FCC Radio Test Report

FCC ID: 2AB7X-WISEPOSPRO

This report concerns: Original Grant

Project No.	: 1906H001
Equipment	: WisePOS Pro
Test Model	: WSP71
Series Model	: WSP72, WSP73
Applicant	: BBPOS International Limited
Address	: Suite 1903-04, 19/F, Tower 2, Nina Tower, No. 8 Yeung Uk Road, Tsuen Wan, N.T. HK

Date of Receipt	: Jun. 25, 2019
Date of Test	: Jun. 25, 2019 ~ Aug. 28, 2019
Issued Date	: Sep. 12, 2019
Tested by	: BTL Inc.

Technical Manager : Krain. Wu
(Krain Wu)

Authorized Signatory : young chai
(Young Chai)

BTL INC.

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Certificate #5123.03

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.
Please note that the measurement uncertainty is provided for informational purpose only and is not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Sep. 12, 2019

1. GENERAL SUMMARY

Equipment	:	WisePOS Pro
Brand Name	:	BBPOS
Test Model	:	WSP71
Series Model	:	WSP72, WSP73
Applicant	:	BBPOS International Limited
Manufacturer	:	BBPOS International Limited
Address	:	Suite 1903-04, 19/F, Tower 2, Nina Tower, No. 8 Yeung Uk Road, Tsuen Wan, N.T. HK
Date of Test	:	Jun. 25, 2019 ~ Aug. 28, 2019
Test Sample	:	Engineering Sample No.: SH19070367
Standard(s)	:	47 CFR FCC Part 24 Subpart E 47 CFR FCC Part 2 ANSI/TIA/EIA-603-E-2016 KDB 971168 D01 Power Meas License Digital Systems v03r01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-2-1906H001) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

Test results included in this report are only for the WCDMA Band II and LTE Band 2 part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 24 Subpart E& Part 2			
Standard(s) Section	Test Item	Verdict	Tested By
2.1046 & 24.232(c)	Equivalent Isotropic Radiated Power	PASS	Summer Xu
2.1049	Occupied Bandwidth	PASS	Summer Xu
2.1051 & 24.238(a)	Conducted Spurious Emissions	PASS	Summer Xu
2.1053 & 24.238(a)	Radiated Spurious Emissions	PASS	Summer Xu
24.238(a)	Band Edge Measurements	PASS	Summer Xu
24.232(d)	Peak To Average Ratio	PASS	Summer Xu
2.1055 & 24.235	Frequency Stability	PASS	Summer Xu

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China
BTL's Test Firm Registration Number for FCC: 476765
BTL's Designation Number for FCC: CN1241

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) k=1.96 or k=2(which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y).

The BTL measurement uncertainty as below table:

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
SH-CB01	CISPR	9KHz ~ 30MHz	V	3.79
		9KHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.88
		30MHz ~ 200MHz	H	4.14
		200MHz ~ 1,000MHz	V	4.62
		200MHz ~ 1,000MHz	H	4.80

Test Site	Method	Measurement Frequency Range	U,(dB)
SH-CB01	CISPR	1GHz ~ 6GHz	4.40
		6GHz ~ 18GHz	4.86

Test Site	Method	Measurement Frequency Range	U,(dB)
SH-CB01	CISPR	18 ~ 26.5 GHz	3.64
		26.5 ~ 40 GHz	3.78

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	WisePOS Pro		
Brand Name	BBPOS		
Test Model	WSP71		
Series Model	WSP72, WSP73		
Model Difference(s)	WSP71: WisePOS Pro device only; WSP72: WisePOS Pro device with hand strap; WSP73: WisePOS Pro device with pistol grip.		
Software Version	970ADGAAK2_BB_V009		
Hardware Version	7MD_V01		
Antenna Type	External Antenna		
Antenna Gain	WCDMA II	2.2 dBi	
	LTE Band 2	2.2 dBi	
Modulation Type	WCDMA		UL: QPSK DL: QPSK
	WCDMA(HSDPA/HSUPA)		16QAM
	LTE		UL: QPSK,16QAM DL: QPSK,16QAM
Operation Frequency	WCDMA Band II		1852.4MHz ~ 1907.6MHz
	LTE Band 2 (Channel Bandwidth: 1.4MHz)		1850.7MHz ~ 1909.3MHz
	LTE Band 2 (Channel Bandwidth: 3MHz)		1851.5MHz ~ 1908.5MHz
	LTE Band 2 (Channel Bandwidth: 5MHz)		1852.5MHz ~ 1907.5MHz
	LTE Band 2 (Channel Bandwidth: 10MHz)		1855.0MHz ~ 1905.0MHz
	LTE Band 2 (Channel Bandwidth: 15MHz)		1857.5MHz ~ 1902.5MHz
	LTE Band 2 (Channel Bandwidth: 20MHz)		1860.0MHz ~ 1900.0MHz

Max. EIRP Power	WCDMA	QPSK	24.59	dBm
	WCDMA_HSDPA	16QAM	23.23	dBm
	WCDMA_HSUPA	16QAM	23.36	dBm
	LTE Band 2 (Channel Bandwidth: 1.4MHz)	QPSK	24.41	dBm
		16QAM	23.70	dBm
	LTE Band 2 (Channel Bandwidth: 3MHz)	QPSK	24.45	dBm
		16QAM	23.80	dBm
	LTE Band 2 (Channel Bandwidth: 5MHz)	QPSK	24.41	dBm
		16QAM	23.85	dBm
	LTE Band 2 (Channel Bandwidth: 10MHz)	QPSK	24.48	dBm
		16QAM	23.80	dBm
	LTE Band 2 (Channel Bandwidth: 15MHz)	QPSK	24.41	dBm
		16QAM	23.74	dBm
	LTE Band 2 (Channel Bandwidth: 20MHz)	QPSK	24.47	dBm
		16QAM	23.96	dBm
Power Source	1. DC Voltage supplied from AC/DC adapter 2. Supplied from Li-ion battery pack			
Power Rating	1. I/P: 100-240V ~ 50/60Hz 1.0A O/P: 5V⎓3A/9V⎓3A 2. 6400mAH 3.8V			

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. WCDMA (UL:QPSK; DL: QPSK) mode was found to be the worst case and recorded.

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

Following channel(s) was (were) selected for the final test as listed below:

WCDMA MODE			
Test Item	Available Channel	Tested Channel	Mode
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA,HSUPA
Output Power	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA,HSUPA
Conducted Emission	9262 to 9538	9400	WCDMA
Radiated Emission	9262 to 9538	9400	WCDMA
Band Edge	9262 to 9538	9262, 9538	WCDMA
Peak to Average Ratio	9262 to 9538	9262, 9400, 9538	WCDMA
Frequency Stability	9262 to 9538	9400	WCDMA

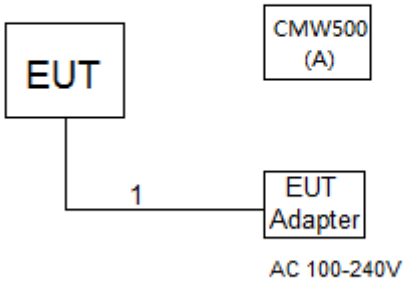
LTE BAND 2 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	18615 to 19185	18615 , 18900, 19185	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Occupied Bandwidth	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	6RB
	18615 to 19185	18615 , 18900, 19185	3MHz	QPSK, 16QAM	15RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	25RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	50RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	75 RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	100RB
Conducted Emission	18607 to 19193	18900	1.4 MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB
Radiated Emission	18607 to 19193	18900	1.4 MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB
Band Edge	18607 to 19193	18607	1.4MHz	QPSK	1RB/6RB
		19193	1.4MHz	QPSK	
	18615 to 19185	18615	3MHz	QPSK	1RB/15RB
		19185	3MHz	QPSK	
	18625 to 19175	18625	5MHz	QPSK	1RB/25RB
		19175	5MHz	QPSK	
	18650 to 19150	18650	10MHz	QPSK	1RB/50RB
		19150	10MHz	QPSK	
	18675 to 19125	18675	15MHz	QPSK	1RB/75RB
		19125	15MHz	QPSK	
	18700 to 19100	18700	20MHz	QPSK	1RB/100RB
		19100	20MHz	QPSK	

LTE BAND 2 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Peak To Average Ratio	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1RB
	18615 to 19185	18615 , 18900, 19185	3MHz	QPSK, 16QAM	1RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1RB
Frequency Stability	18607 to 19193	18900	1.4MHz	QPSK	1RB
	18615 to 19185	18900	3MHz	QPSK	1RB
	18625 to 19175	18900	5MHz	QPSK	1RB
	18650 to 19150	18900	10MHz	QPSK	1RB
	18675 to 19125	18900	15MHz	QPSK	1RB
	18700 to 19100	18900	20MHz	QPSK	1RB

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP	24.5°C, 53%RH	DC 4.0V
Output Power	24.5°C, 53%RH	DC 4.0V
Occupied Bandwidth	24.5°C, 53%RH	DC 4.0V
Conducted Emission	24.5°C, 53%RH	DC 4.0V
Radiated Emission	22°C, 55%RH	AC 120V/60Hz
Band Edge	24.5°C, 53%RH	DC 4.0V
Peak to Average Ratio	24.5°C, 53%RH	DC 4.0V
Frequency Stability	Normal and Extreme	Normal and Extreme

3.3 BLOCKDIGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	CMW500	N/A	N/A	131463

Item	Cable Type	Shielded Type	Ferrite Core	Length
A	DC Cable	NO	NO	1m

4. TEST RESULT

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMIT

Mobile / Portable station are limited to 2 watts e.i.r.p.

4.1.2 TEST PROCEDURE

EIRP:

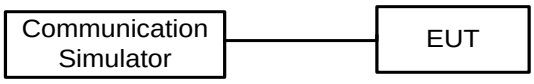
EIRP= Output Power +Antenan gain

Output Power:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TEST SETUP LAYOUT

Output Power Measurement



4.1.4 TEST DEVIATION

No deviation

4.1.5 TEST RESULTS

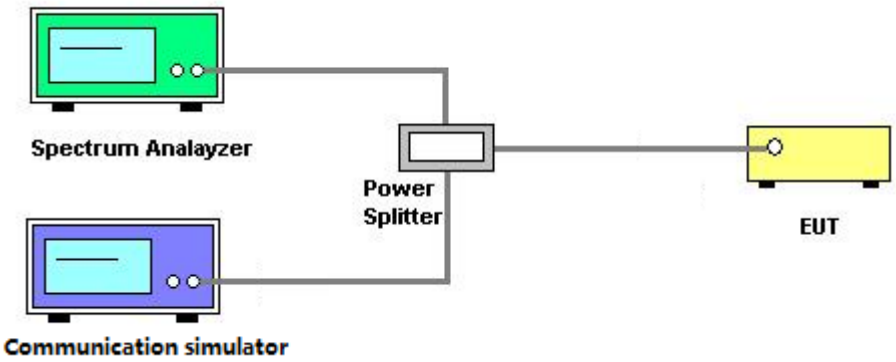
Please refer to the Appendix A.

4.2 OCCUPIED BANDWIDTH MEASUREMENT

4.2.1 TEST PROCEDURE

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.

4.2.2 TEST SETUP LAYOUT



4.2.3 TEST DEVIATION

No deviation

4.2.4 TEST RESULTS

Please refer to the Appendix B.

4.3 CONDUCTED EMISSIONS MEASUREMENT

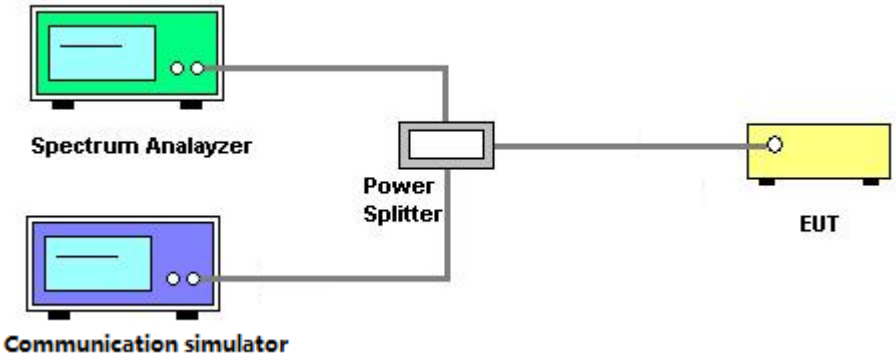
4.3.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

4.3.2 TEST PROCEDURES

1. The testing follows FCC KDB 971168 v03r01 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set RBW>=1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

4.3.3 TEST SETUP LAYOUT



4.3.4 TEST DEVIATION

No deviation

4.3.5 TEST RESULTS

Please refer to the Appendix C.

4.4 RADIATED EMISSIONS MEASUREMENT

4.4.1 LIMIT

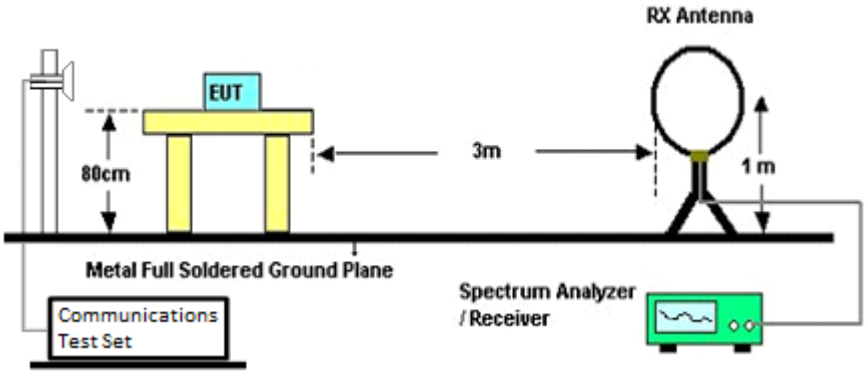
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

4.4.2 TEST PROCEDURES

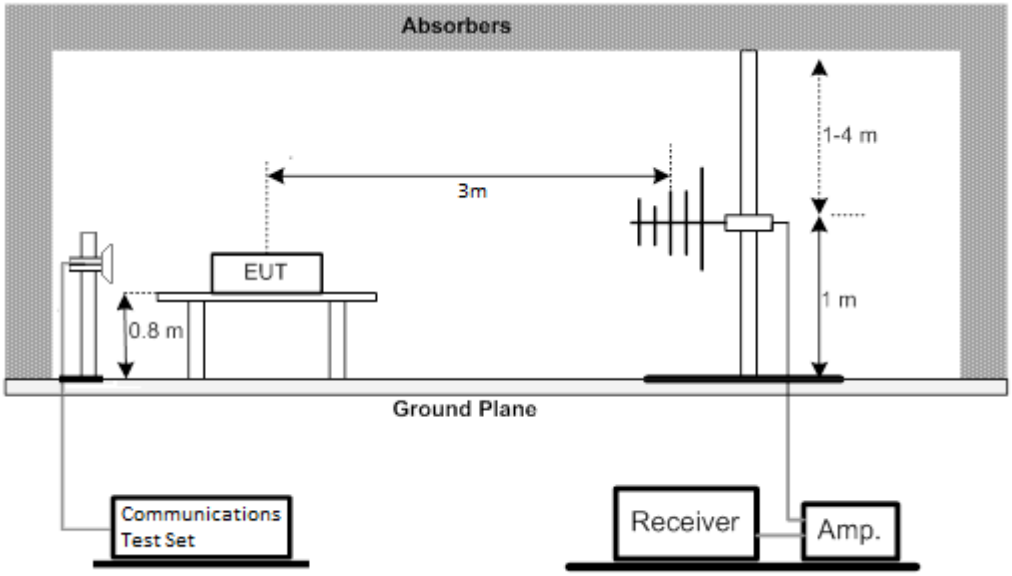
1. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
3. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
4. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.4.3 TEST SETUP LAYOUT

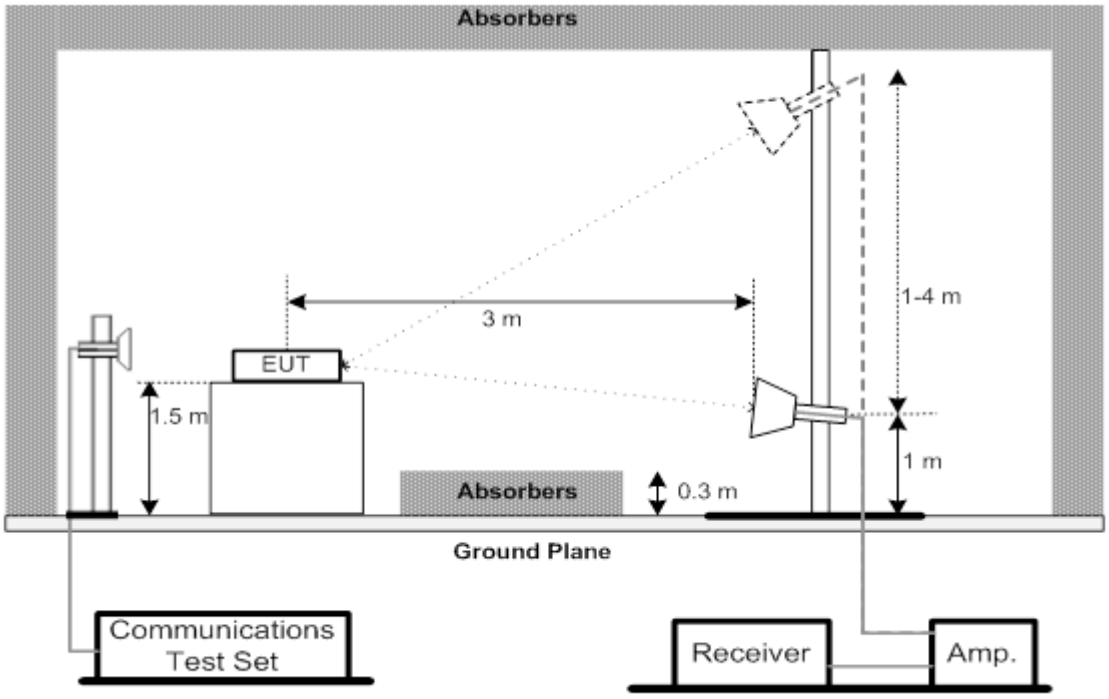
Below 30MHz



30MHz to 1GHz



Above 1GHz



4.4.4 TEST DEVIATION

No deviation

4.4.5 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix D.

4.4.6 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix E.

4.4.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix F.

4.5 BAND EDGE MEASUREMENT

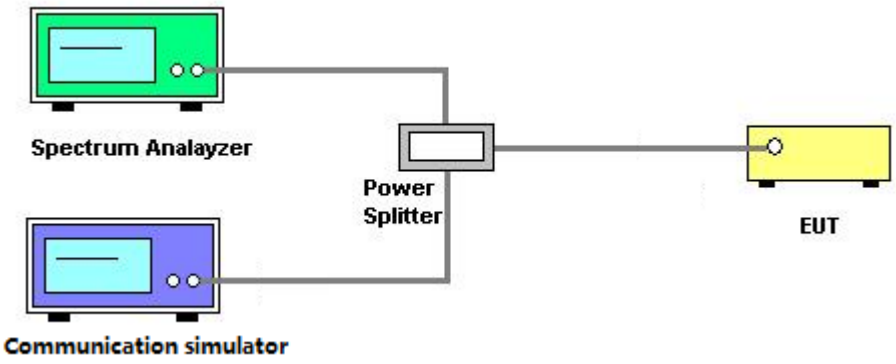
4.5.1 LIMIT

A Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.5.2 TEST PROCEDURES

1. All measurements were done at low and high operational frequency range.
2. The center frequency of spectrum is the band edge frequency and span is 10MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA).
3. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 15kHz and VB of the spectrum is 43kHz (LTE Bandwidth 1.4MHz).
4. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 30kHz and VB of the spectrum is 91kHz (LTE Bandwidth 3MHz).
5. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 150kHz (LTE Bandwidth 5MHz).
6. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Bandwidth 10MHz).
7. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Bandwidth 15MHz).
8. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Bandwidth 20MHz).
9. Record the max trace plot into the test report.

4.5.3 TEST SETUP LAYOUT



4.5.4 TEST DEVIATION

No deviation

4.5.5 TEST RESULTS

Please refer to the Appendix G.

4.6 PEAK TO AVERAGE RATIO MEASUREMENT

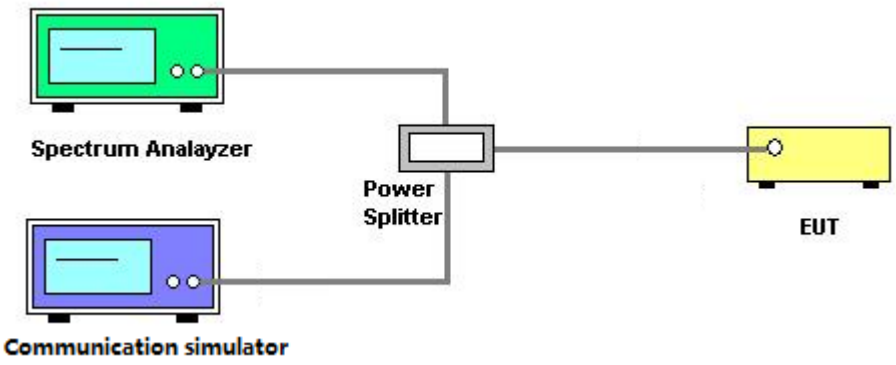
4.6.1 LIMIT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

4.6.2 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.3 TEST SETUP LAYOUT



4.6.4 TEST DEVIATION

No deviation

4.6.5 TEST RESULTS

Please refer to the Appendix H.

4.7 FREQUENCY STABILITY MEASUREMENT

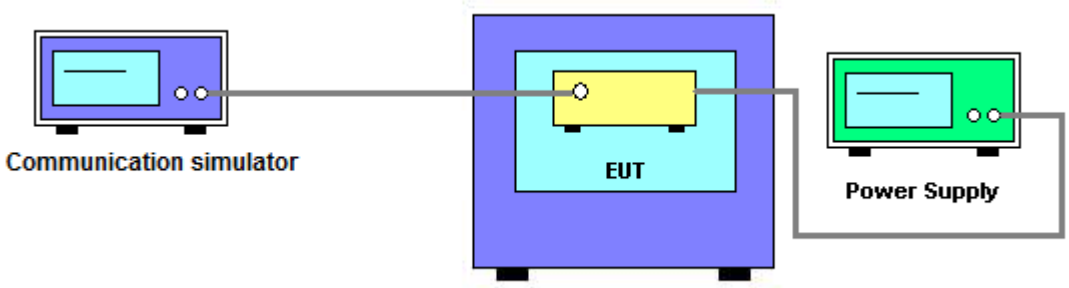
4.7.1 LIMIT

±1.5 ppm is for base and fixed station. ±2.5 ppm is for mobile station.

4.7.2 TEST PROCEDURES

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5°C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

4.7.3 TEST SETUP LAYOUT



4.7.4 TEST DEVIATION

No deviation

4.7.5 TEST RESULTS

Please refer to the Appendix I.

5. LIST OF MEASUREMENT EQUIPMENTS

Radiated Emission Measurement(9K-30M)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	Mar. 29, 2020
2	EMI Test Receiver	R&S	ESCI	100082	Mar. 29, 2020
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

For WCDMA

Radiated Emission Measurement(30M-1G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019

Radiated Emission Measurement(1G-18G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020
3	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
4	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1787	Mar. 29, 2020
5	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020
6	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
7	Cable	N/A	EMC102-SM-SM-6000	170336	Apr. 17, 2020
8	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019

For LTE

Radiated Emission Measurement(30M-1G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019

Radiated Emission Measurement(1G-18G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020
3	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
4	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1787	Mar. 29, 2020
5	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020
6	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
7	Cable	N/A	EMC102-SM-SM-6000	170336	Apr. 17, 2020
8	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019

For WCDMA

Conducted Emission & Band Edge & Occupied Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019
2	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
4	Power Divider	JUK	PD-2SF-2060	N/A	N/A

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019
2*	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
4	Power Divider	JUK	PD-2SF-2060	N/A	N/A
5	Temperature And Humidity Box	Blue pand	BPHS-120B	170616454	Nov. 20, 2019

For LTE

Conducted Emission & Band Edge & Occupied Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
2	Power Divider	JUK	PD-4SF-2060	N/A	N/A
3	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019
4	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
2*	Power Divider	JUK	PD-4SF-2060	N/A	N/A
3	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019
4	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
5	Temperature And Humidity Box	Blue pand	BPHS-120B	170616454	Nov. 20, 2019

Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.
*All calibration period of equipment list is three year

APPENDIX A - OUTPUT POWER

Output Power (dBm):

Modulation	Band	WCDMA Band II		
	Tx Channel	9262CH	9400CH	9538CH
	Frequency	1852.4MHz	1880MHz	1907.6MHz
QPSK	RMC 12.2K	21.98	22.22	22.36
16QAM	HSDPA Subtest-1	20.90	20.91	21.03
	HSDPA Subtest-2	20.48	20.44	20.50
	HSDPA Subtest-3	19.87	20.05	19.94
	HSDPA Subtest-4	19.79	19.94	19.88
	HSUPA Subtest-1	20.50	20.31	21.08
	HSUPA Subtest-2	20.91	20.95	21.03
	HSUPA Subtest-3	20.05	20.01	20.11
	HSUPA Subtest-4	21.06	21.08	21.16
	HSUPA Subtest-5	20.46	20.47	20.58

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18607CH	18900CH	19193CH
				1850.7MHz	1880MHz	1909.3MHz
2 / 1.4M	QPSK	1	0	21.99	22.03	22.05
		1	2	22.09	22.14	22.18
		1	5	21.97	22.02	22.09
		3	0	22.04	22.13	22.15
		3	1	22.07	22.19	22.21
		3	2	22.08	22.15	22.21
		6	0	21.01	21.02	21.18
	16QAM	1	0	21.02	21.14	21.44
		1	2	21.05	21.23	21.50
		1	5	20.99	21.15	21.39
		3	0	21.23	21.21	21.33
		3	1	21.28	21.24	21.35
		3	2	21.23	21.19	21.40
		6	0	20.19	20.22	20.10

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18615CH	18900CH	19185CH
				1851.5MHz	1880MHz	1908.5MHz
2 / 3M	QPSK	1	0	21.98	22.09	22.13
		1	7	22.08	22.24	22.25
		1	14	22.03	22.10	22.13
		8	0	21.00	21.04	21.13
		8	4	21.05	21.07	21.21
		8	7	20.98	21.02	21.15
		15	0	21.02	21.09	21.17
	16QAM	1	0	20.97	21.42	21.12
		1	7	21.03	21.60	21.23
		1	14	20.91	21.47	21.08
		8	0	20.15	20.19	20.14
		8	4	20.17	20.22	20.23
		8	7	20.10	20.16	20.16
		15	0	20.07	20.15	20.12

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18625CH	18900CH	19175CH
				1852.5MHz	1880MHz	1907.5MHz
2 / 5M	QPSK	1	0	22.00	21.94	22.06
		1	13	22.17	22.07	22.21
		1	24	22.03	21.95	22.10
		12	0	21.01	21.03	21.16
		12	6	21.06	21.11	21.19
		12	11	21.06	21.14	21.22
		25	0	21.01	21.07	21.14
	16QAM	1	0	21.11	21.50	21.08
		1	13	21.23	21.65	21.18
		1	24	21.13	21.46	21.11
		12	0	20.10	20.22	20.18
		12	6	20.14	20.30	20.22
		12	11	20.16	20.28	20.25
		25	0	20.03	20.19	20.10

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18650CH	18900CH	19150CH
				1855MHz	1880MHz	1905MHz
2 / 10M	QPSK	1	0	21.96	22.02	22.15
		1	25	22.16	22.18	22.28
		1	49	21.92	21.98	22.15
		25	0	21.08	21.08	21.22
		25	13	21.01	21.09	21.14
		25	25	20.98	21.15	21.18
		50	0	21.04	21.15	21.23
	16QAM	1	0	20.93	21.42	21.06
		1	25	21.10	21.60	21.20
		1	49	20.87	21.38	21.06
		25	0	20.12	20.14	20.30
		25	13	20.04	20.21	20.29
		25	25	20.03	20.23	20.26
		50	0	20.07	20.23	20.26

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18675CH	18900CH	19125CH
				1857.5MHz	1880MHz	1902.5MHz
2 / 15M	QPSK	1	0	22.00	22.03	22.14
		1	38	22.00	22.13	22.21
		1	74	21.90	22.01	22.14
		36	0	21.12	21.14	21.34
		36	18	21.07	21.11	21.23
		36	39	21.00	21.16	21.20
		75	0	21.06	21.14	21.27
	16QAM	1	0	21.33	21.48	20.99
		1	38	21.38	21.54	21.06
		1	74	21.32	21.43	20.94
		36	0	20.11	20.21	20.28
		36	18	20.10	20.07	20.20
		36	39	20.04	20.11	20.16
		75	0	20.07	20.15	20.25

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18700CH	18900CH	19100CH
				1860MHz	1880MHz	1900MHz
2 / 20M	QPSK	1	0	21.95	21.96	22.03
		1	50	22.14	21.97	22.27
		1	99	21.94	21.93	22.06
		50	0	21.10	21.05	21.32
		50	25	21.04	21.12	21.18
		50	50	20.94	21.19	21.35
		100	0	21.04	21.15	21.25
	16QAM	1	0	21.40	21.42	21.50
		1	50	21.58	20.01	21.76
		1	99	21.39	21.35	21.52
		50	0	20.13	20.10	20.37
		50	25	20.08	20.17	20.24
		50	50	20.01	20.20	20.10
		100	0	20.07	20.20	20.32

EIRP Power (dBm):

Modulation	Band	WCDMA Band II		
	Tx Channel	9262CH	9400CH	9538CH
	Frequency	1852.4MHz	1880MHz	1907.6MHz
QPSK	RMC 12.2K	24.18	24.42	24.56
16QAM	HSDPA Subtest-1	23.10	23.11	23.23
	HSDPA Subtest-2	22.68	22.64	22.70
	HSDPA Subtest-3	22.07	22.25	22.14
	HSDPA Subtest-4	21.99	22.14	22.08
	HSUPA Subtest-1	22.70	22.51	23.28
	HSUPA Subtest-2	23.11	23.15	23.23
	HSUPA Subtest-3	22.25	22.21	22.31
	HSUPA Subtest-4	23.26	23.28	23.36
	HSUPA Subtest-5	22.66	22.67	22.78

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18607CH	18900CH	19193CH
				1850.7MHz	1880MHz	1909.3MHz
2 / 1.4M	QPSK	1	0	24.19	24.23	24.25
		1	2	24.29	24.34	24.38
		1	5	24.17	24.22	24.29
		3	0	24.24	24.33	24.35
		3	1	24.27	24.39	24.41
		3	2	24.28	24.35	24.41
		6	0	23.21	23.22	23.38
	16QAM	1	0	23.22	23.34	23.64
		1	2	23.25	23.43	23.70
		1	5	23.19	23.35	23.59
		3	0	23.43	23.41	23.53
		3	1	23.48	23.44	23.55
		3	2	23.43	23.39	23.60
		6	0	22.39	22.42	22.30

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18615CH	18900CH	19185CH
				1851.5MHz	1880MHz	1908.5MHz
2 / 3M	QPSK	1	0	24.18	24.29	24.33
		1	7	24.28	24.44	24.45
		1	14	24.23	24.30	24.33
		8	0	23.20	23.24	23.33
		8	4	23.25	23.27	23.41
		8	7	23.18	23.22	23.35
		15	0	23.22	23.29	23.37
	16QAM	1	0	23.17	23.62	23.32
		1	7	23.23	23.80	23.43
		1	14	23.11	23.67	23.28
		8	0	22.35	22.39	22.34
		8	4	22.37	22.42	22.43
		8	7	22.30	22.36	22.36
		15	0	22.27	22.35	22.32

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18625CH	18900CH	19175CH
				1852.5MHz	1880MHz	1907.5MHz
2 / 5M	QPSK	1	0	24.20	24.14	24.26
		1	13	24.37	24.27	24.41
		1	24	24.23	24.15	24.30
		12	0	23.21	23.23	23.36
		12	6	23.26	23.31	23.39
		12	11	23.26	23.34	23.42
		25	0	23.21	23.27	23.34
	16QAM	1	0	23.31	23.70	23.28
		1	13	23.43	23.85	23.38
		1	24	23.33	23.66	23.31
		12	0	22.30	22.42	22.38
		12	6	22.34	22.50	22.42
		12	11	22.36	22.48	22.45
		25	0	22.23	22.39	22.30

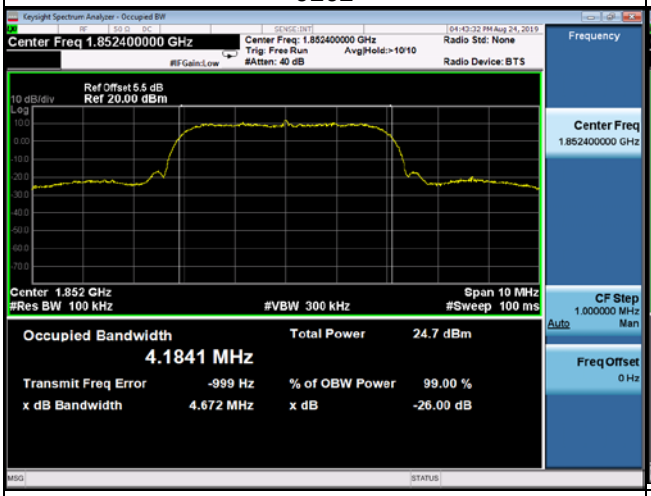
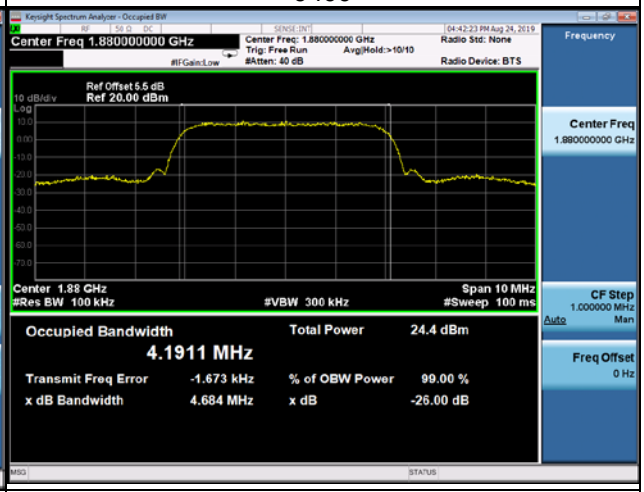
LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18650CH	18900CH	19150CH
				1855MHz	1880MHz	1905MHz
2 / 10M	QPSK	1	0	24.16	24.22	24.35
		1	25	24.36	24.38	24.48
		1	49	24.12	24.18	24.35
		25	0	23.28	23.28	23.42
		25	13	23.21	23.29	23.34
		25	25	23.18	23.35	23.38
		50	0	23.24	23.35	23.43
	16QAM	1	0	23.13	23.62	23.26
		1	25	23.30	23.80	23.40
		1	49	23.07	23.58	23.26
		25	0	22.32	22.34	22.50
		25	13	22.24	22.41	22.49
		25	25	22.23	22.43	22.46
		50	0	22.27	22.43	22.46

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18675CH	18900CH	19125CH
				1857.5MHz	1880MHz	1902.5MHz
2 / 15M	QPSK	1	0	24.20	24.23	24.34
		1	38	24.20	24.33	24.41
		1	74	24.10	24.21	24.34
		36	0	23.32	23.34	23.54
		36	18	23.27	23.31	23.43
		36	39	23.20	23.36	23.40
		75	0	23.26	23.34	23.47
	16QAM	1	0	23.53	23.68	23.19
		1	38	23.58	23.74	23.26
		1	74	23.52	23.63	23.14
		36	0	22.31	22.41	22.48
		36	18	22.30	22.27	22.40
		36	39	22.24	22.31	22.36
		75	0	22.27	22.35	22.45

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				18700CH	18900CH	19100CH
				1860MHz	1880MHz	1900MHz
2 / 20M	QPSK	1	0	24.15	24.16	24.23
		1	50	24.34	24.17	24.47
		1	99	24.14	24.13	24.26
		50	0	23.30	23.25	23.52
		50	25	23.24	23.32	23.38
		50	50	23.14	23.39	23.55
		100	0	23.24	23.35	23.45
	16QAM	1	0	23.60	23.62	23.70
		1	50	23.78	22.21	23.96
		1	99	23.59	23.55	23.72
		50	0	22.33	22.30	22.57
		50	25	22.28	22.37	22.44
		50	50	22.21	22.40	22.30
		100	0	22.27	22.40	22.52

APPENDIX B - OCCUPIED BANDWIDTH

WCDMA Band II					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
9262	1852.4	4.1841	9262	1852.4	4.6720
9400	1880	4.1911	9400	1880	4.6840
9538	1907.6	4.1856	9538	1907.6	4.6810

Spectrum Plot	
9262	9400
	
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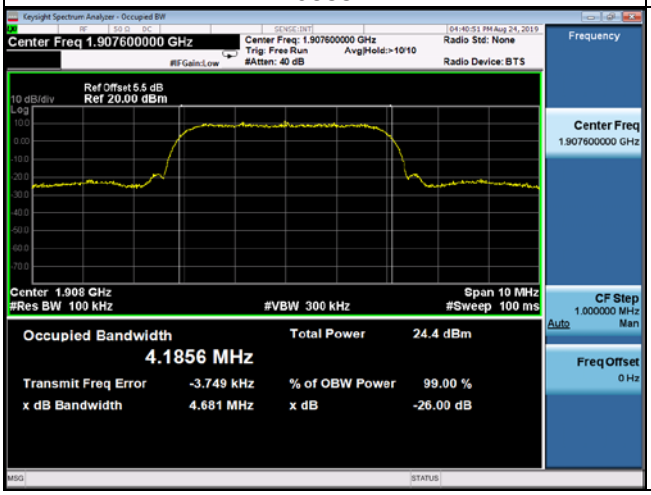
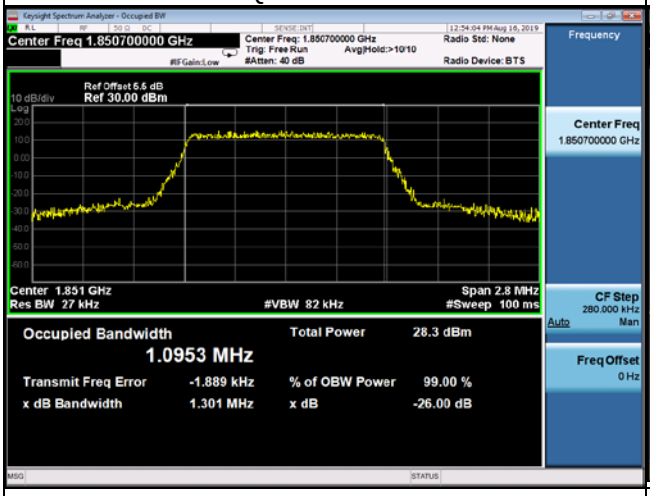
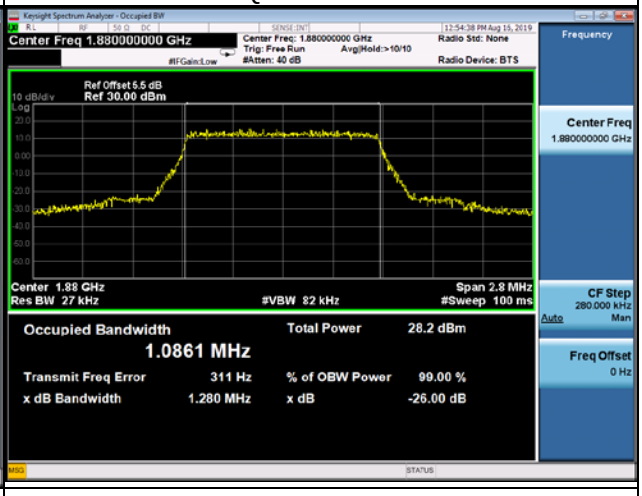
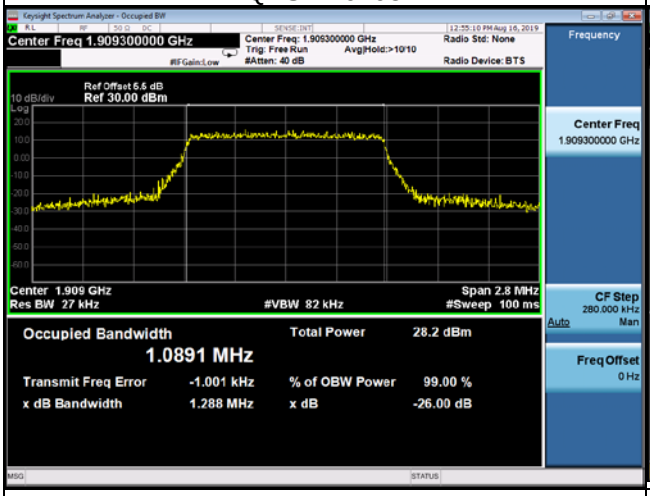
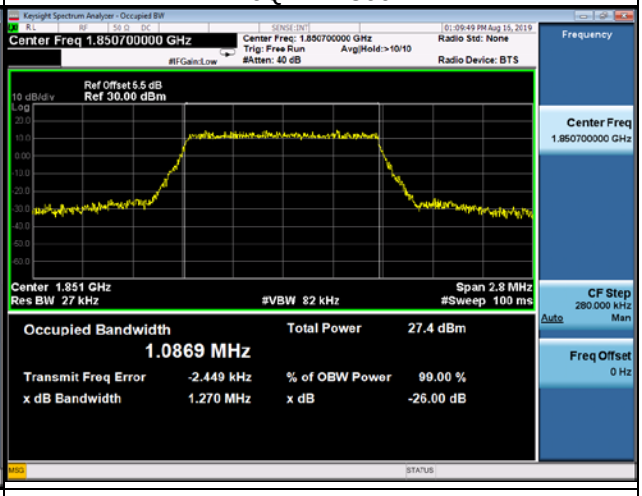
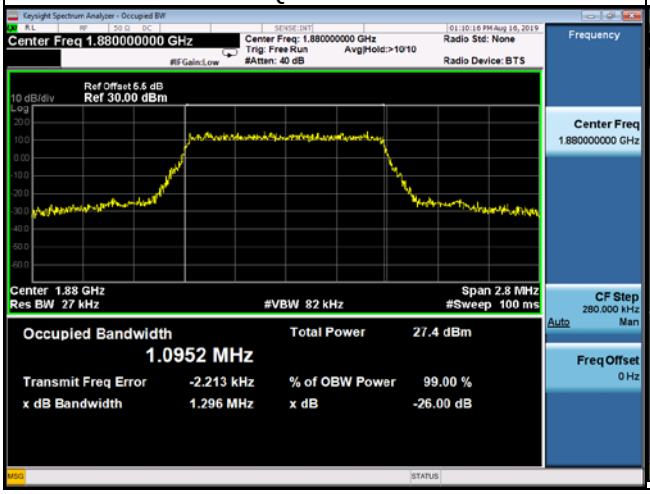
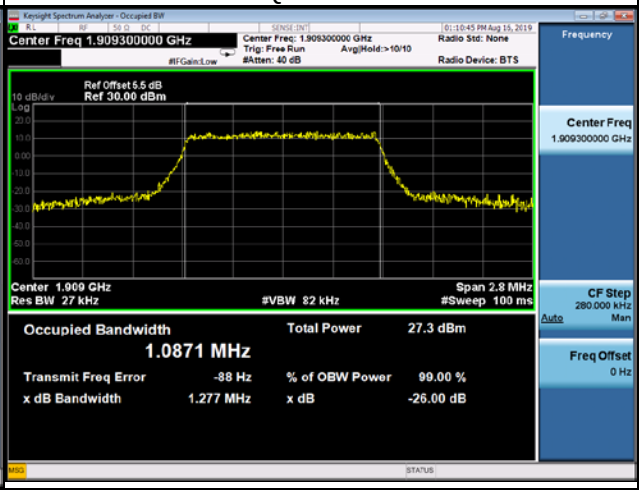
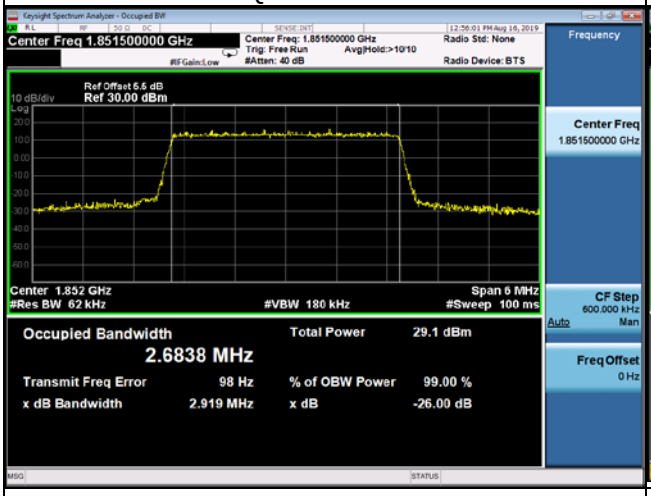
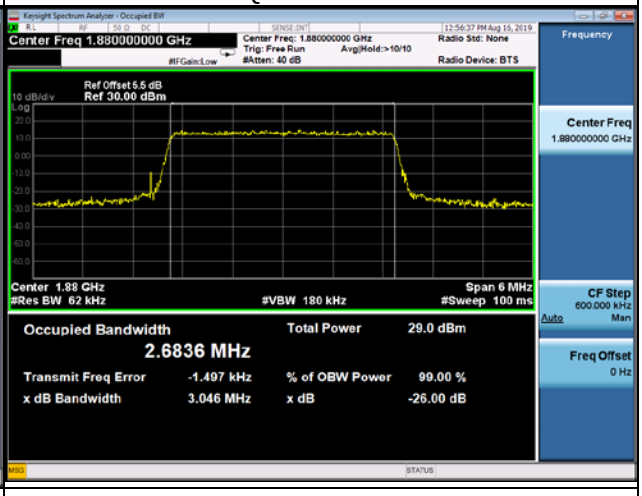
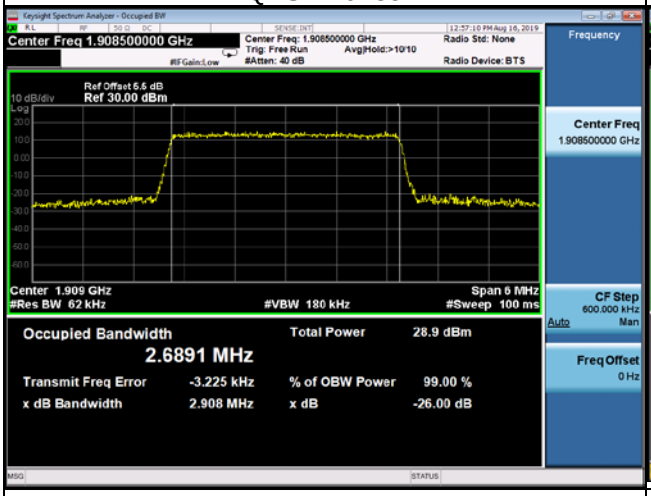
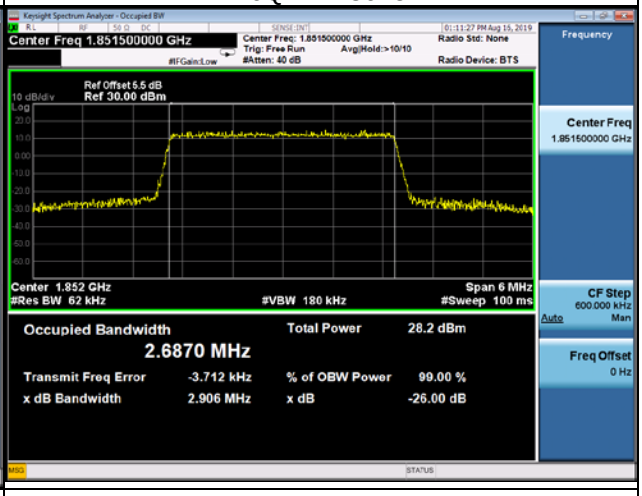
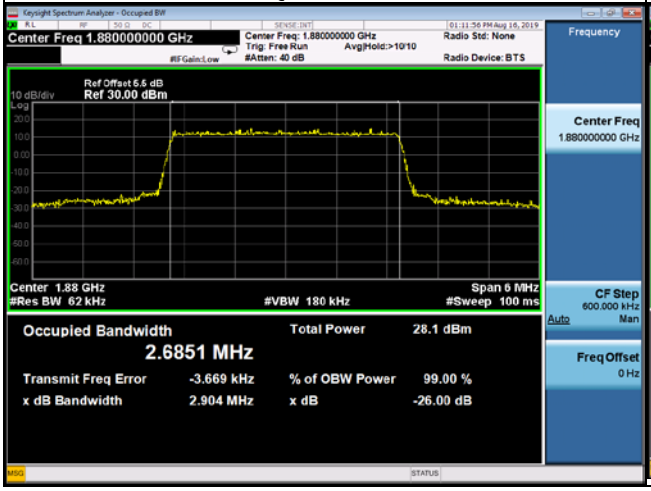
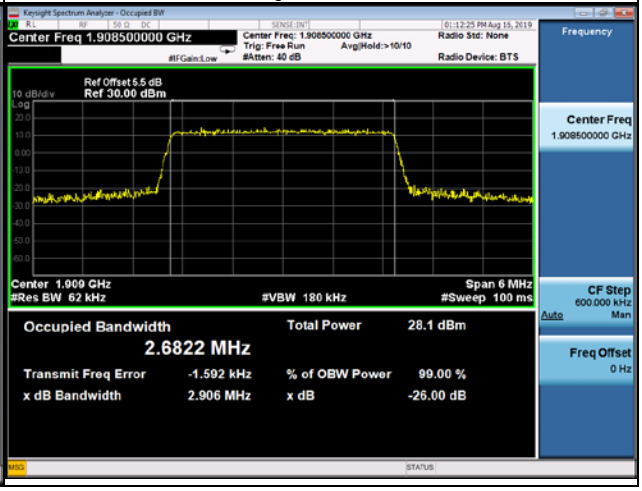
	-

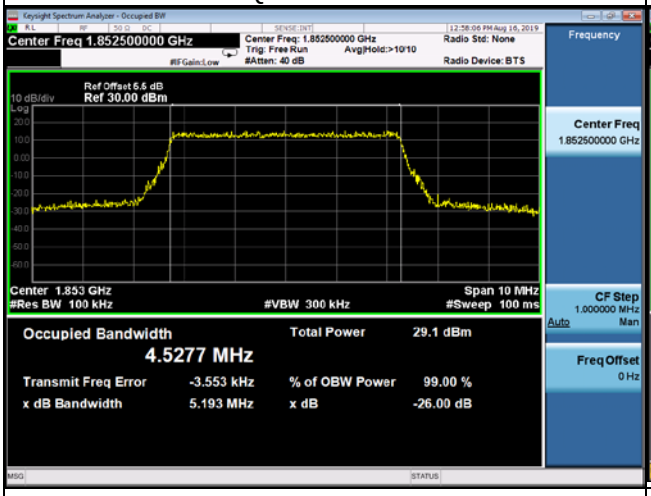
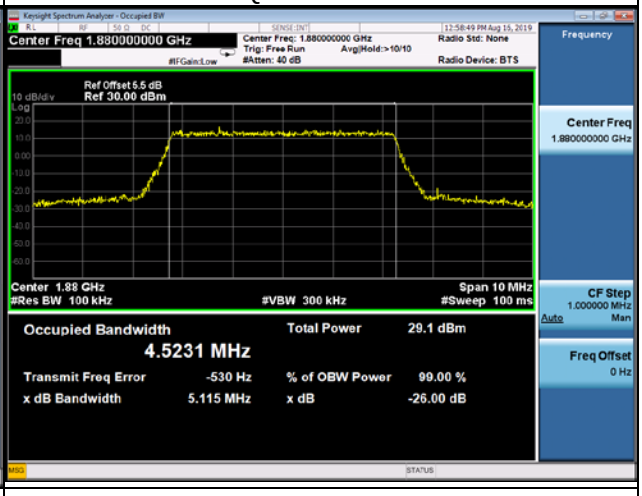
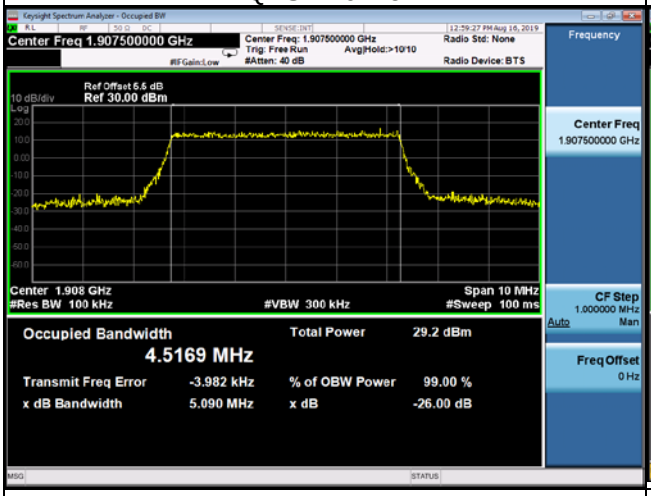
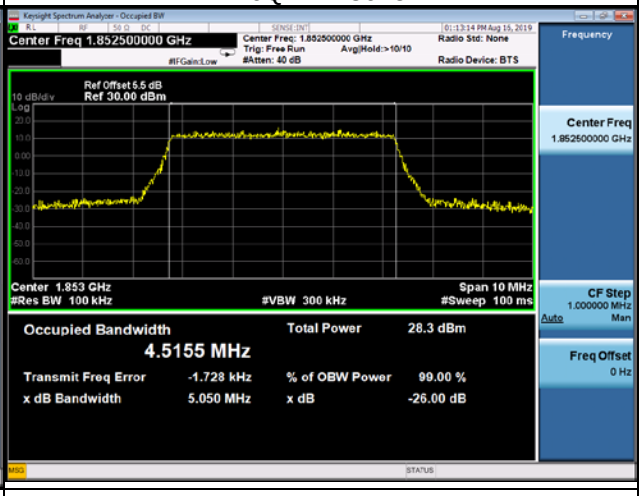
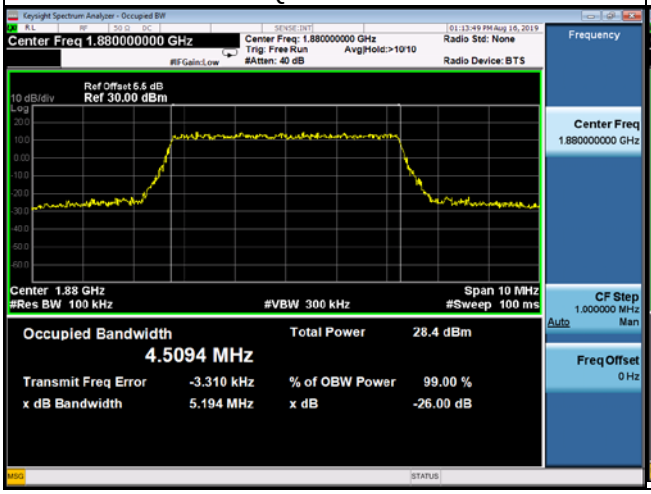
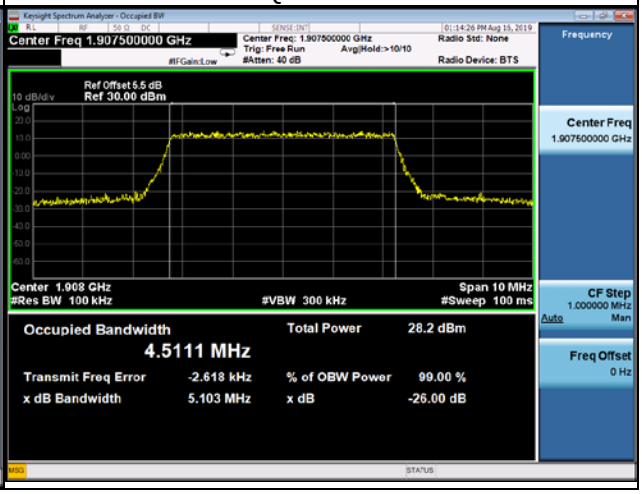
LTE Band 2_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
18607	1850.7	1.0953	18607	1850.7	1.0869
18900	1880	1.0861	18900	1880	1.0952
19193	1909.3	1.0891	19193	1909.3	1.0871
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.3010	18607	1850.7	1.2700
18900	1880	1.2800	18900	1880	1.2960
19193	1909.3	1.2880	19193	1909.3	1.2770

Spectrum Plot	
QPSK-18607	QPSK-18900
	
QPSK-19193	16QAM-18607
	
16QAM-18900	16QAM-19193
	

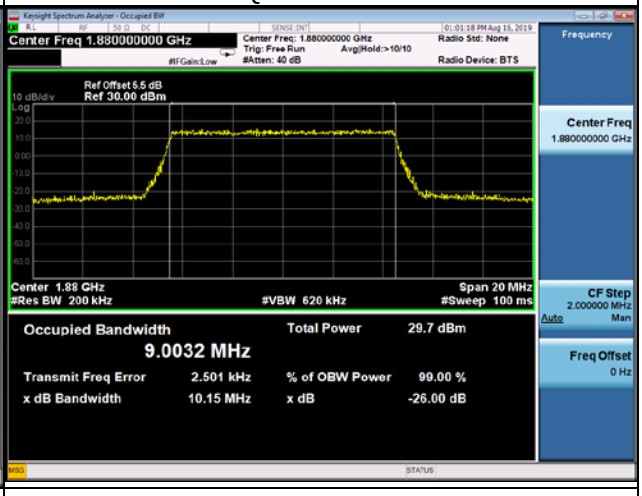
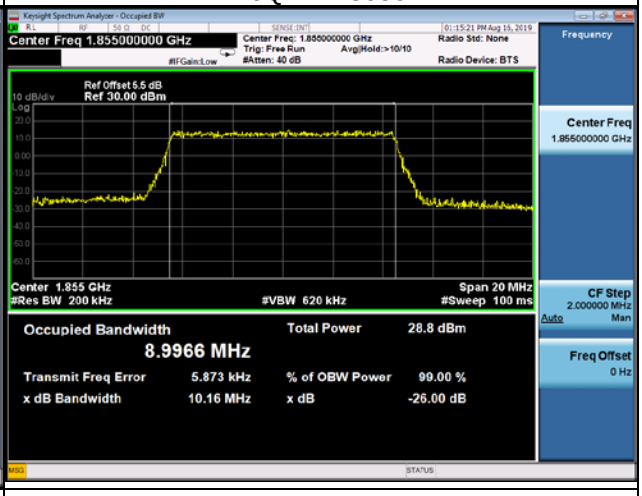
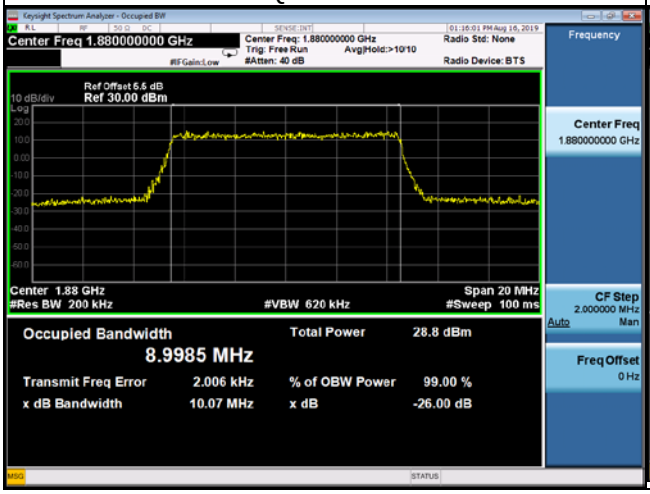
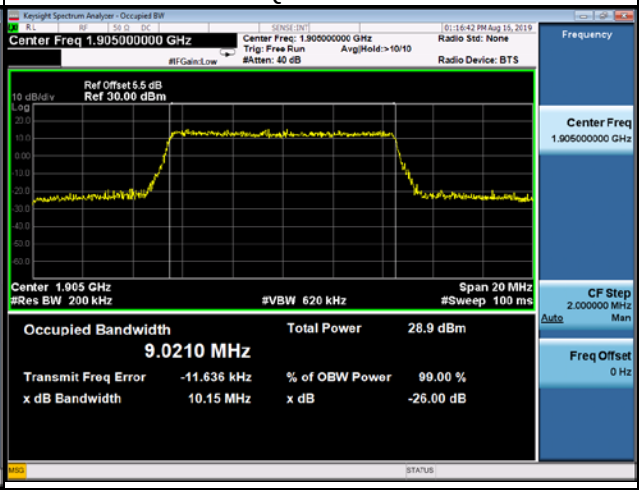
LTE Band 2_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
18615	1851.5	2.6838	18615	1851.5	2.6870
18900	1880	2.6836	18900	1880	2.6851
19185	1908.5	2.6891	19185	1908.5	2.6822
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.9190	18615	1851.5	2.9060
18900	1880	3.0460	18900	1880	2.9040
19185	1908.5	2.9080	19185	1908.5	2.9060

Spectrum Plot	
QPSK-18615	QPSK-18900
	
QPSK-19185	16QAM-18615
	
16QAM-18900	16QAM-19185
	

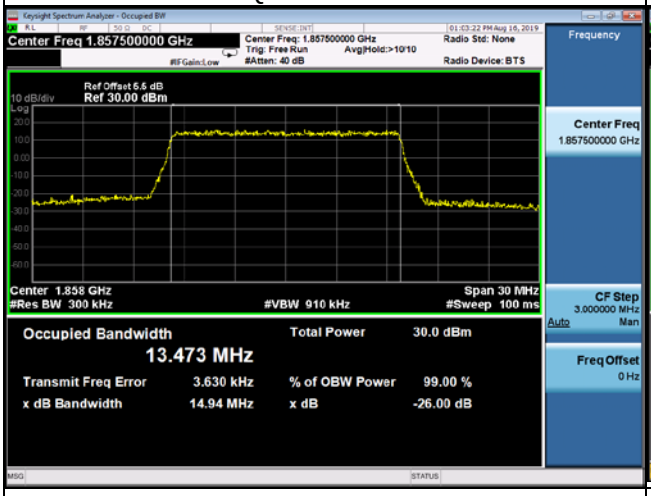
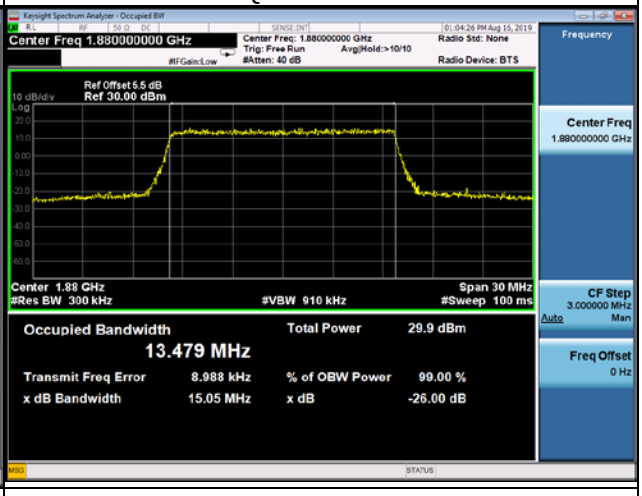
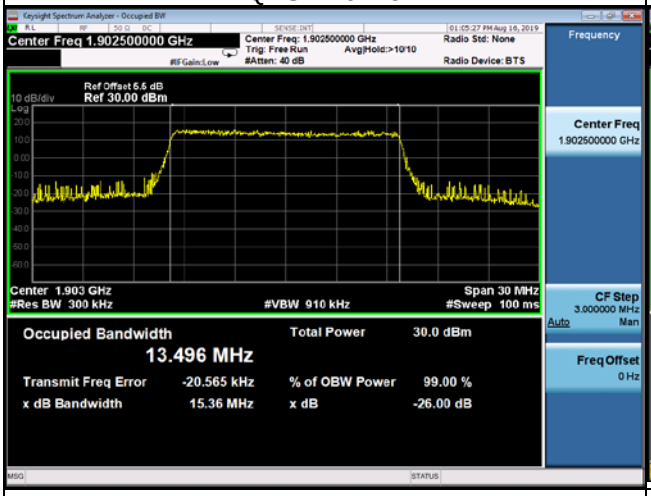
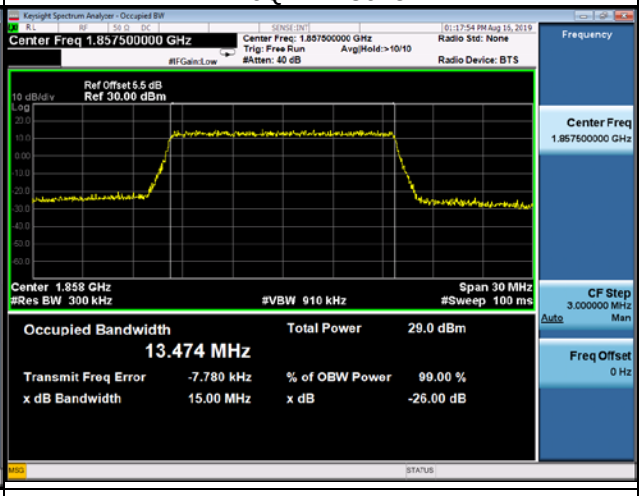
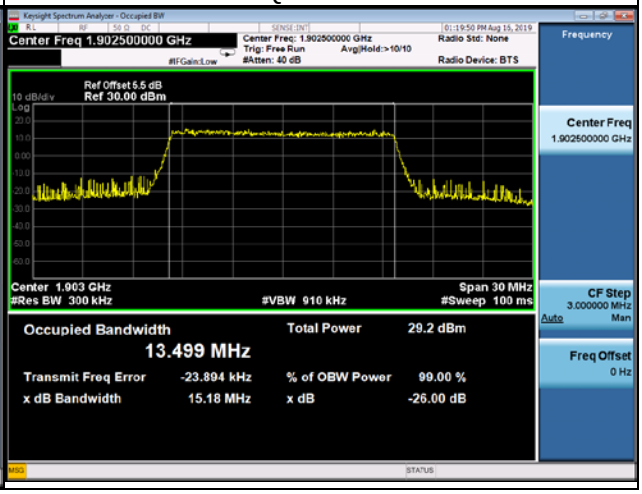
LTE Band 2_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
18625	1852.5	4.5277	18625	1852.5	4.5155
18900	1880	4.5231	18900	1880	4.5094
19175	1907.5	4.5169	19175	1907.5	4.5111
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18625	1852.5	5.1930	18625	1852.5	5.0500
18900	1880	5.1150	18900	1880	5.1940
19175	1907.5	5.0900	19175	1907.5	5.1030

Spectrum Plot	
QPSK-18625	QPSK-18900
	
QPSK-19175	16QAM-18625
	
16QAM-18900	16QAM-19175
	

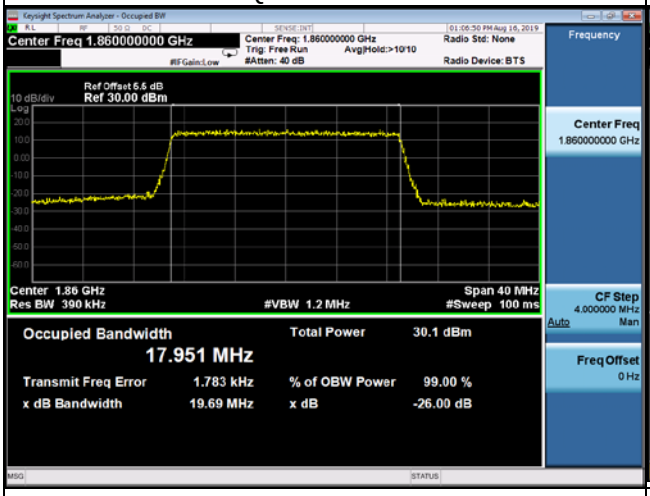
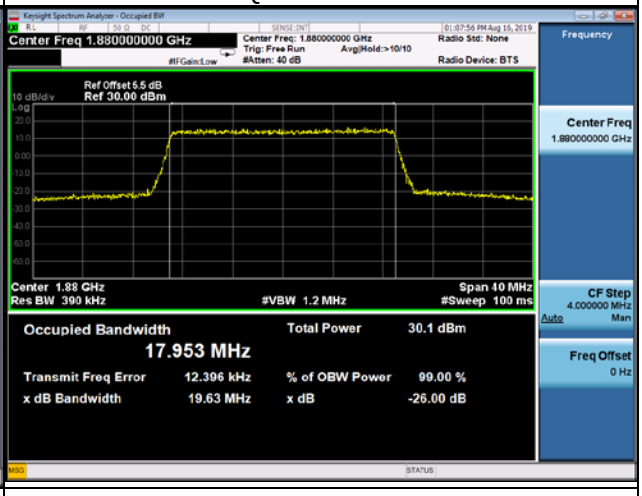
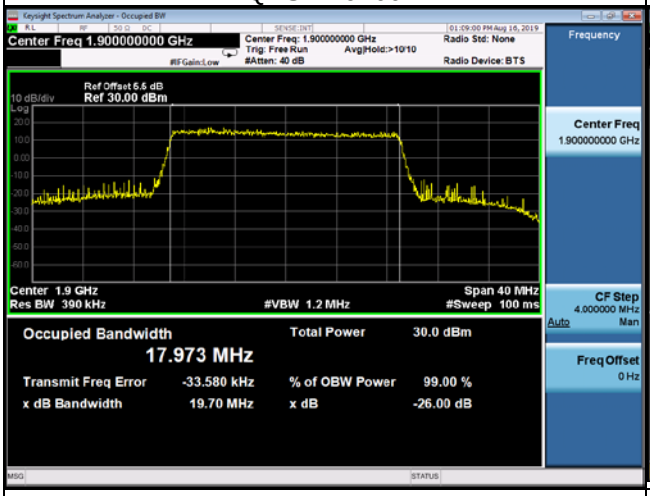
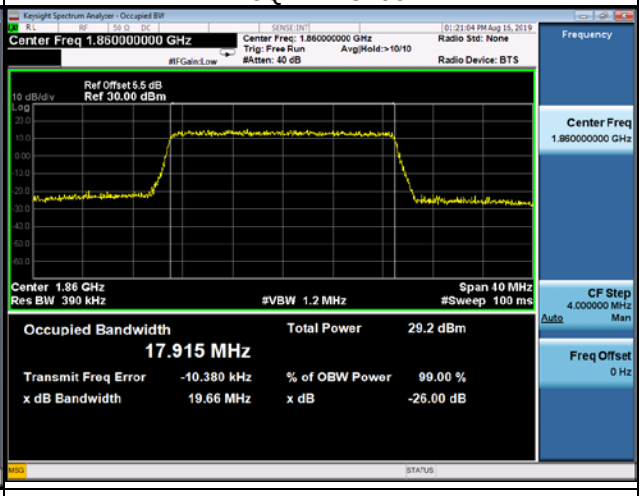
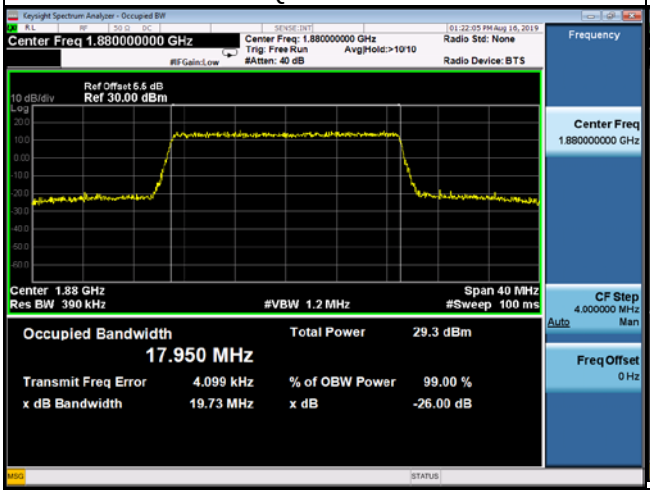
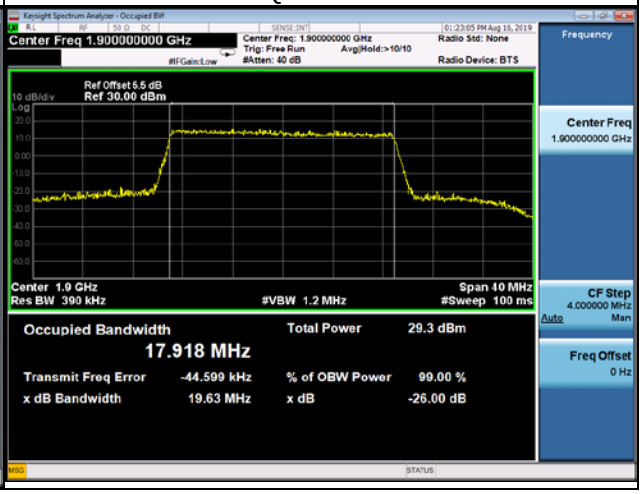
LTE Band 2_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
18650	1855	9.0060	18650	1855	8.9966
18900	1880	9.0032	18900	1880	8.9985
19150	1905	9.0032	19150	1905	9.0210
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18650	1855	10.0300	18650	1855	10.1600
18900	1880	10.1500	18900	1880	10.0700
19150	1905	10.1000	19150	1905	10.1500

Spectrum Plot	
QPSK-18650	QPSK-18900
	
QPSK-19150	16QAM-18650
	
16QAM-18900	16QAM-19150
	

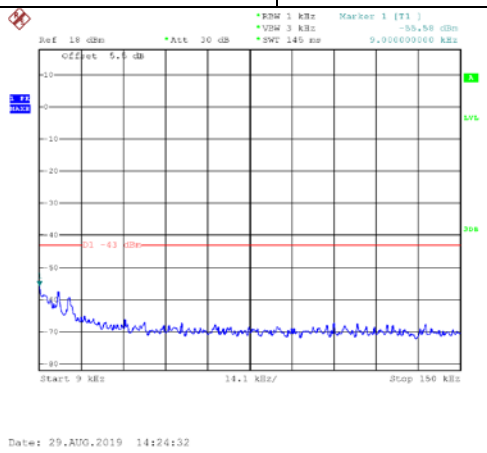
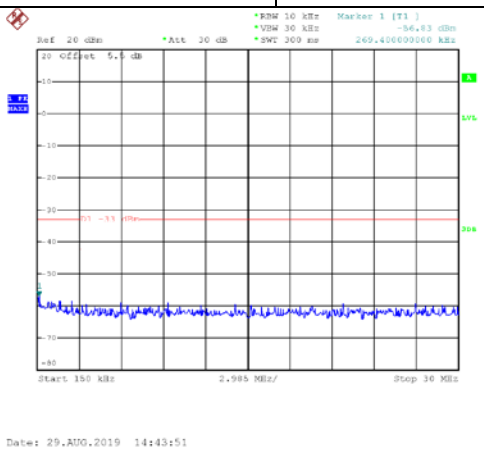
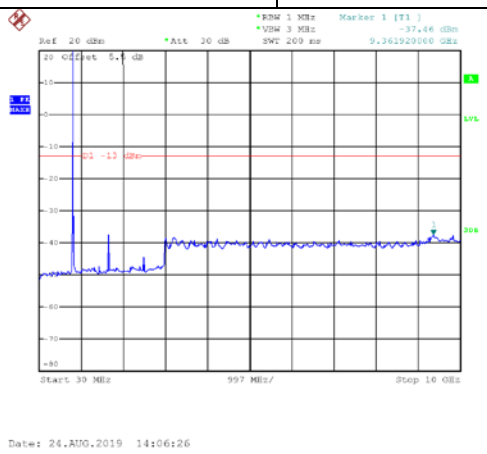
LTE Band 2_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
18675	1857.5	13.4730	18675	1857.5	13.4740
18900	1880	13.4790	18900	1880	13.4920
19125	1902.5	13.4960	19125	1902.5	13.4990
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18675	1857.5	14.9400	18675	1857.5	15.0000
18900	1880	15.0500	18900	1880	14.8400
19125	1902.5	15.3600	19125	1902.5	15.1800

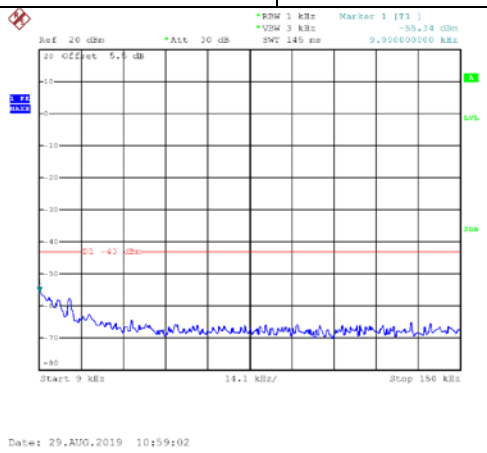
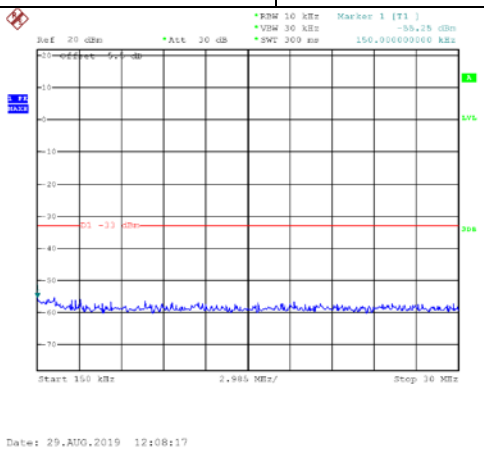
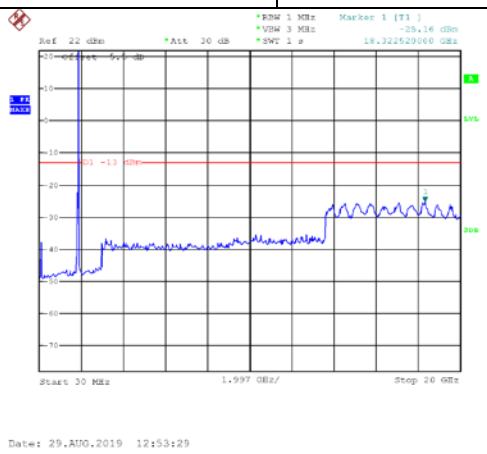
Spectrum Plot	
QPSK-18675	QPSK-18900
	
QPSK-19125	16QAM-18675
	
16QAM-18900	16QAM-19125
	

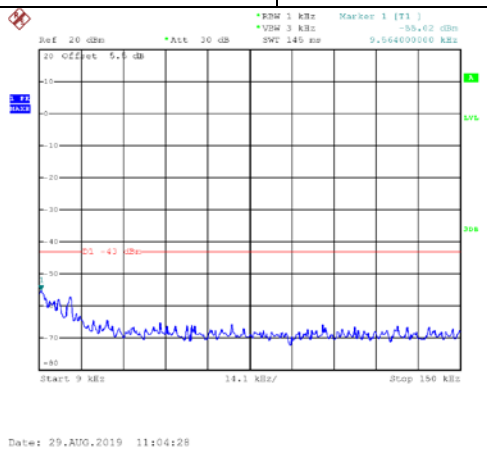
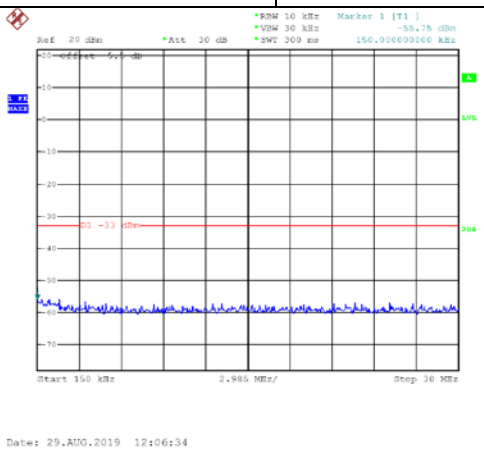
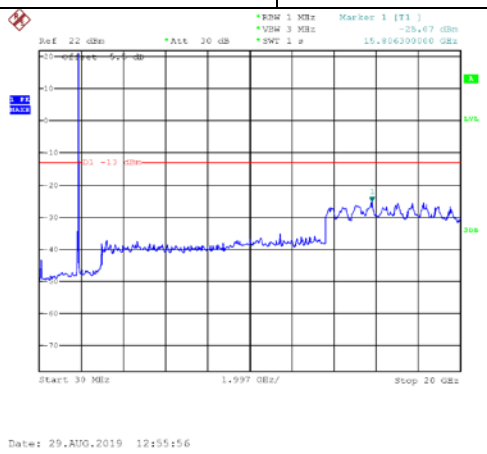
LTE Band 2_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
18700	1860	17.9510	18700	1860	17.9150
18900	1880	17.9530	18900	1880	17.9500
19100	1900	17.9730	19100	1900	17.9180
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
18700	1860	19.6900	18700	1860	19.6600
18900	1880	19.6300	18900	1880	19.7300
19100	1900	19.7000	19100	1900	19.6300

Spectrum Plot	
QPSK-18700	QPSK-18900
	
QPSK-19100	16QAM-18700
	
16QAM-18900	16QAM-19100
	

APPENDIX C - CONDUCTED EMISSIONS

WCDMA Band II			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
9400	1880	9400	1880
			
Channel	Frequency(MHz)	-	-
9400	1880	-	-
		-	

LTE Band 2_1.4M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
18900	1880	18900	1880
			
Channel	Frequency(MHz)	-	-
18900	1880	-	-
		-	

<table>
<tr><td colspan="4">LTE Band 2_5M</td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>18900</td><td>1880</td><td>18900</td><td>1880</td></tr>
<tr><td>  </td><td colspan="2">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>18900</td><td>1880</td><td>-</td><td>-</td></tr>
<tr><td>  </td><td colspan="2">-</td></tr>
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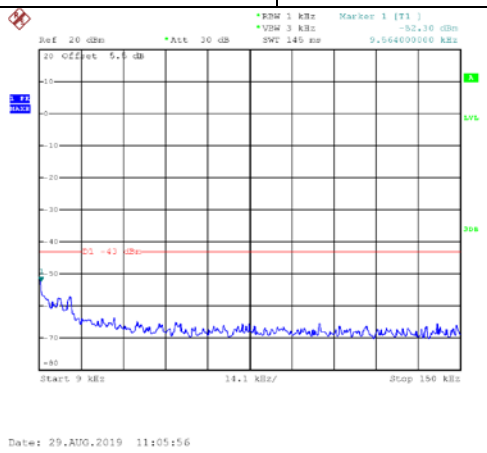
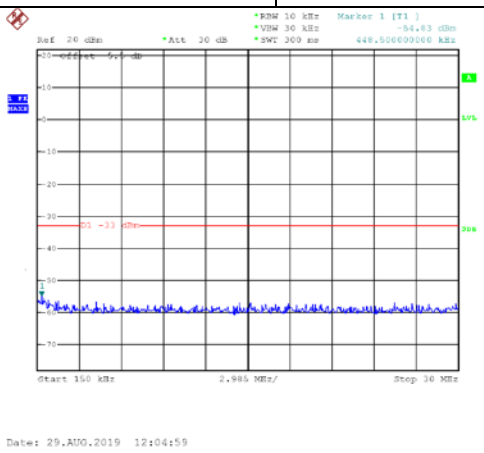
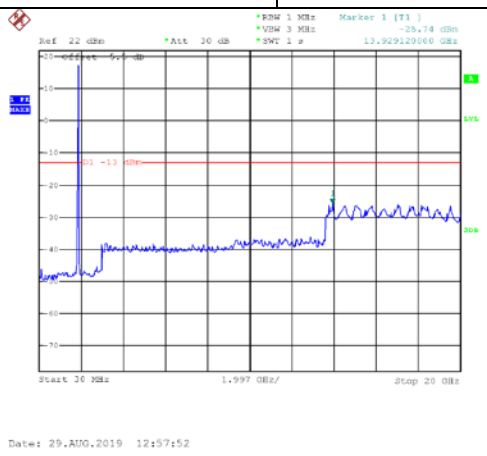
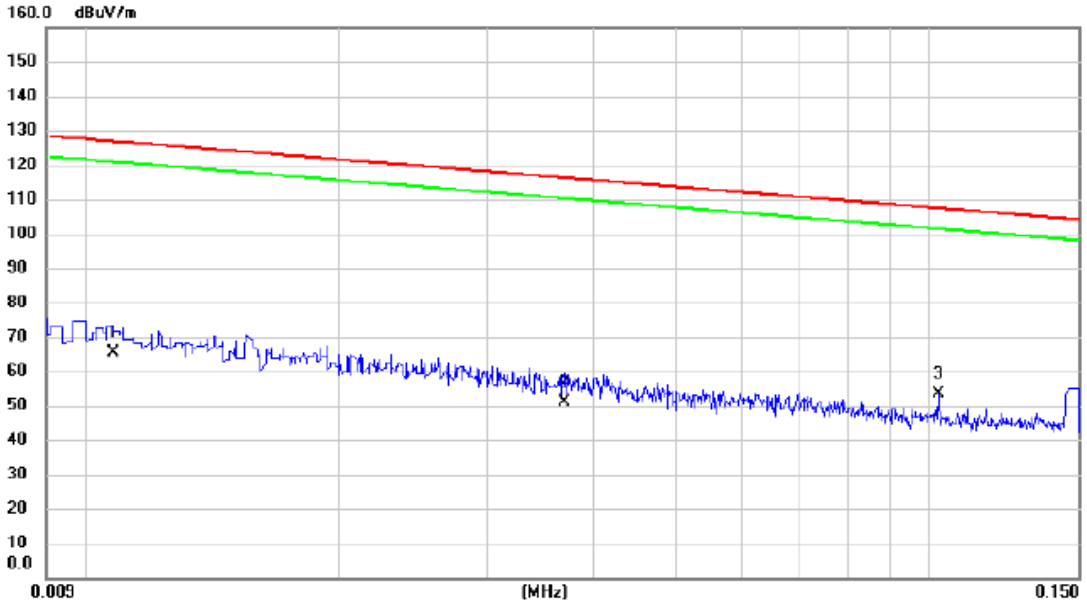
LTE Band 2_20M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
18900	1880	18900	1880
			
Channel	Frequency(MHz)	-	-
18900	1880	-	-
		-	

APPENDIX D - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode:	TX Mode

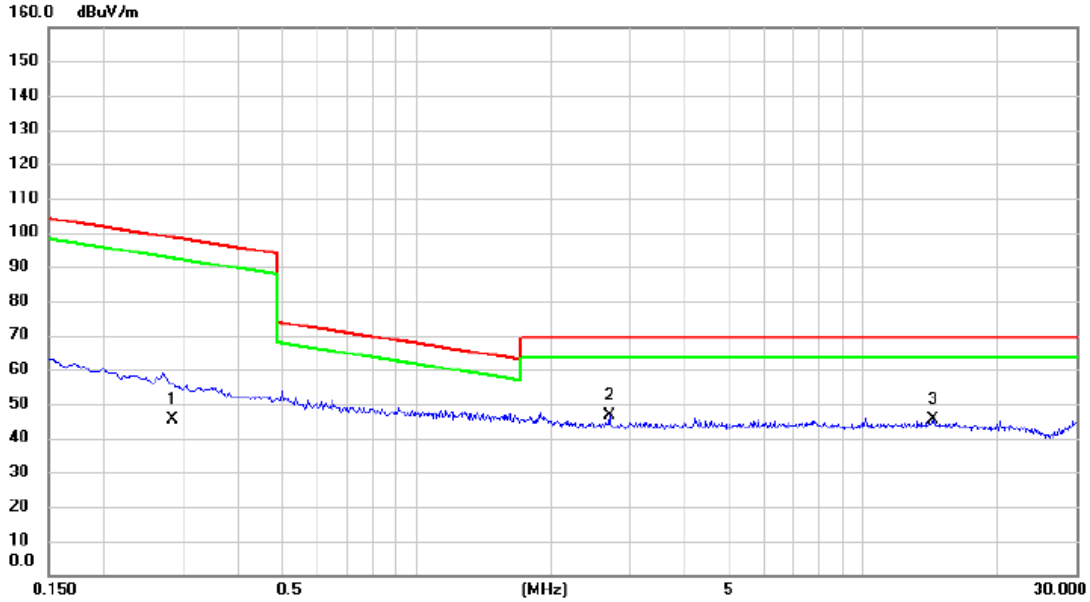
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0108	-12.70	77.91	65.21	126.94	-61.73	AVG	
2		0.0370	-16.67	67.60	50.93	116.24	-65.31	AVG	
3	*	0.1025	-4.56	57.85	53.29	107.39	-54.10	QP	

Test Mode:	TX Mode

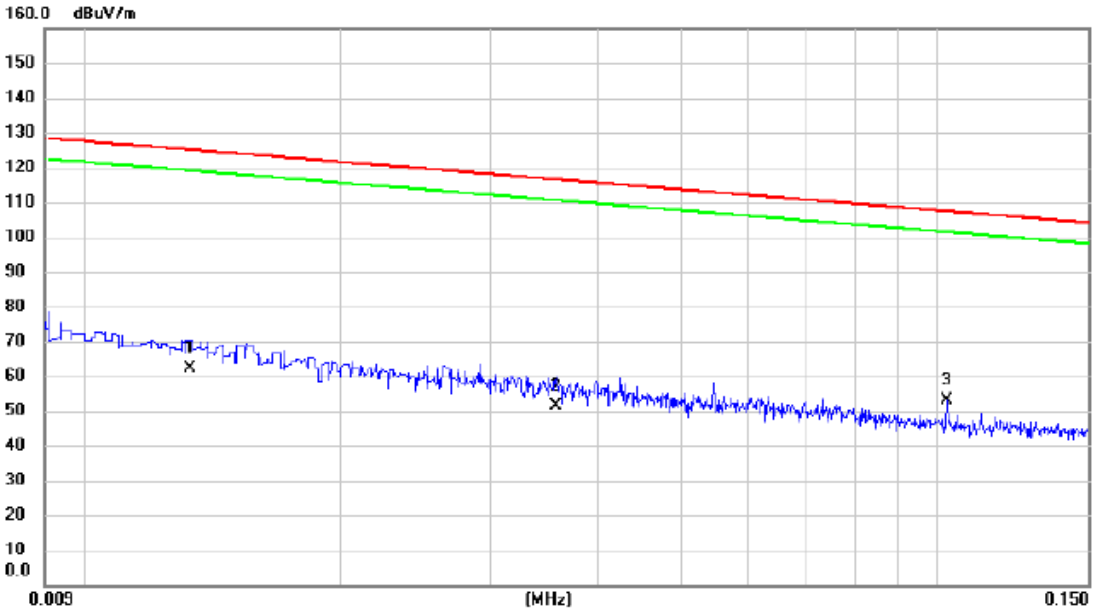
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2850	-3.90	49.21	45.31	98.51	-53.20	AVG	
2	*	2.7015	8.23	38.24	46.47	69.54	-23.07	QP	
3		14.2980	7.35	38.14	45.49	69.54	-24.05	QP	

Test Mode:	TX Mode

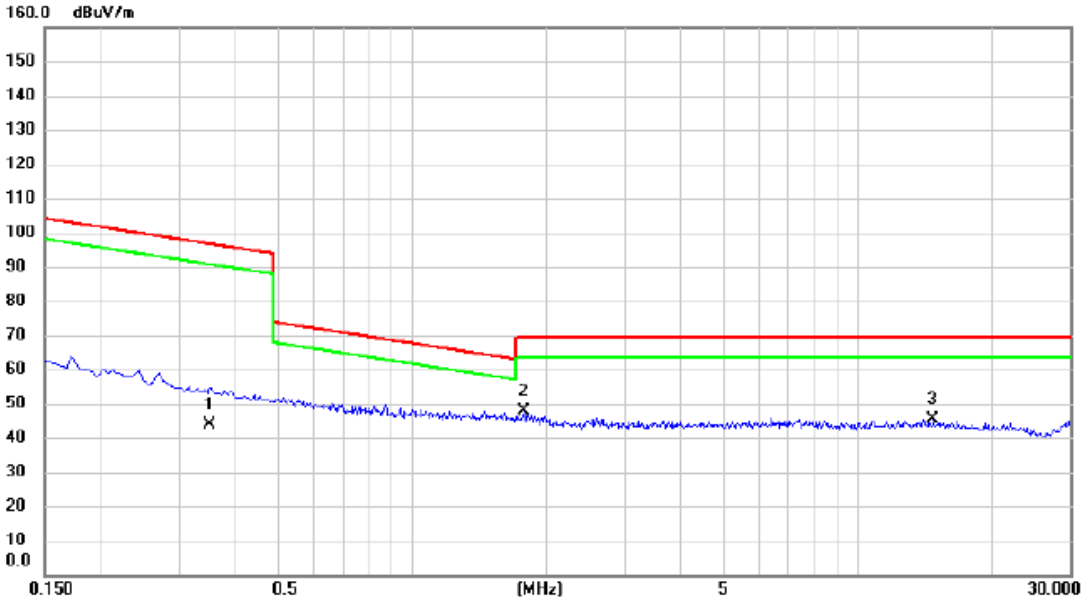
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0133	-14.30	76.39	62.09	125.13	-63.04	AVG	
2		0.0357	-16.40	67.99	51.59	116.55	-64.96	AVG	
3	*	0.1025	-4.90	57.85	52.95	107.39	-54.44	QP	

Test Mode:	TX Mode

Ant 90°

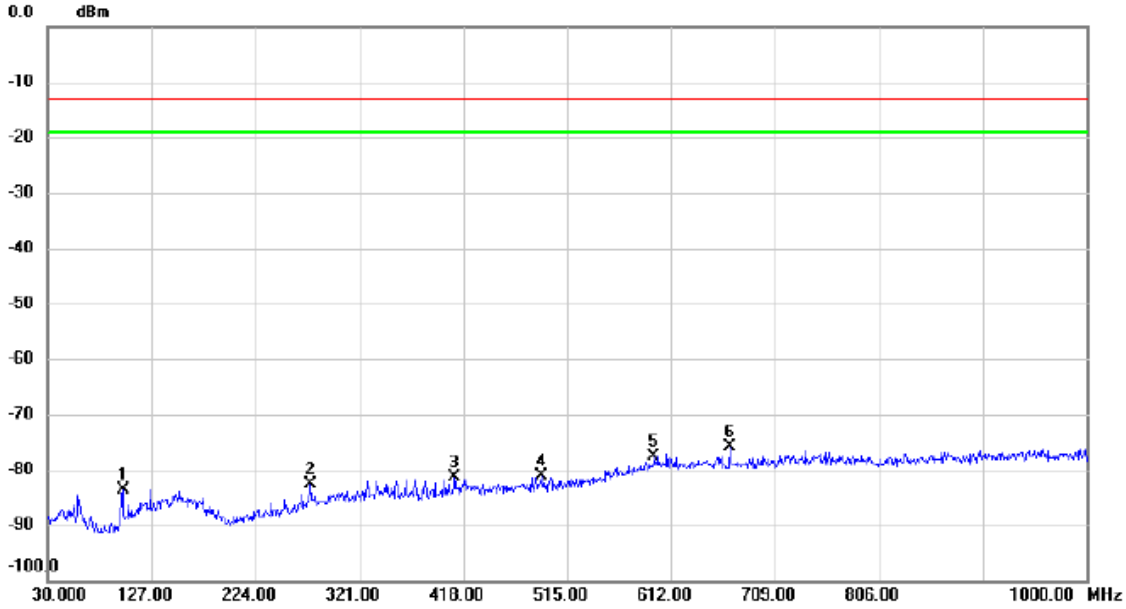


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3525	-3.80	47.55	43.75	96.66	-52.91	AVG	
2	*	1.7790	8.54	39.33	47.87	69.54	-21.67	QP	
3		14.7930	7.42	38.06	45.48	69.54	-24.06	QP	

APPENDIX E - RADIATED EMISSION (30MHZ TO 1GHZ)

Test Mode:	WCDMA Band II_TX Mode

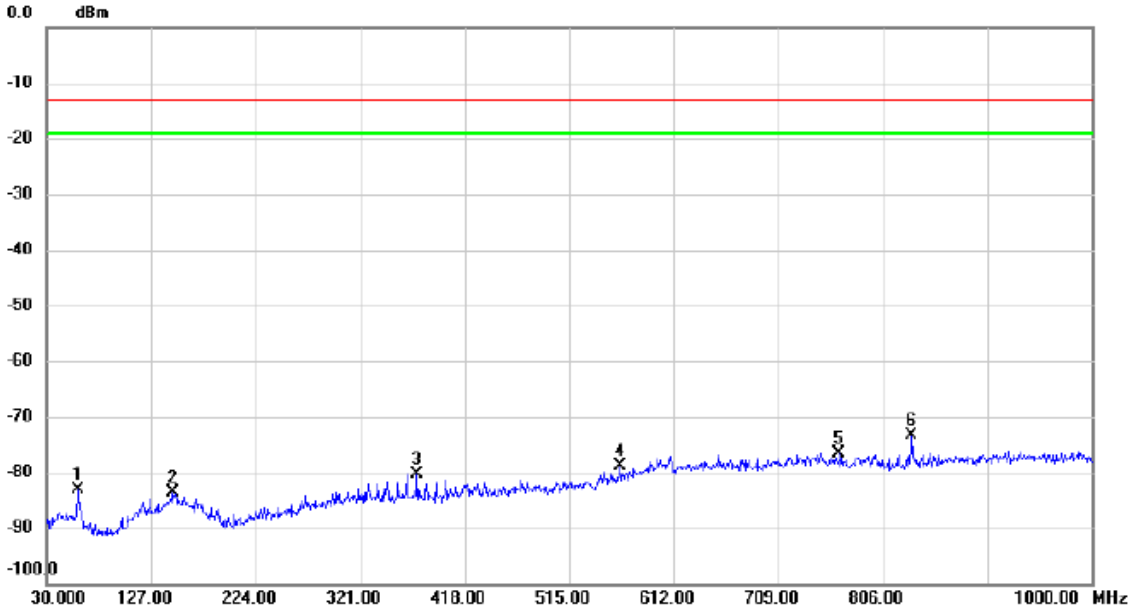
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		100.2280	-65.27	-18.39	-83.66	-13.00	-70.66	peak	
2		275.6040	-68.11	-14.44	-82.55	-13.00	-69.55	peak	
3		409.4640	-69.21	-12.27	-81.48	-13.00	-68.48	peak	
4		490.4590	-69.70	-11.38	-81.08	-13.00	-68.08	peak	
5		596.0920	-70.21	-7.47	-77.68	-13.00	-64.68	peak	
6	*	666.6110	-68.89	-6.99	-75.88	-13.00	-62.88	peak	

Test Mode:	WCDMA Band II_TX Mode

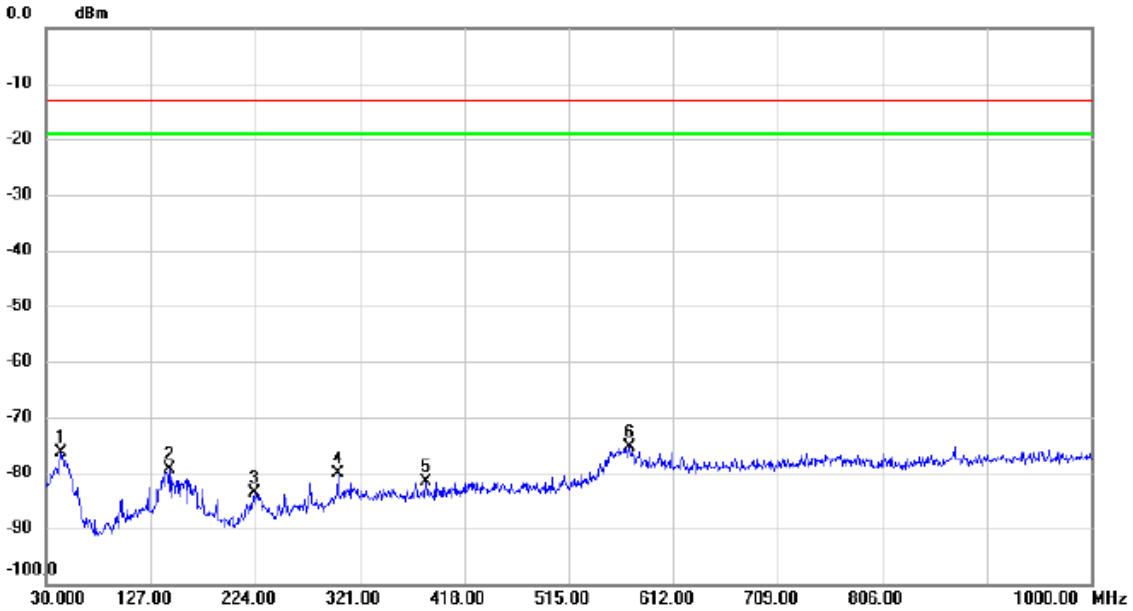
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		58.7120	-66.00	-17.07	-83.07	-13.00	-70.07	peak	
2		146.4970	-69.79	-13.86	-83.65	-13.00	-70.65	peak	
3		373.4770	-67.60	-12.72	-80.32	-13.00	-67.32	peak	
4		562.5300	-69.62	-9.20	-78.82	-13.00	-65.82	peak	
5		765.6480	-70.42	-6.18	-76.60	-13.00	-63.60	peak	
6	*	832.6750	-66.92	-6.48	-73.40	-13.00	-60.40	peak	

Test Mode:	LTE Band 2_TX Mode

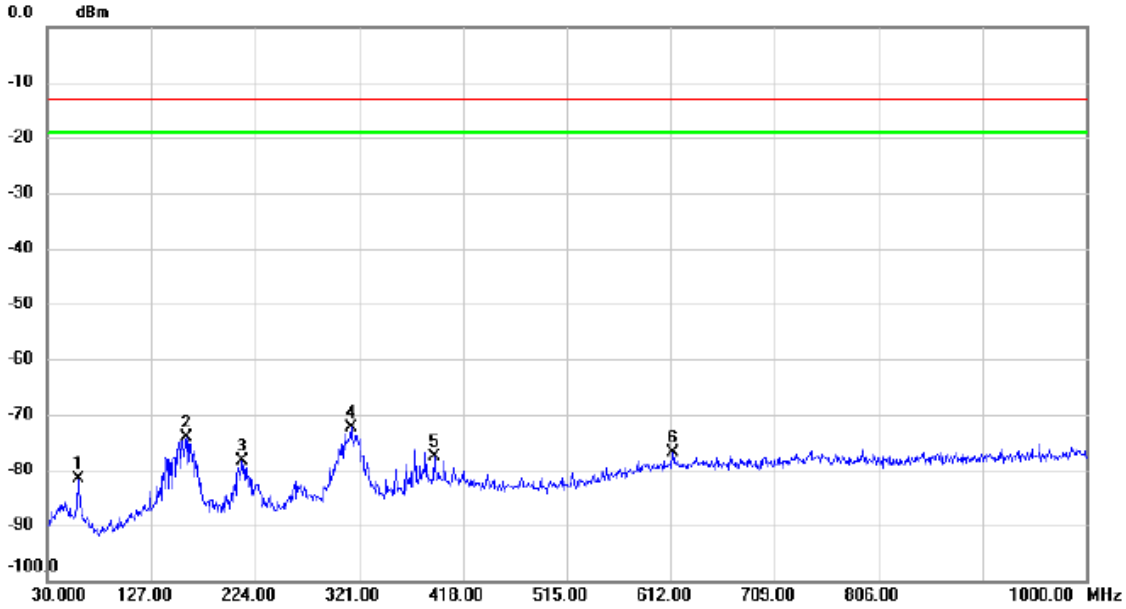
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		44.1620	-59.52	-16.74	-76.26	-13.00	-63.26	peak	
2		144.4600	-65.34	-14.03	-79.37	-13.00	-66.37	peak	
3		223.6120	-66.90	-16.72	-83.62	-13.00	-70.62	peak	
4		300.7270	-66.79	-13.37	-80.16	-13.00	-67.16	peak	
5		382.4980	-68.74	-12.78	-81.52	-13.00	-68.52	peak	
6	*	571.4540	-66.51	-8.74	-75.25	-13.00	-62.25	peak	

Test Mode:	LTE Band 2_TX Mode

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		59.0030	-64.65	-17.08	-81.73	-13.00	-68.73	peak	
2		159.6890	-60.02	-14.09	-74.11	-13.00	-61.11	peak	
3		211.4870	-61.26	-17.23	-78.49	-13.00	-65.49	peak	
4	*	314.1130	-59.16	-13.12	-72.28	-13.00	-59.28	peak	
5		391.5190	-64.89	-12.75	-77.64	-13.00	-64.64	peak	
6		614.2310	-69.65	-7.18	-76.83	-13.00	-63.83	peak	

APPENDIX F - RADIATED EMISSION (ABOVE 1GHZ)

Test Mode:	WCDMA Band II_TX CH9400

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1879.300	-39.81	-17.10	-56.91	-13.00	-43.91	peak	
2		3757.900	-45.34	-12.61	-57.95	-13.00	-44.95	peak	
3	*	5636.500	-37.87	-7.31	-45.18	-13.00	-32.18	peak	

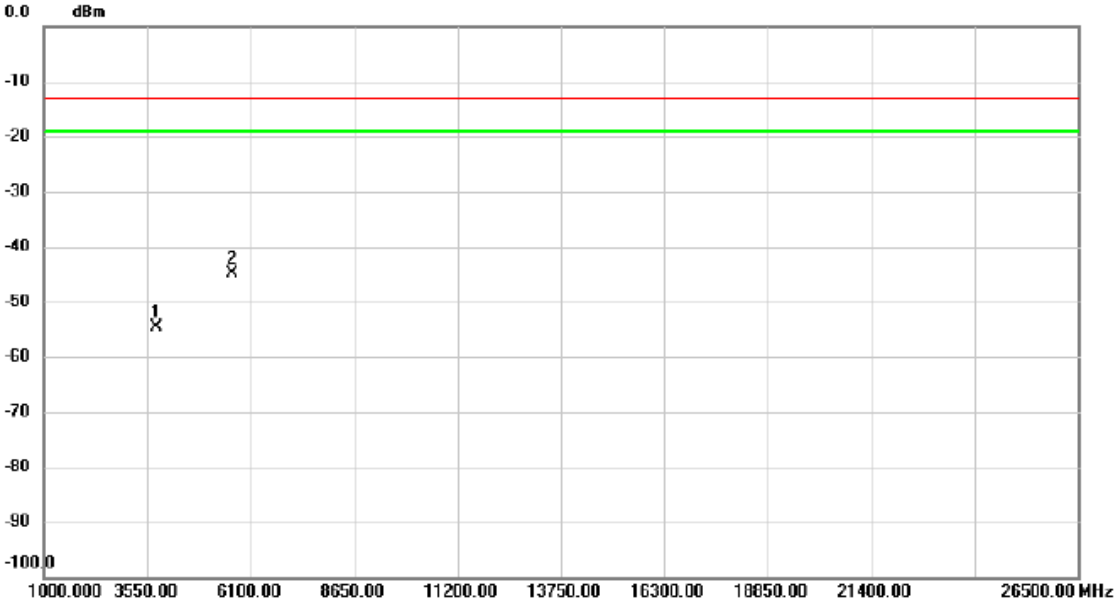
Test Mode:	WCDMA Band II_TX CH9400

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1881.400	-47.28	-17.09	-64.37	-13.00	-51.37	peak	
2		3757.900	-44.90	-12.61	-57.51	-13.00	-44.51	peak	
3	*	5637.100	-35.66	-7.31	-42.97	-13.00	-29.97	peak	

Test Mode:	LTE Band 2_TX CH18900_1.4M

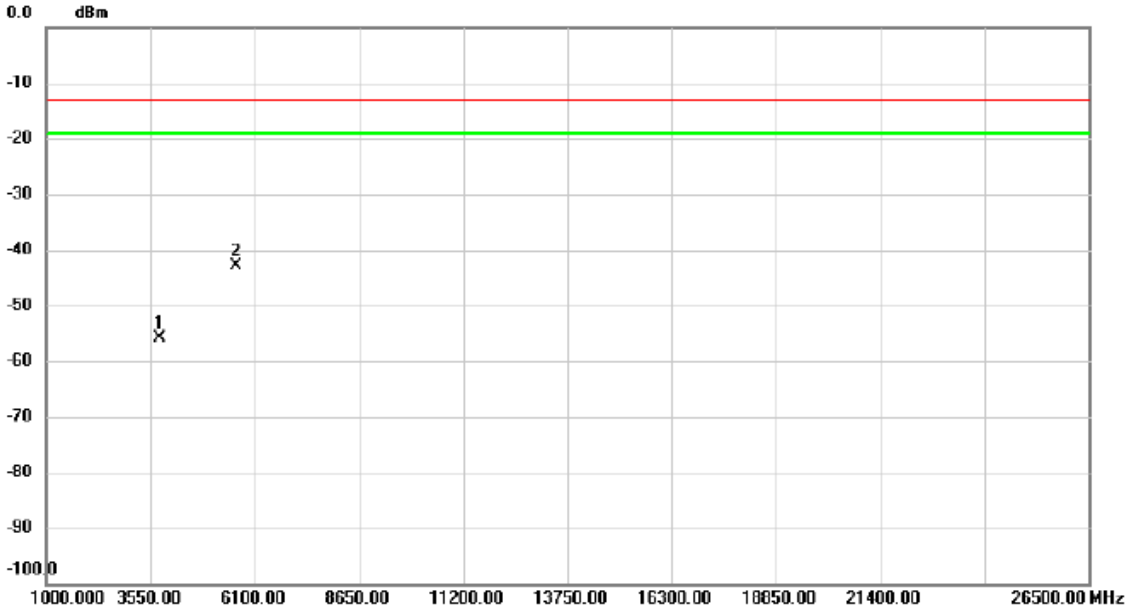
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		3759.100	-41.89	-12.61	-54.50	-13.00	-41.50	peak	
2	*	5638.450	-37.53	-7.29	-44.82	-13.00	-31.82	peak	

Test Mode:	LTE Band 2_TX CH18900_1.4M

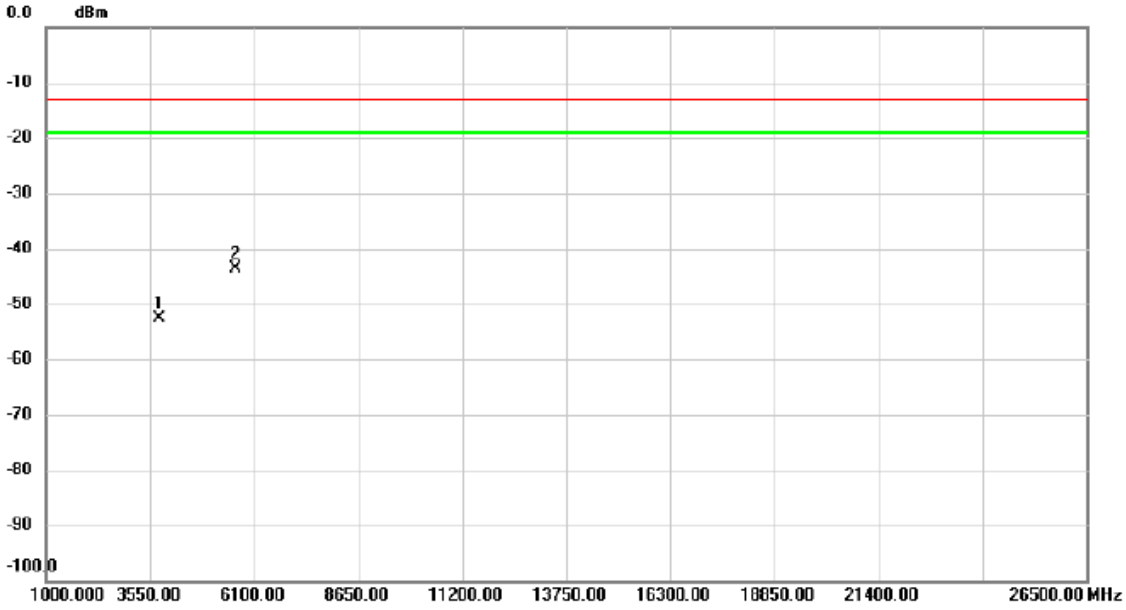
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		3759.100	-43.32	-12.61	-55.93	-13.00	-42.93	peak	
2	*	5638.450	-35.66	-7.29	-42.95	-13.00	-29.95	peak	

Test Mode:	LTE Band 2_ TX CH18900_5M

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		3755.770	-40.09	-12.61	-52.70	-13.00	-39.70	peak	
2	*	5633.526	-36.25	-7.32	-43.57	-13.00	-30.57	peak	