RF TEST REPORT

Applicant	ZTE Corporation
FCC ID	SRQ-ZTEBLADEA6MAX
Product	LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone
Model	ZTE BLADE A6 MAX、ZTE BLADE A0605、BLADE A6 MAX
Report No.	R1802A0070-R1
Issue Date	March 13, 2018

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2017)/ FCC CFR47 Part 27C (2017)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Jiangpeng Lan	*Approved by: Kai Xu*

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

Table of Contents

1 Test Laboratory 4
1.1 Notes of the Test Report 4
1.2 Test facility 4
1.3 Testing Location 5
2 General Description of Equipment under Test 6
3 Applied Standards 8
4 Test Configuration 9
5 Test Case Results 11
5.1 RF Power Output 11
5.2 Effective Isotropic Radiated Power 18
5.3 Occupied Bandwidth 24
5.4 Band Edge Compliance 42
5.5 Peak-to-Average Power Ratio (PAPR) 67
5.6 Frequency Stability 71
5.7 Spurious Emissions at Antenna Terminals 77
5.8 Radiates Spurious Emission 96
6 Main Test Instruments 120
ANNEX A: Product Change Description 121

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	27.50(d)/27.50(b)(10)/(4)/27.50(c)(10)/27.50(h)(2)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	27.53(h) /27.53(g) /27.53(f)	PASS
5	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 27.54	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 27.53(h) /27.53(g) /27.53(f)	PASS
8	Radiates Spurious Emission	2.1053 /27.53(h) /27.53(g) /27.53(f)	PASS
Date of Testing: November 1, 2017~ March 8, 2018			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard.			

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by any government agencies.

1.2 Test facility

CNAS (accreditation number: L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

1.3 Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

2 General Description of Equipment under Test

Client Information

Applicant	ZTE Corporation
Applicant address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
Manufacturer	ZTE Corporation
Manufacturer address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

General information

EUT Description			
Model	ZTE BLADE A6 MAX、ZTE BLADE A0605、BLADE A6 MAX		
IMEI	867224030006579		
Hardware Version	tyuA		
Software Version	JM_P809F15V1.0.0B03		
Power Supply	Battery/AC adapter		
Antenna Type	Internal Antenna		
Test Mode(s)	LTE Band 4; LTE Band 12; LTE Band 13; LTE Band 17;		
Test Modulation	(WCDMA)QPSK; (LTE)QPSK 16QAM;		
HSDPA UE Category	24		
HSUPA UE Category	6		
LTE Release	R10		
Maximum E.I.R.P./ E.R.P.	LTE Band 4:	24.18dBm	
	LTE Band 12:	16.55dBm	
	LTE Band 13:	18.72 dBm	
	LTE Band 17:	18.41dBm	
Rated Power Supply Voltage:	3.85V		
Extreme Voltage	Minimum: 3.6V Maximum: 4.4V		
Extreme Temperature	Lowest: -10°C Highest: +55°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777~787	746~756
	LTE Band 17	704~716	734~746
EUT Accessory			
Adapter	Manufacturer: SHENZHEN RUIJING INDUSTRIAL CO LTD Model: STC-A515A-Z		
Battery	Manufacturer: SCUD (FUJIAN) Electronics Co., Ltd.		

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

	Model: Li3939T44P8h856743
Earphone	Manufacturer: GoerTek Inc Model: HA3-3
USB Cable 1	Manufacturer: Chuan electronics co., ltd USB length 70cm ,shielding cable
USB Cable 2	Manufacturer: KoEY Huaxing electronics co., ltd USB length 70cm ,shielding cable
Note：1. The information of the EUT is declared by the manufacturer.	

Summary of Measurement Results

ZTE BLADE A6 MAX、ZTE BLADE A0605、BLADE A6 MAX (R1802A0070-R1) is a variant model of ZTE ZTE BLADE A6 MAX、ZTE BLADE A0605、BLADE A6 MAX (RXA1711-0356RF03).

Data tested case see the table below. The detailed product change description please refers to the ANNEX A.

Band	Original (RXA1711-0356RF03)	Variant (R1802A0070-R1)
LTE FDD 4	Pass	Refer to the Original
LTE FDD 12	Pass	Refer to the Original
LTE FDD 13	Not Tested	Pass
LTE FDD 17	Not Tested	Pass

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards

FCC CFR47 Part 2 (2017)

FCC CFR47 Part 27C (2017)

ANSI/TIA-603-E (2016)

KDB 971168 D01 Power Meas License Digital Systems v03

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

4 Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (X axis, horizontal polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.
Subsequently, only the worst case emissions are reported.
The following testing in LTE is set based on the maximum RF Output Power.
The following testing in different Bandwidth is set to detailin the following table:

Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/12/13/17:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	-	-	O	O	O	O
Occupied Bandwidth	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 12	O	O	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 13	-	-	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 17	-	-	O	O	-	-	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 17	-	-	O	O	-	-	O	O	-	-	O	O	O	O
Frequency Stability	LTE 4	O	O	O	O	O	O	O	O	-	-	O	-	O	-
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	-	O	-
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	-	O	-

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

	LTE 17	-	-	O	O	-	-	O	O	-	-	O	-	O	-
Spurious Emissions at Antenna Terminals	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 13	-	-	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 17	-	-	O	O	-	-	O	-	O	-	-	O	O	O
Radiates Spurious Emission	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 13	-	-	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 17	-	-	O	O	-	-	O	-	O	-	-	O	O	O
Note	1. The mark “O” means that this configuration is chosen for testing. 2. The mark “-” means that this configuration is not testing.														

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

5 Test Case Results

5.1 RF Power Output

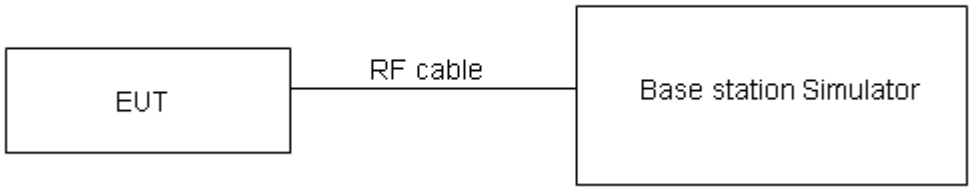
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=0.4 dB.

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Test Results

Original

LTE Band 4				AV Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19957/1710.7	20175/1732.5	20393/1754.3
1.4MHz	QPSK	1	0	23.19	23.34	23.25
		1	2	23.18	23.16	23.02
		1	5	23.00	23.21	23.08
		3	0	22.97	23.02	22.98
		3	2	22.88	22.83	22.86
		3	3	22.88	22.79	22.80
		6	0	21.87	22.00	21.95
	16QAM	1	0	22.16	22.06	22.00
		1	2	21.96	22.16	22.05
		1	5	22.04	22.07	22.10
		3	0	21.83	21.85	21.89
		3	2	21.88	21.76	21.84
		3	3	21.86	21.76	21.87
		6	0	20.91	20.91	21.09
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19965/1711.5	20175/1732.5	20385/1753.5
3MHz	QPSK	1	0	23.21	23.38	23.28
		1	7	23.21	23.21	23.06
		1	14	23.03	23.26	23.12
		8	0	22.07	22.14	22.11
		8	4	22.00	21.93	21.98
		8	7	21.98	21.90	21.90
		15	0	21.90	22.04	21.98
	16QAM	1	0	22.19	22.08	22.03
		1	7	21.99	22.21	22.09
		1	14	22.06	22.11	22.13
		8	0	20.94	20.98	21.01
		8	4	20.99	20.89	20.96
		8	7	20.96	20.88	21.00
		15	0	20.94	20.95	21.12
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19975/1712.5	20175/1732.5	20375/1752.5
5MHz	QPSK	1	0	23.18	23.36	23.24
		1	13	23.19	23.17	23.03
		1	24	23.00	23.21	23.08
		12	0	22.04	22.09	22.07
		12	6	21.98	21.89	21.93
		12	13	21.96	21.88	21.86

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

		25	0	21.88	22.03	21.96
	16QAM	1	0	22.16	22.04	22.00
		1	13	21.96	22.19	22.06
		1	24	22.03	22.09	22.09
		12	0	20.92	20.94	20.98
		12	6	20.96	20.84	20.92
		12	13	20.93	20.83	20.96
		25	0	20.92	20.91	21.07
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20000/1715	20175/1732.5	20350/1750
10MHz	QPSK	1	0	23.20	23.37	23.27
		1	25	23.22	23.22	23.07
		1	49	23.02	23.25	23.11
		25	0	22.07	22.14	22.11
		25	13	22.01	21.94	21.97
		25	25	21.98	21.92	21.91
		50	0	21.96	22.05	22.00
	16QAM	1	0	22.18	22.07	22.02
		1	25	21.99	22.23	22.09
		1	49	22.06	22.11	22.12
		25	0	20.95	20.99	21.02
		25	13	20.98	20.88	20.95
		25	25	20.96	20.88	21.00
		50	0	20.95	20.96	21.11
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20025/1717.5	20175/1732.5	20325/1747.5
15MHz	QPSK	1	0	23.19	23.33	23.25
		1	38	23.20	23.21	23.04
		1	74	22.99	23.20	23.07
		36	0	22.05	22.10	22.08
		36	18	21.98	21.89	21.93
		36	39	21.95	21.89	21.87
		75	0	21.94	22.01	21.95
	16QAM	1	0	22.13	22.05	22.00
		1	38	21.97	22.20	22.07
		1	74	22.03	22.07	22.09
		36	0	20.92	20.97	20.99
		36	18	20.95	20.83	20.91
		36	39	20.94	20.84	20.97
		75	0	20.92	20.91	21.07
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20050/1720	20175/1732.5	20300/1745
20MHz	QPSK	1	0	23.16	23.29	23.22

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

		1	50	23.19	23.17	23.02
		1	99	22.97	23.19	23.04
		50	0	22.02	22.05	22.04
		50	25	21.96	21.85	21.90
		50	50	21.92	21.84	21.83
		100	0	21.91	21.96	21.91
	16QAM	1	0	22.11	22.01	21.95
		1	50	21.93	22.18	22.03
		1	99	22.01	22.04	22.07
		50	0	20.89	20.93	20.96
		50	25	20.92	20.81	20.88
		50	50	20.91	20.79	20.93
		100	0	20.90	20.87	21.04
Note: 1) The following testing in worst case based on the maximum RF Output Power.						

LTE Band 12				**AV Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23017/699.7	23095/707.5	23173/715.3
1.4MHz	QPSK	1	0	22.47	22.55	22.70
		1	2	22.41	22.51	22.74
		1	5	22.61	22.48	22.60
		3	0	22.18	22.28	22.28
		3	2	22.05	22.31	22.15
		3	3	22.20	22.19	22.12
		6	0	21.23	21.20	21.26
	16QAM	1	0	21.46	21.33	21.54
		1	2	21.47	21.43	21.34
		1	5	21.23	21.39	21.52
		3	0	21.11	21.39	21.29
		3	2	21.41	21.34	21.45
		3	3	21.17	21.50	21.16
		6	0	20.40	20.25	20.30
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23025/700.5	23095/707.5	23165/714.5
3MHz	QPSK	1	0	22.49	22.59	22.73
		1	7	22.44	22.56	22.78
		1	14	22.64	22.53	22.64
		8	0	21.28	21.40	21.41
		8	4	21.17	21.41	21.27
		8	7	21.30	21.30	21.22
		15	0	21.26	21.24	21.29
	16QAM	1	0	21.49	21.35	21.57

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

		1	7	21.50	21.48	21.38
		1	14	21.25	21.43	21.55
		8	0	20.22	20.52	20.41
		8	4	20.52	20.47	20.57
		8	7	20.27	20.62	20.29
		15	0	20.43	20.29	20.33
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23035/701.5	23095/707.5	23155/713.5
5MHz	QPSK	1	0	22.46	22.57	22.69
		1	13	22.42	22.52	22.75
		1	24	22.61	22.48	22.60
		12	0	21.25	21.35	21.37
		12	6	21.15	21.37	21.22
		12	13	21.28	21.28	21.18
		25	0	21.24	21.23	21.27
	16QAM	1	0	21.46	21.31	21.54
		1	13	21.47	21.46	21.35
		1	24	21.22	21.41	21.51
		12	0	20.20	20.48	20.38
		12	6	20.49	20.42	20.53
		12	13	20.24	20.57	20.25
		25	0	20.41	20.25	20.28
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23060/704	23095/707.5	23130/711
10MHz	QPSK	1	0	22.44	22.50	22.67
		1	25	22.42	22.52	22.74
		1	49	22.58	22.46	22.56
		25	0	21.23	21.31	21.34
		25	13	21.13	21.33	21.19
		25	25	21.24	21.24	21.15
		50	0	21.27	21.16	21.22
	16QAM	1	0	21.41	21.28	21.49
		1	25	21.44	21.45	21.32
		1	49	21.20	21.36	21.49
		25	0	20.17	20.47	20.36
		25	13	20.45	20.39	20.49
		25	25	20.22	20.53	20.22
		50	0	20.39	20.21	20.25

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Variant

LTE Band 13				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23205/779.5	23230/782	23255/784.5
5MHz	QPSK	1	0	23.62	23.22	23.35
		1	13	23.31	23.37	32.25
		1	24	23.42	23.31	23.27
		12	0	22.28	22.33	22.21
		12	6	22.34	22.23	22.18
		12	13	22.33	22.21	22.19
		25	0	22.26	22.23	22.26
	16QAM	1	0	22.31	22.13	22.19
		1	13	22.08	22.23	22.11
		1	24	22.27	22.28	22.20
		12	0	21.06	21.03	21.05
		12	6	21.14	21.23	21.08
		12	13	21.23	21.08	21.02
		25	0	21.13	21.15	21.17
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				/	23230/782	/
10MHz	QPSK	1	0	/	23.47	/
		1	25	/	23.33	/
		1	49	/	23.63	/
		25	0	/	22.33	/
		25	13	/	22.36	/
		25	25	/	22.21	/
		50	0	/	22.31	/
	16QAM	1	0	/	22.53	/
		1	25	/	22.23	/
		1	49	/	22.32	/
		25	0	/	21.57	/
		25	13	/	21.22	/
		25	25	/	21.30	/
		50	0	/	21.17	/

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 17				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23755/706.5	23790/710	23825/713.5
5MHz	QPSK	1	0	23.15	23.07	23.15
		1	13	23.24	23.18	22.93
		1	24	22.96	23.01	23.32
		12	0	22.06	22.07	22.11
		12	6	21.90	21.86	21.94
		12	13	21.79	21.88	21.85
		25	0	21.84	21.86	21.94
	16QAM	1	0	22.06	22.09	22.24
		1	13	22.11	22.14	21.92
		1	24	22.13	21.96	21.96
		12	0	21.19	20.93	21.14
		12	6	21.13	20.95	20.90
		12	13	21.03	21.10	20.90
		25	0	20.99	20.77	20.94
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23780/709	23790/710	23800/711
10MHz	QPSK	1	0	23.12	23.03	23.12
		1	25	23.23	23.14	22.91
		1	49	22.94	23.00	23.29
		25	0	22.03	22.02	22.07
		25	13	21.88	21.82	21.91
		25	25	21.76	21.83	21.81
		50	0	21.81	21.81	21.90
	16QAM	1	0	22.04	22.05	22.19
		1	25	22.07	22.12	21.88
		1	49	22.11	21.93	21.94
		25	0	21.16	20.89	21.11
		25	13	21.10	20.93	20.87
		25	25	21.00	21.05	20.86
		50	0	20.97	20.73	20.91

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

5.2 Effective Isotropic Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

1. The testing follows FCC KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E (2016).

a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.

b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).

c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.

d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading.LOSS = Generator Output Power (dBm) – Analyzer reading (dBm)

e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation:ERP (dBm) = LVL (dBm) + LOSS (dB)

f) The maximum ERP is the maximum value determined in the preceding step.

g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g.transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:

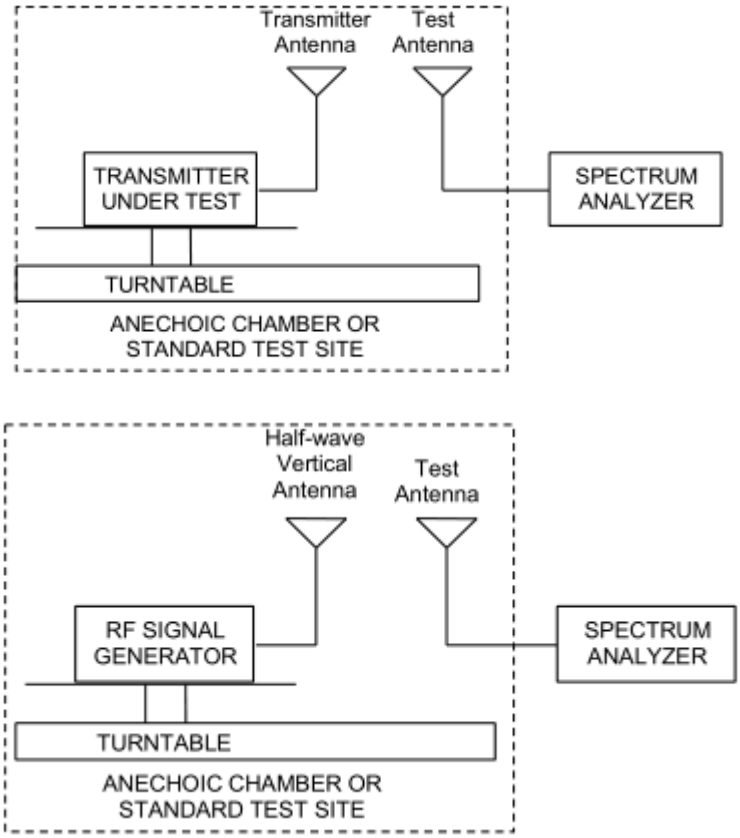
ERP (dBm) = Output Power (dBm) - Losses (dB) + Antenna Gain (dBd)

where:dBd refers to gain relative to an ideal dipole.

EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Test setup



Note: Area side:2.4mX3.6m

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Limits

Rule Part 27.50(b) (10) specifies that “Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP”

Rule Part 27.50(c) (10) specifies that “Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP”

Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”

Part 27.50(b)(10)Limit (ERP)	≤ 3 W (34.77 dBm)
Part 27.50(c)(10)Limit (ERP)	≤ 3 W (34.77 dBm)
Part 27.50(d)(4)Limit (EIRP)	≤ 1 W (30 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 1.19 dB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Test Results

The measurement is performed for both of horizontal and vertical antenna Polarization, and only the data of worst mode is recorded in this report.

Original

LTE Band 4								
Bandwidth	**Channel**	**Frequency (MHz)**	**Polarization**	**Output Power (dBm)**	**Losses (dB)**	**Antenna Gain (dBd)**	**EIRP (dBm)**	**Conclusion**
1.4 MHz (QPSK)	Low	1710.7	Horizontal	-32.18	-54.30	1.44	23.55	Pass
	Mid	1732.5	Horizontal	-32.43	-54.32	1.57	23.46	Pass
	High	1754.3	Horizontal	-32.50	-54.10	1.72	23.32	Pass
3 MHz (QPSK)	Low	1711.5	Horizontal	-32.21	-54.35	1.44	23.58	Pass
	Mid	1732.5	Horizontal	-32.48	-54.41	1.57	23.50	Pass
	High	1753.5	Horizontal	-32.52	-54.48	1.72	23.68	Pass
5 MHz (QPSK)	Low	1712.5	Horizontal	-32.27	-54.34	1.44	23.51	Pass
	Mid	1732.5	Horizontal	-32.54	-54.32	1.57	23.34	Pass
	High	1752.5	Horizontal	-32.08	-54.13	1.72	23.76	Pass
10 MHz (QPSK)	Low	1715	Horizontal	-32.16	-54.32	1.44	23.60	Pass
	Mid	1732.5	Horizontal	-32.30	-54.41	1.57	23.67	Pass
	High	1750	Horizontal	-32.00	-54.52	1.66	24.18	Pass
15 MHz (QPSK)	Low	1717.5	Horizontal	-32.06	-54.35	1.49	23.77	Pass
	Mid	1732.5	Horizontal	-31.88	-54.32	1.57	24.00	Pass
	High	1747.5	Horizontal	-31.82	-54.17	1.66	24.01	Pass
20 MHz (QPSK)	Low	1720	Horizontal	-32.15	-54.44	1.49	23.78	Pass
	Mid	1732.5	Horizontal	-32.07	-54.41	1.57	23.91	Pass
	High	1745	Horizontal	-32.66	-54.59	1.63	23.56	Pass
1.4 MHz (16QAM)	Low	1710.7	Horizontal	-32.42	-54.30	1.44	23.31	Pass
	Mid	1732.5	Horizontal	-32.67	-54.32	1.57	23.22	Pass
	High	1754.3	Horizontal	-32.63	-54.10	1.72	23.19	Pass
3 MHz (16QAM)	Low	1711.5	Horizontal	-32.30	-54.35	1.44	23.49	Pass
	Mid	1732.5	Horizontal	-32.60	-54.41	1.57	23.38	Pass
	High	1753.5	Horizontal	-32.60	-54.48	1.72	23.60	Pass
5 MHz (16QAM)	Low	1712.5	Horizontal	-32.39	-54.34	1.44	23.39	Pass
	Mid	1732.5	Horizontal	-32.73	-54.32	1.57	23.16	Pass
	High	1752.5	Horizontal	-32.25	-54.13	1.72	23.59	Pass
10 MHz (16QAM)	Low	1715	Horizontal	-32.27	-54.32	1.44	23.49	Pass
	Mid	1732.5	Horizontal	-32.48	-54.41	1.57	23.50	Pass
	High	1750	Horizontal	-32.30	-54.52	1.66	23.88	Pass
15 MHz (16QAM)	Low	1717.5	Horizontal	-32.28	-54.35	1.49	23.55	Pass
	Mid	1732.5	Horizontal	-32.20	-54.32	1.57	23.68	Pass
	High	1747.5	Horizontal	-31.96	-54.17	1.66	23.87	Pass
20 MHz (16QAM)	Low	1720	Horizontal	-32.26	-54.44	1.49	23.66	Pass
	Mid	1732.5	Horizontal	-32.13	-54.41	1.57	23.85	Pass

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

	High	1745	Horizontal	-33.06	-54.59	1.63	23.16	Pass

LTE Band 12								
Bandwidth	**Channel**	**Frequency (MHz)**	**Polarization**	**Output Power (dBm)**	**Losses (dB)**	**Antenna Gain (dBd)**	**ERP (dBm)**	**Conclusion**
1.4 MHz (QPSK)	Low	699.7	Horizontal	-35.70	-49.12	2.04	15.46	Pass
	Mid	707.5	Horizontal	-35.11	-49.39	2.03	16.32	Pass
	High	715.3	Horizontal	-35.40	-49.76	1.99	16.35	Pass
3 MHz (QPSK)	Low	700.5	Horizontal	-35.41	-48.94	2.04	15.57	Pass
	Mid	707.5	Horizontal	-35.12	-49.12	2.03	16.03	Pass
	High	714.5	Horizontal	-34.82	-49.37	2.00	16.55	Pass
5 MHz (QPSK)	Low	701.5	Horizontal	-35.62	-49.17	2.04	15.60	Pass
	Mid	707.5	Horizontal	-35.25	-49.39	2.03	16.18	Pass
	High	713.5	Horizontal	-35.54	-49.72	2.01	16.18	Pass
10 MHz (QPSK)	Low	704	Horizontal	-35.26	-49.00	2.04	15.78	Pass
	Mid	707.5	Horizontal	-35.46	-49.12	2.03	15.69	Pass
	High	711	Horizontal	-34.97	-49.33	2.02	16.37	Pass
1.4 MHz (16QAM)	Low	699.7	Horizontal	-35.90	-49.12	2.04	15.26	Pass
	Mid	707.5	Horizontal	-35.33	-49.39	2.03	16.10	Pass
	High	715.3	Horizontal	-35.58	-49.76	1.99	16.17	Pass
3 MHz (16QAM)	Low	700.5	Horizontal	-35.58	-48.94	2.04	15.40	Pass
	Mid	707.5	Horizontal	-35.29	-49.12	2.03	15.86	Pass
	High	714.5	Horizontal	-34.97	-49.37	2.00	16.40	Pass
5 MHz (16QAM)	Low	701.5	Horizontal	-35.95	-49.17	2.04	15.27	Pass
	Mid	707.5	Horizontal	-35.44	-49.39	2.03	15.99	Pass
	High	713.5	Horizontal	-35.71	-49.72	2.01	16.01	Pass
10 MHz (16QAM)	Low	704	Horizontal	-35.51	-49.00	2.04	15.53	Pass
	Mid	707.5	Horizontal	-35.75	-49.12	2.03	15.40	Pass
	High	711	Horizontal	-35.32	-49.33	2.02	16.02	Pass

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Variant

LTE Band 13									
Bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Conclusion
5MHz (QPSK)	Low	779.5	Horizontal	-30.43	-47.01	1.81	18.39	34.77	Pass
	Mid	782	Horizontal	-30.46	-47.17	1.81	18.52	34.77	Pass
	High	784.5	Horizontal	-30.70	-47.59	1.83	18.72	34.77	Pass
10MHz (QPSK)	Mid	782	Horizontal	-29.99	-46.58	1.81	18.40	34.77	Pass
5MHz (16QAM)	Low	779.5	Horizontal	-30.66	-47.01	1.81	18.16	34.77	Pass
	Mid	782	Horizontal	-30.69	-47.17	1.81	18.29	34.77	Pass
	High	784.5	Horizontal	-30.93	-47.59	1.83	18.49	34.77	Pass
10MHz (16QAM)	Mid	782	Horizontal	-30.22	-46.58	1.81	18.17	34.77	Pass

LTE Band 17									
Bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Conclusion
5MHz (QPSK)	Low	706.5	Horizontal	-31.42	-47.47	1.92	17.97	34.77	Pass
	Mid	710	Horizontal	-31.76	-47.75	1.90	17.90	34.77	Pass
	High	713.5	Horizontal	-31.76	-47.72	1.91	17.86	34.77	Pass
10MHz (QPSK)	Low	709	Horizontal	-30.98	-47.49	1.91	18.41	34.77	Pass
	Mid	710	Horizontal	-31.09	-47.49	1.90	18.31	34.77	Pass
	High	711	Horizontal	-31.22	-47.48	1.90	18.16	34.77	Pass
5MHz (16QAM)	Low	706.5	Horizontal	-31.52	-47.47	1.92	17.87	34.77	Pass
	Mid	710	Horizontal	-31.92	-47.75	1.90	17.74	34.77	Pass
	High	713.5	Horizontal	-31.90	-47.72	1.91	17.72	34.77	Pass
10MHz (16QAM)	Low	709	Horizontal	-31.36	-47.49	1.91	18.03	34.77	Pass
	Mid	710	Horizontal	-31.43	-47.49	1.90	17.97	34.77	Pass
	High	711	Horizontal	-31.50	-47.48	1.90	17.88	34.77	Pass

Note: 1. EIRP= E.R.P+2.15

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

5.3 Occupied Bandwidth

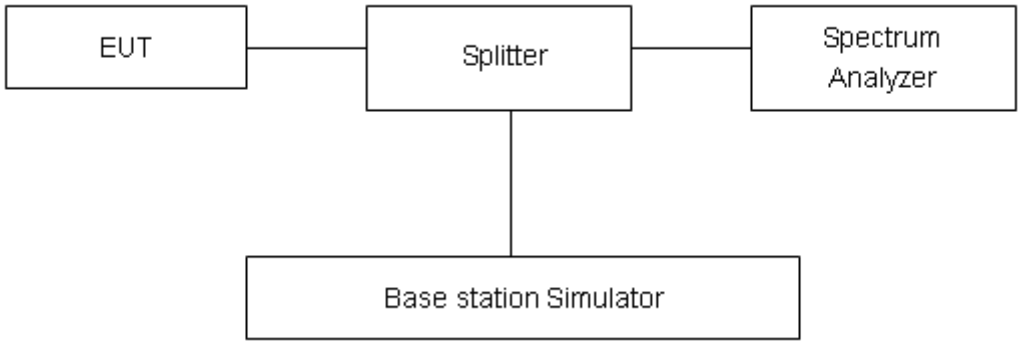
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/12 (1.4MHz).
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/12 (3MHz).
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/12/13/17 (5MHz).
RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4/12/13/17 (10MHz).
RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4 (15MHz/20MHz).
99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=624Hz.

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Test Result

Original

LTE Band 4						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	19957	1710.7	1.1284	1.355
			20175	1732.5	1.1249	1.346
			20393	1754.3	1.1387	1.336
		3	19965	1711.5	2.7528	3.056
			20175	1732.5	2.7463	3.080
			20385	1753.5	2.7429	3.067
		5	19975	1712.5	4.5196	5.025
			20175	1732.5	4.5352	5.039
			20375	1752.5	4.5128	5.025
		10	20000	1715	9.0243	10.100
			20175	1732.5	9.0545	10.130
			20350	1750	9.0521	10.140
		15	20025	1717.5	13.4770	14.810
			20175	1732.5	13.5030	14.850
			20325	1747.5	13.5160	14.830
		20	20050	1720	17.9010	19.350
			20175	1732.5	17.9110	19.290
			20300	1745	17.9240	19.560
	16QAM	1.4	19957	1710.7	1.1229	1.331
			20175	1732.5	1.1280	1.345
			20393	1754.3	1.1198	1.358
		3	19965	1711.5	2.7365	3.061
			20175	1732.5	2.7567	3.068
			20385	1753.5	2.7422	3.075
		5	19975	1712.5	4.5450	5.038
			20175	1732.5	4.5241	5.035
			20375	1752.5	4.5463	5.075
		10	20000	1715	9.0421	10.080
			20175	1732.5	9.0497	10.080
			20350	1750	9.0514	10.070
		15	20025	1717.5	13.5090	14.810
			20175	1732.5	13.5140	14.780
			20325	1747.5	13.5220	14.730
		20	20050	1720	17.9230	19.440
			20175	1732.5	17.9460	19.380
			20300	1745	17.9210	19.400

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 12						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	23017	699.7	1.1294	1.356
			23095	707.5	1.1236	1.339
			23173	715.3	1.1371	1.332
		3	23025	700.5	2.7473	3.057
			23095	707.5	2.7497	3.082
			23165	714.5	2.7472	3.069
		5	23035	701.5	4.5196	5.014
			23095	707.5	4.5480	5.054
			23155	713.5	4.5106	5.018
		10	23060	704	9.0540	10.100
			23095	707.5	9.0868	10.160
			23130	711	9.0199	10.040
	16QAM	1.4	23017	699.7	1.1230	1.324
			23095	707.5	1.1335	1.339
			23173	715.3	1.1205	1.347
		3	23025	700.5	2.7347	3.059
			23095	707.5	2.7651	3.077
			23165	714.5	2.7418	3.080
		5	23035	701.5	4.5389	5.039
			23095	707.5	4.5249	5.044
			23155	713.5	4.5343	5.048
		10	23060	704	9.0651	10.140
			23095	707.5	9.0922	10.120
			23130	711	9.0228	10.030

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Variant

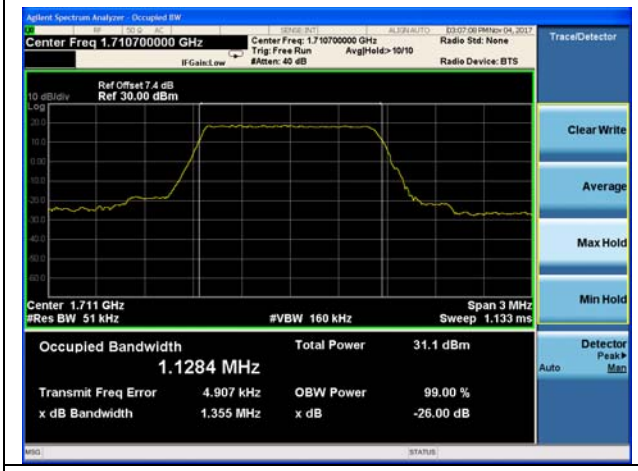
LTE Band 13						
RB	**Modulation**	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**99% Power Bandwidth(MHz)**	**-26dBc Bandwidth(MHz)**
100%	QPSK	5	23205	779.5	4.5394	5.001
			23230	782	4.5155	5.016
			23255	784.5	4.5386	5.042
		10	23230	782	9.0277	10.14
	16QAM	5	23205	779.5	4.5119	5.007
			23230	782	4.5524	5.008
			23255	784.5	4.5189	5.028
		10	23230	782	9.0099	10.02

LTE Band 17						
RB	**Modulation**	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**99% Power Bandwidth(MHz)**	**-26dBc Bandwidth(MHz)**
100%	QPSK	5	23755	706.5	4.5315	5.054
			23790	710	4.5133	4.987
			23825	713.5	4.5395	4.996
		10	23780	709	9.0732	10.13
			23790	710	9.0191	9.966
			23800	711	9.032	10.03
	16QAM	5	23755	706.5	4.5561	5.060
			23790	710	4.5408	5.025
			23825	713.5	4.5177	5.008
		10	23780	709	9.0756	10.02
			23790	710	9.0226	10.11
			23800	711	9.0213	9.997

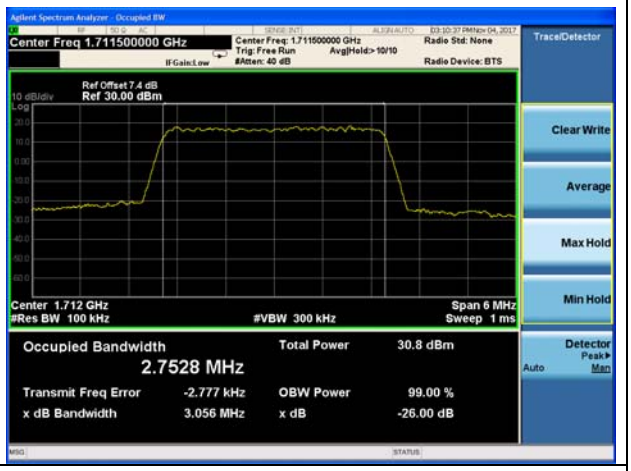
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Original

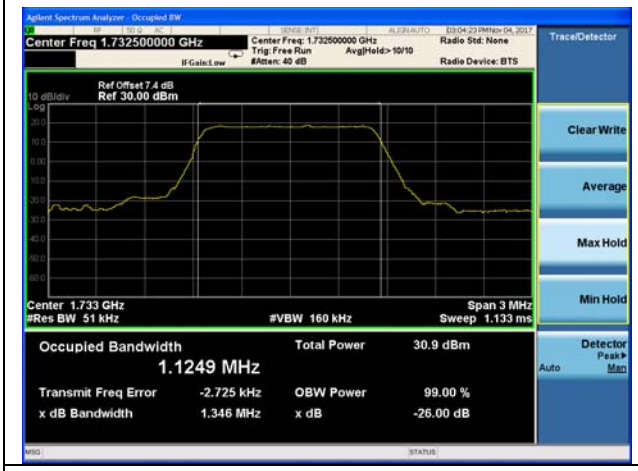
LTE Band 4 QPSK 1.4MHz CH-Low



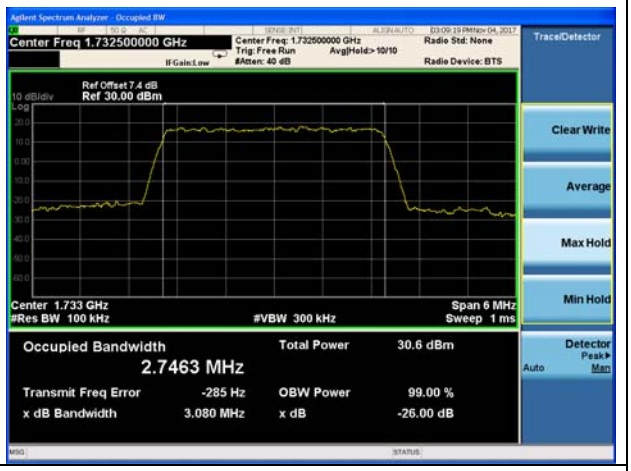
LTE Band 4 QPSK 3MHz CH-Low



LTE Band 4 QPSK 1.4MHz CH-Middle



LTE Band 4 QPSK 3MHz CH-Middle

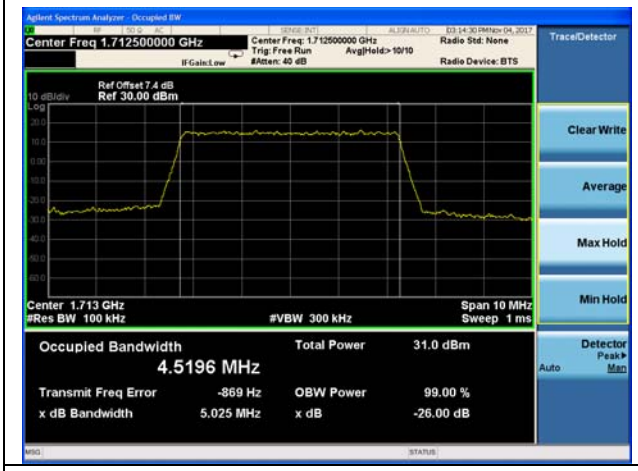


LTE Band 4 QPSK 1.4MHz CH-High

LTE Band 4 QPSK 3MHz CH-High

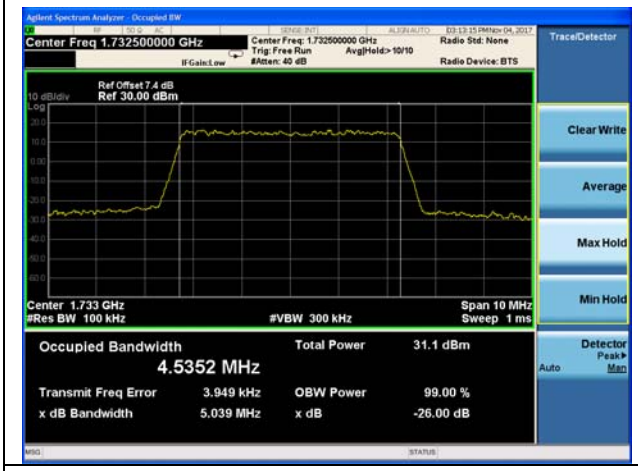
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 QPSK 5MHz CH-Low



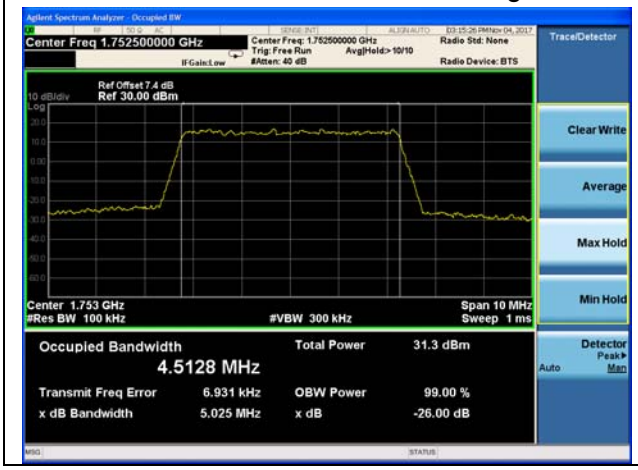
LTE Band 4 QPSK 10MHz CH-Low

LTE Band 4 QPSK 5MHz CH-Middle



LTE Band 4 QPSK 10MHz CH-Middle

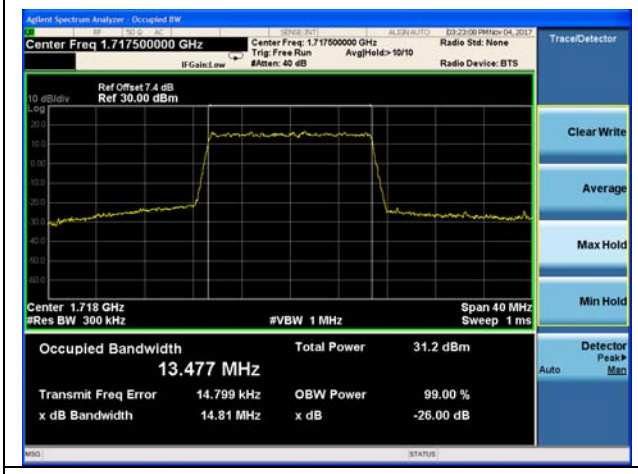
LTE Band 4 QPSK 5MHz CH-High



LTE Band 4 QPSK 10MHz CH-High

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 QPSK 15MHz CH-Low



LTE Band 4 QPSK 20MHz CH-Low

LTE Band 4 QPSK 15MHz CH-Middle

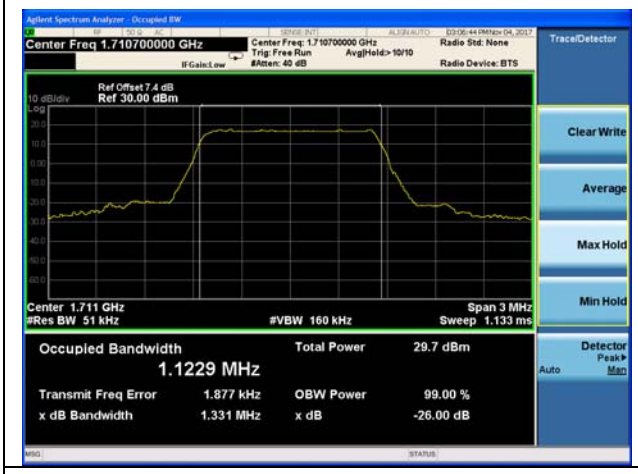
LTE Band 4 QPSK 20MHz CH-Middle

LTE Band 4 QPSK 15MHz CH-High

LTE Band 4 QPSK 20MHz CH-High

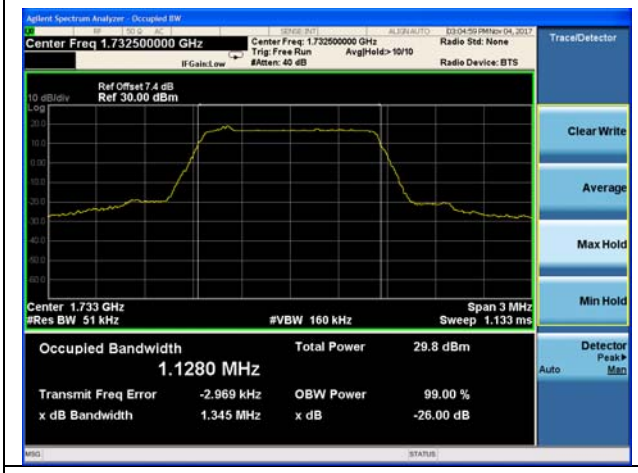
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 16QAM 1.4MHz CH-Low



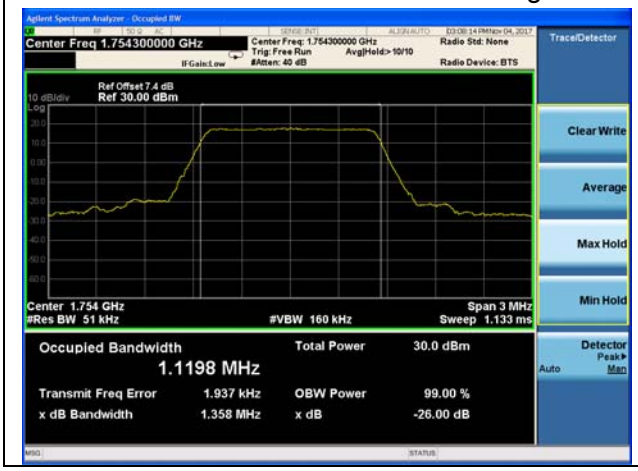
LTE Band 4 16QAM 3MHz CH-Low

LTE Band 4 16QAM 1.4MHz CH-Middle



LTE Band 4 16QAM 3MHz CH-Middle

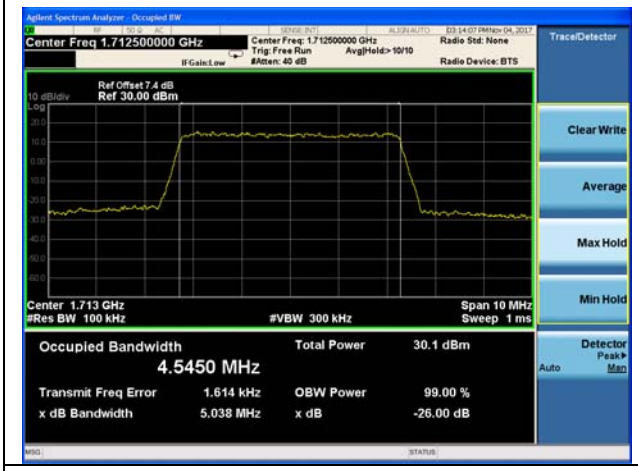
LTE Band 4 16QAM 1.4MHz CH-High



LTE Band 4 16QAM 3MHz CH-High

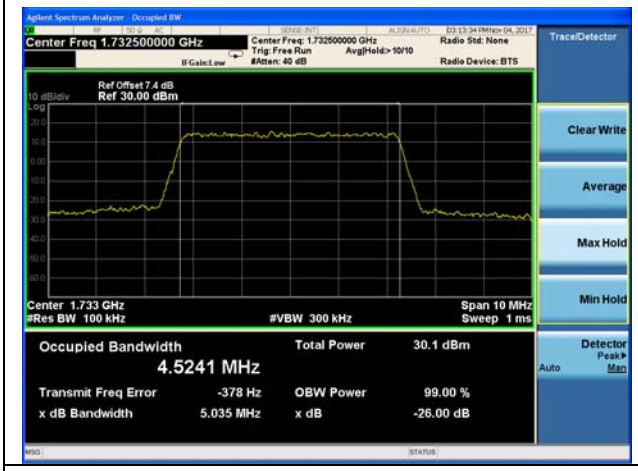
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 16QAM 5MHz CH-Low



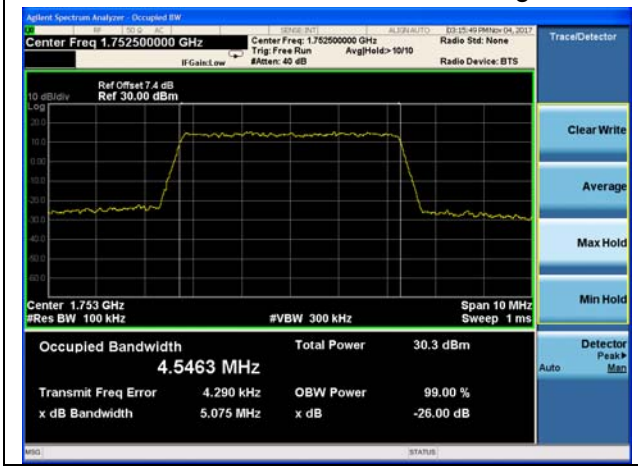
LTE Band 4 16QAM 10MHz CH-Low

LTE Band 4 16QAM 5MHz CH-Middle



LTE Band 4 16QAM 10MHz CH-Middle

LTE Band 4 16QAM 5MHz CH-High

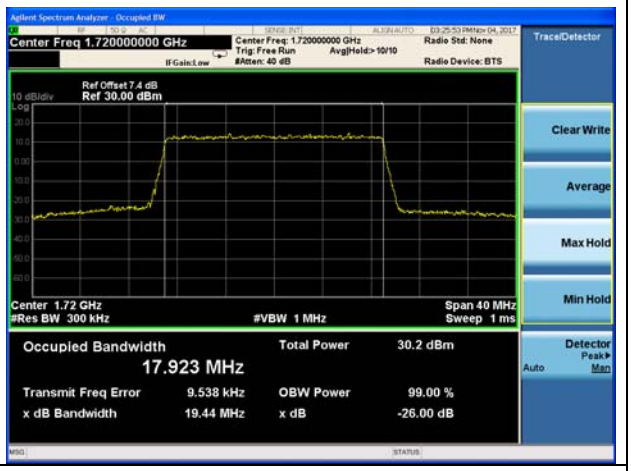


LTE Band 4 16QAM 10MHz CH-High

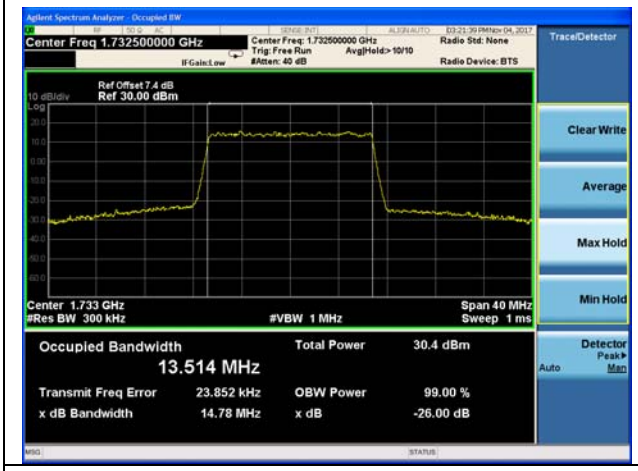
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 16QAM 15MHz CH-Low

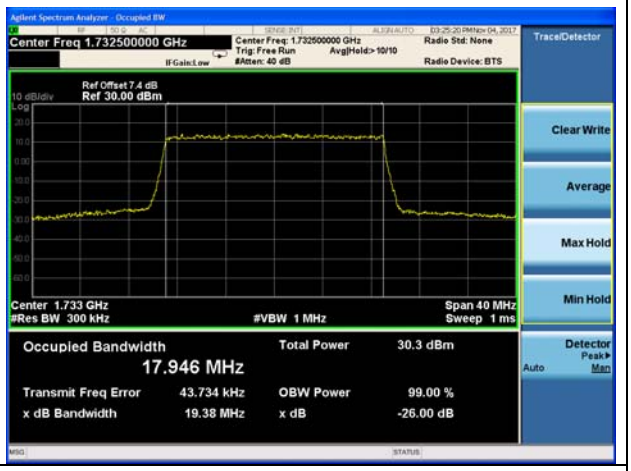
LTE Band 4 16QAM 20MHz CH-Low



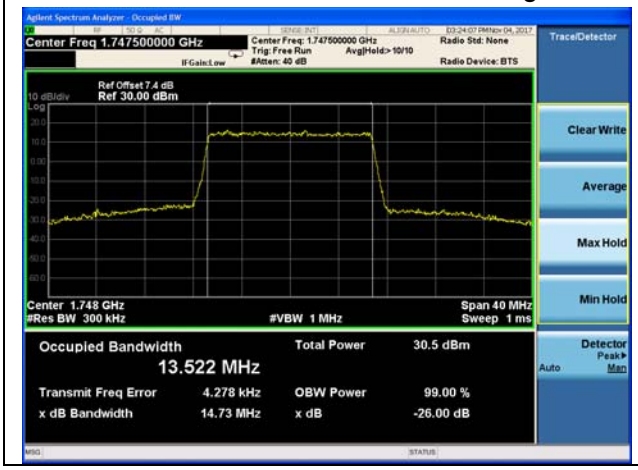
LTE Band 4 16QAM 15MHz CH-Middle



LTE Band 4 16QAM 20MHz CH-Middle



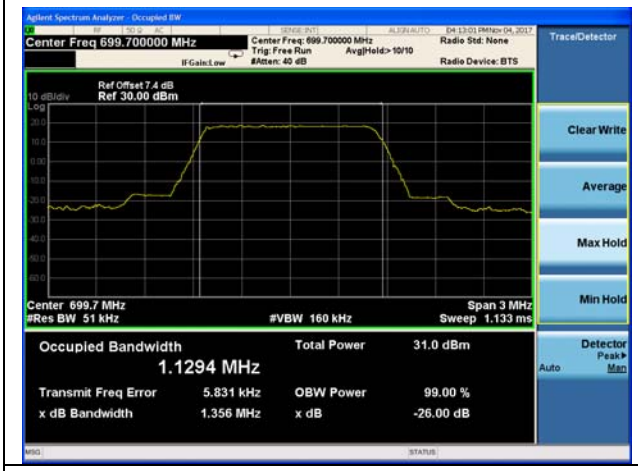
LTE Band 4 16QAM 15MHz CH-High



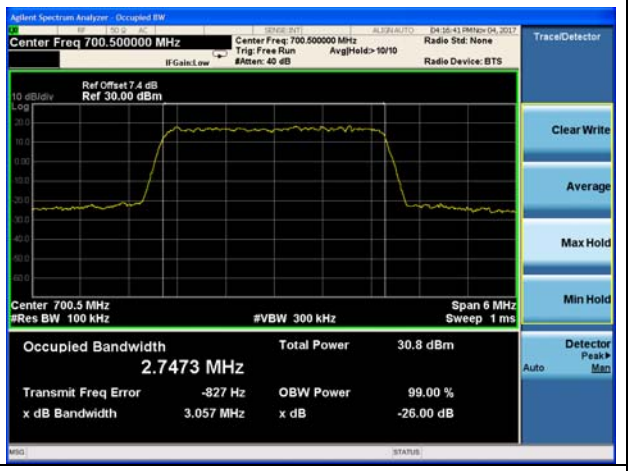
LTE Band 4 16QAM 20MHz CH-High

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

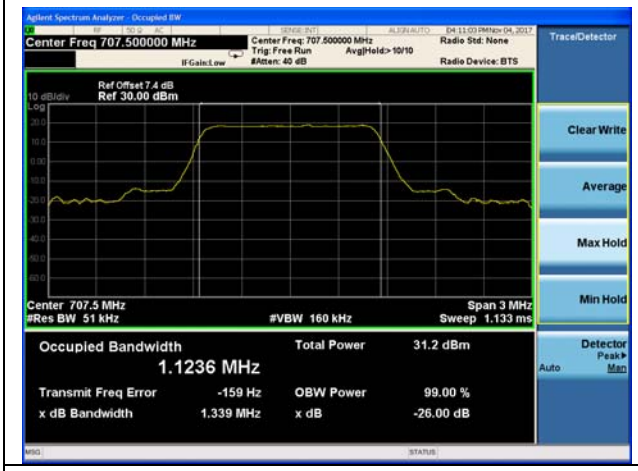
LTE Band 12 QPSK 1.4MHz CH-Low



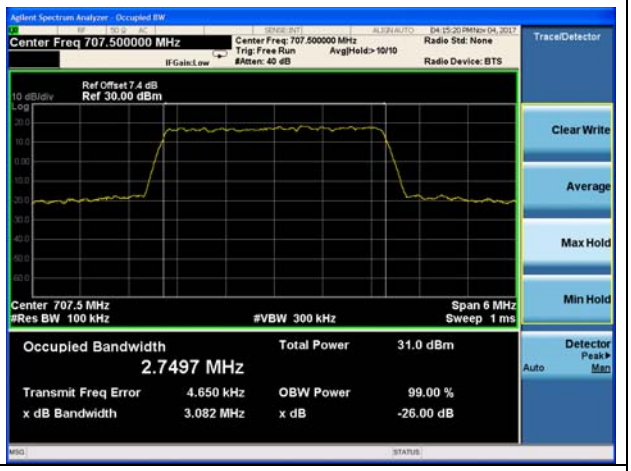
LTE Band 12 QPSK 3MHz CH-Low



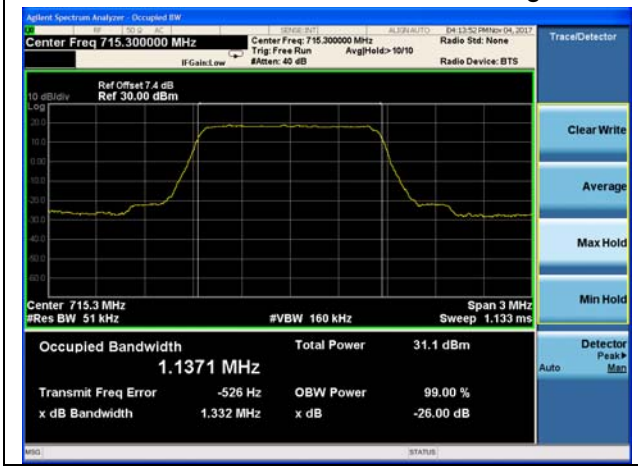
LTE Band 12 QPSK 1.4MHz CH-Middle



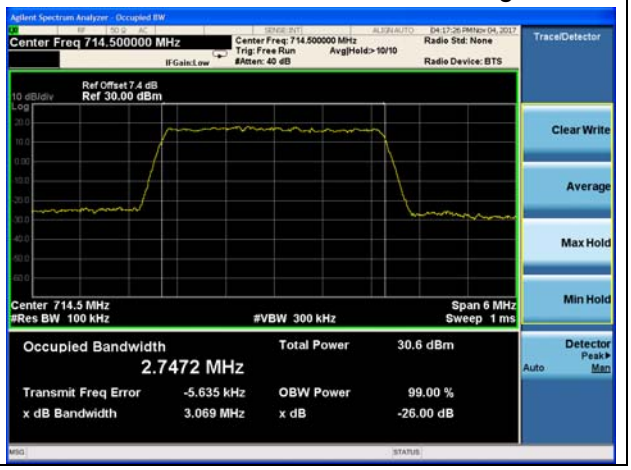
LTE Band 12 QPSK 3MHz CH-Middle



LTE Band 12 QPSK 1.4MHz CH-High

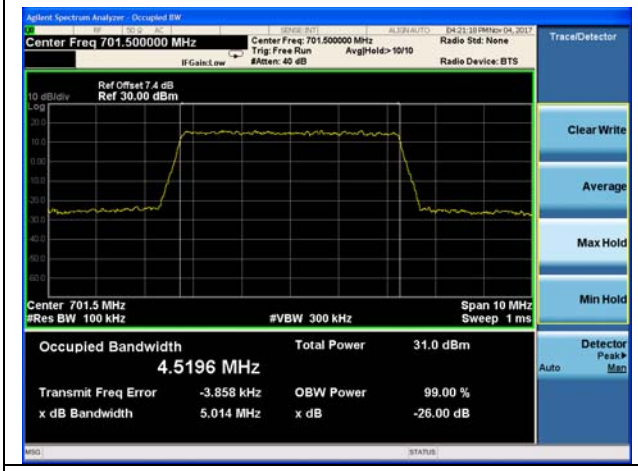


LTE Band 12 QPSK 3MHz CH-High



This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 12 QPSK 5MHz CH-Low

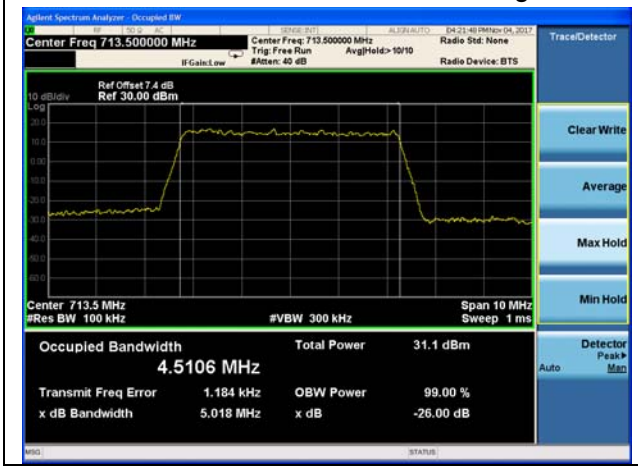


LTE Band 12 QPSK 10MHz CH-Low

LTE Band 12 QPSK 5MHz CH-Middle

LTE Band 12 QPSK 10MHz CH-Middle

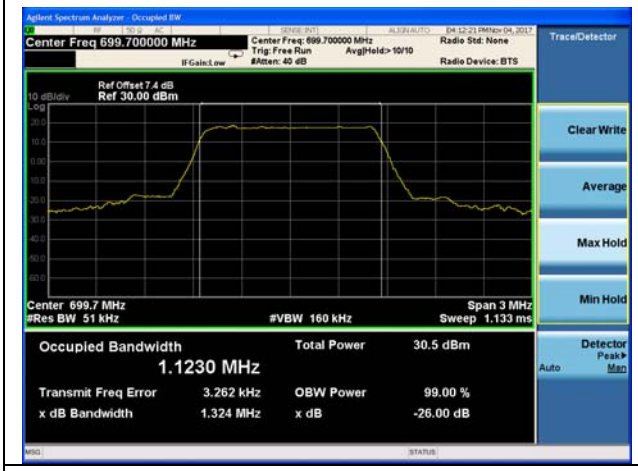
LTE Band 12 QPSK 5MHz CH-High



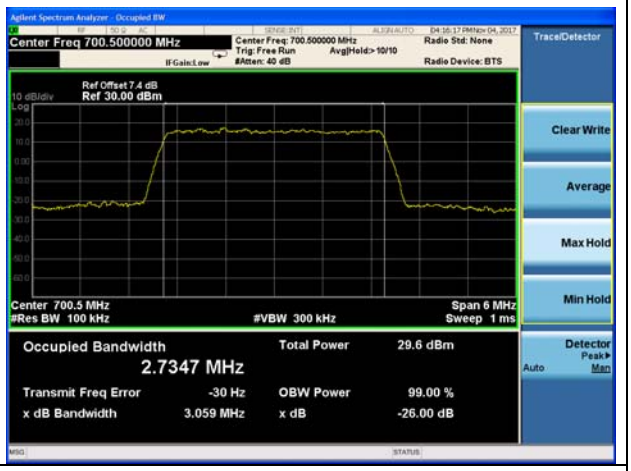
LTE Band 12 QPSK 10MHz CH-High

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

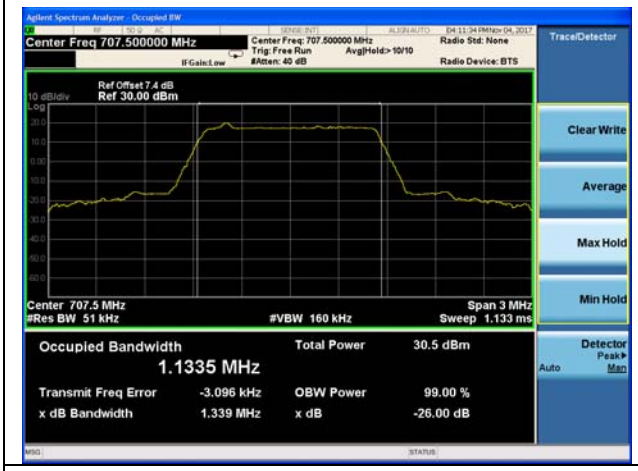
LTE Band 12 16QAM 1.4MHz CH-Low



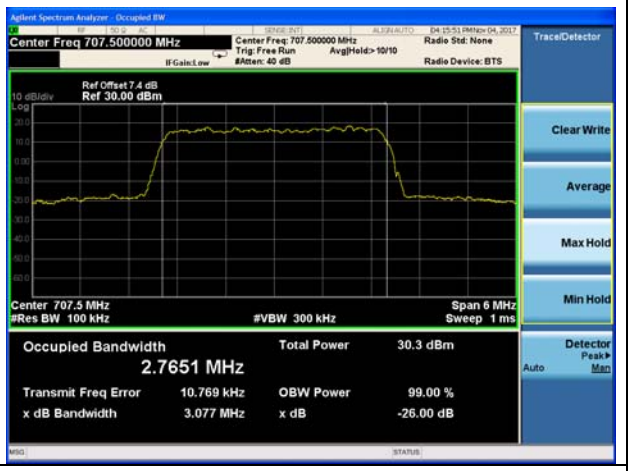
LTE Band 12 16QAM 3MHz CH-Low



LTE Band 12 16QAM 1.4MHz CH-Middle

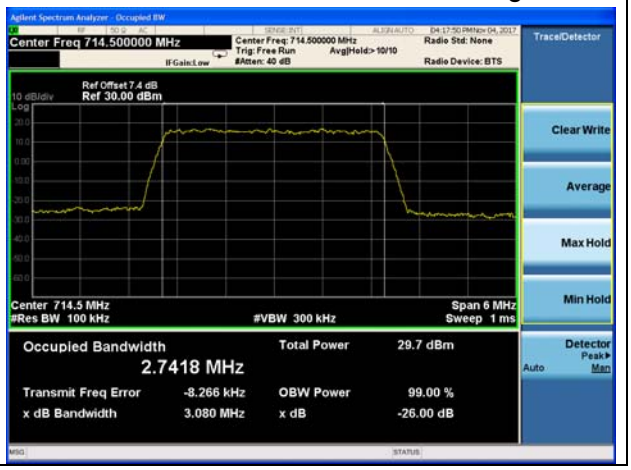


LTE Band 12 16QAM 3MHz CH-Middle



LTE Band 12 16QAM 1.4MHz CH-High

LTE Band 12 16QAM 3MHz CH-High

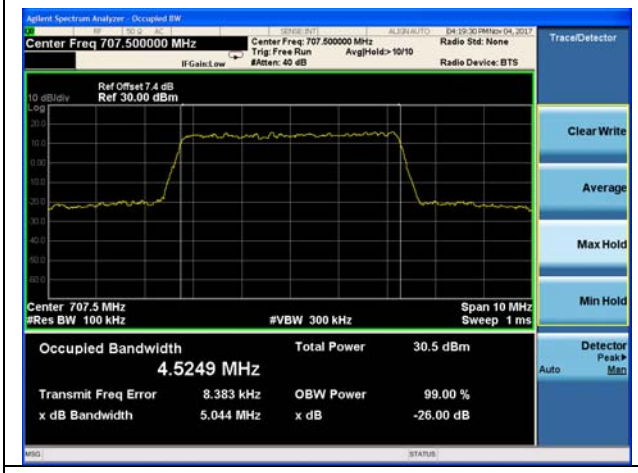


This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 12 16QAM 5MHz CH-Low

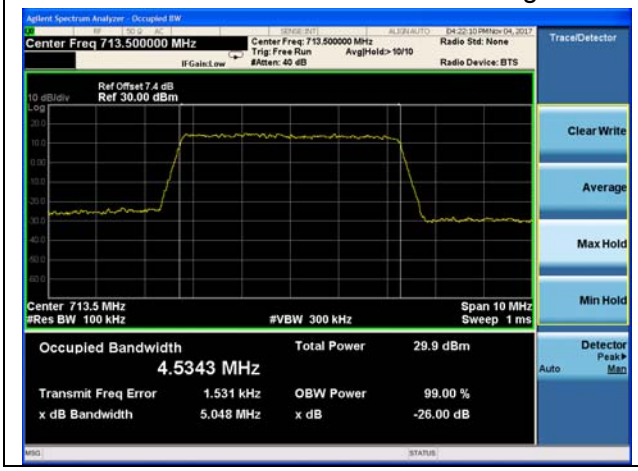
LTE Band 12 16QAM 10MHz CH-Low

LTE Band 12 16QAM 5MHz CH-Middle



LTE Band 12 16QAM 10MHz CH-Middle

LTE Band 12 16QAM 5MHz CH-High

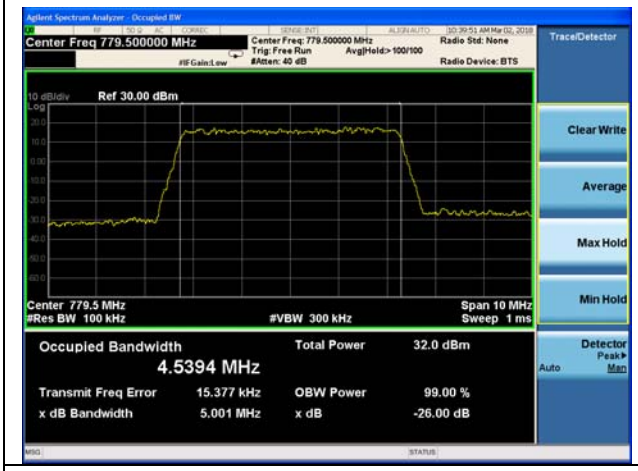


LTE Band 12 16QAM 10MHz CH-High

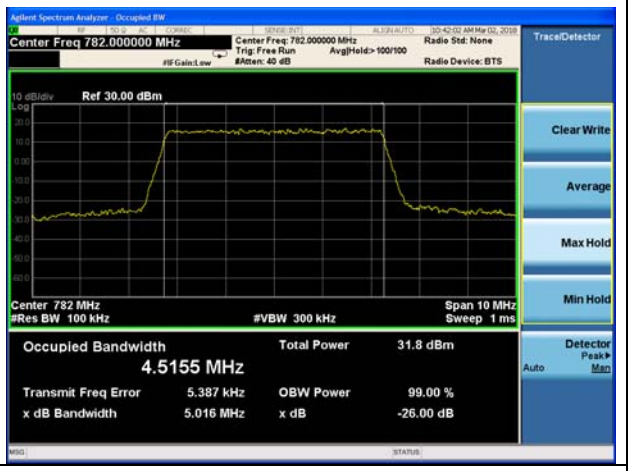
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Variant

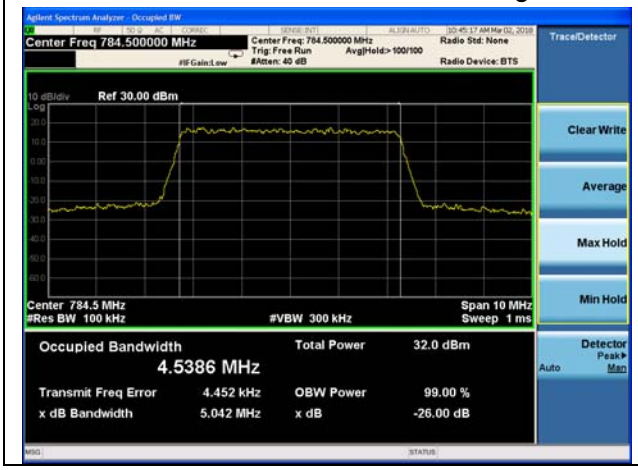
LTE Band 13 QPSK 5MHz CH-Low



LTE Band 13 QPSK 5MHz CH-Middle



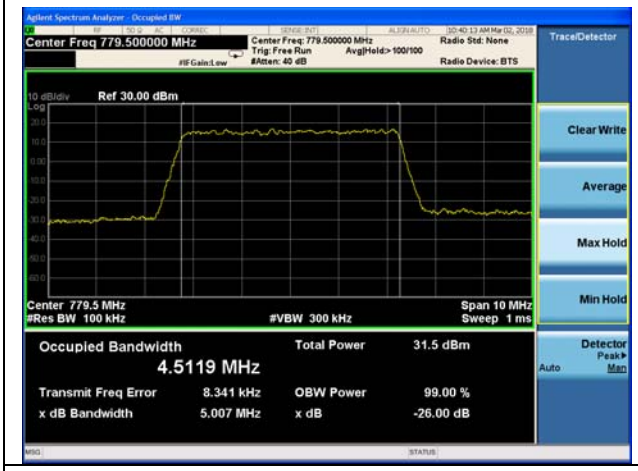
LTE Band 13 QPSK 5MHz CH-High



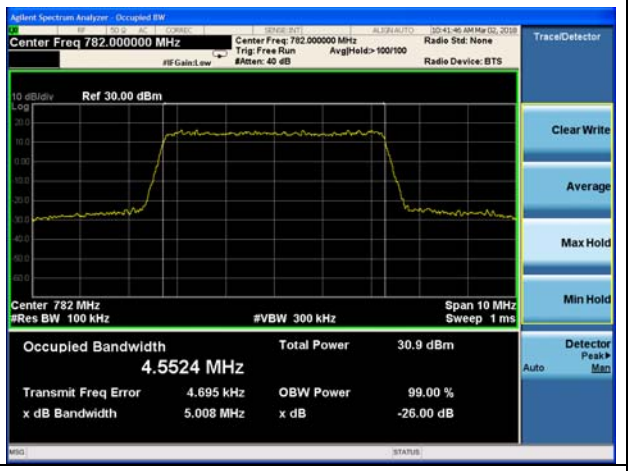
LTE Band 13 QPSK 10MHz CH-Middle

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 13 16QAM 5MHz CH-Low



LTE Band 13 16QAM 5MHz CH-Middle

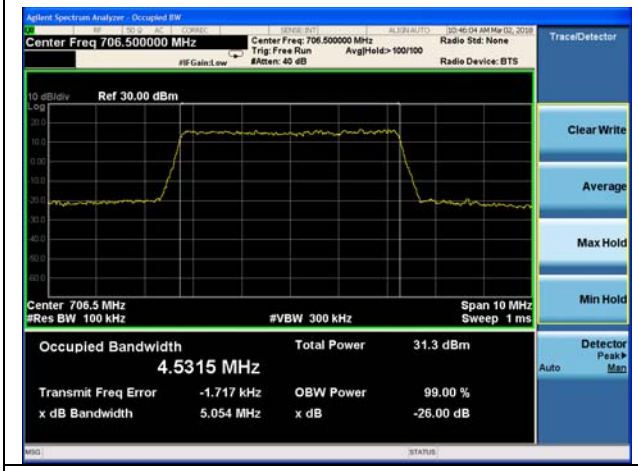


LTE Band 13 16QAM 5MHz CH-High

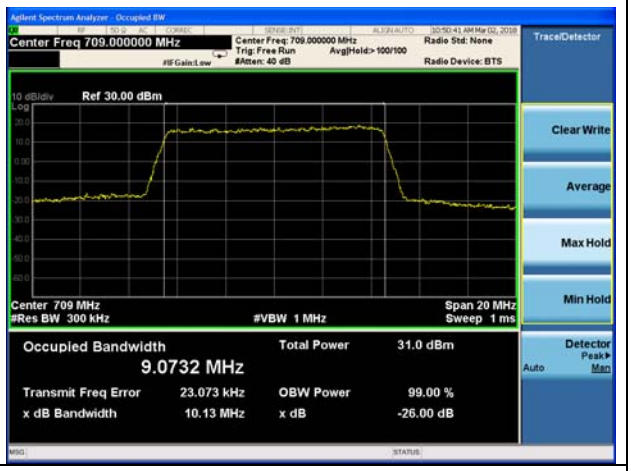
LTE Band 13 16QAM 10MHz CH-Middle

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

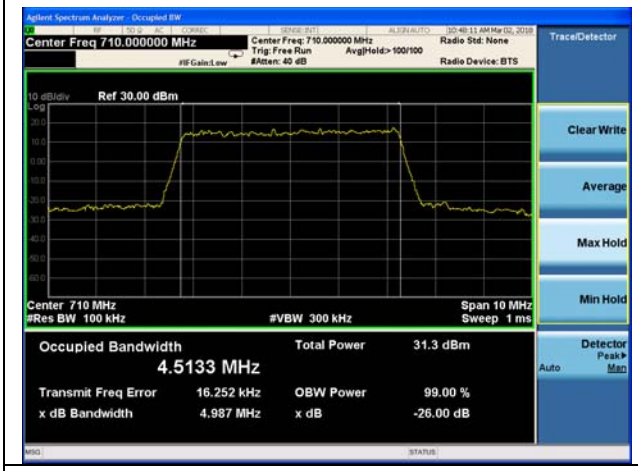
LTE Band 17 QPSK 5MHz CH-Low



LTE Band 17 QPSK 10MHz CH-Low

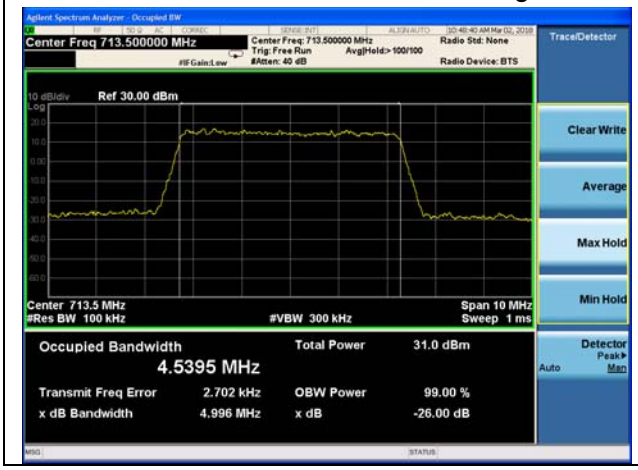


LTE Band 17 QPSK 5MHz CH-Middle



LTE Band 17 QPSK 10MHz CH-Middle

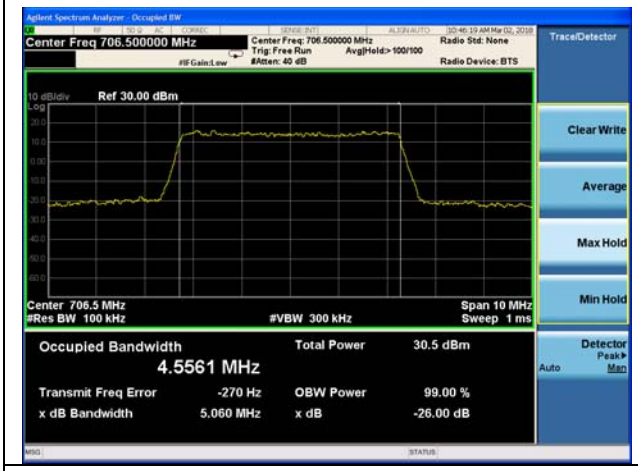
LTE Band 17 QPSK 5MHz CH-High



LTE Band 17 QPSK 10MHz CH-High

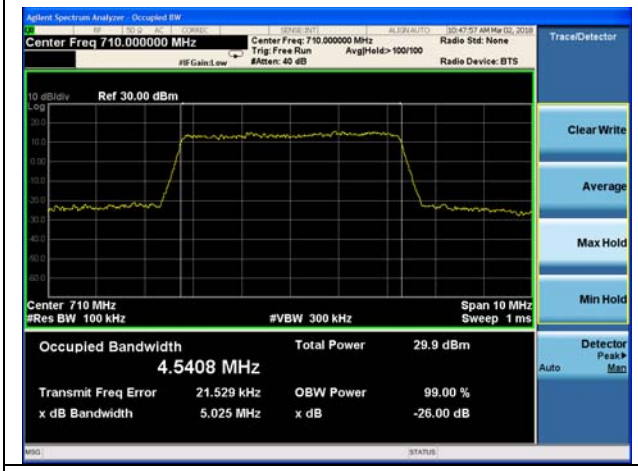
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 17 16QAM 5MHz CH-Low

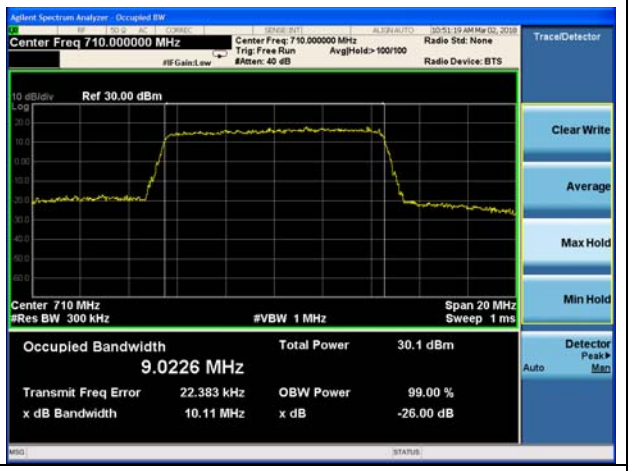


LTE Band 17 16QAM 10MHz CH-Low

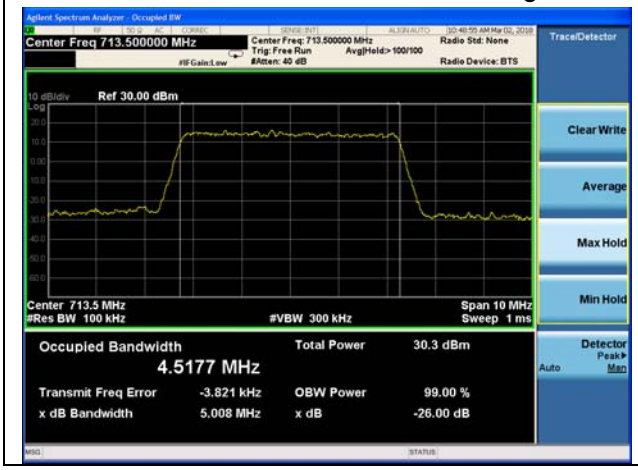
LTE Band 17 16QAM 5MHz CH-Middle



LTE Band 17 16QAM 10MHz CH-Middle



LTE Band 17 16QAM 5MHz CH-High



LTE Band 17 16QAM 10MHz CH-High

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

5.4 Band Edge Compliance

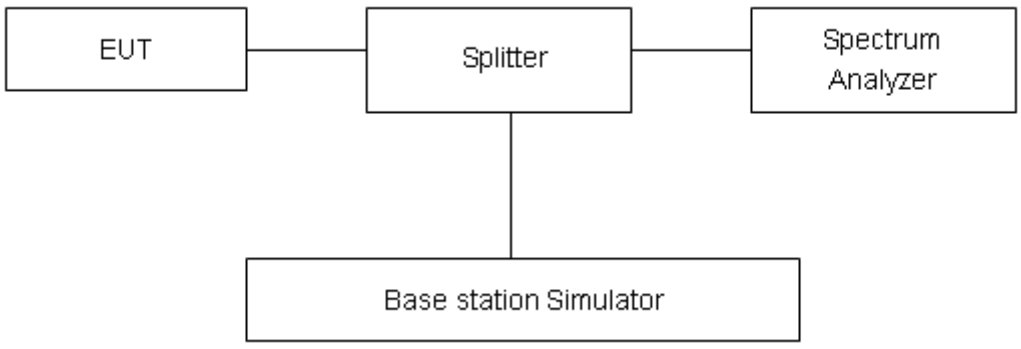
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.
The testing follows KDB 971168 D01 v03 Section 6.0
1.The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 4/12 (1.4MHz).
RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 4/12 (3MHz).
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/12/13/17 (5MHz).
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/12/13/17 (10MHz).
RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 4 (15MHz).
RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 4 (20MHz) on spectrum analyzer.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. Checked that all the results comply with the emission limit line.

Test Setup



This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Limits

Rule Part 27.53(h)/ specifies that " for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB"
Part 27.53(g) specifies that " For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log10 (P) dB."

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=0.684dB.

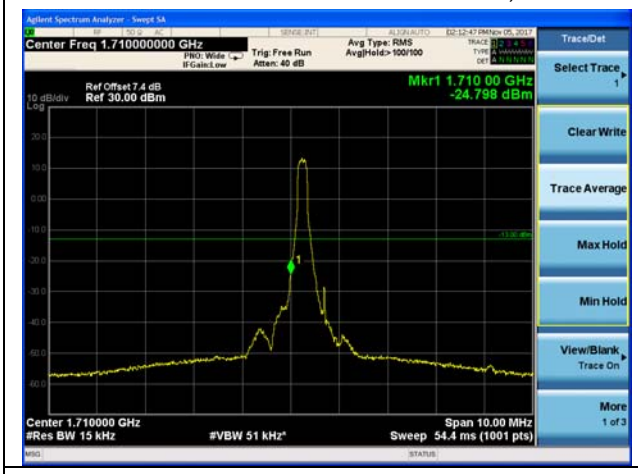
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

Test Result

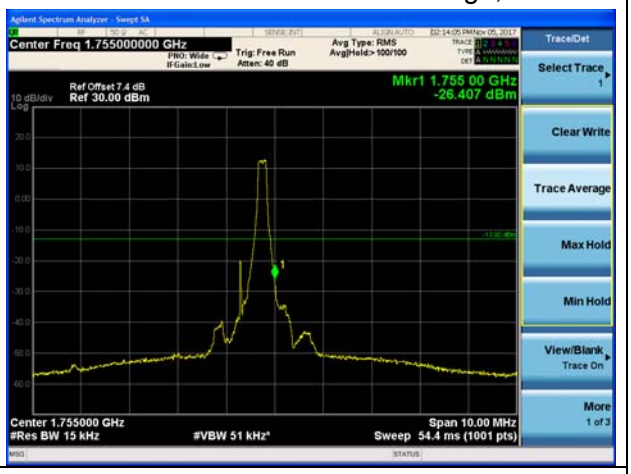
All the test traces in the plots shows the test results clearly.

Original

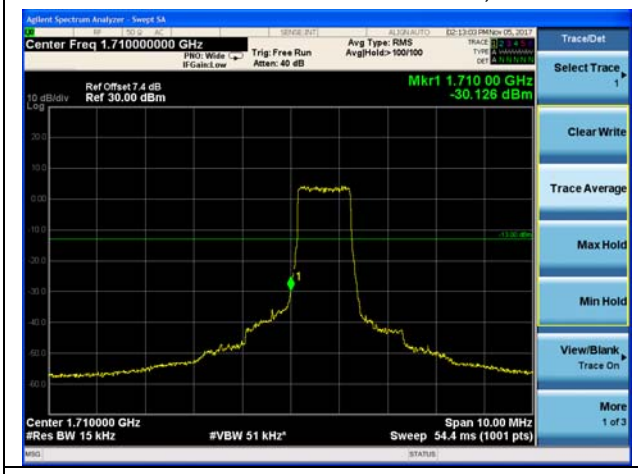
LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB



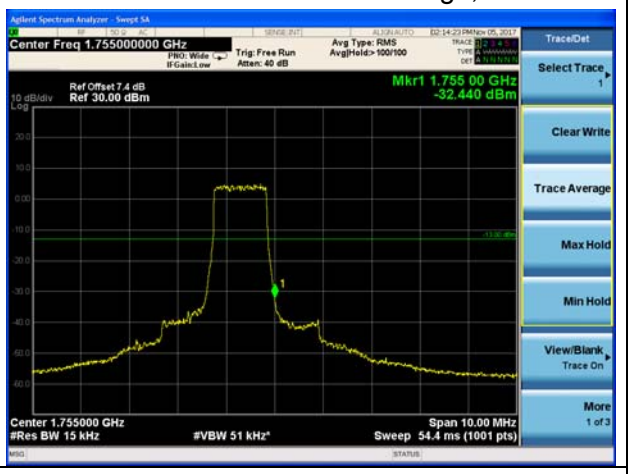
LTE Band 4 QPSK 1.4MHz CH-High, 1 RB



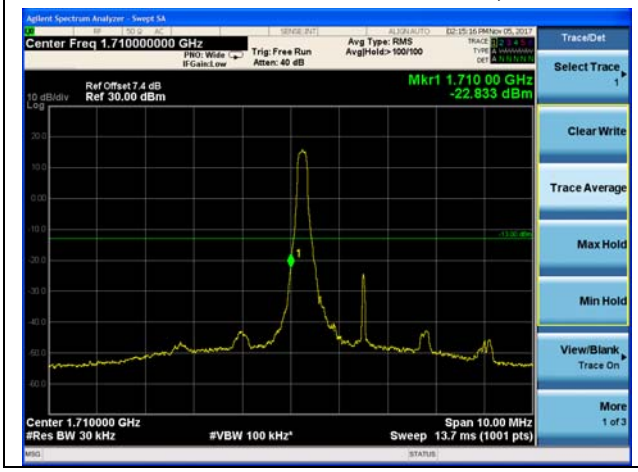
LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB



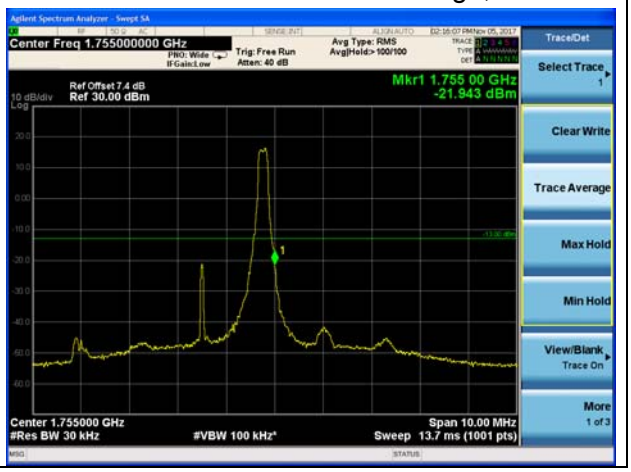
LTE Band 4 QPSK 1.4MHz CH-High, 100%RB



LTE Band 4 QPSK 3MHz CH-Low, 1 RB



LTE Band 4 QPSK 3MHz CH-High, 1 RB

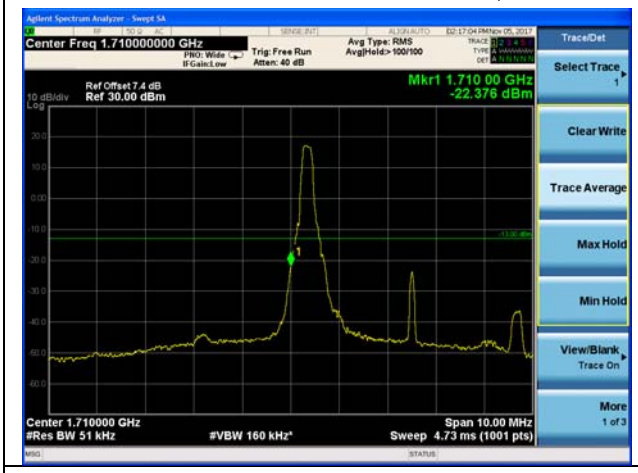


This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

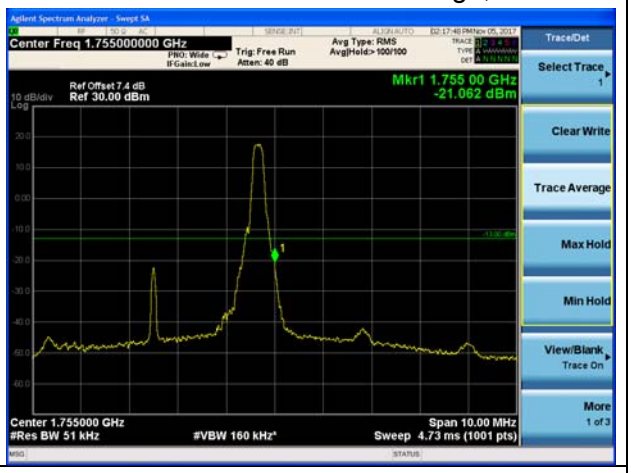
LTE Band 4 QPSK 3MHz CH-Low, 100%RB

LTE Band 4 QPSK 3MHz CH-High, 100%RB

LTE Band 4 QPSK 5MHz CH-Low, 1 RB



LTE Band 4 QPSK 5MHz CH-High, 1 RB

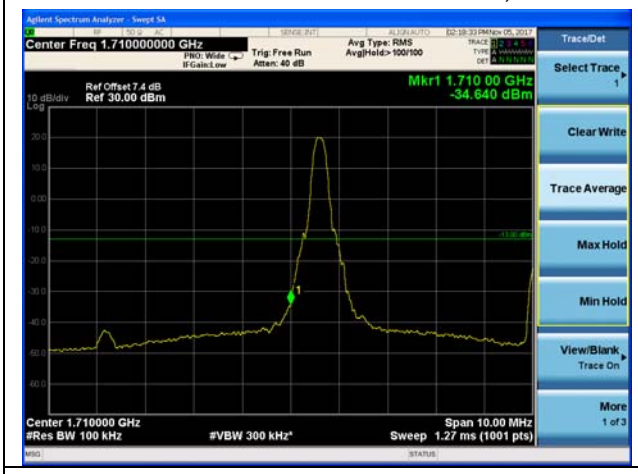


LTE Band 4 QPSK 5MHz CH-Low, 100%RB

LTE Band 4 QPSK 5MHz CH-High, 100%RB

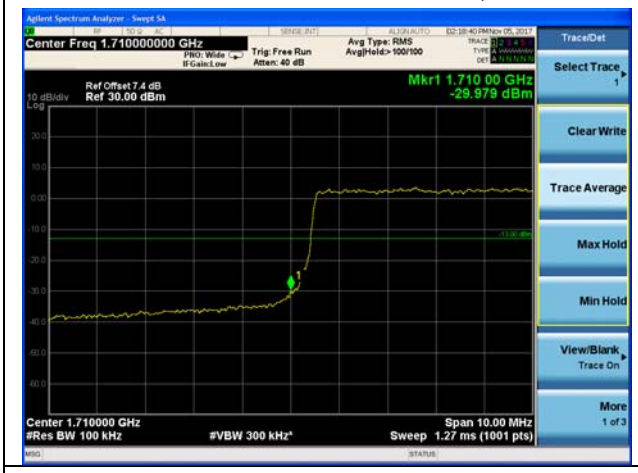
This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 QPSK 10MHz CH-Low, 1 RB



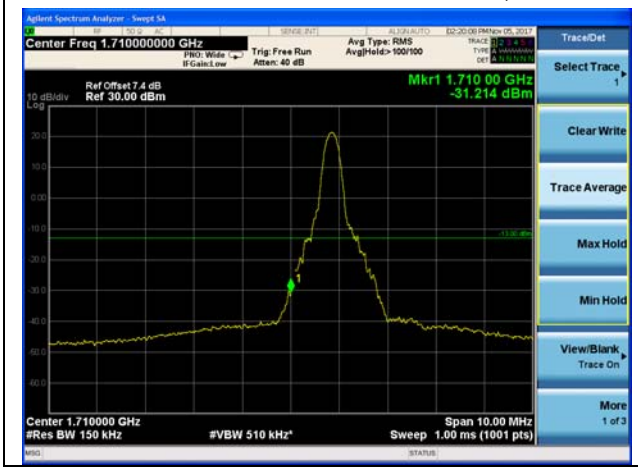
LTE Band 4 QPSK 10MHz CH-High, 1 RB

LTE Band 4 QPSK 10MHz CH-Low, 100%RB



LTE Band 4 QPSK 10MHz CH-High, 100%RB

LTE Band 4 QPSK 15MHz CH-Low, 1 RB



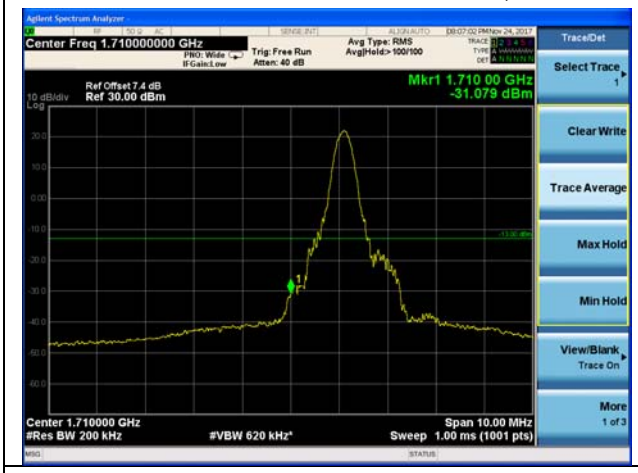
LTE Band 4 QPSK 15MHz CH-High, 1 RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 QPSK 15MHz CH-Low, 100%RB

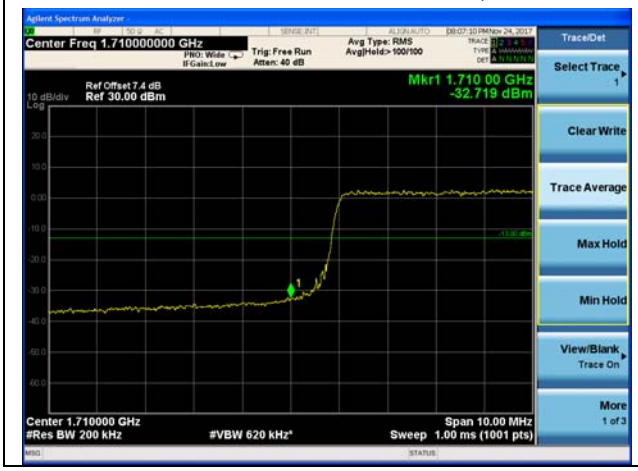
LTE Band 4 QPSK 15MHz CH-High, 100%RB

LTE Band 4 QPSK 20MHz CH-Low, 1 RB



LTE Band 4 QPSK 20MHz CH-High, 1 RB

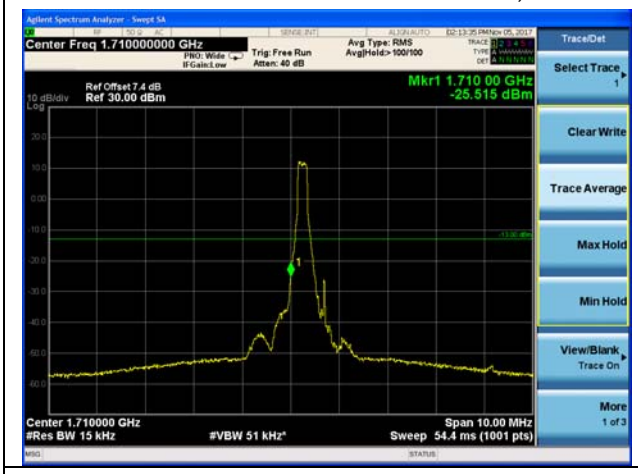
LTE Band 4 QPSK 20MHz CH-Low, 100%RB



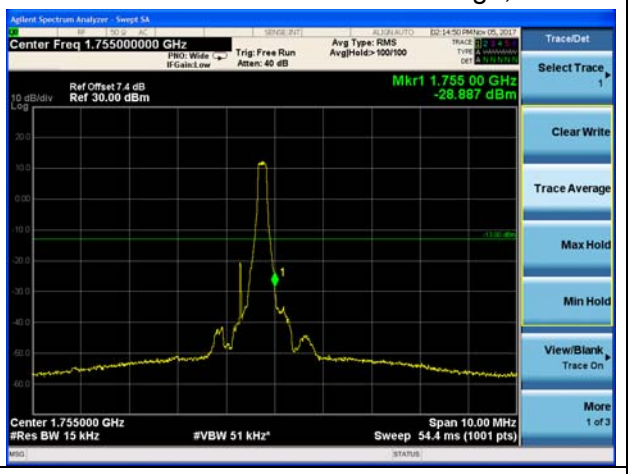
LTE Band 4 QPSK 20MHz CH-High, 100%RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

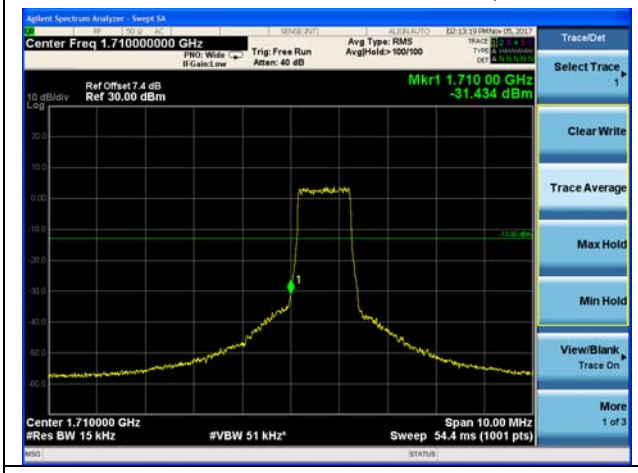
LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB



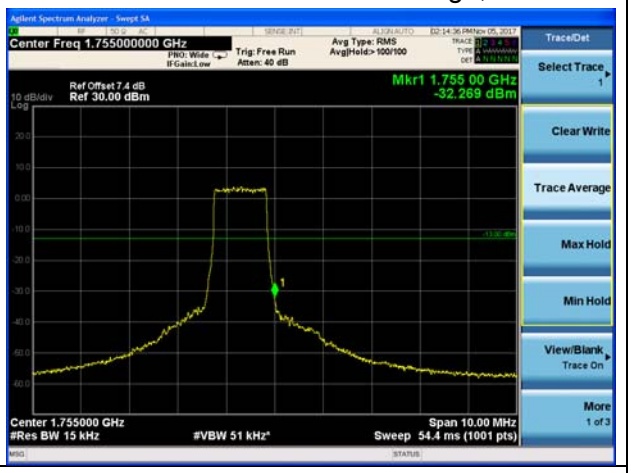
LTE Band 4 16QAM 1.4MHz CH-High, 1 RB



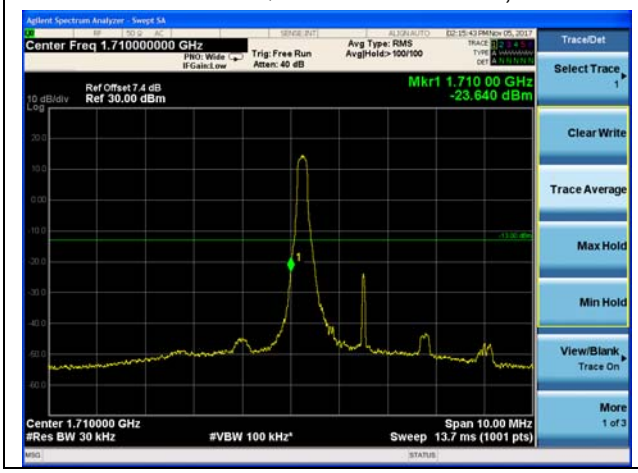
LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB



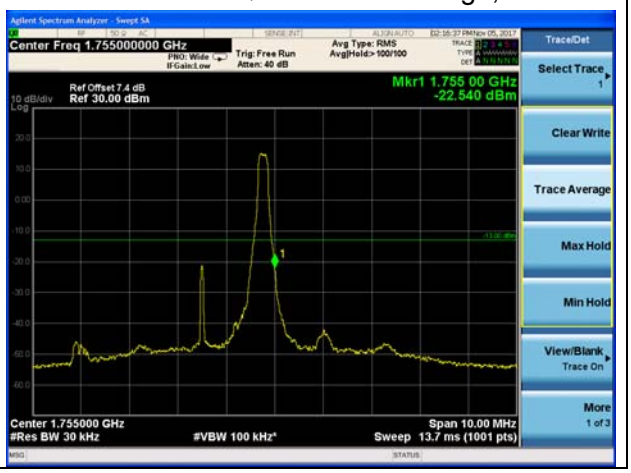
LTE Band 4 16QAM 1.4MHz CH-High, 100%RB



LTE Band 4 16QAM 3MHz CH-Low, 1 RB



LTE Band 4 16QAM 3MHz CH-High, 1 RB

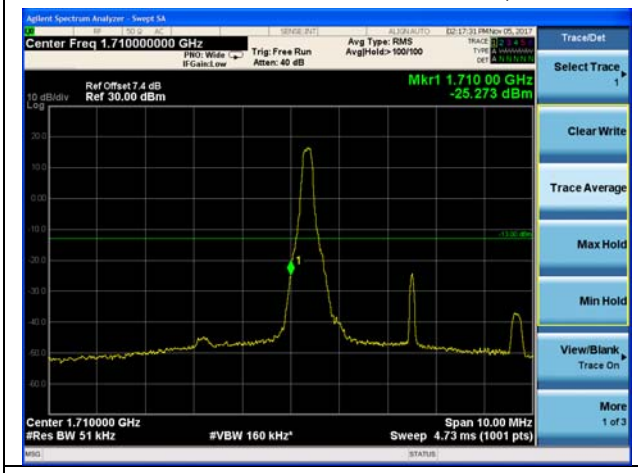


This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

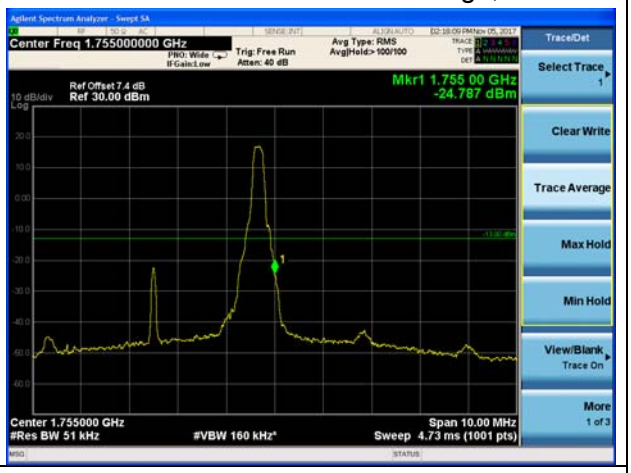
LTE Band 4 16QAM 3MHz CH-Low, 100%RB

LTE Band 4 16QAM 3MHz CH-High, 100%RB

LTE Band 4 16QAM 5MHz CH-Low, 1 RB



LTE Band 4 16QAM 5MHz CH-High, 1 RB

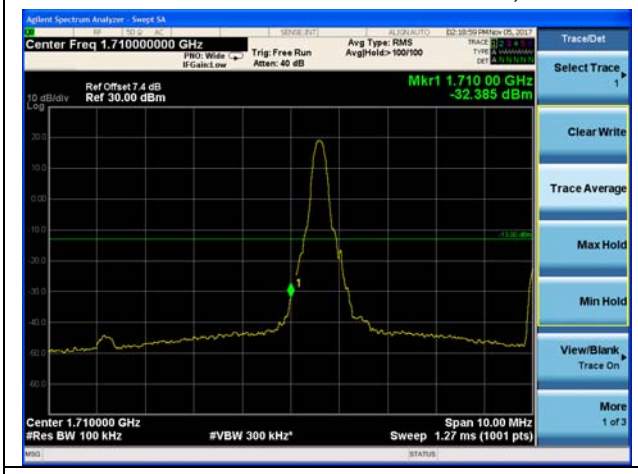


LTE Band 4 16QAM 5MHz CH-Low, 100%RB

LTE Band 4 16QAM 5MHz CH-High, 100%RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

LTE Band 4 16QAM 10MHz CH-Low, 1 RB

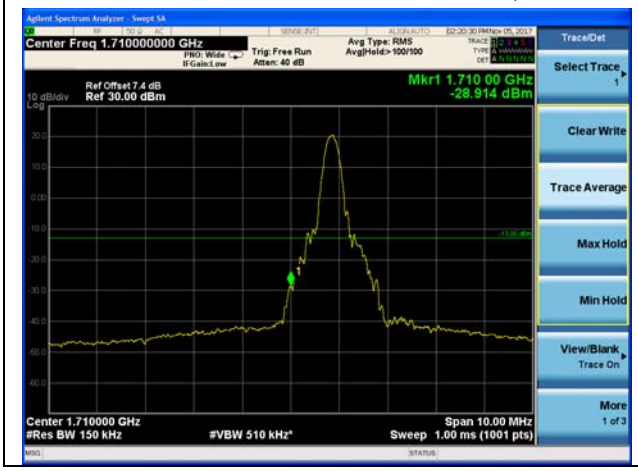


LTE Band 4 16QAM 10MHz CH-High, 1 RB

LTE Band 4 16QAM 10MHz CH-Low, 100%RB

LTE Band 4 16QAM 10MHz CH-High, 100%RB

LTE Band 4 16QAM 15MHz CH-Low, 1 RB



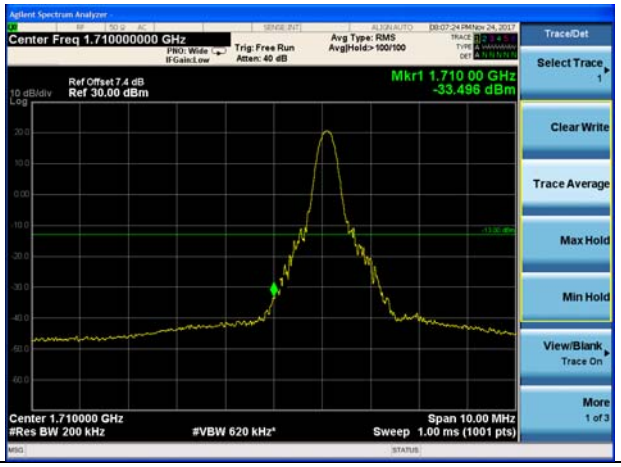
LTE Band 4 16QAM 15MHz CH-High, 1 RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

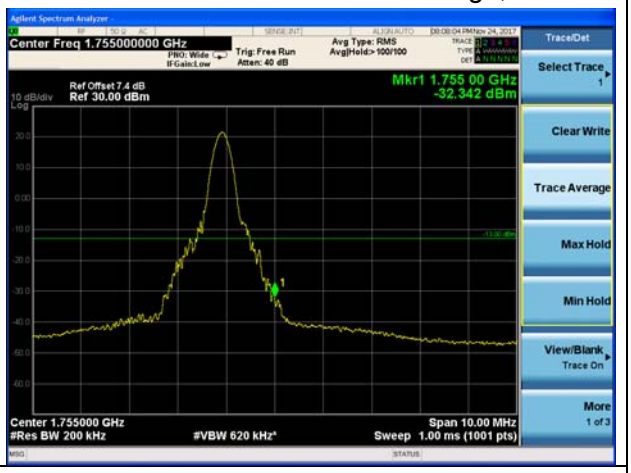
LTE Band 4 16QAM 15MHz CH-Low, 100%RB

LTE Band 4 16QAM 15MHz CH-High, 100%RB

LTE Band 4 16QAM 20MHz CH-Low, 1 RB



LTE Band 4 16QAM 20MHz CH-High, 1 RB

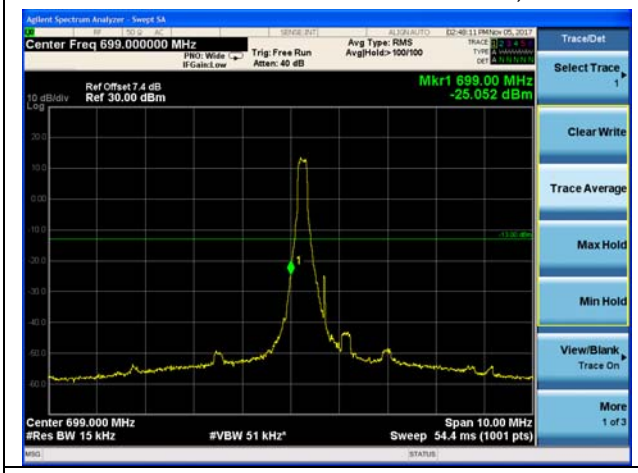


LTE Band 4 16QAM 20MHz CH-Low, 100%RB

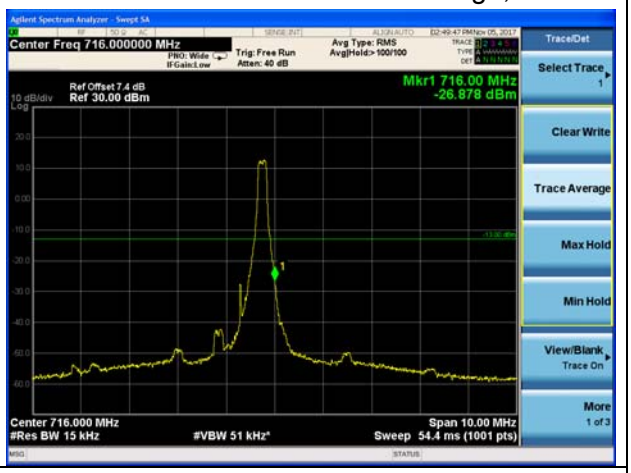
LTE Band 4 16QAM 20MHz CH-High, 100%RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

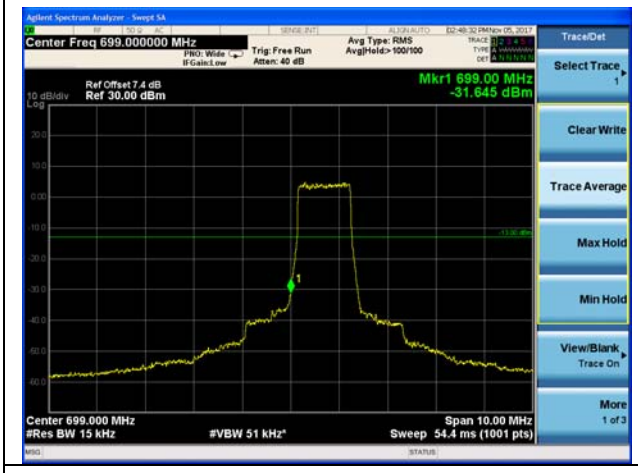
LTE Band 12 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 12 QPSK 1.4MHz CH-High, 1 RB

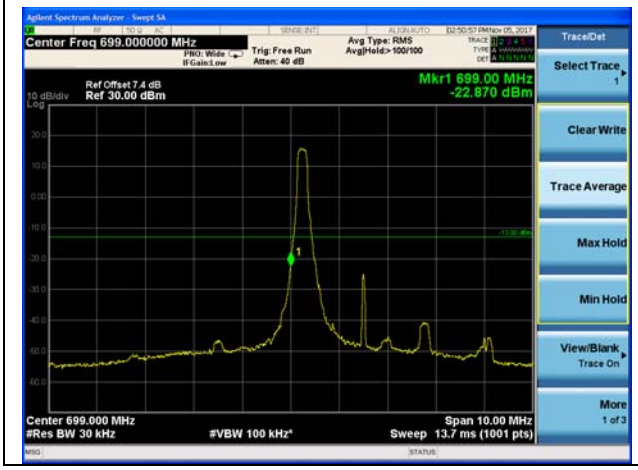


LTE Band 12 QPSK 1.4MHz CH-Low, 100%RB

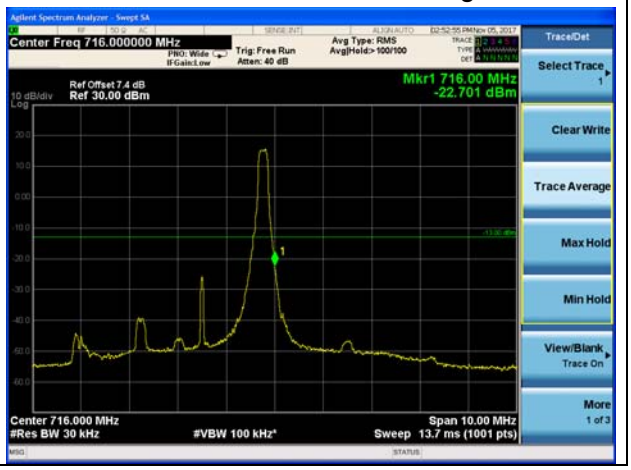


LTE Band 12 QPSK 1.4MHz CH-High, 100%RB

LTE Band 12 QPSK 3MHz CH-Low, 1 RB



LTE Band 12 QPSK 3MHz CH-High, 1 RB

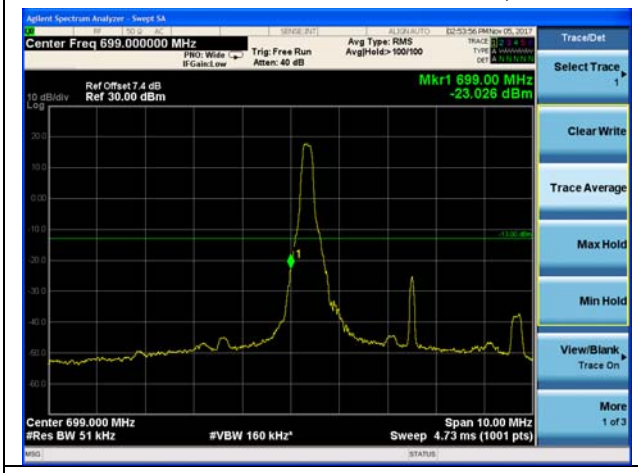


This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

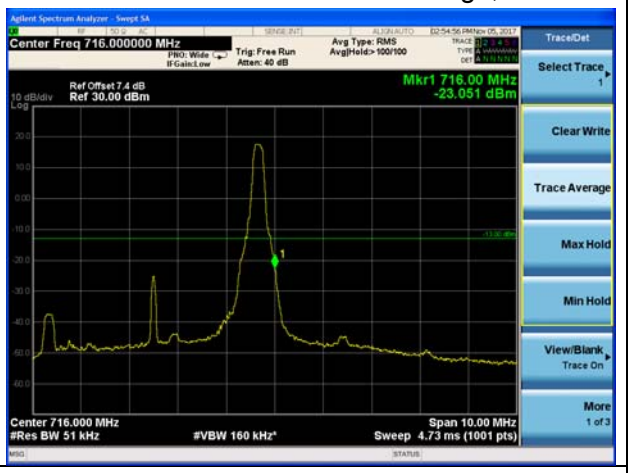
LTE Band 12 QPSK 3MHz CH-Low, 100%RB

LTE Band 12 QPSK 3MHz CH-High, 100%RB

LTE Band 12 QPSK 5MHz CH-Low, 1 RB



LTE Band 12 QPSK 5MHz CH-High, 1 RB

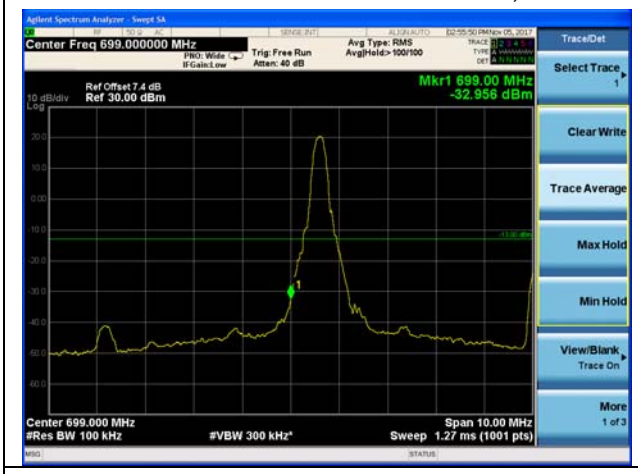


LTE Band 12 QPSK 5MHz CH-Low, 100%RB

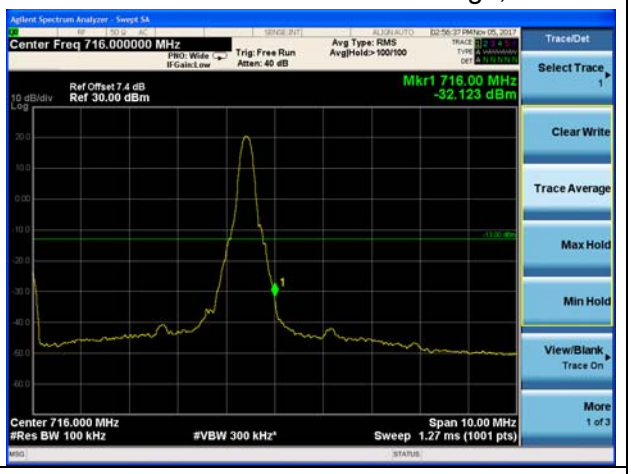
LTE Band 12 QPSK 5MHz CH-High, 100%RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

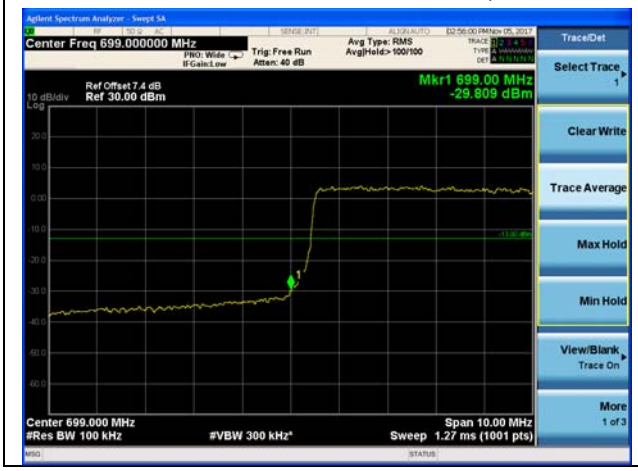
LTE Band 12 QPSK 10MHz CH-Low, 1 RB



LTE Band 12 QPSK 10MHz CH-High, 1 RB

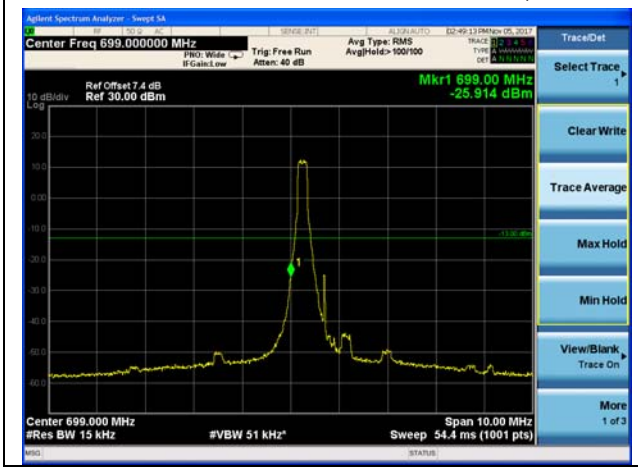


LTE Band 12 QPSK 10MHz CH-Low, 100%RB

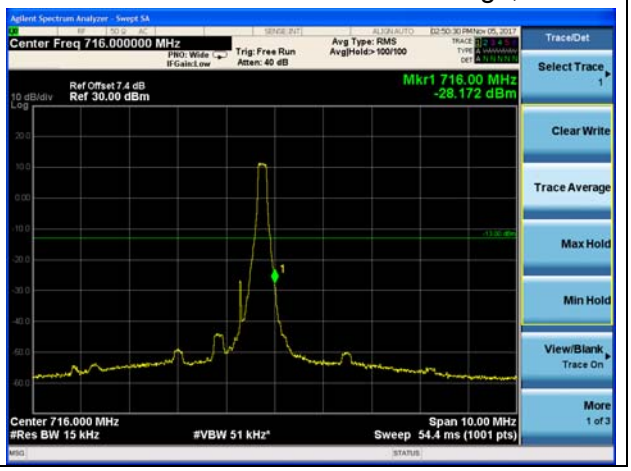


LTE Band 12 QPSK 10MHz CH-High, 100%RB

LTE Band 12 16QAM 1.4MHz CH-Low, 1 RB

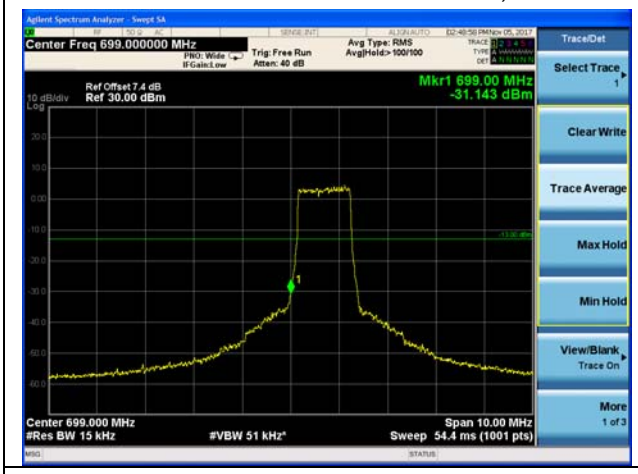


LTE Band 12 16QAM 1.4MHz CH-High, 1 RB

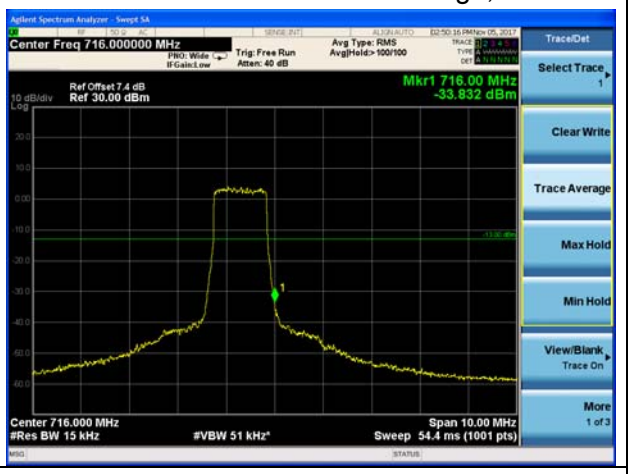


This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.

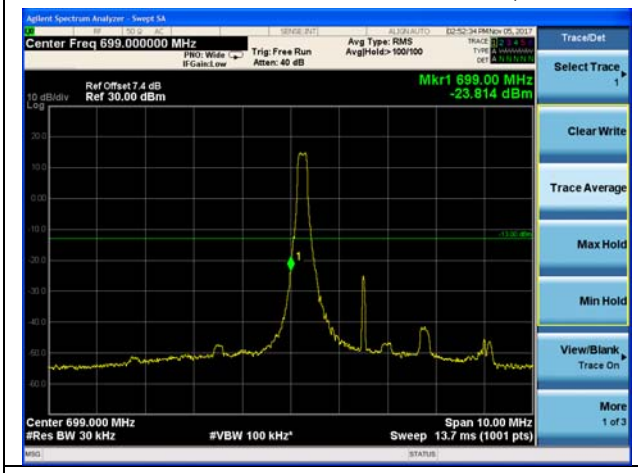
LTE Band 12 16QAM 1.4MHz CH-Low, 100%RB



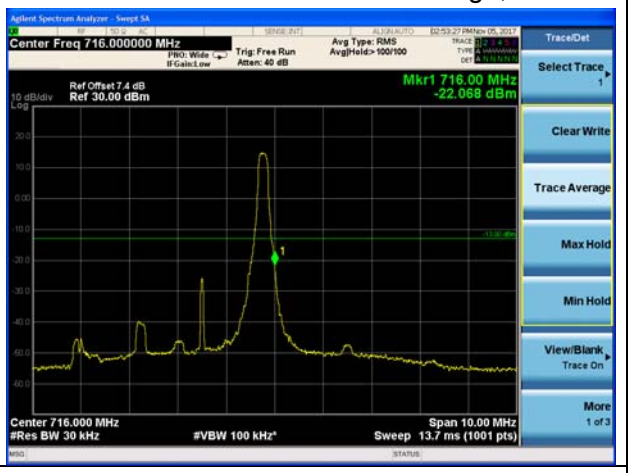
LTE Band 12 16QAM 1.4MHz CH-High, 100%RB



LTE Band 12 16QAM 3MHz CH-Low, 1 RB



LTE Band 12 16QAM 3MHz CH-High, 1 RB



LTE Band 12 16QAM 3MHz CH-Low, 100%RB

LTE Band 12 16QAM 3MHz CH-High, 100%RB

This report shall not be reproduced except in full, without the written approval of TA Technology (Shanghai) Co., Ltd.