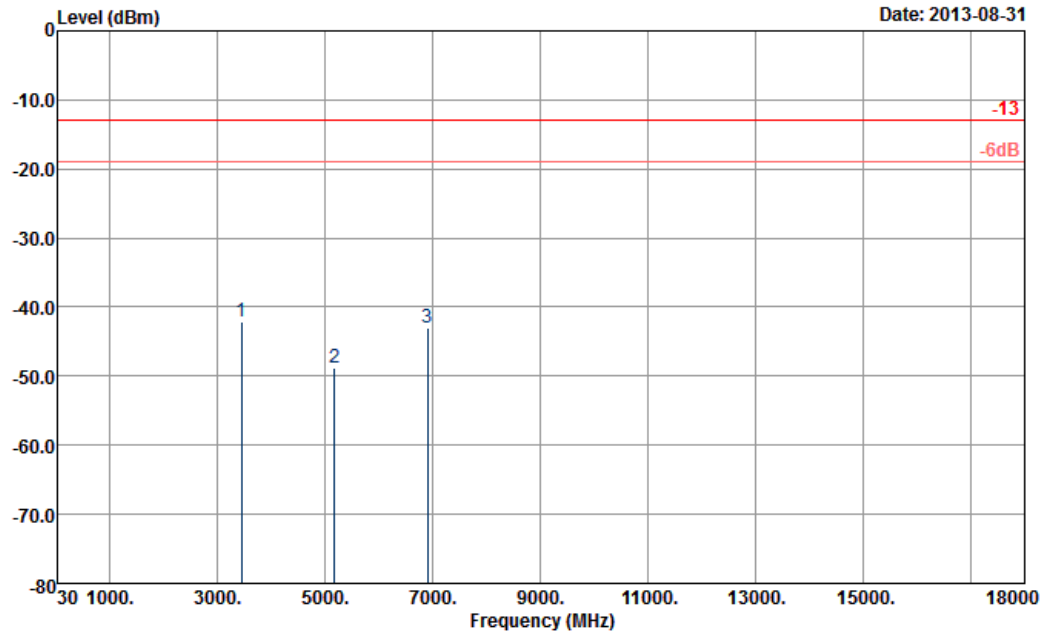


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3460	-40.52	-13	-27.52	-56.06	-42.2	4.48	8.31	V	Pass
5192	-47.41	-13	-34.41	-66.38	-49.9	5.332	9.98	V	Pass
6921	-43.91	-13	-30.91	-69.64	-47	6.1	11.34	V	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

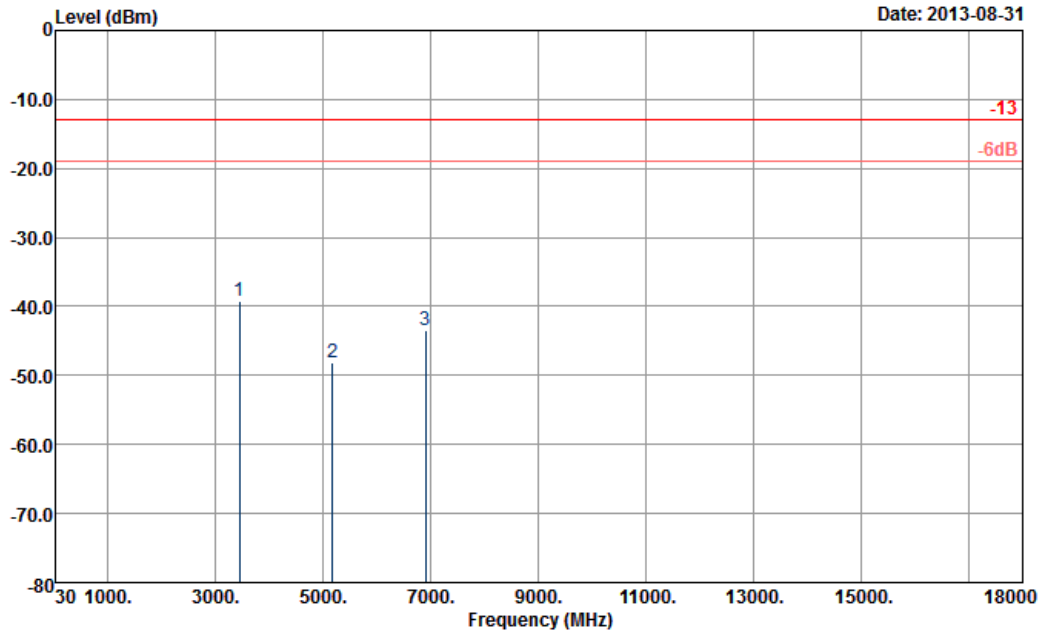


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3456	-42.22	-13	-29.22	-56.57	-43.9	4.48	8.31	H	Pass
5184	-48.71	-13	-35.71	-67.62	-51.2	5.332	9.98	H	Pass
6912	-43.01	-13	-30.01	-69.13	-46.1	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

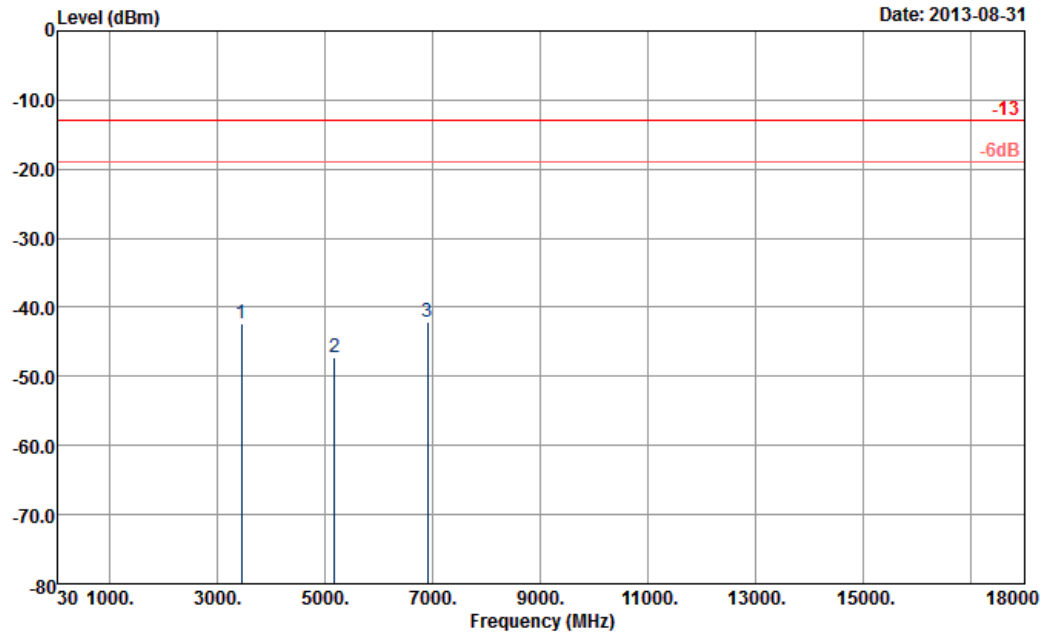


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3456	-39.12	-13	-26.12	-54.97	-40.8	4.48	8.31	V	Pass
5184	-48.21	-13	-35.21	-67.21	-50.7	5.332	9.98	V	Pass
6912	-43.41	-13	-30.41	-69.1	-46.5	6.1	11.34	V	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

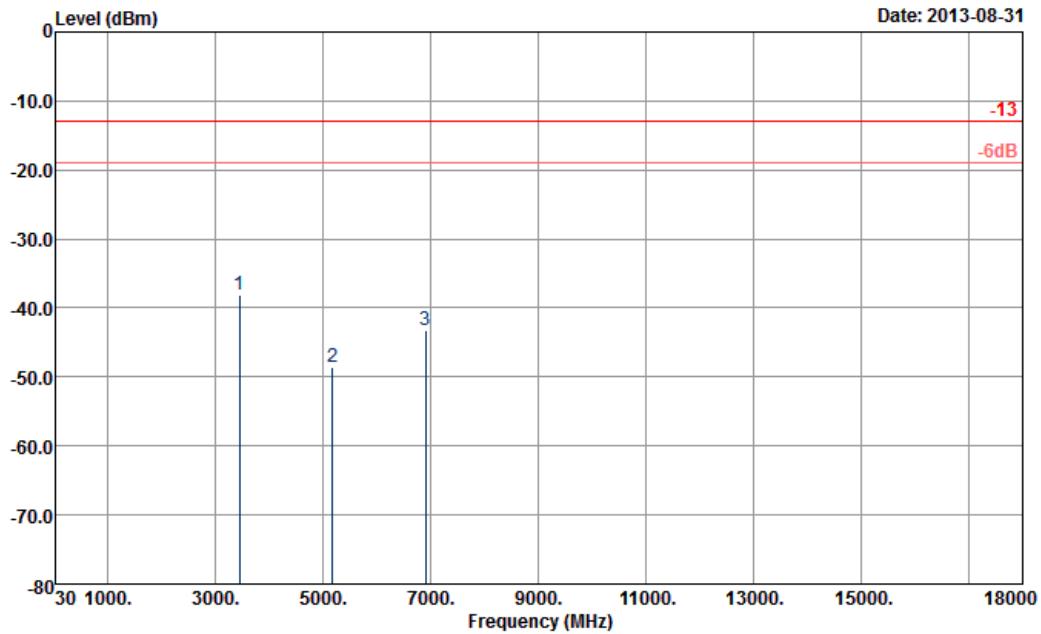


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3452	-42.42	-13	-29.42	-56.86	-44.1	4.48	8.31	H	Pass
5176	-47.31	-13	-34.31	-66.11	-49.8	5.332	9.98	H	Pass
6904	-42.11	-13	-29.11	-68.6	-45.2	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	15MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

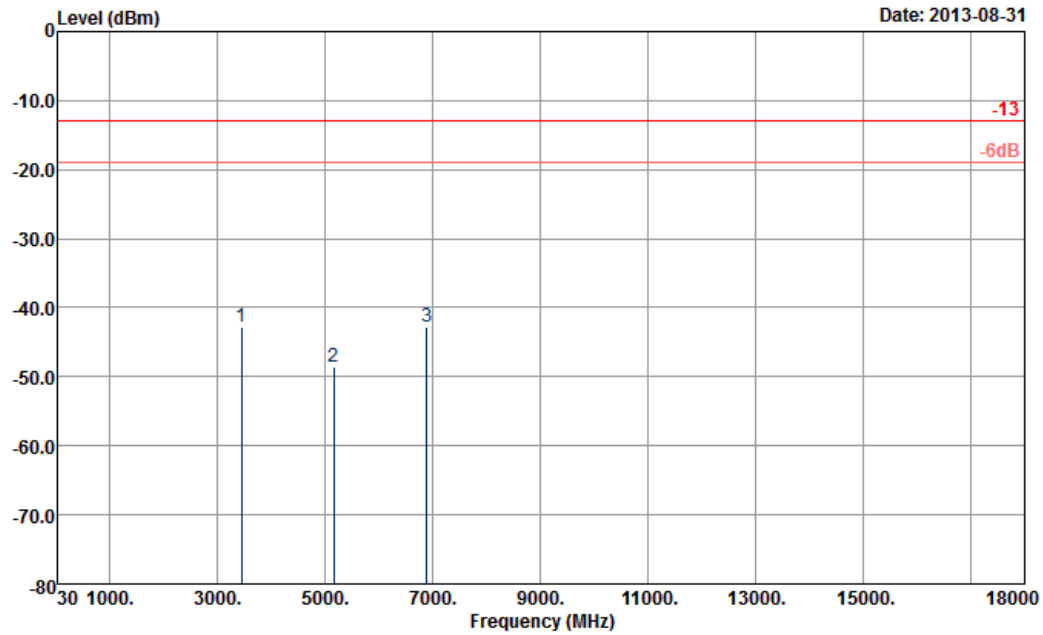


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3452	-38.12	-13	-25.12	-53.66	-39.8	4.48	8.31	V	Pass
5176	-48.61	-13	-35.61	-67.57	-51.1	5.332	9.98	V	Pass
6904	-43.31	-13	-30.31	-69.08	-46.4	6.1	11.34	V	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

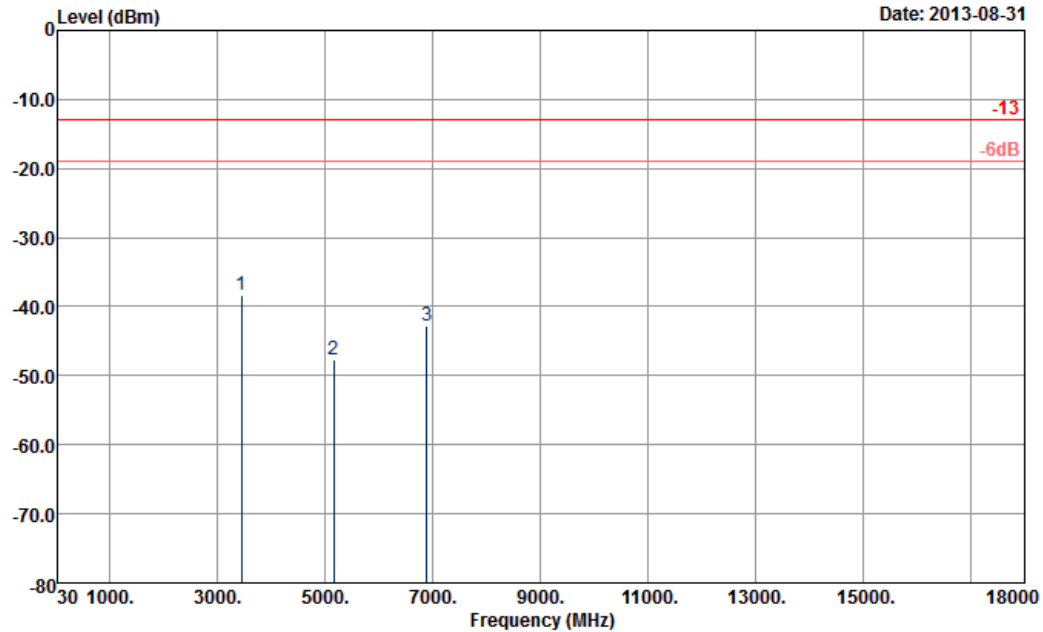


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3448	-42.72	-13	-29.72	-57.01	-44.4	4.48	8.31	H	Pass
5172	-48.61	-13	-35.61	-67.56	-51.1	5.332	9.98	H	Pass
6896	-42.71	-13	-29.71	-69.13	-45.8	6.1	11.34	H	Pass



Band :	LTE Band 4	Temperature :	20~25°C
Test Mode :	20MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

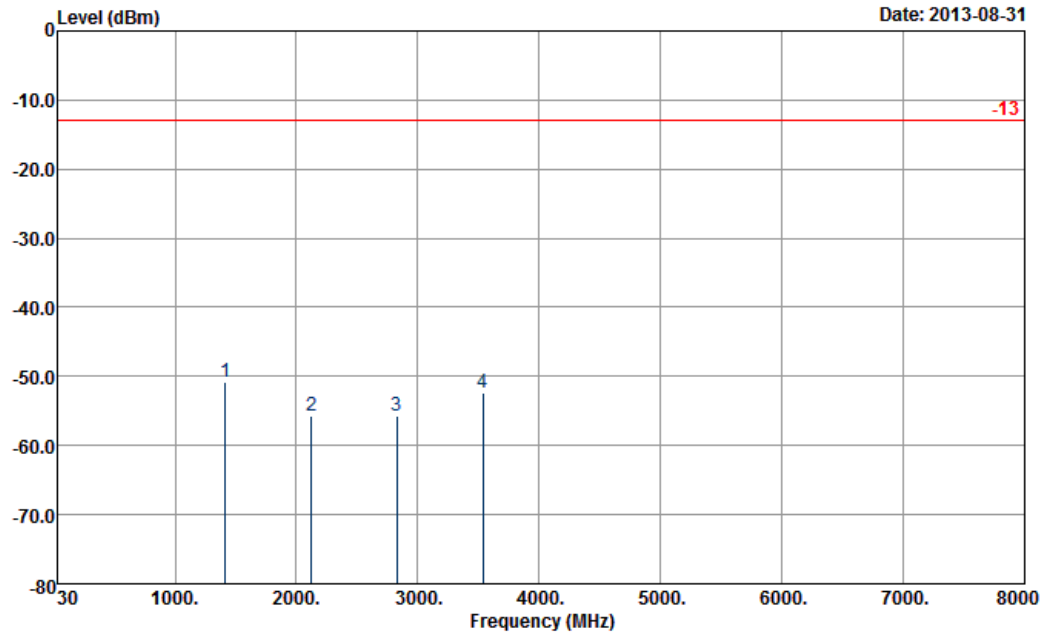


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3448	-38.42	-13	-25.42	-54.07	-40.1	4.48	8.31	V	Pass
5172	-47.61	-13	-34.61	-66.29	-50.1	5.332	9.98	V	Pass
6896	-42.71	-13	-29.71	-68.06	-45.8	6.1	11.34	V	Pass



Band :	LTE Band 17	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

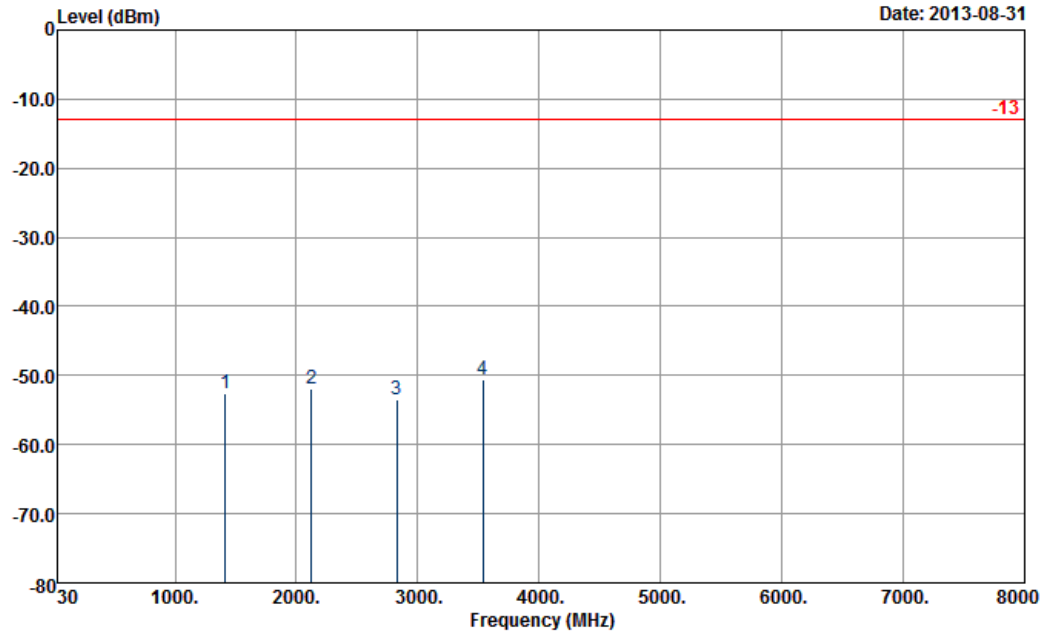


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1414	-50.75	-13	-37.75	-58.62	-52.68	1.53	5.61	H	Pass
2121	-55.65	-13	-42.65	-66.29	-57.67	1.85	6.02	H	Pass
2828	-55.79	-13	-42.79	-68.71	-58.4	2.24	7.00	H	Pass
3535	-52.47	-13	-39.47	-66.78	-56.12	2.46	8.26	H	Pass



Band :	LTE Band 17	Temperature :	20~25°C
Test Mode :	5MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

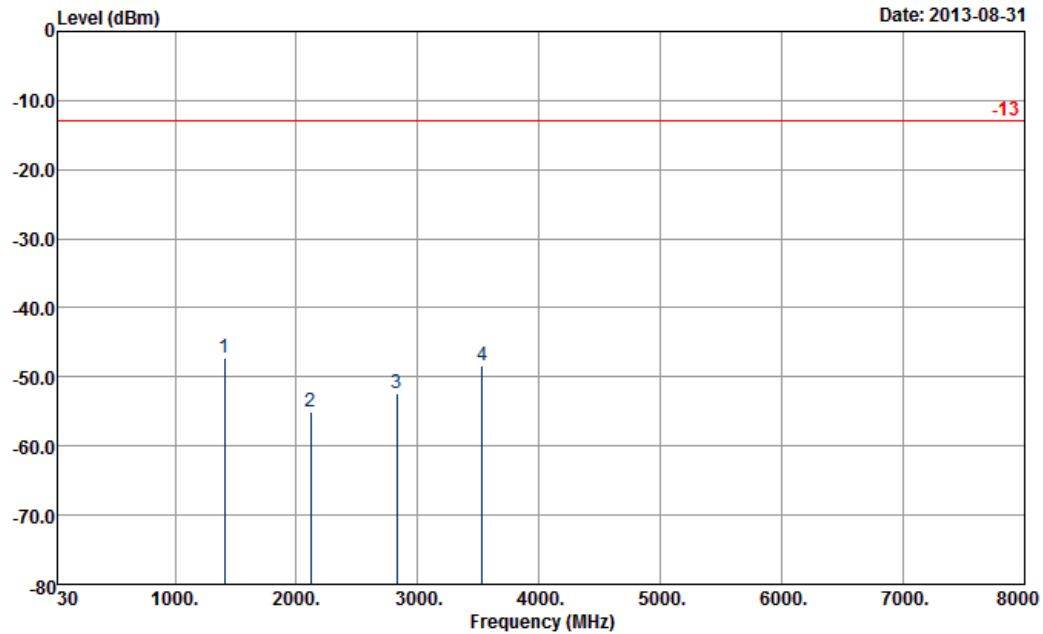


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) VERTICAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1414	-52.57	-13	-39.57	-62.1	-54.5	1.53	5.61	V	Pass
2122	-51.92	-13	-38.92	-64.14	-53.94	1.85	6.02	V	Pass
2828	-53.49	-13	-40.49	-68.55	-56.1	2.24	7.00	V	Pass
3535	-50.55	-13	-37.55	-66.5	-54.2	2.46	8.26	V	Pass



Band :	LTE Band 17	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

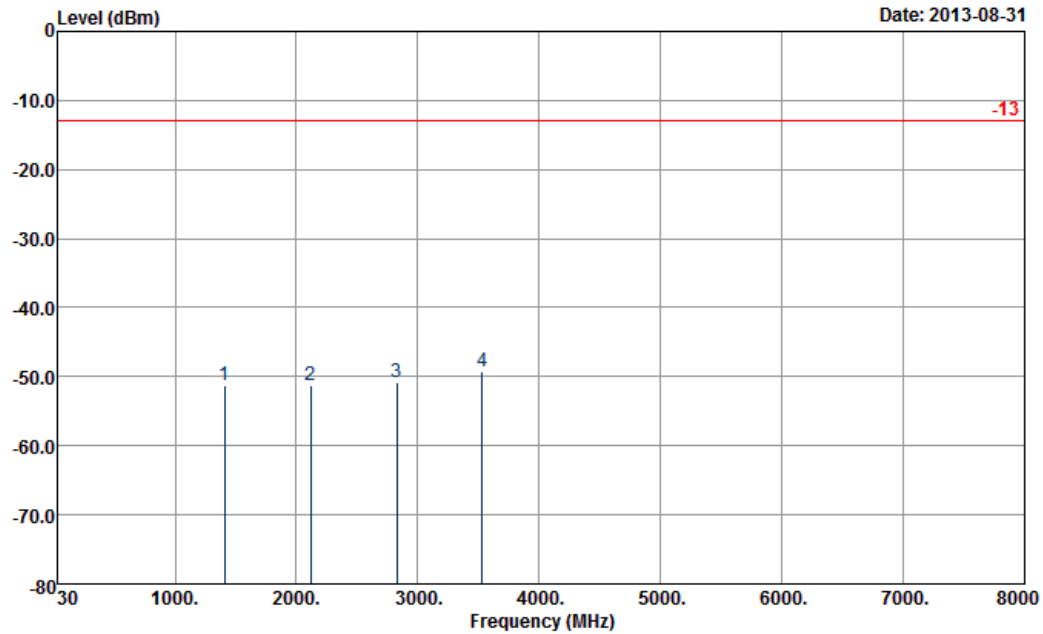


Site : 03CH07-HY
 Condition : -13 HF-EIRP(080306) HORIZONTAL

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1411	-47.27	-13	-34.27	-54.92	-49.2	1.53	5.61	H	Pass
2116	-55.08	-13	-42.08	-65.61	-57.1	1.85	6.02	H	Pass
2824	-52.40	-13	-39.40	-65.18	-55.01	2.24	7.00	H	Pass
3529	-48.45	-13	-35.45	-62.09	-52.1	2.46	8.26	H	Pass



Band :	LTE Band 17	Temperature :	20~25°C
Test Mode :	10MHZ QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Eric Shih	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		



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

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1411	-51.27	-13	-38.27	-61.54	-53.2	1.53	5.61	V	Pass
2116	-51.18	-13	-38.18	-64.51	-53.2	1.85	6.02	V	Pass
2824	-50.84	-13	-37.84	-65.85	-53.45	2.24	7.00	V	Pass
3529	-49.26	-13	-36.26	-64.2	-52.91	2.46	8.26	V	Pass

3.7 Frequency Stability Measurement

3.7.1 Description of Frequency Stability Measurement

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

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

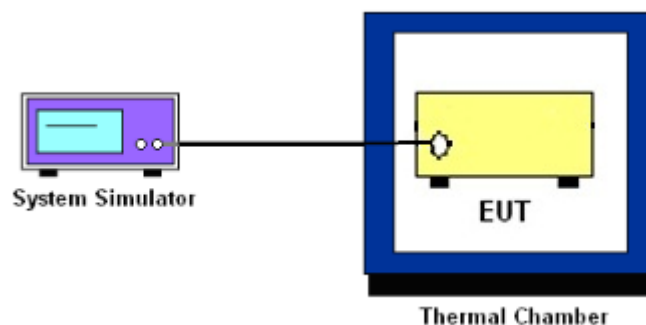
3.7.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
4. If the EUT can not be turned on at -30°C , the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

3.7.4 Test Procedures for Voltage Variation

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

3.7.5 Test Setup



3.7.6 Test Result of Temperature Variation

Band :	LTE Band 5 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 1.4MHz		BW 3MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	3.7	0.004	-4.2	-0.005	PASS
-20	-4.2	-0.005	-4.9	-0.006	
-10	-4.7	-0.006	3.7	0.004	
0	5.2	0.006	-3.6	-0.004	
10	-2.8	-0.003	5.3	0.006	
20	4.4	0.005	-4.8	-0.006	
30	3.6	0.004	-5.1	-0.006	
40	4.2	0.005	3.9	0.005	
50	-3.1	-0.004	-2.3	-0.003	
60	-5.1	-0.006	5.7	0.007	
70	5.3	0.006	5.0	0.006	

Band :	LTE Band 5 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	4.3	0.005	3.1	0.004	PASS
-20	-3.8	-0.005	-4.2	-0.005	
-10	-4.1	-0.005	-4.7	-0.006	
0	-5.2	-0.006	3.6	0.004	
10	3.4	0.004	3.8	0.005	
20	-4.7	-0.006	-4.5	-0.005	
30	4.6	0.005	3.8	0.005	
40	-2.9	-0.003	5.6	0.007	
50	3.4	0.004	-3.8	-0.005	
60	5.0	0.006	-4.9	-0.006	
70	5.6	0.007	3.2	0.004	



Band :	LTE Band 5 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 1.4MHz		BW 3MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	4.7	0.006	3.2	0.004	PASS
-20	-5.2	-0.006	-4.1	-0.005	
-10	-3.9	-0.005	-4.6	-0.005	
0	-4.2	-0.005	-3.3	-0.004	
10	3.8	0.005	-4.4	-0.005	
20	-4.6	-0.005	-2.7	-0.003	
30	-3.4	-0.004	3.6	0.004	
40	4.2	0.005	4.9	0.006	
50	-3.6	-0.004	5.4	0.006	
60	-5.1	-0.006	7.1	0.008	
70	-5.8	-0.007	-4.9	-0.006	

Band :	LTE Band 5 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	4.1	0.005	-4.3	-0.005	PASS
-20	3.6	0.004	-3.2	-0.004	
-10	-6.2	-0.007	4.5	0.005	
0	-4.7	-0.006	-4.5	-0.005	
10	3.4	0.004	-3.3	-0.004	
20	4.6	0.005	6.1	0.007	
30	-4.4	-0.005	-4.7	-0.006	
40	3.1	0.004	-4.0	-0.005	
50	4.5	0.005	-3.6	-0.004	
60	3.9	0.005	-5.4	-0.006	
70	-5.8	-0.007	5.6	0.007	



Band :	LTE Band 2 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 1.4MHz		BW 3MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	12.4	0.007	-17.5	-0.009	PASS
-20	-15.6	-0.008	19.2	0.010	
-10	-17.9	-0.010	18.1	0.010	
0	14.2	0.008	-16.3	-0.009	
10	-15.7	-0.008	-19.7	-0.010	
20	-17.2	-0.009	-20.3	-0.011	
30	16.3	0.009	-15.1	-0.008	
40	-18.6	-0.010	14.9	0.008	
50	19.5	0.010	17.4	0.009	
60	-18.8	-0.010	-15.3	-0.008	
70	14.7	0.008	-17.1	-0.009	

Band :	LTE Band 2 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-16.8	-0.009	-8.9	-0.005	PASS
-20	-19.0	-0.010	-9.1	-0.005	
-10	17.2	0.009	-20.7	-0.011	
0	-14.6	-0.008	15.0	0.008	
10	13.5	0.007	-20.3	-0.011	
20	-12.9	-0.007	24.5	0.013	
30	17.1	0.009	-19.7	-0.010	
40	11.1	0.006	11.8	0.006	
50	-19.2	-0.010	17.5	0.009	
60	-21.2	-0.011	-17.7	-0.009	
70	7.6	0.004	-23.3	-0.012	



Band :	LTE Band 2 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	19.8	0.011	-18.7	-0.010	PASS
-20	18.5	0.010	17.3	0.009	
-10	-11.8	-0.006	-15.2	-0.008	
0	-23.4	-0.012	12.9	0.007	
10	-15.0	-0.008	14.7	0.008	
20	-20.1	-0.011	20.4	0.011	
30	8.7	0.005	-24.1	-0.013	
40	-14.2	-0.008	-18.2	-0.010	
50	-9.4	-0.005	15.0	0.008	
60	7.9	0.004	-17.3	-0.009	
70	-18.0	-0.010	22.9	0.012	

Band :	LTE Band 2 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 1.4MHz		BW 3MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	19.5	0.010	14.3	0.008	PASS
-20	17.3	0.009	-18.1	-0.010	
-10	-20.6	-0.011	-16.5	-0.009	
0	-11.4	-0.006	9.4	0.005	
10	-13.6	-0.007	10.5	0.006	
20	-17.8	-0.009	-16.8	-0.009	
30	20.5	0.011	9.3	0.005	
40	-17.2	-0.009	13.6	0.007	
50	14.6	0.008	-9.1	-0.005	
60	-15.1	-0.008	-15.2	-0.008	
70	-18.5	-0.010	-23.6	-0.013	



Band :	LTE Band 2 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	11.7	0.006	8.5	0.005	PASS
-20	-15.9	-0.008	-10.9	-0.006	
-10	-14.3	-0.008	-23.8	-0.013	
0	-14.9	-0.008	-21.7	-0.012	
10	8.4	0.004	-9.8	-0.005	
20	-10.9	-0.006	-7.1	-0.004	
30	15.8	0.008	-11.5	-0.006	
40	-10.5	-0.006	13.6	0.007	
50	12.7	0.007	12.7	0.007	
60	-9.8	-0.005	15.8	0.008	
70	19.5	0.010	-19.4	-0.010	

Band :	LTE Band 2 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-12.0	-0.006	-15.6	-0.008	PASS
-20	-17.3	-0.009	-17.5	-0.009	
-10	18.0	0.010	11.2	0.006	
0	-16.8	-0.009	-18.3	-0.010	
10	18.9	0.010	10.8	0.006	
20	8.7	0.005	9.2	0.005	
30	-8.1	-0.004	-19.7	-0.010	
40	11.4	0.006	14.6	0.008	
50	-21.5	-0.011	-15.5	-0.008	
60	18.1	0.010	12.4	0.007	
70	-19.7	-0.010	-18.3	-0.010	



Band :	LTE Band 4 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 1.4MHz		BW 3MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	7.6	0.004	11.6	0.007	PASS
-30	-9.7	-0.006	10.3	0.006	
-30	10.2	0.006	-9.2	-0.005	
-30	-10.1	-0.006	-7.6	-0.004	
-30	7.0	0.004	-8.3	-0.005	
-30	6.4	0.004	10.6	0.006	
-30	-8.1	-0.005	-7.4	-0.004	
-30	-6.9	-0.004	10.8	0.006	
-30	7.3	0.004	-9.5	-0.005	
-30	-9.6	-0.006	-7.7	-0.004	
-30	-8.1	-0.005	6.9	0.004	

Band :	LTE Band 4 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	7.4	0.004	6.8	0.004	PASS
-20	-6.9	-0.004	-7.0	-0.004	
-10	-5.8	-0.003	8.2	0.005	
0	8.1	0.005	7.5	0.004	
10	-5.7	-0.003	-9.8	-0.006	
20	10.2	0.006	6.2	0.004	
30	-8.3	-0.005	8.8	0.005	
40	7.6	0.004	-7.1	-0.004	
50	-8.9	-0.005	-7.4	-0.004	
60	9.5	0.005	6.3	0.004	
70	-7.2	-0.004	-10.2	-0.006	



Band :	LTE Band 4 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	9.1	0.005	7.6	0.004	PASS
-20	-8.3	-0.005	-6.4	-0.004	
-10	-7.7	-0.004	-9.8	-0.006	
0	11.4	0.007	-10.4	-0.006	
10	12.6	0.007	5.1	0.003	
20	-8.8	-0.005	-6.4	-0.004	
30	-7.2	-0.004	7.7	0.004	
40	-6.7	-0.004	-8.2	-0.005	
50	5.8	0.003	-6.9	-0.004	
60	6.9	0.004	4.7	0.003	
70	-5.2	-0.003	5.5	0.003	

Band :	LTE Band 4 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 1.4MHz		BW 3MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	7.6	0.004	5.4	0.003	PASS
-20	-6.1	-0.004	7.6	0.004	
-10	-8.3	-0.005	-9.3	-0.005	
0	9.4	0.005	8.5	0.005	
10	-10.1	-0.006	7.1	0.004	
20	5.8	0.003	-8.8	-0.005	
30	-7.5	-0.004	6.7	0.004	
40	-6.7	-0.004	-5.6	-0.003	
50	-6.2	-0.004	-7.5	-0.004	
60	5.9	0.003	6.2	0.004	
70	8.1	0.005	8.0	0.005	



Band :	LTE Band 4 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	9.3	0.005	6.5	0.004	PASS
-20	-6.7	-0.004	-7.2	-0.004	
-10	-5.4	-0.003	6.9	0.004	
0	-8.1	-0.005	8.0	0.005	
10	6.8	0.004	-7.6	-0.004	
20	7.2	0.004	9.9	0.006	
30	-5.6	-0.003	8.1	0.005	
40	4.9	0.003	-9.2	-0.005	
50	7.5	0.004	-7.3	-0.004	
60	8.3	0.005	6.4	0.004	
70	-6.1	-0.004	8.4	0.005	

Band :	LTE Band 4 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 15MHz		BW 20MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	6.9	0.004	6.2	0.004	PASS
-20	7.2	0.004	4.8	0.003	
-10	-6.1	-0.004	-6.1	-0.004	
0	-7.3	-0.004	-7.3	-0.004	
10	-5.8	-0.003	9.6	0.006	
20	6.7	0.004	-5.6	-0.003	
30	7.4	0.004	7.4	0.004	
40	-5.9	-0.003	-10.3	-0.006	
50	-7.2	-0.004	6.8	0.004	
60	6.0	0.003	7.9	0.005	
70	-5.7	-0.003	-7.7	-0.004	



Band :	LTE Band 17 (QPSK)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	-4.9	-0.007	-6.1	-0.009	PASS
-20	-3.8	-0.005	4.5	0.006	
-10	-4.2	-0.006	5.0	0.007	
0	5.3	0.007	-4.8	-0.007	
10	-4.2	-0.006	-4.2	-0.006	
20	3.4	0.005	-4.9	-0.007	
30	5.1	0.007	-3.5	-0.005	
40	4.6	0.006	2.9	0.004	
50	-3.1	-0.004	-3.6	-0.005	
60	-4.4	-0.006	4.1	0.006	
70	6.0	0.008	5.6	0.008	

Band :	LTE Band 17 (16QAM)		Limit (ppm) :	2.5	
Temperature (°C)	BW 5MHz		BW 10MHz		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	4.8	0.007	-2.9	-0.004	PASS
-20	-5.2	-0.007	6.0	0.008	
-10	3.7	0.005	-4.1	-0.006	
0	4.1	0.006	3.9	0.005	
10	-6.0	-0.008	4.2	0.006	
20	-4.6	-0.006	-5.3	-0.007	
30	-3.9	-0.005	3.8	0.005	
40	5.0	0.007	2.5	0.004	
50	-3.1	-0.004	-4.4	-0.006	
60	4.2	0.006	-2.9	-0.004	
70	-3.8	-0.005	-3.7	-0.005	



3.7.7 Test Result of Voltage Variation

Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 5 (QPSK)	1.4M	32	4.9	0.006	2.5	PASS
		Normal	-6.1	-0.007		
		9	-3.8	-0.005		
	3M	32	4.5	0.005		
		Normal	5.2	0.006		
		9	-3.4	-0.004		
	5M	32	5.8	0.007		
		Normal	-4.4	-0.005		
		9	5.7	0.007		
	10M	32	6.5	0.008		
		Normal	-5.3	-0.006		
		9	-4.6	-0.005		
LTE Band 2 (QPSK)	1.4M	32	17.6	0.009	2.5	PASS
		Normal	-13.4	-0.007		
		9	15.2	0.008		
	3M	32	-11.8	-0.006		
		Normal	-9.7	-0.005		
		9	14.8	0.008		
	5M	32	15.7	0.008		
		Normal	-13.1	-0.007		
		9	16.2	0.009		
	10M	32	-18.9	-0.010		
		Normal	14.7	0.008		
		9	-20.3	-0.011		
	15M	32	-16.6	-0.009		
		Normal	-11.5	-0.006		
		9	12.8	0.007		
	20M	32	15.4	0.008		
		Normal	-19.6	-0.010		
		9	12.1	0.006		



Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 4 (QPSK)	1.4M	32	7.6	0.004	2.5	PASS
		Normal	-8.1	-0.005		
		9	-9.3	-0.005		
	3M	32	5.9	0.003		
		Normal	-7.2	-0.004		
		9	6.4	0.004		
	5M	32	-7.5	-0.004		
		Normal	-7.8	-0.005		
		9	6.7	0.004		
	10M	32	7.6	0.004		
		Normal	5.8	0.003		
		9	-10.4	-0.006		
	15M	32	7.2	0.004		
		Normal	-6.9	-0.004		
		9	-7.1	-0.004		
	20M	32	-6.6	-0.004		
		Normal	-9.1	-0.005		
		9	8.2	0.005		
LTE Band 17 (QPSK)	5M	32	3.7	0.005	2.5	PASS
		Normal	-2.8	-0.004		
		9	-3.6	-0.005		
	10M	32	4.2	0.006		
		Normal	-4.0	-0.006		
		9	-4.9	-0.007		



Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 5 (16QAM)	1.4M	32	3.8	0.005	2.5	PASS
		Normal	6.7	0.008		
		9	-4.9	-0.006		
	3M	32	-3.1	-0.004		
		Normal	-4.5	-0.005		
		9	5.0	0.006		
	5M	32	-4.3	-0.005		
		Normal	6.2	0.007		
		9	4.6	0.005		
	10M	32	-4.5	-0.005		
		Normal	-3.7	-0.004		
		9	5.4	0.006		
LTE Band 2 (16QAM)	1.4M	32	12.5	0.007	2.5	PASS
		Normal	-16.9	-0.009		
		9	18.1	0.010		
	3M	32	17.3	0.009		
		Normal	-14.6	-0.008		
		9	-19.2	-0.010		
	5M	32	18.3	0.010		
		Normal	14.7	0.008		
		9	-19.5	-0.010		
	10M	32	-15.8	-0.008		
		Normal	16.7	0.009		
		9	19.2	0.010		
	15M	32	-11.8	-0.006		
		Normal	-16.2	-0.009		
		9	20.6	0.011		
	20M	32	13.1	0.007		
		Normal	-18.5	-0.010		
		9	-17.4	-0.009		



Band	Bandwidth	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 4 (16QAM)	1.4M	32	6.3	0.004	2.5	PASS
		Normal	-7.9	-0.005		
		9	-4.7	-0.003		
	3M	32	-5.8	-0.003		
		Normal	6.1	0.004		
		9	5.6	0.003		
	5M	32	-7.2	-0.004		
		Normal	-6.9	-0.004		
		9	8.1	0.005		
	10M	32	-5.3	-0.003		
		Normal	5.2	0.003		
		9	7.6	0.004		
	15M	32	-5.9	-0.003		
		Normal	6.5	0.004		
		9	-8.7	-0.005		
	20M	32	9.1	0.005		
		Normal	-6.8	-0.004		
		9	-10.5	-0.006		
LTE Band 17 (16QAM)	5M	32	-4.1	-0.006	2.5	PASS
		Normal	3.6	0.005		
		9	2.8	0.004		
	10M	32	-2.6	-0.004		
		Normal	-2.4	-0.003		
		9	3.2	0.005		

Remark:

1. Normal Voltage = 12V.
2. The manufacturer declared that the EUT could work properly between voltage 9V ~ 32V.



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz SISO (FDD Band 1~26)	Jan. 04, 2013	Aug. 27, 2013 ~ Oct. 31, 2013	Jan. 03, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Aug. 27, 2013 ~ Oct. 31, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	Aug. 27, 2013 ~ Oct. 31, 2013	Jul. 18, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz~30GHz	Nov. 30, 2012	Aug. 30, 2013~ Aug. 31, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz~1GHz	Oct. 06, 2012	Aug. 30, 2013~ Aug. 31, 2013	Oct. 05, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Aug. 30, 2013~ Aug. 31, 2013	Aug. 21, 2014	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Sep. 28, 2012	Aug. 30, 2013~ Aug. 31, 2013	Sep. 27, 2013	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Feb. 26, 2013	Aug. 30, 2013~ Aug. 31, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Dec. 01, 2012	Aug. 30, 2013~ Aug. 31, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Aug. 30, 2013~ Aug. 31, 2013	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Aug. 30, 2013~ Aug. 31, 2013	N/A	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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