

ACCREDITE
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Report No.: SZEM190301170307

Page: 1 of 69

## TEST REPORT

Application No.: SZEM1903011703CR

Applicant: Hytera Communications Corporation Limited

Address of Applicant: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road,

Nanshan District, Shenzhen, 518057, China

Manufacturer: Hytera Communications Corporation Limited

Address of Manufacturer: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road,

Nanshan District, Shenzhen, 518057, China

**Equipment Under Test (EUT):** 

**EUT Name:** PoC LTE Terminal

Model No.: PNC370
Trade mark: Hytera

FCC ID: YAMPNC370 Standard(s): 47 CFR Part 2;

> 47 CFR Part 22 subpart H 47 CFR Part 24 subpart E 47 CFR Part 27 subpart C 47 CFR Part 90 subpart S

**Date of Receipt:** 2019-03-14

**Date of Test:** 2019-03-15 to 2019-04-01

**Date of Issue:** 2019-04-04

Test Result: Pass

Keny Xu EMC Laboratory Manager

Ceny. Ku



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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



Report No.: SZEM190301170307

Page: 2 of 69

	Revision Record							
Version	Chapter	Date	Modifier	Remark				
01		2019-04-04		Original				

Authorized for issue by:		
	Robsonti	
	Edison Li /Project Engineer	-
	EvicFu	
	Eric Fu /Reviewer	-



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Report No.: SZEM190301170307

Page: 3 of 69

## 2 Test Summary

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Power Output Data	\$2.1046, \$22.913, \$24.232, \$27.50(c), \$27.50(d), \$90.635(b)	ERP≤7W(LTE Band 5, LTE Band 26(824MHz-849MHz)) ERP≤100W(LTE Band 26(814MHz-824MHz)) EIRP≤ 2W(LTE Band 2,7,38, 41) EIRP≤ 1W(LTE Band 4) ERP≤ 3W(LTE Band 12, 17)	PASS
Peak-Average Ratio	§24.232, §27.50(c), §27.50(d)	≤13dB	PASS
Modulation Characteristics	§2.1047	Digital modulation	PASS
Bandwidth	§2.1049(h), §22.917, §24.238, §27.53(h), §90.209	OBW: No limit EBW: No limit	PASS
Band Edge Compliance	\$2.1051, \$22.917, \$24.238, \$27.53(h), \$27.53(g), \$90.691	≤ -13dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block(LTE Band2,4,5,12,17,26,38,41) ≤ -13dBm(LTE Band7, <5.5MHz) -25dBm(LTE Band7, ≥5.5MHz) ≤50+10*log10(P) at bandedge and for all out-of-band emissions within 37.5KHz of block edge(LTE Band26)	PASS
Spurious emissions at antenna terminals	\$2.1051, \$22.917, \$24.238, \$27.53(h), \$27.53(g), \$90.691	≤ -13dBm(LTE Band2,4,5,12,17,26) ≤ -25dBm(LTE Band7,38, 41)	PASS
Field strength of spurious radiation	§2.1051, §22.917, §24.238,	≤ -13dBm(LTE Band2,4,5,12,17,26) ≤ -25dBm(LTE Band7,38, 41)	PASS
Frequency stability	§2.1055, §22.355, §24.235, §27.54, §90.213	≤ ±2.5ppm	PASS



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Report No.: SZEM190301170307

Page: 4 of 69

### 3 Contents

1	COVE	P DAGE	Page
2			N
3	CONT	ENIS	4
4	GENE	RAL INFORMATION	6
	4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9	Details of E.U.T	
	4.10	Abnormalities from Standard Conditions	13
5	EQUIF	PMENT LIST	14
6	RADIO	O SPECTRUM MATTER TEST RESULTS	16
	6.1 6.1.1 6.1.2 6.1.3 6.2 6.2.1 6.2.2 6.2.3 6.3 6.3.1 6.3.2 6.3.3 6.4 6.4.1 6.4.2	Effective (Isotropic) Radiated Power Output Data  E.U.T. Operation  Test Setup Diagram  Measurement Data  Peak-Average Ratio  E.U.T. Operation  Test Setup Diagram  Measurement Data  Bandwidth  E.U.T. Operation  Test Setup Diagram  Measurement Data  Bandwidth  E.U.T. Operation  Test Setup Diagram  Measurement Data  Band Edge Compliance  E.U.T. Operation  Test Setup Diagram	
	6.4.2 6.4.3 6.5 6.5.1 6.5.2 6.5.3 6.6 6.6.1 6.6.2 6.6.3	Neasurement Data Spurious emissions at antenna terminals E.U.T. Operation Test Setup Diagram Measurement Data Field strength of spurious radiation E.U.T. Operation Test Setup Diagram Measurement Data Test Setup Diagram Measurement Procedure and Data	



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Report No.: SZEM190301170307

Page: 5 of 69

6.7	Frequency stability	34
	E.U.T. Operation	
	Test Setup Diagram	
	Measurement Data	
	Modulation Characteristics	
6.8.1	E.U.T. Operation	65
	Test Setup Diagram	
6.8.3	Measurement Data	65-69



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Report No.: SZEM190301170307

Page: 6 of 69

### 4 General Information

### 4.1 Details of E.U.T.

Power supply:	Switching Power Supply Model: S010WU0500200 Input: AC 100-240V, 50/60Hz, 400mA Output: DC 5.0V, 2000mA
Comple Time:	DC 3.6V, 3100mAh rechargeable battery which charged by USB port
Sample Type:	Portable production
LTE Operation Frequency Band:	LTE FDD Band 2, 4, 5, 7, 12, 17, 26, 38, 41
Modulation Type:	QPSK, 16QAM
LTE Release Version:	R8
LTE Power Class:	Level 3
Antenna Type:	LDS Antenna
Antenna Gain:	0dBi
Extreme temp. Tolerance:	-30 ℃ to +50 ℃
Extreme vol. Limits:	3.06VDC to 4.14VDC (nominal: 3.6VDC)



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Report No.: SZEM190301170307

7 of 69 Page:

4.2 **Test Frequency** 

Nominal andwidth	Low (L)	Middle (NA)		
		Middle (M)	High (H)	
(MHz)	MHz	MHz	MHz	
1.4	1850.7	1880	1909.3	
3	1851.5	1880	1908.5	
5	1852.5	1880	1907.5	
10	1855.0	1880	1905.0	
15	1857.5	1880	1902.5	
20	1860.0	1880	1900.0	
		RF Channel		
	Low (L)	Middle (M)	High (H)	
(MHz)	MHz	MHz	MHz	
1.4	1710.7	1732.5	1754.3	
3	1711.5	1732.5	1753.5	
5	1712.5	1732.5	1752.5	
10	1715.0	1732.5	1750.0	
15	1717.5	1732.5	1747.5	
20	1720.0	1732.5	1745.0	
Nominal	RF Channel			
Bandwidth	Low (L)	Middle (M)	High (H)	
(MHz)	MHz	MHz	MHz	
1.4	824.7	836.5	848.3	
3	825.5	836.5	847.5	
5	826.5	836.5	846.5	
10	829.0	836.5	844.0	
		RF Channel		
	Low (L)	Middle (M)	High (H)	
(MHz)	MHz	MHz	MHz	
5	2502.5	2535.0	2567.5	
10	2505.0	2535.0	2565.0	
15	2507.5	2535.0	2562.5	
20	2510.0	2535.0	2560.0	
Nominal				
andwidth	Low (L)	Middle (M)	High (H)	
(MHz)	MHz	MHz	MHz	
1.4	699.7	707.5	715.3	
	700.5	707.5		
	5 10 15 20 Nominal andwidth (MHz) 1.4 3 5 10 15 20 Nominal andwidth (MHz) 1.4 3 5 10 Nominal andwidth (MHz) 5 10 15 20 Nominal andwidth (MHz)	5       1852.5         10       1855.0         15       1857.5         20       1860.0         Nominal andwidth (MHz)         (MHz)       Low (L)         MHz       1.4         1710.7       3         1711.5       5         10       1715.0         15       1717.5         20       1720.0         Nominal andwidth (MHz)       Low (L)         MHz       824.7         3       825.5         5       826.5         10       829.0         Nominal andwidth (MHz)       Low (L)         MHz       5         2502.5       2502.5         10       2505.0         15       2507.5         20       2510.0         Nominal andwidth (MHz)       Low (L)         MHz       Low (L)	5       1852.5       1880         10       1855.0       1880         15       1857.5       1880         20       1860.0       1880         Nominal andwidth (MHz)         MHz       MHz         1.4       1710.7       1732.5         3       1711.5       1732.5         5       1712.5       1732.5         10       1715.0       1732.5         15       1717.5       1732.5         20       1720.0       1732.5         Nominal andwidth (MHz)       MHz       MHz         MHz       MHz       MHz         Nominal andwidth (MHz)       824.7       836.5         5       826.5       836.5         10       829.0       836.5         Nominal andwidth (MHz)       MHz       MHz         5       2502.5       2535.0         10       2505.0       2535.0         20       2510.0       2535.0         Nominal andwidth (MHz)       RF Channel	



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Report No.: SZEM190301170307

8 of 69 Page:

	5	701.5	707.5	713.5	
	10	704.0	707.5	711.0	
	Nominal	RF Channel			
Test mode:	Bandwidth	Low (L)	Middle (M)	High (H)	
	(MHz)	MHz	MHz	MHz	
LTC CDD Bond 17	5	706.5	710.0	713.5	
LTE FDD Band 17	10	709.0	710.0	711.0	
	Nominal		RF Channel		
Test mode:	Bandwidth	Low (L)	Middle (M)	High (H)	
	(MHz)	MHz	MHz	MHz	
	1.4	814.7	819.0	823.3	
LTE FDD Band 26	3	815.5	819.0	822.5	
(814MHz-824MHz)	5	816.5	819.0	821.5	
(614101112-024101112)	10	/	819.0	/	
	15	821.5	/	/	
	Nominal		RF Channel		
Test mode:	Bandwidth	Low (L)	Middle (M)	High (H)	
	(MHz)	MHz	MHz	MHz	
	1.4	824.7	836.5	848.3	
LTE FDD Band 26	3	825.5	836.5	847.5	
(824MHz-849MHz)	5	826.5	836.5	846.5	
(024IVII 12-049IVII 12)	10	829.0	836.5	844.0	
	15	831.5	836.5	841.5	
	Nominal	RF Channel			
Test mode:	Bandwidth	Low (L)	Middle (M)	High (H)	
	(MHz)	MHz	MHz	MHz	
	5	2572.5	2595.0	2617.5	
LTE TDD Band 38	10	2575.0	2595.0	2615.0	
LIL IDD Ballu 30	15	2577.5	2595.0	2612.5	
	20	2580.0	2595.0	2610.0	
	Nominal		RF Channel		
Test mode:	Bandwidth	Low (L)	Middle (M)	High (H)	
	(MHz)	MHz	MHz	MHz	
	5	2557.5	2605.0	2652.5	
LTE TDD Band 41	10	2560.0	2605.0	2650.0	
LIE IDD Dallu 41	15	2562.5	2605.0	2647.5	
	20	2565.0	2605.0	2645.0	



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Report No.: SZEM190301170307

Page: 9 of 69

### 4.3 Max ERP/EIRP Power, Frequency Tolerance and Emission Designator

FCC Rule	Band	Modulation	BW (MHz)	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP/EIRP (W)
Part24E	LTE Band2	QPSK	1.4	1M10G7D	/	0.222844
Part24E	LTE Band2	16QAM	1.4	1M10W7D	/	0.194536
Part24E	LTE Band2	QPSK	3	2M69G7D	/	0.234423
Part24E	LTE Band2	16QAM	3	2M69W7D	/	0.188799
Part24E	LTE Band2	QPSK	5	4M51G7D	/	0.224388
Part24E	LTE Band2	16QAM	5	4M51W7D	/	0.187932
Part24E	LTE Band2	QPSK	10	8M94G7D	/	0.225944
Part24E	LTE Band2	16QAM	10	8M94W7D	/	0.188365
Part24E	LTE Band2	QPSK	15	13M5G7D	/	0.231206
Part24E	LTE Band2	16QAM	15	13M5W7D	/	0.190108
Part24E	LTE Band2	QPSK	20	18M0G7D	-0.00282	0.236048
Part24E	LTE Band2	16QAM	20	18M0W7D	-0.00265	0.188799
Part27	LTE Band4	QPSK	1.4	1M10G7D	/	0.235505
Part27	LTE Band4	16QAM	1.4	1M10W7D	/	0.191426
Part27	LTE Band4	QPSK	3	2M69G7D	/	0.224905
Part27	LTE Band4	16QAM	3	2M69W7D	/	0.190985
Part27	LTE Band4	QPSK	5	4M51G7D	/	0.226986
Part27	LTE Band4	16QAM	5	4M52W7D	/	0.199526
Part27	LTE Band4	QPSK	10	8M94G7D	/	0.224388
Part27	LTE Band4	16QAM	10	8M94W7D	/	0.193197
Part27	LTE Band4	QPSK	15	13M5G7D	/	0.225424
Part27	LTE Band4	16QAM	15	13M5W7D	/	0.199526
Part27	LTE Band4	QPSK	20	18M0G7D	0.00254	0.229615
Part27	LTE Band4	16QAM	20	18M0W7D	0.00319	0.199526
Part22H	LTE Band5	QPSK	1.4	1M10G7D	/	0.145881
Part22H	LTE Band5	16QAM	1.4	1M10W7D	/	0.117220
Part22H	LTE Band5	QPSK	3	2M68G7D	/	0.147231
Part22H	LTE Band5	16QAM	3	2M69W7D	/	0.118304
Part22H	LTE Band5	QPSK	5	4M50G7D	/	0.144877
Part22H	LTE Band5	16QAM	5	4M52W7D	/	0.121339
Part22H	LTE Band5	QPSK	10	8M98G7D	-0.00648	0.141579
Part22H	LTE Band5	16QAM	10	8M94W7D	-0.00614	0.120226



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of email: <u>CML Decreack(Wasgs.com</u> Mo. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 中国・深圳・科技図中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn sgs.china@sgs.com



Report No.: SZEM190301170307

Page: 10 of 69

Part27	LTE Band7	QPSK	5	4M51G7D	/	0.251189
Part27	LTE Band7	16QAM	5	4M51W7D	/	0.223357
Part27	LTE Band7	QPSK	10	8M96G7D	/	0.240436
Part27	LTE Band7	16QAM	10	8M94W7D	/	0.178649
Part27	LTE Band7	QPSK	15	13M6G7D	/	0.233346
Part27	LTE Band7	16QAM	15	13M5W7D	/	0.195434
Part27	LTE Band7	QPSK	20	18M0G7D	0.00181	0.213796
Part27	LTE Band7	16QAM	20	18M0W7D	0.00208	0.181134
Part27	LTE Band12	QPSK	1.4	1M10G7D	/	0.135207
Part27	LTE Band12	16QAM	1.4	1M10W7D	/	0.116413
Part27	LTE Band12	QPSK	3	2M68G7D	/	0.133045
Part27	LTE Band12	16QAM	3	2M69W7D	/	0.116950
Part27	LTE Band12	QPSK	5	4M51G7D	/	0.140929
Part27	LTE Band12	16QAM	5	4M51W7D	/	0.111429
Part27	LTE Band12	QPSK	10	8M96G7D	0.00722	0.134276
Part27	LTE Band12	16QAM	10	8M96W7D	0.00705	0.118304
Part27	LTE Band17	QPSK	5	4M51G7D	/	0.152405
Part27	LTE Band17	16QAM	5	4M51W7D	/	0.116950
Part27	LTE Band17	QPSK	10	8M94G7D	0.00677	0.145546
Part27	LTE Band17	16QAM	10	8M96W7D	0.00756	0.112460
Part90	LTE Band26a	QPSK	1.4	1M10G7D	/	0.138038
Part90	LTE Band26 <sup>a</sup>	16QAM	1.4	1M10W7D	/	0.108393
Part90	LTE Band26ª	QPSK	3	2M69G7D	/	0.137721
Part90	LTE Band26 <sup>a</sup>	16QAM	3	2M69W7D	/	0.118577
Part90	LTE Band26ª	QPSK	5	4M51G7D	/	0.142889
Part90	LTE Band26 <sup>a</sup>	16QAM	5	4M51W7D	/	0.115878
Part90	LTE Band26 <sup>a</sup>	QPSK	10	8M96G7D	/	0.140929
Part90	LTE Band26 <sup>a</sup>	16QAM	10	8M92W7D	/	0.111944
Part90	LTE Band26 <sup>a</sup>	QPSK	15	13M5G7D	-0.00507	0.139959
Part90	LTE Band26 <sup>a</sup>	16QAM	15	13M4W7D	0.00486	0.112460
Part22H	LTE Band26b	QPSK	1.4	1M10G7D	/	0.141906
Part22H	LTE Band26b	16QAM	1.4	1M10W7D	1	0.116950
Part22H	LTE Band26b	QPSK	3	2M69G7D	/	0.140605
Part22H	LTE Band26b	16QAM	3	2M69W7D	/	0.118304
Part22H	LTE Band26b	QPSK	5	4M51G7D	/	0.140281
Part22H	LTE Band26b	16QAM	5	4M51W7D	/	0.117490
Part22H	LTE Band26b	QPSK	10	8M94G7D	/	0.138038



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Report No.: SZEM190301170307

Page: 11 of 69

Part22H	LTE Band26b	16QAM	10	8M94W7D	/	0.105439
Part22H	LTE Band26b	QPSK	15	13M5G7D	-0.00581	0.141906
Part22H	LTE Band26b	16QAM	15	13M5W7D	0.00574	0.112980
Part27	LTE Band38	QPSK	5	4M52G7D	/	0.237684
Part27	LTE Band38	16QAM	5	4M51W7D	/	0.187499
Part27	LTE Band38	QPSK	10	8M94G7D	/	0.241546
Part27	LTE Band38	16QAM	10	8M96W7D	/	0.198609
Part27	LTE Band38	QPSK	15	13M5G7D	/	0.244906
Part27	LTE Band38	16QAM	15	13M5W7D	/	0.197697
Part27	LTE Band38	QPSK	20	18M0G7D	-0.00195	0.247742
Part27	LTE Band38	16QAM	20	18M0W7D	0.00194	0.192752
Part27	LTE Band41	QPSK	5	4M53G7D	/	0.243220
Part27	LTE Band41	16QAM	5	4M51W7D	/	0.193197
Part27	LTE Band41	QPSK	10	8M94G7D	/	0.207970
Part27	LTE Band41	16QAM	10	8M94W7D	/	0.167109
Part27	LTE Band41	QPSK	15	13M5G7D	/	0.201837
Part27	LTE Band41	16QAM	15	13M5W7D	/	0.151356
Part27	LTE Band41	QPSK	20	18M0G7D	-0.00165	0.210378
Part27	LTE Band41	16QAM	20	18M0W7D	0.00191	0.159221

Note: The frequency band of LTE Band26a is 814MHz-824MHz;

The frequency band of LTE Band26b is 824MHz-849MHz;



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Report No.: SZEM190301170307

Page: 12 of 69

#### 4.4 **Test Environment**

Environment Parameter	Selected Values During Tests				
Relative Humidity	52%				
Atmospheric Pressure:	1015Pa				
Temperature:	TN	25 ℃			
	VL	3.06 V			
Voltage:	VN	3.6 V			
	VH	4.14 V			

NOTE: VL= lower extreme test voltage

VN= nominal voltage

VH= upper extreme test voltage

TN= normal temperature

#### 4.5 **Description of Support Units**

The EUT has been tested independent unit.

#### 4.6 **Measurement Uncertainty**

No.	Item	Measurement Uncertainty		
1	Radio Frequency	7.25 x 10 <sup>-8</sup>		
2	Occupied Bandwidth	3%		
3	RF conducted power	0.75dB		
4	Conducted Spurious emissions	0.75dB		
5	DE Dadiated newer	4.5dB (below 1GHz)		
5	RF Radiated power	4.8dB (above 1GHz)		
6	Dedicted Courieus emission test	4.5dB (Below 1GHz)		
0	Radiated Spurious emission test	4.8dB (Above 1GHz)		
7	Temperature test	1℃		
8	Humidity test	3%		
9	Supply voltages	1.5%		
10	Time	3%		



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Report No.: SZEM190301170307

Page: 13 of 69

#### 4.7 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

### 4.8 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### · CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

#### VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

#### • FCC -Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

#### • Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

#### 4.9 Deviation from Standards

None

#### 4.10 Abnormalities from Standard Conditions

None



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Report No.: SZEM190301170307

Page: 14 of 69

## 5 Equipment List

RF conducted test									
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date				
DC Power Supply	ZhaoXin	PS-3005D	SEM011-05	2018-09-25	2019-09-24				
Spectrum Analyzer (20Hz-43GHz)	Rohde & Schwarz	FSU43	SEM004-08	2018-04-13	2019-04-12				
Signal Analyzer (10Hz-40GHz)	Rohde & Schwarz	FSV40	SEM008-04	2018-04-02	2019-04-01				
Signal Generator (9kHz-40GHz)	KEYSIGHT	N5173B	SEM006-05	2018-09-27	2019-09-26				
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.6	N/A	N/A	N/A				
Coaxial Cable	SGS	N/A	SEM031-01	2018-07-12	2019-07-11				
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A				
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2018-04-02	2019-04-01				
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	SEM010-02	2018-04-02	2019-04-01				
Power Splitter	Narda	4324-2	0168	N/A	N/A				

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
EXA Signal Analyzer (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2018-04-13	2019-04-12
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16
Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2018-09-25	2019-09-24
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2018-11-12	2019-11-11
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2018-04-02	2019-04-01
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2018-07-12	2019-07-11
Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26



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Report No.: SZEM190301170307

Page: 15 of 69

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2018-09-25	2019-09-24
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-06-27	2020-06-26
Pre-amplifier	Agilent Technologies	8447D	SEM005-01	2018-04-02	2019-04-01
(0.1-1300MHz)	Aglierit Technologies	0447D	2EINI002-01	2019-04-01	2020-03-31
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2018-07-12	2019-07-11
Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Signal Generator	R&S	SMA100A	102174	2018-07-12	2019-07-11

General used equipmen	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Equipment	Manuacturei	Model No	inventory No	Cai Date	Cai Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2017-09-29	2018-09-28
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-17



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Report No.: SZEM190301170307

Page: 16 of 69

#### 6 Radio Spectrum Matter Test Results

#### 6.1 **Effective (Isotropic) Radiated Power Output Data**

Test Requirement: §2.1046, §22.913, §24.232, §27.50(c), §27.50(d), §90.635(d)

ANSI C63.26, KDB 971168 D01 v03 Test Method:

Limit: ERP≤7W(LTE Band 5, LTE Band 26(824MHz-849MHz))

ERP≤100W(LTE Band 26(814MHz-824MHz))

EIRP≤ 2W(LTE Band 2,7,38, 41)

EIRP≤ 1W(LTE Band 4) ERP≤ 3W(LTE Band 12, 17)

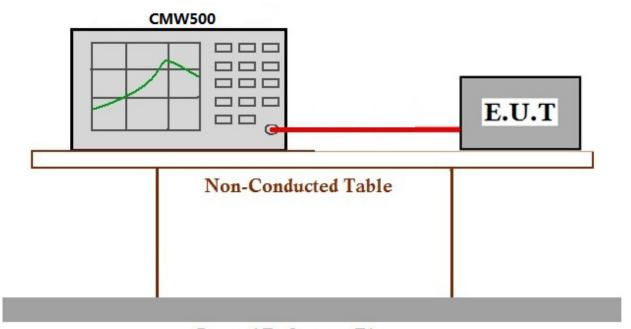
#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25 Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.1.2 Test Setup Diagram



### Ground Reference Plane

#### 6.1.3 **Measurement Data**

Please refer to Appendix A-Output power



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Report No.: SZEM190301170307

Page: 17 of 69

### 6.2 Peak-Average Ratio

Test Requirement: §24.232, §27.50(c), §27.50(d)
Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: ≤13dB

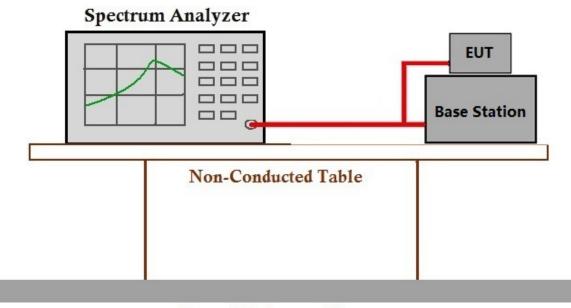
#### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.2.2 Test Setup Diagram



### Ground Reference Plane

#### 6.2.3 Measurement Data

Please refer to Appendix B- Peak-Average Ratio



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Report No.: SZEM190301170307

Page: 18 of 69

#### 6.3 Bandwidth

Test Requirement: §2.1049(h), §22.917, §24.238, §27.53(h), §90.209

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: OBW: No limit

EBW: No limit

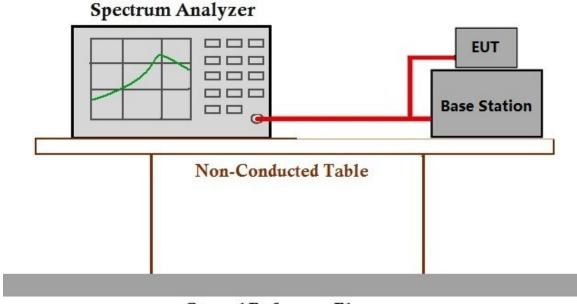
#### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.3.2 Test Setup Diagram



### **Ground Reference Plane**

#### 6.3.3 Measurement Data

Please refer to Appendix C- Bandwidth



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Report No.: SZEM190301170307

Page: 19 of 69

### 6.4 Band Edge Compliance

Test Requirement: §2.1051, §22.917, §24.238, §27.53(h), §27.53(g), §90.691

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: ≤ -13dBm/1%\*EBW, in 1 MHz bands immediately outside and adjacent to

the frequency block(LTE Band2,4,5,12,17,26,38,41)

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. (LTE Band7)

≤50+10\*log10(P) at bandedge and for all out-of-band emissions within

37.5KHz of block edge(LTE Band26)



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Report No.: SZEM190301170307

Page: 20 of 69

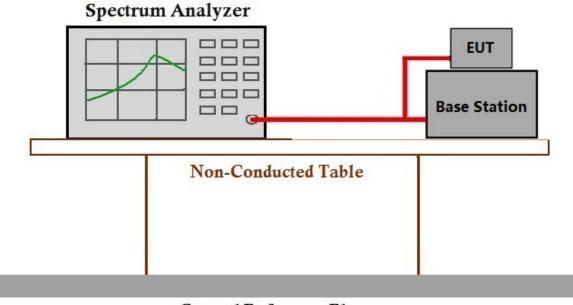
#### 6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.4.2 Test Setup Diagram



Ground Reference Plane

#### 6.4.3 Measurement Data

Please refer to Appendix D- Band Edge



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Report No.: SZEM190301170307

Page: 21 of 69

### 6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051, §22.917, §24.238, §27.53(h), §27.53(g), §90.691

Test Method: ANSI C63.26, KDB 971168 D01 v03 Limit:  $\leq$  -13dBm(LTE Band2,4,5,12,17,26)

≤ -25dBm(LTE Band7,38, 41)

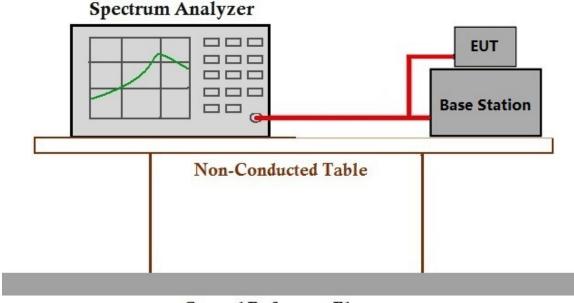
#### 6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.5.2 Test Setup Diagram



### Ground Reference Plane

#### 6.5.3 Measurement Data

Please refer to Appendix E- Spurious emissions at antenna terminals



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Report No.: SZEM190301170307

Page: 22 of 69

### 6.6 Field strength of spurious radiation

Test Requirement: §2.1051, §22.917, §24.238, §27.53(h), §27.53(g), §90.691

Test Method: ANSI C63.26, KDB 971168 D01 v03 Limit: ≤ -13dBm(LTE Band2,4,5,12,17,26)

≤ -25dBm(LTE Band7,38, 41)

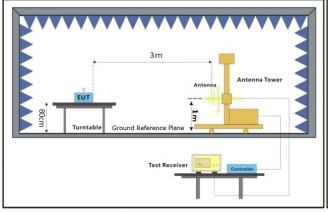
#### 6.6.1 E.U.T. Operation

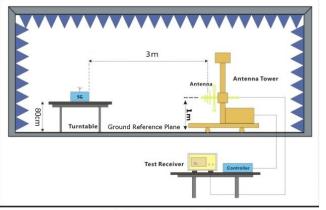
Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.6.2 Test Setup Diagram





Substitue Antenna+Signal Generator



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Report No.: SZEM190301170307

Page: 23 of 69

#### 6.6.3 **Measurement Procedure and Data**

#### Test Procedure:

- (1)On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3)The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall than be rotated through 360 in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13)If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17)The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.



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Page: 24 of 69

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Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3702	-61.42	0.71	7.6	-54.53	-13	-41.53	Horizontal	Pass
5553	-57.93	0.85	10.3	-48.48	-13	-35.48	Horizontal	Pass
7404	-60.52	1	12.9	-48.62	-13	-35.62	Horizontal	Pass
3702	-61.51	0.71	7.6	-54.62	-13	-41.62	Vertical	Pass
5553	-59.05	0.85	10.3	-49.6	-13	-36.6	Vertical	Pass
7404	-58.99	1	12.9	-47.09	-13	-34.09	Vertical	Pass

	FDD LTE Band2- Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
3742	-60.8	0.71	7.6	-53.91	-13	-40.91	Horizontal	Pass			
5613	-58.45	0.85	10.3	-49	-13	-36	Horizontal	Pass			
7484	-58.04	1	12.9	-46.14	-13	-33.14	Horizontal	Pass			
3742	-60.59	0.71	7.6	-53.7	-13	-40.7	Vertical	Pass			
5613	-59.54	0.85	10.3	-50.09	-13	-37.09	Vertical	Pass			
7484	-57.84	1	12.9	-45.94	-13	-32.94	Vertical	Pass			

	FDD LTE Band2- High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
3782	-59.2	0.71	7.6	-52.31	-13	-39.31	Horizontal	Pass			
5673	-57.7	0.85	10.3	-48.25	-13	-35.25	Horizontal	Pass			
7564	-59.01	0.99	13.2	-46.8	-13	-33.8	Horizontal	Pass			
3782	-58.89	0.71	7.6	-52	-13	-39	Vertical	Pass			
5673	-57.31	0.85	10.3	-47.86	-13	-34.86	Vertical	Pass			
7564	-59.54	0.99	13.2	-47.33	-13	-34.33	Vertical	Pass			



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Report No.: SZEM190301170307

Page: 25 of 69

	FDD	LTE Band4-Lo	ow channel, M	odulation:	QPSK, Band	dwidth: 20M	Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3422	-59.73	0.65	6.2	-54.18	-13	-41.18	Horizontal	Pass
5133	-56.88	0.82	9.6	-48.1	-13	-35.1	Horizontal	Pass
6844	-57.1	0.95	11.8	-46.25	-13	-33.25	Horizontal	Pass
3422	-59.13	0.65	6.2	-53.58	-13	-40.58	Vertical	Pass
5133	-58.47	0.82	9.6	-49.69	-13	-36.69	Vertical	Pass
6844	-56.2	0.95	11.8	-45.35	-13	-32.35	Vertical	Pass

	FDD LTE Band4-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB											
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result				
3447	-59.74	0.65	6.2	-54.19	-13	-41.19	Horizontal	Pass				
5170.5	-58.17	0.82	9.6	-49.39	-13	-36.39	Horizontal	Pass				
6894	-58.22	0.95	11.8	-47.37	-13	-34.37	Horizontal	Pass				
3447	-58.79	0.65	6.2	-53.24	-13	-40.24	Vertical	Pass				
5170.5	-58.59	0.82	9.6	-49.81	-13	-36.81	Vertical	Pass				
6894	-56.94	0.95	11.8	-46.09	-13	-33.09	Vertical	Pass				

	FDD LTE Band4-High channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
3472	-59.08	0.65	6.2	-53.53	-13	-40.53	Horizontal	Pass			
5208	-58.13	0.82	9.6	-49.35	-13	-36.35	Horizontal	Pass			
6944	-56.47	0.95	11.8	-45.62	-13	-32.62	Horizontal	Pass			
3472	-60.08	0.65	6.2	-54.53	-13	-41.53	Vertical	Pass			
5208	-58.97	0.82	9.6	-50.19	-13	-37.19	Vertical	Pass			
6944	-57.87	0.95	11.8	-47.02	-13	-34.02	Vertical	Pass			



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Report No.: SZEM190301170307

Page: 26 of 69

	FDD	LTE Band5-Lo	ow channel, M	odulation:	QPSK, Band	dwidth: 10M	Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1649	-61.54	0.52	6	-56.06	-13	-43.06	Horizontal	Pass
2473.5	-61.71	0.53	5.8	-56.44	-13	-43.44	Horizontal	Pass
3298	-57.78	0.65	6.2	-52.23	-13	-39.23	Horizontal	Pass
1649	-63.07	0.52	6	-57.59	-13	-44.59	Vertical	Pass
2473.5	-60.59	0.53	5.8	-55.32	-13	-42.32	Vertical	Pass
3298	-57.53	0.65	6.2	-51.98	-13	-38.98	Vertical	Pass

	FDD L	TE Band5-Mic	ldle channel, N	Modulation	: QPSK, Bar	ndwidth: 10N	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1664	-53.93	0.52	6	-48.45	-13	-35.45	Horizontal	Pass
2496	-60.75	0.53	5.8	-55.48	-13	-42.48	Horizontal	Pass
3328	-57.46	0.65	6.2	-51.91	-13	-38.91	Horizontal	Pass
1664	-59.48	0.52	6	-54	-13	-41	Vertical	Pass
2496	-61.88	0.53	5.8	-56.61	-13	-43.61	Vertical	Pass
3328	-58.36	0.65	6.2	-52.81	-13	-39.81	Vertical	Pass

	FDD	LTE Band5-Hi	gh channel, M	odulation:	QPSK, Ban	dwidth: 10M	Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1679	-60.86	0.52	6	-55.38	-13	-42.38	Horizontal	Pass
2518.5	-61.03	0.59	5.3	-56.32	-13	-43.32	Horizontal	Pass
3358	-57.72	0.65	6.2	-52.17	-13	-39.17	Horizontal	Pass
1679	-65.17	0.52	6	-59.69	-13	-46.69	Vertical	Pass
2518.5	-61.03	0.59	5.3	-56.32	-13	-43.32	Vertical	Pass
3358	-58.47	0.65	6.2	-52.92	-13	-39.92	Vertical	Pass



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Report No.: SZEM190301170307

Page: 27 of 69

	FDD	LTE Band7-Lo	ow channel, M	odulation:	QPSK, Band	dwidth: 20M	Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5002	-50.31	0.82	9.6	-41.53	-25	-16.53	Horizontal	Pass
7503	-55.48	0.99	13.2	-43.27	-25	-18.27	Horizontal	Pass
10004	-56.37	1.26	12.7	-44.93	-25	-19.93	Horizontal	Pass
5002	-48.19	0.82	9.6	-39.41	-25	-14.41	Vertical	Pass
7503	-57.12	0.99	13.2	-44.91	-25	-19.91	Vertical	Pass
10004	-56.09	1.26	12.7	-44.65	-25	-19.65	Vertical	Pass

	FDD L	TE Band7-Mic	ldle channel, N	Modulation	: QPSK, Bar	ndwidth: 20N	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5052	-50.56	0.82	9.6	-43.93	-25	-18.93	Horizontal	Pass
7578	-56.19	0.99	13.2	-46.13	-25	-21.13	Horizontal	Pass
10104	-53.25	1.26	12.7	-43.96	-25	-18.96	Horizontal	Pass
5052	-48.35	0.82	9.6	-41.72	-25	-16.72	Vertical	Pass
7578	-55.81	0.99	13.2	-45.75	-25	-20.75	Vertical	Pass
10104	-53.33	1.26	12.7	-44.04	-25	-19.04	Vertical	Pass

	FDD	LTE Band7-Hi	ah channel. M	odulation:	QPSK. Ban	dwidth: 20M	Hz. 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5102	-52.53	0.82	9.6	-43.75	-25	-18.75	Horizontal	Pass
7653	-57.59	0.99	13.2	-45.38	-25	-20.38	Horizontal	Pass
10204	-55.57	1.26	12.7	-44.13	-25	-19.13	Horizontal	Pass
5102	-50.1	0.82	9.6	-41.32	-25	-16.32	Vertical	Pass
7653	-57.73	0.99	13.2	-45.52	-25	-20.52	Vertical	Pass
10204	-55.45	1.26	12.7	-44.01	-25	-19.01	Vertical	Pass



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Report No.: SZEM190301170307

Page: 28 of 69

	FDD I	TE Band12-L	ow channel, M	lodulation:	QPSK, Ban	dwidth: 10M	1Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1399	-62.07	0.43	1.9	-60.6	-13	-47.6	Horizontal	Pass
2098.5	-64.59	0.53	5.8	-59.32	-13	-46.32	Horizontal	Pass
2798	-58.71	0.59	5.3	-54	-13	-41	Horizontal	Pass
1399	-60.83	0.43	1.9	-59.36	-13	-46.36	Vertical	Pass
2098.5	-63.72	0.53	5.8	-58.45	-13	-45.45	Vertical	Pass
2798	-60.56	0.59	5.3	-55.85	-13	-42.85	Vertical	Pass

	FDD L	ΓΕ Band12-Mi	ddle channel,	Modulatior	n: QPSK, Ba	ndwidth: 10	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1406	-60.37	0.43	1.9	-58.9	-13	-45.9	Horizontal	Pass
2109	-62.51	0.53	5.8	-57.24	-13	-44.24	Horizontal	Pass
2812	-59.8	0.59	5.3	-55.09	-13	-42.09	Horizontal	Pass
1406	-60.46	0.43	1.9	-58.99	-13	-45.99	Vertical	Pass
2109	-61.51	0.53	5.8	-56.24	-13	-43.24	Vertical	Pass
2812	-59.66	0.59	5.3	-54.95	-13	-41.95	Vertical	Pass

	FDD L	TE Band12-H	igh channel, N	Modulation	: QPSK, Bar	dwidth: 10N	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1413	-60.56	0.43	1.9	-59.09	-13	-46.09	Horizontal	Pass
2119.5	-65.29	0.53	5.8	-60.02	-13	-47.02	Horizontal	Pass
2826	-59.93	0.59	5.3	-55.22	-13	-42.22	Horizontal	Pass
1413	-58.92	0.43	1.9	-57.45	-13	-44.45	Vertical	Pass
2119.5	-63.69	0.53	5.8	-58.42	-13	-45.42	Vertical	Pass
2826	-59.24	0.59	5.3	-54.53	-13	-41.53	Vertical	Pass



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Report No.: SZEM190301170307

Page: 29 of 69

	FDD I	TE Band17-L	ow channel, M	lodulation:	QPSK, Ban	dwidth: 10M	1Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1409	-61.03	0.43	1.9	-59.56	-13	-46.56	Horizontal	Pass
2113.5	-62.43	0.53	5.8	-57.16	-13	-44.16	Horizontal	Pass
2818	-60.14	0.59	5.3	-55.43	-13	-42.43	Horizontal	Pass
1409	-58.62	0.43	1.9	-57.15	-13	-44.15	Vertical	Pass
2113.5	-61.91	0.53	5.8	-56.64	-13	-43.64	Vertical	Pass
2818	-58.5	0.59	5.3	-53.79	-13	-40.79	Vertical	Pass

	FDD L	ΓΕ Band17-Mi	ddle channel,	Modulation	n: QPSK, Ba	ndwidth: 10	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1411	-60.66	0.43	1.9	-59.19	-13	-46.19	Horizontal	Pass
2116.5	-63.99	0.53	5.8	-58.72	-13	-45.72	Horizontal	Pass
2822	-59.31	0.59	5.3	-54.6	-13	-41.6	Horizontal	Pass
1411	-59.13	0.43	1.9	-57.66	-13	-44.66	Vertical	Pass
2116.5	-62.05	0.53	5.8	-56.78	-13	-43.78	Vertical	Pass
2822	-59.51	0.59	5.3	-54.8	-13	-41.8	Vertical	Pass

	FDD L	TE Band17-H	igh channel, M	Modulation	: QPSK, Bar	dwidth: 10M	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1413	-61.88	0.43	1.9	-60.41	-13	-47.41	Horizontal	Pass
2119.5	-62.59	0.53	5.8	-57.32	-13	-44.32	Horizontal	Pass
2826	-59.8	0.59	5.3	-55.09	-13	-42.09	Horizontal	Pass
1413	-58.89	0.43	1.9	-57.42	-13	-44.42	Vertical	Pass
2119.5	-60.29	0.53	5.8	-55.02	-13	-42.02	Vertical	Pass
2826	-58.96	0.59	5.3	-54.25	-13	-41.25	Vertical	Pass



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Report No.: SZEM190301170307

Page: 30 of 69

FDD	LTE Band	26-Low chann	el(814MHz-82	24MHz), M	odulation: Q	PSK, Band	vidth: 10MHz,1	RB
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1629	-63.9	0.52	6	-58.42	-13	-45.42	Horizontal	Pass
2443.5	-62.91	0.53	5.8	-57.64	-13	-44.64	Horizontal	Pass
3258	-58.35	0.65	6.2	-52.8	-13	-39.8	Horizontal	Pass
1629	-64.88	0.52	6	-59.4	-13	-46.4	Vertical	Pass
2443.5	-63.58	0.53	5.8	-58.31	-13	-45.31	Vertical	Pass
3258	-58.61	0.65	6.2	-53.06	-13	-40.06	Vertical	Pass

FDD L	FDD LTE Band26-Middle channel(814MHz-824MHz), Modulation: QPSK, Bandwidth: 10MHz,1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
-	-	-	-	-	-	-	Horizontal	-			
-	-	-	-	-	-	1	Horizontal	-			
-	-	-	1	-	-	ı	Horizontal	-			
-	-	-	-	-	-	-	Vertical	-			
-	-	-	-	-	-	-	Vertical	-			
-	-	-	-	-	-	-	Vertical	-			

FDD	LTE Band	26-High chanr	nel(814MHz-82	24MHz), M	lodulation: C	PSK, Band	width: 10MHz,1	I RB
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
-	-	-	-	-	-	-	Horizontal	-
-	-	-	-	-	1	-	Horizontal	1
-	-	-	-	-	-	-	Horizontal	-
-	-	-	-	-	-	-	Vertical	-
-	-	-	-	-	-	-	Vertical	-
-	-	-	-	-	-	-	Vertical	-



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Report No.: SZEM190301170307

Page: 31 of 69

FDD	LTE Band	26-Low chann	el(824MHz-84	9MHz), M	odulation: Q	PSK, Bandv	vidth: 15MHz, 1	I RB
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1649.5	-65.45	0.52	6	-59.97	-13	-46.97	Horizontal	Pass
2474.25	-62.57	0.53	5.8	-57.3	-13	-44.3	Horizontal	Pass
3299	-58.5	0.65	6.2	-52.95	-13	-39.95	Horizontal	Pass
1649.5	-64.71	0.52	6	-59.23	-13	-46.23	Vertical	Pass
2474.25	-61.44	0.53	5.8	-56.17	-13	-43.17	Vertical	Pass
3299	-58.42	0.65	6.2	-52.87	-13	-39.87	Vertical	Pass

FDD L	FDD LTE Band26-Middle channel(824MHz-849MHz), Modulation: QPSK, Bandwidth: 15MHz, 1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
1659.5	-60.99	0.52	6	-55.51	-13	-42.51	Horizontal	Pass			
2489.25	-61.62	0.53	5.8	-56.35	-13	-43.35	Horizontal	Pass			
3319	-58.87	0.65	6.2	-53.32	-13	-40.32	Horizontal	Pass			
1659.5	-62.34	0.52	6	-56.86	-13	-43.86	Vertical	Pass			
2489.25	-61.6	0.53	5.8	-56.33	-13	-43.33	Vertical	Pass			
3319	-58.97	0.65	6.2	-53.42	-13	-40.42	Vertical	Pass			

FDD I	_TE Band	26-High chann	nel(824MHz-84	19MHz), M	odulation: Q	PSK, Bandv	vidth: 15MHz,	1 RB
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1669.5	-57.48	0.52	6	-52	-13	-39	Horizontal	Pass
2504.25	-60.84	0.59	5.3	-56.13	-13	-43.13	Horizontal	Pass
3339	-58.93	0.65	6.2	-53.38	-13	-40.38	Horizontal	Pass
1669.5	-66.18	0.52	6	-60.7	-13	-47.7	Vertical	Pass
2504.25	-61.99	0.59	5.3	-57.28	-13	-44.28	Vertical	Pass
3339	-58.23	0.65	6.2	-52.68	-13	-39.68	Vertical	Pass



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Report No.: SZEM190301170307

Page: 32 of 69

	TDD I	TE Band38-L	ow channel, M	lodulation:	QPSK, Ban	dwidth: 20N	1Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5142	-51.15	0.82	9.6	-42.37	-25	-17.37	Horizontal	Pass
7713	-56.25	0.99	13.2	-44.04	-25	-19.04	Horizontal	Pass
10284	-54.4	1.26	12.7	-42.96	-25	-17.96	Horizontal	Pass
5142	-51.74	0.82	9.6	-42.96	-25	-17.96	Vertical	Pass
7713	-58.02	0.99	13.2	-45.81	-25	-20.81	Vertical	Pass
10284	-54.92	1.26	12.7	-43.48	-25	-18.48	Vertical	Pass

	TDD LTE Band38-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
5172	-55.69	0.82	9.6	-46.91	-25	-21.91	Horizontal	Pass			
7758	-57.51	0.99	13.2	-45.3	-25	-20.3	Horizontal	Pass			
10344	-55.07	1.26	12.7	-43.63	-25	-18.63	Horizontal	Pass			
5172	-52.01	0.82	9.6	-43.23	-25	-18.23	Vertical	Pass			
7758	-57.97	0.99	13.2	-45.76	-25	-20.76	Vertical	Pass			
10344	-55.32	1.26	12.7	-43.88	-25	-18.88	Vertical	Pass			

	TDD L	TE Band38-H	igh channel, N	Modulation	: QPSK, Bar	dwidth: 20N	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5202	-48.02	0.82	9.6	-39.24	-25	-14.24	Horizontal	Pass
7803	-57.73	0.99	13.2	-45.52	-25	-20.52	Horizontal	Pass
10404	-54.85	1.26	12.7	-43.41	-25	-18.41	Horizontal	Pass
5202	-52.05	0.82	9.6	-43.27	-25	-18.27	Vertical	Pass
7803	-58.09	0.99	13.2	-45.88	-25	-20.88	Vertical	Pass
10404	-55.02	1.26	12.7	-43.58	-25	-18.58	Vertical	Pass



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Report No.: SZEM190301170307

Page: 33 of 69

	TDD I	TE Band41-L	ow channel, M	lodulation:	QPSK, Ban	dwidth: 20M	1Hz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5112	-48.1	0.82	9.6	-39.32	-25	-14.32	Horizontal	Pass
7668	-56.12	0.99	13.2	-43.91	-25	-18.91	Horizontal	Pass
10224	-54.01	1.26	12.7	-42.57	-25	-17.57	Horizontal	Pass
5112	-48.58	0.82	9.6	-39.8	-25	-14.8	Vertical	Pass
7668	-57.46	0.99	13.2	-45.25	-25	-20.25	Vertical	Pass
10224	-55.27	1.26	12.7	-43.83	-25	-18.83	Vertical	Pass

	TDD LTE Band41-Middle channel, Modulation: QPSK, Bandwidth: 20MHz, 1 RB										
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result			
5192	-51.76	0.82	9.6	-42.98	-25	-17.98	Horizontal	Pass			
7788	-56.9	0.99	13.2	-44.69	-25	-19.69	Horizontal	Pass			
10384	-56.11	1.26	12.7	-44.67	-25	-19.67	Horizontal	Pass			
5192	-51.61	0.82	9.6	-42.83	-25	-17.83	Vertical	Pass			
7788	-56.59	0.99	13.2	-44.38	-25	-19.38	Vertical	Pass			
10384	-54.4	1.26	12.7	-42.96	-25	-17.96	Vertical	Pass			

	TDD L	TE Band41-H	igh channel, N	Modulation	: QPSK, Bar	dwidth: 20N	MHz, 1 RB	
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
5272	-51.95	0.82	9.6	-43.17	-25	-18.17	Horizontal	Pass
7908	-57.16	0.99	13.2	-44.95	-25	-19.95	Horizontal	Pass
10544	-55.72	1.49	13.5	-43.71	-25	-18.71	Horizontal	Pass
5272	-50.89	0.82	9.6	-42.11	-25	-17.11	Vertical	Pass
7908	-57.5	0.99	13.2	-45.29	-25	-20.29	Vertical	Pass
10544	-55.38	1.49	13.5	-43.37	-25	-18.37	Vertical	Pass

Note: All modes have been tested and we found max bandwidth, 1 RB0 has the worst test result. Only record the worst test result.



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Report No.: SZEM190301170307

Page: 34 of 69

#### 6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235, §27.54, §90.213

ANSI C63.26, KDB 971168 D01 v03 Test Method:

Limit:  $\leq$  ±2.5ppm.

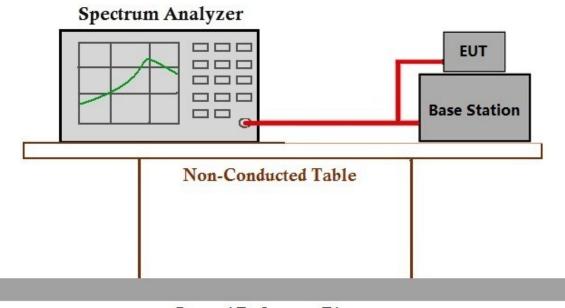
#### 6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.7.2 Test Setup Diagram



### Ground Reference Plane

#### 6.7.3 **Measurement Data**



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Report No.: SZEM190301170307

Page: 35 of 69

Frequency Error VS. Voltage

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband2	QPSK/20MHz	LCH	TN	VL	-5.2	-0.00280	PASS
				VN	-0.25	-0.00013	PASS
				VH	-3.37	-0.00181	PASS
		MCH	TN	VL	0.79	0.00042	PASS
				VN	-3.48	-0.00185	PASS
				VH	1.95	0.00104	PASS
		НСН	TN	VL	-2.23	-0.00117	PASS
				VN	-1.84	-0.00097	PASS
				VH	-1.42	-0.00075	PASS
	16QAM/20MHz	LCH	TN	VL	-4.93	-0.00265	PASS
				VN	-3.64	-0.00196	PASS
				VH	-3.77	-0.00203	PASS
		MCH	TN	VL	0.86	0.00046	PASS
				VN	-3.51	-0.00187	PASS
				VH	1.92	0.00102	PASS
		НСН	TN	VL	-3.72	-0.00196	PASS
				VN	-2.69	-0.00142	PASS
				VH	0.77	0.00041	PASS



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Report No.: SZEM190301170307

Page: 36 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	QPSK/20MHz	LCH	TN	VL	-4.98	-0.00290	PASS
				VN	0.01	0.00001	PASS
				VH	-2.16	-0.00126	PASS
		MCH	TN	VL	1.06	0.00061	PASS
				VN	-3.27	-0.00189	PASS
				VH	2.21	0.00128	PASS
		НСН	TN	VL	-2.93	-0.00168	PASS
				VN	-1.58	-0.00091	PASS
				VH	-1.19	-0.00068	PASS
	16QAM/20MHz	LCH	TN	VL	-4.68	-0.00272	PASS
				VN	-3.37	-0.00196	PASS
				VH	-1.54	-0.00090	PASS
		MCH	TN	VL	1.1	0.00063	PASS
				VN	-3.26	-0.00188	PASS
				VH	2.13	0.00123	PASS
		нсн	TN	VL	-3.48	-0.00199	PASS
				VN	-2.45	-0.00140	PASS
				VH	0	0.00000	PASS



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Report No.: SZEM190301170307

Page: 37 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-5.37	-0.00648	PASS
		LCH	TN	VN	-0.38	-0.00046	PASS
				VH	-2.54	-0.00306	PASS
				VL	0.62	0.00074	PASS
	QPSK/10MHz	MCH	TN	VN	-3.63	-0.00434	PASS
				VH	1.8	0.00215	PASS
				VL	-3.34	-0.00396	PASS
		HCH	TN	VN	-1.98	-0.00235	PASS
LTEband5				VH	-1.57	-0.00186	PASS
LIEDANUS		LCH	TN	VL	-5.09	-0.00614	PASS
				VN	-3.77	-0.00455	PASS
				VH	-2.94	-0.00355	PASS
				VL	0.75	0.00090	PASS
	16QAM/10MHz	MCH	TN	VN	-3.68	-0.00440	PASS
				VH	1.75	0.00209	PASS
		НСН		VL	-3.9	-0.00462	PASS
			TN	VN	-1.85	-0.00219	PASS
				VH	-0.39	-0.00046	PASS



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Report No.: SZEM190301170307

Page: 38 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.79	-0.00151	PASS
		LCH	TN	VN	1.2	0.00048	PASS
				VH	-0.95	-0.00038	PASS
				VL	2.23	0.00088	PASS
	QPSK/20MHz	MCH	TN	VN	-2.06	-0.00081	PASS
				VH	3.38	0.00133	PASS
				VL	-0.79	-0.00031	PASS
		HCH	TN	VN	-0.4	-0.00016	PASS
LTEband7				VH	0.01	0.00000	PASS
LTEDATIO7		LCH	TN	VL	-3.52	-0.00140	PASS
				VN	-2.19	-0.00087	PASS
				VH	-0.36	-0.00014	PASS
				VL	2.35	0.00093	PASS
	16QAM/20MHz	MCH	TN	VN	-2.06	-0.00081	PASS
				VH	3.29	0.00130	PASS
		НСН		VL	-2.3	-0.00090	PASS
			TN	VN	-0.27	-0.00011	PASS
				VH	1.19	0.00046	PASS



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Report No.: SZEM190301170307

Page: 39 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.43	-0.00487	PASS
		LCH	TN	VN	1.56	0.00222	PASS
				VH	-0.59	-0.00084	PASS
				VL	2.59	0.00366	PASS
	QPSK/10MHz	MCH	TN	VN	-1.7	-0.00240	PASS
				VH	3.74	0.00529	PASS
				VL	-0.43	-0.00060	PASS
		HCH	TN	VN	-0.04	-0.00006	PASS
LTEband12				VH	0.37	0.00052	PASS
LIEDANGIZ		LCH	TN	VL	-3.16	-0.00449	PASS
				VN	-1.83	-0.00260	PASS
				VH	0	0.00000	PASS
				VL	2.71	0.00383	PASS
	16QAM/10MHz	MCH	TN	VN	-1.7	-0.00240	PASS
				VH	3.65	0.00516	PASS
				VL	-1.94	-0.00273	PASS
		HCH	TN	VN	0.09	0.00013	PASS
				VH	1.55	0.00218	PASS



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Report No.: SZEM190301170307

Page: 40 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.51	-0.00495	PASS
		LCH	TN	VN	1.48	0.00209	PASS
				VH	-0.67	-0.00094	PASS
				VL	2.51	0.00354	PASS
	QPSK/10MHz	MCH	TN	VN	-1.78	-0.00251	PASS
				VH	3.66	0.00515	PASS
				VL	-0.51	-0.00072	PASS
		HCH	TN	VN	-0.12	-0.00017	PASS
LTEband17				VH	0.29	0.00041	PASS
LT LDand 17		LCH	TN	VL	-3.24	-0.00457	PASS
				VN	-1.91	-0.00269	PASS
				VH	-0.08	-0.00011	PASS
				VL	2.63	0.00370	PASS
	16QAM/10MHz	MCH	TN	VN	-1.78	-0.00251	PASS
				VH	3.57	0.00503	PASS
		НСН		VL	-2.02	-0.00284	PASS
			TN	VN	0.01	0.00001	PASS
				VH	1.47	0.00207	PASS



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Report No.: SZEM190301170307

Page: 41 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	/	/	/
		LCH	TN	VN	/	/	/
				VH	/	/	/
				VL	2.21	0.00270	PASS
	QPSK/10MHz	MCH	TN	VN	-2.07	-0.00253	PASS
				VH	3.37	0.00411	PASS
				VL	/	/	/
1.751 100		HCH	TN	VN	/	/	/
LTEband26				VH	/	/	/
(814MHz- 824MHz)		LCH		VL	/	/	/
02 12)			TN	VN	/	/	/
				VH	/	/	/
				VL	2.27	0.00277	PASS
	16QAM/10MHz	MCH	TN	VN	-2.09	-0.00255	PASS
				VH	3.33	0.00407	PASS
				VL	/	/	/
		HCH	TN	VN	/	/	/
				VH	/	/	/



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Report No.: SZEM190301170307

Page: 42 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.16	-0.00380	PASS
		LCH	TN	VN	1.82	0.00219	PASS
				VH	-1.31	-0.00158	PASS
				VL	2.87	0.00343	PASS
	QPSK/15MHz	MCH	TN	VN	-1.43	-0.00171	PASS
				VH	4.01	0.00479	PASS
				VL	-1.17	-0.00139	PASS
		HCH	TN	VN	-0.79	-0.00094	PASS
LTEband26				VH	0.66	0.00078	PASS
(824MHz- 849MHz)		LCH	TN	VL	-2.87	-0.00345	PASS
0 10111112)				VN	-1.56	-0.00188	PASS
				VH	-0.72	-0.00087	PASS
				VL	2.95	0.00353	PASS
	16QAM/15MHz	MCH	TN	VN	-1.41	-0.00169	PASS
				VH	3.96	0.00473	PASS
		НСН		VL	-1.67	-0.00198	PASS
			TN	VN	-0.63	-0.00075	PASS
				VH	1.82	0.00216	PASS



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Report No.: SZEM190301170307

Page: 43 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.07	-0.00119	PASS
		LCH	TN	VN	1.92	0.00074	PASS
				VH	-1.25	-0.00048	PASS
				VL	2.97	0.00114	PASS
	QPSK/20MHz	MCH	TN	VN	-1.35	-0.00052	PASS
				VH	4.11	0.00158	PASS
				VL	-5.08	-0.00195	PASS
		HCH	TN	VN	-0.7	-0.00027	PASS
LTEband38				VH	0.74	0.00028	PASS
LIEDANUSO		LCH	TN	VL	-2.78	-0.00108	PASS
				VN	-1.5	-0.00058	PASS
				VH	-0.63	-0.00024	PASS
				VL	3.06	0.00118	PASS
	16QAM/20MHz	MCH	TN	VN	-1.33	-0.00051	PASS
				VH	4.05	0.00156	PASS
				VL	-1.58	-0.00061	PASS
		HCH	TN	VN	-0.6	-0.00023	PASS
				VH	1.9	0.00073	PASS



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Report No.: SZEM190301170307

Page: 44 of 69

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	-3.25	-0.00130	PASS
		LCH	TN	VN	1.74	0.00069	PASS
				VH	-2.4	-0.00096	PASS
				VL	2.77	0.00107	PASS
	QPSK/20MHz	MCH	TN	VN	-1.51	-0.00058	PASS
				VH	3.98	0.00153	PASS
				VL	-2.23	-0.00083	PASS
		HCH	TN	VN	-3.86	-0.00144	PASS
LTEband41				VH	0.54	0.00020	PASS
LTEDATIO41		LCH	TN	VL	-2.98	-0.00119	PASS
				VN	-1.65	-0.00066	PASS
				VH	-0.81	-0.00032	PASS
				VL	2.89	0.00111	PASS
	16QAM/20MHz	MCH	TN	VN	-1.51	-0.00058	PASS
				VH	3.87	0.00149	PASS
		НСН		VL	-1.76	-0.00066	PASS
			TN	VN	0.27	0.00010	PASS
				VH	1.73	0.00065	PASS



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Report No.: SZEM190301170307

Page: 45 of 69

Frequency Error VS. Temperature

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.69	0.00091	PASS
				-20	1.7	0.00091	PASS
				-10	0.83	0.00045	PASS
				0	4.52	0.00243	PASS
		LCH	VN	10	3.91	0.00210	PASS
				20	3.78	0.00203	PASS
				30	2.32	0.00125	PASS
				40	1.83	0.00098	PASS
				50	1.98	0.00106	PASS
				-30	-2.69	-0.00143	PASS
		MCH		-20	-2.68	-0.00143	PASS
			VN	-10	-3.82	-0.00203	PASS
				0	-0.28	-0.00015	PASS
LTEband2	QPSK/20MHz			10	-3.52	-0.00187	PASS
				20	-1.94	-0.00103	PASS
				30	-1.82	-0.00097	PASS
				40	-3.47	-0.00185	PASS
				50	-2.52	-0.00134	PASS
				-30	2.72	0.00143	PASS
				-20	2.73	0.00144	PASS
				-10	0.66	0.00035	PASS
				0	3.67	0.00193	PASS
		HCH	VN	10	-0.74	-0.00039	PASS
				20	4.78	0.00252	PASS
				30	1.6	0.00084	PASS
				40	-0.53	-0.00028	PASS
				50	-3.27	-0.00172	PASS



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Report No.: SZEM190301170307

Page: 46 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	0.93	0.00050	PASS
				-20	0.94	0.00051	PASS
				-10	-0.91	-0.00049	PASS
				0	4.72	0.00254	PASS
		LCH	VN	10	4.28	0.00230	PASS
				20	3.34	0.00180	PASS
				30	1.51	0.00081	PASS
				40	1.3	0.00070	PASS
				50	3.48	0.00187	PASS
				-30	-1.85	-0.00098	PASS
				-20	-1.86	-0.00099	PASS
		MCH	VN	-10	-3.64	-0.00194	PASS
				0	-2.05	-0.00109	PASS
LTEband2	16QAM/20MHz			10	-3.18	-0.00169	PASS
				20	0.7	0.00037	PASS
				30	3.48	0.00185	PASS
				40	-1.8	-0.00096	PASS
				50	-1.08	-0.00057	PASS
				-30	3.29	0.00173	PASS
				-20	3.28	0.00173	PASS
				-10	-0.71	-0.00037	PASS
				0	3.33	0.00175	PASS
		HCH	VN	10	-1.69	-0.00089	PASS
			20	4.42	0.00233	PASS	
				30	0.27	0.00014	PASS
				40	-1.45	-0.00076	PASS
				50	-2.69	-0.00142	PASS



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Report No.: SZEM190301170307

Page: 47 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.35	0.00078	PASS
				-20	1.36	0.00079	PASS
				-10	0.49	0.00028	PASS
				0	4.18	0.00243	PASS
		LCH	VN	10	3.57	0.00208	PASS
				20	3.44	0.00200	PASS
				30	1.98	0.00115	PASS
				40	1.49	0.00087	PASS
				50	1.64	0.00095	PASS
				-30	-2.02	-0.00117	PASS
				-20	-2.02	-0.00117	PASS
			VN	-10	-4.16	-0.00240	PASS
				0	-1.62	-0.00094	PASS
LTEband4	QPSK/20MHz	MCH		10	-3.86	-0.00223	PASS
				20	-2.28	-0.00132	PASS
				30	-3.16	-0.00182	PASS
				40	-3.81	-0.00220	PASS
				50	-2.86	-0.00165	PASS
				-30	2.4	0.00138	PASS
				-20	2.39	0.00137	PASS
				-10	0.32	0.00018	PASS
				0	3.33	0.00191	PASS
		HCH	VN	10	-1.08	-0.00062	PASS
				20	4.44	0.00254	PASS
				30	1.26	0.00072	PASS
				40	-0.87	-0.00050	PASS
				50	-3.61	-0.00207	PASS



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Report No.: SZEM190301170307

Page: 48 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.71	0.00099	PASS
				-20	1.7	0.00099	PASS
				-10	-0.15	-0.00009	PASS
				0	5.48	0.00319	PASS
		LCH	VN	10	5.04	0.00293	PASS
				20	4.1	0.00238	PASS
				30	2.27	0.00132	PASS
				40	2.06	0.00120	PASS
				50	4.24	0.00247	PASS
				-30	-1.09	-0.00063	PASS
				-20	-1.1	-0.00063	PASS
		МСН	VN	-10	-2.88	-0.00166	PASS
				0	-0.29	-0.00017	PASS
LTEband4	16QAM/20MHz			10	-2.42	-0.00140	PASS
				20	1.46	0.00084	PASS
				30	4.24	0.00245	PASS
				40	-1.04	-0.00060	PASS
				50	-0.32	-0.00018	PASS
				-30	4.03	0.00231	PASS
				-20	4.04	0.00232	PASS
				-10	0.05	0.00003	PASS
				0	4.09	0.00234	PASS
		HCH	VN	10	-0.93	-0.00053	PASS
				20	5.18	0.00297	PASS
				30	1.03	0.00059	PASS
				40	-0.69	-0.00040	PASS
				50	-1.93	-0.00111	PASS



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Report No.: SZEM190301170307

Page: 49 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			-	-30	0.77	0.00093	PASS
				-20	0.76	0.00092	PASS
				-10	-0.11	-0.00013	PASS
				0	3.58	0.00432	PASS
		LCH	VN	10	2.97	0.00358	PASS
				20	2.84	0.00343	PASS
				30	1.38	0.00166	PASS
				40	0.89	0.00107	PASS
			50	1.04	0.00125	PASS	
				-30	-3.61	-0.00432	PASS
			-20	-3.62	-0.00433	PASS	
			VN	-10	-4.76	-0.00569	PASS
				0	-1.22	-0.00146	PASS
LTEband5	QPSK/10MHz	MCH		10	-4.46	-0.00533	PASS
				20	-2.88	-0.00344	PASS
				30	-1.76	-0.00210	PASS
				40	-4.41	-0.00527	PASS
				50	-3.46	-0.00414	PASS
				-30	1.8	0.00213	PASS
				-20	1.79	0.00212	PASS
				-10	-0.28	-0.00033	PASS
				0	2.73	0.00323	PASS
		HCH	VN	10	-1.68	-0.00199	PASS
				20	3.84	0.00455	PASS
				30	0.66	0.00078	PASS
				40	-1.47	-0.00174	PASS
				50	-4.21	-0.00499	PASS



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Report No.: SZEM190301170307

Page: 50 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	0.47	0.00057	PASS
				-20	0.48	0.00058	PASS
				-10	-1.37	-0.00165	PASS
				0	4.26	0.00514	PASS
		LCH	VN	10	3.82	0.00461	PASS
				20	2.88	0.00347	PASS
				30	1.05	0.00127	PASS
				40	0.84	0.00101	PASS
			50	3.02	0.00364	PASS	
				-30	-2.33	-0.00279	PASS
			-20	-2.32	-0.00277	PASS	
			VN	-10	-4.1	-0.00490	PASS
				0	-1.51	-0.00181	PASS
LTEband5	16QAM/10MHz	MCH		10	-3.64	-0.00435	PASS
				20	0.24	0.00029	PASS
				30	3.02	0.00361	PASS
				40	-2.26	-0.00270	PASS
				50	-1.54	-0.00184	PASS
				-30	2.81	0.00333	PASS
				-20	2.82	0.00334	PASS
				-10	-1.17	-0.00139	PASS
				0	2.87	0.00340	PASS
		HCH	VN	10	-2.15	-0.00255	PASS
				20	3.96	0.00469	PASS
				30	-0.19	-0.00023	PASS
				40	-1.91	-0.00226	PASS
				50	-3.15	-0.00373	PASS



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Report No.: SZEM190301170307

Page: 51 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.72	0.00069	PASS
				-20	1.73	0.00069	PASS
				-10	0.86	0.00034	PASS
				0	4.55	0.00181	PASS
		LCH	VN	10	3.94	0.00157	PASS
				20	3.81	0.00152	PASS
				30	2.35	0.00094	PASS
				40	1.86	0.00074	PASS
				50	2.01	0.00080	PASS
				-30	-2.66	-0.00105	PASS
				-20	-2.65	-0.00105	PASS
			VN	-10	-3.79	-0.00150	PASS
				0	-1.25	-0.00049	PASS
LTEband7	QPSK/20MHz	MCH		10	-3.49	-0.00138	PASS
				20	-1.91	-0.00075	PASS
				30	0.21	0.00008	PASS
				40	-3.44	-0.00136	PASS
				50	-2.49	-0.00098	PASS
				-30	2.75	0.00107	PASS
				-20	2.76	0.00108	PASS
				-10	0.69	0.00027	PASS
				0	3.7	0.00145	PASS
		HCH	VN	10	-0.71	-0.00028	PASS
				20	4.81	0.00188	PASS
				30	1.63	0.00064	PASS
				40	-0.5	-0.00020	PASS
				50	-3.24	-0.00127	PASS



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Report No.: SZEM190301170307

Page: 52 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.44	0.00057	PASS
				-20	1.45	0.00058	PASS
				-10	-0.4	-0.00016	PASS
				0	5.23	0.00208	PASS
		LCH	VN	10	4.79	0.00191	PASS
				20	3.85	0.00153	PASS
				30	2.02	0.00080	PASS
				40	1.81	0.00072	PASS
				50	3.99	0.00159	PASS
				-30	-1.34	-0.00053	PASS
				-20	-1.35	-0.00053	PASS
			VN	-10	-3.13	-0.00123	PASS
				0	-0.54	-0.00021	PASS
LTEband7	16QAM/20MHz	MCH		10	-2.67	-0.00105	PASS
				20	1.21	0.00048	PASS
				30	3.99	0.00157	PASS
				40	-1.29	-0.00051	PASS
				50	-0.57	-0.00022	PASS
				-30	3.8	0.00148	PASS
				-20	3.79	0.00148	PASS
				-10	-0.2	-0.00008	PASS
				0	3.84	0.00150	PASS
		HCH	VN	10	-1.18	-0.00046	PASS
				20	4.93	0.00193	PASS
				30	0.78	0.00030	PASS
				40	-0.94	-0.00037	PASS
				50	-2.18	-0.00085	PASS



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Report No.: SZEM190301170307

Page: 53 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	2.04	0.00290	PASS
				-20	2.05	0.00291	PASS
				-10	1.18	0.00168	PASS
				0	4.87	0.00692	PASS
		LCH	VN	10	4.26	0.00605	PASS
				20	4.13	0.00587	PASS
				30	2.67	0.00379	PASS
				40	2.18	0.00310	PASS
				50	2.33	0.00331	PASS
				-30	-2.34	-0.00331	PASS
				-20	-2.33	-0.00329	PASS
		MCH	VN	-10	-3.47	-0.00490	PASS
				0	-0.93	-0.00131	PASS
LTEband12	QPSK/20MHz			10	-3.17	-0.00448	PASS
				20	-1.59	-0.00225	PASS
				30	0.53	0.00075	PASS
				40	-3.12	-0.00441	PASS
				50	-2.17	-0.00307	PASS
				-30	3.07	0.00432	PASS
				-20	3.08	0.00433	PASS
				-10	1.01	0.00142	PASS
				0	4.02	0.00565	PASS
		HCH	VN	10	-0.39	-0.00055	PASS
				20	5.13	0.00722	PASS
				30	1.95	0.00274	PASS
				40	-0.18	-0.00025	PASS
				50	-2.92	-0.00411	PASS



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Report No.: SZEM190301170307

Page: 54 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.17	0.00166	PASS
				-20	1.18	0.00168	PASS
				-10	-0.67	-0.00095	PASS
				0	4.96	0.00705	PASS
		LCH	VN	10	4.52	0.00642	PASS
				20	3.58	0.00509	PASS
				30	1.75	0.00249	PASS
				40	1.54	0.00219	PASS
				50	3.72	0.00528	PASS
			-30	-1.61	-0.00228	PASS	
			-20	-1.62	-0.00229	PASS	
		МСН	VN	-10	-3.4	-0.00481	PASS
				0	-0.81	-0.00114	PASS
LTEband12	16QAM/10MHz			10	-2.94	-0.00416	PASS
				20	0.94	0.00133	PASS
				30	3.72	0.00526	PASS
				40	-1.56	-0.00220	PASS
				50	-0.84	-0.00119	PASS
				-30	3.53	0.00496	PASS
				-20	3.52	0.00495	PASS
				-10	-0.47	-0.00066	PASS
				0	3.57	0.00502	PASS
		HCH	VN	10	-1.45	-0.00204	PASS
				20	4.66	0.00655	PASS
				30	0.51	0.00072	PASS
				40	-1.21	-0.00170	PASS
				50	-2.45	-0.00345	PASS



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Report No.: SZEM190301170307

Page: 55 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.72	0.00243	PASS
				-20	1.73	0.00244	PASS
				-10	0.86	0.00121	PASS
				0	4.55	0.00642	PASS
		LCH	VN	10	3.94	0.00556	PASS
				20	3.81	0.00537	PASS
				30	2.35	0.00331	PASS
				40	1.86	0.00262	PASS
				50	2.01	0.00283	PASS
				-30	-2.66	-0.00375	PASS
				-20	-2.65	-0.00373	PASS
		MCH	VN	-10	-3.79	-0.00534	PASS
				0	-1.25	-0.00176	PASS
LTEband17	QPSK/20MHz			10	-3.49	-0.00492	PASS
				20	-1.91	-0.00269	PASS
				30	0.21	0.00030	PASS
				40	-3.44	-0.00485	PASS
				50	-2.49	-0.00351	PASS
				-30	2.75	0.00387	PASS
				-20	2.76	0.00388	PASS
				-10	0.69	0.00097	PASS
				0	3.7	0.00520	PASS
		HCH	VN	10	-0.71	-0.00100	PASS
				20	4.81	0.00677	PASS
				30	1.63	0.00229	PASS
				40	-0.5	-0.00070	PASS
				50	-3.24	-0.00456	PASS



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Report No.: SZEM190301170307

Page: 56 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1.57	0.00221	PASS
				-20	1.58	0.00223	PASS
				-10	-0.27	-0.00038	PASS
				0	5.36	0.00756	PASS
		LCH	VN	10	4.92	0.00694	PASS
				20	3.98	0.00561	PASS
				30	2.15	0.00303	PASS
				40	1.94	0.00274	PASS
			50	4.12	0.00581	PASS	
				-30	-1.21	-0.00170	PASS
				-20	-1.22	-0.00172	PASS
		MCH	VN	-10	-3	-0.00423	PASS
	16QAM/10MHz			0	-0.41	-0.00058	PASS
LTEband17				10	-2.54	-0.00358	PASS
				20	1.34	0.00189	PASS
				30	4.12	0.00580	PASS
				40	-1.16	-0.00163	PASS
				50	-0.44	-0.00062	PASS
				-30	3.93	0.00553	PASS
				-20	3.92	0.00551	PASS
				-10	-0.07	-0.00010	PASS
				0	3.97	0.00558	PASS
		HCH	VN	10	-1.05	-0.00148	PASS
				20	5.06	0.00712	PASS
				30	0.91	0.00128	PASS
				40	-0.81	-0.00114	PASS
				50	-2.05	-0.00288	PASS



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Report No.: SZEM190301170307

Page: 57 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
		LCH	VN	20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
				-30	0	0.00000	PASS
				-20	-0.01	-0.00001	PASS
	QPSK/10MHz		VN	-10	-4.15	-0.00507	PASS
LTEband26		MCH		0	-1.61	-0.00197	PASS
(814MHz-				10	-0.85	-0.00104	PASS
824MHz)				20	-2.27	-0.00277	PASS
				30	-0.15	-0.00018	PASS
				40	-3.8	-0.00464	PASS
				50	-3.73	-0.00455	PASS
				-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
		HCH	VN	20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/



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Report No.: SZEM190301170307

Page: 58 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
		LCH	VN	20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
				-30	-1.35	-0.00165	PASS
	16QAM/10MHz			-20	-1.36	-0.00166	PASS
		MCH	VN	-10	-3.14	-0.00383	PASS
LTEband26				0	-1.55	-0.00189	PASS
(814MHz-				10	-2.68	-0.00327	PASS
824MHz)				20	1.2	0.00147	PASS
				30	3.98	0.00486	PASS
				40	-1.3	-0.00159	PASS
				50	-0.58	-0.00071	PASS
				-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
		HCH	VN	20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/



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Report No.: SZEM190301170307

Page: 59 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	0.65	0.00078	PASS
				-20	0.66	0.00079	PASS
				-10	-0.21	-0.00025	PASS
				0	3.48	0.00419	PASS
		LCH	VN	10	2.87	0.00345	PASS
				20	2.74	0.00330	PASS
				30	1.28	0.00154	PASS
				40	0.79	0.00095	PASS
				50	0.94	0.00113	PASS
				-30	-2.73	-0.00326	PASS
				-20	-2.72	-0.00325	PASS
	QPSK/15MHz	MCH	VN	-10	-4.86	-0.00581	PASS
LTEband26				0	-2.32	-0.00277	PASS
(824MHz-				10	-4.56	-0.00545	PASS
849MHz)				20	-2.98	-0.00356	PASS
				30	-1.86	-0.00222	PASS
				40	-4.51	-0.00539	PASS
				50	-3.56	-0.00426	PASS
				-30	1.68	0.00200	PASS
				-20	1.69	0.00201	PASS
				-10	-0.38	-0.00045	PASS
				0	2.63	0.00313	PASS
		HCH	VN	10	-1.78	-0.00212	PASS
				20	3.74	0.00444	PASS
				30	0.56	0.00067	PASS
				40	-1.57	-0.00187	PASS
				50	-4.31	-0.00512	PASS



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Report No.: SZEM190301170307

Page: 60 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	1	0.00120	PASS
				-20	0.99	0.00119	PASS
				-10	-0.86	-0.00103	PASS
				0	4.77	0.00574	PASS
		LCH	VN	10	4.33	0.00521	PASS
				20	3.39	0.00408	PASS
				30	1.56	0.00188	PASS
				40	1.35	0.00162	PASS
				50	2.53	0.00304	PASS
				-30	-1.81	-0.00216	PASS
				-20	-1.81	-0.00216	PASS
	16QAM/15MHz	MCH	VN	-10	-3.59	-0.00429	PASS
LTEband26				0	-1	-0.00120	PASS
(824MHz-				10	-3.13	-0.00374	PASS
849MHz)				20	0.75	0.00090	PASS
				30	3.53	0.00422	PASS
				40	-1.75	-0.00209	PASS
				50	-1.03	-0.00123	PASS
				-30	3.32	0.00395	PASS
				-20	3.33	0.00396	PASS
				-10	-0.66	-0.00078	PASS
				0	3.38	0.00402	PASS
		HCH	VN	10	-1.64	-0.00195	PASS
				20	4.47	0.00531	PASS
				30	0.32	0.00038	PASS
				40	-1.4	-0.00166	PASS
				50	-2.64	-0.00314	PASS



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Report No.: SZEM190301170307

Page: 61 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			VN	-30	0.81	0.00031	PASS
		LCH		-20	0.82	0.00032	PASS
				-10	-0.05	-0.00002	PASS
				0	3.64	0.00141	PASS
				10	3.03	0.00117	PASS
				20	2.9	0.00112	PASS
				30	1.44	0.00056	PASS
				40	0.95	0.00037	PASS
				50	1.1	0.00043	PASS
	QPSK/20MHz	мсн	VN	-30	-2.55	-0.00098	PASS
				-20	-2.56	-0.00099	PASS
				-10	-4.7	-0.00181	PASS
				0	-2.16	-0.00083	PASS
LTEband38				10	-4.4	-0.00170	PASS
				20	-2.82	-0.00109	PASS
				30	-1.7	-0.00066	PASS
				40	-4.35	-0.00168	PASS
				50	-3.4	-0.00131	PASS
				-30	1.86	0.00071	PASS
				-20	1.85	0.00071	PASS
				-10	-0.22	-0.00008	PASS
				0	2.79	0.00107	PASS
		HCH	VN	10	-1.62	-0.00062	PASS PASS PASS PASS PASS PASS PASS PASS
				20	3.9	0.00149	PASS
				30	0.72	0.00028	PASS
				40	-1.41	-0.00054	PASS
				50	-4.15	-0.00159	PASS



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Report No.: SZEM190301170307

Page: 62 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			VN	-30	1.22	0.00047	PASS
		LCH		-20	1.23	0.00048	PASS
				-10	-0.62	-0.00024	PASS
				0	5.01	0.00194	PASS
				10	4.57	0.00177	PASS
				20	3.63	0.00141	PASS
				30	1.8	0.00070	PASS
				40	1.59	0.00062	PASS
	16QAM/20MHz			50	1.77	0.00069	PASS
		МСН	VN	-30	-1.58	-0.00061	PASS
				-20	-1.57	-0.00061	PASS
				-10	-3.35	-0.00129	PASS
				0	-0.76	-0.00029	PASS
LTEband38				10	-2.89	-0.00111	PASS
				20	0.99	0.00038	PASS
				30	3.77	0.00145	PASS
				40	-1.51	-0.00058	PASS
				50	-0.79	-0.00030	PASS
		НСН	VN	-30	3.56	0.00136	PASS
				-20	3.57	0.00137	PASS PASS PASS PASS PASS PASS PASS PASS
				-10	-0.42	-0.00016	
				0	3.62	0.00139	PASS
				10	-1.4	-0.00054	PASS
				20	4.71	0.00180	PASS
				30	0.56	0.00021	PASS
				40	-1.16	-0.00044	PASS
				50	-2.4	-0.00092	PASS



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Report No.: SZEM190301170307

Page: 63 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		LCH	VN	-30	1.25	0.00050	PASS
				-20	1.24	0.00049	PASS
				-10	0.37	0.00015	PASS
				0	4.06	0.00162	PASS
				10	3.45	0.00138	PASS
				20	3.32	0.00132	PASS
				30	1.86	0.00074	PASS
				40	1.37	0.00055	PASS
				50	1.52	0.00061	PASS
			VN	-30	-2.13	-0.00082	PASS
	QPSK/20MHz	МСН		-20	-2.14	-0.00083	PASS
				-10	-4.28	-0.00165	PASS
				0	-1.74	-0.00067	PASS
LTEband41				10	-3.98	-0.00153	PASS
				20	-2.4	-0.00093	PASS
				30	-1.28	-0.00049	PASS
				40	-3.93	-0.00152	PASS
				50	-2.98	-0.00115	PASS
				-30	2.28	0.00085	PASS
				-20	2.27	0.00085	PASS PASS PASS PASS PASS PASS PASS PASS
				-10	0.2	0.00007	PASS
			VN	0	3.21	0.00120	PASS
		НСН		10	-1.2	-0.00045	PASS
				20	4.32	0.00161	PASS
				30	1.14	0.00043	PASS
				40	-0.99	-0.00037	PASS
				50	-3.73	-0.00139	PASS



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Report No.: SZEM190301170307

Page: 64 of 69

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		LCH	VN	-30	0.99	0.00040	PASS
				-20	1	0.00040	PASS
				-10	-0.85	-0.00034	PASS
				0	4.78	0.00191	PASS
				10	4.34	0.00173	PASS
				20	3.4	0.00136	PASS
				30	1.57	0.00063	PASS
				40	1.36	0.00054	PASS
	16QAM/20MHz			50	2.54	0.00101	PASS
		МСН	VN	-30	-1.81	-0.00070	PASS
				-20	-1.8	-0.00069	PASS
				-10	-3.58	-0.00138	PASS
				0	-1.99	-0.00077	PASS
LTEband41				10	-3.12	-0.00120	PASS
				20	0.76	0.00029	PASS
				30	3.54	0.00137	PASS
				40	-1.74	-0.00067	PASS
				50	-1.02	-0.00039	PASS
				-30	3.33	0.00124	PASS
				-20	3.34	0.00125	PASS PASS PASS PASS PASS PASS PASS PASS
				-10	-0.65	-0.00024	PASS
		НСН	VN	0	3.39	0.00126	PASS
				10	-1.63	-0.00061	PASS
				20	4.48	0.00167	PASS
				30	0.33	0.00012	PASS
				40	-1.39	-0.00052	PASS
				50	-2.63	-0.00098	PASS

Note: All modes have been tested and we only record the worst test result.



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Report No.: SZEM190301170307

Page: 65 of 69

#### 6.8 **Modulation Characteristics**

Test Requirement: §2.1047

ANSI C63.26, KDB 971168 D01 v03 Test Method:

Limit: Digital modulation

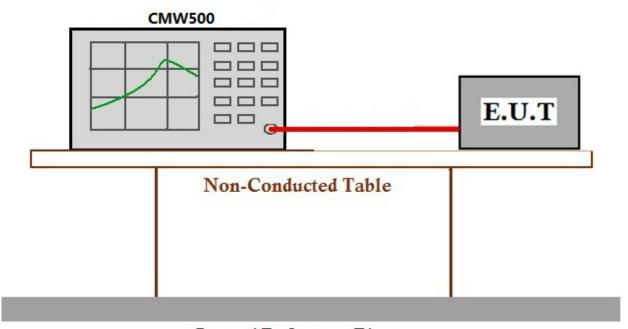
#### 6.8.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

#### 6.8.2 Test Setup Diagram



#### Ground Reference Plane

#### 6.8.3 **Measurement Data**



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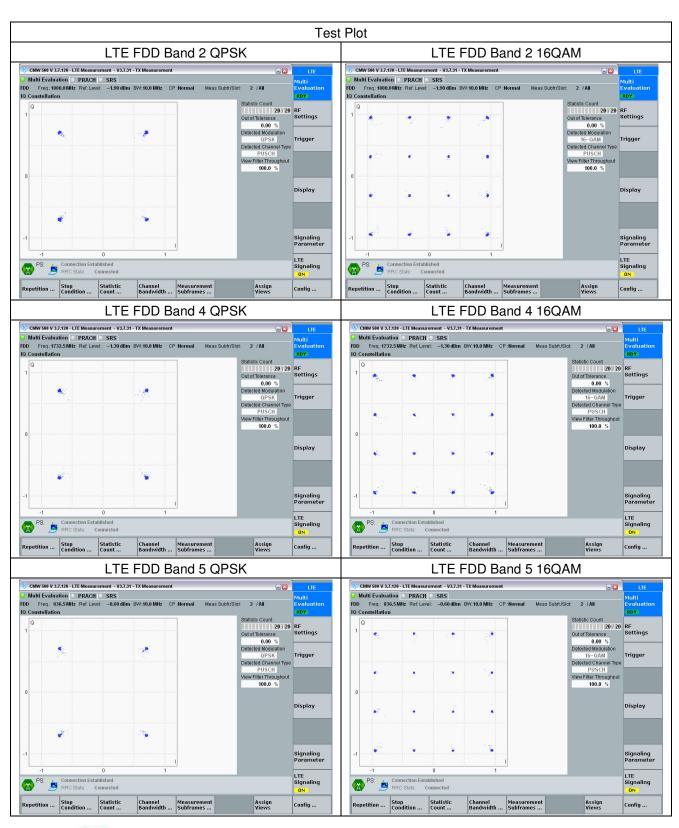
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Report No.: SZEM190301170307

Page: 66 of 69





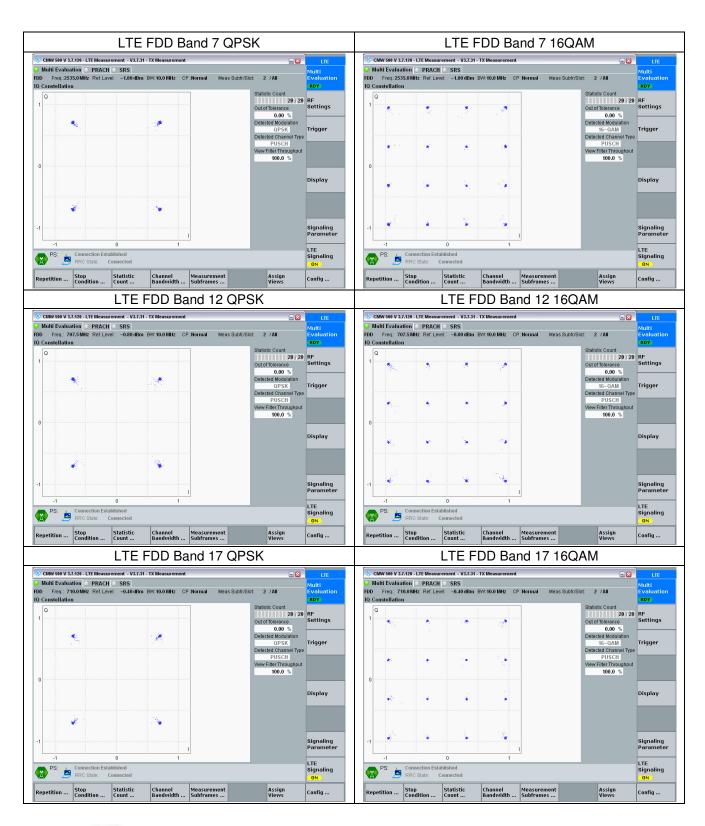
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Page: 67 of 69

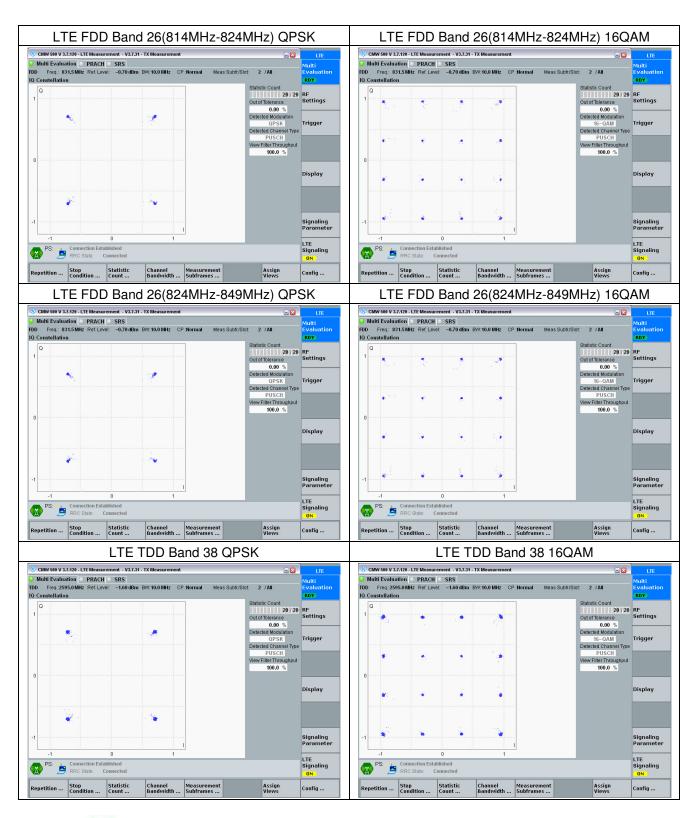






Report No.: SZEM190301170307

Page: 68 of 69

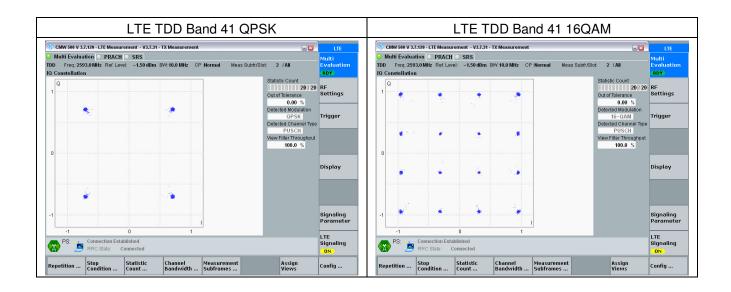






Report No.: SZEM190301170307

Page: 69 of 69



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