3.6 Conducted Spurious Emission Measurement

3.6.1 Description of Conducted Spurious Emission Measurement

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

For Band 7

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 55 + 10 log (P) dB.

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

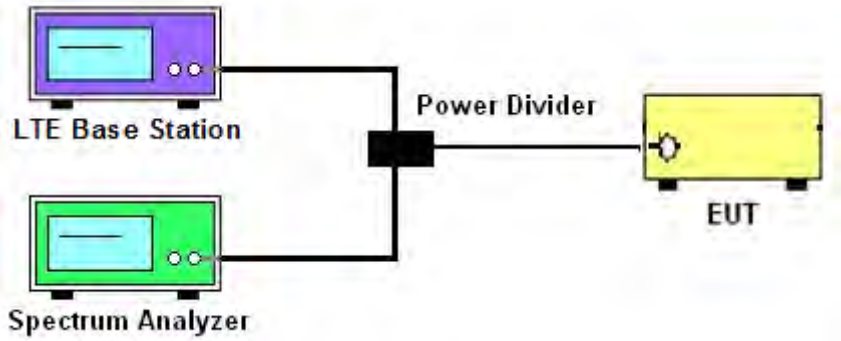
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was connected to spectrum analyzer and LTE base station via a 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 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.
   For Band 7
   The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [55 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)
   = -25dBm.

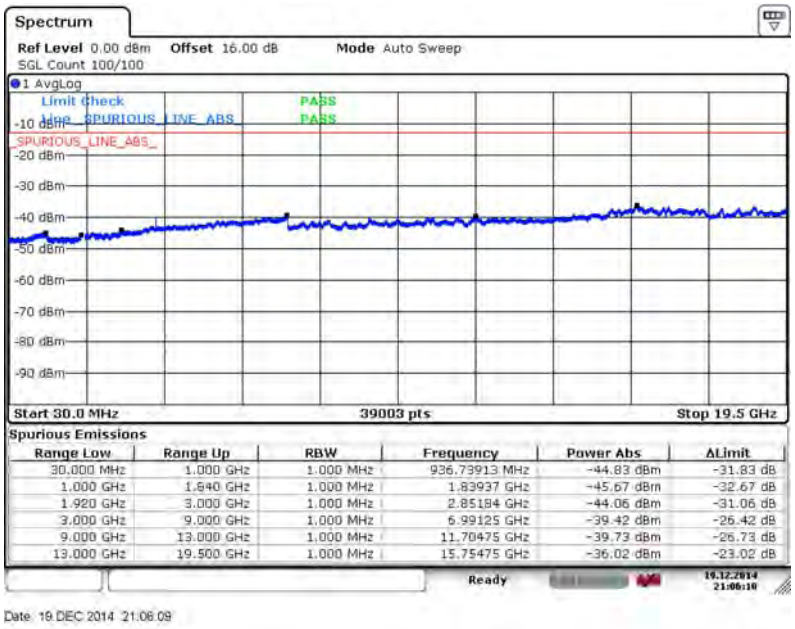
3.6.4 Test Setup



3.6.5 Test Result (Plots) of Conducted Spurious Emission

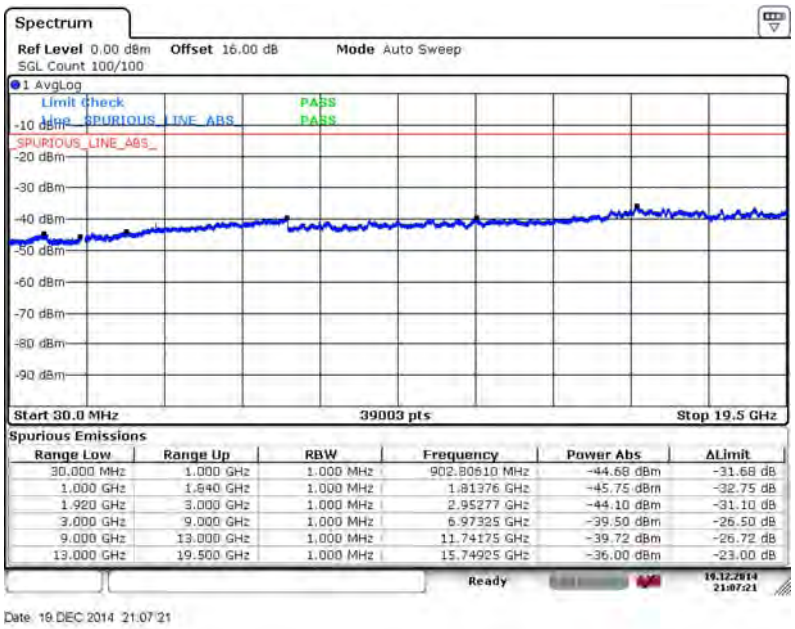
Band :	LTE Band 2	Channel :	CH18607 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:06:09

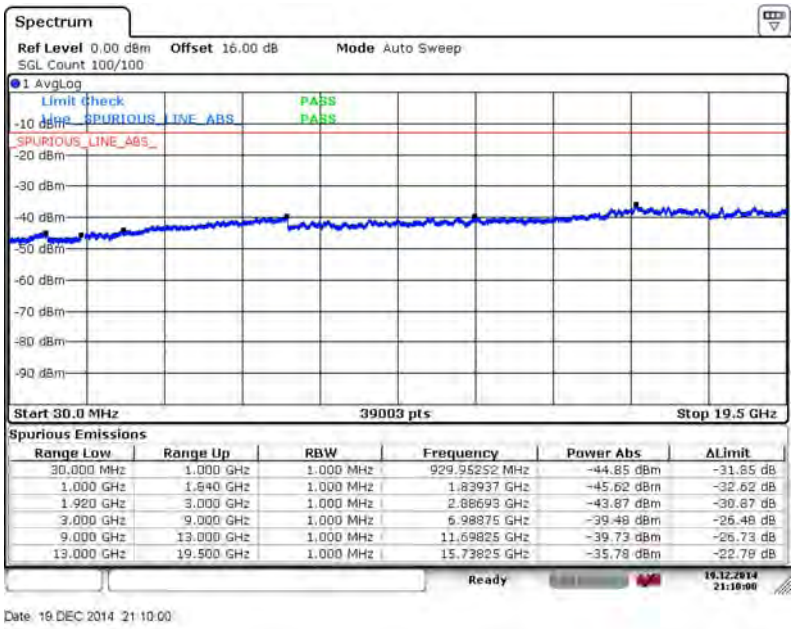
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:07:21

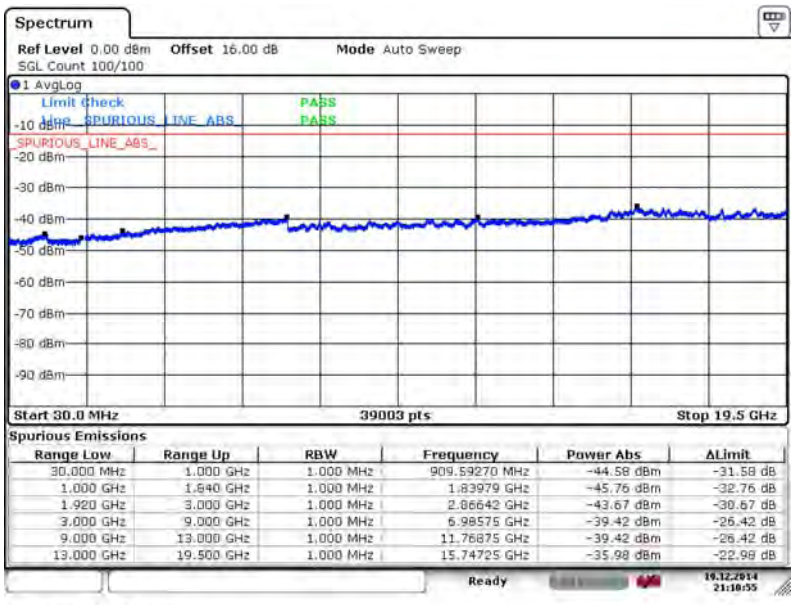
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:10:00

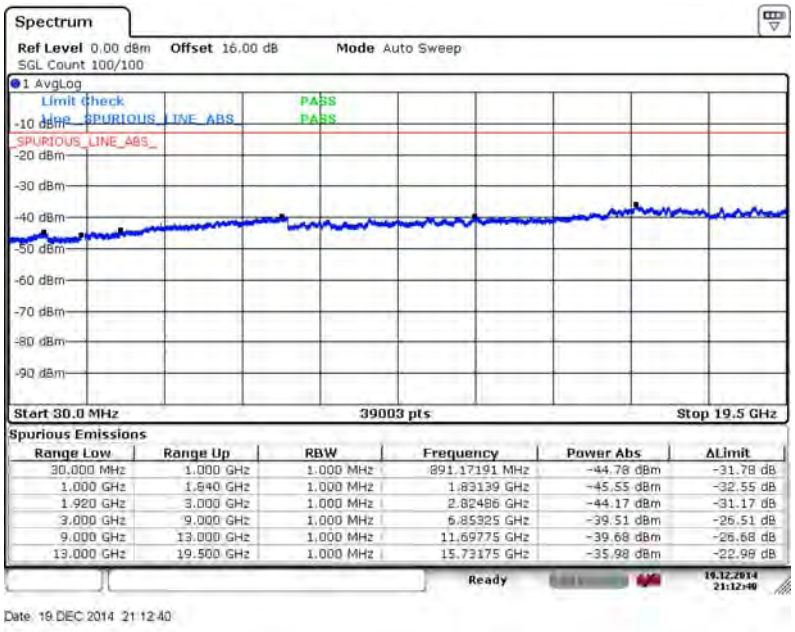
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:10:55

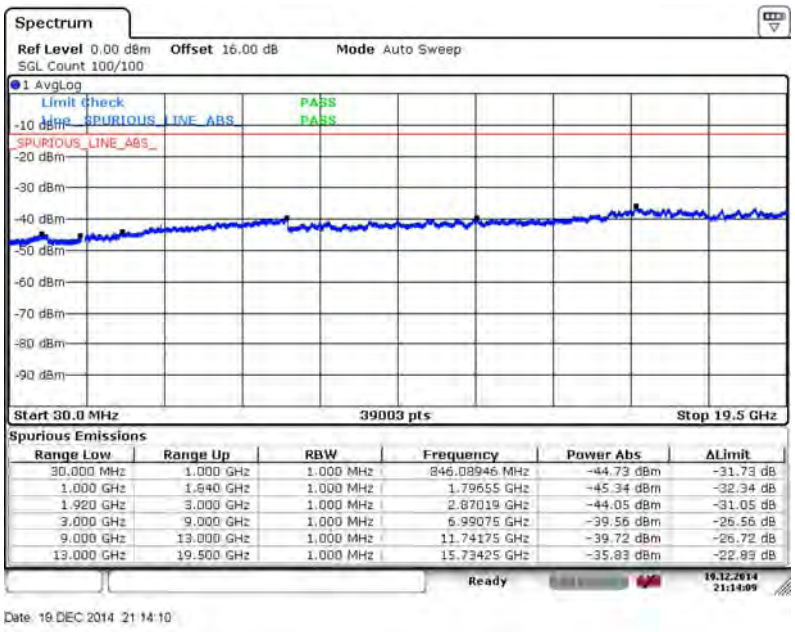
Band :	LTE Band 2	Channel :	CH19193 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:12:40

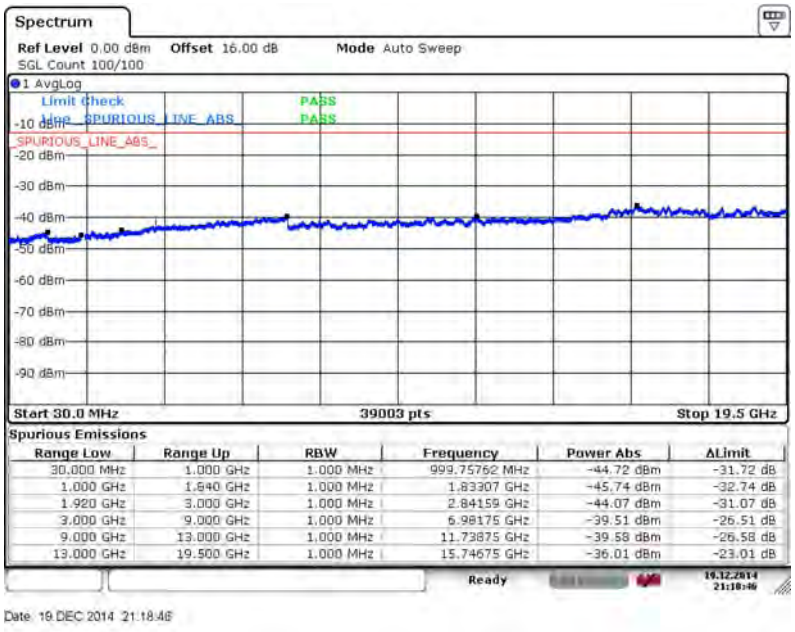
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:14:10

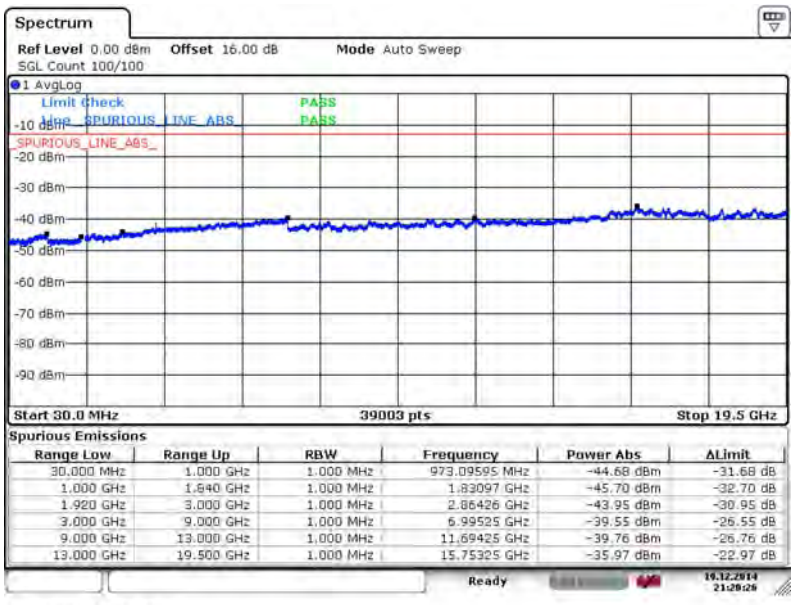
Band :	LTE Band 2	Channel :	CH18615 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:18:46

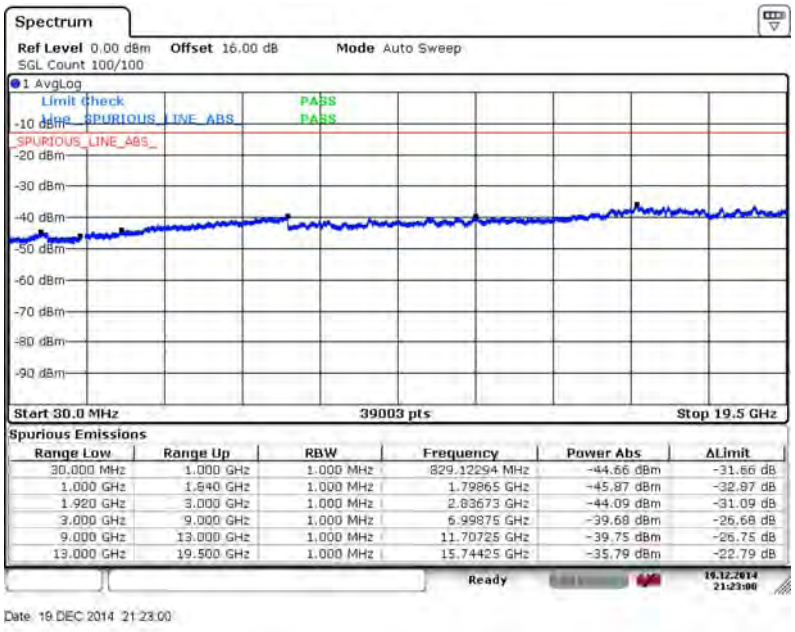
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:20:26

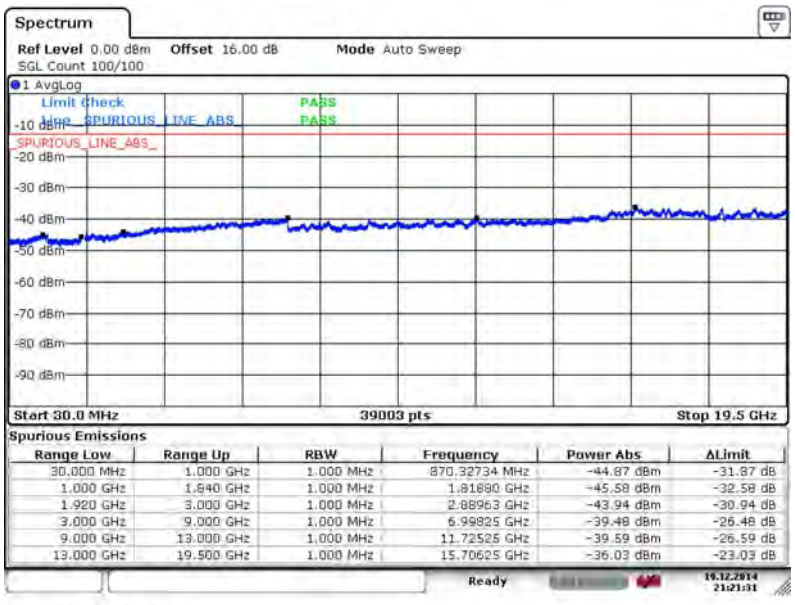
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:23:00

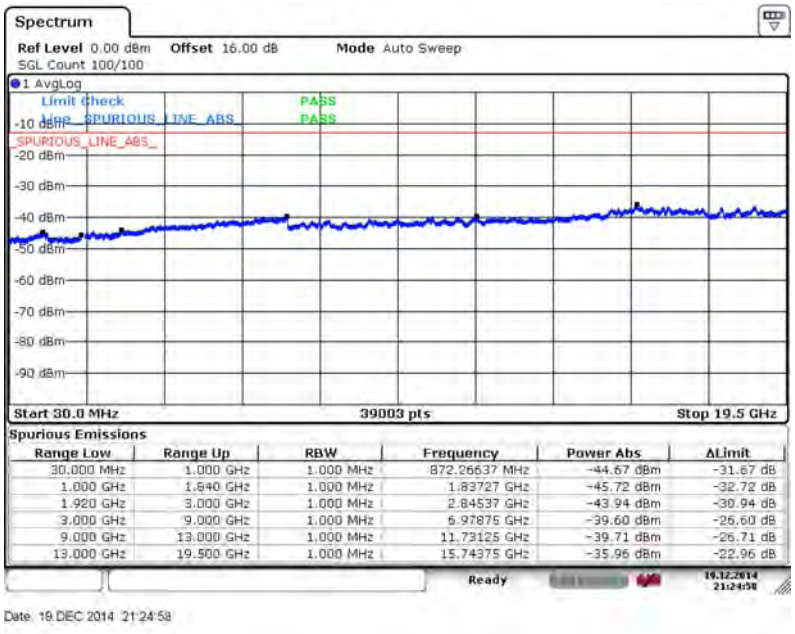
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:21:30

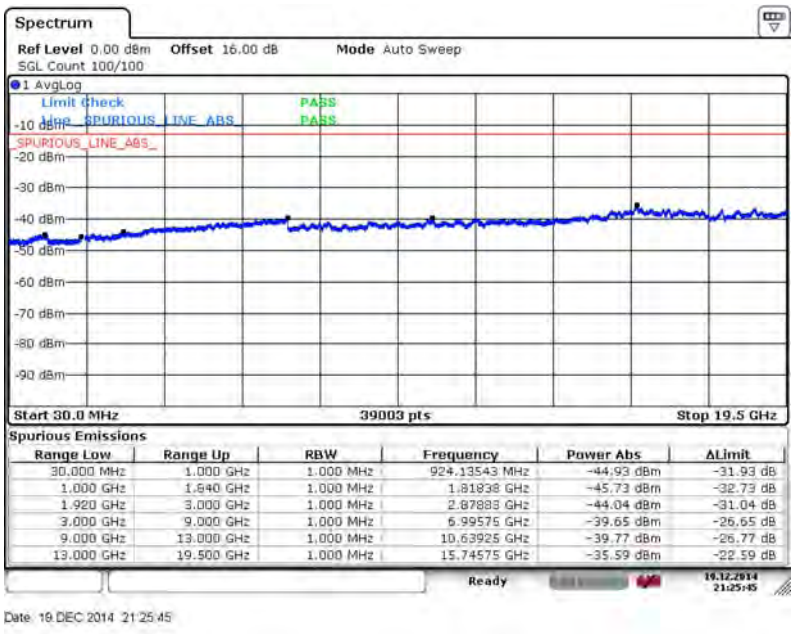
Band :	LTE Band 2	Channel :	CH19185 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:24:58

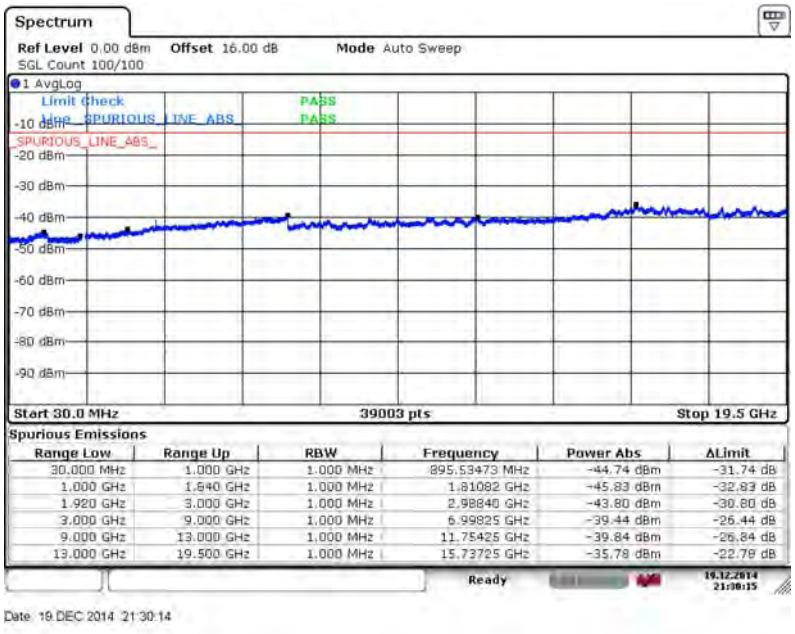
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:25:45

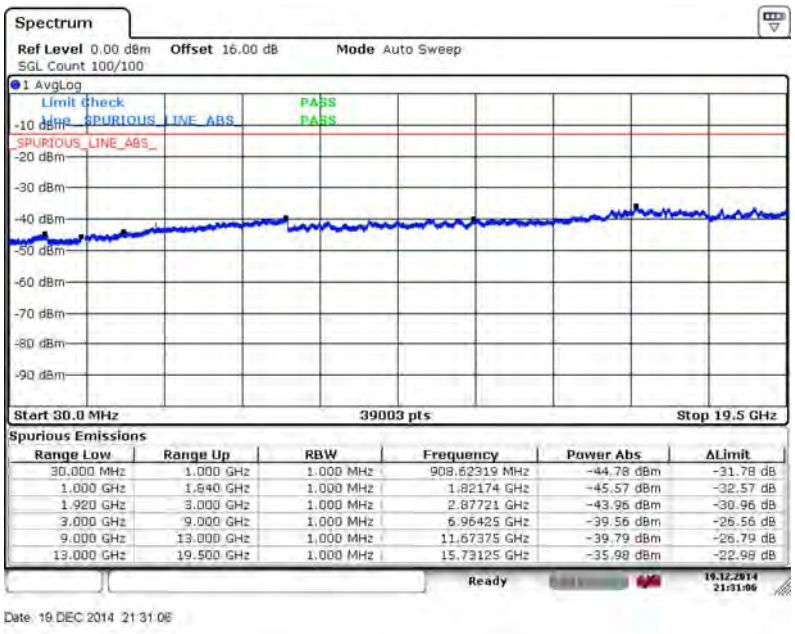
Band :	LTE Band 2	Channel :	CH18625 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:30:14

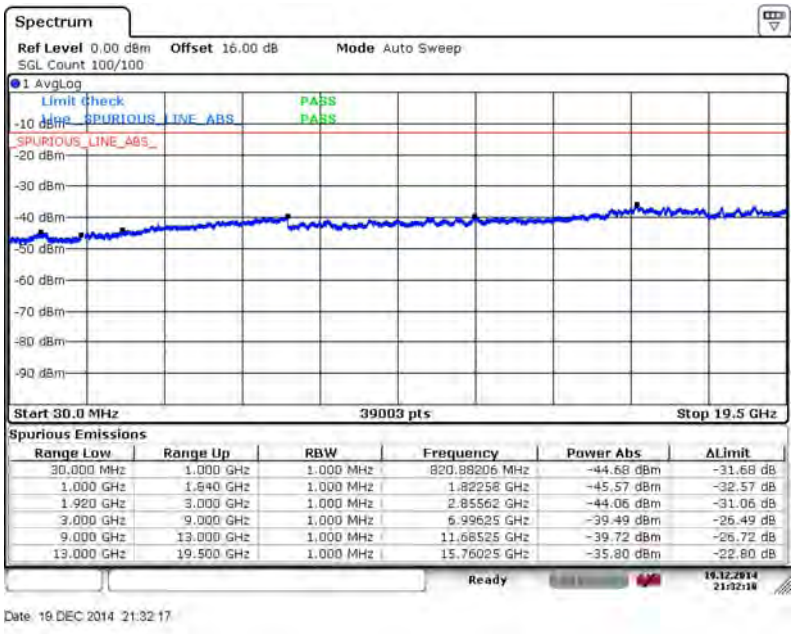
16QAM (RB Size 1, RB Offset 0)



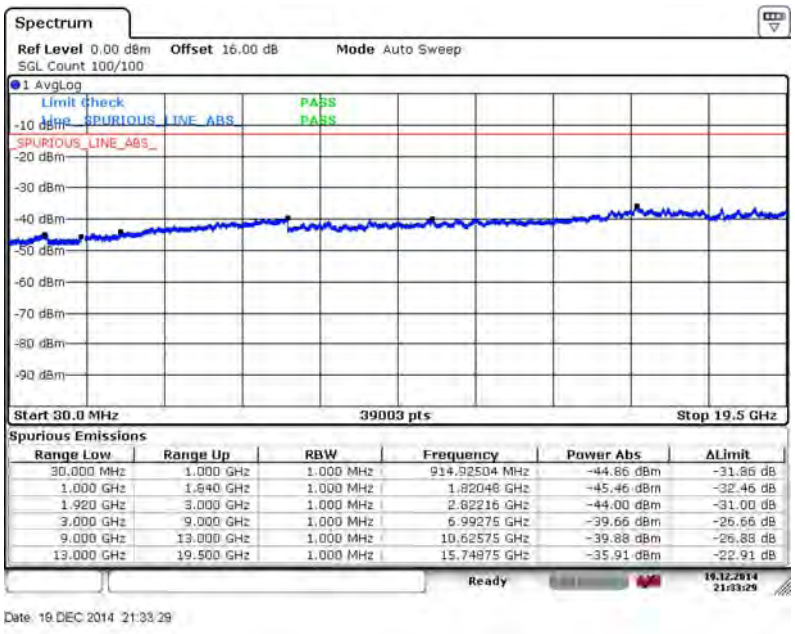
Date: 19.DEC.2014 21:31:06

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

QPSK (RB Size 1, RB Offset 0)

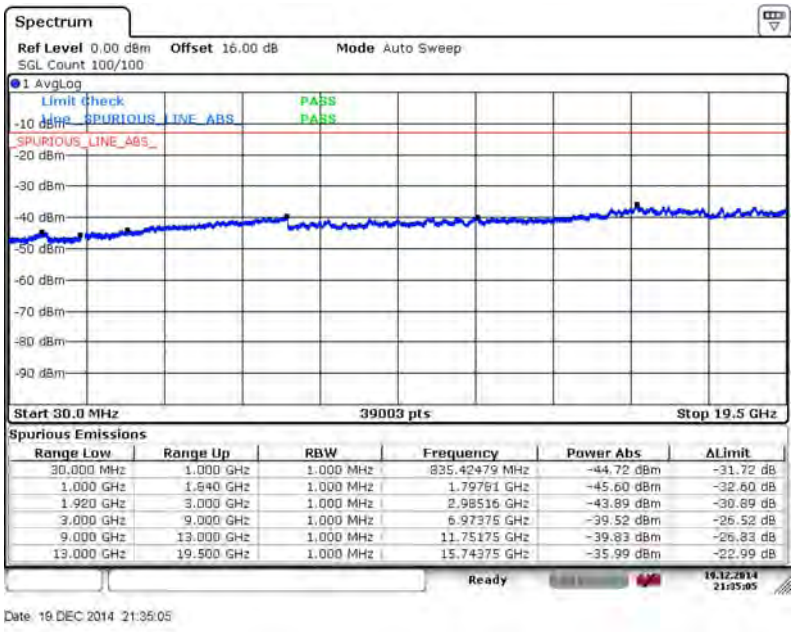


16QAM (RB Size 1, RB Offset 0)



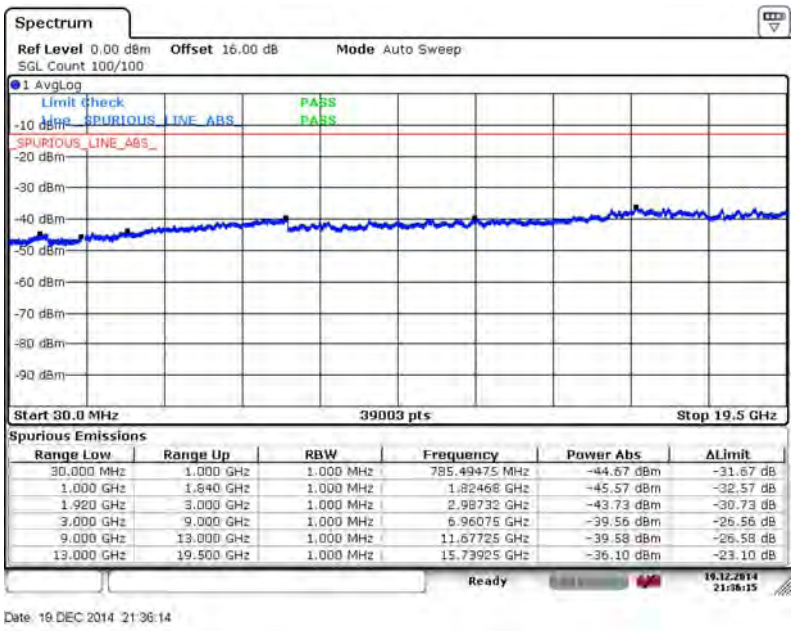
Band :	LTE Band 2	Channel :	CH19175 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:35:05

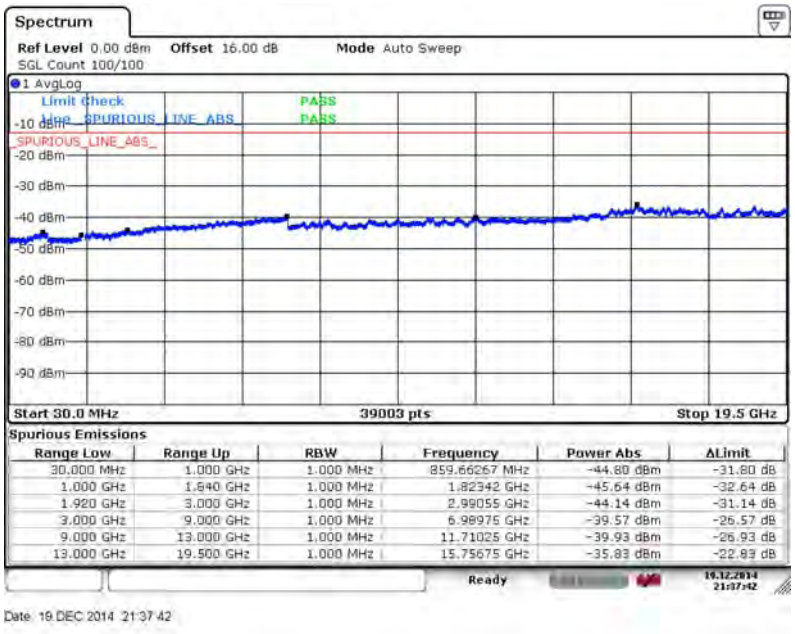
16QAM (RB Size 1, RB Offset 0)



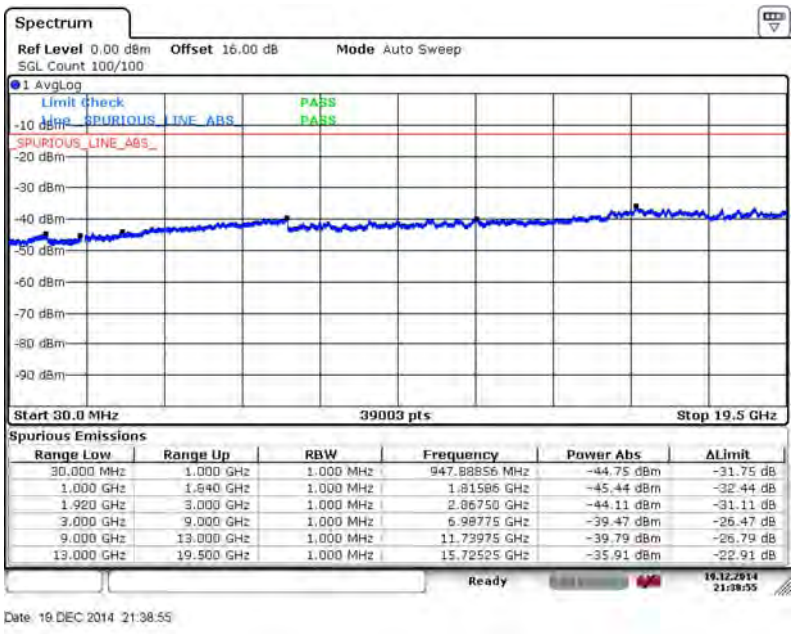
Date: 19.DEC.2014 21:36:14

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

QPSK (RB Size 1, RB Offset 0)

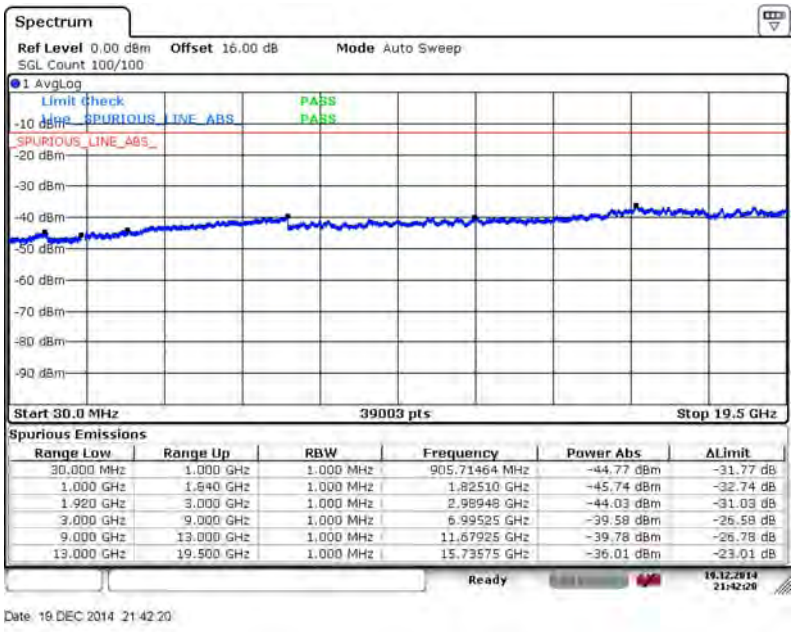


16QAM (RB Size 1, RB Offset 0)

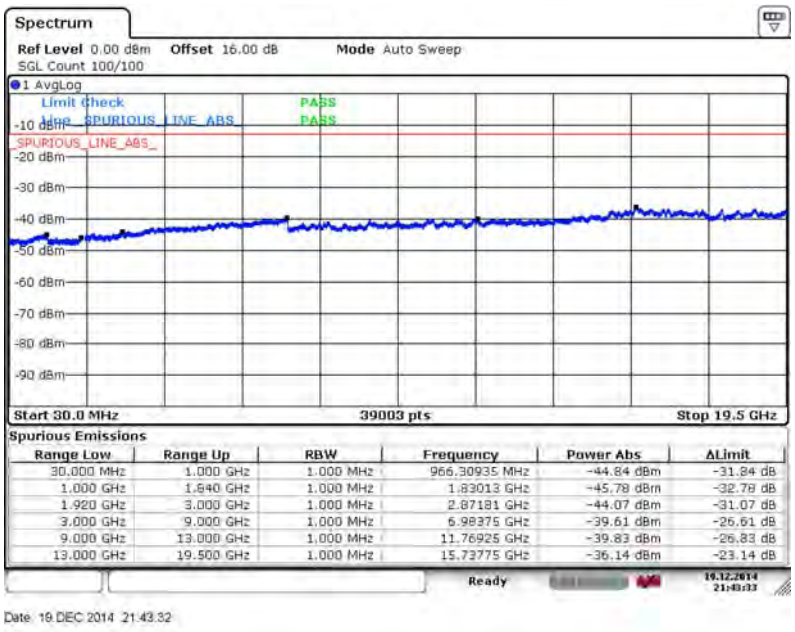


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

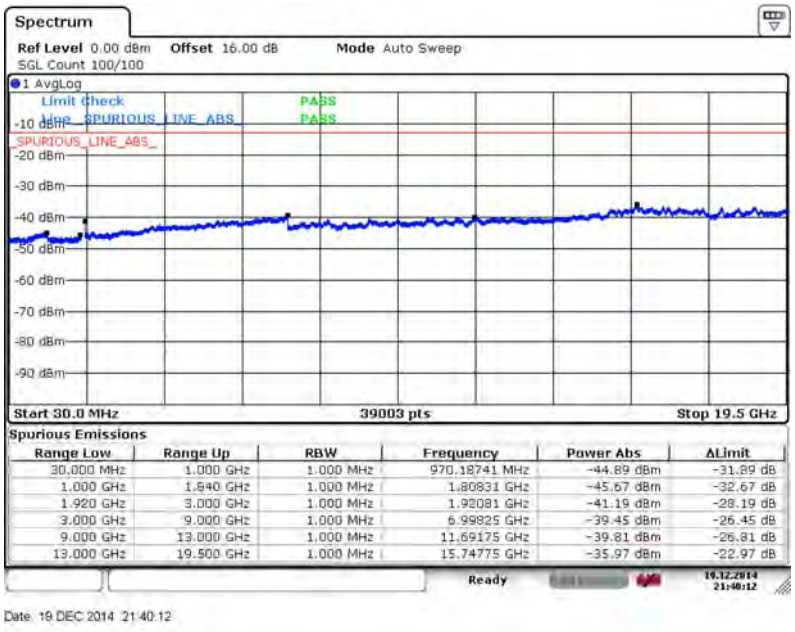


16QAM (RB Size 1, RB Offset 0)

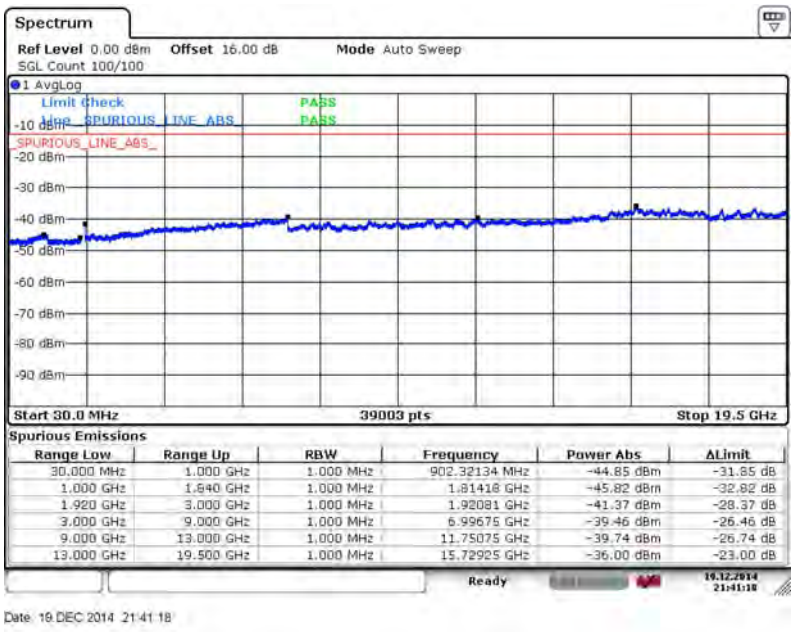


Band :	LTE Band 2	Channel :	CH19150 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

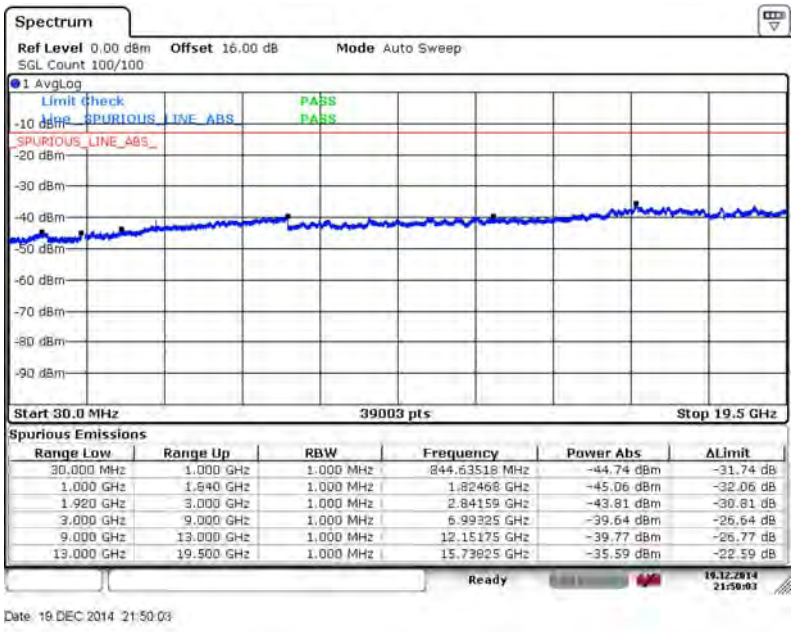


16QAM (RB Size 1, RB Offset 0)



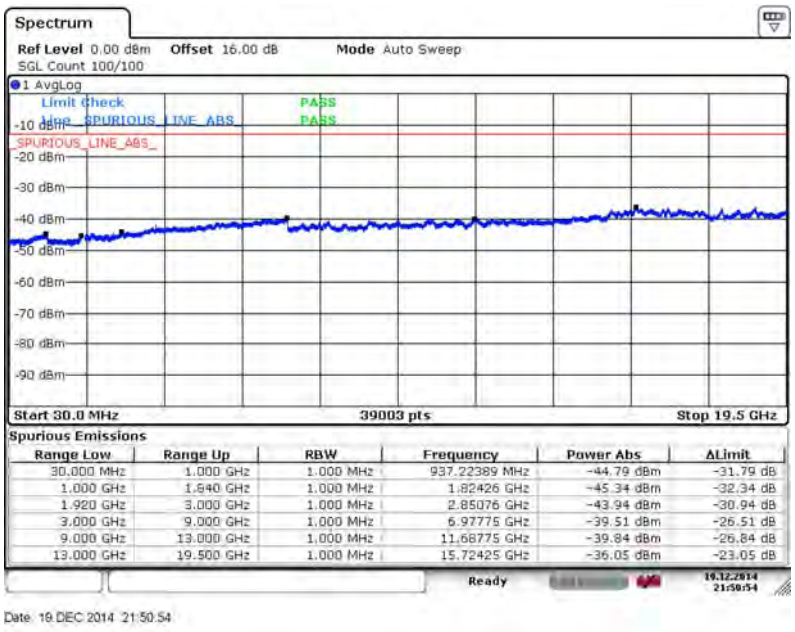
Band :	LTE Band 2	Channel :	CH18675 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:50:03

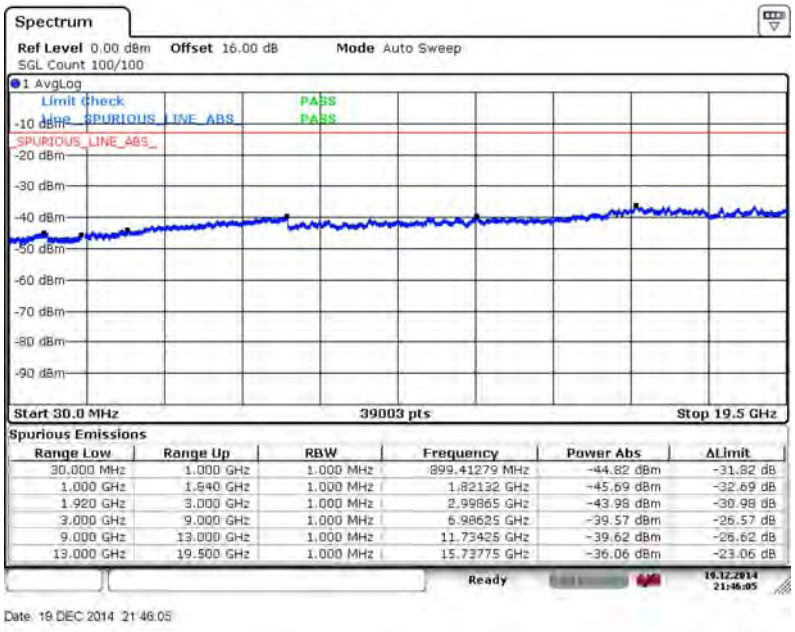
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:50:54

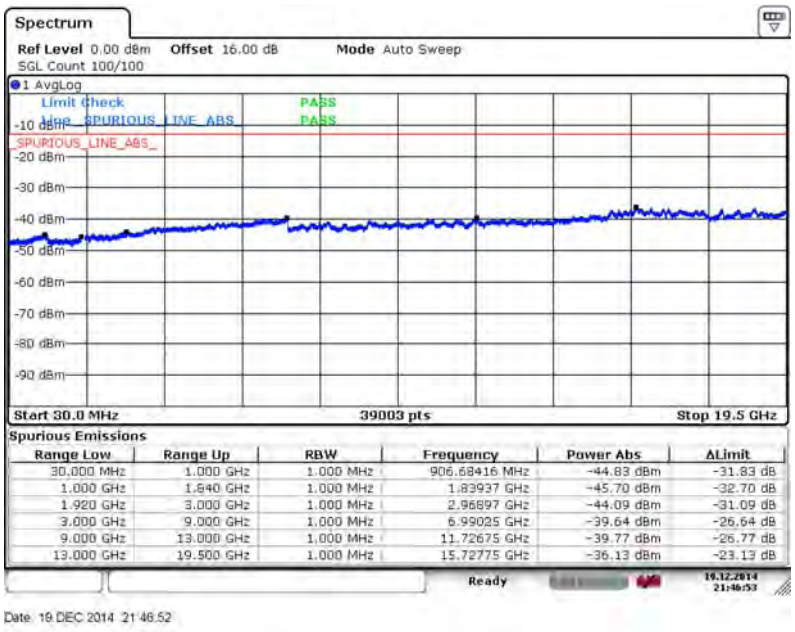
Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:46:05

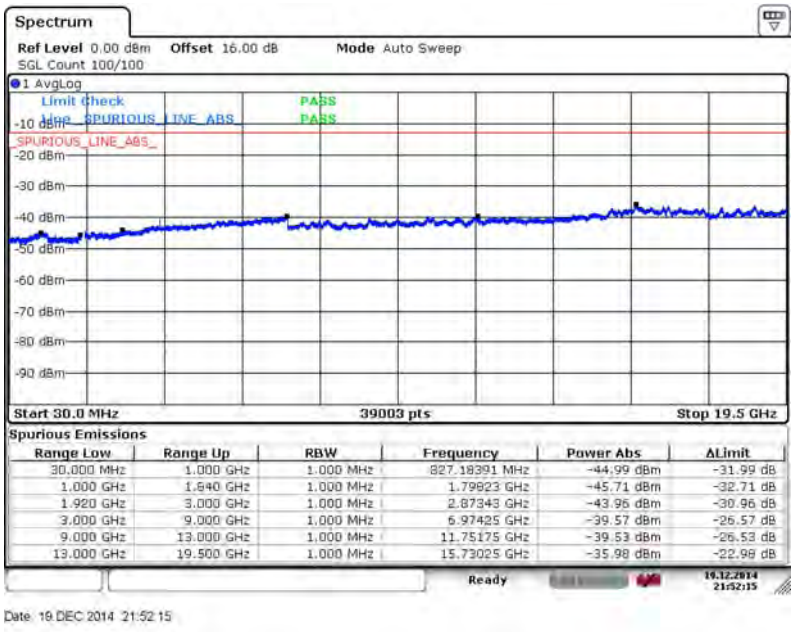
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:46:52

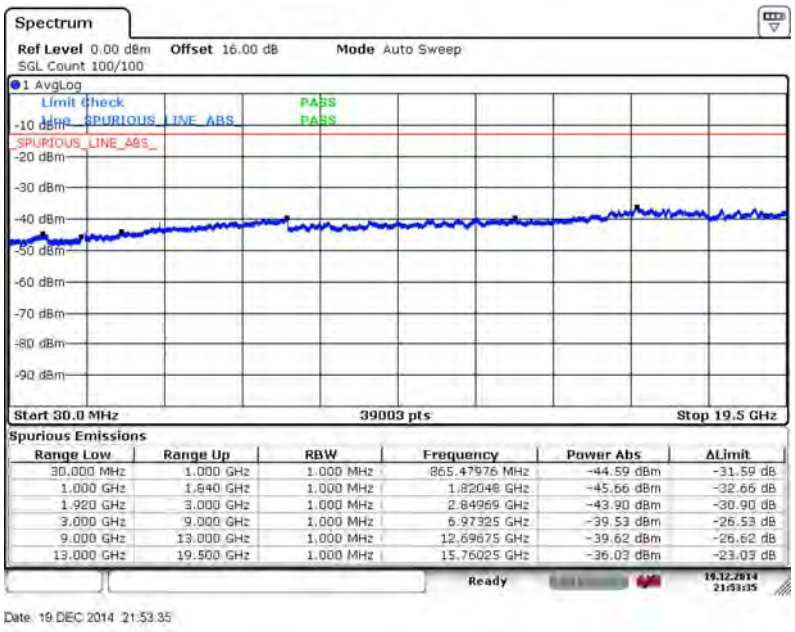
Band :	LTE Band 2	Channel :	CH19125 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 21:52:15

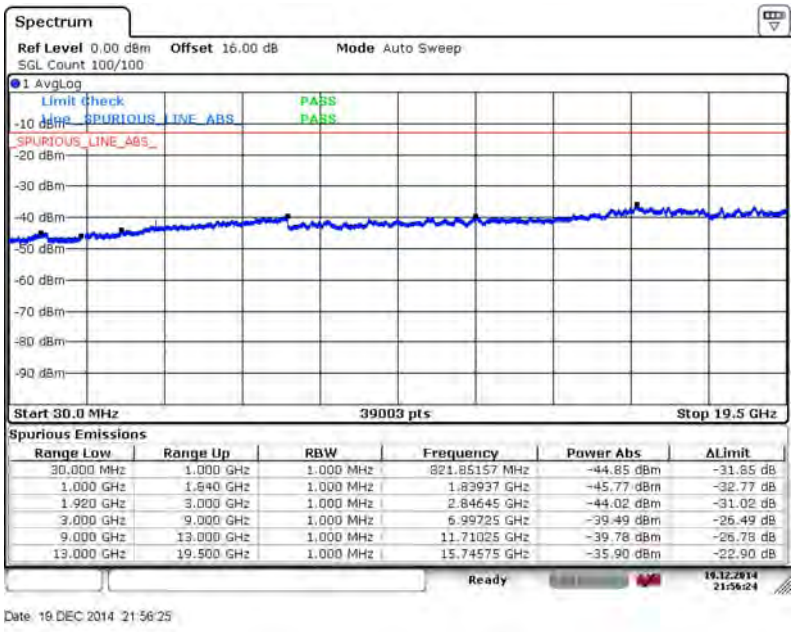
16QAM (RB Size 1, RB Offset 0)



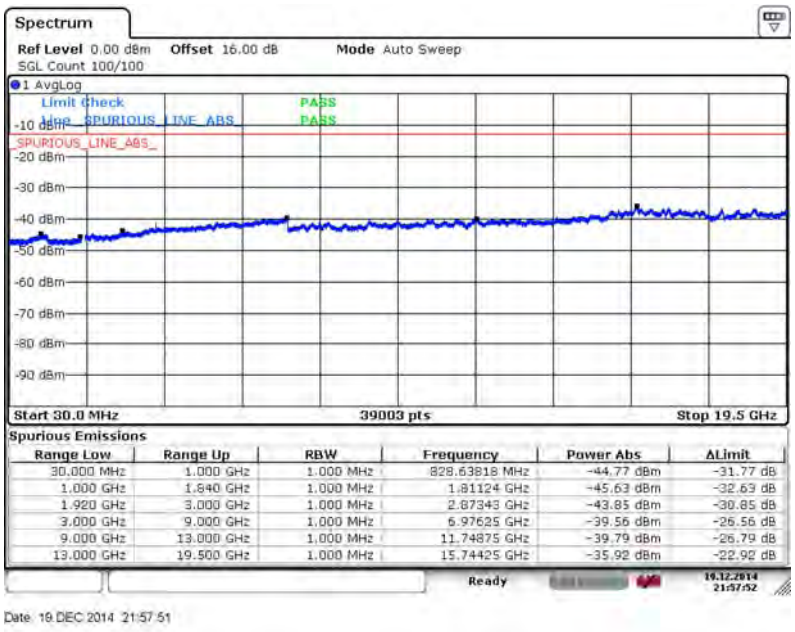
Date: 19.DEC.2014 21:53:35

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

QPSK (RB Size 1, RB Offset 0)

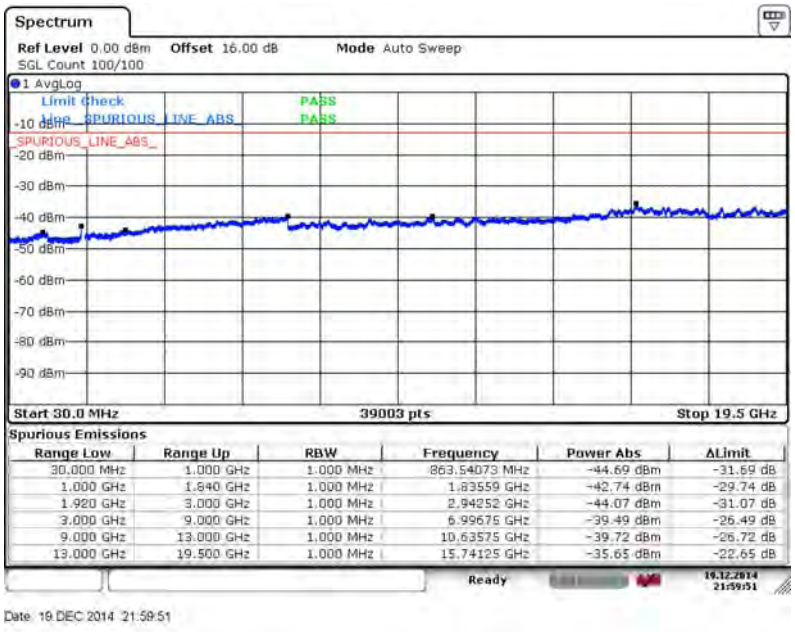


16QAM (RB Size 1, RB Offset 0)

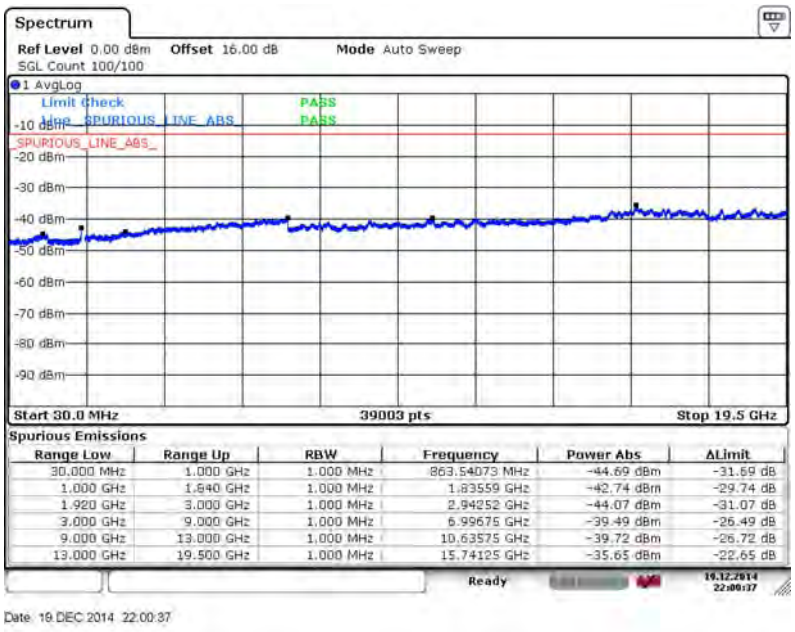


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

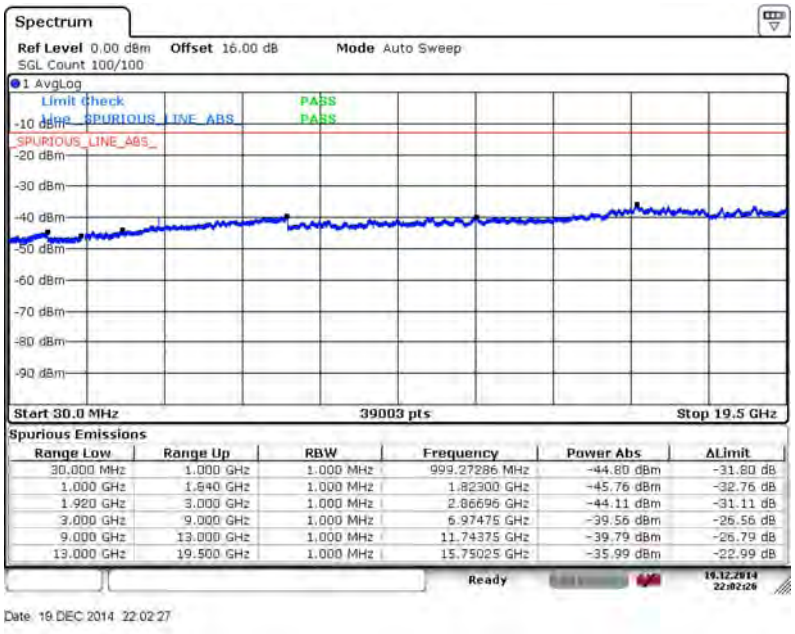


16QAM (RB Size 1, RB Offset 0)



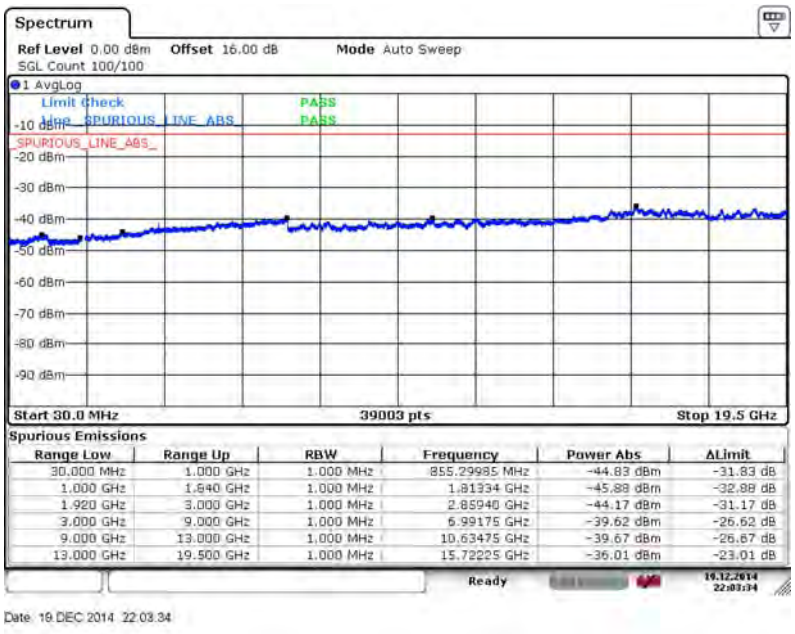
Band :	LTE Band 2	Channel :	CH19100 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:02:27

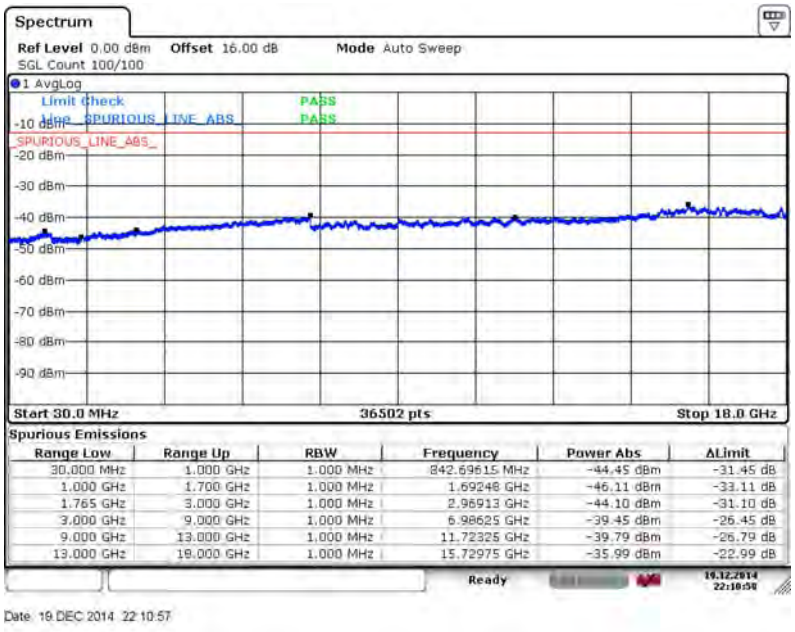
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:03:34

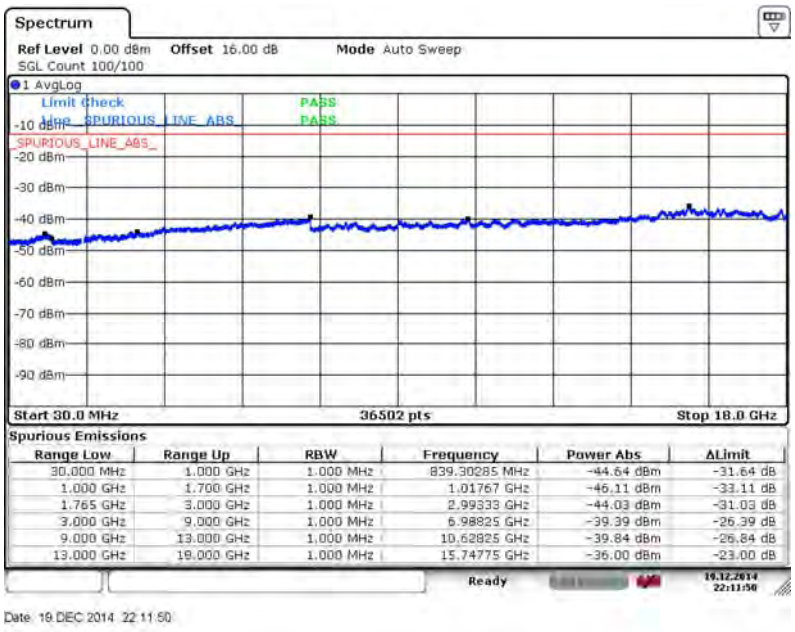
Band :	LTE Band 4	Channel :	CH19957 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:10:57

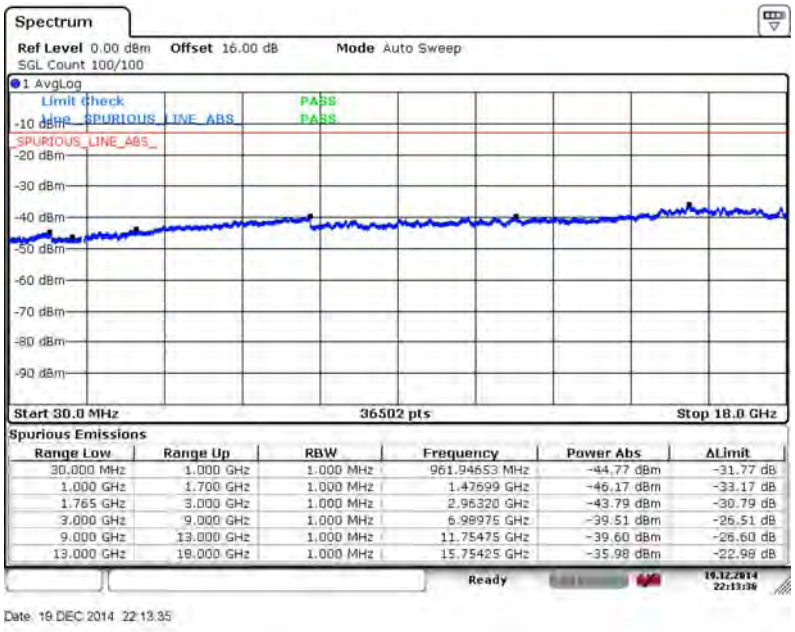
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:11:50

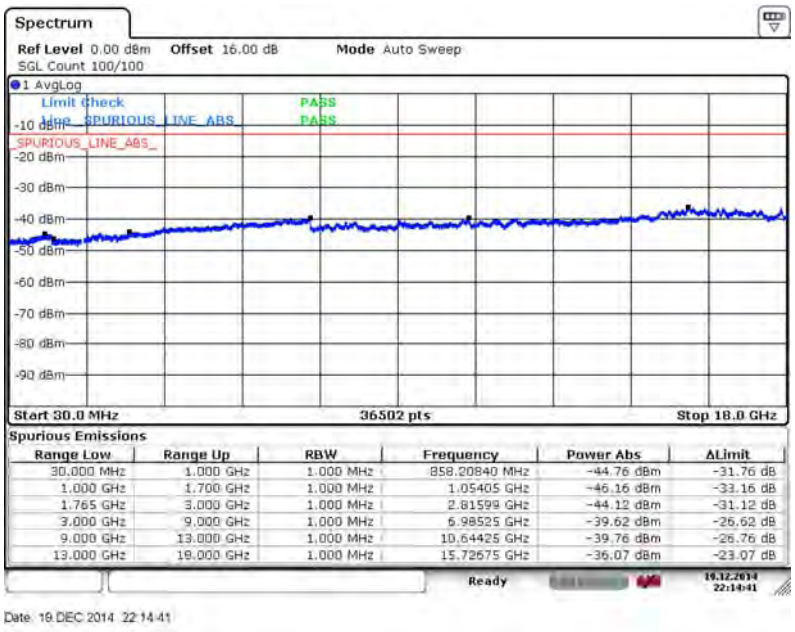
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:13:35

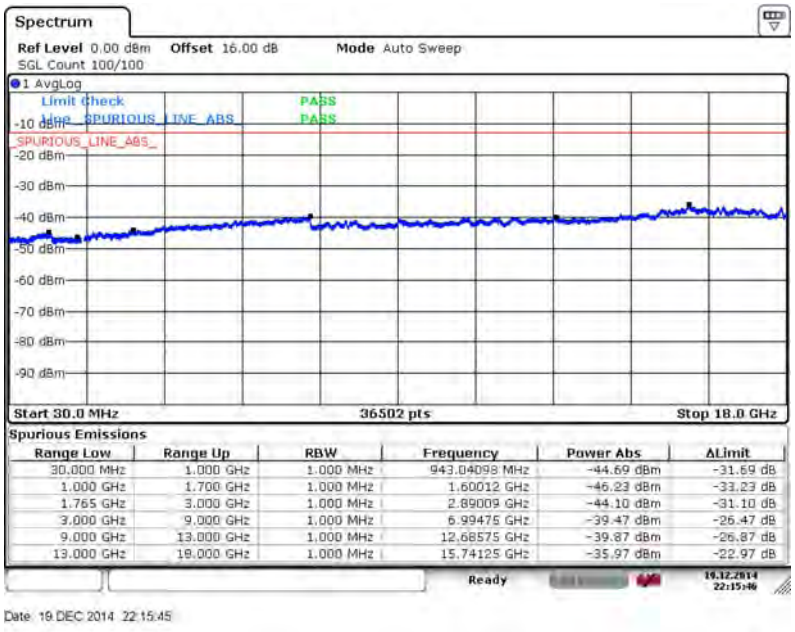
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:14:41

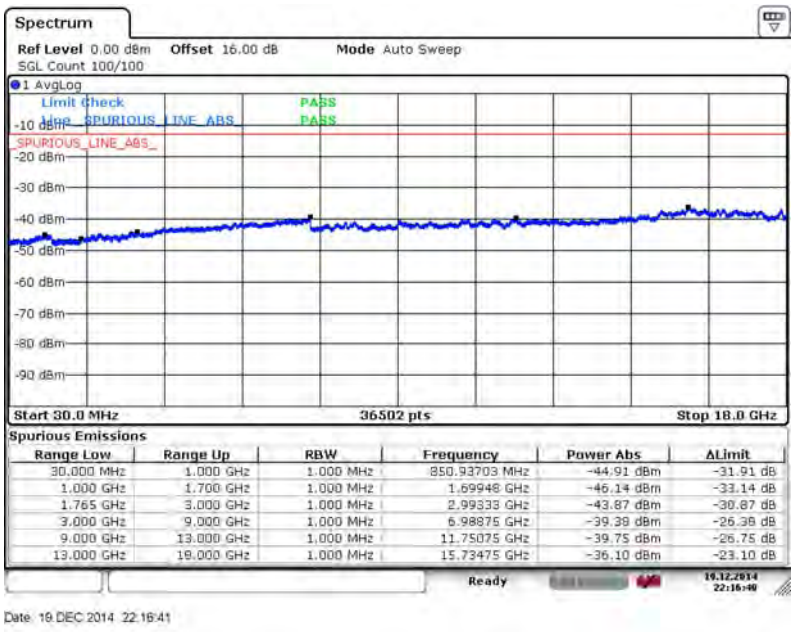
Band :	LTE Band 4	Channel :	CH20393 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:15:45

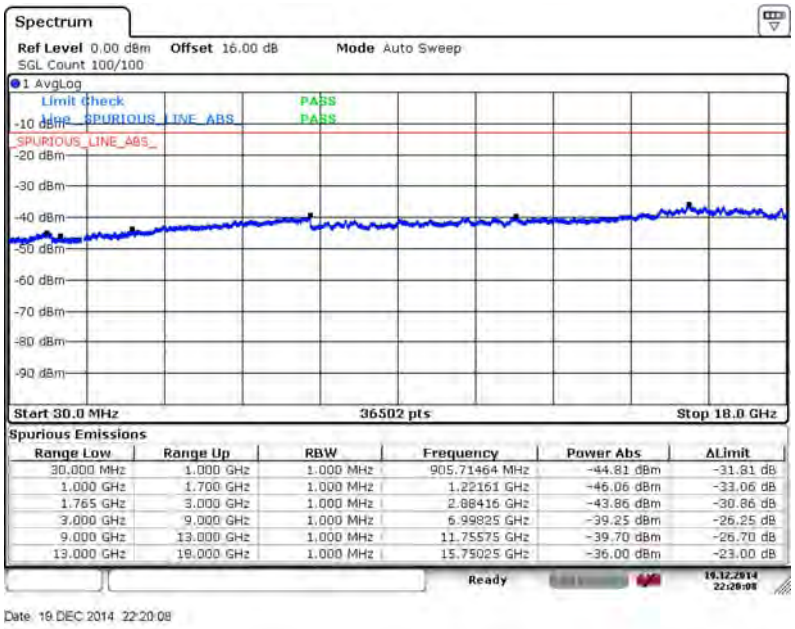
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:16:41

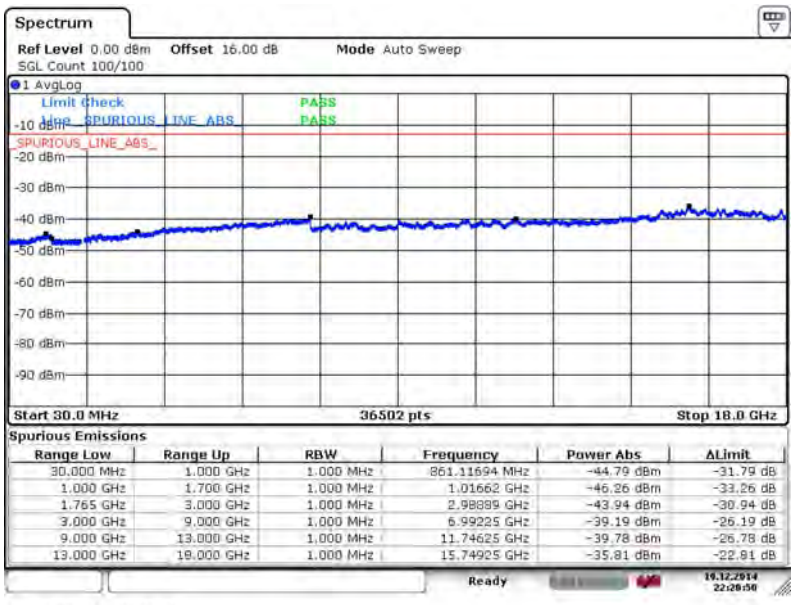
Band :	LTE Band 4	Channel :	CH19965 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:20:08

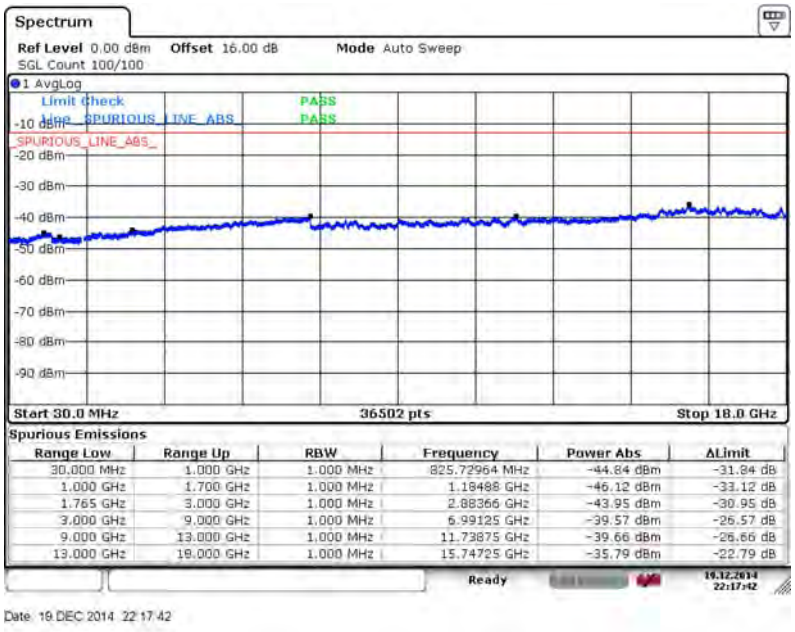
16QAM (RB Size 1, RB Offset 0)



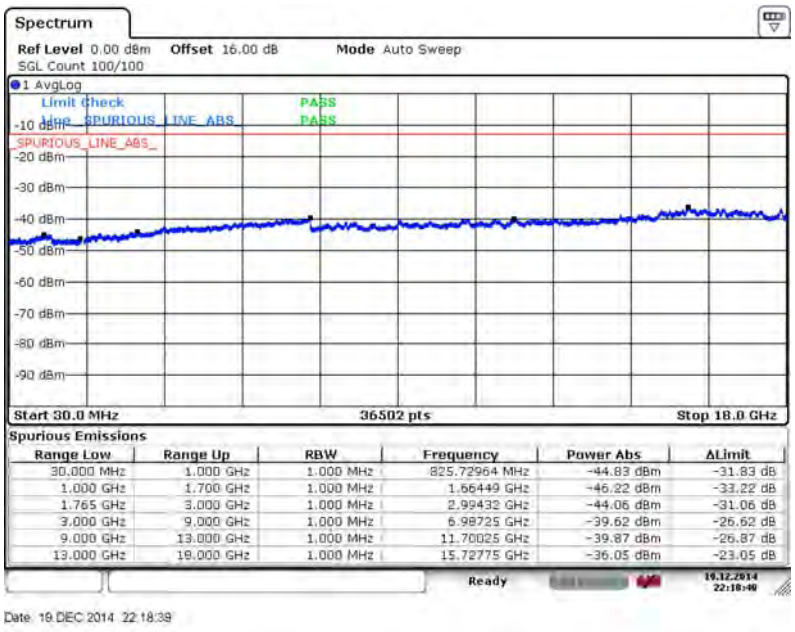
Date: 19.DEC.2014 22:20:49

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

QPSK (RB Size 1, RB Offset 0)

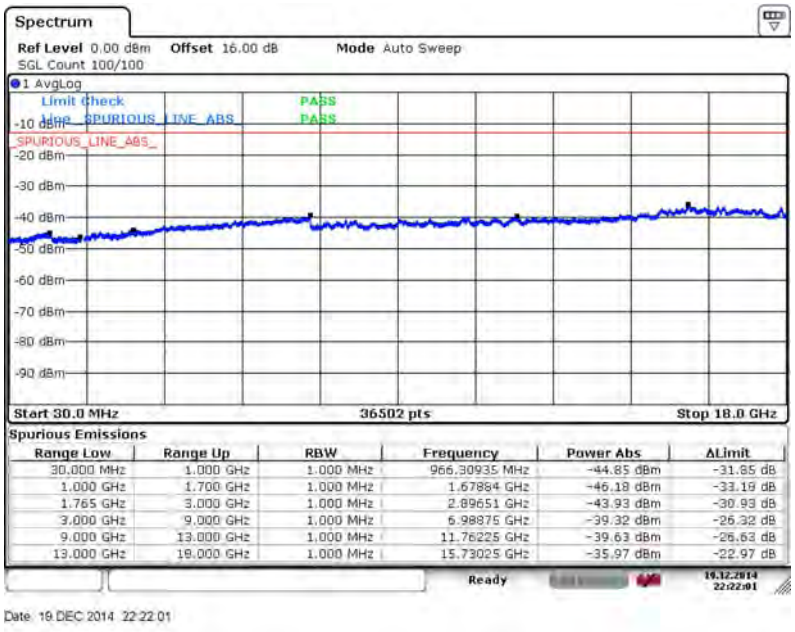


16QAM (RB Size 1, RB Offset 0)



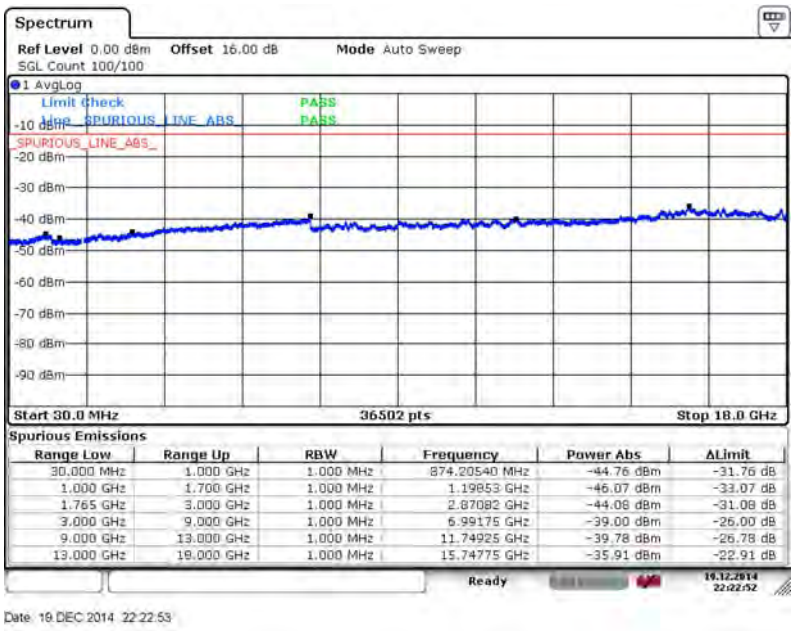
Band :	LTE Band 4	Channel :	CH20385 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:22:01

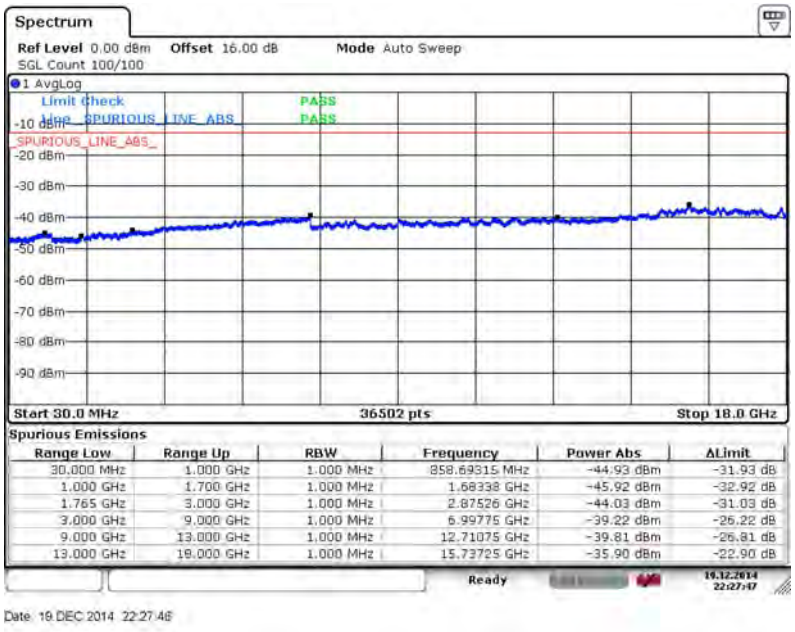
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:22:53

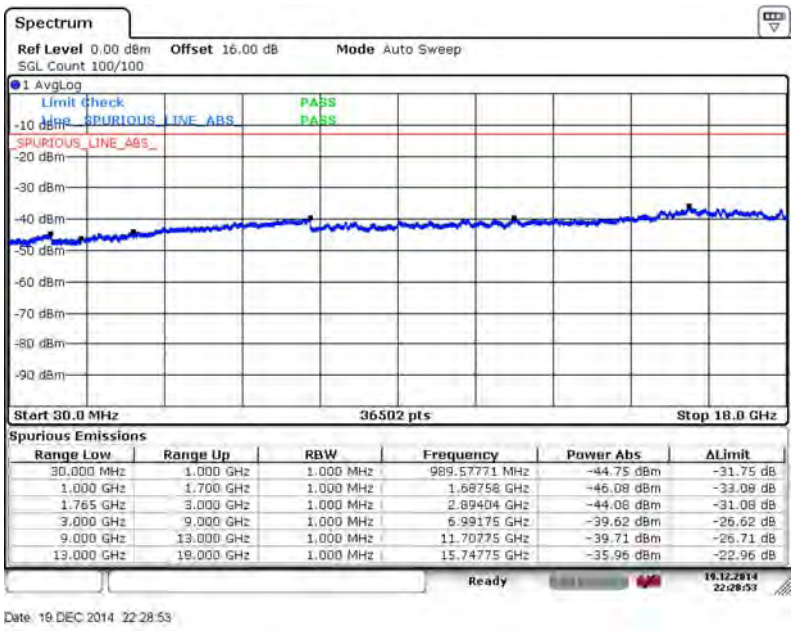
Band :	LTE Band 4	Channel :	CH19975 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:27:46

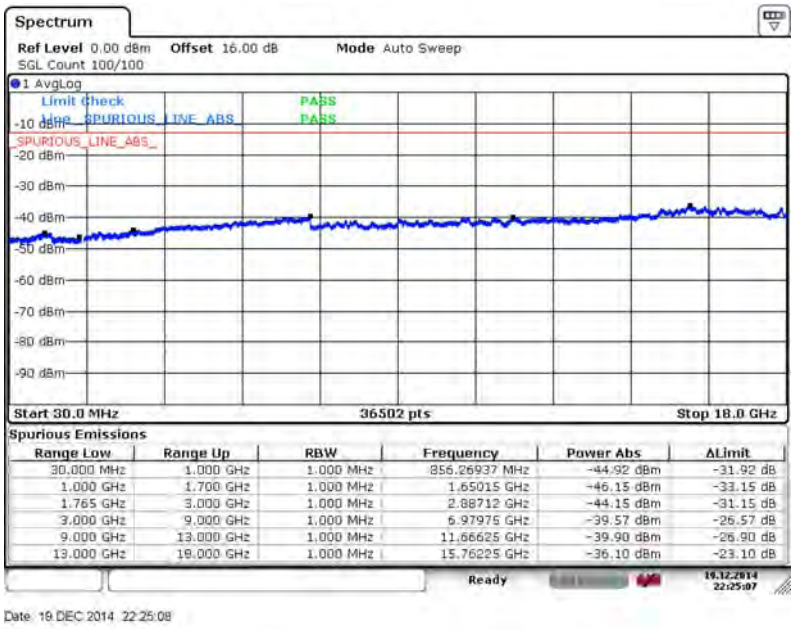
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:28:53

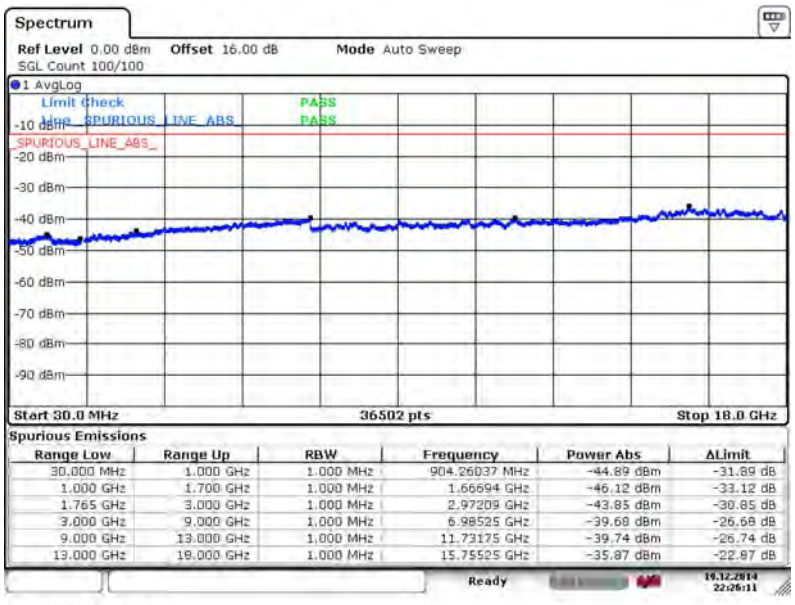
Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:25:08

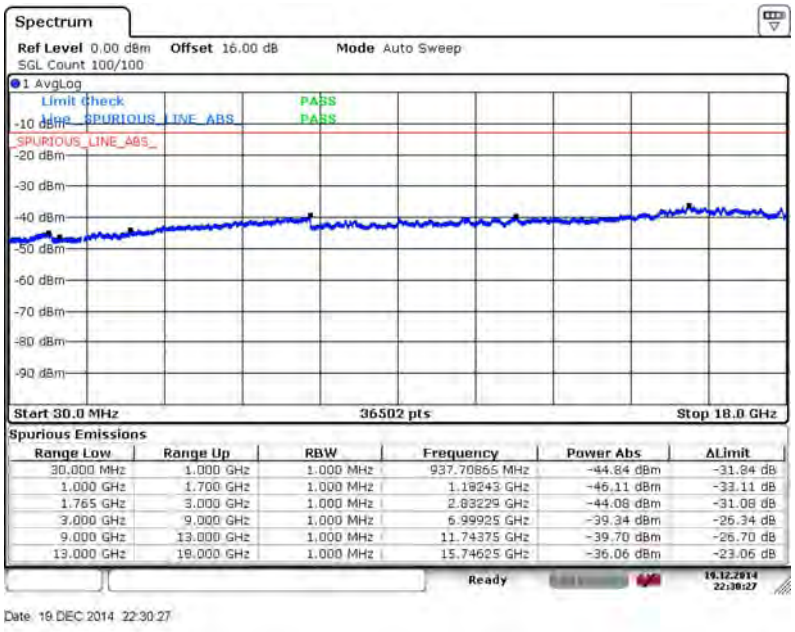
16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:26:11

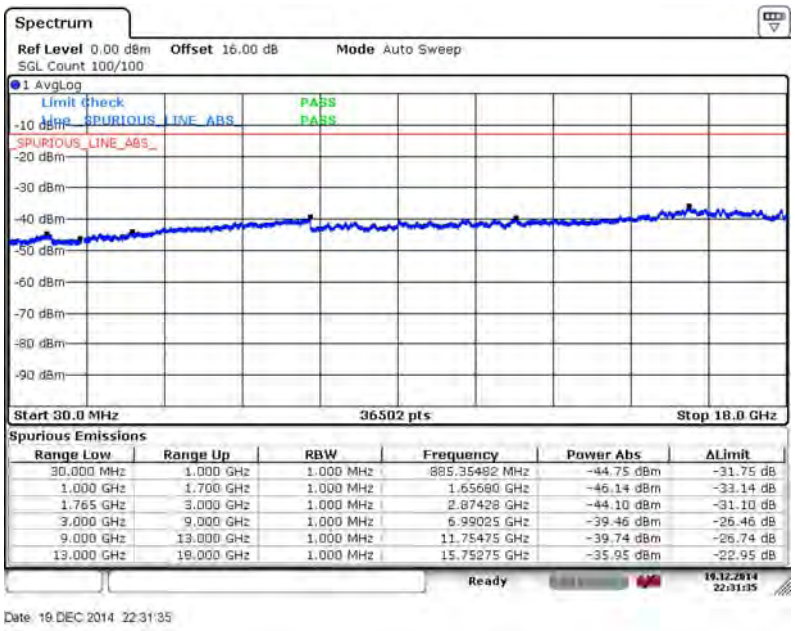
Band :	LTE Band 4	Channel :	CH20375 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:30:27

16QAM (RB Size 1, RB Offset 0)



Date: 19.DEC.2014 22:31:35