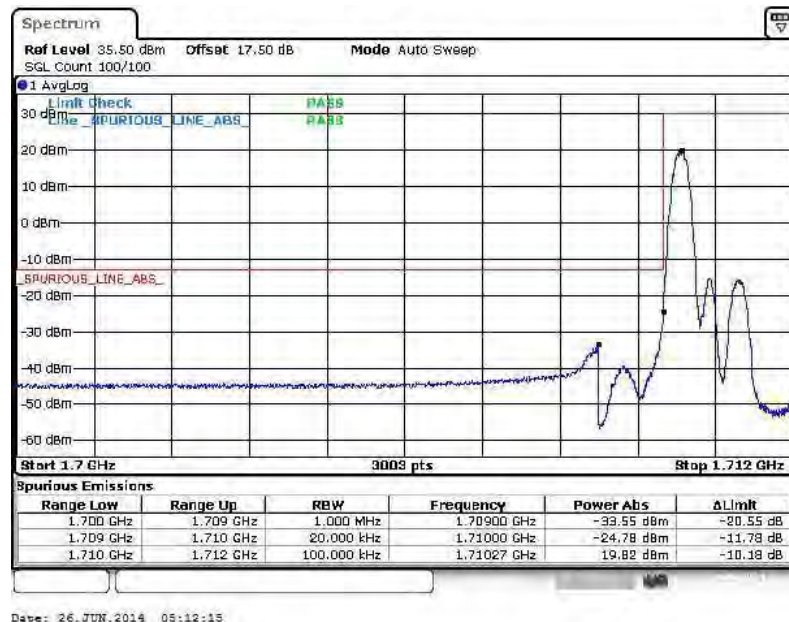


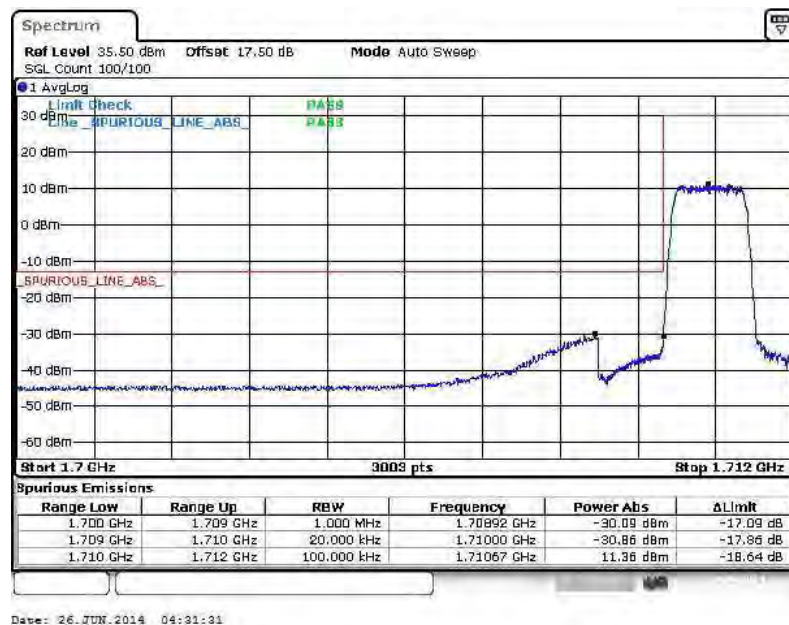


Band :	LTE Band 4	Band Width :	1.4MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

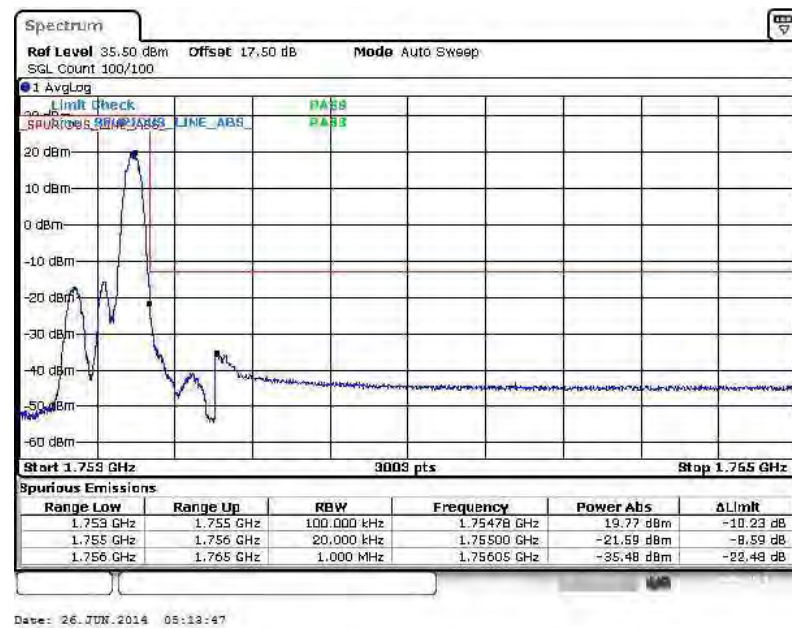


Lower Band Edge Plot for QPSK-RB Size 6, RB Offset 0

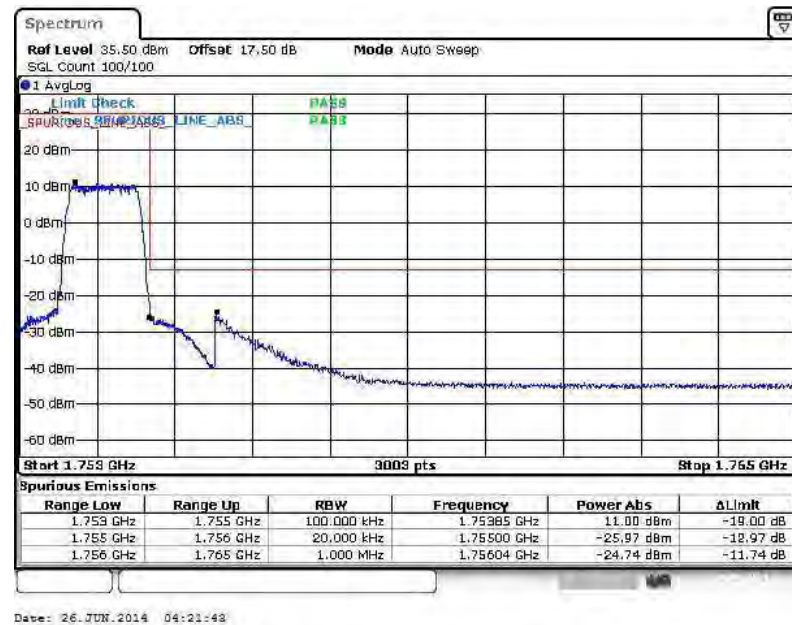




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 5



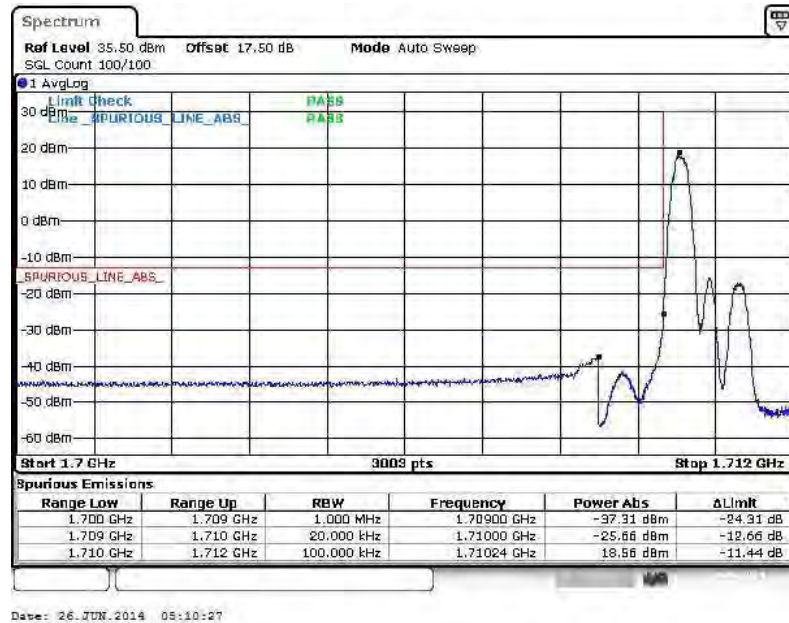
Higher Band Edge Plot for QPSK-RB Size 6, RB Offset 0



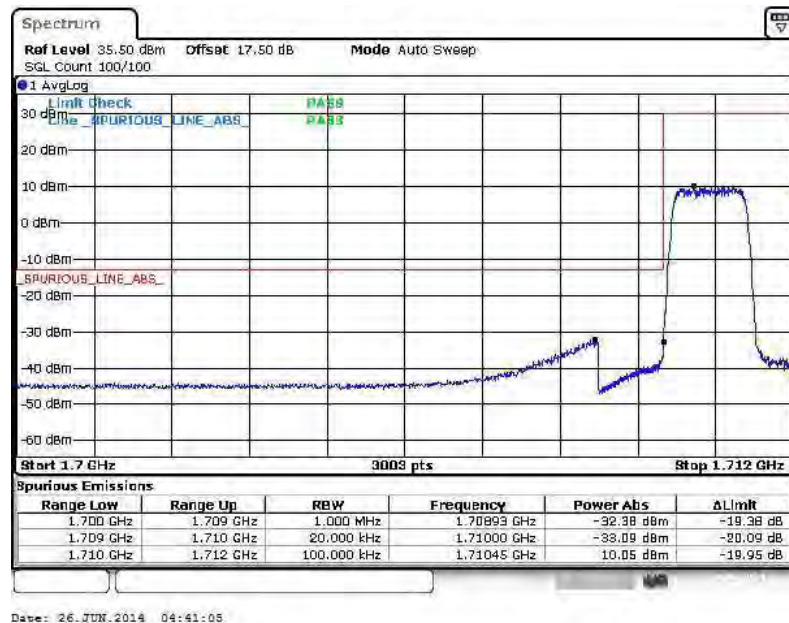


Band :	LTE Band 4	Band Width :	1.4MHz / 16QAM
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Lower Band Edge Plot for 16QAM -RB Size 1, RB Offset 0

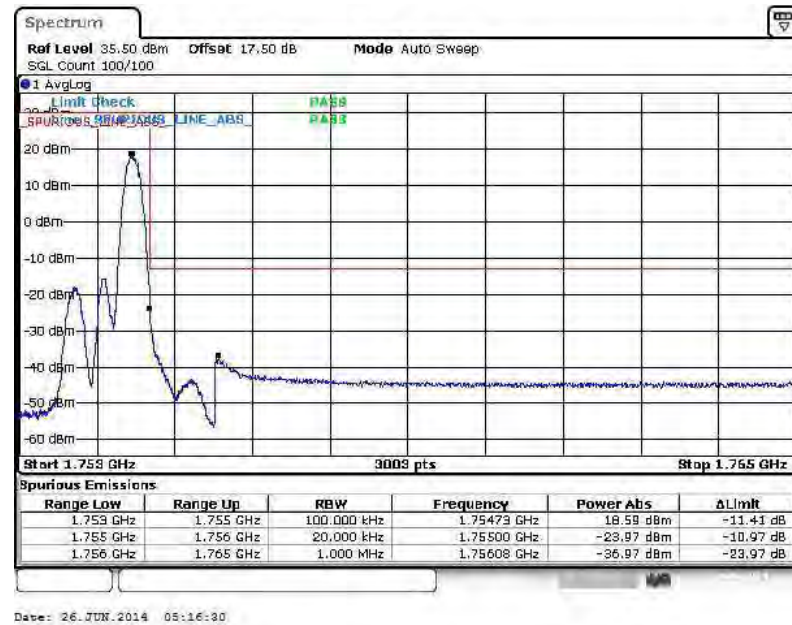


Lower Band Edge Plot for 16QAM-RB Size 6, RB Offset 0

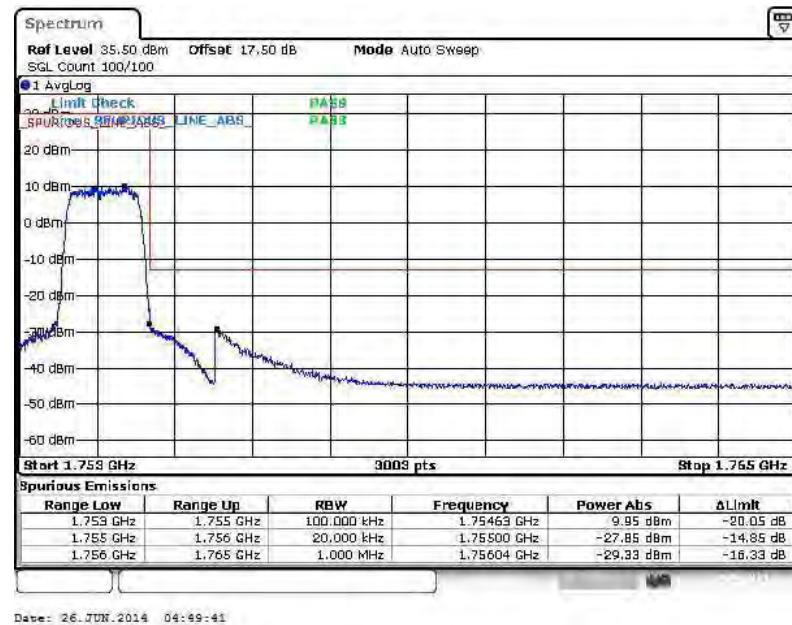




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 5



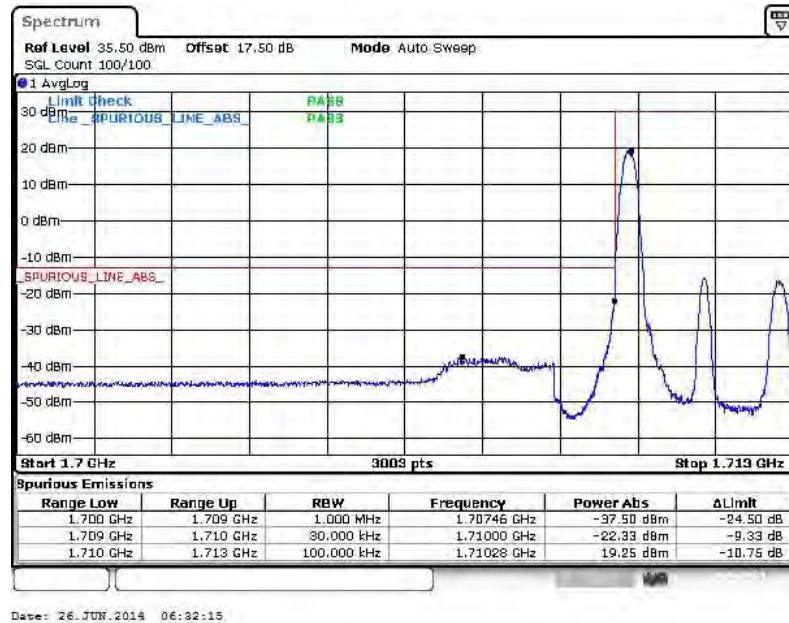
Higher Band Edge Plot for 16QAM-RB Size 6, RB Offset 0



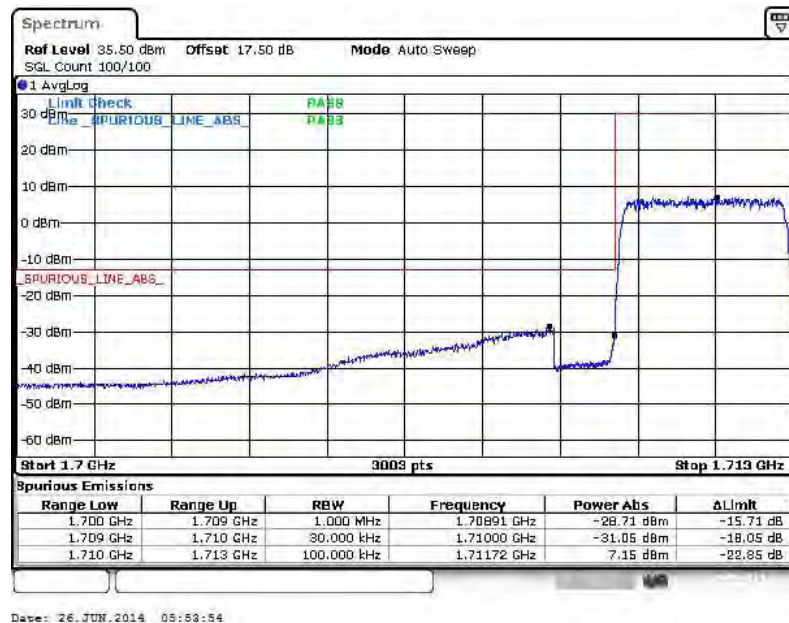


Band :	LTE Band 4	Band Width :	3MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

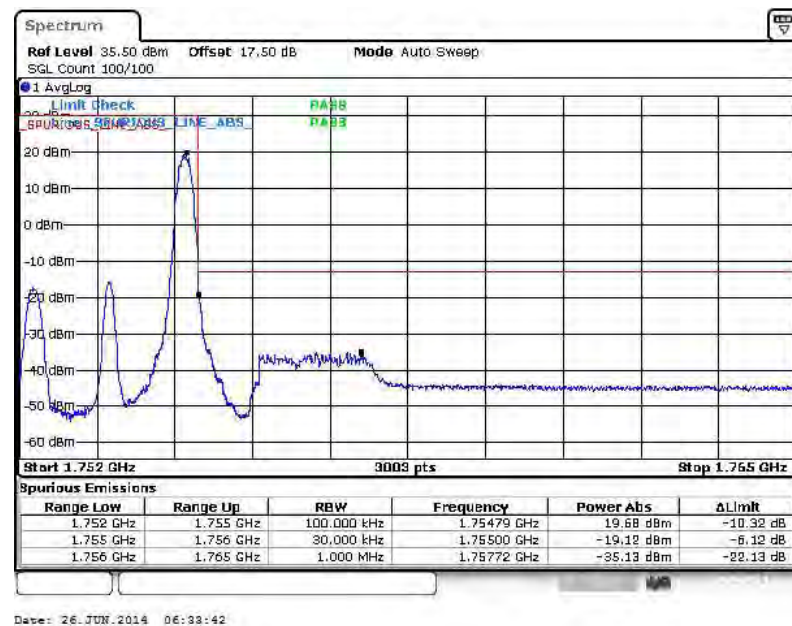


Lower Band Edge Plot for QPSK-RB Size 15, RB Offset 0

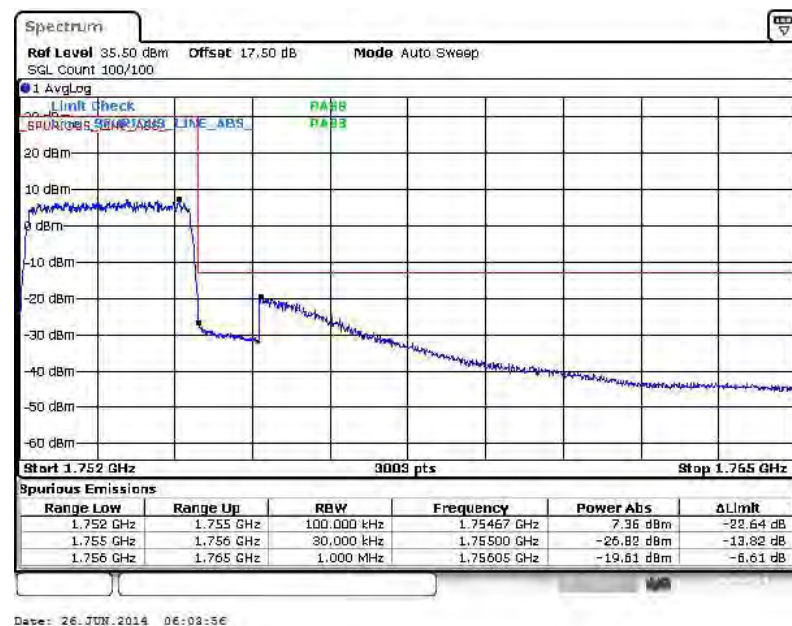




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 14



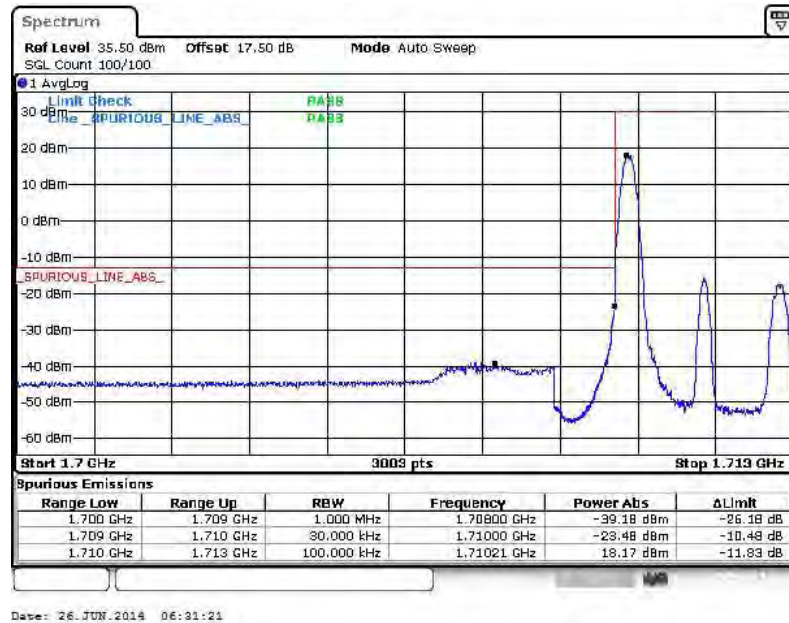
Higher Band Edge Plot for QPSK-RB Size 15, RB Offset 0



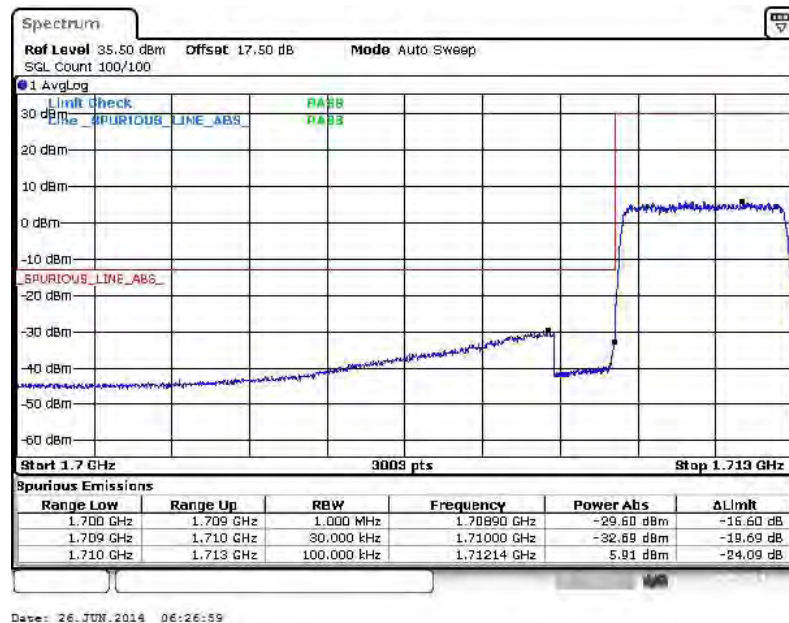


Band :	LTE Band 4	Band Width :	3MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0

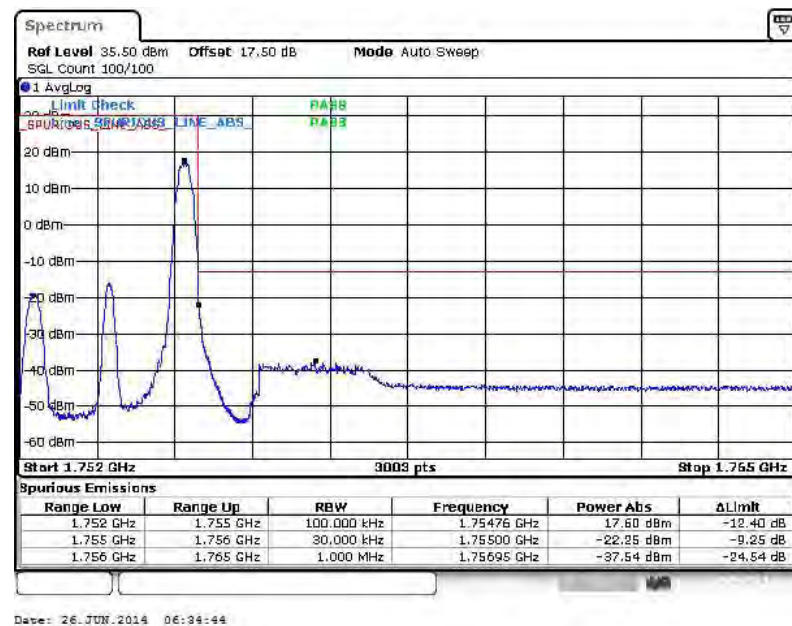


Lower Band Edge Plot for 16QAM-RB Size 15, RB Offset 0

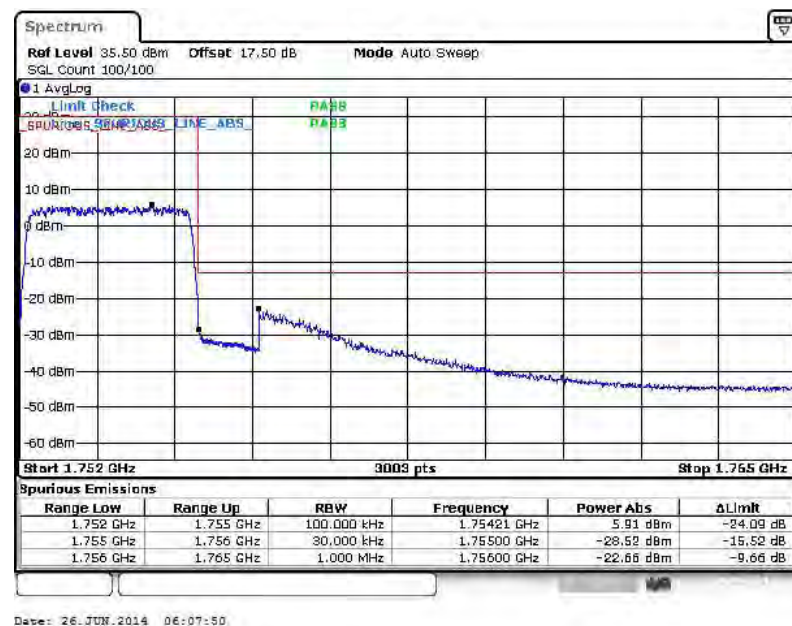




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 14



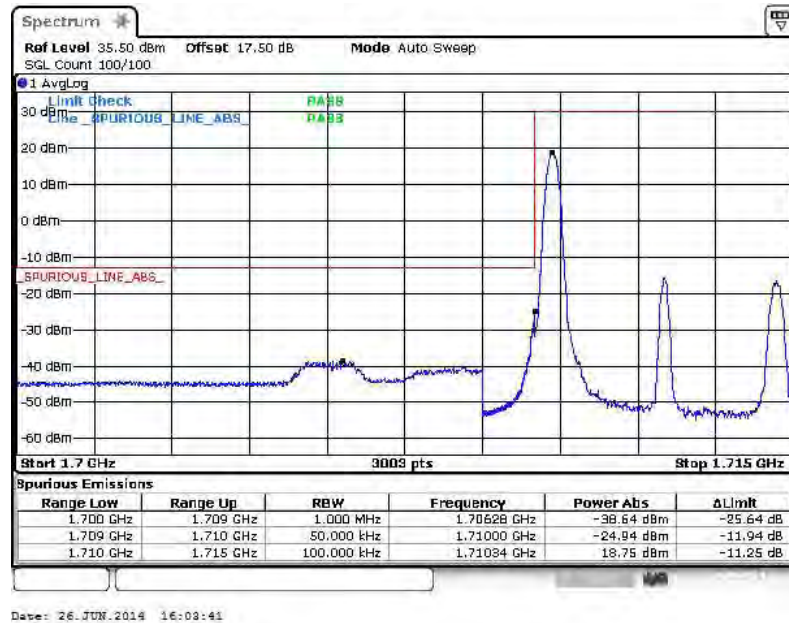
Higher Band Edge Plot for 16QAM-RB Size 15, RB Offset 0



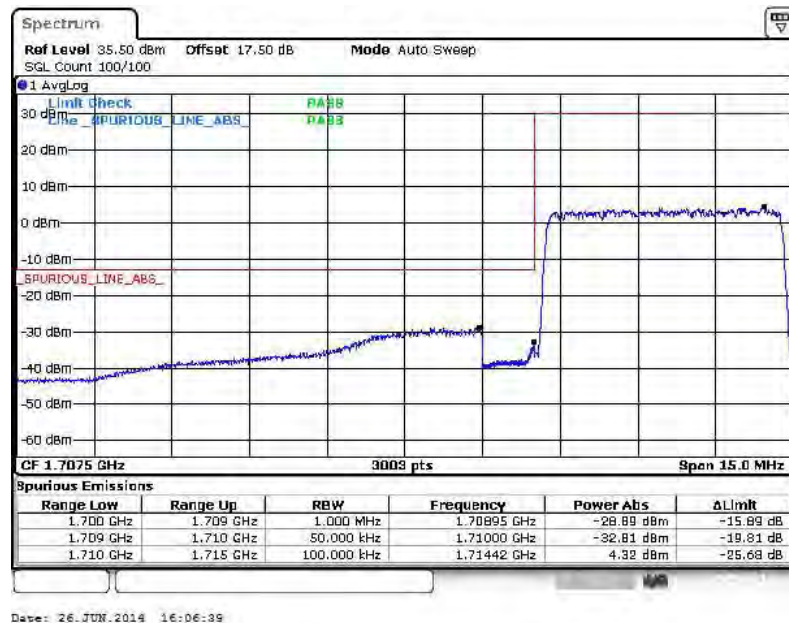


Band :	LTE Band 4	Band Width :	5MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

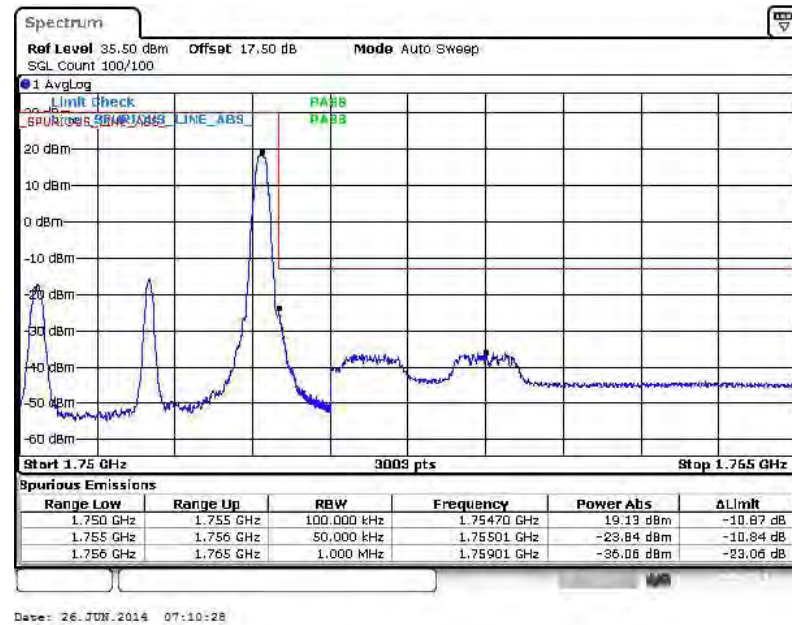


Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0

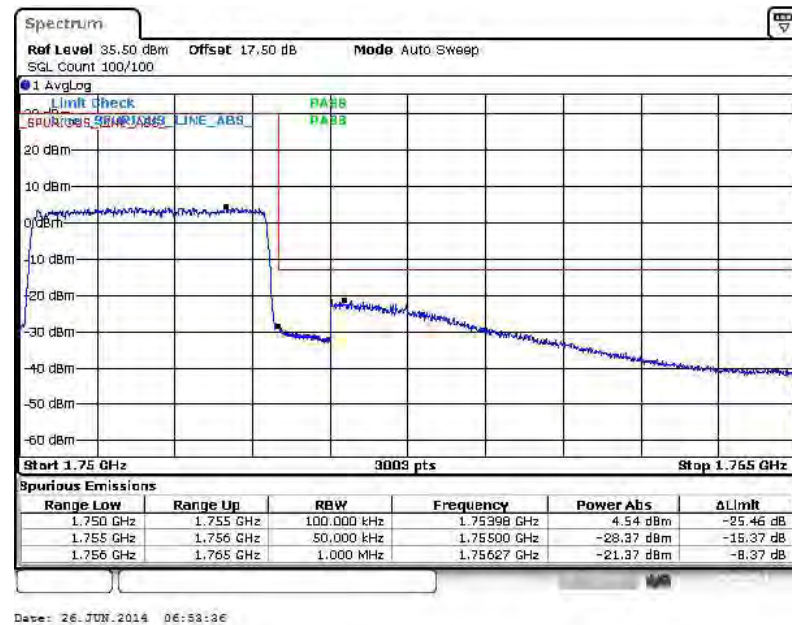




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



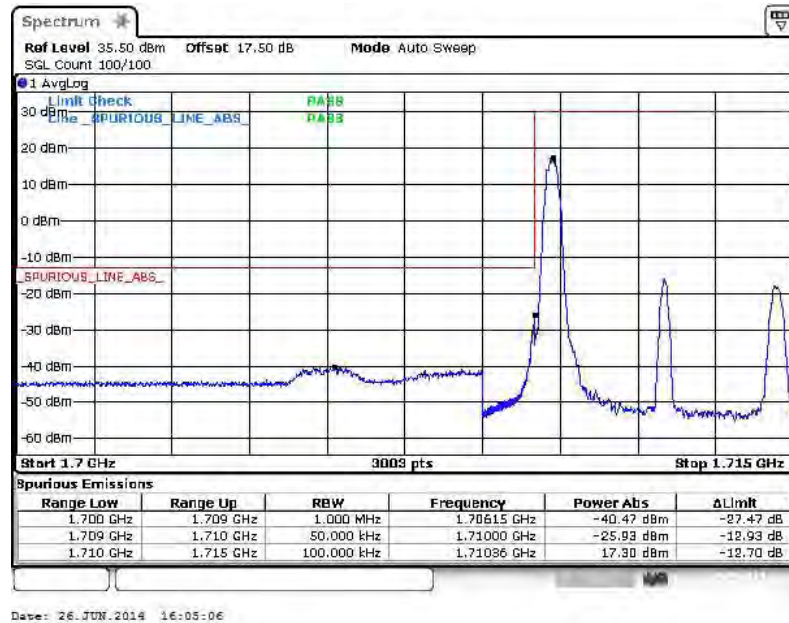
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



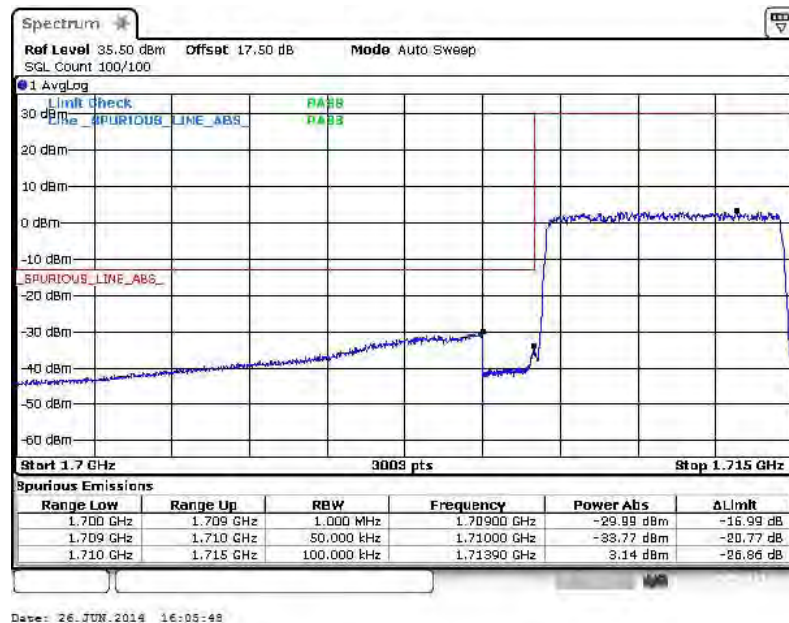


Band :	LTE Band 4	Band Width :	5MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0

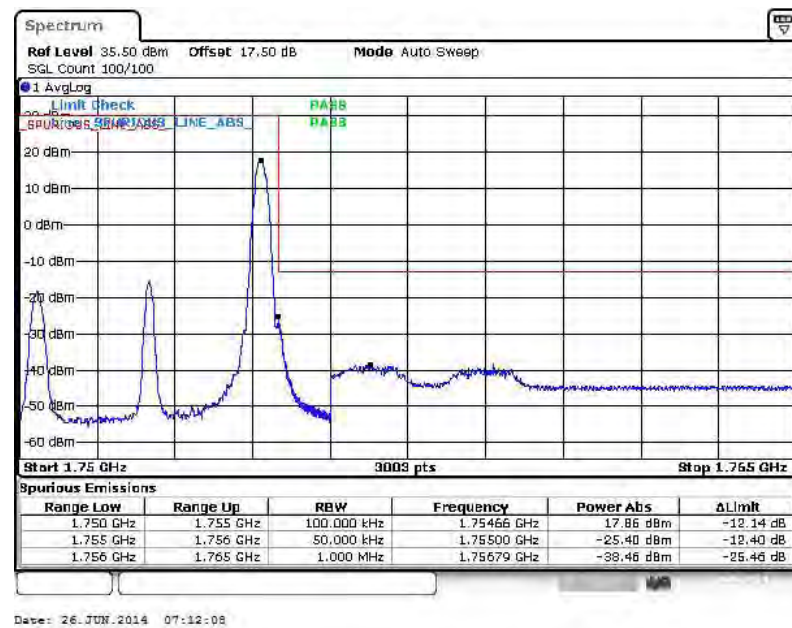


Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

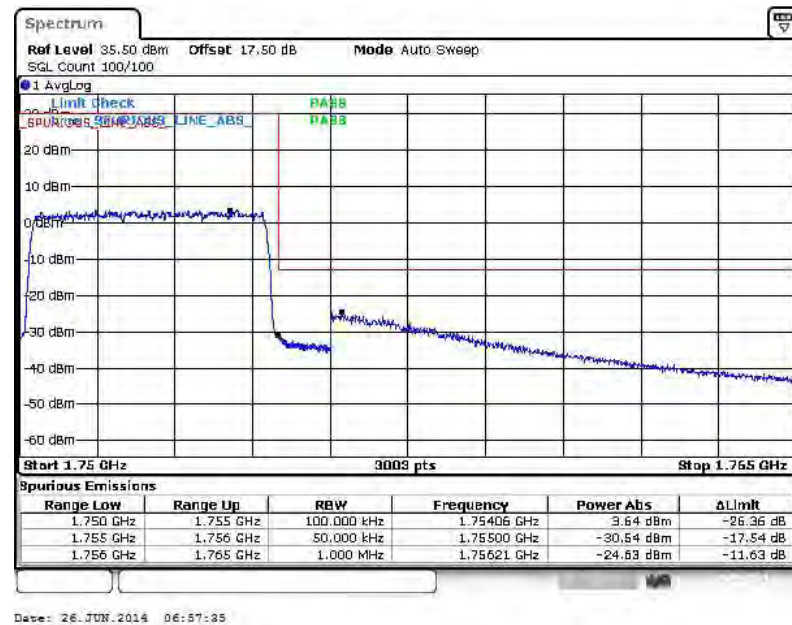




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



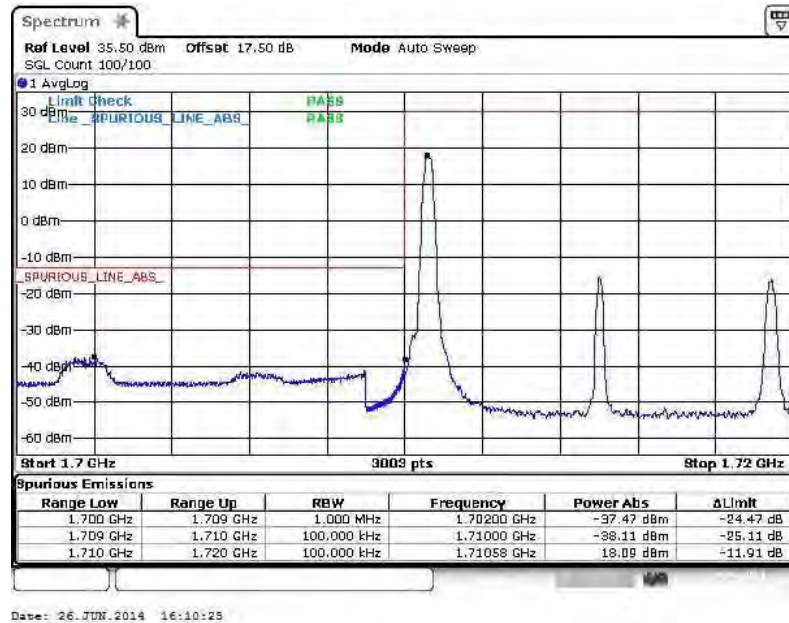
Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



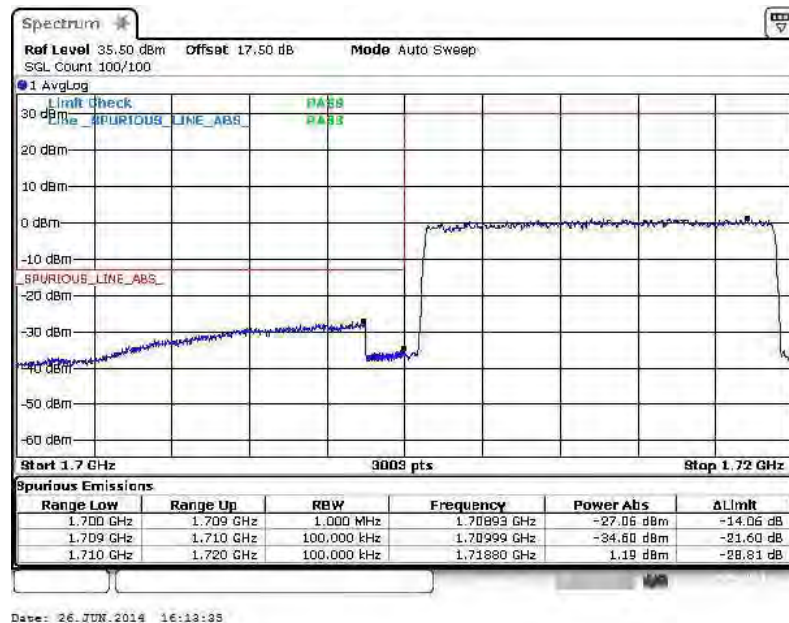


Band :	LTE Band 4	Band Width :	10MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

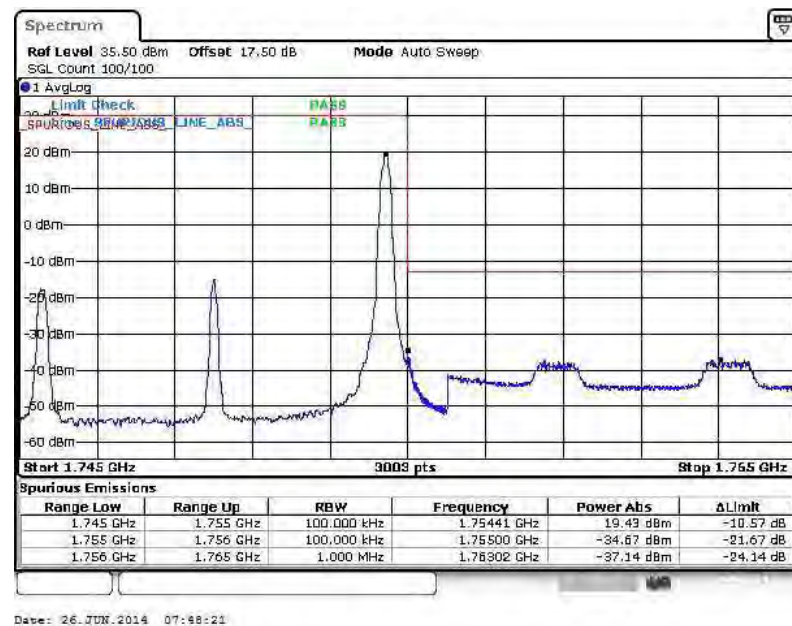


Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0

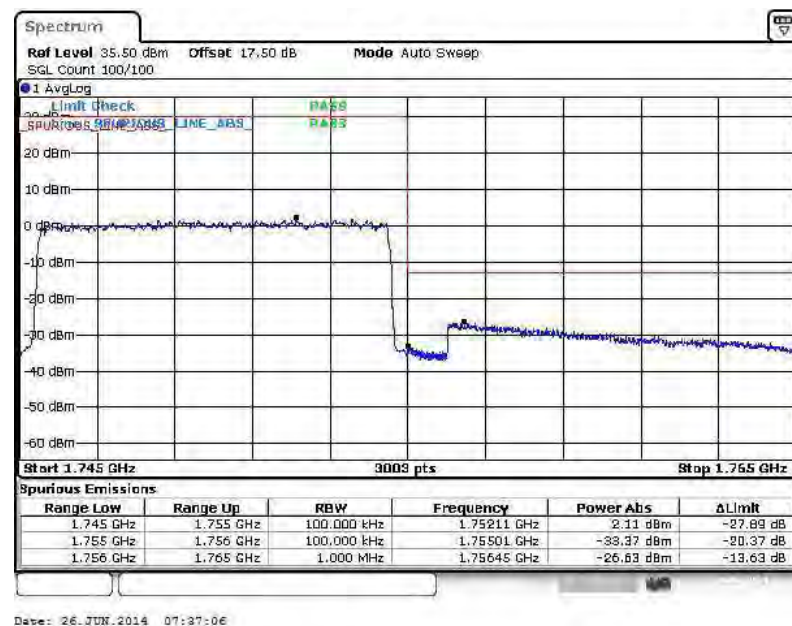




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



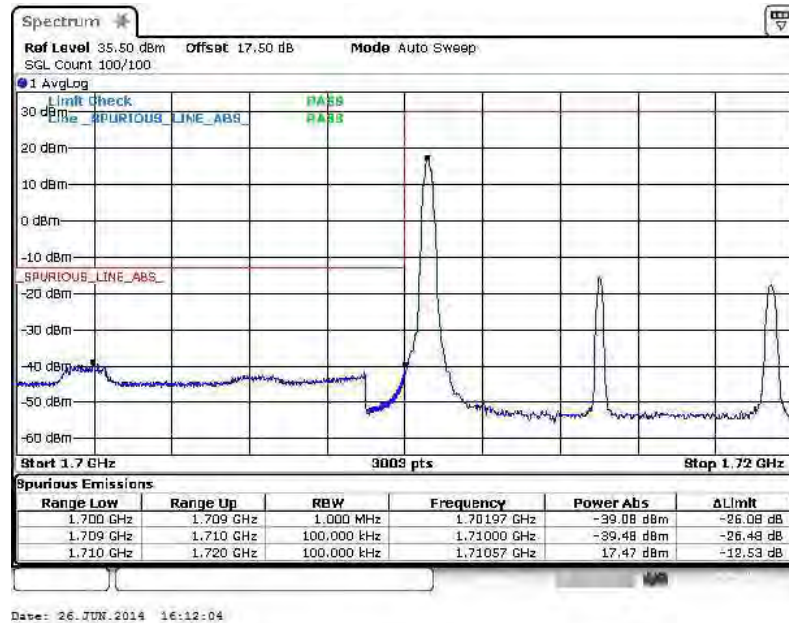
Higher Band Edge Plot for QPSK-RB Size 50, RB Offset 0



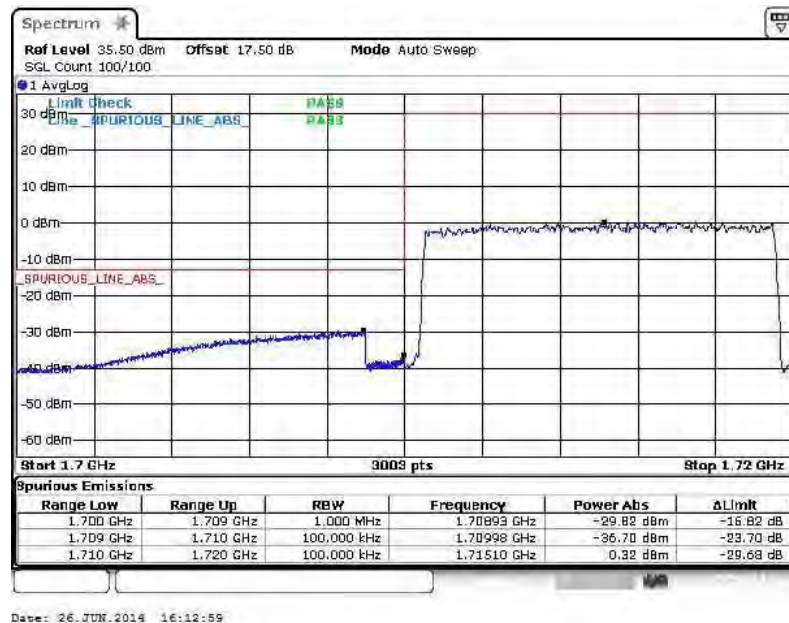


Band :	LTE Band 4	Band Width :	10MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0

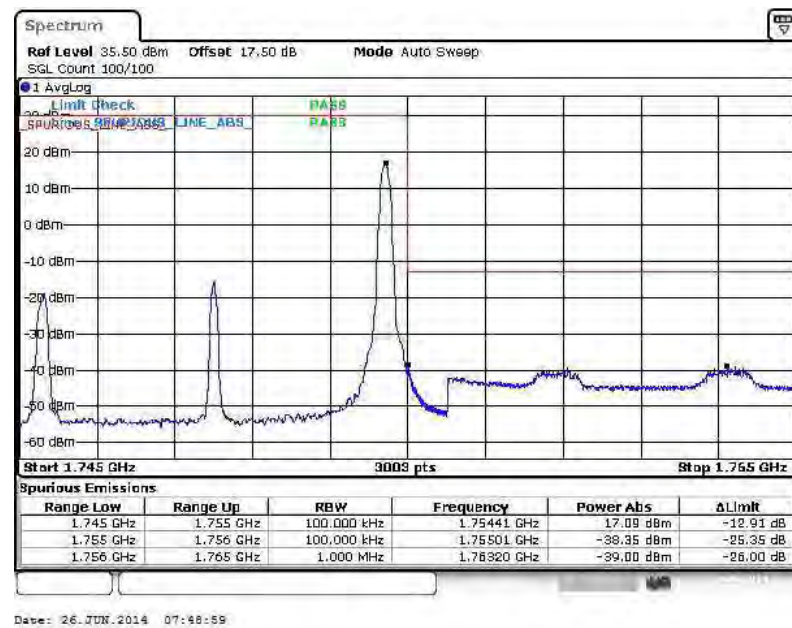


Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

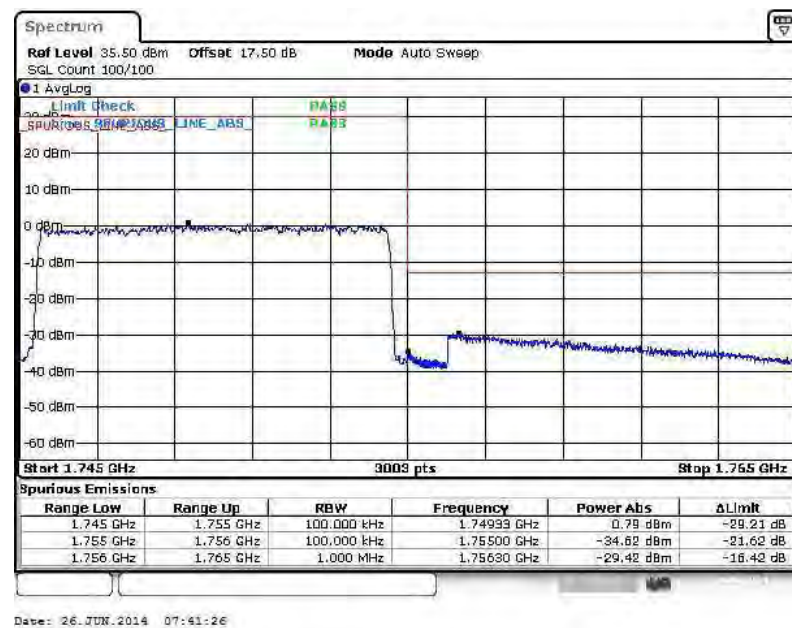




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



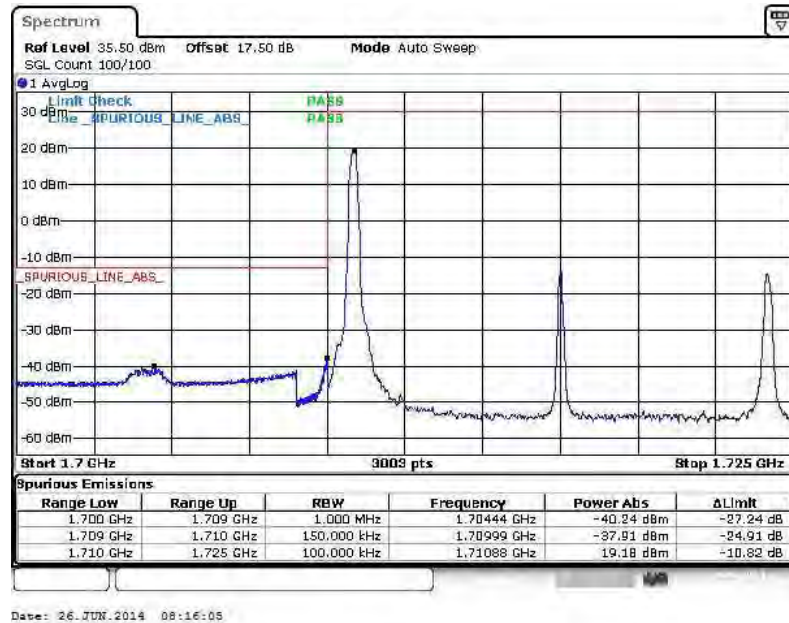
Higher Band Edge Plot for 16QAM-RB Size 50, RB Offset 0



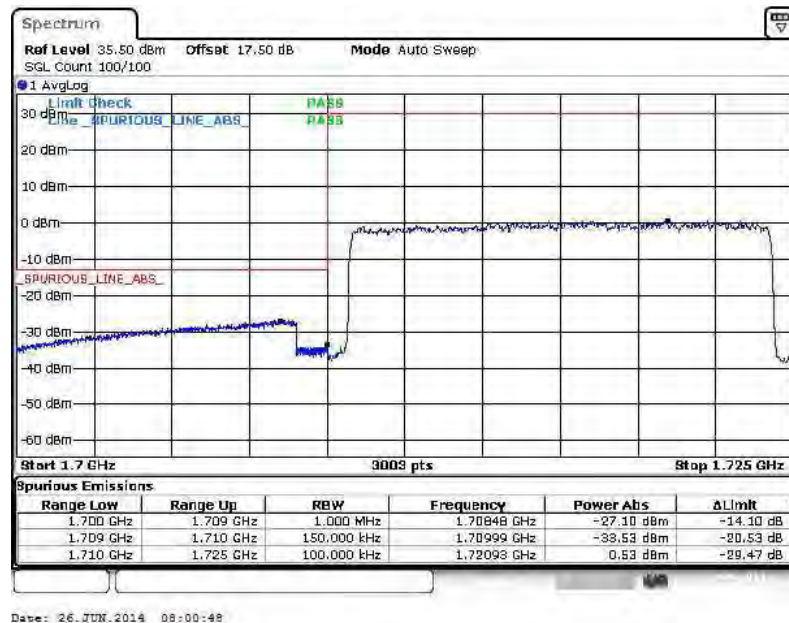


Band :	LTE Band 4	Band Width :	15MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

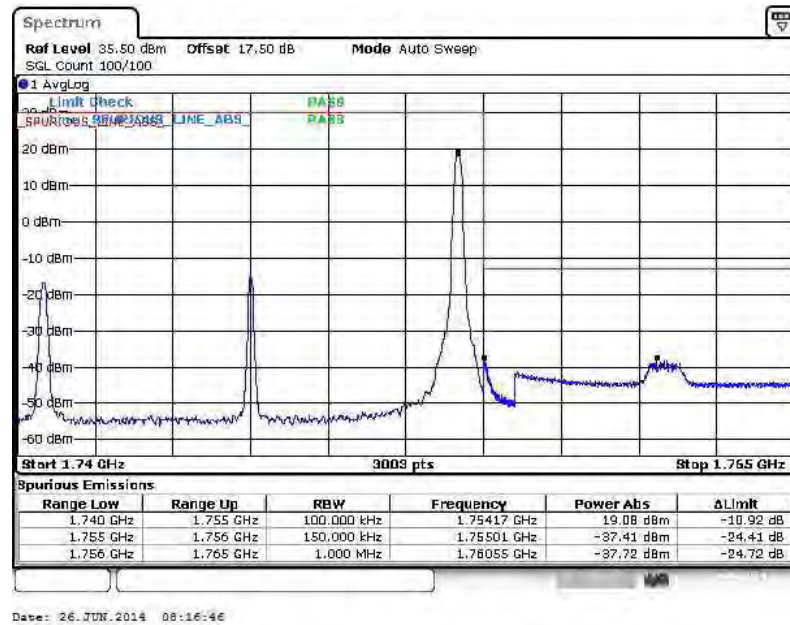


Lower Band Edge Plot for QPSK-RB Size 75, RB Offset 0

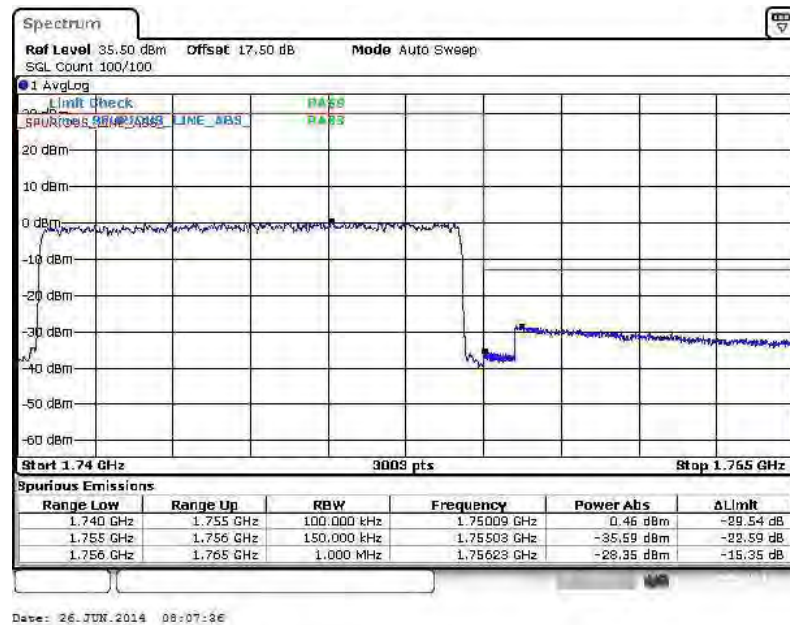




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 74



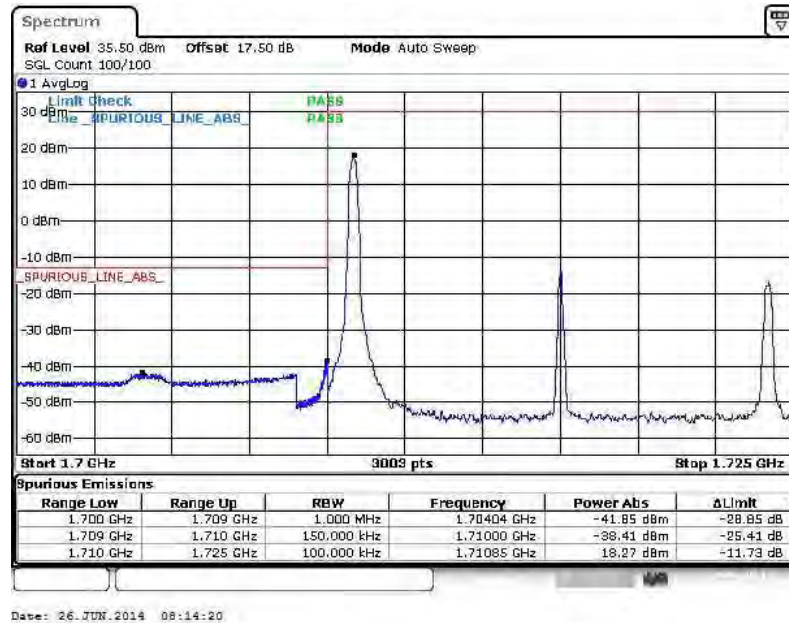
Higher Band Edge Plot for QPSK-RB Size 75, RB Offset 0



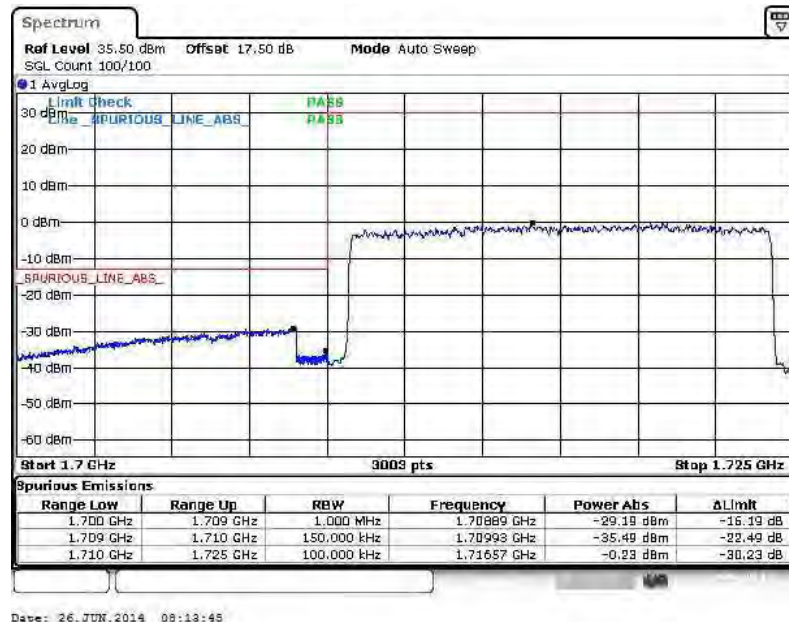


Band :	LTE Band 4	Band Width :	15MHz / 16QAM
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Lower Band Edge Plot for 16QAM-RB Size 1, RB Offset 0

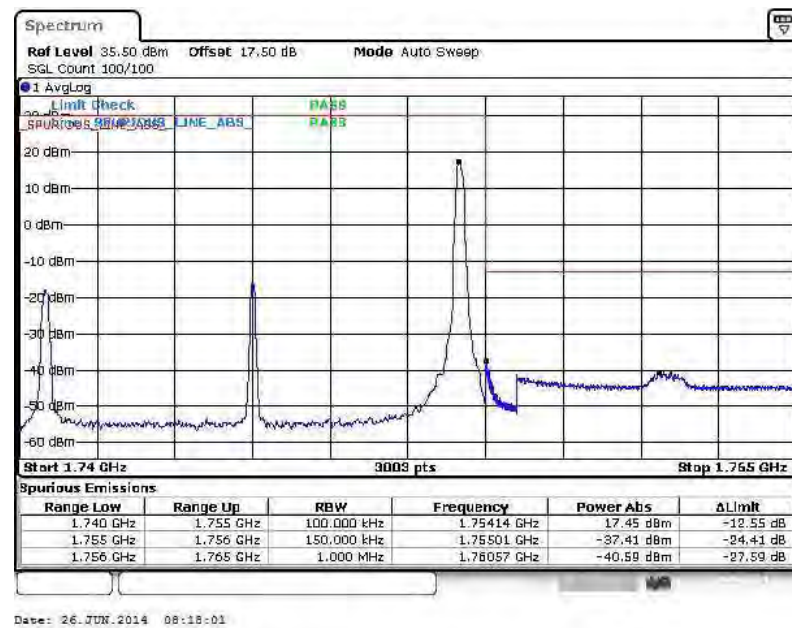


Lower Band Edge Plot for 16QAM-RB Size 75, RB Offset 0

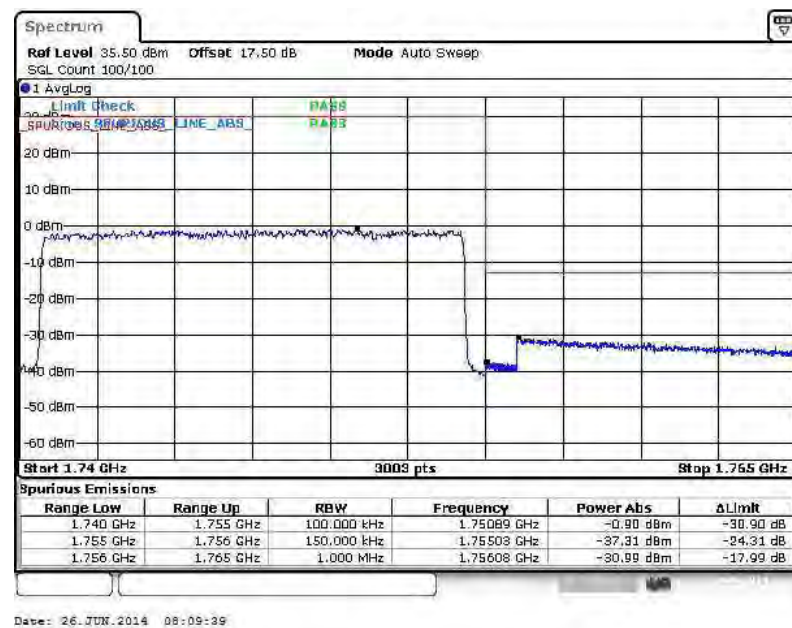




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 74



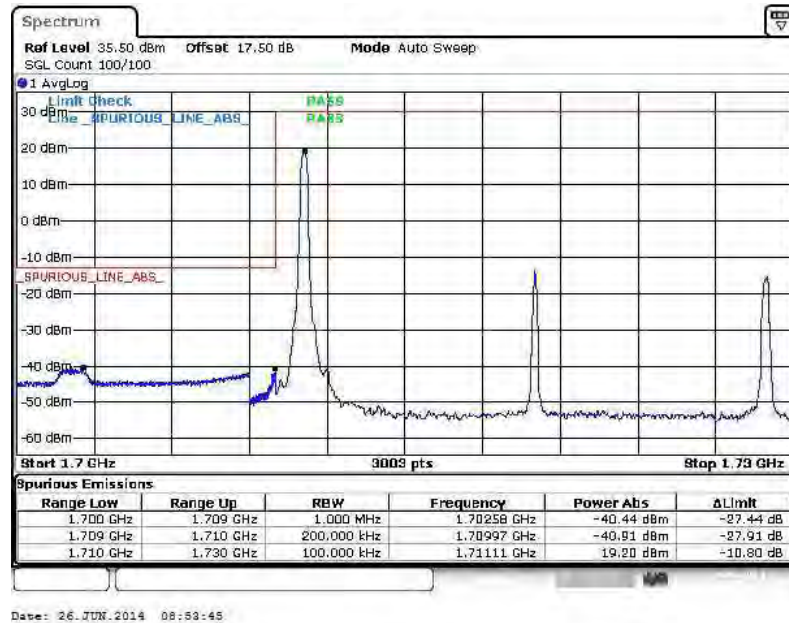
Higher Band Edge Plot for 16QAM-RB Size 75, RB Offset 0



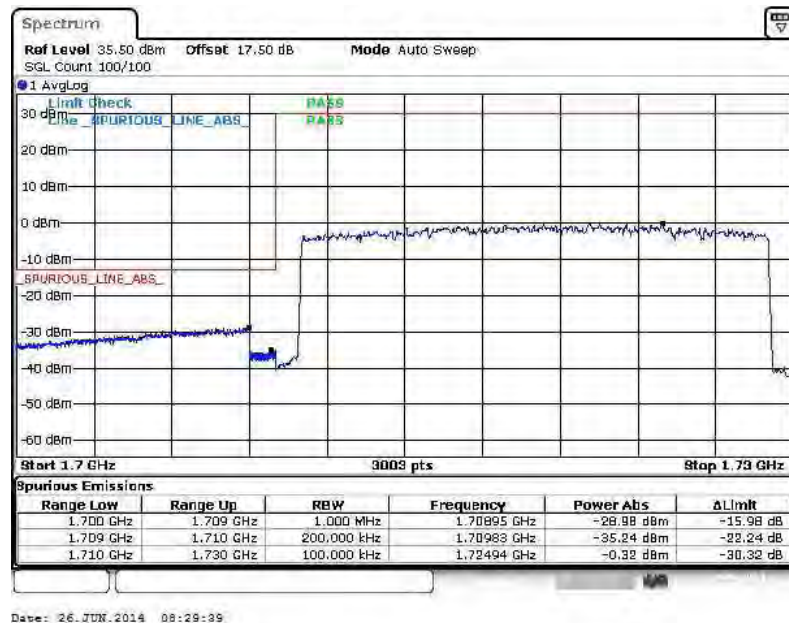


Band :	LTE Band 4	Band Width :	20MHz / QPSK
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Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0

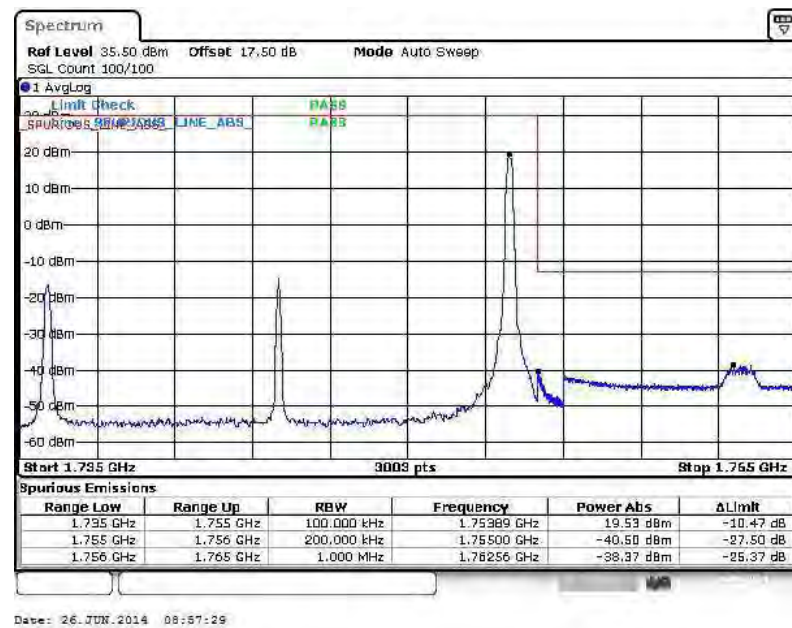


Lower Band Edge Plot for QPSK-RB Size 100, RB Offset 0

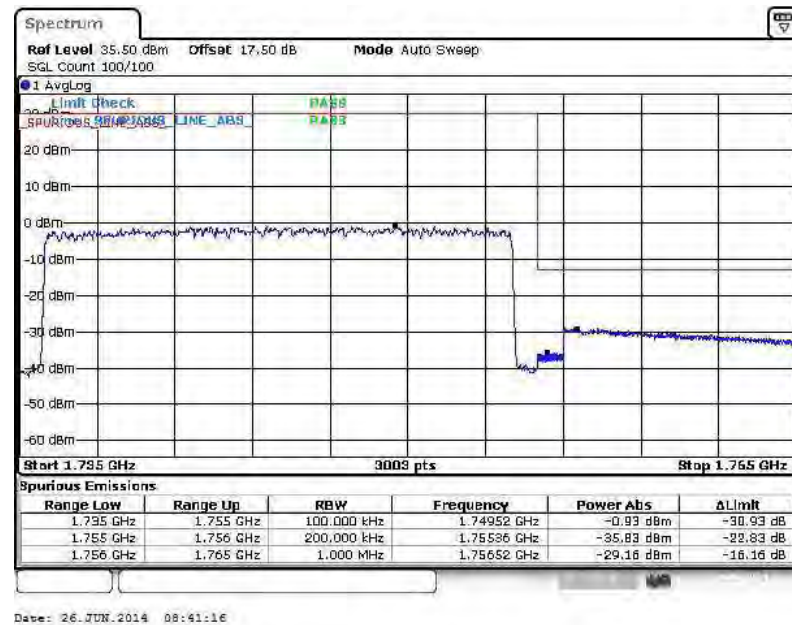




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 99



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

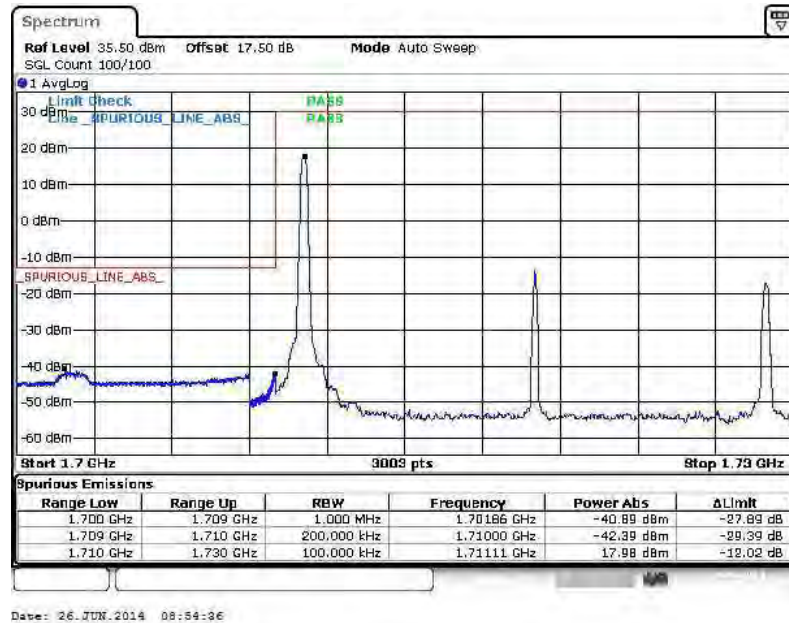




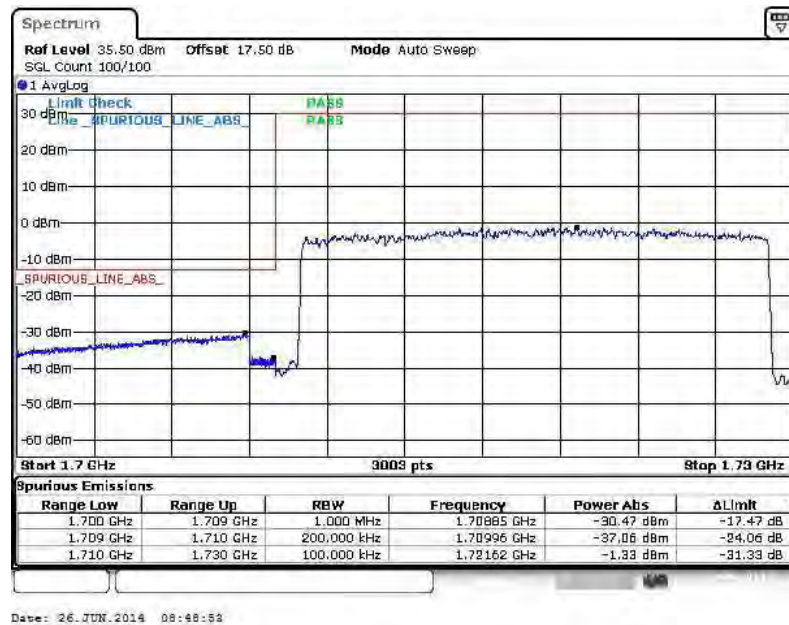
Band : LTE Band 4

Band Width : 20MHz / 16QAM

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

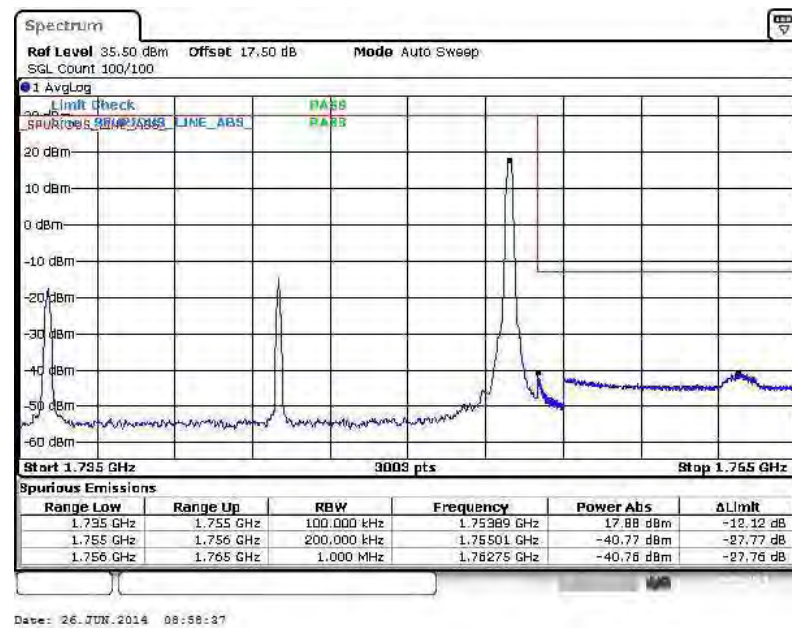


Lower Band Edge Plot for 16QAM-RB Size 100, RB Offset 0

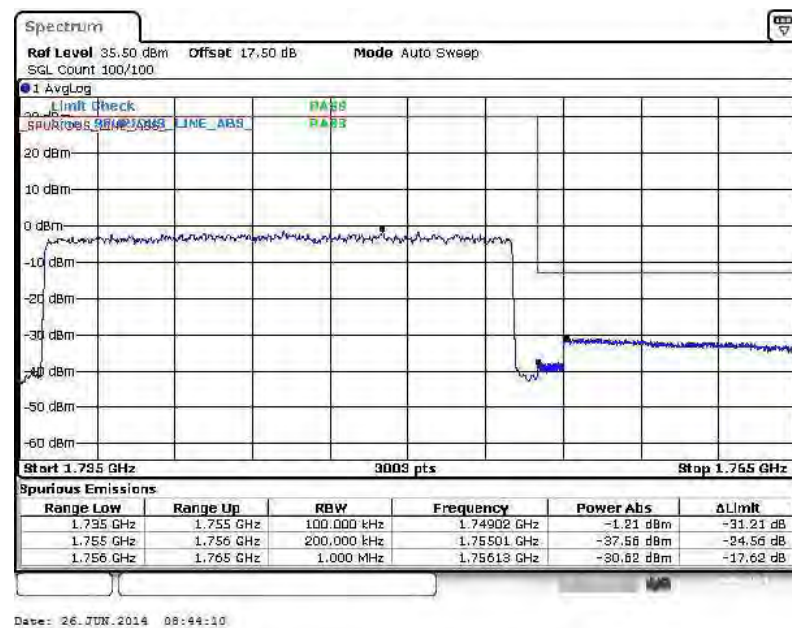




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 99

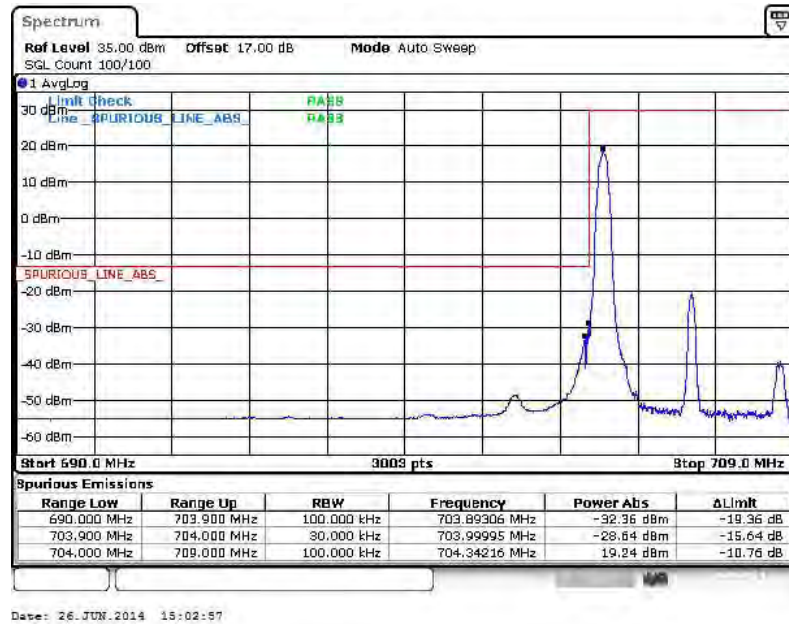
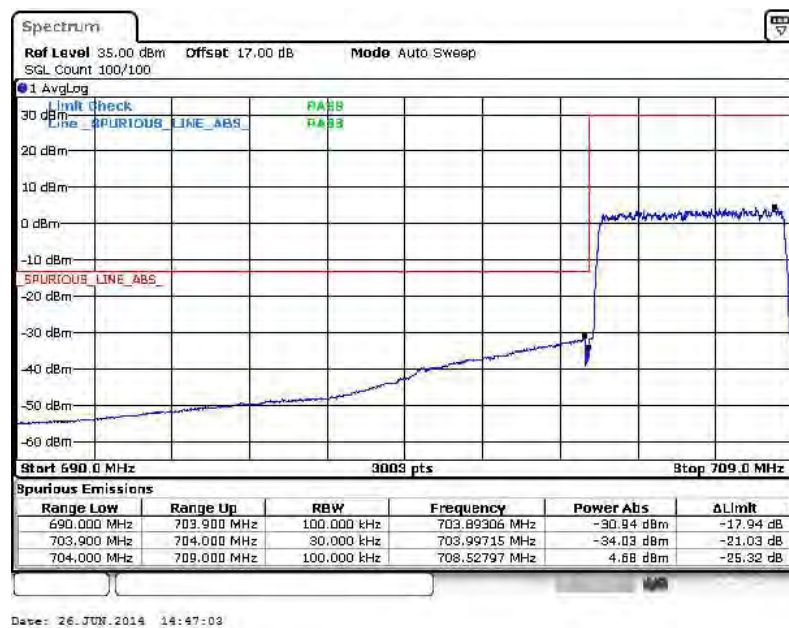


Higher Band Edge Plot for 16QAM-RB Size 100, RB Offset 0



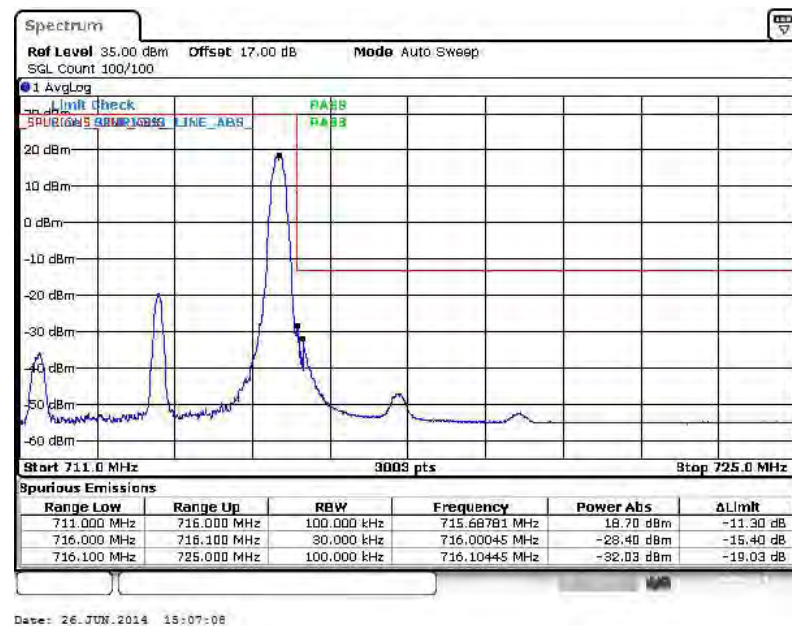


Band :	LTE Band 17	Band Width :	5MHz / QPSK
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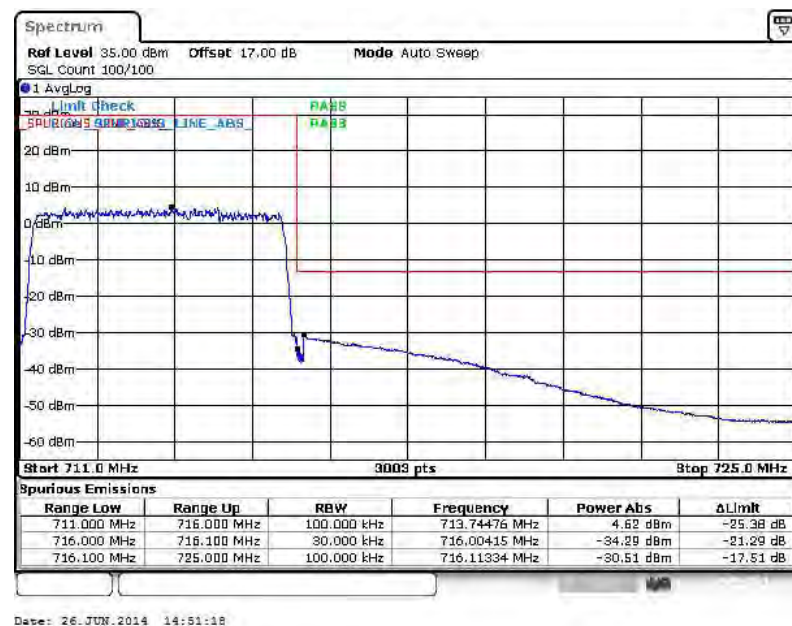
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0**Lower Band Edge Plot for QPSK-RB Size 25, RB Offset 0**



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



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

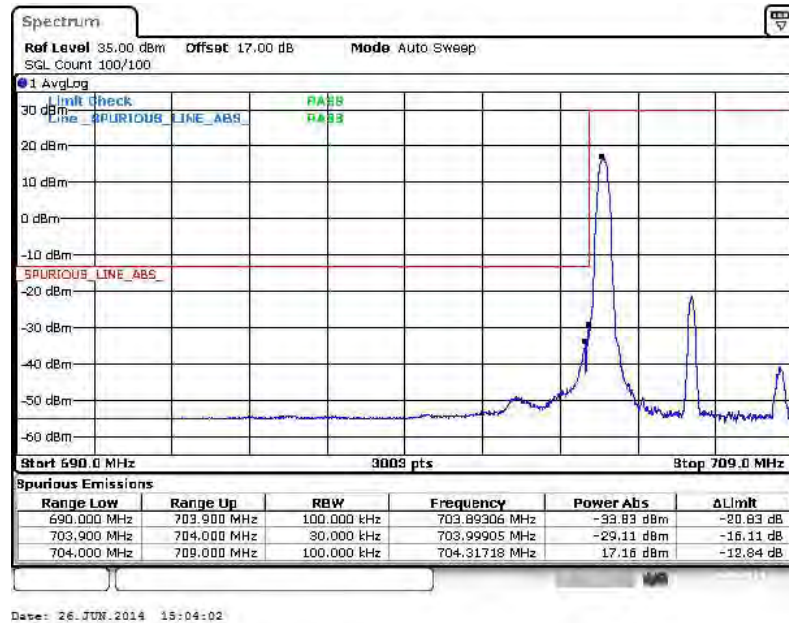




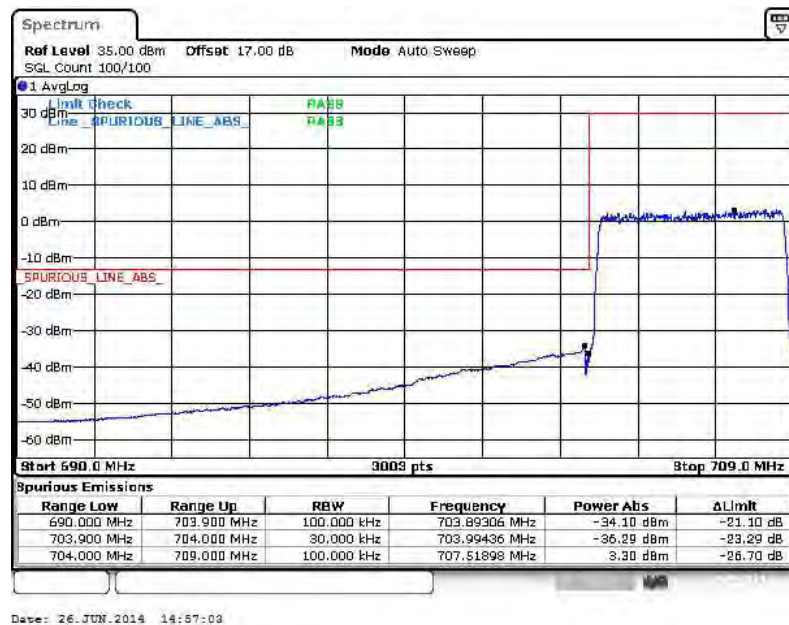
Band : LTE Band 17

Band Width : 5MHz / 16QAM

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

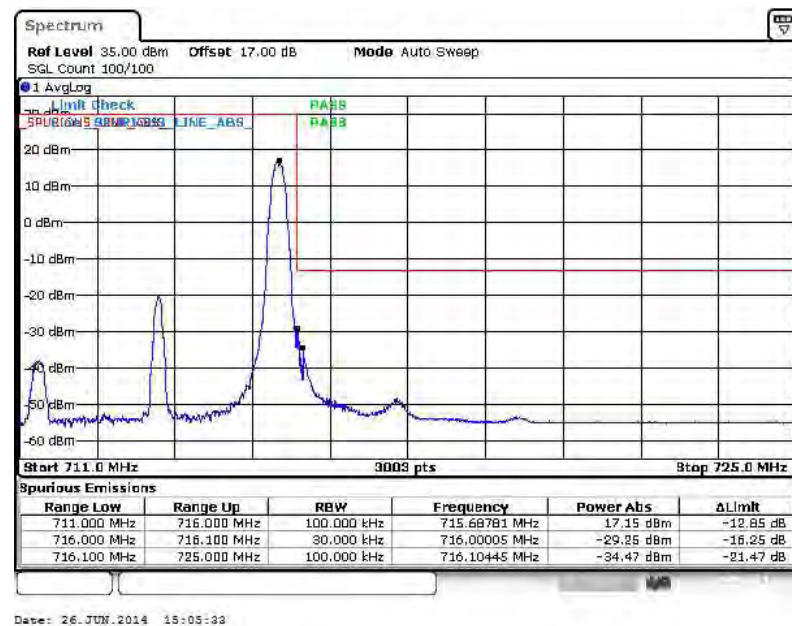


Lower Band Edge Plot for 16QAM-RB Size 25, RB Offset 0

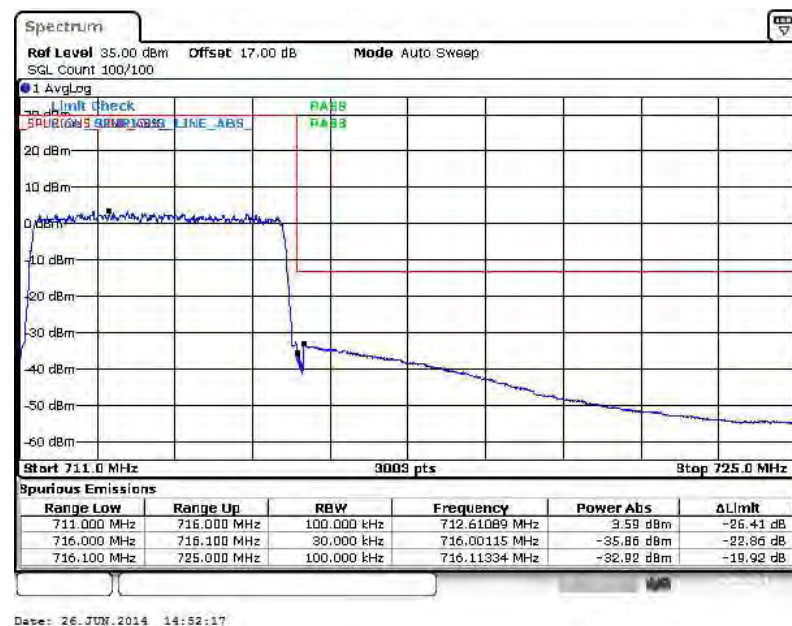




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 24



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

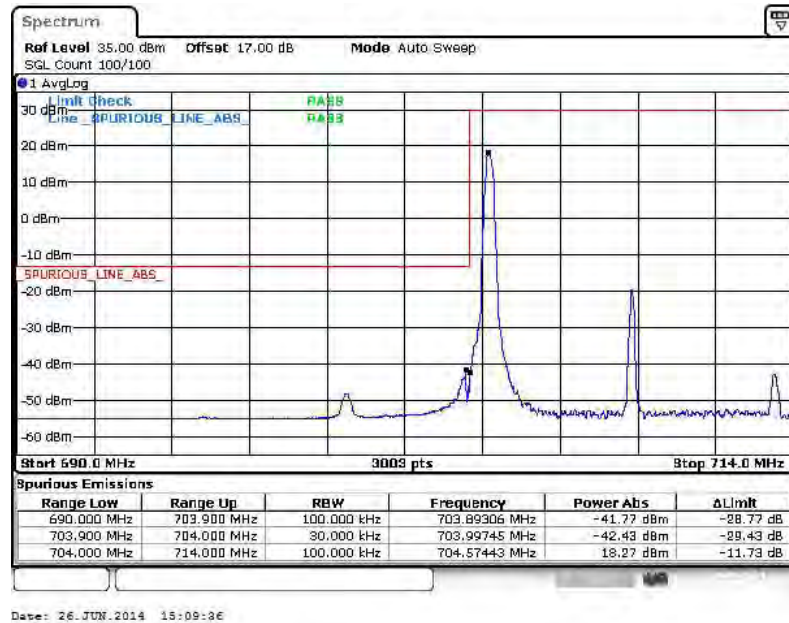




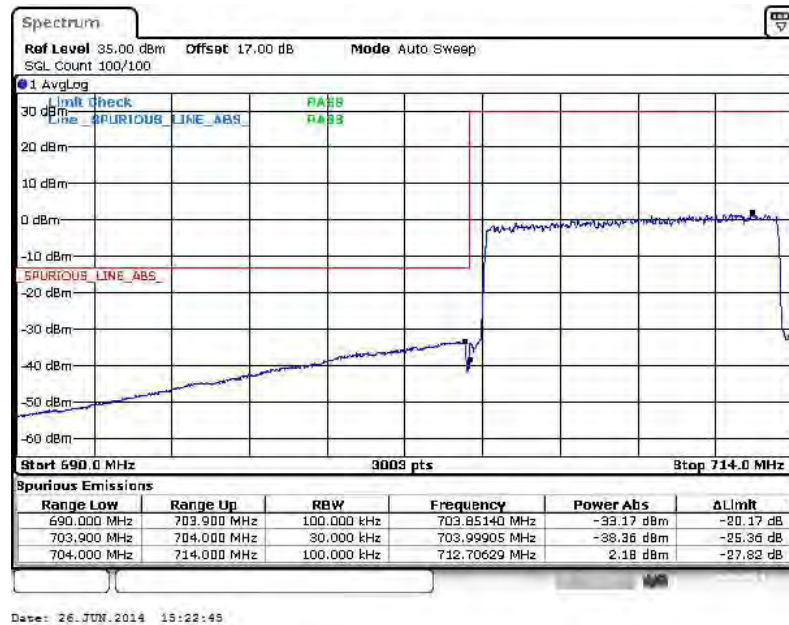
Band : LTE Band 17

Band Width : 10MHz / QPSK

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

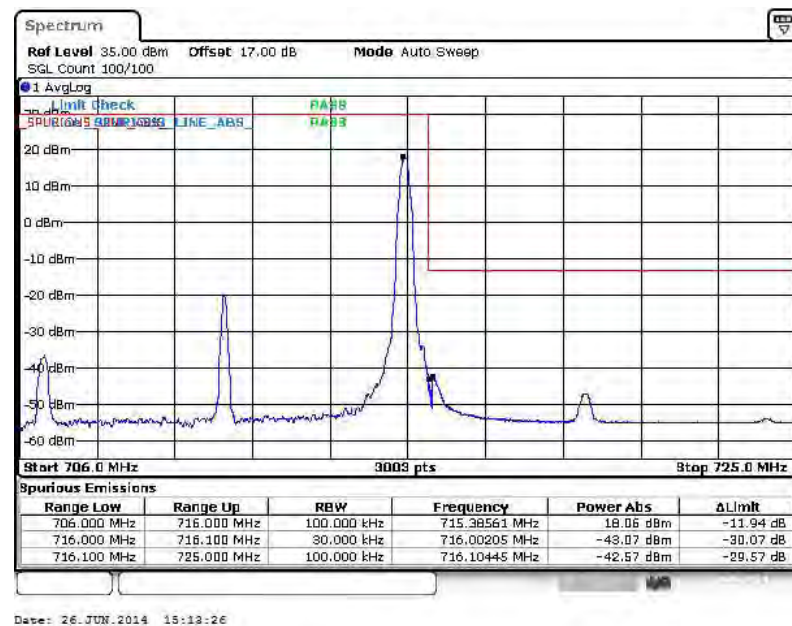


Lower Band Edge Plot for QPSK-RB Size 50, RB Offset 0

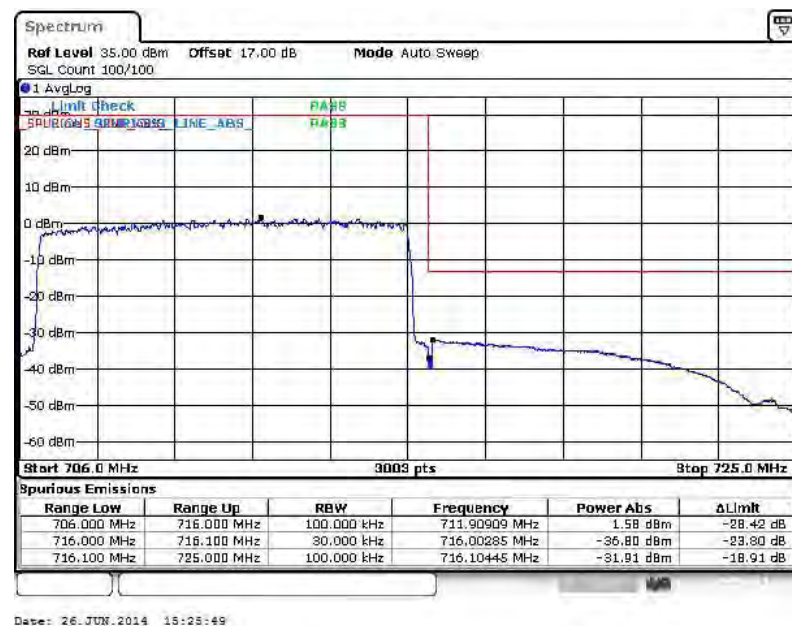




Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 49



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

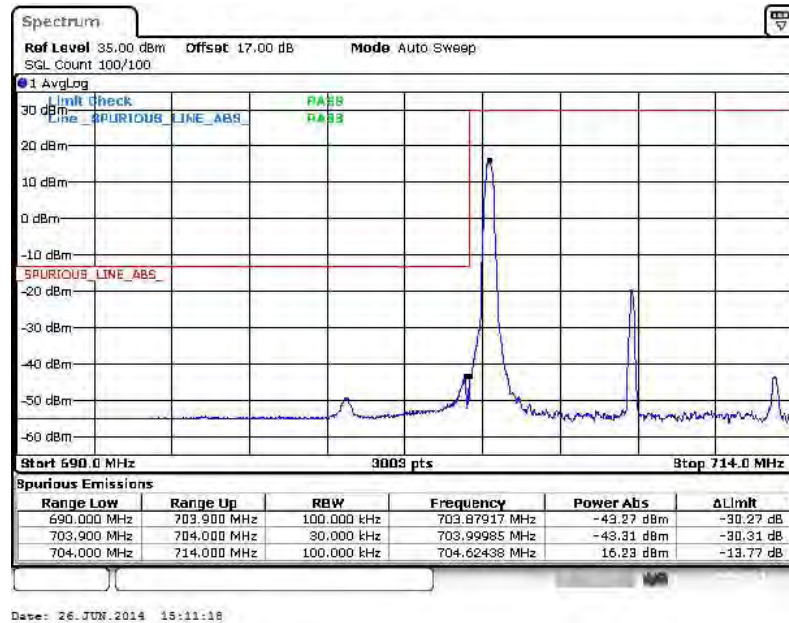




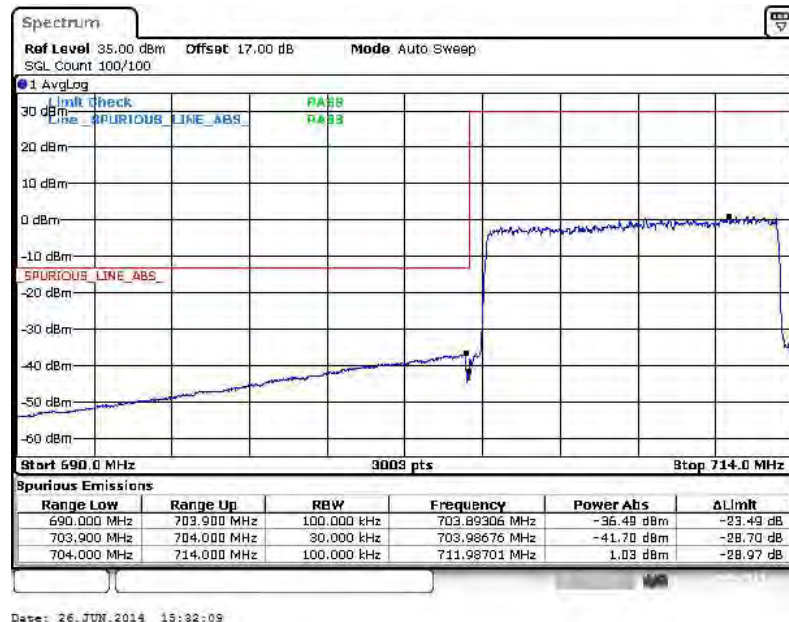
Band : LTE Band 17

Band Width : 10MHz / 16QAM

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

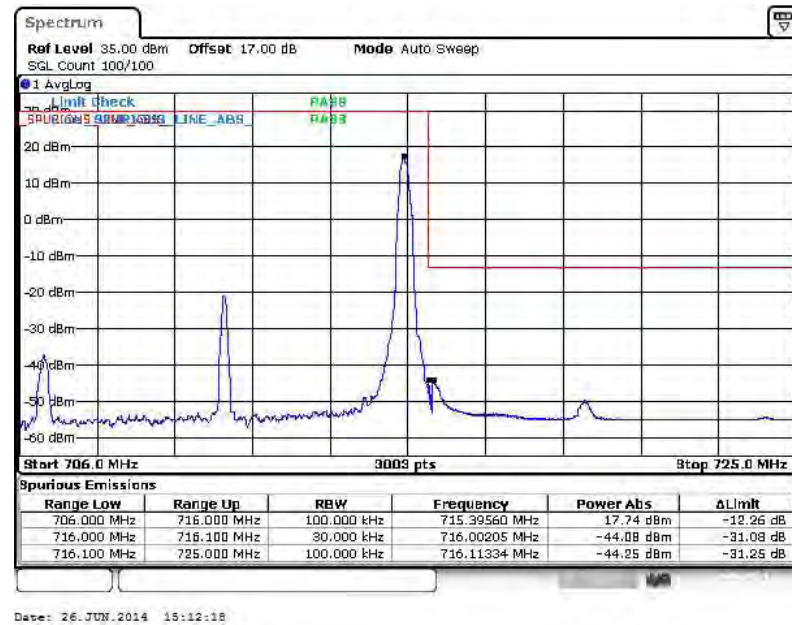


Lower Band Edge Plot for 16QAM-RB Size 50, RB Offset 0

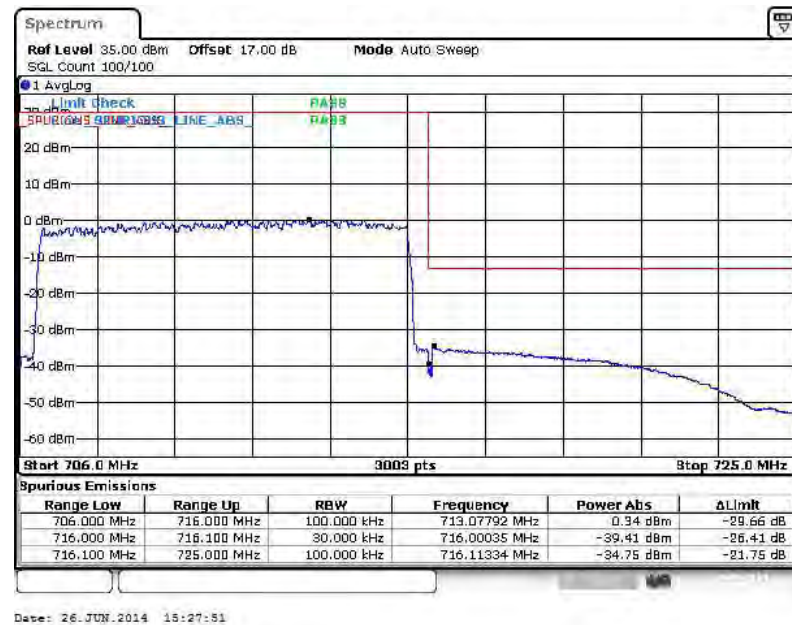




Higher Band Edge Plot for 16QAM-RB Size 1, RB Offset 49



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.

It is measured by means of a calibrated spectrum analyzer and scanned from 30MHz up to a frequency including its 10th harmonic.

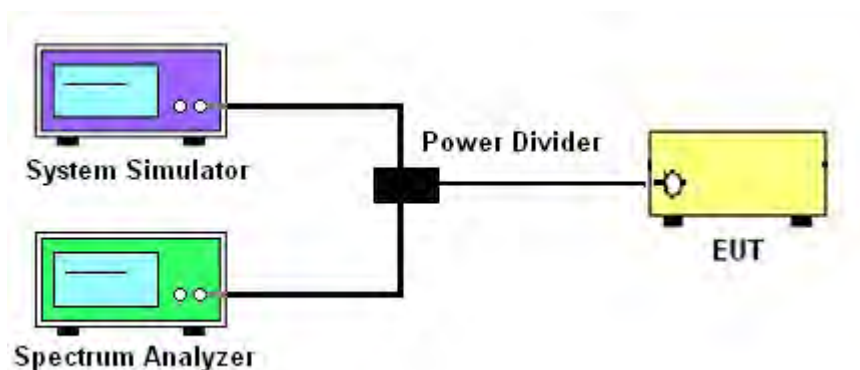
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was 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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

3.6.4 Test Setup

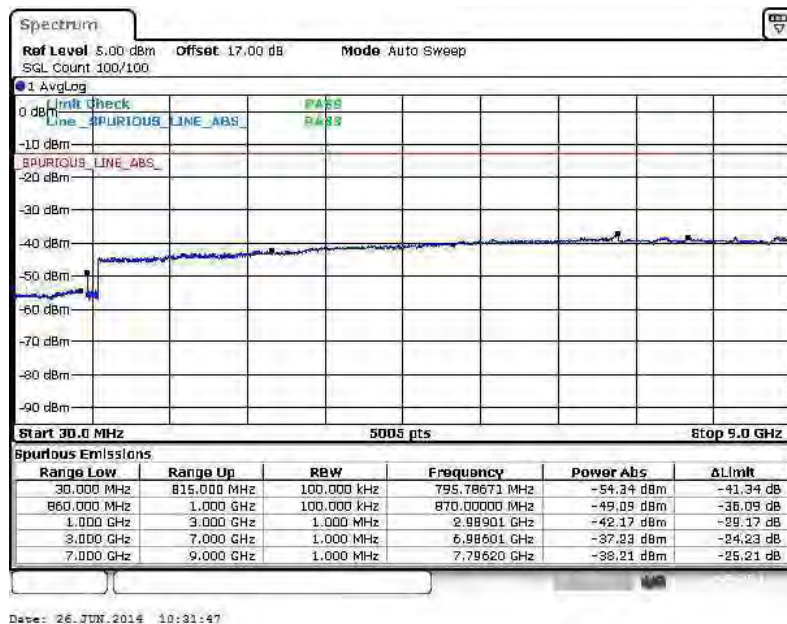




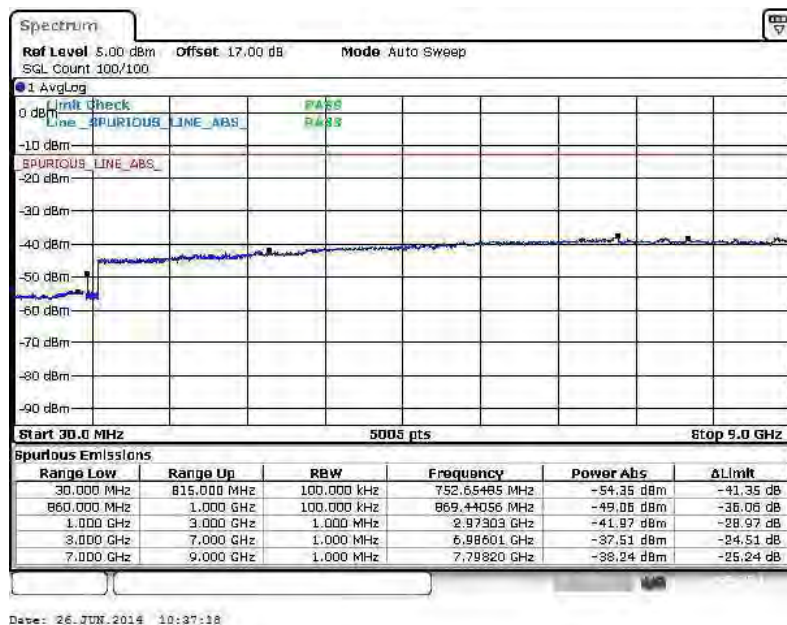
3.6.5 Test Result (Plots) of Conducted Spurious Emission

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

QPSK (RB Size 1, RB Offset 0)



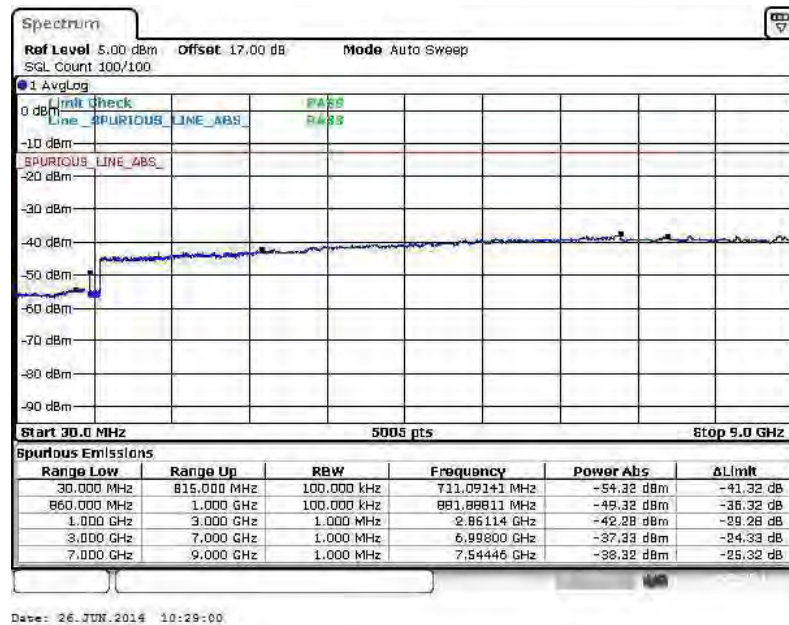
16QAM (RB Size 1, RB Offset 0)



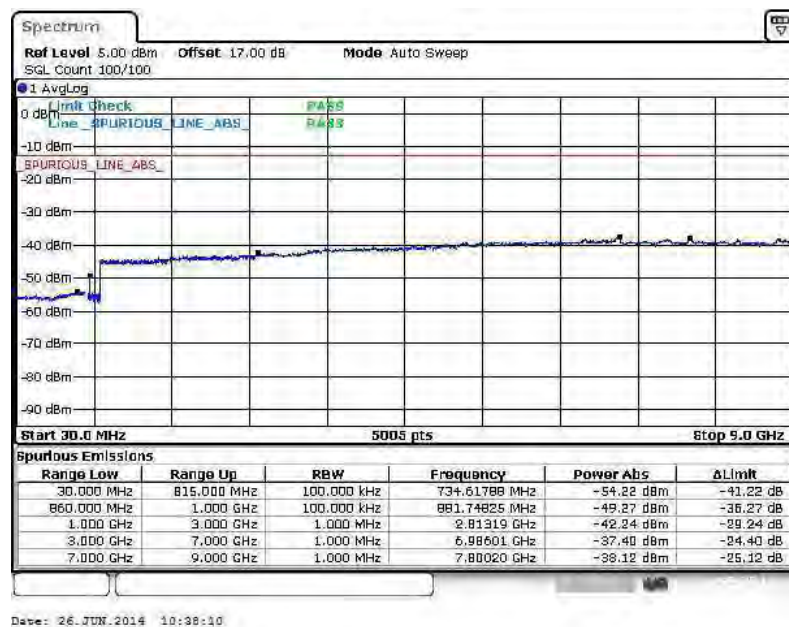


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



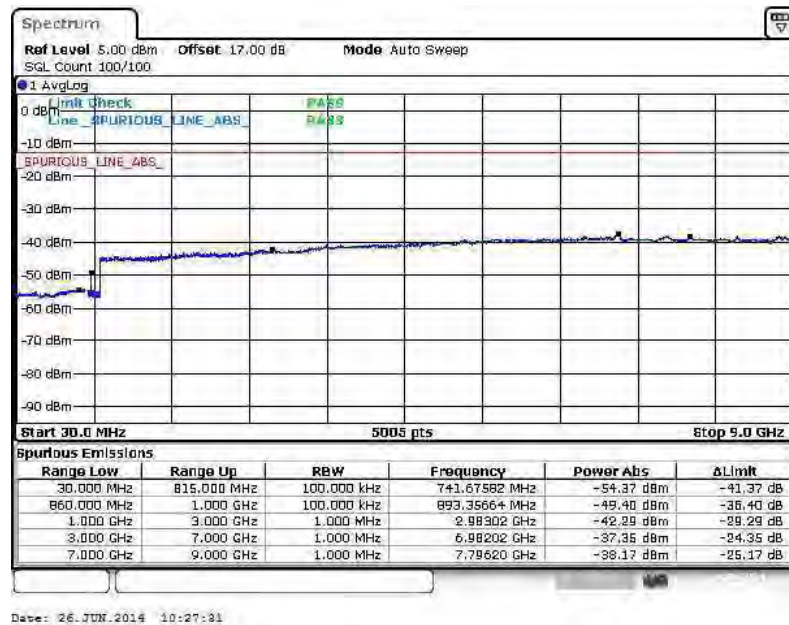
16QAM (RB Size 1, RB Offset 0)



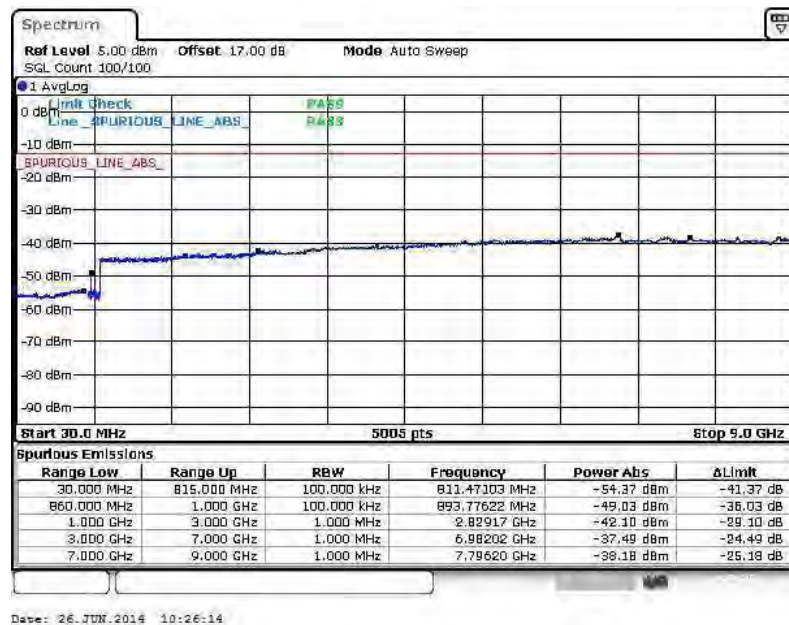


Band :	LTE Band 5	Channel :	CH20643 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



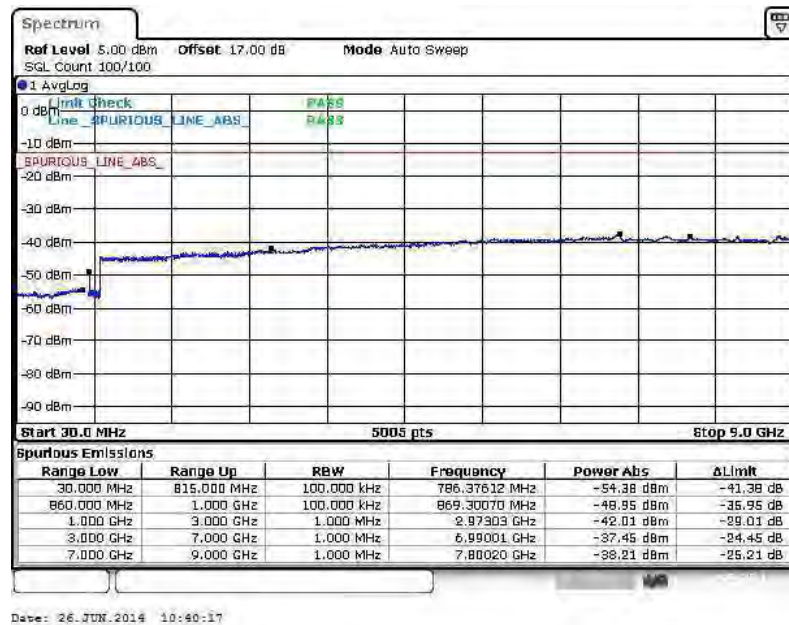
16QAM (RB Size 1, RB Offset 0)



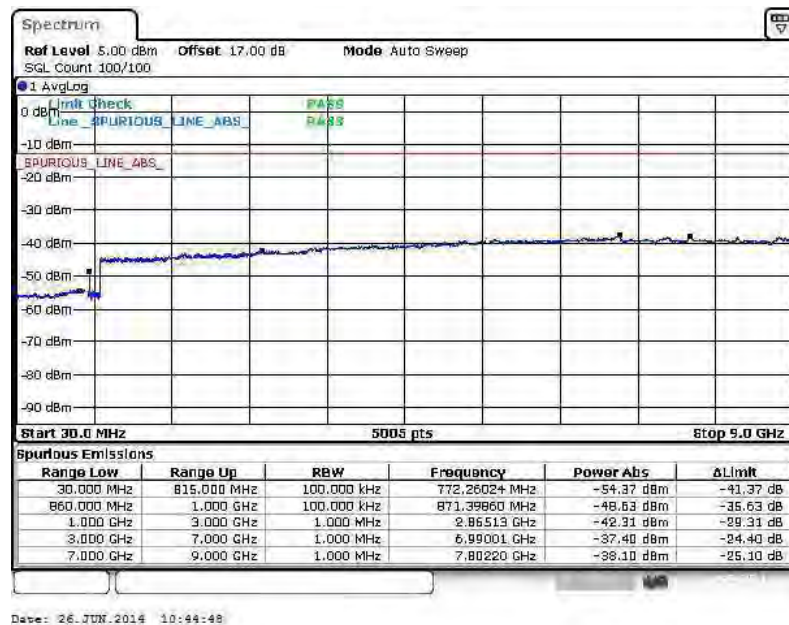


Band :	LTE Band 5	Channel :	CH20415 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



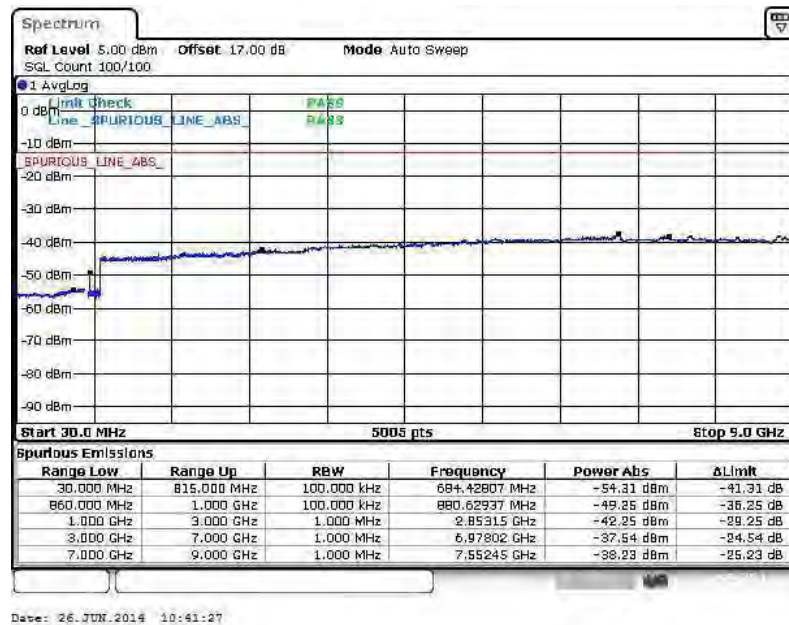
16QAM (RB Size 1, RB Offset 0)



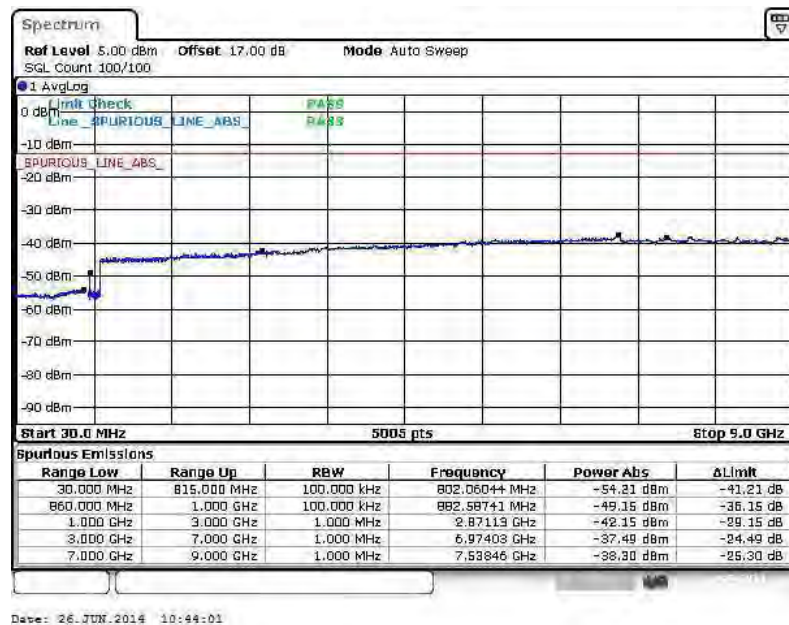


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



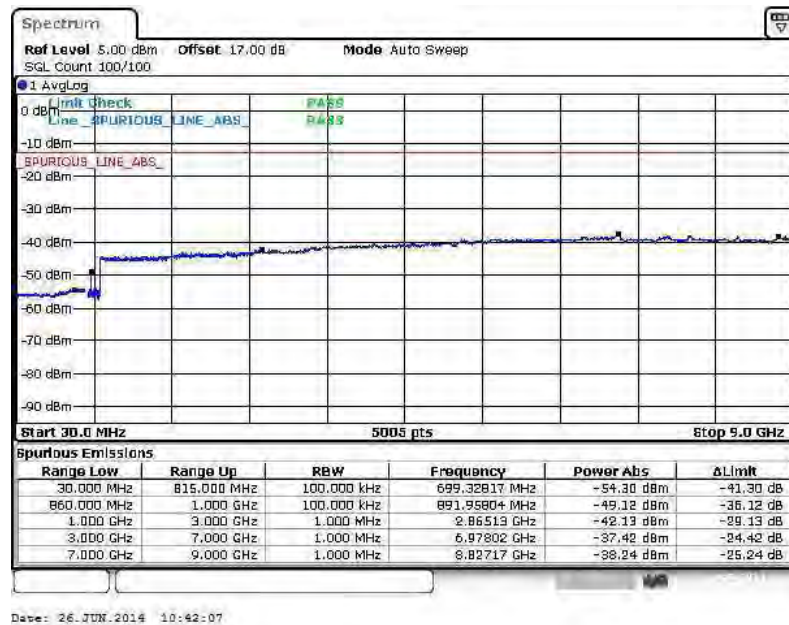
16QAM (RB Size 1, RB Offset 0)



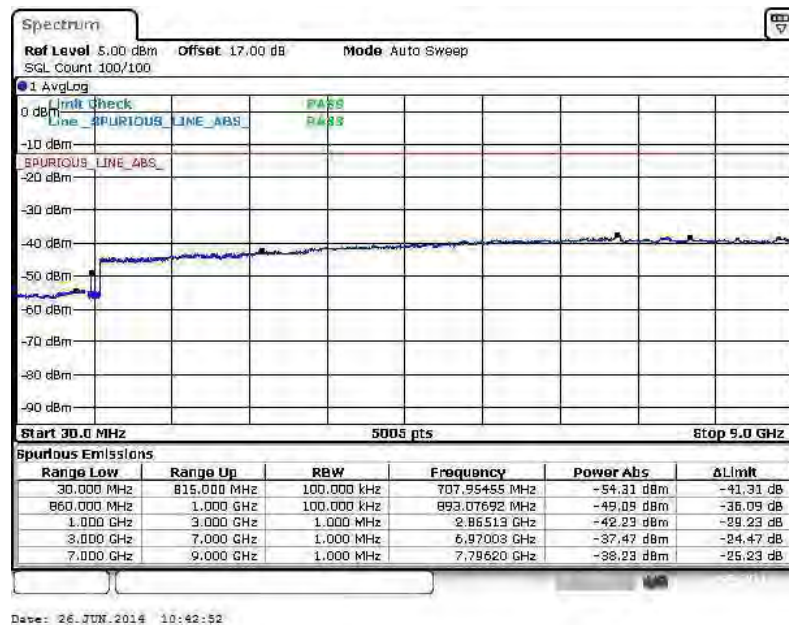


Band :	LTE Band 5	Channel :	CH20635 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



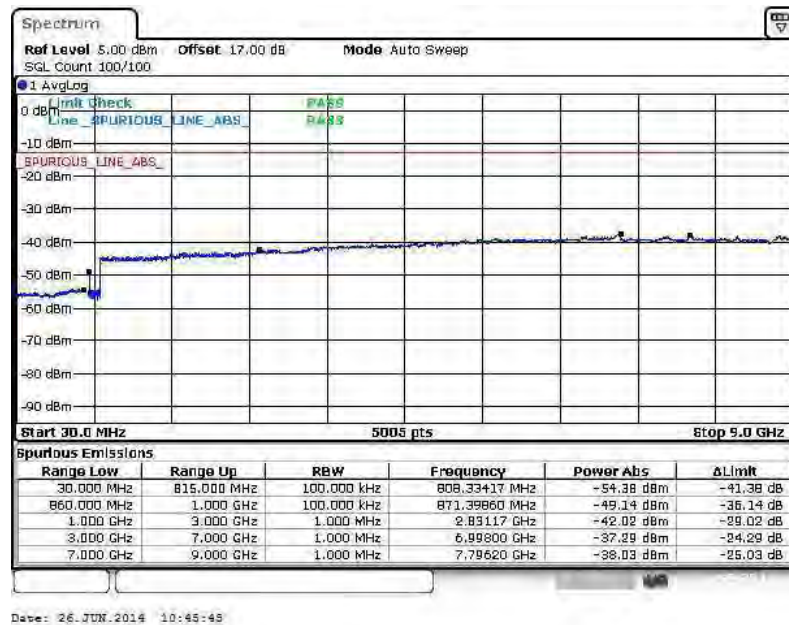
16QAM (RB Size 1, RB Offset 0)



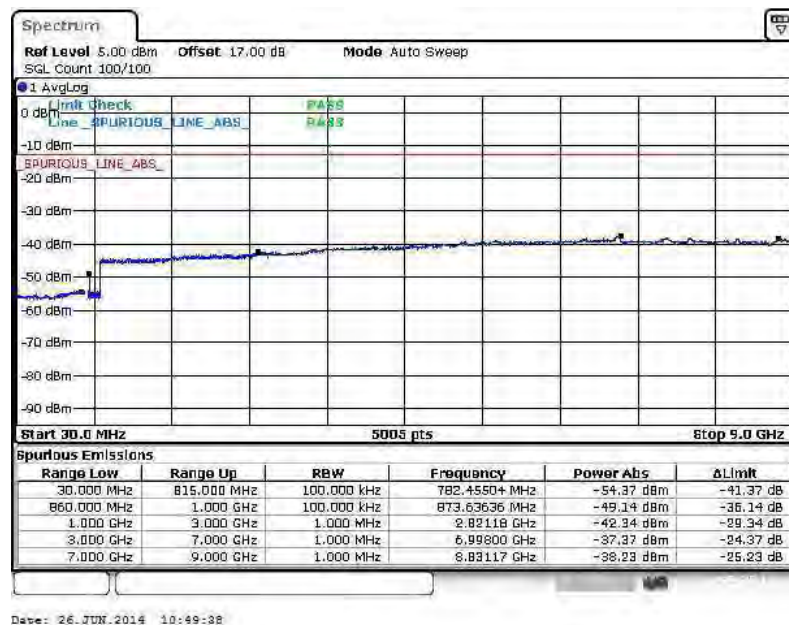


Band :	LTE Band 5	Channel :	CH20425 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



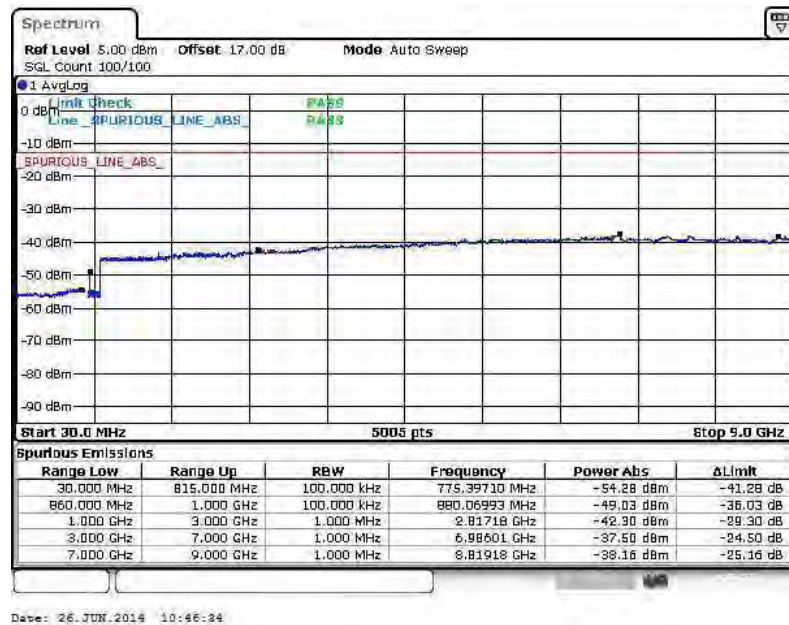
16QAM (RB Size 1, RB Offset 0)



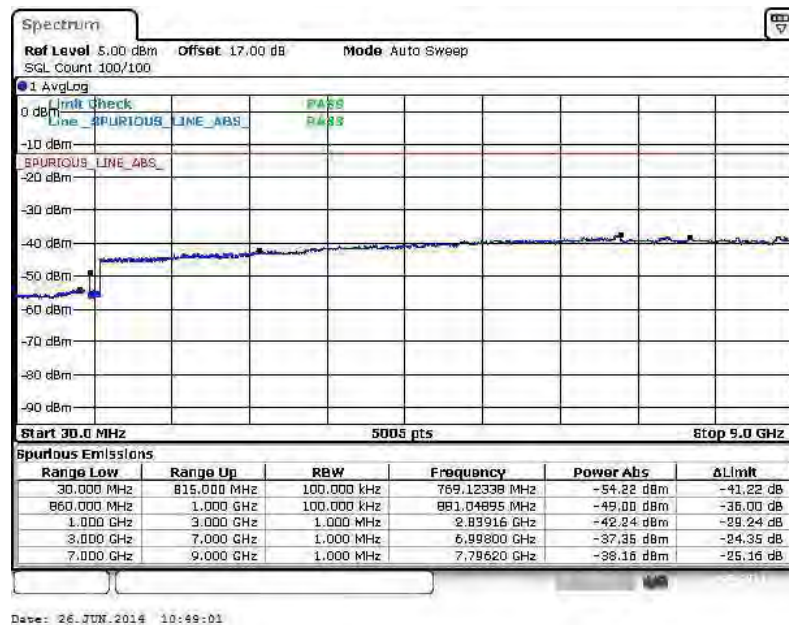


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



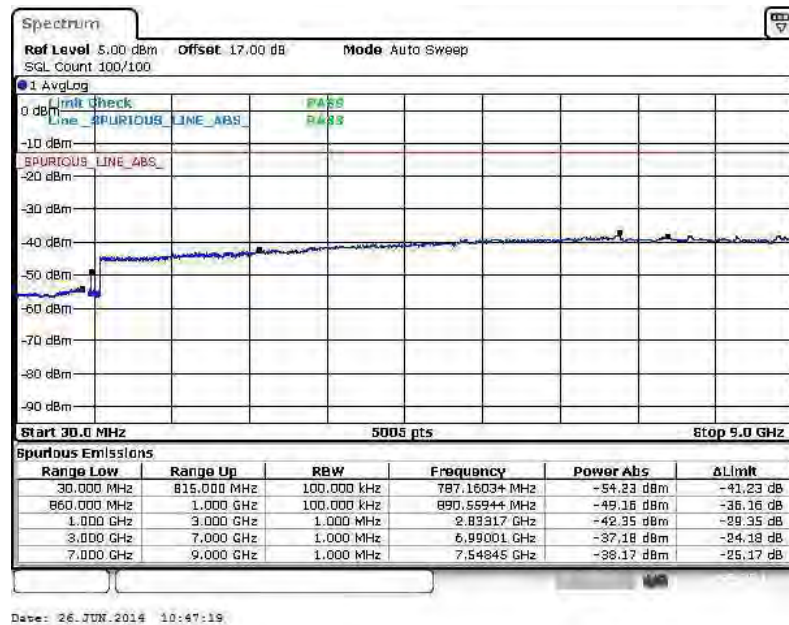
16QAM (RB Size 1, RB Offset 0)



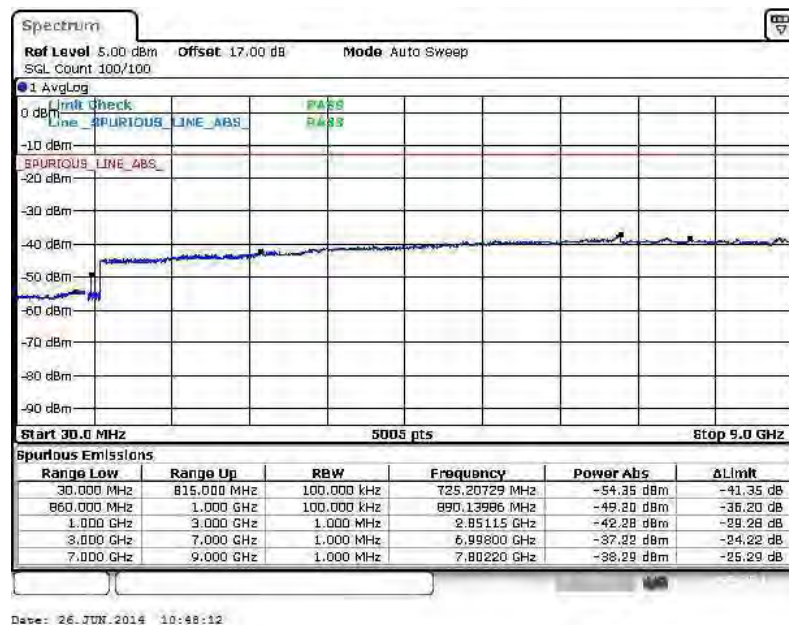


Band :	LTE Band 5	Channel :	CH20625 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



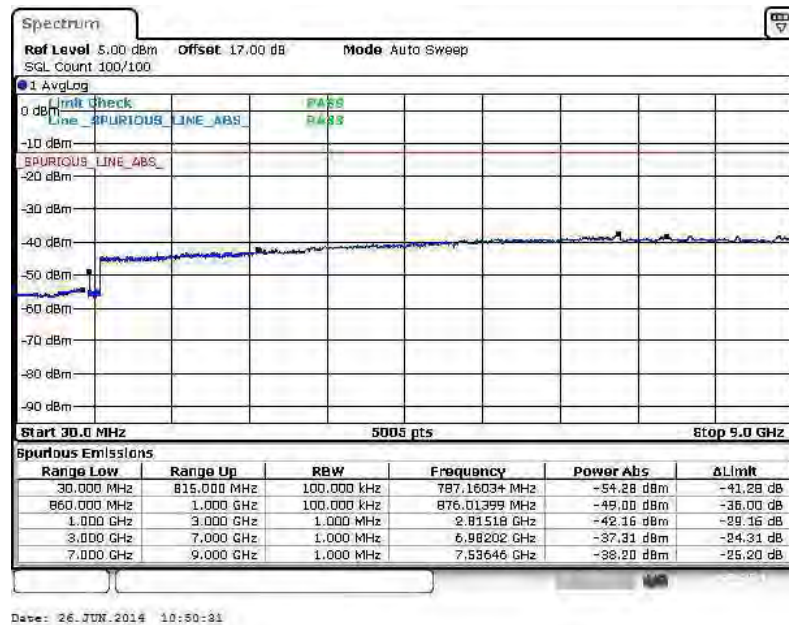
16QAM (RB Size 1, RB Offset 0)



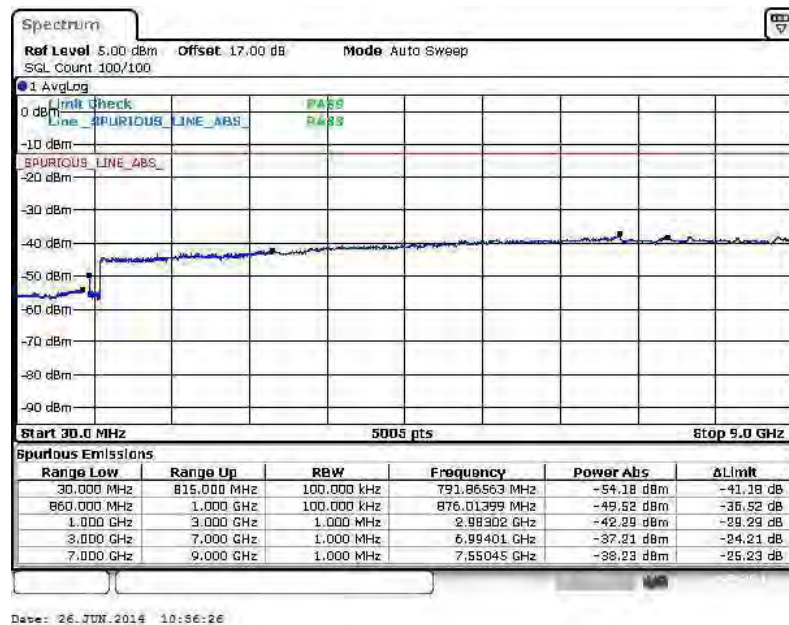


Band :	LTE Band 5	Channel :	CH20450 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



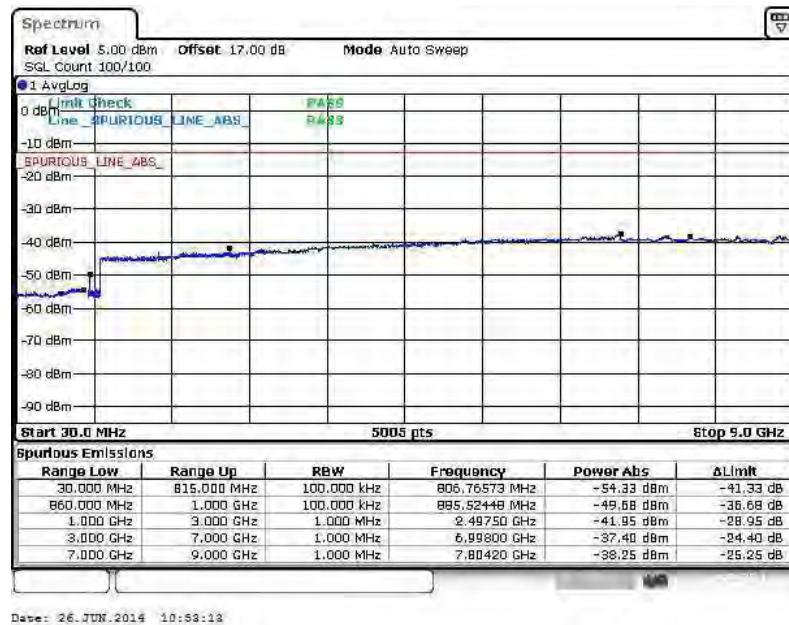
16QAM (RB Size 1, RB Offset 0)



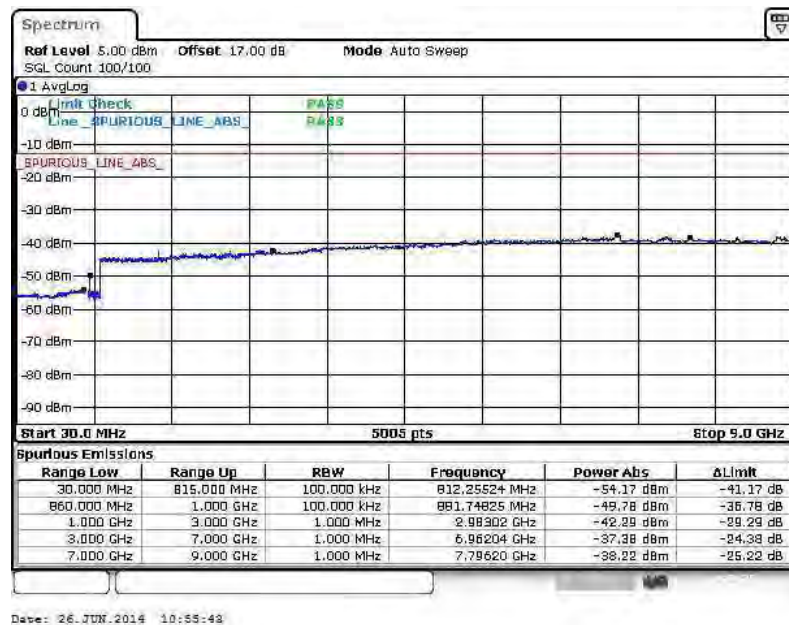


Band :	LTE Band 5	Channel :	CH20525 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



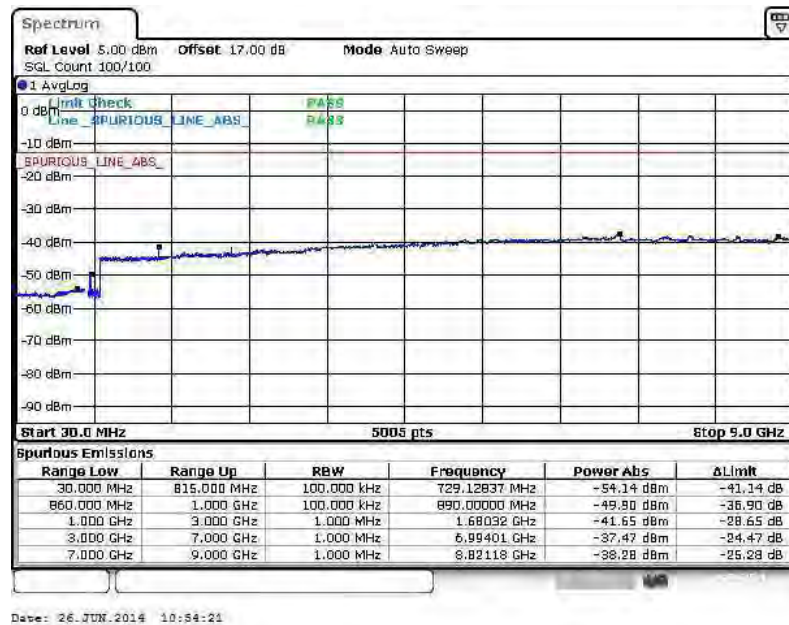
16QAM (RB Size 1, RB Offset 0)



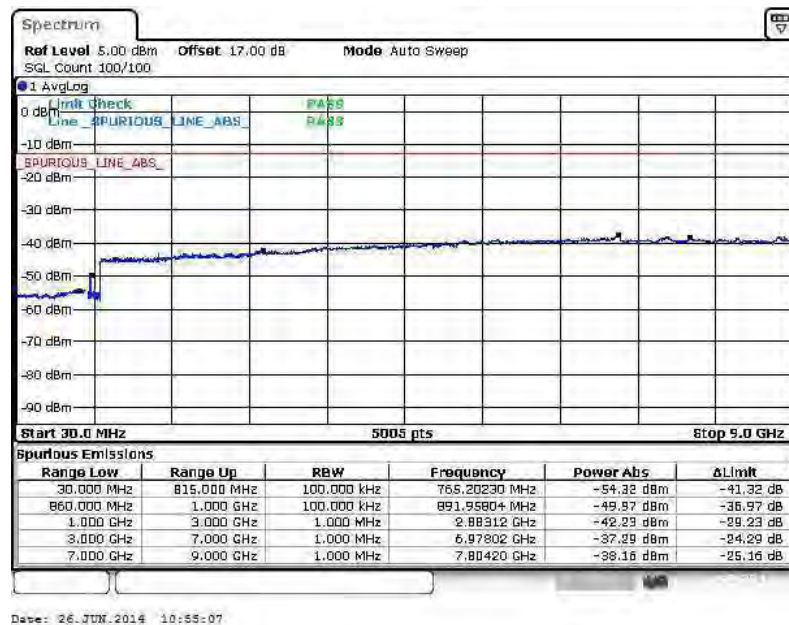


Band :	LTE Band 5	Channel :	CH20600 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



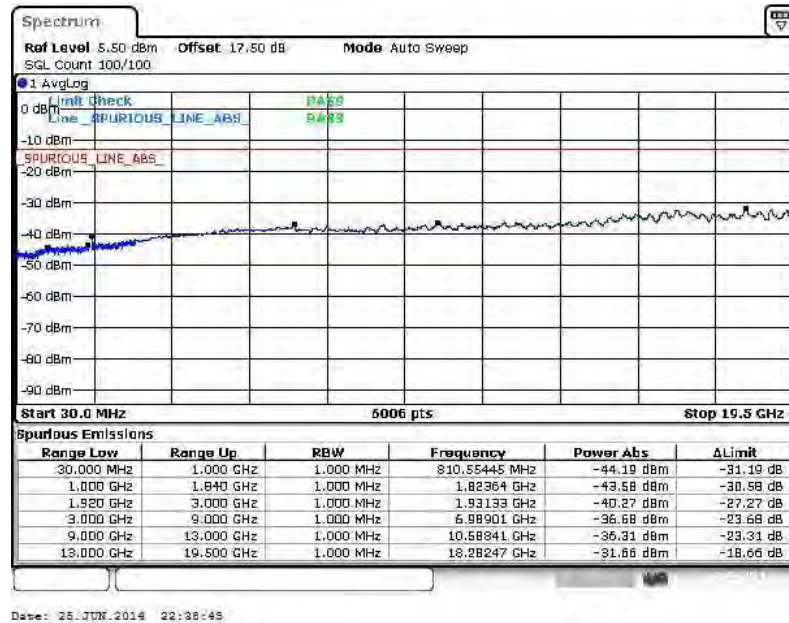
16QAM (RB Size 1, RB Offset 0)



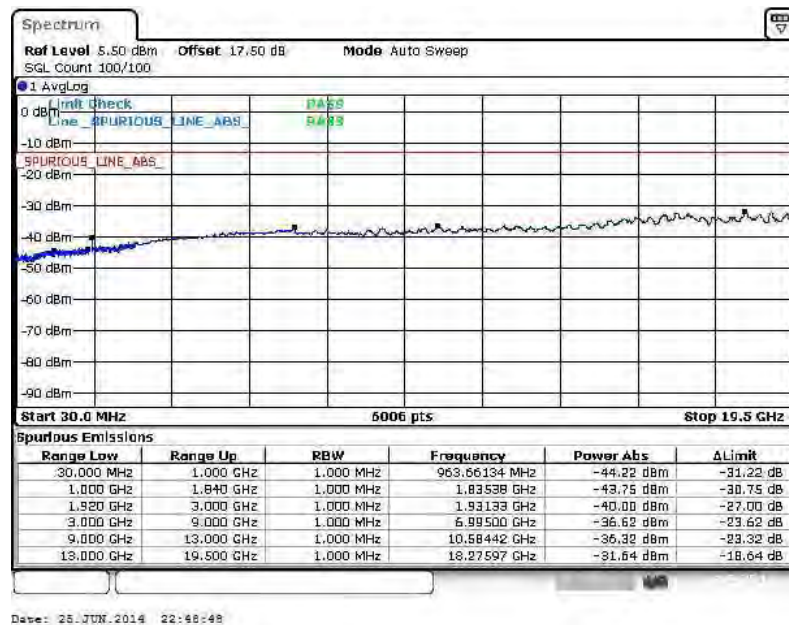


Band :	LTE Band 2	Channel :	CH18607 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



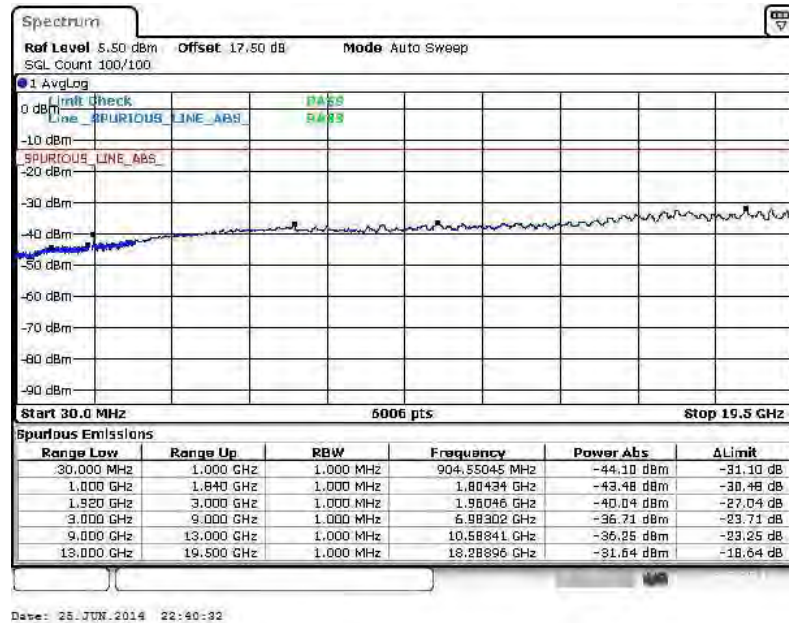
16QAM (RB Size 1, RB Offset 0)



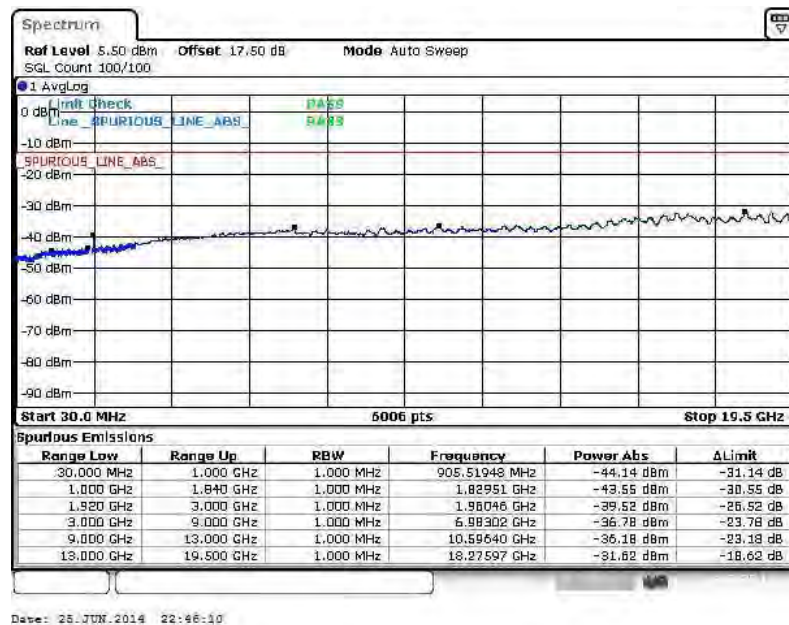


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



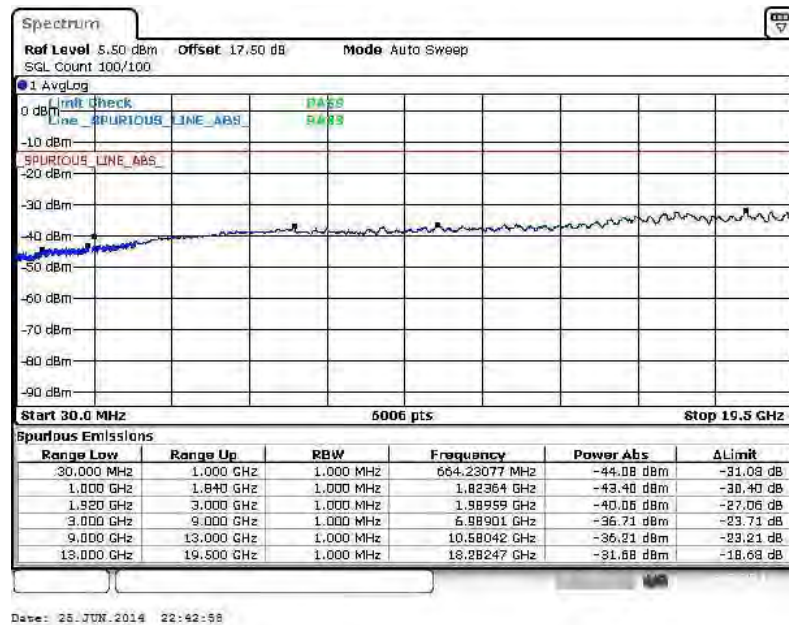
16QAM (RB Size 1, RB Offset 0)



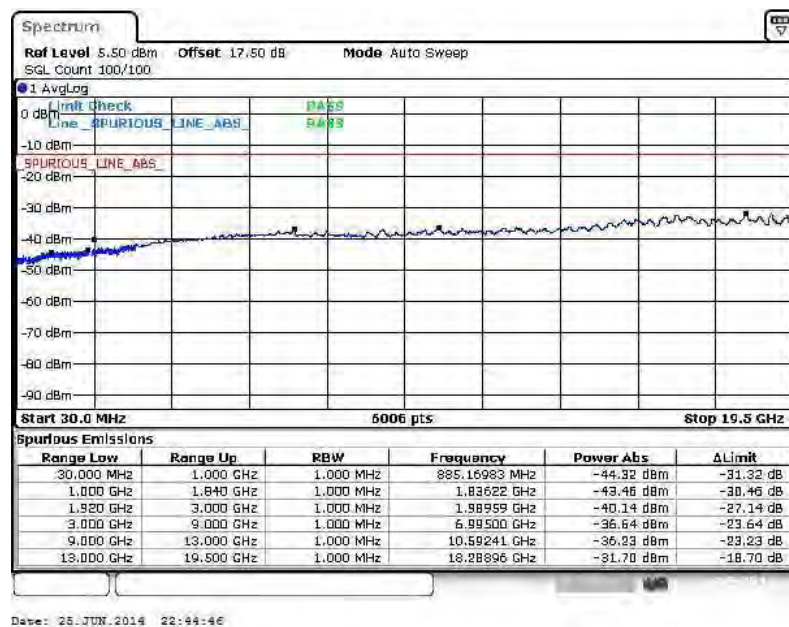


Band :	LTE Band 2	Channel :	CH19193 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



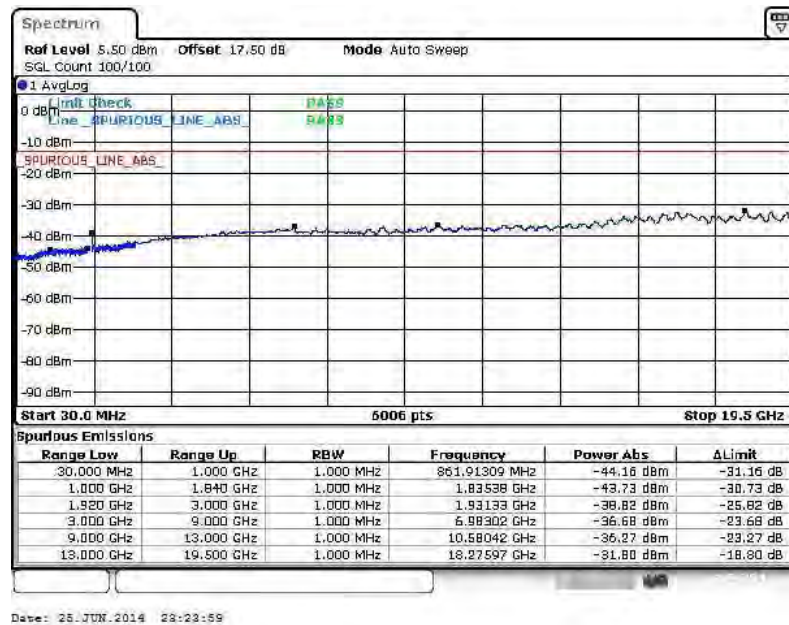
16QAM (RB Size 1, RB Offset 0)



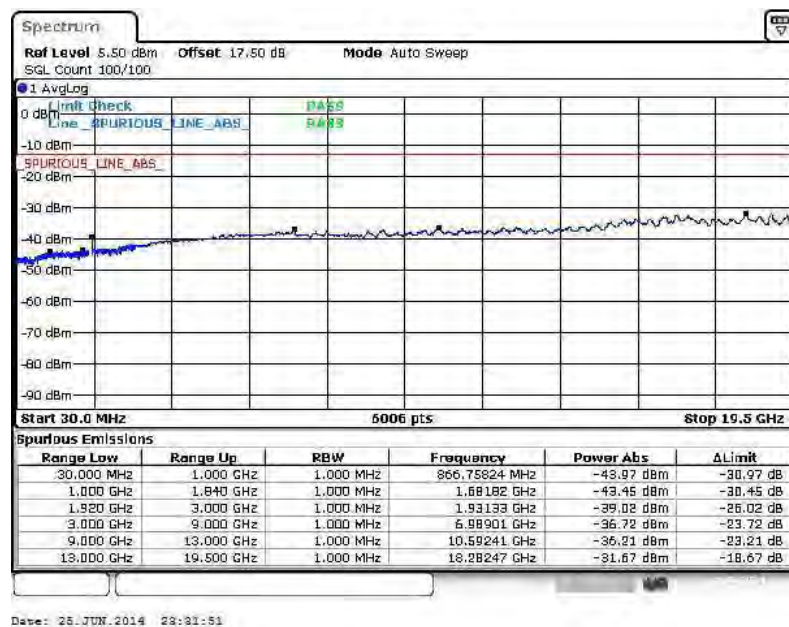


Band :	LTE Band 2	Channel :	CH18615 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



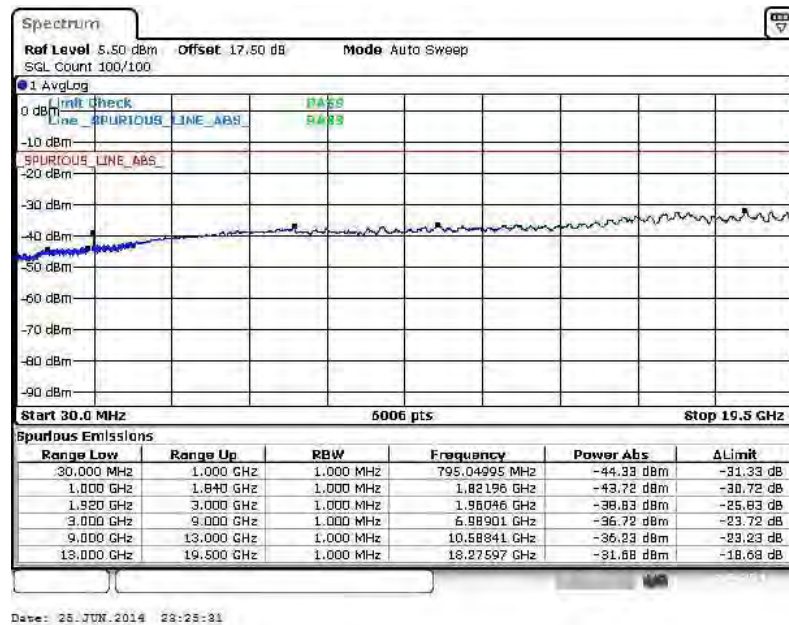
16QAM (RB Size 1, RB Offset 0)



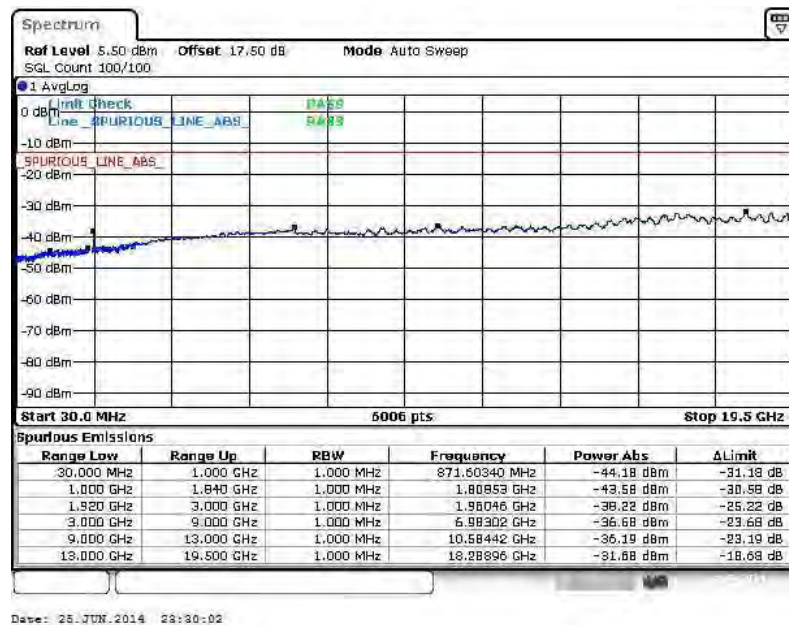


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



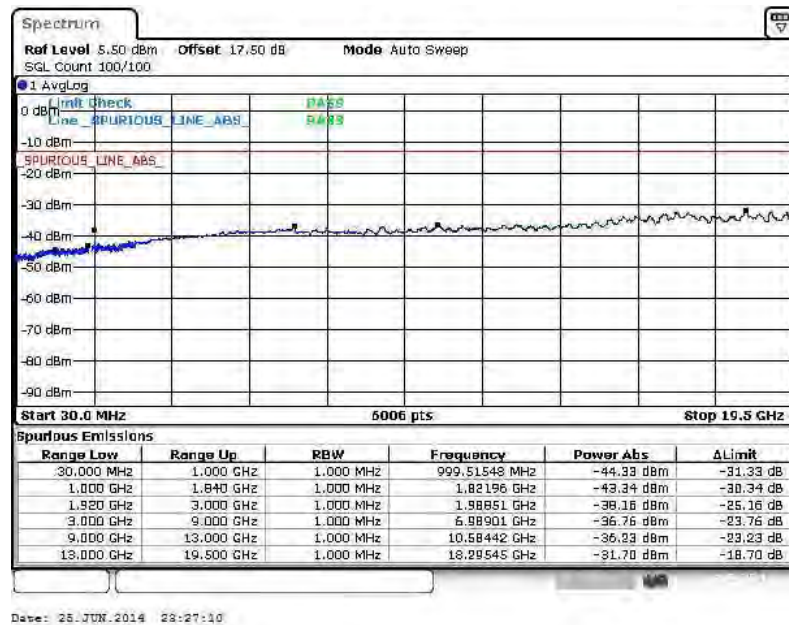
16QAM (RB Size 1, RB Offset 0)



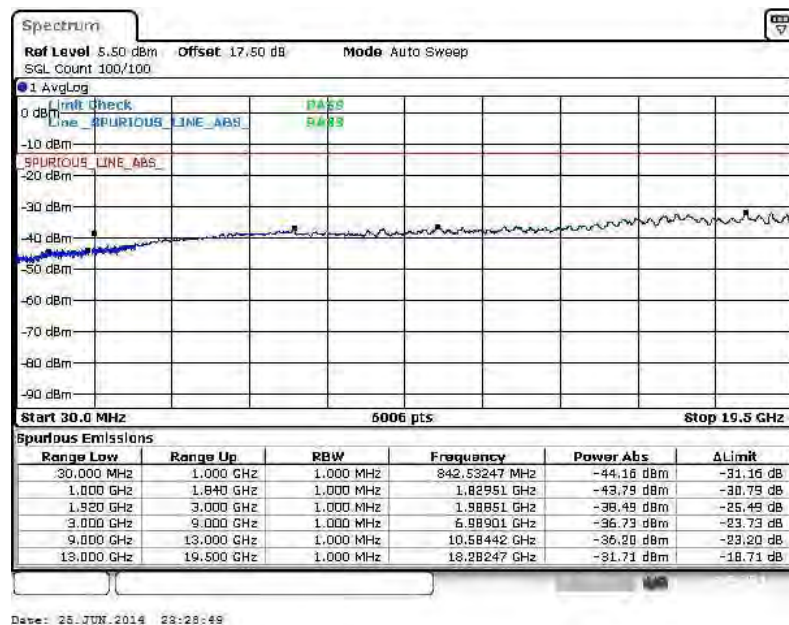


Band :	LTE Band 2	Channel :	CH19185 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



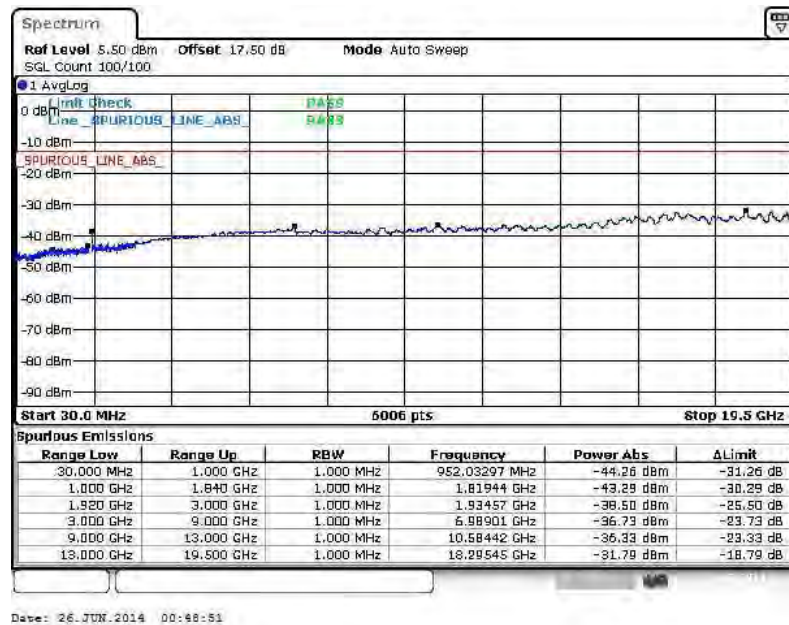
16QAM (RB Size 1, RB Offset 0)



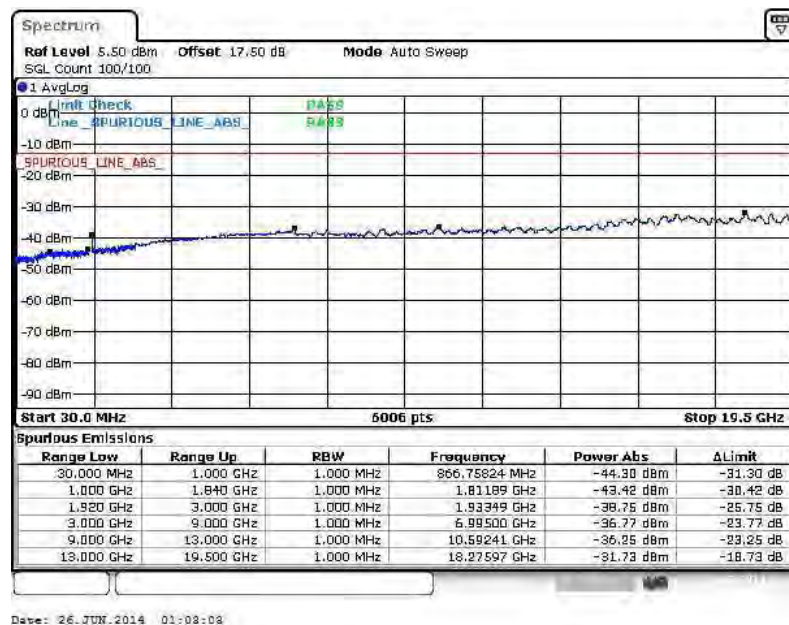


Band :	LTE Band 2	Channel :	CH18625 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



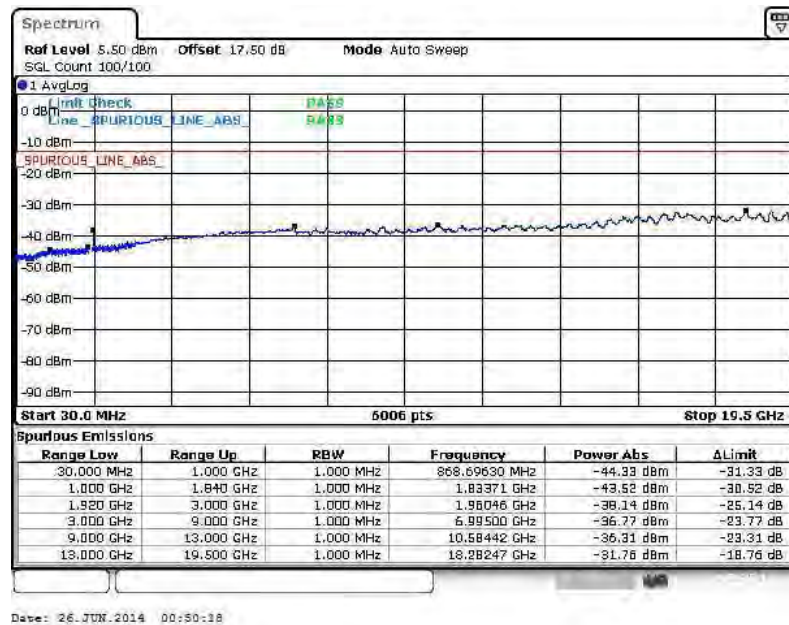
16QAM (RB Size 1, RB Offset 0)



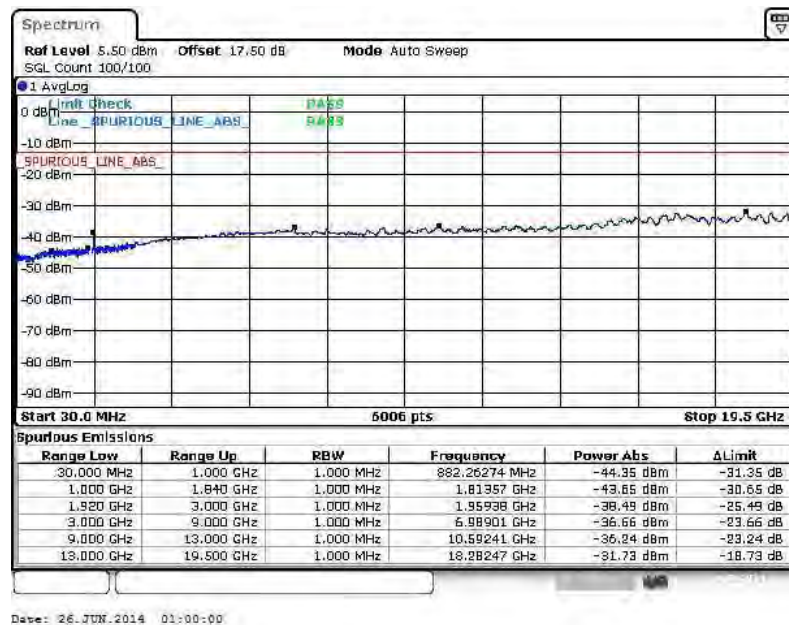


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



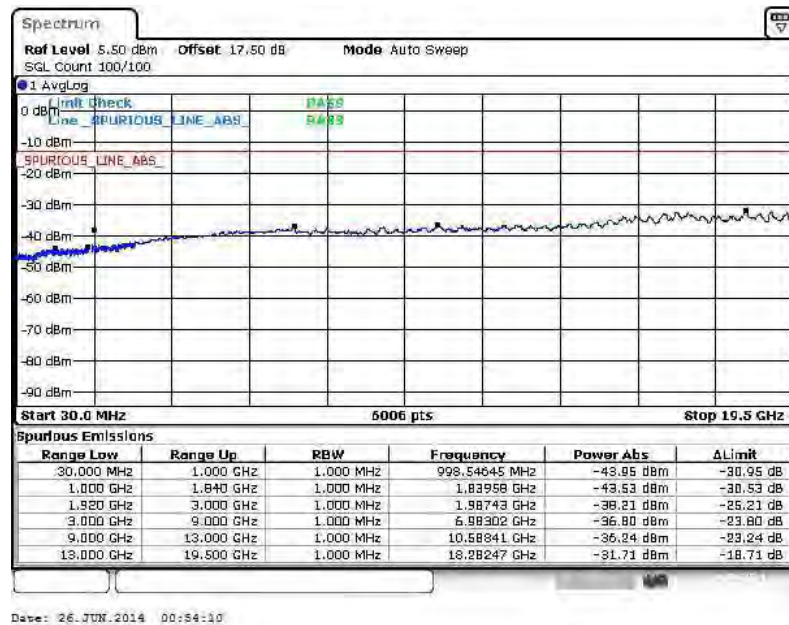
16QAM (RB Size 1, RB Offset 0)



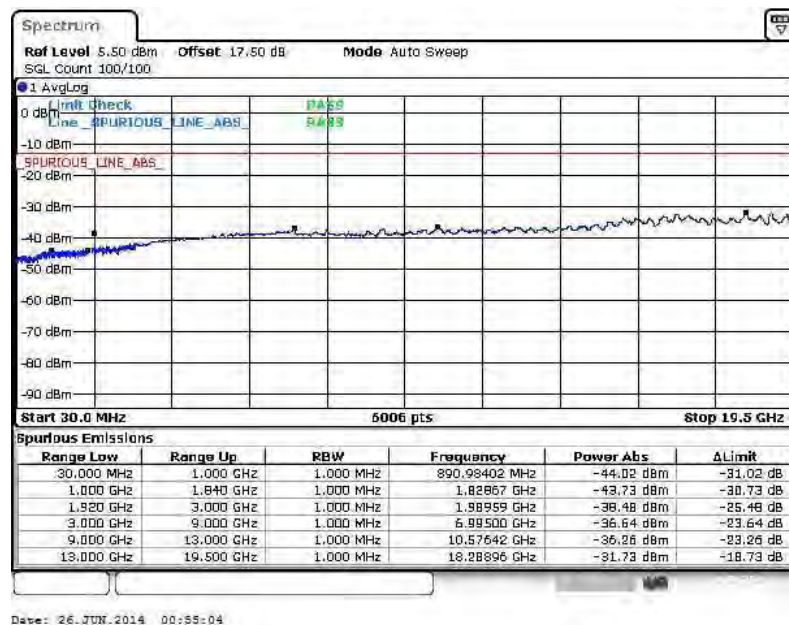


Band :	LTE Band 2	Channel :	CH19175 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



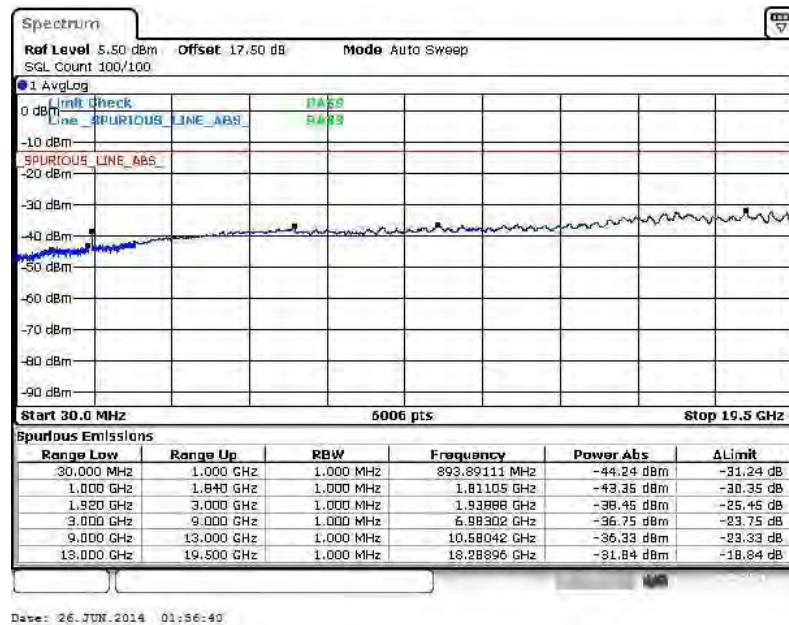
16QAM (RB Size 1, RB Offset 0)



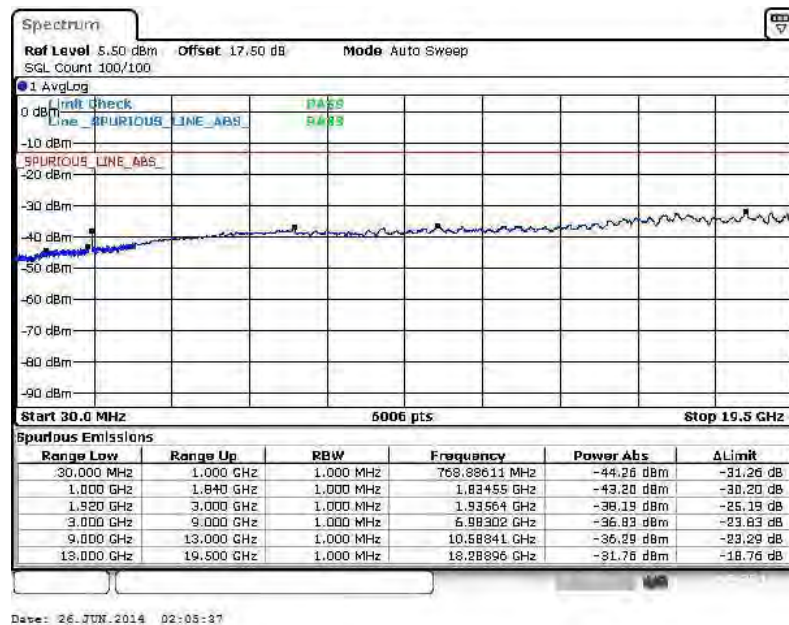


Band :	LTE Band 2	Channel :	CH18650 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



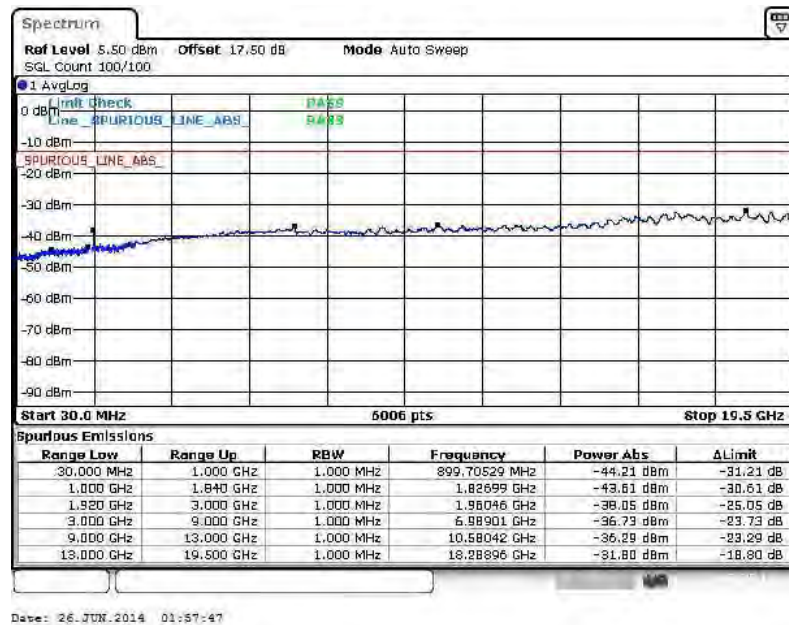
16QAM (RB Size 1, RB Offset 0)



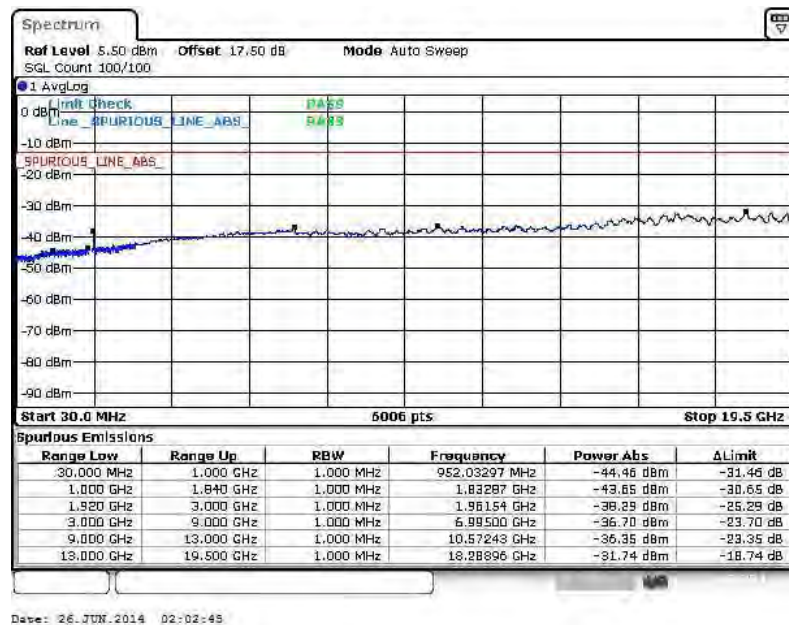


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



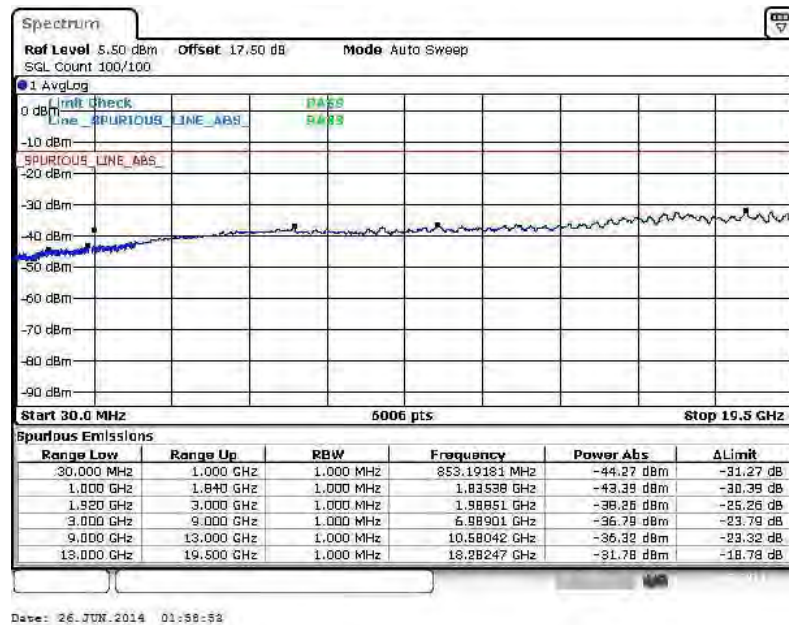
16QAM (RB Size 1, RB Offset 0)



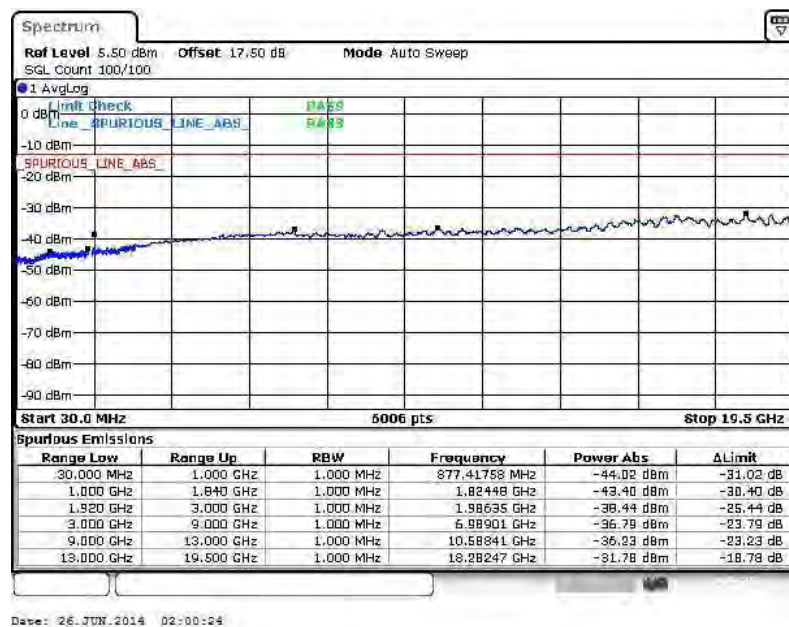


Band :	LTE Band 2	Channel :	CH19150 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



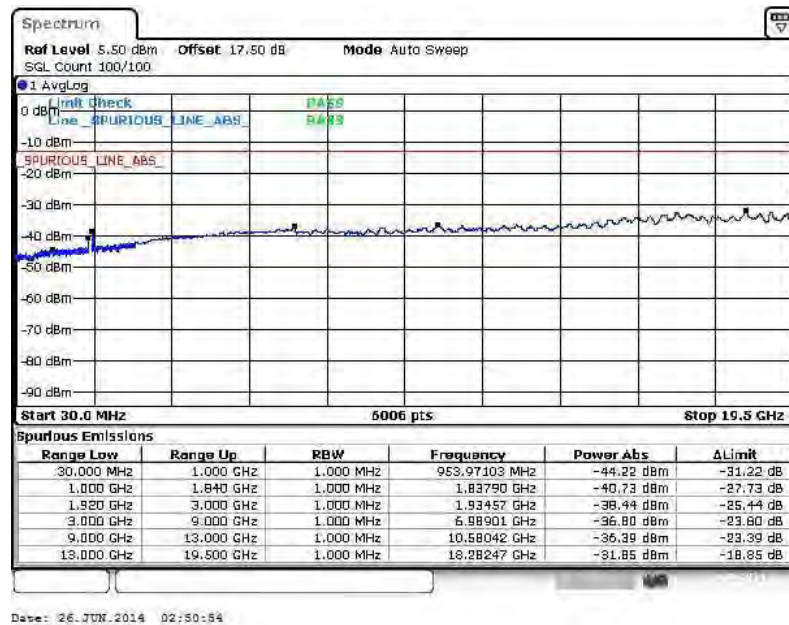
16QAM (RB Size 1, RB Offset 0)



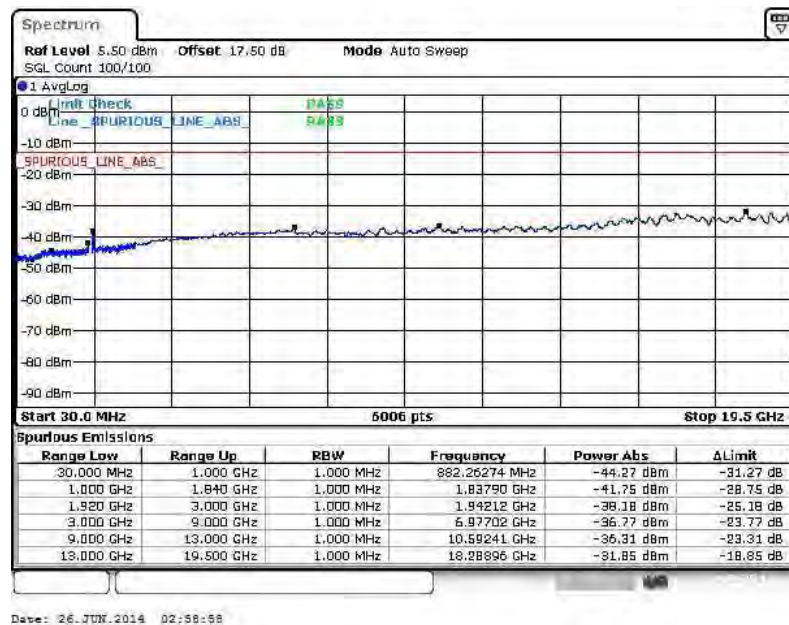


Band :	LTE Band 2	Channel :	CH18675 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



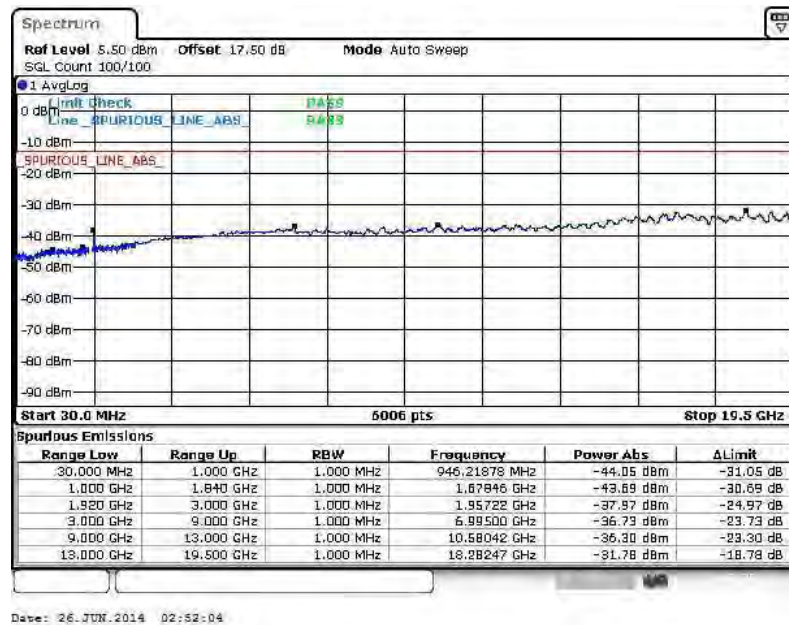
16QAM (RB Size 1, RB Offset 0)



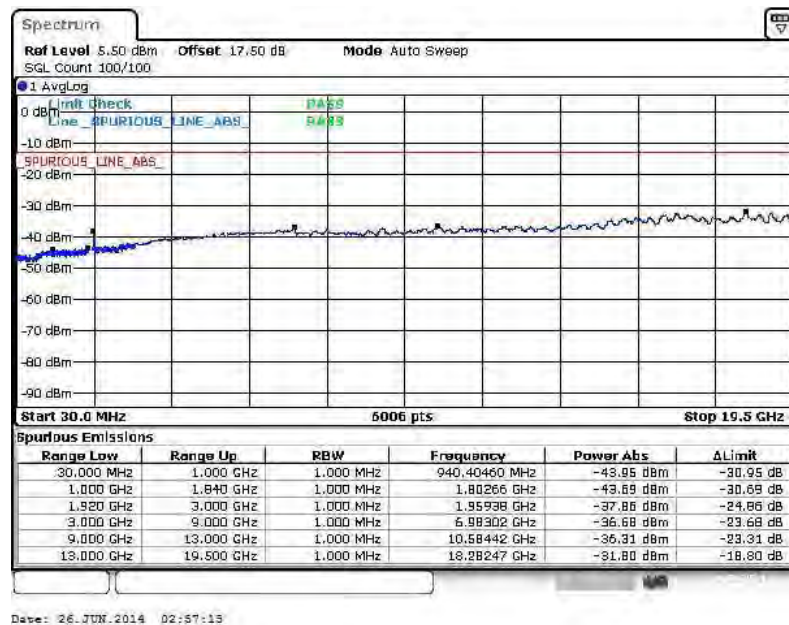


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



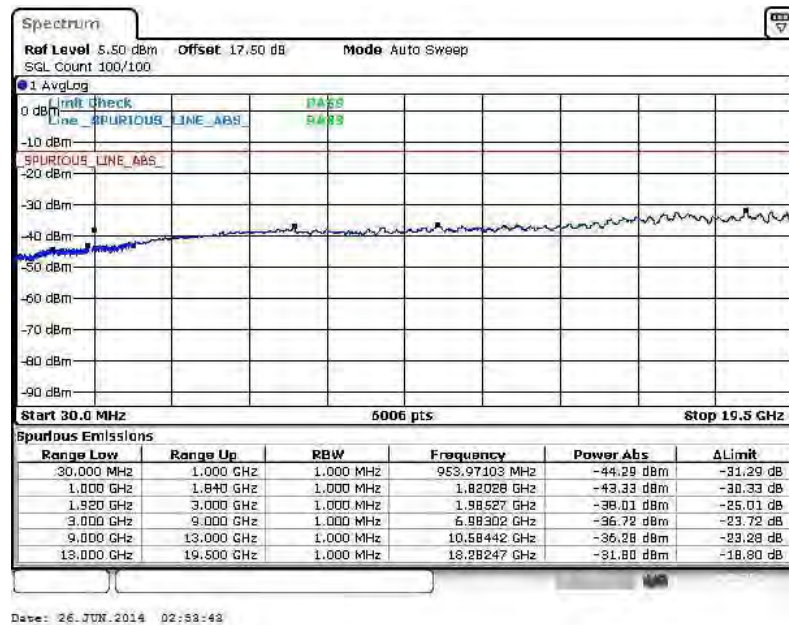
16QAM (RB Size 1, RB Offset 0)



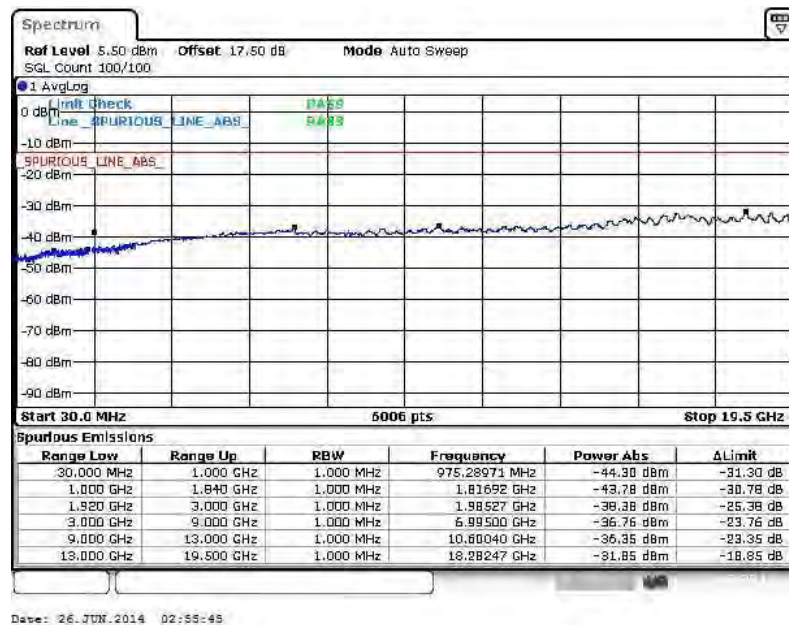


Band :	LTE Band 2	Channel :	CH19125 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



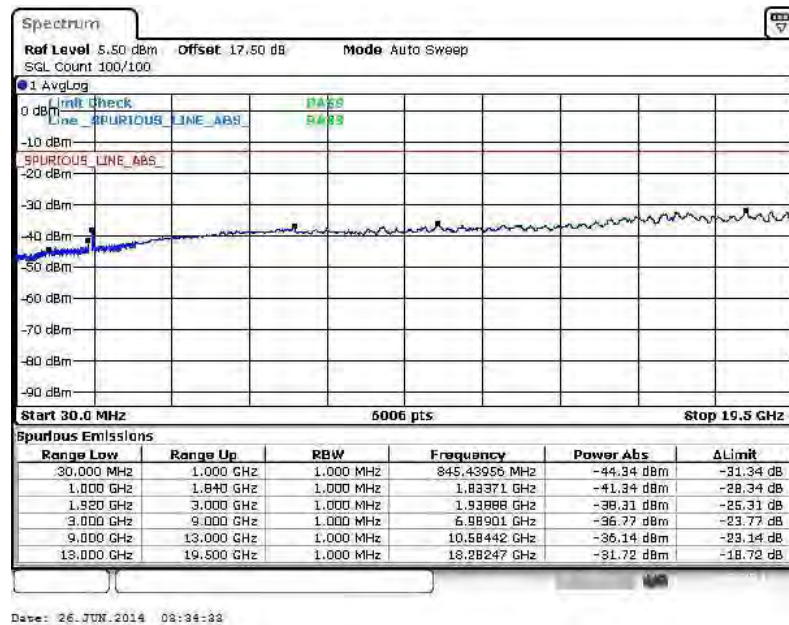
16QAM (RB Size 1, RB Offset 0)



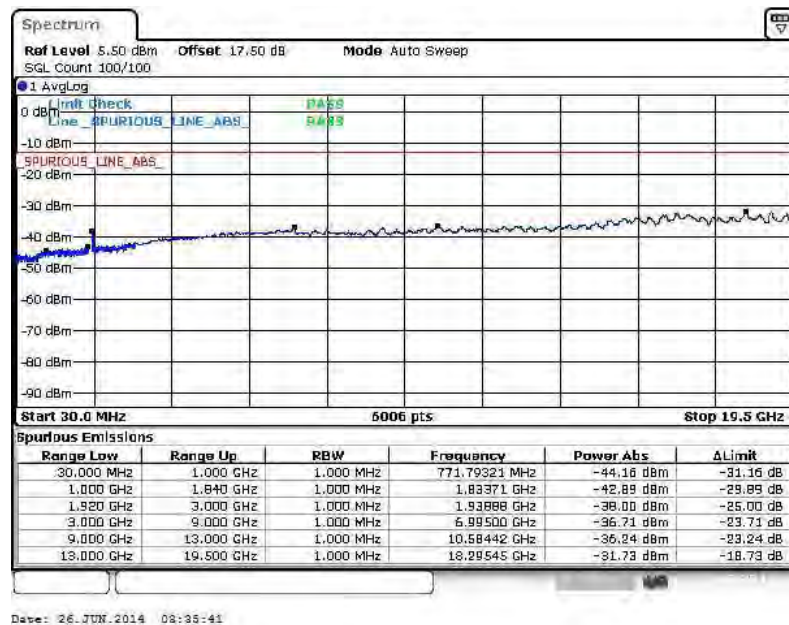


Band :	LTE Band 2	Channel :	CH18700 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



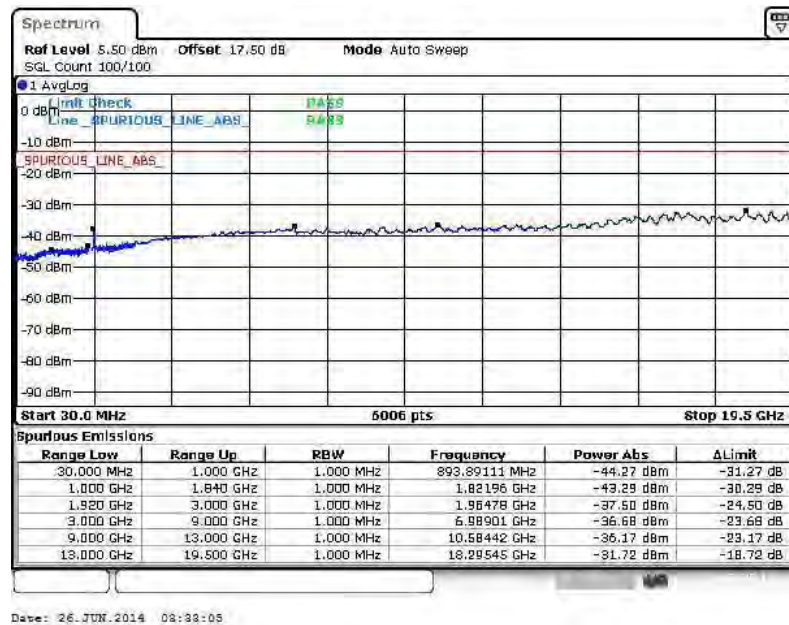
16QAM (RB Size 1, RB Offset 0)



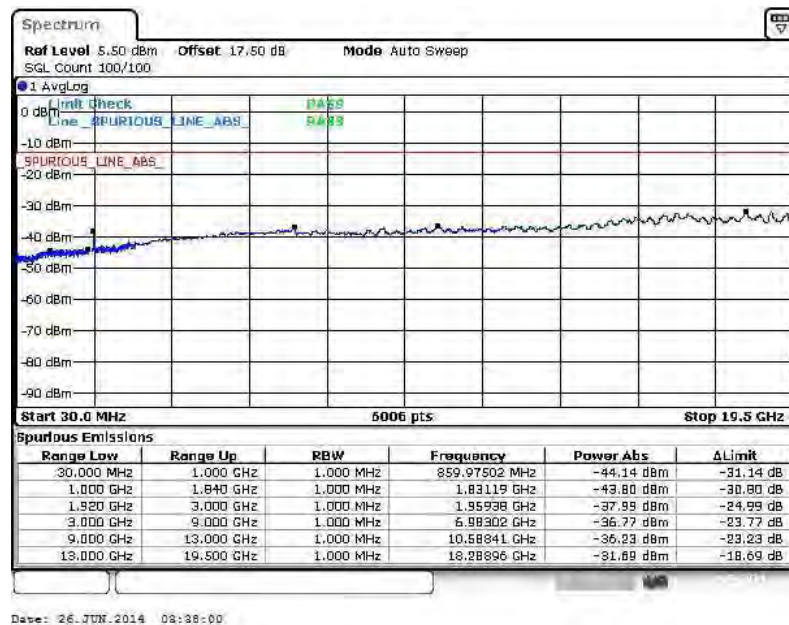


Band :	LTE Band 2	Channel :	CH18900 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



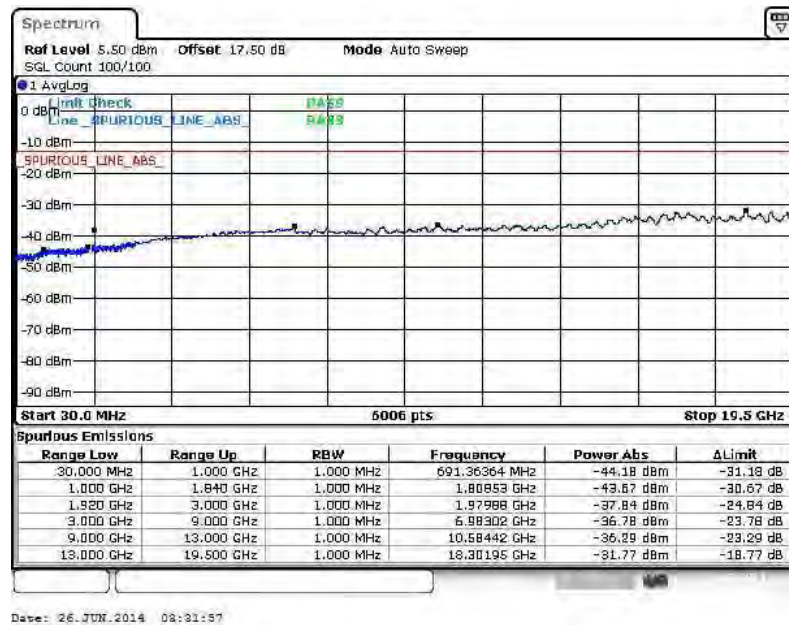
16QAM (RB Size 1, RB Offset 0)



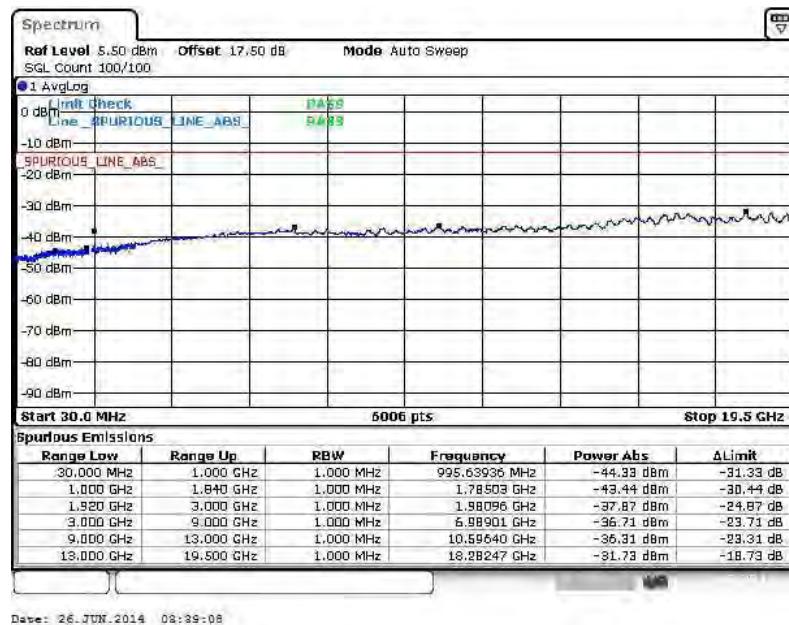


Band :	LTE Band 2	Channel :	CH19100 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



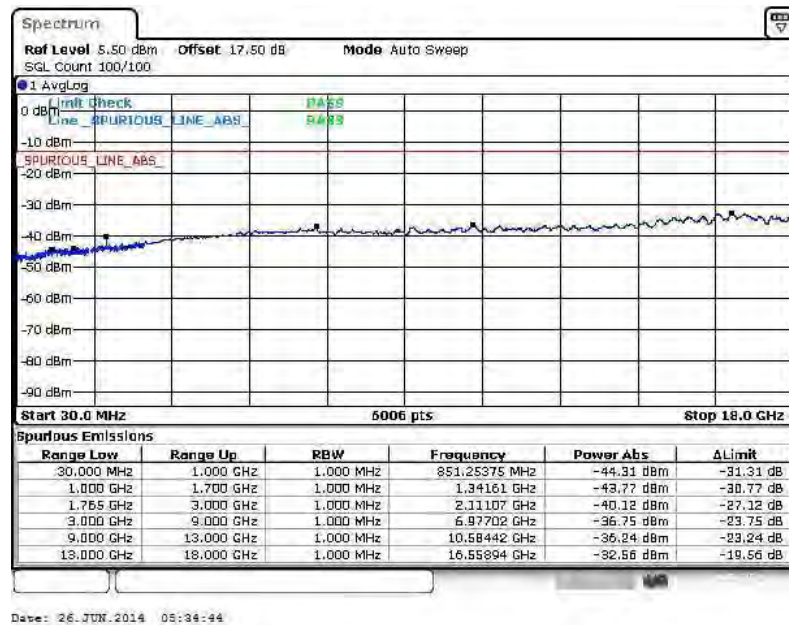
16QAM (RB Size 1, RB Offset 0)



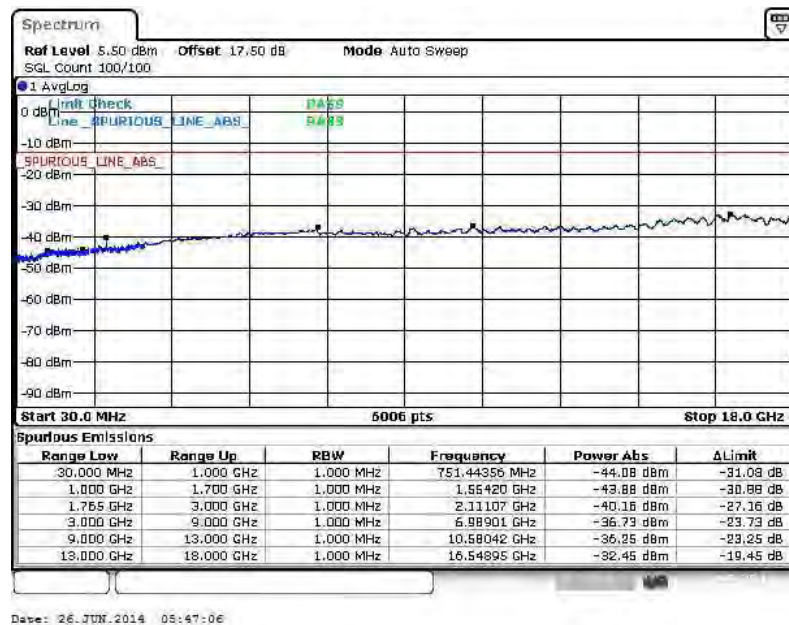


Band :	LTE Band 4	Channel :	CH19957 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



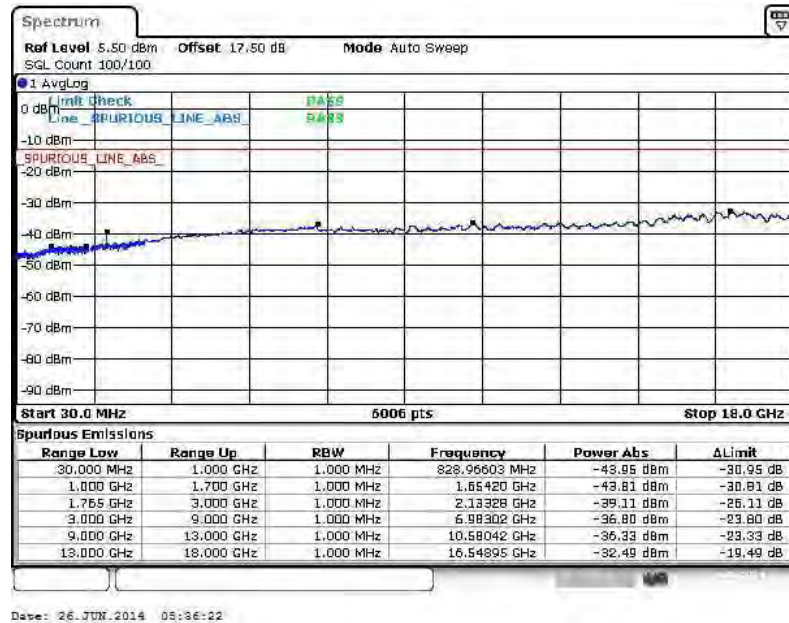
16QAM (RB Size 1, RB Offset 0)



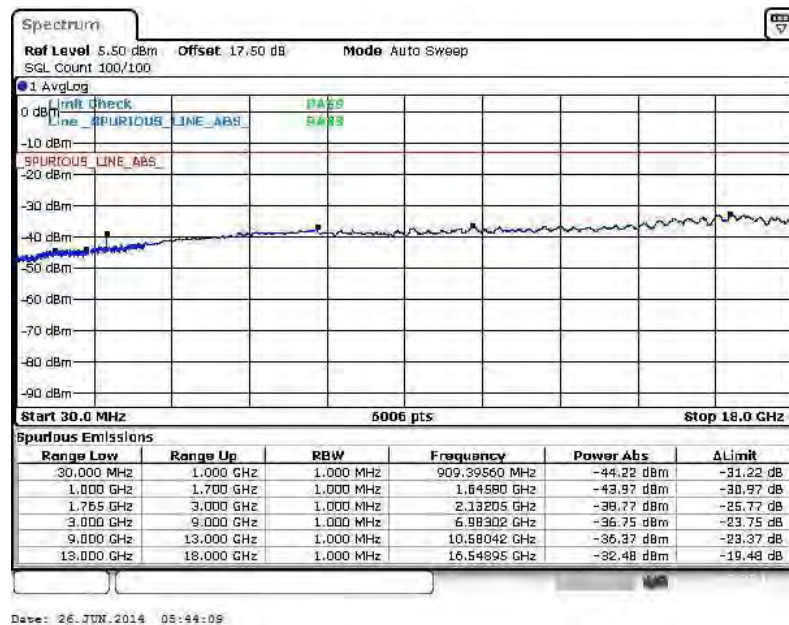


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



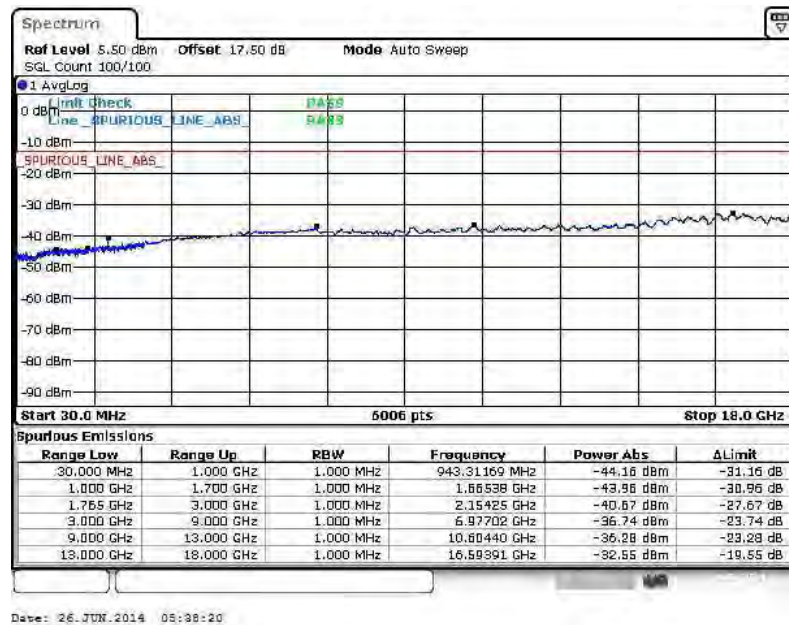
16QAM (RB Size 1, RB Offset 0)



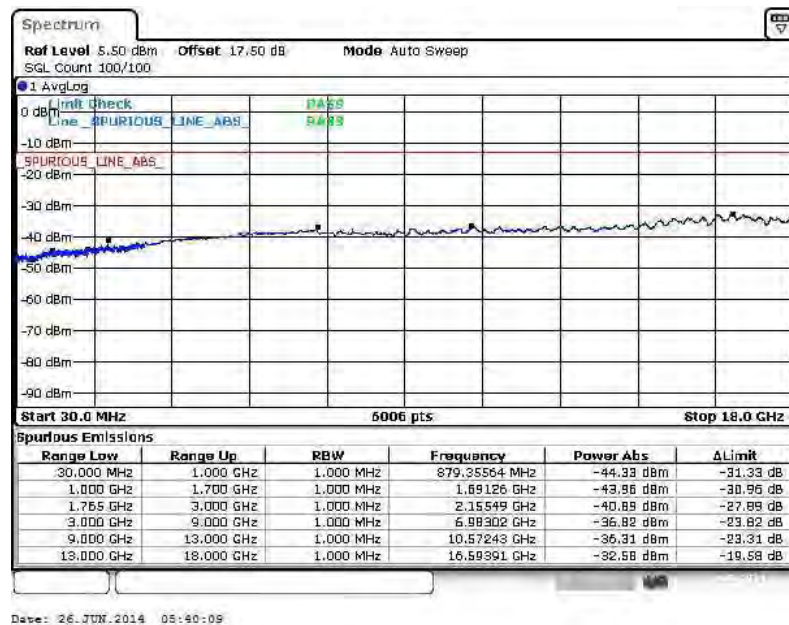


Band :	LTE Band 4	Channel :	CH20393 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)



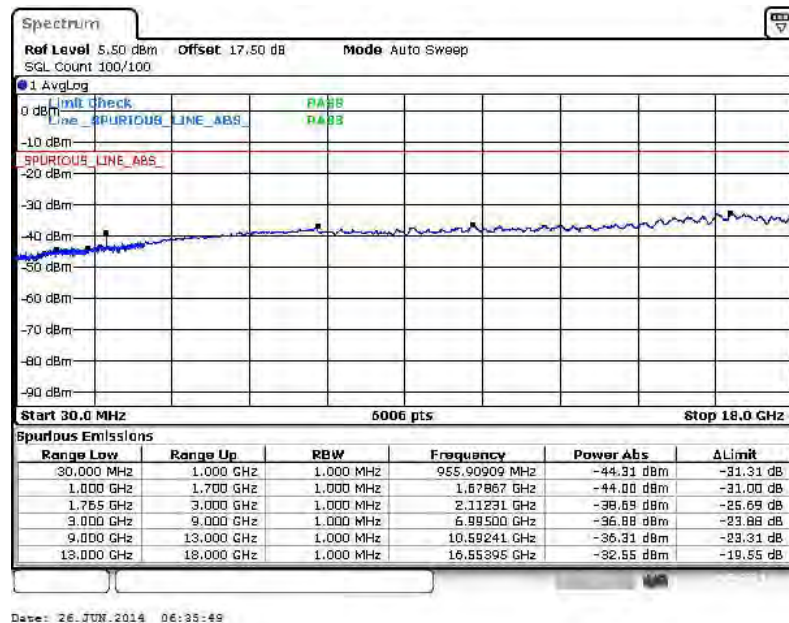
16QAM (RB Size 1, RB Offset 0)



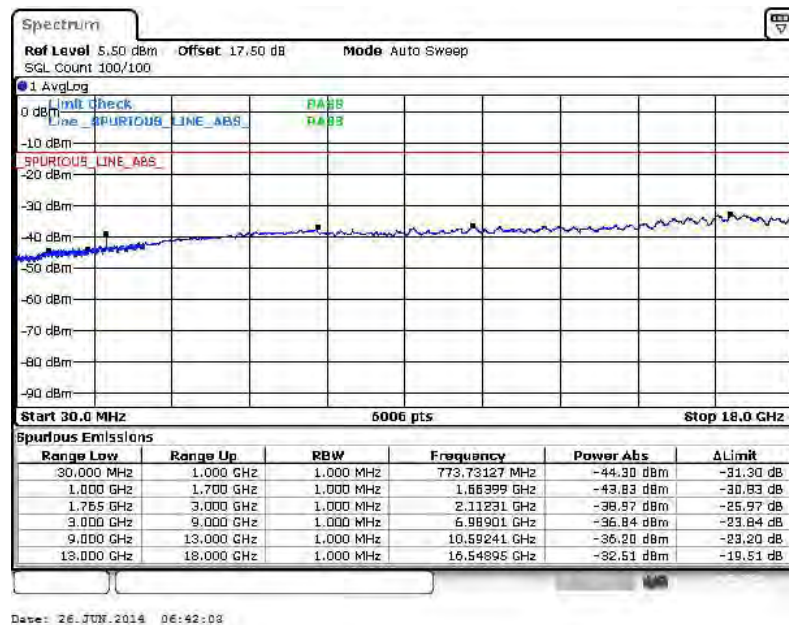


Band :	LTE Band 4	Channel :	CH19965 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



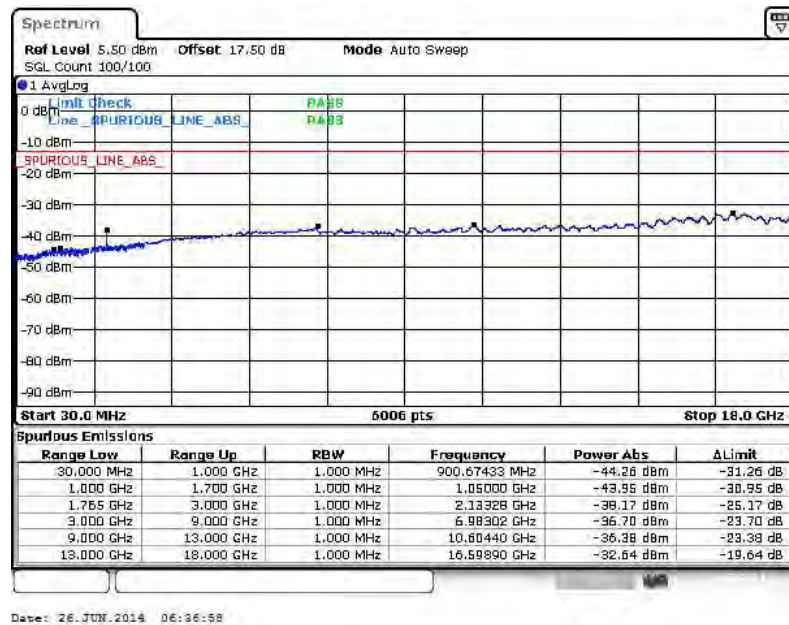
16QAM (RB Size 1, RB Offset 0)



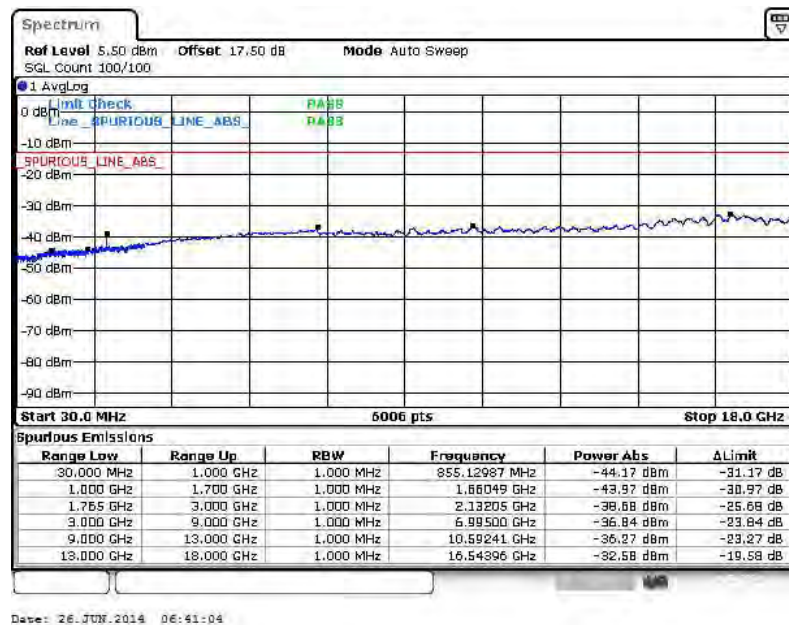


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



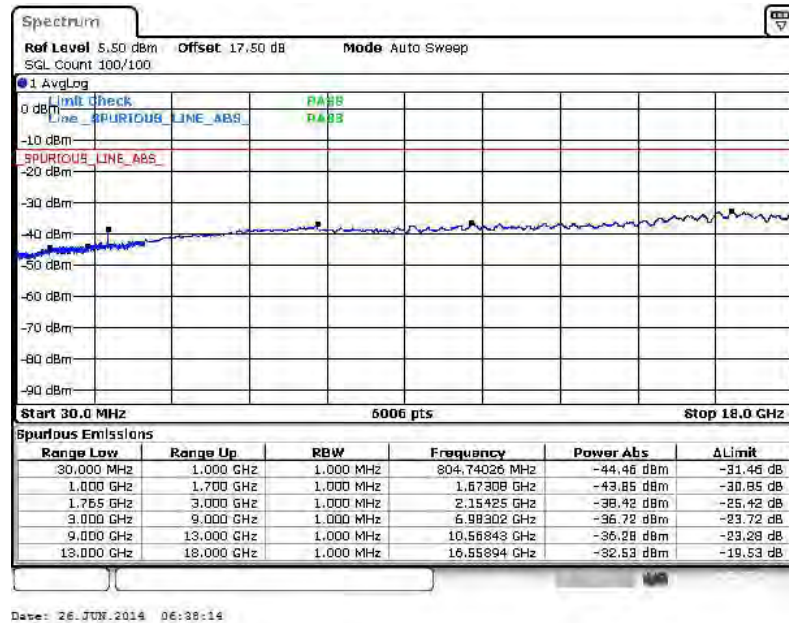
16QAM (RB Size 1, RB Offset 0)



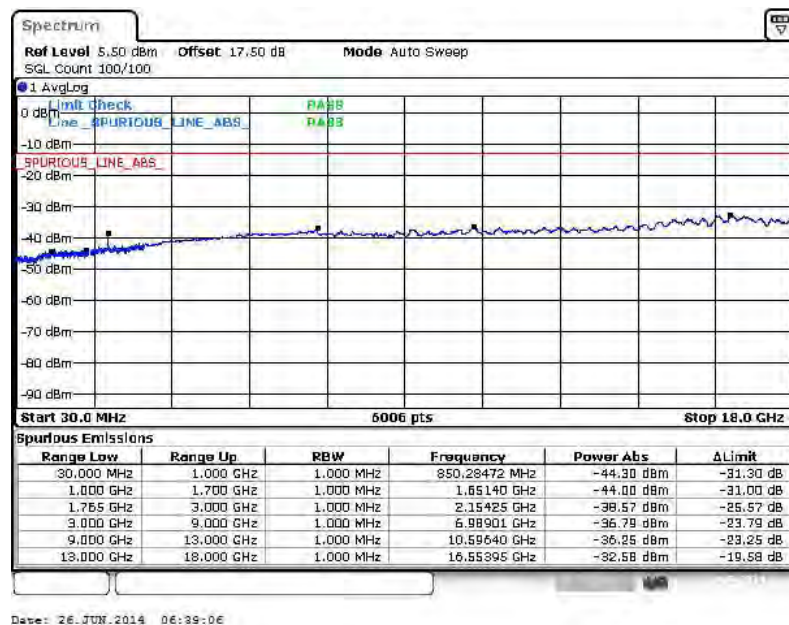


Band :	LTE Band 4	Channel :	CH20385 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



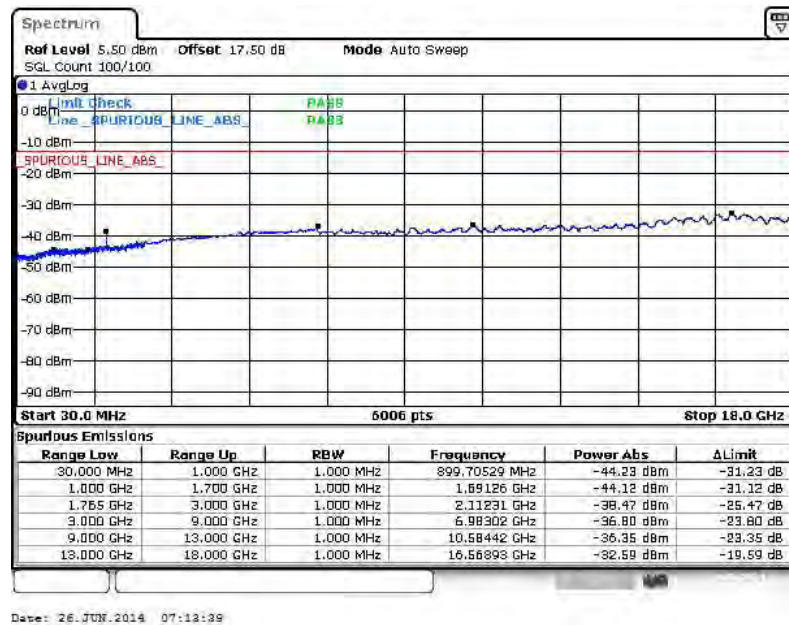
16QAM (RB Size 1, RB Offset 0)



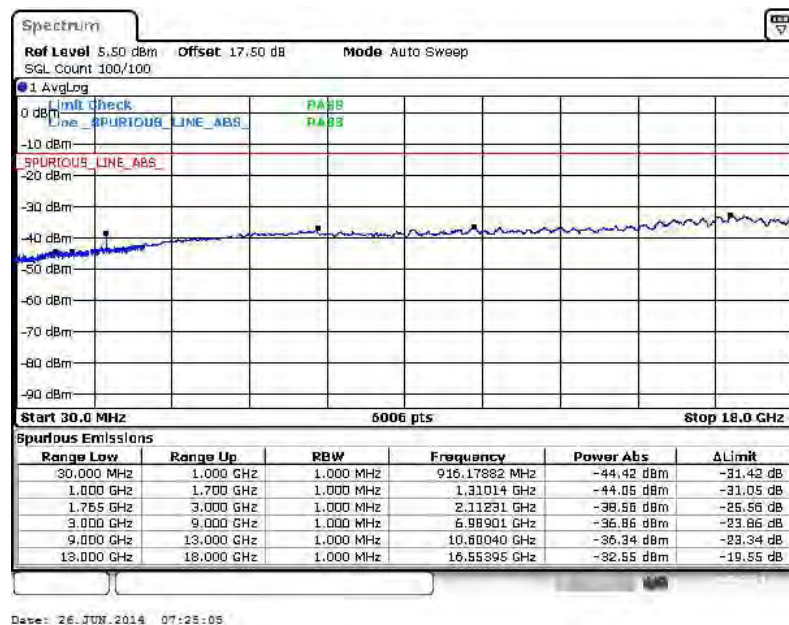


Band :	LTE Band 4	Channel :	CH19975 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



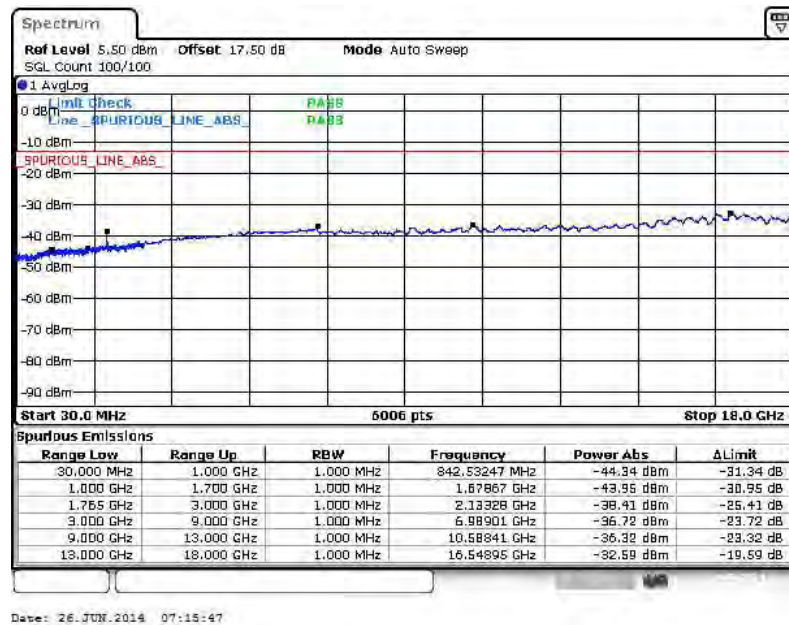
16QAM (RB Size 1, RB Offset 0)



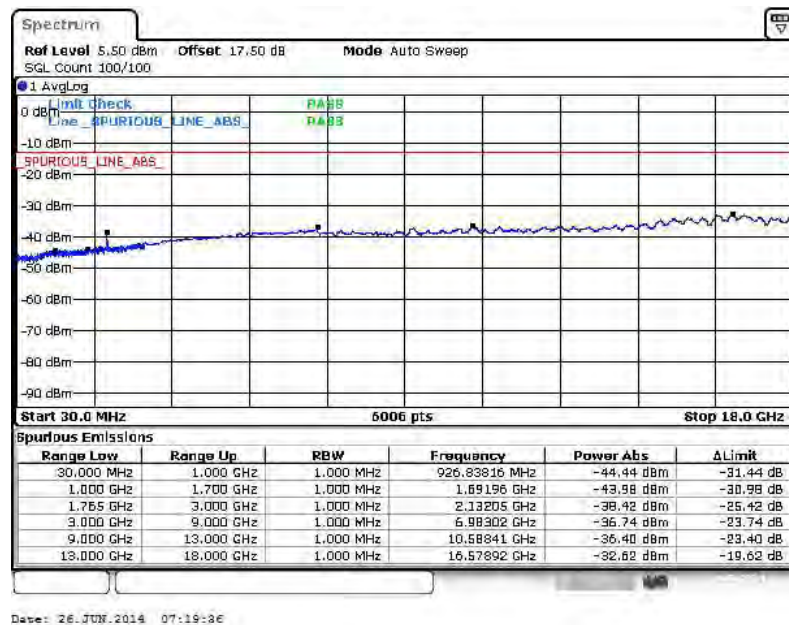


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



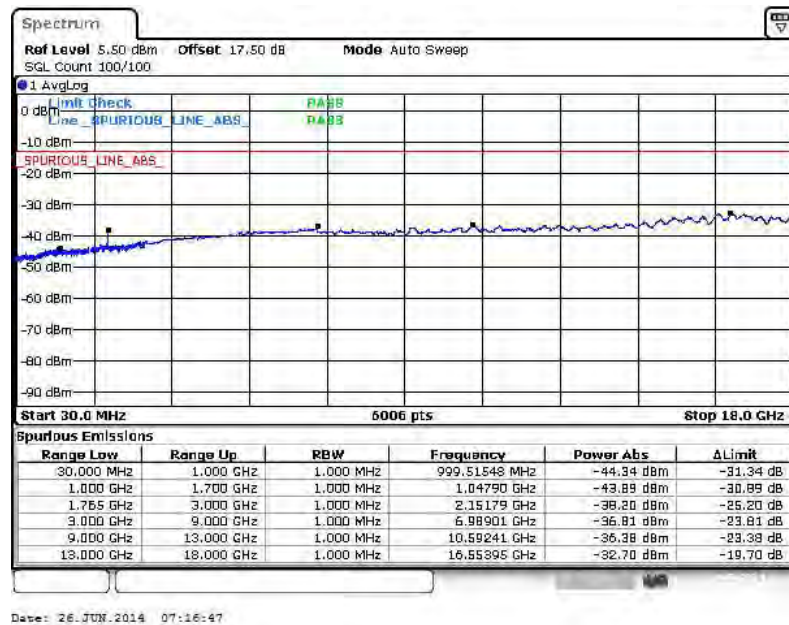
16QAM (RB Size 1, RB Offset 0)



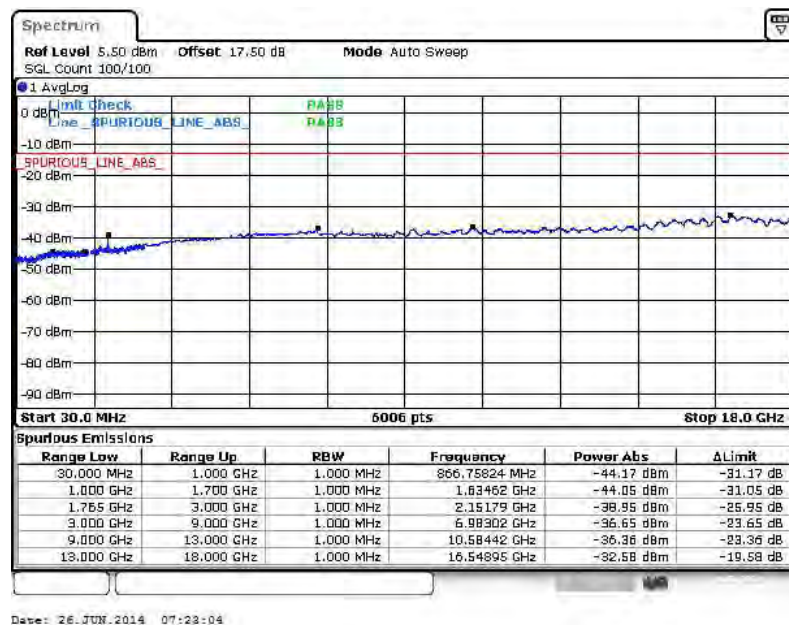


Band :	LTE Band 4	Channel :	CH20375 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



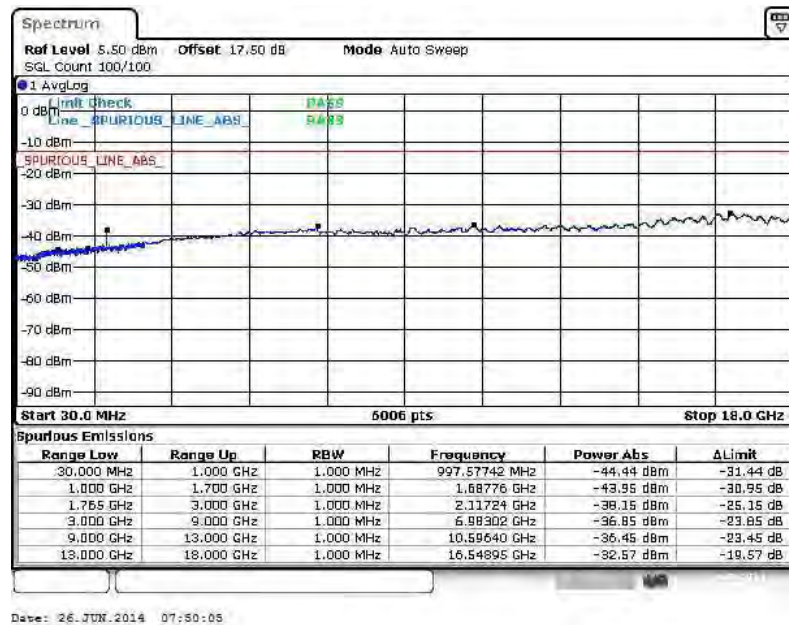
16QAM (RB Size 1, RB Offset 0)



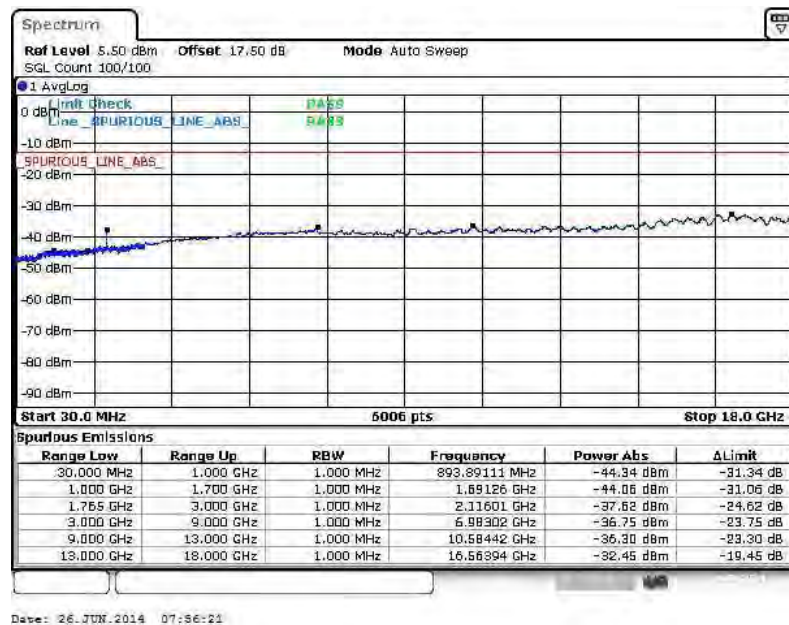


Band :	LTE Band 4	Channel :	CH20000 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



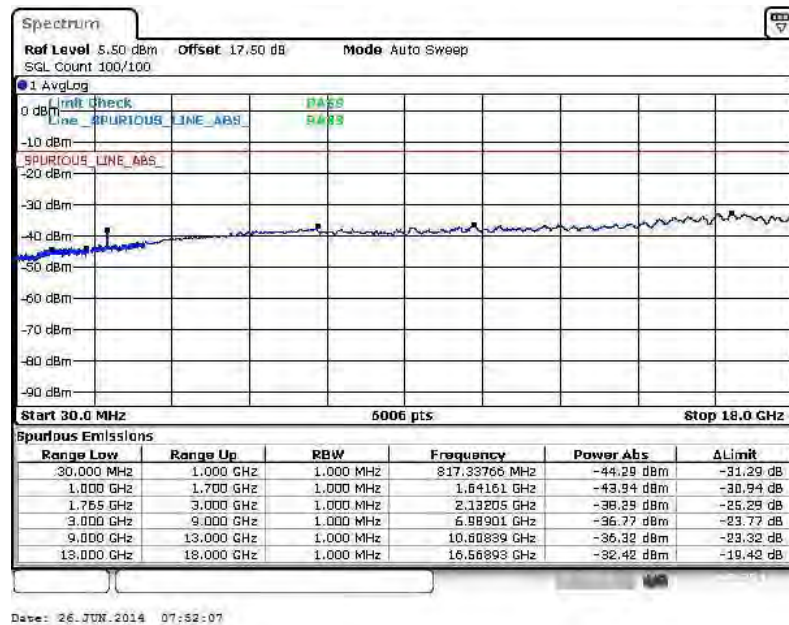
16QAM (RB Size 1, RB Offset 0)



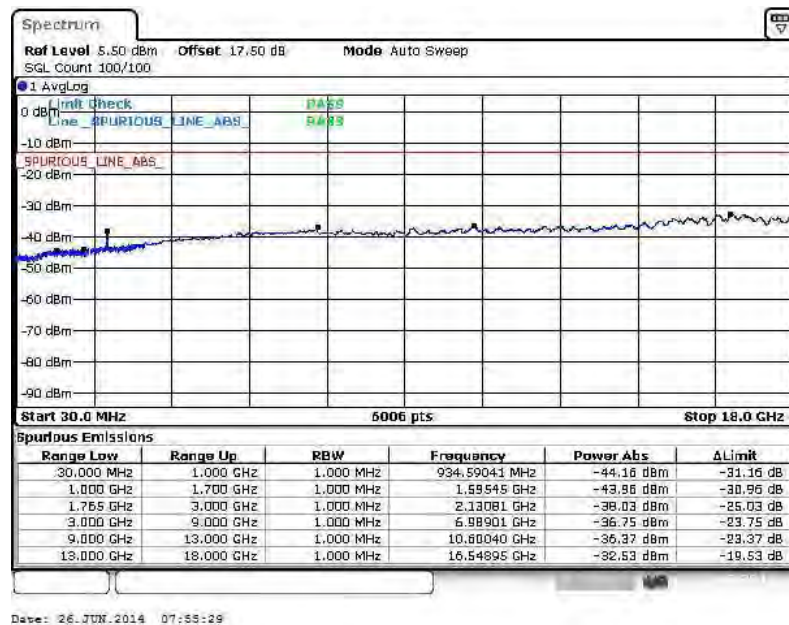


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



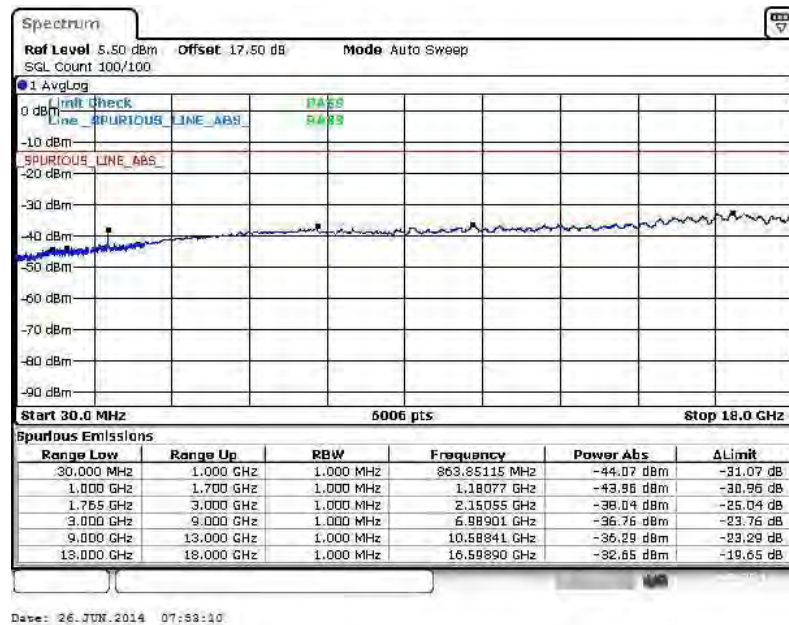
16QAM (RB Size 1, RB Offset 0)



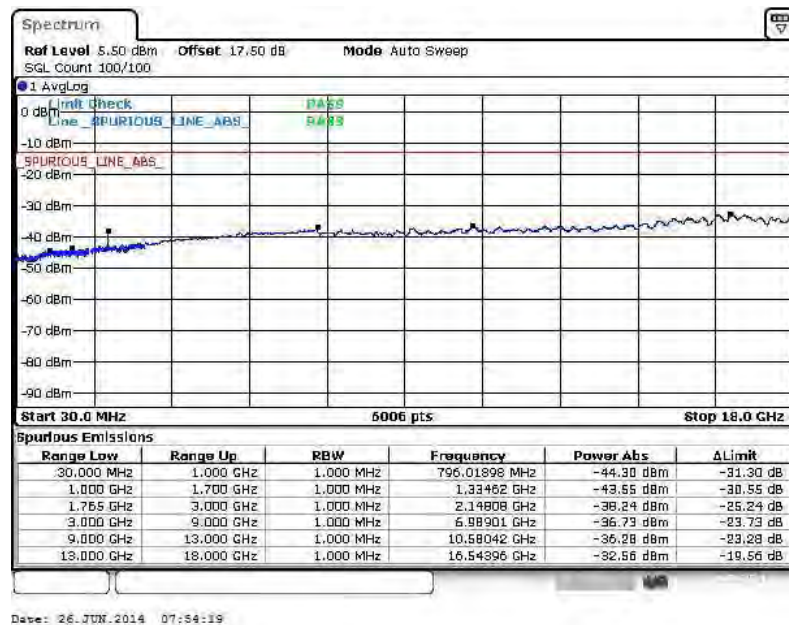


Band :	LTE Band 4	Channel :	CH20350 (High)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



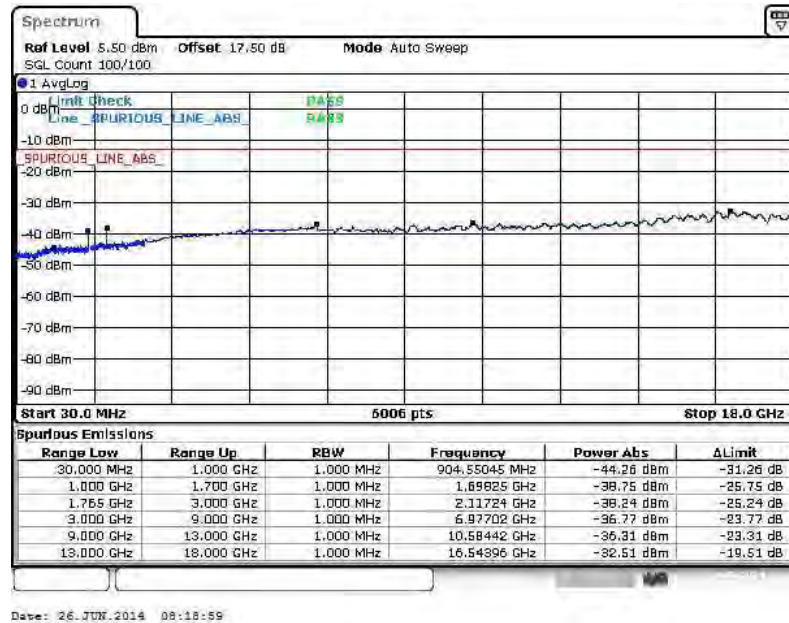
16QAM (RB Size 1, RB Offset 0)



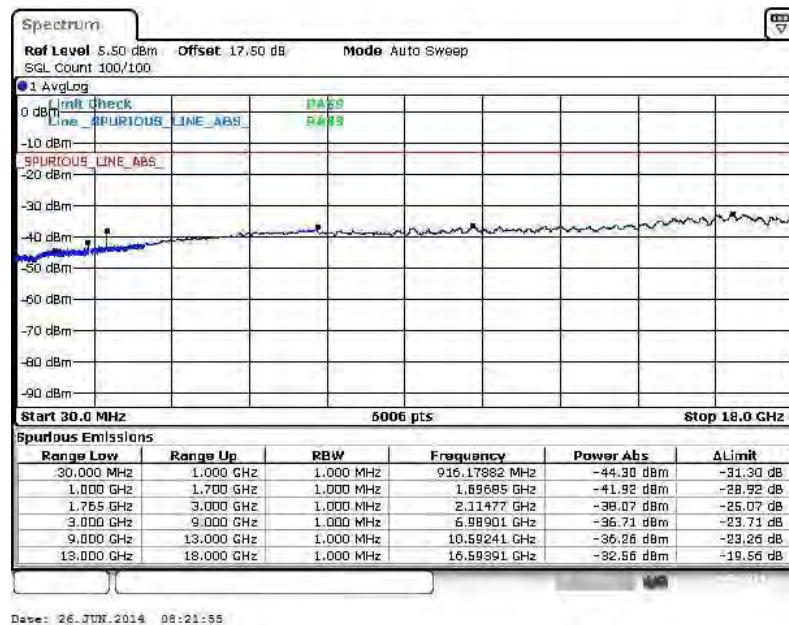


Band :	LTE Band 4	Channel :	CH20025 (Low)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



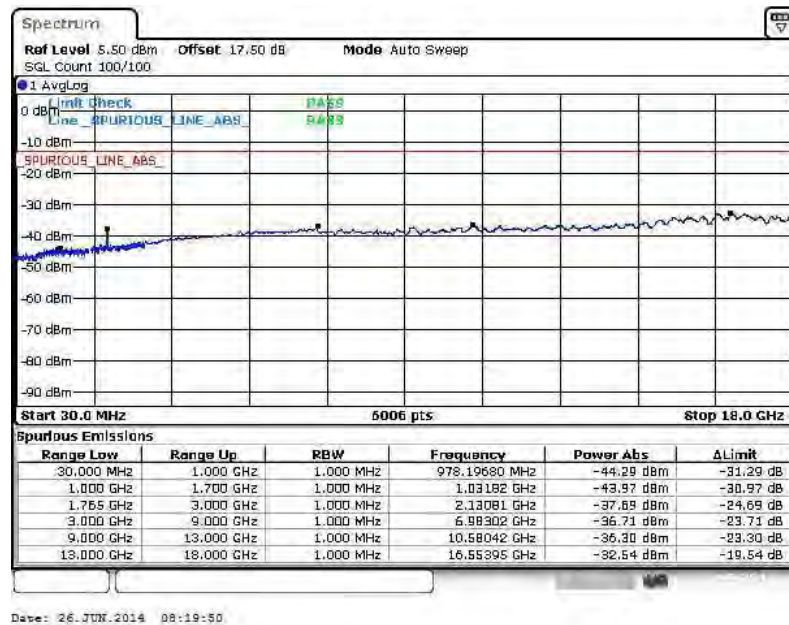
16QAM (RB Size 1, RB Offset 0)



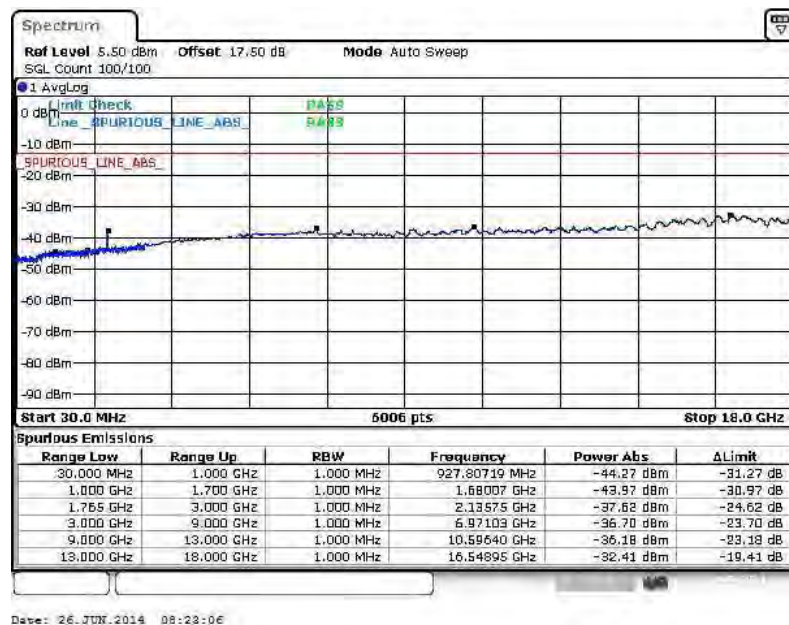


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



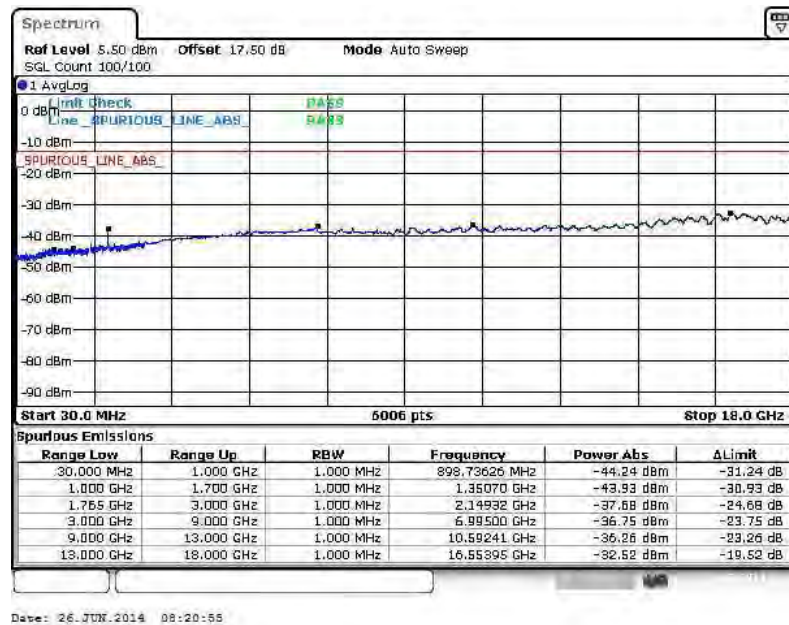
16QAM (RB Size 1, RB Offset 0)



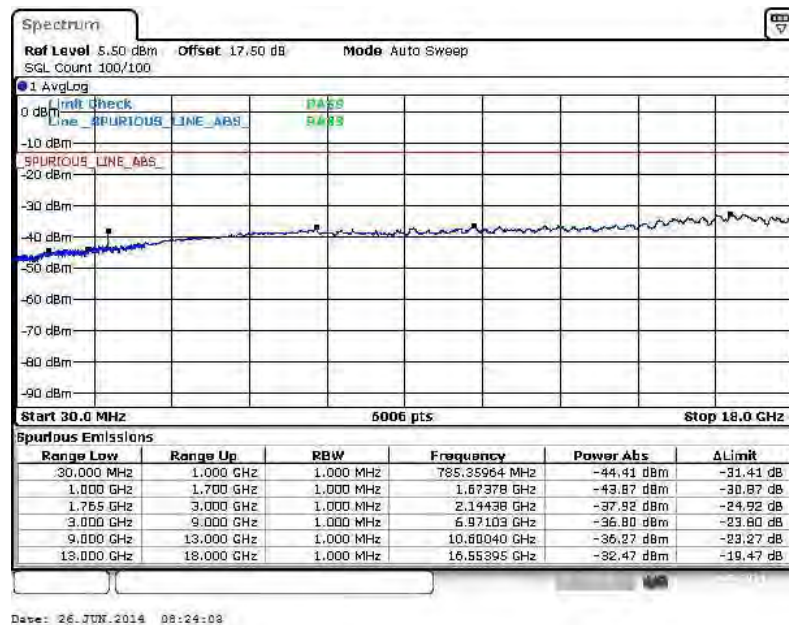


Band :	LTE Band 4	Channel :	CH20325 (High)
Band Width :	15MHz		

QPSK (RB Size 1, RB Offset 0)



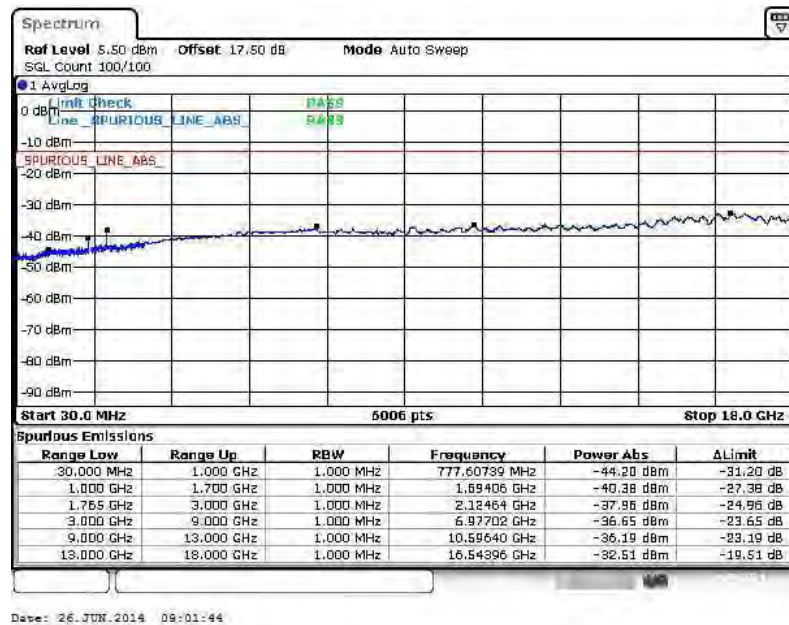
16QAM (RB Size 1, RB Offset 0)



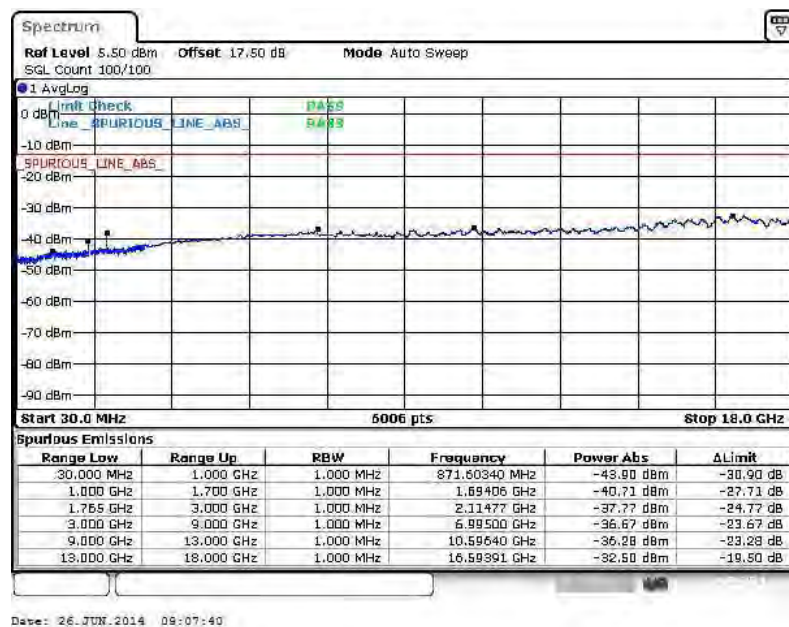


Band :	LTE Band 4	Channel :	CH20050 (Low)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



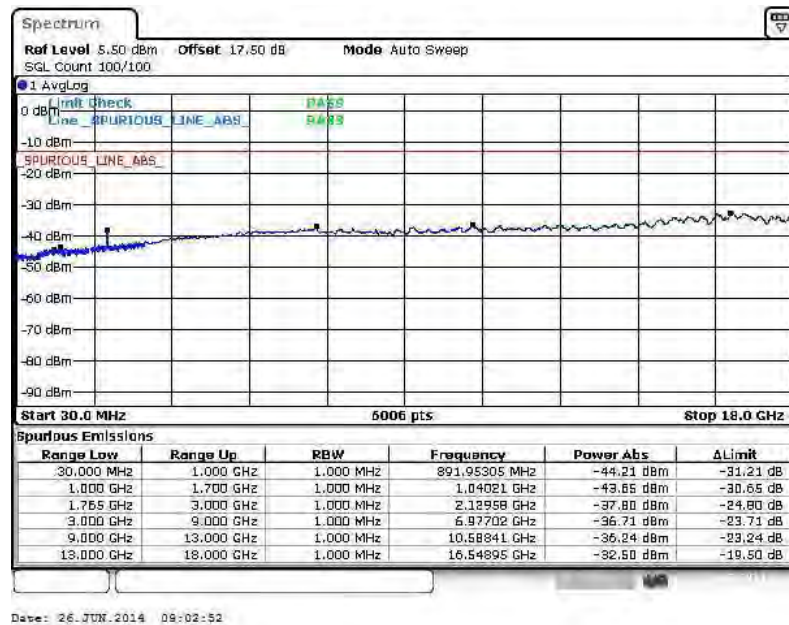
16QAM (RB Size 1, RB Offset 0)



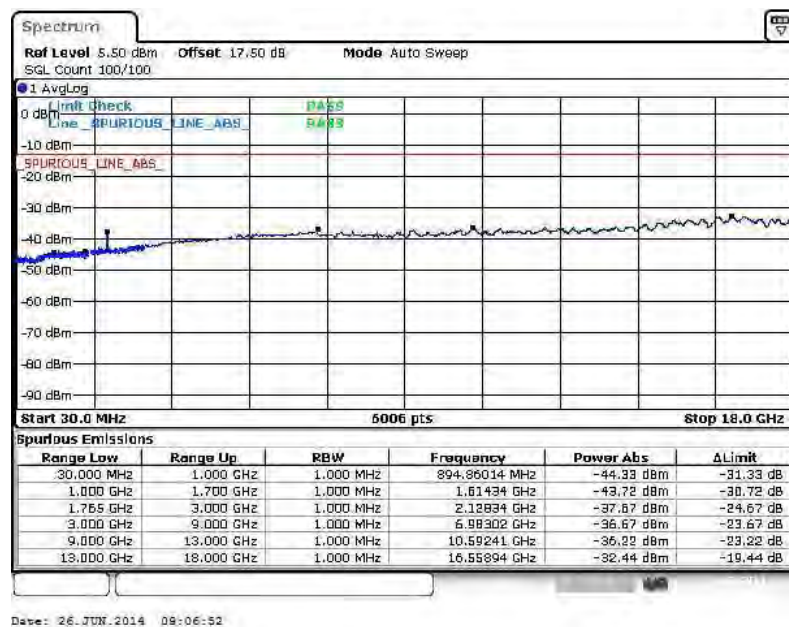


Band :	LTE Band 4	Channel :	CH20175 (Middle)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



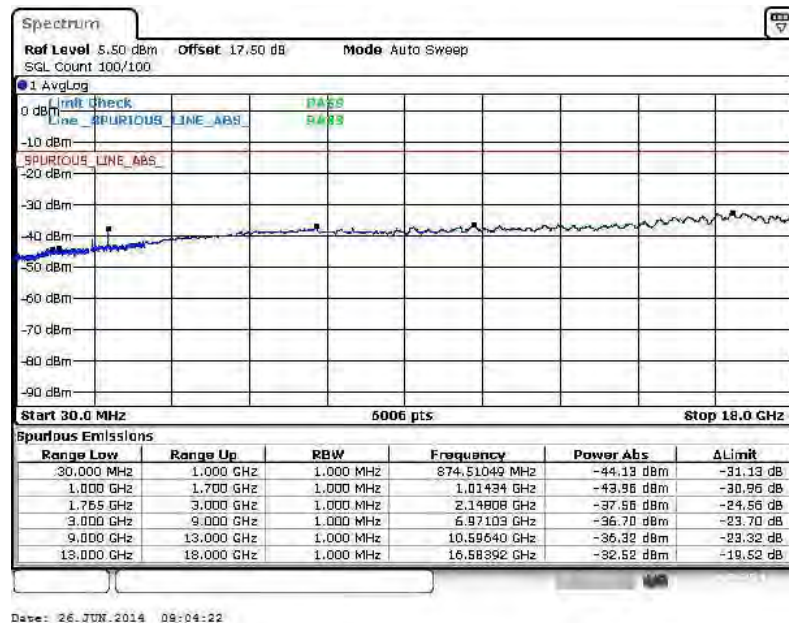
16QAM (RB Size 1, RB Offset 0)



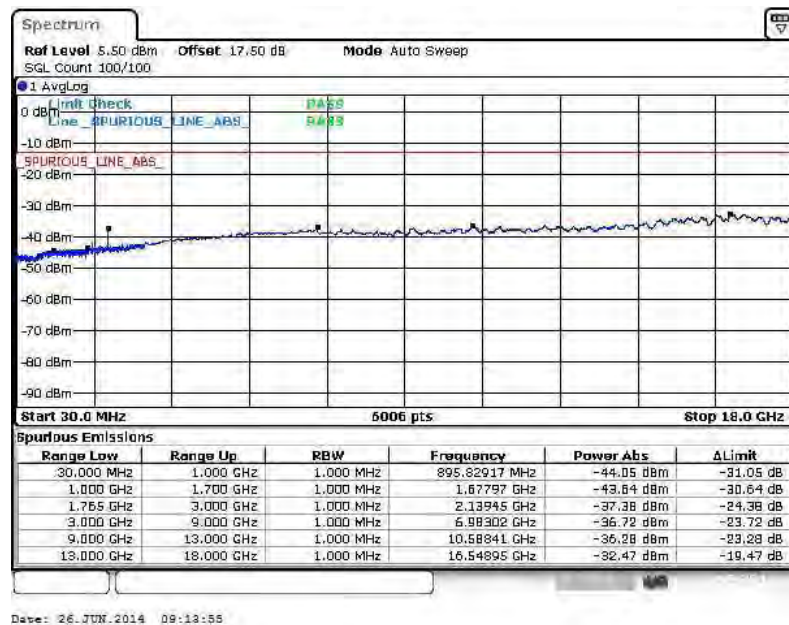


Band :	LTE Band 4	Channel :	CH20300 (High)
Band Width :	20MHz		

QPSK (RB Size 1, RB Offset 0)



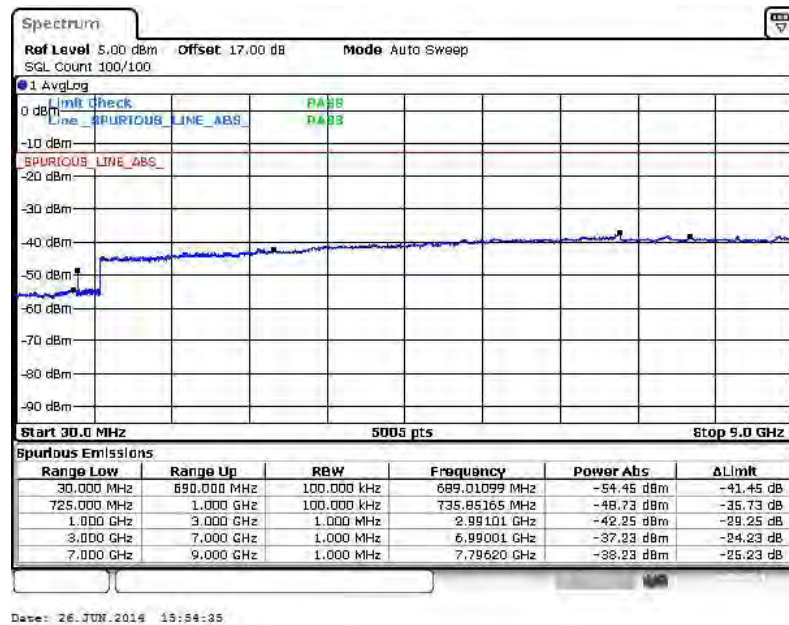
16QAM (RB Size 1, RB Offset 0)



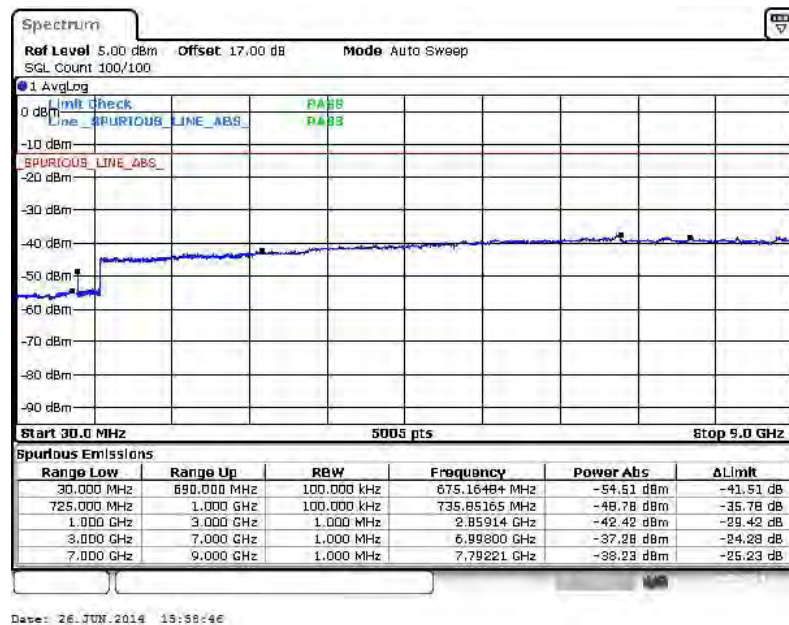


Band :	LTE Band 17	Channel :	CH23755 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



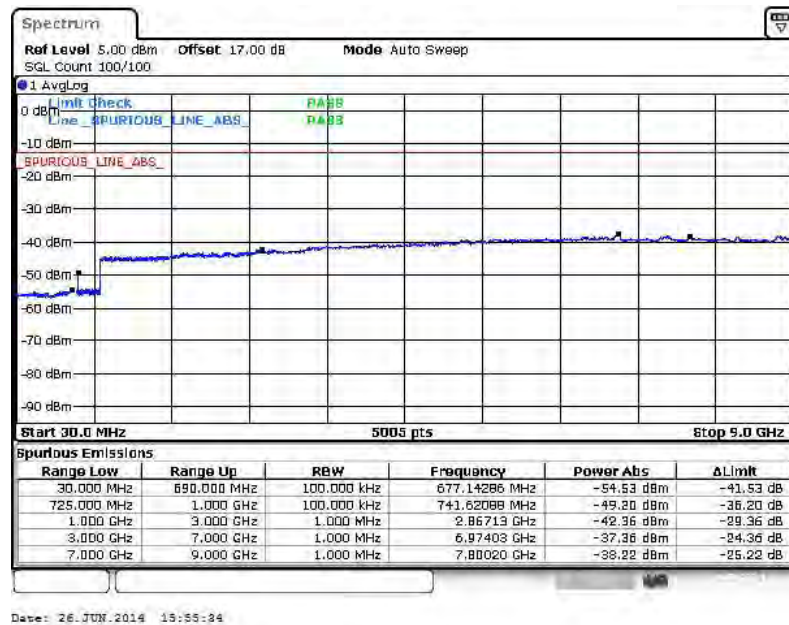
16QAM (RB Size 1, RB Offset 0)



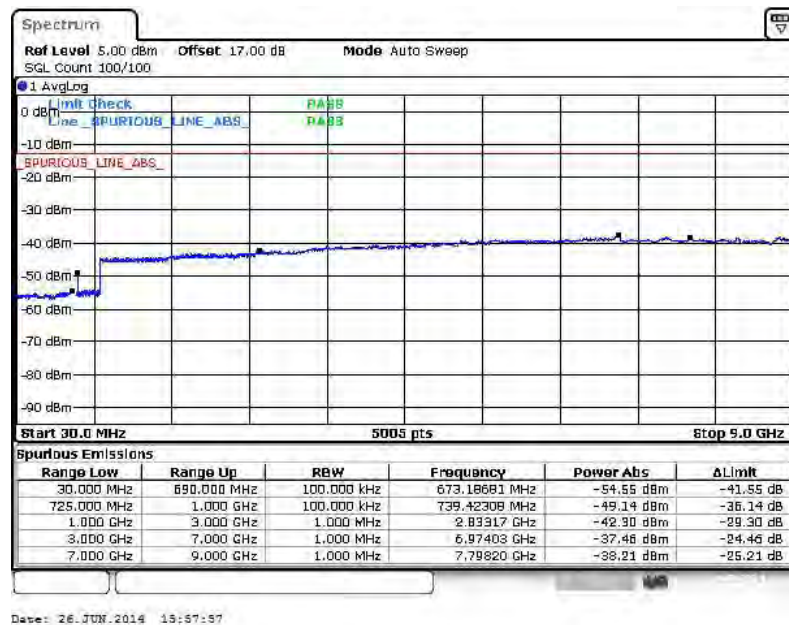


Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



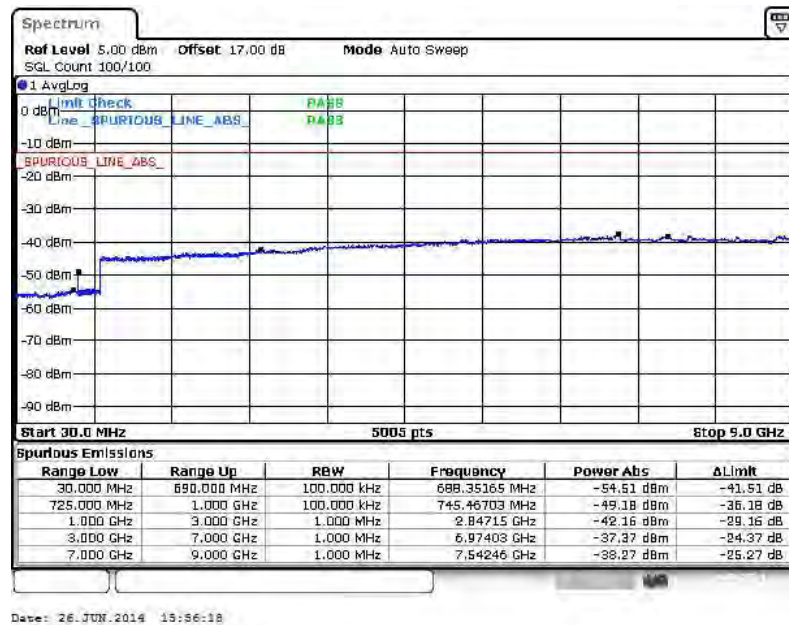
16QAM (RB Size 1, RB Offset 0)



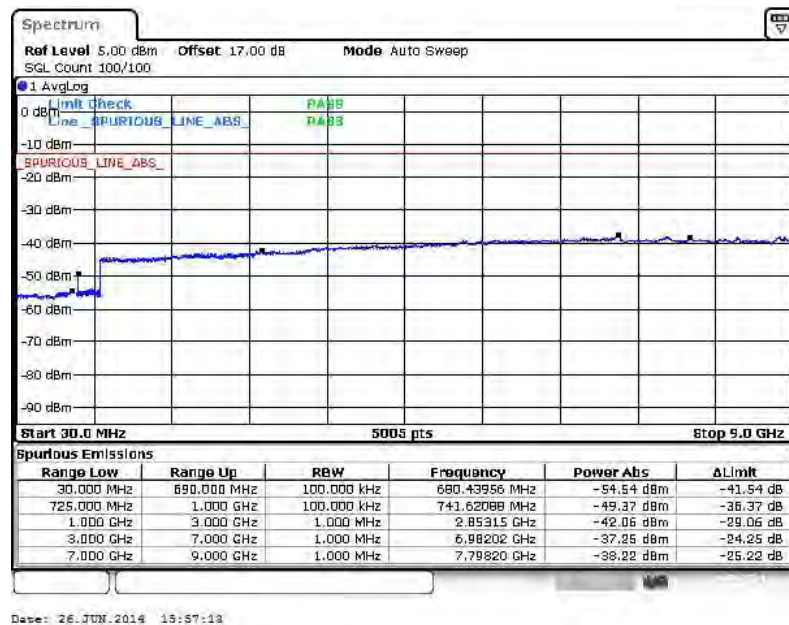


Band :	LTE Band 17	Channel :	CH23825 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)



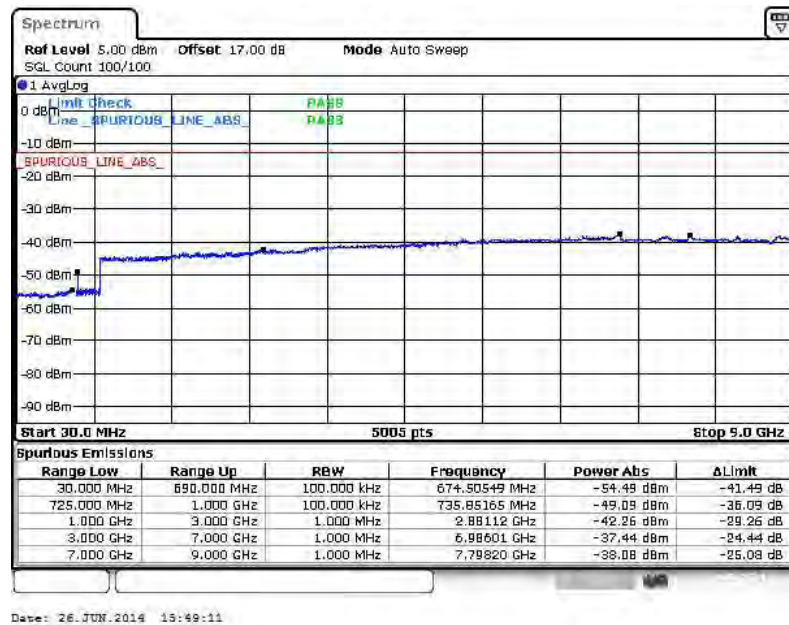
16QAM (RB Size 1, RB Offset 0)



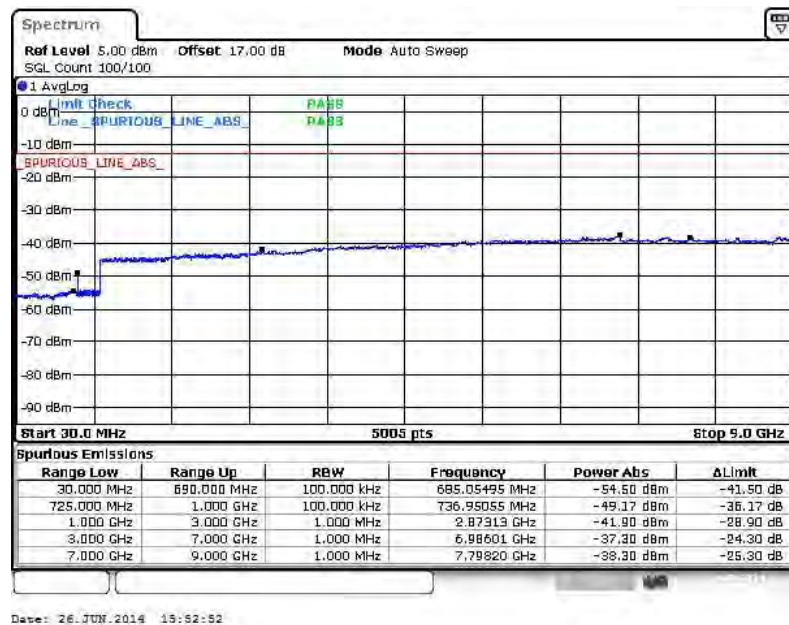


Band :	LTE Band 17	Channel :	CH23780 (Low)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



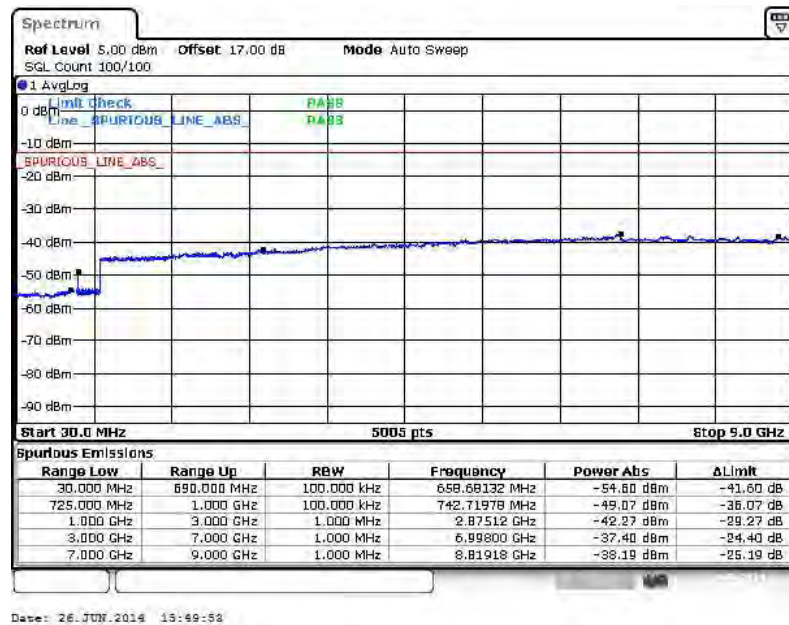
16QAM (RB Size 1, RB Offset 0)



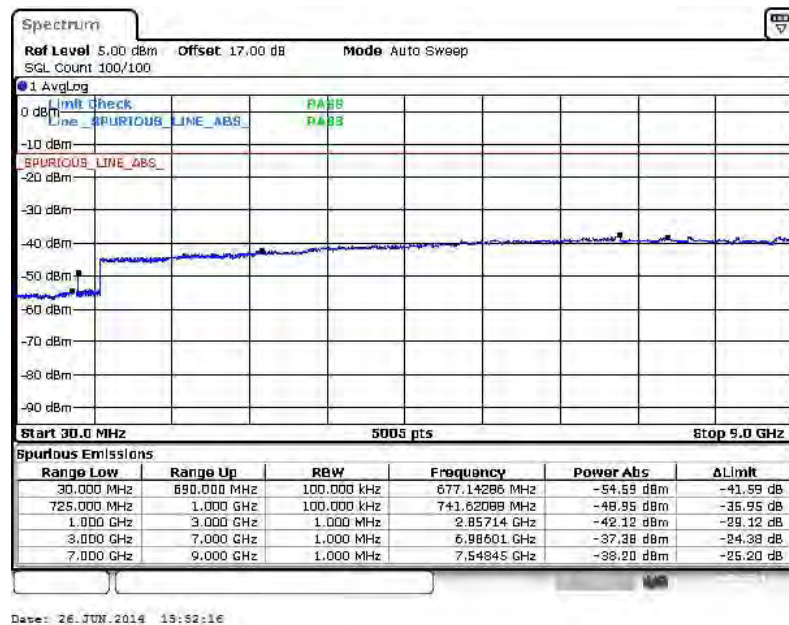


Band :	LTE Band 17	Channel :	CH23790 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)



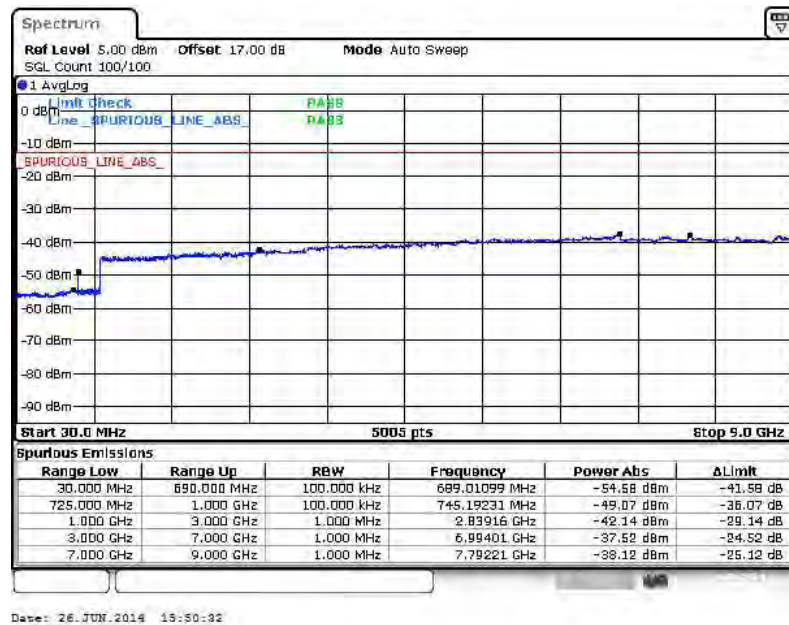
16QAM (RB Size 1, RB Offset 0)



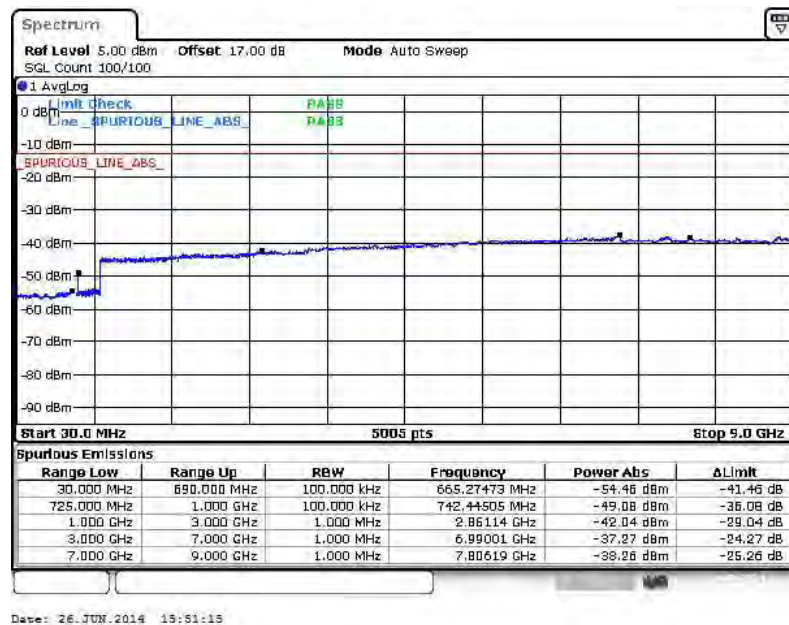


Band :	LTE Band 17	Channel :	CH23800 (High)
Band Width :	10MHz		

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.

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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

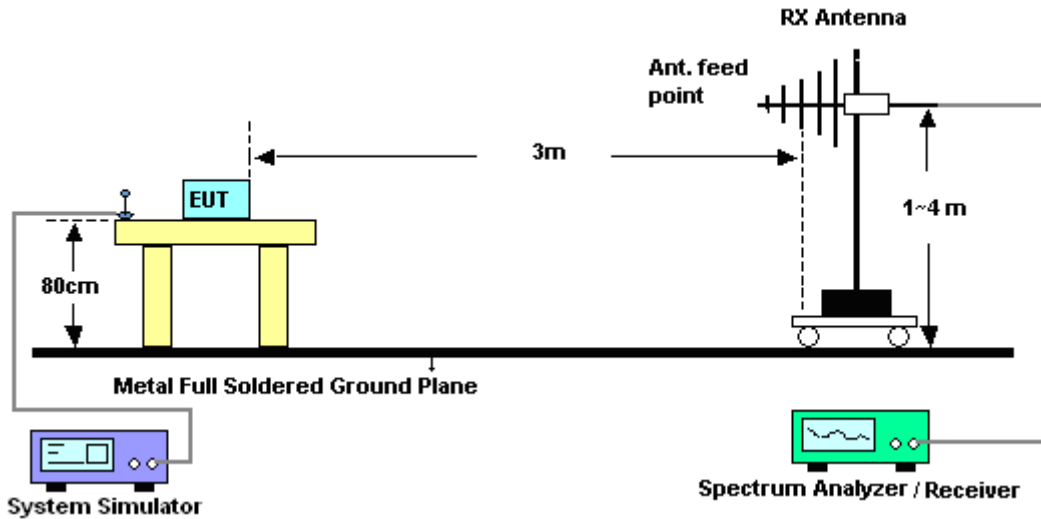
$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$

$$= -13\text{dBm}.$$

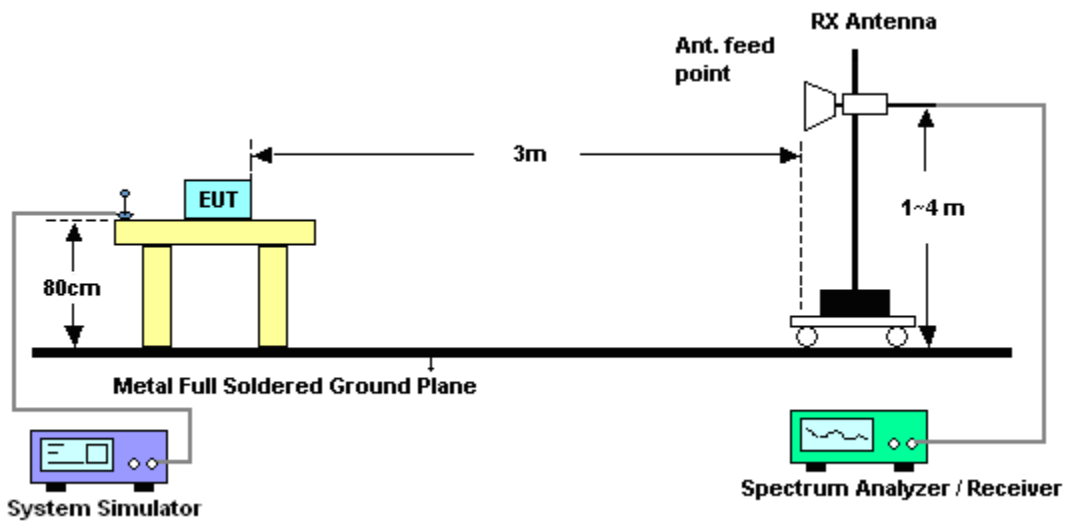
11. $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
12. $\text{ERP (dBm)} = \text{EIRP} - 2.15$

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 5				Temperature :	23~25℃			
Test Mode :	1.4MHz 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	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1671.92	-52.58	-13	-39.58	-66.14	-55.55	0.88	6.00	H	Pass
2507.88	-28.02	-13	-15.02	-53.46	-30.63	1.08	5.84	H	Pass
3343.84	-62.28	-13	-49.28	-72.88	-66.65	1.14	7.66	H	Pass

Band :	LTE Band 5					Temperature :	23~25°C		
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0					Relative Humidity :	48~52%		
Test Engineer :	Gavin Zhang					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1671.92	-55.33	-13	-42.33	-65.96	-58.30	0.88	6.00	V	Pass
2507.88	-33.81	-13	-20.81	-56.69	-36.42	1.08	5.84	V	Pass
3343.84	-59.44	-13	-46.44	-71.27	-63.81	1.14	7.66	V	Pass



Band :	LTE Band 5				Temperature :	23~25°C			
Test Mode :	3MHz 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	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1670.48	-56.07	-13	-43.07	-68.99	-59.04	0.88	6.00	H	Pass
2505.72	-38.53	-13	-25.53	-62.96	-41.14	1.08	5.84	H	Pass
3340.96	-62.42	-13	-49.42	-73.02	-66.79	1.14	7.66	H	Pass

Band :	LTE Band 5				Temperature :	23~25℃			
Test Mode :	3MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1670.48	-56.72	-13	-43.72	-67.35	-59.69	0.88	6.00	V	Pass
2505.72	-44.95	-13	-31.95	-66.34	-47.56	1.08	5.84	V	Pass
3340.96	-61.40	-13	-48.40	-73.23	-65.77	1.14	7.66	V	Pass



Band :	LTE Band 5				Temperature :	23~25°C			
Test Mode :	5MHz 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	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1668.68	-56.73	-13	-43.73	-69.65	-59.70	0.88	6.00	H	Pass
2503.02	-37.48	-13	-24.48	-62.18	-40.09	1.08	5.84	H	Pass
3337.36	-62.09	-13	-49.09	-72.69	-66.46	1.14	7.66	H	Pass

Band :	LTE Band 5				Temperature :	23~25℃			
Test Mode :	5MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1668.68	-56.99	-13	-43.99	-67.62	-59.96	0.88	6.00	V	Pass
2503.02	-40.22	-13	-27.22	-62.44	-42.83	1.08	5.84	V	Pass
3337.36	-60.88	-13	-47.88	-72.71	-65.25	1.14	7.66	V	Pass



Band :	LTE Band 5	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	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1664.18	-53.08	-13	-40.08	-66.58	-56.05	0.88	6.00	H	Pass
2496.27	-32.51	-13	-19.51	-57.70	-35.12	1.08	5.84	H	Pass
3328.36	-62.46	-13	-49.46	-73.06	-66.83	1.14	7.66	H	Pass

Band :	LTE Band 5				Temperature :	23~25℃			
Test Mode :	10MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1664.18	-57.10	-13	-44.10	-67.73	-60.07	0.88	6.00	V	Pass
2496.27	-30.03	-13	-17.03	-53.08	-32.64	1.08	5.84	V	Pass
3328.36	-60.15	-13	-47.15	-71.98	-64.52	1.14	7.66	V	Pass



Band :	LTE Band 2	Temperature :	23~25°C						
Test Mode :	1.4MHz 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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3758.92	-60.03	-13	-47.03	-72.18	-66.77	1.28	8.02	H	Pass
5638.38	-54.78	-13	-41.78	-72.77	-63.20	1.58	10.00	H	Pass
7517.84	-52.75	-13	-39.75	-74.69	-63.07	1.78	12.10	H	Pass

Band :	LTE Band 2				Temperature :	23~25℃			
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3758.92	-57.57	-13	-44.57	-72.6	-64.31	1.28	8.02	V	Pass
5638.38	-52.97	-13	-39.97	-70.05	-61.39	1.58	10	V	Pass
7517.84	-52.62	-13	-39.62	-74.87	-62.94	1.78	12.1	V	Pass



Band :	LTE Band 2	Temperature :	23~25°C						
Test Mode :	3MHz 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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3758.92	-60.69	-13	-47.69	-72.84	-67.43	1.28	8.02	H	Pass
5638.38	-54.95	-13	-41.95	-72.94	-63.37	1.58	10.00	H	Pass
7517.84	-53.12	-13	-40.12	-75.06	-63.44	1.78	12.10	H	Pass

Band :	LTE Band 2				Temperature :	23~25℃			
Test Mode :	3MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3758.92	-57.34	-13	-44.34	-72.37	-64.08	1.28	8.02	V	Pass
5638.38	-53.10	-13	-40.10	-70.18	-61.52	1.58	10	V	Pass
7517.84	-52.86	-13	-39.86	-75.11	-63.18	1.78	12.1	V	Pass



Band :	LTE Band 2				Temperature :	23~25°C			
Test Mode :	5MHz 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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3755.68	-60.92	-13	-47.92	-73.07	-67.66	1.28	8.02	H	Pass
5633.52	-55.30	-13	-42.30	-73.29	-63.72	1.58	10.00	H	Pass
7511.36	-52.81	-13	-39.81	-74.75	-63.13	1.78	12.10	H	Pass

Band :	LTE Band 2	Temperature :	23~25°C						
Test Mode :	5MHz QPSK RB Size 1 Offset 0	Relative Humidity :	48~52%						
Test Engineer :	Gavin Zhang	Polarization :	Vertical						
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3755.68	-57.24	-13	-44.24	-72.27	-63.98	1.28	8.02	V	Pass
5633.52	-54.46	-13	-41.46	-71.54	-62.88	1.58	10	V	Pass
7511.36	-52.31	-13	-39.31	-74.56	-62.63	1.78	12.1	V	Pass



Band :	LTE Band 2	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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dBm)	(dB)	(dBm)	(dBm)	(dBm)	(dB)	(dBi)		
3751.18	-60.63	-13	-47.63	-72.78	-67.37	1.28	8.02	H	Pass
5626.77	-48.18	-13	-35.18	-66.17	-56.60	1.58	10.00	H	Pass
7502.36	-52.95	-13	-39.95	-74.89	-63.27	1.78	12.10	H	Pass

Band :	LTE Band 2				Temperature :	23~25℃			
Test Mode :	10MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3751.18	-57.46	-13	-44.46	-72.49	-64.20	1.28	8.02	V	Pass
5626.77	-42.46	-13	-29.46	-61.01	-50.88	1.58	10	V	Pass
7502.36	-52.98	-13	-39.98	-75.23	-63.30	1.78	12.1	V	Pass



Band :	LTE Band 2				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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3746.68	-60.33	-13	-47.33	-72.48	-67.07	1.28	8.02	H	Pass
5620.02	-54.80	-13	-41.80	-72.79	-63.22	1.58	10.00	H	Pass
7493.36	-52.54	-13	-39.54	-74.48	-62.86	1.78	12.10	H	Pass

Band :	LTE Band 2				Temperature :	23~25℃			
Test Mode :	15MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3746.68	-57.68	-13	-44.68	-72.71	-64.42	1.28	8.02	V	Pass
5620.02	-55.49	-13	-42.49	-72.57	-63.91	1.58	10	V	Pass
7493.36	-53.15	-13	-40.15	-75.4	-63.47	1.78	12.1	V	Pass



Band :	LTE Band 2	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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain	(H/V)	
(dB)	(dB)	(dB)	(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3742.18	-59.16	-13	-46.16	-71.31	-65.90	1.28	8.02	H	Pass
5613.27	-54.90	-13	-41.90	-72.89	-63.32	1.58	10.00	H	Pass
7484.36	-53.10	-13	-40.10	-75.04	-63.42	1.78	12.10	H	Pass

Band :	LTE Band 2				Temperature :	23~25℃			
Test Mode :	20MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3742.18	-56.59	-13	-43.59	-71.62	-63.33	1.28	8.02	V	Pass
5613.27	-56.39	-13	-43.39	-73.47	-64.81	1.58	10	V	Pass
7484.36	-52.50	-13	-39.50	-74.75	-62.82	1.78	12.1	V	Pass



Band :	LTE Band 4	Temperature :	23~25°C						
Test Mode :	1.4MHz 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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3463.92	-58.09	-13	-45.09	-70.76	-65.09	1.3	8.30	H	Pass
5195.88	-46.88	-13	-33.88	-64.61	-55.40	1.6	10.12	H	Pass
6927.84	-53.10	-13	-40.10	-74.84	-63.50	1.7	12.10	H	Pass

Band :	LTE Band 4				Temperature :	23~25°C			
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3463.92	-56.05	-13	-43.05	-71.6	-63.05	1.3	8.3	V	Pass
5195.88	-49.81	-13	-36.81	-66.63	-58.33	1.6	10.12	V	Pass
6927.84	-51.19	-13	-38.19	-73.24	-61.59	1.7	12.1	V	Pass



Band :	LTE Band 4	Temperature :	23~25℃						
Test Mode :	3MHz 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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
			(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3462.48	-58.65	-13	-45.65	-71.32	-65.65	1.3	8.30	H	Pass
5193.72	-48.00	-13	-35.00	-65.73	-56.52	1.6	10.12	H	Pass
6924.96	-53.37	-13	-40.37	-75.11	-63.77	1.7	12.10	H	Pass

Band :	LTE Band 4					Temperature :	23~25°C		
Test Mode :	3MHz QPSK RB Size 1 Offset 0					Relative Humidity :	48~52%		
Test Engineer :	Gavin Zhang					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3462.48	-55.87	-13	-42.87	-71.42	-62.87	1.3	8.3	V	Pass
5193.72	-47.01	-13	-34.01	-63.83	-55.53	1.6	10.12	V	Pass
6924.96	-53.08	-13	-40.08	-75.13	-63.48	1.7	12.1	V	Pass



Band :	LTE Band 4	Temperature :	23~25℃						
Test Mode :	5MHz 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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3460.68	-58.58	-13	-45.58	-71.25	-65.58	1.3	8.30	H	Pass
5191.02	-50.87	-13	-37.87	-68.60	-59.39	1.6	10.12	H	Pass
6921.36	-52.13	-13	-39.13	-73.87	-62.53	1.7	12.10	H	Pass

Band :	LTE Band 4				Temperature :	23~25°C			
Test Mode :	5MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3460.68	-55.04	-13	-42.04	-70.59	-62.04	1.3	8.3	V	Pass
5191.02	-48.42	-13	-35.42	-65.24	-56.94	1.6	10.12	V	Pass
6921.36	-51.88	-13	-38.88	-73.93	-62.28	1.7	12.1	V	Pass



Band :	LTE Band 4	Temperature :	23~25℃						
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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
			(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3456.18	-59.97	-13	-46.97	-72.64	-66.97	1.3	8.30	H	Pass
5184.27	-55.58	-13	-42.58	-73.31	-64.10	1.6	10.12	H	Pass
6912.36	-54.06	-13	-41.06	-75.80	-64.46	1.7	12.10	H	Pass

Band :	LTE Band 4				Temperature :	23~25°C			
Test Mode :	10MHz QPSK RB Size 1 Offset 0				Relative Humidity :	48~52%			
Test Engineer :	Gavin Zhang				Polarization :	Vertical			
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3456.18	-57.17	-13	-44.17	-72.72	-64.17	1.3	8.3	V	Pass
5184.27	-56.49	-13	-43.49	-73.31	-65.01	1.6	10.12	V	Pass
6912.36	-53.76	-13	-40.76	-75.81	-64.16	1.7	12.1	V	Pass



Band :	LTE Band 4	Temperature :	23~25℃						
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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3451.68	-59.54	-13	-46.54	-72.21	-66.54	1.3	8.30	H	Pass
5177.52	-49.34	-13	-36.34	-67.07	-57.86	1.6	10.12	H	Pass
6903.36	-50.23	-13	-37.23	-71.97	-60.63	1.7	12.10	H	Pass

Band :	LTE Band 4					Temperature :	23~25°C		
Test Mode :	15MHz QPSK RB Size 1 Offset 0					Relative Humidity :	48~52%		
Test Engineer :	Gavin Zhang					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3451.68	-56.86	-13	-43.86	-72.41	-63.86	1.3	8.3	V	Pass
5177.52	-47.06	-13	-34.06	-63.88	-55.58	1.6	10.12	V	Pass
6903.36	-52.07	-13	-39.07	-74.12	-62.47	1.7	12.1	V	Pass



Band :	LTE Band 4	Temperature :	23~25℃						
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	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit	Reading	Power	loss	Gain		
			(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3447.18	-59.21	-13	-46.21	-71.88	-66.21	1.3	8.30	H	Pass
5170.77	-52.02	-13	-39.02	-69.75	-60.54	1.6	10.12	H	Pass
6894.36	-53.36	-13	-40.36	-75.10	-63.76	1.7	12.10	H	Pass

Band :	LTE Band 4					Temperature :	23~25°C		
Test Mode :	20MHz QPSK RB Size 1 Offset 0					Relative Humidity :	48~52%		
Test Engineer :	Gavin Zhang					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3447.18	-55.85	-13	-42.85	-71.4	-62.85	1.3	8.3	V	Pass
5170.77	-50.27	-13	-37.27	-67.09	-58.79	1.6	10.12	V	Pass
6894.36	-52.30	-13	-39.30	-74.35	-62.70	1.7	12.1	V	Pass



Band :	LTE Band 17					Temperature :	23~25°C		
Test Mode :	5MHz 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	ERP	Limit	Over Limit	SPA Reading	S.G. Power	TX Cable loss	TX Antenna Gain	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
1417	-54.20	-13	-41.20	-67.02	-57.13	0.78	5.86	H	Pass
2125	-43.81	-13	-30.81	-67.16	-46.41	1	5.75	H	Pass
2834	-62.32	-13	-49.32	-72.68	-66.62	1.05	7.50	H	Pass

Band :	LTE Band 17					Temperature :	23~25°C		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	48~52%		
Test Engineer :	Gavin Zhang					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1417	-57.84	-13	-44.84	-68.37	-60.77	0.78	5.86	V	Pass
2125	-41.05	-13	-28.05	-63.00	-43.65	1.00	5.75	V	Pass
2834	-60.23	-13	-47.23	-71.82	-64.53	1.05	7.50	V	Pass



Band :	LTE Band 17					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	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1412	-54.44	-13	-41.44	-67.26	-57.37	0.78	5.86	H	Pass
2116	-48.12	-13	-35.12	-70.02	-50.72	1	5.75	H	Pass
2822.36	-61.89	-13	-48.89	-72.25	-66.19	1.05	7.50	H	Pass

Band :	LTE Band 17					Temperature :	23~25°C		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	48~52%		
Test Engineer :	Gavin Zhang					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1412	-58.16	-13	-45.16	-68.69	-61.09	0.78	5.86	V	Pass
2116	-45.76	-13	-32.76	-66.71	-48.36	1.00	5.75	V	Pass
2822.36	-60.80	-13	-47.80	-72.39	-65.10	1.05	7.50	V	Pass

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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

3.8.2 Measuring Instruments

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

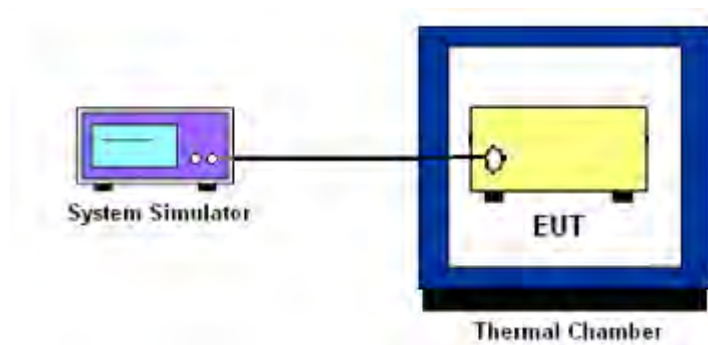
3.8.3 Test Procedures for Temperature Variation

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 $25\pm 5^{\circ}\text{C}$ 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 5 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	+0.0048	10	PASS
40	+0.0036	9	
30	+0.0012	7	
20(Ref.)	+0.0000	6	
10	+0.0012	5	
0	+0.0012	7	
-10	+0.0024	8	
-20	+0.0036	9	
-30	+0.0048	10	

Band :	LTE Band 2 (QPSK)	Limit (ppm) :	2.5
Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0021	15	PASS
40	0.0011	13	
30	0.0005	12	
20(Ref.)	0.0000	11	
10	0.0005	10	
0	0.0005	12	
-10	0.0011	13	
-20	0.0016	14	
-30	0.0021	15	

Band :	LTE Band 4 (QPSK)	Limit (ppm) :	2.5
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Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0023	12	PASS
40	0.0017	11	
30	0.0006	9	
20(Ref.)	0.0000	8	
10	0.0006	7	
0	0.0006	9	
-10	0.0012	10	
-20	0.0017	11	
-30	0.0023	12	

Band :	LTE Band 17 (QPSK)	Limit (ppm) :	2.5
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Temperature (°C)	BW 10MHz		Result
	Deviation (ppm)	Deviation (Hz)	
50	0.0056	8	PASS
40	0.0042	7	
30	0.0028	6	
20(Ref.)	0.0000	4	
10	0.0000	4	
0	0.0014	5	
-10	0.0028	6	
-20	0.0042	7	
-30	0.0056	8	

3.8.7 Test Result of Voltage Variation (FCC)

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Deviation (Hz)	Limit (ppm)	Result
LTE Band 5	10M	3.5	+0.0012	7	2.5	PASS
		Normal	+0.0000	6		
		4.35	+0.0024	8		
LTE Band 2	10M	3.5	+0.0005	12	2.5	PASS
		Normal	+0.0000	11		
		4.35	+0.0011	13		
LTE Band 4	10M	3.5	+0.0006	9	2.5	PASS
		Normal	+0.0006	9		
		4.35	+0.0017	11		
LTE Band 17	10M	3.5	+0.0042	7	2.5	PASS
		Normal	+0.0014	5		
		4.35	+0.0028	6		

Remark:

1. Normal Voltage = 3.8V.
2. The manufacturer declared that the EUT could work properly between voltage 3.5V ~ 4.35V.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	May 08, 2014	Jun. 25, 2014~ Jun. 26, 2014	May 07, 2015	Conducted (TH01-SZ)
Thermal Chamber	Hongzhan	LP-150U	HD20120425	-40℃~150℃	Feb. 21, 2014	Jun. 25, 2014~ Jun. 26, 2014	Feb. 20, 2015	Conducted (TH01-SZ)
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Jun. 28, 2014~ Jul. 05, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2014	Jun. 28, 2014~ Jul. 05, 2014	May 25, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TESEQ	CBL 6112D	23188	30MHz~2GHz	Oct. 26, 2013	Jun. 28, 2014~ Jul. 05, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Jun. 28, 2014~ Jul. 05, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridged Horn Antenna	COM-POWER	AH-840	101073	18GHz~40GHz	Jan. 27, 2014	Jun. 28, 2014~ Jul. 05, 2014	Jan. 26, 2015	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz	Feb. 21, 2014	Jun. 28, 2014~ Jul. 05, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 08, 2014	Jun. 28, 2014~ Jul. 05, 2014	May 07, 2015	Radiation (03CH01-SZ)
AC Source(AVR)	Chroma	61601	616010001985	100Vac~250Vac	Mar. 25, 2014	Jun. 28, 2014~ Jul. 05, 2014	Mar. 24, 2015	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0~360 degree	NCR	Jun. 28, 2014~ Jul. 05, 2014	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m~4 m	NCR	Jun. 28, 2014~ Jul. 05, 2014	NCR	Radiation (03CH01-SZ)
Spectrum Analyzer	R&S	FSP 7	100818	9kHz~7GHz	Sep. 03, 2013	Jun. 20, 2014	Sep. 02, 2014	ERP/EIRP (OTA01-SZ)
Quad-Ridged Horn	ETS-Lindgren	3164-08	00102954	700MHz~10000M Hz	NCR	Jun. 20, 2014	NCR	ERP/EIRP (OTA01-SZ)
Multi-Devices Controller	ETS-Lindgren	2090-OPT1	00108147	N/A	NCR	Jun. 20, 2014	NCR	ERP/EIRP (OTA01-SZ)
Switch Control Mainframe	Agilent	3499A	MY42005451	N/A	NCR	Jun. 20, 2014	NCR	ERP/EIRP (OTA01-SZ)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.9
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