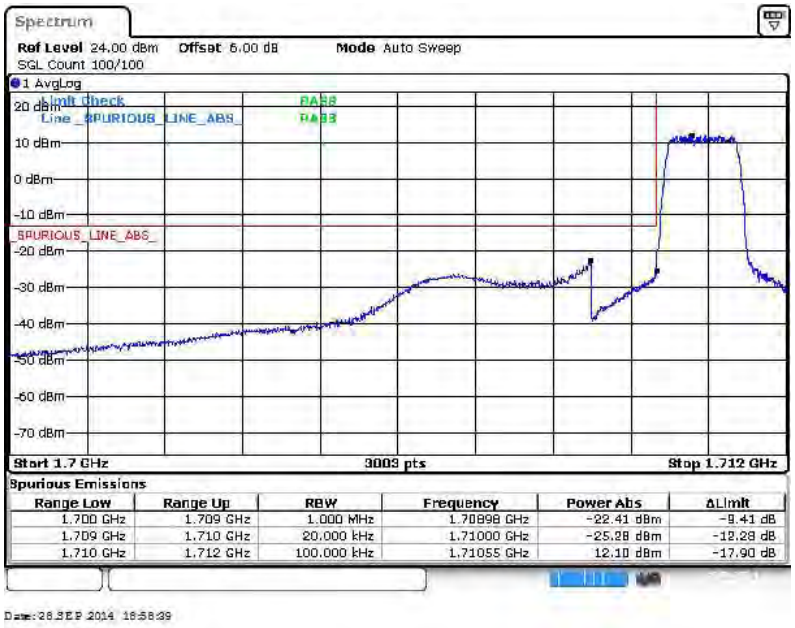
Band :	LTE Band 4	Band Width :	1.4MHz / QPSK

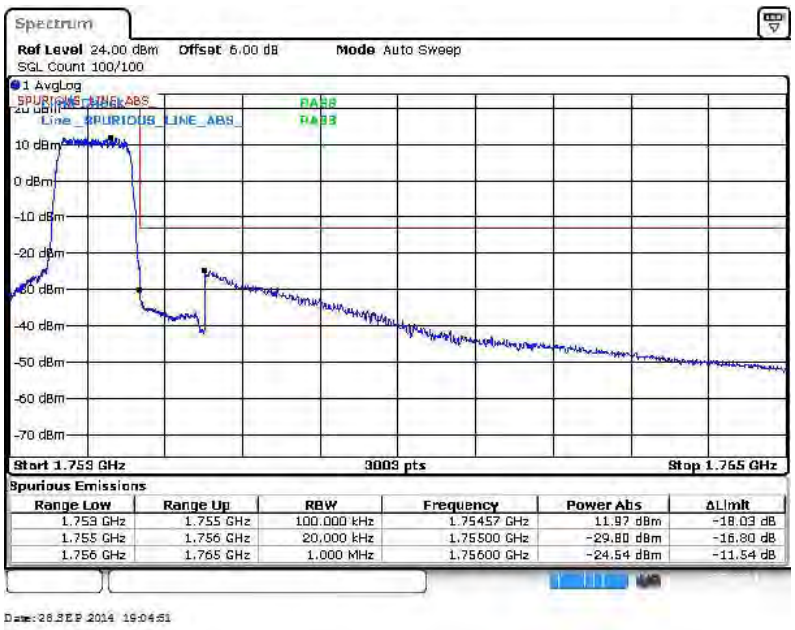
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5

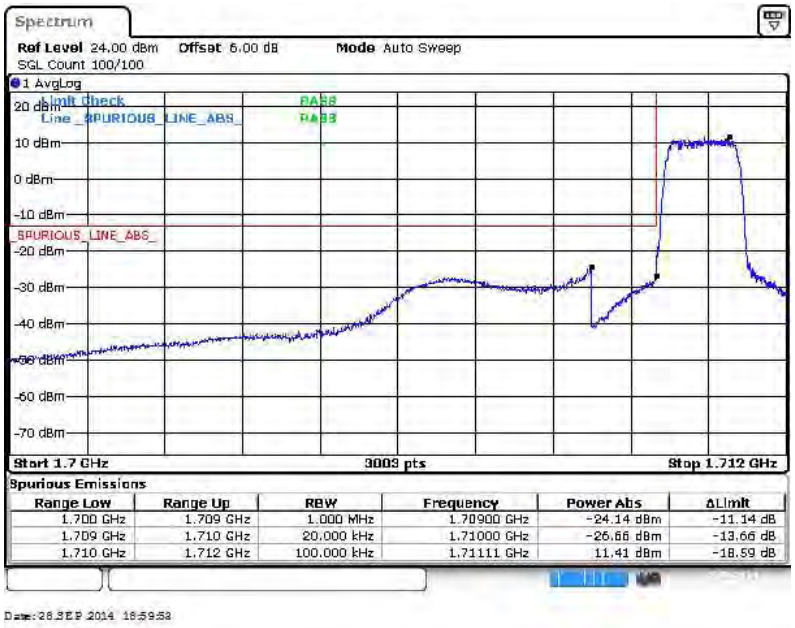
Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0



Band :	LTE Band 4	Band Width :	1.4MHz / 16QAM

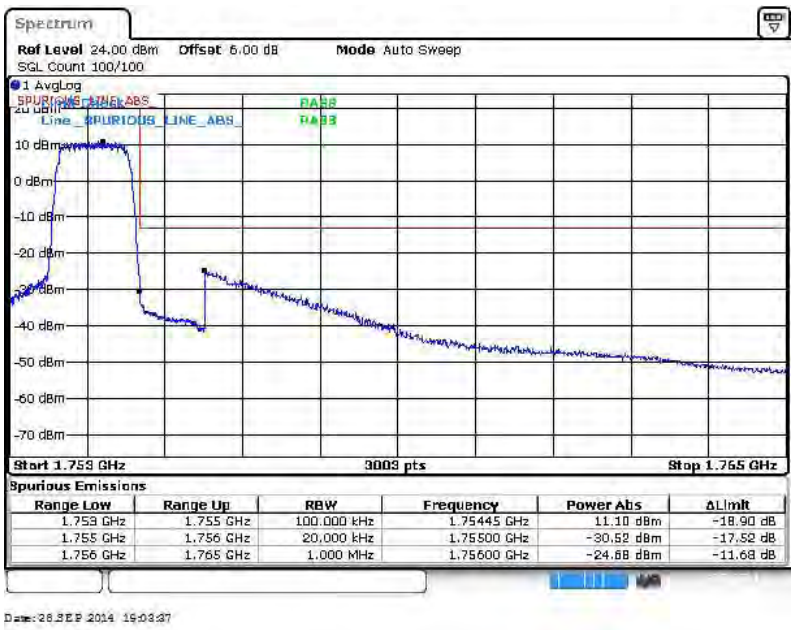
Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0

Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



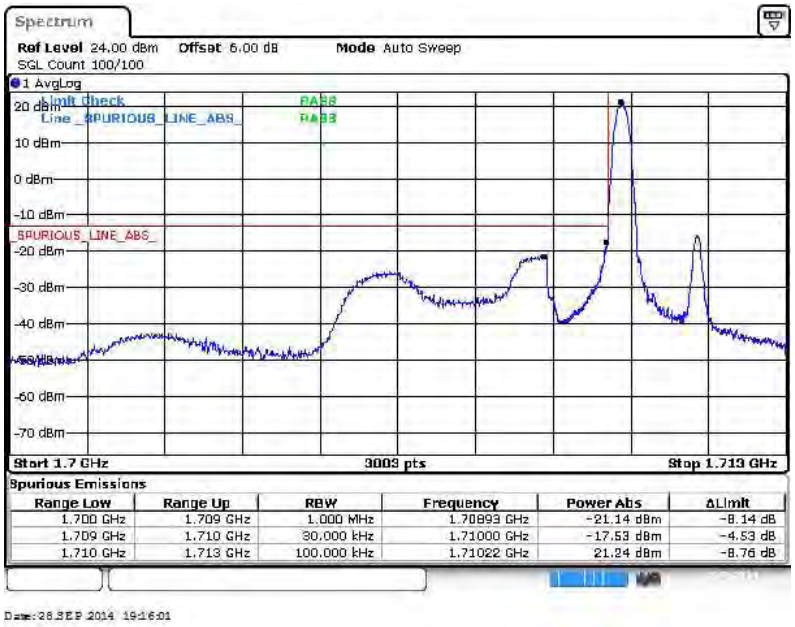
Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5

Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0

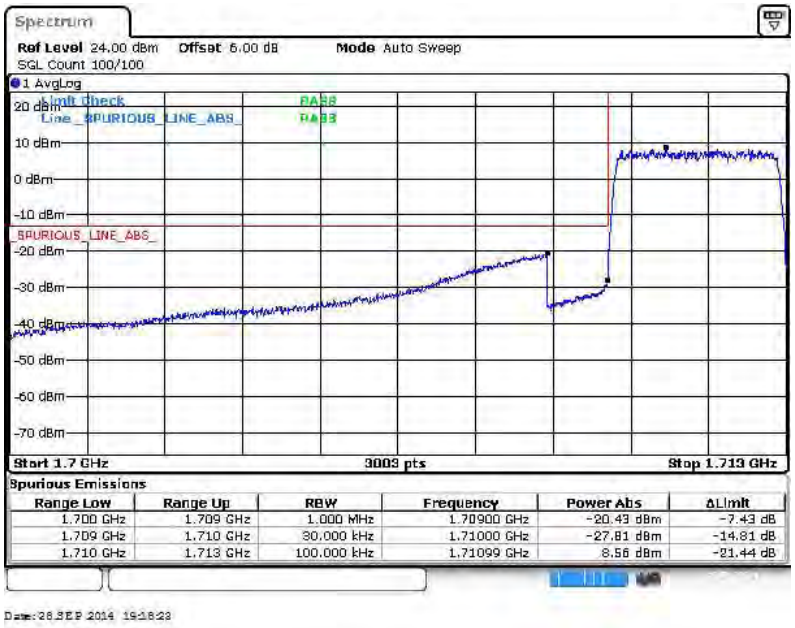


Band :	LTE Band 4	Band Width :	3MHz / QPSK

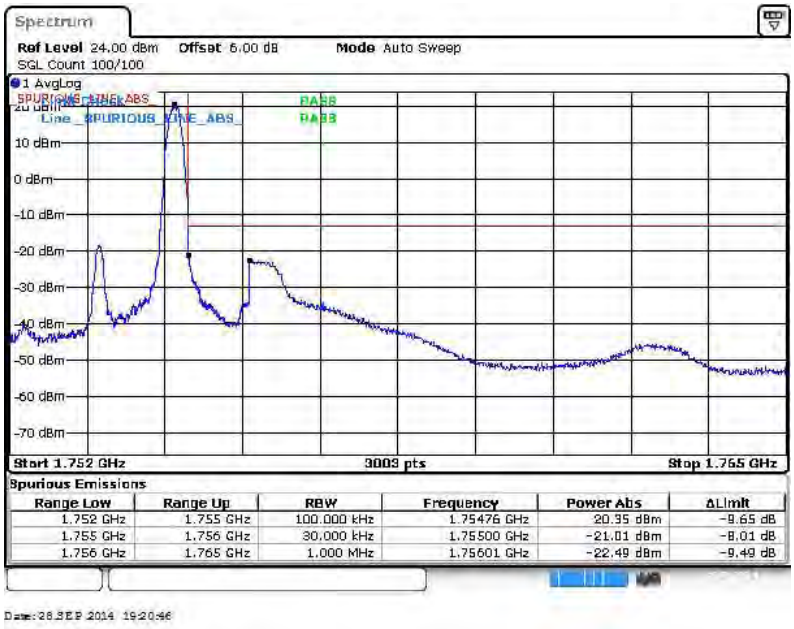
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



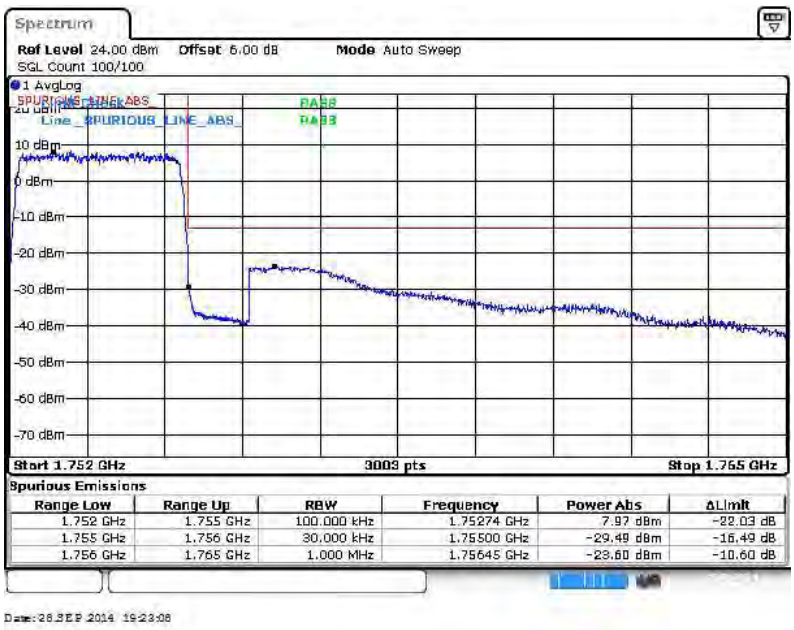
Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0



Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 14

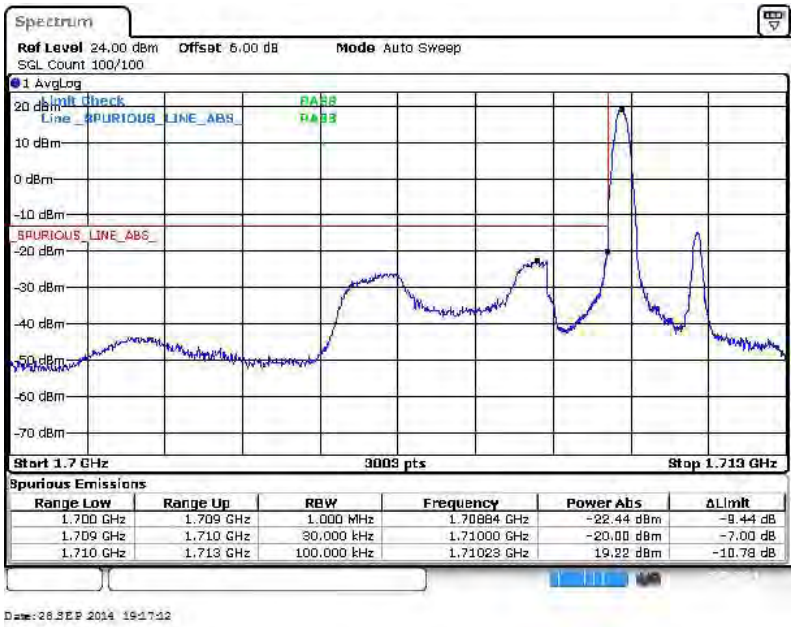


Higher Band Edge Plot for QPSK-RB Size 15, RB Offset 0

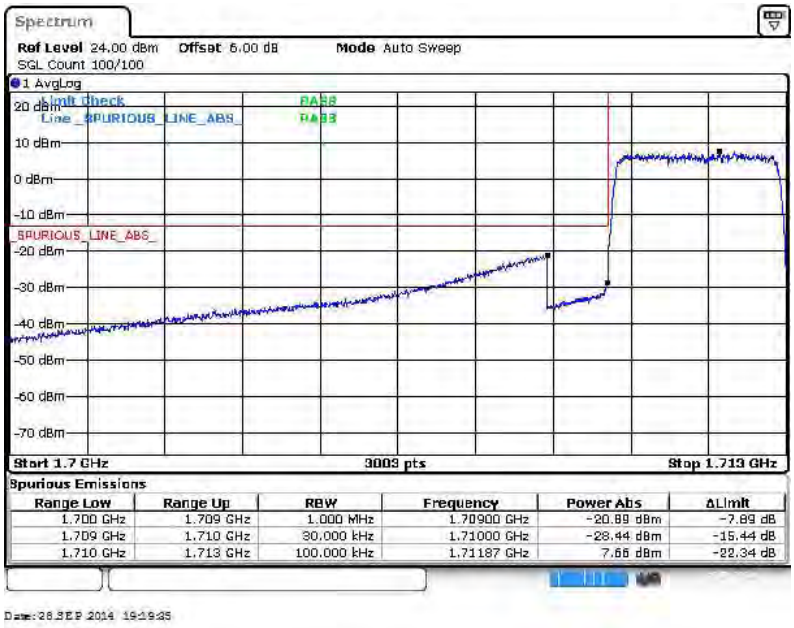


Band :	LTE Band 4	Band Width :	3MHz / 16QAM

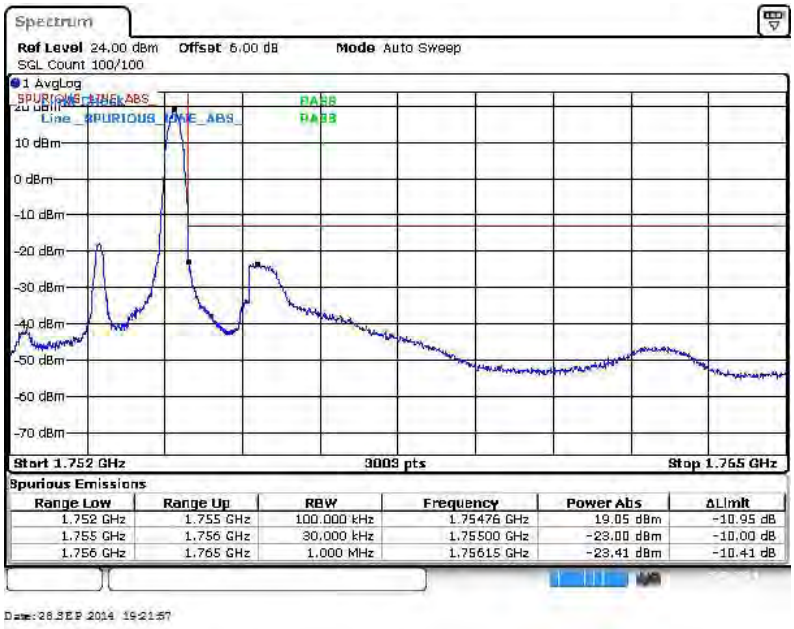
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



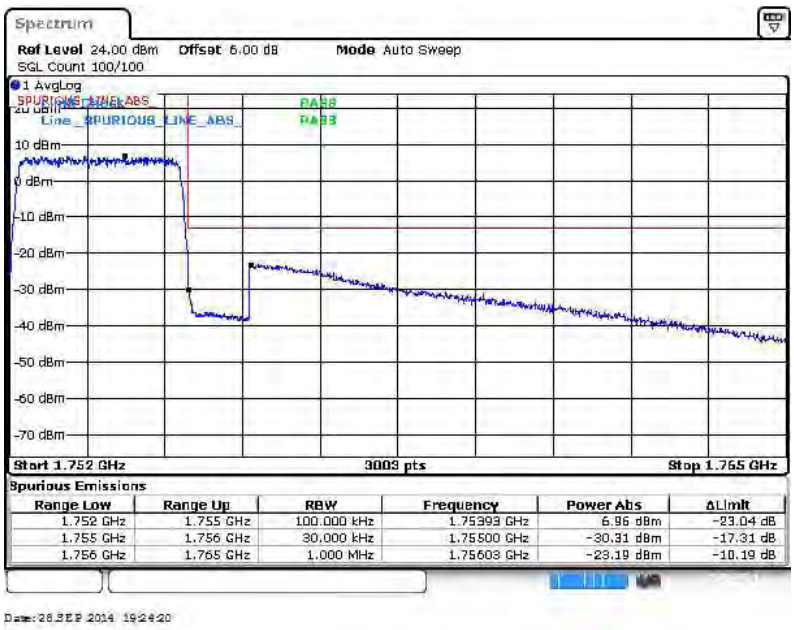
Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14

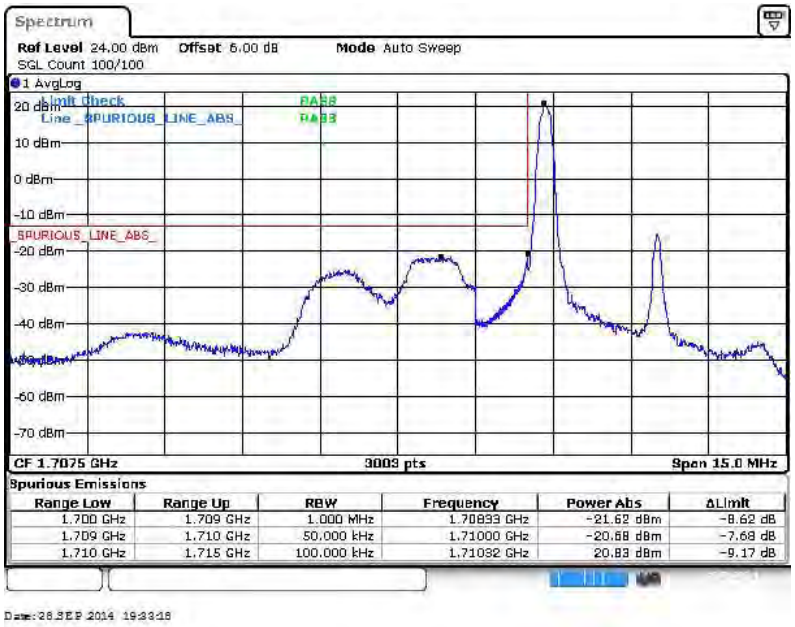


Higher Band Edge Plot for 16QAM-RB Size 15, RB Offset 0

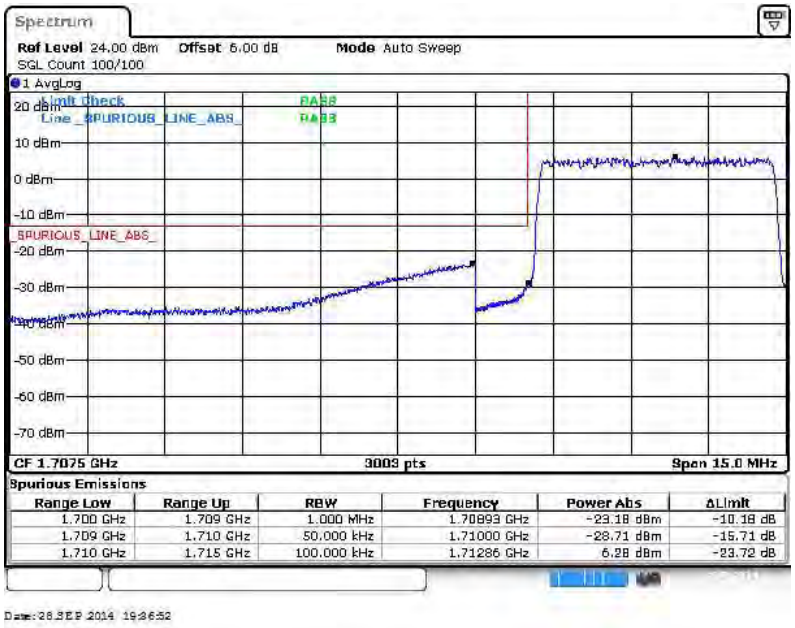


Band :	LTE Band 4	Band Width :	5MHz / QPSK

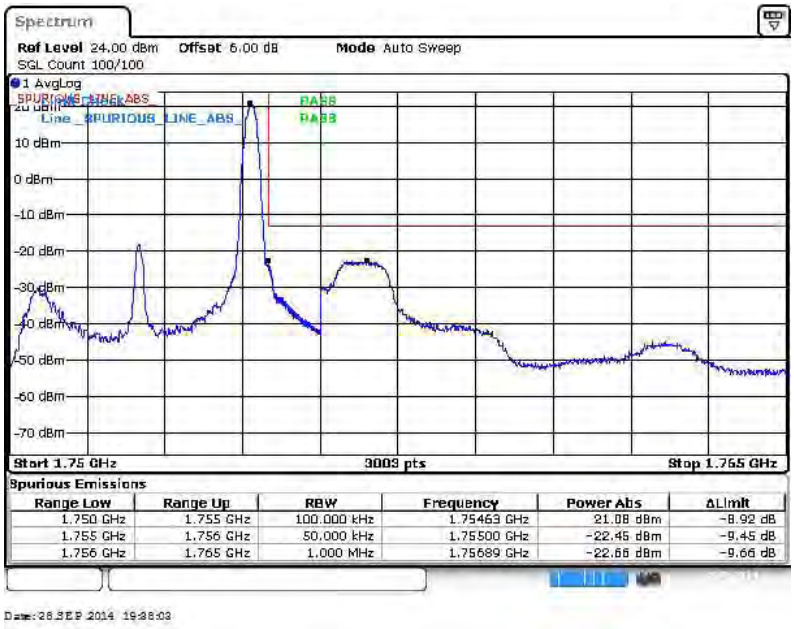
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



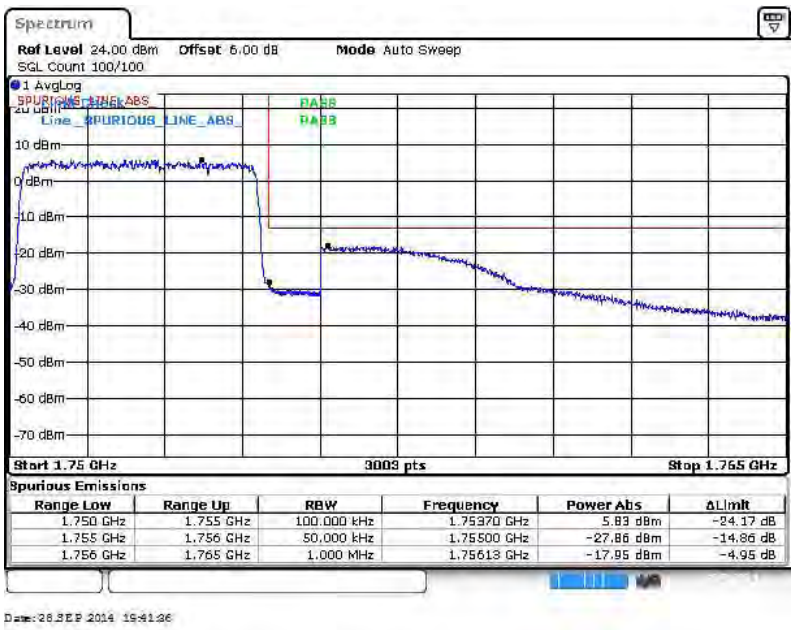
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



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

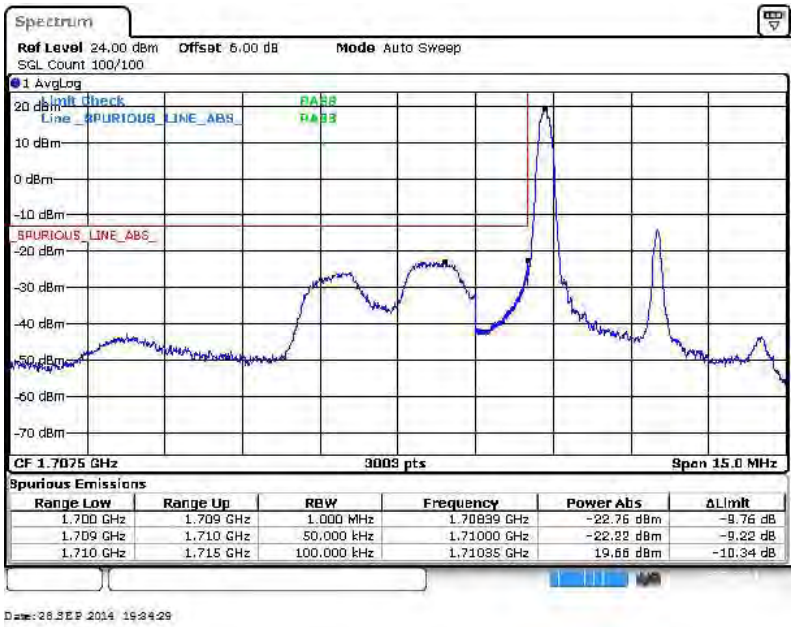


Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

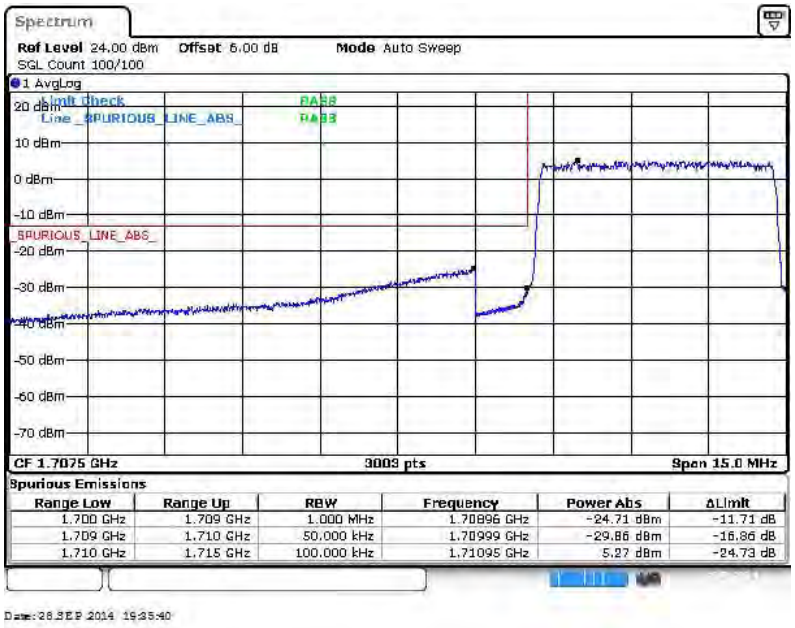


Band :	LTE Band 4	Band Width :	5MHz / 16QAM

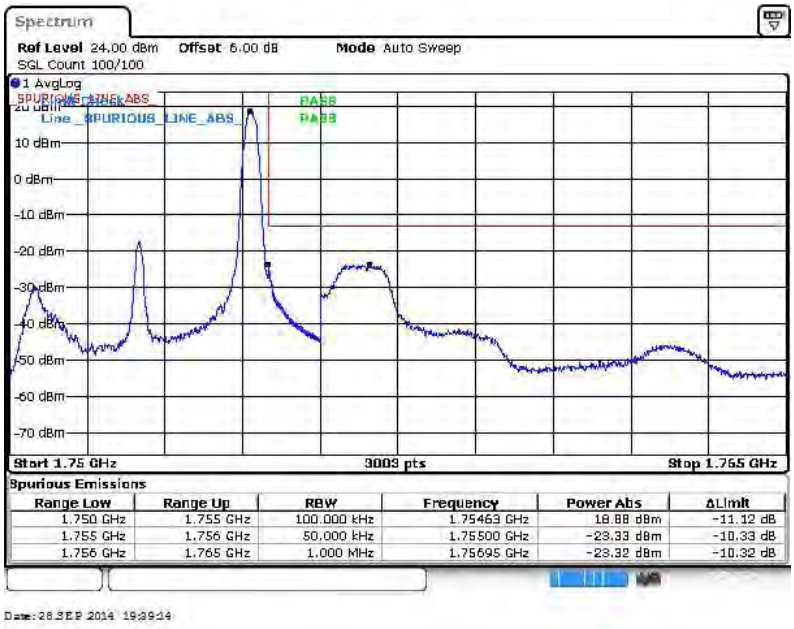
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



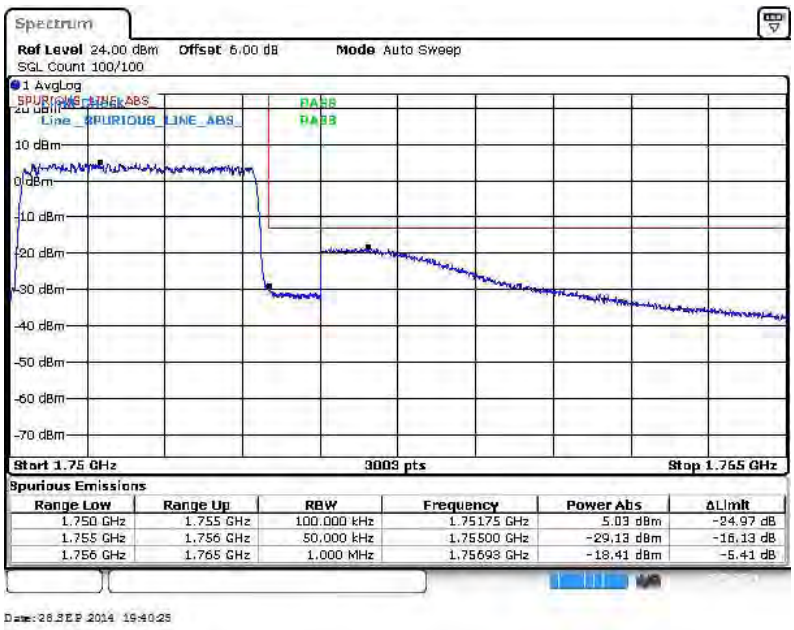
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



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

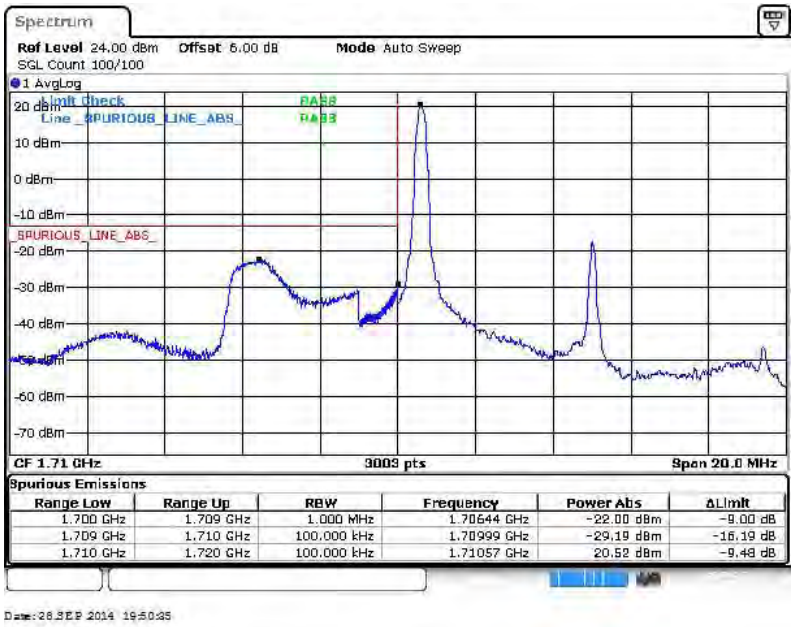


Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

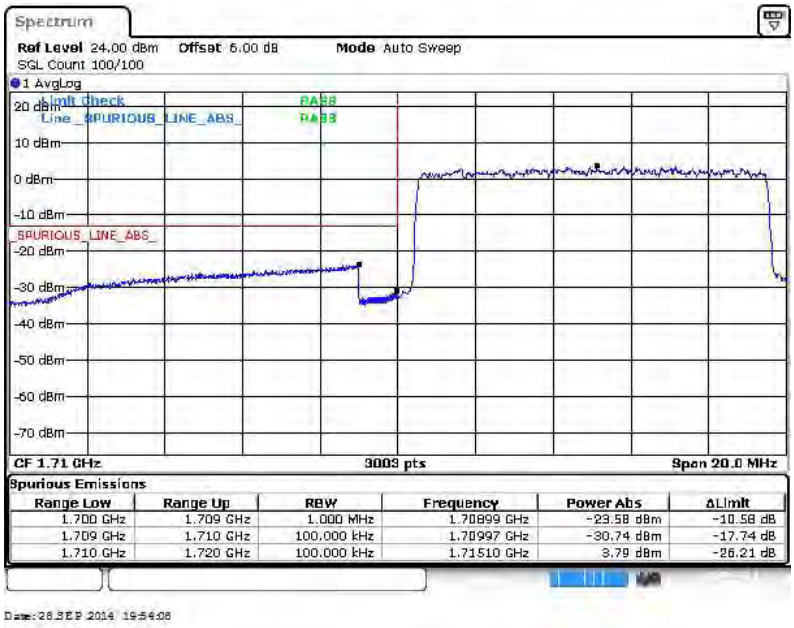


Band :	LTE Band 4	Band Width :	10MHz / QPSK

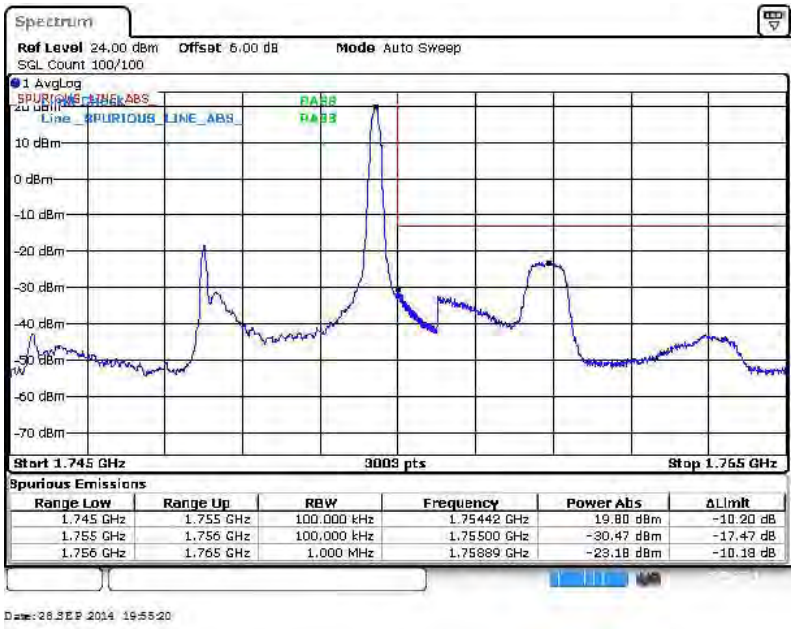
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



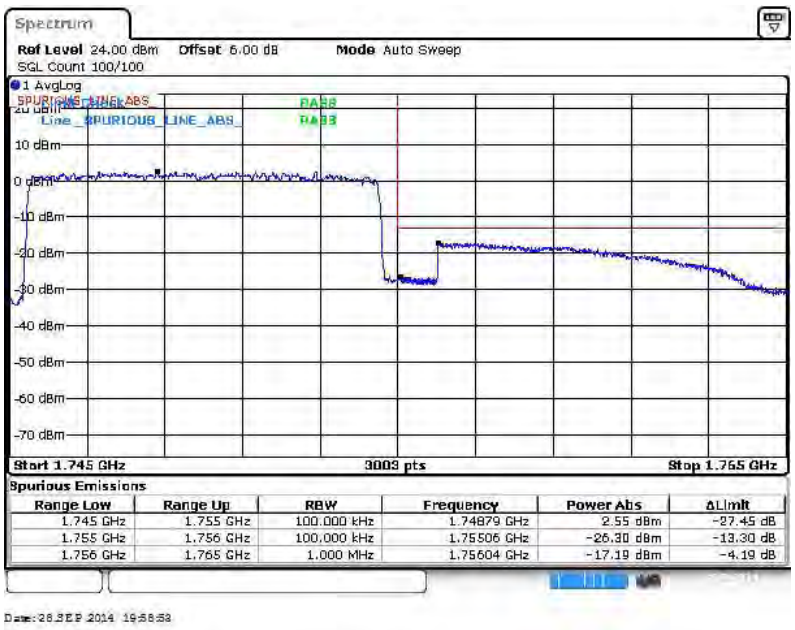
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



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

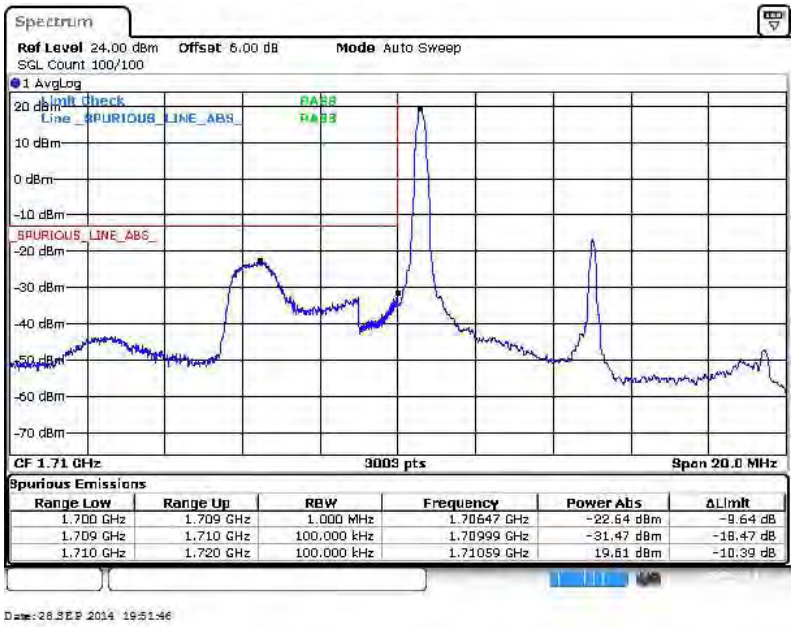


Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

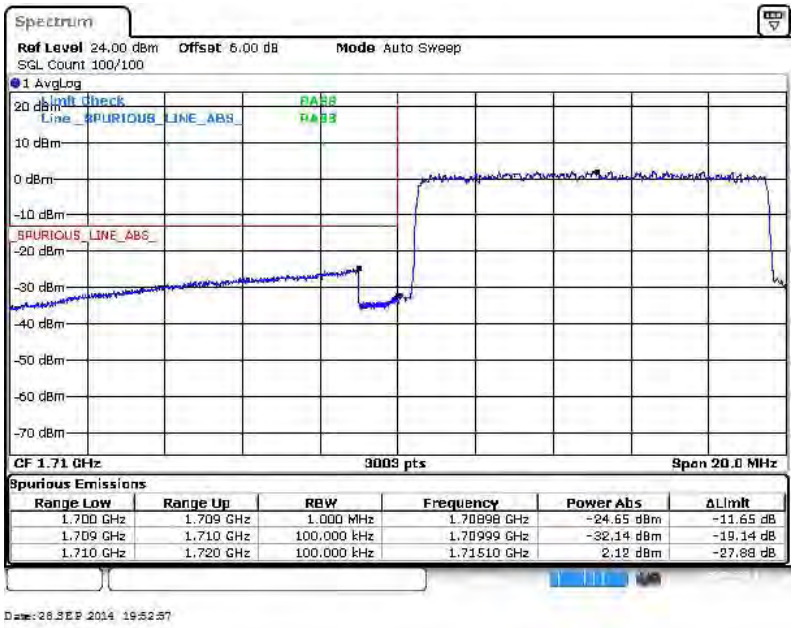


Band :	LTE Band 4	Band Width :	10MHz / 16QAM

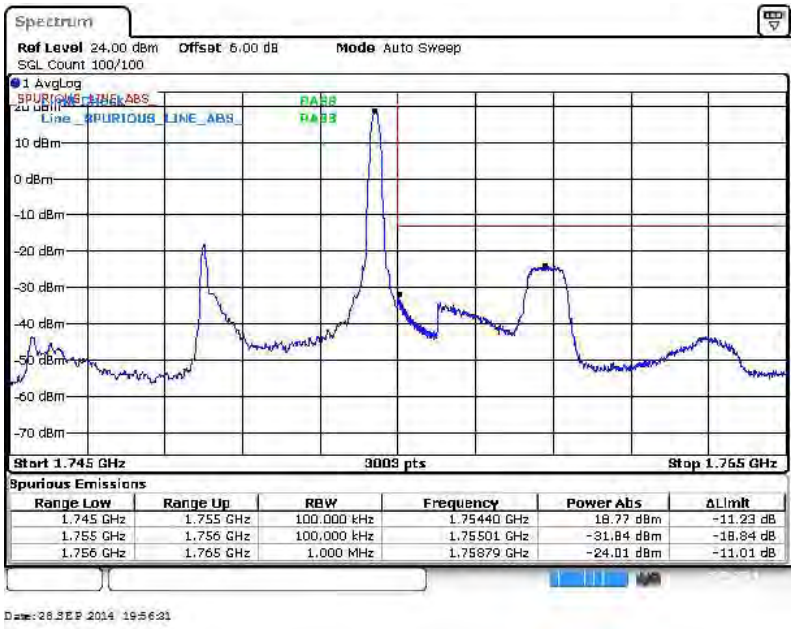
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



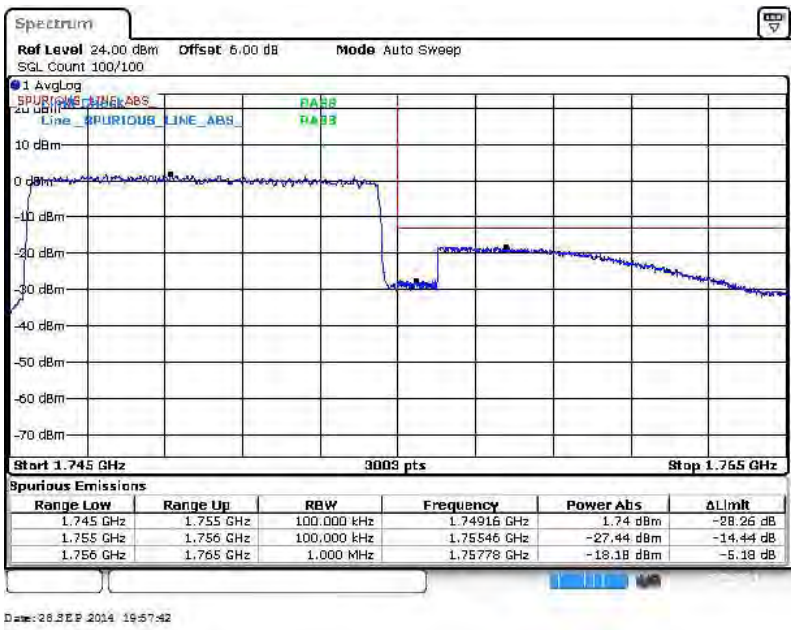
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



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

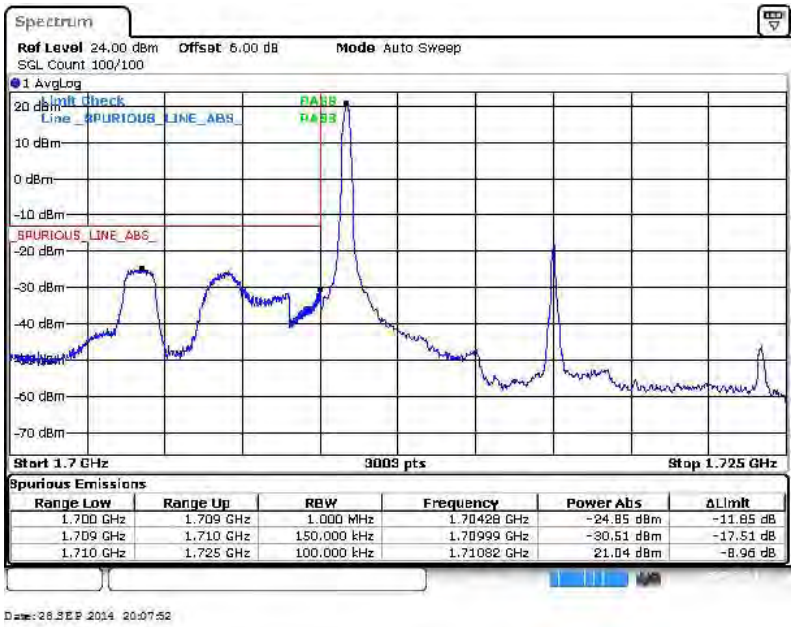


Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

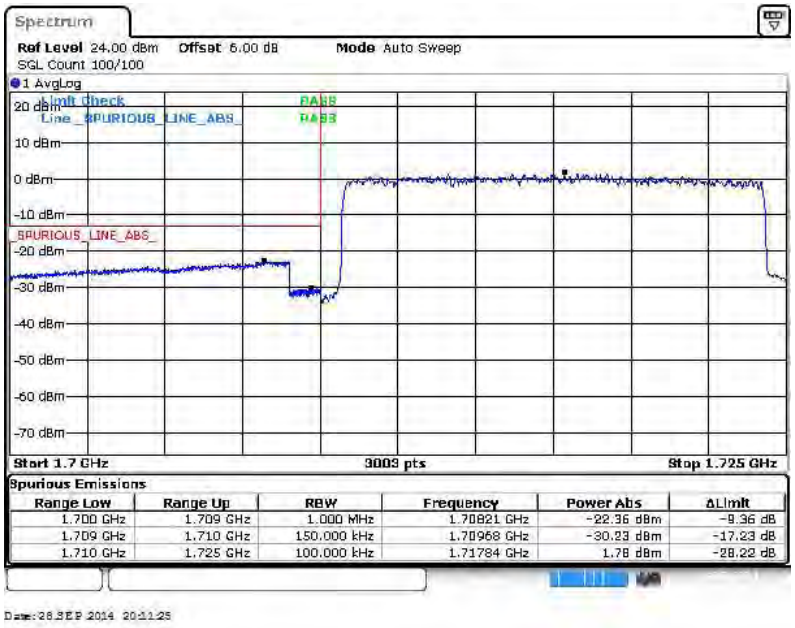


Band :	LTE Band 4	Band Width :	15MHz / QPSK

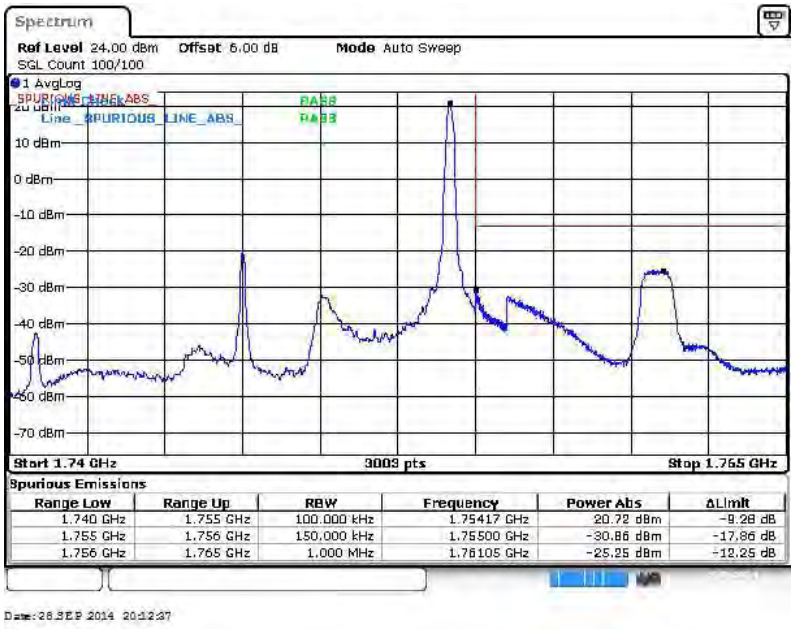
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



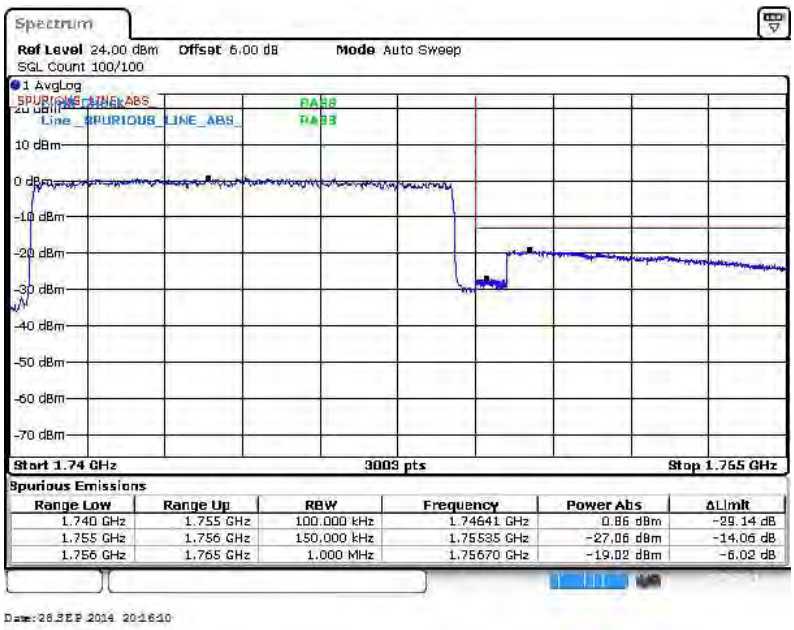
Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0



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

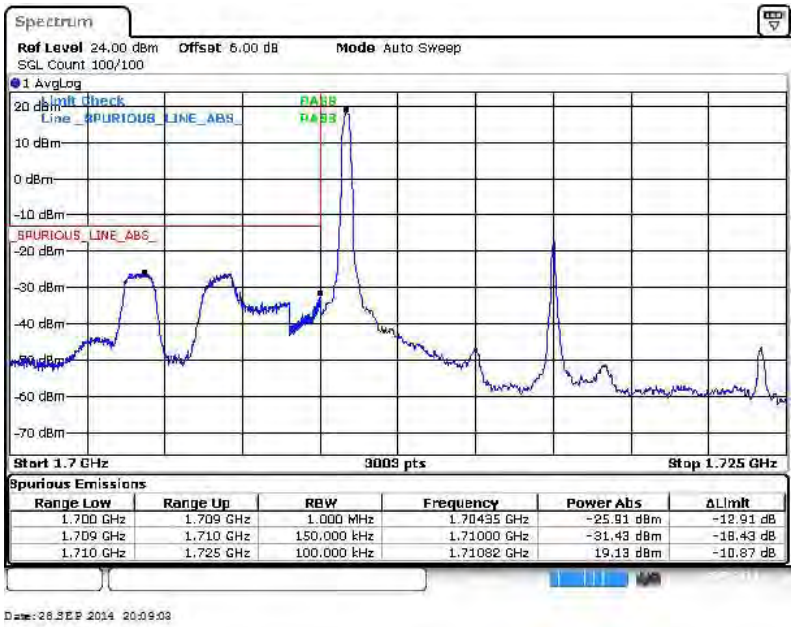


Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0

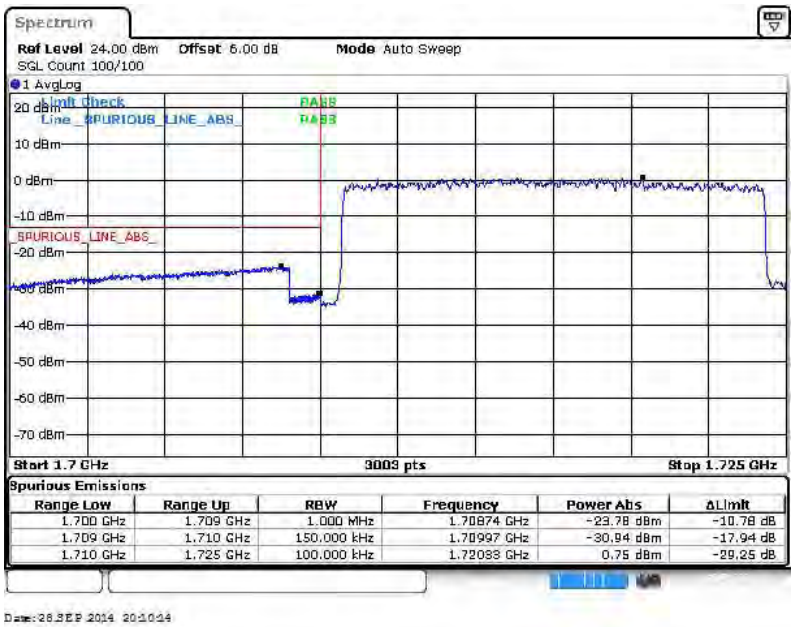


Band :	LTE Band 4	Band Width :	15MHz / 16QAM

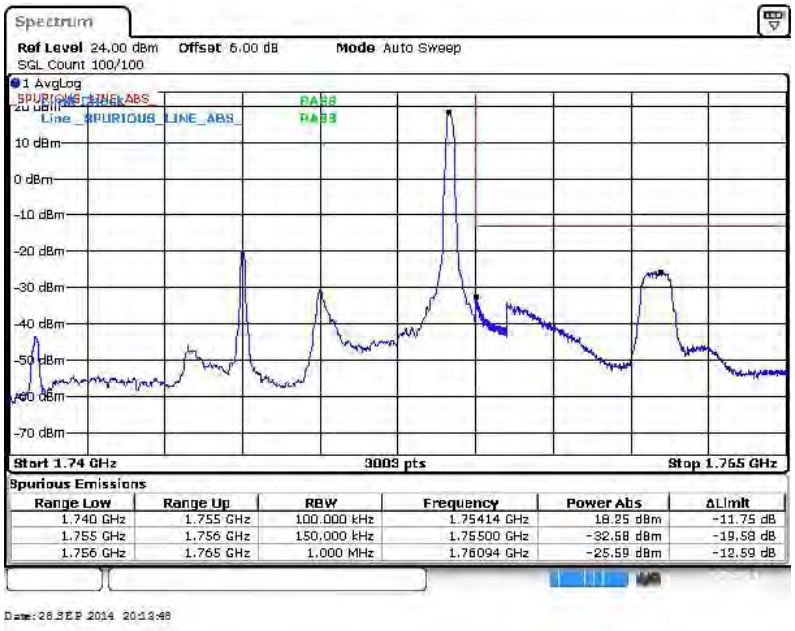
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



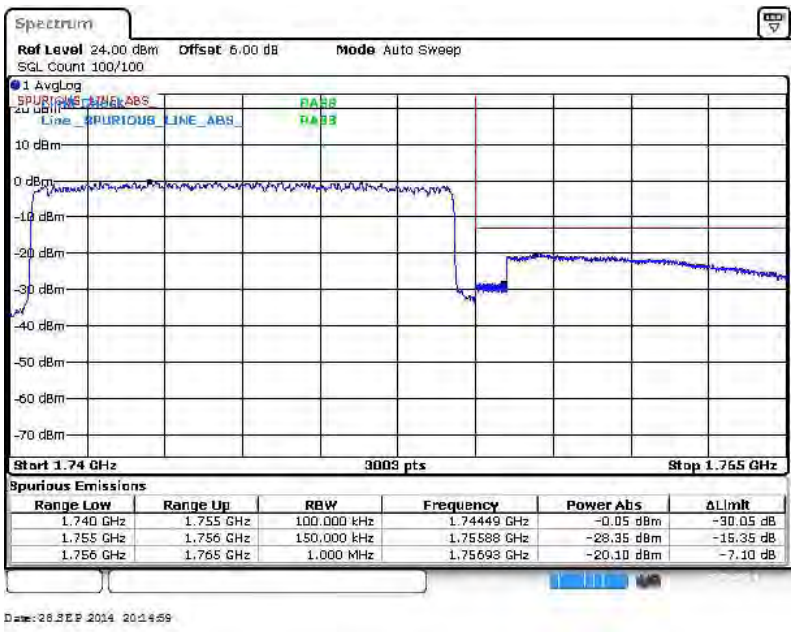
Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



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

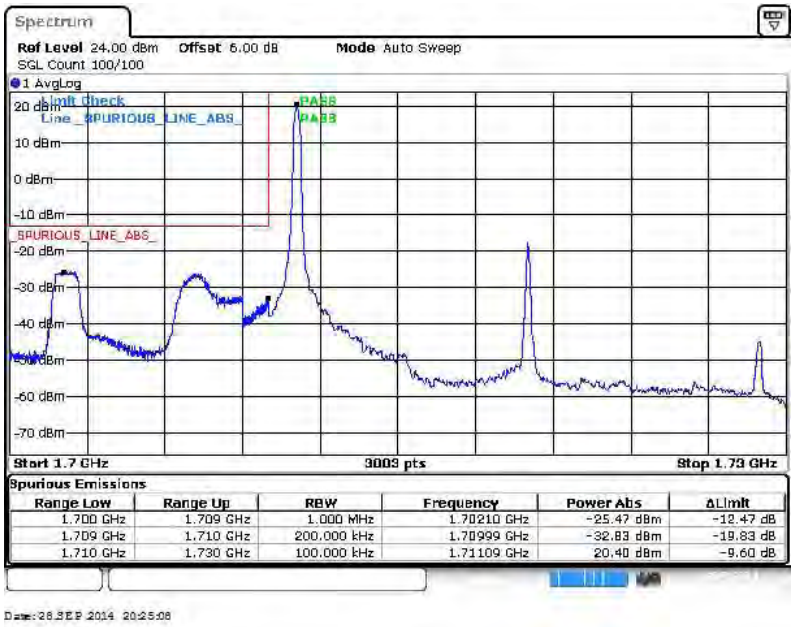


Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0

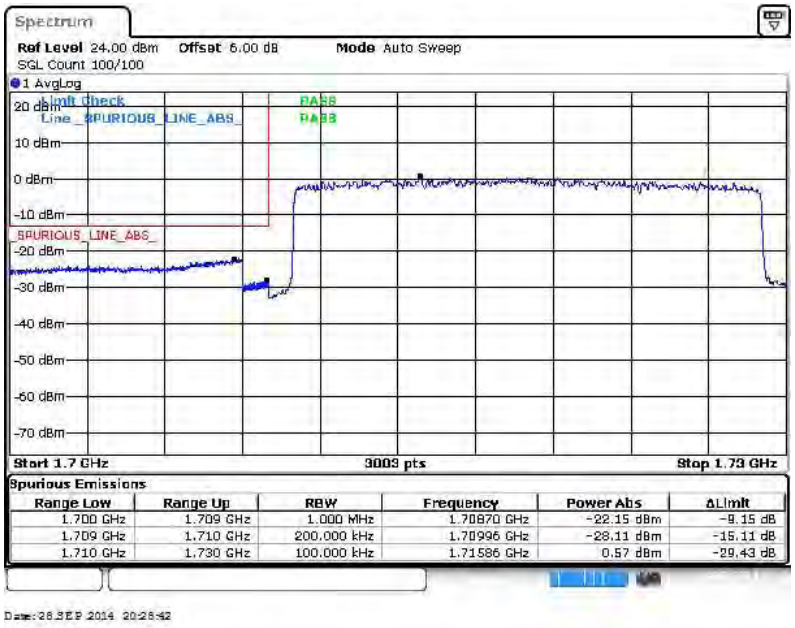


Band :	LTE Band 4	Band Width :	20MHz / QPSK

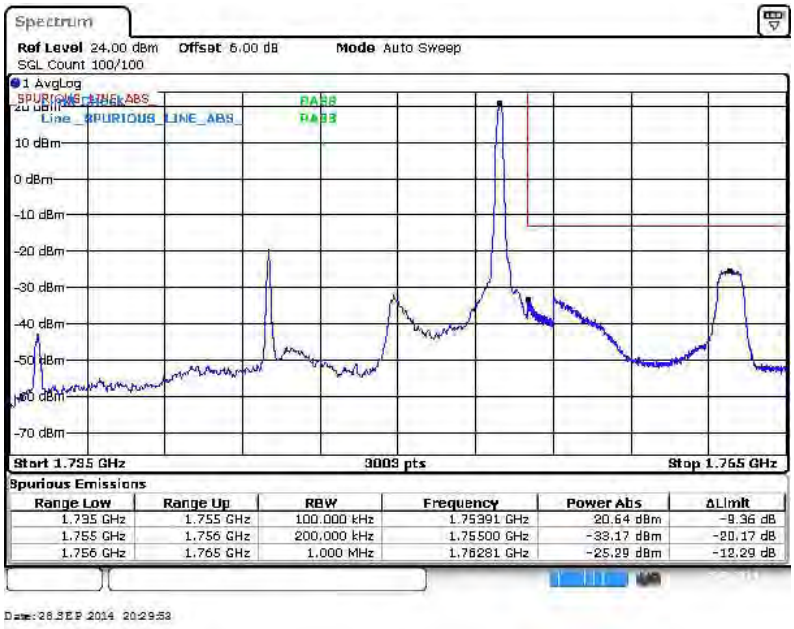
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



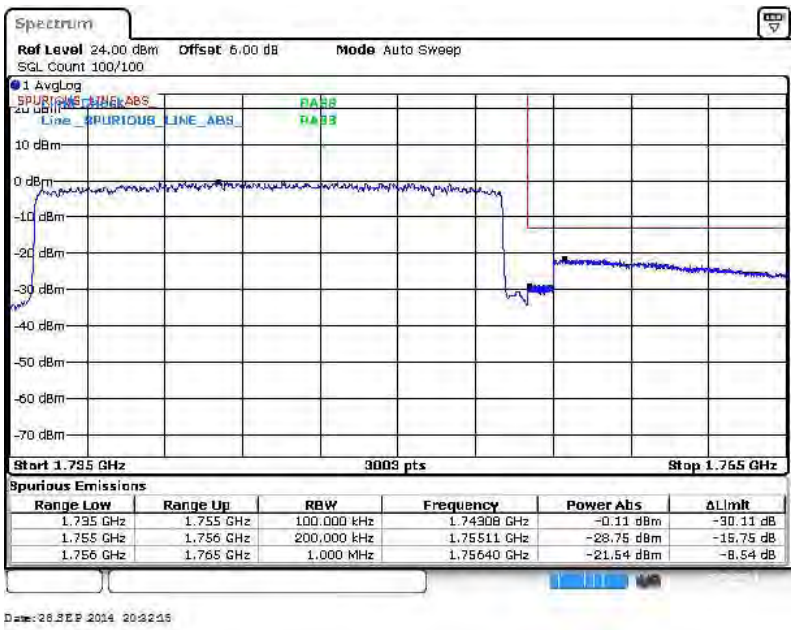
Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0



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

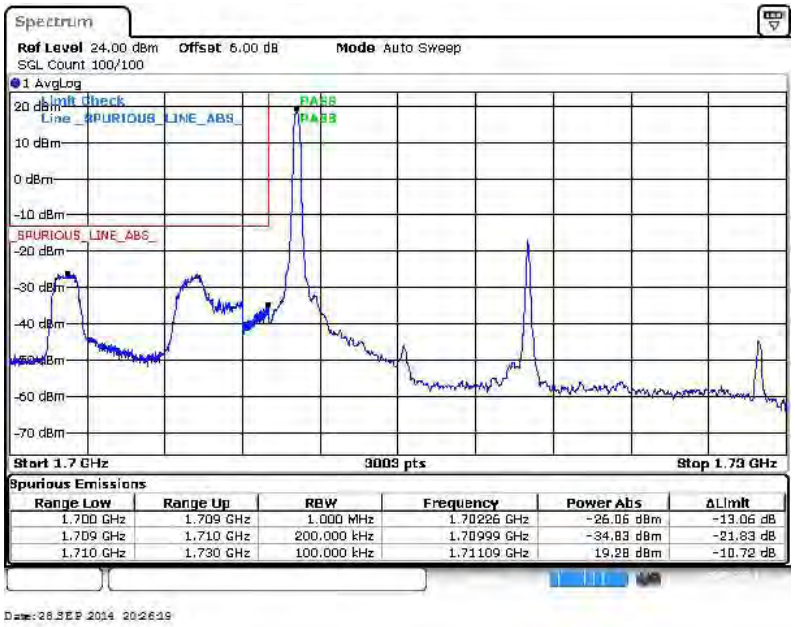


Higher Band Edge Plot for QPSK-RB Size 100, RB Offset 0

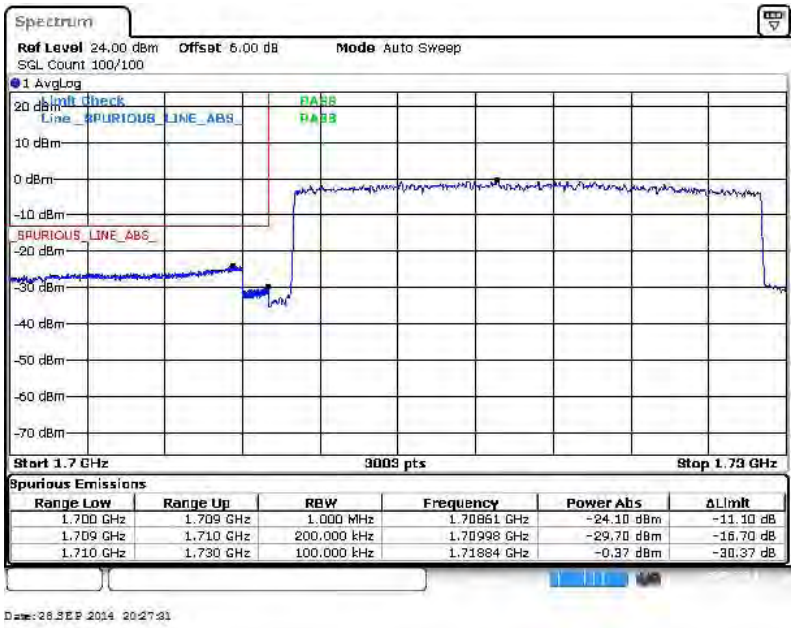


Band :	LTE Band 4	Band Width :	20MHz / 16QAM

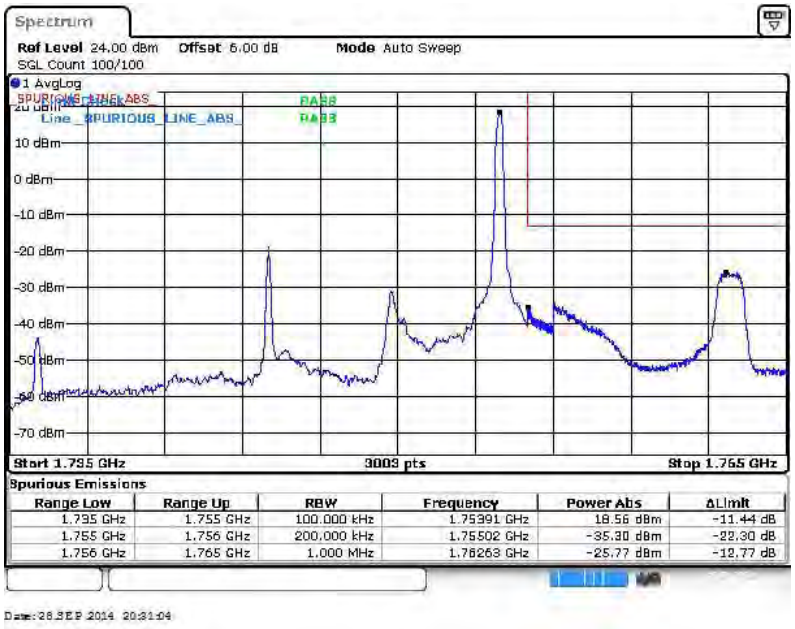
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



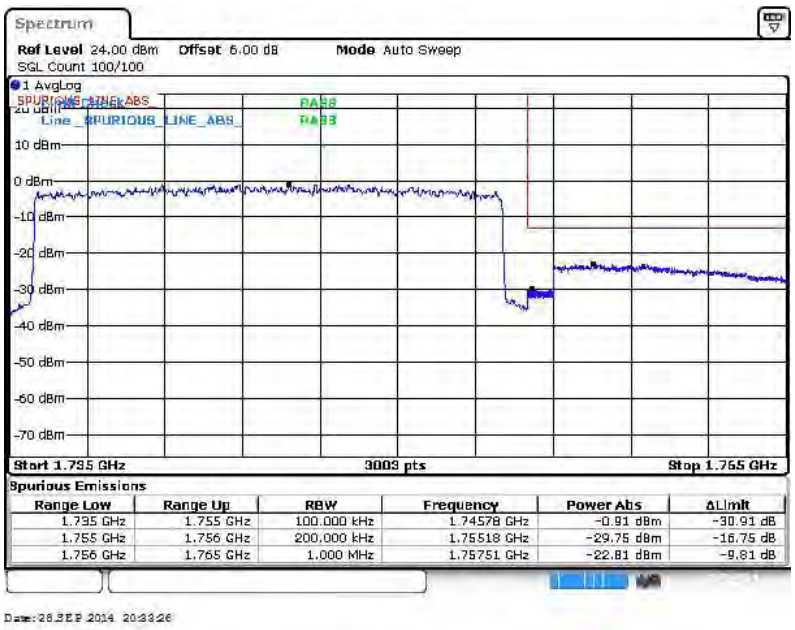
Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



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

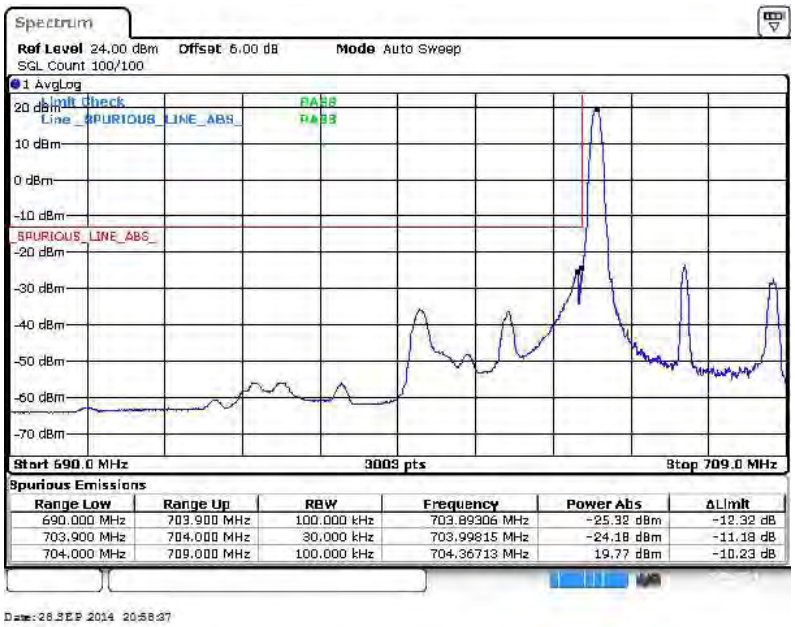


Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0

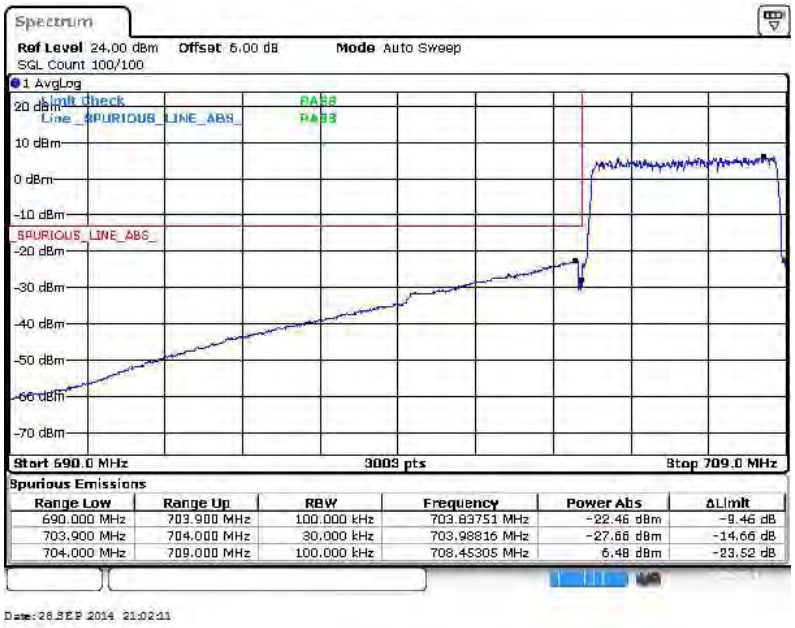


Band :	LTE Band 17	Band Width :	5MHz / QPSK

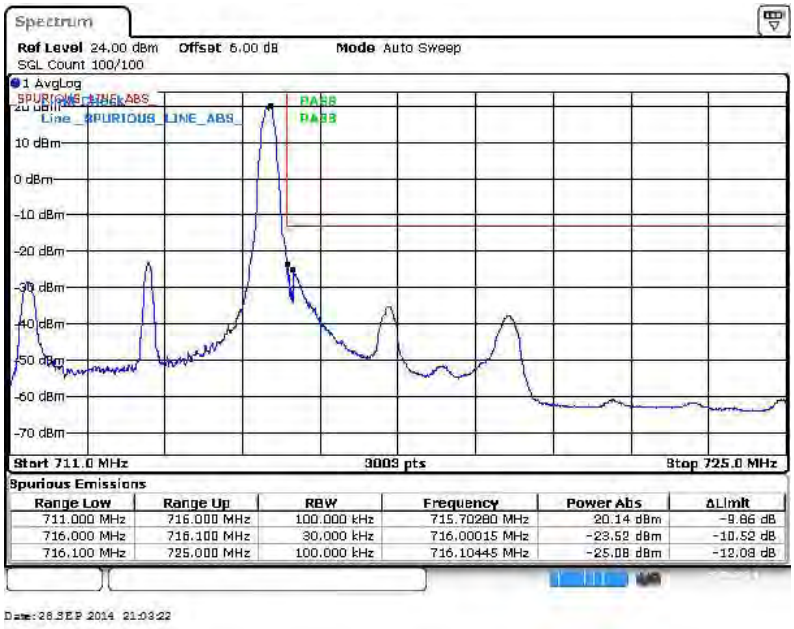
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



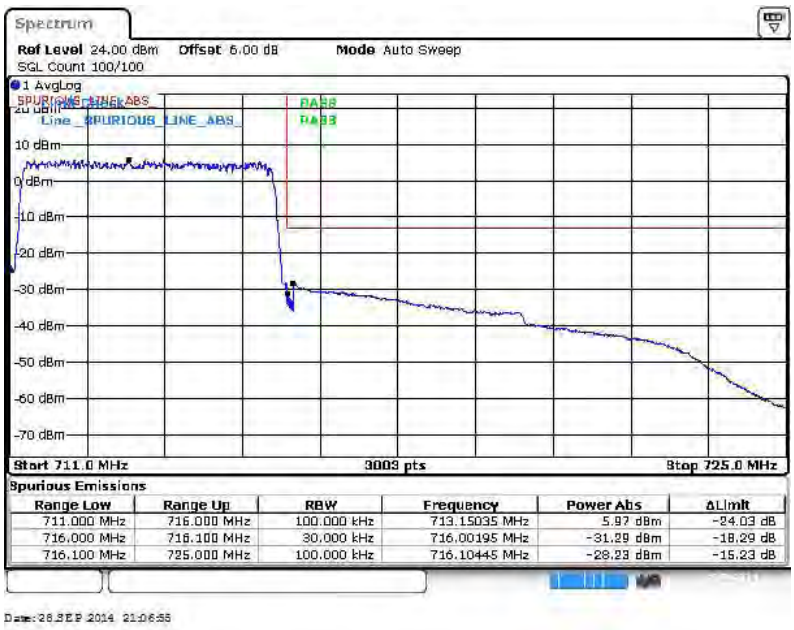
Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0



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

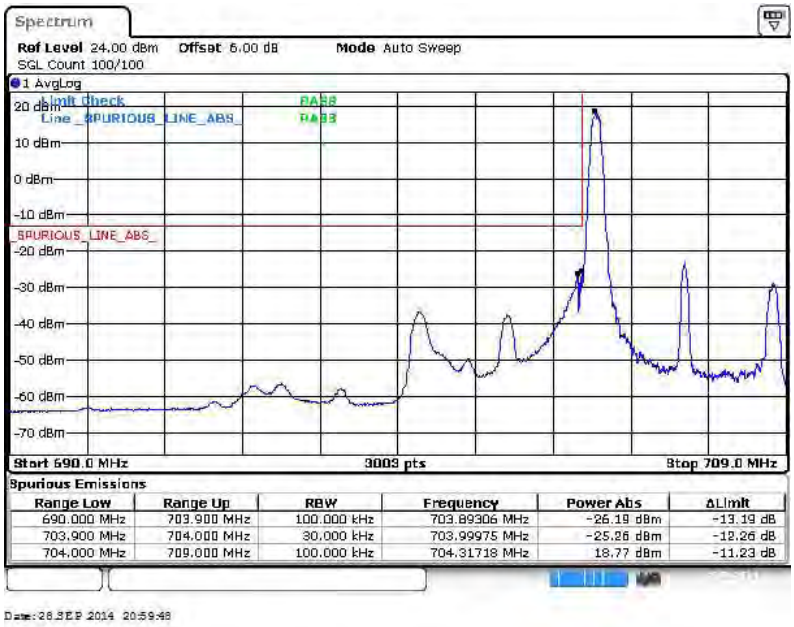


Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0

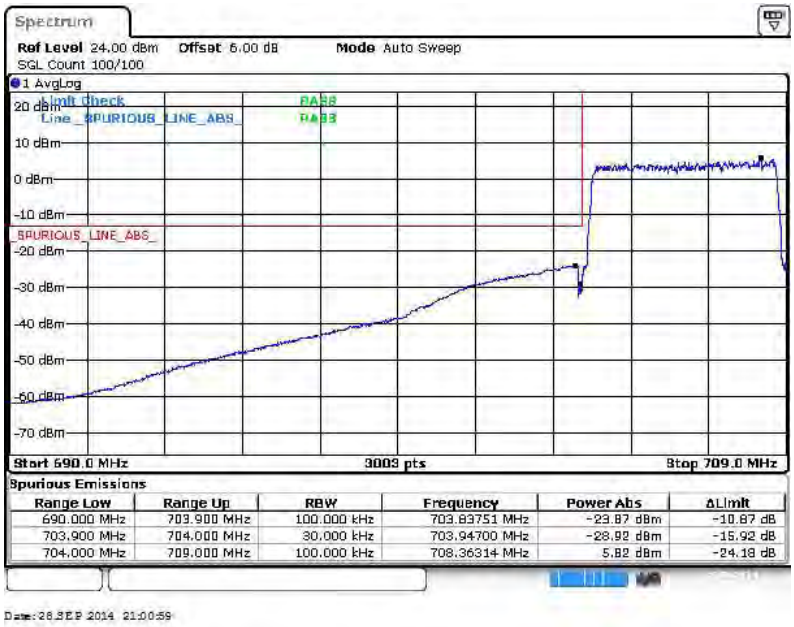


Band :	LTE Band 17	Band Width :	5MHz / 16QAM

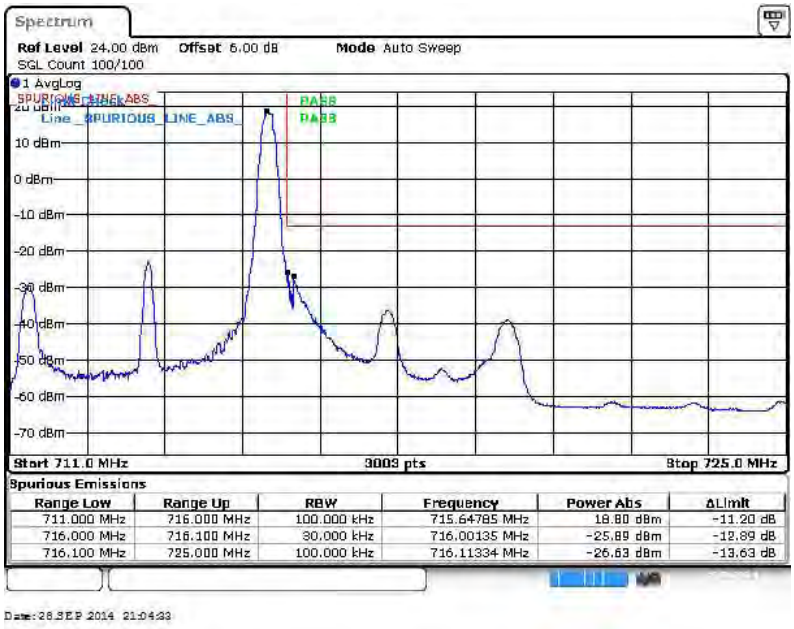
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



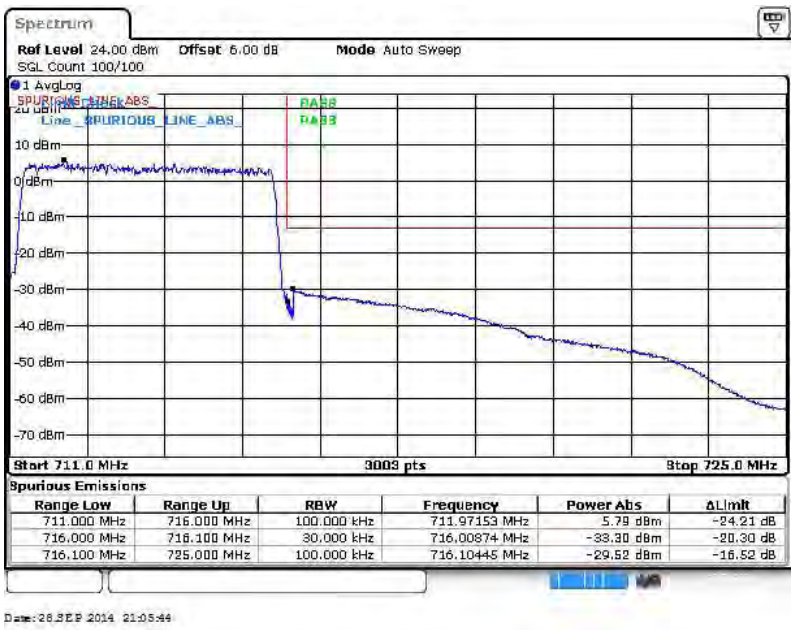
Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



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

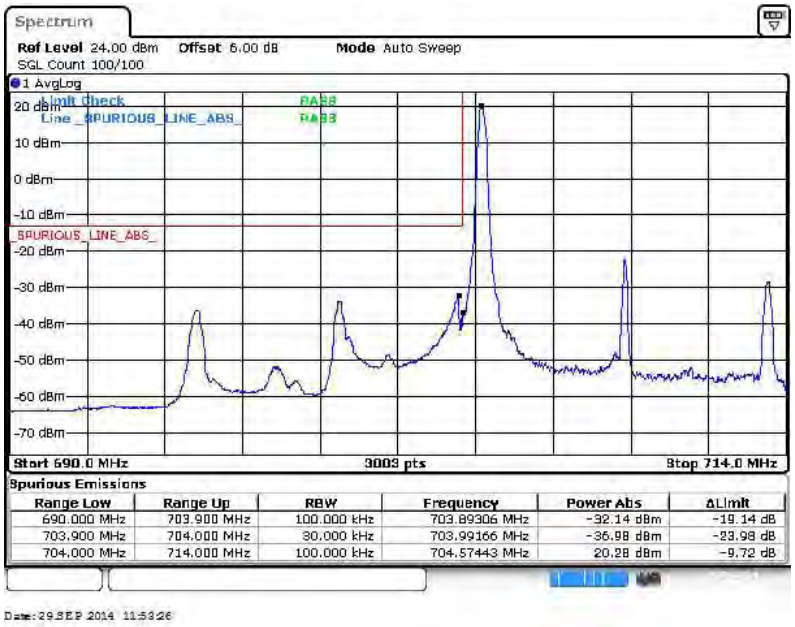


Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

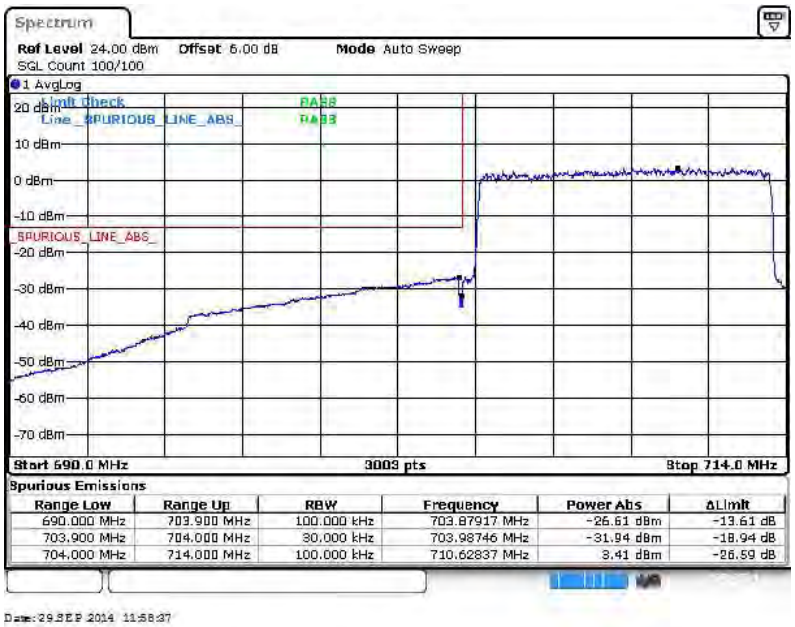


Band :	LTE Band 17	Band Width :	10MHz / QPSK

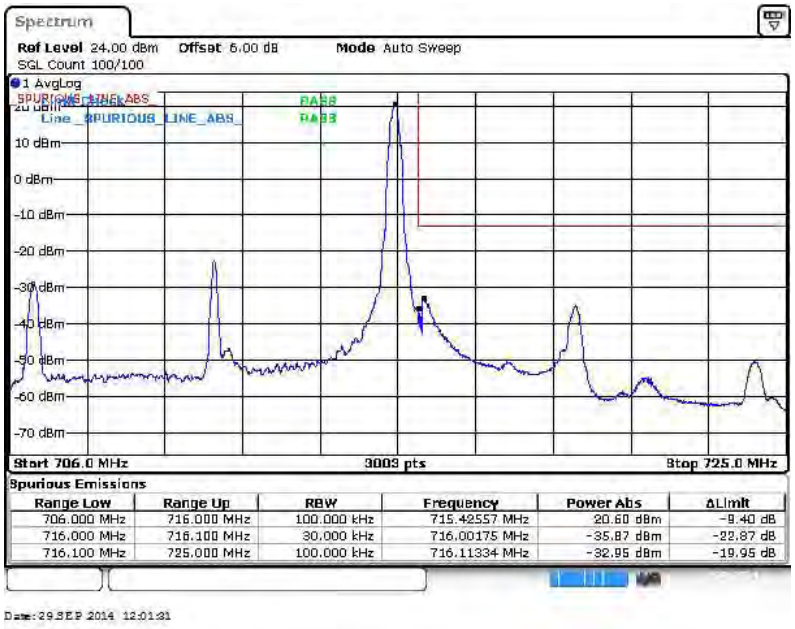
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



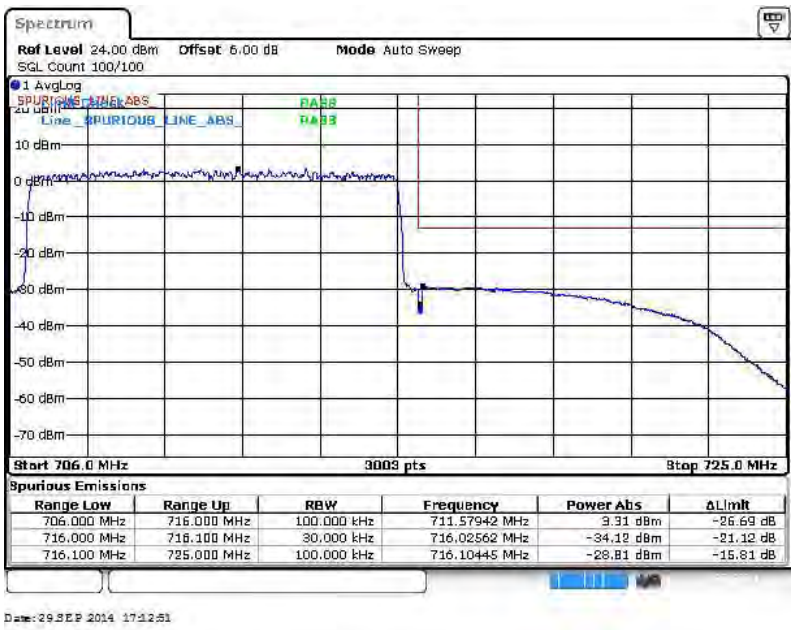
Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0



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

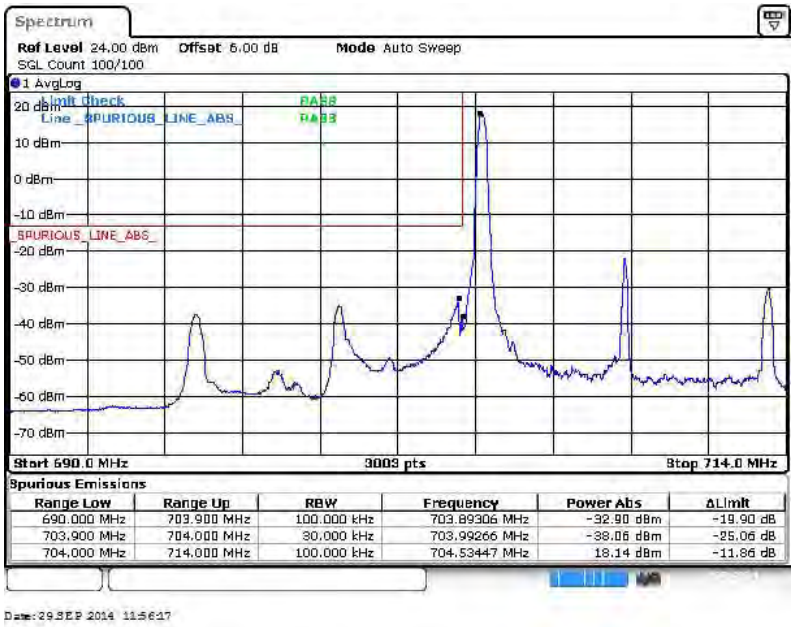


Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0

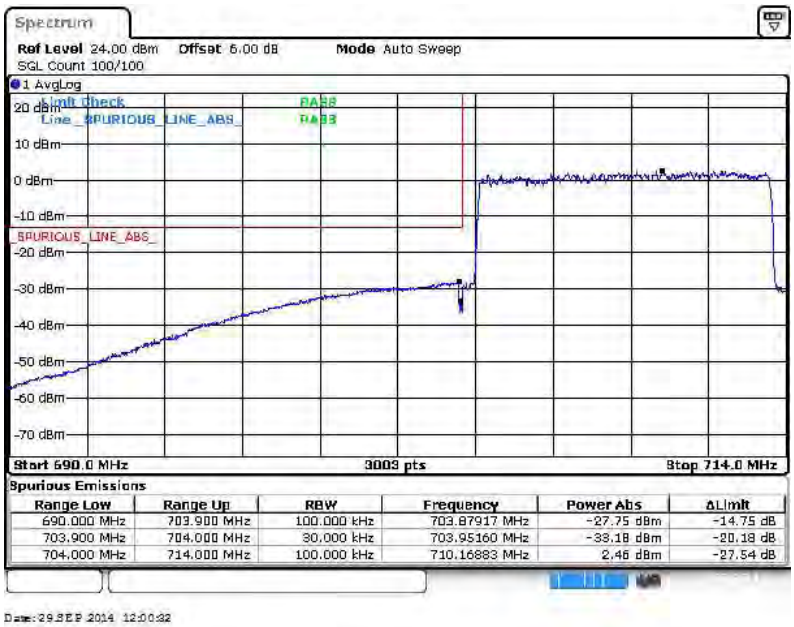


Band :	LTE Band 17	Band Width :	10MHz / 16QAM

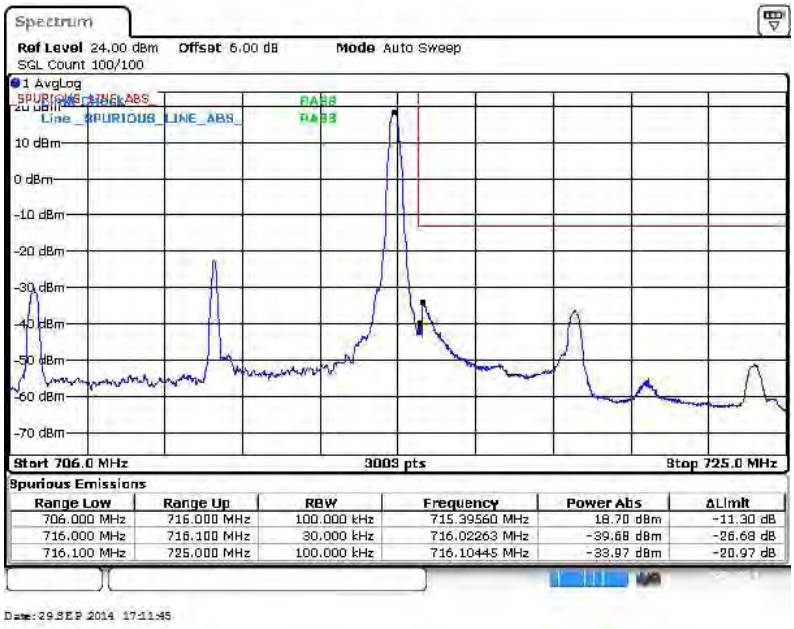
Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0



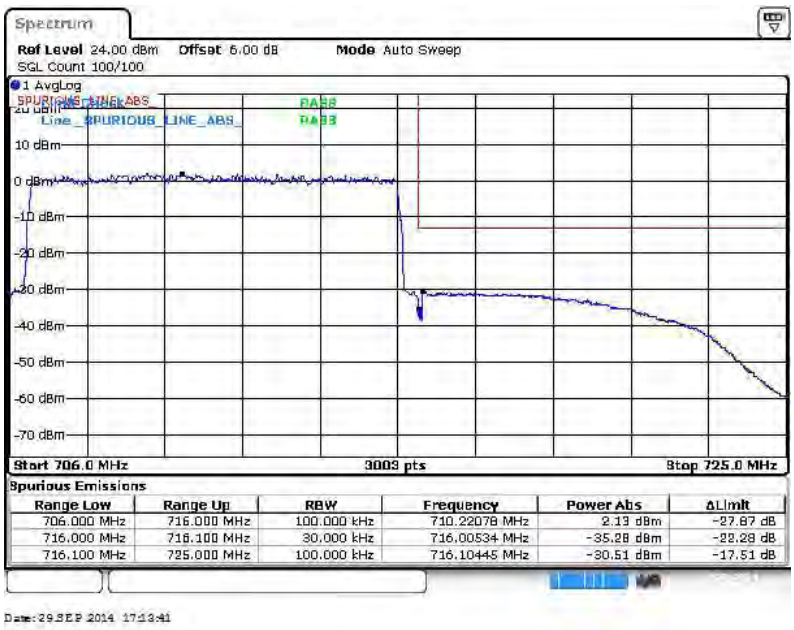
Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



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



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



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 30MHz up to a frequency including its 10^{th} harmonic.

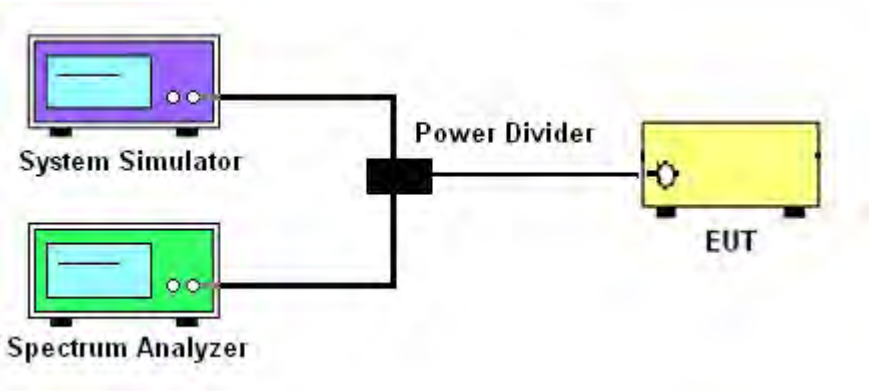
3.6.2 Measuring Instruments

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 system simulator 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.
8. 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.

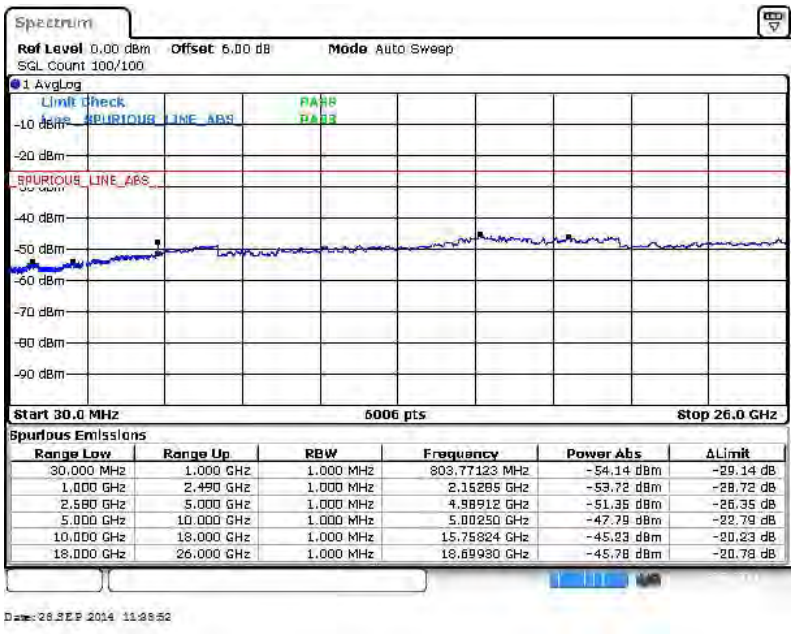
3.6.4 Test Setup



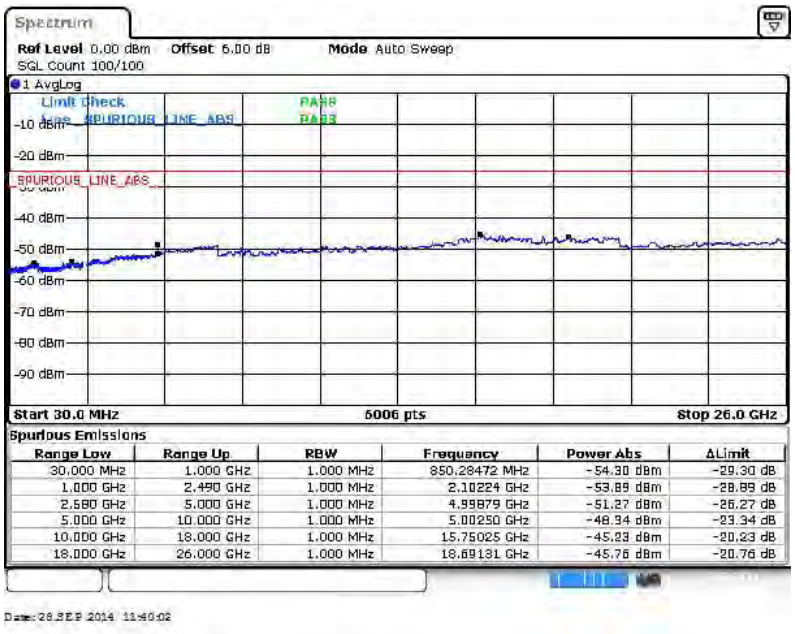
3.6.5 Test Result (Plots) of Conducted Spurious Emission

Band :	LTE Band 7	Channel :	CH20775 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

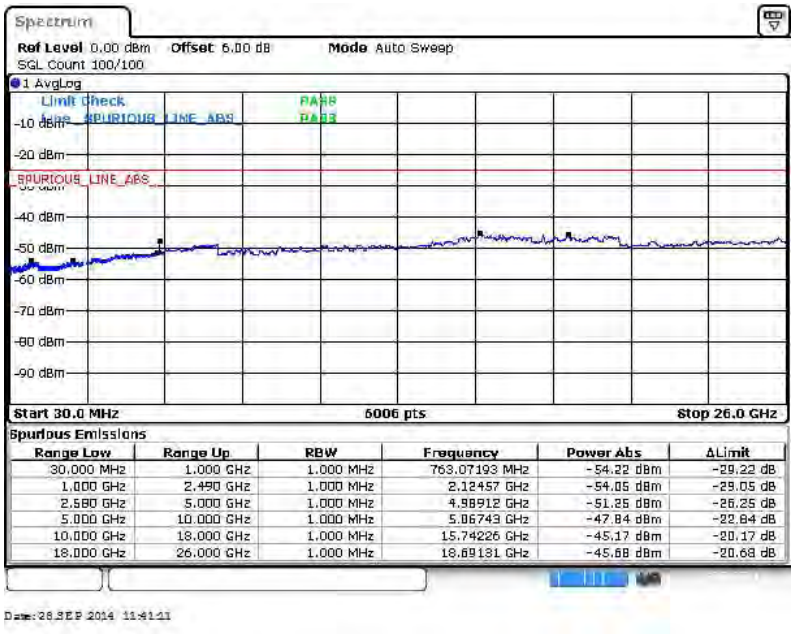


16QAM (RB Size 1, RB Offset 0)

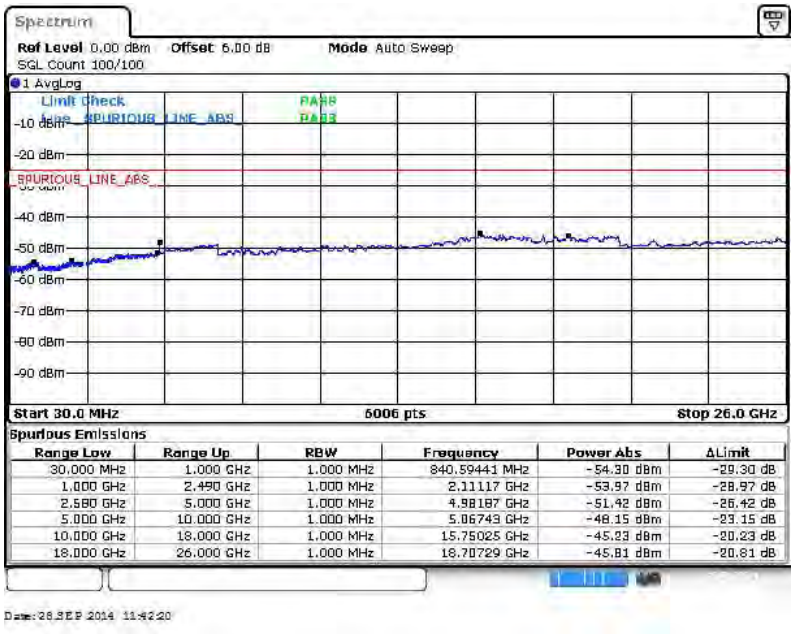


Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

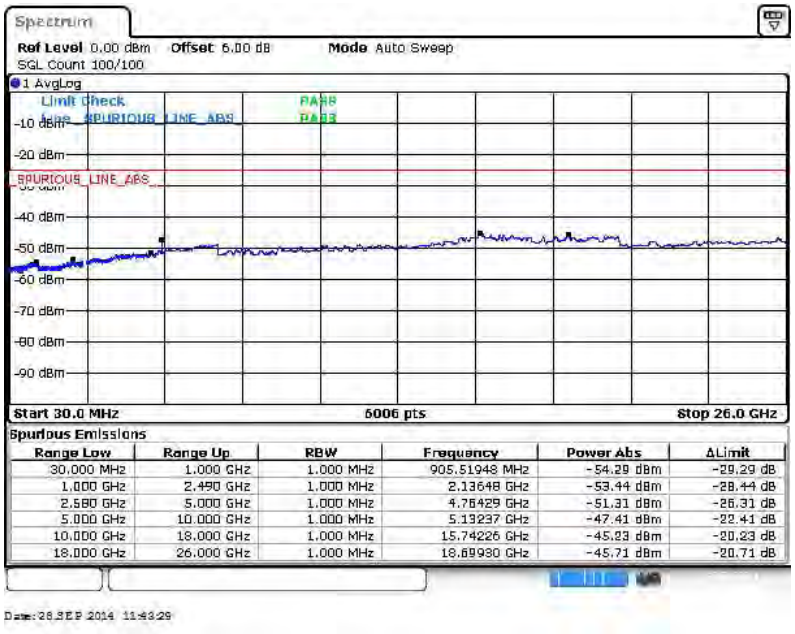


16QAM (RB Size 1, RB Offset 0)

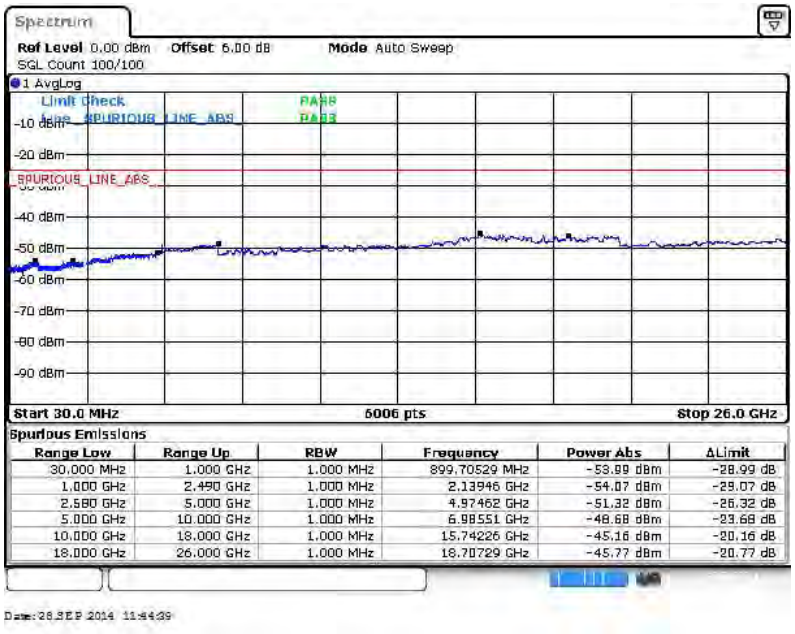


Band :	LTE Band 7	Channel :	CH21425 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

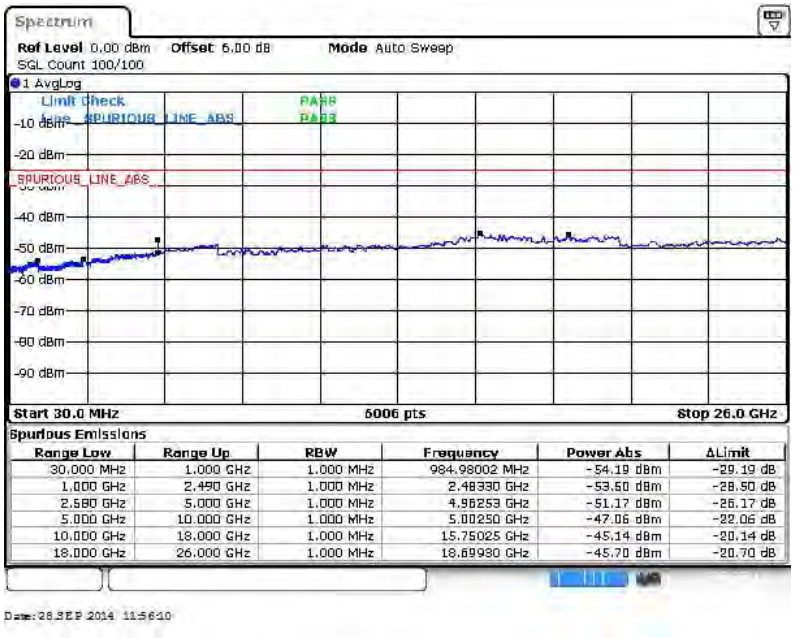


16QAM (RB Size 1, RB Offset 0)

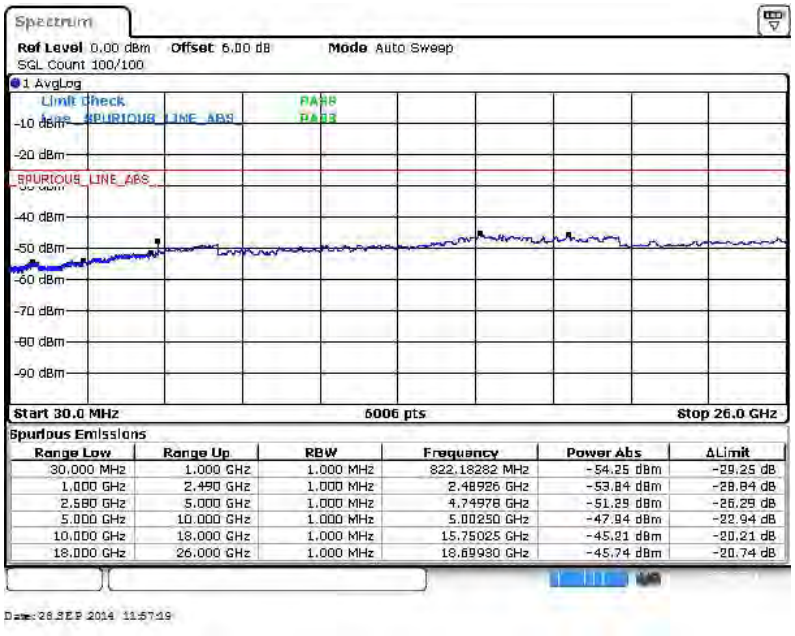


Band :	LTE Band 7	Channel :	CH20800 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

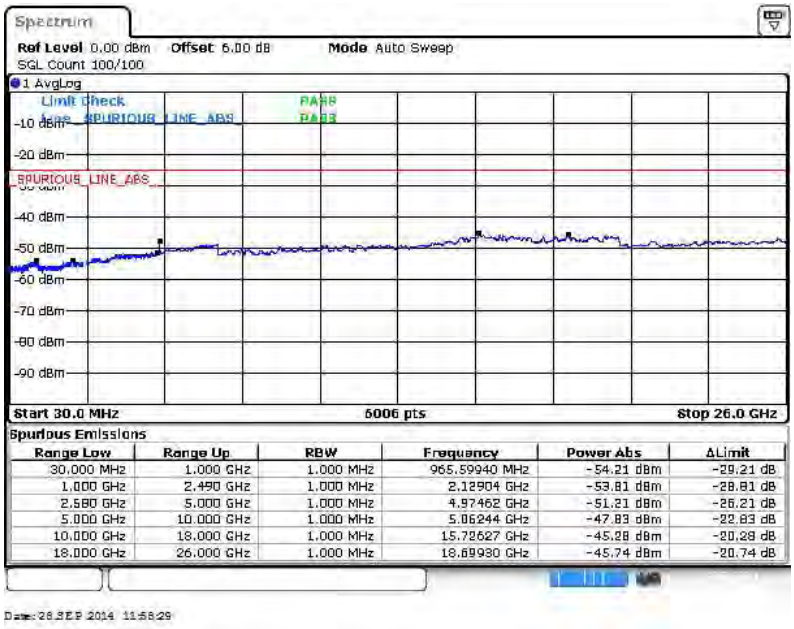


16QAM (RB Size 1, RB Offset 0)

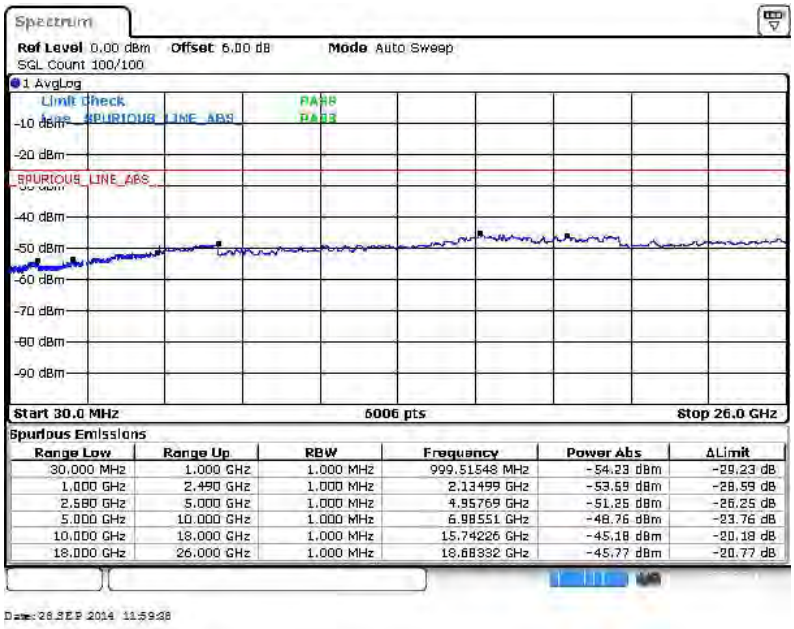


Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

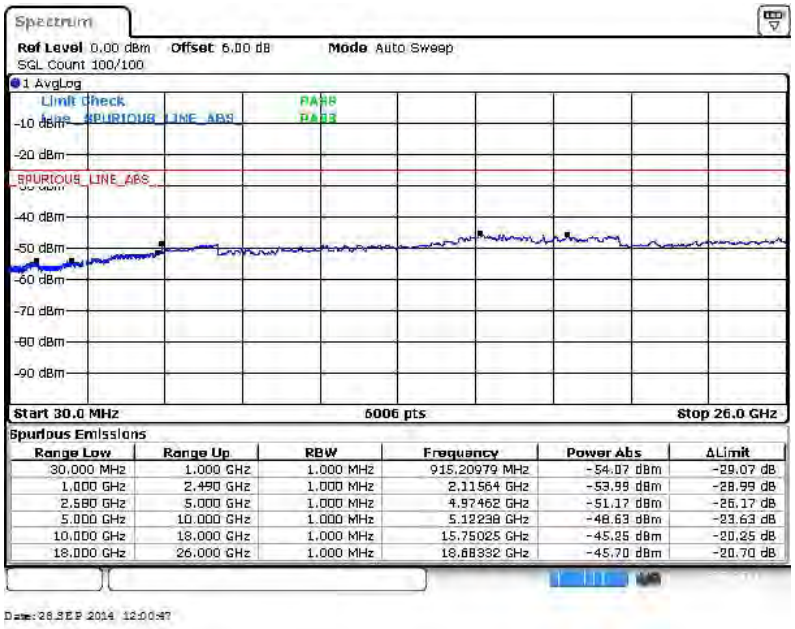


16QAM (RB Size 1, RB Offset 0)

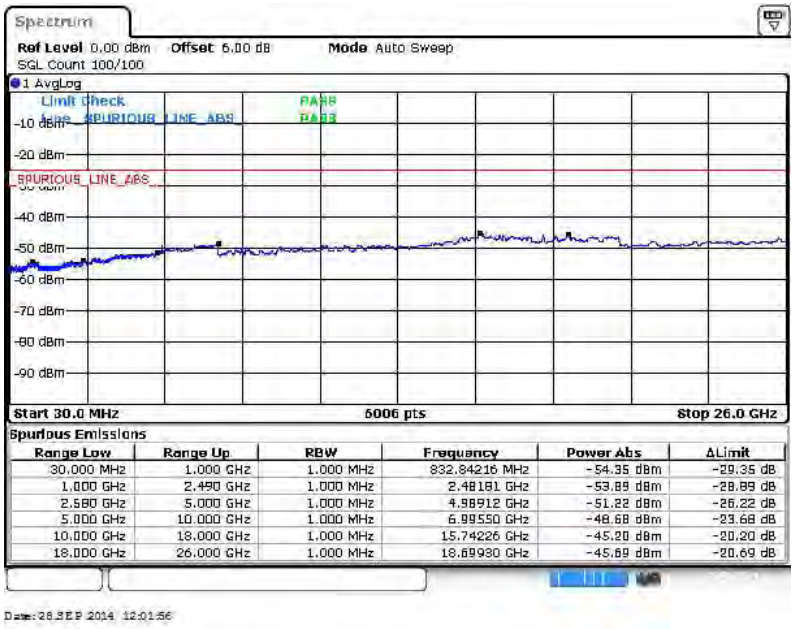


Band :	LTE Band 7	Channel :	CH21400 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

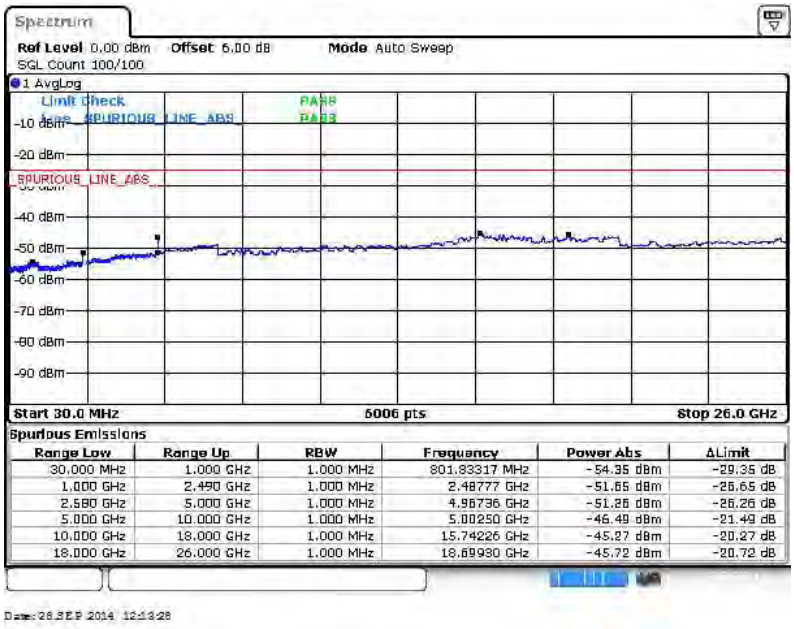


16QAM (RB Size 1, RB Offset 0)

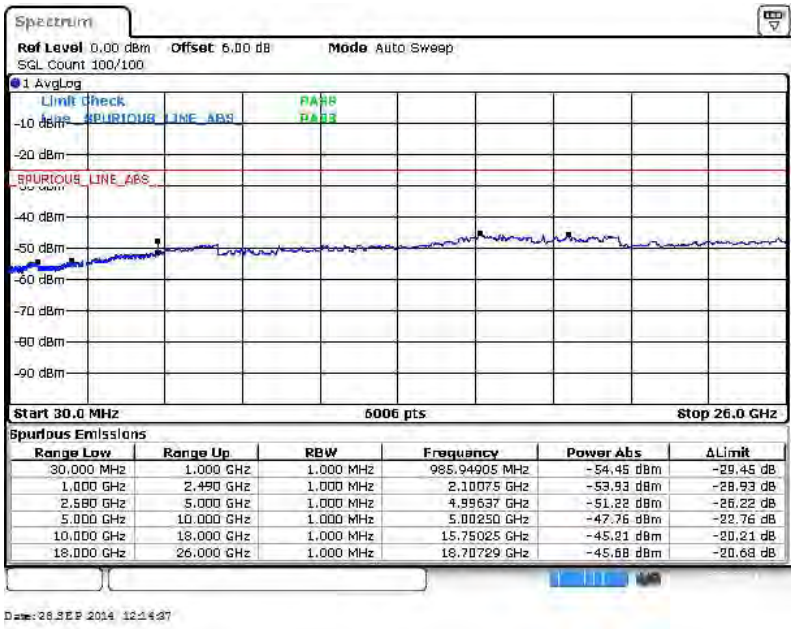


Band :	LTE Band 7	Channel :	CH20825 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

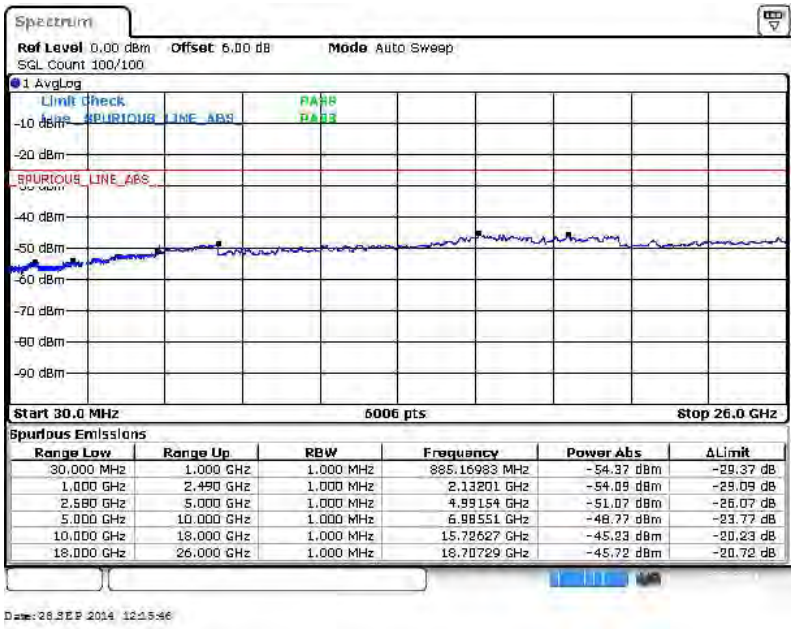


16QAM (RB Size 1, RB Offset 0)

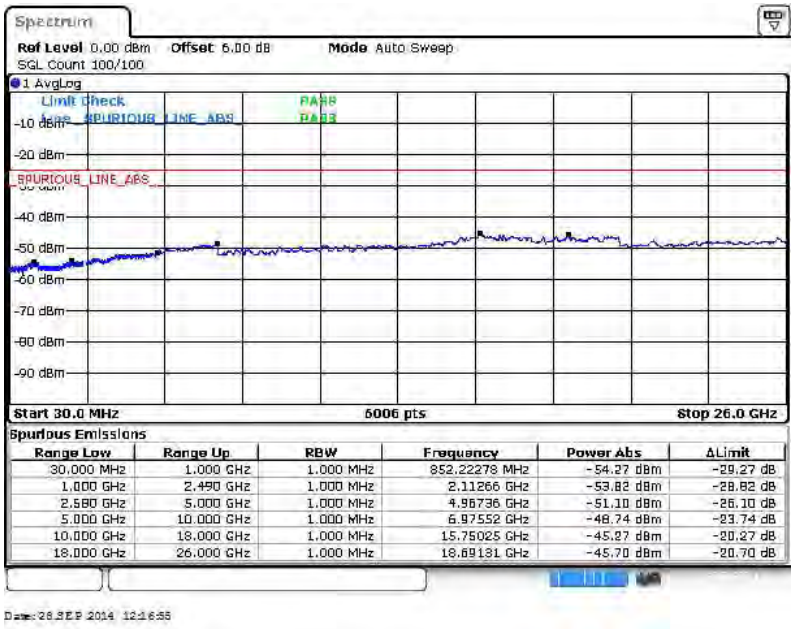


Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

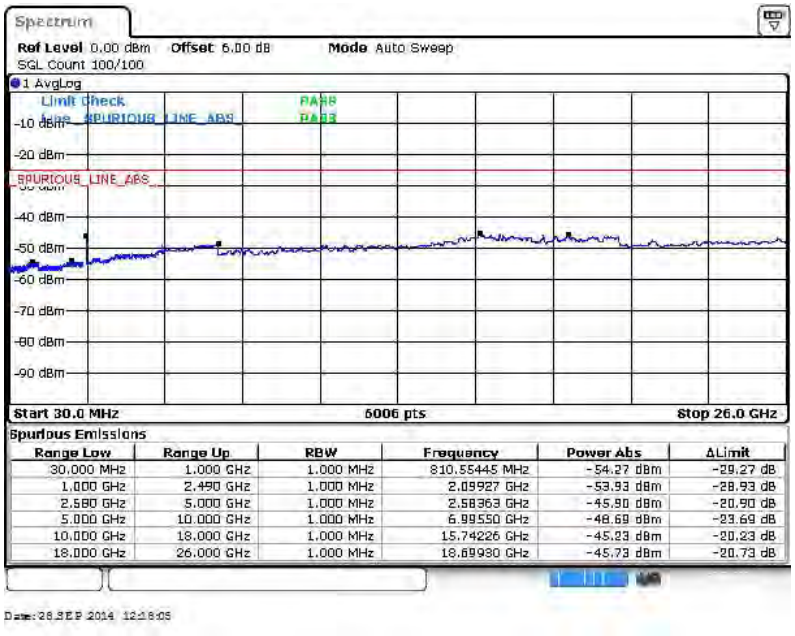


16QAM (RB Size 1, RB Offset 0)

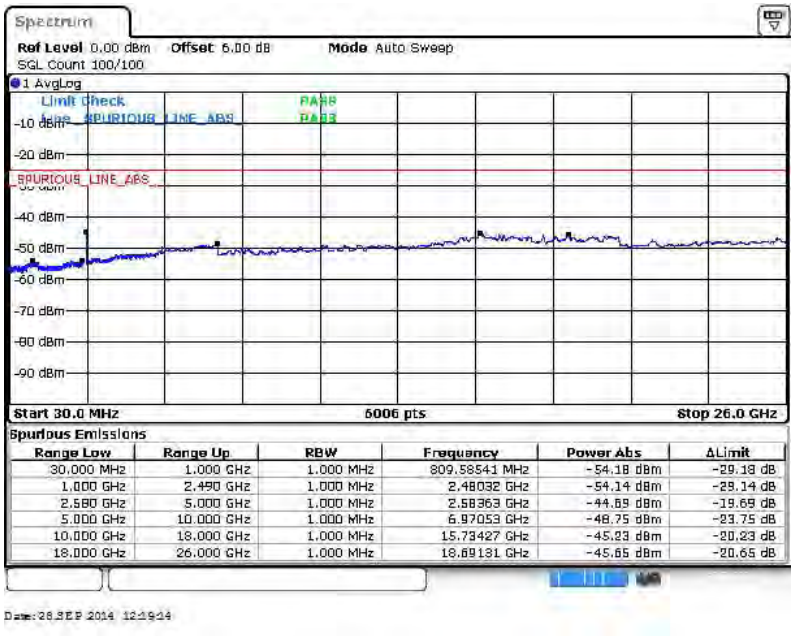


Band :	LTE Band 7	Channel :	CH21375 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

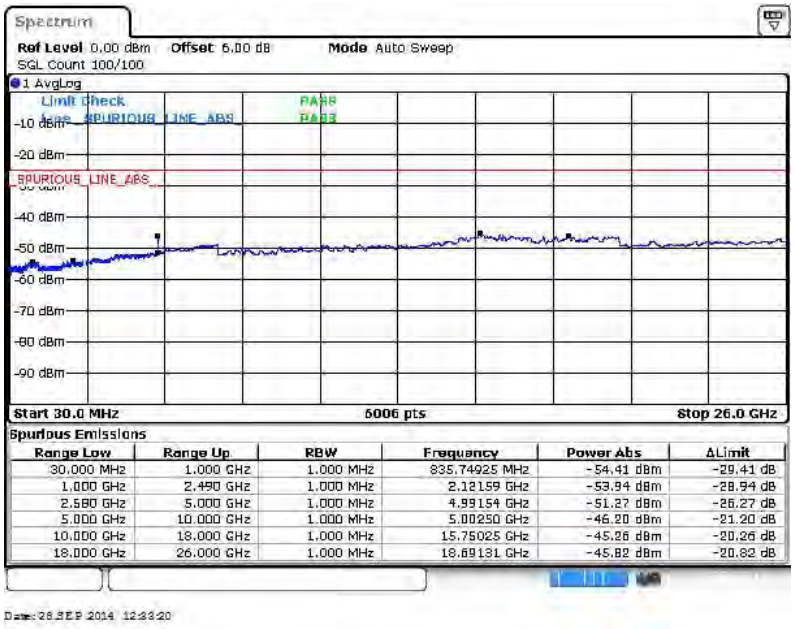


16QAM (RB Size 1, RB Offset 0)

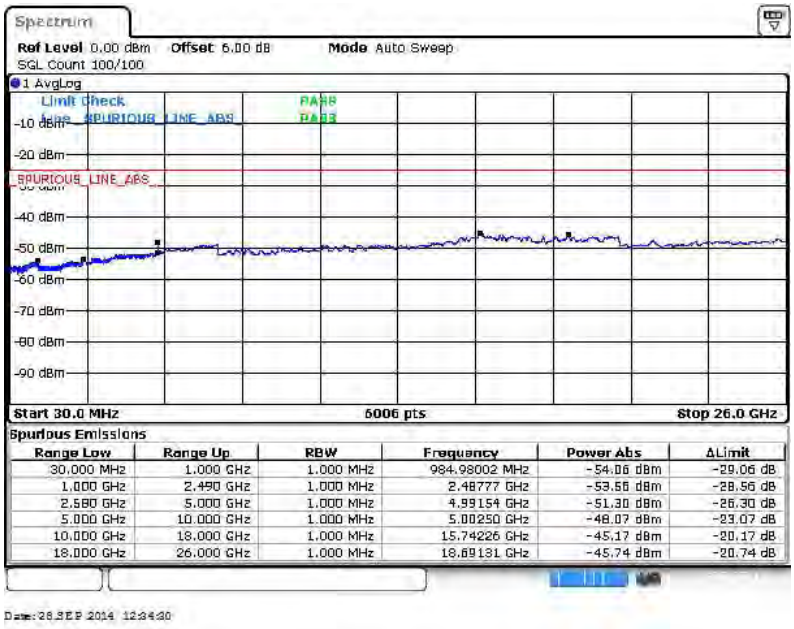


Band :	LTE Band 7	Channel :	CH20850 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

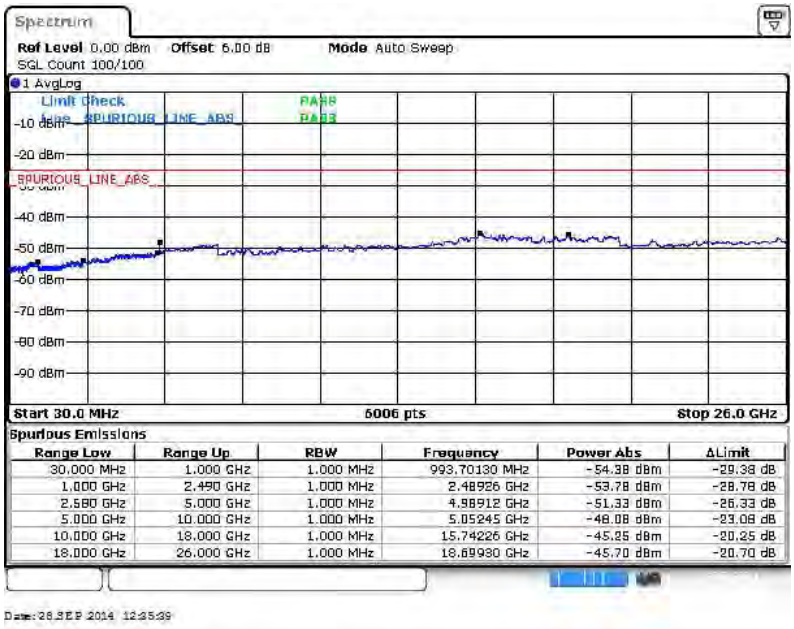


16QAM (RB Size 1, RB Offset 0)

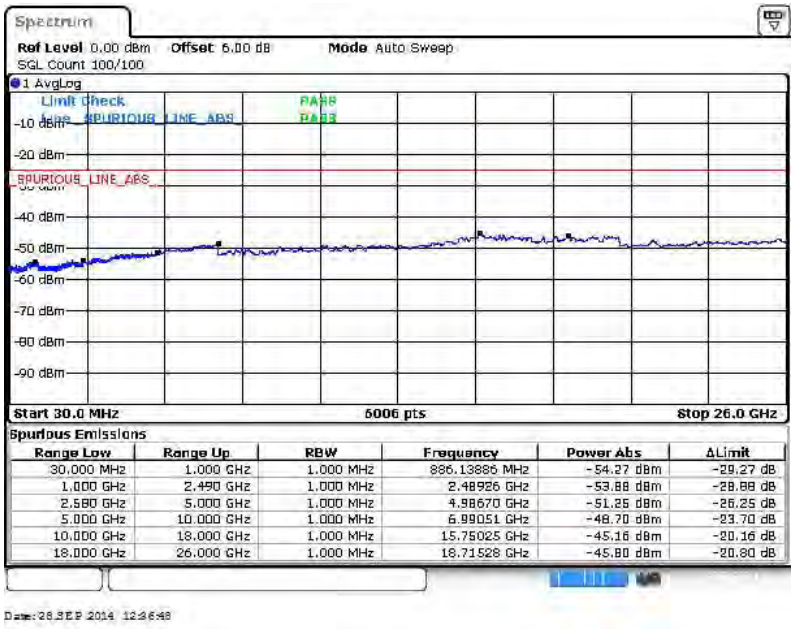


Band :	LTE Band 7	Channel :	CH21100 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

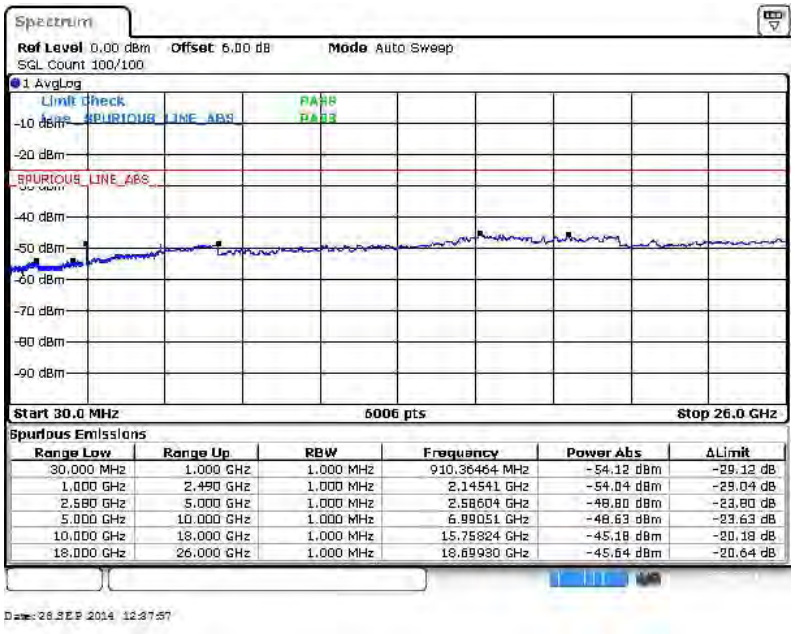


16QAM (RB Size 1, RB Offset 0)

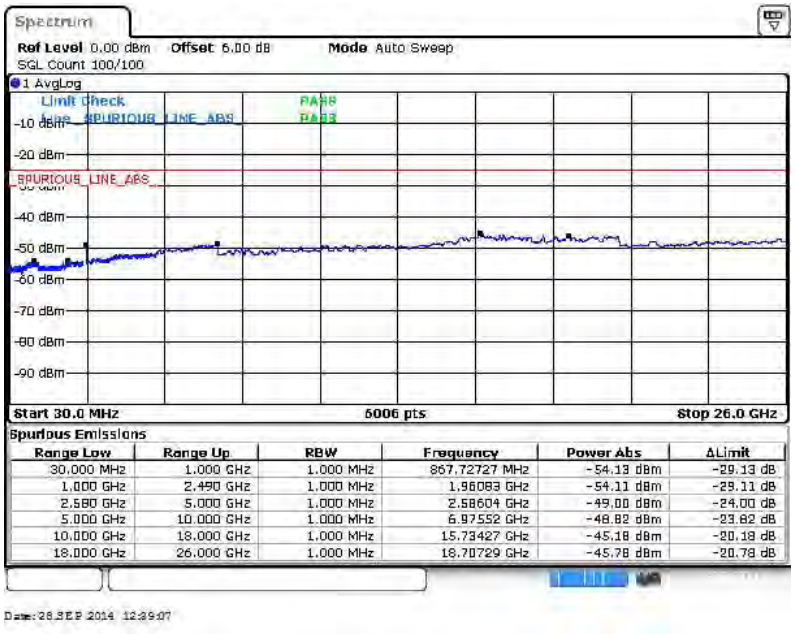


Band :	LTE Band 7	Channel :	CH21350 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

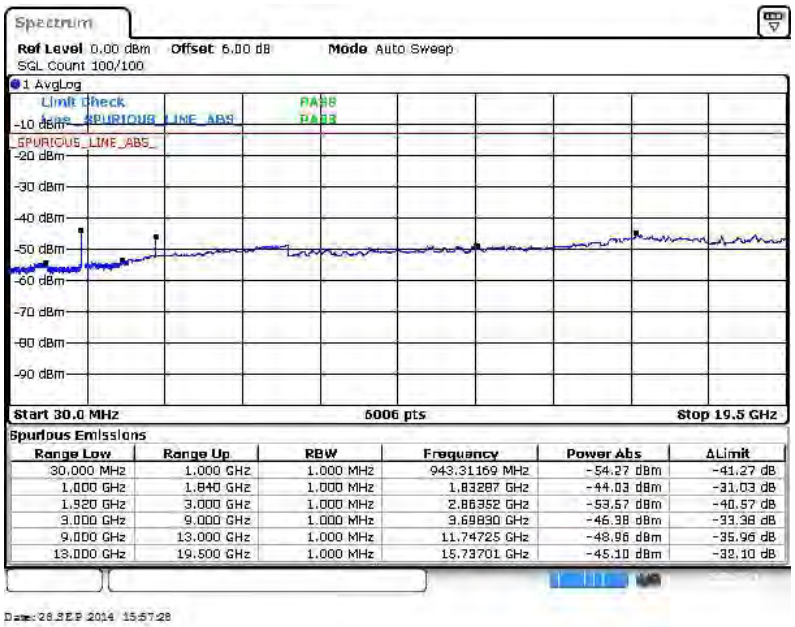


16QAM (RB Size 1, RB Offset 0)

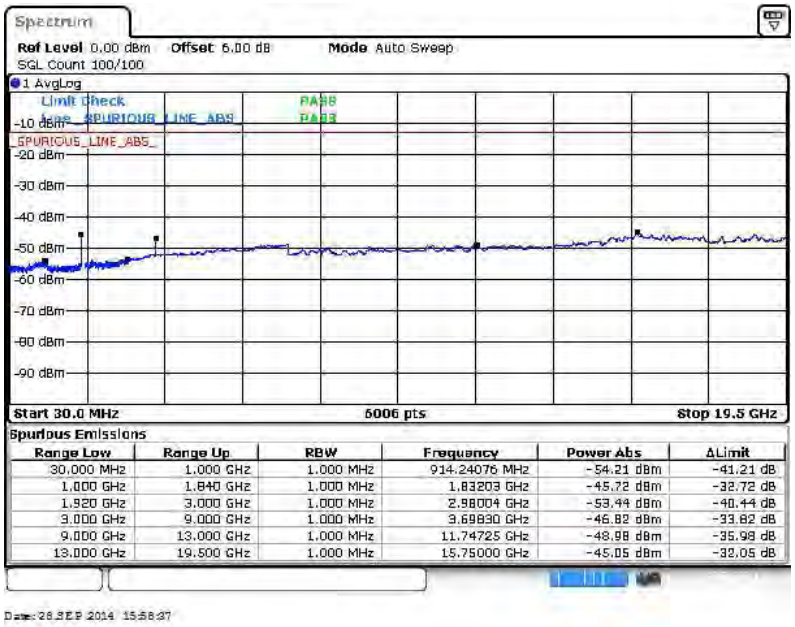


Band :	LTE Band 2	Channel :	CH18607 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

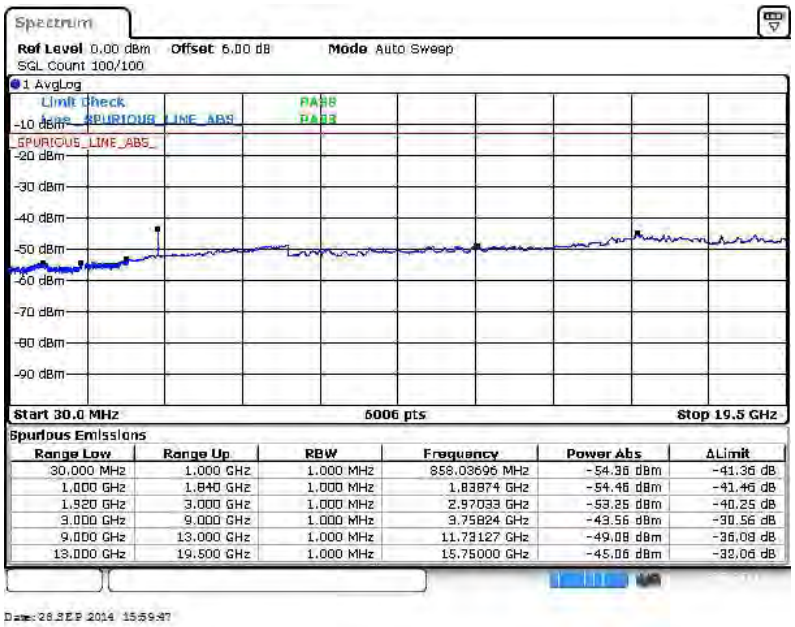


16QAM (RB Size 1, RB Offset 0)

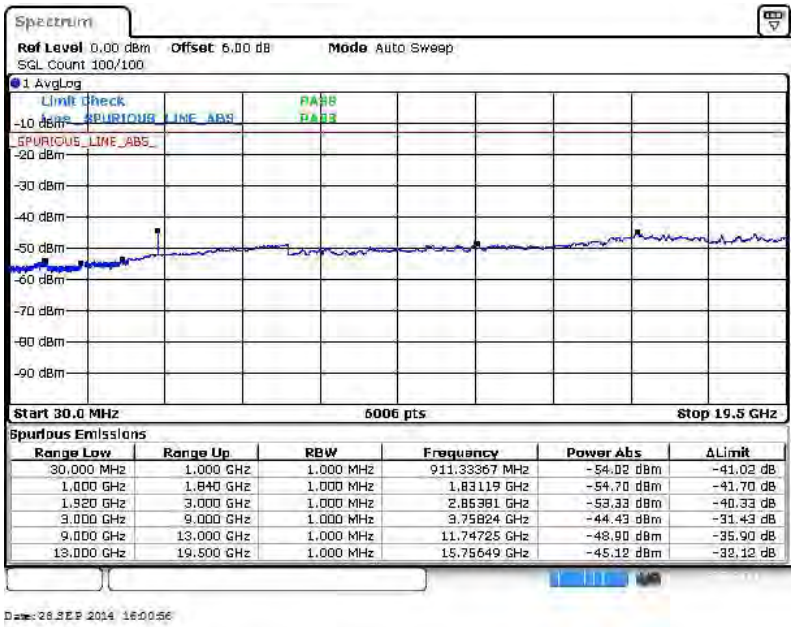


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

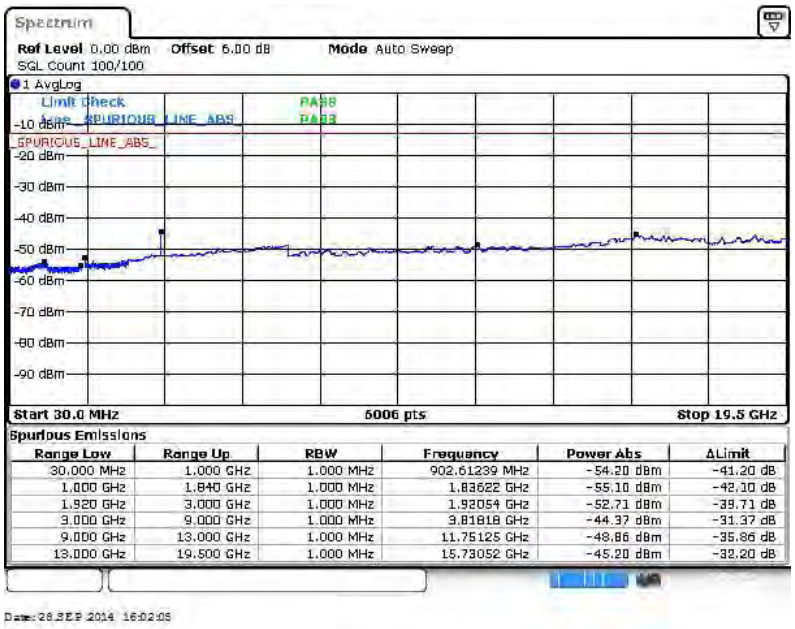


16QAM (RB Size 1, RB Offset 0)

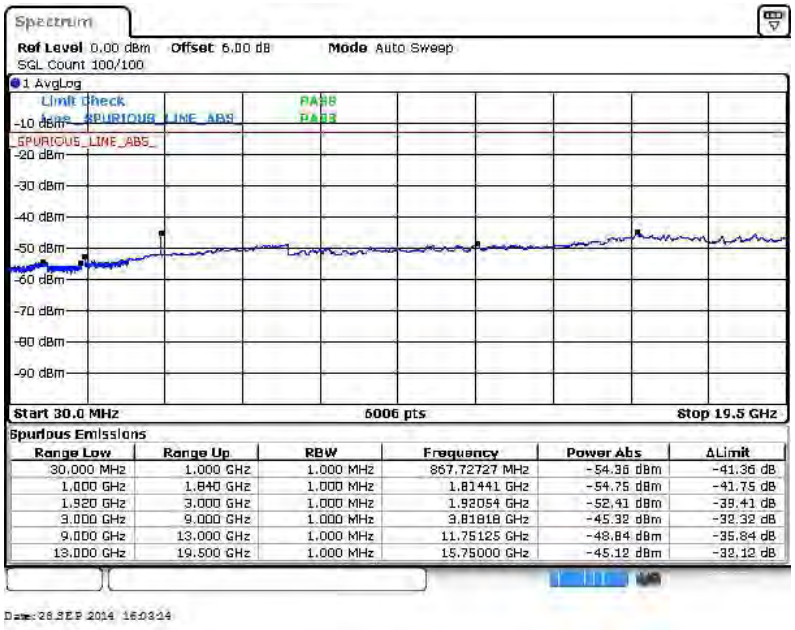


Band :	LTE Band 2	Channel :	CH19193 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

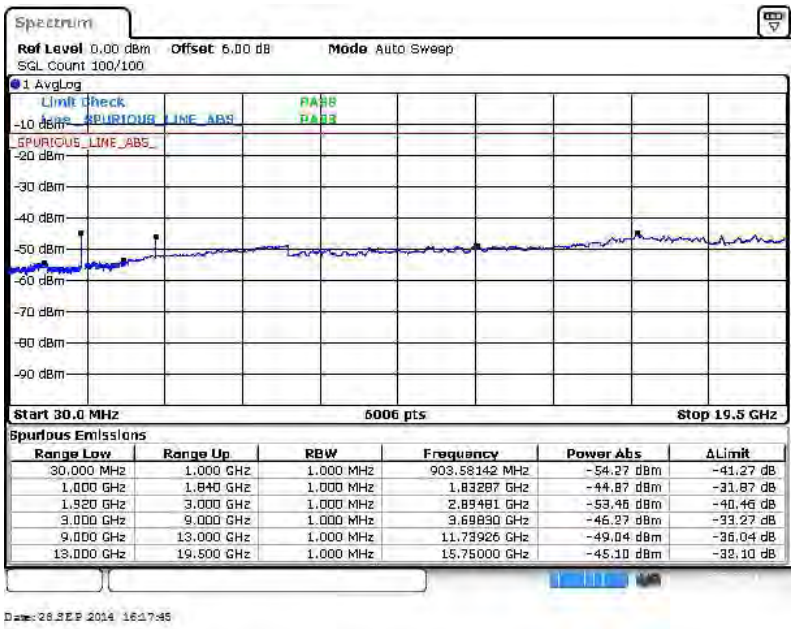


16QAM (RB Size 1, RB Offset 0)

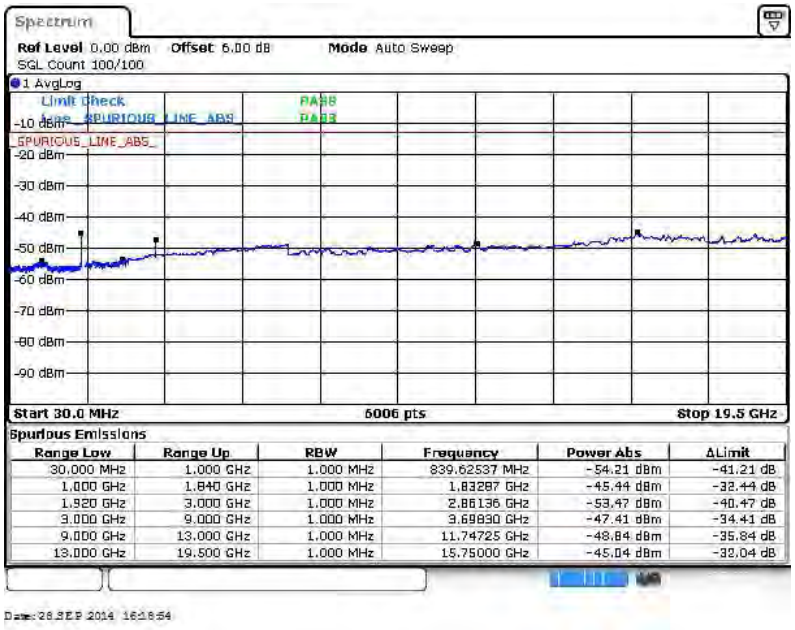


Band :	LTE Band 2	Channel :	CH18615 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

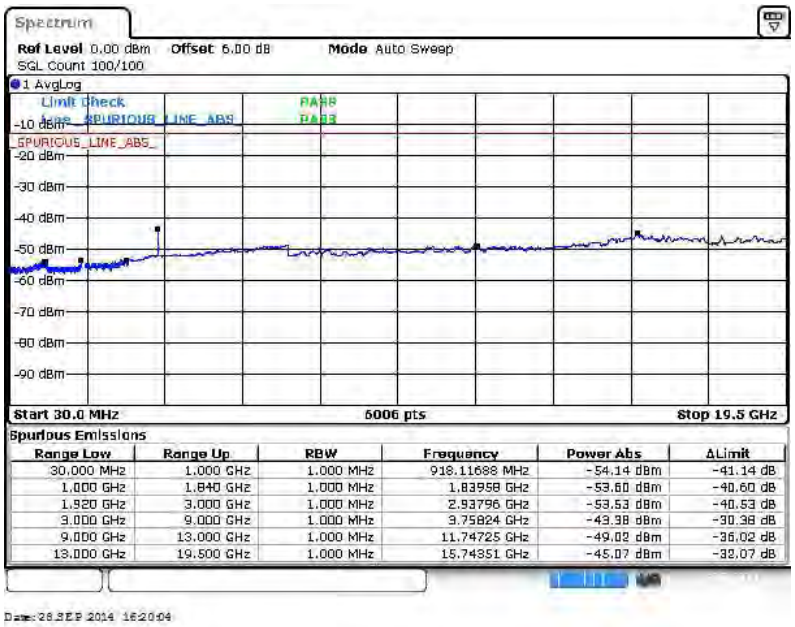


16QAM (RB Size 1, RB Offset 0)

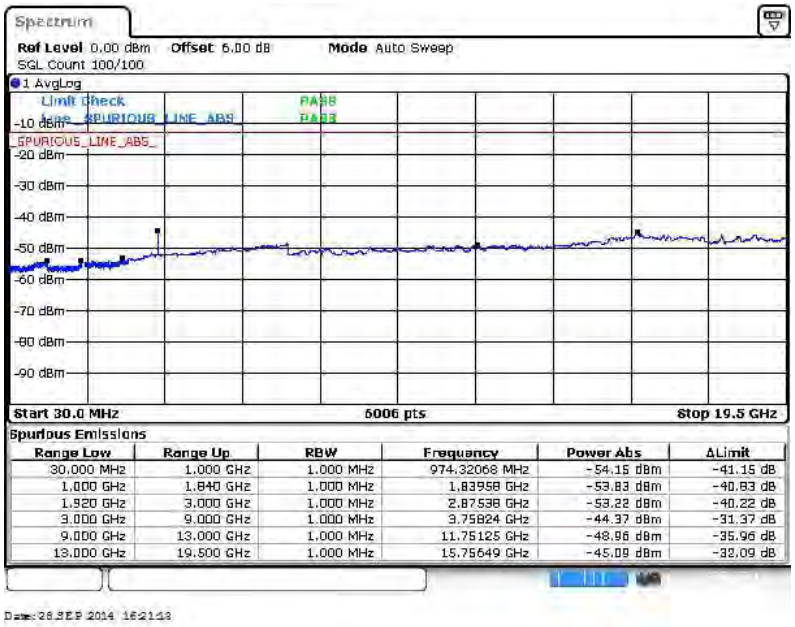


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

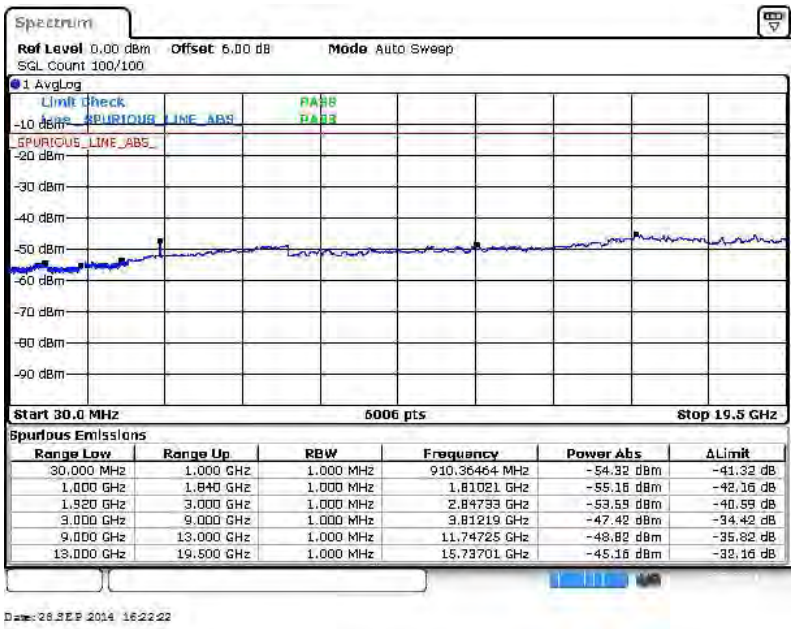


16QAM (RB Size 1, RB Offset 0)

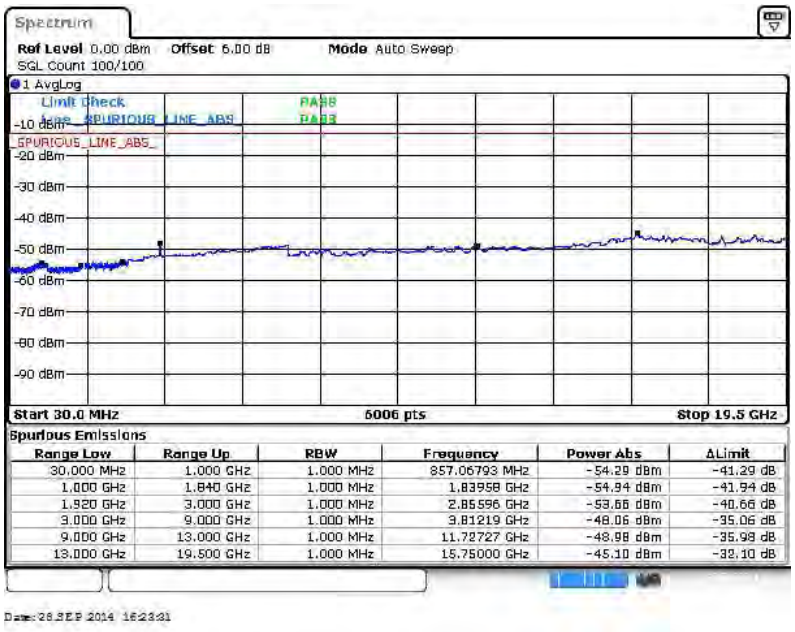


Band :	LTE Band 2	Channel :	CH19185 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

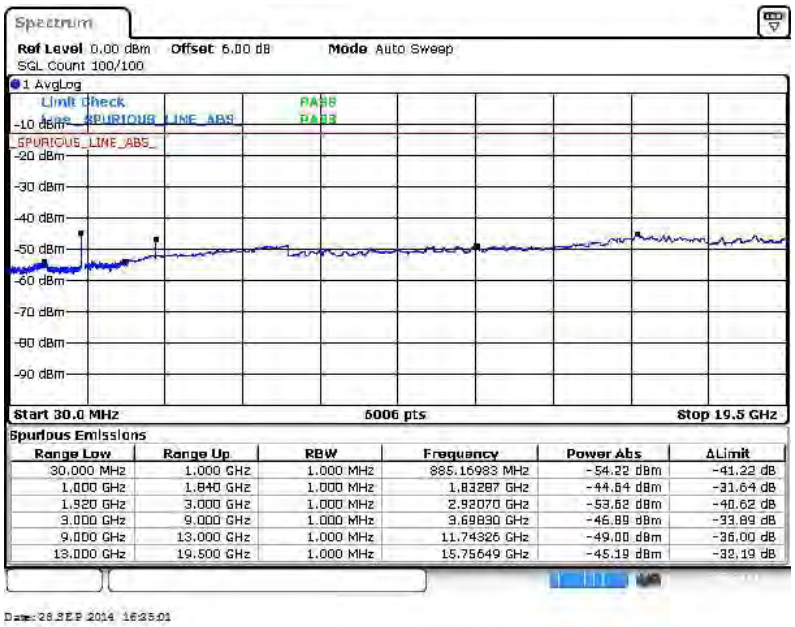


16QAM (RB Size 1, RB Offset 0)

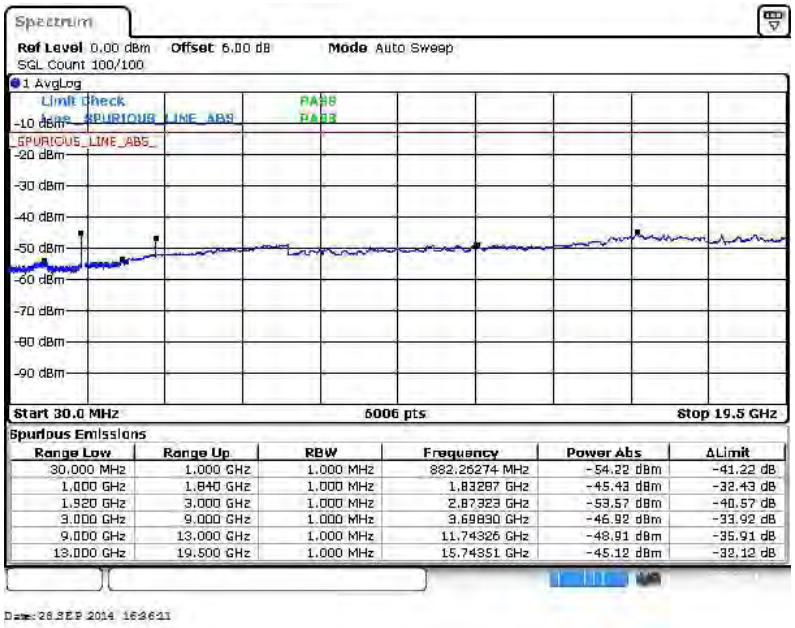


Band :	LTE Band 2	Channel :	CH18625 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

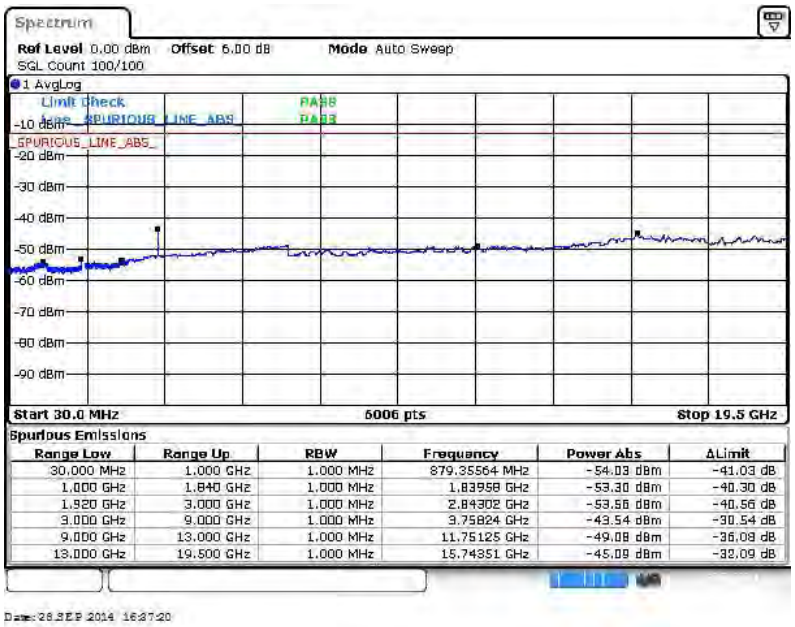


16QAM (RB Size 1, RB Offset 0)

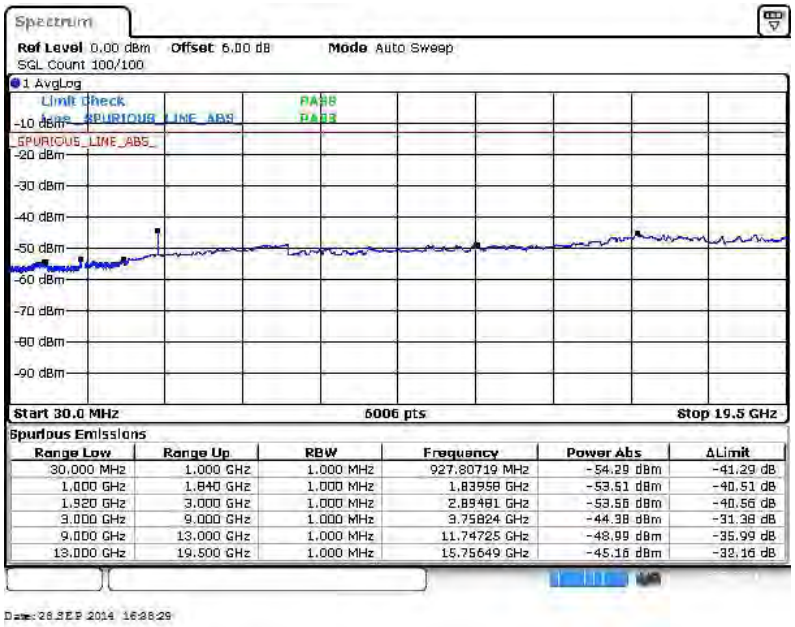


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

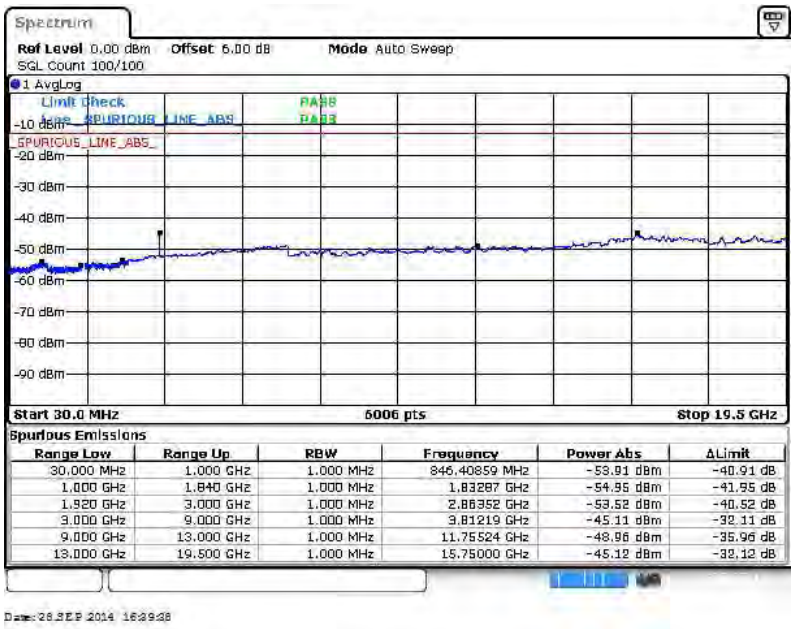


16QAM (RB Size 1, RB Offset 0)

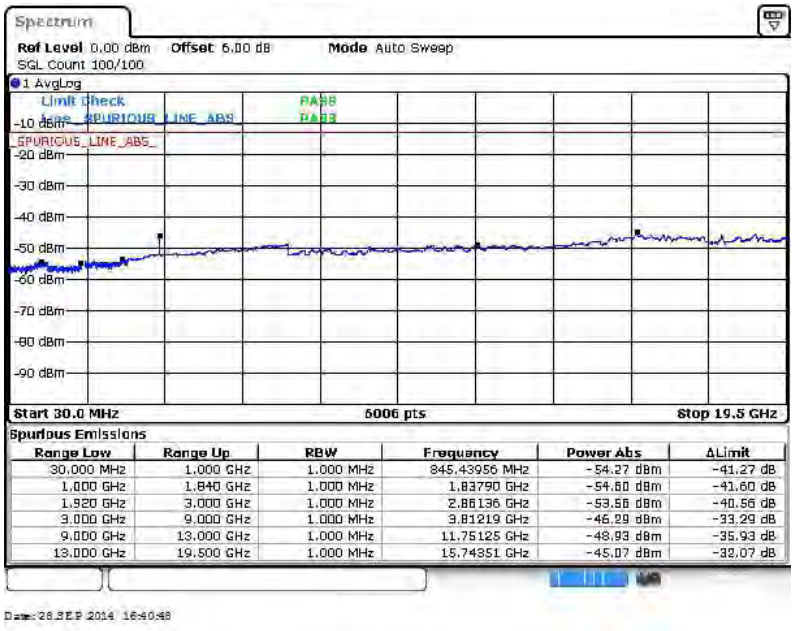


Band :	LTE Band 2	Channel :	CH19175 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

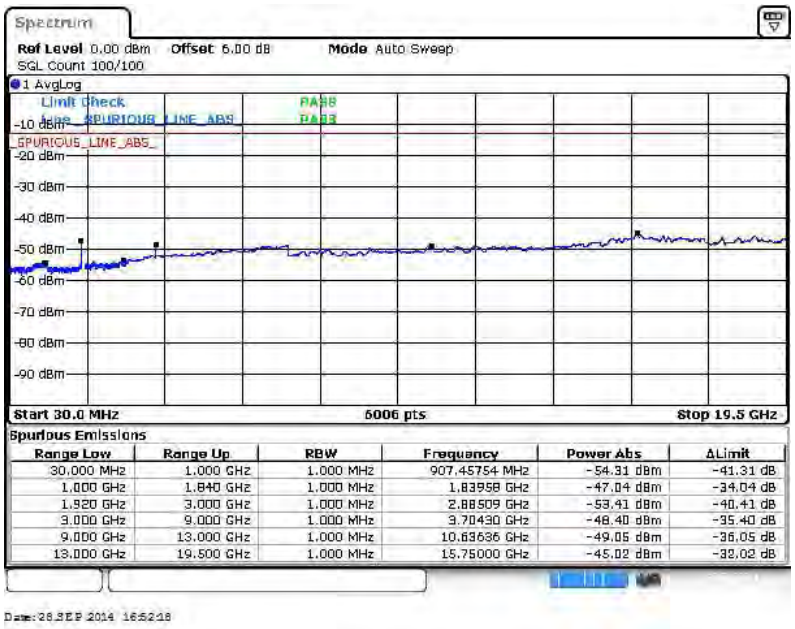


16QAM (RB Size 1, RB Offset 0)

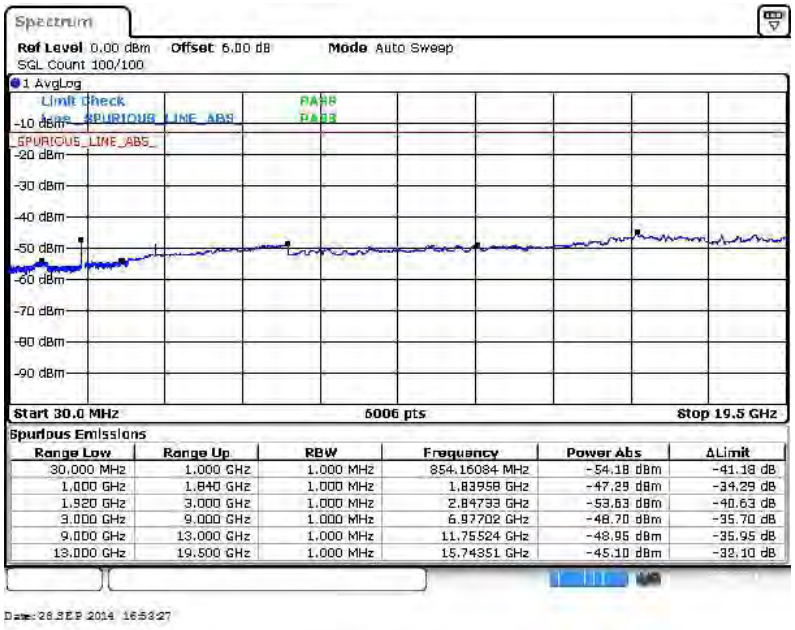


Band :	LTE Band 2	Channel :	CH18650 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

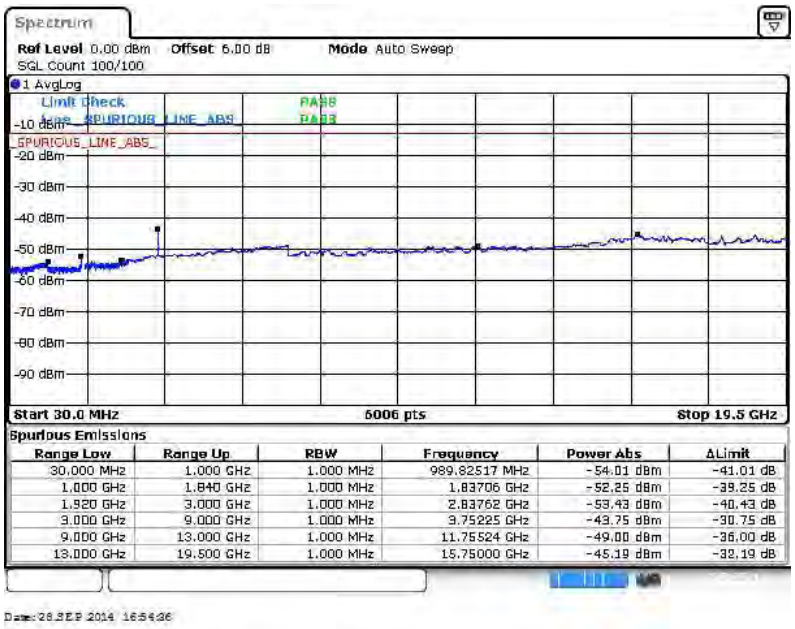


16QAM (RB Size 1, RB Offset 0)

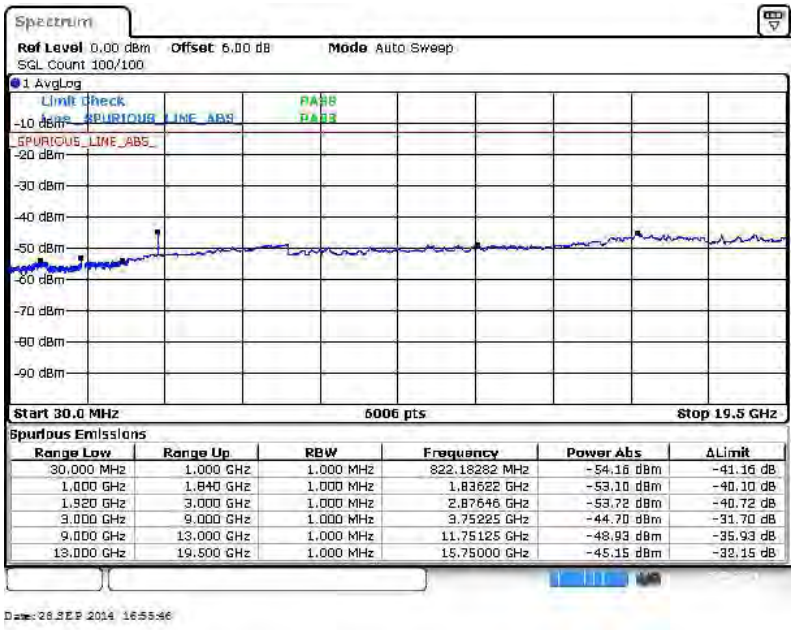


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

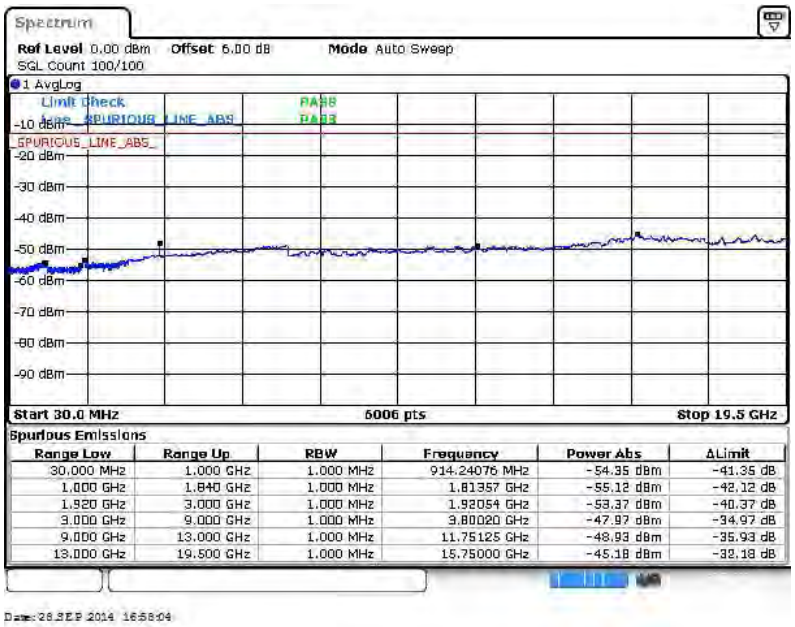


16QAM (RB Size 1, RB Offset 0)

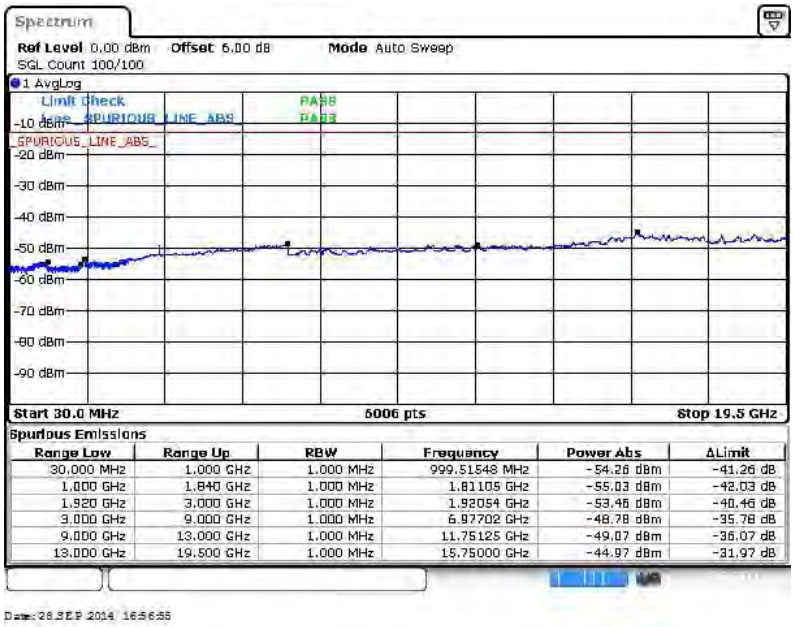


Band :	LTE Band 2	Channel :	CH19150 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

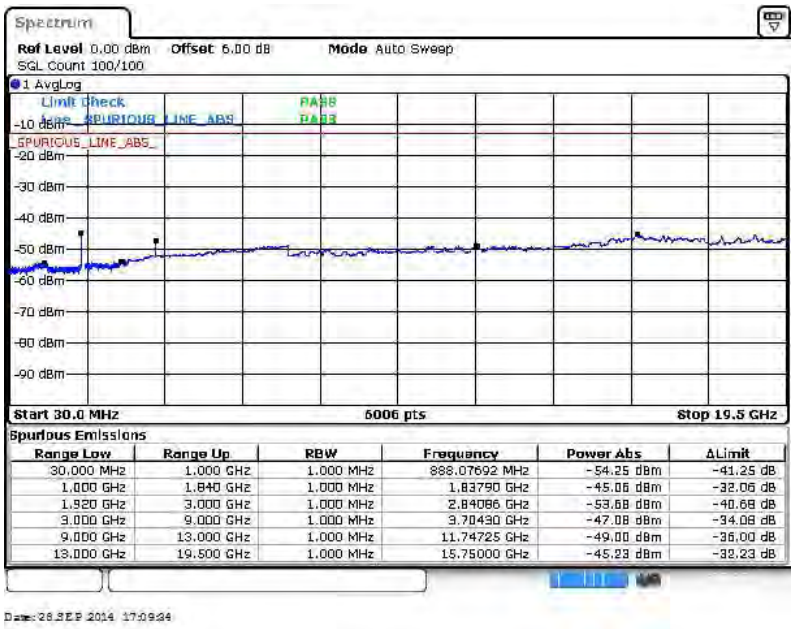


16QAM (RB Size 1, RB Offset 0)

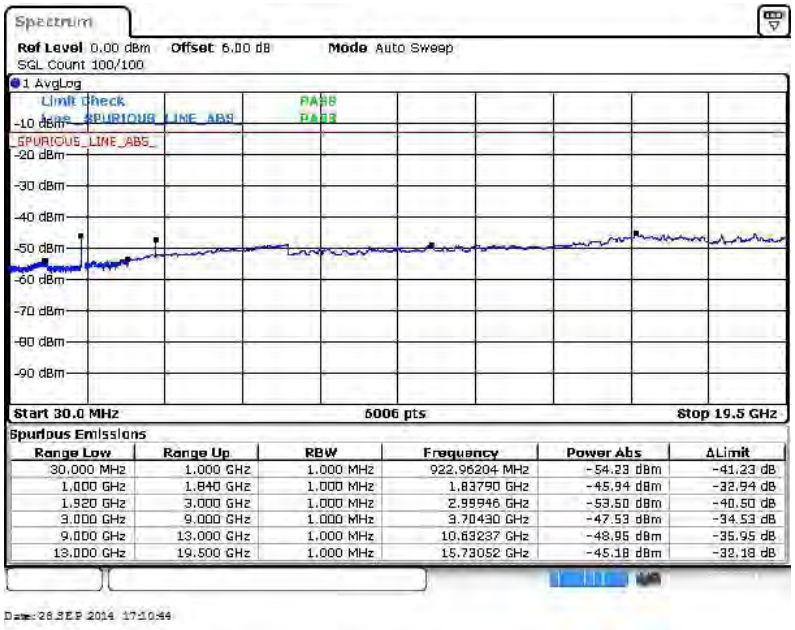


Band :	LTE Band 2	Channel :	CH18675 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

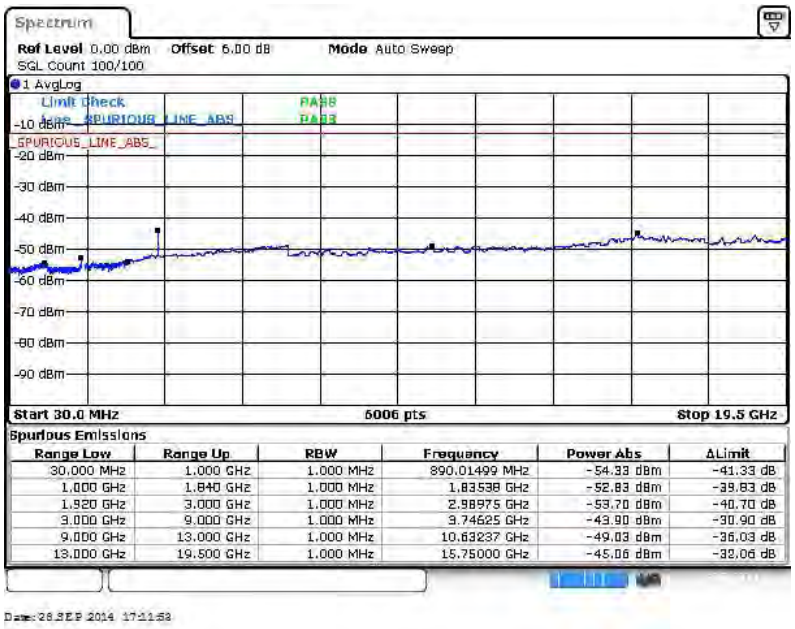


16QAM (RB Size 1, RB Offset 0)

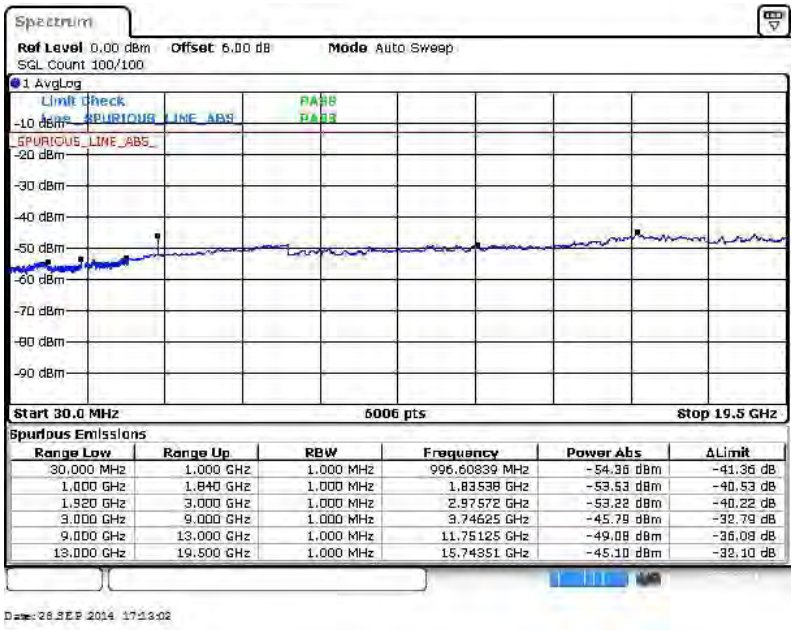


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

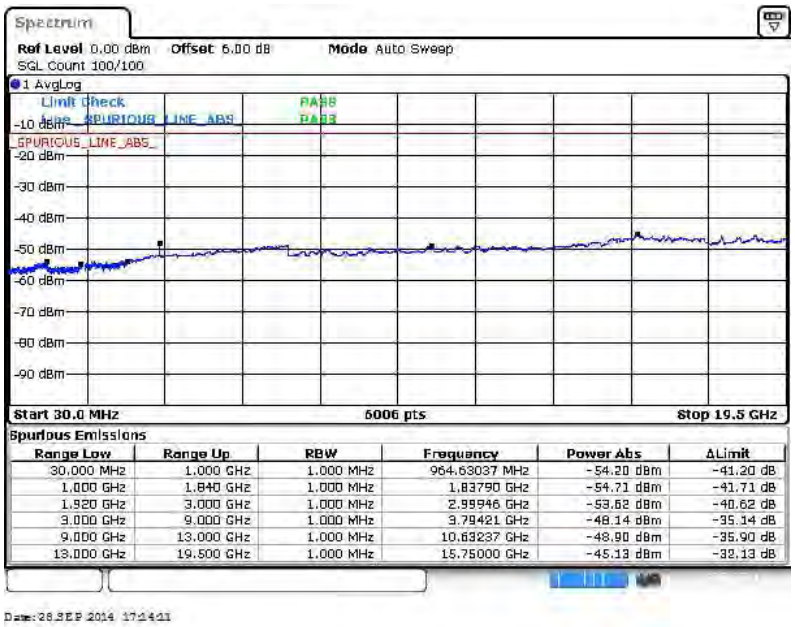


16QAM (RB Size 1, RB Offset 0)

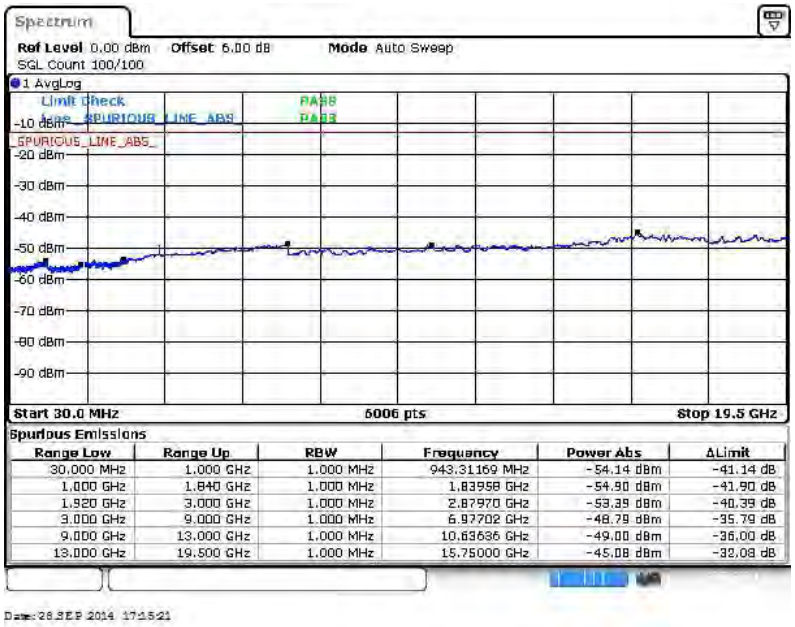


Band :	LTE Band 2	Channel :	CH19125 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

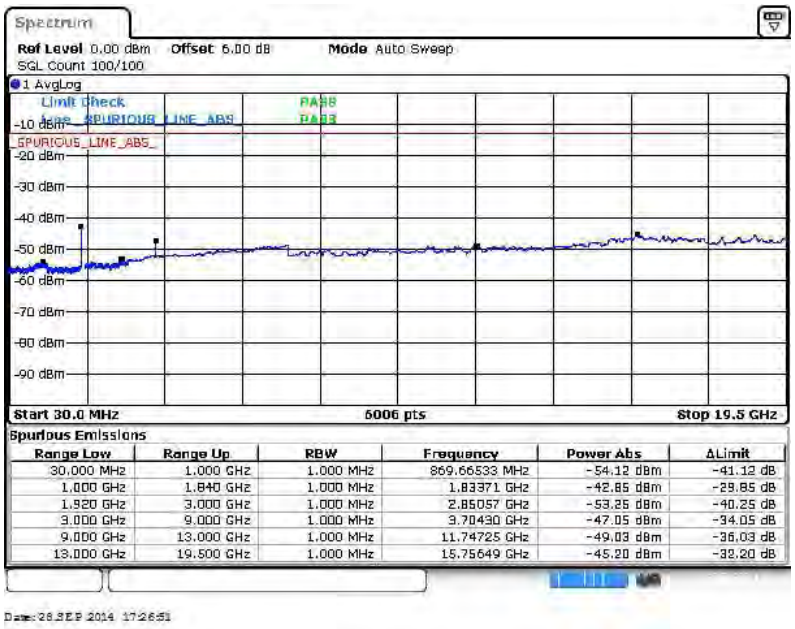


16QAM (RB Size 1, RB Offset 0)

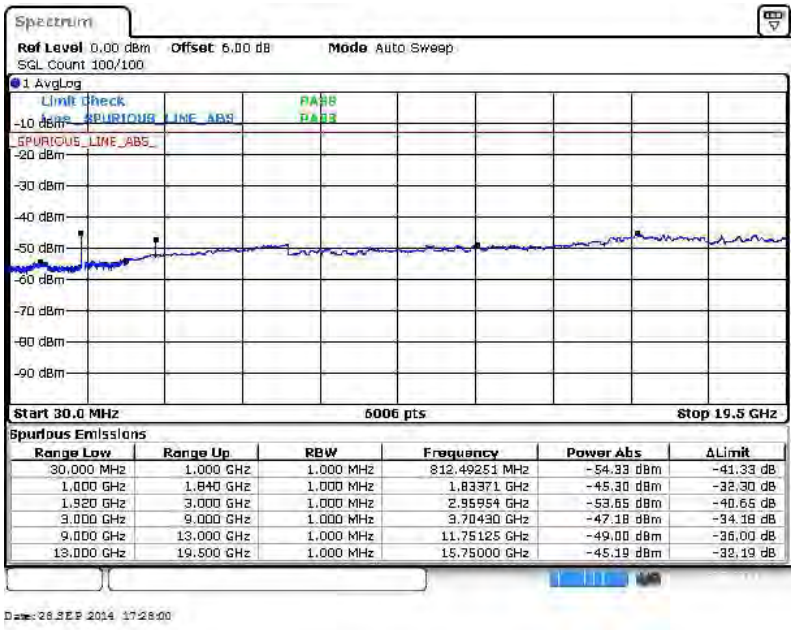


Band :	LTE Band 2	Channel :	CH18700 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

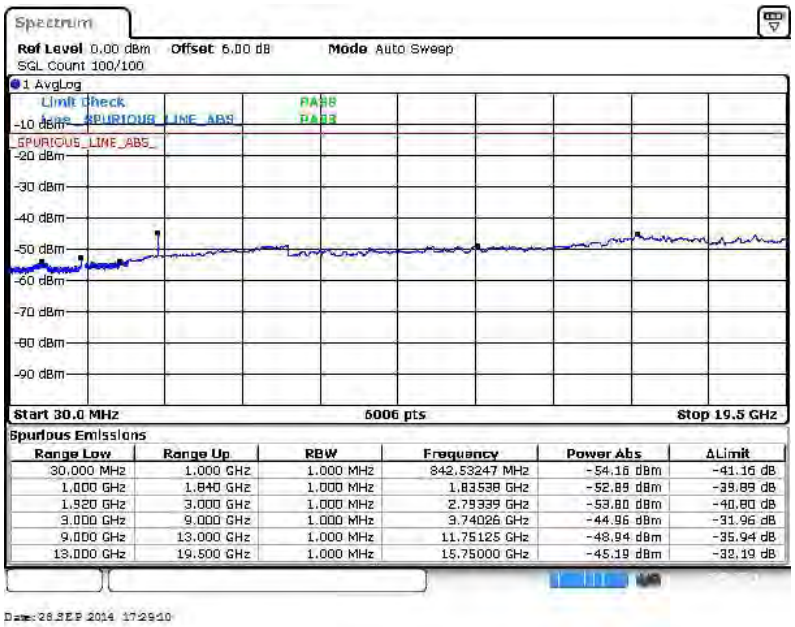


16QAM (RB Size 1, RB Offset 0)

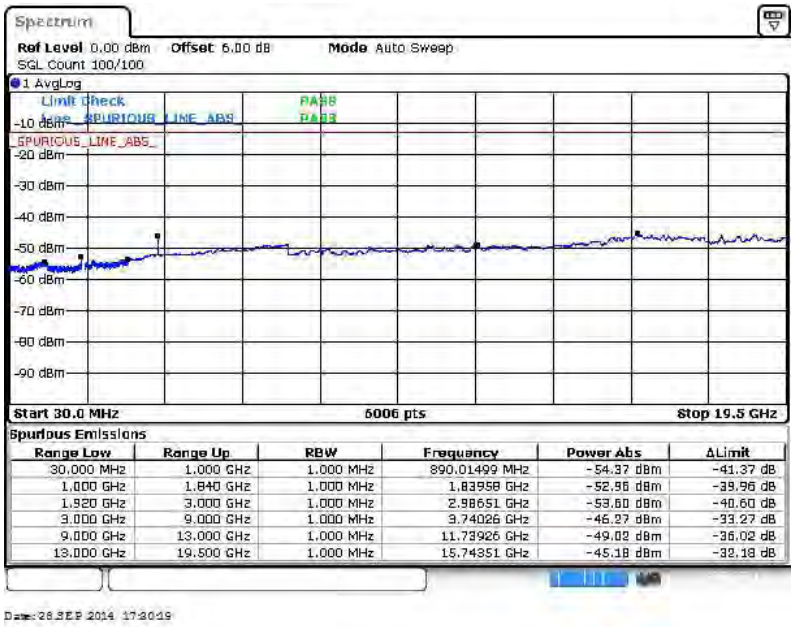


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

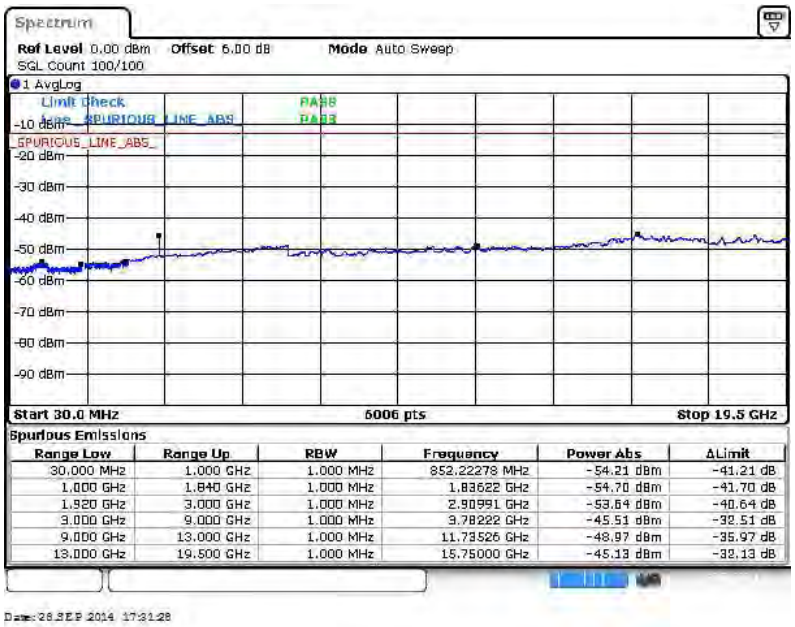


16QAM (RB Size 1, RB Offset 0)

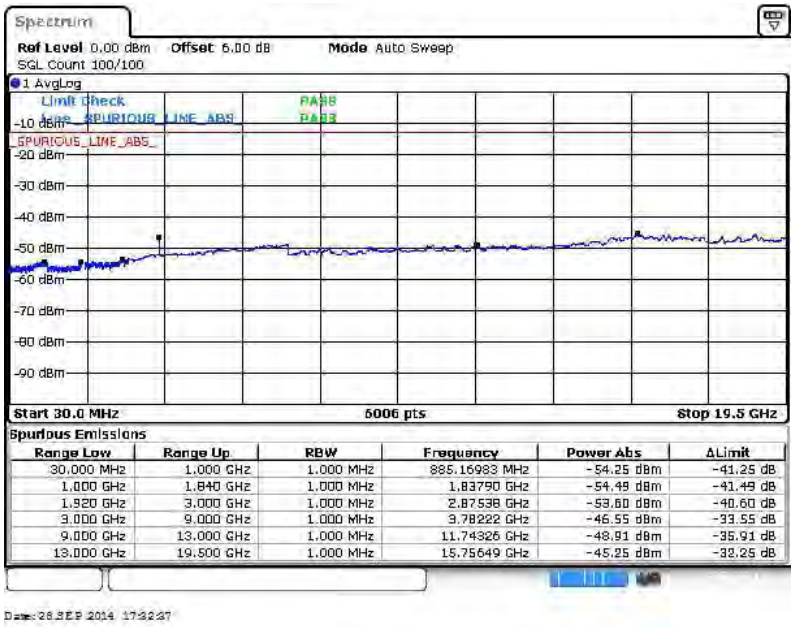


Band :	LTE Band 2	Channel :	CH19100 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

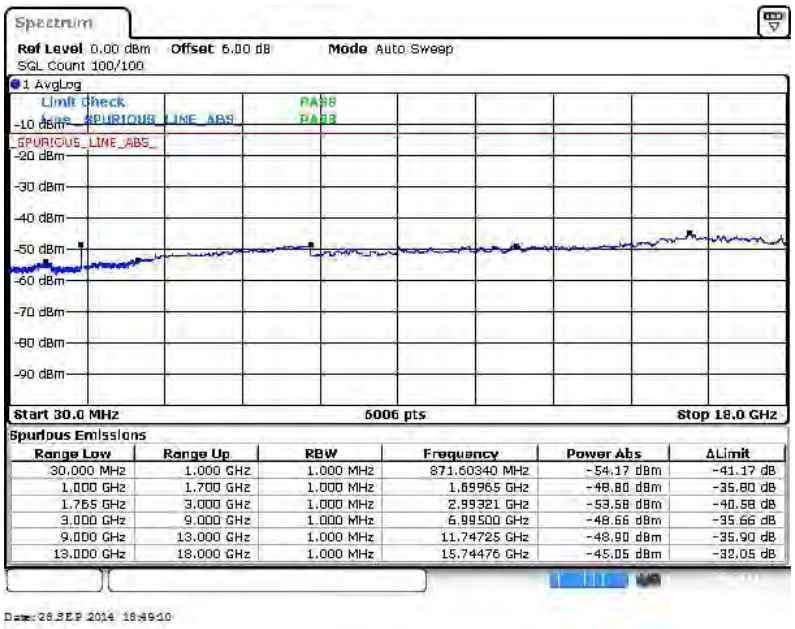


16QAM (RB Size 1, RB Offset 0)

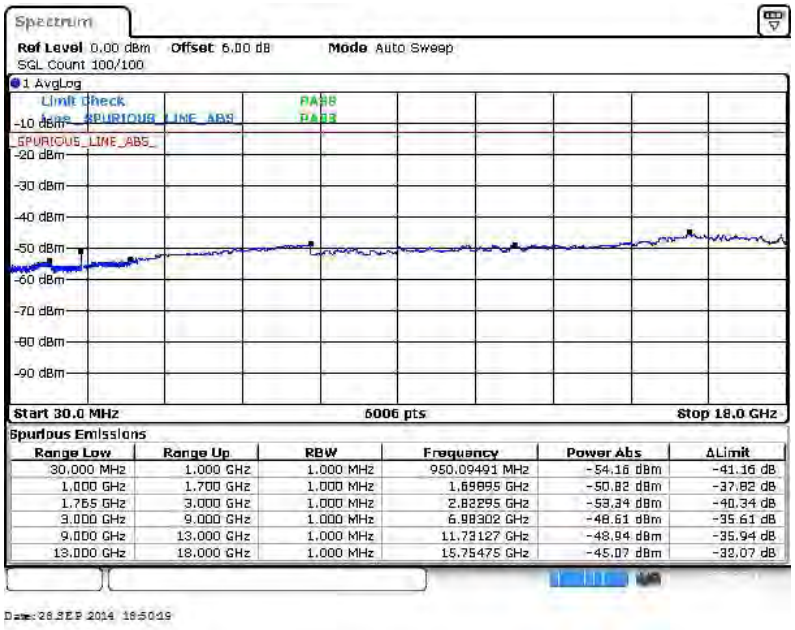


Band :	LTE Band 4	Channel :	CH19957 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

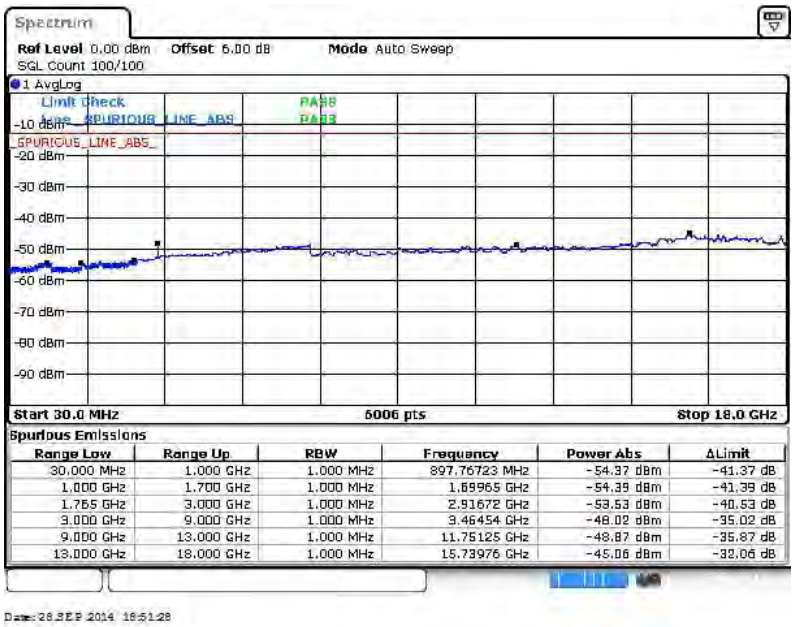


16QAM (RB Size 1, RB Offset 0)

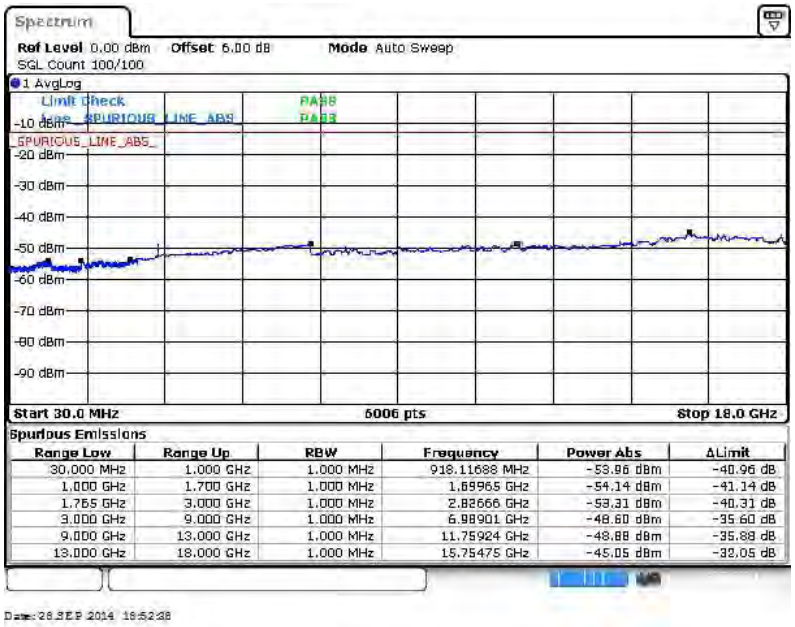


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

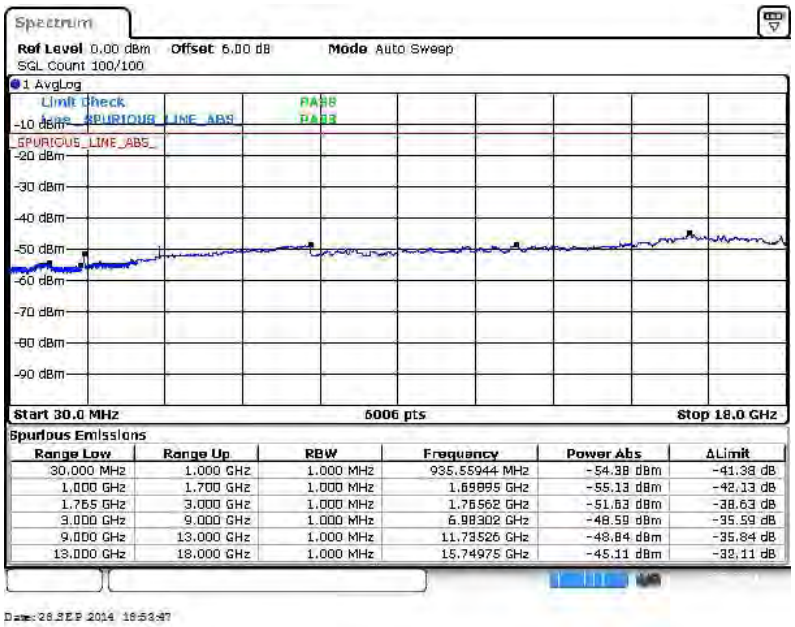


16QAM (RB Size 1, RB Offset 0)

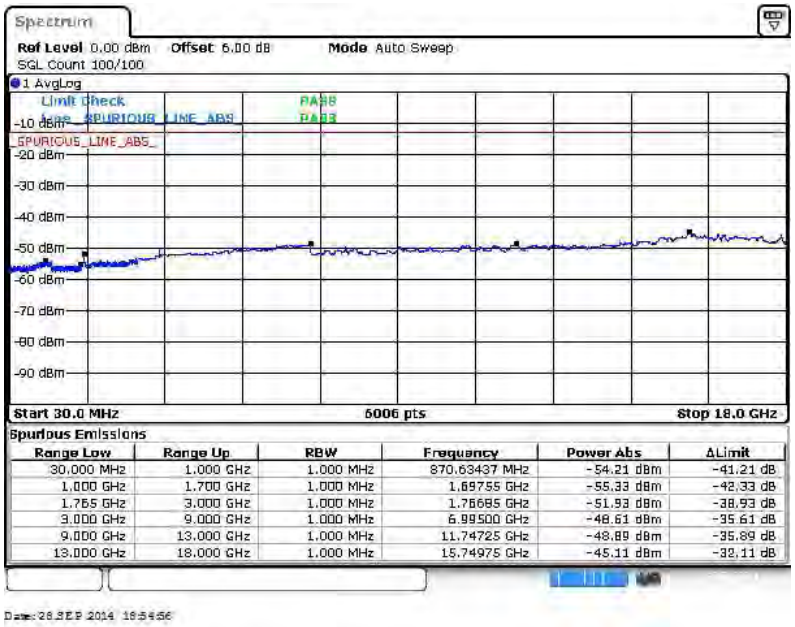


Band :	LTE Band 4	Channel :	CH20393 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

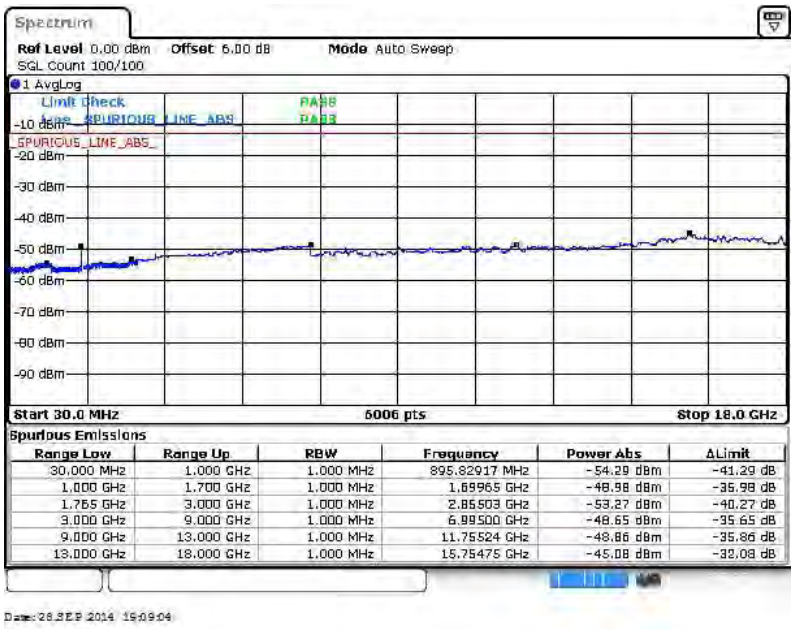


16QAM (RB Size 1, RB Offset 0)

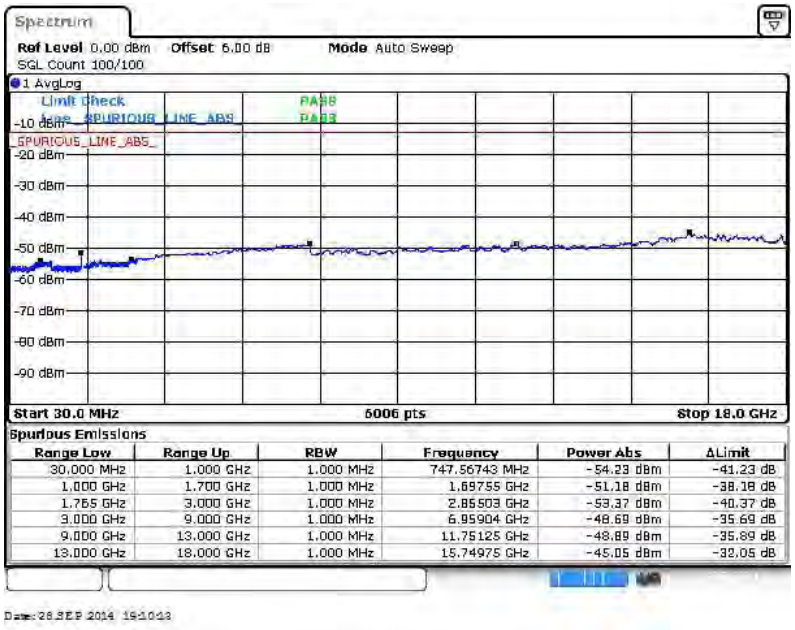


Band :	LTE Band 4	Channel :	CH19965 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

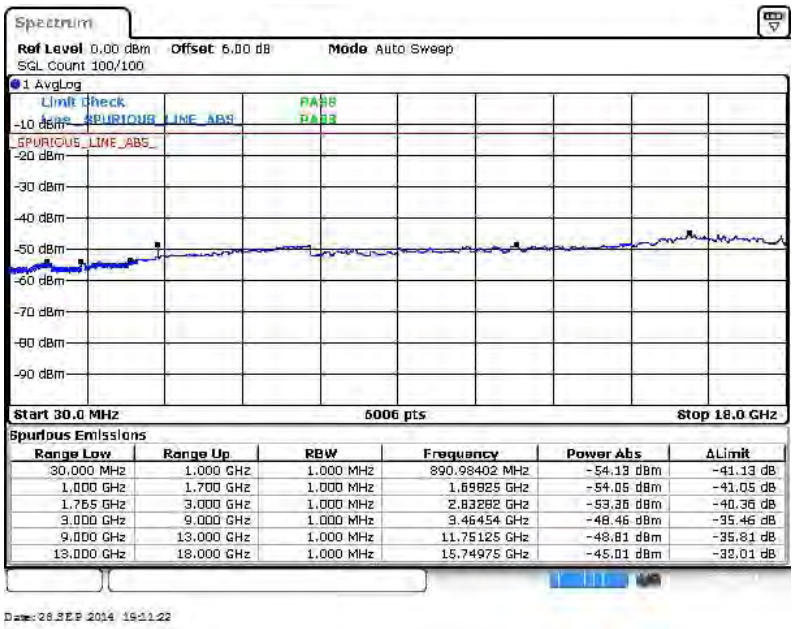


16QAM (RB Size 1, RB Offset 0)

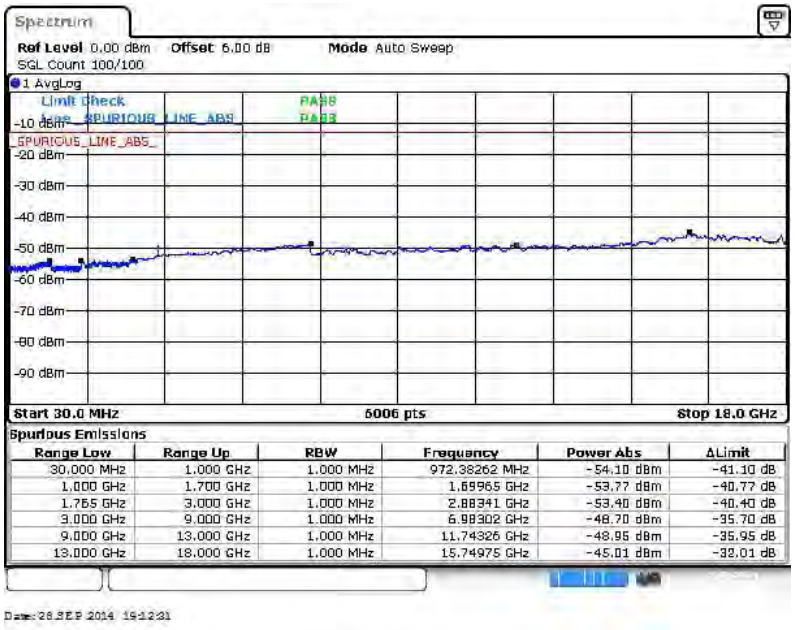


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

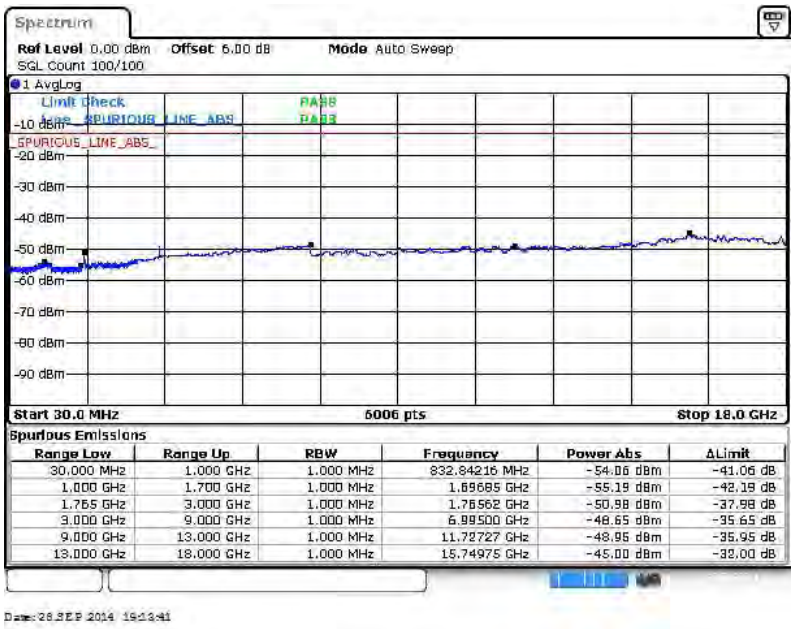


16QAM (RB Size 1, RB Offset 0)

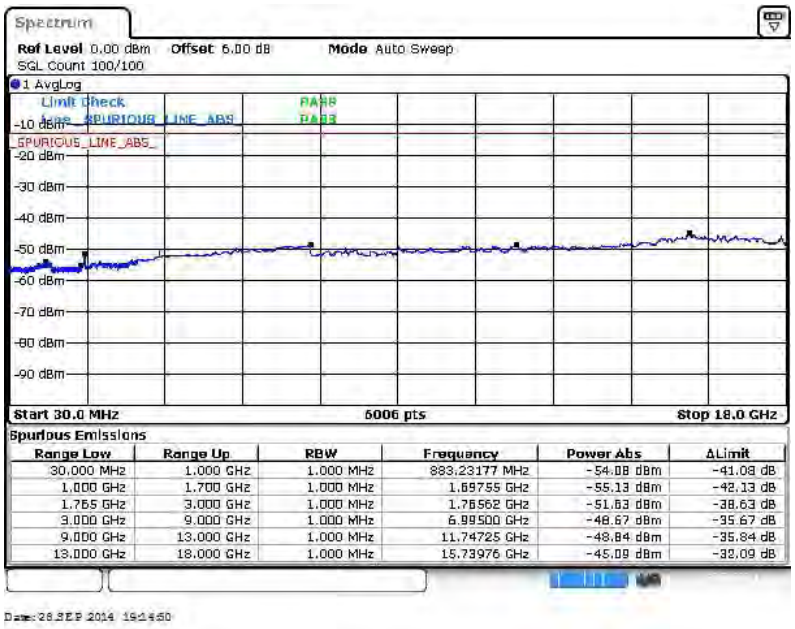


Band :	LTE Band 4	Channel :	CH20385 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

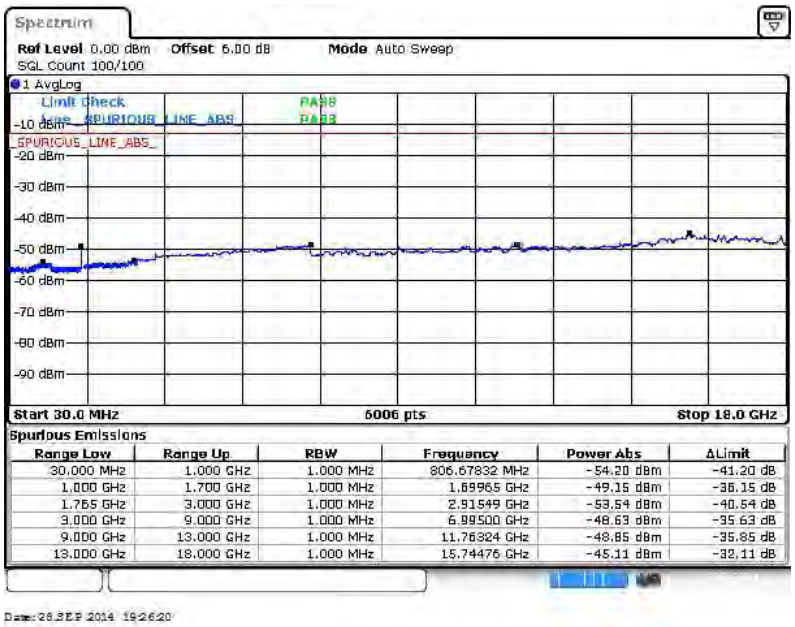


16QAM (RB Size 1, RB Offset 0)

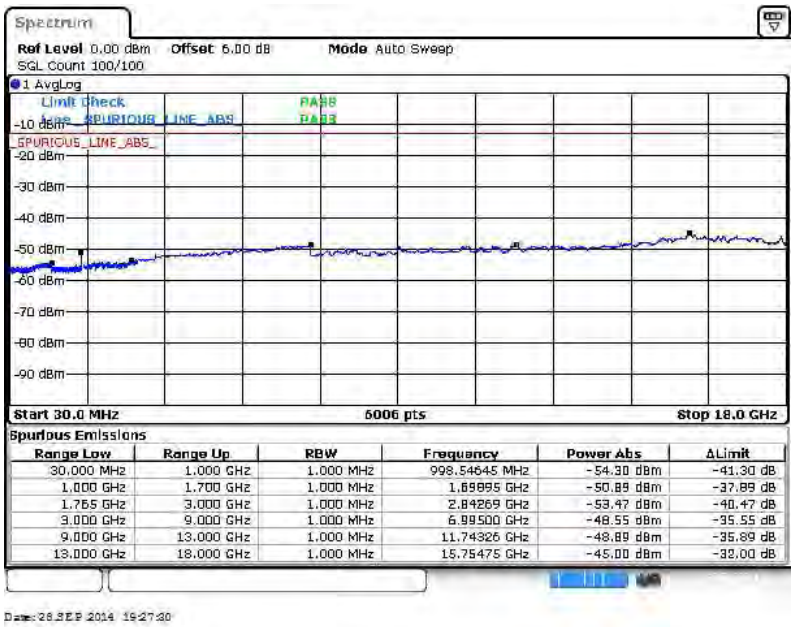


Band :	LTE Band 4	Channel :	CH19975 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

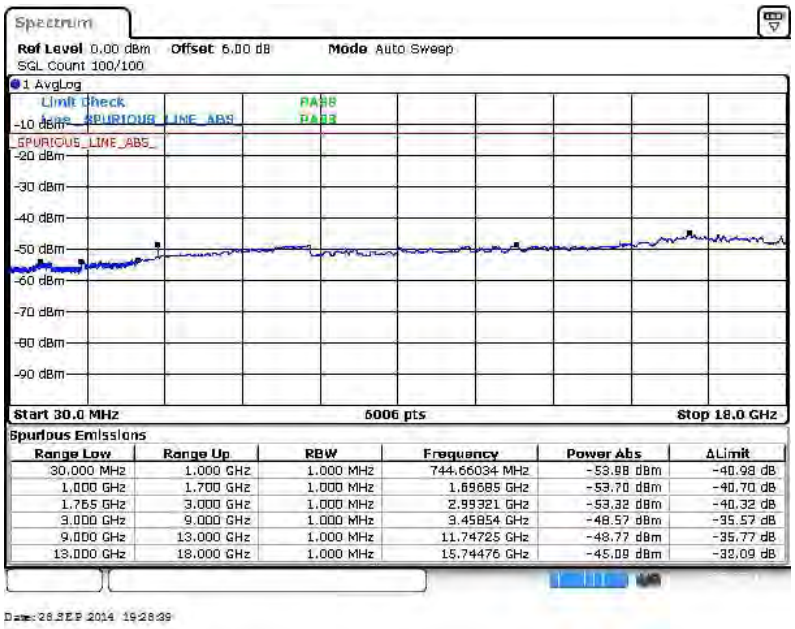


16QAM (RB Size 1, RB Offset 0)

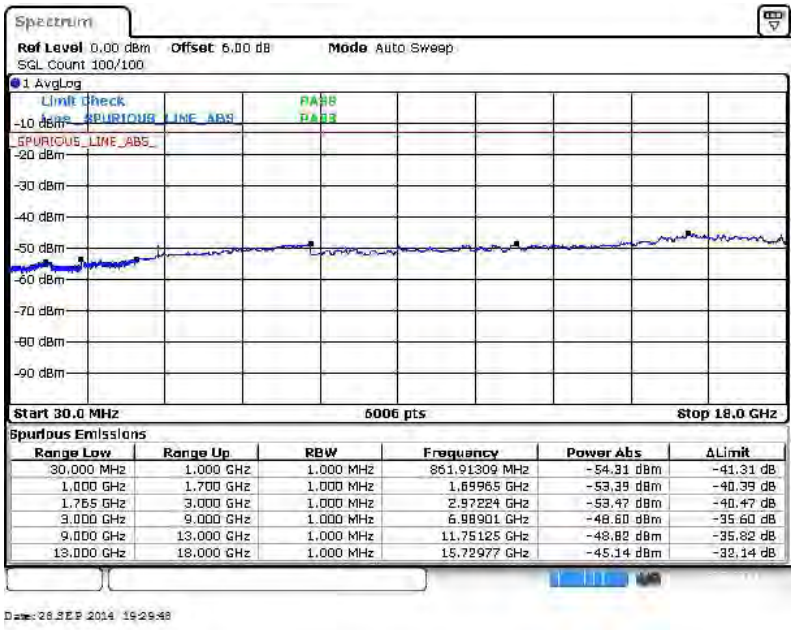


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

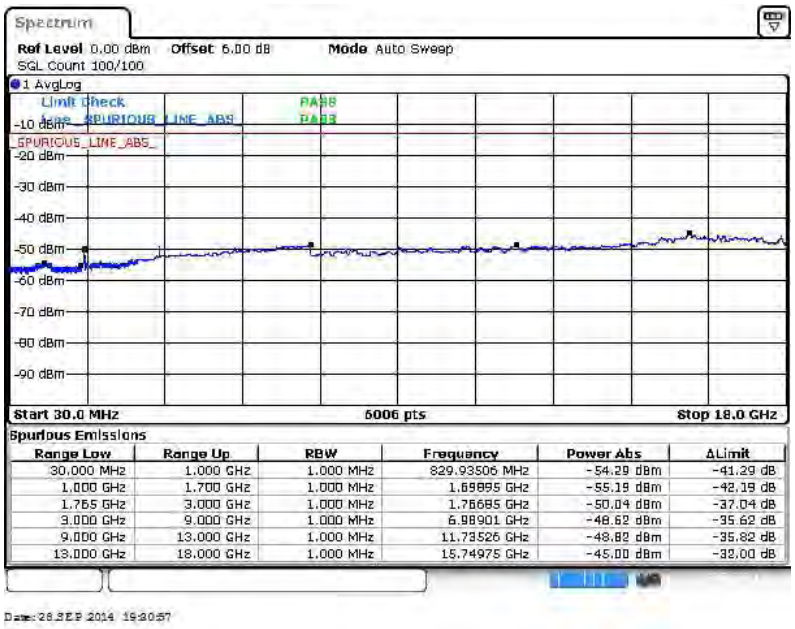


16QAM (RB Size 1, RB Offset 0)

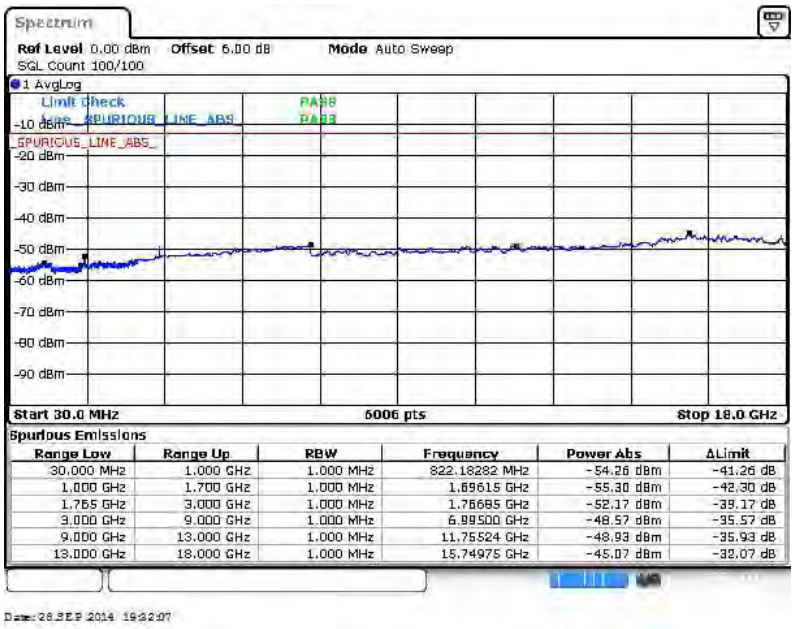


Band :	LTE Band 4	Channel :	CH20375 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

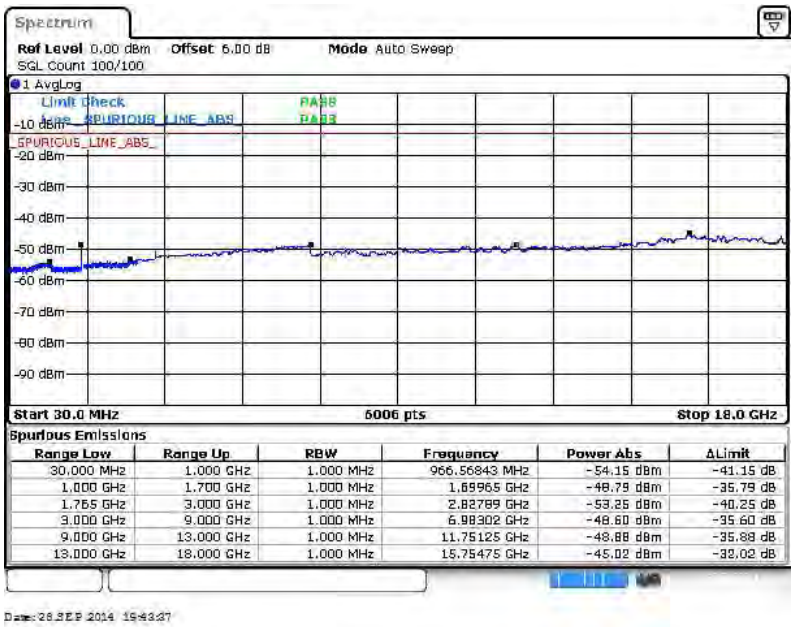


16QAM (RB Size 1, RB Offset 0)

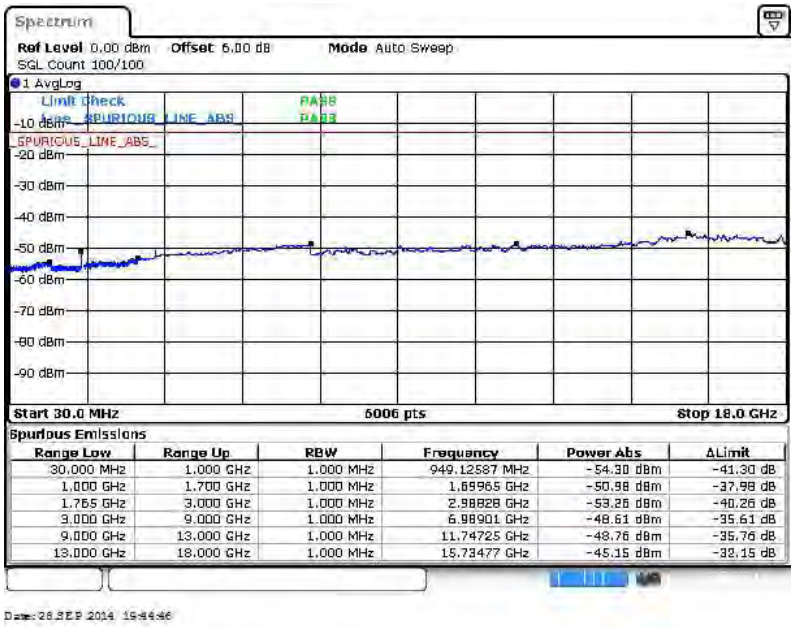


Band :	LTE Band 4	Channel :	CH20000 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

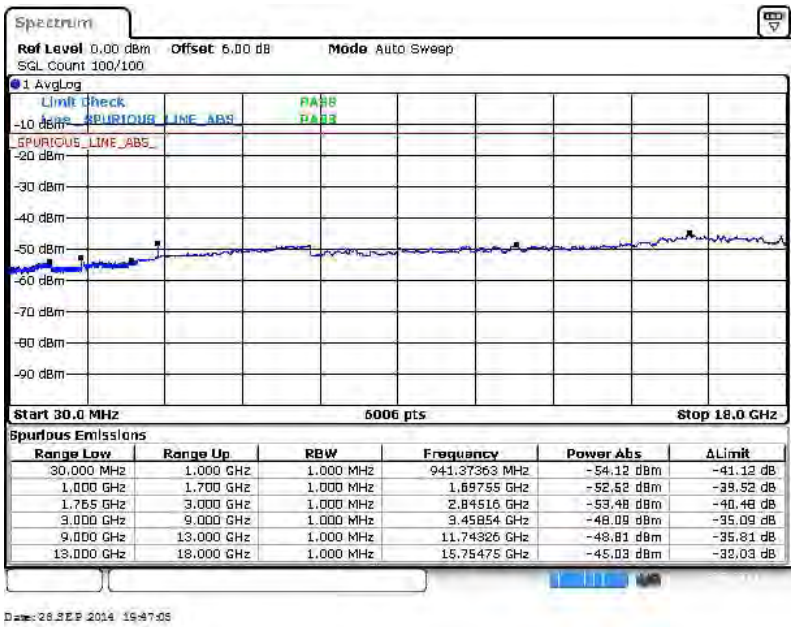


16QAM (RB Size 1, RB Offset 0)

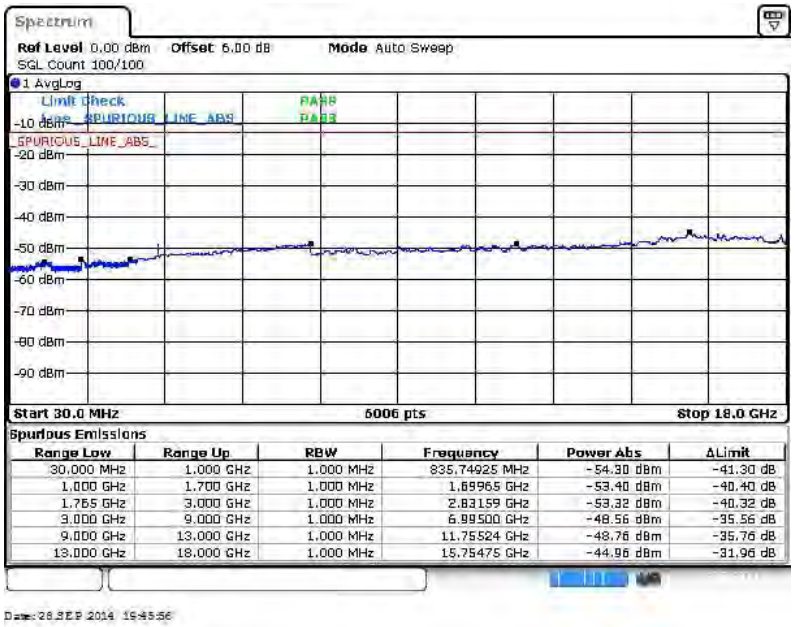


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

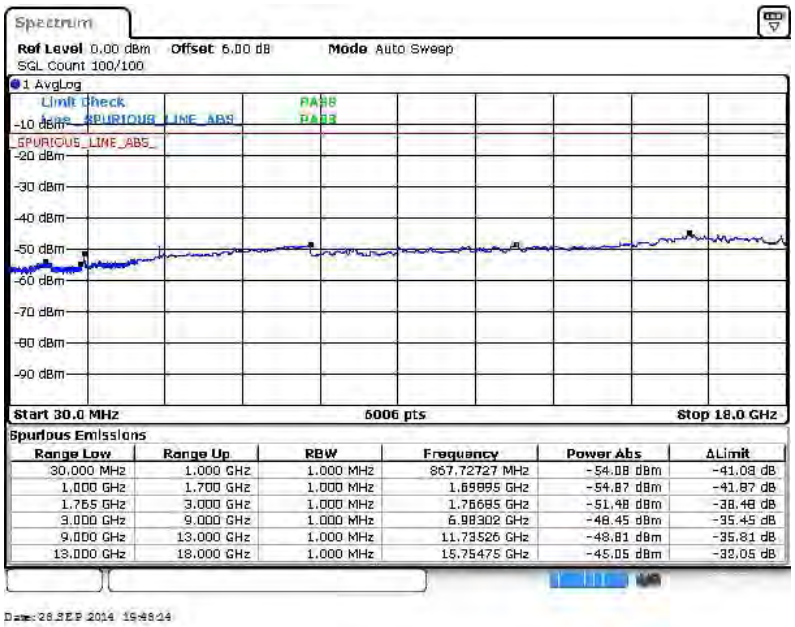


16QAM (RB Size 1, RB Offset 0)

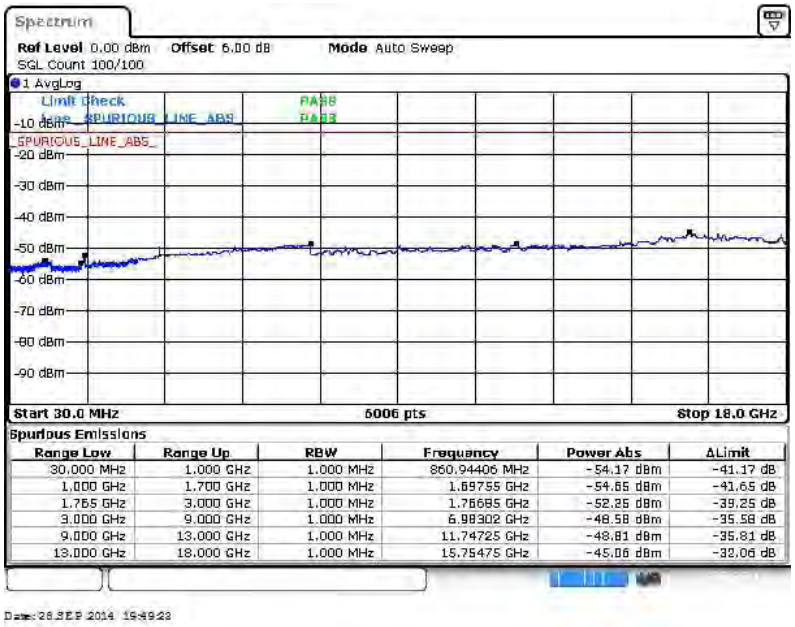


Band :	LTE Band 4	Channel :	CH20350 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

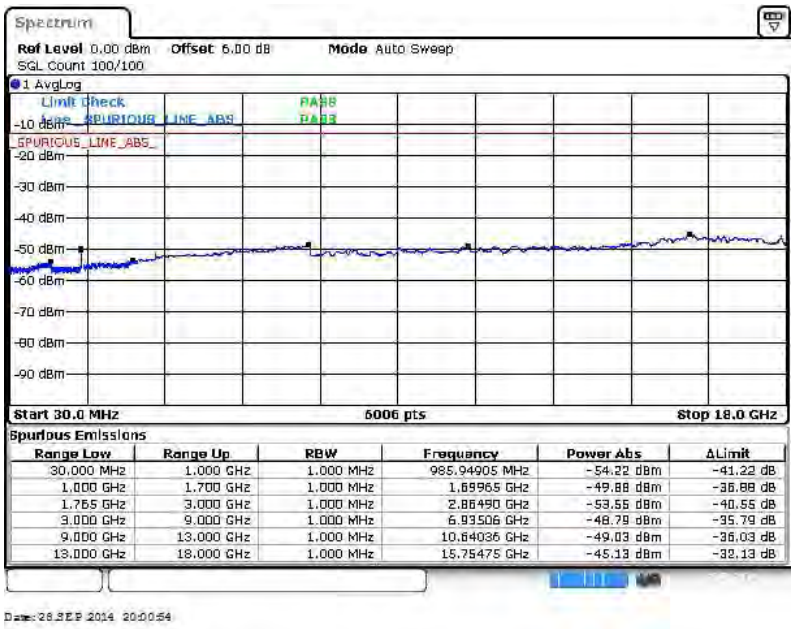


16QAM (RB Size 1, RB Offset 0)

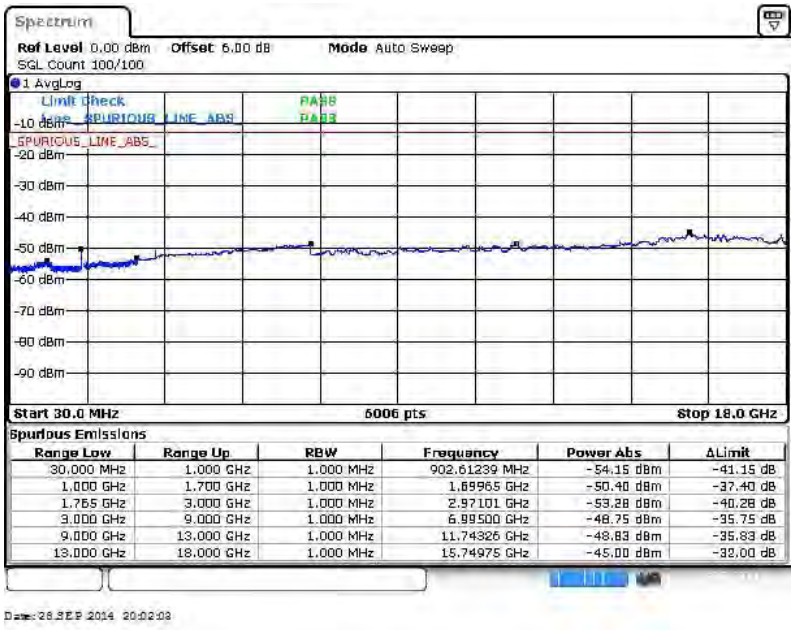


Band :	LTE Band 4	Channel :	CH20025 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

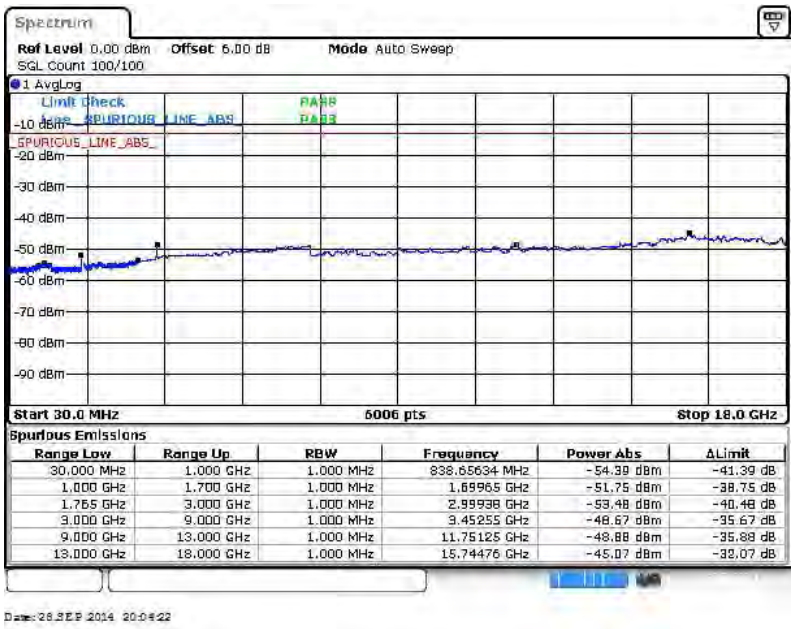


16QAM (RB Size 1, RB Offset 0)

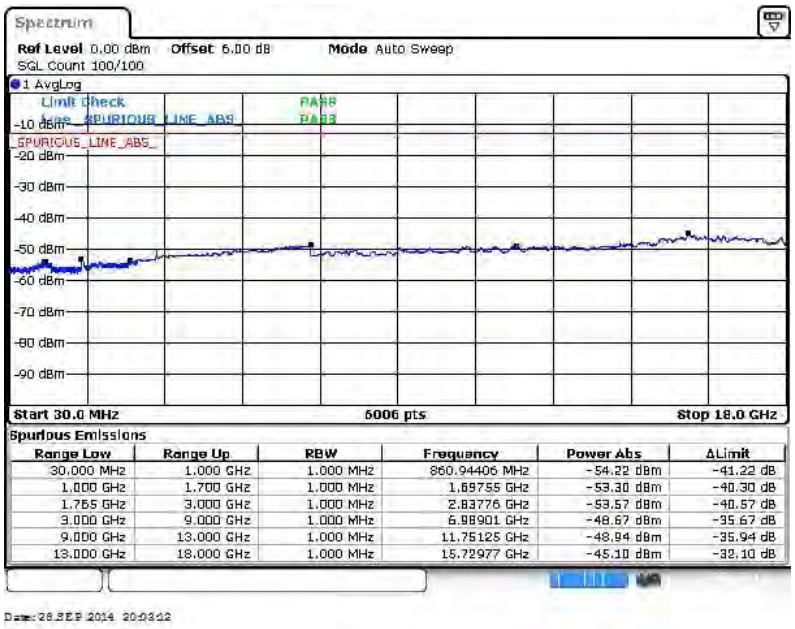


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

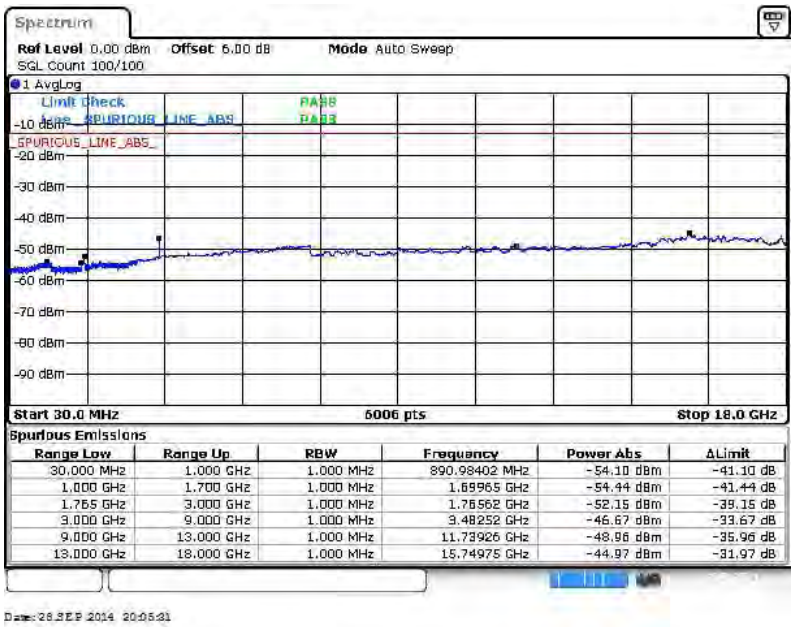


16QAM (RB Size 1, RB Offset 0)

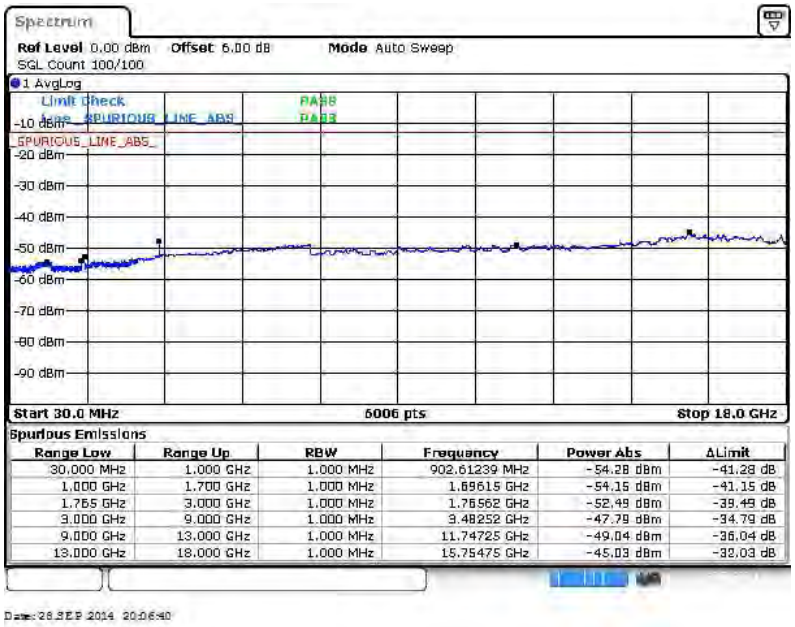


Band :	LTE Band 4	Channel :	CH20325 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)

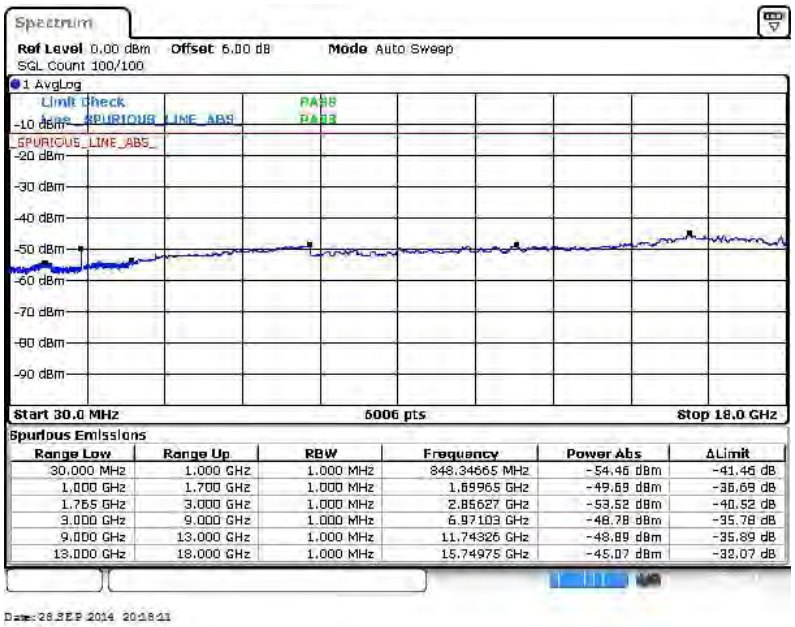


16QAM (RB Size 1, RB Offset 0)

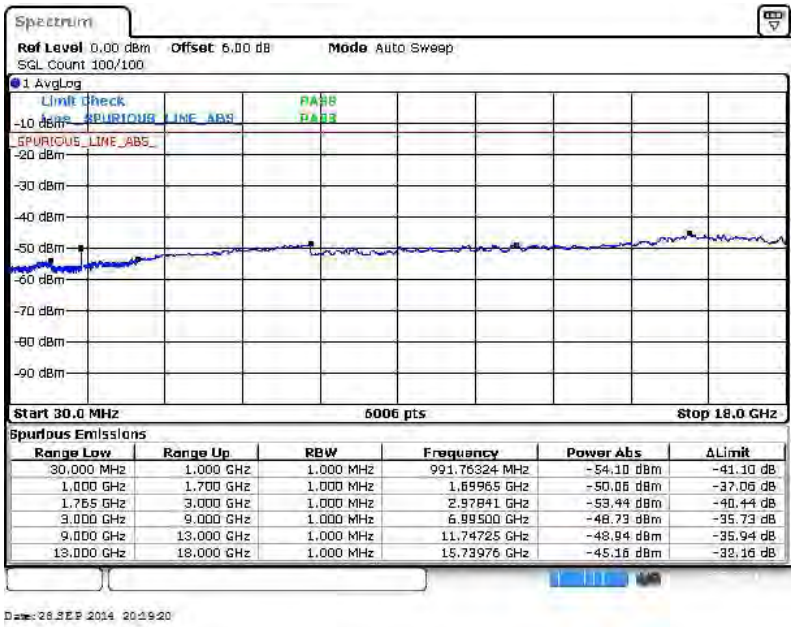


Band :	LTE Band 4	Channel :	CH20050 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

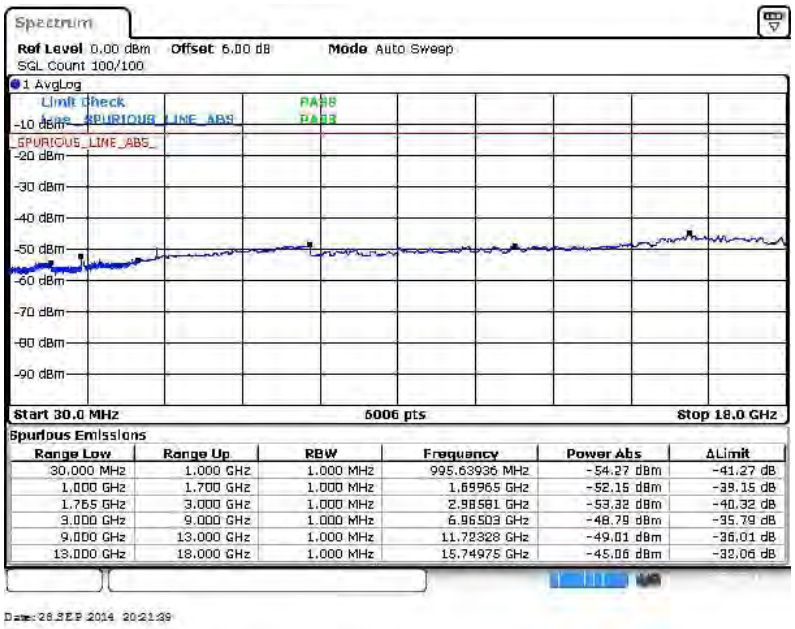


16QAM (RB Size 1, RB Offset 0)

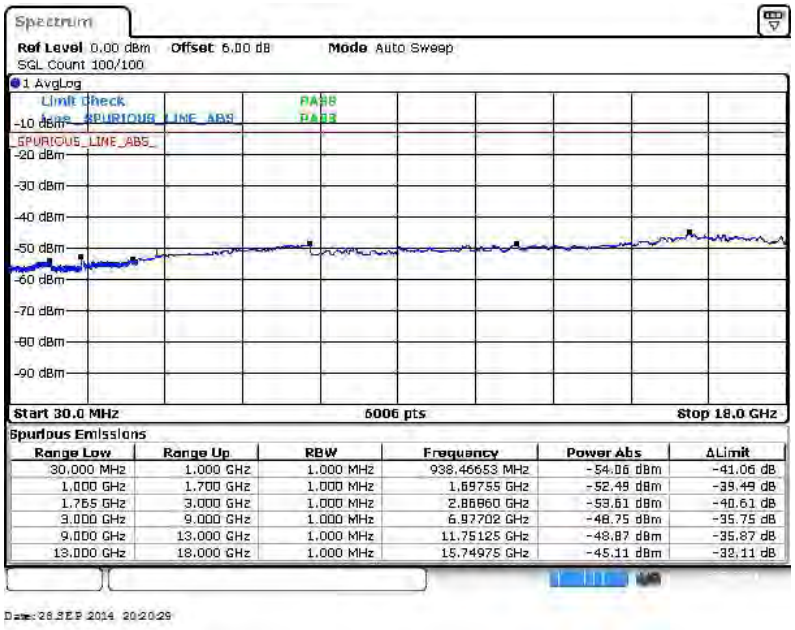


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

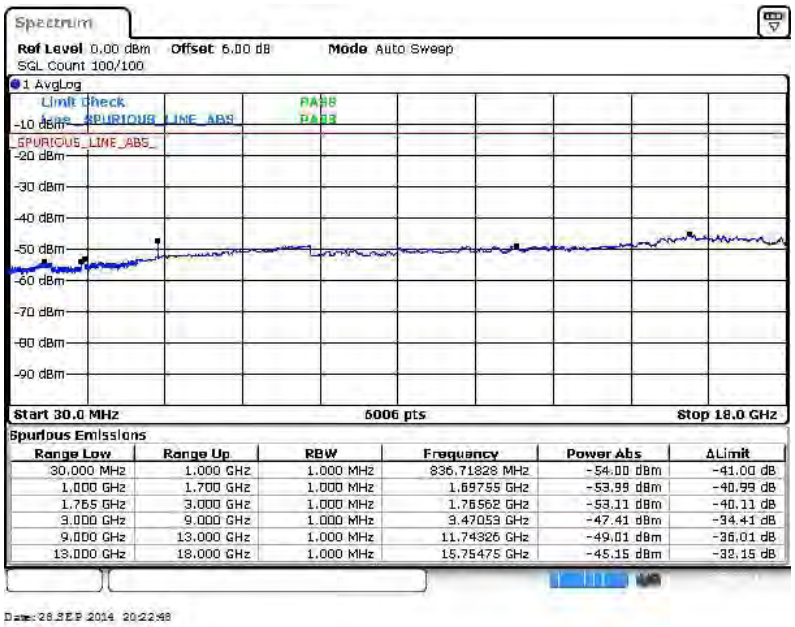


16QAM (RB Size 1, RB Offset 0)

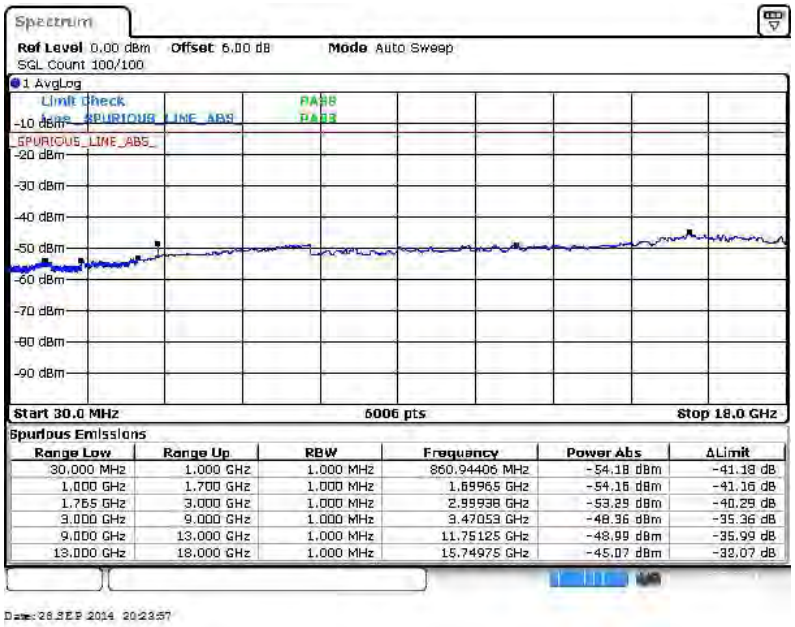


Band :	LTE Band 4	Channel :	CH20300 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)

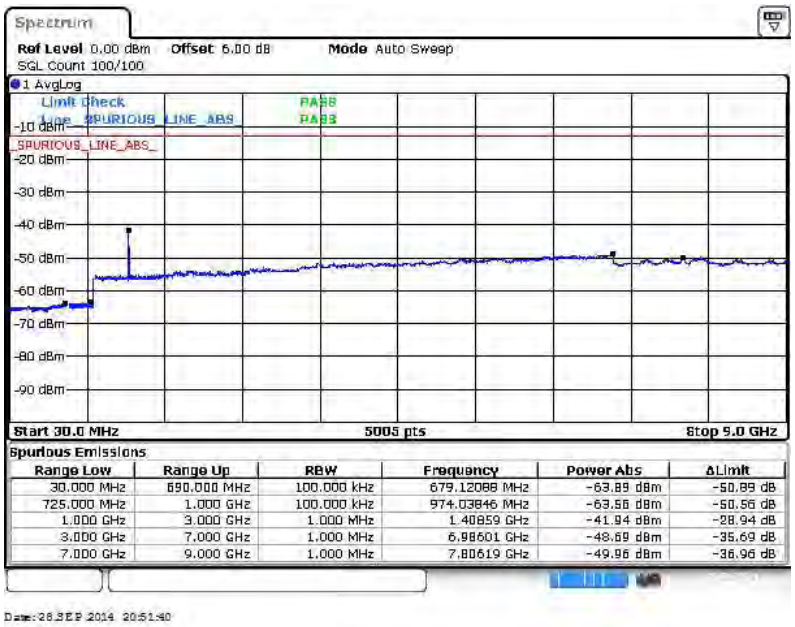


16QAM (RB Size 1, RB Offset 0)

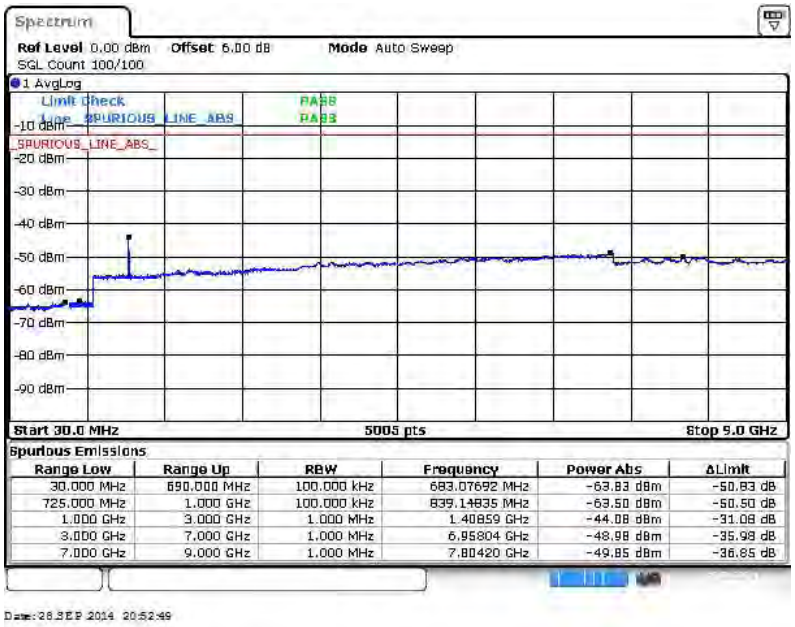


Band :	LTE Band 17	Channel :	CH23755 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

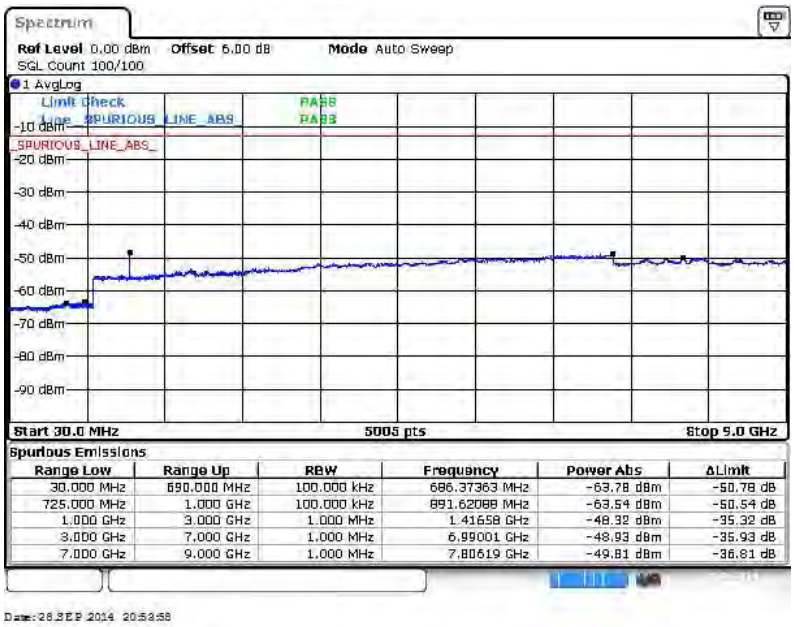


16QAM (RB Size 1, RB Offset 0)

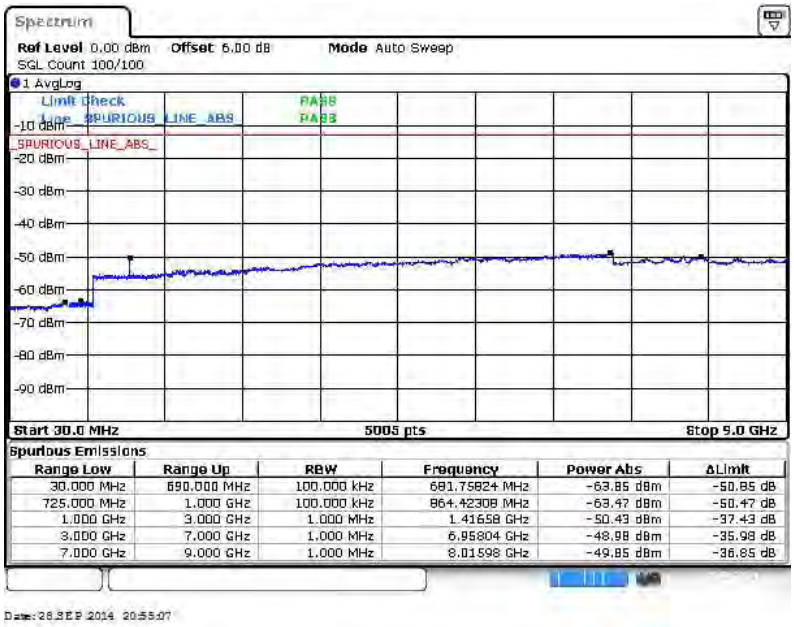


Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

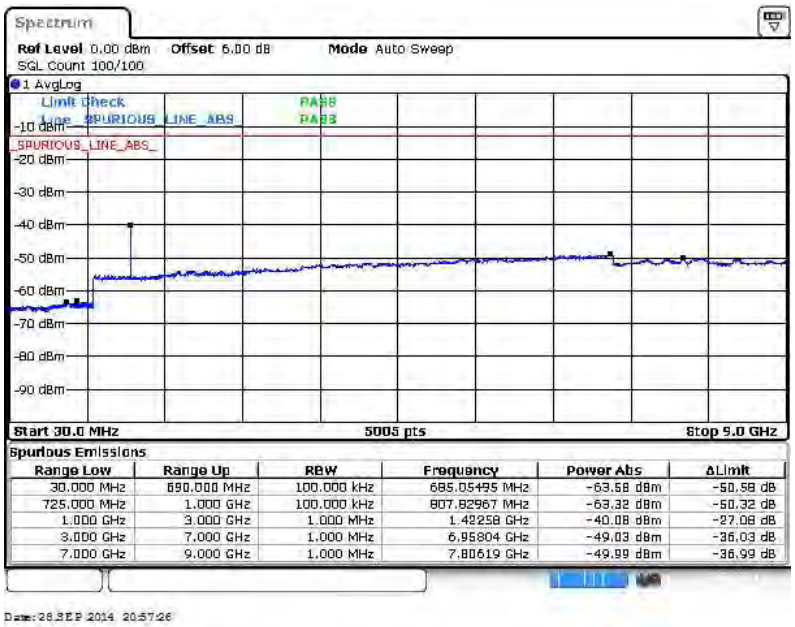


16QAM (RB Size 1, RB Offset 0)

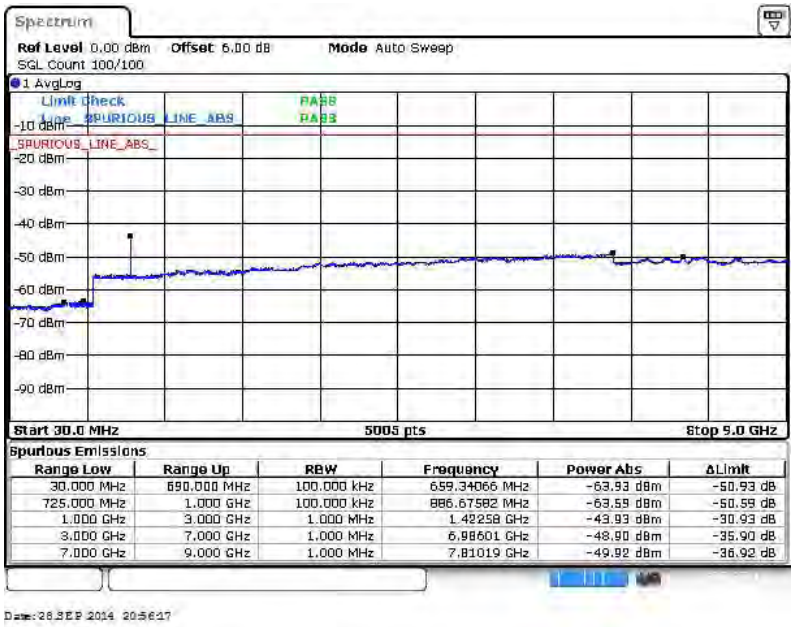


Band :	LTE Band 17	Channel :	CH23825 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

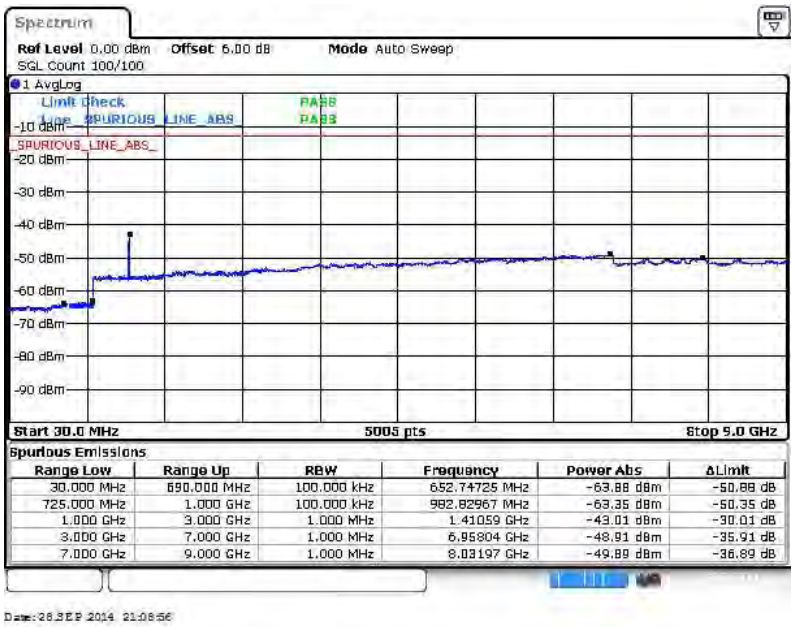


16QAM (RB Size 1, RB Offset 0)

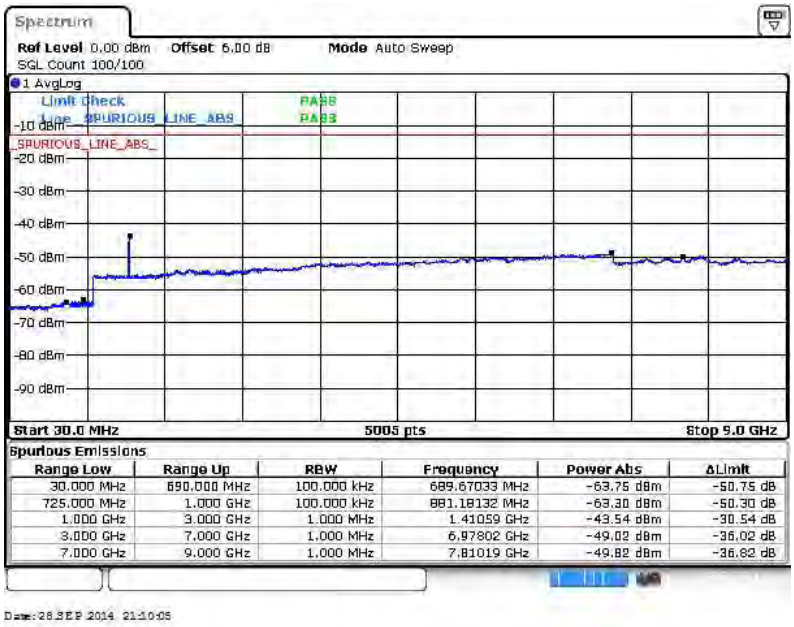


Band :	LTE Band 17	Channel :	CH23780 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

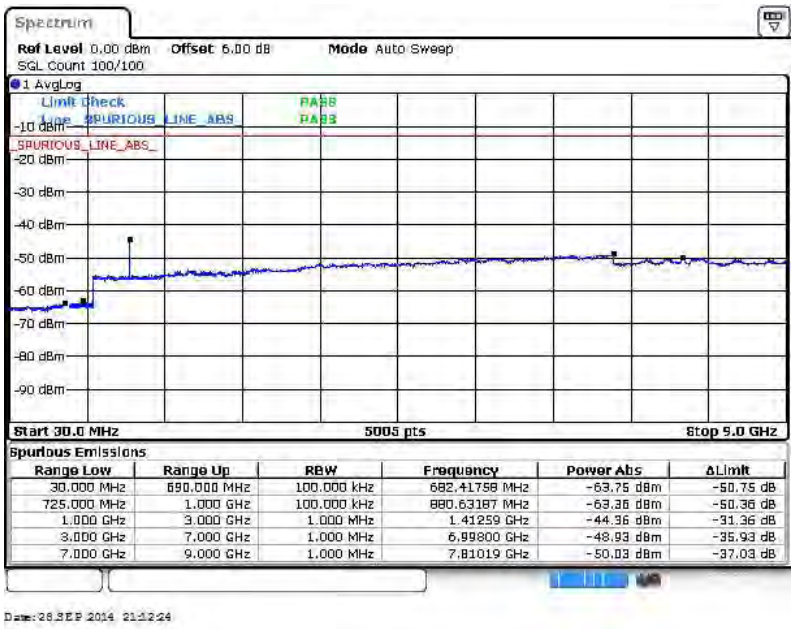


16QAM (RB Size 1, RB Offset 0)

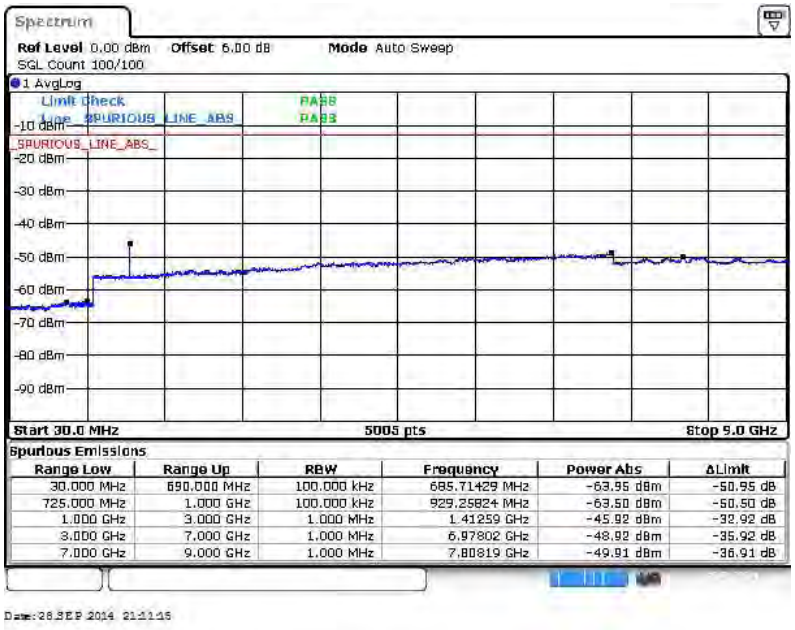


Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

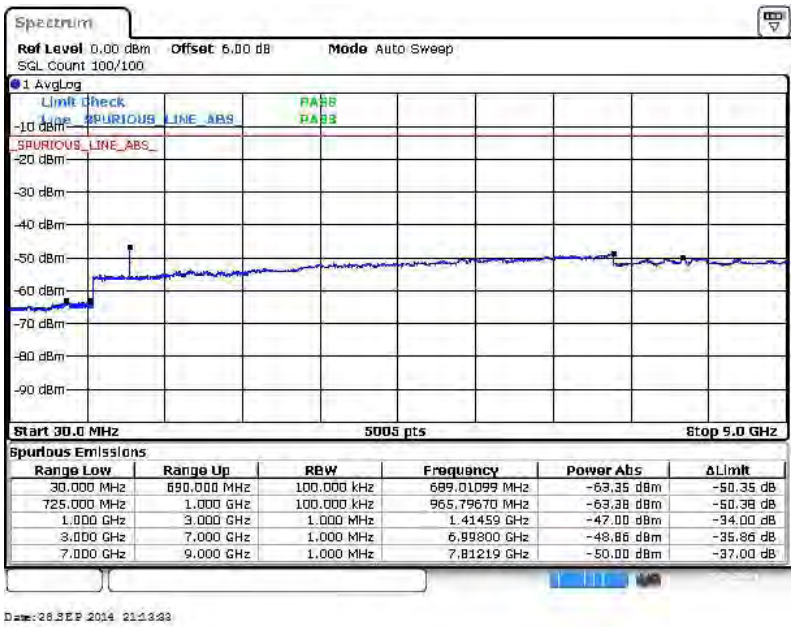


16QAM (RB Size 1, RB Offset 0)

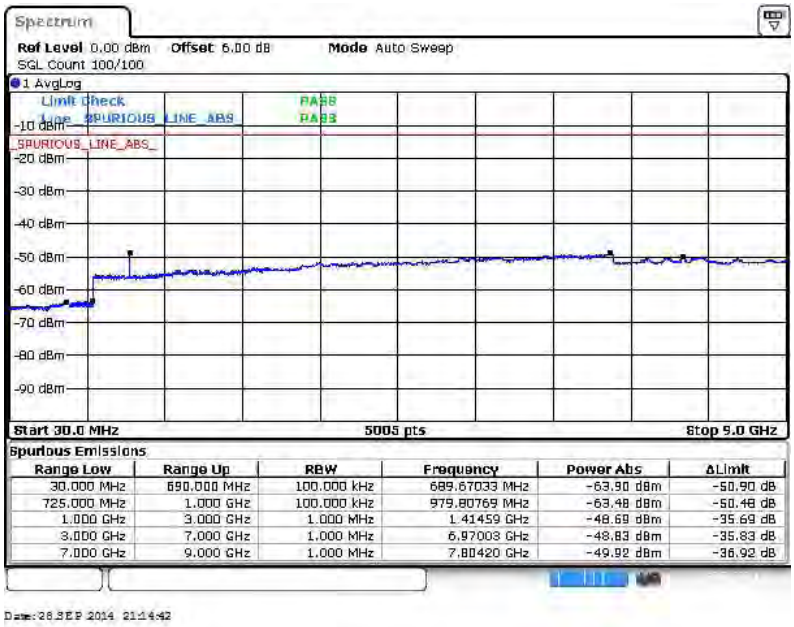


Band :	LTE Band 17	Channel :	CH23800 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



16QAM (RB Size 1, RB Offset 0)



3.7 Radiated Spurious Emission Measurement

3.7.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For Band 7

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 55 + 10 log (P) dB.

For LTE Band 17

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.7.2 Measuring Instruments

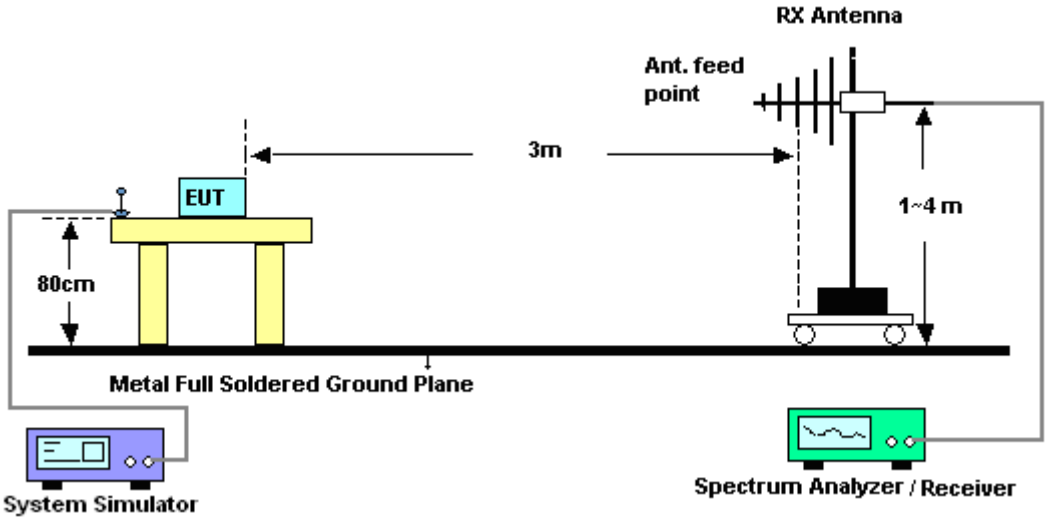
The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

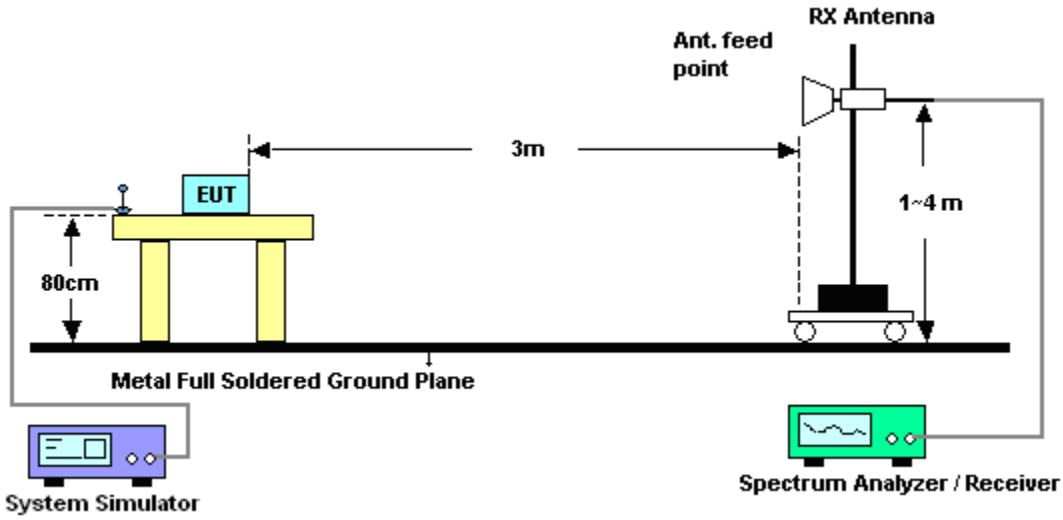
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

3.7.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 Test Result of Field Strength of Spurious Radiated

Band :	LTE Band 7	**Temperature :**	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	40~41%
Test Engineer :	Jun Liu	**Polarization :**	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5066	-50.86	-25	-25.86	-57.73	-56.26	2.2	7.60	H	Pass
7598	-54.81	-25	-29.81	-66.35	-61.59	3.12	9.90	H	Pass
10130	-51.16	-25	-26.16	-66.00	-59.05	2.98	10.87	H	Pass

Band :	LTE Band 7	**Temperature :**	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	40~41%
Test Engineer :	Jun Liu	**Polarization :**	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5066	-58.25	-25	-33.25	-64.8	-63.65	2.2	7.6	V	Pass
7598	-52.61	-25	-27.61	-66.7	-59.39	3.12	9.9	V	Pass
10130	-54.07	-25	-29.07	-66.72	-61.96	2.98	10.87	V	Pass

Band :	LTE Band 7	Temperature :	23~25°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Gavin Zhang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5060	-63.08	-25	-38.08	-64.72	-68.48	2.2	7.60	H	Pass
7589	-54.07	-25	-29.07	-65.61	-60.85	3.12	9.90	H	Pass
10121	-51.73	-25	-26.73	-66.57	-59.62	2.98	10.87	H	Pass

Band :	LTE Band 7	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5060	-57.88	-25	-32.88	-64.43	-63.28	2.2	7.6	V	Pass
7589	-49.89	-25	-24.89	-63.98	-56.67	3.12	9.9	V	Pass
10121	-53.52	-25	-28.52	-66.17	-61.41	2.98	10.87	V	Pass

Band :	LTE Band 7	Temperature :	23~25°C
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Gavin Zhang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5054	-62.55	-25	-37.55	-64.19	-67.95	2.2	7.60	H	Pass
7586	-53.38	-25	-28.38	-64.92	-60.16	3.12	9.90	H	Pass
10109	-50.98	-25	-25.98	-65.82	-58.87	2.98	10.87	H	Pass

Band :	LTE Band 7	Temperature :	22~23°C
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5057	-58.77	-25	-33.77	-65.32	-64.17	2.2	7.6	V	Pass
7583	-52.62	-25	-27.62	-66.71	-59.40	3.12	9.9	V	Pass
10109	-52.93	-25	-27.93	-65.58	-60.82	2.98	10.87	V	Pass

Band :	LTE Band 7	Temperature :	23~25°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%
Test Engineer :	Gavin Zhang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5051	-63.69	-25	-38.69	-65.33	-69.09	2.2	7.60	H	Pass
7574	-54.80	-25	-29.80	-66.34	-61.58	3.12	9.90	H	Pass
10100	-51.03	-25	-26.03	-65.87	-58.92	2.98	10.87	H	Pass

Band :	LTE Band 7	Temperature :	22~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5051	-58.86	-25	-33.86	-65.41	-64.26	2.2	7.6	V	Pass
7574	-52.07	-25	-27.07	-66.16	-58.85	3.12	9.9	V	Pass
10100	-53.06	-25	-28.06	-65.71	-60.95	2.98	10.87	V	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3759	-59.07	-13	-46.07	-62.42	-65.45	0.78	7.16	H	Pass
5640	-37.36	-13	-24.36	-52.56	-45.90	1.04	9.58	H	Pass
7518	-50.61	-13	-37.61	-62.15	-60.72	1.35	11.46	H	Pass
9396	-49.65	-13	-36.65	-62.08	-60.71	1.75	12.81	H	Pass
11280	-45.04	-13	-32.04	-64.55	-56.13	2	13.09	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3759	-55.92	-13	-42.92	-64.32	-62.30	0.78	7.16	V	Pass
5640	-34.47	-13	-21.47	-51.29	-43.01	1.04	9.58	V	Pass
7518	-49.98	-13	-36.98	-64.07	-60.09	1.35	11.46	V	Pass
9396	-42.44	-13	-29.44	-58.51	-53.50	1.75	12.81	V	Pass
11277	-37.87	-13	-24.87	-58.35	-48.96	2	13.09	V	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-59.00	-13	-46.00	-62.35	-65.38	0.78	7.16	H	Pass
5637	-38.14	-13	-25.14	-53.19	-46.68	1.04	9.58	H	Pass
7515	-49.23	-13	-36.23	-61.21	-59.34	1.35	11.46	H	Pass
9393	-49.74	-13	-36.74	-62.17	-60.80	1.75	12.81	H	Pass
11271	-45.28	-13	-32.28	-64.79	-56.37	2	13.09	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-55.80	-13	-42.80	-64.2	-62.18	0.78	7.16	V	Pass
5637	-35.26	-13	-22.26	-52.17	-43.80	1.04	9.58	V	Pass
7515	-49.28	-13	-36.28	-63.37	-59.39	1.35	11.46	V	Pass
9393	-44.32	-13	-31.32	-59.24	-55.38	1.75	12.81	V	Pass
11274	-36.47	-13	-23.47	-57.31	-47.56	2	13.09	V	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-56.10	-13	-43.10	-61.23	-62.48	0.78	7.16	H	Pass
5634	-36.13	-13	-23.13	-51.41	-44.67	1.04	9.58	H	Pass
7512	-50.24	-13	-37.24	-61.78	-60.35	1.35	11.46	H	Pass
9390	-49.82	-13	-36.82	-62.25	-60.88	1.75	12.81	H	Pass
11268	-46.01	-13	-33.01	-65.52	-57.10	2	13.09	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3756	-54.68	-13	-41.68	-63.08	-61.06	0.78	7.16	V	Pass
5634	-32.54	-13	-19.54	-49.71	-41.08	1.04	9.58	V	Pass
7512	-48.88	-13	-35.88	-62.97	-58.99	1.35	11.46	V	Pass
9390	-44.52	-13	-31.52	-59.4	-55.58	1.75	12.81	V	Pass
11268	-39.73	-13	-26.73	-59.31	-50.82	2	13.09	V	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3750	-59.16	-13	-46.16	-62.51	-65.54	0.78	7.16	H	Pass
5628	-37.37	-13	-24.37	-52.57	-45.91	1.04	9.58	H	Pass
7503	-50.41	-13	-37.41	-61.95	-60.52	1.35	11.46	H	Pass
9378	-50.48	-13	-37.48	-62.91	-61.54	1.75	12.81	H	Pass
11253	-45.91	-13	-32.91	-65.42	-57.00	2	13.09	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3750	-53.43	-13	-40.43	-61.83	-59.81	0.78	7.16	V	Pass
5628	-34.21	-13	-21.21	-50.93	-42.75	1.04	9.58	V	Pass
7503	-48.01	-13	-35.01	-62.1	-58.12	1.35	11.46	V	Pass
9378	-44.13	-13	-31.13	-59.09	-55.19	1.75	12.81	V	Pass
11256	-42.50	-13	-29.50	-60.57	-53.59	2	13.09	V	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3747	-56.41	-13	-43.41	-61.35	-62.79	0.78	7.16	H	Pass
5622	-40.74	-13	-27.74	-55.18	-49.28	1.04	9.58	H	Pass
7494	-50.16	-13	-37.16	-61.70	-60.27	1.35	11.46	H	Pass
9366	-50.45	-13	-37.45	-62.88	-61.51	1.75	12.81	H	Pass
11241	-45.60	-13	-32.60	-65.11	-56.69	2	13.09	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3747	-53.04	-13	-40.04	-61.44	-59.42	0.78	7.16	V	Pass
5622	-35.67	-13	-22.67	-52.4	-44.21	1.04	9.58	V	Pass
7494	-47.17	-13	-34.17	-61.26	-57.28	1.35	11.46	V	Pass
9366	-42.24	-13	-29.24	-58.32	-53.30	1.75	12.81	V	Pass
11241	-41.01	-13	-28.01	-59.57	-52.10	2	13.09	V	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3741	-58.08	-13	-45.08	-61.72	-64.46	0.78	7.16	H	Pass
5616	-43.78	-13	-30.78	-57.28	-52.32	1.04	9.58	H	Pass
7485	-48.23	-13	-35.23	-60.79	-58.34	1.35	11.46	H	Pass
9354	-49.65	-13	-36.65	-62.08	-60.71	1.75	12.81	H	Pass
11232	-45.67	-13	-32.67	-65.18	-56.76	2	13.09	H	Pass

Band :	LTE Band 2	Temperature :	22~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3741	-54.02	-13	-41.02	-62.42	-60.40	0.78	7.16	V	Pass
5616	-41.64	-13	-28.64	-57.29	-50.18	1.04	9.58	V	Pass
7485	-48.89	-13	-35.89	-62.98	-59.00	1.35	11.46	V	Pass
9354	-45.44	-13	-32.44	-60.17	-56.50	1.75	12.81	V	Pass
11229	-41.52	-13	-28.52	-60.04	-52.61	2	13.09	V	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3465	-48.88	-13	-35.88	-55.08	-54.28	2.2	7.60	H	Pass
5196	-49.01	-13	-36.01	-61.34	-55.79	3.12	9.90	H	Pass
6930	-41.45	-13	-28.45	-55.87	-49.34	2.98	10.87	H	Pass
8661	-43.63	-13	-30.63	-58.55	-53.12	2.97	12.46	H	Pass
10392	-41.35	-13	-28.35	-58.78	-50.51	3.46	12.62	H	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3462	-51.27	-13	-38.27	-56.86	-56.67	2.2	7.6	V	Pass
5199	-56.10	-13	-43.10	-64.07	-62.88	3.12	9.9	V	Pass
6927	-46.93	-13	-33.93	-59.08	-54.82	2.98	10.87	V	Pass
8661	-50.13	-13	-37.13	-61.28	-59.62	2.97	12.46	V	Pass
10392	-49.93	-13	-36.93	-62.58	-59.09	3.46	12.62	V	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3462	-48.03	-13	-35.03	-54.54	-53.43	2.2	7.60	H	Pass
5193	-46.39	-13	-33.39	-60.22	-53.17	3.12	9.90	H	Pass
6924	-40.32	-13	-27.32	-55.16	-48.21	2.98	10.87	H	Pass
8658	-42.40	-13	-29.40	-57.69	-51.89	2.97	12.46	H	Pass
10386	-42.37	-13	-29.37	-59.33	-51.53	3.46	12.62	H	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3462	-51.50	-13	-38.50	-57	-56.90	2.2	7.6	V	Pass
5196	-55.48	-13	-42.48	-63.45	-62.26	3.12	9.9	V	Pass
6924	-46.46	-13	-33.46	-58.73	-54.35	2.98	10.87	V	Pass
8658	-50.95	-13	-37.95	-62.1	-60.44	2.97	12.46	V	Pass
10380	-51.21	-13	-38.21	-63.86	-60.37	3.46	12.62	V	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3459	-46.70	-13	-33.70	-53.69	-52.10	2.2	7.60	H	Pass
5193	-47.88	-13	-34.88	-61.12	-54.66	3.12	9.90	H	Pass
6921	-41.48	-13	-28.48	-55.89	-49.37	2.98	10.87	H	Pass
8652	-46.38	-13	-33.38	-59.76	-55.87	2.97	12.46	H	Pass
10383	-42.80	-13	-29.80	-59.63	-51.96	3.46	12.62	H	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3459	-53.46	-13	-40.46	-57.93	-58.86	2.2	7.6	V	Pass
5193	-55.63	-13	-42.63	-63.6	-62.41	3.12	9.9	V	Pass
6921	-49.89	-13	-36.89	-60.97	-57.78	2.98	10.87	V	Pass
8655	-50.02	-13	-37.02	-61.17	-59.51	2.97	12.46	V	Pass
10383	-50.03	-13	-37.03	-62.68	-59.19	3.46	12.62	V	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3456	-46.95	-13	-33.95	-53.87	-52.35	2.2	7.60	H	Pass
5184	-46.48	-13	-33.48	-60.27	-53.26	3.12	9.90	H	Pass
6912	-43.69	-13	-30.69	-57.51	-51.58	2.98	10.87	H	Pass
8643	-45.10	-13	-32.10	-59.04	-54.59	2.97	12.46	H	Pass
10368	-42.14	-13	-29.14	-59.17	-51.30	3.46	12.62	H	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3456	-53.03	-13	-40.03	-57.65	-58.43	2.2	7.6	V	Pass
5184	-57.34	-13	-44.34	-65.31	-64.12	3.12	9.9	V	Pass
6912	-50.90	-13	-37.90	-61.47	-58.79	2.98	10.87	V	Pass
8640	-51.29	-13	-38.29	-62.44	-60.78	2.97	12.46	V	Pass
10368	-50.00	-13	-37.00	-62.65	-59.16	3.46	12.62	V	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3450	-48.39	-13	-35.39	-54.77	-53.79	2.2	7.60	H	Pass
5178	-49.38	-13	-36.38	-61.77	-56.16	3.12	9.90	H	Pass
6903	-50.70	-13	-37.70	-61.32	-58.59	2.98	10.87	H	Pass
8631	-47.93	-13	-34.93	-60.67	-57.42	2.97	12.46	H	Pass
10356	-42.17	-13	-29.17	-59.19	-51.33	3.46	12.62	H	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	15MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3450	-53.21	-13	-40.21	-57.77	-58.61	2.2	7.6	V	Pass
5175	-59.52	-13	-46.52	-67.49	-66.30	3.12	9.9	V	Pass
6903	-51.66	-13	-38.66	-62.18	-59.55	2.98	10.87	V	Pass
8631	-50.81	-13	-37.81	-61.96	-60.30	2.97	12.46	V	Pass
10356	-50.59	-13	-37.59	-63.24	-59.75	3.46	12.62	V	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3447	-45.96	-13	-32.96	-53.16	-51.36	2.2	7.60	H	Pass
5172	-51.12	-13	-38.12	-62.63	-57.90	3.12	9.90	H	Pass
6894	-54.70	-13	-41.70	-62.99	-62.59	2.98	10.87	H	Pass
8619	-48.24	-13	-35.24	-60.88	-57.73	2.97	12.46	H	Pass
10341	-41.82	-13	-28.82	-58.99	-50.98	3.46	12.62	H	Pass

Band :	LTE Band 4	Temperature :	22~23°C
Test Mode :	20MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3447	-53.56	-13	-40.56	-58	-58.96	2.2	7.6	V	Pass
5172	-57.68	-13	-44.68	-65.65	-64.46	3.12	9.9	V	Pass
6894	-53.49	-13	-40.49	-64.01	-61.38	2.98	10.87	V	Pass
8619	-52.45	-13	-39.45	-63.6	-61.94	2.97	12.46	V	Pass
10341	-49.97	-13	-36.97	-62.62	-59.13	3.46	12.62	V	Pass

Band :	LTE Band 17	Temperature :	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1416	-47.66	-13	-34.66	-46.16	-53.06	2.2	7.60	H	Pass
2124	-64.78	-13	-51.78	-63.45	-71.56	3.12	9.90	H	Pass
2830	-66.54	-13	-53.54	-65.21	-74.43	2.98	10.87	H	Pass
3536	-62.79	-13	-49.79	-65.02	-72.28	2.97	12.46	H	Pass
4244	-66.42	-13	-53.42	-66.11	-75.58	3.46	12.62	H	Pass
4956	-48.10	-13	-35.10	-56.21	-56.20	4.5	12.60	H	Pass
5663	-33.31	-13	-20.31	-49.02	-41.41	4.5	12.60	H	Pass

Band :	LTE Band 17	Temperature :	22~23°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1416	-49.91	-13	-36.91	-52.73	-55.31	2.2	7.6	V	Pass
2122	-63.53	-13	-50.53	-65.96	-70.31	3.12	9.9	V	Pass
2830	-63.79	-13	-50.79	-66.22	-71.68	2.98	10.87	V	Pass
3536	-65.29	-13	-52.29	-66.31	-74.78	2.97	12.46	V	Pass
4244	-62.30	-13	-49.30	-64.98	-71.46	3.46	12.62	V	Pass
4952	-59.82	-13	-46.82	-66.37	-67.92	4.5	12.6	V	Pass
5663	-30.74	-13	-17.74	-48.12	-38.84	4.5	12.6	V	Pass

Band :	LTE Band 17	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1412	-45.96	-13	-32.96	-44.63	-51.36	2.2	7.60	H	Pass
2116	-66.90	-13	-53.90	-65.57	-73.68	3.12	9.90	H	Pass
2820	-66.75	-13	-53.75	-65.42	-74.64	2.98	10.87	H	Pass
3524	-63.23	-13	-50.23	-65.46	-72.72	2.97	12.46	H	Pass
4230	-66.65	-13	-53.65	-66.34	-75.81	3.46	12.62	H	Pass
4940	-47.83	-13	-34.83	-55.96	-55.93	4.5	12.60	H	Pass
5645	-26.86	-13	-13.86	-43.07	-34.96	4.5	12.60	H	Pass
6350	-50.55	-13	-37.55	-59.72	-58.65	4.5	12.60	H	Pass

Band :	LTE Band 17	Temperature :	22~23°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	Relative Humidity :	40~41%
Test Engineer :	Jun Liu	Polarization :	Vertical
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.		

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1410	-49.72	-13	-36.72	-52.58	-55.12	2.2	7.6	V	Pass
2116	-62.51	-13	-49.51	-64.94	-69.29	3.12	9.9	V	Pass
2820	-63.56	-13	-50.56	-65.99	-71.45	2.98	10.87	V	Pass
3524	-64.96	-13	-51.96	-65.98	-74.45	2.97	12.46	V	Pass
4230	-63.70	-13	-50.70	-66.38	-72.86	3.46	12.62	V	Pass
4936	-60.06	-13	-47.06	-66.61	-68.16	4.5	12.6	V	Pass
5645	-26.83	-13	-13.83	-44.51	-34.93	4.5	12.6	V	Pass
6350	-51.42	-13	-38.42	-61.12	-59.52	4.5	12.6	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

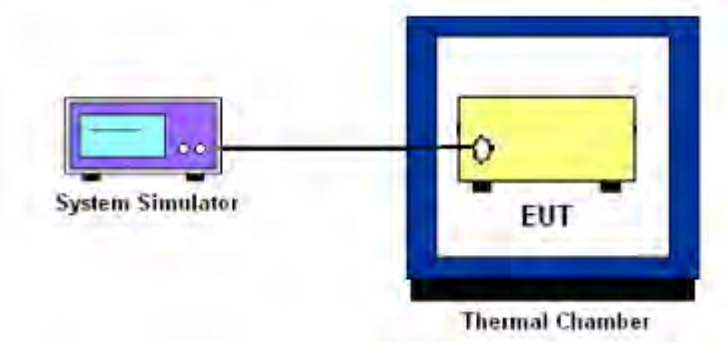
3.8.3 Test Procedures for Temperature Variation

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

3.8.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.8.5 Test Setup



3.8.6 Test Result of Temperature Variation (FCC)

Band :	LTE Band 7 (QPSK)	Limit (ppm) :	within authorized band

Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0009	10.2	PASS
40	0.0037	3.1	
30	0.0018	8	
20(Ref.)	0.0000	12.5	
10	0.0085	-9.1	
0	0.0058	-2.3	
-10	0.0055	-1.5	
-20	0.0045	1.1	
-30	0.0038	2.8	

Band :	LTE Band 2 (QPSK)	Limit (ppm) :	within authorized band

Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0101	-30	PASS
40	0.0069	-24	
30	0.0032	-17	
20(Ref.)	0.0000	-11	
10	0.0011	-9	
0	0.0011	-13	
-10	0.0085	-27	
-20	0.0101	-30	
-30	0.0128	-35	

Band :	LTE Band 4 (QPSK)	Limit (ppm) :	within authorized band

Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0010	6.5	PASS
40	0.0055	-1.2	
30	0.0111	-11	
20(Ref.)	0.0000	8.3	
10	0.0036	2.1	
0	0.0101	-9.2	
-10	0.0011	10.2	
-20	0.0012	10.3	
-30	0.0078	-5.2	

Band :	LTE Band 17 (QPSK)	Limit (ppm) :	within authorized band

Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0265	8.5	PASS
40	0.0231	6.1	
30	0.0015	-9.2	
20(Ref.)	0.0000	-10.3	
10	0.0207	4.4	
0	0.0110	-2.5	
-10	0.0268	8.7	
-20	0.0163	1.3	
-30	0.0055	-6.4	

3.8.7 Test Result of Voltage Variation (FCC)

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Deviation (Hz)	Limit (ppm)	Result
LTE Band 7	10M	4.35	0.0023	6.7	(Note 3.)	PASS
		Normal	0.0013	9.1		
		3.60	0.0028	5.5		
LTE Band 2	10M	4.35	0.0011	-13	(Note 3.)	PASS
		Normal	0.0011	-9		
		3.60	0.0005	-10		
LTE Band 4	10M	4.35	0.0081	-5.8	(Note 3.)	PASS
		Normal	0.0028	13.2		
		3.60	0.0010	10.1		
LTE Band 17	10M	4.35	0.0258	8	(Note 3.)	PASS
		Normal	0.0190	3.2		
		3.60	0.0286	10		

Remark:

1. Normal Voltage = 4.00V.
2. The manufacturer declared that the EUT could work properly between voltage 3.60V ~ 4.35V.
3. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2014	Sep. 28, 2014~ Oct. 10, 2014	May 03, 2015	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 28, 2013	Sep. 28, 2014~ Oct. 10, 2014	Dec. 27, 2014	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Dec. 10, 2013	Sep. 28, 2014~ Oct. 10, 2014	Dec. 09, 2014	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	Oct. 04, 2014~ Oct. 06, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 04, 2014	Oct. 04, 2014~ Oct. 06, 2014	May 03, 2015	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	Oct. 04, 2014~ Oct. 06, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 08, 2014	Oct. 04, 2014~ Oct. 06, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701030	1GHz~18GHz	Nov. 18, 2013	Oct. 04, 2014~ Oct. 06, 2014	Nov. 17, 2014	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 10, 2014	Oct. 04, 2014~ Oct. 06, 2014	Mar. 09, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	Oct. 04, 2014~ Oct. 06, 2014	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Dec. 10, 2013	Oct. 04, 2014~ Oct. 06, 2014	Dec. 09, 2014	Radiation (03CH01-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 04, 2014~ Oct. 06, 2014	NCR	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 04, 2014~ Oct. 06, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 04, 2014~ Oct. 06, 2014	NCR	Radiation (03CH01-KS)

Spectrum Analyzer	R&S	FSP 7	100819	9kHz~7GHz	May 04, 2014	Sep. 26, 2014	May 03, 2015	ERP/EIRP (OTA01-KS)
Switch Control Manframe	Agilent	3499A	MY42005452	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Dual 1-to-6(4) MW MUX	Agilent	N2276A	MY42000841	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Microwave Switch	Agilent	44476A	MY42002573	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Microwave Switch	Agilent	44476A	MY42002586	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Diagonal Dual Polarized Horn	ETS-Lindgren	3164-04	00066993	700MHz~6GHz	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Multi-Devices Controller	ETS-Lindgren	2090-OPT1	00066604	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Conical Log Spiral (Small)	ETS-Lindgren	3102	00066951	1~10GHz	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Turn Table	ETS-Lindgren	2088	N/A	Resolution : 0.1degree	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Limiting Amplifier	ETS-lindgren	109643	920326	10MHz~2.5GHz	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
EMQuest	ETS-Lindgren	EMQ-100	1125	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)
Medium Duty Holder	ETS-Lindgren	2015	N/A	N/A	N/A	Sep. 26, 2014	N/A	ERP/EIRP (OTA01-KS)

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))	**2.5**