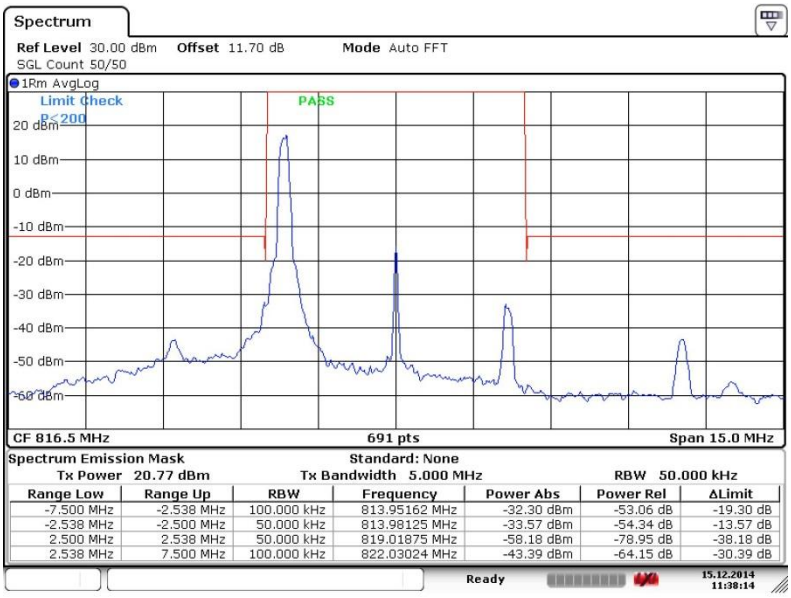
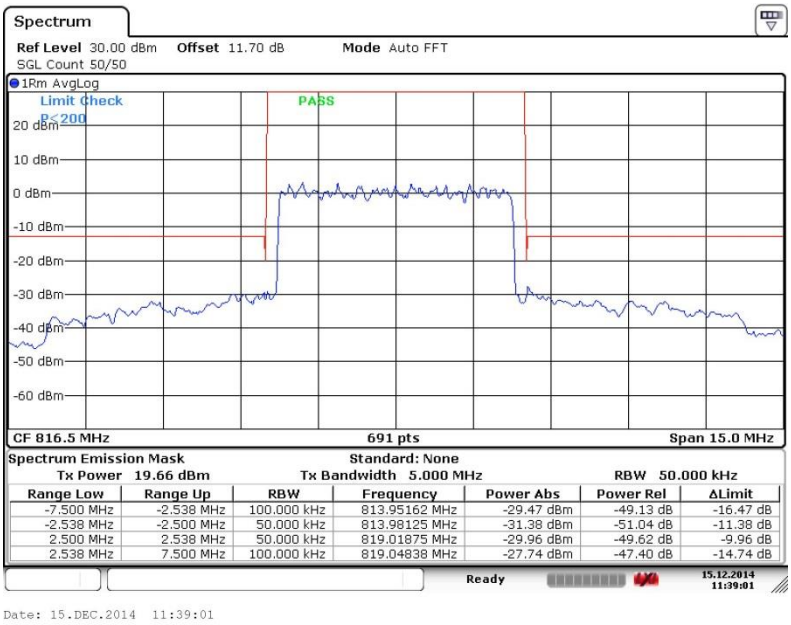
Band :	LTE Band 26	Band Width :	5MHz / QPSK

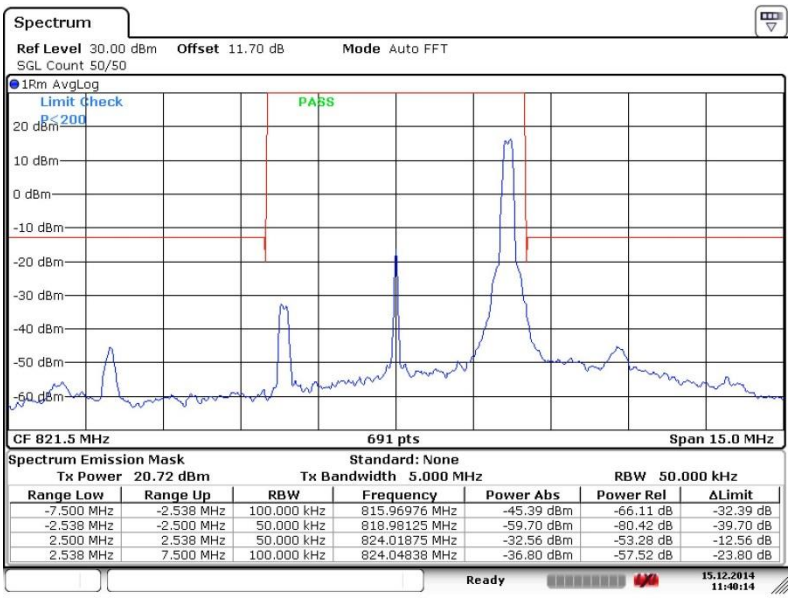
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



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

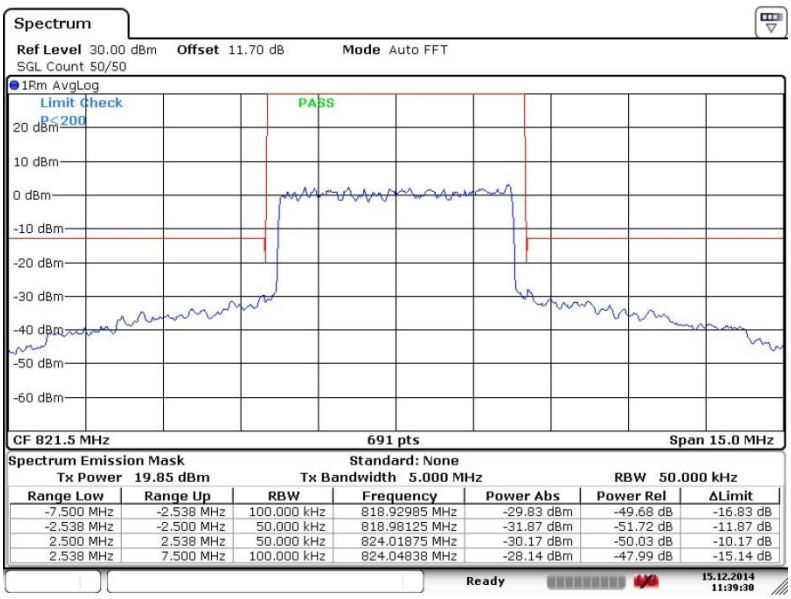


Higher Band Edge Plot for QPSK-RB Size 1, RB Offset 24



Date: 15.DEC.2014 11:40:14

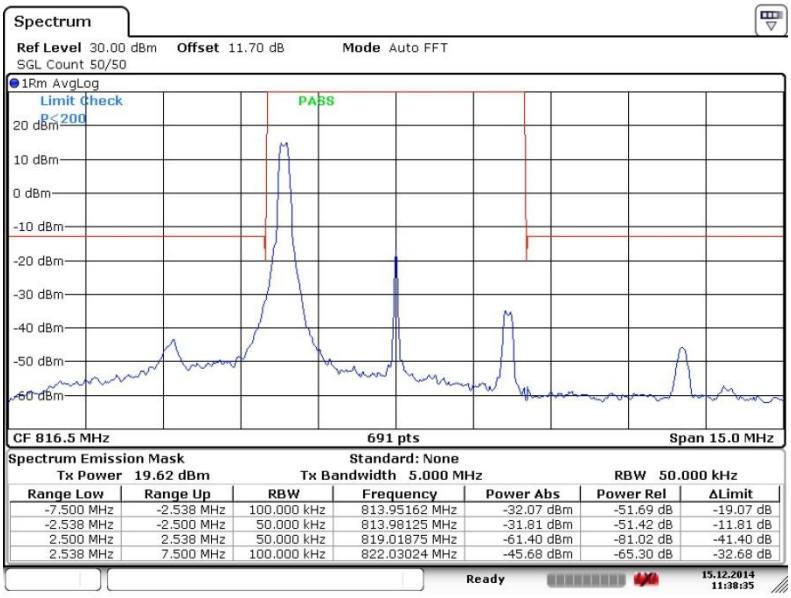
Higher Band Edge Plot for QPSK-RB Size 25, RB Offset 0



Date: 15.DEC.2014 11:39:30

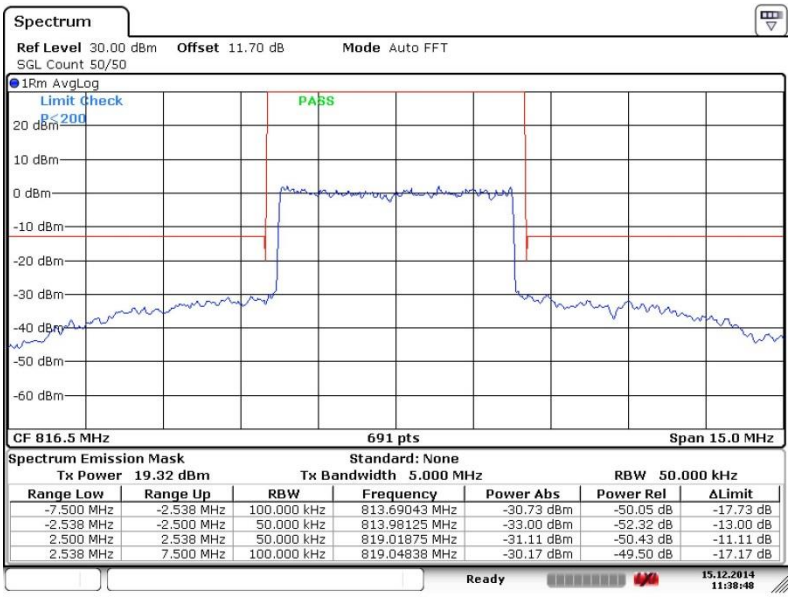
Band :	LTE Band 26	Band Width :	5MHz / 16QAM

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



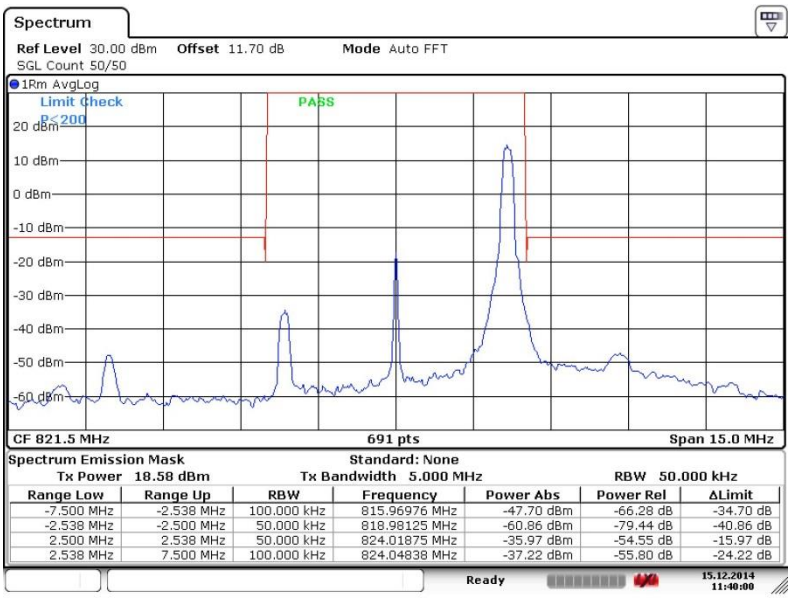
Date: 15.DEC.2014 11:38:35

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



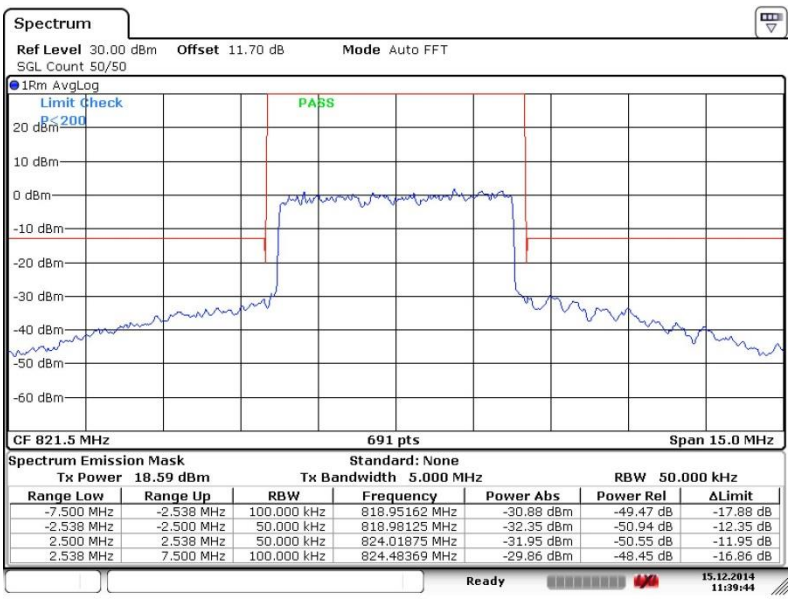
Date: 15.DEC.2014 11:38:48

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



Date: 15.DEC.2014 11:40:00

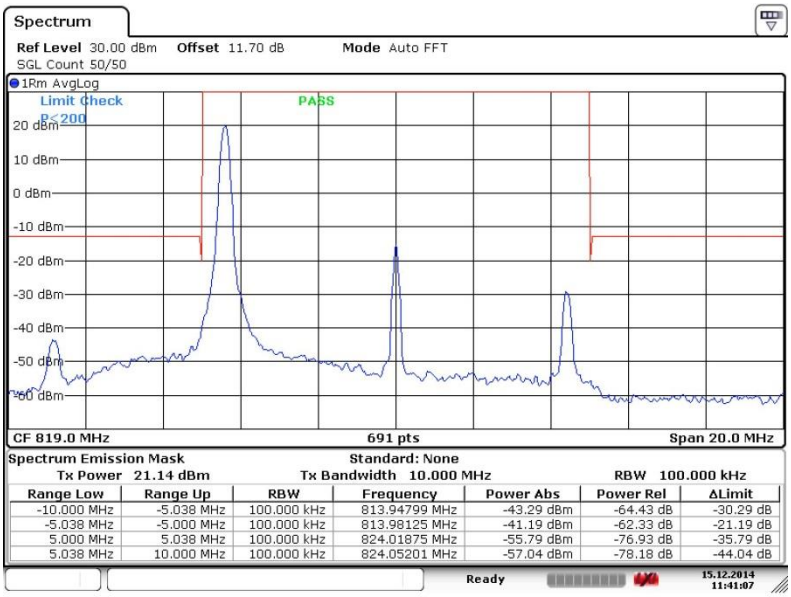
Higher Band Edge Plot for 16QAM-RB Size 25, RB Offset 0



Date: 15.DEC.2014 11:39:44

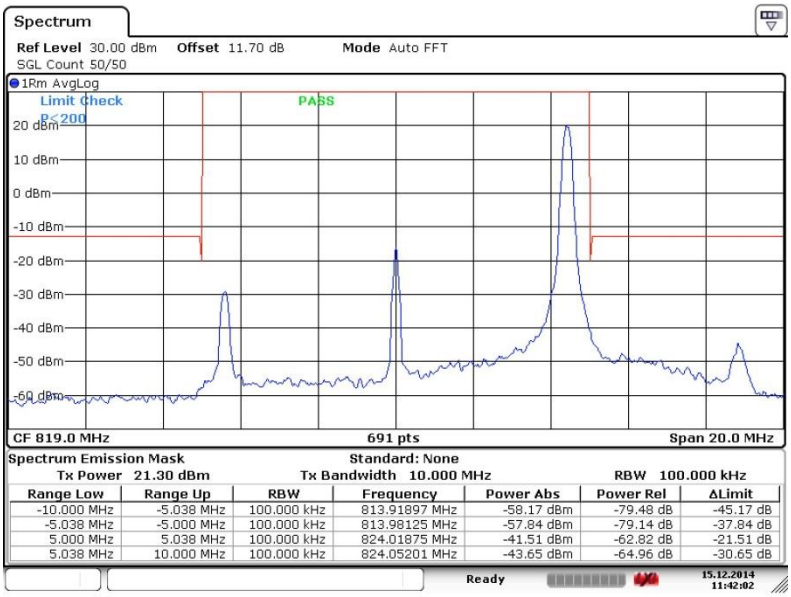
Band :	LTE Band 26	Band Width :	10MHz / QPSK

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



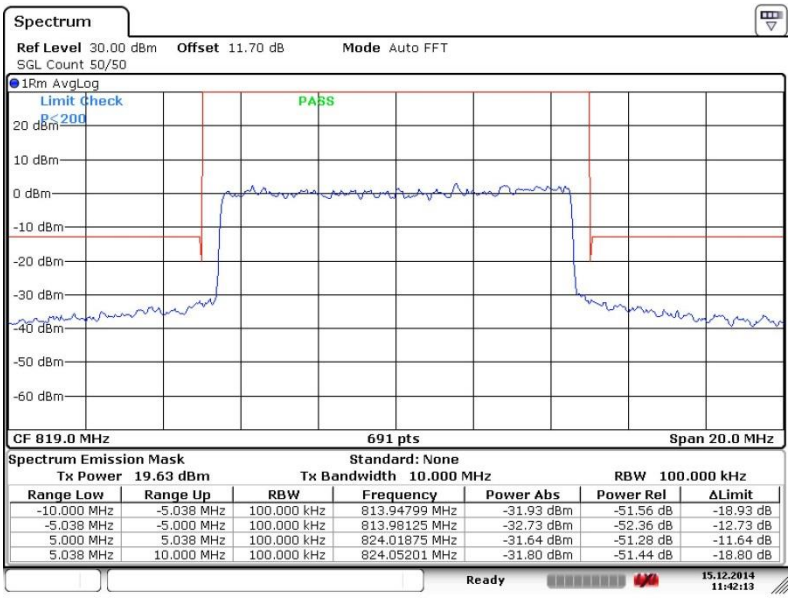
Date: 15.DEC.2014 11:41:07

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



Date: 15.DEC.2014 11:42:02

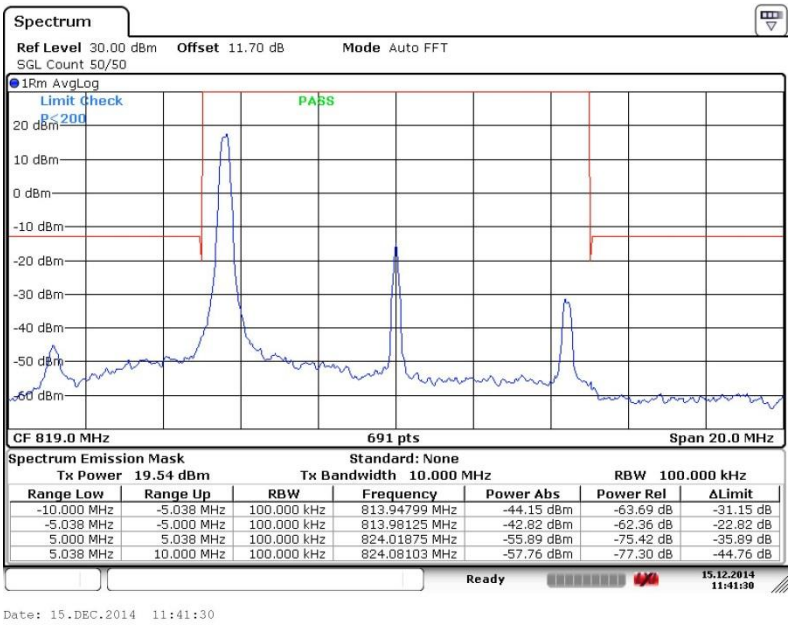
Band Edge Plot for QPSK-RB Size 50, RB Offset 0



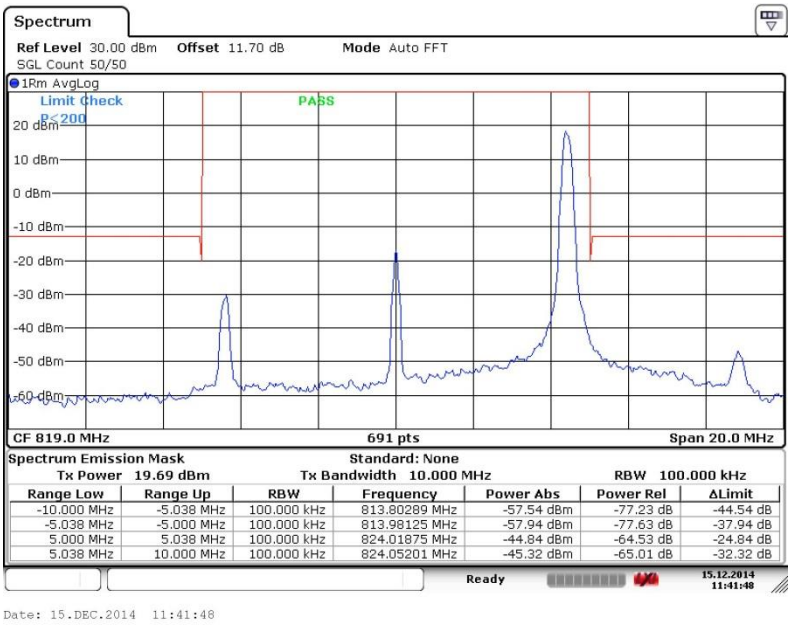
Date: 15.DEC.2014 11:42:13

Band :	LTE Band 26	Band Width :	10MHz / 16QAM

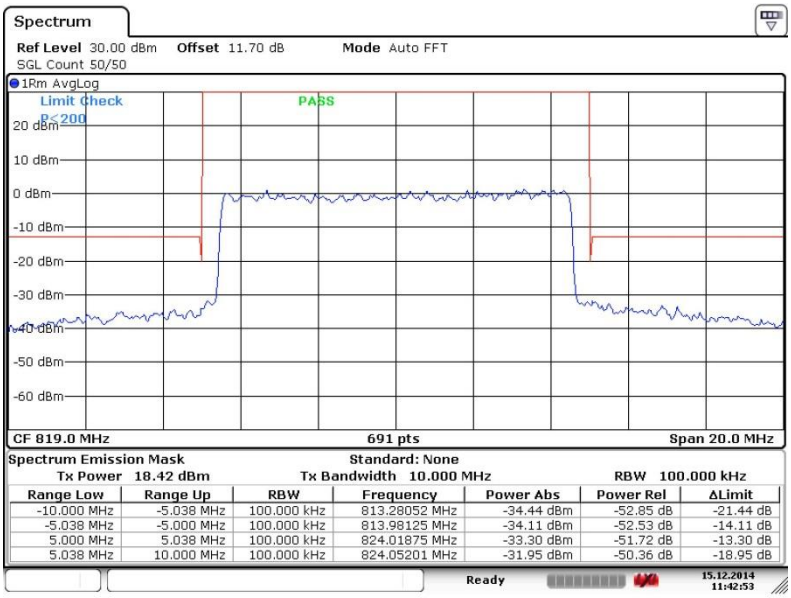
Lower Band Edge Plot for QPSK-RB Size 1, RB Offset 0



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



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



3.4 Emissions Mask – Out Of Band Emissions Measurement

3.4.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 10 log (P) dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

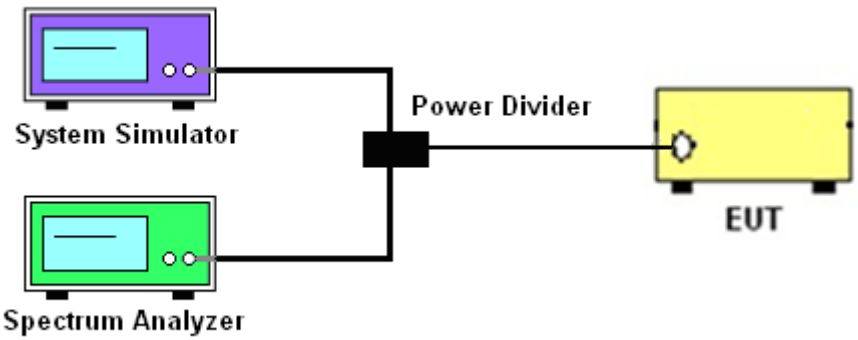
3.4.2 Measuring Instruments

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

3.4.3 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.

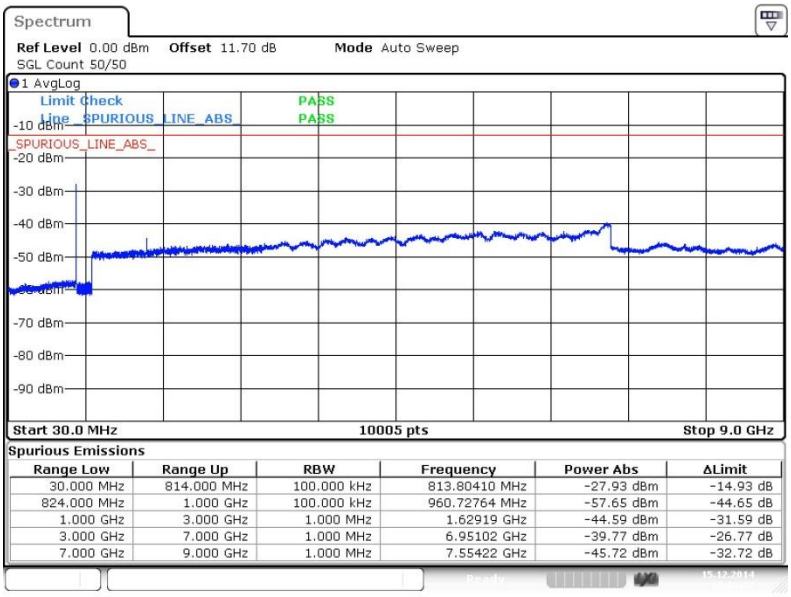
3.4.4 Test Setup



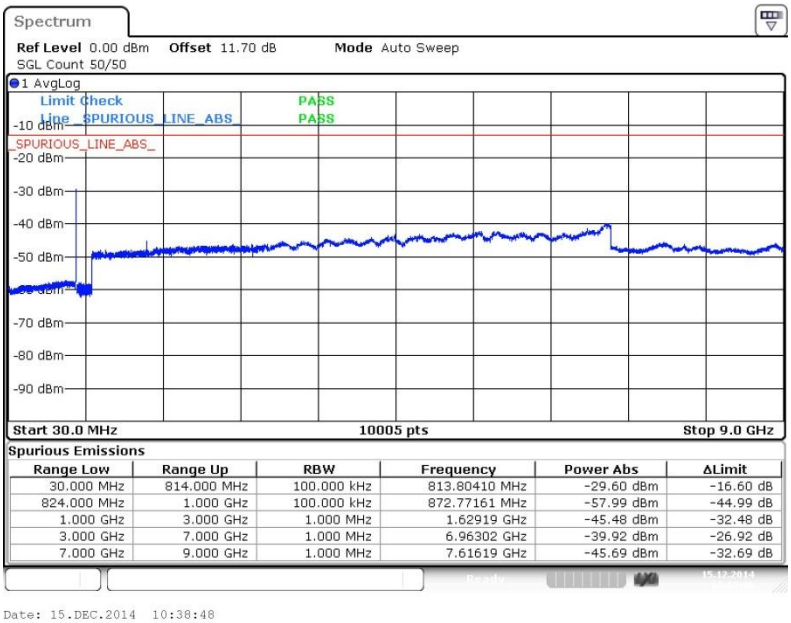
3.4.5 Test Result (Plots) of Conducted Emission

Band :	LTE Band 26	Channel :	CH26697 (Low)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

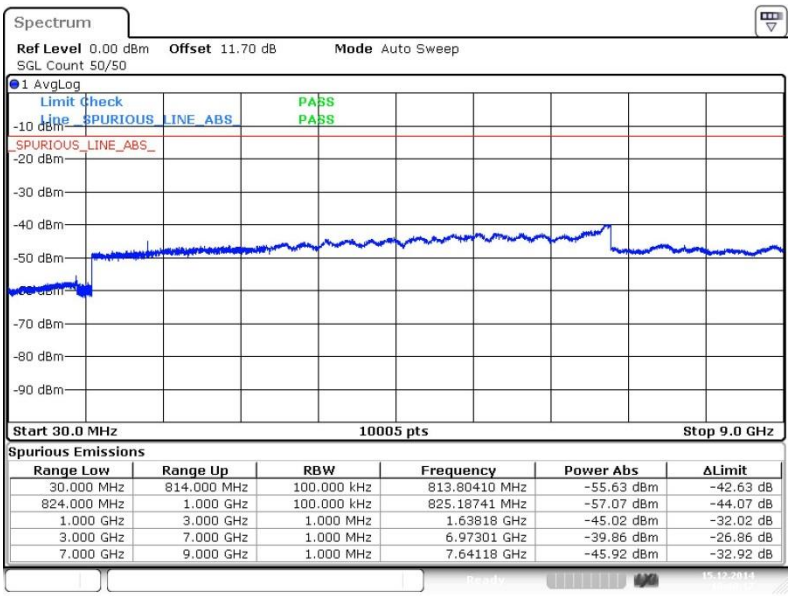


16QAM (RB Size 1, RB Offset 0)



Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

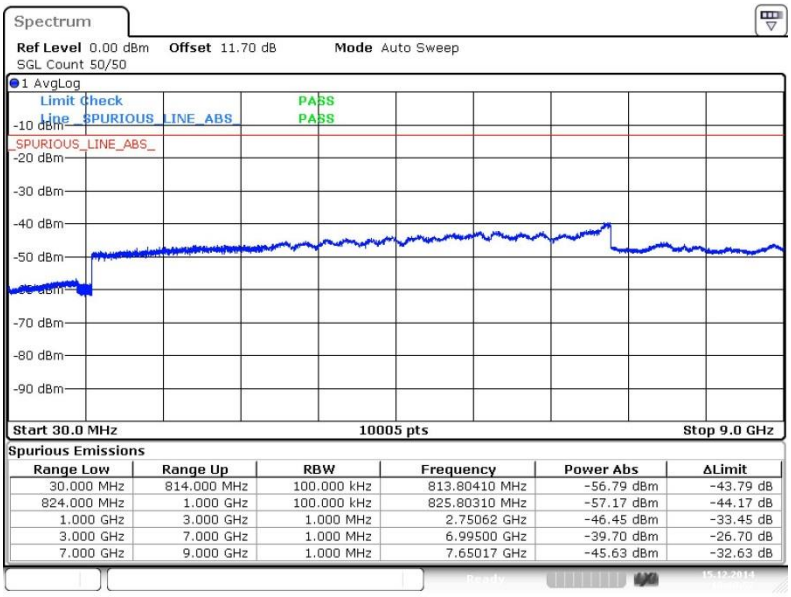


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-55.63 dBm	-42.63 dB
824.000 MHz	1.000 GHz	100.000 kHz	825.18741 MHz	-57.07 dBm	-44.07 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63818 GHz	-45.02 dBm	-32.02 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97301 GHz	-39.86 dBm	-26.86 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.64118 GHz	-45.92 dBm	-32.92 dB

Date: 15.DEC.2014 10:40:17

16QAM (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-56.79 dBm	-43.79 dB
824.000 MHz	1.000 GHz	100.000 kHz	825.80310 MHz	-57.17 dBm	-44.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.75062 GHz	-46.45 dBm	-33.45 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99500 GHz	-39.70 dBm	-26.70 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.65017 GHz	-45.63 dBm	-32.63 dB

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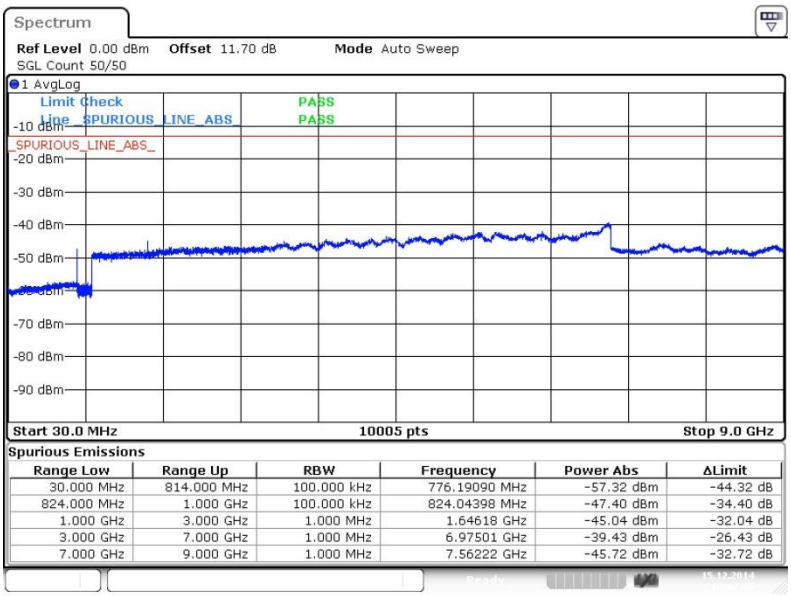
Band :	LTE Band 26	Channel :	CH26783 (High)
Band Width :	1.4MHz		

QPSK (RB Size 1, RB Offset 0)

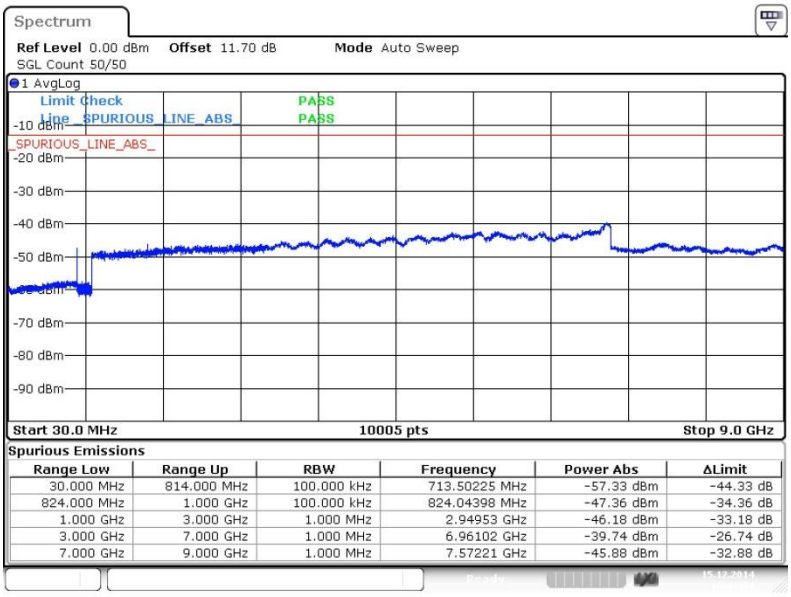


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	776.19090 MHz	-57.32 dBm	-44.32 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.04398 MHz	-47.40 dBm	-34.40 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64618 GHz	-45.04 dBm	-32.04 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97501 GHz	-39.43 dBm	-26.43 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.56222 GHz	-45.72 dBm	-32.72 dB

Date: 15.DEC.2014 10:42:06

16QAM (RB Size 1, RB Offset 0)



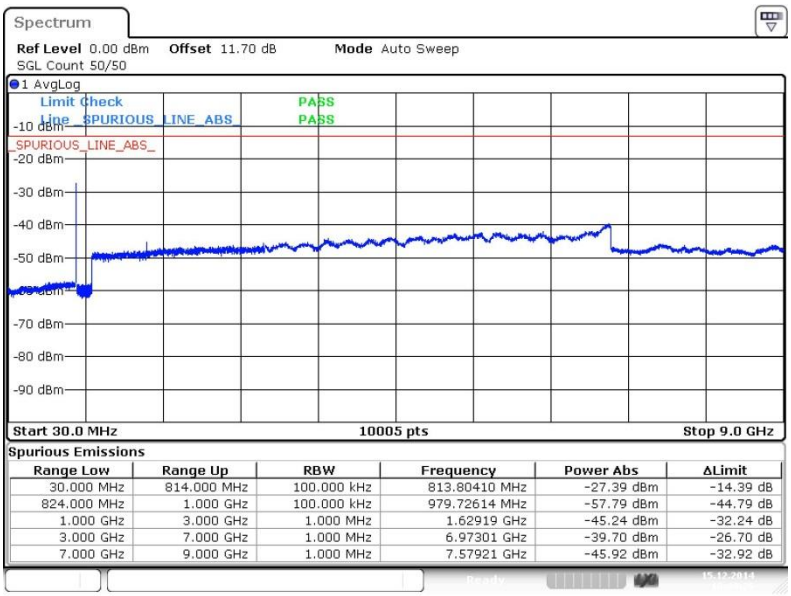
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	713.50225 MHz	-57.33 dBm	-44.33 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.04398 MHz	-47.36 dBm	-34.36 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.94953 GHz	-46.18 dBm	-33.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96102 GHz	-39.74 dBm	-26.74 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.57221 GHz	-45.88 dBm	-32.88 dB

Date: 15.DEC.2014 10:41:34

Band :	LTE Band 26	Channel :	CH26705 (Low)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-27.39 dBm	-14.39 dB
824.000 MHz	1.000 GHz	100.000 kHz	979.72614 MHz	-57.79 dBm	-44.79 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62919 GHz	-45.24 dBm	-32.24 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97301 GHz	-39.70 dBm	-26.70 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.57921 GHz	-45.92 dBm	-32.92 dB

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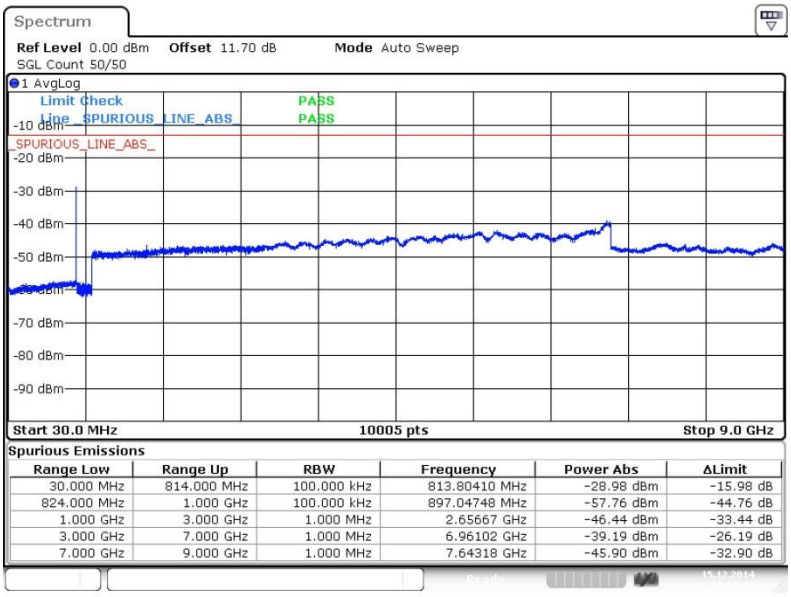
16QAM (RB Size 1, RB Offset 0)



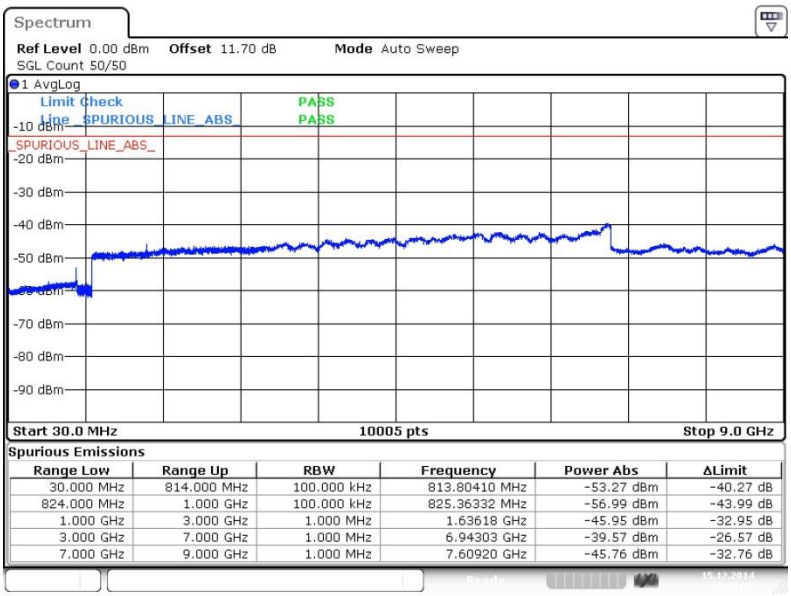
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-28.98 dBm	-15.98 dB
824.000 MHz	1.000 GHz	100.000 kHz	897.04748 MHz	-57.76 dBm	-44.76 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.65667 GHz	-46.44 dBm	-33.44 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96102 GHz	-39.19 dBm	-26.19 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.64318 GHz	-45.90 dBm	-32.90 dB

Date: 15.DEC.2014 10:50:43

Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)

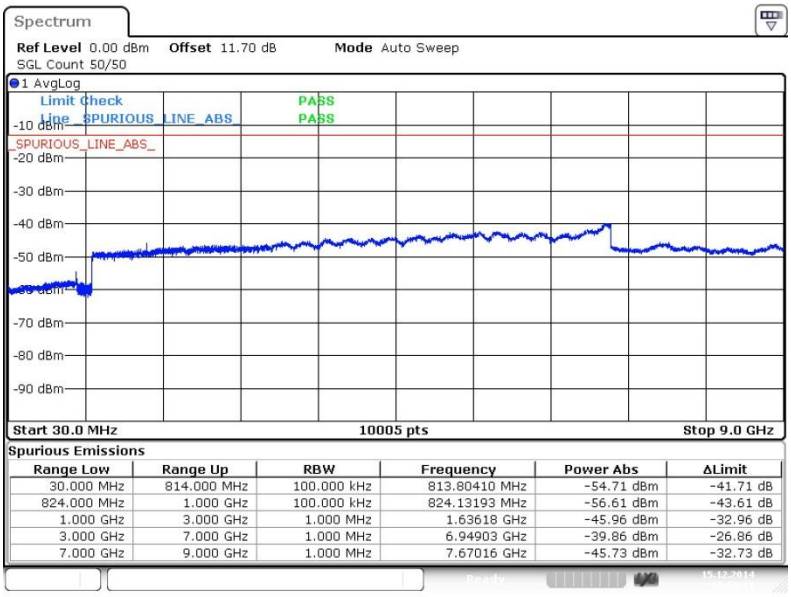


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-53.27 dBm	-40.27 dB
824.000 MHz	1.000 GHz	100.000 kHz	825.36332 MHz	-56.99 dBm	-43.99 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63618 GHz	-45.95 dBm	-32.95 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94303 GHz	-39.57 dBm	-26.57 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.60920 GHz	-45.76 dBm	-32.76 dB

Date: 15.DEC.2014 10:51:57

16QAM (RB Size 1, RB Offset 0)



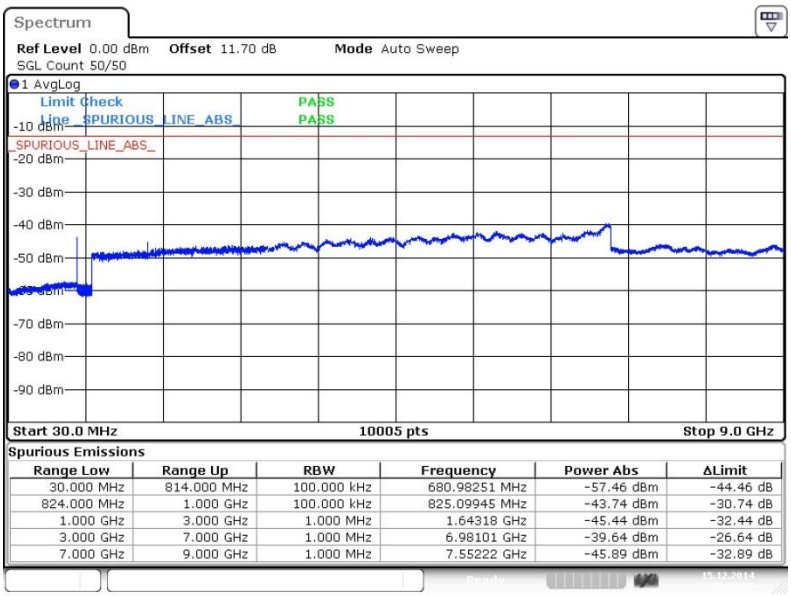
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-54.71 dBm	-41.71 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.13193 MHz	-56.61 dBm	-43.61 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63618 GHz	-45.96 dBm	-32.96 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94903 GHz	-39.86 dBm	-26.86 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.67016 GHz	-45.73 dBm	-32.73 dB

Date: 15.DEC.2014 10:53:11

Band :	LTE Band 26	Channel :	CH26775 (High)
Band Width :	3MHz		

QPSK (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	680.98251 MHz	-57.46 dBm	-44.46 dB
824.000 MHz	1.000 GHz	100.000 kHz	825.09945 MHz	-43.74 dBm	-30.74 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64318 GHz	-45.44 dBm	-32.44 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98101 GHz	-39.64 dBm	-26.64 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.55222 GHz	-45.89 dBm	-32.89 dB

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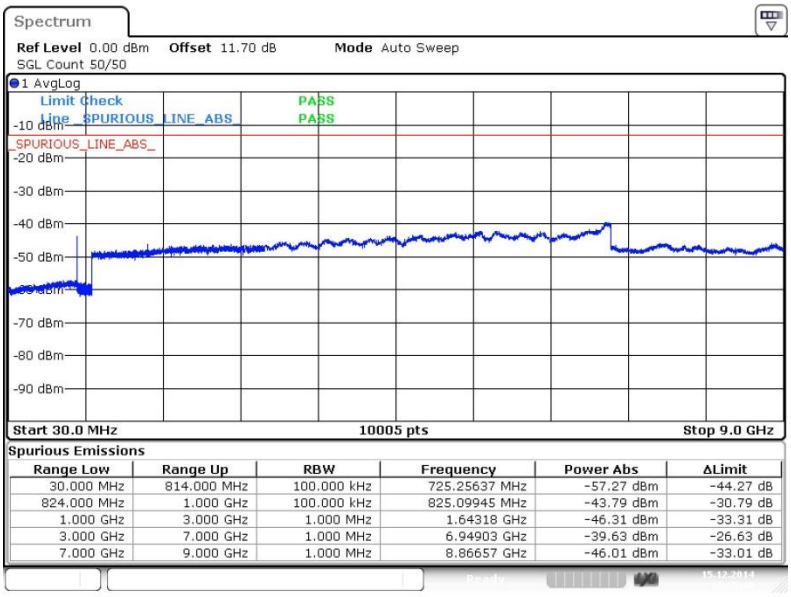
16QAM (RB Size 1, RB Offset 0)



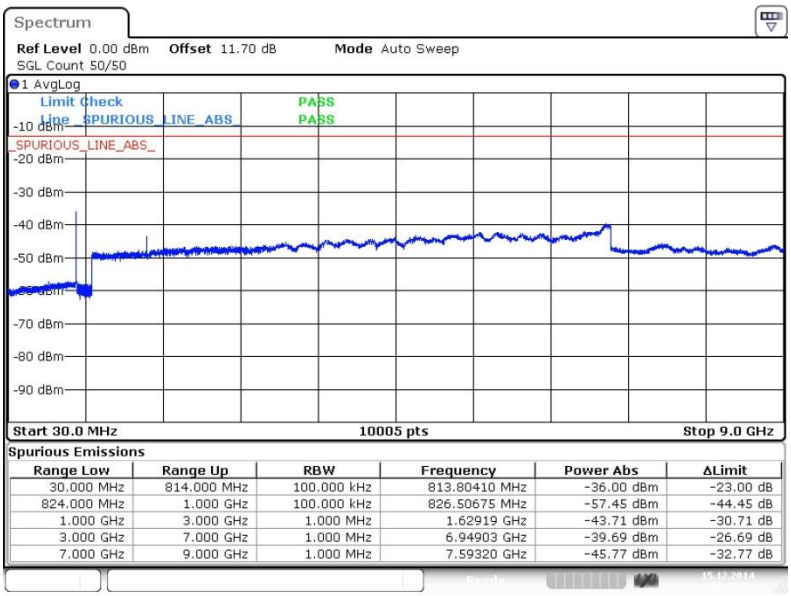
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	725.25637 MHz	-57.27 dBm	-44.27 dB
824.000 MHz	1.000 GHz	100.000 kHz	825.09945 MHz	-43.79 dBm	-30.79 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64318 GHz	-46.31 dBm	-33.31 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94903 GHz	-39.63 dBm	-26.63 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.86657 GHz	-46.01 dBm	-33.01 dB

Date: 15.DEC.2014 10:55:40

Band :	LTE Band 26	Channel :	CH26715 (Low)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

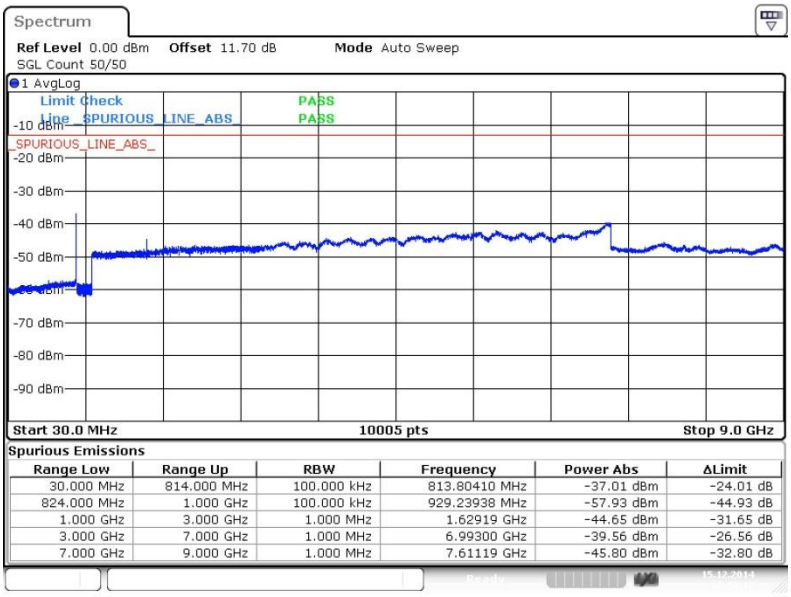


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-36.00 dBm	-23.00 dB
824.000 MHz	1.000 GHz	100.000 kHz	826.50675 MHz	-57.45 dBm	-44.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62919 GHz	-43.71 dBm	-30.71 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94903 GHz	-39.69 dBm	-26.69 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.59320 GHz	-45.77 dBm	-32.77 dB

Date: 15.DEC.2014 10:56:58

16QAM (RB Size 1, RB Offset 0)



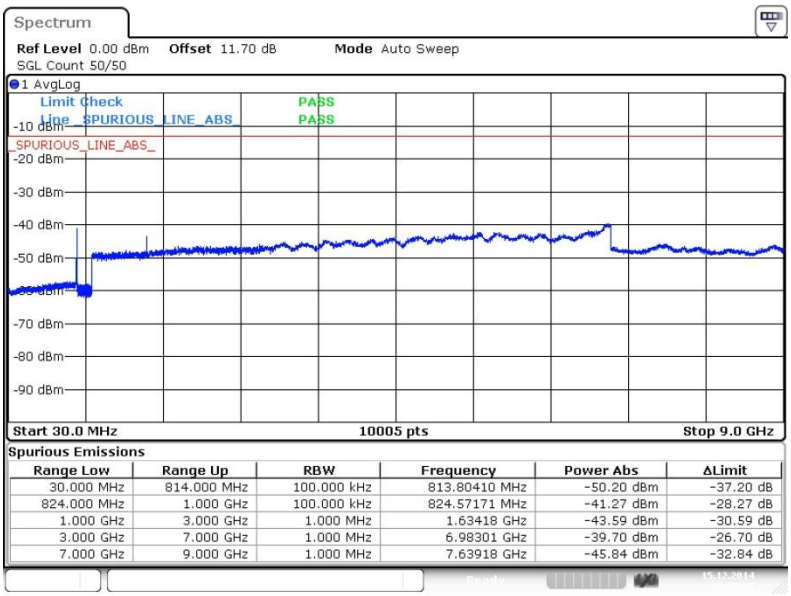
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-37.01 dBm	-24.01 dB
824.000 MHz	1.000 GHz	100.000 kHz	929.23938 MHz	-57.93 dBm	-44.93 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62919 GHz	-44.65 dBm	-31.65 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99300 GHz	-39.56 dBm	-26.56 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.61119 GHz	-45.80 dBm	-32.80 dB

Date: 15.DEC.2014 10:58:12

Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

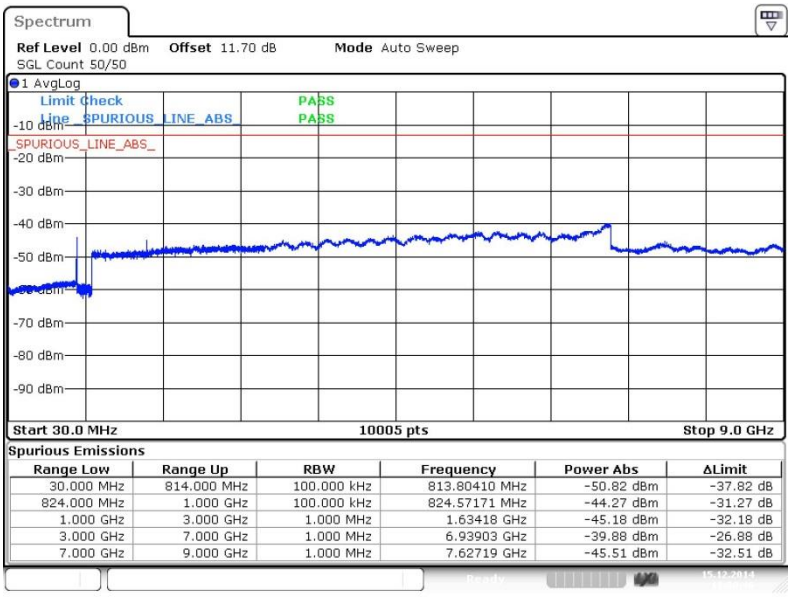


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-50.20 dBm	-37.20 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.57171 MHz	-41.27 dBm	-28.27 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63418 GHz	-43.59 dBm	-30.59 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98301 GHz	-39.70 dBm	-26.70 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.63918 GHz	-45.84 dBm	-32.84 dB

Date: 15.DEC.2014 10:59:27

16QAM (RB Size 1, RB Offset 0)



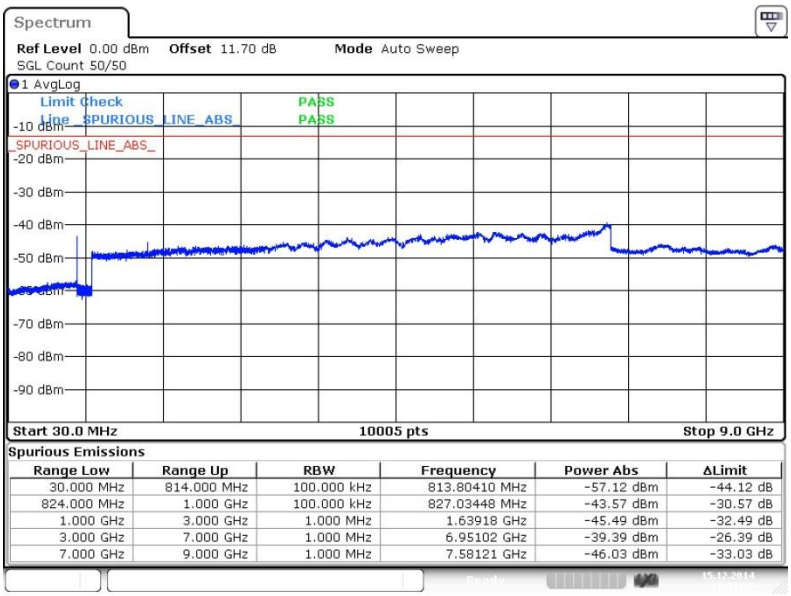
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-50.82 dBm	-37.82 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.57171 MHz	-44.27 dBm	-31.27 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63418 GHz	-45.18 dBm	-32.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93903 GHz	-39.88 dBm	-26.88 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.62719 GHz	-45.51 dBm	-32.51 dB

Date: 15.DEC.2014 11:00:40

Band :	LTE Band 26	Channel :	CH26765 (High)
Band Width :	5MHz		

QPSK (RB Size 1, RB Offset 0)

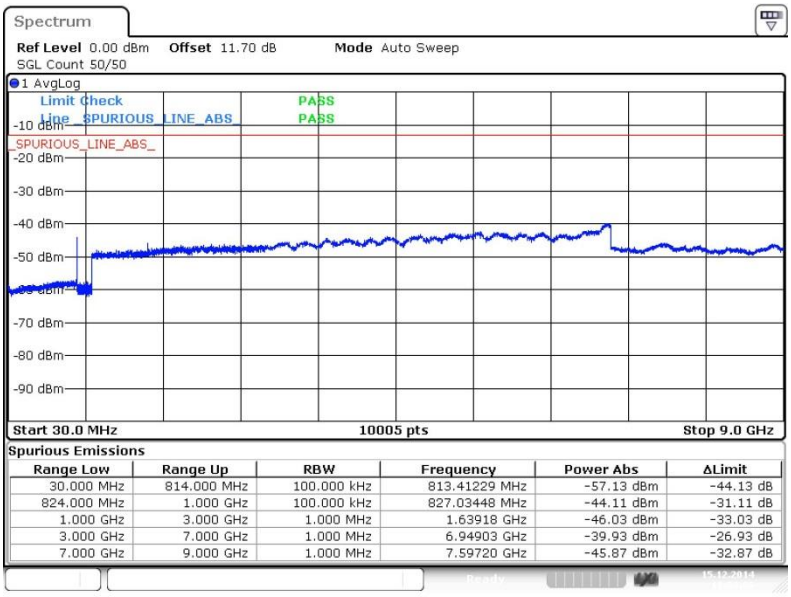


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-57.12 dBm	-44.12 dB
824.000 MHz	1.000 GHz	100.000 kHz	827.03448 MHz	-43.57 dBm	-30.57 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63918 GHz	-45.49 dBm	-32.49 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95102 GHz	-39.39 dBm	-26.39 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.58121 GHz	-46.03 dBm	-33.03 dB

Date: 15.DEC.2014 11:01:55

16QAM (RB Size 1, RB Offset 0)



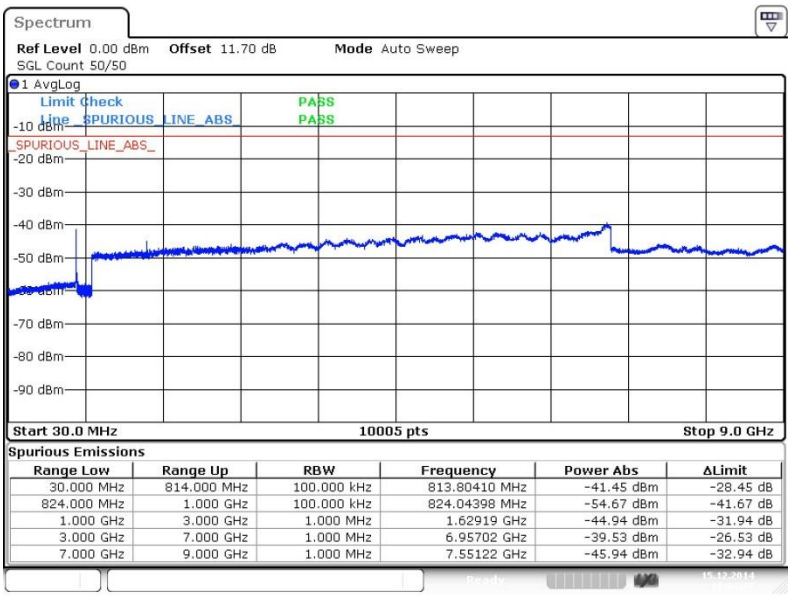
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.41229 MHz	-57.13 dBm	-44.13 dB
824.000 MHz	1.000 GHz	100.000 kHz	827.03448 MHz	-44.11 dBm	-31.11 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63918 GHz	-46.03 dBm	-33.03 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94903 GHz	-39.93 dBm	-26.93 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.59720 GHz	-45.87 dBm	-32.87 dB

Date: 15.DEC.2014 11:03:09

Band :	LTE Band 26	Channel :	CH26740 (Middle)
Band Width :	10MHz		

QPSK (RB Size 1, RB Offset 0)

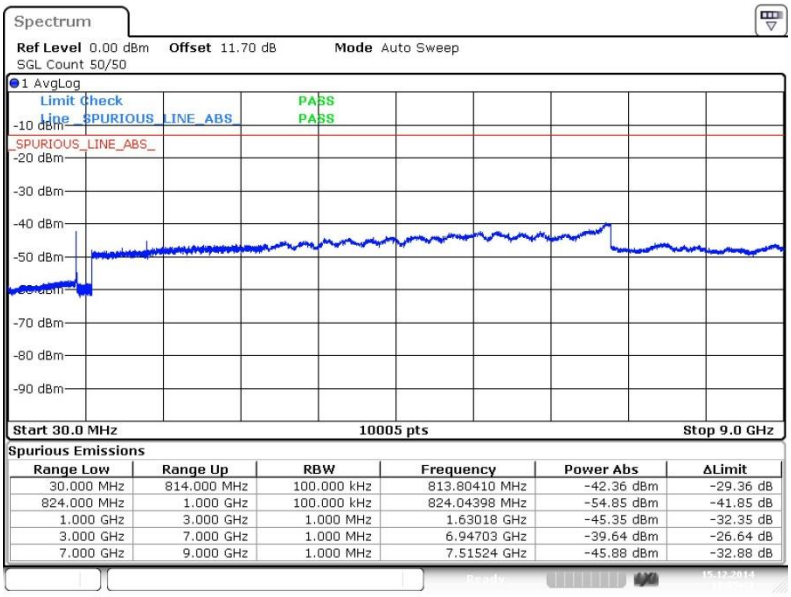


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-41.45 dBm	-28.45 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.04398 MHz	-54.67 dBm	-41.67 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62919 GHz	-44.94 dBm	-31.94 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95702 GHz	-39.53 dBm	-26.53 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.55122 GHz	-45.94 dBm	-32.94 dB

Date: 15.DEC.2014 11:04:27

16QAM (RB Size 1, RB Offset 0)



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	814.000 MHz	100.000 kHz	813.80410 MHz	-42.36 dBm	-29.36 dB
824.000 MHz	1.000 GHz	100.000 kHz	824.04398 MHz	-54.85 dBm	-41.85 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63018 GHz	-45.35 dBm	-32.35 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94703 GHz	-39.64 dBm	-26.64 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.51524 GHz	-45.88 dBm	-32.88 dB

Date: 15.DEC.2014 11:05:41

3.5 Field Strength of Spurious Radiation Measurement

3.5.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

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 $43+10\log_{10}(P[Watts])$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

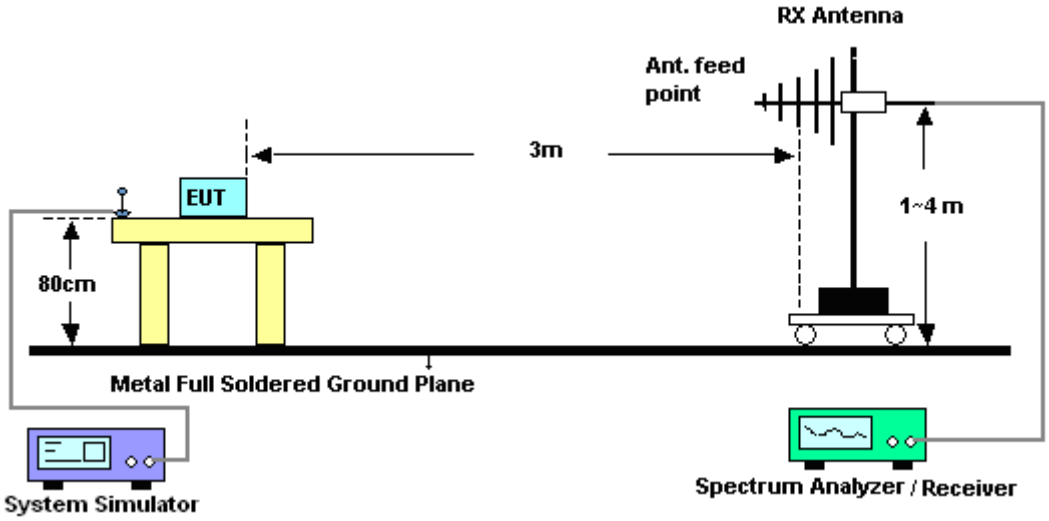
3.5.2 Measuring Instruments

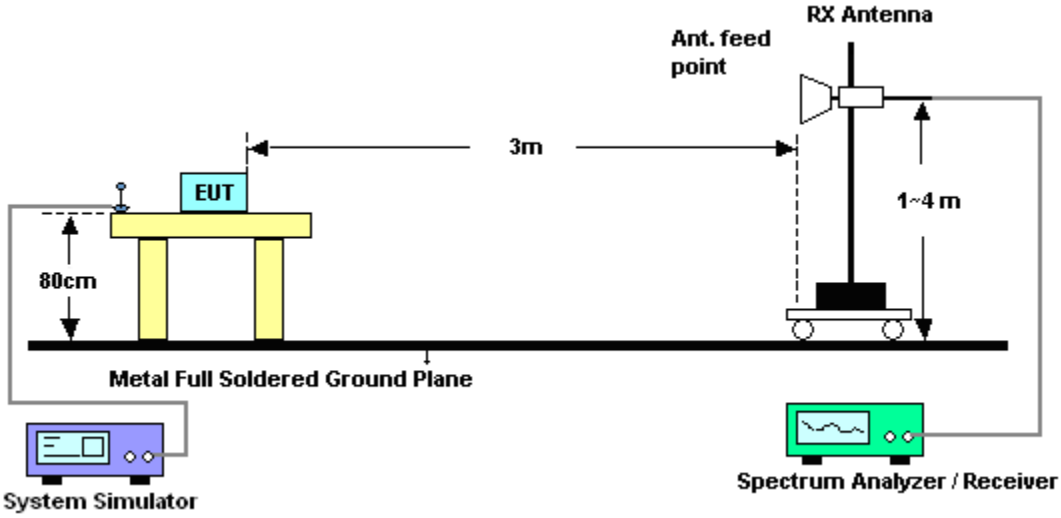
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. 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.

3.5.4 Test Setup





3.5.5 Test Result of Field Strength of Spurious Radiated

<Low Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1628	-62.78	-13	-49.78	-74.85	-64.6	0.97	4.94	H	Pass
2442	-58.10	-13	-45.10	-75.35	-59.9	1.27	5.23	H	Pass
3256	-57.65	-13	-44.65	-76.72	-60.9	1.53	6.93	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1628	-63.38	-13	-50.38	-75.07	-65.2	0.97	4.94	V	Pass
2442	-60.20	-13	-47.20	-75.54	-62	1.27	5.23	V	Pass
3256	-58.65	-13	-45.65	-76.47	-61.9	1.53	6.93	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1640	-61.12	-13	-48.12	-73.69	-62.9	0.97	4.91	H	Pass
2455	-58.26	-13	-45.26	-75.45	-60.1	1.28	5.27	H	Pass
3273	-57.28	-13	-44.28	-76.72	-60.6	1.53	7.00	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1640	-63.52	-13	-50.52	-75.16	-65.3	0.97	4.91	V	Pass
2455	-60.66	-13	-47.66	-75.96	-62.5	1.28	5.27	V	Pass
3273	-58.98	-13	-45.98	-76.73	-62.3	1.53	7.00	V	Pass

<High Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1648	-63.14	-13	-50.14	-75.03	-64.9	0.98	4.89	H	Pass
2468	-58.33	-13	-45.33	-75.94	-60.2	1.28	5.30	H	Pass
3290	-57.41	-13	-44.41	-76.74	-60.8	1.54	7.08	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	1.4MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1648	-63.64	-13	-50.64	-75.34	-65.4	0.98	4.89	V	Pass
2468	-60.53	-13	-47.53	-75.99	-62.4	1.28	5.30	V	Pass
3290	-59.41	-13	-46.41	-76.98	-62.8	1.54	7.08	V	Pass

<Low Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1628	-62.68	-13	-49.68	-75.11	-64.5	0.97	4.94	H	Pass
2442	-58.50	-13	-45.50	-75.81	-60.3	1.27	5.23	H	Pass
3256	-56.75	-13	-43.75	-75.75	-60	1.53	6.93	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1628	-63.68	-13	-50.68	-74.93	-65.5	0.97	4.94	V	Pass
2442	-60.20	-13	-47.20	-75.29	-62	1.27	5.23	V	Pass
3256	-59.05	-13	-46.05	-76.64	-62.3	1.53	6.93	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1635	-62.60	-13	-49.60	-74.95	-64.4	0.97	4.92	H	Pass
2452	-58.27	-13	-45.27	-75.62	-60.1	1.28	5.26	H	Pass
3270	-57.89	-13	-44.89	-76.13	-61.2	1.53	6.99	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1635	-63.40	-13	-50.40	-74.96	-65.2	0.97	4.92	V	Pass
2452	-60.67	-13	-47.67	-76.13	-62.5	1.28	5.26	V	Pass
3270	-58.99	-13	-45.99	-76.77	-62.3	1.53	6.99	V	Pass

<High Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1640	-62.52	-13	-49.52	-74.79	-64.3	0.97	4.91	H	Pass
2463	-58.64	-13	-45.64	-76.07	-60.5	1.28	5.29	H	Pass
3284	-58.04	-13	-45.04	-76.82	-61.4	1.54	7.05	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	3MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1640	-63.42	-13	-50.42	-75.05	-65.2	0.97	4.91	V	Pass
2463	-60.64	-13	-47.64	-75.88	-62.5	1.28	5.29	V	Pass
3284	-59.34	-13	-46.34	-76.91	-62.7	1.54	7.05	V	Pass

<Low Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1624	-62.86	-13	-49.86	-75.01	-64.7	0.97	4.95	H	Pass
2442	-57.80	-13	-44.80	-75.02	-59.6	1.27	5.23	H	Pass
3256	-57.05	-13	-44.05	-76.12	-60.3	1.53	6.93	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1624	-63.36	-13	-50.36	-74.89	-65.2	0.97	4.95	V	Pass
2442	-60.30	-13	-47.30	-75.56	-62.1	1.27	5.23	V	Pass
3256	-58.55	-13	-45.55	-76.22	-61.8	1.53	6.93	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1632	-62.69	-13	-49.69	-74.97	-64.5	0.97	4.93	H	Pass
2450	-57.78	-13	-44.78	-75.23	-59.6	1.28	5.25	H	Pass
3266	-57.71	-13	-44.71	-76.52	-61	1.53	6.97	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1632	-63.79	-13	-50.79	-74.89	-65.6	0.97	4.93	V	Pass
2450	-60.58	-13	-47.58	-75.89	-62.4	1.28	5.25	V	Pass
3266	-58.91	-13	-45.91	-76.66	-62.2	1.53	6.97	V	Pass

<High Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1640	-62.42	-13	-49.42	-74.85	-64.2	0.97	4.91	H	Pass
2457	-58.66	-13	-45.66	-76.01	-60.5	1.28	5.27	H	Pass
3276	-57.77	-13	-44.77	-76.84	-61.1	1.53	7.01	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	5MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1640	-63.32	-13	-50.32	-74.96	-65.1	0.97	4.91	V	Pass
2457	-60.66	-13	-47.66	-76.09	-62.5	1.28	5.27	V	Pass
3276	-59.27	-13	-46.27	-76.8	-62.6	1.53	7.01	V	Pass

<Middle Channel>

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1628	-62.58	-13	-49.58	-74.68	-64.4	0.97	4.94	H	Pass
2442	-58.60	-13	-45.60	-75.82	-60.4	1.27	5.23	H	Pass
3256	-57.65	-13	-44.65	-76.35	-60.9	1.53	6.93	H	Pass

Band :	LTE Band 26	**Temperature :**	23~24°C
Test Mode :	10MHz QPSK RB Size 1 Offset 0	**Relative Humidity :**	46~48%
Test Engineer :	Derreck Chen, Ken Wu, and Nick Yu	**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
1624	-63.56	-13	-50.56	-74.84	-65.4	0.97	4.95	V	Pass
2442	-60.50	-13	-47.50	-76.05	-62.3	1.27	5.23	V	Pass
3256	-58.85	-13	-45.85	-76.39	-62.1	1.53	6.93	V	Pass

3.6 Frequency Stability Measurement

3.6.1 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 according to FCC Part 90.213.

3.6.2 Measuring Instruments

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

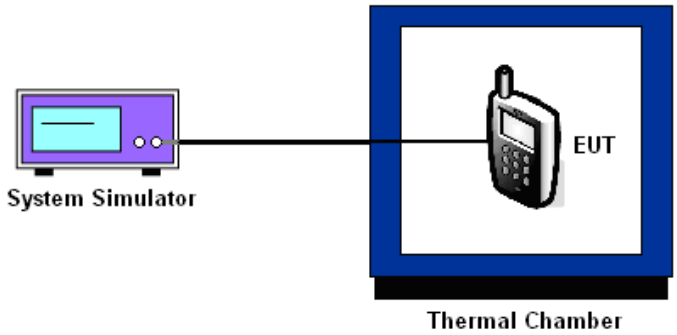
3.6.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized for three hours. 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.

3.6.4 Test Procedures for Voltage Variation

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

3.6.5 Test Setup



3.6.6 Test Result of Temperature Variation

Band :	LTE Band 26 (QPSK)	Limit (ppm) :	2.5

Temperature (°C)	BW 10MHz	Result
	Deviation (ppm)	
50	0.0010	PASS
40	0.0001	
30	0.0007	
20(Ref.)	0.0000	
10	0.0020	
0	0.0002	
-10	0.0004	
-20	0.0006	
-30	0.0017	

3.6.7 Test Result of Voltage Variation

Band	Bandwidth	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
LTE Band 26	10M	4.20	0.0007	2.5	PASS
		Normal	0.0000		
		3.4	0.0004		

Remark:

1. Normal Voltage = 3.8V.
2. The manufacturer declared that the EUT could work properly between voltage 3.4V ~ 4.20V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz	Jan. 07, 2014	Dec. 14, 2014	Jan. 06, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 09, 2014	Dec. 14, 2014	Jun. 08, 2015	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 17, 2014	Dec. 14, 2014	Jul. 16, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Sep. 27, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	Sep. 26, 2015	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 19, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	Aug. 18, 2015	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz	Mar. 17, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Oct. 21, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	Oct. 20, 2015	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Dec. 04, 2014 ~ Dec. 09, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Dec. 04, 2014 ~ Dec. 09, 2014	N/A	Radiation (03CH07-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 23, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	May 22, 2015	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00066583	1GHz~18GHz	Jul. 24, 2014	Dec. 04, 2014 ~ Dec. 09, 2014	Jul. 23, 2015	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.50**