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Report No.: GZEM140700341203 Page: 1 of 214 FCC ID: PX8MBDA-200S

TEST REPORT

Application No.:	GZEM1407003412RF
Applicant:	Comba Telecom Ltd.
FCC ID:	PX8MBDA-200S
Product Name:	mBDA Band Selective Wireless Repeater
Model No.:	mBDA-200S
Trade Mark:	Comba
Standards:	FCC Part 22, FCC Part 24, FCC Part 27, FCC Part 2
Date of Receipt:	2014-07-08
Date of Test:	2014-07-09 to 2014-08-31
Date of Issue:	2014-10-30
Test Result :	Pass*

 In the configuration tested, the EUT complied with the standards specified above. This report GZEM140700341203 supersedes the previous report GZEM140700341201, issued on 2014-09-01 which is hereby deemed null and void.



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Version

Revision Record					
Version	n Chapter Date Modifier Remark		Remark		
00		2014-09-01		Original (null)	
01		2014-10-30		Adding test information for RF Output power.	

Authorized for issue by:			
Tested By	fred. The	2014-07-09 to 2014-08-31	
	(Fred Zhu) /Project Engineer		
Prepared By	ful du	2014-10-30	
	(Fred Zhu) /Clerk	Date	
Checked By	3	2014-10-30	
	(Jerry Chen) /Reviewer	Date	



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3 Test Summary

Test Item	Test Requirement	Test Method	Result	
	FCC part 22.913	ECC part 2 1046		
Output Power	FCC part 24.232	2 11 04/EAD/DE	PASS	
	FCC part 27.50	2-11-04/EAD/NF		
	FCC part 22.917	FCC part 0 1051		
Conducted Spurious Emissions	FCC part 24.238	PUU part 2.1001	PASS	
	FCC part 27.53	2-11-04/EAD/hr		
	FCC part 22.917	ECC part 2 1051		
Band Edge& Intermodulation	FCC part 24.238	2 11 04/EAD/DE	PASS	
	FCC part 27.53	2-11-04/EAD/hr		
	FCC part 22.917	ECC part 2 1052	PASS	
Radiated Spurious Emissions	FCC part 24.238	0 11 04/EAD/DE		
	FCC part 27.53	2-11-04/EAD/hr		
Occupied Rendwidth		FCC part 2.1049	DASS	
	FUU part 2.1049	2-11-04/EAB/RF	PA33	
Out of Band Rejection	2-11-04/EAB/RF	2-11-04/EAB/RF	PASS	
	FCC part 22.355			
Frequency Stablility	FCC part 24.235	FCC part 2.1055	PASS	
	FCC part 27.54			
Remark: Tx: In this whole report Tx (Rx: In this whole report Rx (or tx) means Transmitter. or rx) means Receiver.			



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5 General Information

5.1 Client Information

Applicant Name:	Comba Telecom Ltd.
Applicant Address:	611 East Wing,No. 8 Science Park West Avenue,Hong Kong Science Park,Tai Po,Hong Kong
Manufacturer:	Comba Telecom Systems (China) Ltd.
Address of Manufacturer:	No.10 Shenzhou Road, Guangzhou Science City, GuangZhou 510663, Guangdong, P.R.China

5.2 General Description of E.U.T.

Product Name:	mBDA Band Selective Wireless Repeater
Model No.:	mBDA-200S
Power Supply:	AC 100-240V 47-63Hz
Test power:	AC 120V 60Hz
Operating Temperature:	-20 °C to +40°C
Operating Humidity:	10% to 85%

5.3 Details of E.U.T.

Type of Modulation	GSM&CDMA&WCDMA & LTE			
	GXW(GSM)			
- · · - · ·	F9W(CDMA),			
Emission Designator:	F9W (WCDMA)			
	G7D(LTE)			
Frequency Band:	Downlink 728MHz to 746MHz;Uplink 698MHz to 716MHz			
	include the Modulation:LTE;			
	Downlink 746MHz to 757MHz;Uplink 776MHz to 787MHz			
	include the Modulation:LTE;			
	Downlink 869MHz to 894MHz;uplink 824MHz to 849MHz			
	include the Modulation: GSM,CDMA, WCDMA, LTE;			
	Downlink 1930MHz to 1995MHz;uplink 1850MHz to 1915MHz			
	include the Modulation: GSM,CDMA, WCDMA, LTE;			
	Downlink 2110MHz to 2155MHz;Uplink 1710MHz to 1755MHz			
	include the Modulation: WCDMA, LTE;			
	Downlink 2620MHz to 2690MHz;Uplink 2500MHz to 2570MHz			
	include the Modulation:LTE			
Nominal Power Output:	27,30,33dBm for downlink of all frequency bands			
	23dBm for uplink @824-849&1850-1915MHz			
	17dBm for uplink @698-716&776-787&1710-1755&2500-2570MHz			
Nominal System Gain:	80dB for downlink & uplink			



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5.4 Product Description

mBDA is a wireless enhanced solution where high-quality voice or high-speed data service is not available between a mobile and a base station.mBDA is ideal for the first phase of the network rollout and for any subsequent phase where cost,coverage,and quality need to be optimized.

mBDA offers a modular, robust design that is easy to install, manage an upgrade. It supports three

individually adjustable sub-bands for flexibility and high RF performance, supports multi-carrier and multi-band opearation.

Remote configuration and surveillance is possible through Comba's remote and monitoring system via PC or wireless modem to the OMT/OMC.

5.5 Standards Applicable for Testing

The standard used was FCC part 2 & FCC part 22 & FCC part 24 & FCC part 27

5.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

5.7 Other Information Requested by the Customer

None.



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5.8 Test Facility

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

• NVLAP (Lab Code: 200611-0)

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

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

• ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

• CNAS (Lab Code: L0167)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

• FCC (Registration No.: 282399)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

Industry Canada (Registration No.: 4620B-1)

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co. Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460, C-2584, G-449 and T-1179 respectively.

• CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01:2006-10 and Rules of procedure IECEE 02:2006-10, and the relevant IECEE CB-Scheme Operational documents.



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RE in Chamber						
N -	Test Equipment	M		O state Na	Cal. date	Cal.Due date
NO.		Manufacturer	Model No.	Serial No.	(YYYY-MM-DD)	(YYYY-MM-DD)
EMC0525	Compact Semi- Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	2013-12-5	2014-12-5
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100283	2014-04-19	2015-04-19
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	100236	2014-03-03	2015-03-03
EMC0528	RI High frequency Cable	SGS	20 m	N/A	2014-05-09	2015-05-09
EMC2025	Trilog Broadband Antenna 30-1 000MHz	SCHWARZBECK MESS- ELEKTRONIK	VULB 9160	9160-3372	2014-07-14	2017-07-14
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	2013-08-31	2016-08-31
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	2014-05-04	2017-05-04
EMC2026	Horn Antenna 1-18GHz	SCHWARZBECK MESS- ELEKTRONIK	BBHA 9120D	9120D-841	2013-08-31	2016-08-31
EMC0518	Horn Antenna	Rohde & Schwarz	HF906	100096	2012-07-01	2015-07-01
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	2014-03-03	2015-03-03
EMC2065	Amplifier	HP	8447F	N/A	2014-08-25	2015-08-25
EMC0075	310N Amplifier	Sonama	310N	272683	2014-03-03	2015-03-03
EMC0523	Active Loop Antenna	EMCO	6502	42963	2014-03-03	2016-03-03
EMC2041	Broad-Band Horn Antenna (14)15-26.5(40)GHz	SCHWARZBECK MESS- ELEKTRONI	BBHA 9170	9170-375	2014-05-26	2017-05-26
EMC2069	2.4GHz filter	Micro-Tronics	BRM 50702	149	2014-04-19	2015-04-19
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	2014-05-03	2016-05-03

6 Equipment Used during Test



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	Other equipment					
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm- yy)	Cal. Due Date (dd-mm-yy)
NA	Power Meter	Agilent	E4419B	MY45100856	2014.6.12	2015.6.11
NA	Signal Generator	Agilent	E4437B	US39260800	2014.6.12	2015.6.11
NA	Signal Generator	Agilent	E4438C	US39260800	2014.6.12	2015.6.11
NA	Spectrum Analyzer	Agilent	N9020A	MY48011385	2014.6.12	2015.6.11
NA	Spectrum Analyzer	Rohde&Schwarz	FSQ 8	SN0805772	2014.6.12	2015.6.11
NA	Attenuator	SHX manufacturer	30dB/50W	09031816		
NA	Attenuator	SHX manufacturer	40dB/50W	09031312		
NA	Attenuator	SHX manufacturer	50dB/50W	09053023		
NA	Signal Generator	Rohde&Schwarz	SMU 200A	08103303	2014.6.12	2015.6.11

General used equipment						
No	Toot Equipmont	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
NO.	rest Equipment				(YYYY-MM-DD)	(YYYY-MM-DD)
EMC0006	DMM	Fluke	73	70681569	2013-09-13	2014-09-13
EMC0007	DMM	Fluke	73	70671122	2013-09-13	2014-09-13



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7 Test Results

7.1 E.U.T. test conditions

Input Voltage:	AC 120V 60Hz
Operating Environment:	
Temperature:	22°C ~26°C
Humidity:	46%~56% RH
Atmospheric Pressure:	990~1005M modulationbar
Test Requirement:	The RF output power of the EUT was measured at the antenna port, by adjusting the input power of signal generter to drive the EUT to get to maximum output power point and keep the EUT at maximum gain setting for all tests. The device should be tested on downlink.
	For detail test Modulation and Frequency, please refer to 7.2.

Remark:

GENERAL DEFINITIONS FOR CERTIFICATION PURPOSES:

The following three general definitions follow from those stated in the Part 22, 24, and 90 rule sections as listed above. Two of the definitions replace previous EAB internal definitions given for booster, repeater and extender. The general term "extender" is the same as booster, but booster should be used rather than extender. The general term "translator" is the same as repeater, but repeater should be used rather than translator.

External radio frequency power amplifier (ERFPA) - any device which, (1) when used in conjunction with a radio transmitter signal source, is capable of amplification of that signal, and (2) is not an integral part of a radio transmitter as manufactured. The EAS equipment class AMP is used only for an ERFPA device inserted between a transmitter (TNB/PCB) and an antenna (has only one antenna port)

Booster is a device that automatically reradiates signals from base transmitters without channel translation, for the purpose of improving the reliability of existing service by increasing the signal strength in dead spots. An "in-building radiation system" is a signal booster. These devices are not intended to extend the size of coverage from the originating base station. A booster can be either single or multiple channels.

Repeater is a device that retransmits the signals of other stations. Repeaters are different from boosters in that they can include frequency translation and can extend coverage beyond the design of the original base station. A repeater is typically single channel but can also be multiple channels.

ERFPA (AMP) and boosters/repeaters (TNB/PCB) can generally be authorized for all rule parts except 15 and 18.

Tests should be done with each typical signal. e.g., for F3E emissions use 2500 Hz with 2.5 or 5 kHz deviation. Use of CW signal for some tests is acceptable in lieu of actual emission, in some cases when CW signal gives worst case.

mBDA is a wireless enhanced solution where high-quality voice or high-speed data service is not available between a mobile and a base station. mBDA is ideal for the first phase of the network rollout and for any subsequent phase where cost, coverage, and quality need to be optimized. So **the Equipment belongs to the repeater and TNB class.**

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7.2 Test Procedure & Measurement Data

Test Modulation and Frequency

1.700L MHz

Downlink: 728MHz to 746MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
LTE(5M modulation)	731.5	737	743.5
LTE(15M modulation)	735.5	737	738.5
Uplink: 698MHz to 716M	Hz		

Modulation	Lowest frequency	Middle frequency	Highest frequency
LTE(5M modulation)	700.5	707	713.5
LTE(15M modulation)	705.5	707	708.5

2.700U MHz

Downlink: 746MHz to 757MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency	
LTE(5M modulation)	748.5	751.5	754.5	
LTE(10M modulation)	751	751.5	752	
Uplink: 776MHz to 787MHz				

Modulation	Lowest frequency	Middle frequency	Highest frequency
LTE(5M modulation)	778.5	781.5	784.5
LTE(10M modulation)	781	781.5	782

3.850MHz

Downlink: 869MHz to 894MHz

Lowest frequency	Middle frequency	Highest frequency
872	881.5	891
871.5	881.5	891.5
879	881.5	884
	Lowest frequency 872 871.5 879	Lowest frequency Middle frequency 872 881.5 871.5 881.5 879 881.5

 Uplink: 824MHz to 849MHz

 Modulation
 Lowest frequency

Modulation	Lowest frequency	Middle frequency	Highest frequency
WCDMA	827	836.5	846
LTE(5M modulation)	826.5	836.5	846.5
LTE(15M modulation)	834	836.5	839



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4. 1900MHz

Downlink: 1930MHz to 1995MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
WCDMA	1933	1962.5	1992
LTE(5M modulation)	1932.5	1962.5	1992.5
LTE(15M modulation)	1940	1962.5	1985
	-	1	1

Uplink: 1850MHz to 1915MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
WCDMA	1853	1882.5	1912
LTE(5M modulation)	1852.5	1882.5	1912.5
LTE(15M modulation)	1860	1882.5	1905

5. AWS

Downlink: 2110 MHz to 2155MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
WCDMA	2113	2130	2152
LTE(5M modulation)	2112.5	2130	2152.5
LTE(15M modulation)	2120	2130	2145
Lististe 1710 MUL to 1700		•	•

Uplink: 1710 MHz to 1755MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
WCDMA	1713	1730	1752
LTE(5M modulation)	1712.5	1730	1752.5
LTE(15M modulation)	1720	1730	2150

6. 2600MHz

Downlink: 2620MHz to 2690MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
LTE(5M modulation)	2622.5	2640	2687.5
LTE(15M modulation)	2630	2640	2680

Uplink: 2500 MHz to 2570MHz

Modulation	Lowest frequency	Middle frequency	Highest frequency
LTE(5M modulation)	2502.5	2535	2567.5
LTE(15M modulation)	2510	2535	2560
Design and a			

Remark:

1) We test the downlink in the lowest band; the middle band; the hightest band and test the respective frequency as above table;



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General Test Setup:





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7.2.1 RF Output Power

Test Date:	2014-08-10
Test Requirement:	FCC part 22.913(a) & FCC part 24.232(a)&(b) and FCC part 27.50(b)(2), (c)(1)(3),d(3)(4)
	22.913(a):Maximum ERP. In general, the effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts.
	24.232(a) Base stations are limited to 1640 watts peak equivalent isotropically
	radiated power (EIRP) with an antenna height up to 300 meters HAAT, except
	as described in paragraph (b) below. See §24.53 for HAAT calculation method.
	Base station antenna heights may exceed 300 meters with a corresponding
	reduction in power; see Table 1 of this section. The service area boundary limit
	and microwave protection criteria specified in §§24.236 and 24.237 apply.
	(b) The following power and antenna height limits apply to transmitters operating in the 746-763 MHz, 775–793 MHz and 805–806 MHz bands:
	(2) Fixed and base stations transmitting a signal in the 746–757 MHz, 758–763
	MHz, 776–787 MHz, and 788–793 MHz bands with an emission bandwidth of 1
	MHZ or less must not exceed an ERP of 1000 watts and an antenna height of
	305 m HAAT, except that antenna heights greater than 305 m HAAT are
	Table 1 of this section
	(c) The following power and antenna height requirements apply to stations
	transmitting in the 698–746 MHz band:
	(1) Fixed and base stations transmitting a signal with an emission bandwidth of
	I MHZ or less must not exceed an effective radiated power (ERP) of 1000 watts
	and an antenna neight of 305 m neight above average terrain (HAAT), except
	that antenna heights greater than 305 m HAAT are permitted if power
	levels are reduced below 1000 watts ERP in accordance with Table 1 of this
	(2) Eived and have stations transmitting a signal with an emission bandwidth
	(3) Fixed and base stations transmitting a signal with an emission bandwidth
	greater than 1 MHz must not exceed an Enr of 1000 watts/MHz and an 205 m
	HAAT are permitted if power levels are reduced below 1000 watts/MHz EPP in
	accordance with Table 3 of this section:
	$P_{\text{accordance}}$ with radie 5 of this section,
	2110 2155 MHz hand and located in any county with non-ulation density of 100
	2 + 10-2 + 55 wind barrow and and located in any county with population density of 100 or fower percepts per equate mile, based upon the meet recently evolution
	or rewer persons per square mile, based upon the most recently available



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population statistics from the Bureau of the Census, is limited to a peak equivalent isotropically radiated power (EIRP) of 3280 watts. The power of each fixed or base station transmitting in the 2110-2155 MHz band from any other location is limited to a peak EIRP of 1640 watts. A licensee operating a base or fixed station utilizing a power of more than 1640 watts EIRP must coordinate such operations in advance with all Government and non-Government satellite entities in the 2025-2110 MHz band.

Operations above 1640 watts EIRP must also be coordinated in advance with the following licensees within 120 kilometers (75 miles) of the base or fixed station: all Broadband Radio Service (BRS) licensees authorized under Part 27 in the 2155-2160 MHz band and all AWS licensees in the 2110-2155 MHz band. (3) A licensee operating a base or fixed station in the 2110-2155 MHz band utilizing a power greater than 1640 watts EIRP and greater than 1640 watts/MHz EIRP must coordinate such operations in advance with all Government and non-Government satellite entities in the 2025-2110 MHz band. A licensee operating a base or fixed station in the 2110-2180 MHz band utilizing power greater than 1640 watts/MHz band utilizing power greater than 1640 watts/MHz band utilizing power greater than 1640 watts (MHz band utilizing power greater than 1640 watts (MHz band utilizing power greater than 1640 watts) band utilizing power greater than 1640 watts (MHz band utilizing power greater than 1640 watts (MHz band utilizing power greater than 1640 watts) (75 miles) of the base or fixed station operating in this band: All Broadband Radio Service (BRS) licensees authorized under this part in the 2155-2160 MHz band and all advanced wireless services (AWS) licensees authorized to operate on adjacent frequency blocks in the 2110-2180 MHz band.

(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

FCC part 2.1046

Test Method: EUT Operation: Status: Conditions: Application: Test Configuration:

Drive the EUT to maximum output power. Normal conditions Cellular Band RF output ports



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Fig.1 RF Output Power test configuration



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Test Procedure:	RF output power test procedure:			
	1.			
	 a) Connect the equipment as illustrated, when the output power is over the max value of the Spectrum Analyzer, add the attenuator to avoid destroying the facility. 			
	b) Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line.			
	c) do not apply any tone to modulate the EUT.			
	d1) Adjust the spectrum analyzer for the following settings:			
	1) Resolution Bandwidth >> the carrier bandwidth,			
	2) Video Bandwidth refer to standard requirement.			
	d2) Use spectrum analyzer channel power measurement function;			
	e) Record the frequencies and levels of carrier power;			
	f) Calculate the signal link way loss and final power value.			
	Or 2.			
	a) Connect the equipment as illustrated;			
	b) Read the value from the power meter;			
	c) Calculate the signal link way loss and final power value.			
Remark:	Output power –			
	Power on Form 731 should be clearly understood as either composite of multichannels or per carrier. If power is composite include in comments field: "Power output listed is composite for multi-channel operation."			
	Check that the input drive level is at maximum input rating and maximum			
	gain			
	settings for all tests. Check both uplink and downlink input levels. See manual or			
	brochures/technical description for maximum rating. May need to check FCC			
	identifier of transmitter used for tests.			
	Confirm device can not operate in saturation. Are there means to control maximum power and to assure linear operation (use in system configuration may be necessary)? How is saturation or over-modulation prevented for pulsed signal inputs?			



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7.2.1.1 Measurement Record

1.700L MHz

1.1 Downlink: 728MHz ~ 746MHz

7.2.1.2 1.1.1 Test in the maxoutput 27dBm

Per channel Power Input=-53dBm for downlink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
	27.6dBm	27.7dBm	27.5dBm	
LTE(5M modulation)	(0.575W)	(0.589W)	(0.562W)	
	26.2dBm	26.3 dBm	26.5dBm	
LIE(15M modulation)	(0.417W)	(0.427W)	(0.447W)	

1.1.2 Test in the maxoutput 30dBm

Per channel Power Input=-50dBm for downlink

Modulation	Lowest frequency	Middle frequency	Highest frequency
	30.6dBm	30.7dBm	30.5dBm
LIE(SIVI modulation)	(1.148W)	(1.175W)	(1.122W)
TT (15N modulation)	29.3dBm	29.4 dBm	29.5dBm
LIE(15M modulation)	(0.851W)	(0.871W)	(0.891W)

1.1.3 Test in the maxoutput 33dBm

Per channel Power Input=-47dBm for downlink

Modulation	Lowest frequency	Middle frequency	Highest frequency
	33.7dBm	32.8dBm	33.6dBm
LTE(5M modulation)	(2.344W)	(1.905W)	(2.291W)
	32.2dBm	32.3 dBm	32.3 dBm
LTE(15M modulation)	(1.660W)	(1.698W)	(1.698W)

1.2 Uplink: 698MHz ~ 716MHz

limit: 17dBm± 2dB

limit: 33dBm± 2dB

Per channel Power Input=-63dBm for uplink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
LTE(5M modulation)	16.9dBm	17.1dBm	17.0dBm	
	(0.049W)	(0.512W)	(0.501W)	
LTE(15M modulation)	16.9dBm	17.3dBm	17.2dBm	
	(0.049W)	(0.054W)	(0.053W)	

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Uncertainty: ± 2dB

limit: 27dBm± 2dB

limit: 30dBm± 2dB



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2.700U MHz

2.1 Downlink: 746MHz ~ 757MHz

2.1.1 Test in the maxoutput 27dBm

Per channel Power Input=-53 dBm for downlink Modulation Lowest frequency **Middle frequency Highest frequency** 27.6dBm 27.4dBm 27.2dBm LTE(5M modulation) (0.575W) (0.550W) (0.525W) 27.5dBm 27.5dBm 27.4dBm LTE(15M modulation) (0.562W) (0.562W) (0.550W)

2.1.2 Test in the maxoutput 30dBm

Per channel Power Input=-50dBm for downlink

Modulation	Lowest frequency	Middle frequency	Highest frequency
LTE(5M modulation)	30.6dBm	30.4dBm	30.3dBm
	(1.148W)	(1.096W)	(1.071W)
	30.5dBm	30.4dBm	30.6dBm
LTE(15M modulation)	(1.122W)	(1.096W)	(1.148W)

2.1.3 Test in the maxoutput 33dBm

limit: 33dBm± 2dB

Per channel Power Input=-47dBm for downlink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
	33.7dBm	33.5dBm	33.3dBm	
LTE(5M modulation)	(2.344W)	(2.239W)	(2.140W)	
LTE(10M modulation)	33.4dBm	33.6dBm	33.5dBm	
	(2.188W)	(2.291W)	(2.239W)	

2.2 Uplink: 776MHz ~ 787MHz

limit: 17dBm± 2dB

Per channel Power Input=-63dBm for uplink		

Modulation	Lowest frequency	Middle frequency	Highest frequency
	17.1dBm	17.8dBm	18.1dBm
LIE(5M modulation)	(0.051W)	(0.061W)	(0.065W)
LTE/10M modulation	16.8dBm	16.7dBm	16.9dBm
	(0.047W)	(0.047W)	(0.049W)

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limit: 27dBm± 2dB

limit: 30dBm± 2dB



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limit: 30dBm± 2dB

limit: 33dBm± 2dB

3.850MHz

Remark:

The data of the GSM mode and CDMA mode have been tested in 850MHz frequency bands ,reference the report of GZEM1311005668RF(FCC ID: PX8MBDA-200).

3.1 Downlink: 869MHz ~ 894MHz

3.1.1 Test in the maxoutput 27dBm limit: 27dBm± 2dB			limit: 27dBm± 2dB	
Per channel Power Input=-53dBm for downlink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
	26.8dBm	26.6dBm	26.1dBm	
WCDMA	(0.479W)	(0.457W)	(0.407W)	
LTE(5M modulation)	26.9dBm	27.3 dBm	27.8dBm	
	(0.490W)	(0.537W)	(0.603W)	
LTE(20M modulation)	27.1dBm	26.8dBm	26.9dBm	
	(0.513W)	(0.479W)	(0.490W)	

3.1.2 Test in the maxoutput 30dBm

Per channel Power Input=-50dBm for downlink			
Modulation	Lowest frequency	Middle frequency	Highest frequency
	29.7dBm	29.7dBm	30.0dBm
WCDMA	(0.933W)	(0.955W)	(1.000W)
LTE(5M modulation)	29.9dBm	30.3 dBm	29.8dBm
	(0.977W)	(1.072W)	(0.955W)
	30.0dBm	29.9dBm	29.8dBm
LIE(2011 modulation)	(1.023W)	(0.977W)	(0.955W)

3.1.3 Test in the maxoutput 33dBm

Per channel Power Input=-47dBm for downlink

Modulation	Lowest frequency	Middle frequency	Highest frequency
	32.7dBm	32.7dBm	33.0dBm
WCDMA	(1.861W)	(1.905W)	(1.995W)
. 	32.9dBm	33.3dBm	32.8dBm
LTE(5M modulation)	(1.995)	(2.138W)	(1.906W)
LTE(20M modulation)	33.0dBm	32.9dBm	32.8dBm
	(1.995W)	(1.950W)	(1.905W)



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Per channel Power Input=-57dBm for uplink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
	23.3dBm	23.3dBm	23.1dBm	
WCDMA	(0.214W)	(0.214W)	(0.204W)	
LTE(5M modulation)	22.4 dBm	23.1dBm	22.3dBm	
	(0.173W)	(0.204W)	(0.169W)	
	22.9dBm	23.0dBm	23.2dBm	
LTE(20M modulation)	(0.195W)	(0.200W)	(0.209W)	

4.LTE 1900MHz Remark:

The data of the GSM mode and CDMA mode in 1900MHz frequency bands have been tested ,reference the report of GZEM1311005668RF(FCC ID: PX8MBDA-200).

4.1 Downlink:	1930MHz ~	1995MHz
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3.2 Uplink: 824MHz ~ 849MHz

4.1.1 Test in the maxoutput 27dBm			limit: 27dBm± 2dB
Per channel Power Input	t=-53dBm for downlink		
Modulation	Lowest frequency	Middle frequency	Highest frequency
WCDMA	26.8dBm	26.9dBm	27.1dBm
	(0.480W)	(0.490W)	(0.513W)
	26.5dBm	25.9 dBm	26.3dBm
LIE(SIM modulation)	(0.447W)	(0.389W)	(0.427W)
	26.4dBm	26.5dBm	26.1dBm
LIE(201VI modulation)	(0.437W)	(0.447W)	(0.407W)

4.1.2 Test in the maxoutput 30dBm

limit: 30dBm± 2dB

Per channel Power Input=-50dBm for downlink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
WCDMA	29.8dBm	29.7dBm	30.1dBm	
	(0.955W)	(0.933W)	(1.023W)	
LTE(5M modulation)	29.3 dBm	29.6 dBm	29.3 dBm	
	(0.851W)	(0.912W)	(0.851W)	
	29.5dBm	29.2dBm	29.1dBm	
LIE(20M modulation)	(0.891W)	(0.831W)	(0.813W)	

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limit: 23dBm± 2dB



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4.1.3 Test in the maxoutpu	t 33dBm	limit: 33dBm± 2dB	
Per channel Power Input=-47dBm for downlink			
Modulation	Lowest frequency	Middle frequency	Highest frequency
	32.7dBm	32.7dBm	33.0dBm
WCDMA	(1.862W)	(1.862W)	(1.995W)
	31.4dBm	31.8dBm	31.2dBm
LTE(5M modulation)	(1.380W)	(1.514W)	(1.349W)
	32.4dBm	32.4dBm	32.0dBm
LTE(20M modulation)	(1.738W)	(1.738W)	(1.585W)

4.2 Uplink: 1850MHz ~ 1915MHz

limit: 23dBm± 2dB

limit: 27dBm± 2dB

Per channel Power Input=-47dBm for uplink			
Modulation	Lowest frequency	Middle frequency	Highest frequency
	22.5dBm	22.3dBm	22.1dBm
WCDMA	(0.178W)	(0.170W)	(0.162W)
LTE (ENA medulation)	22.4dBm	22.4dBm	22.0dBm
LIE(5M modulation)	(0.174W)	(0.174W)	(0.159W)
LTE(00M modulation)	22.2dBm	21.5dBm	23.2dBm
LIE(20101 modulation)	(0.170W)	(0.141W)	(0.209W)

5. AWS

5.1Downlink: 2110 MHz to 2155MHz

Per channel Power Input=-53dBm for downlink			
Modulation	Lowest frequency	Middle frequency	Highest frequency
	26.6dBm	26.5dBm	26.1dBm
WCDMA	(0.457W)	(0.450W)	(0.470W)
· /_ · · · · · · · · · · · · · · · ·	27.3dBm	26.2dBm	26.2dBm
LTE(5M modulation)	(0.537W)	(0.417W)	(0.417W)
	26.7dBm	26.8dBm	26.6dBm
LTE(20M modulation)	(0.468W)	(0.480W)	(0.458W)



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5	5.1.2 Test in the maxoutput 30dBm		limit: 30dBm± 2dB	
	Per channel Power Input=-50dBm for downlink			
	Modulation	Lowest frequency	Middle frequency	Highest frequency
		29.5dBm	29.4dBm	29.0dBm
	WCDMA	(0.891W)	(0.871W)	(0.794W)
		30.4dBm	29.1dBm	29.0dBm
	LIE(5M modulation)	(1.096W)	(0.813W)	(0.794W)
		29.6dBm	29.6dBm	29.5dBm
	LIE(20M modulation)	(0.891W)	(0.912W)	(0.891W)
5	.1.3 Test in the maxoutpu	t 33dBm		limit: 33dBm± 2dB
	Per channel Power Input	=-47dBm for downlink		
	Modulation	Lowest frequency	Middle frequency	Highest frequency
		32.5dBm	32.4dBm	32.0dBm
	WCDMA	(1.778W)	(1.738W)	(1.585W)
		33.4dBm	32.1dBm	32.0dBm
	LIE(5M modulation)	(2.188W)	(1.622W)	(1.585W)
		32.6dBm	32.6dBm	32.5dBm
	LIE(20M modulation)	(1.820W)	(1.820W)	(1.778W)
5.2	Uplink: 1710 MHz to 1755	5MHz		limit: 17dBm± 2dB
	Per channel Power Input	=-63dBm for uplink		
	Modulation	Lowest frequency	Middle frequency	Highest frequency
		17.2dBm	17.4dBm	16.7 dBm
	WCDMA	(0.052W)	(0.550W)	(0.470W)
		17.6dBm	18.0dBm	17.0dBm
	LIE(SIVI modulation)	(0.058W)	(0.063W)	(0.050W)
		17.9dBm	17.2dBm	16.7dBm
	LIE(201VI MODULATION)	(0.062W)	(0.053W)	(0.048W)



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limit: 27dBm± 2dB

limit: 30dBm± 2dB

6. LTE 2600MHz

- 6.1 Downlink: 2620 MHz to 2690MHz
- 6.1.1 Test in the maxoutput 27dBm

Per channel Power Input=-53dBm for downlink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
Modulation	26.2dBm	26.5dBm	26.1dBm	
	(0.417W)	(0.447W)	(0.407W)	
Modulation LTE(5M modulation) LTE(20M modulation)	27.2dBm	27.3dBm	27.0dBm	
LIE(20M modulation)	(0.524W)	(0.537W)	(0.501W)	

6.1.2 Test in the maxoutput 30dBm

Per channel Power Input=-47dBm for downlink Modulation Lowest frequency Middle frequency **Highest frequency** 29.2dBm 29.7dBm 29.2dBm LTE(5M modulation) (0.832W) (0.933W) (0.835W) 30.2dBm 30.3dBm 29.9dBm LTE(20M modulation) (1.047W) (1.071W) (0.977W)

6.1.3 Test in the maxoutput 33dBm

limit: 33dBm± 2dB

Per channel Power Input=-47dBm for downlink				
Modulation	Lowest frequency	Middle frequency	Highest frequency	
	32.1dBm	32.6dBm	31.3dBm	
LTE(5M modulation)	(1.621W)	(1.820W)	(1.349W)	
LTE(20M modulation)	33.3dBm	33.4dBm	33.1dBm	
	(2.138W)	(2.188W)	(2.042W)	
Uplink: 2500 MHz to 2570MHz limit: 17			limit: 17dBm± 2dB	

6.2 Uplink: 2500 MHz to 2570MHz

Per channel Power Input=-63dBm for uplink

Modulation	Lowest frequency	Middle frequency	Highest frequency
·	18.1dBm	17.1dBm	15.5dBm
LIE(5M modulation)	(0.065W)	(0.051W)	(0.040W)
	17.8dBm	17.3dBm	16.6dBm
LIE(20M modulation)	(0.060W)	(0.054W)	(0.046W)

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7.2.2 Conducted Spurious Emissions

Test Date:	2014-08-11 to 2014-08-23
Test Requirement:	FCC part 22.917(a) & FCC part 24.238(a) & FCC part 27.53(h)
	22.917(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.
	24.238(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.
	27.53(h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10(P) dB$.
Test Method:	FCC part 2.1051
EUT Operation:	
Status:	Drive the EUT to maximum output power.
Conditions:	Normal conditions
Application:	Cellular Band RF output ports
Test Configuration:	



Fig.2. Conducted Spurious Emissions test configuration





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Test Procedure: Conducted Emissions test procedure: a) Connect the equipment as illustrated, with the notch filter by-passed, when the output power is over the max value of the Spectrum Analyzer, add the attenuator to avoid destroying the facility. b) Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line. c) do not apply any tone to modulate the EUT. d) Adjust the spectrum analyzer for the following settings: 1) Resolution Bandwidth, (base the standard, apply the different set), her is 100KHz for frequency band less than 1GHz, 1MHz for frequency over 1GHz; 2) Video Bandwidth refer to standard requirement. e) Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from: 1) the lowest radio frequency generated in the equipment, it can be 9KHz base the test method, here select 30MHz as lowest frequency start point; 2) the highest radion frequency shall higher than 10 times of carrier frequency; f) Record the frequencies and levels of spurious emissions from step e) Remark: The notch filter is used for avoid the EUT fundamental carrier output power making the spectrum overload and the harmonic spurious brought by it. When the EUT fundamental carrier is not enough to make the status, the notch filter could be not used.

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7.2.2.1 Measurement Record:

- 1.Downlink: 728MHz ~ 746MHz(LTE)
 - Remark:

Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm), finally find the worst case as the EUT with Maximum Rated Output power(33dBm).

1.1 lowest frequency:

9KHz to 1GHz

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1.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

Peak Search	:35:12 AM Aug 10, 2014	ALIGNAUTO	DFF	EXT SOUR	ENSE:E	91		AC	alyzer - Sw 50 ຄ	ectrum A	lent Sp
NextPeak	2.710 8 GHz	>100/100	vg Hold:	n	ee Rui 6 dB	Trig: Fre Atten: 6	1⊟Z PNO: Fast □ Gain:Low	00000 G IF I.3 dB	108000	2 2.7 Re	arkei
Next Pk Right								abm	<u>r 35.10</u>		
Next Pk Left	-13.00 dBm		↓ 2								90 1.9 1.9 1
Marker Delta				adab di Maraka	un ha	<u>a para-apad-Roogi</u>	ngo <mark>lle_{ster}nen berekennen</mark>	gagetungen, gal fanne	#-1,-1,00,000,99,0 ⁰ .	NAME AND STREET	1.9 1.9
Mkr→CF	top 3.600 GHz ms (1001 pts) FUNCTION VALUE	Sweep 3.	N FUI	FUNC	Z	/ 1.0 MHz Y	#VB	× 750	Hz MHz	000 G W 1.0	art 1. Res B
Mkr→RefLv					dBm	-29.646 c) 8 GHz	2.710			
More 1 of 2											7 3 9 0 1 2
		STATUS									3



Report No.: GZEM140700341203 Page: 29 of 214 FCC ID: PX8MBDA-200S

1.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

	M Aug 10, 2014	08:35:54 A	ALIGN AUTO	OURCE OFF	NSE:EX	SE		- Swept SA 50 Ω AC	<mark>um Analyz</mark> e RF	gilent Spect
Peak Search	CE 1 2 3 4 5 6 PE M (ALANALANA) ET P N N N N N	TRAC TYI DI	pe: RMS d:>100/100	#Avg Avg H	e Run dB	Trig: Free	GHz PNO: Fast	0000000	3.1554	larker 2
Next Peak	54GHz 57dBm	r2 3.15 -29.9	Mk				ir Gain.Luw	et 41.3 dB 10 dBm	Ref Off Ref 35	0 dB/div
Next Pk Righ										5 .1 5.1 5.1
Next Pk Lef	-13.00 dBm	↓ ²								90 4.9 4.9
Marker Delta								nter and the second		4.9
Mkr→CF	3.600 GHz 1001 pts) DN VALUE	Stop 3 3.20 ms (Sweep	FUNCTION	Bm	W 1.0 MHz Y	#V 50.0 MHz	×	0 GHz 1.0 MH:	tart 1.00 Res BW
Mkr→RefLv					Bm	-29.957 di	55 4 GHz	3.1	f	2 N 3 4 5 6 7
More 1 of 2										8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
										ISG



Report No.: GZEM140700341203 Page: 30 of 214 FCC ID: PX8MBDA-200S

Test result 1)lowest frequency:

Aeasurement Record:												
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)								
9KHz to 1GHz	RBW=100KHz	-35.1	-13.0	-22.1								
1GHz to 10GHz	RBW=1MHz	-29.8	-13.0	-16.8								

2)Middle frequency:

Measurement Record:

Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.0	-13.0	-29.0
1GHz to 10GHz	RBW=1MHz	-29.6	-13.0	-16.6

3)highest frequency

Measurement Record:											
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)							
9KHz to 1GHz	RBW=100KHz	-43.0	-13.0	-30.1							
1GHz to 10GHz	RBW=1MHz	-30.0	-13.0	-17.1							



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2.Uplink: 698MHz ~ 716MHz(LTE)

2.1 lowest frequency:

9KHz to 1GHz



1GHz to 10GHz

Peak Search	M Aug 09, 2014 E <mark>1</mark> 2 3 4 5 6	04:45:30 A	ALIGNAUTO	JRCE OFF	NSE:EXT	SE	GHz	Swept SA DΩ AC 10000000 0	m Analyzer - RF 5 3.160600	ilent Spectr arker 1
Next Peak		r1 3.16	d:>100/100	Avg H	e Run dB	Atten: 6	PNO: Fast 🕞 Gain:Low	41.2 dB	Ref Offset	
Next Pk Right		-00.0							Ref 33.2	3.2 20
Next Pk Lef	-13.00 dBm	1	و المحمد المحم	Junarater						80 5.8 5.8
Marker Delta								ayler gildene dyertike	and the local	5.8 5.8 5.8
Mkr→CF	.600 GHz 1001 pts) ^{DN VALUE}	Stop 3 3.20 ms (Sweep	NCTION	Bm	Y -30.302 d	#VBV	× 3.16	GHZ I.0 MHZ	Cart 1.00 Res BW
Mkr→RefLv										
More 1 of 2										
			STATUS							3



Report No.: GZEM140700341203 Page: 32 of 214 FCC ID: PX8MBDA-200S

2.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

								Analyzer - Swept SA	Agilent Spect
Peak Search	M Aug 09, 2014 CE 123456 PE M WWWWWW	U4:43:577 TRA TY	ype: RMS Id:>100/100	DURCE OFF #Avg AvalF	e Run	Trig: Free	GHz	184000000000000000000000000000000000000	Marker 1
Next Peal	4 0 GHz 50 dBm	r1 3.18 -30.0	Mk		dB	Atten: 6	IFGain:Low	Ref Offset 41.2 dB Ref 33.20 dBm	10 dB/div
Next Pk Righ									23.2 13.2 3.20
Next Pk Le	-13.00 dBm	↓ ¹							-6.80 -16.8 -26.8
Marker Delt	n Laure d'Alter of Agerstelling					, , , , , , , , , , , , , , , , , , ,		,	-36.8
Mkr→Ci	3.600 GHz 1001 pts) DN VALUE	Stop 3 3.20 ms (FUNCTI	Sweep	UNCTION	2	W 1.0 MHz Y	#VE	GHz 0 MHz	Start 1.00 #Res BW
Mkr→RefLv					Bm	-30.050 d	184 0 GHz	f 3.'	1 N 2 3 4 5 5 6
Mor 1 of									8 9 10 11 12



Report No.: GZEM140700341203 Page: 33 of 214 FCC ID: PX8MBDA-200S

2.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

Agilent Spectr	um Analyzer - Sw	vept SA					
Marker 1	RF 50 G	2 AC	Si Si	ENSE:EXT SOURCE OF #Av e Run Ave	g Type: RMS Hold:>100/100	04:43:23 AM Aug 09, TRACE 1 2 3 TYPE M 4444	2014 4 5 6 WWW
10 dB/div	Ref Offset 47 Ref 33.20	IFGain:L 1.2 dB dBm	ow Atten: 6	dB	Mk	r1 2.700 4 G -29.840 dE	HZ NextPeak Bm
23.2 13.2 3.20							Next Pk Right
-6.80 -16.8 -26.8					1	-13.00	Next Pk Left
-36.8	nhume ⁿ stitu _{nt} hrund	Angellunden	yy 22 Constantine (1949) Annu 22 may 1940 (1949) 				Marker Delta
Start 1.00 #Res BW	0 GHz 1.0 MHz	# ×	VBW 1.0 MHz	FUNCTION	Sweep FUNCTION WIDTH	Stop 3.600 G 3.20 ms (1001 p FUNCTION VALUE	Hz ots) Mkr→CF
2 3 4 5 6		2.700 4 GH	z -29.840 c				Mkr→RefLv
8 9 10 11 12							More 1 of 2
MSG						3	



1GHz to 10GHz

RBW=1MHz

Test result

SGS-CSTC Standards Technical Services Co., Ltd.

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-13.0

-16.8

1)lowest frequency: Measurement Record: Measurement **Spurious Emission** Limit(dBm) Over Limit(dB) Frequency range bandwidth Level(dBm) 9KHz to 1GHz RBW=100KHz -41.3 -13.0 -28.3 1GHz to 10GHz RBW=1MHz -30.0 -13.0 -17.0 2)Middle frequency: Measurement Record: Measurement **Spurious Emission** Frequency range Limit(dBm) Over Limit(dB) bandwidth Level(dBm) RBW=100KHz -43.3 9KHz to 1GHz -13.0 -30.3 1GHz to 10GHz RBW=1MHz -30.1 -13.0 -17.1 3)highest frequency Measurement Record: Measurement **Spurious Emission** Frequency range Limit(dBm) Over Limit(dB) bandwidth Level(dBm) -41.2 9KHz to 1GHz RBW=100KHz -13.0 -28.2

-29.8

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3.Downlink: 746MHz ~ 757MHz(LTE)

Remark:

Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm),finally find the worst case as the EUT with Maximum Rated Output power(33dBm).

3.1 lowest frequency

9KHz to 1GHz

Agilent Spectrum Analyzer - Swept SA					
K RF 50 Ω AC	IH7	RCE OFF ALIGNAUTO #Avg Type: RMS	08:26:17 AM Aug 10, 2014 TRACE 1 2 3 4 5 6	Marker	
	PNO: Fast Trig: Free Run IFGain:Low Atten: 14 dB	Avg Hold:>100/100	TYPE MWWWWW DET PNNNNN	Select Marker	
Ref Offset 41.3 dB 10 dB/div Ref 45.10 dBm		MI	kr2 482.0 MHz -34.786 dBm		
Log 35.1 25.1 15.1				Normal	
5.10 -4.90 -14.9			-13.00 dBm,	Delta	
-24.9 -34.9 -44.9				Fixed⊳	
Start 9 kHz #Res BW 100 kHz MKR MODE TRC SCL X	#VBW 300 kHz	Sweep 9:	Stop 1.0000 GHz 5.6 ms (1001 pts) FUNCTION VALUE	Off	
2 N 1 f 49 3 4 5 5 7	49.0 MHz 24.890 dBm 82.0 MHz -34.786 dBm			Properties▶	
8 9 9 10 12 12		The STATIO		More 1 of 2	

1GHz to 10GHz

Agilent Spect	rum Analyzer	- Swept SA									
Warker 2	RF	50 Q AC		SE	NSE:EXT SO	URCE OFF	ALIGN AUTO	08:30:44 Al TRAC	M Aug 10, 2014	Peak Search	
	2.10020		PNO: Fast IFGain:Low	, Trig: Free Atten: 6	e Run dB	Avg Ho	old:>100/100	TYF De			
10 dB/div	Ref Offs Ref 35.	et 41.3 dB 10 dBm					Mk	r2 2.708 -30.1	3 2 GHz 13 dBm	Next Peak	
25.1 15.1 5.10										Next Pk Right	
-4.90 -14.9 -24.9							2		-13.00 dBm	Next Pk Left	
-34.9		per per la la construcción de la co	a soonal galaga Hilaada							Marker Delta	
Start 1.00 #Res BW	00 GHz 1.0 MHz	×	#V	BW 1.0 MHz	FL	JNCTION	Sweep :	Stop 3 3.20 ms (FUNCTIO	.600 GHz 1001 pts) ^{IN VALUE}	Mkr→CF	
2 N 4 3 4 5 6 7	f	2.	708 2 GHz	-30.113 di	3m					Mkr→RefLvl	
8 9 10 11 12							1			More 1 of 2	
MSG	G Lostatus										

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3.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

Peak Search	AM Aug 09, 2014 ACE 123456 YPE M Manual Aug	03:38:22. TRA	ALIGNAUTO pe: RMS	URCE OFF	SE:EXT Pun	SEP	Hz	- Swept SA 50 Ω AC 100000000 (Spectrum Analyze RF er 1 2.8320	Agilen XI Marl
NextPeak	Mkr1 2.832 GHz -30.583 dBm					Atten: 6 o	PNO: Fast G Gain:Low	et 41.2 dB 20 dBm	Ref Offs	10 dE
Next Pk Righ										Log 23.2 13.2 3.20
Next Pk Lef	-13.00 dBm									-6.80 -16.8 -26.8
Marker Delta					alqda Arwi		den julijanse och or	vy-Materian and Anna	<u></u>	-36.8 -46.8 -56.8
Mkr→CF	3.000 GHz (1001 pts) ION VALUE	Stop 3 2.47 ms	Sweep 2	INCTION		1.0 MHz	#VB\	×	1.000 GHz BW 1.0 MH;	Start #Res
Mkr→RefLv					sm	-30.583 di	32 GHZ	2		2 3 4 5 6
More 1 of 2										7 8 9 10 11
										MSG


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3.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

	M 8	00-00-10 4						yzer - Swept SA	ent Spectrum A	Agile
Peak Search	CE 1 2 3 4 5 6 PE MULLIA	UB:30:13 A TRAC TYI	pe: RMS d:>100/100	#Avg Avg H	ee Rur	Trig: Fre) GHz PNO: Fas	3200000000	rker 2 3.0	Ma
Next Peak	3 2 GHz 49 dBm	r2 3.03 -29.9	Mk		5 dB	v Atten: 6	IFGain:Lo	Offset 41.3 dB 35.10 dBm	Re dB/div R e	10 c
Next Pk Righ									1 1 1 0	25.1 25.1 15.1
Next Pk Lef	-13.00 dBm		`) ; ; 1	-4.90 -14.9 -24.9
Marker Delta					78 (*)	an a		A south of the second sec	3 	-34.9 -44.9 -54.9
Mkr→CF	0.600 GHz 1001 pts)	Stop 3 3.20 ms (FUNCTIO	Sweep	FUNCTION	z dBm	/BW 1.0 MHz Y	#\ 750.0 MHz	z Hz ×	nrt 1.000 G es BW 1.0 MODE TRC SC N 1 f	Sta #Re MKR
Mkr→RefLv					dBm	-29.949 d	.033 2 GHz	3.	N 1 f	2 3 4 5 6 7
More 1 of 2										8 9 10 11 12
										MSG



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Test result 1)lowest frequency:

Measurement Record:										
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)						
9KHz to 1GHz	RBW=100KHz	-34.7	-13.0	-21.7						
1GHz to 10GHz	RBW=1MHz	-30.1	-13.0	-17.1						

2)Middle frequency:

Measurement Record:

Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)						
9KHz to 1GHz	RBW=100KHz	-41.2	-13.0	-28.2						
1GHz to 10GHz	RBW=1MHz	-30.5	-13.0	-17.5						

3)highest frequency

leasurement Record:											
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)							
9KHz to 1GHz	RBW=100KHz	-33.7	-13.0	-20.7							
1GHz to 10GHz	RBW=1MHz	-29.9	-13.0	-16.9							



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4.Uplink: 776MHz ~ 787MHz(LTE)

4.1 lowest frequency

9KHz to 1GHz



1GHz to 10GHz

Peak Search	M Aug 09, 2014 CE 123456 PE M WARAAA	04:15:17 A TRAC TY	ALIGNAUTO e: Log-Pwr	RCE OFF	ISE:EXT SC Bun	SEP	GHz	Swept SA	Analyzer - 1 RF 50 069600	ectrum 13	nt Spe rker
Next Peak	9 6 GHz	r1 3.06	Mk	Argin	B	Atten: 6 o	PNO: Fast IFGain:Low	41.2 dB	ef Offset		
Next Pk Right									er 33.20	V	
Next Pk Left	-13.00 dBm	1	agoneutrour	h. Aug 2. 200 Ard A.		and a second state of a second state					
Marker Delta											2
Mkr→CF	8.600 GHz 1001 pts) DN VALUE	Stop 3 3.20 ms (Sweep	ICTION	FI Sm	√ 1.0 MHz Y -30.691 dE	#VE	× 3.06	GHz) MHz ^{SCL}	000 W 1.	rt 1. es B ^{MODE} N
Mkr→RefLvi					3m	dl	4.0 MHz	53	f	1	<u>N</u>
More 1 of 2											

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4.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

Peak Search	M Aug 09, 2014 E 1 2 3 4 5 6 E M 444444	D4:14:16 AF TRAC TYF	ALIGNAUTO	SOURCE OFF	SENSE:E	GHz	m Analyzer - Swept SA RF 50 ົດ AC 3.2984000000000	gilent Spectr 1 Marker 1
NextPeal	^{P NNNNN} 3 4 GHz 35 dBm	1 3.298 -29.3	Mki		Atten: 6 dB	IFGain:Low	Ref Offset 41.2 dB Ref 33.20 dBm	0 dB/div
Next Pk Righ								-og 23.2 13.2
Next Pk Lef	-13.00 dBm							5.80 16.8 26.8
Marker Delt		A		and a second	ng n	dan de parte de la parte		36.8 <mark>2</mark> 46.8 ← 56.8 ←
Mkr→Cl	.600 GHz 1001 pts)	Stop 3 3.20 ms (1 FUNCTIO	Sweep 3	FUNCTION	1.0 MHz Y	#VBW	O GHZ I.0 MHZ	tart 1.00 Res BW
Mkr→RefLv					-29.335 dBm dBm	98 4 GHz 34.0 MHz	f 3.2 f 5	1 N 1 2 N 1 3 4 5 6
More 1 of:								7 8 9 10 11
			I ostatus					12 s g



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4.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

		0444454						zer - Swept SA	nt Spectrum Analy
Peak Search	M Aug 09, 2014	U4:14:45 A TRAC	pe: Log-Pwr	Avg		Tuin: Enc	GHz	800000000	rker 1 3.048
NextPeak	B 8 GHz 56 dBm	r1 3.04 -30.2	Mk	Avgjr	dB	Atten: 6	PNO: Fast C IFGain:Low	fset 41.2 dB 3 .20 dB m	Ref Of IB/div Ref 3
Next Pk Right									2
Next Pk Left	-13.00 dBm	1	•)
Marker Delta	149970184944			11 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -			anthan an Isana		2
Mkr→CF	.600 GHz 1001 pts) IN VALUE	Stop 3 3.20 ms (FUNCTIO	Sweep	FUNCTION	2	/ 1.0 MHz	#VB	lz ×	rt 1.000 GHz es BW 1.0 MH MODE TRC SCL
Mkr→RefLvi					IBM IBM	-30.256 d d	48 8 GHz 34.0 MHz	3.0	N 1 F N 1 F
More 1 of 2									

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Test result

1)lowest frequency:

Vleasurement Record:										
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)						
9KHz to 1GHz	RBW=100KHz	-42.7	-13.0	-29.7						
1GHz to 10GHz	RBW=1MHz	-30.7	-13.0	-17.7						

2)Middle frequency:

Measurement Record:										
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)						
9KHz to 1GHz	RBW=100KHz	-42.8	-13.0	-29.8						
1GHz to 10GHz	RBW=1MHz	-29.3	-13.0	-16.3						

3)highest frequency

Measurement Record:										
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)						
9KHz to 1GHz	RBW=100KHz	-42.4	-13.0	-29.4						
1GHz to 10GHz	RBW=1MHz	-30.2	-13.0	-17.2						



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5.Downlink: 869MHz ~ 894MHz(WCDMA,LTE)

Remark:

Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm),finally find the worst case as the EUT with Maximum Rated Output power(33dBm).

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

5.1 lowest frequency

9KHz to 1GHz

Agiler	t Spe	ctrur	n An	alyzer - S	Swept	SA				051105		0.00			b 0.40			-	
Mar	ker	18	R⊧ 79	.0000	000	00 N	ЛНz	Fast C	Tria	Free R	un	#Avg Avall	Type Hold::	*: RMS >20/20	09:10	TRAC TYF	M AUG 10, 20 E 1 2 3 4 5 E M WWWW	14 6 6	Peak Search
		_	Ref	Offset	41.3	dB	IFGai	n:Low	Atte	n:6 dB				N	1kr1	DE 875	0.0 MH		Next Peak
10 dl Log 25.1 15.1 5.10	3/div	·	Rei	35.1	U dB	.m										▲1			Next Pk Right
-4.90 -14.9 -24.9																	-13.00 d	9m	Next Pk Left
-34.9 -44.9 -54.9	h-m-	a gad a ca da		mtolinia a	dywr	ul an strag	8	Nata da Pala - m	44.0		moles_a		الإيدارين			j l		W ~	Marker Delta
Star #Re	t9 sB\ MODE N	KHZ N 1 TRC	00 SCL	kHz		× 8	79.0 N	#VB	W 300 I Y 19.95	(Hz 57 dBn	FUI	NCTION	FUN	Sweep	Stop 95.6 n) 1.0 ns (0000 GH 1001 pt IN VALUE	iz s)	Mkr→CF
2 3 4 5 6 7	N	1	f			7	60.0 N	MHZ	-43.00	02 dBm									Mkr→RefLvl
8 9 10 11 12														2					More 1 of 2
MSG			_													cou	pled: Acc	y ur	nspec'd < 10MHz



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1GHz to 10GHz



5.2 Middle frequency 9KHz to 1GHz

9KHZ to TGHZ





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1GHz to 10GHz





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5.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

	RF 50	DΩ AC		9	ENSE:EXT :	SOURCE OFF	ALIGN AUTO	09:12:30 A	M Aug 10, 2014 📕	
ter 1	2.570000	000000	GHz	Tria: Er	oo Dun	#Avg	Type: RMS	TRA		Peak Search
			PNO: Fast IFGain:Low	Atten: 6	6 dB	A Y BI	1010.20120	D	ET P NNNNN	
	Ref Offset	41.3 dB					N	1kr1 2.5	70 GHz	Next Peak
V	Ref 35.1	0 dBm						-29.9	66 dBm	
										Next Pk Right
									-13.00 dBm	Next Pk Left
							\	1		
	and a shall be shown	neghannya.	Liptoma habite	- and a play may made	manualles	here	maner	ل <i>اردو به معاد طول وطار</i> ر مع	mariely Bern Afre	
										Marker Delta
										Marker Deita
0.01								Oton 2		
BW	1.0 MHz		#VE	3W 1.0 MH	z		Sweep	ຣເວp 3 2.47 ms (1000 GH2	
DE TR	CI SCLI	×		Y		FUNCTION	FUNCTION WIDTH	FUNCTI	DN VALUE	Mkr→CF
1 1	f		2.570 GHz	-29.966	dBm					
										Mkr→RefLv
										More
										1 of 2



Report No.: GZEM140700341203 Page: 47 of 214 FCC ID: PX8MBDA-200S

2.1 For WCDMA mo 1)lowest frequency	ode: ':			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-43.5	-13.0	-30.5
1GHz to 10GHz	RBW=1MHz	-29.7	-13.0	-16.7
2)Middle frequency	1:	• •	·	÷
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.2	-13.0	-28.2
1GHz to 10GHz	RBW=1MHz	-30.2	-13.0	-17.2
3)highest frequency	,			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.6	-13.0	-28.6
1GHz to 10GHz	RBW=1MHz	-30.5	-13.0	-17.5
2.2 For LTE mode:				-
1)lowest frequency	1			
Measurement Record:			1	
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-43.0	-13.0	-30.1
1GHz to 10GHz	RBW=1MHz	-29.9	-13.0	-16.9
2)Middle frequency	:			
Measurement Record:		1	T	-
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.7	-13.0	-28.7
1GHz to 10GHz	RBW=1MHz	-30.4	-13.0	-17.4
3)highest frequency	1			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.7	-13.0	-28.7
1GHz to 10GHz	RBW=1MHz	-30.0	-13.0	-17.0



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6.Uplink: 824MHz ~ 849MHz(WCDMA,LTE)

Remark:

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

6.1 lowest frequency

9KHz to 1GHz

Agiler	nt Spe	ctru	n An	alyzer - S	wept SA														
LXI			RF	50 :	Ω AC				S	ENSE:E)	(T SOUF	RCE OFF	_	ALIGNAUTO	05:	48:32 A	M Aug 09, 20)14	Marker
Mar	ker	23	304	.00626	54000	D MIHE PN IFG	Z 10: Fast Sain:Lov	t 🖵 w	Trig: Fre Atten: 6	e Run dB	1	#Avg Avg H	lype lold:>	: RMS 100/100		TYP	2 3 4 PE M 4 1 ET P N N N I	56 101 NN	Select Marker
10 di	B/div	,	Ref Ref	Offset 4 5 33.30	1.3 dB dBm									N	lkr2 -4	304 2.7	l.0 MH 11 dBi	Z M	2
23.3 13.3 3.30															_1				Normal
-6.70 -16.7 -26.7							. 2										-13.00 d	Bın	Delta
-36.7 -46.7 -56.7	Jhele	an Prandari		en Marthanen	nulm	A.Larador	2 Lursin		unan pin-thaty	******		~~!!_~ <u>~</u>		an a	,/ 	hum	an a	~	Fixed⊳
Star #Re	t9 sB\ MODE	KHZ W 1	00 SCL	kHz	×	005	#V	/BW	300 kH; Y	<u>z</u>	FUN	CTION	FUN	Sweep	Sto 95.6	op 1.0 ms (FUNCTIO	0000 GH 1001 pt	iz S)	Off
2 3 4 5 6 7	N		f			825.0 304.0	<u>0 MHz</u>		-42.711 c	IBm IBm									Properties▶
8 9 10 11 12														Ch etatue	• •	C	nladi Aas		More 1 of 2
8 9 10 11 12 <u>MSG</u>															<u>1</u> A	C cou	pled: Acc	y ur	M 1 nspec'd < 10MH

1GHz to 10GHz

Peak Search	M Aug 27, 2014	08:05:02 A	ALIGNAUTO	T #Ava	SENSE:E	CH-	m Analyzer - Swept SA RF 50 Ω AC	gilent Spectr /
NextPea		TY D	old:>100/100	Avgli	Trig: Free Ru #Atten: 0 dB	PNO: Fast IFGain:High	5. 18920000000	larker
	16 dBm	-34.1					Ref Offset 41.3 dB Ref 21.30 dBm	0 dB/div
Next Pk Righ								11.3 1.30
Next Pk Lef								28.7
	a dirang pangalan di	ALCONTROL OF STREET	while is an also raised for the second	desponded or nor Willy?	ىدەر _{ىيە} بلەر _{ىيە} بەر _{مە} بەر _{مە} بەر	مار موارد رهان مارد ورو <mark>بالسال الم</mark>	eeleseleven op plan aller i alfan son	38.7 34
Marker Delt								i8.7 i8.7
Mkr→C	.600 GHz 1001 pts)	Stop 3 .20 ms (Sweep 3		1.0 MHz	#VBW	GHz I.0 MHz	tart 1.00 Res BW
)n value	FUNCTI	FUNCTION WIDTH	FUNCTION	⊻ -34.116 dBm	89 2 GHz	SCL X	IKR MODE TR
Mkr→RefL\								2 3 4 5 6 7
Mor 1 of:								8 9 0 1
			STATUS					SG

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6.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

Agilent Spect	rum Analyzer - Swo	ept SA								
w Marker 1	RF 50 Ω 2.61460000	AC 00000 GHz	Fast (SENSE	EXT #Av un Avo	aLIGN/ g Type: RMS (Hold:>100/1	AUTO (08:1 5 100	D5:23 AM Aug 27, TRACE 1 2 3 TYPE M 4444	2014 4 5 6	Peak Search
10 dB/div	Ref Offset 41 Ref 21.30 c	.3 dB dBm	n:High	#Atten: 0 dB			Mkr1 2	.614 6 G 3.622 d	Hz 3m	Next Peal
11.3 1.30										Next Pk Righ
-18.7 -28.7 -38.7		n ,	مىرىلىلەر بىر ىمىرىغا يىرىم	advent and and		Manager of the latter of the l	يەرمىمىيە قەرىغانىغان	Laurant, Tayukaraa		Next Pk Lef
-48.7 -58.7 -68.7										Marker Delta
Start 1.00 #Res BW	00 GHz 1.0 MHz	×	#VBW	1.0 MHz	FUNCTION	Swe	St ep 3.20	top 3.600 C ms (1001 FUNCTION VALUE	SHz ots)	Mkr→Ci
2 3 4 5 6		2.614 6 G		-33.622 dBm						Mkr→RefLv
7 8 9 10 11 12										Mor 1 of 2
MSG						S	TATUS			



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6.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

	M Aug 07, 2014	00-04-00 4			versmart			er - Swept SA	Spectrum Analyz	gilent
Peak Search	CE 123456 PE MWAAAAAAA	08:04:20 A TRAC TYI	e: RMS :>100/100	#Avg Ty Avg Hol	Run	Trig: Free	GHz PN0: Fast ⊂	000000000	er 1 2.648	/ lark
NextPea	8 4 GHz 70 dBm	r1 2.64 -33.0	Mk		dB	#Atten: 0	IFGain:High	set 41.3 dB 1.30 dBm	Ref Of div Ref 2	10 dB
Next Pk Righ										_ og 11.3 - 1.30 - -8.70 -
Next Pk Lei	Querical Jurybackstore	يواور بر _ا ولوار ر	لي. موروقي ويوني	1		- and many many and a start	hand gala the option of the	flection of provide the second se	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-18.7 -28.7 -38.7
Marker Delt										-48.7 -58.7 -68.7 -
Mkr→Cl	3.600 GHz (1001 pts) ON VALUE	Stop 3 3.20 ms (FUNCTIO	Sweep 3	ICTION F	3m	V 1.0 MHz Y -33.070 df	# VB	z × 2.64	1.000 GHz BW 1.0 MH	Start #Res ^{MKR M}
Mkr→RefLv										2 3 4 5 6 7
Mor 1 of:										8 9 10 11 12
			STATUS							MSG



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2.1 For WCDMA mode: 1)lowest frequency:

leasurement Record:									
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)					
9KHz to 1GHz	RBW=100KHz	-43.1	-13.0	-30.1					
1GHz to 10GHz	RBW=1MHz	-29.2	-13.0	-16.2					
2)Middle frequency									

2)Middle trequency: Measurement Record:

Frequency range	equency range Measurement bandwidth		Limit(dBm)	Over Limit(dB)			
9KHz to 1GHz	RBW=100KHz	-41.9	-13.0	-28.9			
1GHz to 10GHz	RBW=1MHz	-30.5	-13.0	-17.5			

3)highest frequency

Neasurement Record.								
Frequency range Measurement bandwidth		Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)				
9KHz to 1GHz	RBW=100KHz	-41.2	-13.0	-28.2				
1GHz to 10GHz	RBW=1MHz	-30.2	-13.0	-17.2				

2.2 For LTE mode:

1)lowest frequency:

Aeasurement Record:								
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)				
9KHz to 1GHz	RBW=100KHz	-42.7	-13.0	-29.7				
1GHz to 10GHz	RBW=1MHz	-29.4	-13.0	-16.4				

2)Middle frequency:

Measurement Record:

Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-43.9	-13.0	-30.9
1GHz to 10GHz	RBW=1MHz	-29.7	-13.0	-16.7

3)highest frequency

Measurement Record:

Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-43.8	-13.0	-30.8
1GHz to 10GHz	RBW=1MHz	-29.5	-13.0	-16.5

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7.Downlink: 1930MHz ~ 1995MHz(WCDMA,LTE)

Remark:

Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm), finally find the worst case as the EUT with Maximum Rated Output power(33dBm).

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode,others record the data.

7.1 lowest frequency

9KHz to 1GHz

Agilent Spectrum Analyzer - Swept SA			
Marker 1 939.000549000 MHz	SENSE:EXT SOURCE C	OFF ALIGN AUTO 09:34:08 AM Aug 10, 2014 Avg Type: RMS TRACE 2 3 4 5 6 Val Hold > 20/20 TYPE MUNICIPAL	Peak Search
PNO: Fa IFGain:Li	ow Atten: 6 dB		NextPeak
Ref Offset 41.3 dB 10 dB/div Ref 35.10 dBm		-42.472 dBm	
25.1 15.1 5.10			Next Pk Right
-4.90 -14.9 -24.9		-13.00 dBm	Next Pk Left
-34.9 -44.9 Weather Annal - Anna - Annal - Ann	Land Control and C		Marker Delta
Start 9 kHz #Res BW 100 kHz #	VBW 300 kHz	Stop 1.0000 GHz Sweep 95.6 ms (1001 pts)	Mkr→CF
1 N 1 f 939.0 MH	z -42.472 dBm		
3 4 5 6 7			Mkr→RefLvl
8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10			More 1 of 2
MSG		STATUS AC coupled: Accy	unspec'd < 10MHz

1GHz to 10GHz

Agilent Spectrum Analyzer - Swept SA				
LXI RF 50Ω AC	SENSE:	EXT SOURCE OFF ALIGN AUTO	09:37:50 AM Aug 10, 2014	Marker
Marker 2 3.08260000000	PNO: Fast Trig: Free Ru IFGain:Low Atten: 6 dB	in Avg Hold>20/20	TYPE MWWWWW DET P N N N N N	Select Marker
Ref Offset 41.3 dB 10 dB/div Ref 35.10 dBm		Mk	r2 3.082 6 GHz -31.096 dBm	2
25.1 15.1				Normal
-4.90 -14.9 -24.9	1		2	Delta
-34.9	and a second the matter was for a second the second terms of terms		an Laward Barkan La Charles and La C	Fixed⊳
Center 2.300 GHz #Res BW 1.0 MHz MKR MODE TRC SCL X	#VBW 1.0 MHz	Sweep	Span 2.600 GHz 3.20 ms (1001 pts) FUNCTION VALUE	Off
1 N 1 f 19 2 N 1 f 3.0 3 4 5 5 6	140 0 GHz 29.743 dBm 182 6 GHz -31.096 dBm			Properties▶
8 9 9 9 10 10 11 10 12 10				More 1 of 2

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7.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz





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7.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz





0.1 Ear WCDMA model

SGS-CSTC Standards Technical Services Co., Ltd.

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1)lowest frequency	/:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.5	-13.0	-29.5
1GHz to 10GHz	RBW=1MHz	-29.1	-13.0	-16.1
2)Middle frequency	/:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.2	-13.0	-29.2
1GHz to 10GHz	RBW=1MHz	-30.1	-13.0	-17.1
3)highest frequency	1	·		
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.7	-13.0	-28.7
1GHz to 10GHz	RBW=1MHz	-30.1	-13.0	-17.1
2.2 For LTE mode: 1)lowest frequency	<i>'</i> :			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.5	-13.0	-29.5
1GHz to 10GHz	RBW=1MHz	-31.0	-13.0	-18.0
2)Middle frequency	/:	•		÷
Measurement Record:			-	-
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.9	-13.0	-28.9
1GHz to 10GHz	RBW=1MHz	-30.4	-13.0	-17.4
3)highest frequency	1			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-40.9	-13.0	-27.9
1GHz to 10GHz	RBW=1MHz	-31.1	-13.0	-18.1



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8.Uplink: 1850MHz ~ 1915MHz(WCDMA,LTE) Remark:

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

8.1 lowest frequency

9KHz to 1GHz

Marker 1 951.000441000 MHz Server 2	Search ext Peak
Ph0: Fast Free Run Avginoid>2020 Der Free Run Av	ext Peak
Ref Offset 41.3 dB Mkr1 951.0 MHz N 10 dB/div Ref 35.10 dBm -41.862 dBm	ext Peak
Z51 Next 15.1	Pk Right
4.90	tt Pk Left
-34.9 -44.9 -54.9	ker Delta
Start 9 kHz Stop 1.0000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 95.6 ms (1001 pts) MKR MODE TRC SCL X Y FUNCTION VIDTH FUNCTION VALUE	Mkr→CF
1 N 1 f 951.0 MHz -41.862 dBm 2 3	→RefLvl
	More 1 of 2

1GHz to 10GHz

Agilent Spectru X/	um Analyzer - Sw RF 50 G	wept SA Ω AC		SENSE:	XT SOURCE OFF	ALIGNAUTO	10:04:04 A	M Aug 10, 2014	Marker
Marker 2	3.1762000	JUUUUUU GHZ PNO: IFGair	Fast 🖵 n:Low	Trig: Free Ru Atten: 6 dB	n Avg	Hold:>20/20	TY		Select Marker
10 dB/div	Ref Offset 4 Ref 35.10	1.3 dB dBm				Mk	r2 3.17 -28.9	6 2 GHz 09 dBm	2
25.1			∲ ¹						Norma
-4.90 -14.9			1				2	-13.00 dBm	Delta
-34.9	ng gangeran gipt ty of filling an angeneration of the	paleuros sental	/ annatan		an an a frank a frank an	An	n and have a	- arinkan	Fixed
Start 1.000 #Res BW	0 GHz 1.0 MHz		#VBW	1.0 MHz	FUNCTION	Sweep :	Stop 3 3.20 ms (600 GHz 1001 pts)	of
1 N 1 2 N 1 3 4 5 5	f	1.880 0 0 3.176 2 0	GHz GHz	17.706 dBm -28.909 dBm	TONCTON	TONCTON WIDTH			Properties
6 7 8 9 9 10 10 11 10 10 10 10 10 10 10 10 10 10									More 1 of 2
12 13G						STATUS			

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8.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz





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8.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz





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2.1 For WCDMA mo 1)lowest frequency	ode: /:			
Measurement Record:	-			
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.3	-13.0	-29.3
1GHz to 10GHz	RBW=1MHz	-29.7	-13.0	-16.7
2)Middle frequency	/:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.1	-13.0	-29.1
1GHz to 10GHz	RBW=1MHz	-30.5	-13.0	-17.5
3)highest frequency	1			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.6	-13.0	-28.6
1GHz to 10GHz	RBW=1MHz	-30.4	-13.0	-17.4
2.2 For LTE mode: 1)lowest frequency	/:	1		
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.9	-13.0	-28.9
1GHz to 10GHz	RBW=1MHz	-28.9	-13.0	-15.9
2)Middle frequency:				
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-40.6	-13.0	-27.6
1GHz to 10GHz	RBW=1MHz	-30.4	-13.0	-17.4
3)highest frequency	1		·	•
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.5	-13.0	-29.5
1GHz to 10GHz	RBW=1MHz	-28.8	-13.0	-15.8

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9.Downlink: 2110MHz ~ 2155MHz

Remark:

Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm),finally find the worst case as the EUT with Maximum Rated Output power(33dBm).

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

9.1 lowest frequency

9KHz to 1GHz

Agilen	t Spect	rum Ar	alyzer - S	Swept S/	A											
w Mar	ker 2	RF 2 876	50 5.0011	Ω AC 1600	0 MH	Z		SEN	SE:EXT SO	JRCE OFF	AL Type:	IGN AUTO	09:44:53 TR/	AM Aug 10, 2014 ACE 123456	Peak	Search
					PI IFC	NO: Fast (Gain:Low	→ Tn At	ig: Free ten: 6 d	Run B	Avg F	Hold>2	0/20				NextPeak
10 dE	3/div	Ref Re	f Offset f 35.10	41.3 dB) dBm	3 1							n	-42.0	6.0 MHZ 074 dBm		
25.1 15.1															Nex	t Pk Right
5.10 -4.90 -14.9														-13.00 dBm	Ne	xt Pk Left
-24.9 -34.9 -44.9			و بوراً الدين	والأحفسوري	***	p-Jupg-du*ef4	1411-1-1-1-1-1-	raind yet etc	عماسم				p. g. stanuster	1 2→	Ma	rker Delta
-54.9 Star	t 9 kl	Hz											Stop 1	.0000 GHz		irker Deita
#Res	S BW	100 RC SCI	kHz	:	×	#VE	W 300	0 kHz Y	FU	NCTION	FUNCT	weep	95.6 ms	(1001 pts)		Mkr→CF
1 2 3 4 5 6 7		1 f 1 f			2.120 876.	0 GHz 0 MHz	-42	dE .074 dB	5m 5m						Mk	r→RefLvl
8 9 10 11 12																More 1 of 2
MSG													AC co	upled: Accy ι	inspec'd	< 10MHz

1GHz to 10GHz

Agilent	Spectru	m An	alyzer - Sw	ept SA												
LXI		RF	50 Ω	AC			SEM	VSE:EXT	SOUR		Type		09:44:02	AM Aug 10, 2014		Marker
Mark		3.0:	560000	00000	PNO: Fast IFGain:Lov		rig: Free tten: 6 d	Run B		Avg ⊢	loid>	-20/20	т	PE MINANANAN DET PINNNNN	5	elect Marker
10 dB	/div	Ref Ref	Offset 41	l.3 dB dBm								Mk	r2 3.05 -29.8	60 GHz 884 dBm		2
25.1							(1									Normal
15.1 5.10 -															_	
-4.90 - -14.9 -														-13.00 dBm		Delta
-24.9							lunur	محمد في	ww	www.math	mann		2 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	a personal personality		
-34.9 -44.9 -		Verner														Fixed⊳
-54.9			211-										0			
#Res	BW	1.0 P	9HZ VIHZ		#V	'BW 1.0) MHz					Sweep 🗄	span 3.20 ms	2.600 GH2 (1001 pts)		Off
MKR M	IODE TRI	SCL f		× 2.	120 0 GHz	29	Y 222 di 884 di	3m 3m	FUNC	TION	FUN	CTION WIDTH	FUNCT	ION VALUE		
3 4 5 6																Properties►
7 8 9 10 11																More 1 of 2
12												1				



Report No.: GZEM140700341203 Page: 61 of 214 FCC ID: PX8MBDA-200S

9.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

Marker	M Aug 10, 2014 E 1 2 3 4 5 6	09:43:05 A TRAC	ALIGNAUTO Type: RMS	T SOURCE OFF	SENSE:E	GHz	um Analyzer - Swept SA RF 50 Ω AC 3.18400000000000	gilent Spectru larker 2
Select Marker	OGHz 12 dBm	r2 3.184 -30.0	Mk	Avg	Atten: 6 dB	PNO: Fast C IFGain:Low	Ref Offset 41.3 dB Ref 35.10 dBm) dB/div
Norma					¥1			og 25.1
Delta	-13.00 dBm	²						90
Fixed▷	63	an a	139999 haral providence and providence of the first second s	nontreesson to the north of the	and by san your director	(nagaaga galag galag galag da sa		4.9 4.9 4.9
Off	.600 GHz 1001 pts) ^{DN VALUE}	Span 2 3.20 ms (Sweep	FUNCTION	1.0 MHz Y	#VB	000 GHz 1.0 MHz	enter 2.3 Res BW
Properties▶					28.298 dBm -30.012 dBm	30 0 GHz 84 0 GHz	f 2.1: f 3.1:	1 N 1 2 N 1 3 4 5 5
More 1 of 2								7 8 9 9 1 2
			I status					G



Report No.: GZEM140700341203 Page: 62 of 214 FCC ID: PX8MBDA-200S

9.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

Marker	M Aug 10, 2014 E 1 2 3 4 5 6	09:41:32 A TRAC	ALIGNAUTO	SOURCE OFF	SENSE:E	Tu) GHz	alyzer - Swept SA 50 Ω AC 410000000000	gilent Spectrum Aarker 2 3.
Select Marker	OGHz 5 dBm	r2 3.041	Mk	AVgji	g: Free Rui ten: 6 dB	,	PNO: Fast IFGain:Low	f Offset 41.3 dB f 35.10 dBm	10 dB/div
Norma					(1				og 25.1 15.1
Delta	-13.00 dBm	2	¢²						4.90
Fixed▷	faar***********************************	ىرىرىيەل ت _{اھىل} ىكلىمە		in a star in the second se	heman		**************************************	-Batanordo-Louten-o	34.9 44.9 54.9
Off	.600 GHz 1001 pts) IN VALUE	Span 2 3.20 ms (FUNCTIO	Sweep 3	FUNCTION	MHz Y	BW 1.0	#VI	GHz MHz	Center 2.30 Res BW 1.
Properties▶					748 dBm 865 dBm	-28.	041 0 GHz	3.0	1 N 1 2 N 1 3 4 5 6
More 1 of 2									7 8 9 0 1
								·	G



Report No.: GZEM140700341203 Page: 63 of 214 FCC ID: PX8MBDA-200S

2.1 For WCDMA m 1)lowest frequency	ode: y:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.7	-13.0	-29.7
1GHz to 10GHz	RBW=1MHz	-29.1	-13.0	-16.1
2)Middle frequency	y:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.5	-13.0	-29.5
1GHz to 10GHz	RBW=1MHz	-30.2	-13.0	-17.2
3)highest frequency	y		·	·
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.3	-13.0	-28.3
1GHz to 10GHz	RBW=1MHz	-29.8	-13.0	-16.8
2.2 For LTE mode: 1)lowest frequency	y:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.0	-13.0	-29.1
1GHz to 10GHz	RBW=1MHz	-29.9	-13.0	-16.9
2)Middle frequency	y:			
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.4	-13.0	-29.4
1GHz to 10GHz	RBW=1MHz	-30.0	-13.0	-17.0
3)highest frequency	y		·	·
Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.1	-13.0	-29.1
1GHz to 10GHz	RBW=1MHz	-28.9	-13.0	-15.9

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10.Uplink: 1710MHz ~ 1755MHz Remark:

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

10.1 lowest frequency

9KHz to 1GHz

Agilen	t Spectru	im Analy	rzer - Sw	ept SA									
I <mark>XI</mark> Mar	or 1	RF 14.00	50 Ω					SENSE:EXT S	OURCE OFF	ALIGNAUTO	08:10:00 Al	M Aug 09, 2014	Peak Search
Wall		14.00	10074		PNC IFGa): Fast C in:Low	Trig: F Atten	ree Run : 6 dB	Avg Ho	ld:>100/100	TYF DE		NextBook
10 dE	3/div	Ref 0 Ref 2	ffset 41 2 1.70 (.7 dB d Bm							Mkr1 14 -40.6	I.0 MHz 84 dBm	Nextreak
LUg													Next Pk Right
11.7													
1.70													Next Pk Left
-8.30													
-18.3													Marker Delta
-28.3													
-38.3	∮ ¹							1				ante a l'activ	Mkr→CF
-48.3	**************************************	shipation	Lafer United	en parte	-langer (INIAN 'YAN	niner-jikterenter	- and an and a start of the sta	/p.,	halifa, fri (1999) - 1994	ale and ale to a set of the set of the	int — in the stand of the	
-58.3													Mkr→RefLvl
-68.3													
													More
Star #Res	SBW	z 100 ki	Ιz			#VB	W 300 k	Hz		Sweep	Stop 1.0 95.6 ms (000 GHz 1001 pts)	1 of 2
MSG											s 🚹 AC cou	pled: Accy u	nspec'd < 10MHz

1GHz to 10GHz

Aglient Spectrum Analyzer - Swept SA	
XX RF 50 Ω AC SENSE:EXT SOURCE OFF ALIGN AUTO DB:17:37 AM Aug 09,2014 More Lear 2: 2: 940.000.000.000.000 CH= #Ave Type: RMS IRACE ID 24/56	Marker
PRO: Fast IFGain:Low Atten: 6 dB	elect Marker
Ref Offset 41.7 dB Mkr2 2.840 8 GHz 10 dB/div Ref 21.70 dBm -28.915 dBm	2
Log 11.7 1.70 8.30	Normal
-18.3 -28.3 -38.3	Deita
	Fixed⊳
Start 1.000 GHz Stop 3.600 GHz #Res BW 1.0 MHz #VBW 1.0 MHz Sweep 3.20 ms (1001 pts) MKR MODEL TRC SCL X Y FUNCTION FUNCTION VIDTH FUNCTION VALUE	Off
1 1 1/40 5 6112 10,000 dBin 2 N 1 f 2,840 8 GHz -28,915 dBm 3 4 - - -28,915 dBm - 5 - - - - - 6 - - - - - - 7 - <	Properties►
	More 1 of 2

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10.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz





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10.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

Agilent Spect	rum Analyzer - Swo	ept SA						
Reference	ce Level 21.	AC .70 dBm	SENSE:	EXT SOURCE OFF	ALIGNAUTO	08:15:29 / TRA	M Aug 09, 2014	Amplitude
10 dB/div	Ref Offset 41 Ref 21.70 (PNO: Fast (IFGain:Low .7 dB dBm	Trig: Free Ru Atten: 6 dB	n Avgļi	Hold:>100/100	r2 3.07 -28.6	2 2 GHz 36 dBm	Ref Leve l 21.70 dBm
Log 11.7 1.70								Attenuation [6 dB]
-18.3 -28.3 -38.3	og of the second second		رالەر ھەرەپ ئىستىرلار بىلەتتە مېزىر كى		۹۰۰۰۰ میکاری اور میکارد. ۱۹۹۹ - ۲۰۰۰ میکارد م	2		Scale/Div 10 dB
-48.3 -58.3 -68.3								Scale Type
Start 1.00 #Res BW	00 GHz 1.0 MHz	#VB	3W 1.0 MHz		Sweep	Stop 3 3.20 ms (3.600 GHz (1001 pts)	
MKR MDDE TI 1 N 1 2 N 1 3 4 5 5 6 7	RC SCL	X 1,720 2 GHz 3.072 2 GHz	∀ 15,567 dBm -28,636 dBm	FUNCTION	FUNCTION WIDTH	FUNCTI	ON VALUE	
8 9 10 11 12								More 1 of 2
MSG								

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2.1 For WCDMA mode:

1)lowest frequency: . .

Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.1	-13.0	-29.1
1GHz to 10GHz	RBW=1MHz	-29.5	-13.0	-16.5

2)Middle frequency: Measurement Record:

measurement necord.		
Frequency range	Measurement	S

Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-42.3	-13.0	-29.3
1GHz to 10GHz	RBW=1MHz	-30.4	-13.0	17.4

3) highest frequency

Measurement Record:												
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)								
9KHz to 1GHz	RBW=100KHz	-41.5	-13.0	-28.5								
1GHz to 10GHz	RBW=1MHz	-29.5	-13.0	-16.5								

2.2 For LTE mode:

1)lowest frequency:

...

Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-40.7	-13.0	-27.7
1GHz to 10GHz	RBW=1MHz	-28.9	-13.0	-15.9
0)Middle frequency				

2)Middle frequency: Measurement Record:

measurement necord.				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-41.3	-13.0	-28.3
1GHz to 10GHz	RBW=1MHz	-29.2	-13.0	-16.2

3) highest frequency . .

Measurement Record:						
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)		
9KHz to 1GHz	RBW=100KHz	-40.7	-13.0	-27.7		
1GHz to 10GHz	RBW=1MHz	-28.6	-13.0	-15.6		



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11.Downlink: 2620MHz ~ 2690MHz(LTE)

Remark:

Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm), finally find the worst case as the EUT with Maximum Rated Output power(33dBm).

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

11.1 lowest frequency

9KHz to 1GHz

Agile	nt Spe	ctrur	n Ana	alyzer - S	wept SA	L												
<mark>ж</mark> Ма	rker	16	RF 16	50 .0034	Ω AC 5600	0 MH	z		SE	NSE:E	EXT SOUP	RCE OFF	Тур	ALIGNAUTO e: RMS	03:00:45 TR/	AM Aug 09, 201 ACE <mark>1 2 3 4 5</mark> (4	Peak Search
						P) IFG	10: Fast Sain:Lov		Trig: Fre Atten: 6	e Ru dB	n	Avg H	lold:	87/100	T	PPE M WWWWWW DET P N N N N I		
10 d	B/di	,	Ref Ref	Offset 4 35.00	13 dB I dBm									Μ	101 lkr1 40.4	6.0 MHz I51 dBm		NextPeak
Log 25.1 15.1																		Next Pk Right
5.0	-																	
-5.00 -15.0																		Next Pk Left
-25.0 -35.0												♦1						
-45.0 -55.0) 	ur da	un plan pop	leve, ner "N	in odraw	n viltral, White	yes hand	ala Ula	ilent-o-stand	-benapas	hdunana	and water	n _{ent} (Ar	-lang-server/(Linner	ghannalasis	nauga an		Marker Delta
Sta #Re	urt9 esB	kHz W 1	00	kHz			#V	/BW	300 kHz	 :				Sweep s	Stop 1 95.6 ms	.0000 GHz (1001 pts)		Mkr. CE
MKR 1	MODE N	TRC 1	SCL f		>	< 616.	0 MHz		۲ -40.451 d	Bm	FUN	CTION	FUI	NCTION WIDTH	FUNCT	ION VALUE		WIKI→CF
234567																		Mkr→RefLvi
8 9 10 11 12																		More 1 of 2
MSG															AC co	upled: Accy	uns	pec'd < 10MHz

1GHz to 10GHz

Agiler	nt Spe	ctru	n Ana	alyzer	- Swe	ept S/	1																				
₩ Ref	erei	nee	RF	ve	50 Ω 35.	AC 00	dBm	1				SEI	VSE:E)	π sou	RCE O #A	FF Vg Ty	A ype:	RMS	UTO	02:5	53:48 A TRA	AM AU .CE 🚺	309,201 2345	4	ļ	Amplite	ude
							IF	PNO: FGain	Fast :Low	₽	Trig Atte	:Free n:6 d	e Run dB	1	Av	gHo	ld:>	100/10	00		TY D	PE M DET P	NNNN			Re	fLeve
10 di	B/div		Ref Ref	Offse 35.	et 43 00 c	dB iBm													Mk	r2 3 -2	.04 8.6	88 01	GH: dBm			35	.00 dBm
Log 26.0															TĂ	1											
15.0																									A	attent	
5.00	<u> </u>																										[o dD]
-5.00																										0.0	ole/Di
-15.0															H,	h			_	2						50	10 dB
-25.0	\vdash										lungerturn	nt-re-lat			t l	Pro-10-10	dana			- 			an grade and an				. o un
-35.0		white of			4																					Cas	
-45.0																									a	Sca	le Type Lin
-35.0																											
Star #Re	rt 1. s Bl	000 W 1	GH .0 N	iz ViHz					#VE	зw	1.0 N	ИHz					ş	Swee	ep :	St 3.20	op 3 ms (3.60 (100	0 GH: 11 pts				
MKR	MODE	TRC	SCL			;	<				Y			FUN	ICTION		FUNC	TION W	/IDTH	F	UNCTI	ION VA	LUE				
1	N	1	f f				2.625	50G 38G	iHz iHz		31.8 -28.6	<u>11 di</u> 01 di	Bm 3m														
3									\rightarrow				\rightarrow														
5																											
7																											
9																											More
11																											1 of 2
12																		-4									

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11.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz



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11.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz





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2.1 Test result

1)lowest frequency:

Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-40.5	-13.0	-27.5
1GHz to 10GHz	RBW=1MHz	-28.6	-13.0	-15.6

2)Middle frequency:

Measurement Record:

	Measurement	Spurious Emission				
Frequency range	bandwidth	Level(dBm)	Limit(dBm)	Over Limit(dB)		
9KHz to 1GHz	RBW=100KHz	-40.4	-13.0	-27.4		
1GHz to 10GHz	RBW=1MHz	-28.7	-13.0	-15.7		

3)highest frequency

Measurement Record:												
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)								
9KHz to 1GHz	RBW=100KHz	-40.0	-13.0	-27.0								
1GHz to 10GHz	RBW=1MHz	-27.9	-13.0	-14.9								



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12.Uplink: 2500MHz ~ 2570MHz(LTE) Remark

The data of the WCDMA mode is almost the same with LTE mode, so we only show the photo in the LTE mode, others record the data.

12.1 lowest frequency

9KHz to 1GHz

Agilent Spectrum Analyzer - Swept SA											
Mark	(er 1 9	02.00088	2000 MH	z	Trin: Enc	Due	#Avg Type	: RMS	09:29:51 A TRAC	E 1 2 3 4 5 6	Peak Search
			PI IFC	NO: Fast 🖵 Gain:Low	Atten: 6 d	dB	Avginoid.	DET PNNN			
10 dB	/div	Ref Offset 43 Ref 23.00	3 dB dBm					N	1kr1 902 -39.8	2.0 MHz 46 dBm	NextPeak
13.0 -											Next Pk Right
3.00 -											
-7.00 -										12.00 dBm	Next Pk Left
-17.0 -											Marker Delta
-27.0 -											
-37.0 -	այրվերո	and provide the	Analalanta	hander and the state of the sta	whether	rhadisahusah	Ulopussiand Allapor	warehowner	elanovaluses	halman	Mkr→CF
-47.0											
-57.0											Mkr→RefLvl
-67.0 -											
											More
start #Res	BW 1	00 kHz		#VBW	300 kHz			Sweep	stop 1.0 95.6 ms (1000 GHz 1001 pts)	1 of 2
MSG									🔥 AC cou	pled: Accy u	nspec'd < 10MHz

1GHz to 10GHz

Agiler	it Spectr	um An	alyzer	- Swep	t SA														
w Mar	ker 1	RF 2.50	5260	50 Ω 000(AC 0000	GHz			SEN	SE:EXT	SOUR	CE OFF #Avg	ј Туре	ALIGNAUTO	09:32:4	19 AM A	ug 09, 2014 <mark>2 3 4 5</mark> 6		Peak Search
	PNO: Fast 🖵 IFGain:Low					► Irig Att	'Trig:FreeRun Atten:6dB			Avg Hold:>100/100			r1 2 5				NextPeal		
10 di	B/div	Ref Rei	Offse	t 43 d)0 dE	B 3m										16	.009	dBm		
Log 13.0												1							
3.00																			Next Pk Right
-7.00																	-13.00 dBm		
-27.0											, and the second se	han		No. of Concession, Name		برياويدها	واسترد ورار ما وروا الم		Next Pk Left
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12.2 Middle frequency

9KHz to 1GHz



1GHz to 10GHz

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12.3 highest frequency

9KHz to 1GHz



1GHz to 10GHz

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2.2 Test result

1)lowest frequency:

Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-39.8	-13.0	-26.8
1GHz to 10GHz	RBW=1MHz	-26.7	-13.0	-13.7

2)Middle frequency:

Measurement Record:

Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-40.1	-13.0	-27.1
1GHz to 10GHz	RBW=1MHz	-27.1	-13.0	-14.1

3)highest frequency

Measurement Record:				
Frequency range	Measurement bandwidth	Spurious Emission Level(dBm)	Limit(dBm)	Over Limit(dB)
9KHz to 1GHz	RBW=100KHz	-40.0	-13.0	-27.0
1GHz to 10GHz	RBW=1MHz	-26.6	-13.0	-13.6



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7.2.3 Band Edge& Intermodulation

Test Date:	2014-08-19
Test Requirement:	FCC part 22.917(b) & FCC part 24.238(b) & FCC part 27.53(h) 22.917(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
	24.238(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
	27.53(h) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
Test Method:	FCC part 2.1051&2-11-04/EAB/RF
EUT Operation:	
Status:	Drive the EUT to maximum output power.
Conditions:	Normal conditions
Application:	Cellular Band RF output ports

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Test Configuration:







Test Procedure:

Conducted Emissions test procedure:

a) Connect the equipment as illustrated, with the notch filter by-passed, when the output power is over the max value of the Spectrum Analyzer, add the attenuator to avoid destroying the facility.

b) Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line.

- c) do not apply any tone to modulate the EUT.
- d) Adjust the spectrum analyzer for the following settings:
 - 1) Resolution Bandwidth,(base the standard, apply the different set),here is 100KHz for frequency band less than 1GHz, 1MHz for frequency over 1GHz;
 - 2) Video Bandwidth refer to standard requirement.

e) Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from:

1) the lowest radio frequency generated in the equipment, it can be 9KHz base the test method, here select 30MHz as lowest frequency start point;

2) the highest radion frequency shall higher than 10 times of carrier frequency;

f) Record the frequencies and levels of spurious emissions from step e) Remark:

The notch filter is used for avoid the EUT fundamental carrier output power making the spectrum overload and the harmonic spurious brought by it.

When the EUT fundamental carrier is not enough to make the status, the notch filter could be not used.



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Intermodulation	1. Connect the equipment as illustrated;
Test Procedure:	2. Test the background noise level with all the test facilities;
	3. Keep one transmitting path, all other connectors shall be connected by normal power or RF leads;
	 Select the attenuator to avoid the test receiver or spectrum analyzer being destroied;
	5. Keep the EUT continuously transmitting in max power;
	6. Keep two signals are same in modulation type and level;
	Measure the 3 order intermodulated product by the EUT(the sum of the two unwanted signal should be rated power);
	8. Correct for all losses in the RF path;
	9. Read the conducted spurious emissioins of the EUT antenna port.
	Remark:
	CW signal rather than typical signal is acceptable (for FM).
	 At maximum drive level, for each modulation: one test with three tones, or two tests (high-, low-band edge) with two tones
	Limit usually is -13dBm conducted.
	 Not needed for Single Channel systems.



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7.2.3.1 Measurement Record:

1) Downlink: 728MHz to 746MHz(LTE)

1.Pretest the EUT with Maximum Rated Output Power(27dBm,30dBm,33dBm),finally find the worst case as the EUT with Maximum Rated Output power(33dBm)

LTE Mode:

1.1 one signal input —Lower Edge(1 Carrier 15M modulation)



^{1.2} one signal input —Upper Edge



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1.3 one signal input —Lower Edge (1 Carrier 5M modulation)

1.4 one signal input —Upper Edge



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