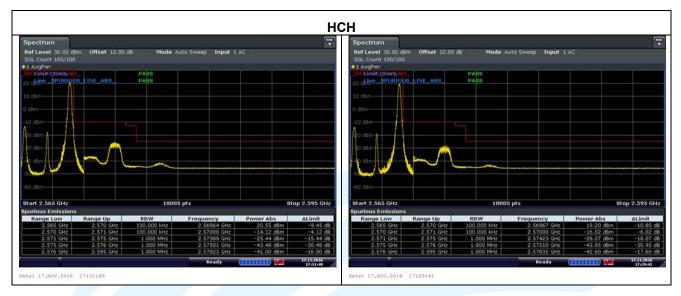
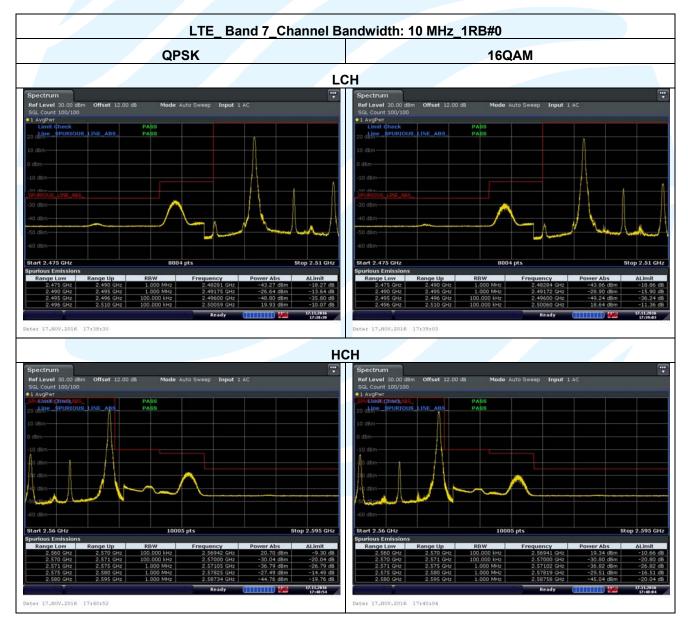
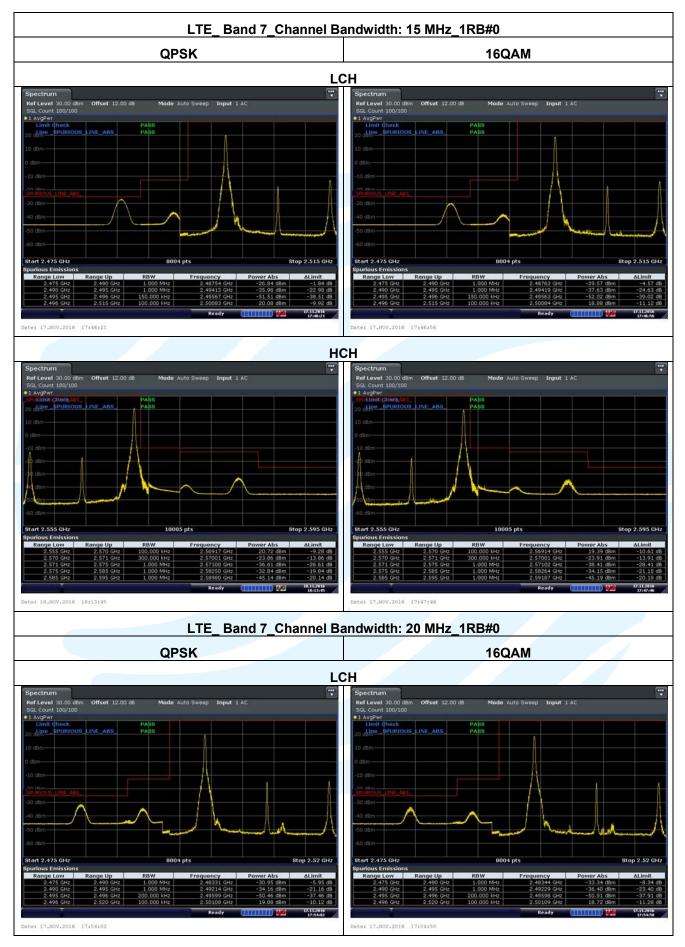
# Page 49 of 109

## Report No.: 1610280464RFM-3

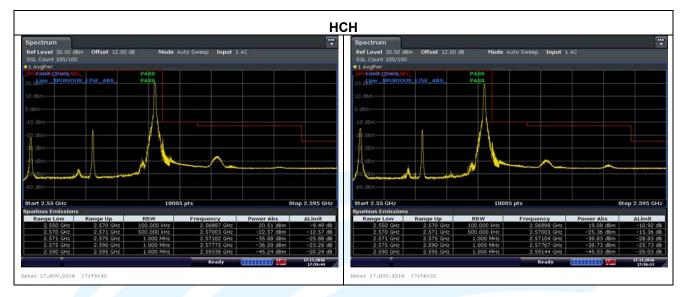


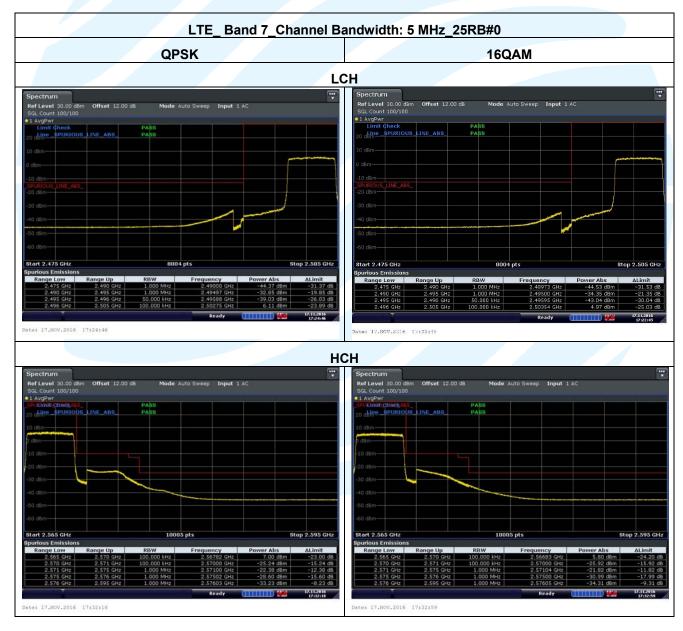


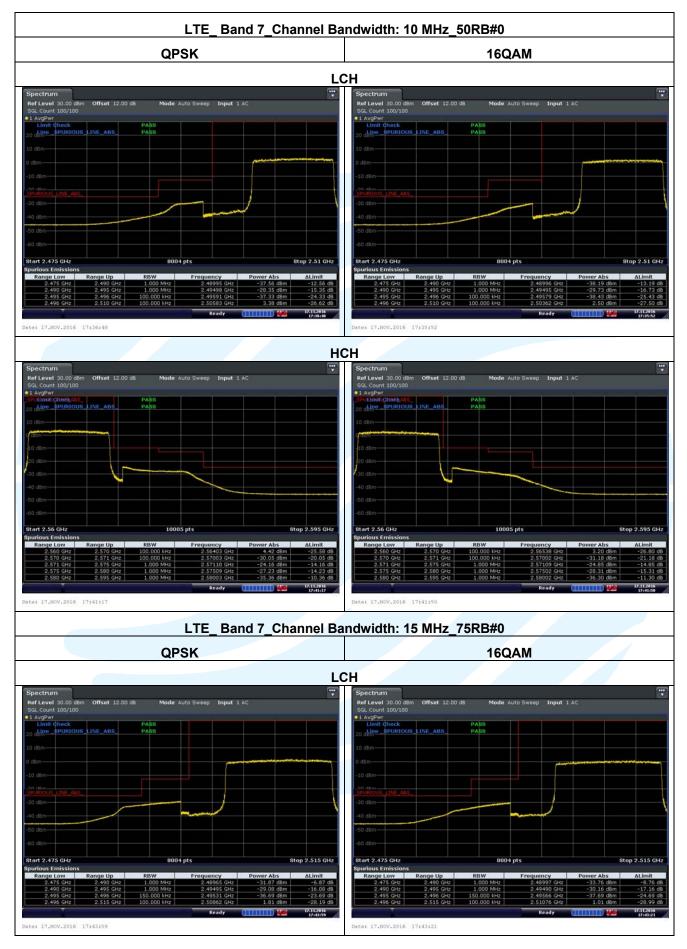


Page 51 of 109

## Report No.: 1610280464RFM-3

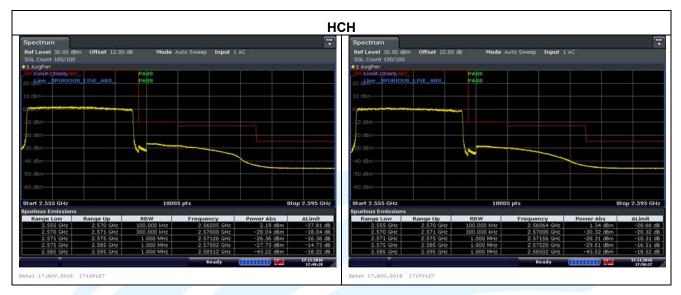


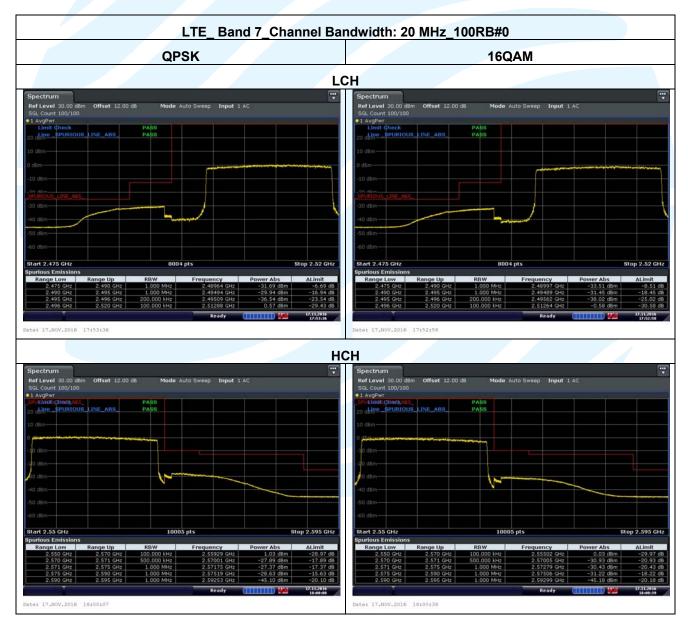




# Page 53 of 109

## Report No.: 1610280464RFM-3





# Uni⊗nTrust

Page 54 of 109

Report No.: 1610280464RFM-3

## 5.6 Spurious emissions at antenna terminals

Test Requirement: Test Method: Limit:	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(h)(1)/(m)(4) ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02 FCC 47 CFR Part 27.53(h)(1): Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915- 1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. The emission limit equal to $-13$ dBm. FCC 47 CFR Part 27.53(m)(4): For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or				
Test Procedure:	the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range. b. Measuring frequency range is from 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.				
	Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.				
Test Setup:	Refer to section 4.1.1(2) for details.				
Instruments Used:	Refer to section 3 for details				
Test Mode:	Link mode				
Test Results:	Pass				

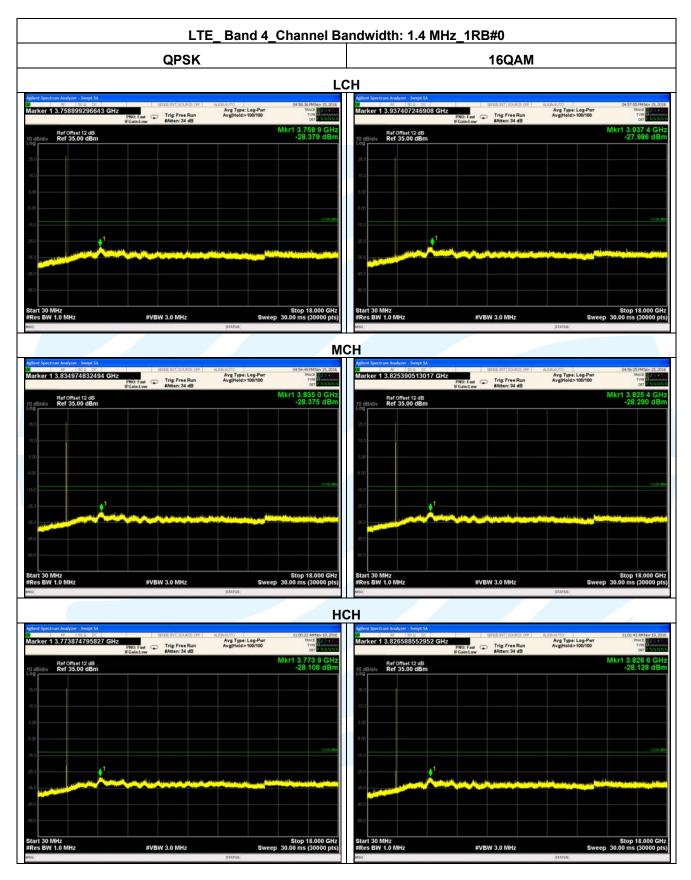
The test plot as follows:

## Spurious Emission Test Data (9 KHz ~ 30 MHz):

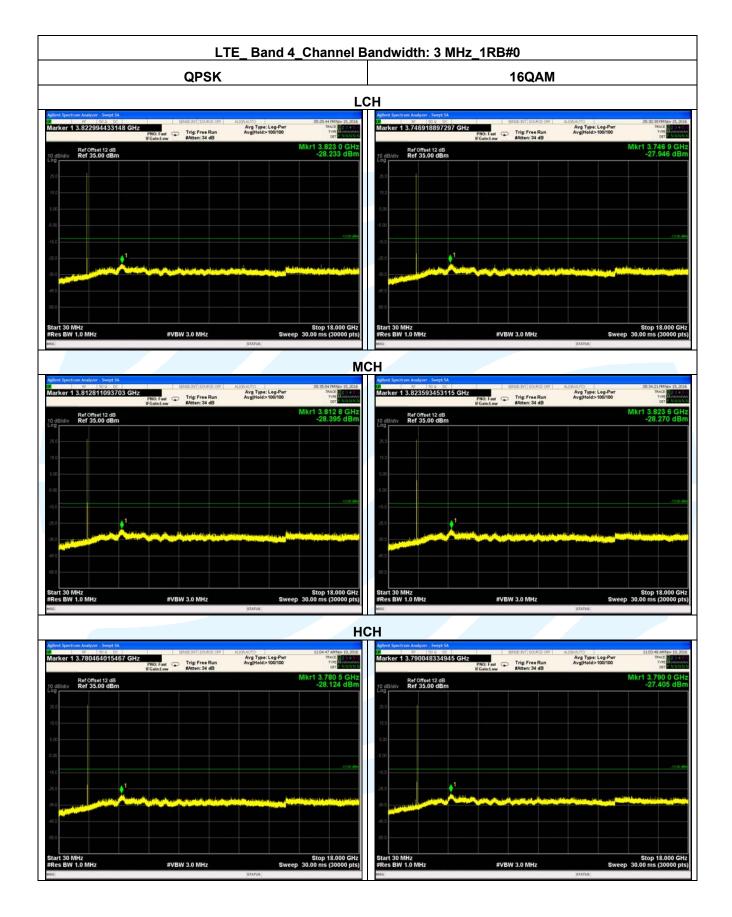
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



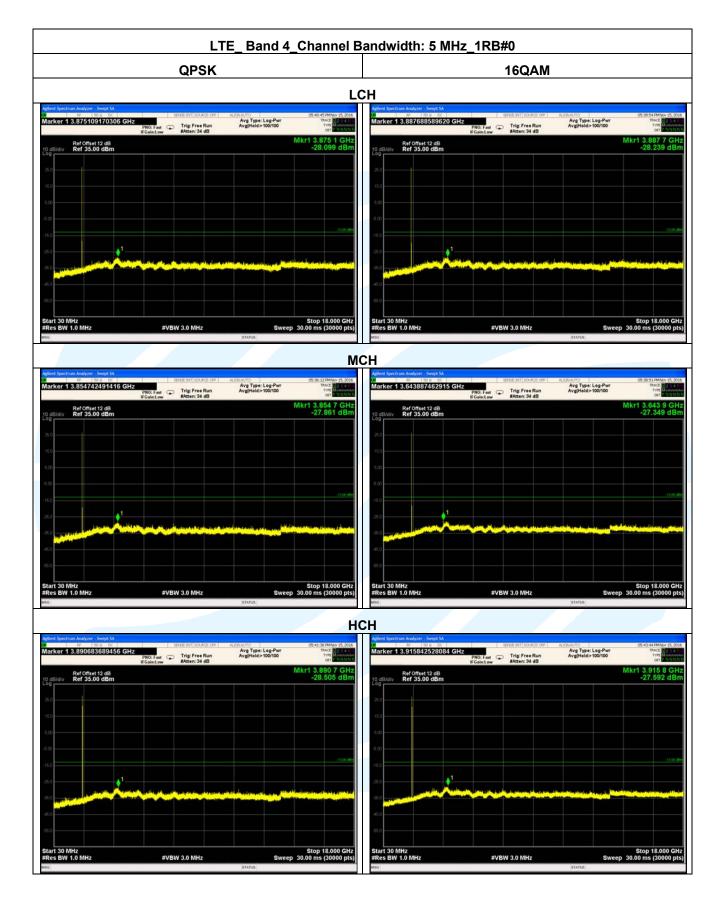
Spurious Emission Test Data (Above 30MHz):



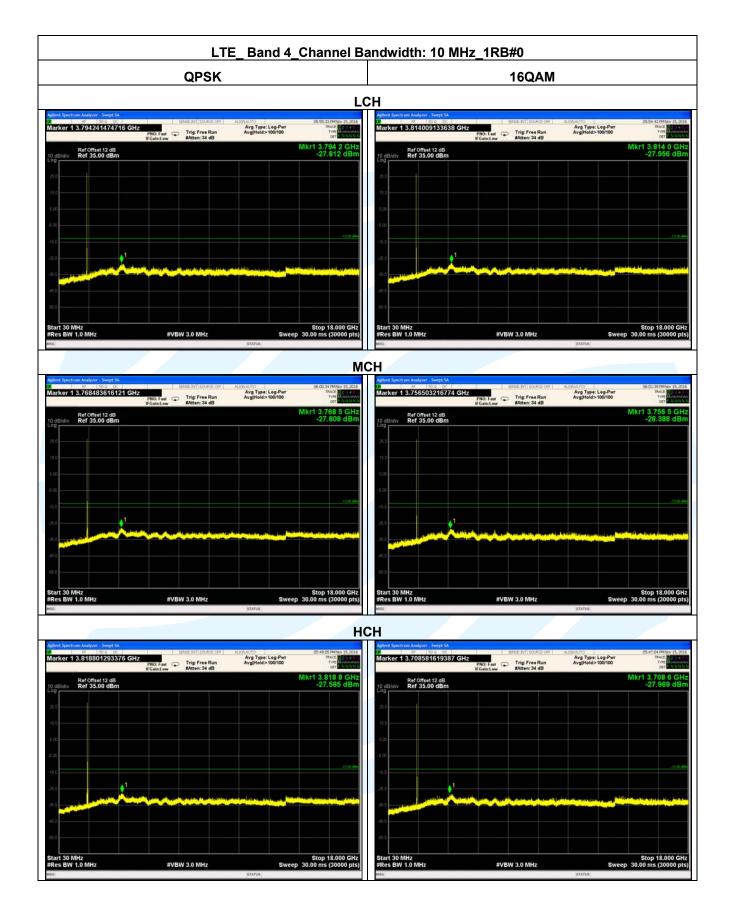




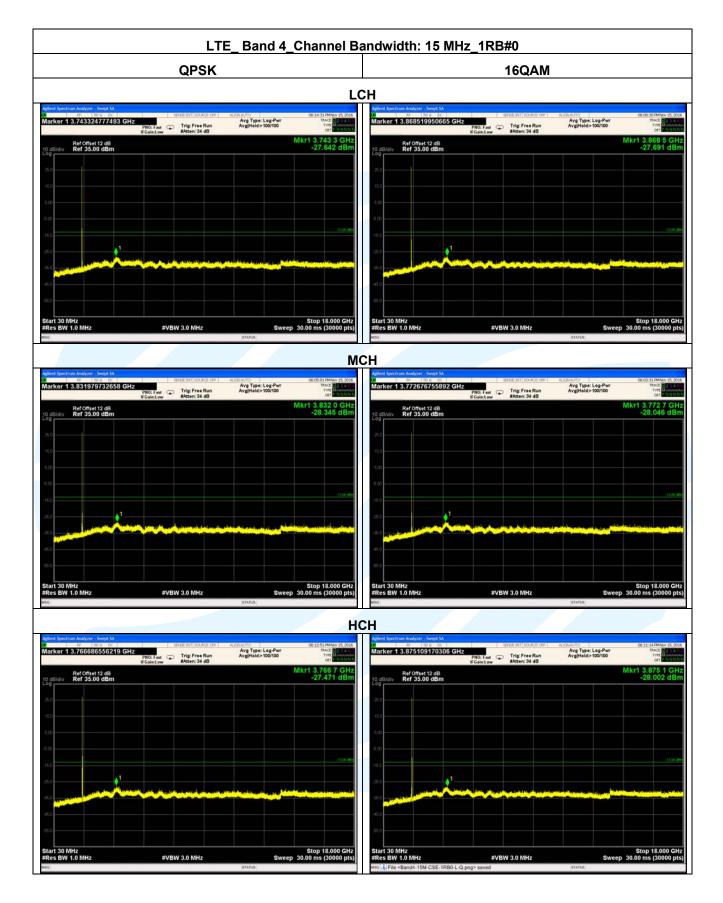




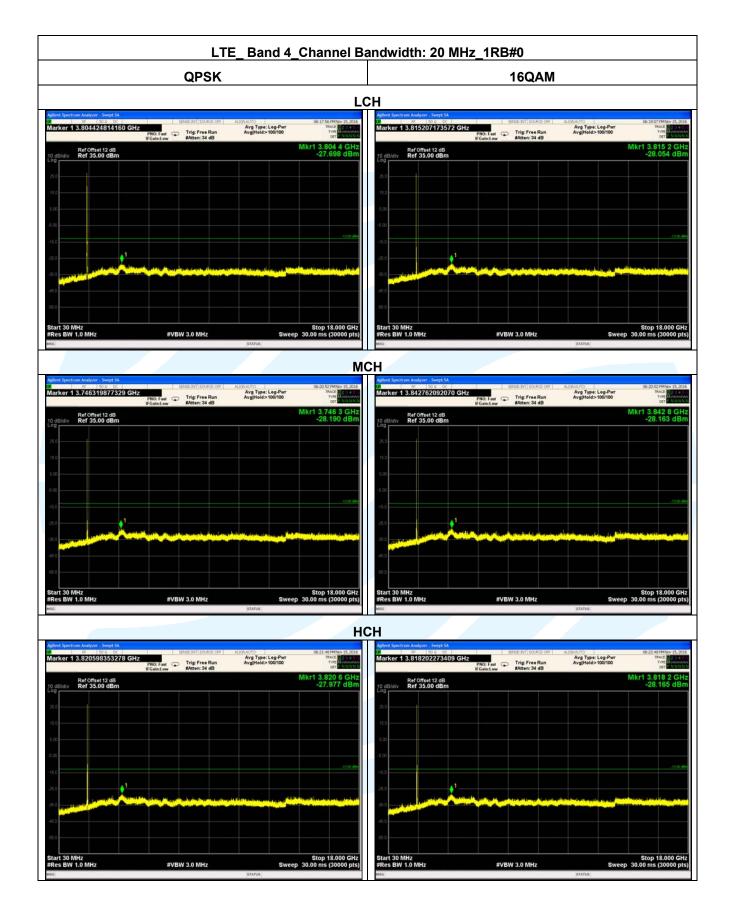




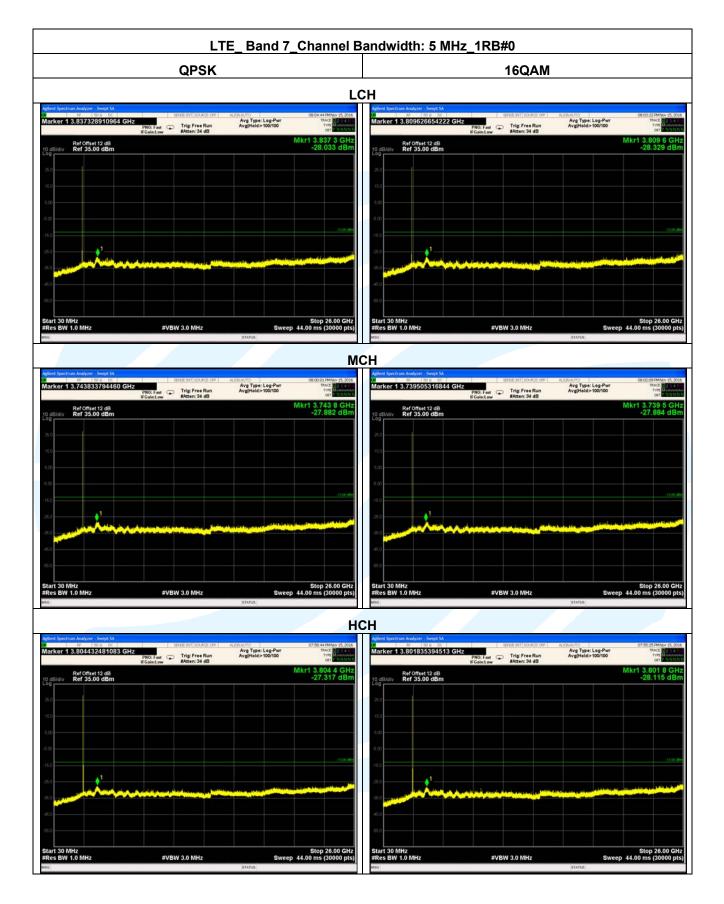




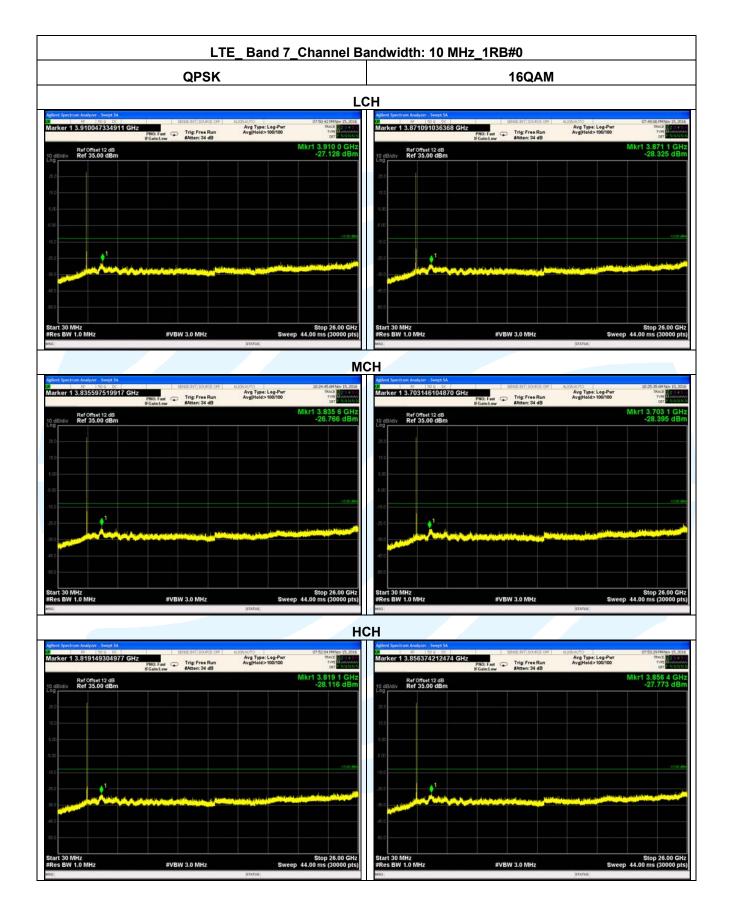




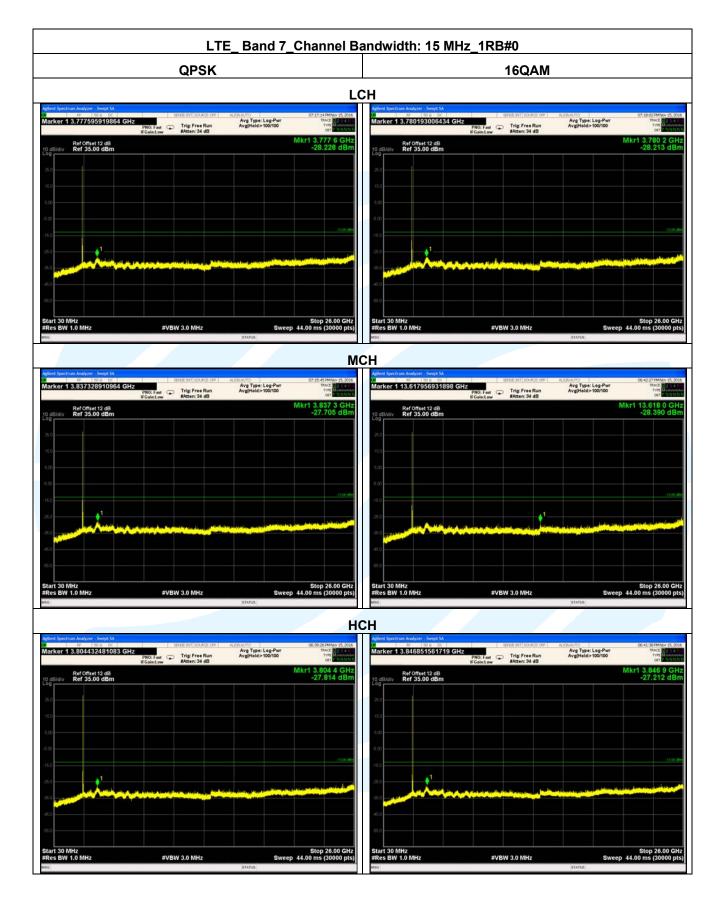




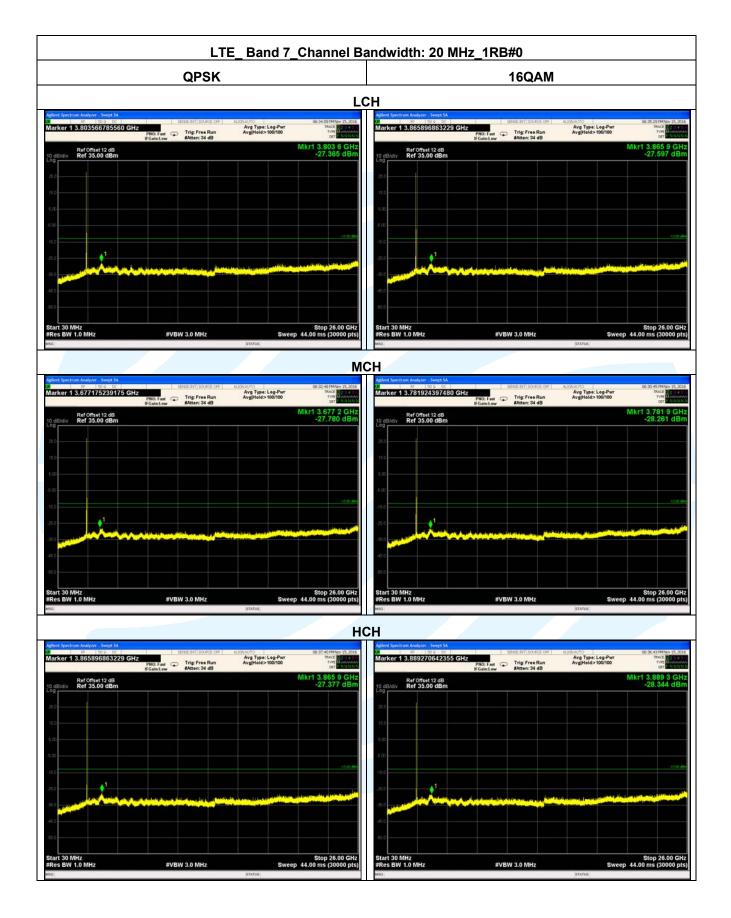












# Uni@nTrust Page 65 of 109

Report No.: 1610280464RFM-3

## th of enurious radiation

5.7 Field streng	th of spurious radiation				
Test Requirement:	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(h)/(m)				
Test Method:	ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02				
Limit:	FCC 47 CFR Part 27.53(h)(1): Except as otherwise specified below, for				
	operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920				
	MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and				
	2180-2200 bands, the power of any emission outside a licensee's frequency block				
	shall be attenuated below the transmitter power (P) in watts by at least 43 + 10				
	log10 (P) dB. The emission limit equal to –13 dBm.				
	FCC 47 CFR Part 27.53(m)(4): For mobile digital stations, the attenuation factor				
	shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all				
	frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P) dB$ on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall				
	not be less that $43 + 10 \log (P) dB$ on all frequencies between 2490.5 MHz and				
	2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service				
	licensees operating on frequencies below 2495 MHz may also submit a				
	documented interference complaint against BRS licensees operating on channel				
	BRS Channel 1 on the same terms and conditions as adjacent channel BRS or				
	EBS licensees.				
Test Procedure:	1. Scan up to 10 <sup>th</sup> harmonic, find the maximum radiation frequency to measure.				
	2. The technique used to find the Spurious Emissions of the transmitter was the				
	antenna substitution method. Substitution method was performed to				
	determine the actual ERP/EIRP emission levels of the EUT.				
	Test procedure as below:				
	1) The EUT was powered ON and placed on a 1.5m high table at a 3 meter				
	fully Anechoic Chamber. The antenna of the transmitter was extended to its				
	maximum length. Modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.				
	2) The EUT was set 3 meters (above 18GHz the distance is 1 meter) away				
	from the interference-receiving antenna, which was mounted on the top of a				
	variable-height antenna tower.				
	3) The disturbance of the transmitter was maximized on the test receiver				
	display by raising and lowering from 1m to 4m the receive antenna and by				
	rotating through 360° the turntable. After the fundamental emission was				
	maximized, a field strength measurement was made.				
	4) Steps 1) to 3) were performed with the EUT and the receive antenna in both				
	vertical and horizontal polarization.				
	5) The transmitter was then removed and replaced with another antenna. The				
	center of the antenna was approximately at the same location as the center				
	of the transmitter.				
	6) A signal at the disturbance was fed to the substitution antenna by means of				
	a non-radiating cable. With both the substitution and the receive antennas				
	horizontally polarized, the receive antenna was raised and lowered to obtain				
	a maximum reading at the test receiver. The level of the signal generator				
	was adjusted until the measured field strength level in step 3) is obtained for this set of conditions.				
	<ol> <li>The output power into the substitution antenna was then measured.</li> </ol>				
	<ul><li>8) Steps 6) and 7) were repeated with both antennas polarized.</li></ul>				
	<ul><li>9) Calculate power in dBm by the following formula:</li></ul>				
	ERP(dBm) = Pg(dBm) - cable loss (dB) + antenna gain (dBd)				
	ERP(dBm) = Pg(dBm) - cable loss (dB) + antenna gain (dBd) EIRP(dBm) = Pg(dBm) - cable loss (dB) + antenna gain (dBi)				
	EIRP=ERP+2.15dB				
	where: Bo is the generator output power into the substitution antenna				
	Pg is the generator output power into the substitution antenna.				
	10) Test the EUT in the lowest channel, the middle channel the Highest channel				



11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, and found the Z axis positioning which it is worse case.

12) Repeat above procedures until all frequencies measured was complete.

**Receiver Setup:** 

Frequency	Detector	RBW	VBW	Remark
0.009MHz-30MHz	Peak	10kHz	30kHz	Peak
30MHz-1GHz	Peak	100kHz	300kHz	Peak
Above 1GHz	Peak	1MHz	3MHz	Peak

**Test Setup: Instruments Used: Test Mode:** 

Refer to section 4.1.2 for details.

Refer to section 3 for details Link mode

Pass **Test Results:** 

Test Data:

## 5.7.1 Spurious Emission Test Data (9 KHz ~ 30 MHz)

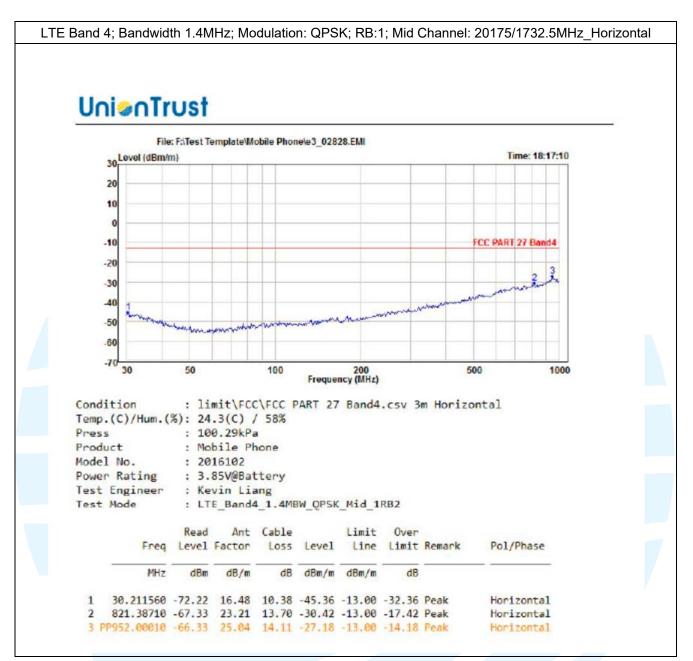
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

## 5.7.2 Spurious Emission Test Data (Above 18 GHz)

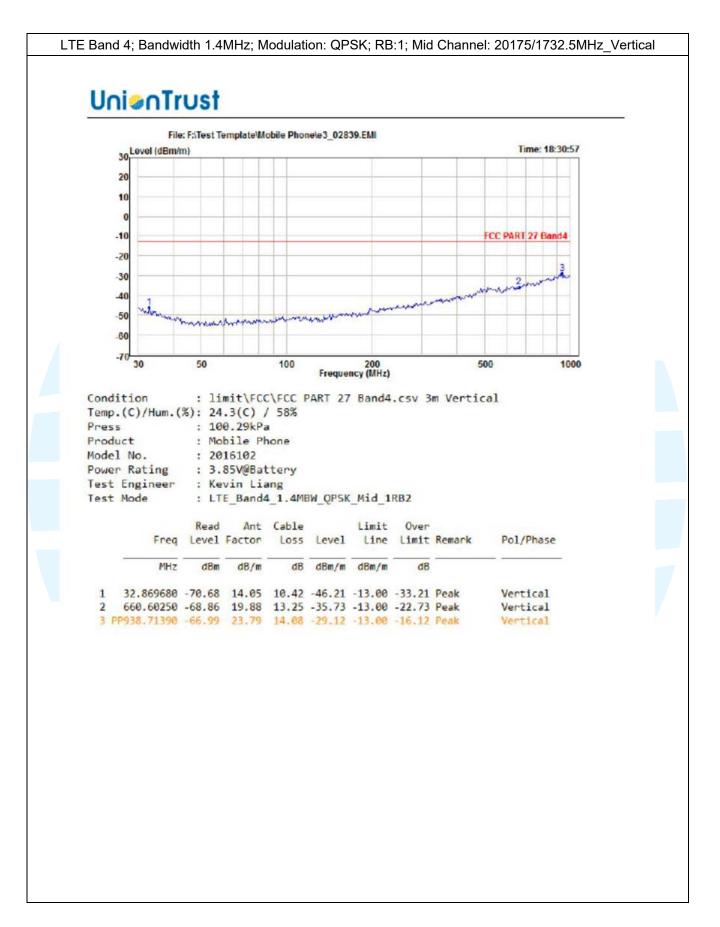
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.



## 5.7.3 Spurious Emission Test Data (30 MHz ~ 1 GHz)





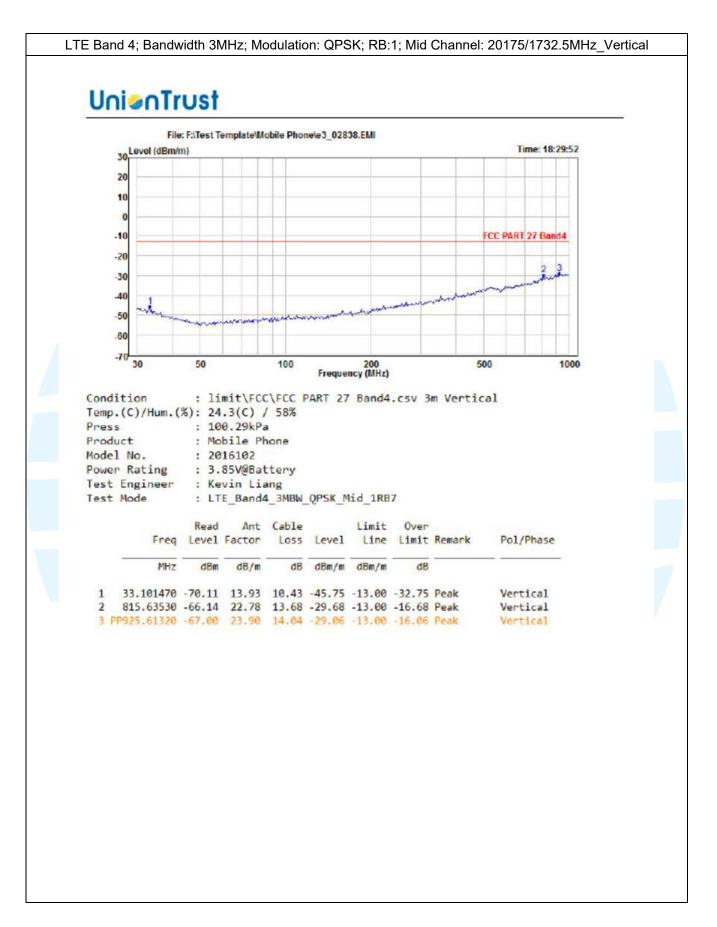




## Page 69 of 109

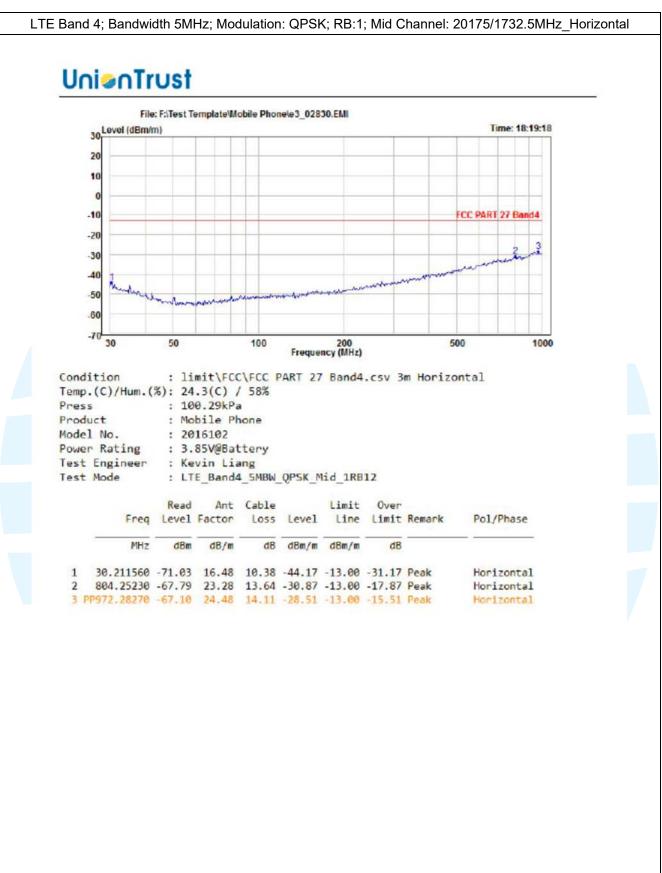




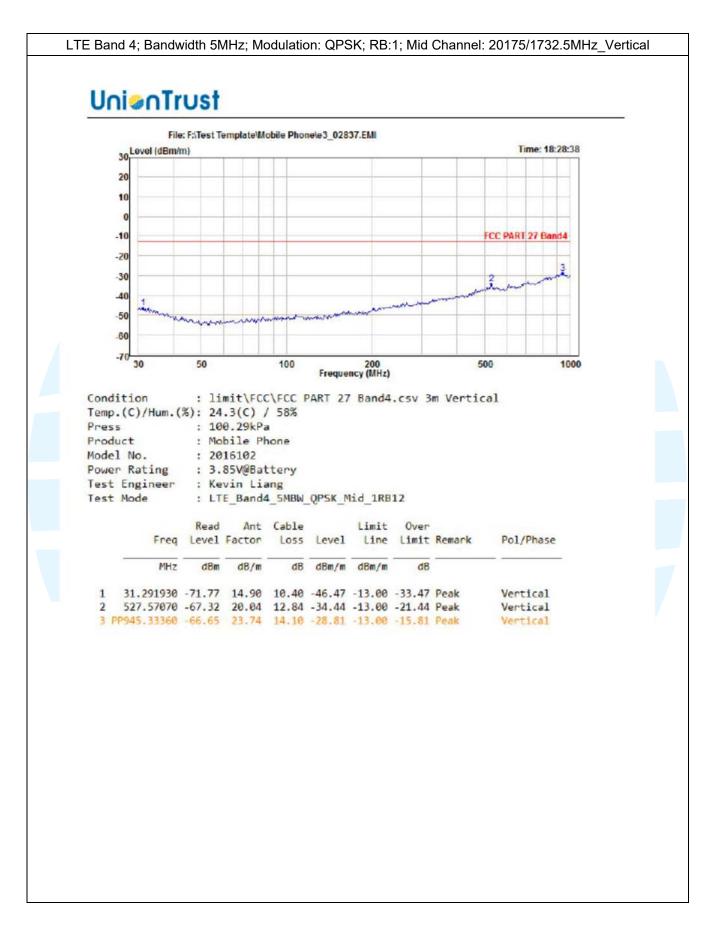




## Page 71 of 109





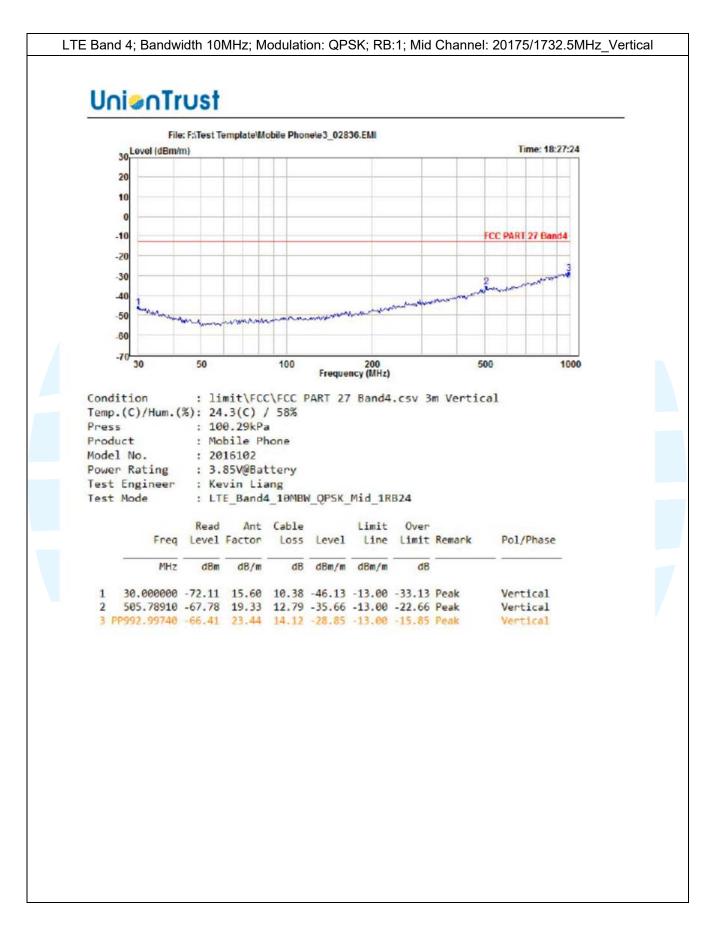




## Page 73 of 109

LTE Band 4; Bandwidth 10MHz; Modulation: QPSK; RB:1; Mid Channel: 20175/1732.5MHz Horizontal **Uni@nTrust** File: F:\Test Template\Mobile Phone\e3 02831.EMI 30 Level (dBm/m) Time: 18:20:27 20 10 0 -10 CC PART 27 B -20 3 -30 -40 -50 -60 -70 30 200 Frequency (MHz) 1000 50 100 500 Condition : limit\FCC\FCC PART 27 Band4.csv 3m Horizontal Temp.(C)/Hum.(%): 24.3(C) / 58% Press : 100.29kPa Product : Mobile Phone Model No. : 2016102 Power Rating : 3.85V@Battery Test Engineer : Kevin Liang : LTE Band4 10MBW QPSK Mid 1RB24 Test Mode Ant Cable Read Limit Over Freq Level Factor Loss Level Line Limit Remark Pol/Phase MHZ dBm dB/m dB dBm/m dBm/m dB 32.183990 -71.43 15.40 10.41 -45.62 -13.00 -32.62 Peak Horizontal 1 520.20790 -67.94 19.53 12.82 -35.59 -13.00 -22.59 Peak 2 Horizontal 3 PP952.00010 -67.61 25.04 14.11 -28.46 -13.00 -15.46 Peak Horizontal



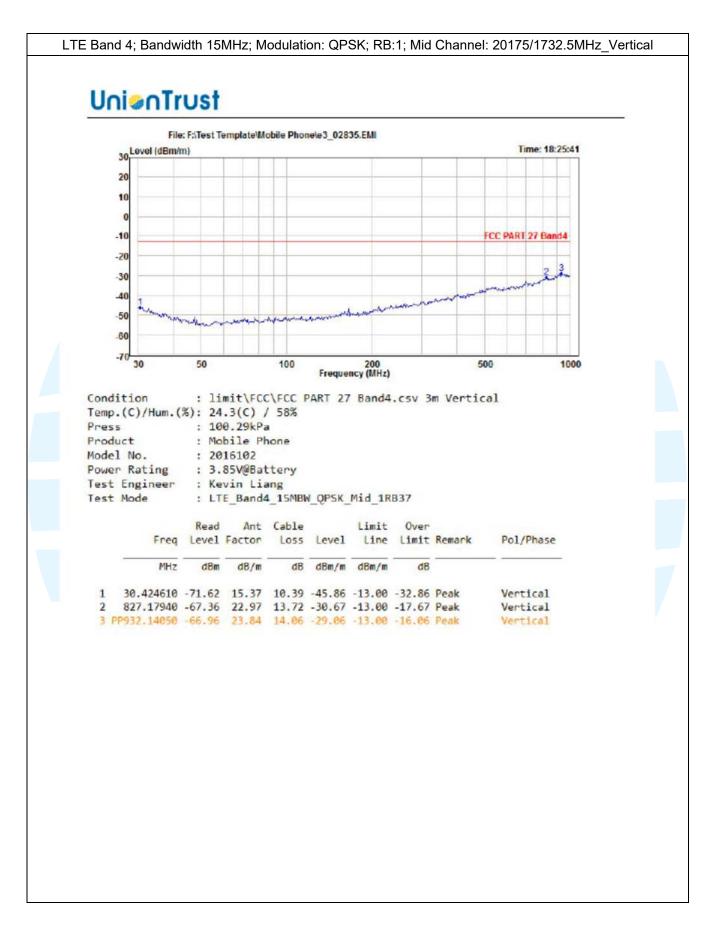




## Page 75 of 109

LTE Band 4; Bandwidth 15MHz; Modulation: QPSK; RB:1; Mid Channel: 20175/1732.5MHz Horizontal **Uni@nTrust** File: F:\Test Template\Mobile Phone\e3 02832.EMI 30 Level (dBm/m) Time: 18:21:22 20 10 0 -10 CC PART 27 B -20 -30 -40 -50 -60 -70 30 200 Frequency (MHz) 1000 50 100 500 Condition : limit\FCC\FCC PART 27 Band4.csv 3m Horizontal Temp.(C)/Hum.(%): 24.3(C) / 58% Press : 100.29kPa Product : Mobile Phone Model No. : 2016102 Power Rating : 3.85V@Battery Test Engineer : Kevin Liang : LTE Band4 15MBW QPSK Mid 1RB37 Test Mode Ant Cable Read Limit Over Freq Level Factor Loss Level Line Limit Remark Pol/Phase MHZ dBm dB/m dB dBm/m dBm/m dB 33.101470 -71.91 14.89 10.43 -46.59 -13.00 -33.59 Peak Horizontal 1 418.37840 -67.96 17.18 12.49 -38.29 -13.00 -25.29 Peak 2 Horizontal 3 PP952.00010 -67.06 25.04 14.11 -27.91 -13.00 -14.91 Peak Horizontal

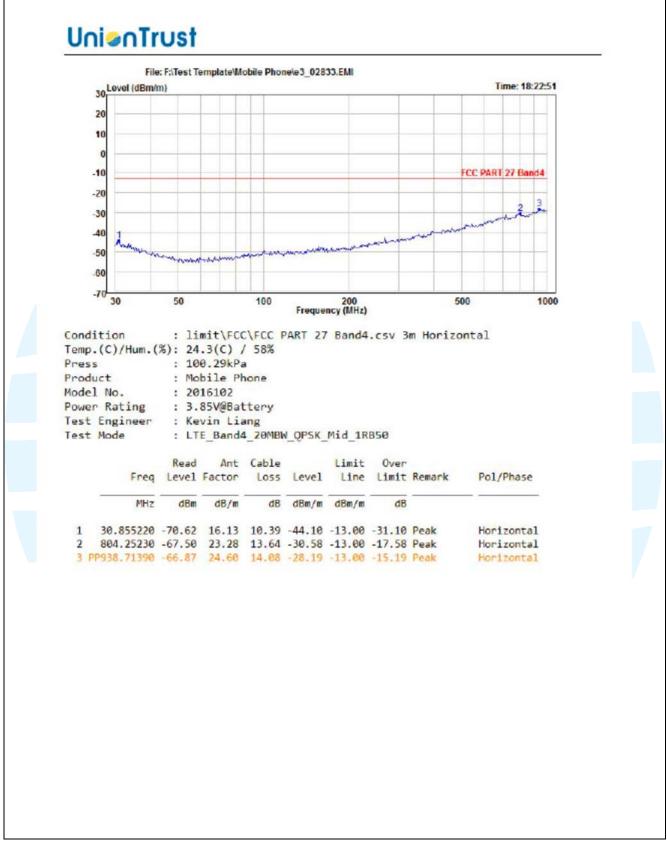




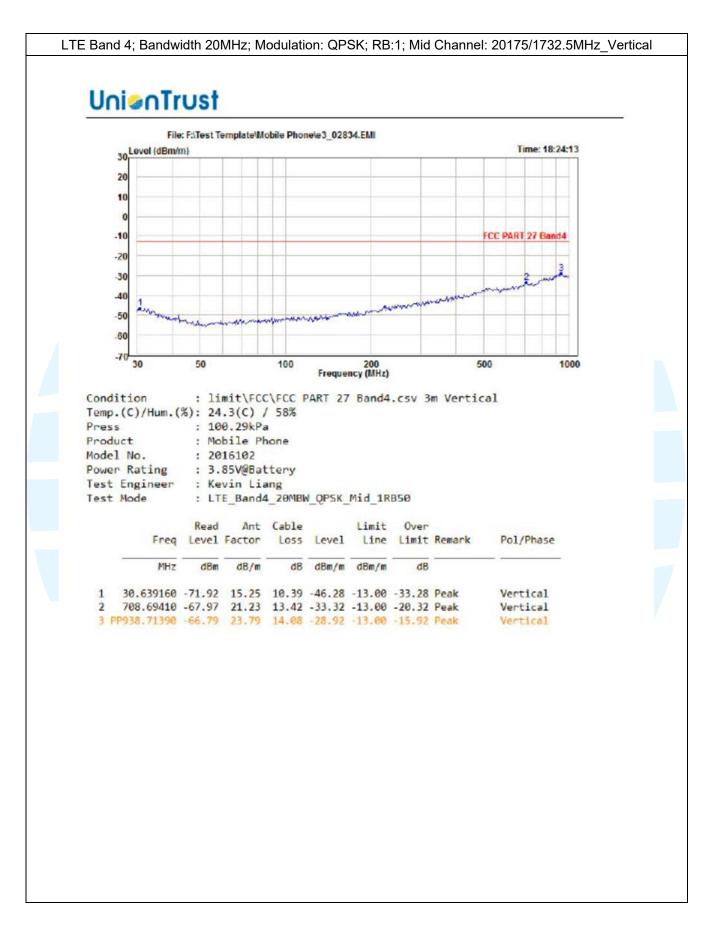


# Page 77 of 109

LTE Band 4; Bandwidth 20MHz; Modulation: QPSK; RB:1; Mid Channel: 20175/1732.5MHz\_Horizontal

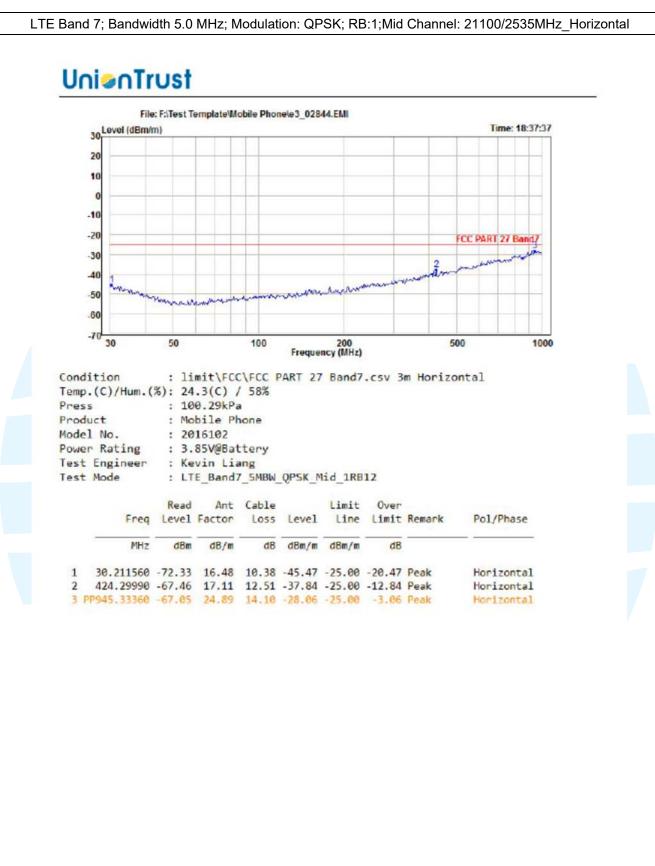




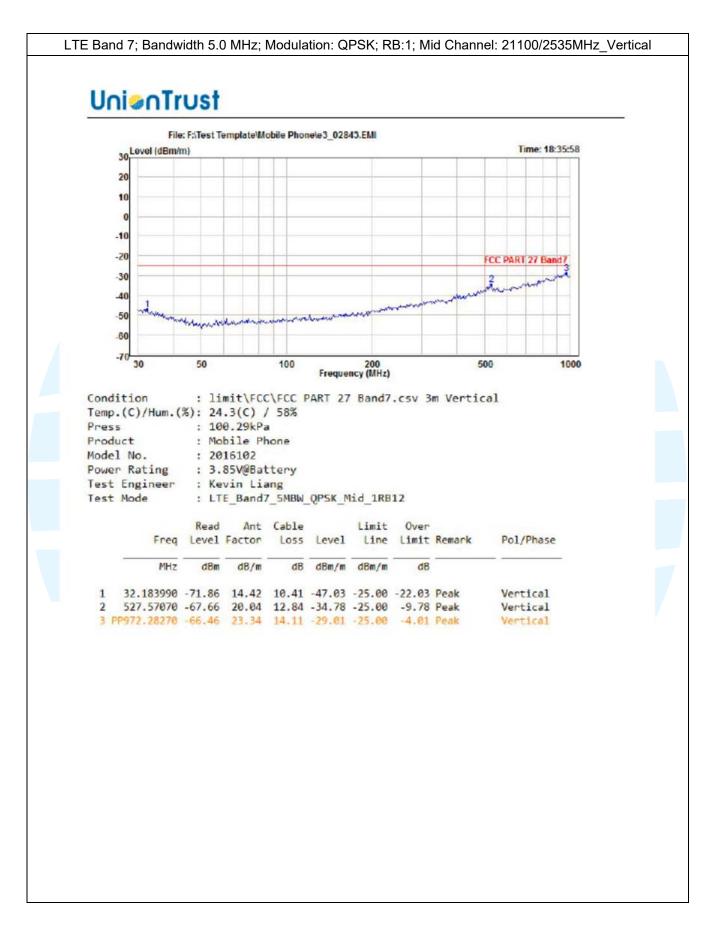




# Page 79 of 109





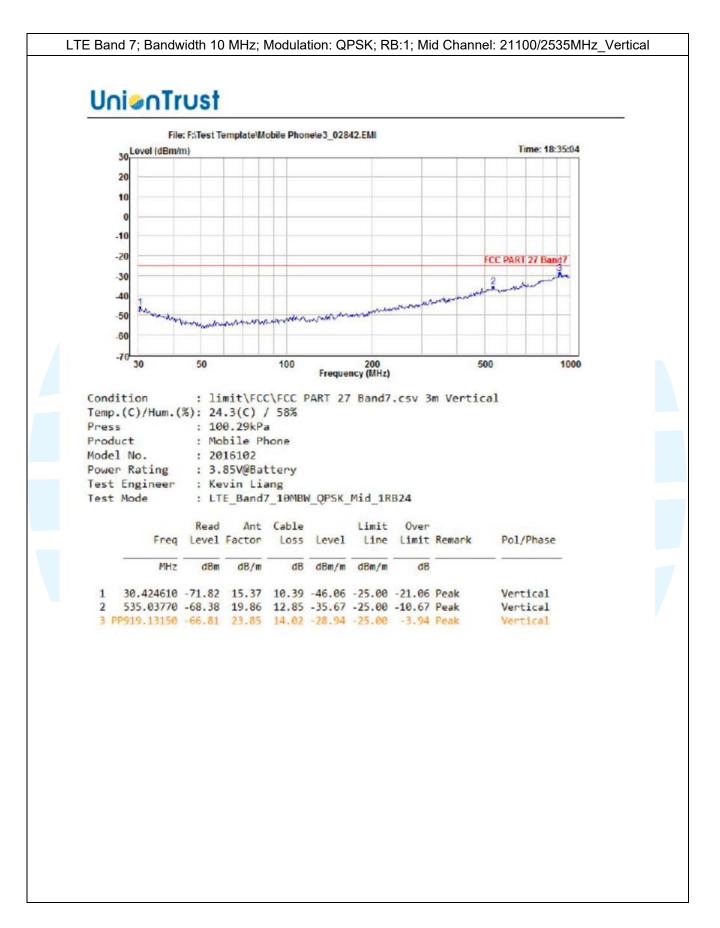




## Page 81 of 109

LTE Band 7; Bandwidth 10 MHz; Modulation: QPSK; RB:1;Mid Channel: 21100/2535MHz Horizontal **Uni@nTrust** File: F:\Test Template\Mobile Phone\e3 02845.EMI 30 Level (dBm/m) Time: 18:38:33 20 10 0 -10 -20 CC PART 27 -30 -40 -50 -60 -70 30 200 Frequency (MHz) 1000 50 100 500 Condition : limit\FCC\FCC PART 27 Band7.csv 3m Horizontal Temp.(C)/Hum.(%): 24.3(C) / 58% Press : 100.29kPa Product : Mobile Phone Model No. : 2016102 Power Rating : 3.85V@Battery Test Engineer : Kevin Liang : LTE Band7 10MBW QPSK Mid 1RB24 Test Mode Ant Cable Read Limit Over Freq Level Factor Loss Level Line Limit Remark Pol/Phase MHZ dBm dB/m dB dBm/m dBm/m dB 30.639160 -71.89 16.25 10.39 -45.25 -25.00 -20.25 Peak Horizontal 1 718.72460 -67.57 22.45 13.42 -31.70 -25.00 -6.70 Peak 2 Horizontal 3 PP1000.0000 -67.59 24.40 14.12 -29.07 -25.00 -4.07 Peak Horizontal







## Page 83 of 109

