

# TEST REPORT

**REPORT NUMBER: B18W50279\_Rev4**

**ON**

**Type of Equipment:** LTE CAT-M1/NB-IOT/GPRS/EDGE/GNSS MODULE

**Model Name:** SIM7000G

**Manufacturer:** Shanghai SIMCom Wireless Solutions Limited.

## ACCORDING TO

**FCC CFR Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS;**

**PART 22, PUBLIC MOBILE SERVICES;**

**PART 24, PERSONAL COMMUNICATIONS SERVICES;**

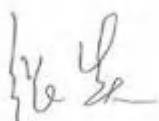
**PART 27, MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES;**

**Chongqing Academy of Information and Communications Technology**

*Month date, year*

*Jan, 22, 2020*

Signature



**Zhang Yan**

**Director**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.

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## **Revision Version**

<b>Report Number</b>	<b>Revision</b>	<b>Date</b>	<b>Memo</b>
<b>B18W50279</b>	<b>V0.0</b>	<b>2018-09-17</b>	--
<b>B18W50279</b>	<b>V1.0</b>	<b>2019-10-22</b>	--
<b>B18W50279</b>	<b>V2.0</b>	<b>2019-10-31</b>	--
<b>B18W50279</b>	<b>V3.0</b>	<b>2019-11-25</b>	--
<b>B18W50279</b>	<b>V4.0</b>	<b>2020-01-22</b>	--

# **Chongqing Academy of Information and Communications Technology**

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**FCC ID:** 2AJYU-SIM7000G

**Report Date:** 2020-01-22

**Test Firm Name:** Chongqing Academy of Information and Communications Technology

**FCC Registration Number:** CN1239

## **Statement**

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 2, 22, 24, 27 , The sample tested was found to comply with the requirements defined in the applied rules.

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## **1 General Information**

### **1.1 Notes**

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 2, 22, 24, 27.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex B.

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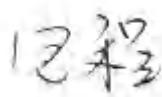
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## 1.2 Testers

Name: Bao Cheng  
Position: Engineer  
Department: Department of RF test  
Date: 2018-08-01 to 2020-01-21

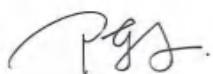
Signature:



Editor of this test report:

Name: Chen Wen  
Position: Engineer  
Department: Department of RF test  
Date: 2020-01-22

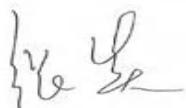
Signature:



Technical responsibility for area of testing:

Name: Zhang Yan  
Position: Manager  
Department: Director of the laboratory  
Date: 2020-01-22

Signature:



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## **1.3 Testing Laboratory information**

### **1.3.1 Location**

Name: Chongqing Academy of Information and Communications Technology  
Address: Building B, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China, 401336  
Tel: +86-23-88069965  
Fax: +86-23-88608777  
Email: liqiao@caict.ac.cn

### **1.3.2 Test location, where different from section 1.3.1**

Name: -----  
Street: -----  
City: -----  
Country: -----  
Telephone: -----  
Fax: -----  
Postcode: -----

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## **1.4 Details of applicant or manufacturer**

### **1.4.1 Applicant**

Name: Shanghai SIMCom Wireless Solutions Limited.  
Address: Bldg. B, SIM Technology Bldg.,No.633, Jinzhong Rd,  
Changning Dist., Shanghai, P.R.China  
Country: China  
Telephone: +86-21-31575182  
Fax: --  
Contact: Yongsheng Li  
Telephone: +86-21-31575182  
Email: --

### **1.4.2 Manufacturer (if different from applicant in section 1.4.1)**

Name: --  
Address: --  
City: --  
Country: --

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## 2 Test Item

### 2.1 General Information

Manufacturer:	Shanghai SIMCom Wireless Solutions Limited.
Type of Equipment:	LTE CAT-M1/NB-IOT/GPRS/EDGE/GNSS MODULE
Model Name:	SIM7000G
Production Status:	Product
Hardware Version:	SIM7000G_V1.03
Software Version:	SIM7000G R1529
Receipt date of test item:	2018-07-03

### 2.2 Outline of Equipment under Test

The SIM7000G, referred to as “EUT” hereafter, is a multi-Band wireless modem operating on the GSM/LTE CAT-M1/NB-IoT networks. The table below shows the supported Bands for the EUT.

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
GSM	GSM850	824 – 849	869 – 894	--
	PCS1900	1850 – 1910	1930 – 1990	--
NB-IoT	Band2	1850 – 1910	1930 – 1990	--
	Band5	824 – 849	869 – 894	Covered by Band26 (Band5 is a subset of Band26. Both Bands share the same hardware and have the same radio performance. Separate measurement in Band5 is not required.)
	Band12	699 – 716	729 – 746	--
	Band13	777 – 787	746 – 756	--
	Band17	704 – 716	734 – 746	--
	Band26	814 – 849	859 – 894	--
	Band2	1850 – 1910	1930 – 1990	--
CAT-M	Band4	1710 – 1755	2110 – 2155	--

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Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
	Band5	824 – 849	869 – 894	Covered by Band26 (Band5 is a subset of Band26. Both Bands share the same hardware and have the same radio performance. Separate measurement in Band5 is not required.)
	Band12	698 – 716	728 – 746	--
	Band13	777 – 787	746 – 756	--
	Band26	814 – 849	859 – 894	--

## 2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

## 2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Modules	Shanghai SIMCom Wireless Solutions Limited.	SIM7000G	D20618181ACDFF4	None
B	Modules	Shanghai SIMCom Wireless Solutions Limited.	SIM7000G	MP0618221C7CAF8	None
C	Adaptor	Someting High Electric (Xiamen) Company	P-050B-050200	--	None

## 2.5 Other Information

--

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## 3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC Rules	Name of Test	Result
2.1046, 22.913(a) 24.232(c), 27.50	Conducted RF Power Output	Pass
2.1049, 22.917(b), 24.238(b)	Occupied Bandwidth	*Note 1
2.1051, 2.1053 22.917, 24.238 27.53	Conducted spurious emissions	Pass
2.1051, 2.1053 22.917, 24.238 27.53	Radiated Spurious Emission	Pass
2.1051, 2.1053 22.917, 24.238 27.53	Band Edge	Pass
2.1055, 22.355 24.235, 27.54	Frequency Stability over Temperature Variation	Pass
2.1055, 22.355 24.235, 27.54	Frequency Stability over Voltage Variation	Pass
24.232, 27.50	Peak to Average Ratio	Pass
22.913(a), 24.232(b)	ERP and EIRP	Pass
Note 1: No applicable performance criteria.		

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## 4 Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

No.	Equipment	Model	SN	Manufacture	Cal. Due Date
1	EMI Test Receiver	ESU26	100367	R&S	2020-03-01
2	Trilog super broadBand test antenna	VULB 9163	9163-544	R&S	2019-11-24
3	Double-Ridged Horn Antenna	HF907	100356	R&S	2021-06-20
4	Fully-Anechoic Chamber	11.8m×6.5 m×6.3m	--	ETS	2022-10-22
5	Universal Radio Communication Tester	CMW500	128181	R&S	2020-03-01
6	Signal Generator	SMU200A	104517	R&S	2020-03-01
7	spectrum analyzer	FSQ 26	201137/026	R&S	2020-03-01
8	spectrum analyzer	N9020A	MY50200376	Agilent	2020-03-01
9	Universal Radio Communication Tester	CMU200	112012	R&S	2020-03-01
10	Climate chamber	SH-241	92010759	ESPEC	2020-03-01
11	DC Power Supply	N6705B	MY50000919	Agilent	2019-12-05
12	Universal Radio Communication Tester	CMW500	152395	R&S	2020-03-01
13	Universal Radio Communication Tester	SP8315	SP8315-1249	StarPoint	2020-03-01

### 5 Test Results

#### 5.1 Conducted RF Power Output

<b>Specifications:</b>	FCC Part 2.1046, 22.913(a), 24.232(c), 27.50
<b>DUT Serial Number:</b>	S1: D20618181ACDFF4
<b>Test conditions:</b>	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	Pass

#### Limit Level Construction:

**According to Part 22.913(a)**, the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

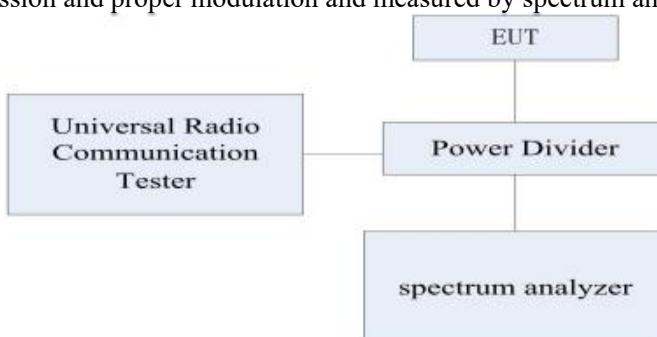
**According to Part 24.232(c)**, mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

**According to Part 27.50(c)**, 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;

**According to Part 27.50(d)**, 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.

#### Test Setup:

During the test, the EUT was controlled via the Wireless Telecommunications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



#### Test Method:

- 1) The EUT was coupled to the spectrum analyzer and the Wireless Telecommunications Test Set through a power divider. The loss of the RF cables of the test system is calibrated to correct the readings.
- 2) For RMS power test, the spectrum analyzer was set to RMS Detector function and Maximum hold mode.
- 3) For Peak power test, the spectrum analyzer was set to Maxpeak Detector function and

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Maximum hold mode.

4) The resolution Bandwidth of the spectrum analyzer was comparable to the emission Bandwidth.

**Note:** --

## 5.1.1 GSM850 Conducted RF Power Output Results

### GPRS GMSK Mode:

Channel	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	33.3	31.8	29.7	27.3
190 (836.6MHz)	33.5	32.0	29.3	27.2
251 (848.8MHz)	32.7	31.2	29.4	27.1

### EGPRS GMSK Mode

Channel	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	33.4	32.0	29.6	27.5
190 (836.6MHz)	33.5	32.1	29.5	27.4
251 (848.8MHz)	33.0	31.6	29.3	27.0

### EGPRS 8PSK Mode

Channel	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
128 (824.2MHz)	30.0	28.2	27.2	26.0
190 (836.6MHz)	30.0	28.2	26.9	25.8
251 (848.8MHz)	29.6	27.8	26.7	25.2

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## 5.1.2 PCS1900 Conducted RF Power Output Results

### GPRS GMSK Mode

Channel	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	28.3	27.5	26.0	24.5
661 (1880.0MHz)	28.0	27.0	25.7	24.4
810 (1909.8MHz)	28.4	27.5	26.3	24.9

### EGPRS GMSK Mode

Channel	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	28.5	27.5	25.8	24.8
661 (1880.0MHz)	28.0	27.0	25.6	24.2
810 (1909.8MHz)	28.4	27.6	26.1	24.8

### EGPRS 8PSK Mode

Channel	Maximum output power(pk) [dBm]			
	1TS	2TS	3TS	4TS
512 (1850.2MHz)	24.4	23.3	22.2	21.2
661 (1880.0MHz)	24.0	23.0	22.0	21.0
810 (1909.8MHz)	24.7	23.5	22.5	21.5

## 5.1.3 NB-IoT B2 Conducted RF Power Output Results

### NB-IoT standalone Test frequencies for operating Band 2

Test Frequency ID	Channel	Frequency (MHz)	Power(dBm)	Power(dBm)
			QPSK	BPSK
Low Range	18630	1853	22.52	22.49
Mid Range	18900	1880	21.97	21.93
High Range	19193	1909.3	21.05	21.04

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## 5.1.4 NB-IoT B12 Conducted RF Power Output Results

### NB-IoT standalone Test frequencies for operating Band 12

Test Frequency ID	Channel	Frequency (MHz)	Power(dBm)	Power(dBm)
			QPSK	BPSK
Low Range	23017	699.7	22.80	22.86
Mid Range	23095	707.5	22.92	22.88
High Range	23173	715.3	22.76	22.74
High	23179	715.9	-14.59	-14.50

## 5.1.5 NB-IoT B13 Conducted RF Power Output Results

### NB-IoT standalone Test frequencies for operating Band 13

Test Frequency ID	Channel	Frequency (MHz)	Power(dBm)	Power(dBm)
			QPSK	BPSK
Low Range	23205	779.5	23.29	23.26
Mid Range	23230	782.0	23.26	22.25
High Range	23255	784.5	23.17	22.40

## 5.1.6 NB-IoT B17 Conducted RF Power Output Results

### NB-IoT standalone Test frequencies for operating Band 17

Test Frequency ID	Channel	Frequency (MHz)	Power(dBm)	Power(dBm)
			QPSK	BPSK
Low Range	23735	704	22.83	22.80
Mid Range	23790	710	22.93	22.81
High Range	23849	716	22.85	22.80

## 5.1.7 NB-IoT B26 Conducted RF Power Output Results

### NB-IoT standalone Test frequencies for operating Band 26

Test Frequency ID	Channel	Frequency (MHz)	Power(dBm)	Power(dBm)
			QPSK	BPSK
Low Range	26690	814	20.80	20.83

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Mid Range	26865	831.5	21.65	20.98
High Range	27039	849	21.85	21.86

## 5.1.8 CAT-M B2 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band2	1.4MHz	18607	1#0	0	21.74	21.50
			6#0	0	20.64	20.58
		18900	1#0	0	22.07	22.06
			6#0	0	20.98	20.80
		19195	1#5	0	21.64	21.60
			6#0	0	20.99	20.42
	3MHz	18615	1#0	0	21.45	21.30
			6#0	0	21.05	20.96
		18900	1#0	0	21.86	21.66
			6#0	0	20.84	20.69
		19185	1#5	1	22.12	22.08
			6#0	1	21.42	21.32
	5MHz	18620	1#0	0	22.61	22.53
			6#0	0	21.13	21.06
		18900	1#0	0	22.54	22.08
			6#0	0	21.41	21.20
		19180	1#5	3	23.10	22.93

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		6#0	3	21.32	21.20
10MHz	18640	1#0	0	22.75	22.50
		4#0	0	20.69	20.75
	18900	1#0	0	22.41	21.18
		4#0	0	20.39	20.23
	19160	1#5	7	22.12	22.08
		4#2	7	21.41	21.12
15MHz	18660	1#0	0	22.45	21.26
		6#0	0	20.65	20.48
	18900	1#0	0	21.74	21.56
		6#0	0	20.54	20.43
	19140	1#5	0	21.89	21.58
		6#0	0	20.75	20.65
20MHz	18680	1#0	0	21.98	21.78
		6#0	0	21.12	20.94
	18900	1#0	0	22.26	22.16
		6#0	0	21.65	20.81
	19120	1#5	0	22.51	22.17
		6#0	0	21.12	20.89

## 5.1.9 CAT-M B4 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM

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Band4	1.4MHz	19957	1#0	0	23.05	22.37
			6#0	0	21.25	21.52
	20175	1#0	0	22.76	22.33	
		6#0	0	21.23	21.38	
	20393	1#5	0	23.08	22.56	
		6#0	0	21.06	20.96	
	3MHz	19965	1#0	0	22.97	22.85
			6#0	0	21.25	20.78
		20175	1#0	0	23.10	23.05
			6#0	0	21.32	21.21
		20385	1#5	1	22.76	22.72
			6#0	1	20.80	20.72
	5MHz	19975	1#0	0	22.80	22.76
			6#0	0	20.60	20.51
		20175	1#0	0	22.71	22.65
			6#0	0	20.45	20.40
		20375	1#5	3	22.85	22.59
			6#0	3	21.50	21.42
	10MHz	20000	1#0	0	23.05	21.98
			4#0	0	20.88	20.45
		20175	1#0	0	23.11	22.03

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			<b>4#0</b>	<b>0</b>	21.12	21.05
20350	20025	15MHz	<b>1#5</b>	<b>7</b>	22.30	22.12
			<b>4#2</b>	<b>7</b>	20.54	20.32
			<b>1#0</b>	<b>0</b>	22.18	22.06
20175	20325	20MHz	<b>6#0</b>	<b>0</b>	21.23	21.05
			<b>1#0</b>	<b>0</b>	21.97	21.85
			<b>6#0</b>	<b>0</b>	20.82	20.54
20050	20175	20MHz	<b>1#5</b>	<b>0</b>	22.23	22.17
			<b>6#0</b>	<b>0</b>	21.25	21.11
			<b>1#0</b>	<b>0</b>	21.97	21.85
20300	20300	20MHz	<b>6#0</b>	<b>0</b>	20.98	20.84
			<b>1#0</b>	<b>0</b>	22.30	22.17
			<b>6#0</b>	<b>0</b>	20.87	20.51
Band12	1.4MHz	20315	<b>1#5</b>	<b>0</b>	21.74	21.50
			<b>6#0</b>	<b>0</b>	20.49	20.40

## 5.1.10 CAT-M B12 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band12	1.4MHz	20315	<b>1#0</b>	<b>0</b>	22.56	22.15
			<b>6#0</b>	<b>0</b>	20.98	20.78
		23095	<b>1#0</b>	<b>0</b>	22.57	21.52
			<b>6#0</b>	<b>0</b>	21.12	21.01

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		23175	1#5	0	22.69	22.57
			6#0	0	21.42	21.38
3MHz	20320	1#0	0	22.41	22.34	
		6#0	0	21.42	21.29	
	23095	1#0	0	22.29	22.16	
		6#0	0	21.59	21.32	
	23170	1#5	1	22.40	22.32	
		6#0	1	21.45	20.79	
5MHz	20330	1#0	0	22.41	22.28	
		6#0	0	21.58	21.26	
	23095	1#0	0	21.57	21.45	
		6#0	0	21.29	20.89	
	23160	1#5	3	22.72	22.59	
		6#0	3	21.22	21.03	
10MHz	20345	1#0	0	22.33	22.30	
		4#0	0	22.09	21.12	
	23095	1#0	0	21.89	21.45	
		4#0	0	21.56	21.14	
	23145	1#5	7	22.21	22.10	
		4#2	7	20.89	20.52	

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## 5.1.11 CAT-M B13 Conducted RF Power Output Results

	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band13	5MHz	23200	1#0	0	23.16	22.56
			6#0	0	21.16	21.10
		23230	1#0	0	22.90	22.34
			6#0	0	21.89	21.62
		23260	1#5	3	22.26	22.20
			6#0	3	21.23	20.96
	10MHz	23225	1#0	0	23.31	23.13
			4#0	0	22.10	21.20
		23230	1#0	0	22.62	22.54
			4#0	0	21.11	20.90
		23235	1#5	7	23.02	22.98
			4#2	7	22.12	22.08

## 5.1.12 CAT-M B26 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band26	1.4MHz	26697	1#0	0	23.03	21.94
			6#0	0	20.69	21.04
		26865	1#0	0	23.15	21.06
			6#0	0	20.80	21.09
		27033	1#5	0	23.08	21.97

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		<b>6#0</b>	<b>0</b>	20.70	21.01
<b>3MHz</b>	26705	<b>1#0</b>	<b>0</b>	23.18	22.15
		<b>6#0</b>	<b>0</b>	20.83	21.11
	26865	<b>1#0</b>	<b>0</b>	23.38	22.39
		<b>6#0</b>	<b>0</b>	21.01	21.24
<b>5MHz</b>	27025	<b>1#5</b>	<b>1</b>	23.35	22.28
		<b>6#0</b>	<b>1</b>	20.88	21.18
	26715	<b>1#0</b>	<b>0</b>	22.87	22.53
		<b>6#0</b>	<b>0</b>	20.40	20.05
<b>10MHz</b>	26865	<b>1#0</b>	<b>0</b>	22.71	22.63
		<b>6#0</b>	<b>0</b>	20.32	20.10
	27015	<b>1#5</b>	<b>3</b>	22.92	22.56
		<b>6#0</b>	<b>3</b>	21.91	20.98
<b>15MHz</b>	26740	<b>1#0</b>	<b>0</b>	22.80	22.56
		<b>4#0</b>	<b>0</b>	21.91	20.98
	26865	<b>1#0</b>	<b>0</b>	22.88	22.71
		<b>4#0</b>	<b>0</b>	21.08	20.28
	26990	<b>1#5</b>	<b>7</b>	22.79	22.68
		<b>4#2</b>	<b>7</b>	21.65	20.85
	26765	<b>1#0</b>	<b>0</b>	22.96	22.88
		<b>6#0</b>	<b>0</b>	21.47	21.41

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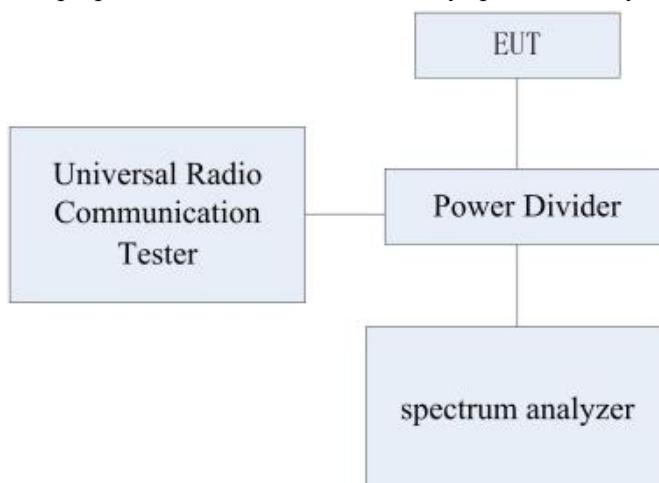
		<b>26865</b>	<b>1#0</b>	<b>0</b>	22.83	22.93
			<b>6#0</b>	<b>0</b>	21.30	21.35
		<b>26965</b>	<b>1#5</b>	<b>0</b>	22.75	22.52
			<b>6#0</b>	<b>0</b>	20.86	20.56

### 5.2 Occupied Bandwidth

<b>Specifications:</b>	FCC Part 2.1049, 22.917(b), 24.238(b)
<b>DUT Serial Number:</b>	S1: D20618181ACDFF4
<b>Test conditions:</b>	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	--

### Test Setup

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



### Test Method

The 99% occupied Bandwidth was calculated from the spectrum analyzer. Markers in the spectrum analyzer were then placed between the calculated frequencies to show the calculated 99% power Band. The 26dB Bandwidth was also measured and recorded.

**Note:** --

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## 5.2.1 GSM Mode Occupied Bandwidth Results

Band	Channel	Mode	Occupied Bandwidth 99% (kHz)	Occupied Bandwidth 26dB (kHz)
GSM850	128	GMSK	245.2	315.7
		8PSK	243.6	307.7
	190	GMSK	243.6	320.5
		8PSK	243.0	304.5
	251	GMSK	245.2	315.7
		8PSK	242.0	302.9
	512	GMSK	246.0	320.5
		8PSK	244.0	310.9
PCS1900	661	GMSK	244.0	317.3
		8PSK	246.0	306.1
	810	GMSK	247.0	320.5
		8PSK	247.0	309.3

## 5.2.2 NB-IoT B2 Mode Occupied Bandwidth Results

Mode	Channel/Frequency (MHz)	Occupied Bandwidth 99% (kHz)	Occupied Bandwidth 26dB (kHz)
BPSK	18900/1880	157.0	94.0
QPSK	18900/1880	162.0	83.0

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## 5.2.3 NB-IoT B12 Mode Occupied Bandwidth Results

Mode	Channel/Frequency (MHz)	Occupied Bandwidth 99% (kHz)	Occupied Bandwidth 26dB (kHz)
BPSK	23095/707.5	137.0	94.0
QPSK	23095/707.5	135.0	81.0
BPSK	23179/715.9	136.2	107.4
QPSK	23179/715.9	144.2	110.6

## 5.2.4 NB-IoT B13 Mode Occupied Bandwidth Results

Mode	Channel/Frequency (MHz)	Occupied Bandwidth 99% (kHz)	Occupied Bandwidth 26dB (kHz)
BPSK	23230/782	138.0	94.0
QPSK	23230/782	133.0	95.0

## 5.2.5 NB-IoT B17 Mode Occupied Bandwidth Results

Mode	Channel/Frequency (MHz)	Occupied Bandwidth 99% (kHz)	Occupied Bandwidth 26dB (kHz)
BPSK	23790/710	133.0	97.8
QPSK	23790/710	131.4	97.8

## 5.2.6 NB-IoT B26 Mode Occupied Bandwidth Results

Mode	Channel/Frequency (MHz)	Occupied Bandwidth 99% (kHz)	Occupied Bandwidth 26dB (kHz)
BPSK	26843/829.34	137.8	107.4
QPSK	26843/829.34	136.1	96.2

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## 5.2.7 CAT-M B2 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Frequency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	18900/1880	6#0	0	1.12	1.32
	16QAM	18900/1880			1.10	1.33
3MHz	QPSK	18900/1880	6#0	0	1.14	1.47
	16QAM	18900/1880			1.13	1.46
5MHz	QPSK	18900/1880	6#0	0	1.12	1.43
	16QAM	18900/1880			1.17	1.52
10MHz	QPSK	18900/1880	6#0	0	1.17	1.73
	16QAM	18900/1880			1.19	1.68
15MHz	QPSK	18900/1880	6#0	0	1.23	1.95
	16QAM	18900/1880			1.25	1.80
20MHz	QPSK	18900/1880	6#0	0	1.19	1.86
	16QAM	18900/1880			1.31	1.92

## 5.2.8 CAT-M B4 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Frequency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	20175/1732.5	6#0	0	1.10	1.27
	16QAM	20175/1732.5			1.09	1.30
3MHz	QPSK	20175/1732.5	6#0	0	1.11	1.40
	16QAM	20175/1732.5			1.10	1.41
5MHz	QPSK	20175/1732.5	6#0	0	1.12	1.43

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	16QAM	20175/1732.5			1.37	1.43
10MHz	QPSK	20175/1732.5	6#0	0	1.11	1.51
	16QAM	20175/1732.5			1.12	1.54
15MHz	QPSK	20175/1732.5	6#0	0	1.13	1.71
	16QAM	20175/1732.5			1.25	2.01
20MHz	QPSK	20175/1732.5	6#0	0	1.12	1.67
	16QAM	20175/1732.5			1.28	2.40

## 5.2.9 CAT-M B12 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Frequency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	23095/707.5	6#0	0	1.12	1.29
	16QAM	23095/707.5			1.10	1.31
3MHz	QPSK	23095/707.5	6#0	0	1.13	1.42
	16QAM	23095/707.5			1.12	1.47
5MHz	QPSK	23095/707.5	6#0	0	1.11	1.39
	16QAM	23095/707.5			1.13	1.52
10MHz	QPSK	23095/707.5	6#0	0	1.14	1.62
	16QAM	23095/707.5			1.15	1.60

## 5.2.10 CAT-M B13 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Frequency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
5MHz	QPSK	23230/782	6#0	0	1.12	1.44
	16QAM	23230/782			1.14	1.47

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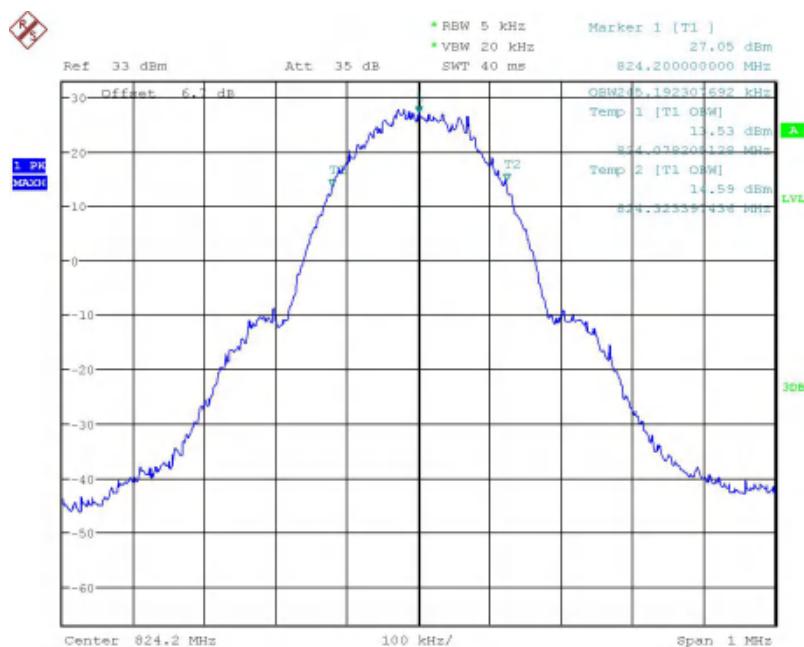
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10MHz	QPSK	23230/782	6#0	0	1.14	1.49
	16QAM	23230/782			1.15	1.62

## 5.2.11 CAT-M B26 Mode Occupied Bandwidth Results

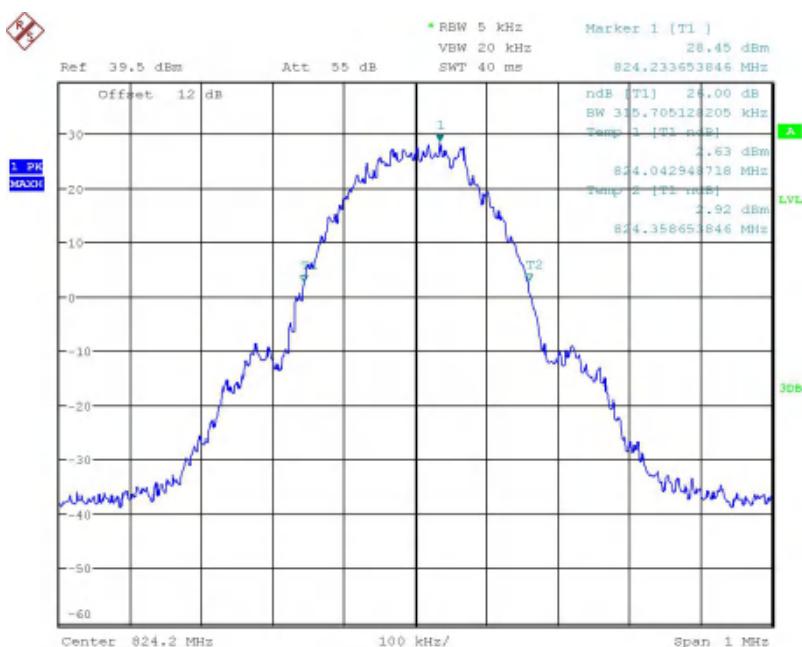
Bandwidth	Modulation	Channel/Frequency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	23230/782	6#0	0	1.12	1.30
	16QAM	23230/782			1.11	1.34
3MHz	QPSK	23230/782	6#0	0	1.13	1.45
	16QAM	23230/782			1.13	1.46
5MHz	QPSK	23230/782	6#0	0	1.15	1.42
	16QAM	23230/782			1.15	1.55
10MHz	QPSK	23230/782	6#0	0	1.15	1.67
	16QAM	23230/782			1.22	1.70
15MHz	QPSK	23230/782	6#0	0	1.23	1.97
	16QAM	23230/782			1.23	1.83

**Graphical results for GSM850:**



Date: 2.AUG.2018 16:56:55

**99% OBW-GMSK-Channel 128**

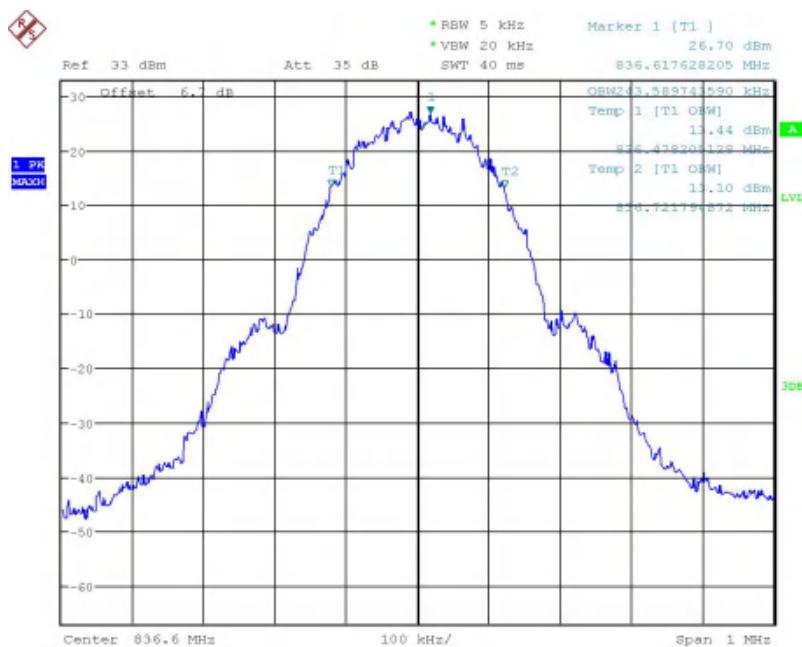


Date: 3.AUG.2018 10:41:02

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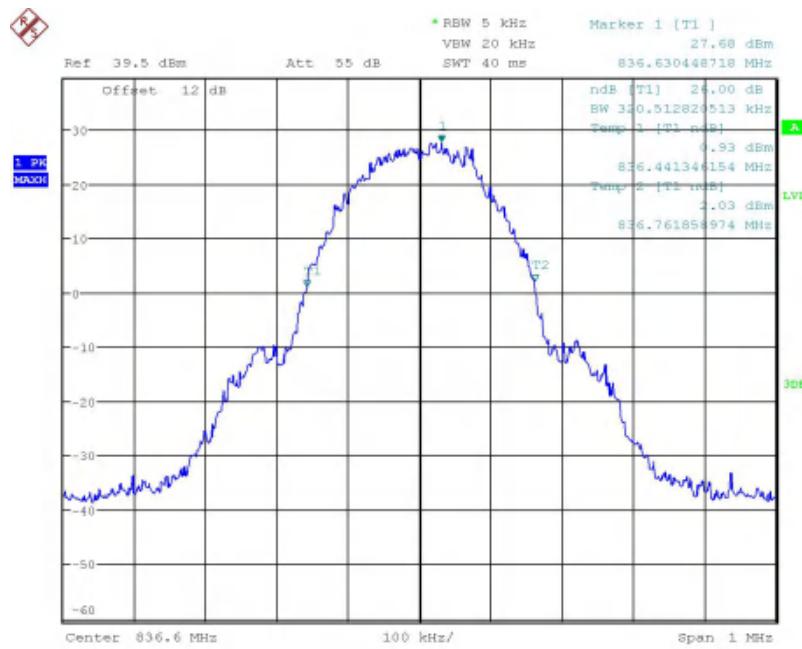
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## Report No.:B18W50279\_Rev4 26dB OBW-GMSK-Channel 128



Date: 2.AUG.2018 16:59:09

## 99% OBW-GMSK-Channel 190



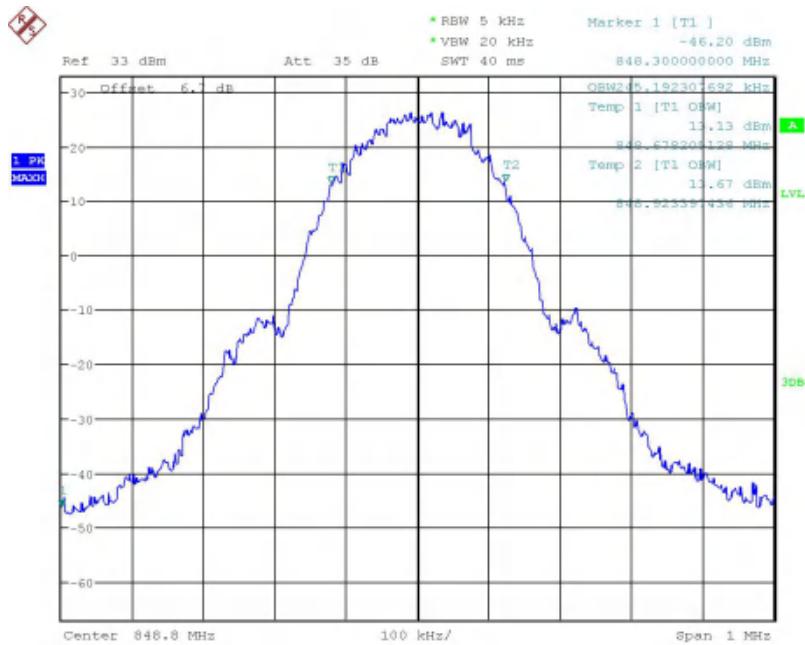
Date: 3.AUG.2018 10:40:14

## 26dB OBW-GMSK-Channel-190

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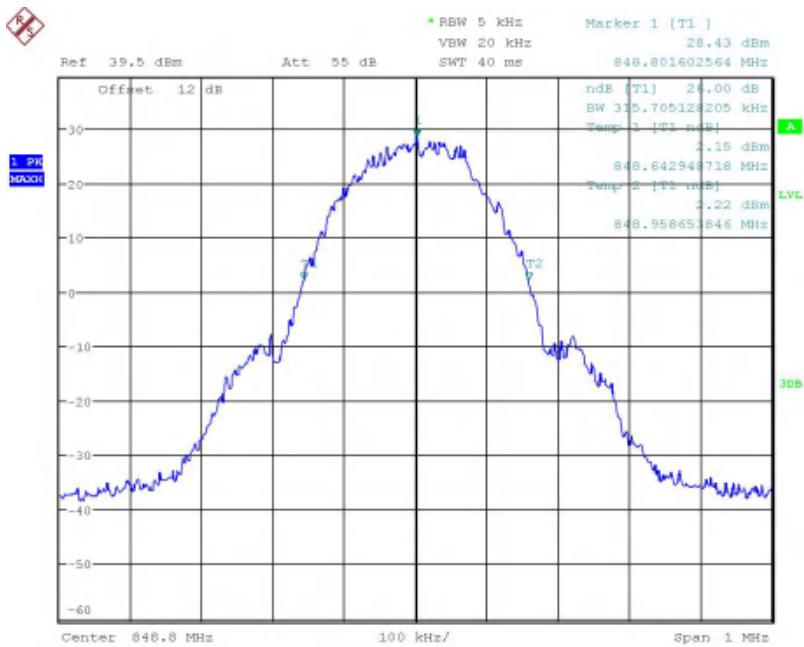
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Report No.:B18W50279\_Rev4



Date: 2.AUG.2018 17:00:31

99% OBW-GMSK-Channel 251



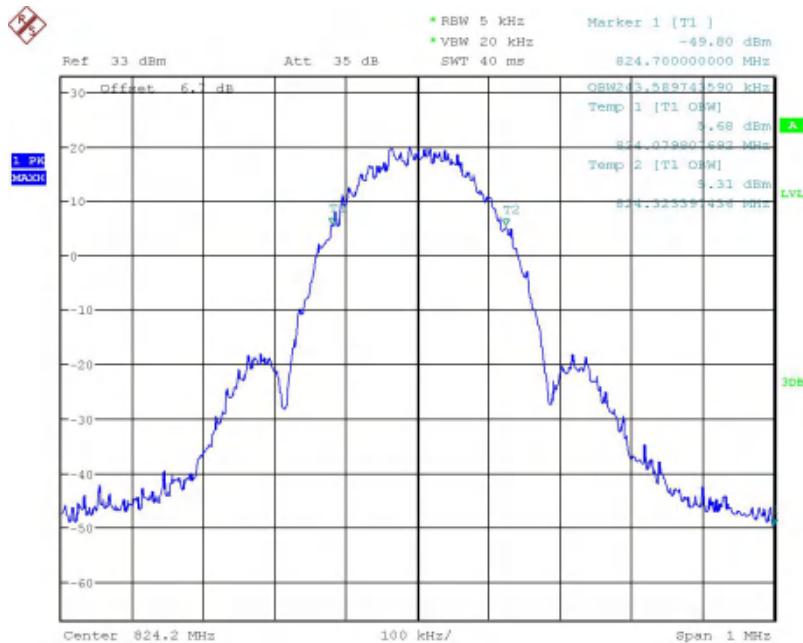
Date: 3.AUG.2018 10:42:12

26dB OBW-GMSK Channel 251

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

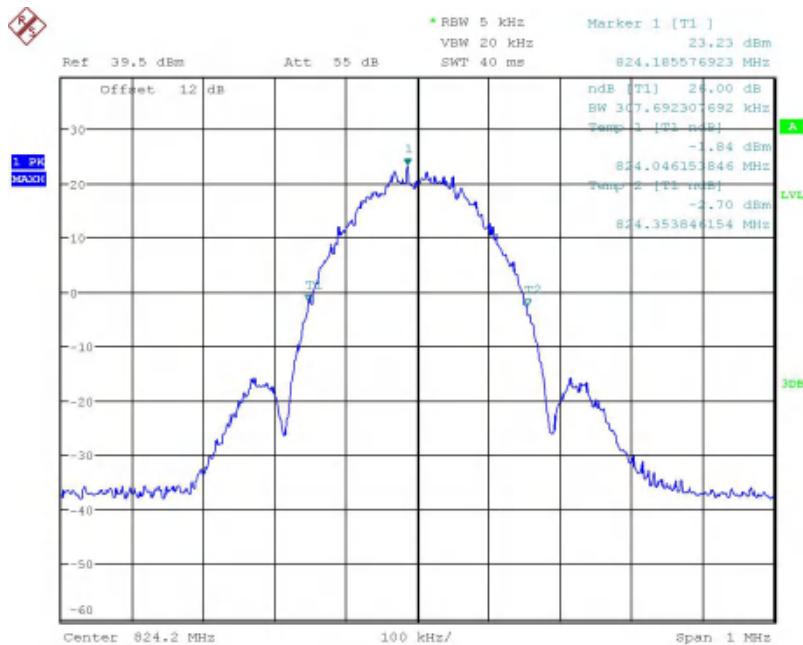
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Report No.:B18W50279\_Rev4



Date: 3.AUG.2018 17:02:51

99% OBW-8PSK-Channel 128



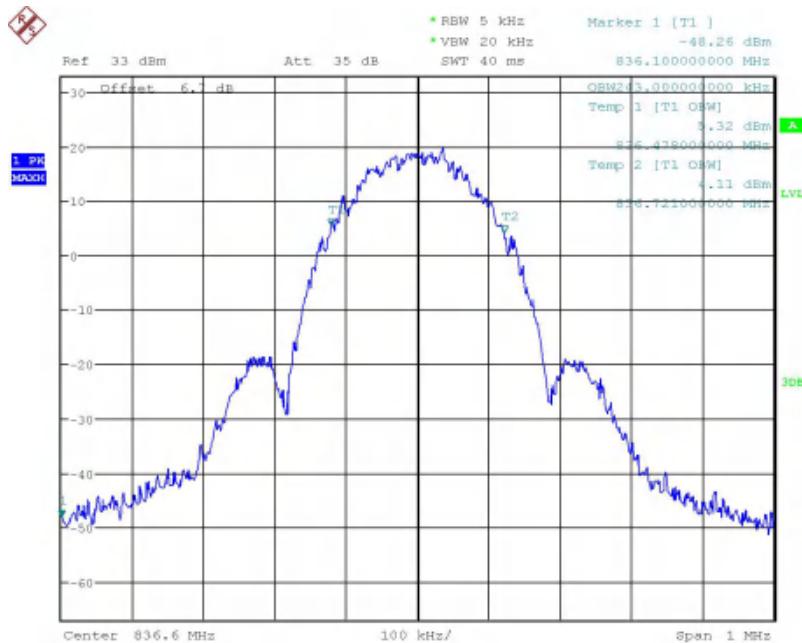
Date: 3.AUG.2018 10:53:07

26dB OBW-8PSK-Channel 128

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

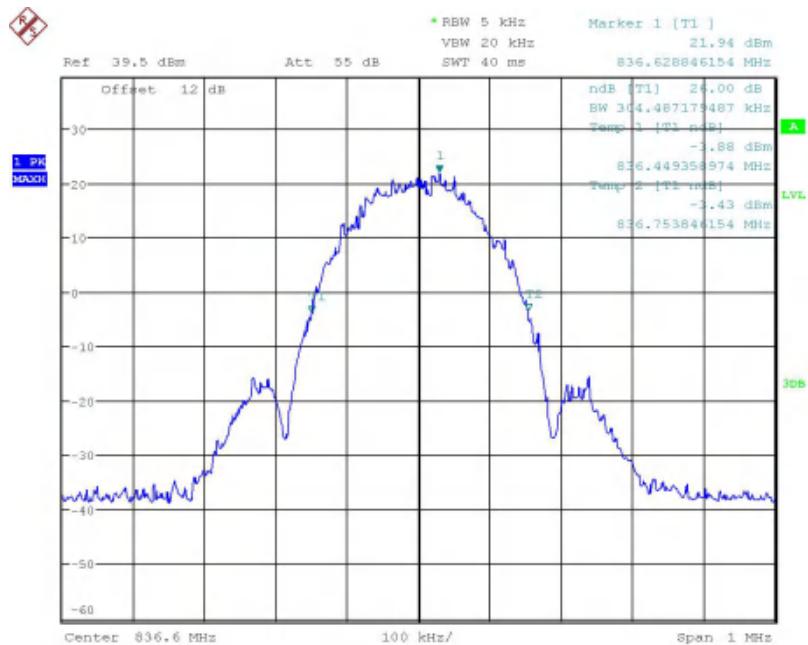
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 2.AUG.2018 17:04:16

## 99% OBW-8PSK-Channel 190



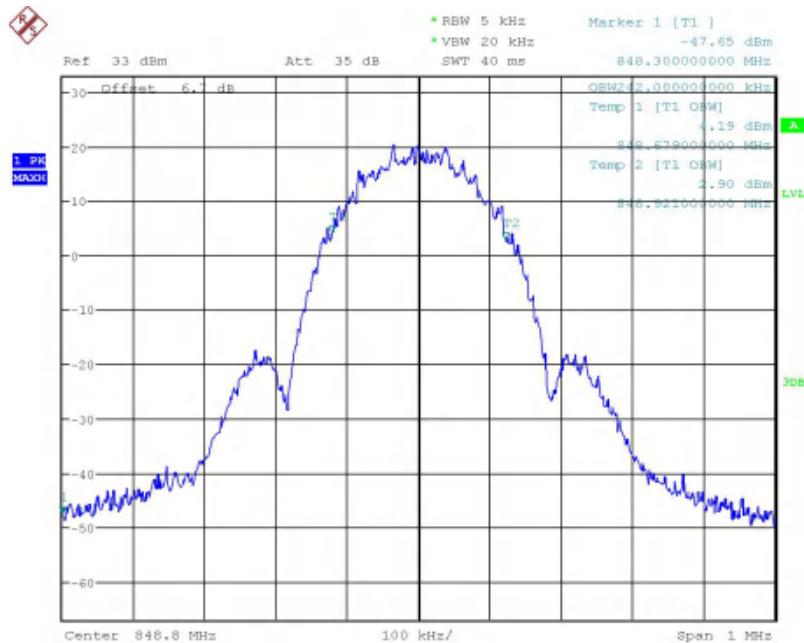
Date: 3.AUG.2018 10:50:18

## 26dB OBW-8PSK-Channel 190

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
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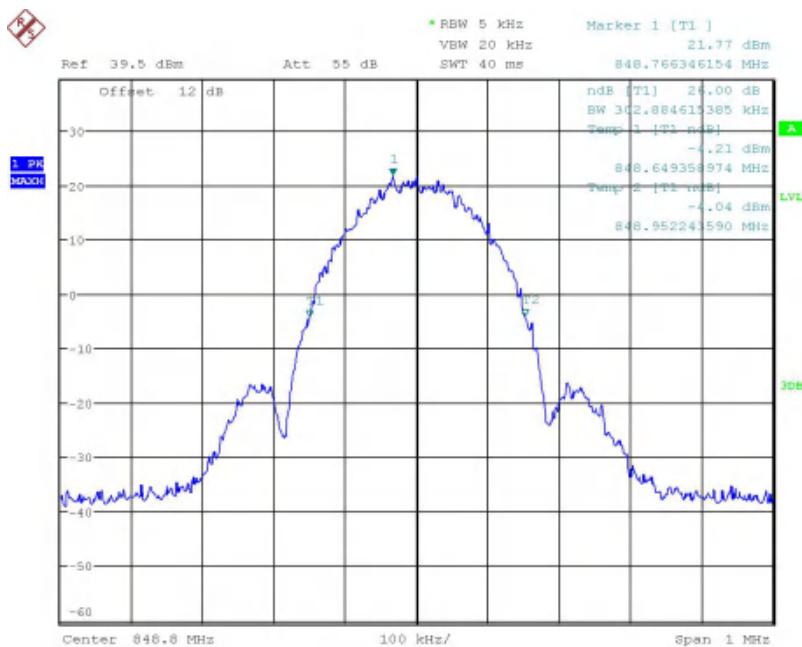
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Report No.:B18W50279\_Rev4



Date: 2.AUG.2018 17:05:28

99% OBW-8PSK-Channel 251



Date: 3.AUG.2018 10:48:55

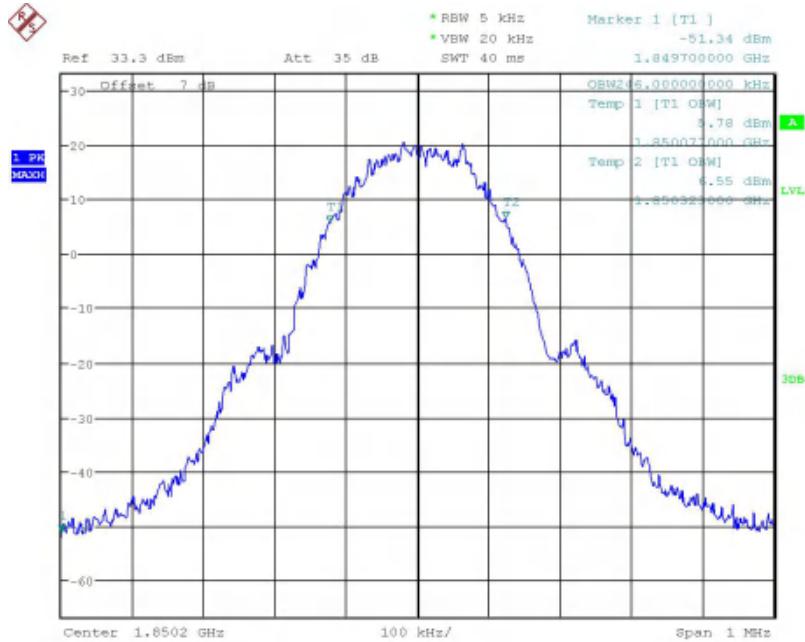
26dB OBW-8PSK-Channel 251

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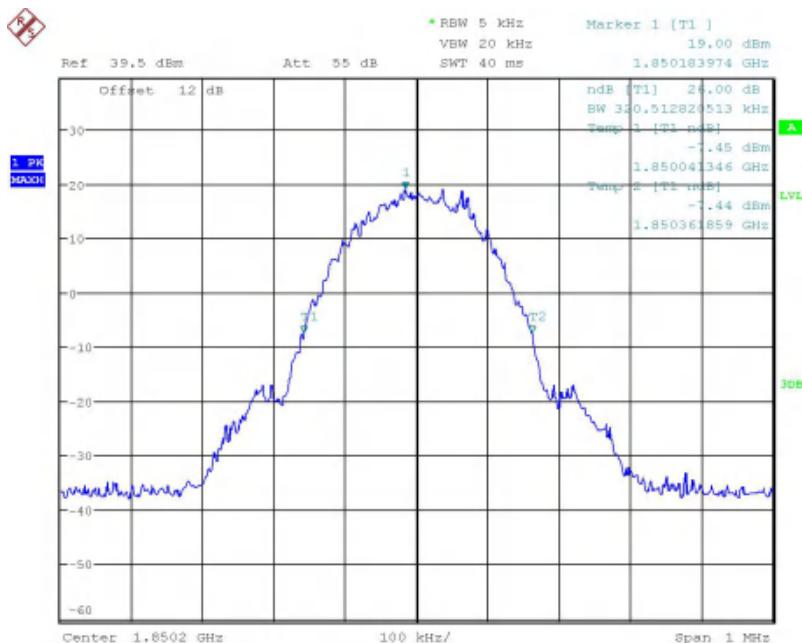
Report No.:B18W50279\_Rev4

## Graphical results for PCS1900:



Date: 2.AUG.2018 17:08:57

## 99% OBW-GMSK-Channel 512



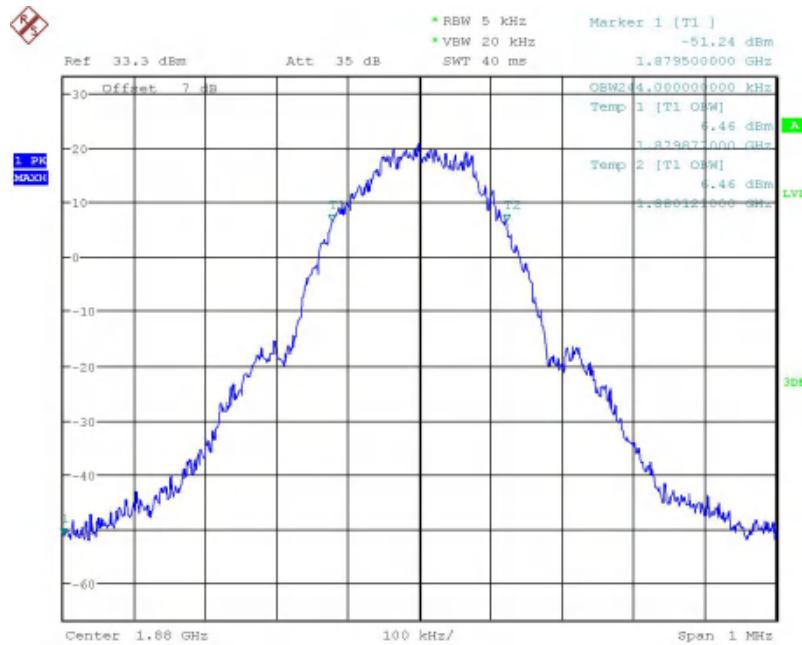
Date: 3.AUG.2018 11:00:30

## 26dB OBW-GMSK-Channel 512

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Tel: 0086-23-88069965 FAX: 0086-23-88608777

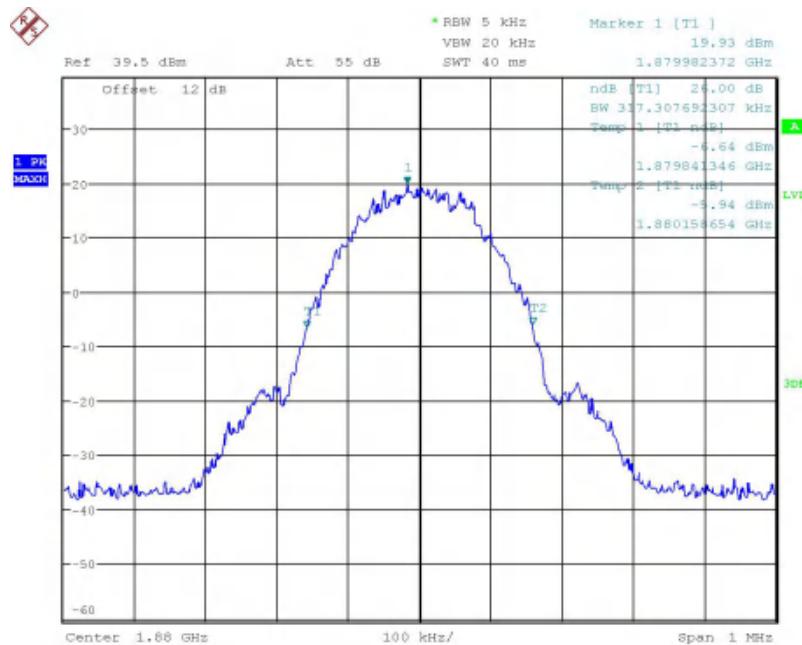
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Report No.:B18W50279\_Rev4



Date: 2.AUG.2018 17:09:39

## 99% OBW-GMSK-Channel 661



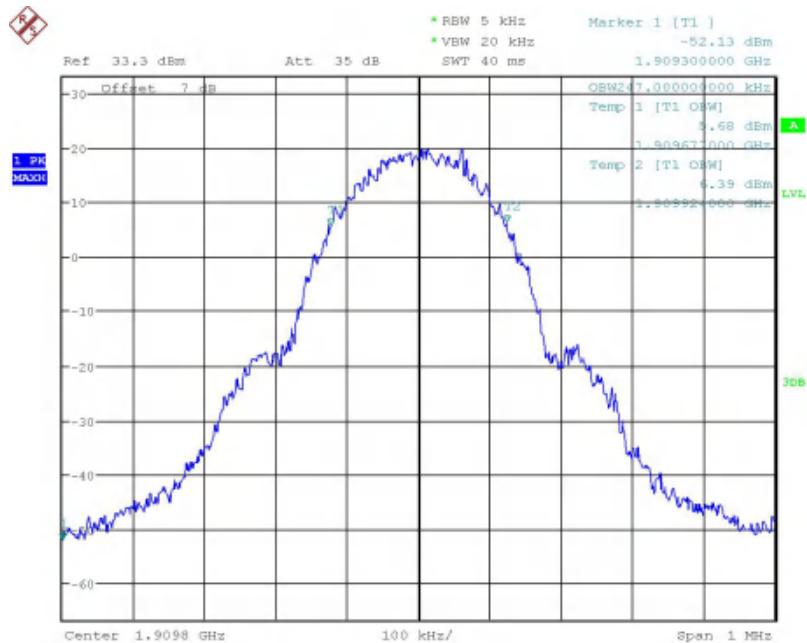
Date: 3.AUG.2018 11:03:24

## 26dB OBW-GMSK-Channel 661

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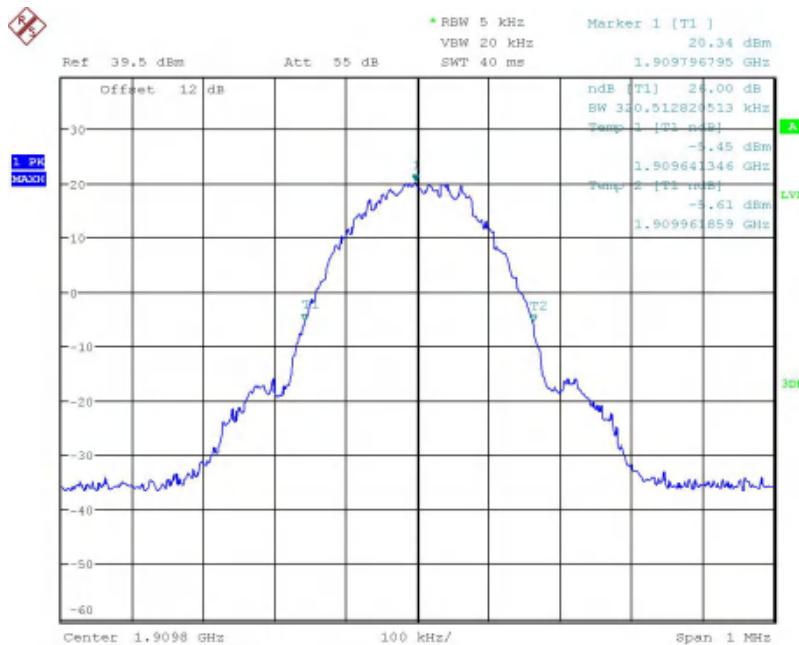
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Date: 2.AUG.2018 17:12:45

## 99% OBW-GMSK-Channel 810



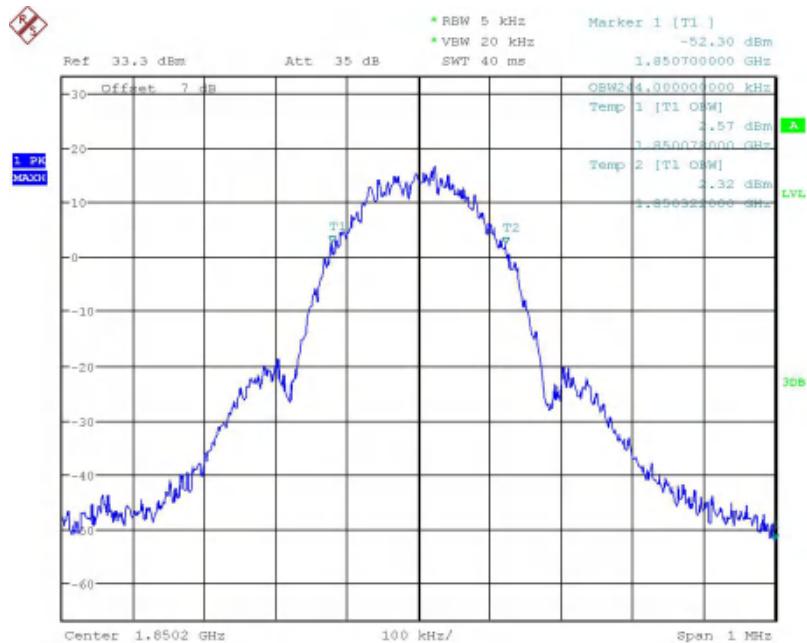
Date: 3.AUG.2018 11:06:35

## 26dB OBW-GMSK-Channel 810

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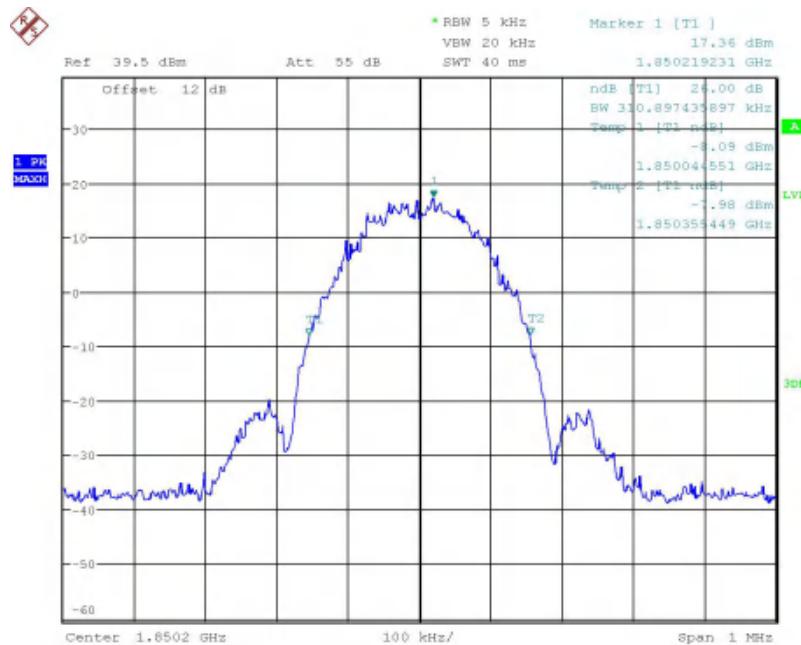
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Date: 2.AUG.2018 17:14:56

## 99% OBW-8PSK-Channel 512



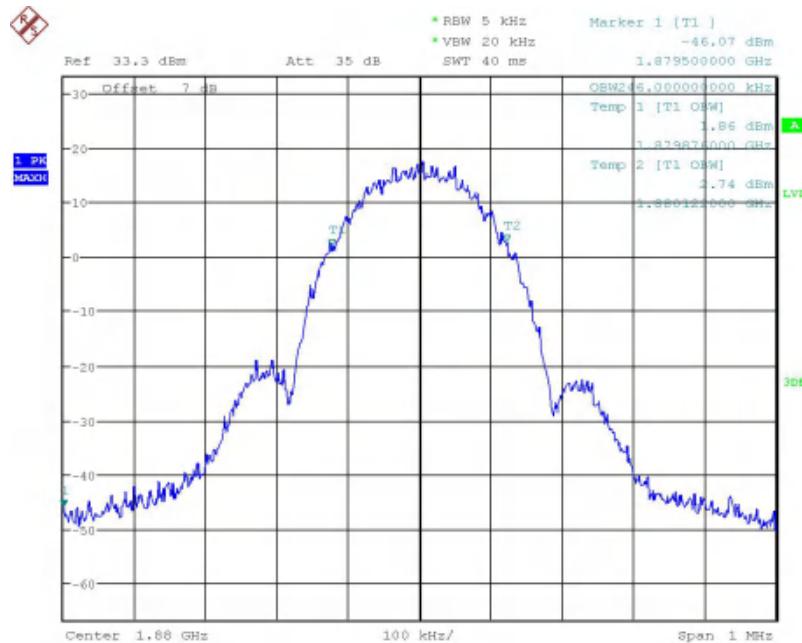
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## 26dB OBW-8PSK-Channel 512

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

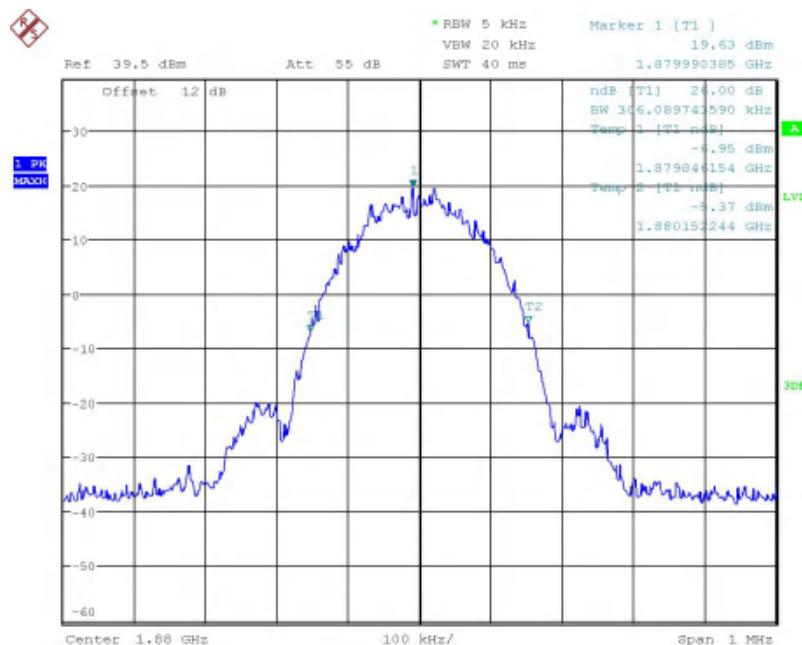
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 2.AUG.2018 17:16:23

99% OBW-8PSK-Channel 661

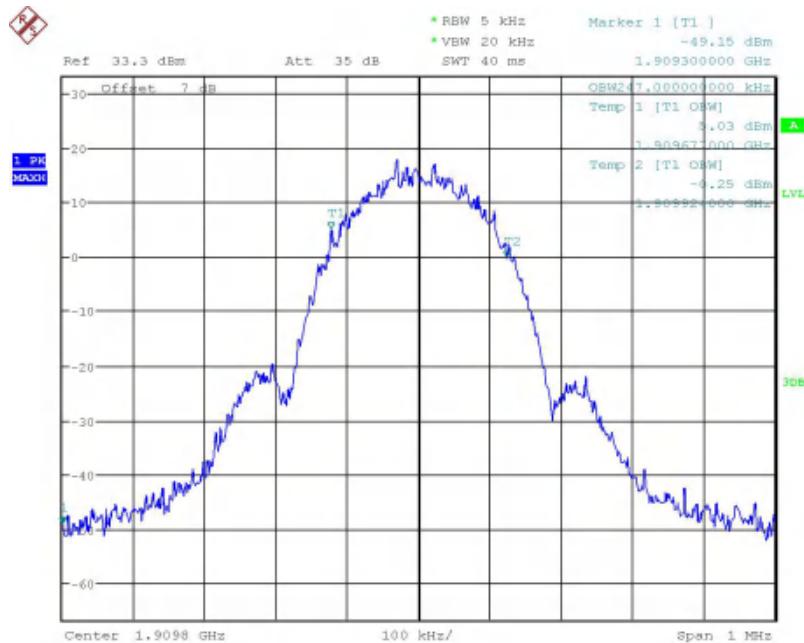


Date: 3.AUG.2018 11:14:02

26dB OBW-8PSK-Channel 661

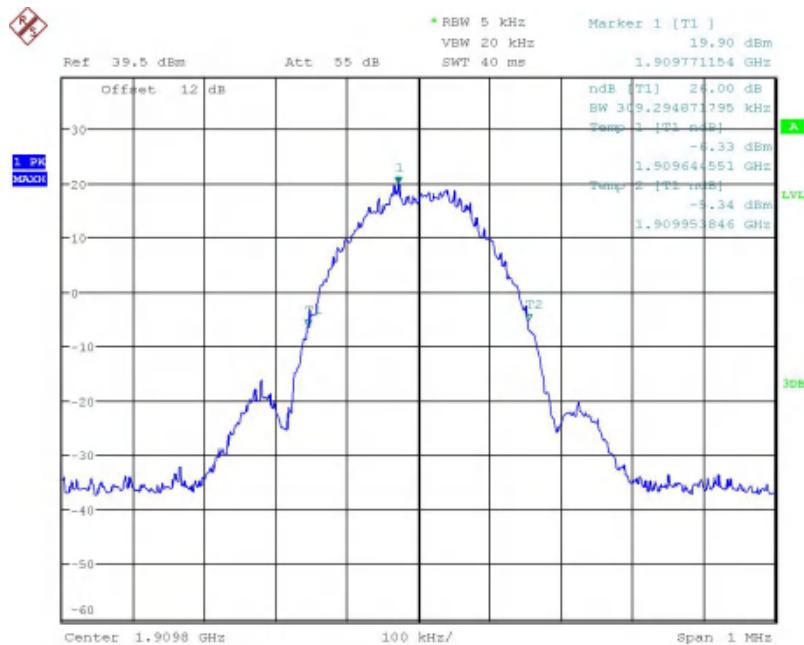
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 2.AUG.2018 17:17:49

## 99% OBW-8PSK-Channel 810



Date: 3.AUG.2018 11:11:45

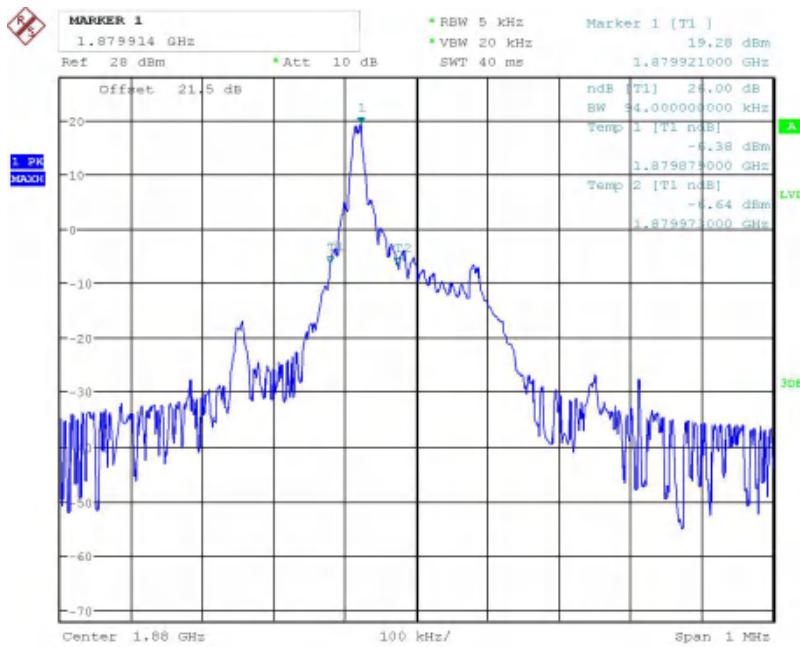
## 26dB OBW-8PSK-Channel 810

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

# Chongqing Academy of Information and Communications Technology

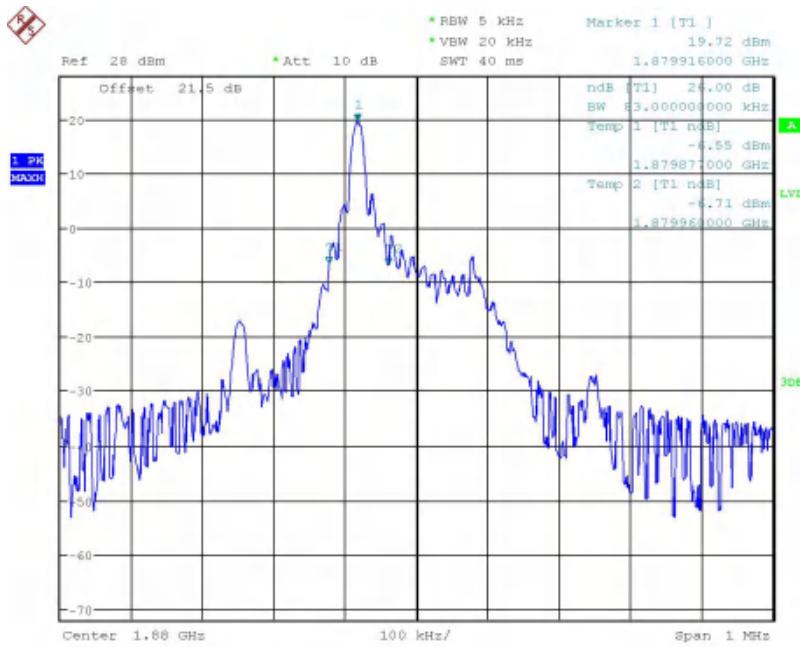
Report No.:B18W50279\_Rev4

## Graphical results for NB-IoT



Date: 5.AUG.2018 22:45:14

## Band2-26dB OBW-Middle Channel-BPSK



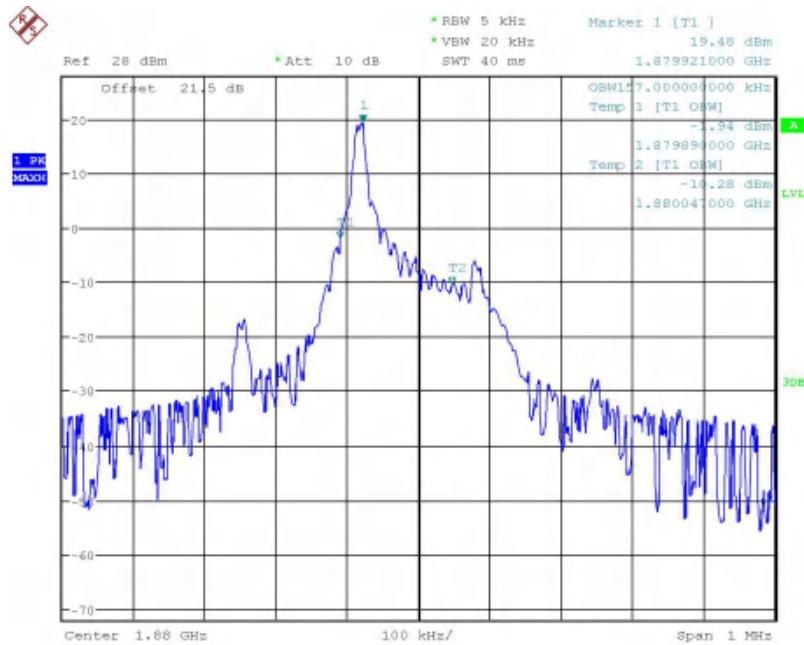
Date: 5.AUG.2018 22:45:29

## Band2-26dB OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

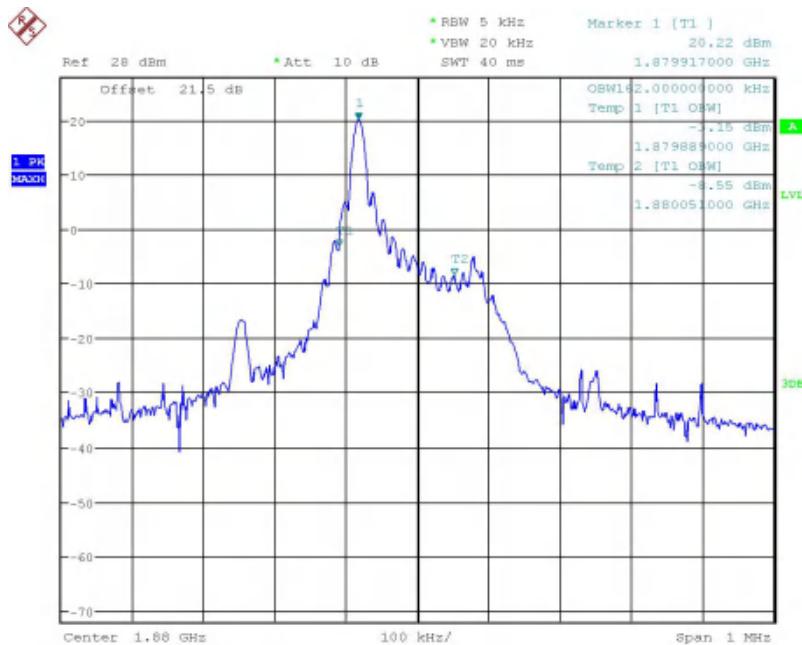
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 22:44:59

## Band2-99% OBW-Middle Channel-BPSK



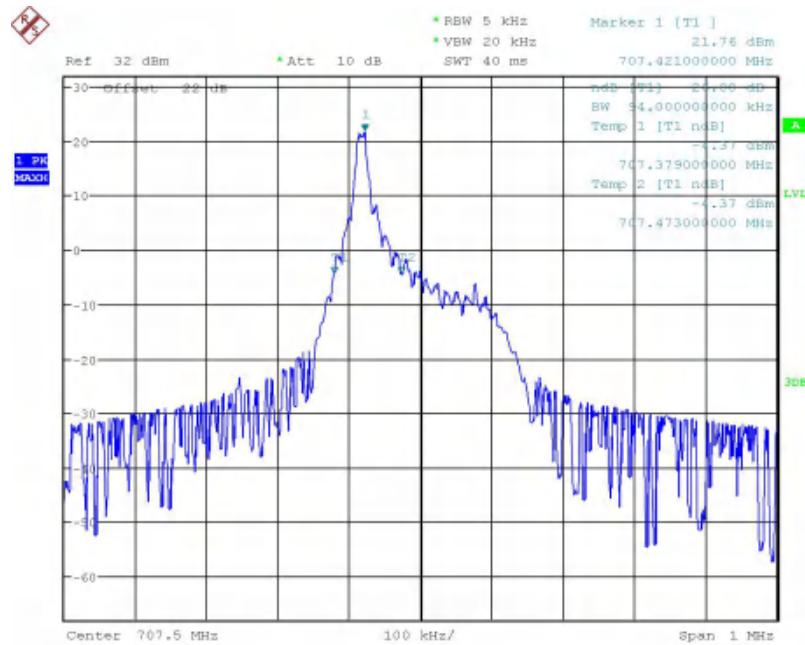
Date: 5.AUG.2018 22:44:42

## Band2-99% OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

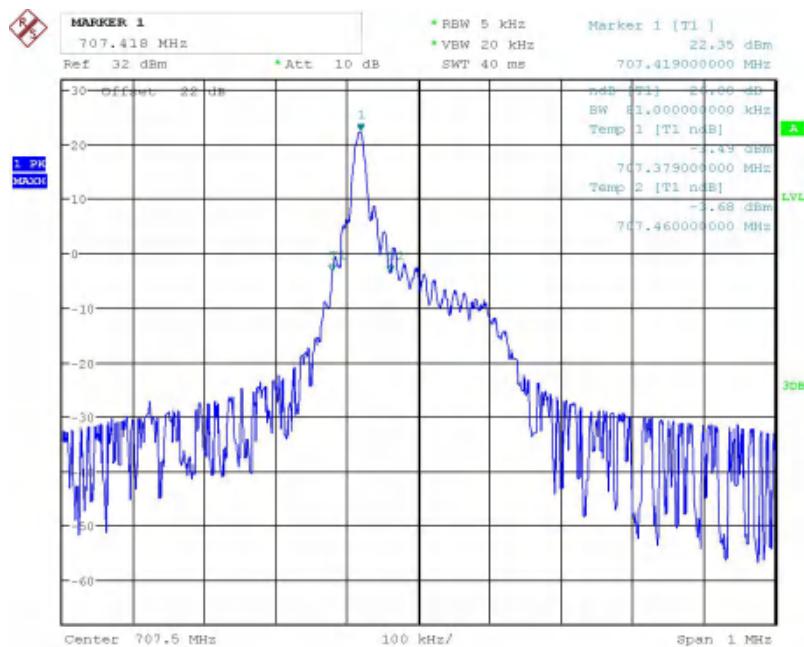
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 22:21:32

## Band12-26% OBW-Middle Channel-BPSK



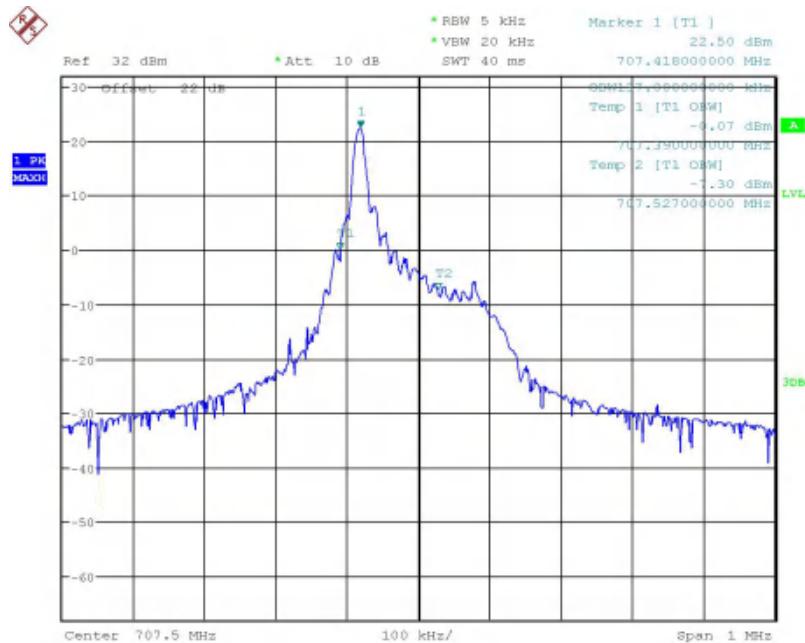
Date: 5.AUG.2018 22:21:16

## Band12-26% OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

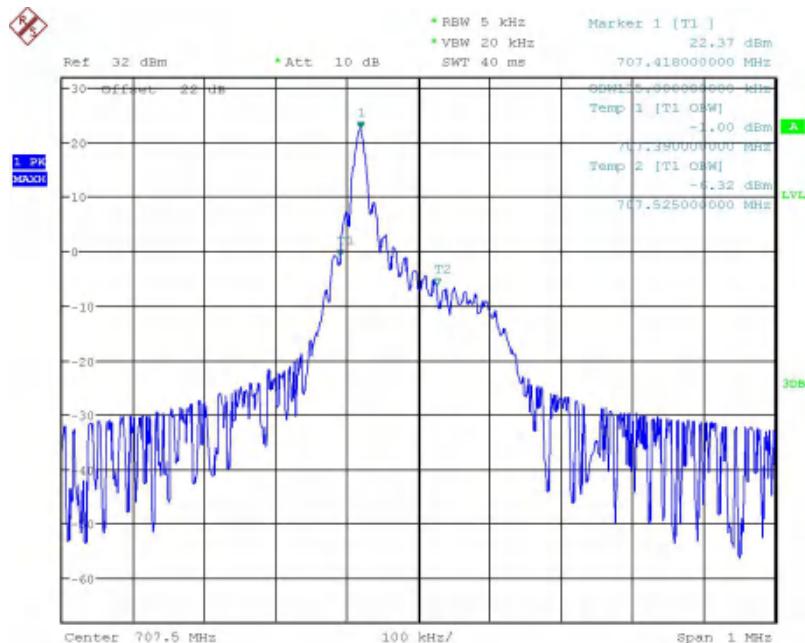
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 22:20:42

Band12-99% OBW-Middle Channel-BPSK

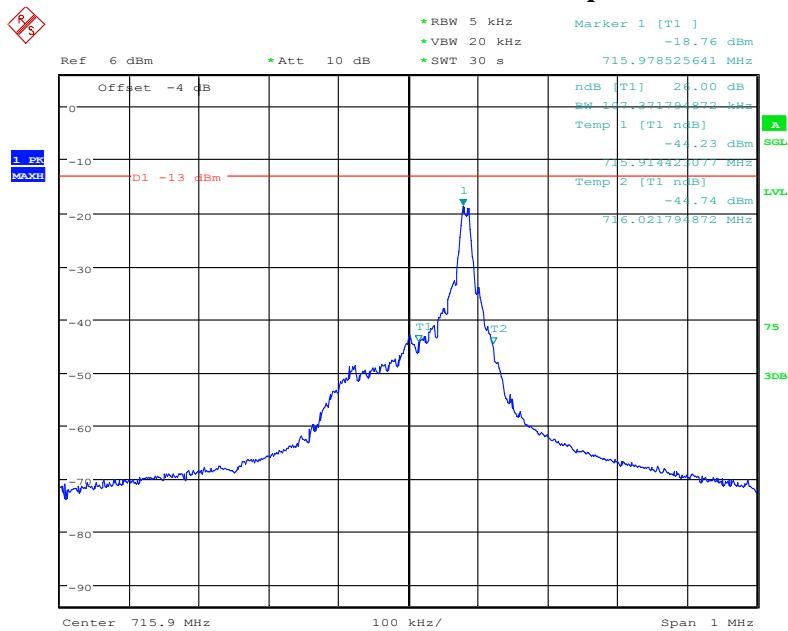


Date: 5.AUG.2018 22:21:02

Band12-99% OBW-Middle Channel-QPSK

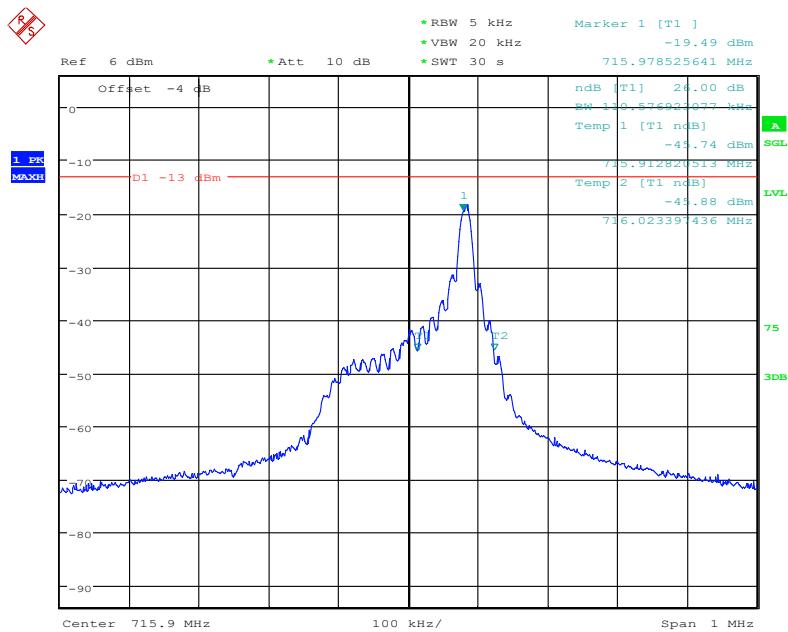
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 15.JAN.2020 11:55:03

## Band12-26% OBW-23179 Channel-BPSK



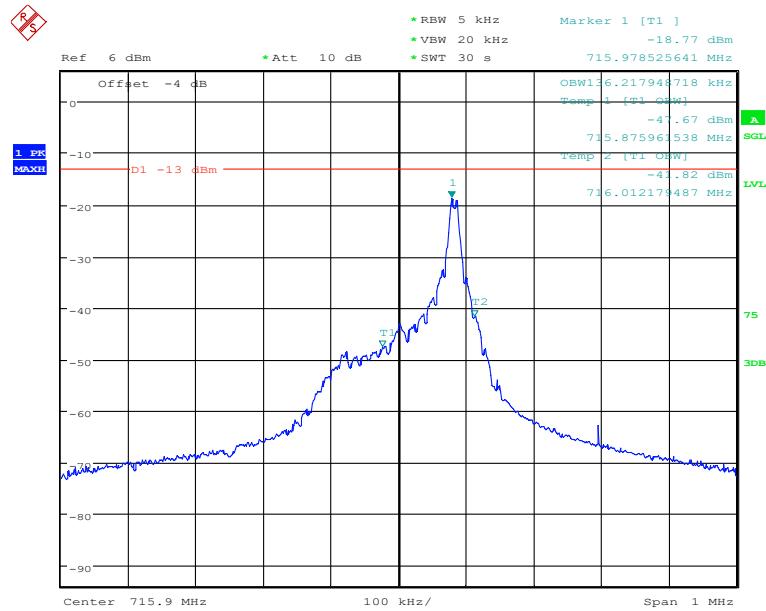
Date: 15.JAN.2020 11:57:13

## Band12-26% OBW-23179 Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

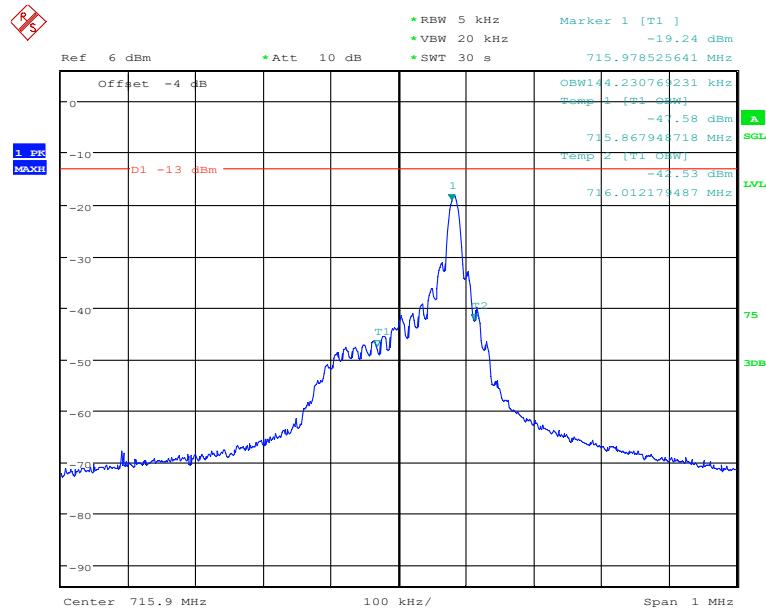
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 15.JAN.2020 11:54:14

## Band12-99% OBW-23179 Channel-BPSK



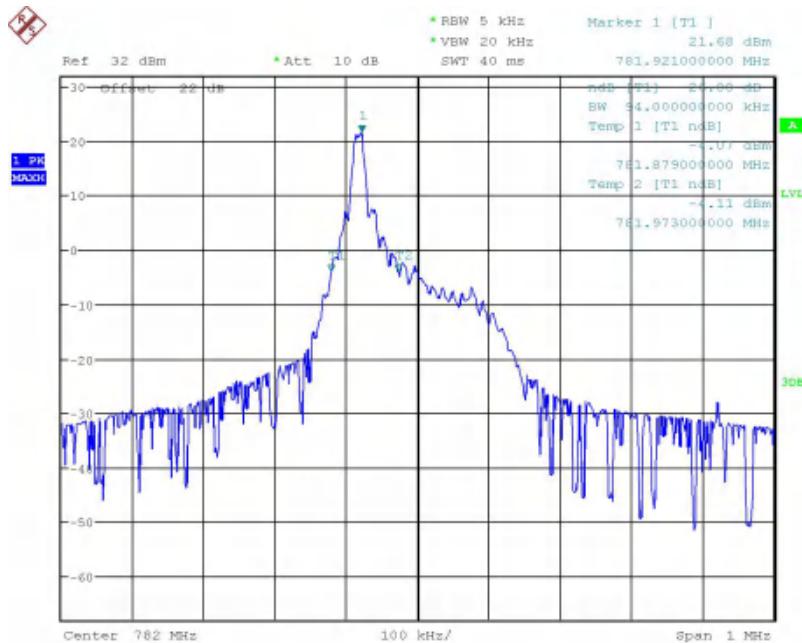
Date: 15.JAN.2020 11:57:56

## Band12-99% OBW-23179 Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

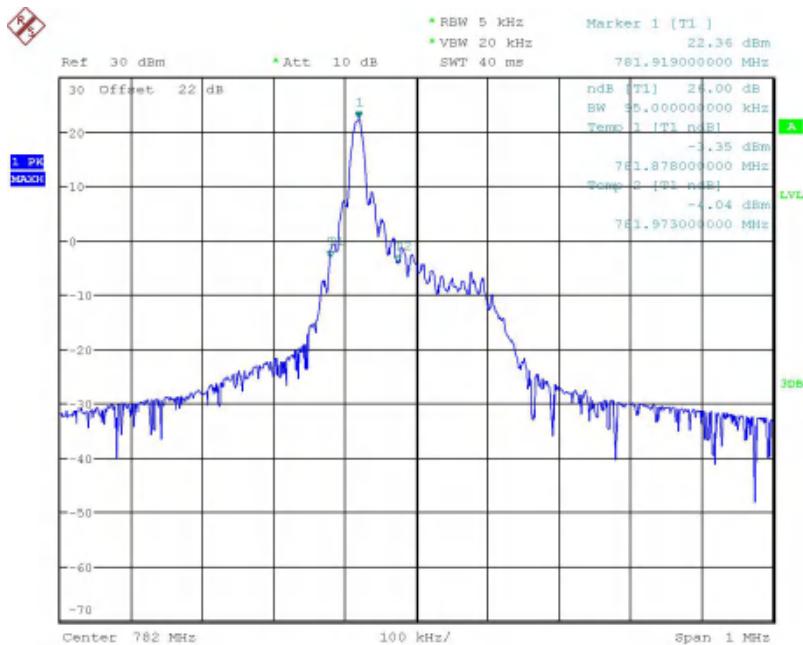
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 22:04:24

## Band13-26dB OBW-Middle Channel-BPSK



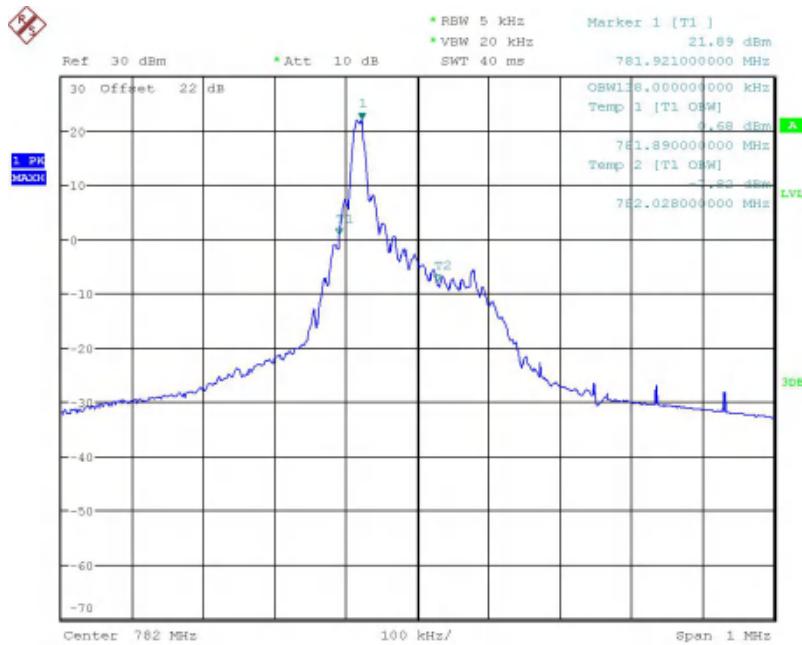
Date: 5.AUG.2018 22:03:58

## Band13-26dB OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

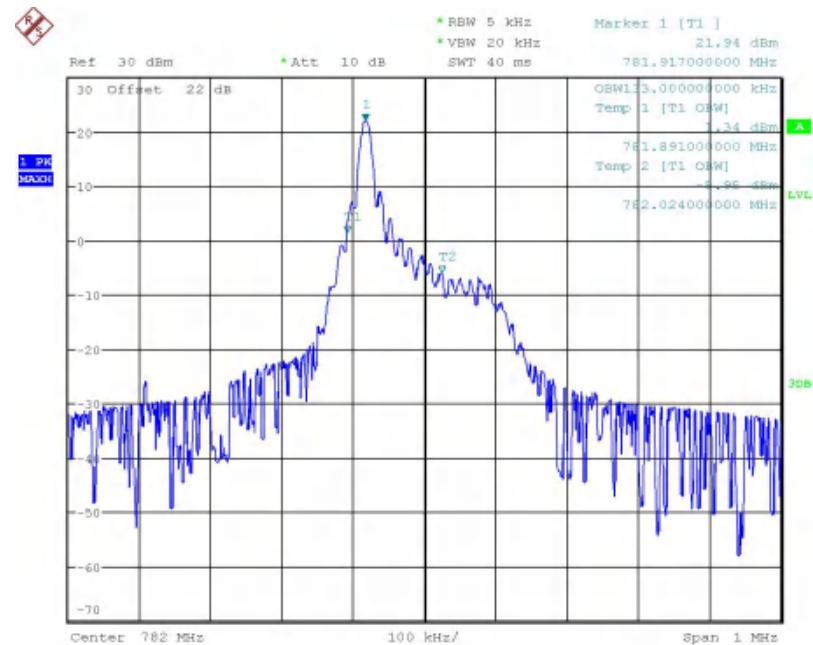
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 22:02:57

Band13-99% OBW-Middle Channel-BPSK

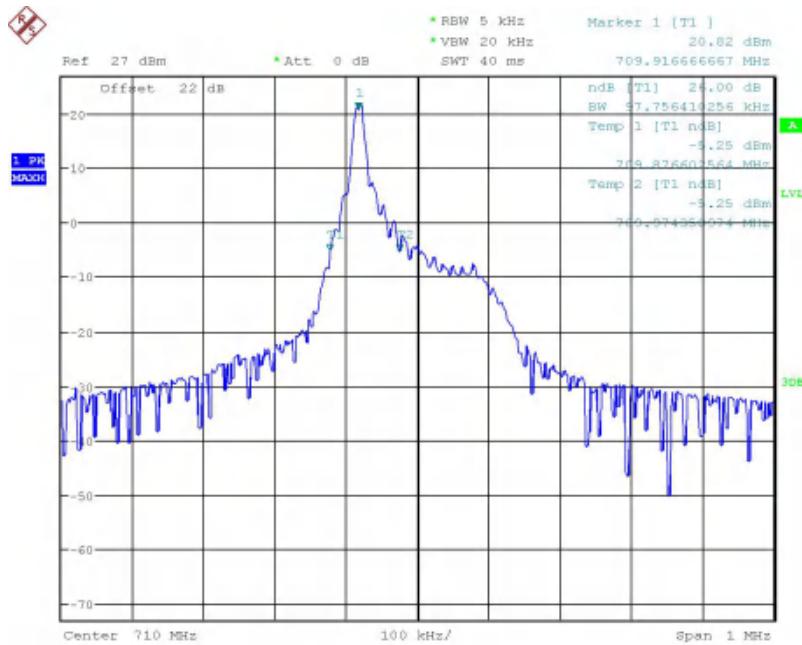


Date: 5.AUG.2018 22:03:16

Band13-99% OBW-Middle Channel-QPSK

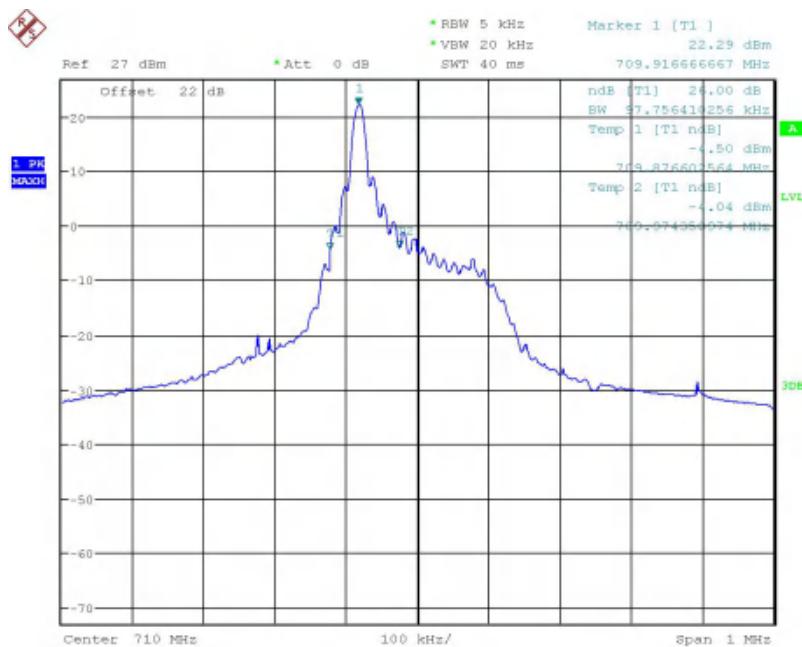
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 21:10:17

## Band17-26dB OBW-Middle Channel-BPSK



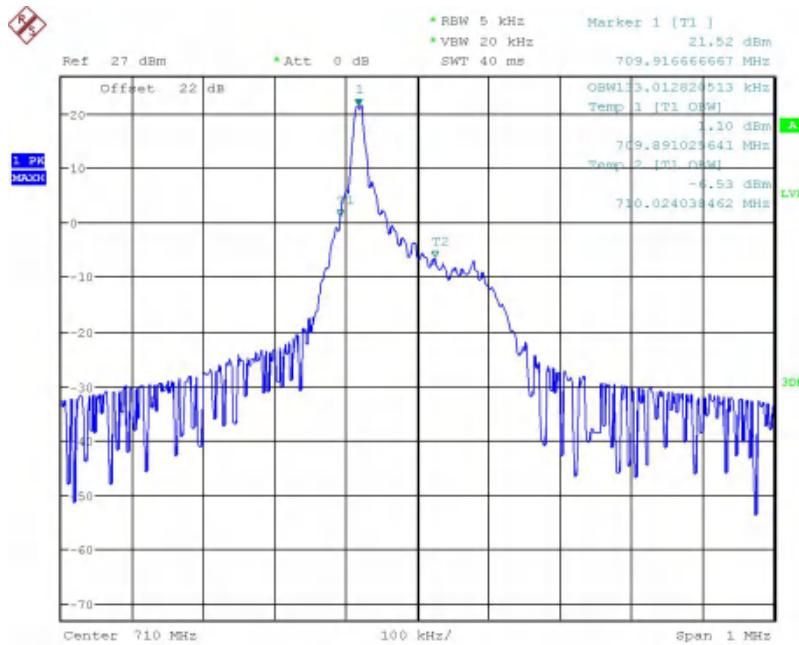
Date: 5.AUG.2018 21:09:52

## Band17-26dB OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

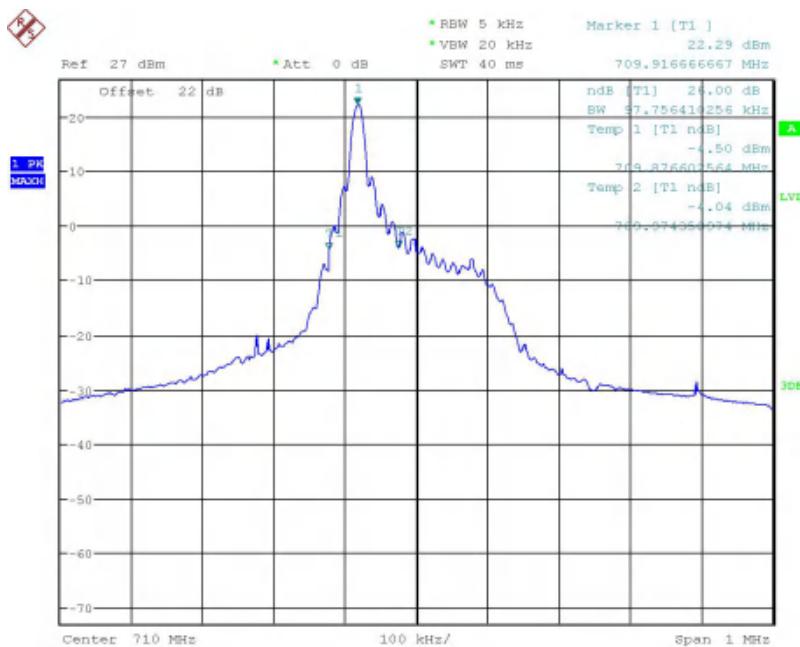
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 21:10:43

## Band17-99% OBW-Middle Channel-BPSK



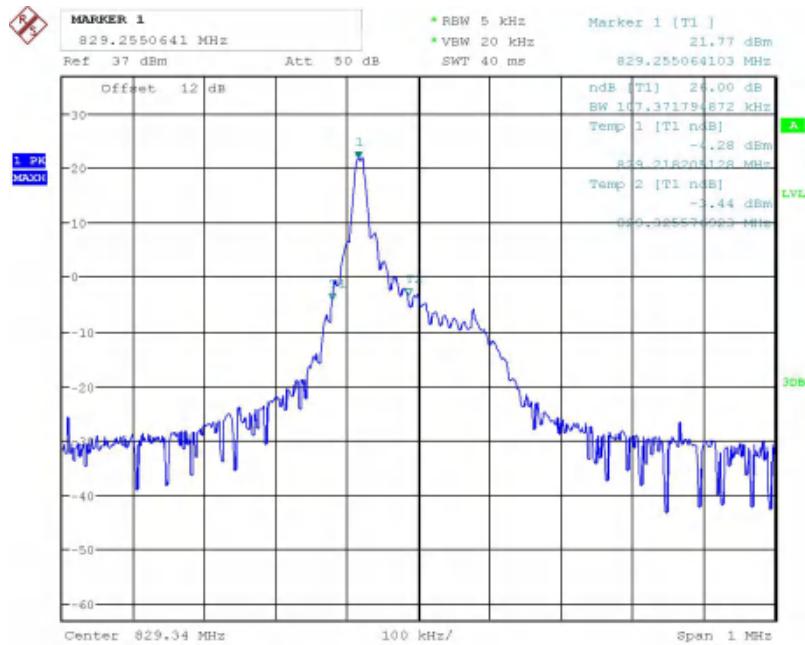
Date: 5.AUG.2018 21:09:52

## Band17-99% OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

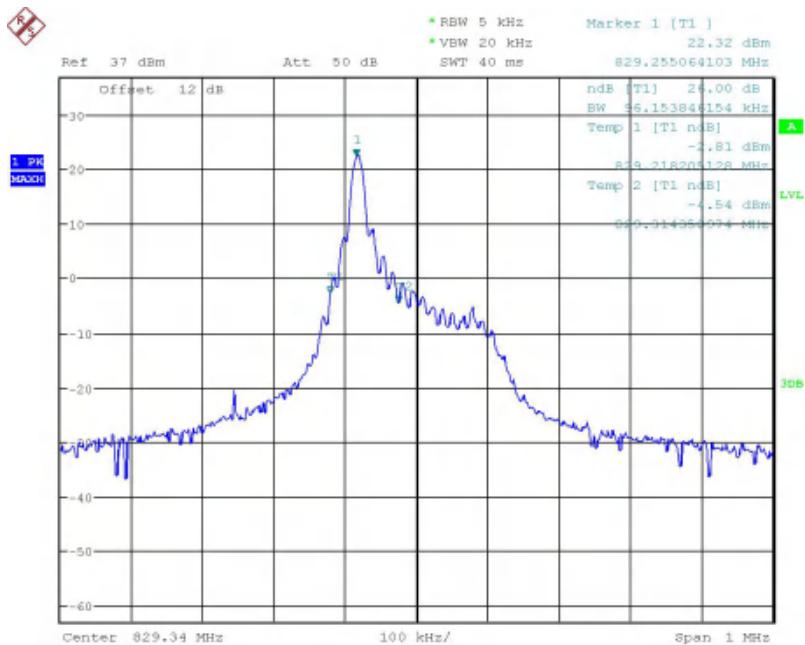
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 20:13:59

Band26-26dB OBW-Middle Channel-BPSK



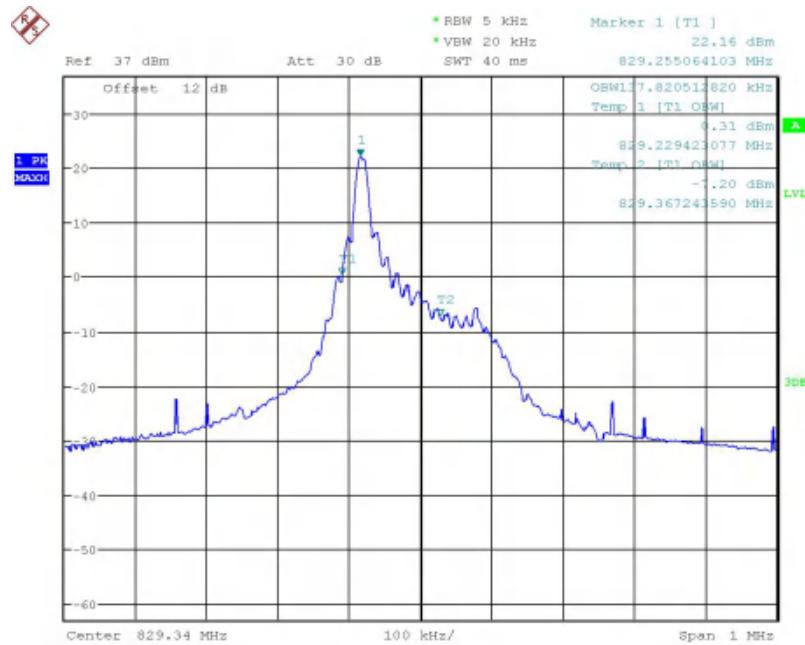
Date: 5.AUG.2018 20:14:43

Band26-26dB OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

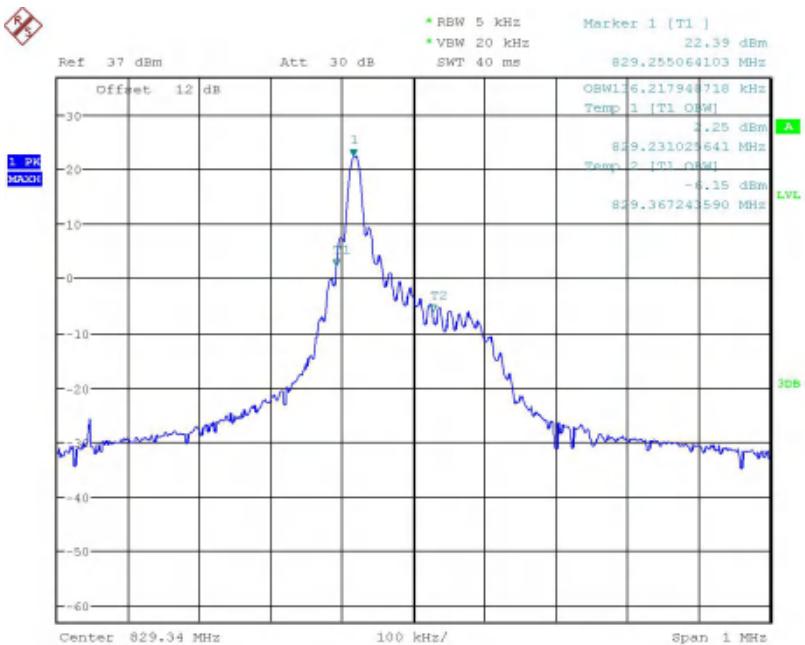
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 5.AUG.2018 20:13:24

## Band26-99% OBW-Middle Channel-BPSK



Date: 5.AUG.2018 20:15:19

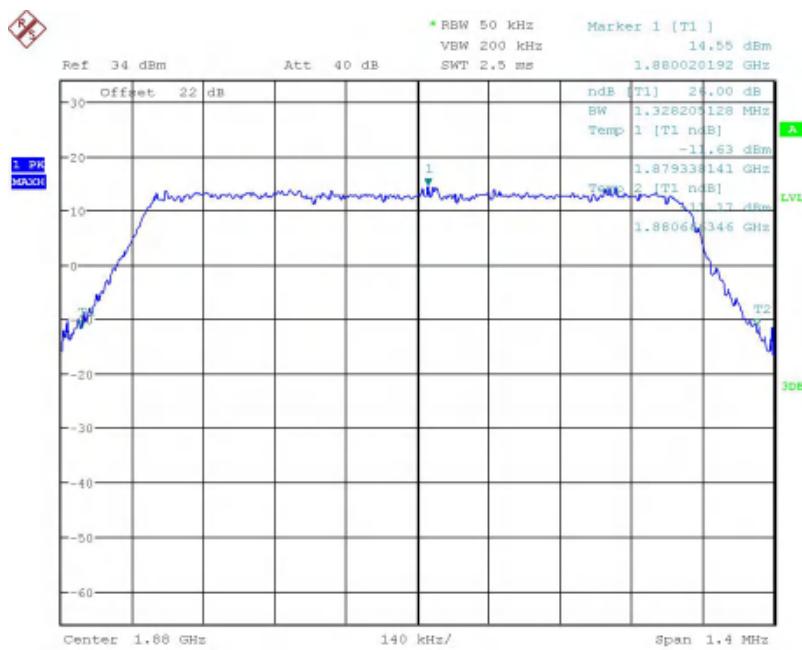
## Band26-99% OBW-Middle Channel-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

# Chongqing Academy of Information and Communications Technology

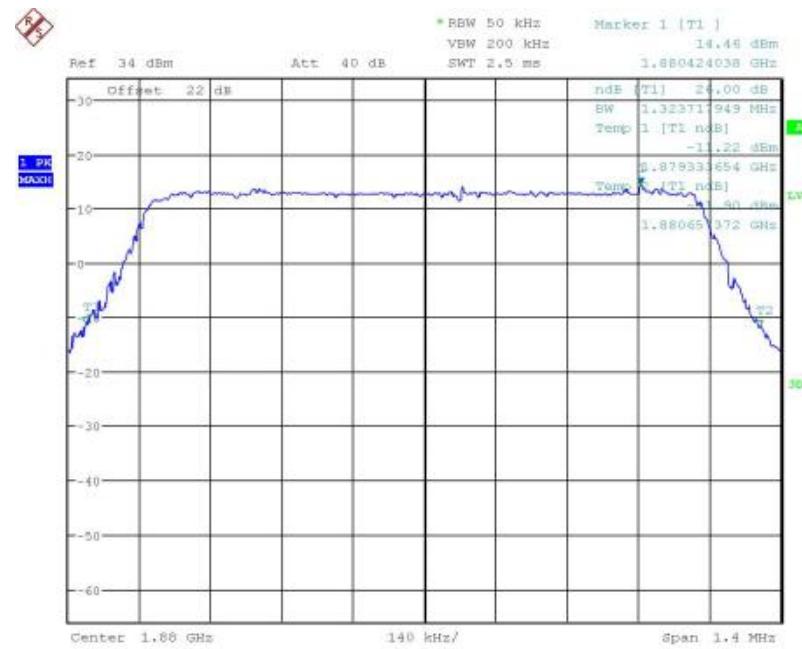
Report No.:B18W50279\_Rev4

## Graphical results for CAT-M:



Date: 8.AUG.2018 11:30:13

## Band2-26dB OBW-1.4MHz Bandwidth-16QAM



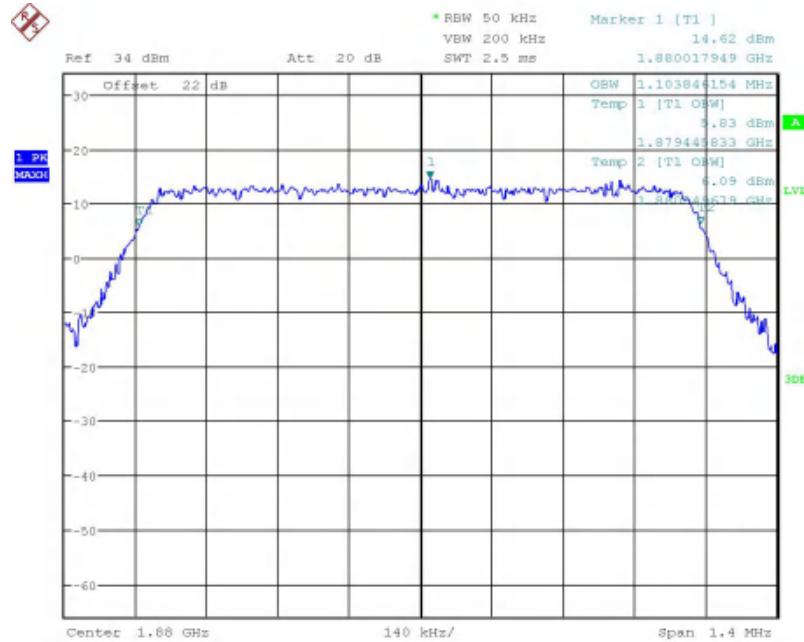
Date: 8.AUG.2018 11:29:48

## Band2-26dB OBW-1.4MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:30:29

Band2-99% OBW-1.4MHz Bandwidth-16QAM



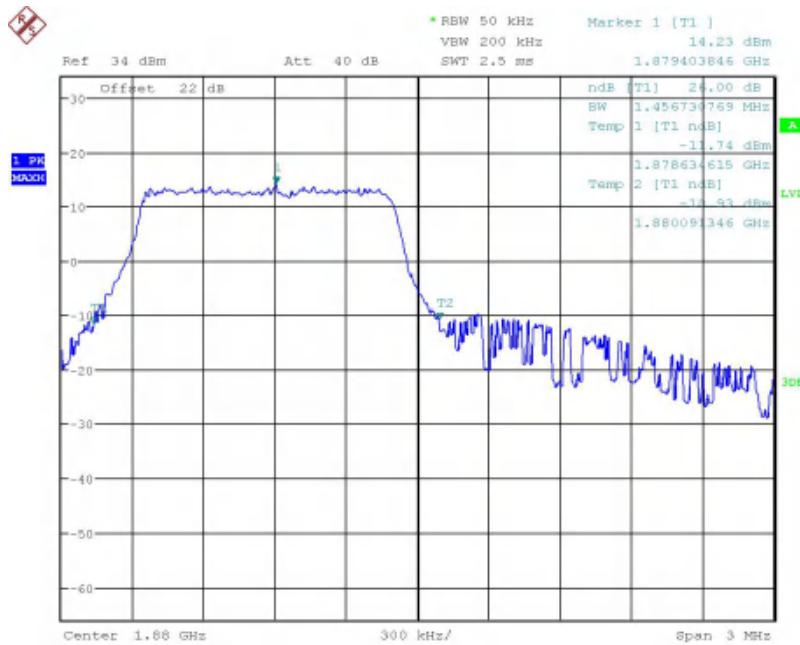
Date: 8.AUG.2018 11:29:12

Band2-99% OBW-1.4MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

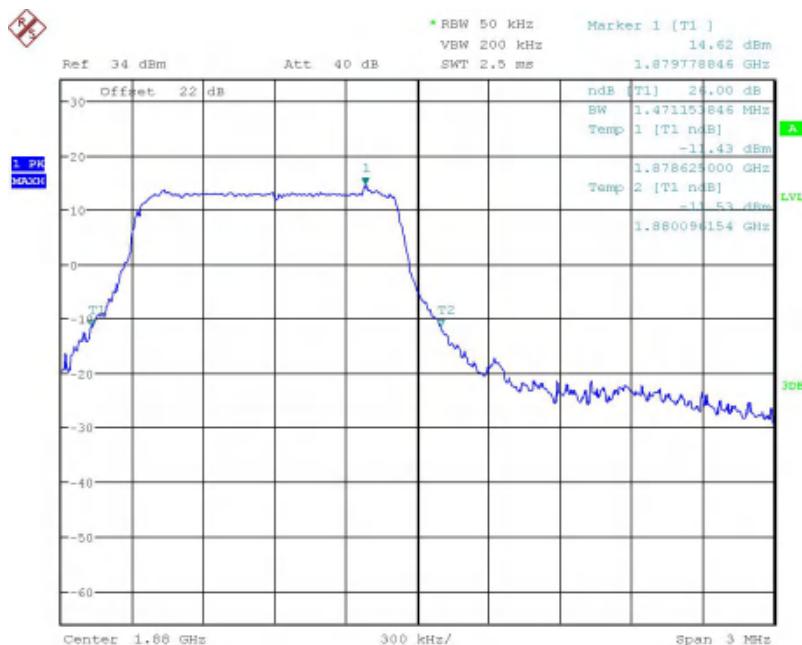
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:31:17

Band2-26dB OBW-3MHz Bandwidth-16QAM



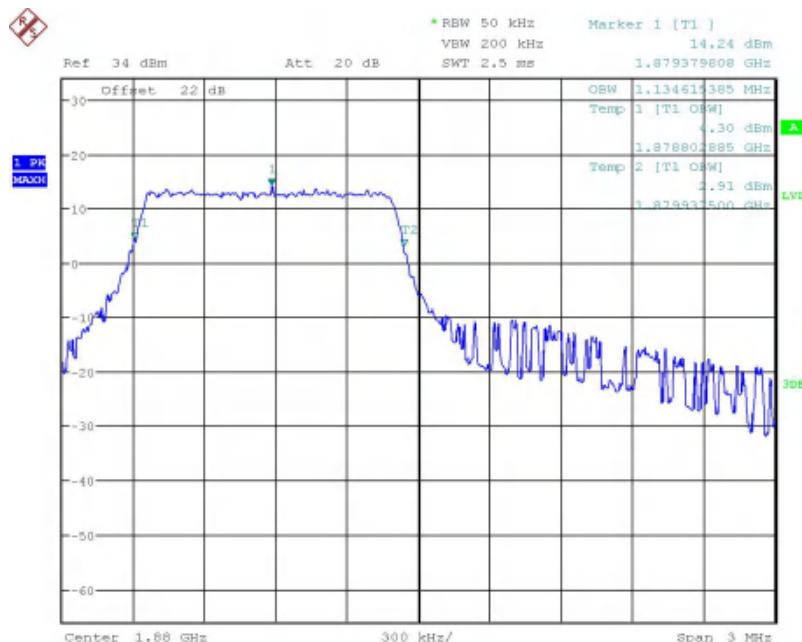
Date: 8.AUG.2018 11:32:07

Band2-26dB OBW-3MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

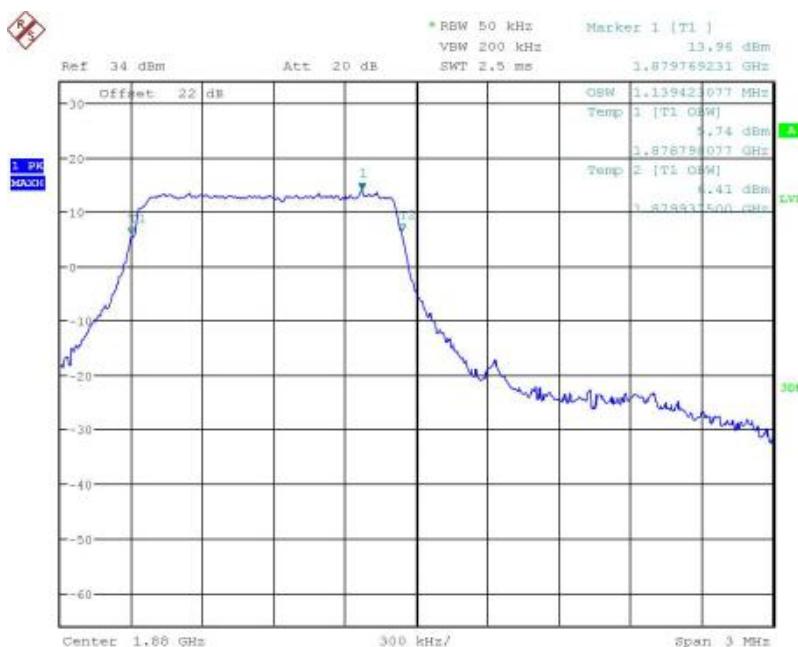
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:30:59

Band2-99% OBW-3MHz Bandwidth-16QAM



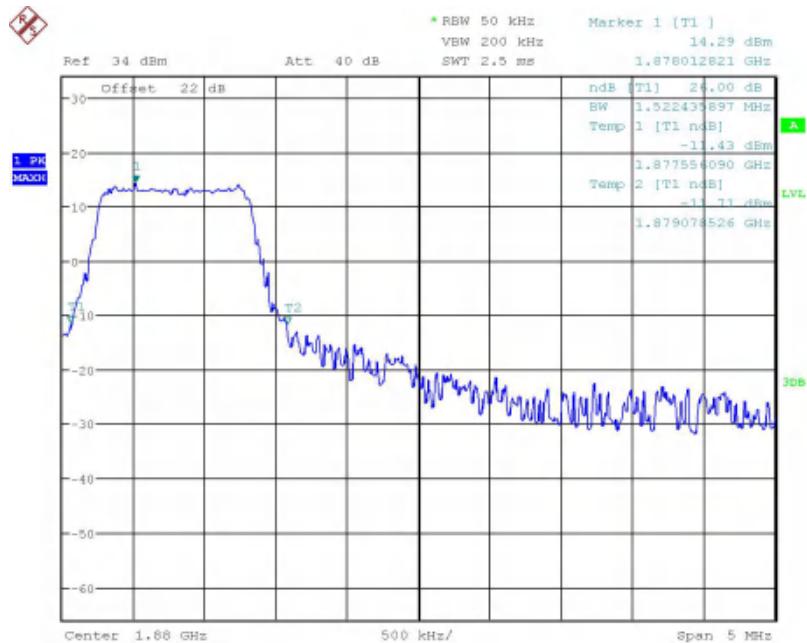
Date: 8.AUG.2018 11:32:51

Band2-99% OBW-3MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

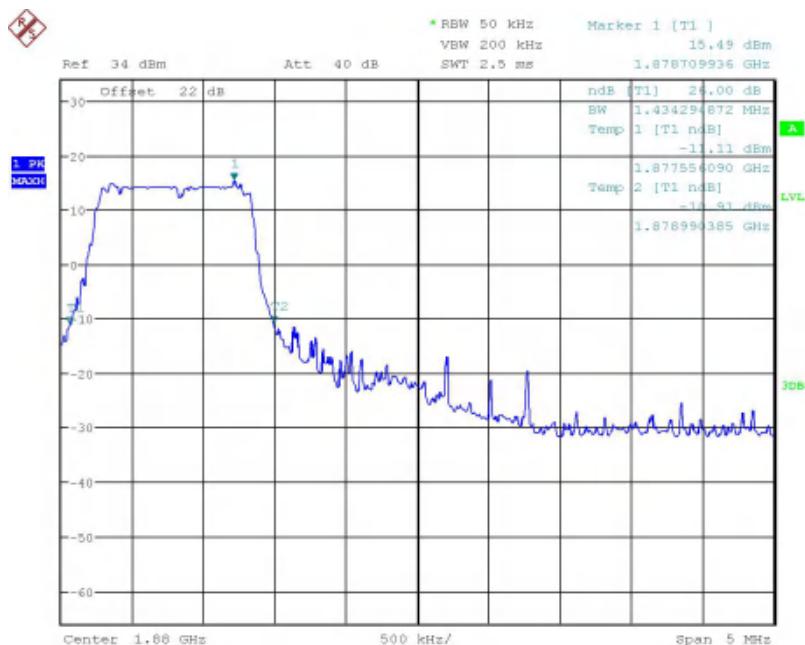
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:36:13

Band2-26dB OBW-5MHz Bandwidth-16QAM



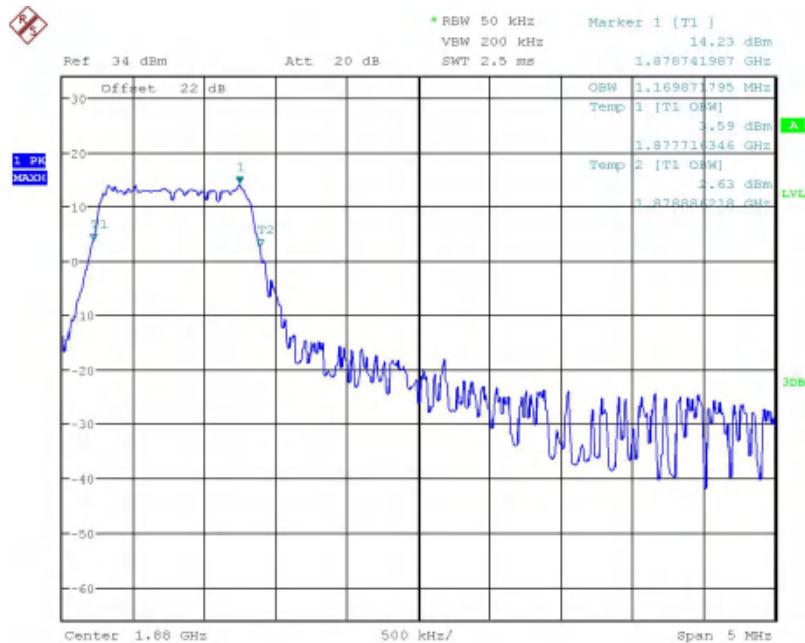
Date: 8.AUG.2018 11:35:37

Band2-26dB OBW-5MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

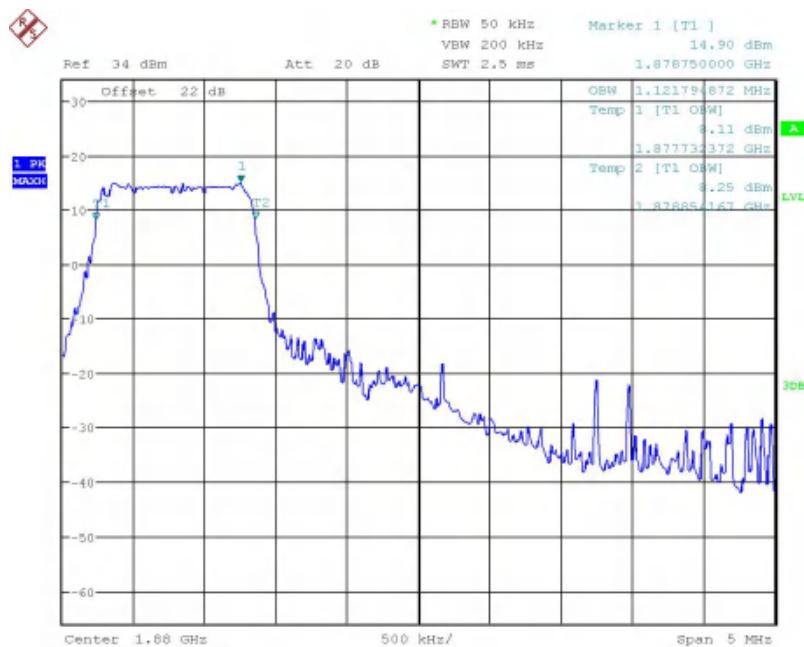
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:36:32

Band2-99% OBW-5MHz Bandwidth-16QAM

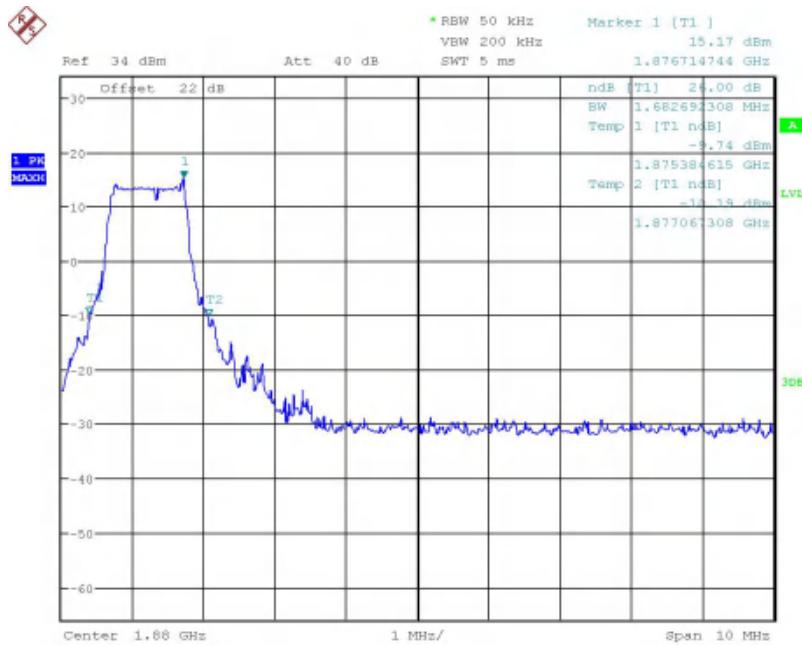


Date: 8.AUG.2018 11:35:18

Band2-99% OBW-5MHz Bandwidth-QPSK

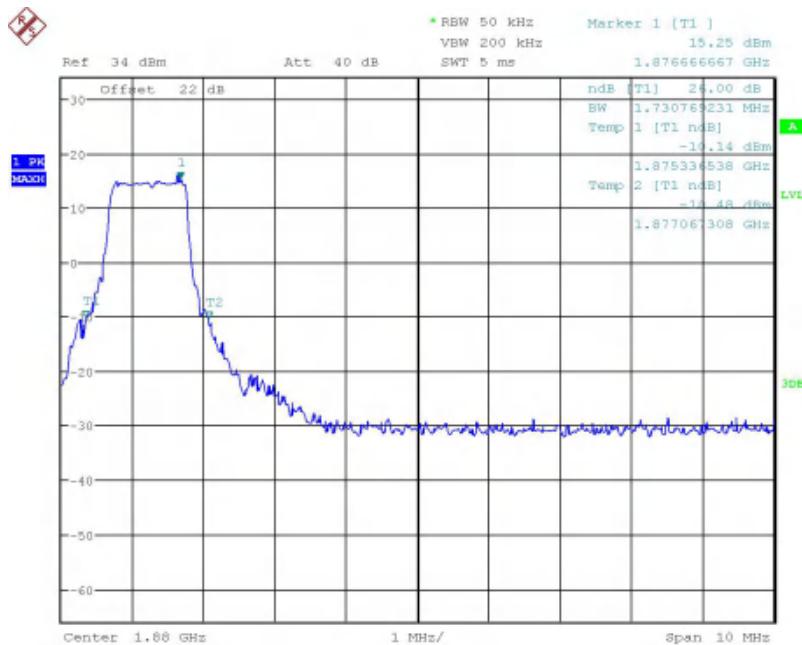
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:56:00

## Band2-26dB OBW-10MHz Bandwidth-16QAM



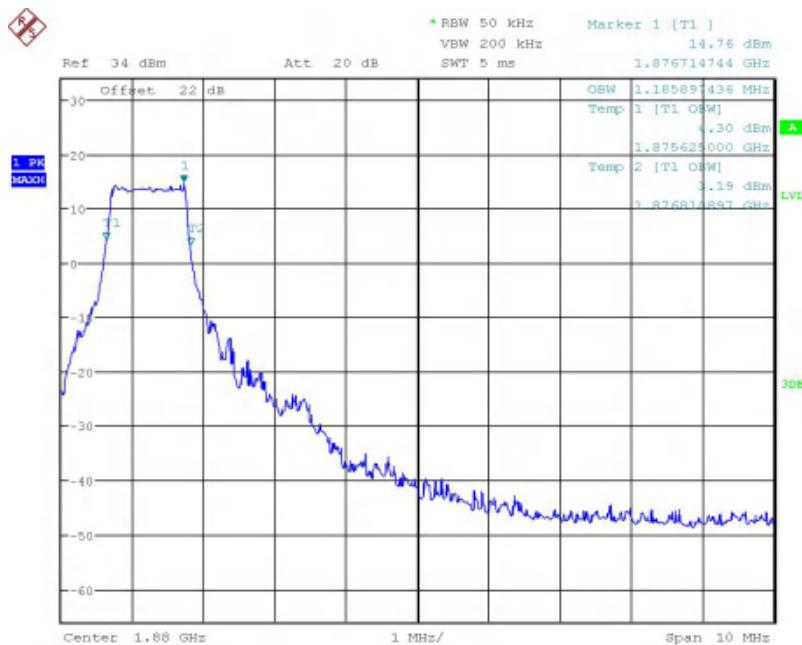
Date: 8.AUG.2018 11:55:47

## Band2-26dB OBW-10MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

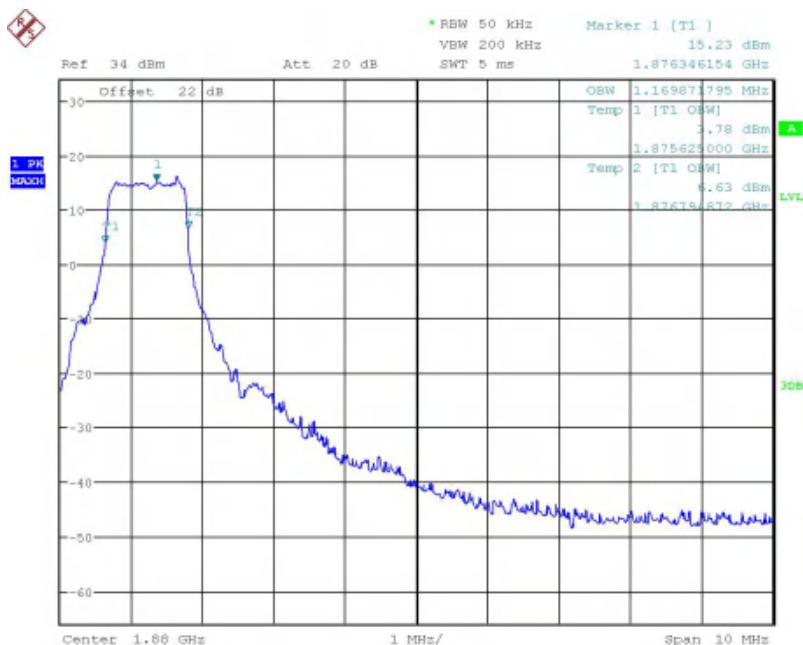
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:56:30

Band2-99% OBW-10MHz Bandwidth-16QAM



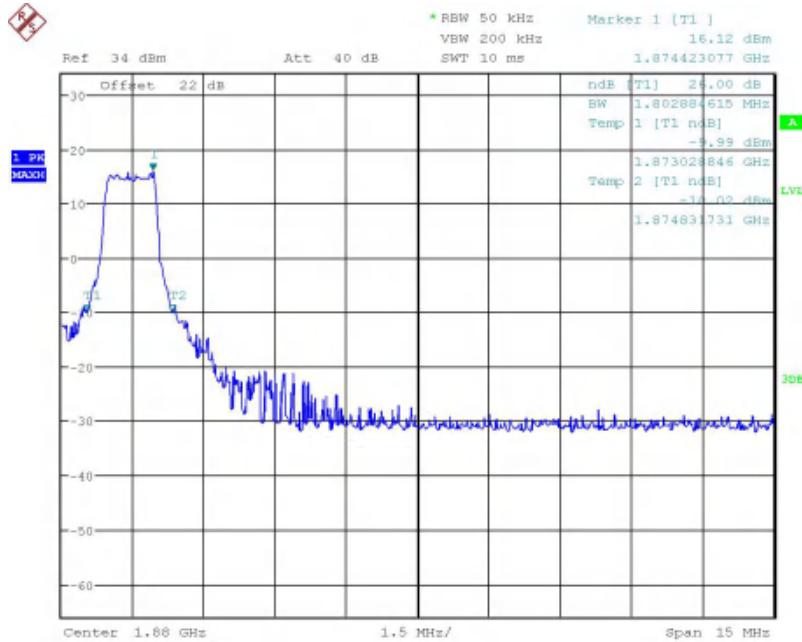
Date: 8.AUG.2018 11:55:25

Band2-99% OBW-10MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965      FAX: 0086-23-88608777

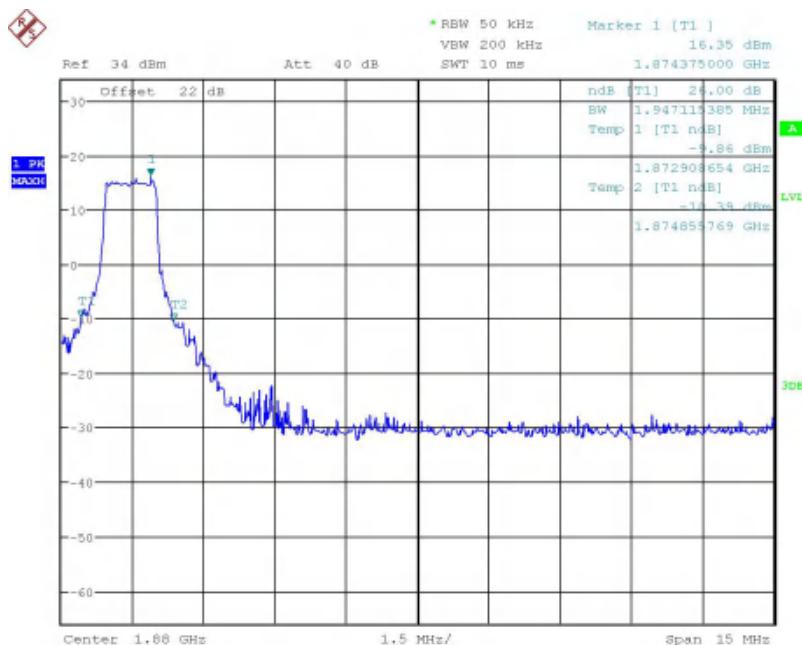
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 11:59:44

Band2-26dB OBW-15MHz Bandwidth-16QAM



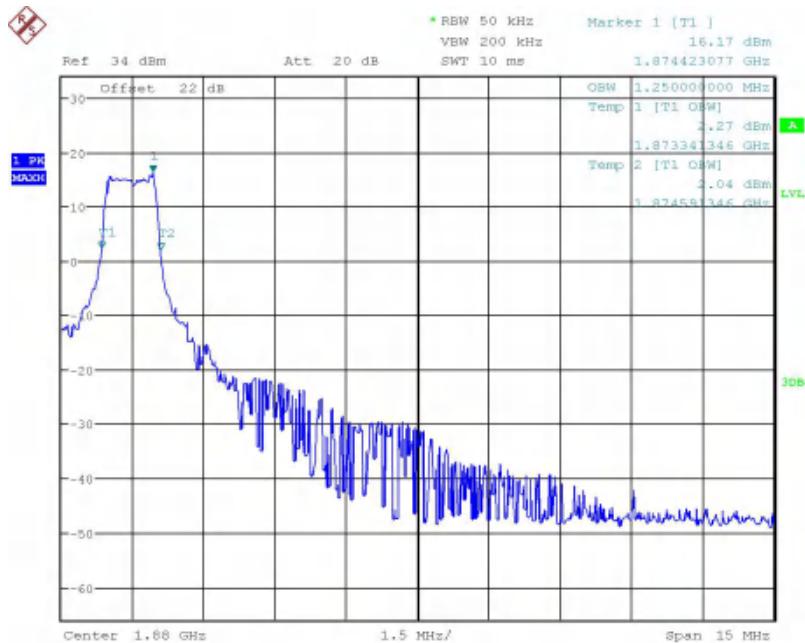
Date: 8.AUG.2018 11:59:17

Band2-26dB OBW-15MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

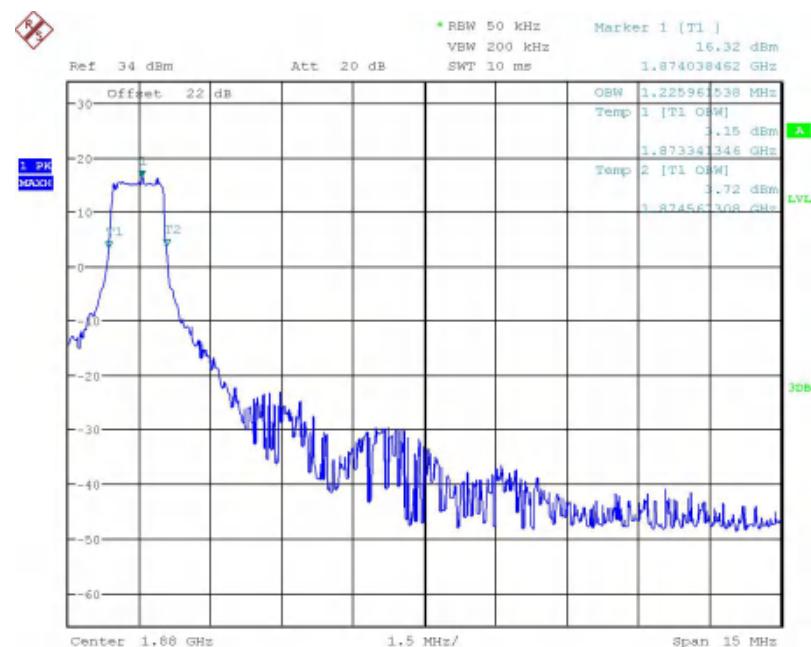
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 12:00:04

Band2-99% OBW-15MHz Bandwidth-16QAM

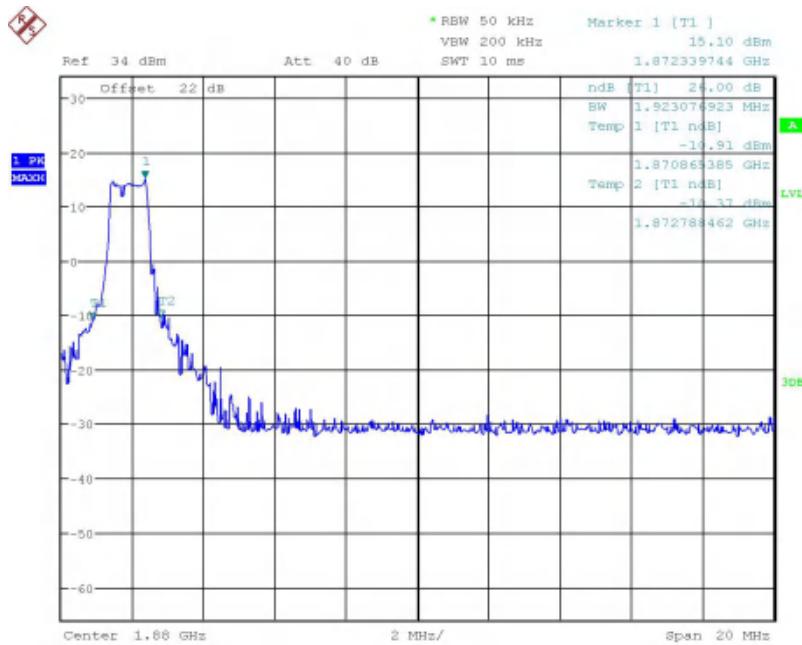


Date: 8.AUG.2018 11:58:32

Band2-99% OBW-15MHz Bandwidth-QPSK

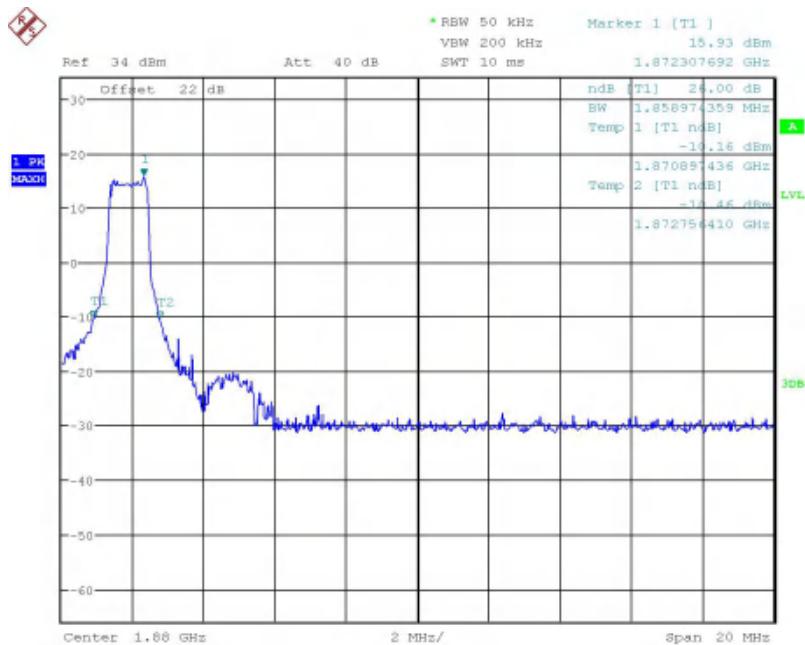
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 12:00:54

## Band2-26dB OBW-20MHz Bandwidth-16QAM



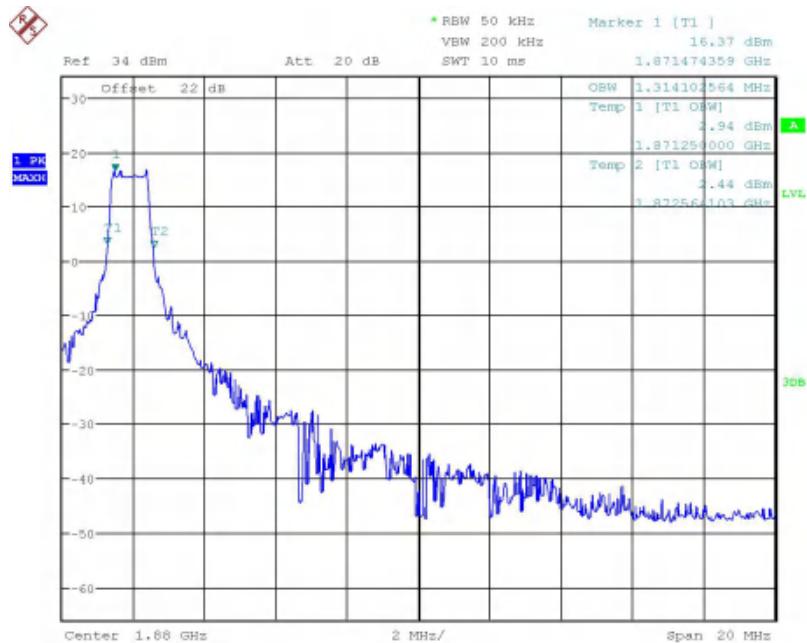
Date: 8.AUG.2018 12:01:45

## Band2-26dB OBW-20MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

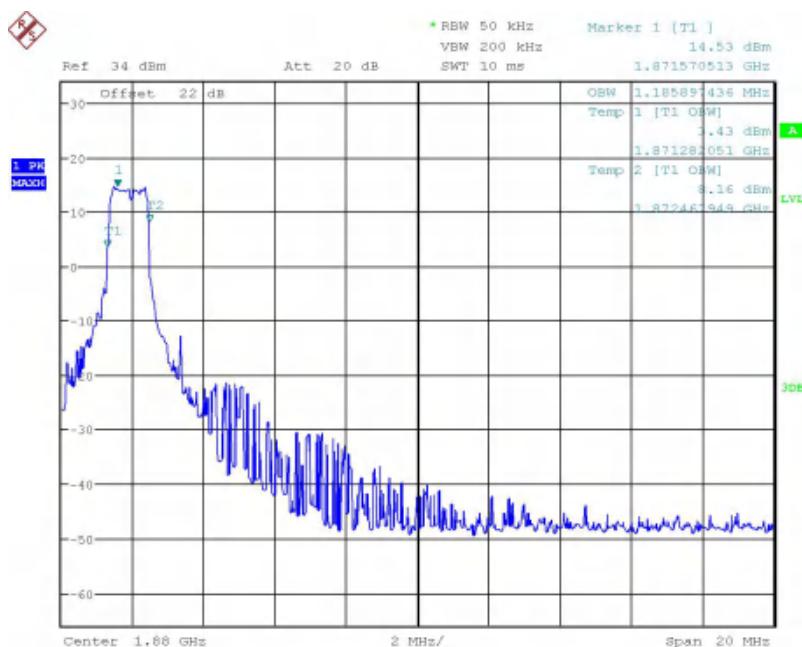
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 8.AUG.2018 13:42:28

Band2-99% OBW-20MHz Bandwidth-16QAM



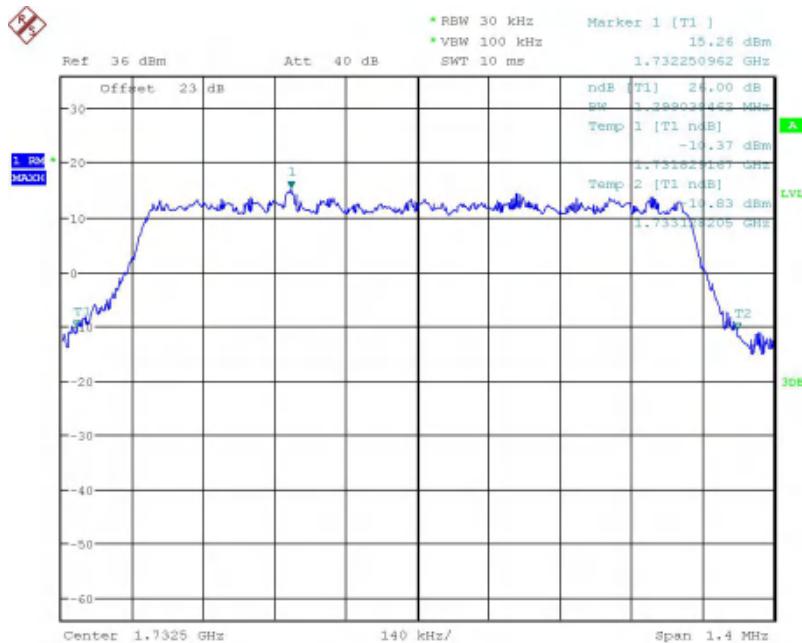
Date: 8.AUG.2018 12:02:02

Band2-99% OBW-20MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

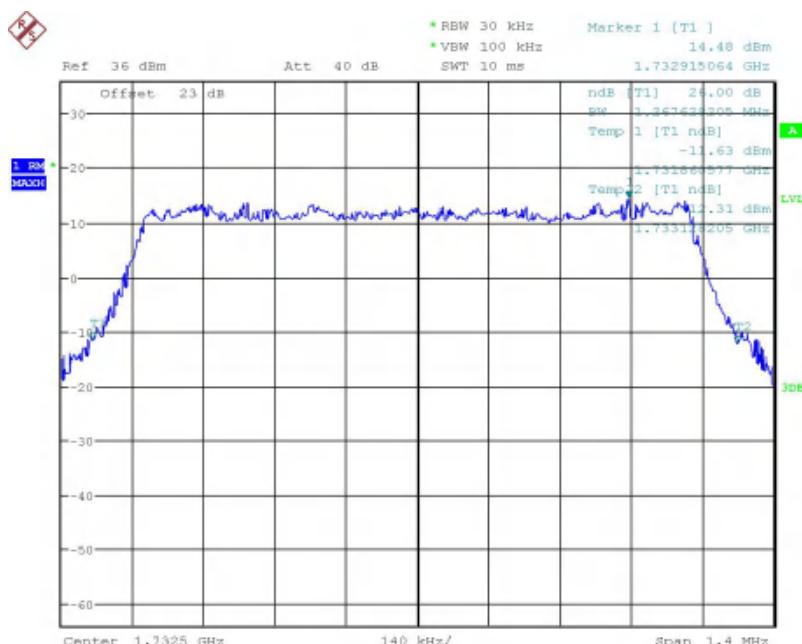
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:35:56

## Band4-26dB OBW-1.4MHz Bandwidth-16QAM



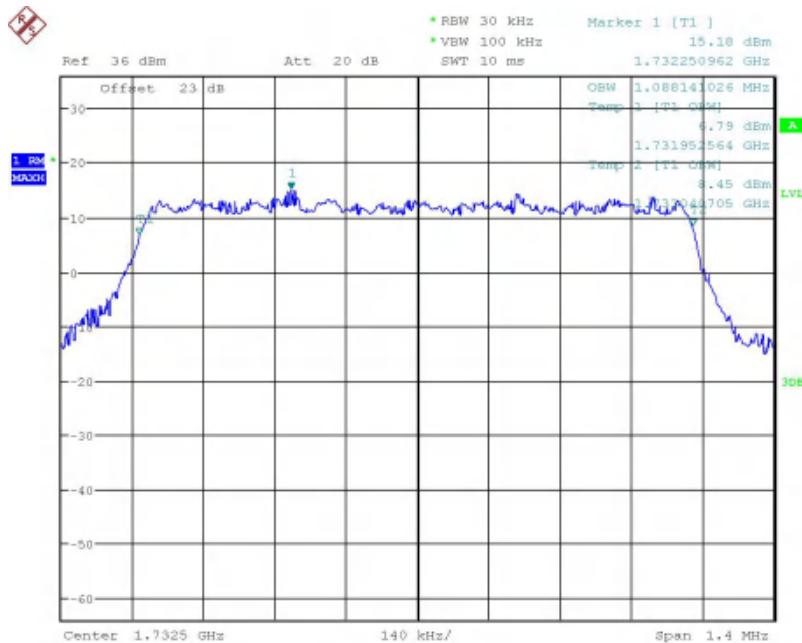
Date: 7.AUG.2018 09:35:08

## Band4-26dB OBW-1.4MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965      FAX: 0086-23-88608777

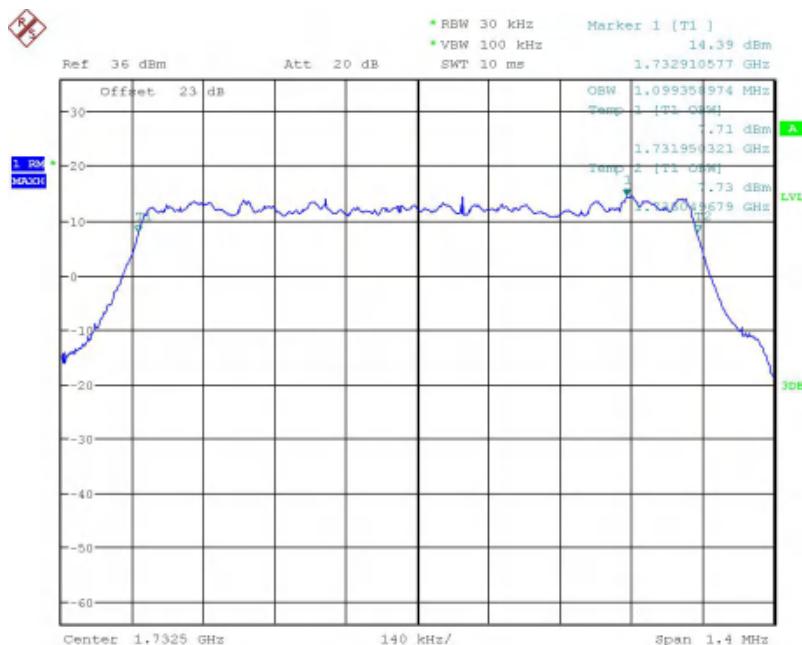
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:36:39

## Band4-99% OBW-1.4MHz Bandwidth-16QAM



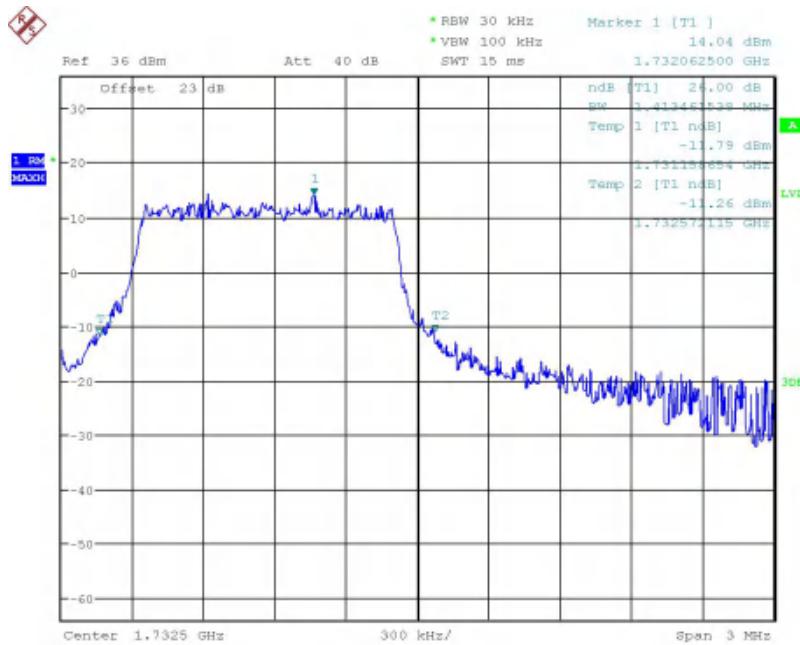
Date: 7.AUG.2018 09:34:36

## Band4-99% OBW-1.4MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

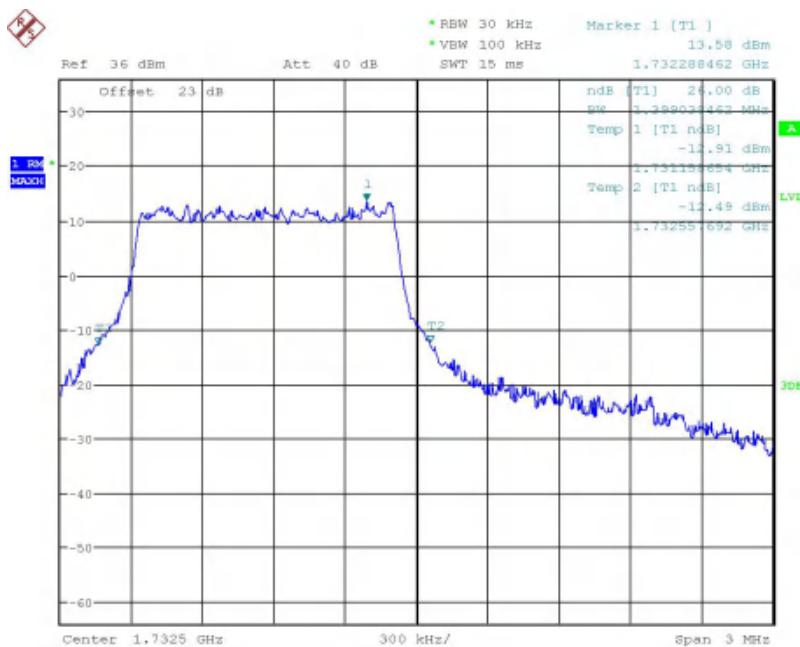
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:37:50

Band4-26dB OBW-3MHz Bandwidth-16QAM



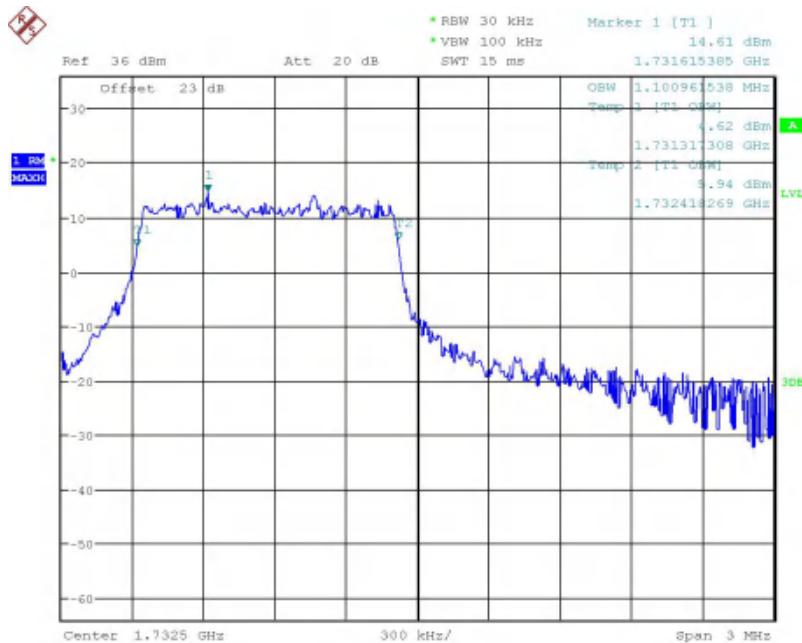
Date: 7.AUG.2018 09:38:34

Band4-26dB OBW-3MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

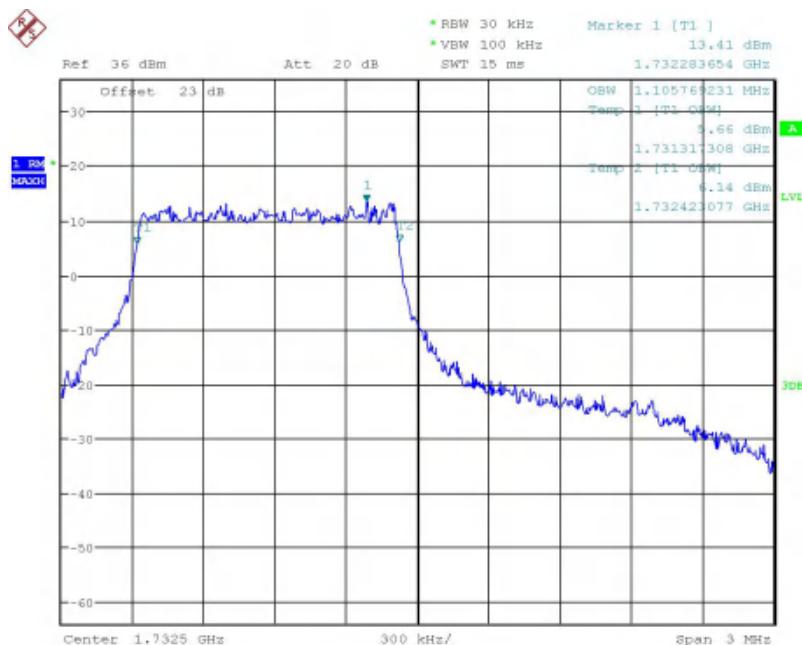
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:37:29

## Band4-99% OBW-3MHz Bandwidth-16QAM



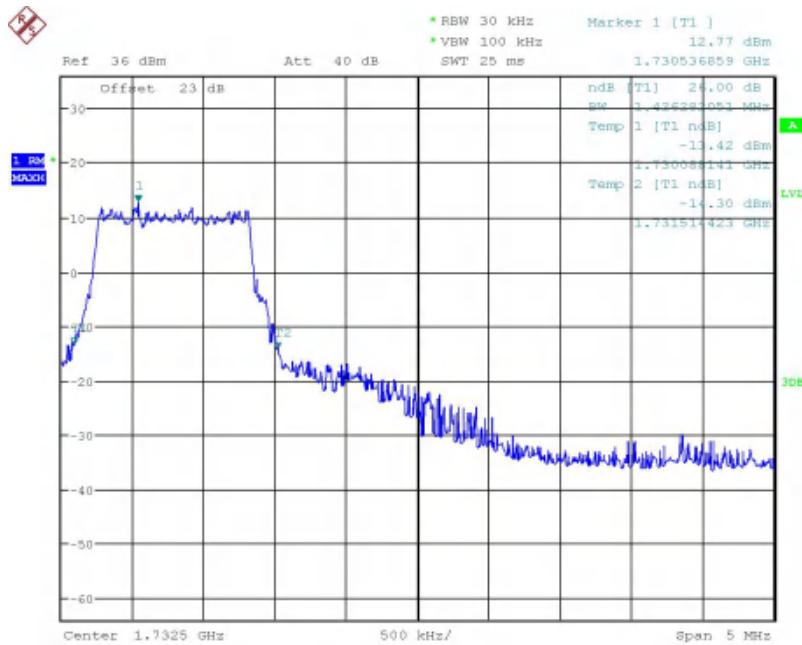
Date: 7.AUG.2018 09:38:59

## Band4-99% OBW-3MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

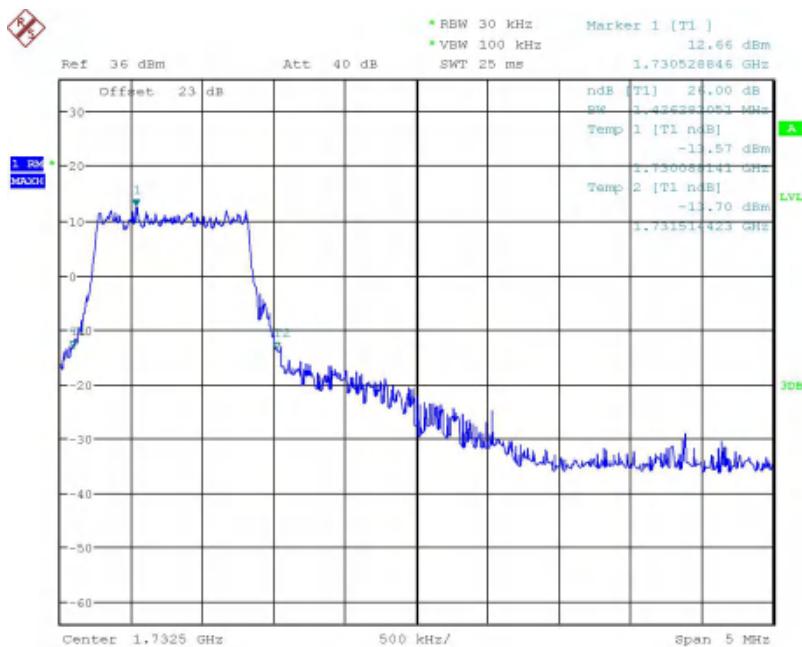
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:56:21

Band4-26dB OBW-5MHz Bandwidth-16QAM

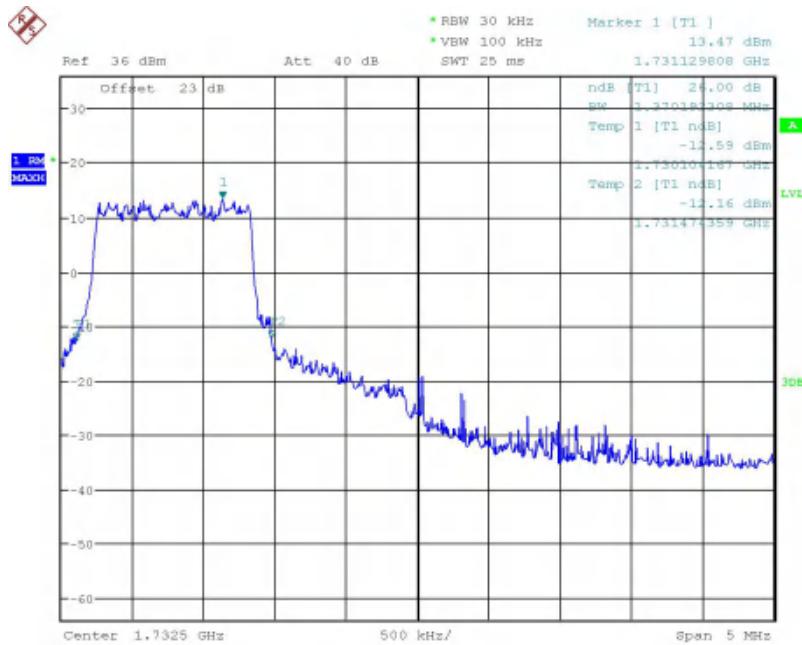


Date: 7.AUG.2018 09:45:15

Band4-26dB OBW-5MHz Bandwidth-QPSK

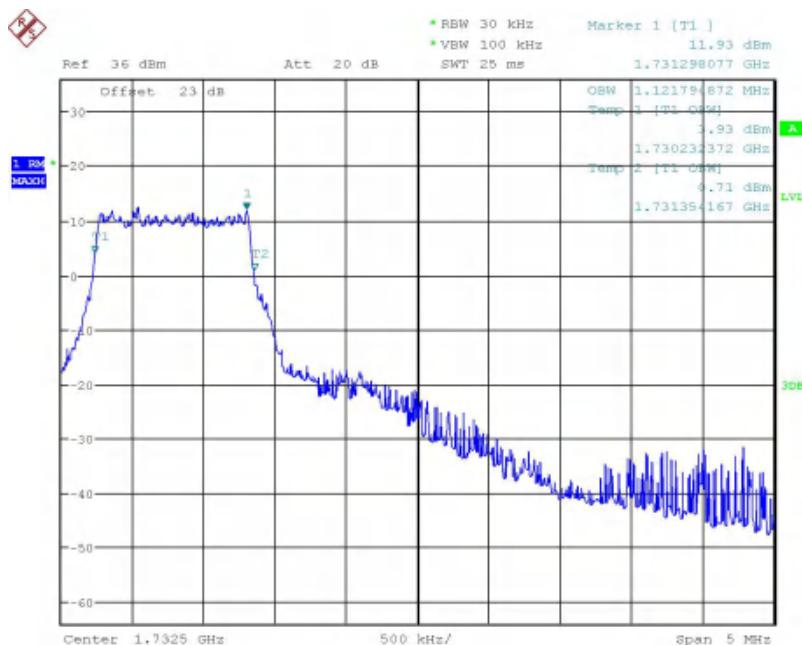
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:42:16

## Band4-99% OBW-5MHz Bandwidth-16QAM



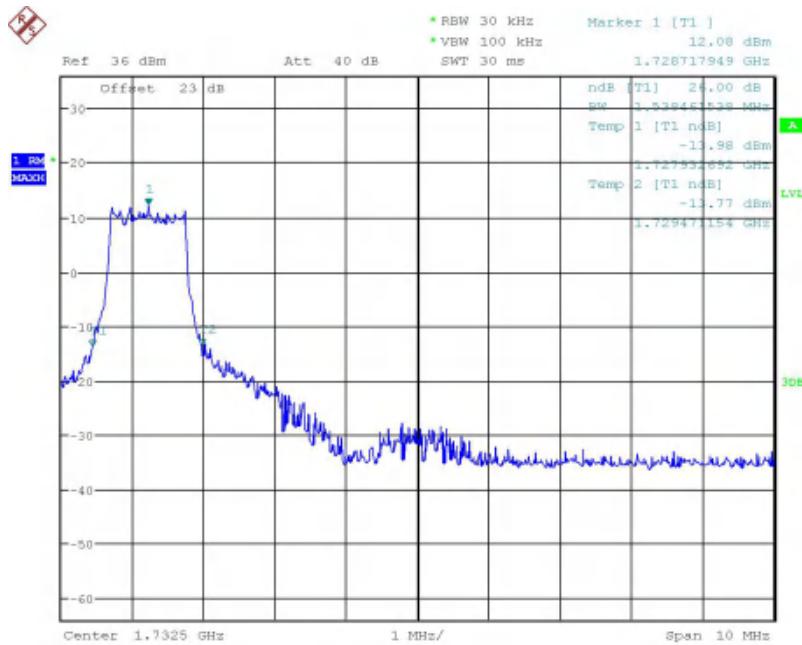
Date: 7.AUG.2018 09:44:41

## Band4-99% OBW-5MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

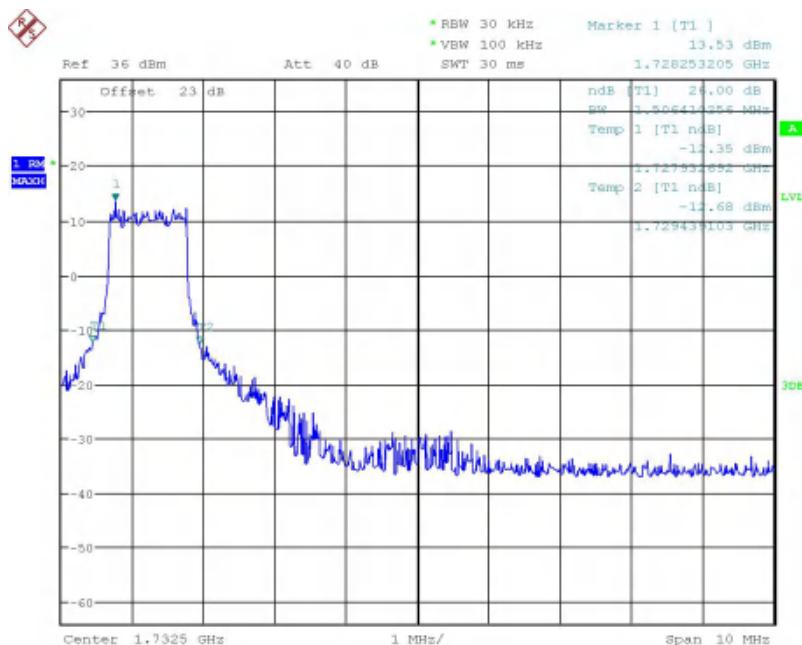
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:47:18

## Band4-26dB OBW-10MHz Bandwidth-16QAM



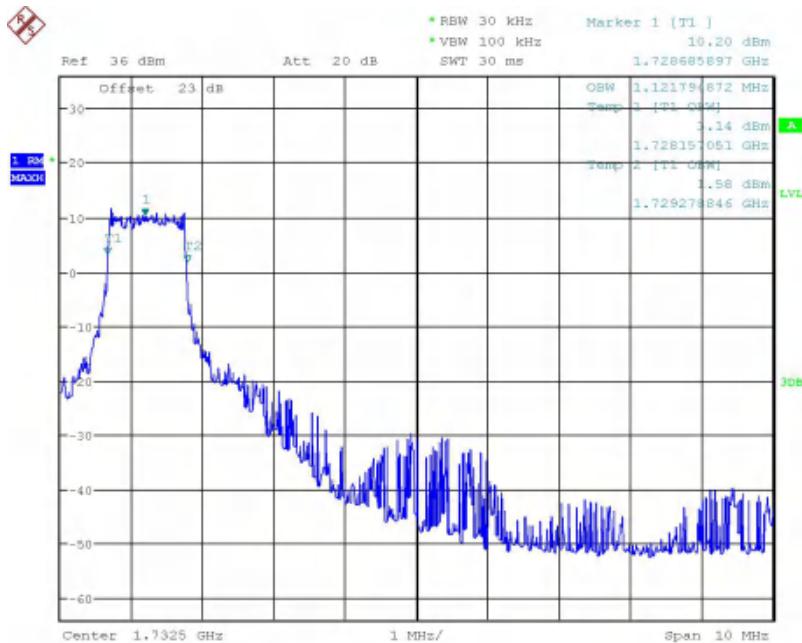
Date: 7.AUG.2018 09:48:33

## Band4-26dB OBW-10MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

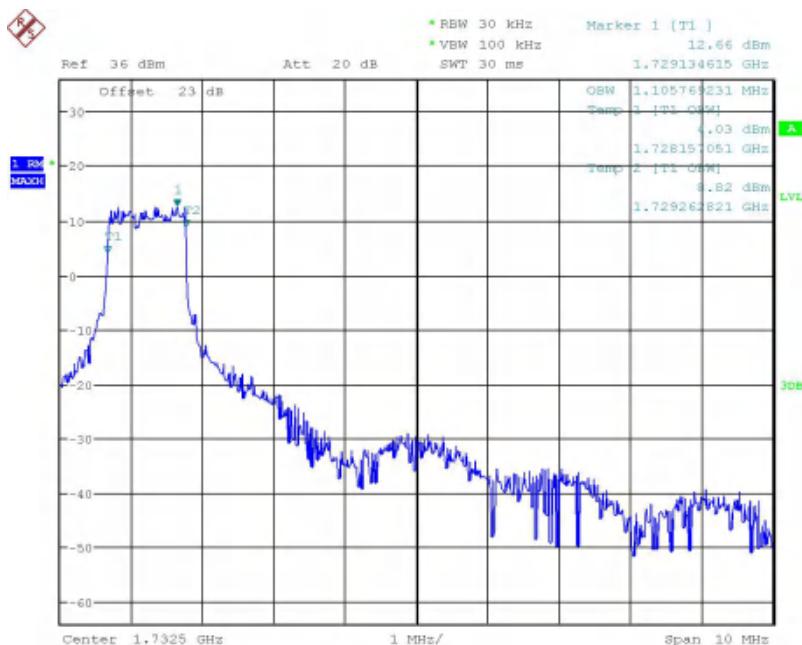
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:47:33

Band4-99% OBW-10MHz Bandwidth-16QAM



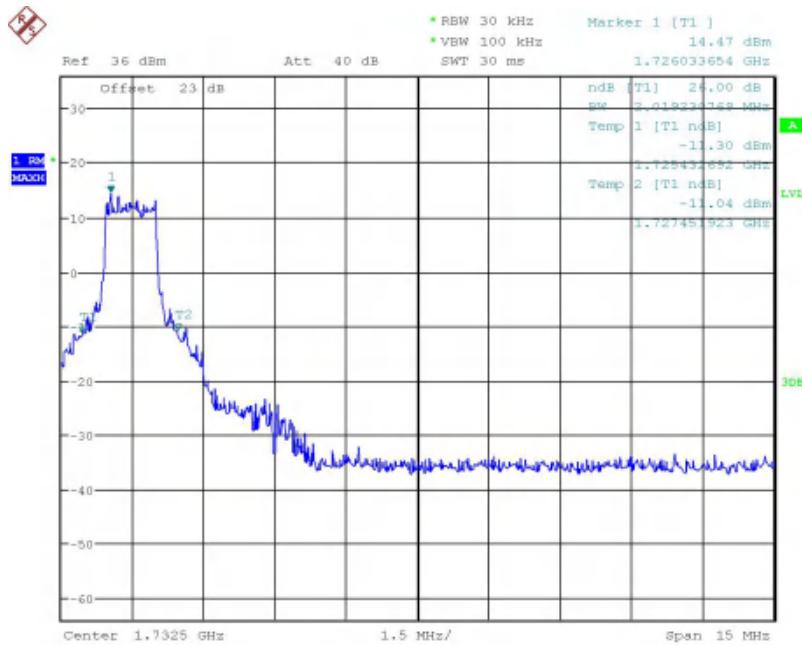
Date: 7.AUG.2018 09:48:16

Band4-99% OBW-10MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

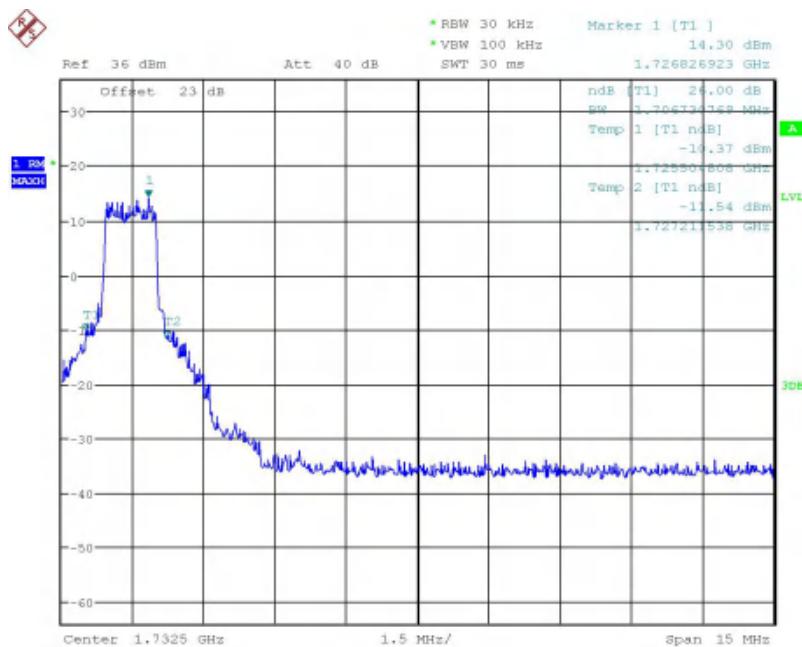
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:50:13

## Band4-26dB OBW-15MHz Bandwidth-16QAM



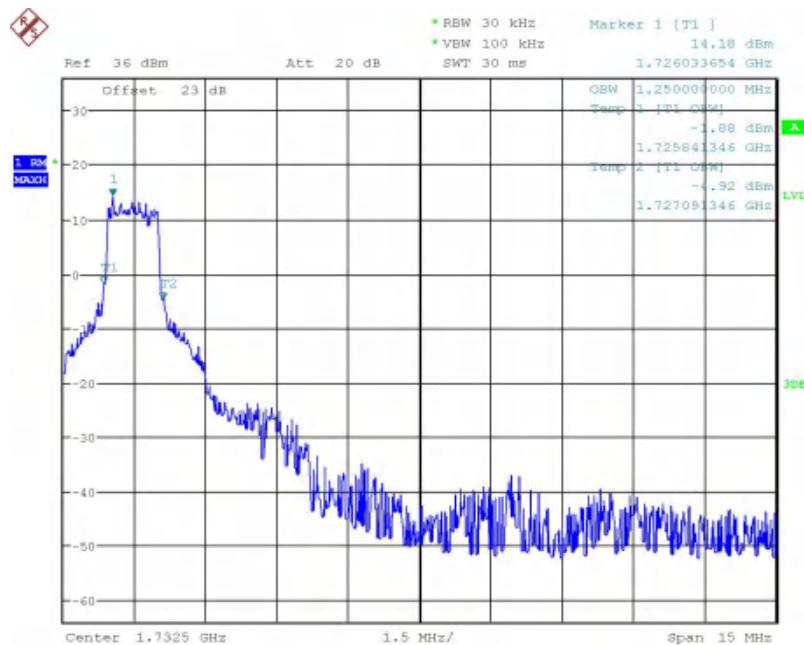
Date: 7.AUG.2018 09:49:05

## Band4-26dB OBW-15MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

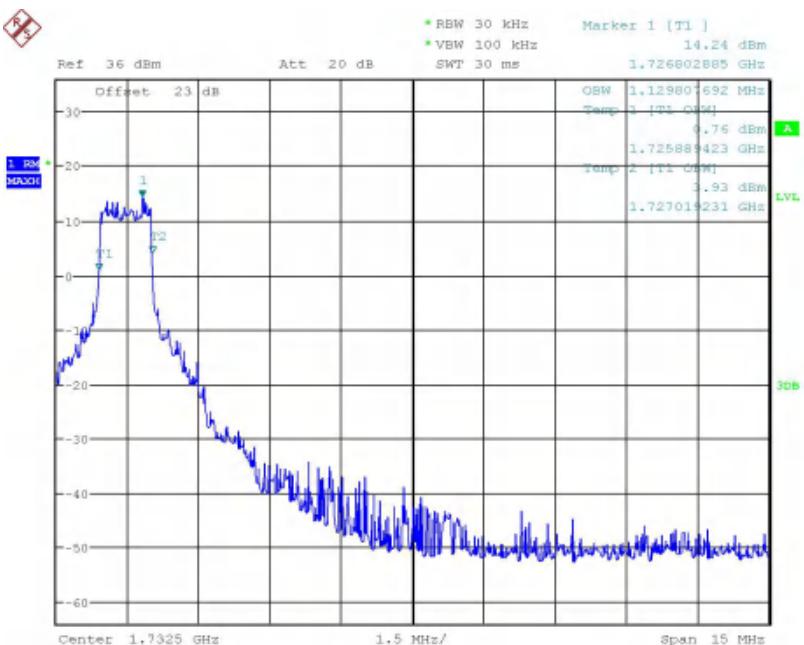
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:49:43

## Band4-99% OBW-15MHz Bandwidth-16QAM



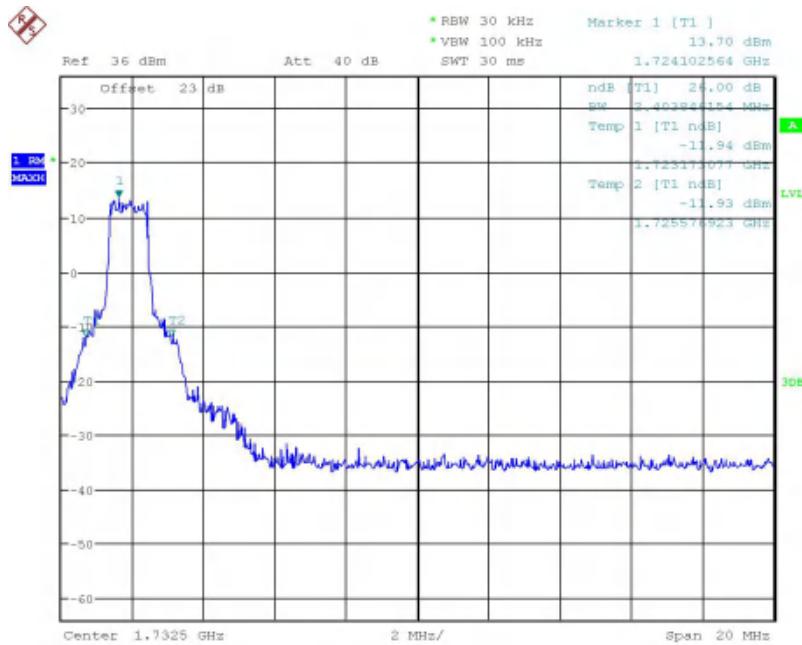
Date: 7.AUG.2018 09:49:20

## Band4-99% OBW-15MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
 Tel: 0086-23-88069965      FAX: 0086-23-88608777

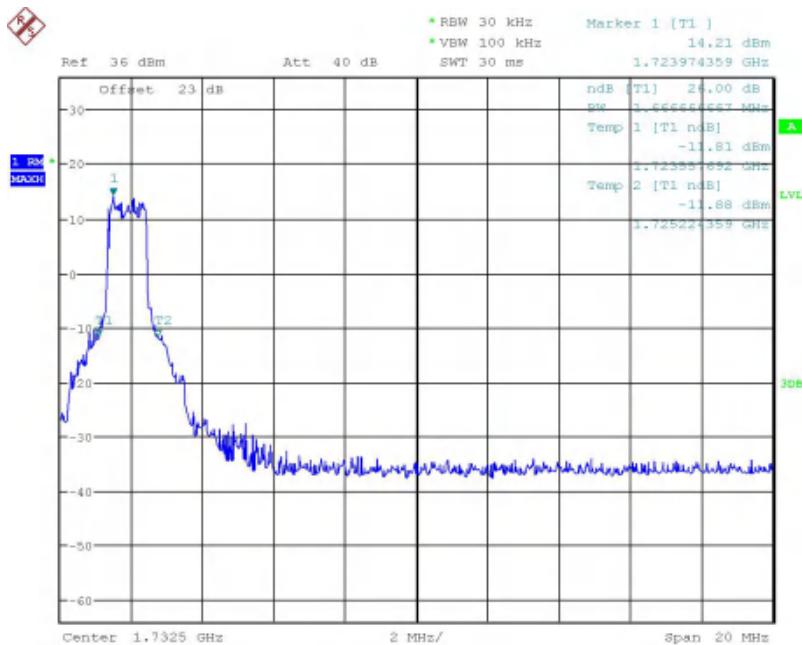
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:53:42

## Band4-26dB OBW-20MHz Bandwidth-16QAM



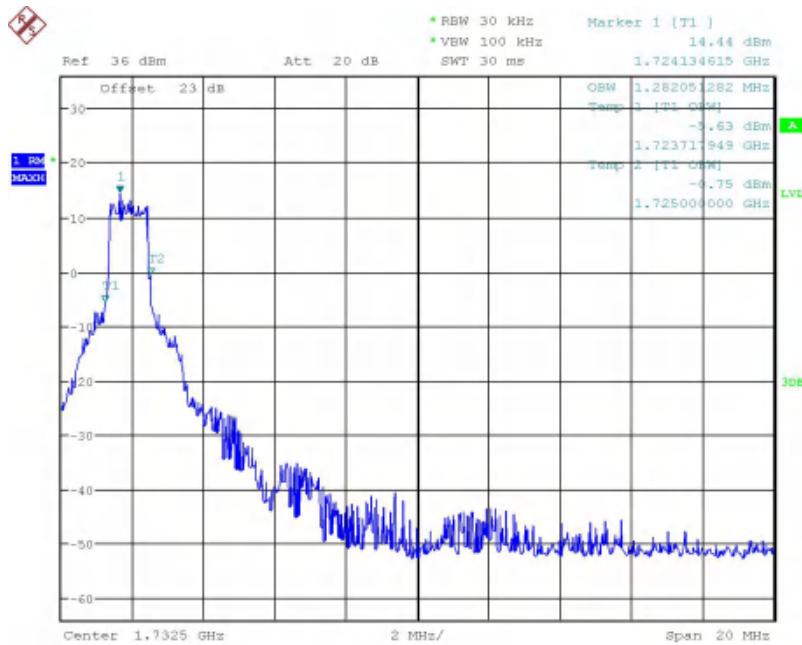
Date: 7.AUG.2018 09:54:45

## Band4-26dB OBW-20MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

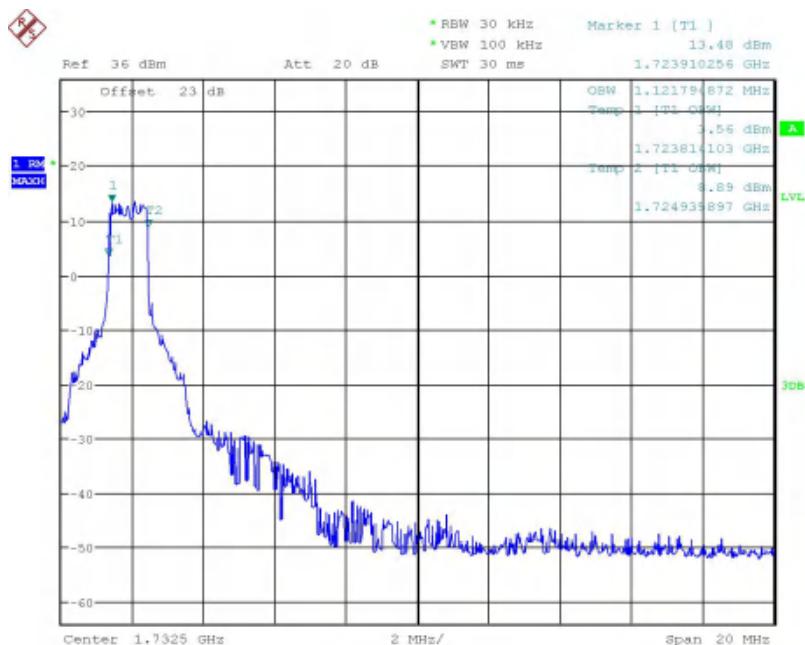
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 09:53:59

Band4-99% OBW-20MHz Bandwidth-16QAM

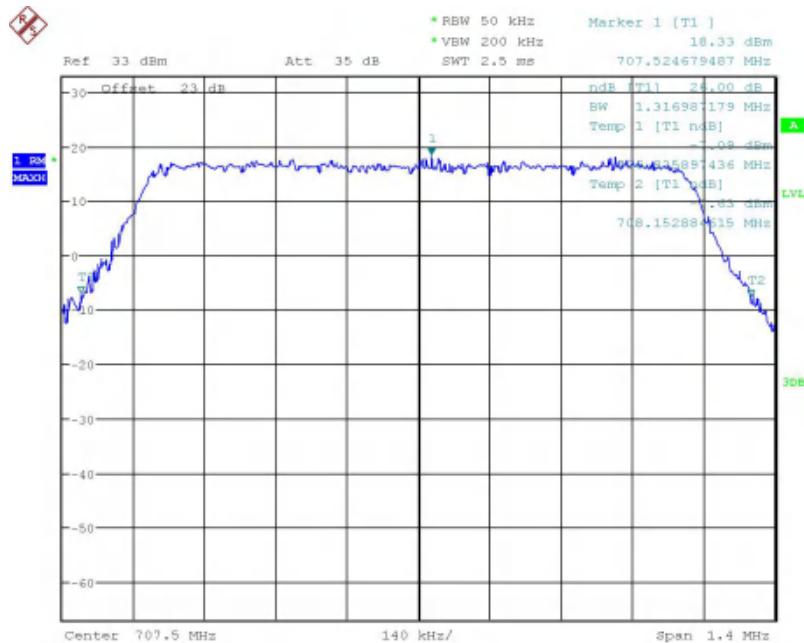


Date: 7.AUG.2018 09:54:31

Band4-99% OBW-20MHz Bandwidth-QPSK

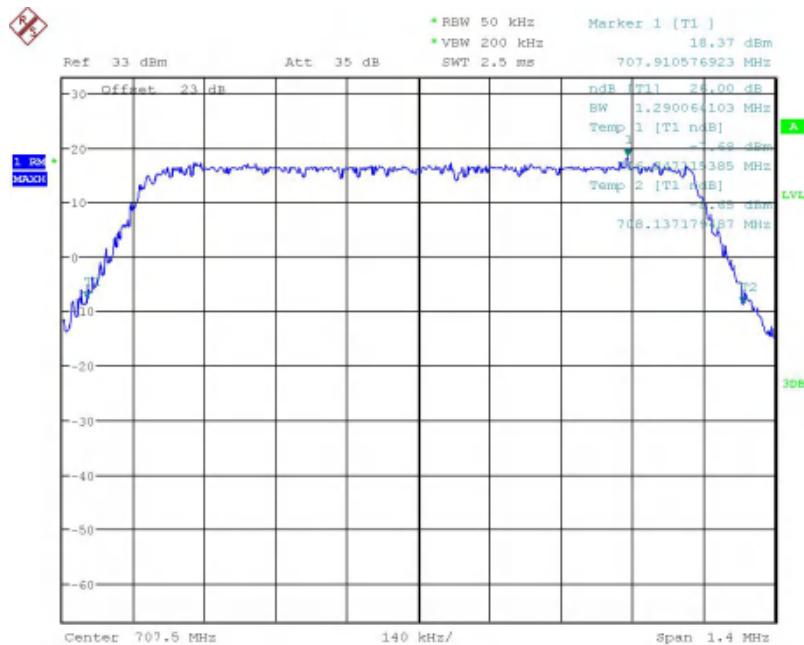
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:14:47

Band12-26dB OBW-1.4MHz Bandwidth-16QAM



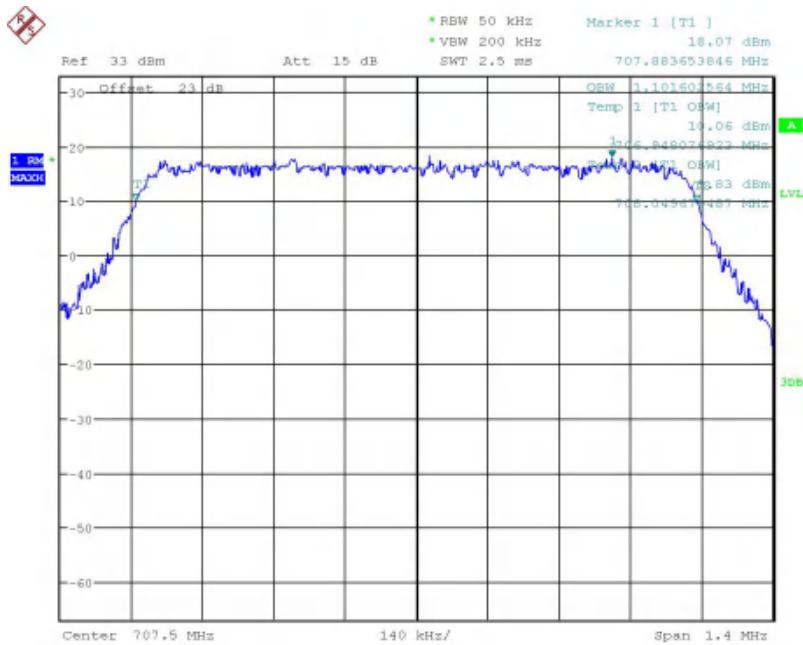
Date: 7.AUG.2018 14:14:12

Band12-26dB OBW-1.4MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

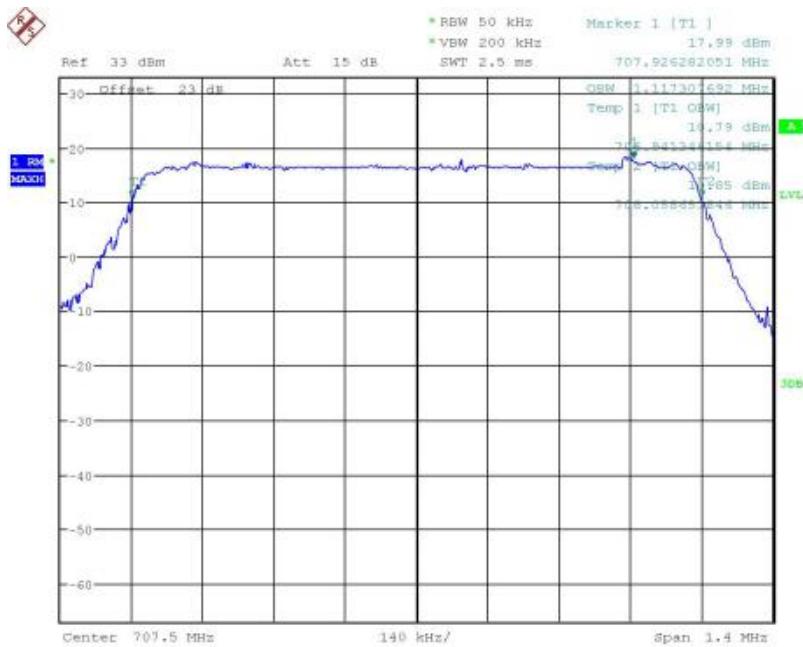
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:15:04

Band12-99% OBW-1.4MHz Bandwidth-16QAM



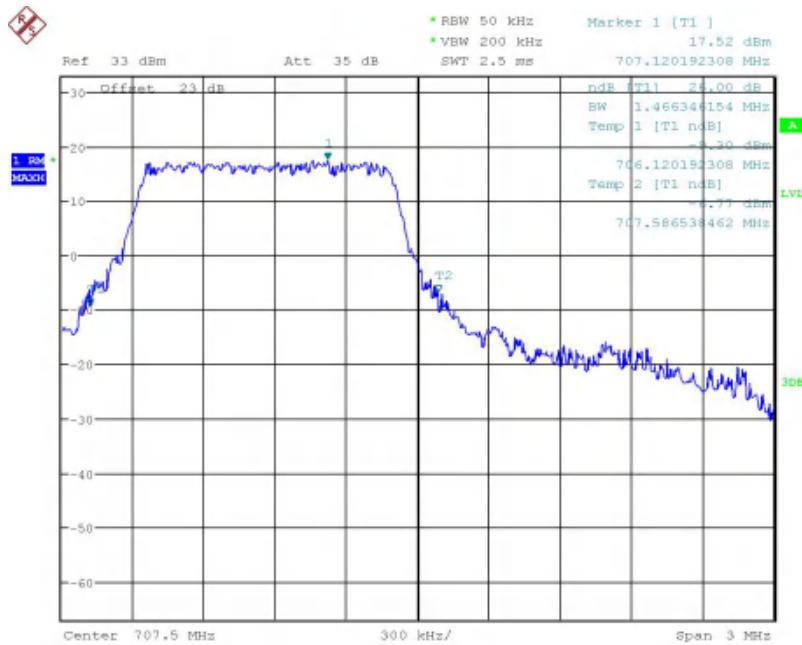
Date: 7.AUG.2018 14:13:47

Band12-99% OBW-1.4MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

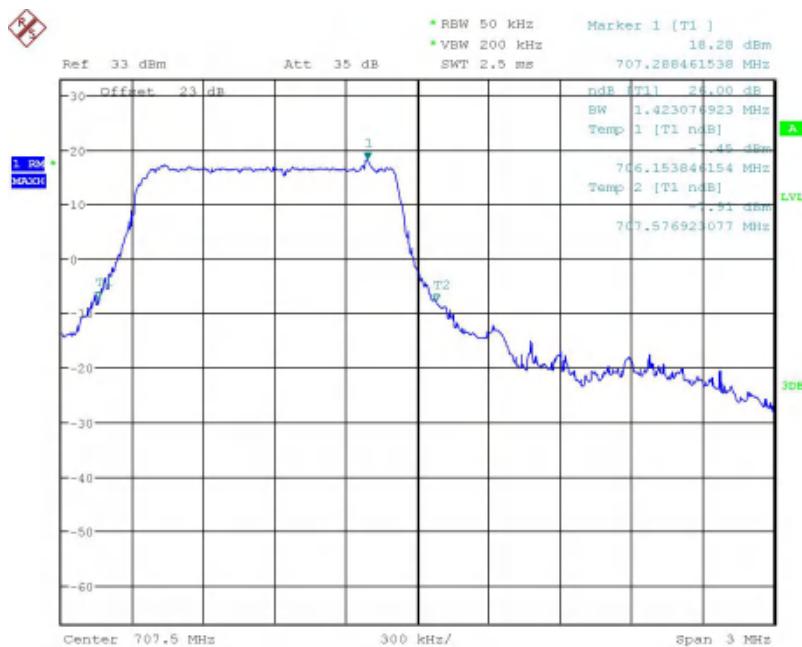
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:16:27

Band12-26dB OBW-3MHz Bandwidth-16QAM

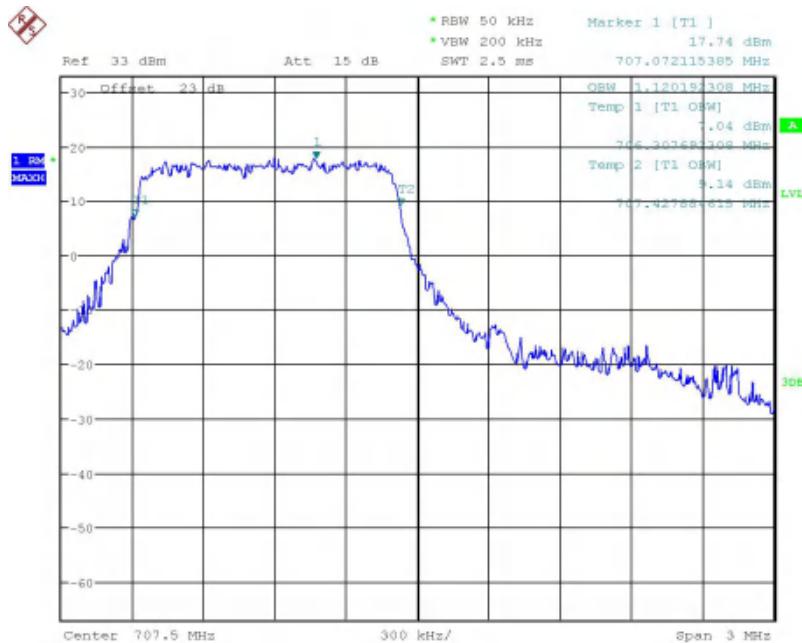


Date: 7.AUG.2018 14:17:24

Band12-26dB OBW-3MHz Bandwidth-QPSK

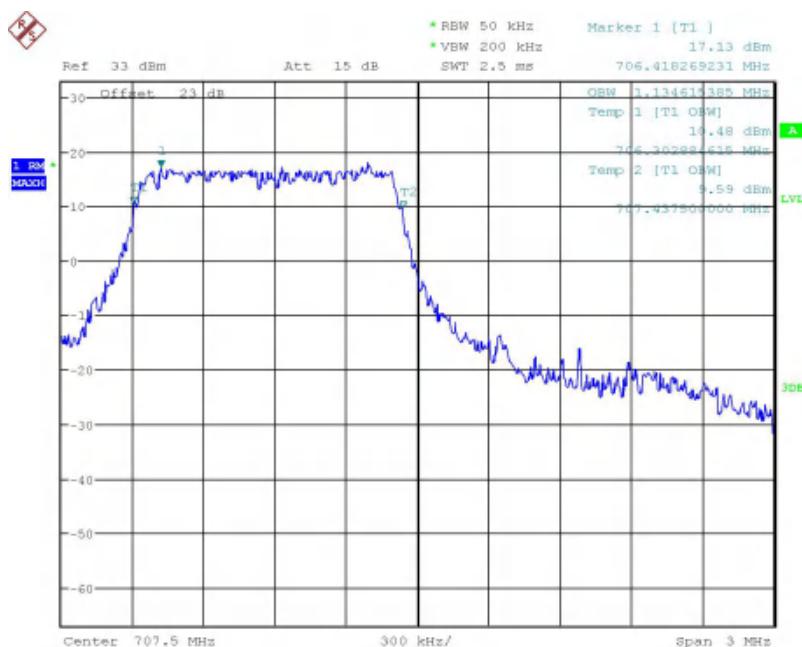
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:16:11

Band12-99% OBW-3MHz Bandwidth-16QAM

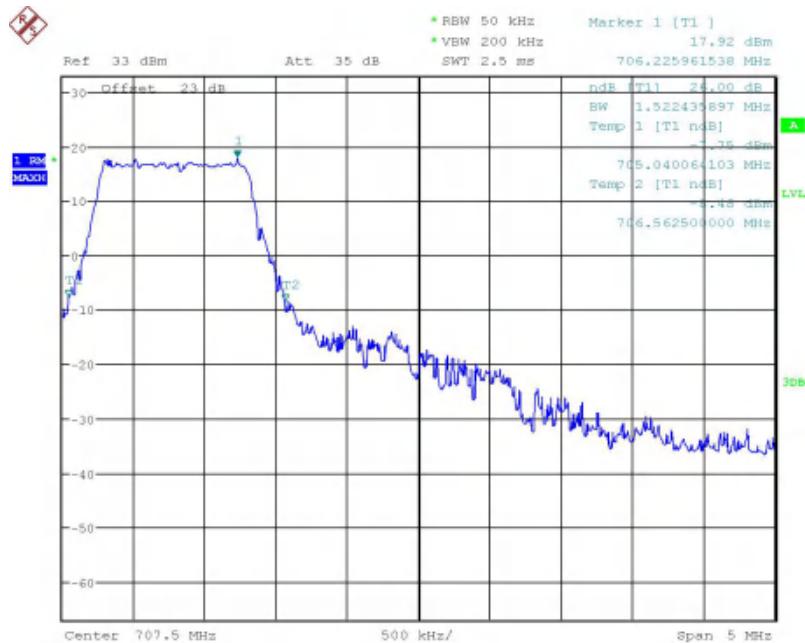


Date: 7.AUG.2018 14:17:36

Band12-99% OBW-3MHz Bandwidth-QPSK

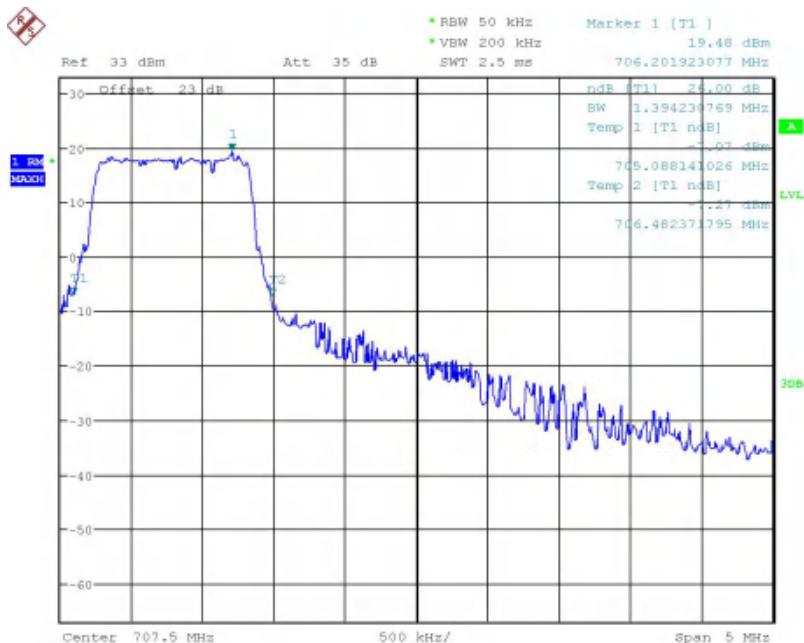
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:19:31

Band12-26dB OBW-5MHz Bandwidth-16QAM



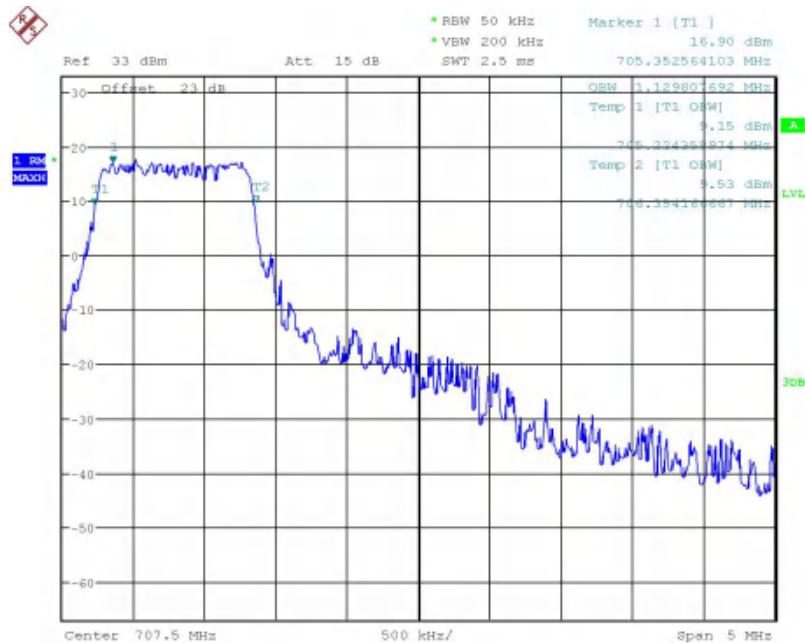
Date: 7.AUG.2018 14:18:49

Band12-26dB OBW-5MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

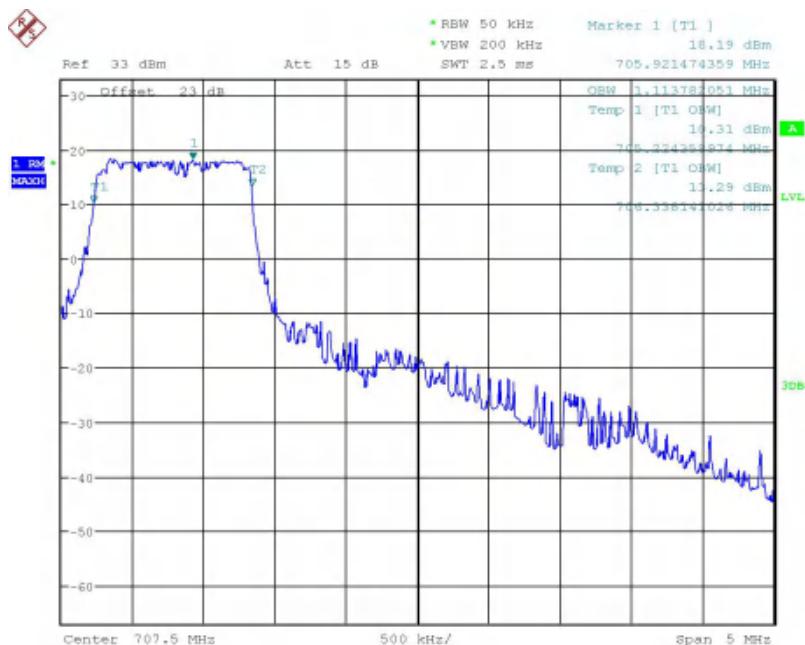
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:19:44

Band12-99% OBW-5MHz Bandwidth-16QAM



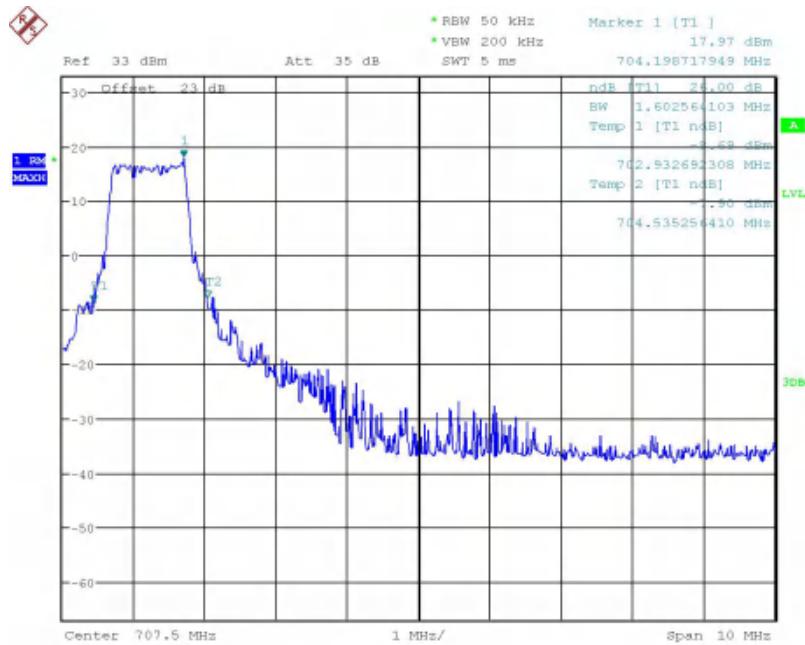
Date: 7.AUG.2018 14:18:23

Band12-99% OBW-5MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965      FAX: 0086-23-88608777

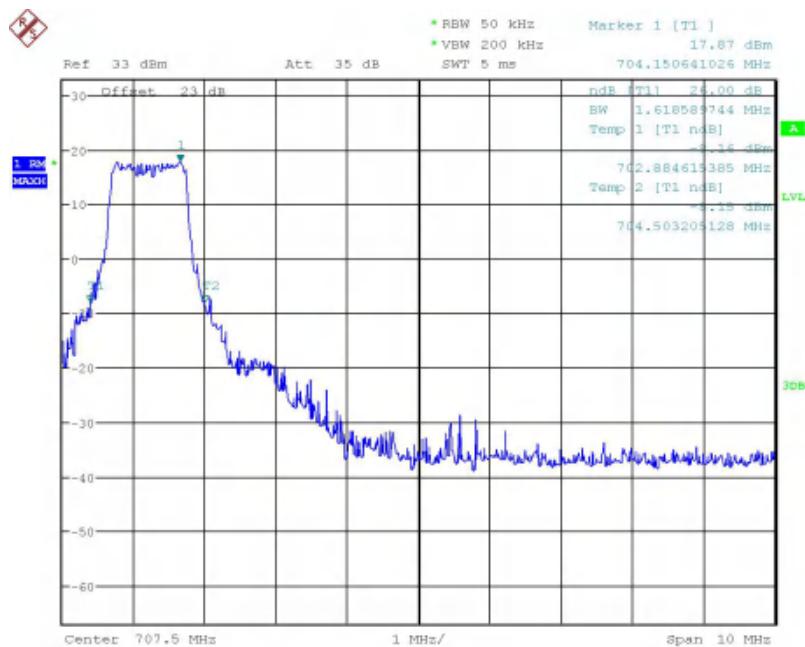
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:21:07

Band12-26dB OBW-10MHz Bandwidth-16QAM



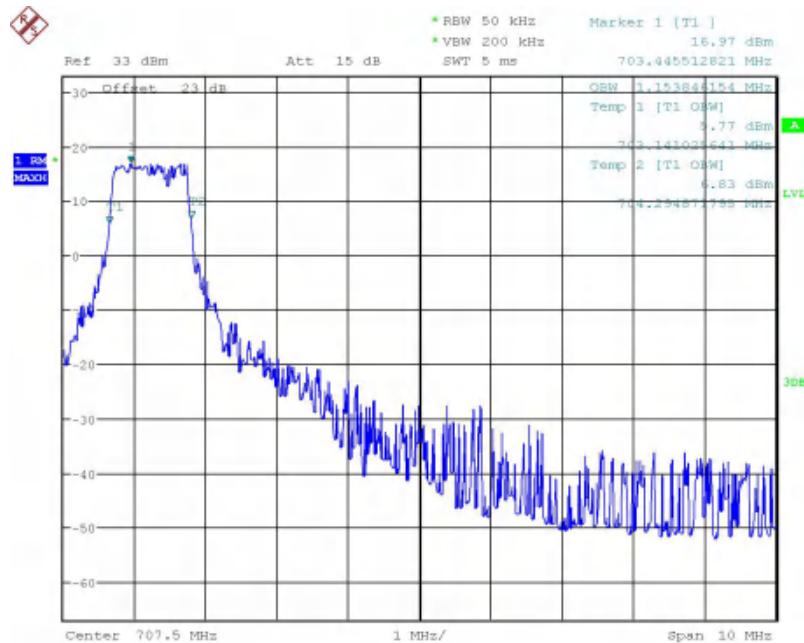
Date: 7.AUG.2018 14:21:32

Band12-26dB OBW-10MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

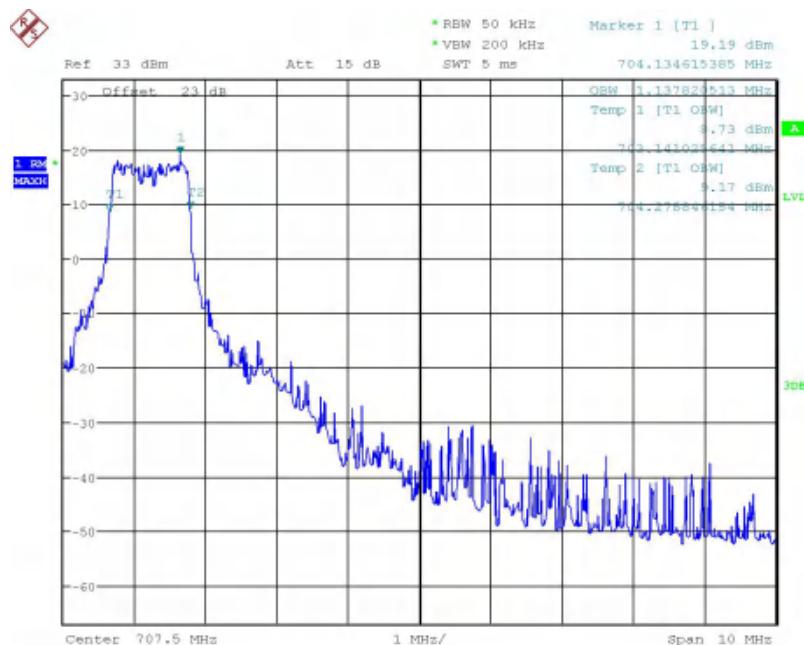
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 14:20:33

Band12-99% OBW-10MHz Bandwidth-16QAM

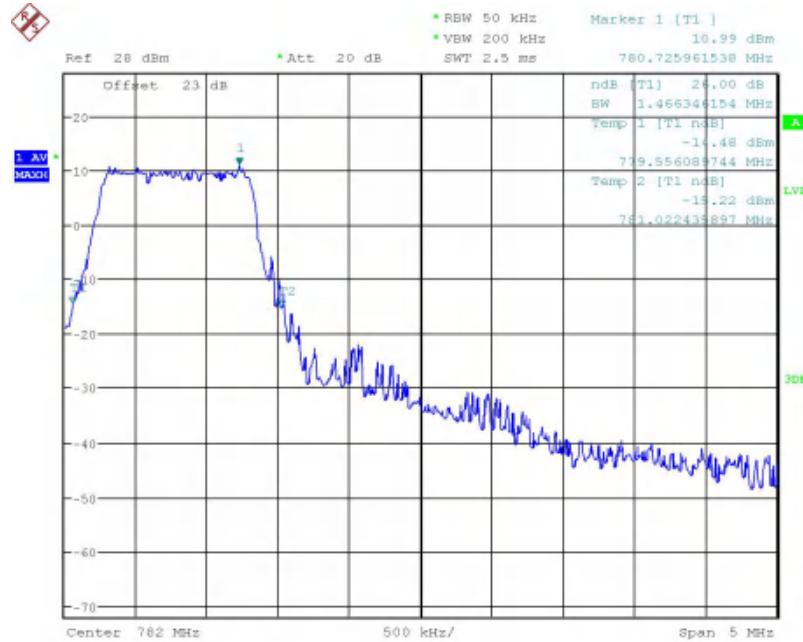


Date: 7.AUG.2018 14:21:52

Band12-99% OBW-10MHz Bandwidth-QPSK

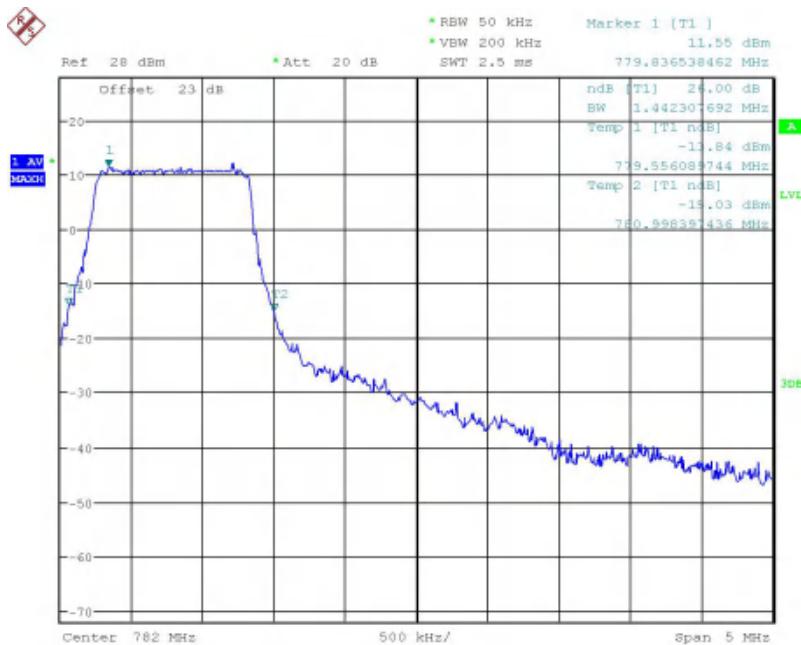
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 15:47:03

## Band13-26dB OBW-5MHz Bandwidth-16QAM



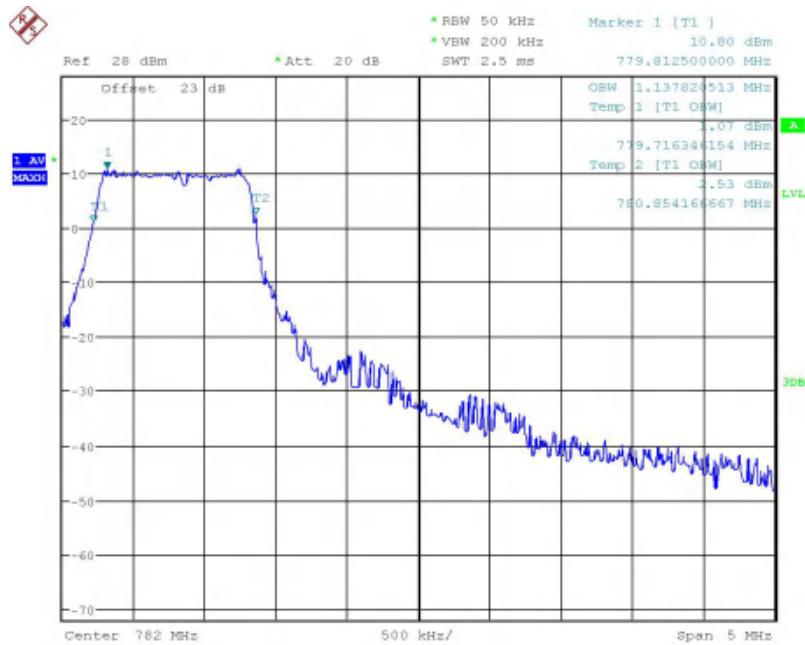
Date: 7.AUG.2018 15:45:56

## Band13-26dB OBW-5MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

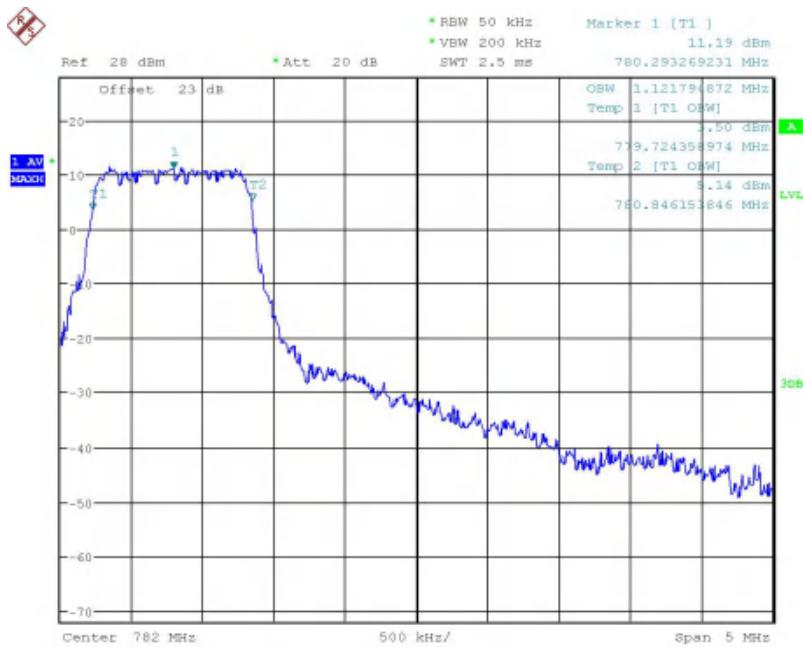
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 15:46:44

Band13-99% OBW-5MHz Bandwidth-16QAM

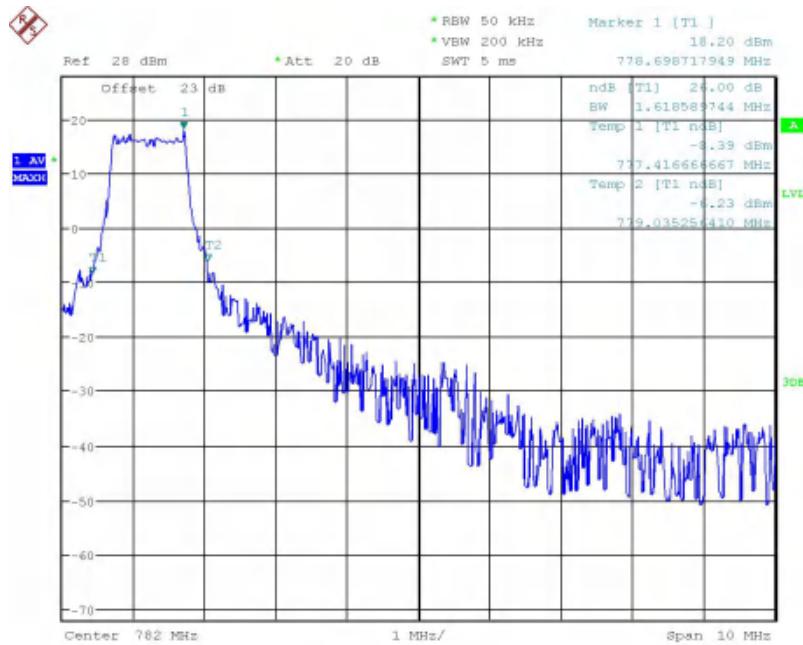


Date: 7.AUG.2018 15:46:13

Band13-99% OBW-5MHz Bandwidth-QPSK

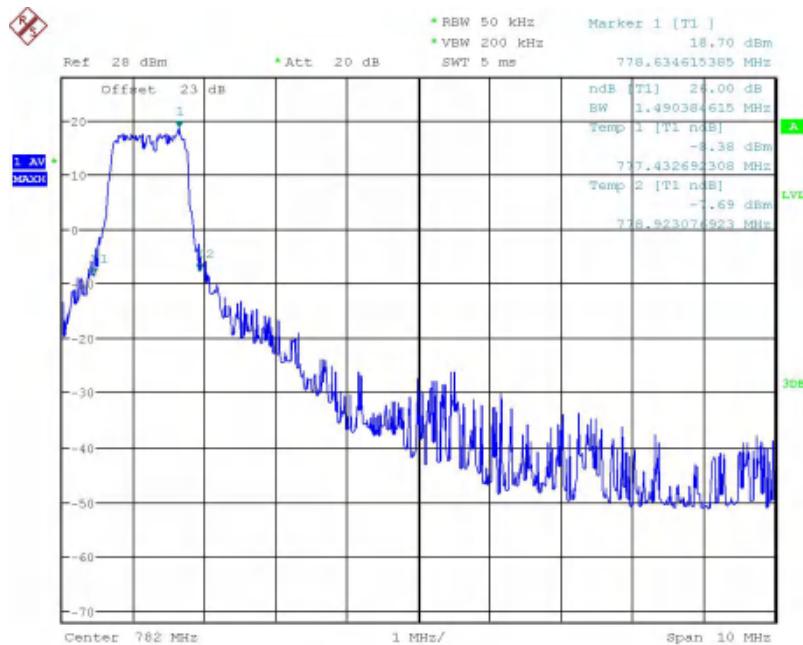
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 15:48:12

Band13-26dB OBW-10MHz Bandwidth-16QAM

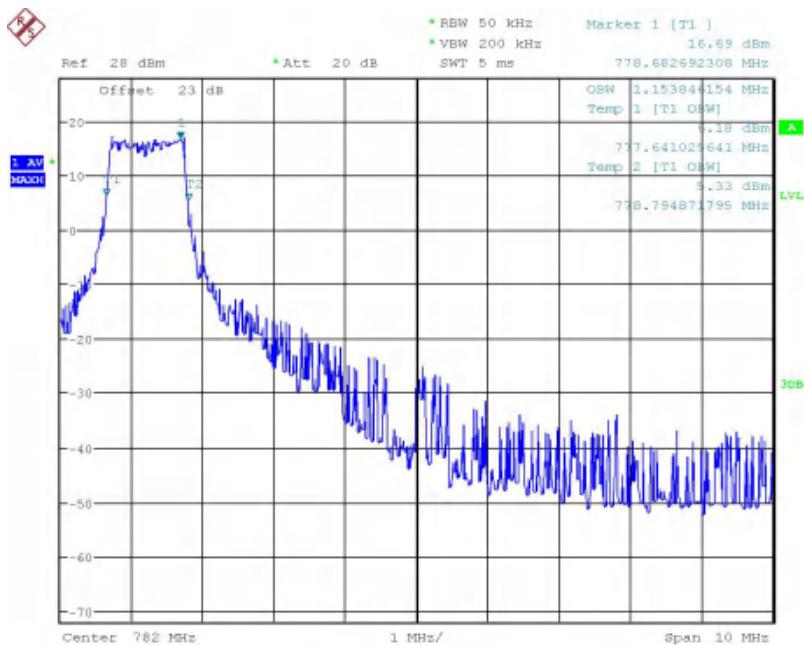


Date: 7.AUG.2018 15:49:07

Band13-26dB OBW-10MHz Bandwidth-QPSK

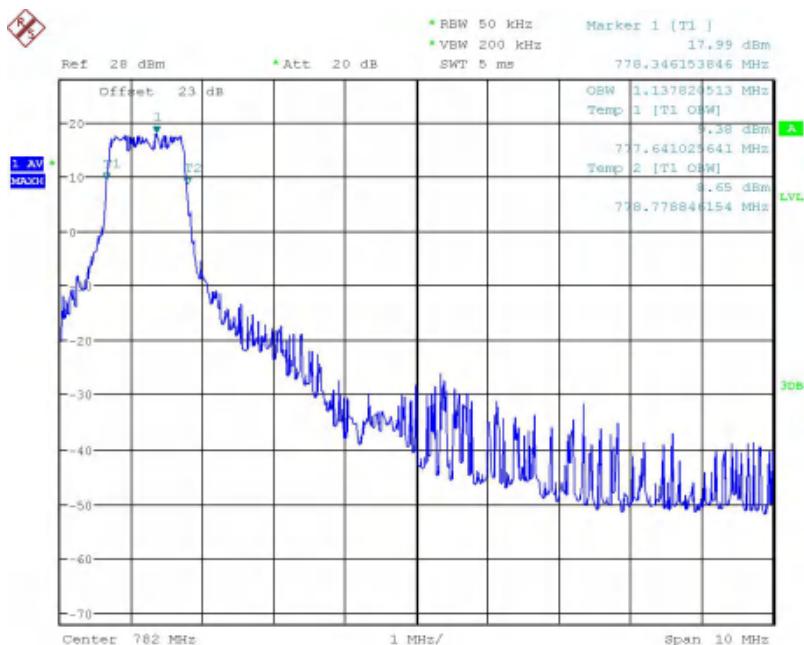
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 15:48:26

Band13-99% OBW-10MHz Bandwidth-16QAM



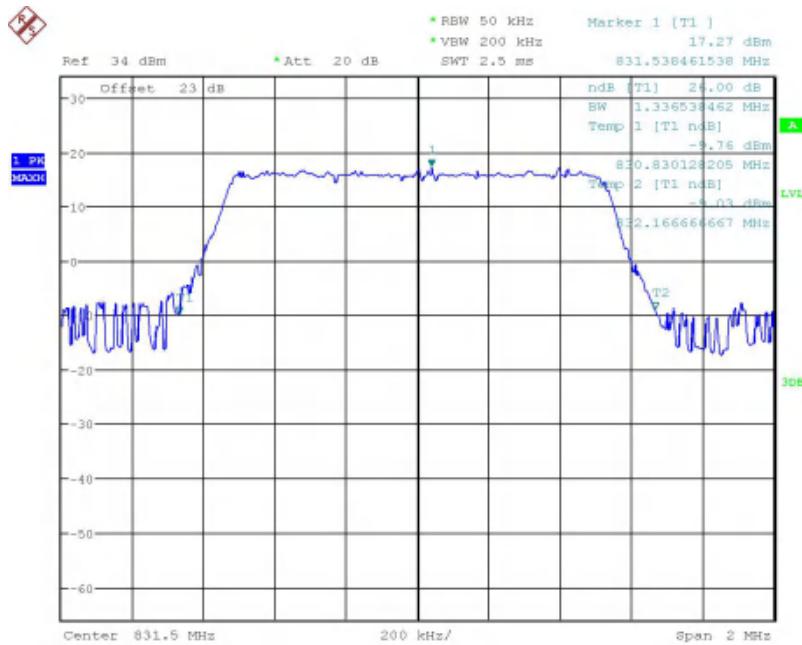
Date: 7.AUG.2018 15:48:50

Band13-99% OBW-10MHz Bandwidth-QPSK

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

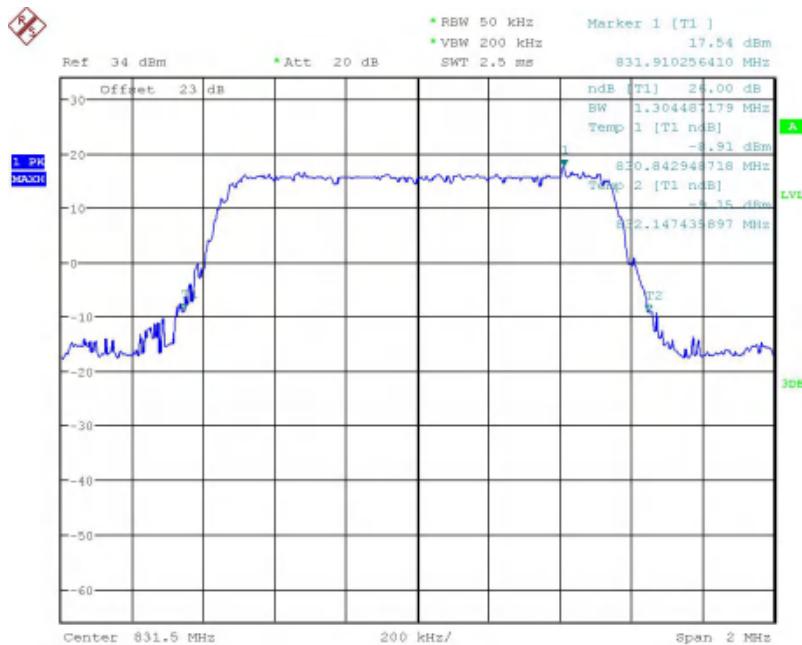
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:45:35

Band26-26dB OBW-1.4MHz Bandwidth-16QAM

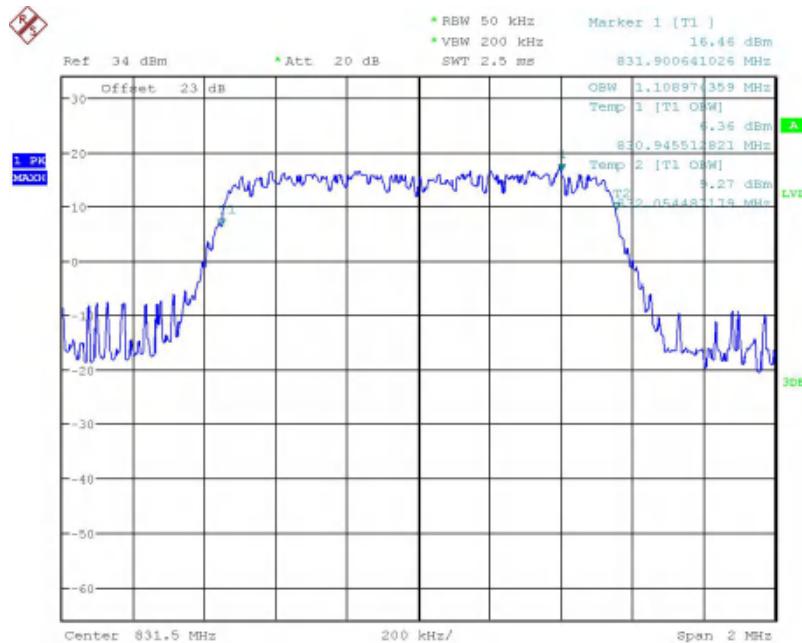


Date: 7.AUG.2018 16:44:32

Band26-26dB OBW-1.4MHz Bandwidth-QPSK

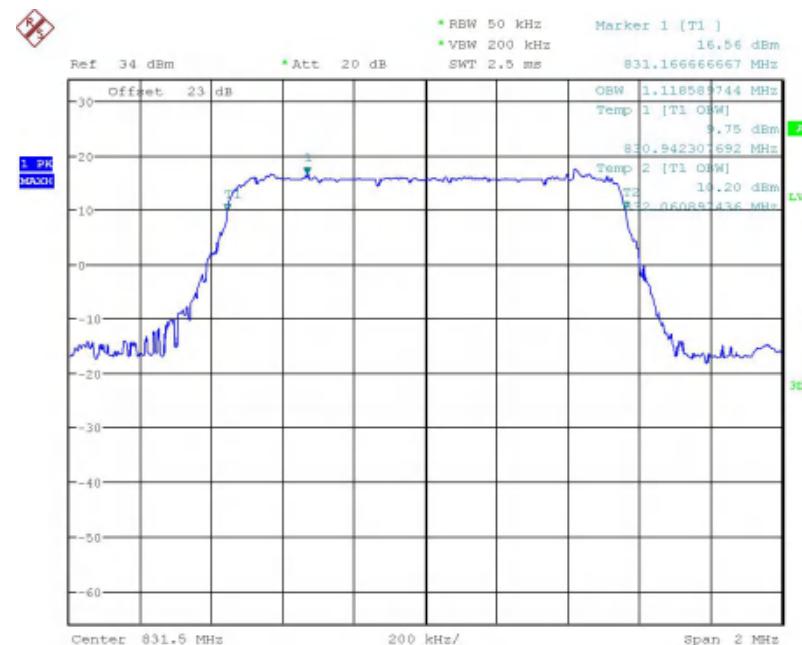
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:45:58

Band26-99% OBW-1.4MHz Bandwidth-16QAM

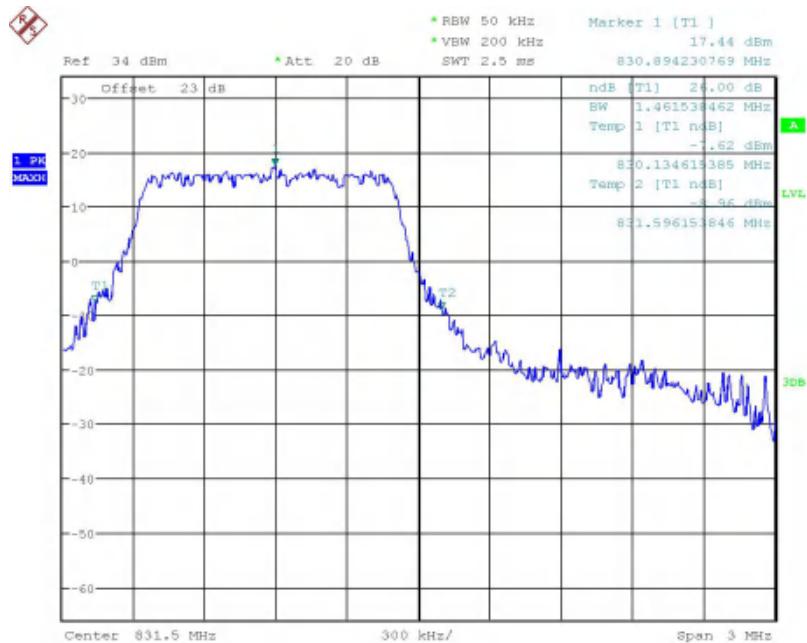


Date: 7.AUG.2018 16:43:56

Band26-99% OBW-1.4MHz Bandwidth-QPSK

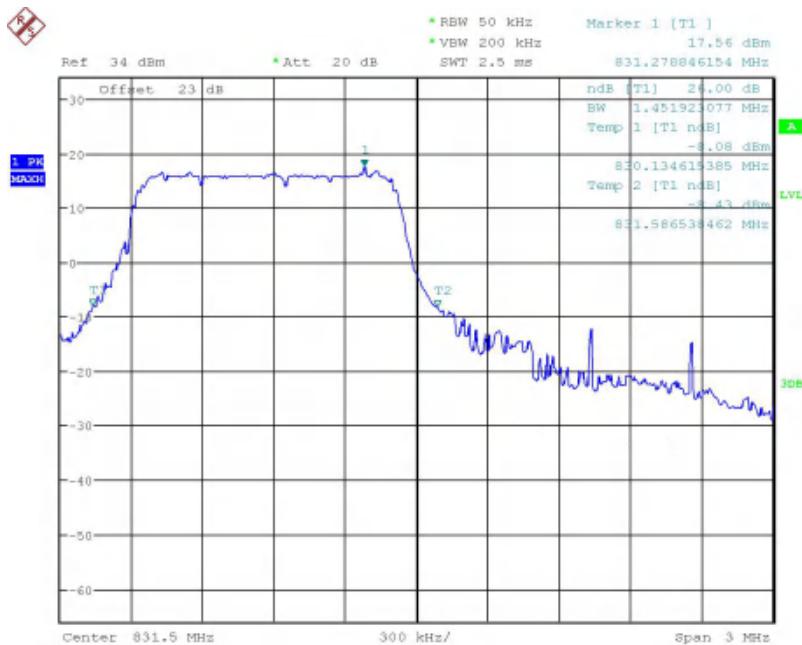
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:46:34

Band26-26dB OBW-3MHz Bandwidth-16QAM

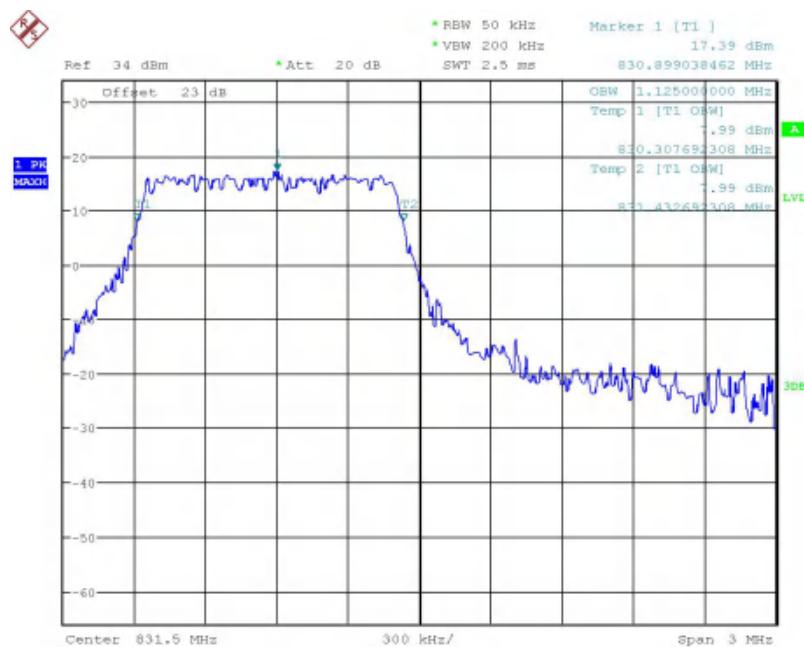


Date: 7.AUG.2018 16:47:30

Band26-26dB OBW-3MHz Bandwidth-QPSK

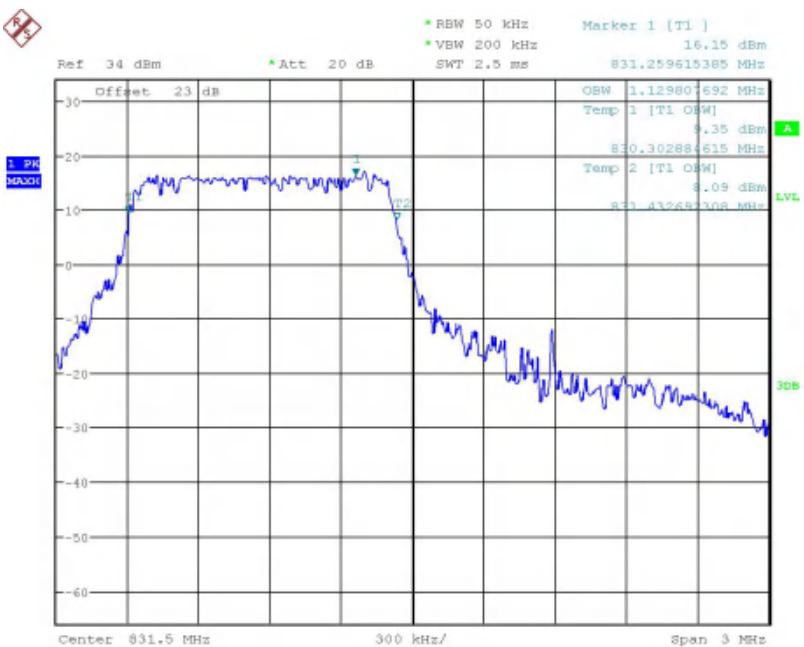
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:46:19

Band26-99% OBW-3MHz Bandwidth-16QAM

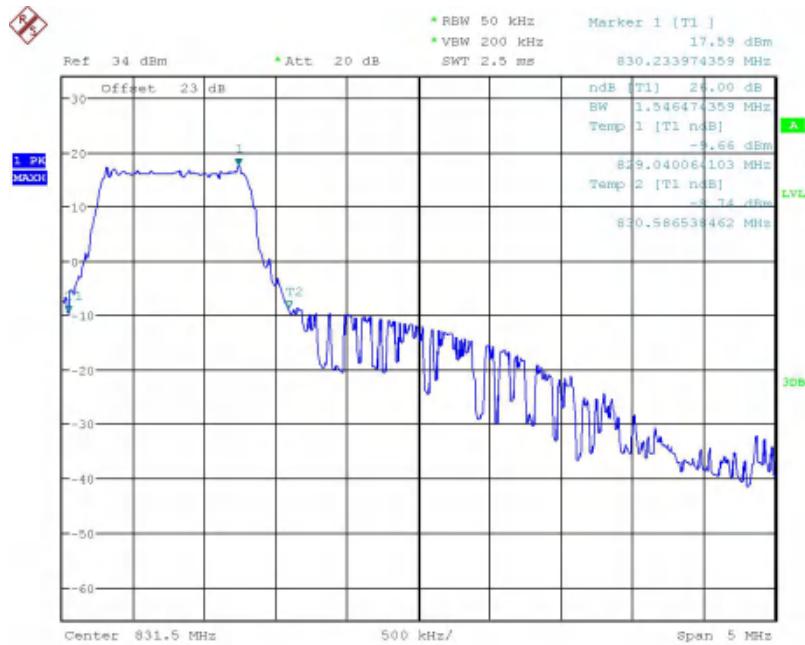


Date: 7.AUG.2018 16:47:45

Band26-99% OBW-3MHz Bandwidth-QPSK

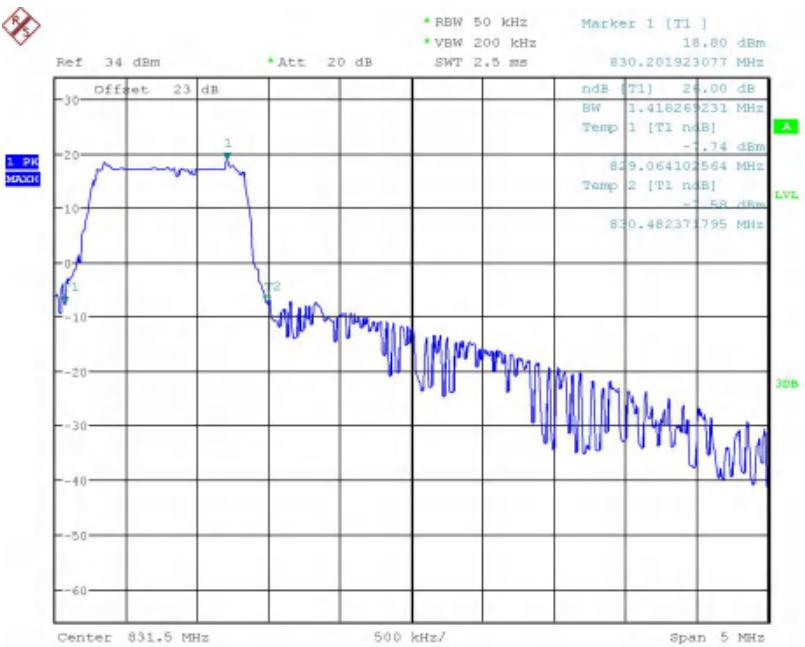
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:56:55

Band26-26dB OBW-5MHz Bandwidth-16QAM



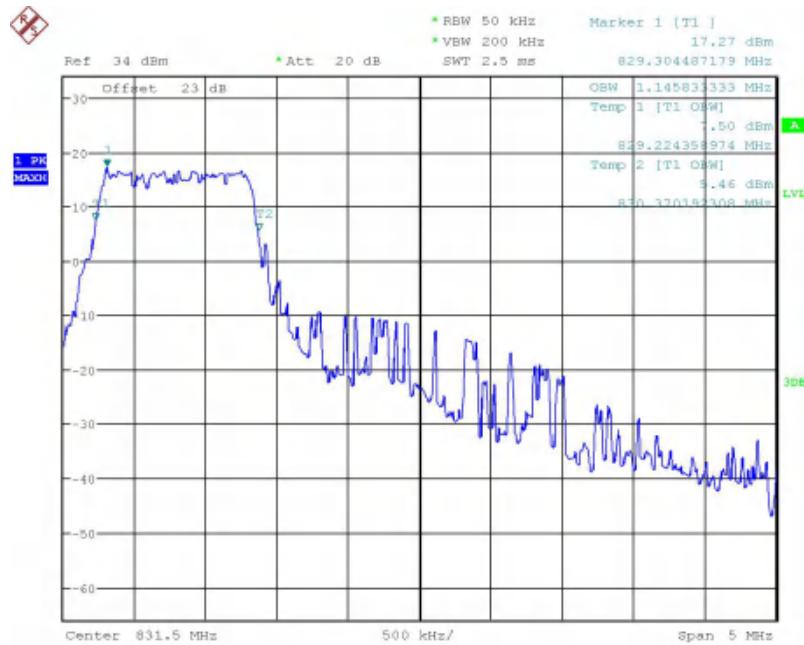
Date: 7.AUG.2018 16:56:11

Band26-26dB OBW-5MHz Bandwidth-QPSK

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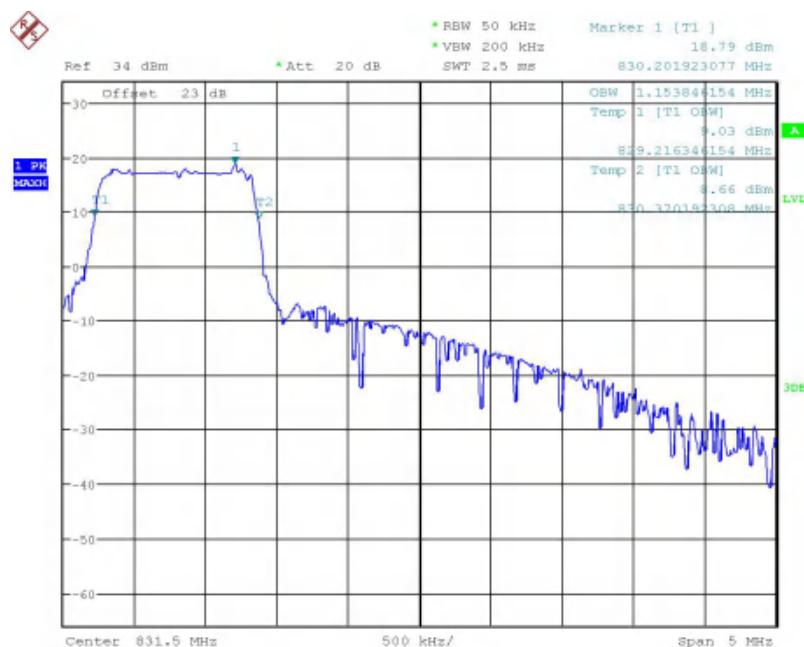
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:57:09

Band26-99% OBW-5MHz Bandwidth-16QAM

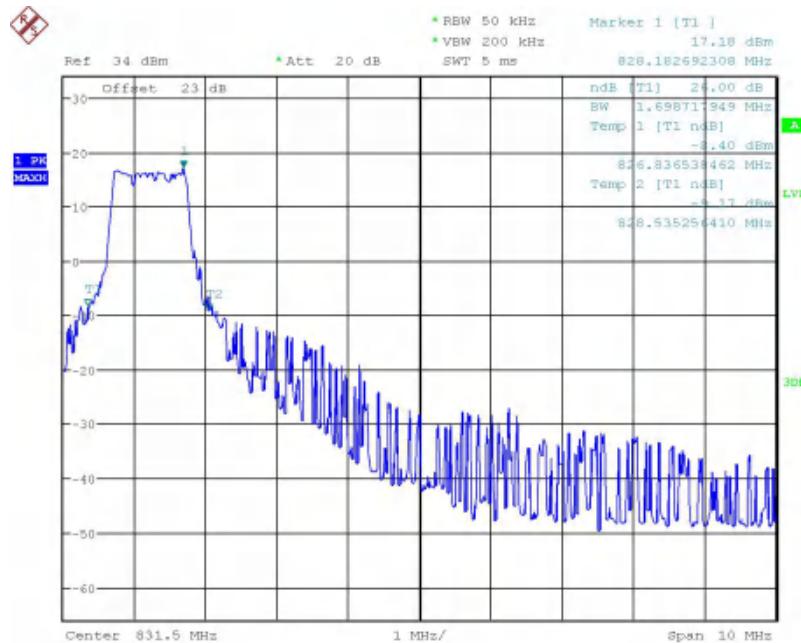


Date: 7.AUG.2018 16:55:26

Band26-99% OBW-5MHz Bandwidth-QPSK

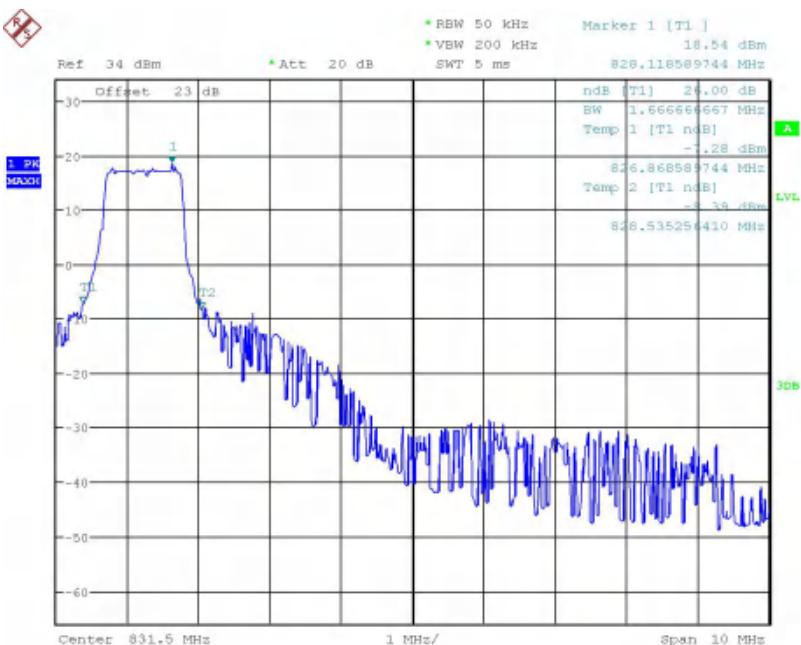
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:58:26

Band26-26dB OBW-10MHz Bandwidth-16QAM

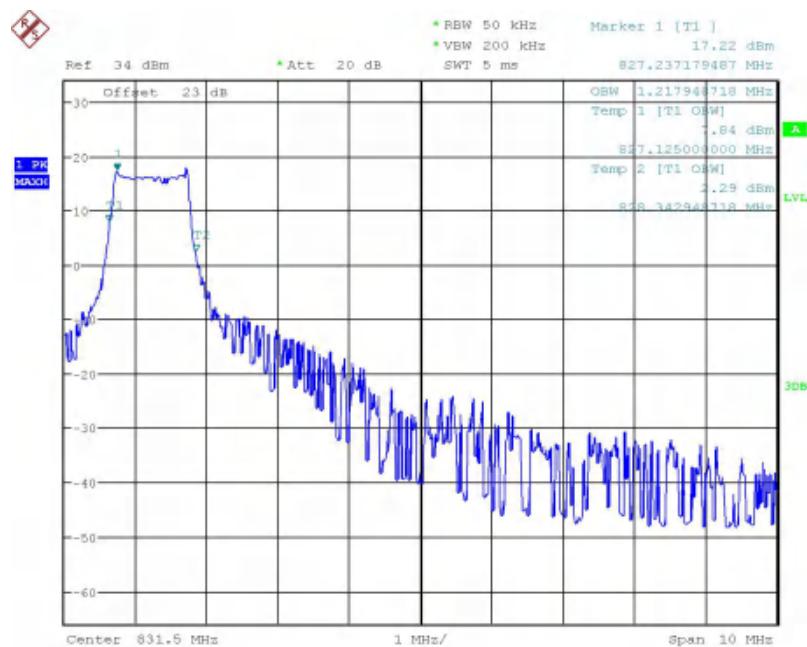


Date: 7.AUG.2018 16:59:03

Band26-26dB OBW-10MHz Bandwidth-QPSK

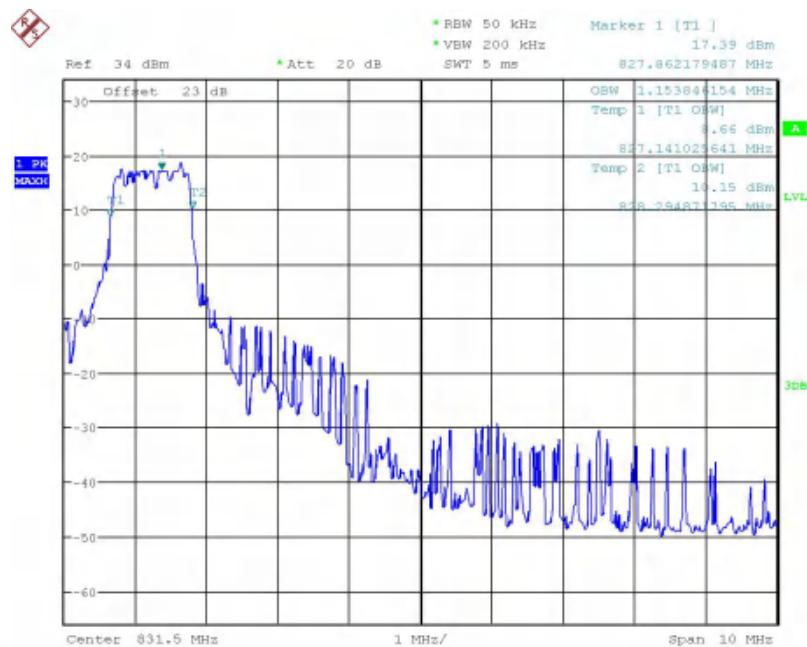
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 16:58:08

## Band26-99% OBW-10MHz Bandwidth-16QAM



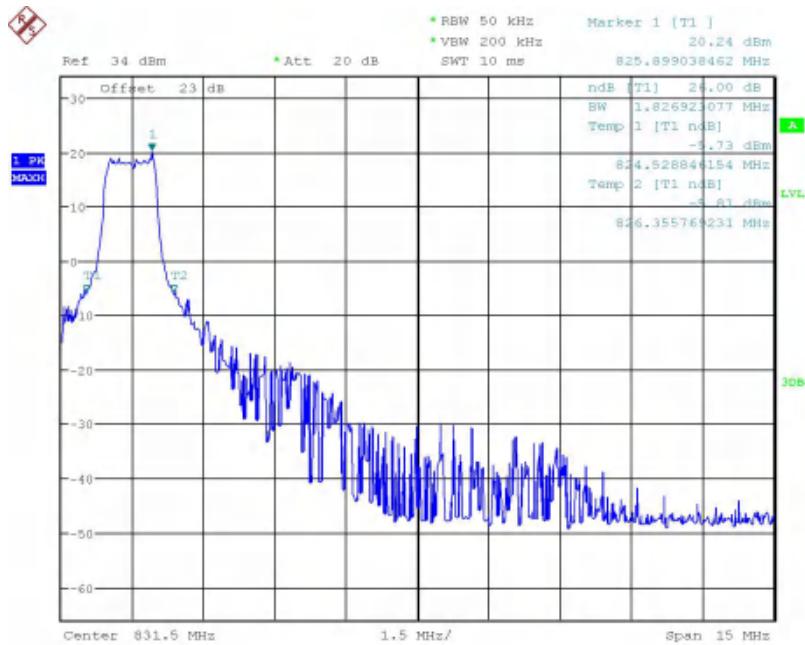
Date: 7.AUG.2018 16:59:16

## Band26-99% OBW-10MHz Bandwidth-QPSK

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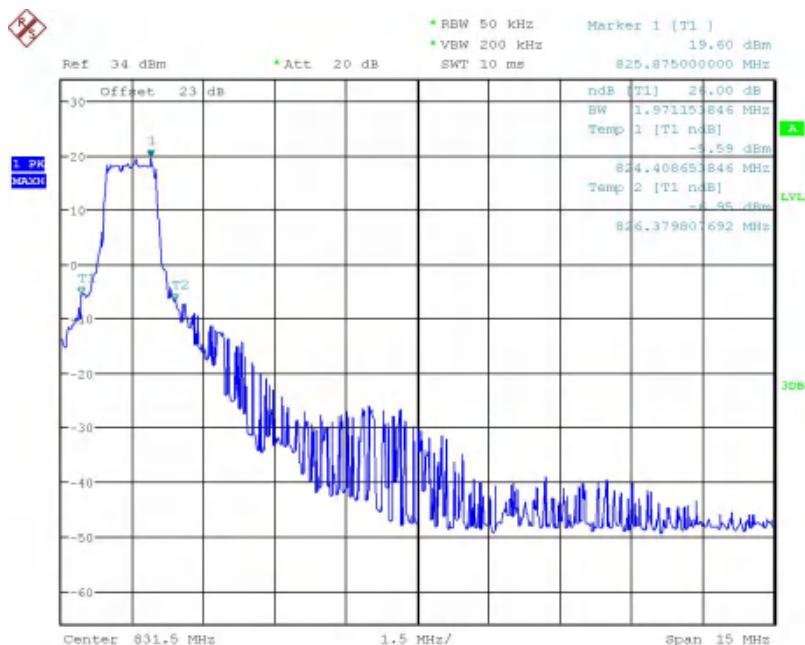
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 17:01:34

Band26-26dB OBW-15MHz Bandwidth-16QAM

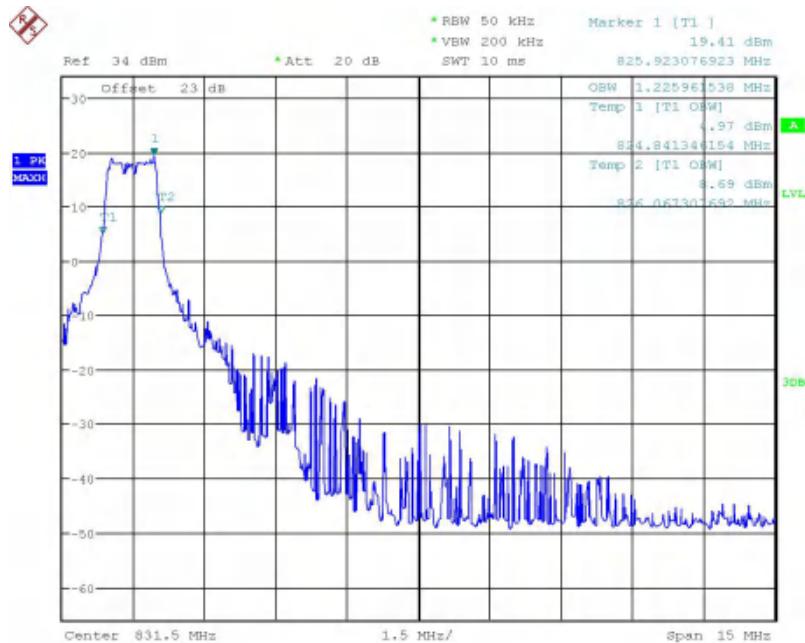


Date: 7.AUG.2018 17:00:46

Band26-26dB OBW-15MHz Bandwidth-QPSK

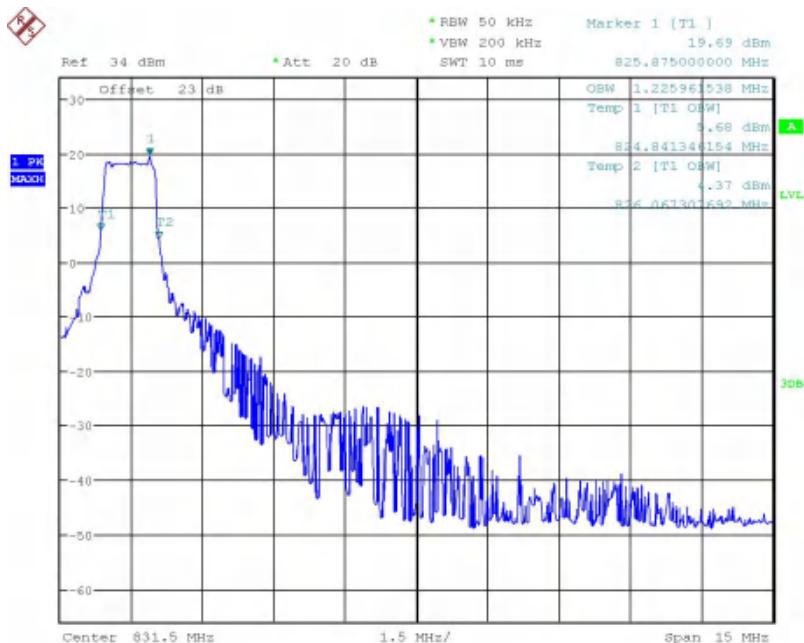
# Chongqing Academy of Information and Communications Technology

Report No.:B18W50279\_Rev4



Date: 7.AUG.2018 17:01:56

Band26-99% OBW-15MHz Bandwidth-16QAM



Date: 7.AUG.2018 17:00:20

Band26-99% OBW-15MHz Bandwidth-QPSK

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## 5.3 Conducted Spurious Emission

<b>Specifications:</b>	FCC Part 2.1051, 24.238, 2.1053, 22.917, 27.53
<b>DUT Serial Number:</b>	S1: D20618181ACDFF4
<b>Test conditions:</b>	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	--

### Limit Level Construction:

**According to Part 22.917 (a)**, i.e., 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.

**According to Part 24.238 (a)**, i.e., 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, so the limit level is:  $P(\text{dBm}) - (43 + 10 \log(P)) \text{ dB} = -13 \text{ dBm}$ .

### According to Part 27.53(h):

Except as otherwise specified below, 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.

### According to Part 27.53(g):

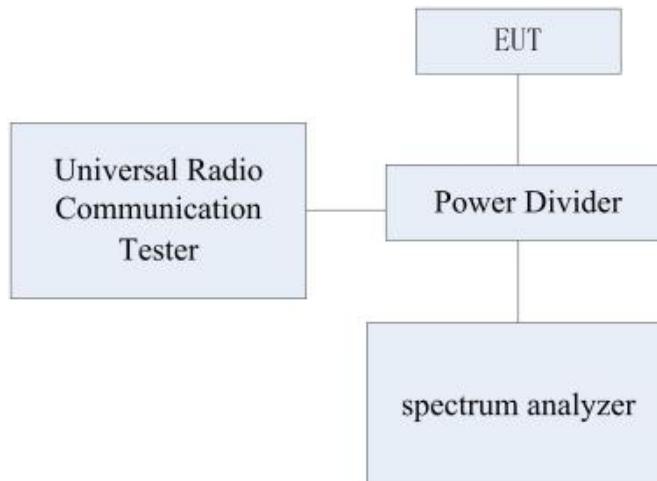
For operations in the 600 MHz Band and the 698-746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency block, a resolution Bandwidth of at least 30 kHz may be employed.

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## Test Setup:

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



## Test Method:

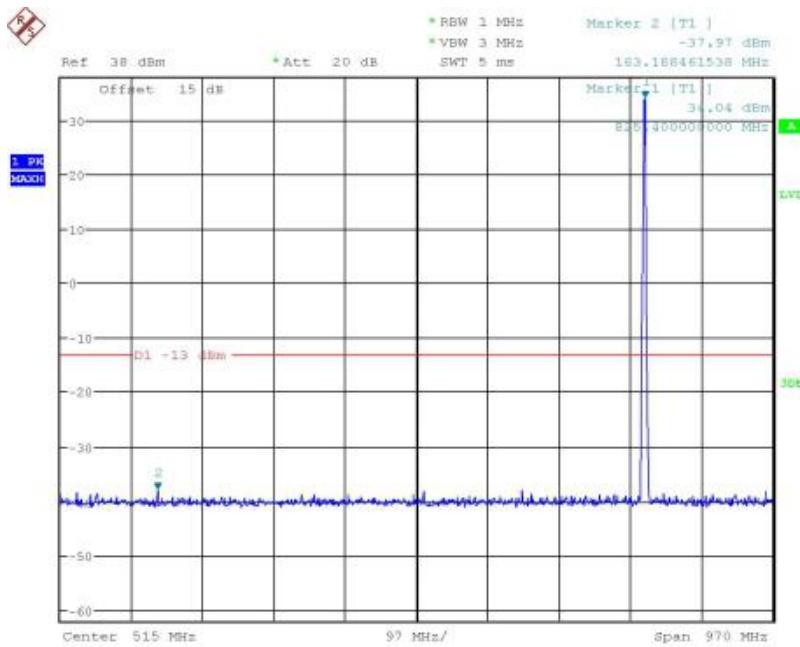
The measurement was performed accordance with section 2.2.13 of ANSI/TIA-603-D: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

The measurement was performed accordance with section 2.2.13 of ANSI/TIA-603-D-2010: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-Band emissions, if any, up to 10th harmonic. The EUT was scanned for spurious emissions from 30MHz to 20GHz with sufficient Bandwidth and video resolution. The spectrum analyzer was set to Maximum hold mode to ensure that the worst-case emissions were captured.

**Note: --**

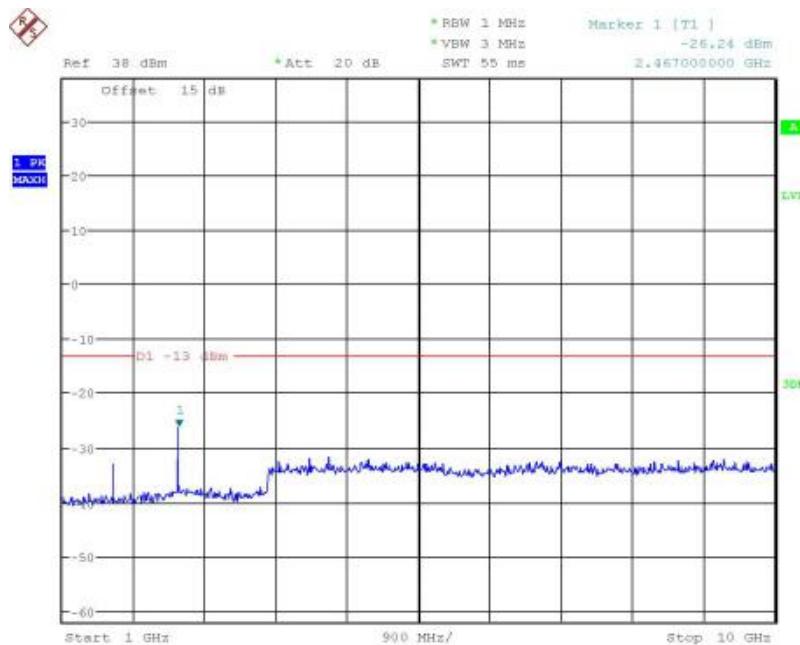
### 5.3.1 GSM850 Conducted Spurious Emission Results



Date: 3.AUG.2018 10:07:53

GMSK-Low channel-824.200 MHz-30MHz to 1GHz

Note: The strong emission shown in each case is the carrier signal.



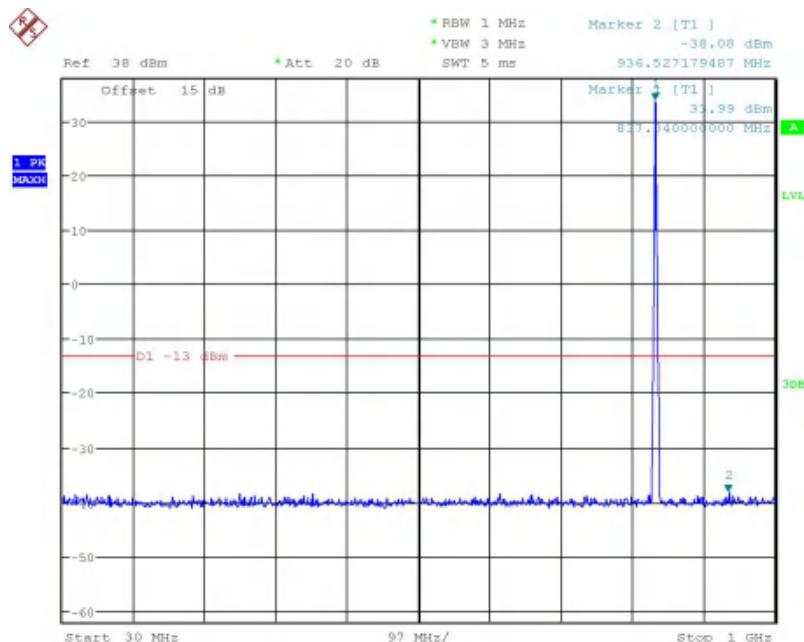
Date: 3.AUG.2018 10:02:49

GMSK-Low channel-824.200 MHz, 1GHz to 10GHz

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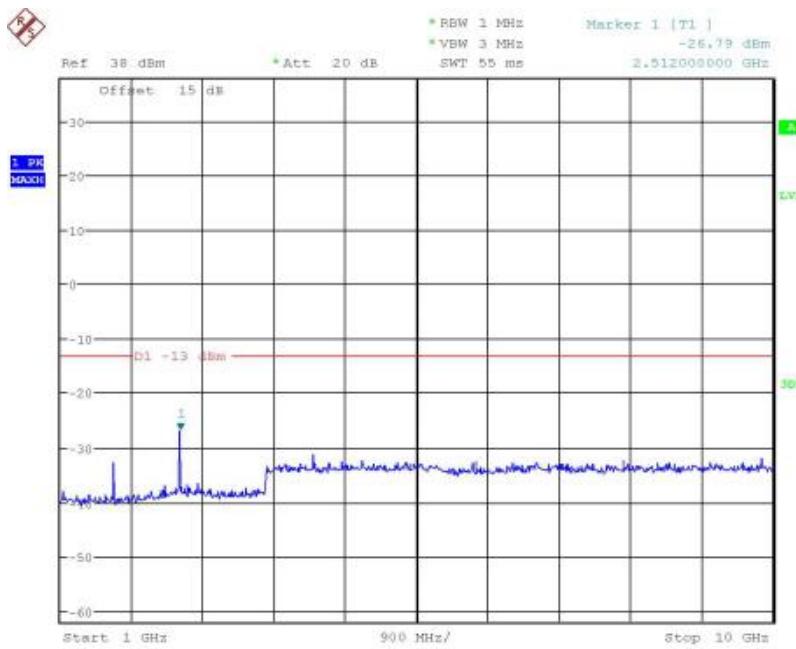
Report No.:B18W50279\_Rev4



Date: 3.AUG.2018 10:04:16

GMSK- Mid Channel-836.6 MHz- 30MHz to 1GHz

Note: The strong emission shown in each case is the carrier signal.



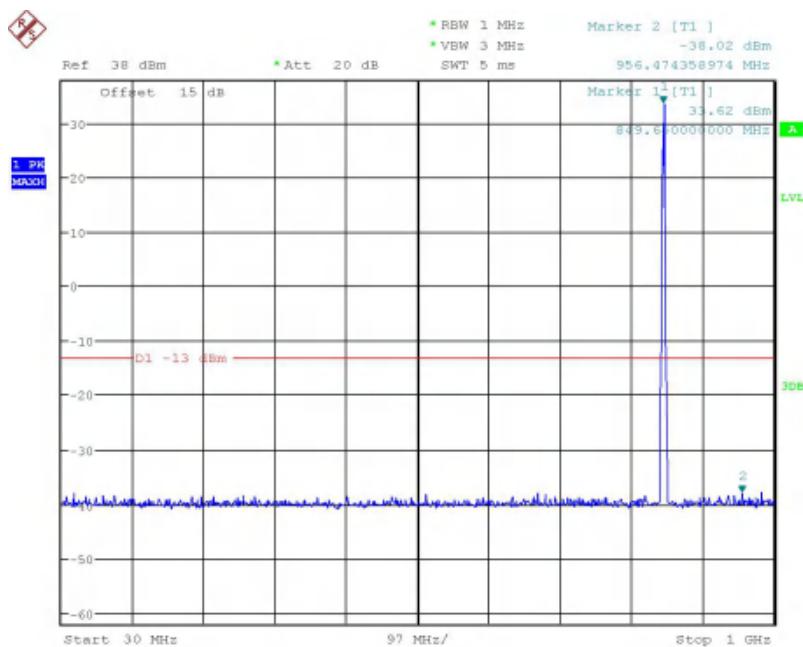
Date: 3.AUG.2018 10:05:29

GMSK-Mid Channel-836.6 MHz-1GHz to 10GHz

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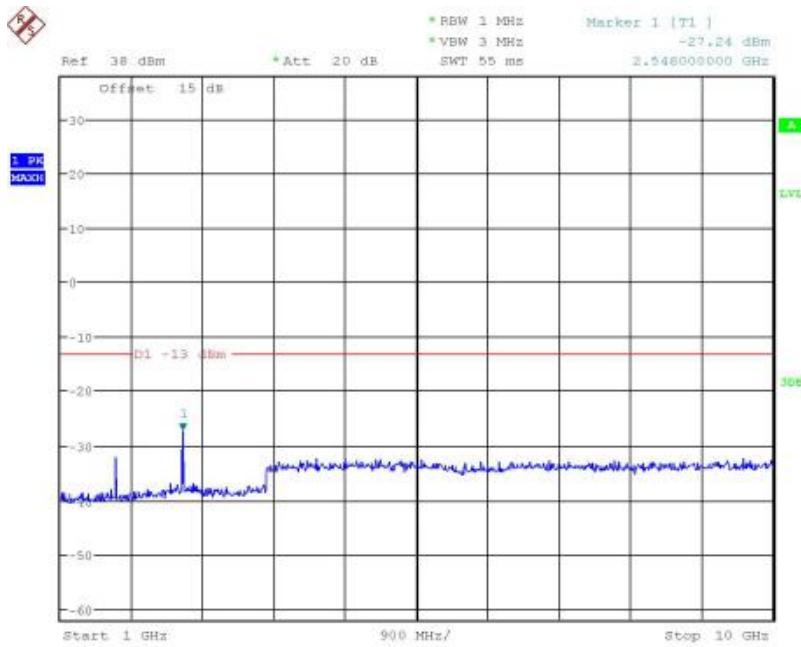
Report No.:B18W50279\_Rev4



Date: 3.AUG.2018 10:09:57

GMSK- High Channel-848.8 MHz-30MHz to 1GHz

Note: The strong emission shown in each case is the carrier signal.



Date: 3.AUG.2018 10:11:00

GMSK- High Channel-848.8 MHz-1GHz to 10GHz

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