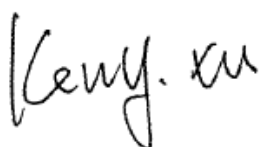


TEST REPORT

Application No.: SZEM1901010237CR
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.: PDC680 UxB1
Trade mark: Hytera
FCC ID: YAMPDC680UXB1
Standard(s) : 47 CFR Part 2(2017);
 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 2019-02-28
Date of Issue: 2019-03-05

Test Result:	Pass
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* In the configuration tested, the EUT complied with the standards specified above.



Keny Xu
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-03-05		Original

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



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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-829MHz)) 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

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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
Test voltage:	AC 120V, 60Hz
Cable:	DC cable: 148cm unshielded
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°C to +50°C
Extreme vol. Limits:	6.54VDC to 8.85VDC (nominal: 7.7VDC)



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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	1.4	814.7	819.0	823.3
	3	815.5	819.0	822.5



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(814MHz-824MHz)	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



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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	/	0.149968
Part24E	LTE Band2	16QAM	1.4	1M10W7D	/	0.118577
Part24E	LTE Band2	QPSK	3	2M68G7D	/	0.152405
Part24E	LTE Band2	16QAM	3	2M69W7D	/	0.113240
Part24E	LTE Band2	QPSK	5	4M50G7D	/	0.158489
Part24E	LTE Band2	16QAM	5	4M50W7D	/	0.110662
Part24E	LTE Band2	QPSK	10	8M96G7D	/	0.157036
Part24E	LTE Band2	16QAM	10	8M94W7D	/	0.118304
Part24E	LTE Band2	QPSK	15	13M5G7D	/	0.158489
Part24E	LTE Band2	16QAM	15	13M5W7D	/	0.112460
Part24E	LTE Band2	QPSK	20	17M9G7D	0.00250	0.158489
Part24E	LTE Band2	16QAM	20	17M9W7D	0.00239	0.115080
Part27	LTE Band4	QPSK	1.4	1M10G7D	/	0.140605
Part27	LTE Band4	16QAM	1.4	1M10W7D	/	0.111686
Part27	LTE Band4	QPSK	3	2M69G7D	/	0.140929
Part27	LTE Band4	16QAM	3	2M68W7D	/	0.111944
Part27	LTE Band4	QPSK	5	4M50G7D	/	0.141254
Part27	LTE Band4	16QAM	5	4M49W7D	/	0.111944
Part27	LTE Band4	QPSK	10	8M94G7D	/	0.140605
Part27	LTE Band4	16QAM	10	8M94W7D	/	0.111944
Part27	LTE Band4	QPSK	15	13M5G7D	/	0.141254
Part27	LTE Band4	16QAM	15	13M4W7D	/	0.111686
Part27	LTE Band4	QPSK	20	17M9G7D	-0.00253	0.140605
Part27	LTE Band4	16QAM	20	17M9W7D	0.00307	0.111944
Part22H	LTE Band5	QPSK	1.4	1M10G7D	/	0.136458
Part22H	LTE Band5	16QAM	1.4	1M10W7D	/	0.107152
Part22H	LTE Band5	QPSK	3	2M69G7D	/	0.134586
Part22H	LTE Band5	16QAM	3	2M68W7D	/	0.102094
Part22H	LTE Band5	QPSK	5	4M50G7D	/	0.135207
Part22H	LTE Band5	16QAM	5	4M50W7D	/	0.108393
Part22H	LTE Band5	QPSK	10	8M96G7D	0.00537	0.135831
Part22H	LTE Band5	16QAM	10	8M94W7D	0.00583	0.108143
Part27	LTE Band7	QPSK	5	4M50G7D	/	0.236048



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Part27	LTE Band7	16QAM	5	4M50W7D	/	0.198153
Part27	LTE Band7	QPSK	10	8M92G7D	/	0.240436
Part27	LTE Band7	16QAM	10	8M92W7D	/	0.199067
Part27	LTE Band7	QPSK	15	13M5G7D	/	0.230144
Part27	LTE Band7	16QAM	15	13M5W7D	/	0.196336
Part27	LTE Band7	QPSK	20	17M9G7D	-0.00176	0.233346
Part27	LTE Band7	16QAM	20	17M9W7D	0.00174	0.196336
Part90	LTE Band26 ^a	QPSK	1.4	1M10G7D	/	0.130617
Part90	LTE Band26 ^a	16QAM	1.4	1M10W7D	/	0.106660
Part90	LTE Band26 ^a	QPSK	3	2M68G7D	/	0.130017
Part90	LTE Band26 ^a	16QAM	3	2M69W7D	/	0.107895
Part90	LTE Band26 ^a	QPSK	5	4M49G7D	/	0.136144
Part90	LTE Band26 ^a	16QAM	5	4M49W7D	/	0.101158
Part90	LTE Band26 ^a	QPSK	10	8M90G7D	/	0.132434
Part90	LTE Band26 ^a	16QAM	10	8M90W7D	/	0.100000
Part90	LTE Band26 ^a	QPSK	15	13M5G7D	-0.00613	0.132130
Part90	LTE Band26 ^a	16QAM	15	13M5W7D	0.004410	0.099083
Part22H	LTE Band26 ^b	QPSK	1.4	1M10G7D	/	0.136458
Part22H	LTE Band26 ^b	16QAM	1.4	1M10W7D	/	0.104232
Part22H	LTE Band26 ^b	QPSK	3	2M68G7D	/	0.136144
Part22H	LTE Band26 ^b	16QAM	3	2M69W7D	/	0.106905
Part22H	LTE Band26 ^b	QPSK	5	4M49G7D	/	0.136458
Part22H	LTE Band26 ^b	16QAM	5	4M50W7D	/	0.103514
Part22H	LTE Band26 ^b	QPSK	10	8M96G7D	/	0.135831
Part22H	LTE Band26 ^b	16QAM	10	8M92W7D	/	0.107647
Part22H	LTE Band26 ^b	QPSK	15	13M5G7D	0.00520	0.136458
Part22H	LTE Band26 ^b	16QAM	15	13M5W7D	0.00628	0.106170
Part27	LTE Band38	QPSK	5	4M52G7D	/	0.248886
Part27	LTE Band38	16QAM	5	4M52W7D	/	0.196789
Part27	LTE Band38	QPSK	10	8M96G7D	/	0.247742
Part27	LTE Band38	16QAM	10	8M96W7D	/	0.193642
Part27	LTE Band38	QPSK	15	13M5G7D	/	0.248313
Part27	LTE Band38	16QAM	15	13M6W7D	/	0.196336
Part27	LTE Band38	QPSK	20	18M0G7D	-0.00226	0.250611
Part27	LTE Band38	16QAM	20	17M9W7D	0.00186	0.199067
Part27	LTE Band40 ^c	QPSK	5	4M50G7D	/	0.194089
Part27	LTE Band40 ^c	16QAM	5	4M50W7D	/	0.138676



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Part27	LTE Band40 ^c	QPSK	10	8M90G7D	-0.00202	0.188799
Part27	LTE Band40 ^c	16QAM	10	8M92W7D	-0.00174	0.174985
Part27	LTE Band40 ^d	QPSK	5	4M50G7D	/	0.190546
Part27	LTE Band40 ^d	16QAM	5	4M51W7D	/	0.134896
Part27	LTE Band40 ^d	QPSK	10	8M92G7D	-0.00192	0.186638
Part27	LTE Band40 ^d	16QAM	10	8M94W7D	0.00170	0.138357
Part27	LTE Band41	QPSK	5	4M50G7D	/	0.249459
Part27	LTE Band41	16QAM	5	4M50W7D	/	0.187068
Part27	LTE Band41	QPSK	10	8M94G7D	/	0.249459
Part27	LTE Band41	16QAM	10	8M92W7D	/	0.194536
Part27	LTE Band41	QPSK	15	13M5G7D	/	0.250035
Part27	LTE Band41	16QAM	15	13M5W7D	/	0.214289
Part27	LTE Band41	QPSK	20	17M9G7D	-0.00171	0.250035
Part27	LTE Band41	16QAM	20	17M9W7D	0.00196	0.198609

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;



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4.4 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	52%	
Atmospheric Pressure:	1015Pa	
Temperature:	TN	25 °C
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	$\pm 7.25 \times 10^{-8}$
2	Duty cycle	$\pm 0.37\%$
3	Occupied Bandwidth	$\pm 3\%$
4	RF conducted power	$\pm 0.75\text{dB}$
5	RF power density	$\pm 2.84\text{dB}$
6	Conducted Spurious emissions	$\pm 0.75\text{dB}$
7	RF Radiated power	$\pm 4.5\text{dB}$ (below 1GHz)
		$\pm 4.8\text{dB}$ (above 1GHz)
8	Radiated Spurious emission test	$\pm 4.5\text{dB}$ (Below 1GHz)
		$\pm 4.8\text{dB}$ (Above 1GHz)
9	Temperature test	$\pm 1^\circ\text{C}$
10	Humidity test	$\pm 3\%$
11	Supply voltages	$\pm 1.5\%$
12	Time	$\pm 3\%$

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



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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



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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



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6 Radio Spectrum Matter Test Results

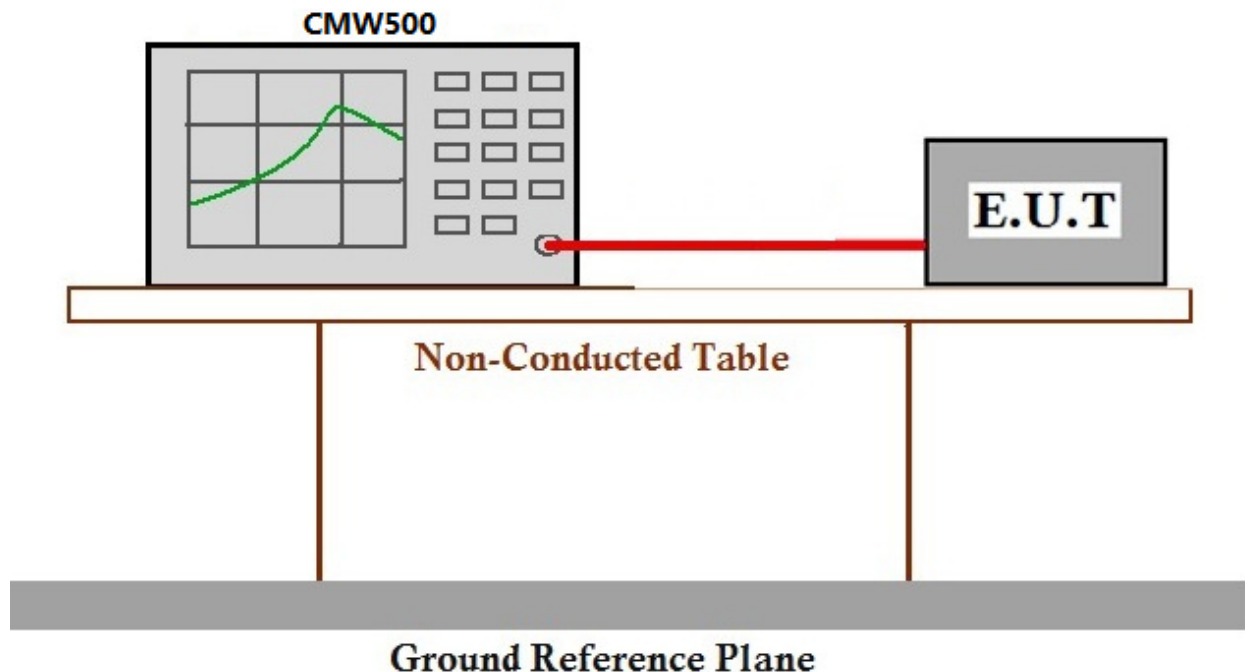
6.1 Effective (Isotropic) Radiated Power Output Data

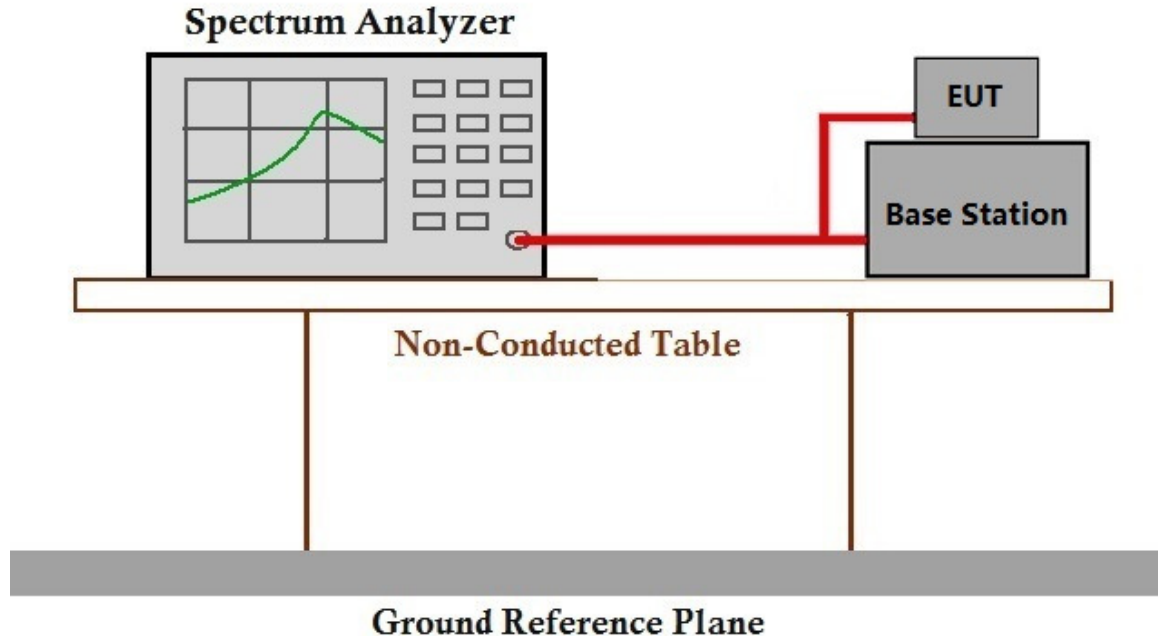
Test Requirement: §2.1046, §22.913, §24.232, §27.50(c), §27.50(d), §90.635(d)
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ERP≤7W(LTE Band 5, LTE Band 26(824MHz-829MHz))
ERP≤100W(LTE Band 26(814MHz-824MHz))
EIRP≤ 2W(LTE Band 2,7,38,41)
EIRP≤ 1W(LTE Band 4)
EIRP≤ 0.25W(LTE Band 40)

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





Ground Reference Plane

(Only for LTE Band 40)

6.1.3 Measurement Data

Please refer to Appendix A-Output power



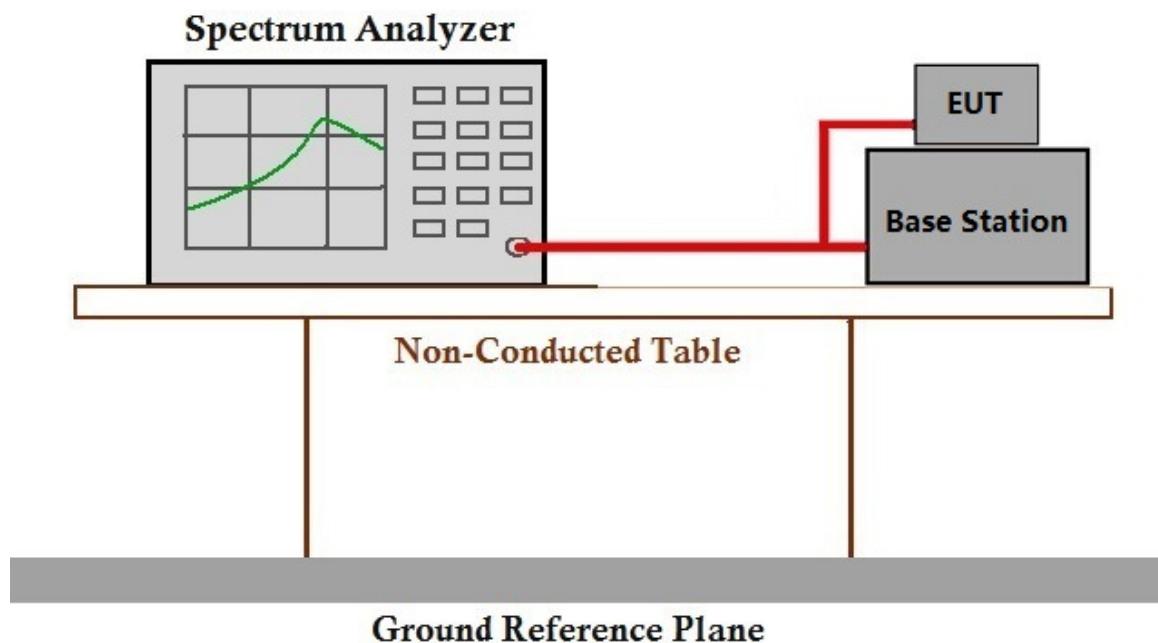
6.2 Peak-Average Ratio

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



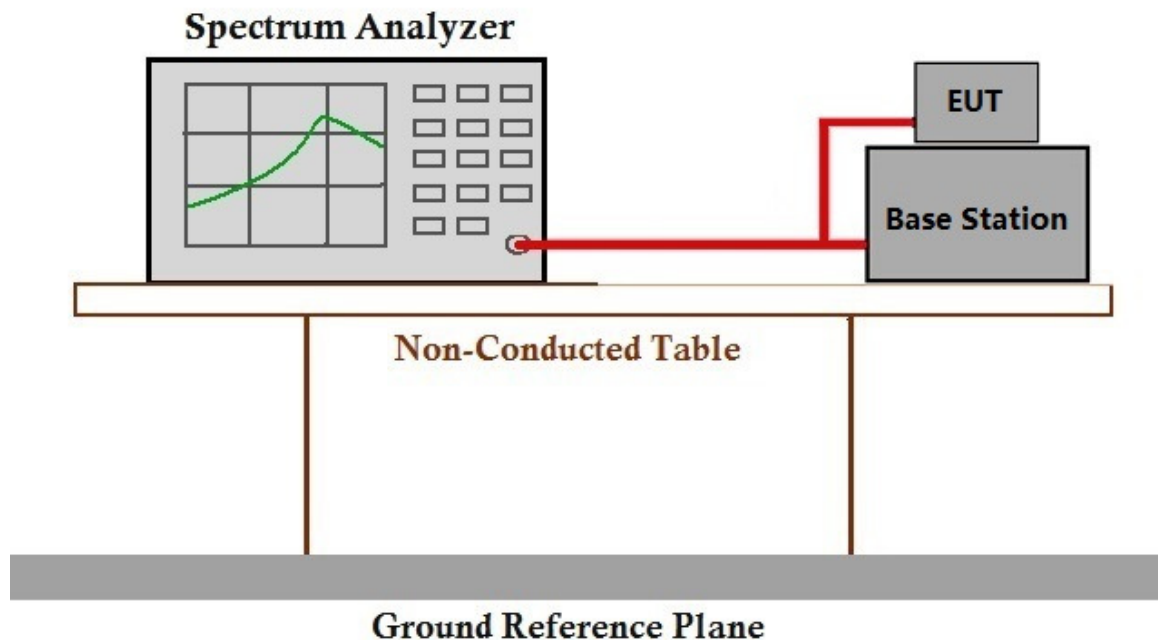
6.3 Bandwidth

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: $\leq -13\text{dBm}/1\% \cdot \text{EBW}$, in 1 MHz bands immediately outside and adjacent to the frequency block (LTE Band 2, 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 than $43 + 10 \log(P)$ 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 Band 7)

$\leq 50 + 10 \cdot \log_{10}(P)$ at band edge and for all out-of-band emissions within 37.5 KHz of block edge (LTE Band 26)

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.



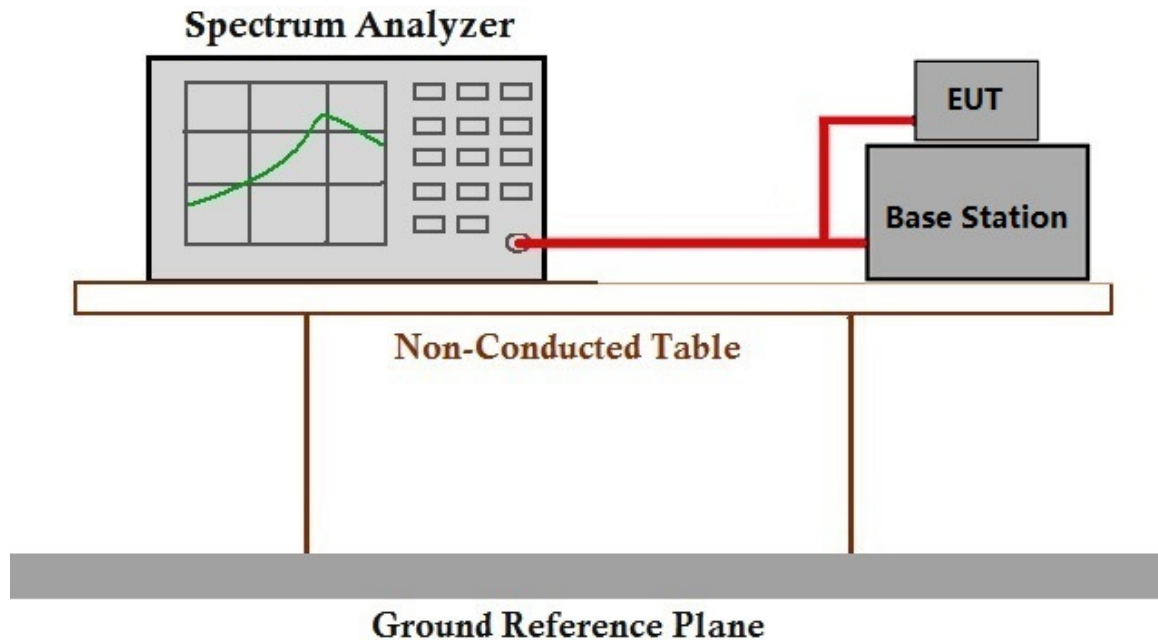
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6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Please refer to Appendix D- Band Edge



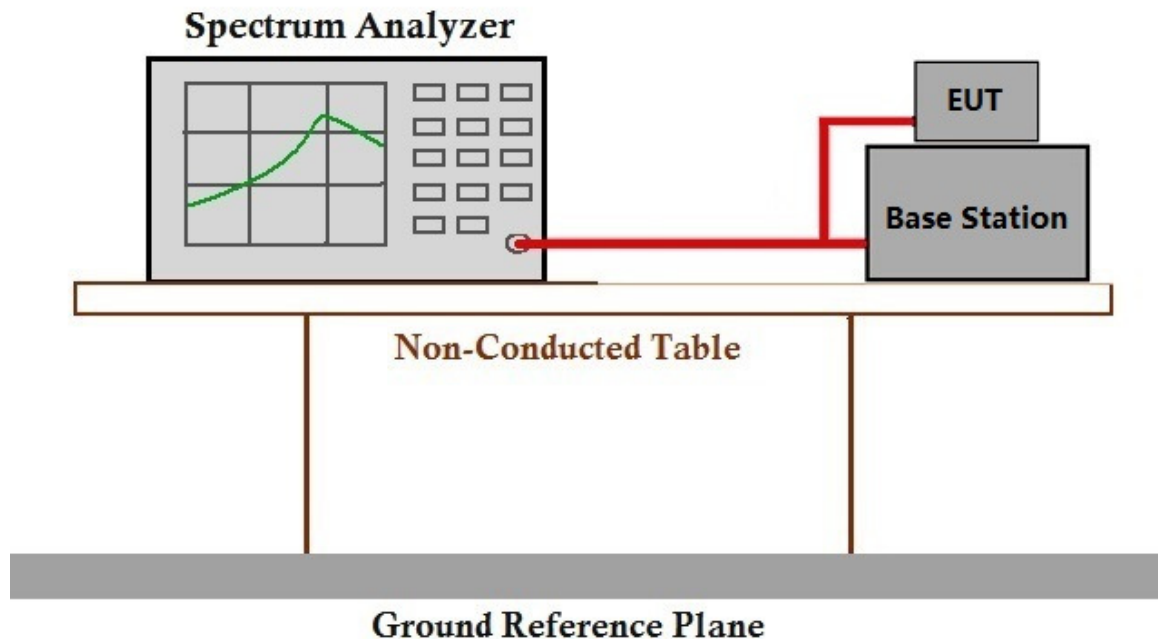
6.5 Spurious emissions at antenna terminals

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

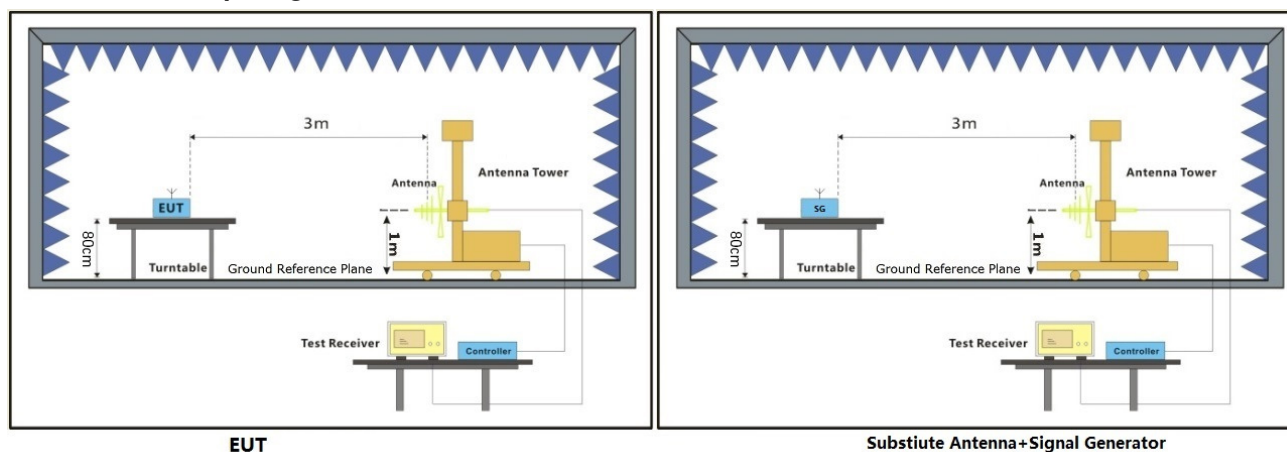
6.6 Field strength of spurious radiation

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



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 then 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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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	-60.36	0.71	7.6	-53.47	-13	-40.47	Horizontal	Pass
5553	-58.52	0.85	10.3	-49.07	-13	-36.07	Horizontal	Pass
7404	-58.8	1	12.9	-46.9	-13	-33.9	Horizontal	Pass
3702	-61.47	0.71	7.6	-54.58	-13	-41.58	Vertical	Pass
5553	-58.87	0.85	10.3	-49.42	-13	-36.42	Vertical	Pass
7404	-59.63	1	12.9	-47.73	-13	-34.73	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	-61.16	0.71	7.6	-54.27	-13	-41.27	Horizontal	Pass
5613	-57.1	0.85	10.3	-47.65	-13	-34.65	Horizontal	Pass
7484	-58.85	1	12.9	-46.95	-13	-33.95	Horizontal	Pass
3742	-60.09	0.71	7.6	-53.2	-13	-40.2	Vertical	Pass
5613	-57.6	0.85	10.3	-48.15	-13	-35.15	Vertical	Pass
7484	-59.1	1	12.9	-47.2	-13	-34.2	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	-59.78	0.71	7.6	-52.89	-13	-39.89	Horizontal	Pass
5673	-58.7	0.85	10.3	-49.25	-13	-36.25	Horizontal	Pass
7564	-59.25	0.99	13.2	-47.04	-13	-34.04	Horizontal	Pass
3782	-59.72	0.71	7.6	-52.83	-13	-39.83	Vertical	Pass
5673	-58.74	0.85	10.3	-49.29	-13	-36.29	Vertical	Pass
7564	-58.67	0.99	13.2	-46.46	-13	-33.46	Vertical	Pass



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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	-59.67	0.65	6.2	-54.12	-13	-41.12	Horizontal	Pass
5133	-58.66	0.82	9.6	-49.88	-13	-36.88	Horizontal	Pass
6844	-57.2	0.95	11.8	-46.35	-13	-33.35	Horizontal	Pass
3422	-60.38	0.65	6.2	-54.83	-13	-41.83	Vertical	Pass
5133	-57.29	0.82	9.6	-48.51	-13	-35.51	Vertical	Pass
6844	-58	0.95	11.8	-47.15	-13	-34.15	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	-58.73	0.65	6.2	-53.18	-13	-40.18	Horizontal	Pass
5170.5	-58.62	0.82	9.6	-49.84	-13	-36.84	Horizontal	Pass
6894	-57.62	0.95	11.8	-46.77	-13	-33.77	Horizontal	Pass
3447	-59.98	0.65	6.2	-54.43	-13	-41.43	Vertical	Pass
5170.5	-57.52	0.82	9.6	-48.74	-13	-35.74	Vertical	Pass
6894	-58.28	0.95	11.8	-47.43	-13	-34.43	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	-59.56	0.65	6.2	-54.01	-13	-41.01	Horizontal	Pass
5208	-57.95	0.82	9.6	-49.17	-13	-36.17	Horizontal	Pass
6944	-57.85	0.95	11.8	-47	-13	-34	Horizontal	Pass
3472	-57.76	0.65	6.2	-52.21	-13	-39.21	Vertical	Pass
5208	-58.35	0.82	9.6	-49.57	-13	-36.57	Vertical	Pass
6944	-56.37	0.95	11.8	-45.52	-13	-32.52	Vertical	Pass



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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	-66.02	0.52	6	-60.54	-13	-47.54	Horizontal	Pass
2473.5	-61.8	0.53	5.8	-56.53	-13	-43.53	Horizontal	Pass
3298	-58.15	0.65	6.2	-52.6	-13	-39.6	Horizontal	Pass
1649	-65.59	0.52	6	-60.11	-13	-47.11	Vertical	Pass
2473.5	-61.56	0.53	5.8	-56.29	-13	-43.29	Vertical	Pass
3298	-57.57	0.65	6.2	-52.02	-13	-39.02	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	-64.47	0.52	6	-58.99	-13	-45.99	Horizontal	Pass
2496	-60.45	0.53	5.8	-55.18	-13	-42.18	Horizontal	Pass
3328	-56.18	0.65	6.2	-50.63	-13	-37.63	Horizontal	Pass
1664	-64.82	0.52	6	-59.34	-13	-46.34	Vertical	Pass
2496	-61.31	0.53	5.8	-56.04	-13	-43.04	Vertical	Pass
3328	-57.43	0.65	6.2	-51.88	-13	-38.88	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	-63.19	0.52	6	-57.71	-13	-44.71	Horizontal	Pass
2518.5	-61.26	0.59	5.3	-56.55	-13	-43.55	Horizontal	Pass
3358	-57.67	0.65	6.2	-52.12	-13	-39.12	Horizontal	Pass
1679	-64.48	0.52	6	-59	-13	-46	Vertical	Pass
2518.5	-61.24	0.59	5.3	-56.53	-13	-43.53	Vertical	Pass
3358	-57.07	0.65	6.2	-51.52	-13	-38.52	Vertical	Pass



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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	-58.79	0.82	9.6	-50.01	-13	-37.01	Horizontal	Pass
7503	-58.96	0.99	13.2	-46.75	-13	-33.75	Horizontal	Pass
10004	-57.57	1.26	12.7	-46.13	-13	-33.13	Horizontal	Pass
5002	-57.5	0.82	9.6	-48.72	-13	-35.72	Vertical	Pass
7503	-59.31	0.99	13.2	-47.1	-13	-34.1	Vertical	Pass
10004	-57.55	1.26	12.7	-46.11	-13	-33.11	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	-54.89	0.82	9.6	-46.11	-25	-21.11	Horizontal	Pass
7578	-59.55	0.99	13.2	-47.34	-25	-22.34	Horizontal	Pass
10104	-56.14	1.26	12.7	-44.7	-25	-19.70	Horizontal	Pass
5052	-50.85	0.82	9.6	-42.07	-25	-17.07	Vertical	Pass
7578	-59.77	0.99	13.2	-47.56	-25	-22.56	Vertical	Pass
10104	-57.1	1.26	12.7	-45.66	-25	-20.66	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	-59.43	0.82	9.6	-50.65	-13	-37.65	Horizontal	Pass
7653	-58.18	0.99	13.2	-45.97	-13	-32.97	Horizontal	Pass
10204	-56.54	1.26	12.7	-45.1	-13	-32.1	Horizontal	Pass
5102	-58.75	0.82	9.6	-49.97	-13	-36.97	Vertical	Pass
7653	-59.15	0.99	13.2	-46.94	-13	-33.94	Vertical	Pass
10204	-57.82	1.26	12.7	-46.38	-13	-33.38	Vertical	Pass



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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	-65.98	0.52	6	-60.5	-13	-47.5	Horizontal	Pass
2443.5	-63.57	0.53	5.8	-58.3	-13	-45.3	Horizontal	Pass
3258	-58.31	0.65	6.2	-52.76	-13	-39.76	Horizontal	Pass
1629	-66.88	0.52	6	-61.4	-13	-48.4	Vertical	Pass
2443.5	-64.35	0.53	5.8	-59.08	-13	-46.08	Vertical	Pass
3258	-58.55	0.65	6.2	-53	-13	-40	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	--



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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	-66.91	0.52	6	-61.43	-13	-48.43	Horizontal	Pass
2474.25	-62	0.53	5.8	-56.73	-13	-43.73	Horizontal	Pass
3299	-58.59	0.65	6.2	-53.04	-13	-40.04	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
1669.5	-62.8	0.52	6	-57.32	-13	-44.32	Horizontal	Pass
2504.25	-62.15	0.59	5.3	-57.44	-13	-44.44	Horizontal	Pass
3339	-58.7	0.65	6.2	-53.15	-13	-40.15	Horizontal	Pass
1669.5	-66.52	0.52	6	-61.04	-13	-48.04	Vertical	Pass
2504.25	-60.9	0.59	5.3	-56.19	-13	-43.19	Vertical	Pass
3339	-58.73	0.65	6.2	-53.18	-13	-40.18	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	-62.8	0.52	6	-57.32	-13	-44.32	Horizontal	Pass
2504.25	-62.15	0.59	5.3	-57.44	-13	-44.44	Horizontal	Pass
3339	-58.7	0.65	6.2	-53.15	-13	-40.15	Horizontal	Pass
1669.5	-66.52	0.52	6	-61.04	-13	-48.04	Vertical	Pass
2504.25	-60.9	0.59	5.3	-56.19	-13	-43.19	Vertical	Pass
3339	-58.73	0.65	6.2	-53.18	-13	-40.18	Vertical	Pass



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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	-57.39	0.82	9.6	-48.61	-25	-23.61	Horizontal	Pass
7713	-57.81	0.99	13.2	-45.6	-25	-20.6	Horizontal	Pass
10284	-54.76	1.26	12.7	-43.32	-25	-18.32	Horizontal	Pass
5142	-58.57	0.82	9.6	-49.79	-25	-24.79	Vertical	Pass
7713	-58.6	0.99	13.2	-46.39	-25	-21.39	Vertical	Pass
10284	-55.39	1.26	12.7	-43.95	-25	-18.95	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	-57.31	0.82	9.6	-48.53	-25	-23.53	Horizontal	Pass
7758	-53.5	0.99	13.2	-41.29	-25	-16.29	Horizontal	Pass
10344	-54.78	1.26	12.7	-43.34	-25	-18.34	Horizontal	Pass
5172	-58.59	0.82	9.6	-49.81	-25	-24.81	Vertical	Pass
7758	-51.81	0.99	13.2	-39.6	-25	-14.6	Vertical	Pass
10344	-55.28	1.26	12.7	-43.84	-25	-18.84	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	-57.91	0.82	9.6	-49.13	-25	-24.13	Horizontal	Pass
7803	-58.76	0.99	13.2	-46.55	-25	-21.55	Horizontal	Pass
10404	-55.52	1.26	12.7	-44.08	-25	-19.08	Horizontal	Pass
5202	-58.57	0.82	9.6	-49.79	-25	-24.79	Vertical	Pass
7803	-58.37	0.99	13.2	-46.16	-25	-21.16	Vertical	Pass
10404	-55.39	1.26	12.7	-43.95	-25	-18.95	Vertical	Pass



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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	-57.35	0.76	9.7	-48.41	-40	-8.41	Horizontal	Pass
6916.5	-53.32	0.95	11.8	-43.47	-40	-3.47	Horizontal	Pass
9222	-52.74	1.23	12.4	-43.57	-40	-3.57	Horizontal	Pass
4611	-58.35	0.76	9.7	-49.41	-40	-9.41	Vertical	Pass
6916.5	-53.76	0.95	11.8	-43.91	-40	-3.91	Vertical	Pass
9222	-53.17	1.23	12.4	-43	-40	-3.00	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	--



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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	-58.87	0.76	9.7	-49.93	-40	-9.93	Horizontal	Pass
7051.5	-53.75	1	12.9	-43.85	-40	-3.85	Horizontal	Pass
9402	-54.52	1.23	12.4	-43.35	-40	-3.35	Horizontal	Pass
4701	-60.47	0.76	9.7	-51.53	-40	-11.53	Vertical	Pass
7051.5	-53.31	1	12.9	-43.41	-40	-3.41	Vertical	Pass
9402	-56.03	1.23	12.4	-44.86	-40	-4.86	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	--



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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	-57.65	0.76	9.7	-48.71	-25	-23.71	Horizontal	Pass
7491	-58.31	1	12.9	-46.41	-25	-21.41	Horizontal	Pass
9988	-55.06	1.27	13	-43.33	-25	-18.33	Horizontal	Pass
4994	-58	0.76	9.7	-49.06	-25	-24.06	Vertical	Pass
7491	-56.4	1	12.9	-44.5	-25	-19.5	Vertical	Pass
9988	-55.15	1.27	13	-43.42	-25	-18.42	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	-56.28	0.82	9.6	-47.5	-25	-22.5	Horizontal	Pass
7752	-51.16	0.99	13.2	-38.95	-25	-13.95	Horizontal	Pass
10336	-52.82	1.26	12.7	-41.38	-25	-16.38	Horizontal	Pass
5168	-55.7	0.82	9.6	-46.92	-25	-21.92	Vertical	Pass
7752	-51.82	0.99	13.2	-39.61	-25	-14.61	Vertical	Pass
10336	-54.98	1.26	12.7	-43.54	-25	-18.54	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	-57.86	0.82	9.6	-49.08	-25	-24.08	Horizontal	Pass
8013	-55.91	1.01	12.9	-44.02	-25	-19.02	Horizontal	Pass
10684	-55.34	1.49	13.5	-43.33	-25	-18.33	Horizontal	Pass
5342	-57.38	0.82	9.6	-48.6	-25	-23.60	Vertical	Pass
8013	-56.42	1.01	12.9	-44.53	-25	-19.53	Vertical	Pass
10684	-55.07	1.49	13.5	-43.06	-25	-18.06	Vertical	Pass

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



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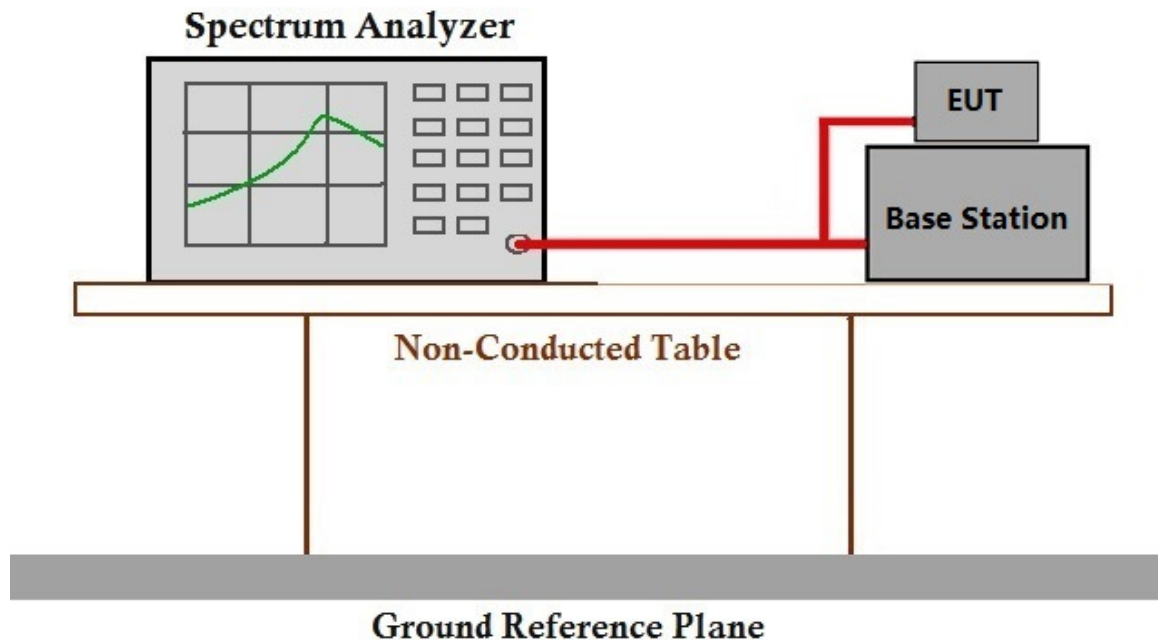
6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235, §90.213
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: $\leq \pm 2.5\text{ppm}$.

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	-4.27	-0.00230	PASS
				VN	0.68	0.00037	PASS
				VH	-2.44	-0.00131	PASS
		MCH	TN	VL	1.72	0.00091	PASS
				VN	-2.55	-0.00136	PASS
				VH	2.88	0.00153	PASS
		HCH	TN	VL	-1.3	-0.00068	PASS
				VN	-0.91	-0.00048	PASS
				VH	-0.49	-0.00026	PASS
	16QAM/20MHz	LCH	TN	VL	-4	-0.00215	PASS
				VN	-2.71	-0.00146	PASS
				VH	-2.84	-0.00153	PASS
		MCH	TN	VL	1.79	0.00095	PASS
				VN	-2.58	-0.00137	PASS
				VH	2.85	0.00152	PASS
		HCH	TN	VL	-2.79	-0.00147	PASS
				VN	-1.76	-0.00093	PASS
				VH	1.7	0.00089	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	-4.05	-0.00235	PASS
				VN	0.94	0.00055	PASS
				VH	-1.23	-0.00072	PASS
		MCH	TN	VL	1.99	0.00115	PASS
				VN	-2.34	-0.00135	PASS
				VH	3.14	0.00181	PASS
		HCH	TN	VL	-2	-0.00115	PASS
				VN	-0.65	-0.00037	PASS
				VH	-0.26	-0.00015	PASS
	16QAM/20MHz	LCH	TN	VL	-3.75	-0.00218	PASS
				VN	-2.44	-0.00142	PASS
				VH	-0.61	-0.00035	PASS
		MCH	TN	VL	2.03	0.00117	PASS
				VN	-2.33	-0.00134	PASS



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		HCH	TN	VH	3.06	0.00177	PASS
				VL	-2.55	-0.00146	PASS
				VN	-1.52	-0.00087	PASS
				VH	0.93	0.00053	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	-4.1	-0.00495	PASS
				VN	0.89	0.00107	PASS
				VH	-1.27	-0.00153	PASS
		MCH	TN	VL	1.89	0.00226	PASS
				VN	-2.36	-0.00282	PASS
				VH	3.07	0.00367	PASS
		HCH	TN	VL	-2.07	-0.00245	PASS
				VN	-0.71	-0.00084	PASS
				VH	-0.3	-0.00036	PASS
	16QAM/10MHz	LCH	TN	VL	-3.82	-0.00461	PASS
				VN	-2.5	-0.00302	PASS
				VH	-1.67	-0.00201	PASS
		MCH	TN	VL	2.02	0.00241	PASS
				VN	-2.41	-0.00288	PASS
				VH	3.02	0.00361	PASS
		HCH	TN	VL	-2.63	-0.00312	PASS
				VN	-0.58	-0.00069	PASS
				VH	0.88	0.00104	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	-3.74	-0.00149	PASS
				VN	1.25	0.00050	PASS
				VH	-0.9	-0.00036	PASS
		MCH	TN	VL	2.28	0.00090	PASS
				VN	-2.01	-0.00079	PASS
				VH	3.43	0.00135	PASS
		HCH	TN	VL	-0.74	-0.00029	PASS
				VN	-0.35	-0.00014	PASS
				VH	0.06	0.00002	PASS
	16QAM/20MHz	LCH	TN	VL	-3.47	-0.00138	PASS



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		MCH	TN	VN	-2.14	-0.00085	PASS
				VH	-0.31	-0.00012	PASS
				VL	2.4	0.00095	PASS
				VN	-2.01	-0.00079	PASS
		HCH	TN	VH	3.34	0.00132	PASS
				VL	-2.25	-0.00088	PASS
				VN	-0.22	-0.00009	PASS
				VH	1.24	0.00048	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	0.00244	PASS
				VN	-2.28	-0.00278	PASS
				VH	3.16	0.00386	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
	16QAM/10MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	2.06	0.00252	PASS
				VN	-2.3	-0.00281	PASS
				VH	3.12	0.00381	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	-3.94	-0.00474	PASS
				VN	1.04	0.00125	PASS
				VH	-2.09	-0.00251	PASS
		MCH	TN	VL	2.09	0.00250	PASS
				VN	-2.21	-0.00264	PASS
				VH	3.23	0.00386	PASS



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	16QAM/15MHz	HCH	TN	VL	-1.95	-0.00232	PASS
				VN	-1.57	-0.00187	PASS
				VH	-0.12	-0.00014	PASS
		LCH	TN	VL	-3.65	-0.00439	PASS
				VN	-2.34	-0.00281	PASS
				VH	-1.5	-0.00180	PASS
	16QAM/15MHz	MCH	TN	VL	2.17	0.00259	PASS
				VN	-2.19	-0.00262	PASS
				VH	3.18	0.00380	PASS
		HCH	TN	VL	-2.45	-0.00291	PASS
				VN	-1.41	-0.00168	PASS
				VH	1.04	0.00124	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	-3.9	-0.00151	PASS
				VN	1.09	0.00042	PASS
				VH	-2.08	-0.00081	PASS
		MCH	TN	VL	2.14	0.00082	PASS
				VN	-2.18	-0.00084	PASS
				VH	3.28	0.00126	PASS
		HCH	TN	VL	-5.91	-0.00226	PASS
				VN	-1.53	-0.00059	PASS
				VH	-0.09	-0.00003	PASS
	16QAM/20MHz	LCH	TN	VL	-3.61	-0.00140	PASS
				VN	-2.33	-0.00090	PASS
				VH	-1.46	-0.00057	PASS
		MCH	TN	VL	2.23	0.00086	PASS
				VN	-2.16	-0.00083	PASS
				VH	3.22	0.00124	PASS
		HCH	TN	VL	-2.41	-0.00092	PASS
				VN	-1.43	-0.00055	PASS
				VH	1.07	0.00041	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	/	/	/



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2315MHz)		MCH	TN	VH	/	/	/
				VL	1.88	0.00081	PASS
				VN	-2.39	-0.00103	PASS
		HCH	TN	VH	3.08	0.00133	PASS
				VL	/	/	/
				VN	/	/	/
	16QAM/5MHz	LCH	TN	VH	/	/	/
				VL	/	/	/
				VN	/	/	/
		MCH	TN	VH	/	/	/
				VL	2	0.00087	PASS
				VN	-2.4	-0.00104	PASS
		HCH	TN	VH	2.94	0.00127	PASS
				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	1.92	0.00082	PASS
				VN	-2.42	-0.00103	PASS
				VH	2.06	0.00088	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
	16QAM/10MHz	LCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/
		MCH	TN	VL	1.99	0.00085	PASS
				VN	-2.42	-0.00103	PASS
				VH	4	0.00170	PASS
		HCH	TN	VL	/	/	/
				VN	/	/	/
				VH	/	/	/



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Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband41	QPSK/20MHz	LCH	TN	VL	-3.97	-0.00158	PASS
				VN	1.02	0.00041	PASS
				VH	-3.12	-0.00125	PASS
		MCH	TN	VL	2.05	0.00079	PASS
				VN	-2.23	-0.00086	PASS
				VH	3.26	0.00126	PASS
		HCH	TN	VL	-2.95	-0.00110	PASS
				VN	-4.58	-0.00171	PASS
				VH	-0.18	-0.00007	PASS
	16QAM/20MHz	LCH	TN	VL	-3.7	-0.00148	PASS
				VN	-2.37	-0.00095	PASS
				VH	-1.53	-0.00061	PASS
		MCH	TN	VL	2.17	0.00084	PASS
				VN	-2.23	-0.00086	PASS
				VH	3.15	0.00121	PASS
		HCH	TN	VL	-2.48	-0.00093	PASS
				VN	-0.45	-0.00017	PASS
				VH	1.01	0.00038	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	1.66	0.00089	PASS
				-20	1.67	0.00090	PASS
				-10	0.8	0.00043	PASS
				0	4.49	0.00241	PASS
				10	3.88	0.00209	PASS
				20	3.75	0.00202	PASS
				30	2.29	0.00123	PASS
				40	1.8	0.00097	PASS
				50	1.95	0.00105	PASS
		MCH	VN	-30	-2.72	-0.00145	PASS
				-20	-2.71	-0.00144	PASS
				-10	-3.85	-0.00205	PASS
				0	-0.31	-0.00016	PASS
				10	-3.55	-0.00189	PASS
				20	-1.97	-0.00105	PASS



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				30	-1.85	-0.00098	PASS
				40	-3.5	-0.00186	PASS
				50	-2.55	-0.00136	PASS
		HCH	VN	-30	2.69	0.00142	PASS
				-20	2.7	0.00142	PASS
				-10	0.63	0.00033	PASS
				0	3.64	0.00192	PASS
				10	-0.77	-0.00041	PASS
				20	4.75	0.00250	PASS
				30	1.57	0.00083	PASS
				40	-0.56	-0.00029	PASS
				50	-3.3	-0.00174	PASS



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Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband2	16QAM/20MHz	LCH	VN	-30	0.66	0.00035	PASS
				-20	0.67	0.00036	PASS
				-10	-1.18	-0.00063	PASS
				0	4.45	0.00239	PASS
				10	4.01	0.00216	PASS
				20	3.07	0.00165	PASS
				30	1.24	0.00067	PASS
				40	1.03	0.00055	PASS
				50	3.21	0.00173	PASS
		MCH	VN	-30	-2.12	-0.00113	PASS
				-20	-2.13	-0.00113	PASS
				-10	-3.91	-0.00208	PASS
				0	-2.32	-0.00123	PASS
				10	-3.45	-0.00184	PASS
				20	0.43	0.00023	PASS
				30	3.21	0.00171	PASS
				40	-2.07	-0.00110	PASS
				50	-1.35	-0.00072	PASS
		HCH	VN	-30	3.02	0.00159	PASS
				-20	3.01	0.00158	PASS
				-10	-0.98	-0.00052	PASS
				0	3.06	0.00161	PASS
				10	-1.96	-0.00103	PASS
				20	4.15	0.00218	PASS
				30	0	0.00000	PASS
				40	-1.72	-0.00091	PASS
				50	-2.96	-0.00156	PASS

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	QPSK/20MHz	LCH	VN	-30	1.13	0.00066	PASS
				-20	1.14	0.00066	PASS
				-10	0.27	0.00016	PASS
				0	3.96	0.00230	PASS
				10	3.35	0.00195	PASS
				20	3.22	0.00187	PASS
				30	1.76	0.00102	PASS
				40	1.27	0.00074	PASS
				50	1.42	0.00083	PASS
		MCH	VN	-30	-2.24	-0.00129	PASS
				-20	-2.24	-0.00129	PASS
				-10	-4.38	-0.00253	PASS
				0	-1.84	-0.00106	PASS
				10	-4.08	-0.00235	PASS
				20	-2.5	-0.00144	PASS
				30	-3.38	-0.00195	PASS
				40	-4.03	-0.00233	PASS
				50	-3.08	-0.00178	PASS
		HCH	VN	-30	2.18	0.00125	PASS
				-20	2.17	0.00124	PASS
				-10	0.1	0.00006	PASS
				0	3.11	0.00178	PASS
				10	-1.3	-0.00074	PASS
				20	4.22	0.00242	PASS
				30	1.04	0.00060	PASS
				40	-1.09	-0.00062	PASS
				50	-3.83	-0.00219	PASS



Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband4	16QAM/20MHz	LCH	VN	-30	1.51	0.00088	PASS
				-20	1.5	0.00087	PASS
				-10	-0.35	-0.00020	PASS
				0	5.28	0.00307	PASS
				10	4.84	0.00281	PASS
				20	3.9	0.00227	PASS
				30	2.07	0.00120	PASS
				40	1.86	0.00108	PASS
				50	4.04	0.00235	PASS
		MCH	VN	-30	-1.29	-0.00074	PASS
				-20	-1.3	-0.00075	PASS
				-10	-3.08	-0.00178	PASS
				0	-0.49	-0.00028	PASS
				10	-2.62	-0.00151	PASS
				20	1.26	0.00073	PASS
				30	4.04	0.00233	PASS
				40	-1.24	-0.00072	PASS
				50	-0.52	-0.00030	PASS
		HCH	VN	-30	3.83	0.00219	PASS
				-20	3.84	0.00220	PASS
				-10	-0.15	-0.00009	PASS
				0	3.89	0.00223	PASS
				10	-1.13	-0.00065	PASS
				20	4.98	0.00285	PASS
				30	0.83	0.00048	PASS
				40	-0.89	-0.00051	PASS
				50	-2.13	-0.00122	PASS



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LTEband5	QPSK/10MHz	LCH	VN	-30	1.46	0.00176	PASS
				-20	1.45	0.00175	PASS
				-10	0.58	0.00070	PASS
				0	4.27	0.00515	PASS
				10	3.66	0.00441	PASS
				20	3.53	0.00426	PASS
				30	2.07	0.00250	PASS
				40	1.58	0.00191	PASS
				50	1.73	0.00209	PASS
		MCH	VN	-30	-2.92	-0.00349	PASS
				-20	-2.93	-0.00350	PASS
				-10	-4.07	-0.00487	PASS
				0	-0.53	-0.00063	PASS
				10	-3.77	-0.00451	PASS
				20	-2.19	-0.00262	PASS
				30	-1.07	-0.00128	PASS
				40	-3.72	-0.00445	PASS
				50	-2.77	-0.00331	PASS
		HCH	VN	-30	2.49	0.00295	PASS
				-20	2.48	0.00294	PASS
				-10	0.41	0.00049	PASS
				0	3.42	0.00405	PASS
				10	-0.99	-0.00117	PASS
				20	4.53	0.00537	PASS
				30	1.35	0.00160	PASS
				40	-0.78	-0.00092	PASS
				50	-3.52	-0.00417	PASS



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Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband5	16QAM/10MHz	LCH	VN	-30	1.04	0.00125	PASS
				-20	1.05	0.00127	PASS
				-10	-0.8	-0.00097	PASS
				0	4.83	0.00583	PASS
				10	4.39	0.00530	PASS
				20	3.45	0.00416	PASS
				30	1.62	0.00195	PASS
				40	1.41	0.00170	PASS
				50	3.59	0.00433	PASS
		MCH	VN	-30	-1.76	-0.00210	PASS
				-20	-1.75	-0.00209	PASS
				-10	-3.53	-0.00422	PASS
				0	-0.94	-0.00112	PASS
				10	-3.07	-0.00367	PASS
				20	0.81	0.00097	PASS
				30	3.59	0.00429	PASS
				40	-1.69	-0.00202	PASS
				50	-0.97	-0.00116	PASS
		HCH	VN	-30	3.38	0.00400	PASS
				-20	3.39	0.00402	PASS
				-10	-0.6	-0.00071	PASS
				0	3.44	0.00408	PASS
				10	-1.58	-0.00187	PASS
				20	4.53	0.00537	PASS
				30	0.38	0.00045	PASS
				40	-1.34	-0.00159	PASS
				50	-2.58	-0.00306	PASS



Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	QPSK/20MHz	LCH	VN	-30	1.04	0.00041	PASS
				-20	1.05	0.00042	PASS
				-10	0.18	0.00007	PASS
				0	3.87	0.00154	PASS
				10	3.26	0.00130	PASS
				20	3.13	0.00125	PASS
				30	1.67	0.00067	PASS
				40	1.18	0.00047	PASS
				50	1.33	0.00053	PASS
		MCH	VN	-30	-3.34	-0.00132	PASS
				-20	-3.33	-0.00131	PASS
				-10	-4.47	-0.00176	PASS
				0	-1.93	-0.00076	PASS
				10	-4.17	-0.00164	PASS
				20	-2.59	-0.00102	PASS
				30	-0.47	-0.00019	PASS
				40	-4.12	-0.00163	PASS
				50	-3.17	-0.00125	PASS
		HCH	VN	-30	2.07	0.00081	PASS
				-20	2.08	0.00081	PASS
				-10	0.01	0.00000	PASS
				0	3.02	0.00118	PASS
				10	-1.39	-0.00054	PASS
				20	4.13	0.00161	PASS
				30	0.95	0.00037	PASS
				40	-1.18	-0.00046	PASS
				50	-3.92	-0.00153	PASS



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Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	16QAM/20MHz	LCH	VN	-30	0.58	0.00023	PASS
				-20	0.59	0.00024	PASS
				-10	-1.26	-0.00050	PASS
				0	4.37	0.00174	PASS
				10	3.93	0.00157	PASS
				20	2.99	0.00119	PASS
				30	1.16	0.00046	PASS
				40	0.95	0.00038	PASS
				50	3.13	0.00125	PASS
		MCH	VN	-30	-2.2	-0.00087	PASS
				-20	-2.21	-0.00087	PASS
				-10	-3.99	-0.00157	PASS
				0	-1.4	-0.00055	PASS
				10	-3.53	-0.00139	PASS
				20	0.35	0.00014	PASS
				30	3.13	0.00123	PASS
				40	-2.15	-0.00085	PASS
				50	-1.43	-0.00056	PASS
		HCH	VN	-30	2.94	0.00115	PASS
				-20	2.93	0.00114	PASS
				-10	-1.06	-0.00041	PASS
				0	2.98	0.00116	PASS
				10	-2.04	-0.00080	PASS
				20	4.07	0.00159	PASS
				30	-0.08	-0.00003	PASS
				40	-1.8	-0.00070	PASS
				50	-3.04	-0.00119	PASS



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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	-0.87	-0.00106	PASS
				-20	-0.88	-0.00107	PASS
				-10	-5.02	-0.00613	PASS
				0	-2.48	-0.00303	PASS
				10	-1.72	-0.00210	PASS
				20	-3.14	-0.00383	PASS
				30	-1.02	-0.00125	PASS
				40	-4.67	-0.00570	PASS
				50	-3.72	-0.00454	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	-1.72	-0.00210	PASS
				-20	-1.73	-0.00211	PASS
				-10	-3.51	-0.00429	PASS
				0	-1.92	-0.00234	PASS
				10	-3.05	-0.00372	PASS
				20	0.83	0.00101	PASS
				30	3.61	0.00441	PASS
				40	-1.67	-0.00204	PASS
				50	-0.95	-0.00116	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	1.29	0.00155	PASS
				-20	1.3	0.00156	PASS
				-10	0.43	0.00052	PASS
				0	4.12	0.00495	PASS
				10	3.51	0.00422	PASS
				20	3.38	0.00406	PASS
				30	1.92	0.00231	PASS
				40	1.43	0.00172	PASS
				50	1.58	0.00190	PASS
		MCH	VN	-30	-2.09	-0.00250	PASS
				-20	-2.08	-0.00249	PASS
				-10	-4.22	-0.00504	PASS
				0	-1.68	-0.00201	PASS
				10	-3.92	-0.00469	PASS
				20	-2.34	-0.00280	PASS
				30	-1.22	-0.00146	PASS
				40	-3.87	-0.00463	PASS
				50	-2.92	-0.00349	PASS
		HCH	VN	-30	2.32	0.00276	PASS
				-20	2.33	0.00277	PASS
				-10	0.26	0.00031	PASS
				0	3.27	0.00389	PASS
				10	-1.14	-0.00135	PASS
				20	4.38	0.00520	PASS
				30	1.2	0.00143	PASS
				40	-0.93	-0.00111	PASS
				50	-3.67	-0.00436	PASS



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	1.45	0.00174	PASS
				-20	1.44	0.00173	PASS
				-10	-0.41	-0.00049	PASS
				0	5.22	0.00628	PASS
				10	4.78	0.00575	PASS
				20	3.84	0.00462	PASS
				30	2.01	0.00242	PASS
				40	1.8	0.00216	PASS
				50	2.98	0.00358	PASS
		MCH	VN	-30	-1.36	-0.00163	PASS
				-20	-1.36	-0.00163	PASS
				-10	-3.14	-0.00375	PASS
				0	-0.55	-0.00066	PASS
				10	-2.68	-0.00320	PASS
				20	1.2	0.00143	PASS
				30	3.98	0.00476	PASS
				40	-1.3	-0.00155	PASS
				50	-0.58	-0.00069	PASS
		HCH	VN	-30	3.77	0.00448	PASS
				-20	3.78	0.00449	PASS
				-10	-0.21	-0.00025	PASS
				0	3.83	0.00455	PASS
				10	-1.19	-0.00141	PASS
				20	4.92	0.00585	PASS
				30	0.77	0.00092	PASS
				40	-0.95	-0.00113	PASS
				50	-2.19	-0.00260	PASS



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Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband38	QPSK/20MHz	LCH	VN	-30	0.94	0.00036	PASS
				-20	0.95	0.00037	PASS
				-10	0.08	0.00003	PASS
				0	3.77	0.00146	PASS
				10	3.16	0.00122	PASS
				20	3.03	0.00117	PASS
				30	1.57	0.00061	PASS
				40	1.08	0.00042	PASS
				50	1.23	0.00048	PASS
		MCH	VN	-30	-2.42	-0.00093	PASS
				-20	-2.43	-0.00094	PASS
				-10	-4.57	-0.00176	PASS
				0	-2.03	-0.00078	PASS
				10	-4.27	-0.00165	PASS
				20	-2.69	-0.00104	PASS
				30	-1.57	-0.00061	PASS
				40	-4.22	-0.00163	PASS
				50	-3.27	-0.00126	PASS
		HCH	VN	-30	1.99	0.00076	PASS
				-20	1.98	0.00076	PASS
				-10	-0.09	-0.00003	PASS
				0	2.92	0.00112	PASS
				10	-1.49	-0.00057	PASS
				20	4.03	0.00154	PASS
				30	0.85	0.00033	PASS
				40	-1.28	-0.00049	PASS
				50	-4.02	-0.00154	PASS



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Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband38	16QAM/20MHz	LCH	VN	-30	1.02	0.00040	PASS
				-20	1.03	0.00040	PASS
				-10	-0.82	-0.00032	PASS
				0	4.81	0.00186	PASS
				10	4.37	0.00169	PASS
				20	3.43	0.00133	PASS
				30	1.6	0.00062	PASS
				40	1.39	0.00054	PASS
				50	1.57	0.00061	PASS
		MCH	VN	-30	-1.78	-0.00069	PASS
				-20	-1.77	-0.00068	PASS
				-10	-3.55	-0.00137	PASS
				0	-0.96	-0.00037	PASS
				10	-3.09	-0.00119	PASS
				20	0.79	0.00030	PASS
				30	3.57	0.00138	PASS
				40	-1.71	-0.00066	PASS
				50	-0.99	-0.00038	PASS
		HCH	VN	-30	3.36	0.00129	PASS
				-20	3.37	0.00129	PASS
				-10	-0.62	-0.00024	PASS
				0	3.42	0.00131	PASS
				10	-1.6	-0.00061	PASS
				20	4.51	0.00173	PASS
				30	0.36	0.00014	PASS
				40	-1.36	-0.00052	PASS
				50	-2.6	-0.00100	PASS

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	-2.55	-0.00110	PASS
				-20	-2.54	-0.00110	PASS
				-10	-4.68	-0.00202	PASS
				0	-1.14	-0.00049	PASS
				10	-4.38	-0.00189	PASS
				20	-2.8	-0.00121	PASS
				30	-1.68	-0.00073	PASS
				40	-4.33	-0.00187	PASS
				50	-3.38	-0.00146	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 (2305MHz-2315MHz)	16QAM/10MHz	LCH	VN	-20	/	/	/
				-10	/	/	/
				0	/	/	/
				10	/	/	/
				20	/	/	/
				30	/	/	/
				40	/	/	/
				50	/	/	/
				55	/	/	/
		MCH	VN	-30	-2.24	-0.00097	PASS
				-20	-2.25	-0.00097	PASS
				-10	-4.03	-0.00174	PASS
				0	-2.44	-0.00106	PASS
				10	-3.57	-0.00154	PASS
				20	0.31	0.00013	PASS
				30	3.09	0.00134	PASS
				40	-2.19	-0.00095	PASS
				50	-1.47	-0.00064	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	-1.68	-0.00071	PASS
				-20	-1.67	-0.00071	PASS
				-10	-0.81	-0.00034	PASS
				0	-2.27	-0.00096	PASS
				10	-4.51	-0.00192	PASS
				20	-2.93	-0.00125	PASS
				30	-0.81	-0.00034	PASS
				40	-4.46	-0.00190	PASS
				50	-3.51	-0.00149	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	/	/	/



Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband41	QPSK/20MHz	LCH	VN	-30	1.27	0.00051	PASS
				-20	1.26	0.00050	PASS
				-10	0.39	0.00016	PASS
				0	4.08	0.00163	PASS
				10	3.47	0.00138	PASS
				20	3.34	0.00133	PASS
				30	1.88	0.00075	PASS
				40	1.39	0.00055	PASS
				50	1.54	0.00061	PASS
		MCH	VN	-30	-2.11	-0.00081	PASS
				-20	-2.12	-0.00082	PASS
				-10	-4.26	-0.00164	PASS
				0	-1.72	-0.00066	PASS
				10	-3.96	-0.00153	PASS
				20	-2.38	-0.00092	PASS
				30	-1.26	-0.00049	PASS
				40	-3.91	-0.00151	PASS
				50	-2.96	-0.00114	PASS
		HCH	VN	-30	2.3	0.00086	PASS
				-20	2.29	0.00085	PASS
				-10	0.22	0.00008	PASS
				0	3.23	0.00121	PASS
				10	-1.18	-0.00044	PASS
				20	4.34	0.00162	PASS
				30	1.16	0.00043	PASS
				40	-0.97	-0.00036	PASS
				50	-3.71	-0.00138	PASS

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband41	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	2.67	0.00107	PASS
		MCH	VN	-30	-1.68	-0.00065	PASS
				-20	-1.67	-0.00064	PASS
				-10	-3.45	-0.00133	PASS
				0	-1.86	-0.00072	PASS
				10	-2.99	-0.00115	PASS
				20	0.89	0.00034	PASS
				30	3.67	0.00142	PASS
				40	-1.61	-0.00062	PASS
				50	-0.89	-0.00034	PASS
		HCH	VN	-30	3.46	0.00129	PASS
				-20	3.47	0.00129	PASS
				-10	-0.52	-0.00019	PASS
				0	3.52	0.00131	PASS
				10	-1.5	-0.00056	PASS
				20	4.61	0.00172	PASS
				30	0.46	0.00017	PASS
				40	-1.26	-0.00047	PASS
				50	-2.5	-0.00093	PASS

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



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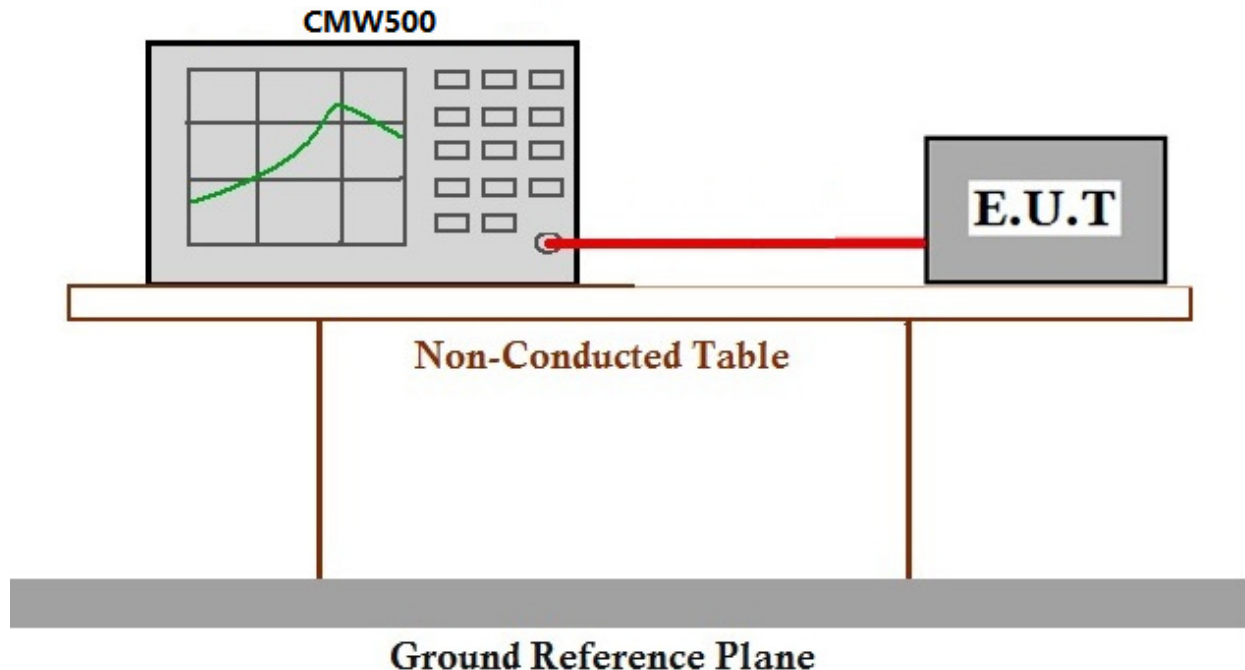
6.8 Modulation Characteristics

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



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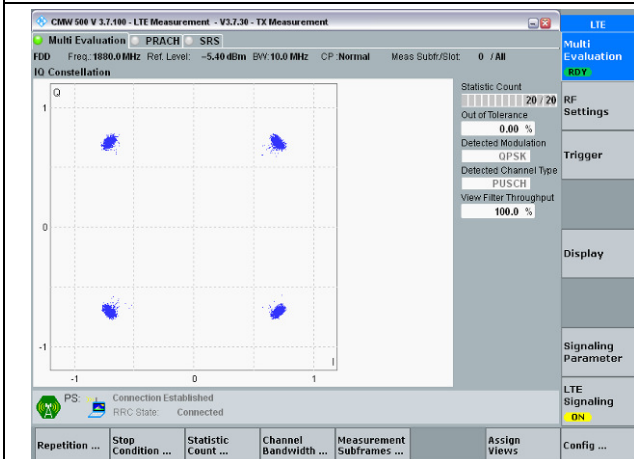


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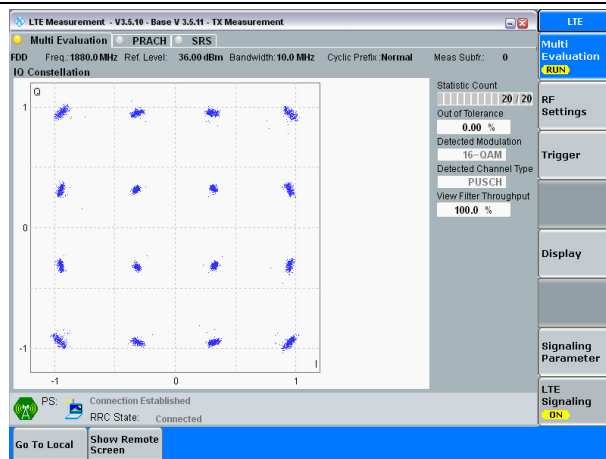
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Test Plot

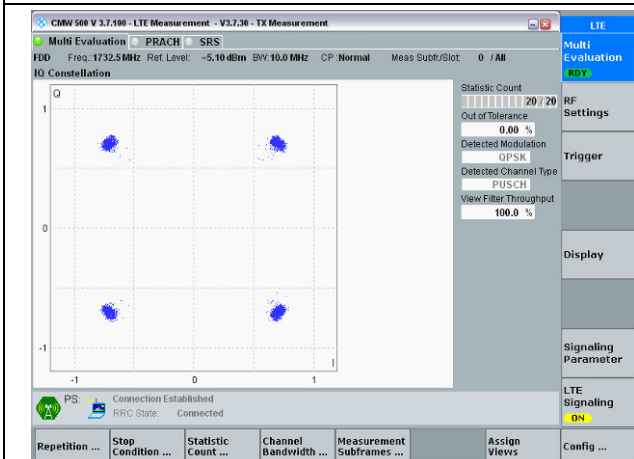
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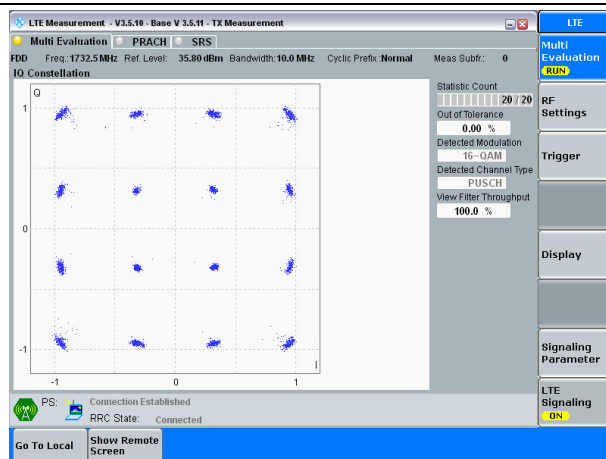
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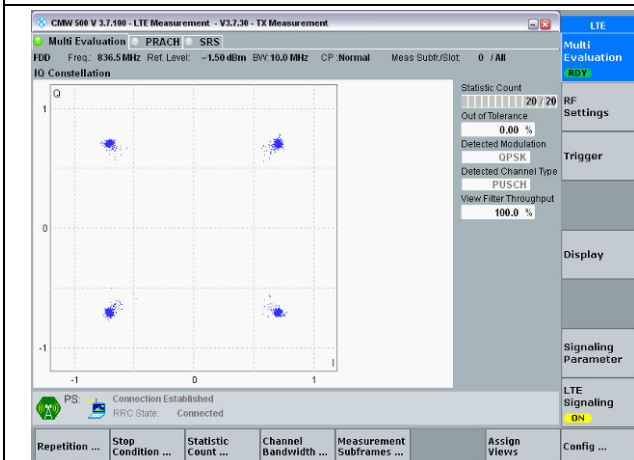
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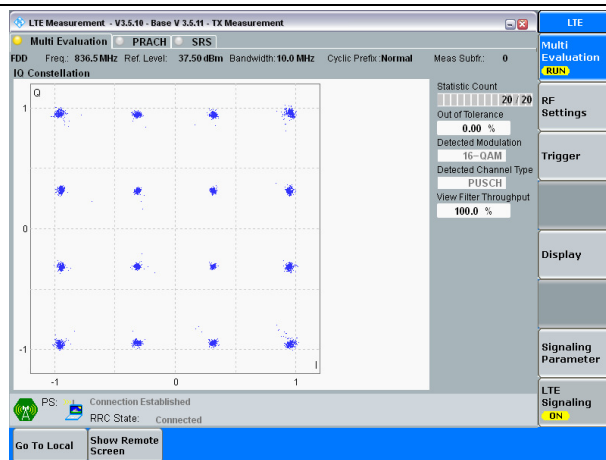
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LTE FDD Band 5 QPSK



LTE FDD Band 5 16QAM



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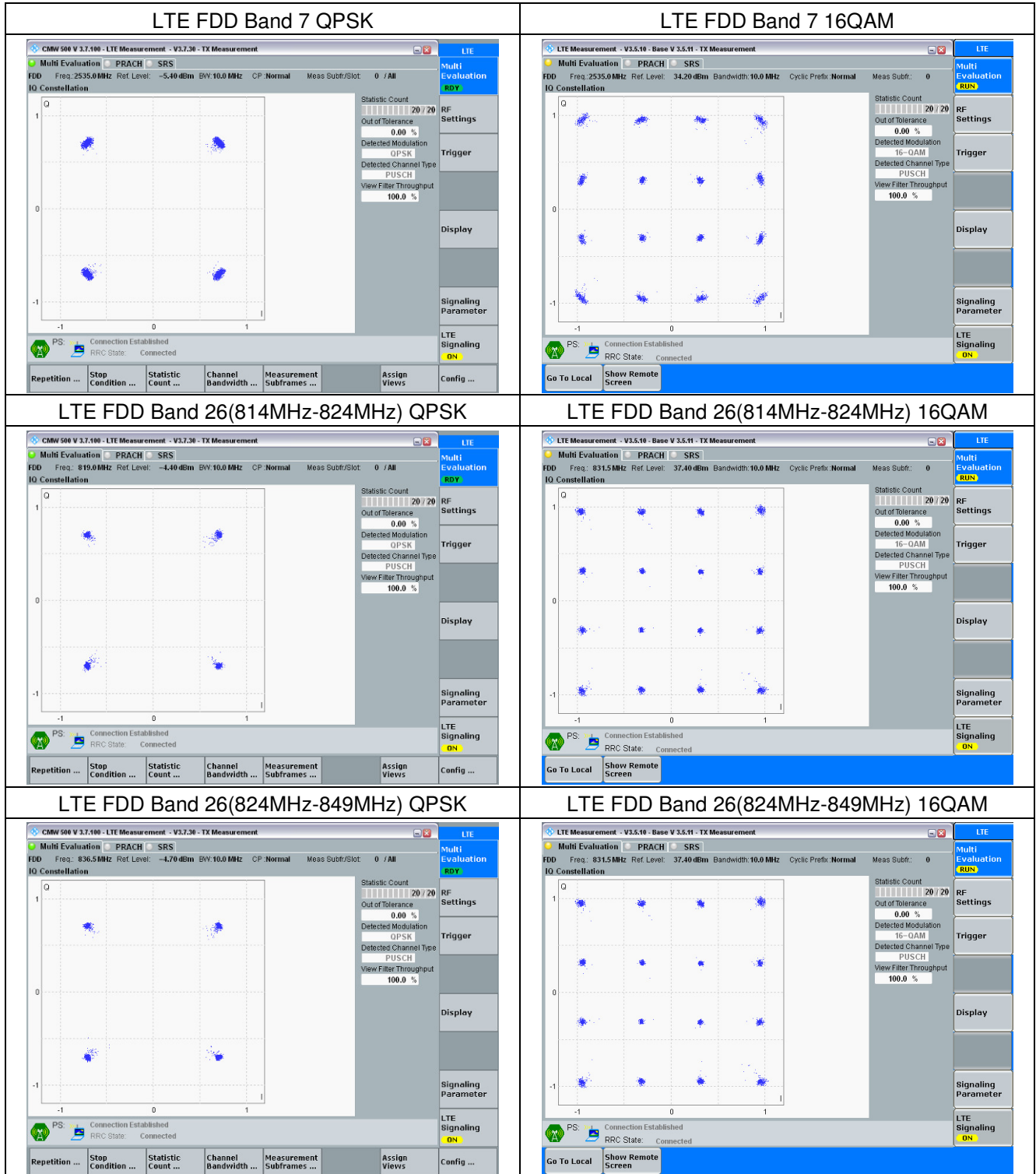
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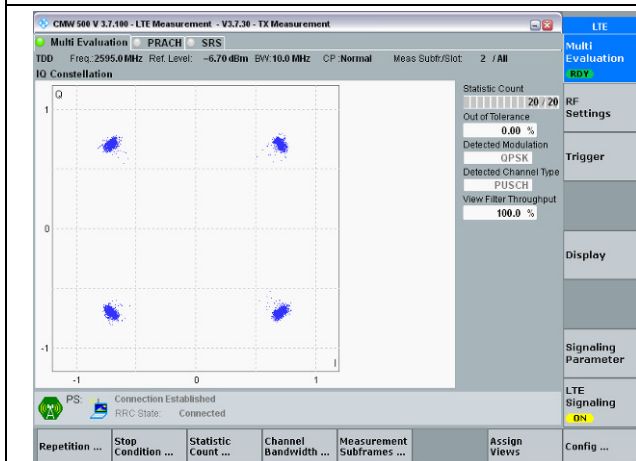
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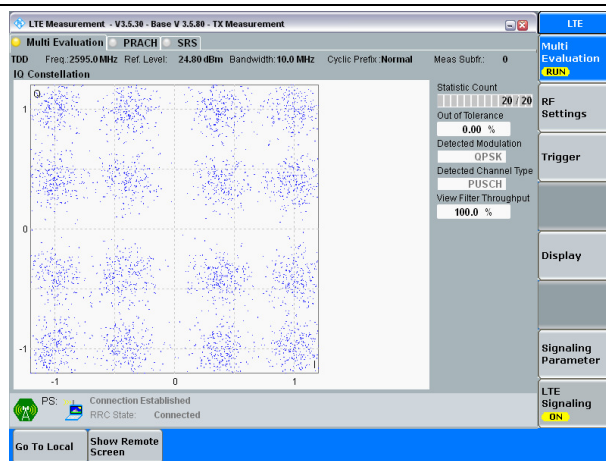
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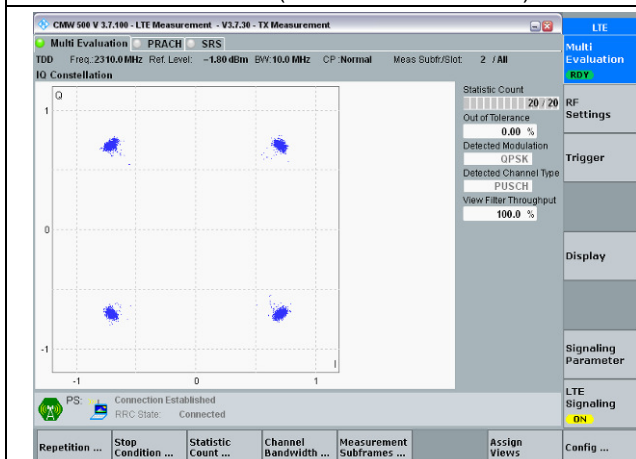
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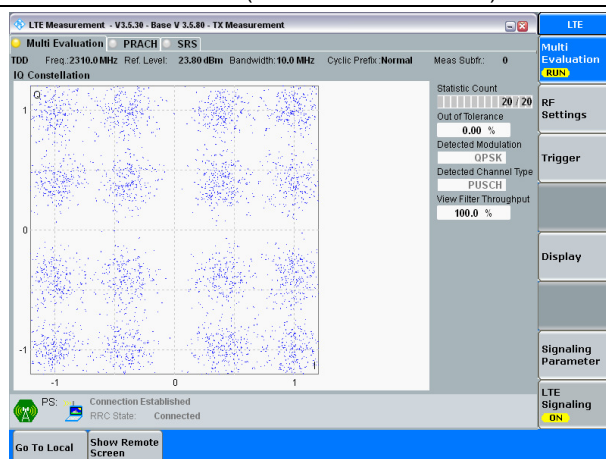
LTE TDD Band 38 16QAM



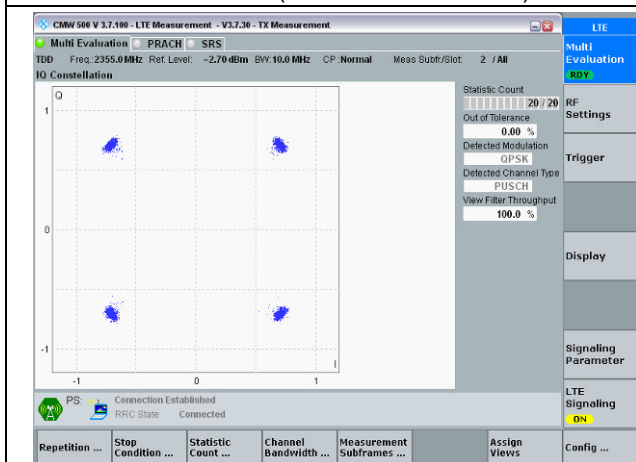
LTE TDD Band 40(2305MHz-2315MHz) QPSK



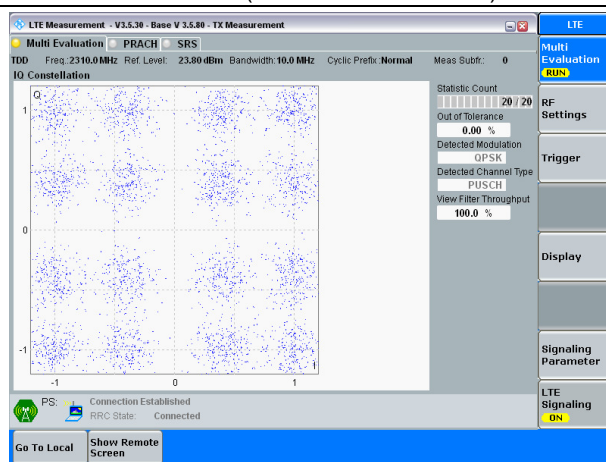
LTE TDD Band 40(2305MHz-2315MHz) 16QAM



LTE TDD Band 40(2350MHz-2360MHz) QPSK

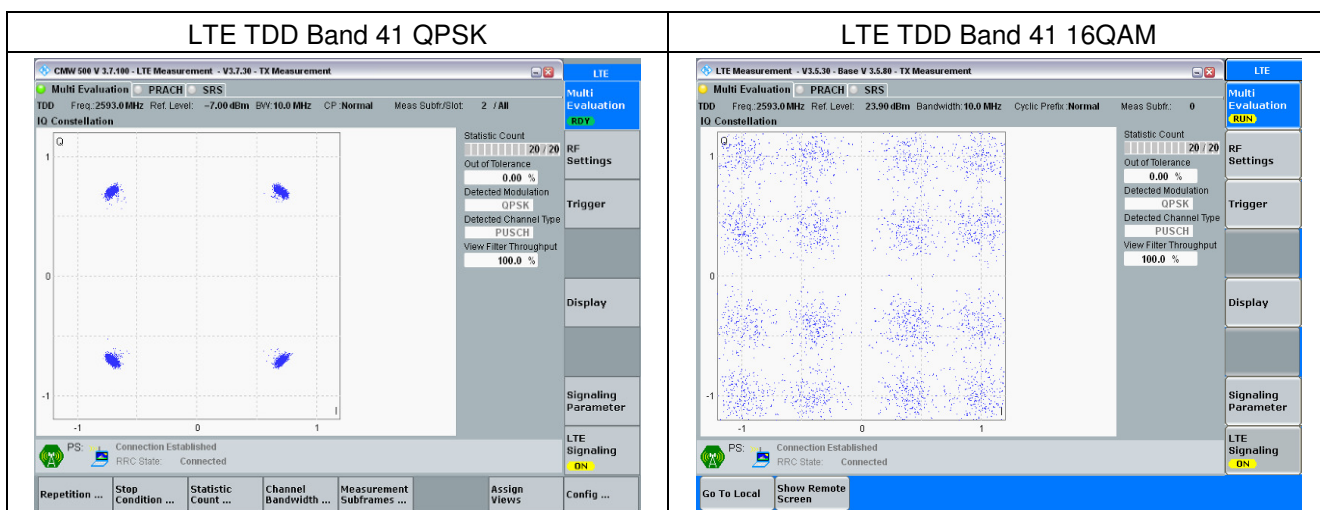


LTE TDD Band 40(2350MHz-2360MHz) 16QAM



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