TEST REPORT

Application No.:	SZEM1901010239CR
Applicant:	Hytera Communications Corporation Limited
Address of Applicant:	Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China
Manufacturer:	Hytera Communications Corporation Limited
Address of Manufacturer:	Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China
Equipment Under Test (EUT):	
EUT Name:	Multi-mode Advanced Radio
Model No.:	PTC680 FxB1
Trade mark:	Hytera
FCC ID:	YAMPTC680FXB1
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:	2019-01-09
Date of Test:	2019-01-10 to 2019-02-18
Date of Issue:	2019-03-06
Test Result:	**Pass**

* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
EMC Laboratory Manager

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2019-03-06		Original

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

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) EIRP≤ 0.25W(LTE Band 40)	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) §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 Band2,4,5,26,38,40, 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 Band2,4,5,26) ≤ -25dBm(LTE Band7,38, 41) ≤ -40dBm(LTE Band40)	PASS
Field strength of spurious radiation	§2.1051, §22.917, §24.238 §27.53(h) §27.53(g) §90.691	≤ -13dBm(LTE Band2,4,5,26) ≤ -25dBm(LTE Band7,38, 41) ≤ -40dBm(LTE Band40)	PASS
Frequency stability	§2.1055, §22.355, §24.235 §27.54 §90.213	≤ ±2.5ppm.	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	Switching Power Supply Model: S024AZM1200200 Input: AC 100-240V, 50/60Hz, 600mA Output: DC 12V, 2000mA DC 7.7V, 2400mAh rechargeable battery which charged by Cradle charger
Sample Type:	Portable production
LTE Operation Frequency Band:	LTE FDD Band 2, 4, 5, 7, 26, 38, 40, 41
Modulation Type:	QPSK, 16QAM
LTE Release Version:	R8
LTE Power Class:	Level 3
Antenna Type:	PIFA
Antenna Gain:	0dBi
SIM Card:	This device has dual SIM Card sockets. Both SIM Card have been tested. SIM1 was worst case, only record SIM1.
Extreme temp. Tolerance:	-30℃ to +50℃
Extreme vol. Limits:	6.54VDC to 8.85VDC (nominal: 7.7VDC)

4.2 Test Frequency

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 2	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
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE FDD Band 4	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
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE FDD Band 5	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
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE FDD Band 7	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
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE FDD Band 26 (814MHz-824MHz)	1.4	814.7	819.0	823.3
	3	815.5	819.0	822.5

	5	816.5	819.0	821.5
	10	/	819.0	/
	15	821.5	/	/
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE FDD Band 26 (824MHz-849MHz)	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
	15	831.5	836.5	841.5
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE TDD Band 38	5	2572.5	2595.0	2617.5
	10	2575.0	2595.0	2615.0
	15	2577.5	2595.0	2612.5
	20	2580.0	2595.0	2610.0
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE TDD Band 40 (2305MHz-2315MHz)	5	2307.5	2310	2312.5
	10	/	2310	/
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE TDD Band 40 (2350MHz-2360MHz)	5	2352.5	2355	2357.5
	10	/	2355	/
Test mode:	**Nominal Bandwidth (MHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE TDD Band 41	5	2498.5	2593.0	2687.5
	10	2501.0	2593.0	2685.0
	15	2503.5	2593.0	2682.5
	20	2506.0	2593.0	2680.0

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	/	0.15382
Part24E	LTE Band2	16QAM	1.4	1M10W7D	/	0.11885
Part24E	LTE Band2	QPSK	3	2M69G7D	/	0.15241
Part24E	LTE Band2	16QAM	3	2M69W7D	/	0.11298
Part24E	LTE Band2	QPSK	5	4M50G7D	/	0.15812
Part24E	LTE Band2	16QAM	5	4M50W7D	/	0.11194
Part24E	LTE Band2	QPSK	10	8M96G7D	/	0.15849
Part24E	LTE Band2	16QAM	10	8M92W7D	/	0.11695
Part24E	LTE Band2	QPSK	15	13M5G7D	/	0.15524
Part24E	LTE Band2	16QAM	15	13M5W7D	/	0.11015
Part24E	LTE Band2	QPSK	20	17M9G7D	-0.00305	0.15849
Part24E	LTE Band2	16QAM	20	17M9W7D	-0.00291	0.11508
Part27	LTE Band4	QPSK	1.4	1M10G7D	/	0.14125
Part27	LTE Band4	16QAM	1.4	1M10W7D	/	0.11194
Part27	LTE Band4	QPSK	3	2M68G7D	/	0.14028
Part27	LTE Band4	16QAM	3	2M69W7D	/	0.11169
Part27	LTE Band4	QPSK	5	4M50G7D	/	0.14125
Part27	LTE Band4	16QAM	5	4M50W7D	/	0.11220
Part27	LTE Band4	QPSK	10	8M94G7D	/	0.14125
Part27	LTE Band4	16QAM	10	8M92W7D	/	0.11220
Part27	LTE Band4	QPSK	15	13M4G7D	/	0.13996
Part27	LTE Band4	16QAM	15	13M4W7D	/	0.11092
Part27	LTE Band4	QPSK	20	17M9G7D	-0.00331	0.14125
Part27	LTE Band4	16QAM	20	17M9W7D	-0.00314	0.11220
Part22H	LTE Band5	QPSK	1.4	1M10G7D	/	0.13614
Part22H	LTE Band5	16QAM	1.4	1M10W7D	/	0.10814
Part22H	LTE Band5	QPSK	3	2M69G7D	/	0.13646
Part22H	LTE Band5	16QAM	3	2M68W7D	/	0.10814
Part22H	LTE Band5	QPSK	5	4M49G7D	/	0.16558
Part22H	LTE Band5	16QAM	5	4M49W7D	/	0.10568
Part22H	LTE Band5	QPSK	10	8M94G7D	-0.00688	0.13614
Part22H	LTE Band5	16QAM	10	8M92W7D	-0.00654	0.10765

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Part27	LTE Band7	QPSK	5	4M50G7D	/	0.22182
Part27	LTE Band7	16QAM	5	4M49W7D	/	0.19099
Part27	LTE Band7	QPSK	10	8M94G7D	/	0.23988
Part27	LTE Band7	16QAM	10	8M92W7D	/	0.19543
Part27	LTE Band7	QPSK	15	13M5G7D	/	0.23068
Part27	LTE Band7	16QAM	15	13M5W7D	/	0.19815
Part27	LTE Band7	QPSK	20	17M9G7D	-0.00158	0.22336
Part27	LTE Band7	16QAM	20	17M9W7D	0.00196	0.17783
Part90	LTE Band26[a]	QPSK	1.4	1M10G7D	/	0.13335
Part90	LTE Band26[a]	16QAM	1.4	1M10W7D	/	0.10666
Part90	LTE Band26[a]	QPSK	3	2M68G7D	/	0.13032
Part90	LTE Band26[a]	16QAM	3	2M68W7D	/	0.09977
Part90	LTE Band26[a]	QPSK	5	4M50G7D	/	0.13646
Part90	LTE Band26[a]	16QAM	5	4M50W7D	/	0.10139
Part90	LTE Band26[a]	QPSK	10	8M92G7D	/	0.13152
Part90	LTE Band26[a]	16QAM	10	8M90W7D	/	0.10209
Part90	LTE Band26[a]	QPSK	15	13M4G7D	-0.00540	0.12106
Part90	LTE Band26[a]	16QAM	15	13M5W7D	0.00446	0.08913
Part22H	LTE Band26[b]	QPSK	1.4	1M10G7D	/	0.12942
Part22H	LTE Band26[b]	16QAM	1.4	1M10W7D	/	0.10328
Part22H	LTE Band26[b]	QPSK	3	2M68G7D	/	0.13243
Part22H	LTE Band26[b]	16QAM	3	2M69W7D	/	0.10328
Part22H	LTE Band26[b]	QPSK	5	4M50G7D	/	0.13428
Part22H	LTE Band26[b]	16QAM	5	4M50W7D	/	0.09908
Part22H	LTE Band26[b]	QPSK	10	8M94G7D	/	0.13552
Part22H	LTE Band26[b]	16QAM	10	8M92W7D	/	0.10423
Part22H	LTE Band26[b]	QPSK	15	13M5G7D	-0.00613	0.13646
Part22H	LTE Band26[b]	16QAM	15	13M5W7D	-0.00503	0.10351
Part27	LTE Band38	QPSK	5	4M51G7D	/	0.24660
Part27	LTE Band38	16QAM	5	4M49W7D	/	0.19815
Part27	LTE Band38	QPSK	10	8M94G7D	/	0.24099
Part27	LTE Band38	16QAM	10	8M94W7D	/	0.19861
Part27	LTE Band38	QPSK	15	13M5G7D	/	0.24660
Part27	LTE Band38	16QAM	15	13M5W7D	/	0.19907
Part27	LTE Band38	QPSK	20	17M9G7D	-0.00683	0.25061
Part27	LTE Band38	16QAM	20	17M9W7D	-0.00415	0.18750
Part27	LTE Band40[c]	QPSK	5	4M50G7D	/	0.18155

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Part27	LTE Band40[c]	16QAM	5	4M49W7D	/	0.15632
Part27	LTE Band40[c]	QPSK	10	8M94G7D	-0.00196	0.22182
Part27	LTE Band40[c]	16QAM	10	8M92W7D	-0.00172	0.19454
Part27	LTE Band40[d]	QPSK	5	4M50G7D	/	0.18323
Part27	LTE Band40[d]	16QAM	5	4M50W7D	/	0.15241
Part27	LTE Band40[d]	QPSK	10	8M94G7D	-0.00193	0.17539
Part27	LTE Band40[d]	16QAM	10	8M94W7D	0.00186	0.15668
Part27	LTE Band41	QPSK	5	4M50G7D	/	0.24155
Part27	LTE Band41	16QAM	5	4M50W7D	/	0.19724
Part27	LTE Band41	QPSK	10	8M92G7D	/	0.25004
Part27	LTE Band41	16QAM	10	8M92W7D	/	0.18365
Part27	LTE Band41	QPSK	15	13M5G7D	/	0.24155
Part27	LTE Band41	16QAM	15	13M5W7D	/	0.16904
Part27	LTE Band41	QPSK	20	17M9G7D	-0.00168	0.24099
Part27	LTE Band41	16QAM	20	17M9W7D	0.00188	0.18493

Note: The frequency band of LTE Band26[a] is 814MHz-824MHz;
The frequency band of LTE Band26[b] is 824MHz-849MHz;
The frequency band of LTE Band40[c] is 2305MHz-2315MHz;
The frequency band of LTE Band40[d] is 2350MHz-2360MHz;

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.4 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	52%	
Atmospheric Pressure:	1015Pa	
Temperature:	TN	25 ℃
Voltage:	VL	6.54 V
	VN	7.7 V
	VH	8.85 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	7.25×10^{-8}
2	Duty cycle	0.37%
3	Occupied Bandwidth	3%
4	RF conducted power	0.75dB
5	RF power density	2.84dB
6	Conducted Spurious emissions	0.75dB
7	RF Radiated power	4.5dB (below 1GHz)
		4.8dB (above 1GHz)
8	Radiated Spurious emission test	4.5dB (Below 1GHz)
		4.8dB (Above 1GHz)
9	Temperature test	1℃
10	Humidity test	3%
11	Supply voltages	1.5%
12	Time	3%

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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M–10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com

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
EXA Signal Analyzer (10Hz-26.5GHz)	KEYSIGHT	N9010A	SEM004-09	2018-04-13	2019-04-12
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

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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

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

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 (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	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	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 equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2018-09-27	2019-09-26
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2018-09-27	2019-09-26
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2018-09-27	2019-09-26
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2018-04-08	2019-04-07

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)

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

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)
EIRP≤ 0.25W(LTE Band 40)

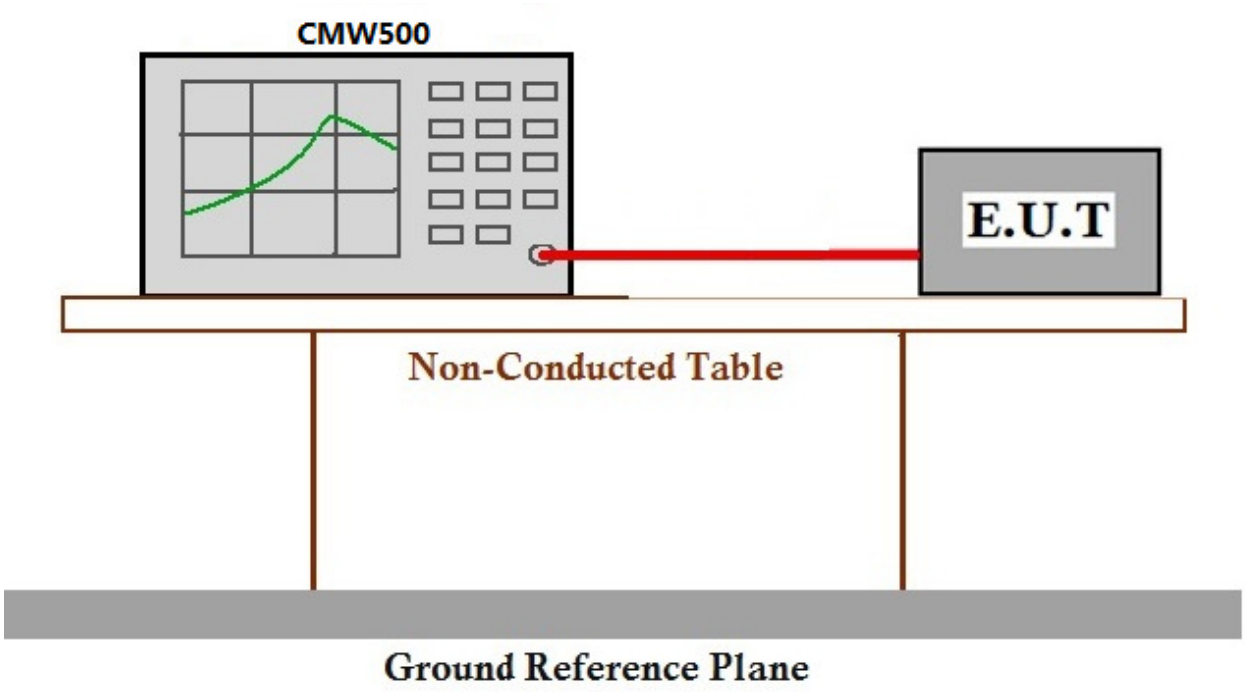
6.1.1 E.U.T. Operation

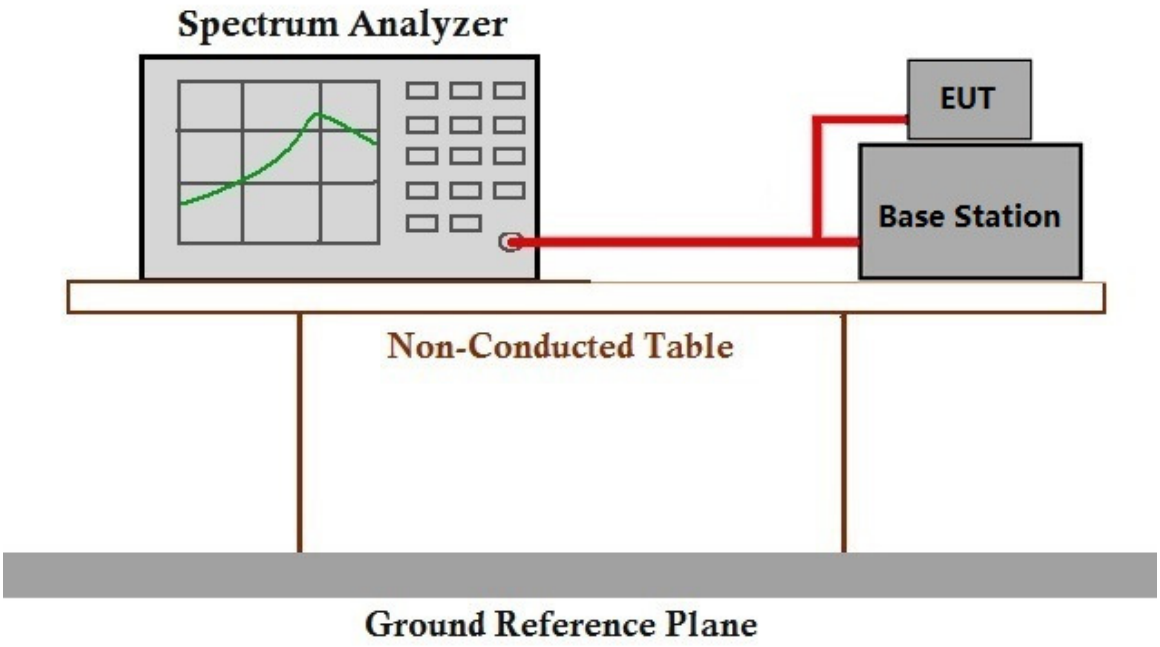
Operating Environment:

Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar

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

6.1.2 Test Setup Diagram





(Only for LTE Band40)

6.1.3 Measurement Data

Please refer to Appendix A-Output power

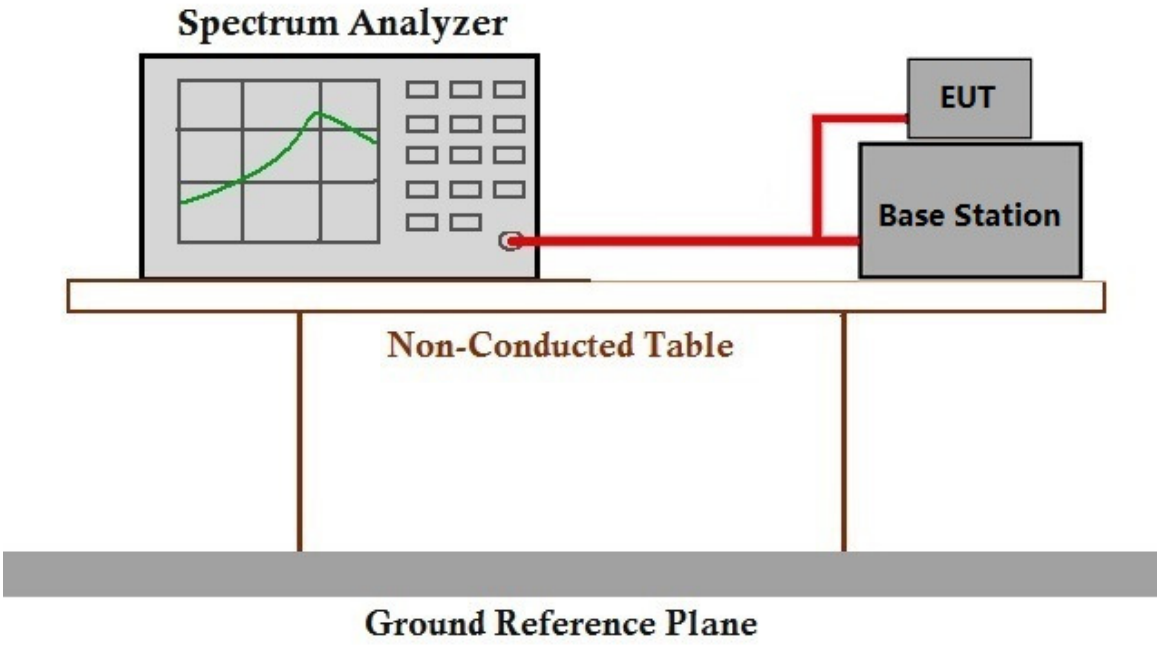
6.2 Peak-Average Ratio

Test Requirement: §24.232
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ≤13dB

6.2.1 E.U.T. Operation

Operating Environment:
Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: m: Tx mode, Keep the EUT in transmitting mode.

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

Please refer to Appendix B- Peak-Average Ratio

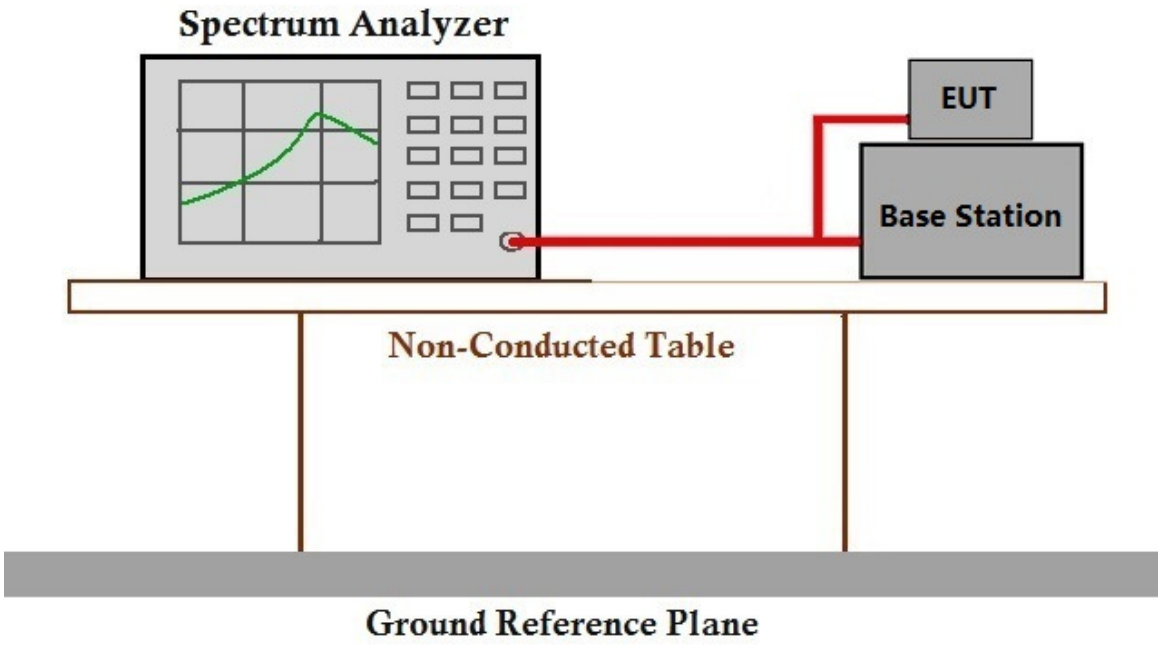
6.3 Bandwidth

Test Requirement: §2.1049(h), §22.917, §24.238, §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: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: m: Tx mode, Keep the EUT in transmitting mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data

Please refer to Appendix C- Bandwidth

6.4 Band Edge Compliance

Test Requirement: §2.1051, §22.917, §24.238, §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 Band2,4,5,26,38,40, 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)

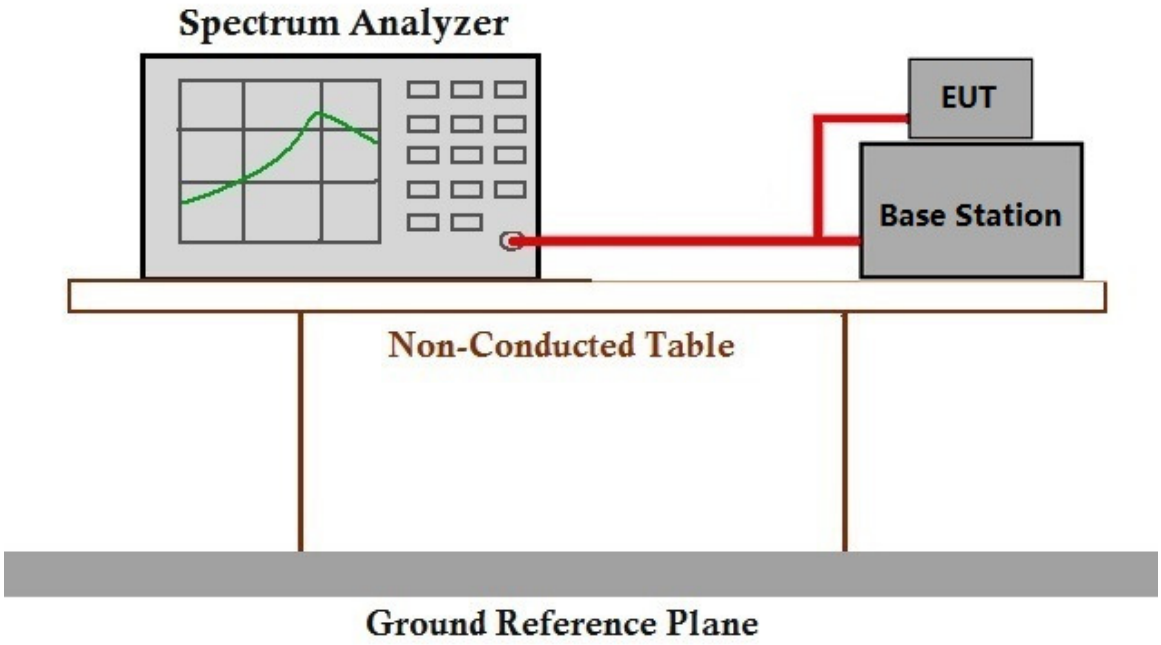
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar

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

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Please refer to Appendix D- Band Edge

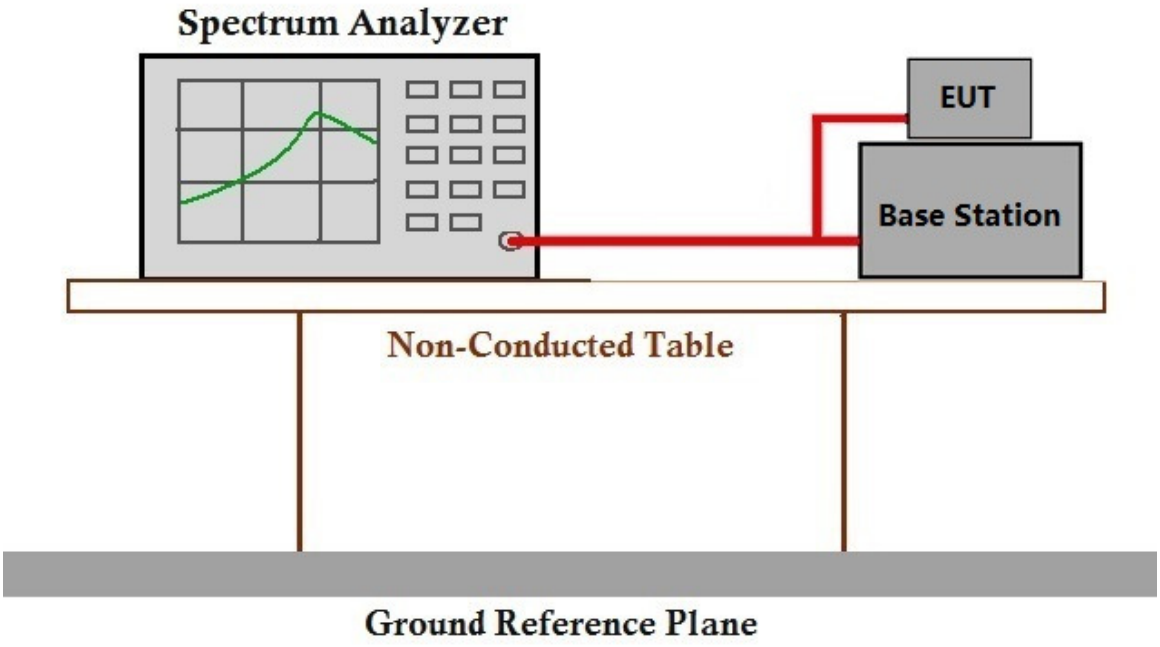
6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051, §22.917, §24.238, §90.691
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ≤ -13dBm(LTE Band2,4,5,26)
≤ -25dBm(LTE Band7,38, 41)
≤ -40dBm(LTE Band40)

6.5.1 E.U.T. Operation

Operating Environment:
Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: m: Tx mode, Keep the EUT in transmitting mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data

Please refer to Appendix E- Spurious emissions at antenna terminals

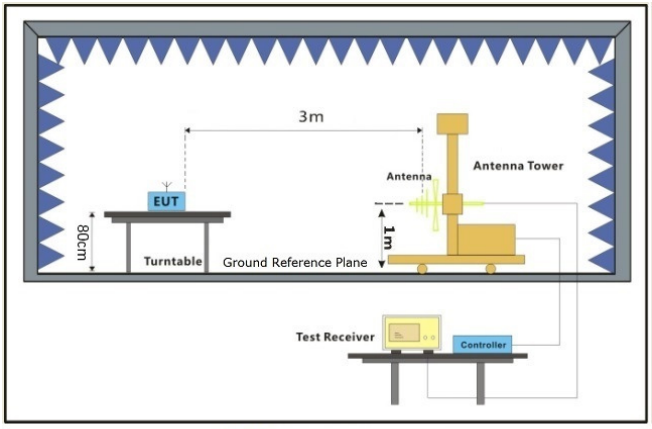
6.6 Field strength of spurious radiation

Test Requirement: §2.1051, §22.917, §24.238, §90.691
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ≤ -13dBm(LTE Band2,4,5,26)
≤ -25dBm(LTE Band7,38, 41)
≤ -40dBm(LTE Band40)

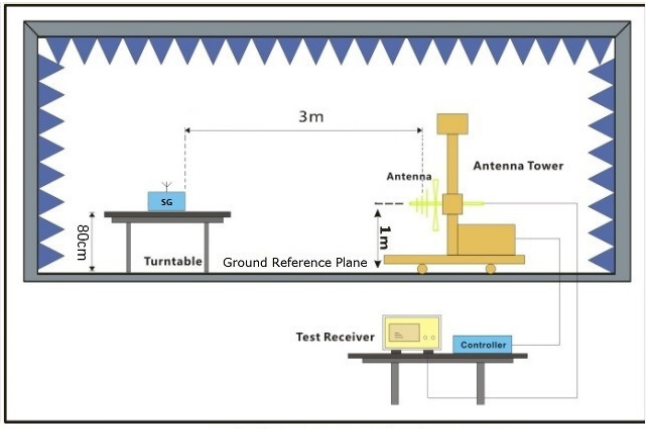
6.6.1 E.U.T. Operation

Operating Environment:
Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: m: Tx mode, Keep the EUT in transmitting mode.

6.6.2 Test Setup Diagram



EUT



Substiute Antenna+Signal Generator

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.

FDD LTE Band2- Low 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
3702	-59.27	0.71	7.6	-54.53	-13	-41.53	Horizontal	Pass
5553	-55.78	0.85	10.3	-48.48	-13	-35.48	Horizontal	Pass
7404	-58.37	1	12.9	-48.62	-13	-35.62	Horizontal	Pass
3702	-59.36	0.71	7.6	-54.62	-13	-41.62	Vertical	Pass
5553	-56.9	0.85	10.3	-49.6	-13	-36.6	Vertical	Pass
7404	-56.84	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	-57.05	0.71	7.6	-52.31	-13	-39.31	Horizontal	Pass
5673	-55.55	0.85	10.3	-48.25	-13	-35.25	Horizontal	Pass
7564	-56.86	0.99	13.2	-46.8	-13	-33.8	Horizontal	Pass
3782	-56.74	0.71	7.6	-52	-13	-39	Vertical	Pass
5673	-55.16	0.85	10.3	-47.86	-13	-34.86	Vertical	Pass
7564	-57.39	0.99	13.2	-47.33	-13	-34.33	Vertical	Pass

FDD LTE Band4-Low 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
3422	-57.58	0.65	6.2	-54.18	-13	-41.18	Horizontal	Pass
5133	-54.73	0.82	9.6	-48.1	-13	-35.1	Horizontal	Pass
6844	-54.95	0.95	11.8	-46.25	-13	-33.25	Horizontal	Pass
3422	-56.98	0.65	6.2	-53.58	-13	-40.58	Vertical	Pass
5133	-56.32	0.82	9.6	-49.69	-13	-36.69	Vertical	Pass
6844	-54.05	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	-56.93	0.65	6.2	-53.53	-13	-40.53	Horizontal	Pass
5208	-55.98	0.82	9.6	-49.35	-13	-36.35	Horizontal	Pass
6944	-54.32	0.95	11.8	-45.62	-13	-32.62	Horizontal	Pass
3472	-57.93	0.65	6.2	-54.53	-13	-41.53	Vertical	Pass
5208	-56.82	0.82	9.6	-50.19	-13	-37.19	Vertical	Pass
6944	-55.72	0.95	11.8	-47.02	-13	-34.02	Vertical	Pass

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

FDD LTE Band5-Low channel, 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
1649	-66.92	0.52	6	-61.44	-13	-48.44	Horizontal	Pass
2473.5	-62.7	0.53	5.8	-57.43	-13	-44.43	Horizontal	Pass
3298	-59.05	0.65	6.2	-53.5	-13	-40.5	Horizontal	Pass
1649	-67.44	0.52	6	-61.96	-13	-48.96	Vertical	Pass
2473.5	-63.41	0.53	5.8	-58.14	-13	-45.14	Vertical	Pass
3298	-59.42	0.65	6.2	-53.87	-13	-40.87	Vertical	Pass

FDD LTE Band5-Middle channel, 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
1664	-66.57	0.52	6	-61.09	-13	-48.09	Horizontal	Pass
2496	-62.55	0.53	5.8	-57.28	-13	-44.28	Horizontal	Pass
3328	-58.28	0.65	6.2	-52.73	-13	-39.73	Horizontal	Pass
1664	-66.22	0.52	6	-60.74	-13	-47.74	Vertical	Pass
2496	-62.71	0.53	5.8	-57.44	-13	-44.44	Vertical	Pass
3328	-58.83	0.65	6.2	-53.28	-13	-40.28	Vertical	Pass

FDD LTE Band5-High channel, 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
1679	-64.09	0.52	6	-58.61	-13	-45.61	Horizontal	Pass
2518.5	-62.16	0.59	5.3	-57.45	-13	-44.45	Horizontal	Pass
3358	-58.57	0.65	6.2	-53.02	-13	-40.02	Horizontal	Pass
1679	-66.33	0.52	6	-60.85	-13	-47.85	Vertical	Pass
2518.5	-63.09	0.59	5.3	-58.38	-13	-45.38	Vertical	Pass
3358	-58.92	0.65	6.2	-53.37	-13	-40.37	Vertical	Pass

FDD LTE Band7-Low 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
5002	-59.02	0.82	9.6	-50.24	-25	-25.24	Horizontal	Pass
7503	-59.23	0.99	13.2	-47.02	-25	-22.02	Horizontal	Pass
10004	-57.09	1.26	12.7	-45.65	-25	-20.65	Horizontal	Pass
5002	-58.73	0.82	9.6	-49.95	-25	-24.95	Vertical	Pass
7503	-58.97	0.99	13.2	-46.76	-25	-21.76	Vertical	Pass
10004	-58.31	1.26	12.7	-46.87	-25	-21.87	Vertical	Pass

FDD LTE Band7-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
5052	-57.56	0.82	9.6	-48.78	-25	-23.78	Horizontal	Pass
7578	-59.36	0.99	13.2	-47.15	-25	-22.15	Horizontal	Pass
10104	-56.32	1.26	12.7	-44.88	-25	-19.88	Horizontal	Pass
5052	-56.98	0.82	9.6	-48.2	-25	-23.2	Vertical	Pass
7578	-59.94	0.99	13.2	-47.73	-25	-22.73	Vertical	Pass
10104	-57.37	1.26	12.7	-45.93	-25	-20.93	Vertical	Pass

FDD LTE Band7-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
5102	-59.17	0.82	9.6	-50.39	-25	-25.39	Horizontal	Pass
7653	-58.44	0.99	13.2	-46.23	-25	-21.23	Horizontal	Pass
10204	-56.88	1.26	12.7	-45.44	-25	-20.44	Horizontal	Pass
5102	-59.27	0.82	9.6	-50.49	-25	-25.49	Vertical	Pass
7653	-59.64	0.99	13.2	-47.43	-25	-22.43	Vertical	Pass
10204	-57.57	1.26	12.7	-46.13	-25	-21.13	Vertical	Pass

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

FDD LTE Band26-Low 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
1629	-65.08	0.52	6	-59.6	-13	-46.6	Horizontal	Pass
2443.5	-62.67	0.53	5.8	-57.4	-13	-44.4	Horizontal	Pass
3258	-57.41	0.65	6.2	-51.86	-13	-38.86	Horizontal	Pass
1629	-65.03	0.52	6	-59.55	-13	-46.55	Vertical	Pass
2443.5	-62.5	0.53	5.8	-57.23	-13	-44.23	Vertical	Pass
3258	-56.7	0.65	6.2	-51.15	-13	-38.15	Vertical	Pass

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
-	-	-	-	-	-13	-	Horizontal	-
-	-	-	-	-	-13	-	Horizontal	-
-	-	-	-	-	-13	-	Horizontal	-
-	-	-	-	-	-13	-	Vertical	-
-	-	-	-	-	-13	-	Vertical	-
-	-	-	-	-	-13	-	Vertical	-

FDD LTE Band26-High 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
-	-	-	-	-	-13	-	Horizontal	-
-	-	-	-	-	-13	-	Horizontal	-
-	-	-	-	-	-13	-	Horizontal	-
-	-	-	-	-	-13	-	Vertical	-
-	-	-	-	-	-13	-	Vertical	-
-	-	-	-	-	-13	-	Vertical	-

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

FDD LTE Band26-Low 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
1649.5	-66.13	0.52	6	-60.65	-13	-47.65	Horizontal	Pass
2474.25	-61.22	0.53	5.8	-55.95	-13	-42.95	Horizontal	Pass
3299	-57.81	0.65	6.2	-52.26	-13	-39.26	Horizontal	Pass
1649.5	-66.51	0.52	6	-61.03	-13	-48.03	Vertical	Pass
2474.25	-61.52	0.53	5.8	-56.25	-13	-43.25	Vertical	Pass
3299	-58.47	0.65	6.2	-52.92	-13	-39.92	Vertical	Pass

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	-61.35	0.52	6	-55.87	-13	-42.87	Horizontal	Pass
2489.25	-61.28	0.53	5.8	-56.01	-13	-43.01	Horizontal	Pass
3319	-57.78	0.65	6.2	-52.23	-13	-39.23	Horizontal	Pass
1659.5	-63.98	0.52	6	-58.5	-13	-45.5	Vertical	Pass
2489.25	-61.05	0.53	5.8	-55.78	-13	-42.78	Vertical	Pass
3319	-58.84	0.65	6.2	-53.29	-13	-40.29	Vertical	Pass

FDD LTE Band26-High 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
1669.5	-61.55	0.52	6	-56.07	-13	-43.07	Horizontal	Pass
2504.25	-60.9	0.59	5.3	-56.19	-13	-43.19	Horizontal	Pass
3339	-57.45	0.65	6.2	-51.9	-13	-38.9	Horizontal	Pass
1669.5	-60.27	0.52	6	-54.79	-13	-41.79	Vertical	Pass
2504.25	-54.65	0.59	5.3	-49.94	-13	-36.94	Vertical	Pass
3339	-52.48	0.65	6.2	-46.93	-13	-33.93	Vertical	Pass

TDD LTE Band38-Low 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
5142	-55.29	0.82	9.6	-46.51	-25	-21.51	Horizontal	Pass
7713	-55.71	0.99	13.2	-43.5	-25	-18.5	Horizontal	Pass
10284	-52.66	1.26	12.7	-41.22	-25	-16.22	Horizontal	Pass
5142	-56.47	0.82	9.6	-47.69	-25	-22.69	Vertical	Pass
7713	-56.5	0.99	13.2	-44.29	-25	-19.29	Vertical	Pass
10284	-53.29	1.26	12.7	-41.85	-25	-16.85	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	-55.21	0.82	9.6	-46.43	-25	-21.43	Horizontal	Pass
7758	-51.4	0.99	13.2	-39.19	-25	-14.19	Horizontal	Pass
10344	-52.68	1.26	12.7	-41.24	-25	-16.24	Horizontal	Pass
5172	-56.49	0.82	9.6	-47.71	-25	-22.71	Vertical	Pass
7758	-49.71	0.99	13.2	-37.5	-25	-12.5	Vertical	Pass
10344	-53.18	1.26	12.7	-41.74	-25	-16.74	Vertical	Pass

TDD LTE Band38-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
5202	-55.81	0.82	9.6	-47.03	-25	-22.03	Horizontal	Pass
7803	-56.66	0.99	13.2	-44.45	-25	-19.45	Horizontal	Pass
10404	-53.42	1.26	12.7	-41.98	-25	-16.98	Horizontal	Pass
5202	-56.47	0.82	9.6	-47.69	-25	-22.69	Vertical	Pass
7803	-56.27	0.99	13.2	-44.06	-25	-19.06	Vertical	Pass
10404	-53.29	1.26	12.7	-41.85	-25	-16.85	Vertical	Pass

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

TDD LTE Band40-Low channel(2305MHz-2315MHz), 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
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-

TDD LTE Band40-Middle channel(2305MHz-2315MHz), 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
4611	-62.1	0.76	9.7	-53.16	-40	-13.16	Horizontal	Pass
6916.5	-58.07	0.95	11.8	-47.22	-40	-7.22	Horizontal	Pass
9222	-57.49	1.23	12.4	-46.32	-40	-6.32	Horizontal	Pass
4611	-62.6	0.76	9.7	-53.66	-40	-13.66	Vertical	Pass
6916.5	-56.01	0.95	11.8	-45.16	-40	-5.16	Vertical	Pass
9222	-57.42	1.23	12.4	-46.25	-40	-6.25	Vertical	Pass

TDD LTE Band40-High channel(2305MHz-2315MHz), 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
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

TDD LTE Band40-Low channel(2350MHz-2360MHz), 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
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-

TDD LTE Band40-Middle channel(2350MHz-2360MHz), 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
4701	-62.12	0.76	9.7	-53.18	-40	-13.18	Horizontal	Pass
7051.5	-56	1	12.9	-44.1	-40	-4.1	Horizontal	Pass
9402	-57.77	1.23	12.4	-46.6	-40	-6.6	Horizontal	Pass
4701	-61.42	0.76	9.7	-52.48	-40	-12.48	Vertical	Pass
7051.5	-54.26	1	12.9	-43.36	-40	-3.36	Vertical	Pass
9402	-56.98	1.23	12.4	-45.81	-40	-5.81	Vertical	Pass

TDD LTE Band40-High channel(2350MHz-2360MHz), 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
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Horizontal	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-
-	-	-	-	-	-40	-	Vertical	-

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

TDD LTE Band41-Low 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
4994	-58.45	0.76	9.7	-49.51	-25	-24.51	Horizontal	Pass
7491	-59.11	1	12.9	-47.21	-25	-22.21	Horizontal	Pass
9988	-55.86	1.27	13	-44.13	-25	-19.13	Horizontal	Pass
4994	-59.26	0.76	9.7	-50.32	-25	-25.32	Vertical	Pass
7491	-57.66	1	12.9	-45.76	-25	-20.76	Vertical	Pass
9988	-56.41	1.27	13	-44.68	-25	-19.68	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
5168	-58.38	0.82	9.6	-49.6	-25	-24.6	Horizontal	Pass
7752	-53.26	0.99	13.2	-41.05	-25	-16.05	Horizontal	Pass
10336	-54.92	1.26	12.7	-43.48	-25	-18.48	Horizontal	Pass
5168	-57.2	0.82	9.6	-48.42	-25	-23.42	Vertical	Pass
7752	-53.32	0.99	13.2	-41.11	-25	-16.11	Vertical	Pass
10336	-56.48	1.26	12.7	-45.04	-25	-20.04	Vertical	Pass

TDD LTE Band41-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
5342	-58.66	0.82	9.6	-49.88	-25	-24.88	Horizontal	Pass
8013	-56.71	1.01	12.9	-44.82	-25	-19.82	Horizontal	Pass
10684	-56.14	1.49	13.5	-44.13	-25	-19.13	Horizontal	Pass
5342	-58.64	0.82	9.6	-49.86	-25	-24.86	Vertical	Pass
8013	-57.68	1.01	12.9	-45.79	-25	-20.79	Vertical	Pass
10684	-56.33	1.49	13.5	-44.32	-25	-19.32	Vertical	Pass

Note: All modes have been tested and we found max bandwidth, full RB Test mode: has the worst test result. Only record the worst test result.

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

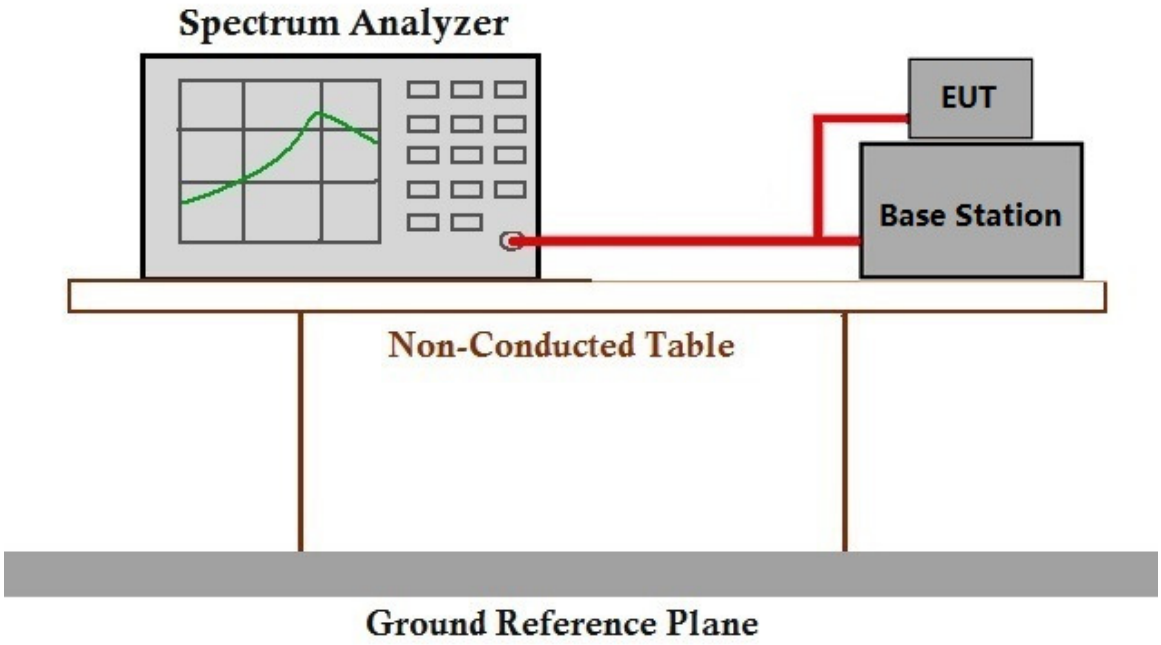
6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235, §90.213
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ≤ ±2.5ppm.

6.7.1 E.U.T. Operation

Operating Environment:
Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: m: Tx mode, Keep the EUT in transmitting mode.

6.7.2 Test Setup Diagram



6.7.3 Measurement Data

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	-5.68	-0.00305	PASS
				VN	-0.73	-0.00039	PASS
				VH	-3.85	-0.00207	PASS
		MCH	TN	VL	0.31	0.00016	PASS
				VN	-3.96	-0.00211	PASS
				VH	1.47	0.00078	PASS
		HCH	TN	VL	-2.71	-0.00143	PASS
				VN	-2.32	-0.00122	PASS
				VH	-1.9	-0.00100	PASS
	16QAM/20MHz	LCH	TN	VL	-5.41	-0.00291	PASS
				VN	-4.12	-0.00222	PASS
				VH	-4.25	-0.00228	PASS
		MCH	TN	VL	0.38	0.00020	PASS
				VN	-3.99	-0.00212	PASS
				VH	1.44	0.00077	PASS
		HCH	TN	VL	-4.2	-0.00221	PASS
				VN	-3.17	-0.00167	PASS
				VH	0.29	0.00015	PASS

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	QPSK/20MHz	LCH	TN	VL	-5.7	-0.00331	PASS
				VN	-0.71	-0.00041	PASS
				VH	-2.88	-0.00167	PASS
		MCH	TN	VL	0.34	0.00020	PASS
				VN	-3.99	-0.00230	PASS
				VH	1.49	0.00086	PASS
		HCH	TN	VL	-3.65	-0.00209	PASS
				VN	-2.3	-0.00132	PASS
				VH	-1.91	-0.00109	PASS
	16QAM/20MHz	LCH	TN	VL	-5.4	-0.00314	PASS
				VN	-4.09	-0.00238	PASS
				VH	-2.26	-0.00131	PASS
		MCH	TN	VL	0.38	0.00022	PASS
				VN	-3.98	-0.00230	PASS

				VH	1.41	0.00081	PASS
		HCH	TN	VL	-4.2	-0.00241	PASS
				VN	-3.17	-0.00182	PASS
				VH	-0.72	-0.00041	PASS

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband5	QPSK/10MHz	LCH	TN	VL	-5.7	-0.00688	PASS
				VN	-0.71	-0.00086	PASS
				VH	-2.87	-0.00346	PASS
		MCH	TN	VL	0.29	0.00035	PASS
				VN	-3.96	-0.00473	PASS
				VH	1.47	0.00176	PASS
		HCH	TN	VL	-3.67	-0.00435	PASS
				VN	-2.31	-0.00274	PASS
				VH	-1.9	-0.00225	PASS
	16QAM/10MHz	LCH	TN	VL	-5.42	-0.00654	PASS
				VN	-4.1	-0.00495	PASS
				VH	-3.27	-0.00394	PASS
		MCH	TN	VL	0.42	0.00050	PASS
				VN	-4.01	-0.00479	PASS
				VH	1.42	0.00170	PASS
		HCH	TN	VL	-4.23	-0.00501	PASS
				VN	-2.18	-0.00258	PASS
				VH	-0.72	-0.00085	PASS

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	QPSK/20MHz	LCH	TN	VL	-3.97	-0.00158	PASS
				VN	1.02	0.00041	PASS
				VH	-1.13	-0.00045	PASS
		MCH	TN	VL	2.05	0.00081	PASS
				VN	-2.24	-0.00088	PASS
				VH	3.2	0.00126	PASS
		HCH	TN	VL	-0.97	-0.00038	PASS
				VN	-0.58	-0.00023	PASS
				VH	-0.17	-0.00007	PASS
	16QAM/20MHz	LCH	TN	VL	-3.7	-0.00147	PASS

				VN	-2.37	-0.00094	PASS
				VH	-0.54	-0.00022	PASS
		MCH	TN	VL	2.17	0.00086	PASS
				VN	-2.24	-0.00088	PASS
				VH	3.11	0.00123	PASS
		HCH	TN	VL	-2.48	-0.00097	PASS
				VN	-0.45	-0.00018	PASS
				VH	1.01	0.00039	PASS

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband26 (814MHz-824MHz)	QPSK/10MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	2.04	0.00249	PASS
				VN	-2.24	-0.00274	PASS
				VH	3.2	0.00391	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
	16QAM/10MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	2.1	0.00256	PASS
				VN	-2.26	-0.00276	PASS
				VH	3.16	0.00386	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband26 (824MHz-849MHz)	QPSK/15MHz	LCH	TN	VL	-3.97	-0.00477	PASS
				VN	1.01	0.00121	PASS
				VH	-2.12	-0.00255	PASS
		MCH	TN	VL	2.06	0.00246	PASS
				VN	-2.24	-0.00268	PASS
				VH	3.2	0.00383	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

		HCH	TN	VL	-1.98	-0.00235	PASS
				VN	-1.6	-0.00190	PASS
				VH	-0.15	-0.00018	PASS
	16QAM/15MHz	LCH	TN	VL	-3.68	-0.00443	PASS
				VN	-2.37	-0.00285	PASS
				VH	-1.53	-0.00184	PASS
		MCH	TN	VL	2.14	0.00256	PASS
				VN	-2.22	-0.00265	PASS
				VH	3.15	0.00377	PASS
		HCH	TN	VL	-2.48	-0.00295	PASS
				VN	-1.44	-0.00171	PASS
				VH	1.01	0.00120	PASS

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband38	QPSK/20MHz	LCH	TN	VL	-3.74	-0.00450	PASS
				VN	1.25	0.00150	PASS
				VH	-1.92	-0.00231	PASS
		MCH	TN	VL	2.3	0.00275	PASS
				VN	-2.02	-0.00241	PASS
				VH	3.44	0.00411	PASS
		HCH	TN	VL	-5.75	-0.00683	PASS
				VN	-1.37	-0.00163	PASS
				VH	0.07	0.00008	PASS
	16QAM/20MHz	LCH	TN	VL	-3.45	-0.00415	PASS
				VN	-2.17	-0.00261	PASS
				VH	-1.3	-0.00156	PASS
		MCH	TN	VL	2.39	0.00286	PASS
				VN	-2	-0.00239	PASS
				VH	3.38	0.00404	PASS
		HCH	TN	VL	-2.25	-0.00267	PASS
				VN	-1.27	-0.00151	PASS
				VH	1.23	0.00146	PASS

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband40 (2305MHz-	QPSK/5MHz	LCH	TN	VL	/	/	/
				VN	/	/	/

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

2315MHz)				VH	/	/	/
		MCH	TN	VL	2.27	0.00098	PASS
				VN	-2	-0.00087	PASS
				VH	3.47	0.00150	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
	16QAM/5MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	2.39	0.00103	PASS
				VN	-2.01	-0.00087	PASS
				VH	3.33	0.00144	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband40 (2350MHz-2360MHz)	QPSK/10MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	2.31	0.00098	PASS
				VN	-2.03	-0.00086	PASS
				VH	2.45	0.00104	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
	16QAM/10MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	2.38	0.00101	PASS
				VN	-2.03	-0.00086	PASS
				VH	4.39	0.00186	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband41	QPSK/20MHz	LCH	TN	VL	-3.74	-0.00149	PASS
				VN	1.25	0.00050	PASS
				VH	-2.89	-0.00115	PASS
		MCH	TN	VL	2.28	0.00088	PASS
				VN	-2	-0.00077	PASS
				VH	3.49	0.00135	PASS
		HCH	TN	VL	-2.72	-0.00101	PASS
				VN	-4.35	-0.00162	PASS
				VH	0.05	0.00002	PASS
	16QAM/20MHz	LCH	TN	VL	-3.47	-0.00138	PASS
				VN	-2.14	-0.00085	PASS
				VH	-1.3	-0.00052	PASS
		MCH	TN	VL	2.4	0.00093	PASS
				VN	-2	-0.00077	PASS
				VH	3.38	0.00130	PASS
		HCH	TN	VL	-2.25	-0.00084	PASS
				VN	-0.22	-0.00008	PASS
				VH	1.24	0.00046	PASS

Frequency Error VS. Temperature

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband2	QPSK/20MHz	LCH	VN	-30	1.4	0.00075	PASS
				-20	1.41	0.00076	PASS
				-10	0.54	0.00029	PASS
				0	4.23	0.00227	PASS
				10	3.62	0.00195	PASS
				20	3.49	0.00188	PASS
				30	2.03	0.00109	PASS
				40	1.54	0.00083	PASS
				50	1.69	0.00091	PASS
		MCH	VN	-30	-2.98	-0.00159	PASS
				-20	-2.97	-0.00158	PASS
				-10	-4.11	-0.00219	PASS
				0	-0.57	-0.00030	PASS
				10	-3.81	-0.00203	PASS
				20	-2.23	-0.00119	PASS

				30	-2.11	-0.00112	PASS
				40	-3.76	-0.00200	PASS
				50	-2.81	-0.00149	PASS
		HCH	VN	-30	2.43	0.00128	PASS
				-20	2.44	0.00128	PASS
				-10	0.37	0.00019	PASS
				0	3.38	0.00178	PASS
				10	-1.03	-0.00054	PASS
				20	4.49	0.00236	PASS
				30	1.31	0.00069	PASS
				40	-0.82	-0.00043	PASS
				50	-3.56	-0.00187	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband2	16QAM/20MHz	LCH	VN	-30	0.77	0.00041	PASS
				-20	0.78	0.00042	PASS
				-10	-1.07	-0.00058	PASS
				0	4.56	0.00245	PASS
				10	4.12	0.00222	PASS
				20	3.18	0.00171	PASS
				30	1.35	0.00073	PASS
				40	1.14	0.00061	PASS
				50	3.32	0.00178	PASS
		MCH	VN	-30	-2.01	-0.00107	PASS
				-20	-2.02	-0.00107	PASS
				-10	-3.8	-0.00202	PASS
				0	-2.21	-0.00118	PASS
				10	-3.34	-0.00178	PASS
				20	0.54	0.00029	PASS
				30	3.32	0.00177	PASS
				40	-1.96	-0.00104	PASS
				50	-1.24	-0.00066	PASS
		HCH	VN	-30	3.13	0.00165	PASS
				-20	3.12	0.00164	PASS
				-10	-0.87	-0.00046	PASS
				0	3.17	0.00167	PASS
				10	-1.85	-0.00097	PASS
				20	4.26	0.00224	PASS
				30	0.11	0.00006	PASS
				40	-1.61	-0.00085	PASS
				50	-2.85	-0.00150	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	QPSK/20MHz	LCH	VN	-30	1.29	0.00075	PASS
				-20	1.3	0.00076	PASS
				-10	0.43	0.00025	PASS
				0	4.12	0.00240	PASS
				10	3.51	0.00204	PASS
				20	3.38	0.00197	PASS
				30	1.92	0.00112	PASS
				40	1.43	0.00083	PASS
				50	1.58	0.00092	PASS
		MCH	VN	-30	-2.08	-0.00120	PASS
				-20	-2.08	-0.00120	PASS
				-10	-4.22	-0.00244	PASS
				0	-1.68	-0.00097	PASS
				10	-3.92	-0.00226	PASS
				20	-2.34	-0.00135	PASS
				30	-3.22	-0.00186	PASS
				40	-3.87	-0.00223	PASS
				50	-2.92	-0.00169	PASS
		HCH	VN	-30	2.34	0.00134	PASS
				-20	2.33	0.00134	PASS
				-10	0.26	0.00015	PASS
				0	3.27	0.00187	PASS
				10	-1.14	-0.00065	PASS
				20	4.38	0.00251	PASS
				30	1.2	0.00069	PASS
				40	-0.93	-0.00053	PASS
				50	-3.67	-0.00210	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	16QAM/20MHz	LCH	VN	-30	1.58	0.00092	PASS
				-20	1.57	0.00091	PASS
				-10	-0.28	-0.00016	PASS
				0	5.35	0.00311	PASS
				10	4.91	0.00285	PASS
				20	3.97	0.00231	PASS
				30	2.14	0.00124	PASS
				40	1.93	0.00112	PASS
				50	4.11	0.00239	PASS
		MCH	VN	-30	-1.22	-0.00070	PASS
				-20	-1.23	-0.00071	PASS
				-10	-3.01	-0.00174	PASS
				0	-0.42	-0.00024	PASS
				10	-2.55	-0.00147	PASS
				20	1.33	0.00077	PASS
				30	4.11	0.00237	PASS
				40	-1.17	-0.00068	PASS
				50	-0.45	-0.00026	PASS
		HCH	VN	-30	3.9	0.00223	PASS
				-20	3.91	0.00224	PASS
				-10	-0.08	-0.00005	PASS
				0	3.96	0.00227	PASS
				10	-1.06	-0.00061	PASS
				20	5.05	0.00289	PASS
				30	0.9	0.00052	PASS
				40	-0.82	-0.00047	PASS
				50	-2.06	-0.00118	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband5	QPSK/10MHz	LCH	VN	-30	0.69	0.00083	PASS
				-20	0.68	0.00082	PASS
				-10	-0.19	-0.00023	PASS
				0	3.5	0.00422	PASS
				10	2.89	0.00349	PASS
				20	2.76	0.00333	PASS
				30	1.3	0.00157	PASS
				40	0.81	0.00098	PASS
				50	0.96	0.00116	PASS
		MCH	VN	-30	-3.69	-0.00441	PASS
				-20	-3.7	-0.00442	PASS
				-10	-4.84	-0.00579	PASS
				0	-1.3	-0.00155	PASS
				10	-4.54	-0.00543	PASS
				20	-2.96	-0.00354	PASS
				30	-1.84	-0.00220	PASS
				40	-4.49	-0.00537	PASS
				50	-3.54	-0.00423	PASS
		HCH	VN	-30	1.72	0.00204	PASS
				-20	1.71	0.00203	PASS
				-10	-0.36	-0.00043	PASS
				0	2.65	0.00314	PASS
				10	-1.76	-0.00209	PASS
				20	3.76	0.00445	PASS
				30	0.58	0.00069	PASS
				40	-1.55	-0.00184	PASS
				50	-4.29	-0.00508	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband5	16QAM/10MHz	LCH	VN	-30	0.36	0.00043	PASS
				-20	0.37	0.00045	PASS
				-10	-1.48	-0.00179	PASS
				0	4.15	0.00501	PASS
				10	3.71	0.00448	PASS
				20	2.77	0.00334	PASS
				30	0.94	0.00113	PASS
				40	0.73	0.00088	PASS
				50	2.91	0.00351	PASS
		MCH	VN	-30	-2.44	-0.00292	PASS
				-20	-2.43	-0.00290	PASS
				-10	-4.21	-0.00503	PASS
				0	-1.62	-0.00194	PASS
				10	-3.75	-0.00448	PASS
				20	0.13	0.00016	PASS
				30	2.91	0.00348	PASS
				40	-2.37	-0.00283	PASS
				50	-1.65	-0.00197	PASS
		HCH	VN	-30	2.7	0.00320	PASS
				-20	2.71	0.00321	PASS
				-10	-1.28	-0.00152	PASS
				0	2.76	0.00327	PASS
				10	-2.26	-0.00268	PASS
				20	3.85	0.00456	PASS
				30	-0.3	-0.00036	PASS
				40	-2.02	-0.00239	PASS
				50	-3.26	-0.00386	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	QPSK/20MHz	LCH	VN	-30	1.51	0.00060	PASS
				-20	1.52	0.00061	PASS
				-10	0.65	0.00026	PASS
				0	4.34	0.00173	PASS
				10	3.73	0.00149	PASS
				20	3.6	0.00143	PASS
				30	2.14	0.00085	PASS
				40	1.65	0.00066	PASS
				50	1.8	0.00072	PASS
		MCH	VN	-30	-2.87	-0.00113	PASS
				-20	-2.86	-0.00113	PASS
				-10	-4	-0.00158	PASS
				0	-1.46	-0.00058	PASS
				10	-3.7	-0.00146	PASS
				20	-2.12	-0.00084	PASS
				30	0	0.00000	PASS
				40	-3.65	-0.00144	PASS
				50	-2.7	-0.00107	PASS
		HCH	VN	-30	2.54	0.00099	PASS
				-20	2.55	0.00100	PASS
				-10	0.48	0.00019	PASS
				0	3.49	0.00136	PASS
				10	-0.92	-0.00036	PASS
				20	4.6	0.00180	PASS
				30	1.42	0.00055	PASS
				40	-0.71	-0.00028	PASS
				50	-3.45	-0.00135	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	16QAM/20MHz	LCH	VN	-30	1.12	0.00045	PASS
				-20	1.13	0.00045	PASS
				-10	-0.72	-0.00029	PASS
				0	4.91	0.00196	PASS
				10	4.47	0.00178	PASS
				20	3.53	0.00141	PASS
				30	1.7	0.00068	PASS
				40	1.49	0.00059	PASS
				50	3.67	0.00146	PASS
		MCH	VN	-30	-1.66	-0.00065	PASS
				-20	-1.67	-0.00066	PASS
				-10	-3.45	-0.00136	PASS
				0	-0.86	-0.00034	PASS
				10	-2.99	-0.00118	PASS
				20	0.89	0.00035	PASS
				30	3.67	0.00145	PASS
				40	-1.61	-0.00064	PASS
				50	-0.89	-0.00035	PASS
		HCH	VN	-30	3.48	0.00136	PASS
				-20	3.47	0.00136	PASS
				-10	-0.52	-0.00020	PASS
				0	3.52	0.00138	PASS
				10	-1.5	-0.00059	PASS
				20	4.61	0.00180	PASS
				30	0.46	0.00018	PASS
				40	-1.26	-0.00049	PASS
				50	-2.5	-0.00098	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband26 (814MHz-824MHz)	QPSK/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-0.27	-0.00033	PASS
				-20	-0.28	-0.00034	PASS
				-10	-4.42	-0.00540	PASS
				0	-1.88	-0.00230	PASS
				10	-1.12	-0.00137	PASS
				20	-2.54	-0.00310	PASS
				30	-0.42	-0.00051	PASS
				40	-4.07	-0.00497	PASS
				50	-4	-0.00488	PASS
		HCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband26 (814MHz-824MHz)	16QAM/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-1.68	-0.00205	PASS
				-20	-1.69	-0.00206	PASS
				-10	-3.47	-0.00424	PASS
				0	-1.88	-0.00230	PASS
				10	-3.01	-0.00368	PASS
				20	0.87	0.00106	PASS
				30	3.65	0.00446	PASS
				40	-1.63	-0.00199	PASS
				50	-0.91	-0.00111	PASS
		HCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband26 (824MHz-849MHz)	QPSK/15MHz	LCH	VN	-30	0.38	0.00046	PASS
				-20	0.39	0.00047	PASS
				-10	-0.48	-0.00058	PASS
				0	3.21	0.00386	PASS
				10	2.6	0.00313	PASS
				20	2.47	0.00297	PASS
				30	1.01	0.00121	PASS
				40	0.52	0.00063	PASS
				50	0.67	0.00081	PASS
		MCH	VN	-30	-3	-0.00359	PASS
				-20	-2.99	-0.00357	PASS
				-10	-5.13	-0.00613	PASS
				0	-2.59	-0.00310	PASS
				10	-4.83	-0.00577	PASS
				20	-3.25	-0.00389	PASS
				30	-2.13	-0.00255	PASS
				40	-4.78	-0.00571	PASS
				50	-3.83	-0.00458	PASS
		HCH	VN	-30	1.41	0.00168	PASS
				-20	1.42	0.00169	PASS
				-10	-0.65	-0.00077	PASS
				0	2.36	0.00280	PASS
				10	-2.05	-0.00244	PASS
				20	3.47	0.00412	PASS
				30	0.29	0.00034	PASS
				40	-1.84	-0.00219	PASS
				50	-4.58	-0.00544	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband26 (824MHz-849MHz)	16QAM/15MHz	LCH	VN	-30	0.38	0.00046	PASS
				-20	0.37	0.00044	PASS
				-10	-1.48	-0.00178	PASS
				0	4.15	0.00499	PASS
				10	3.71	0.00446	PASS
				20	2.77	0.00333	PASS
				30	0.94	0.00113	PASS
				40	0.73	0.00088	PASS
				50	1.91	0.00230	PASS
		MCH	VN	-30	-2.43	-0.00290	PASS
				-20	-2.43	-0.00290	PASS
				-10	-4.21	-0.00503	PASS
				0	-1.62	-0.00194	PASS
				10	-3.75	-0.00448	PASS
				20	0.13	0.00016	PASS
				30	2.91	0.00348	PASS
				40	-2.37	-0.00283	PASS
				50	-1.65	-0.00197	PASS
		HCH	VN	-30	2.7	0.00321	PASS
				-20	2.71	0.00322	PASS
				-10	-1.28	-0.00152	PASS
				0	2.76	0.00328	PASS
				10	-2.26	-0.00269	PASS
				20	3.85	0.00458	PASS
				30	-0.3	-0.00036	PASS
				40	-2.02	-0.00240	PASS
				50	-3.26	-0.00387	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband38	QPSK/20MHz	LCH	VN	-30	0.26	0.00010	PASS
				-20	0.27	0.00010	PASS
				-10	-0.6	-0.00023	PASS
				0	3.09	0.00120	PASS
				10	2.48	0.00096	PASS
				20	2.35	0.00091	PASS
				30	0.89	0.00034	PASS
				40	0.4	0.00016	PASS
				50	0.55	0.00021	PASS
		MCH	VN	-30	-3.1	-0.00119	PASS
				-20	-3.11	-0.00120	PASS
				-10	-5.25	-0.00202	PASS
				0	-2.71	-0.00104	PASS
				10	-4.95	-0.00191	PASS
				20	-3.37	-0.00130	PASS
				30	-2.25	-0.00087	PASS
				40	-4.9	-0.00189	PASS
				50	-3.95	-0.00152	PASS
		HCH	VN	-30	1.31	0.00050	PASS
				-20	1.3	0.00050	PASS
				-10	-0.77	-0.00030	PASS
				0	2.24	0.00086	PASS
				10	-2.17	-0.00083	PASS
				20	3.35	0.00128	PASS
				30	0.17	0.00007	PASS
				40	-1.96	-0.00075	PASS
				50	-4.7	-0.00180	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband38	16QAM/20MHz	LCH	VN	-30	1	0.00039	PASS
				-20	1.01	0.00039	PASS
				-10	-0.84	-0.00033	PASS
				0	4.79	0.00186	PASS
				10	4.35	0.00169	PASS
				20	3.41	0.00132	PASS
				30	1.58	0.00061	PASS
				40	1.37	0.00053	PASS
				50	1.55	0.00060	PASS
		MCH	VN	-30	-1.8	-0.00069	PASS
				-20	-1.79	-0.00069	PASS
				-10	-3.57	-0.00138	PASS
				0	-0.98	-0.00038	PASS
				10	-3.11	-0.00120	PASS
				20	0.77	0.00030	PASS
				30	3.55	0.00137	PASS
				40	-1.73	-0.00067	PASS
				50	-1.01	-0.00039	PASS
		HCH	VN	-30	3.34	0.00128	PASS
				-20	3.35	0.00128	PASS
				-10	-0.64	-0.00025	PASS
				0	3.4	0.00130	PASS
				10	-1.62	-0.00062	PASS
				20	4.49	0.00172	PASS
				30	0.34	0.00013	PASS
				40	-1.38	-0.00053	PASS
				50	-2.62	-0.00100	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband40 (2305MHz-2315MHz)	QPSK/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-2.4	-0.00104	PASS
				-20	-2.39	-0.00103	PASS
				-10	-4.53	-0.00196	PASS
				0	-0.99	-0.00043	PASS
				10	-4.23	-0.00183	PASS
				20	-2.65	-0.00115	PASS
				30	-1.53	-0.00066	PASS
				40	-4.18	-0.00181	PASS
				50	-3.23	-0.00140	PASS
		HCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband40 (2305MHz-2315MHz)	16QAM/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-2.18	-0.00094	PASS
				-20	-2.19	-0.00095	PASS
				-10	-3.97	-0.00172	PASS
				0	-2.38	-0.00103	PASS
				10	-3.51	-0.00152	PASS
				20	0.37	0.00016	PASS
				30	3.15	0.00136	PASS
				40	-2.13	-0.00092	PASS
				50	-1.41	-0.00061	PASS
		HCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband40 (2350MHz-2360MHz)	QPSK/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-1.7	-0.00072	PASS
				-20	-1.69	-0.00072	PASS
				-10	-0.83	-0.00035	PASS
				0	-2.29	-0.00097	PASS
				10	-4.53	-0.00193	PASS
				20	-2.95	-0.00125	PASS
				30	-0.83	-0.00035	PASS
				40	-4.48	-0.00190	PASS
				50	-3.53	-0.00150	PASS
		HCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband40 (2350MHz-2360MHz)	16QAM/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-1.72	-0.00073	PASS
				-20	-1.73	-0.00074	PASS
				-10	-3.51	-0.00149	PASS
				0	-0.92	-0.00039	PASS
				10	-3.05	-0.00130	PASS
				20	0.83	0.00035	PASS
				30	3.61	0.00153	PASS
				40	-1.67	-0.00071	PASS
				50	-0.95	-0.00040	PASS
		HCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband41	QPSK/20MHz	LCH	VN	-30	1.17	0.00047	PASS
				-20	1.16	0.00046	PASS
				-10	0.29	0.00012	PASS
				0	3.98	0.00159	PASS
				10	3.37	0.00134	PASS
				20	3.24	0.00129	PASS
				30	1.78	0.00071	PASS
				40	1.29	0.00051	PASS
				50	1.44	0.00057	PASS
		MCH	VN	-30	-2.21	-0.00085	PASS
				-20	-2.22	-0.00086	PASS
				-10	-4.36	-0.00168	PASS
				0	-1.82	-0.00070	PASS
				10	-4.06	-0.00157	PASS
				20	-2.48	-0.00096	PASS
				30	-1.36	-0.00052	PASS
				40	-4.01	-0.00155	PASS
				50	-3.06	-0.00118	PASS
		HCH	VN	-30	2.2	0.00082	PASS
				-20	2.19	0.00082	PASS
				-10	0.12	0.00004	PASS
				0	3.13	0.00117	PASS
				10	-1.28	-0.00048	PASS
				20	4.24	0.00158	PASS
				30	1.06	0.00040	PASS
				40	-1.07	-0.00040	PASS
				50	-3.81	-0.00142	PASS

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband41	16QAM/20MHz	LCH	VN	-30	0.93	0.00037	PASS
				-20	0.94	0.00038	PASS
				-10	-0.91	-0.00036	PASS
				0	4.72	0.00188	PASS
				10	4.28	0.00171	PASS
				20	3.34	0.00133	PASS
				30	1.51	0.00060	PASS
				40	1.3	0.00052	PASS
				50	2.48	0.00099	PASS
		MCH	VN	-30	-1.87	-0.00072	PASS
				-20	-1.86	-0.00072	PASS
				-10	-3.64	-0.00140	PASS
				0	-2.05	-0.00079	PASS
				10	-3.18	-0.00123	PASS
				20	0.7	0.00027	PASS
				30	3.48	0.00134	PASS
				40	-1.8	-0.00069	PASS
				50	-1.08	-0.00042	PASS
		HCH	VN	-30	3.27	0.00122	PASS
				-20	3.28	0.00122	PASS
				-10	-0.71	-0.00026	PASS
				0	3.33	0.00124	PASS
				10	-1.69	-0.00063	PASS
				20	4.42	0.00165	PASS
				30	0.27	0.00010	PASS
				40	-1.45	-0.00054	PASS
				50	-2.69	-0.00100	PASS

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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

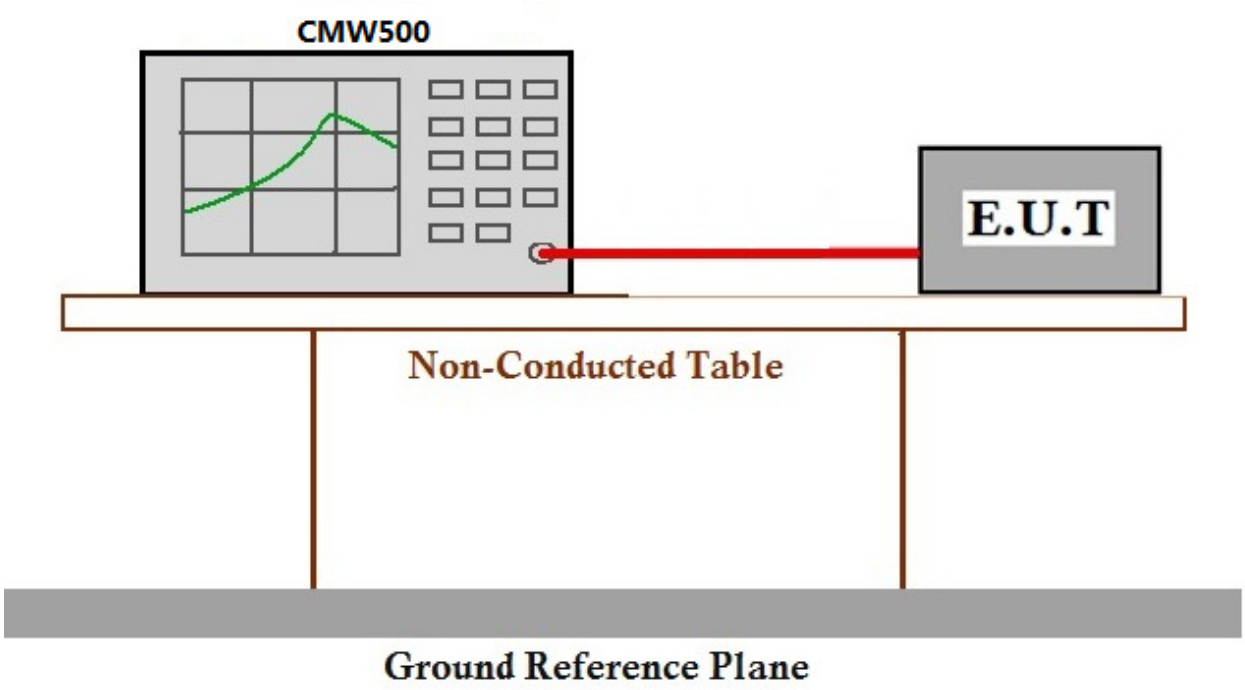
6.8 Modulation Characteristics

Test Requirement: §2.1047
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: Digital modulation

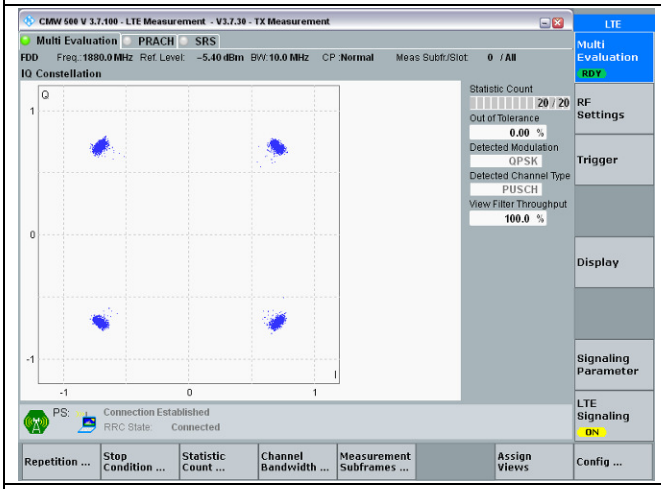
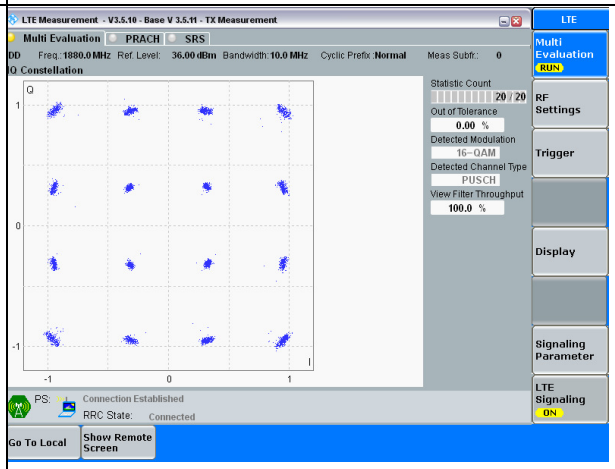
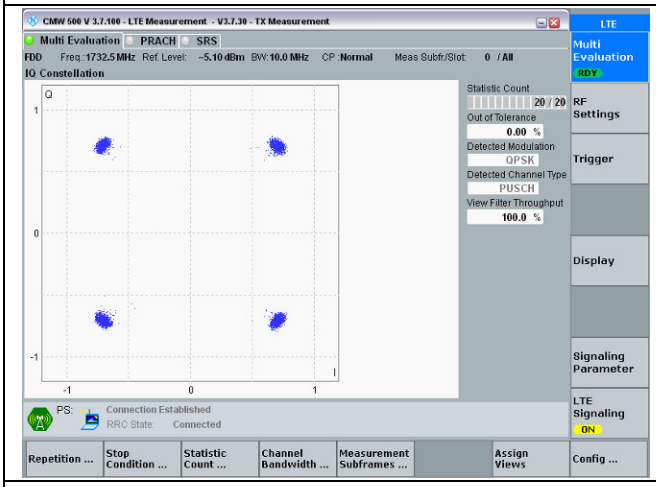
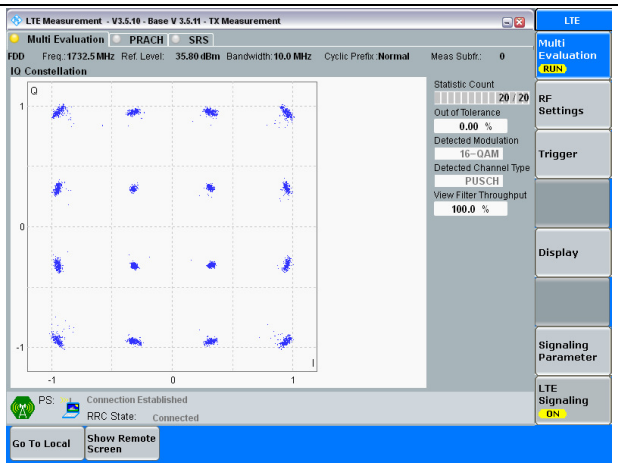
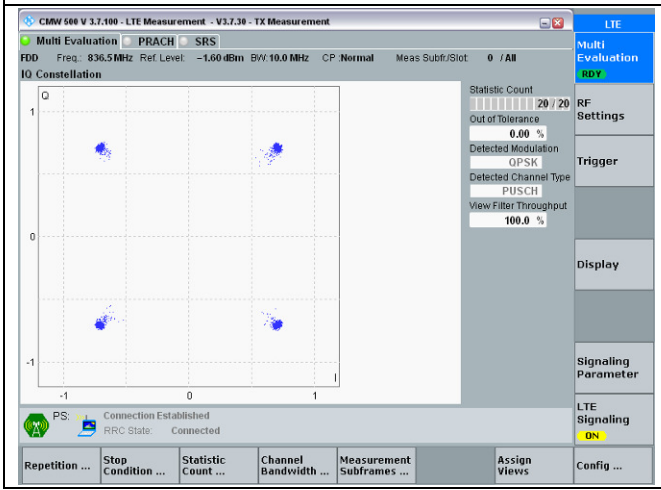
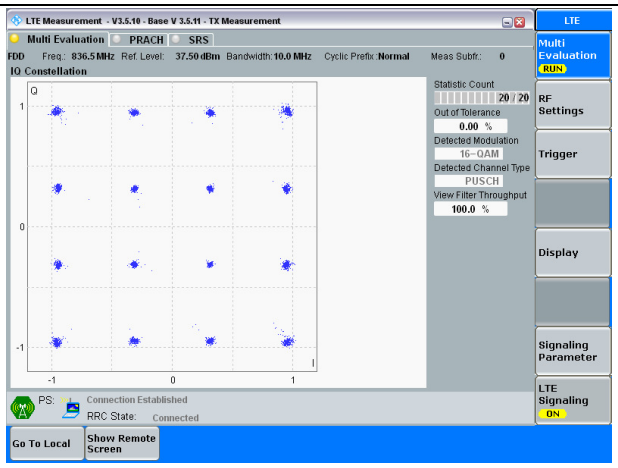
6.8.1 E.U.T. Operation

Operating Environment:
Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: m: Tx mode, Keep the EUT in transmitting mode.

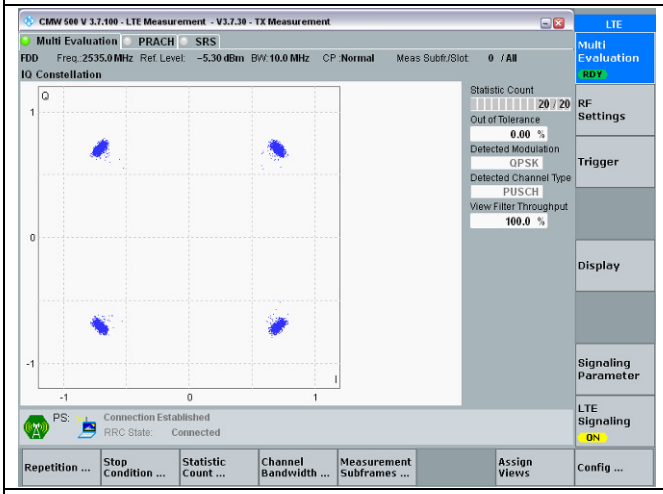
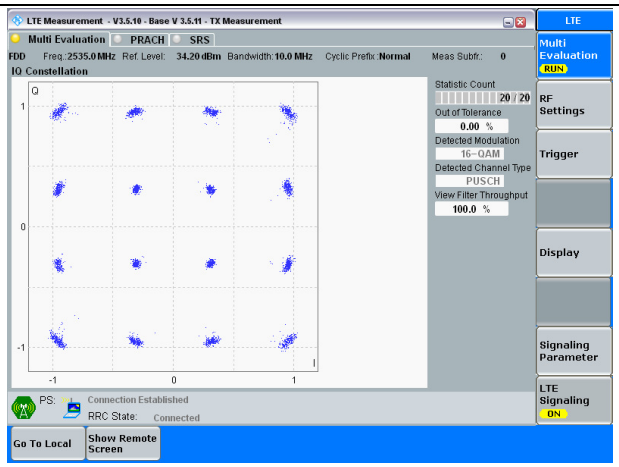
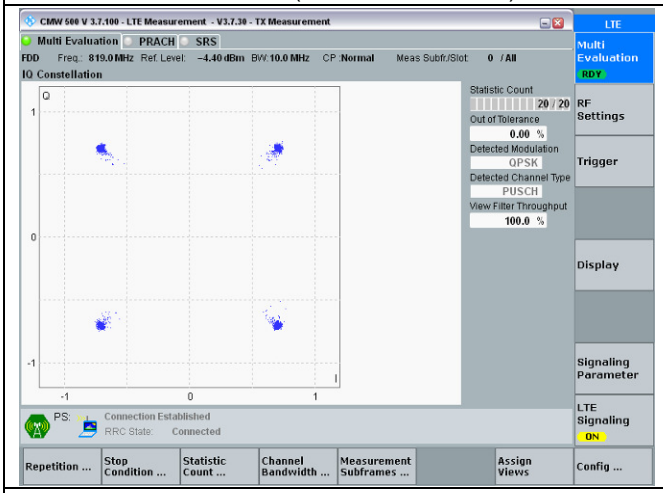
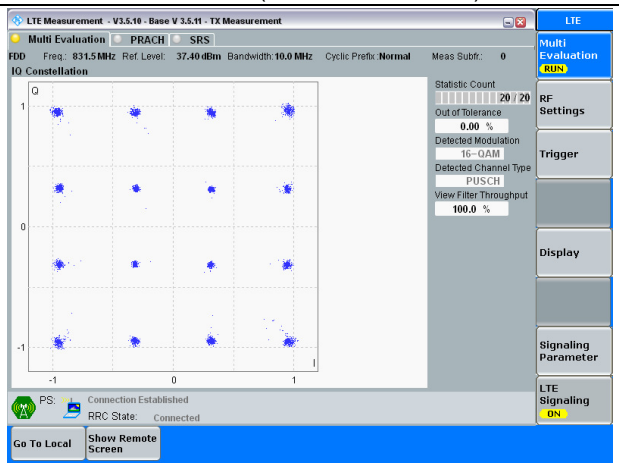
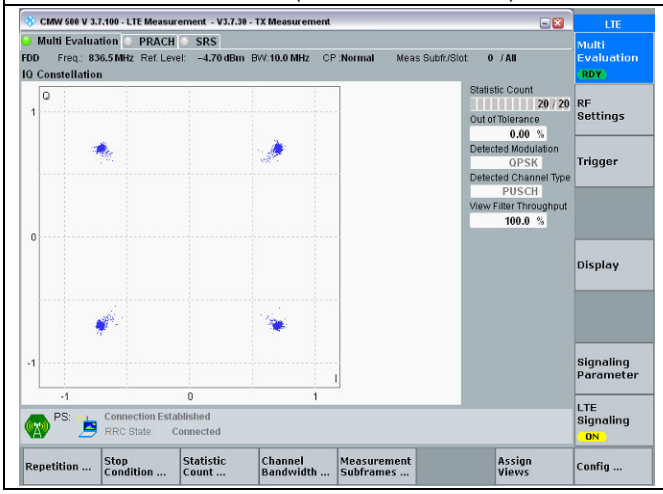
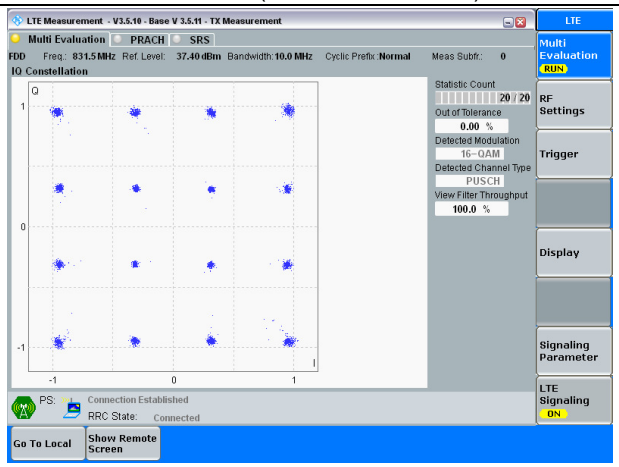
6.8.2 Test Setup Diagram



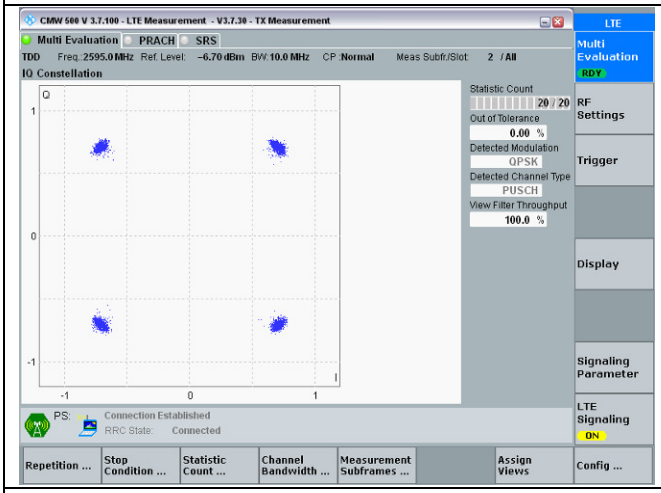
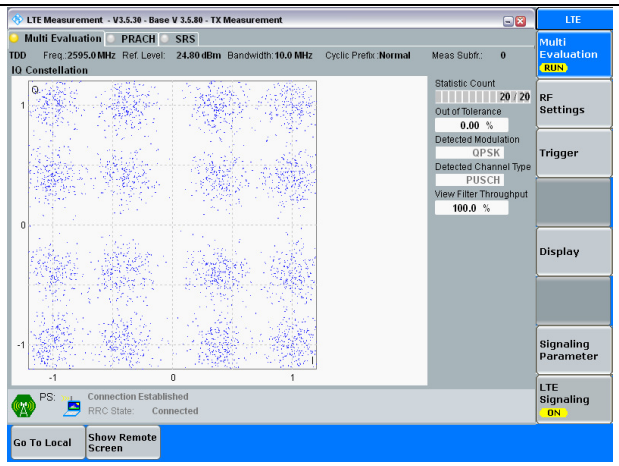
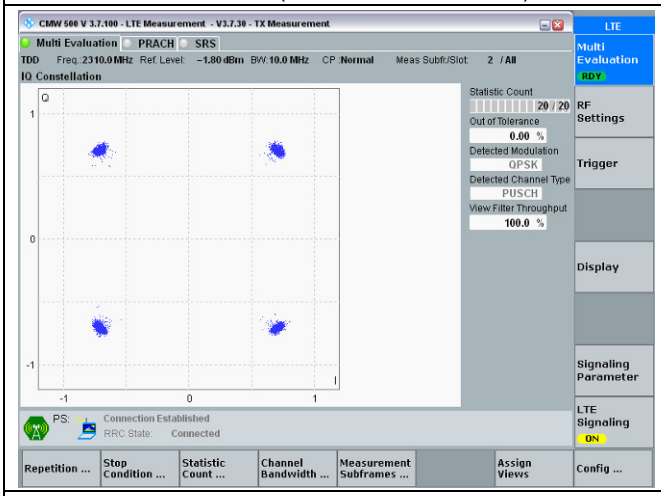
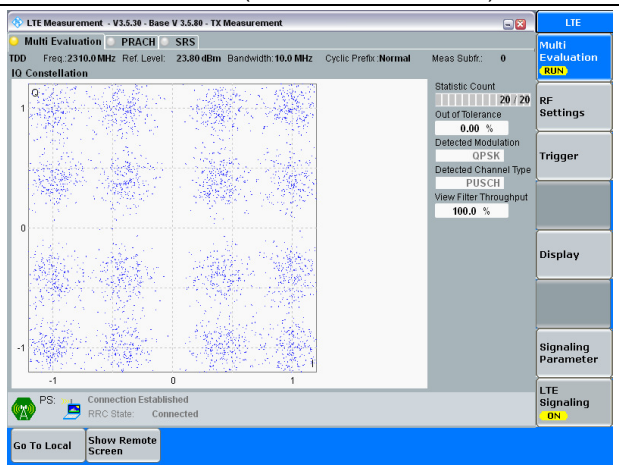
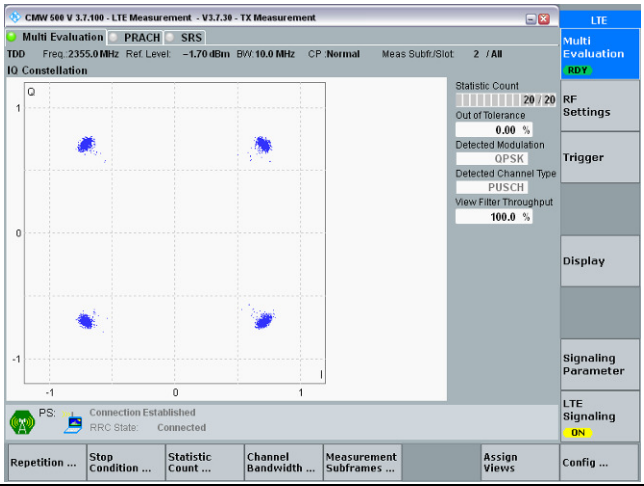
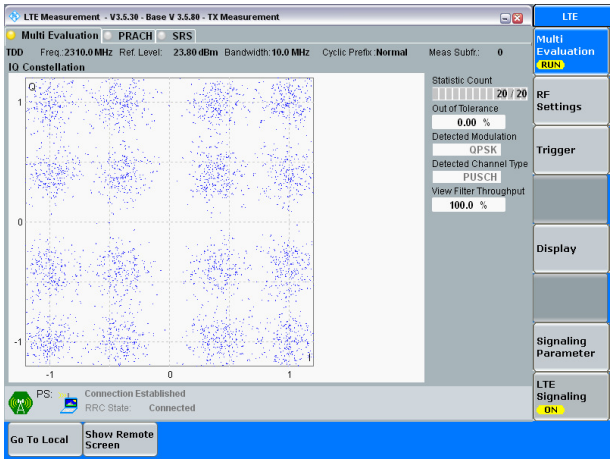
6.8.3 Measurement Data

Test Plot	
LTE FDD Band 2 QPSK	LTE FDD Band 2 16QAM
	
LTE FDD Band 4 QPSK	LTE FDD Band 4 16QAM
	
LTE FDD Band 5 QPSK	LTE FDD Band 5 16QAM
	

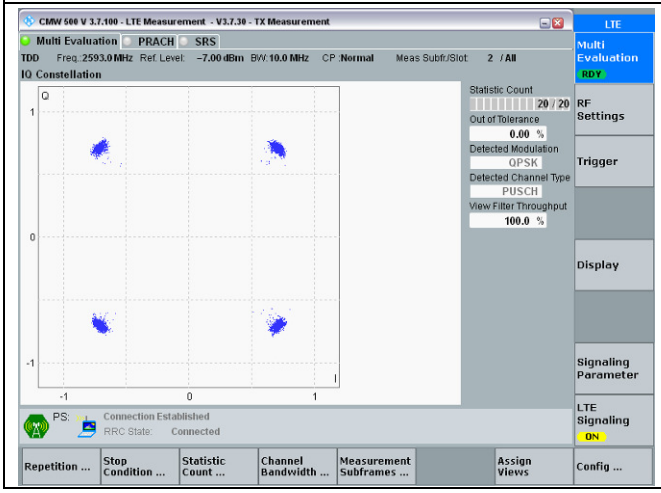
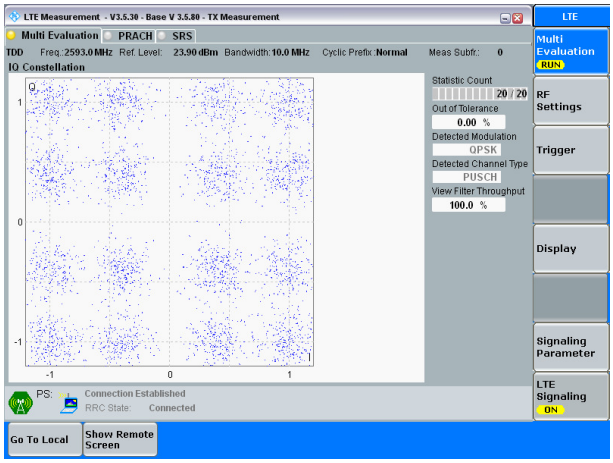
SGS-CSTC Standards Technical Services Co.,Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

LTE FDD Band 7 QPSK	LTE FDD Band 7 16QAM
	
LTE FDD Band 26(814MHz-824MHz) QPSK	**LTE FDD Band 26(814MHz-824MHz) 16QAM**
	
LTE FDD Band 26(824MHz-849MHz) QPSK	**LTE FDD Band 26(824MHz-849MHz) 16QAM**
	

SGS-CSTC Standards Technical Services Co.,Ltd. Shenzhen Branch · Testing Center · EEC Laboratory.
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

LTE TDD Band 38 QPSK	LTE TDD Band 38 16QAM
	
LTE TDD Band 40(2305MHz-2315MHz) QPSK	**LTE TDD Band 40(2305MHz-2315MHz) 16QAM**
	
LTE TDD Band 40(2350MHz-2360MHz) QPSK	**LTE TDD Band 40(2350MHz-2360MHz) 16QAM**
	

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

LTE TDD Band 41 QPSK	LTE TDD Band 41 16QAM
	

- End of the Report -

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com