

TEST REPORT

REPORT NUMBER: I20W00014-WWAN_Rev2

ON

Type of Equipment:

IoT Module

Model Name:

L720

Manufacturer:

Shanghai MobileTek Communication Ltd.

ACCORDING TO

FCC CFR Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS, e-CFR, 2019

PART 22, PUBLIC MOBILE SERVICES, e-CFR, 2019

PART 24, PERSONAL COMMUNICATIONS SERVICES, e-CFR, 2019

PART 27, MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES, e-CFR, 2019

PART 90, PRIVATE LAND MOBILE RADIO SERVICES, e-CFR, 2019

ANSI C63.26-2015

Chongqing Academy of Information and Communications Technology

Month date, year

Oct, 15, 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

Report Number	Revision	Date	Memo
I20W00014	V0.0	2020-09-21	--
I20W00014	V1.0	2020-10-12	--
I20W00014	V2.0	2020-10-15	--

Report No.: I20W00014-WWAN_Rev2**FCC ID:** 2AK9D-GL720**Report Date:** 2020-10-15**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, 27,90,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, 27,90.

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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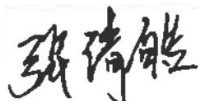
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1.2 Testers

Name: Zhang qinghao
Position: Engineer
Department: Department of RF test
Date: 2020-09-08 to 2020-09-18

Signature:



Editor of this test report:

Name: Chen Wen
Position: Engineer
Department: Department of RF test
Date: 2020-10-15

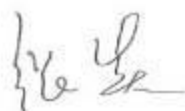
Signature:



Technical responsibility for area of testing:

Name: Zhang Yan
Position: Manager
Department: Director of the laboratory
Date: 2020-10-15

Signature:



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1.3 Testing Laboratory information

1.3.1 Location

Name: Chongqing Academy of Information and Communications Technology
Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China
4th Floor, Block B1-3, 19 East Road, XTB Valley, Yubeu District, Chongqing, P. R. China
Postal Code: 401336
Tel: +86-23-88069965
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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 MobileTek Communication Ltd.
Address: Free Trade Zone No.33, No.17 building 6H Xiya
Road,shanghai
Country: China
Telephone: 18616835910
Fax: +86-21-54451877
Contact: bin yang
Email: b.yang@mobiletek.cn

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: --
Address: --
Country: --
Telephone: --
Fax: --
Contact: --
Email: --

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2 Test Item

2.1 General Information

Manufacturer:	Shanghai MobileTek Communication Ltd.		
Type of Equipment:	IoT Module		
Model Name:	L720		
Production Status:	Product		
Hardware Version:	V1		
Software Version:	L720v08.02b01		
Nominal Voltage:	3.3V		
Extreme High Voltage:	4.8V		
Extreme Low Voltage:	2.7V		
Antenna type:	Single stage sub-antenna		
Antenna gain:	Band2/Band25	2dBi-3dBi	
	Band4/Band5/Band12/Band13/ Band26/Band66	3dBi-4dBi	
Modulation Type:	BPSK/QPSK/16QAM		
Receipt date of test item:	2020-09-08		

2.2 Outline of Equipment under Test

The L720, referred to as “EUT” hereafter, is a multi-Band wireless module operating on the CAT-M1/NB-IoT networks. The table below shows the supported Bands for the EUT.

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
NB-IoT	Band2	1850 – 1910	1930 – 1990	--
	Band4	1710–1755	2110–2155	--

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Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
	Band5	824 – 849	869 – 894	--
	Band12	699 – 716	729 – 746	--
	Band13	777 - 787	746 - 756	--
	Band25	1850-1915	1930-995	--
	Band66	1710-1780	2110-2200	--
CAT-M	Band2	1850 – 1910	1930 – 1990	--
	Band4	1710 – 1755	2110 – 2155	--
	Band5	824 – 849	869 – 894	--
	Band12	699 – 716	729 – 746	--
	Band13	777 - 787	746 - 756	--
	Band25	1850-1915	1930-995	--
	Band26	814 – 849	859-894	--
	Band66	1710-1780	2110-2200	--

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.

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Report No.: I20W00014-WWAN_Rev2**2.4 Equipment Configuration**

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Modules	Micron Electronics LLC.	L720	866884045622016	None
B	Modules	Micron Electronics LLC.	L720	866884045622099	None

2.5 Other Information

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Report No.: I20W00014-WWAN_Rev2**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),27.50,90.635(b)	Conducted RF Power Output	Pass
24.232(b),27.50(d),27.50(h)(2),27.50(c),90.635(b)	ERP and EIRP	Pass
2.1049,22.917(b),24.238(b),90.209	Occupied Bandwidth	--
2.1051,2.1053,24.238,22.917,27.53,90.691	Conducted spurious emissions	Pass
2.1051,2.1053,24.238,22.917,27.53,90.691	Radiated Spurious Emission	Pass
2.1051,2.1053,24.238,22.917,27.53,90.691	Band Edge	Pass
2.1055,22.355,24.235,27.54,90.213	Frequency Stability over Temperature Variation	Pass
2.1055,22.355,24.235,27.54,90.213	Frequency Stability over Voltage Variation	Pass
24.232,27.50	Peak to Average Ratio	Pass
Note 1: No applicable performance criteria.		

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Report No.: I20W00014-WWAN_Rev2**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	2021-02-28
2	Loop antenna	6502	00143163	ETS	2020-12-05
3	Trilog super broadBand test antenna	VULB 9163	9163-544	R&S	2020-11-23
4	Double-Ridged Horn Antenna	HF907	100357	R&S	2021-06-20
5	Fully-Anechoic Chamber	11.8m×6.5m×6.3m	--	ETS	2020-10-22
6	Signal Generator	SMU200A	104517	R&S	2021-02-28
7	spectrum analyzer	FSQ 26	201137/026	R&S	2021-02-28
8	spectrum analyzer	N9020A	MY50200376	Agilent	2021-02-28
9	Universal Radio Communication Tester	CMU200	112012	R&S	2021-02-28
10	Climate chamber	SH-241	92010759	ESPEC	2021-02-28
11	DC Power Supply	N6705B	MY50000919	Agilent	2020-12-04
12	Universal Radio Communication Tester	CMW500	152395	R&S	2021-02-28
13	Universal Radio Communication Tester	SP8315	SP8315-1249	StarPoint	2021-02-28

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5 Test Results

5.1 Conducted RF Power Output

Specifications:	FCC Part 2.1046, 22.913(a),24.232(c), 27.50,90.635(b)
DUT Serial Number:	866884045622016
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	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 Part24.232(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.

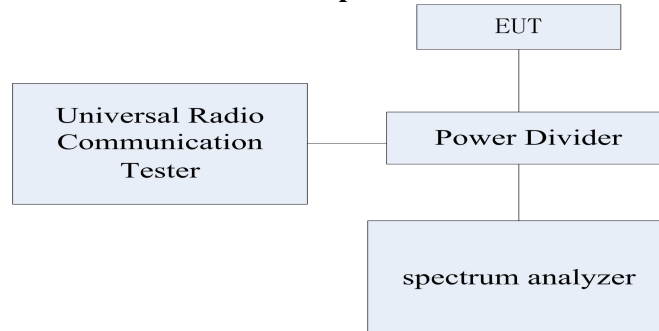
According to Part 90.635 (b),The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	0.52 dB (k=2)

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.

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- 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 Maximum hold mode.
- 4) The resolution Bandwidth of the spectrum analyzer was comparable to the emission Bandwidth.

Note: --.

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5.1.1 NB-IoT Band2 Conducted RF Power Output Results

NB-IoT Band 2

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.15	21.38	21.62
		1@47	21.08	21.64	21.43
	QPSK	1@0	21.12	21.72	21.52
		1@47	21.05	21.68	21.55
15	BPSK	1@0	21.61	20.77	21.09
		1@11	21.53	20.73	21.12
	QPSK	1@0	21.57	20.86	20.97
		1@11	21.48	20.76	21.03
		12@0	19.38	18.41	18.59

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5.1.2 NB-IoT Band4 Conducted RF Power Output Results

NB-IoT Band 4

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.67	21.55	21.58
		1@47	21.61	21.56	21.53
	QPSK	1@0	21.33	20.31	21.49
		1@47	21.50	21.28	21.55
15	BPSK	1@0	21.68	20.66	20.53
		1@11	21.60	20.58	20.55
	QPSK	1@0	21.71	20.30	20.62
		1@11	21.66	20.28	20.57
		12@0	19.21	18.12	18.09

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5.1.3 NB-IoT Band5 Conducted RF Power Output Results

NB-IoT Band 5

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.22	21.14	20.99
		1@47	21.34	21.08	21.05
	QPSK	1@0	21.29	21.02	21.10
		1@47	21.23	21.05	20.95
15	BPSK	1@0	22.62	22.33	22.33
		1@11	22.53	22.25	22.25
	QPSK	1@0	22.61	22.21	22.37
		1@11	22.30	22.25	22.26
		12@0	20.34	20.18	22.15

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5.1.4 NB-IoT Band12 Conducted RF Power Output Results

NB-IoT Band12

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.82	21.42	-14.66
		1@47	21.75	21.27	-14.62
	QPSK	1@0	21.71	21.43	-14.60
		1@47	21.73	21.36	-14.64
15	BPSK	1@0	21.23	22.29	-14.68
		1@11	21.36	22.48	-14.83
	QPSK	1@0	21.43	22.62	-14.80
		1@11	21.38	22.46	-14.79
		12@0	20.54	22.35	-16.86

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5.1.5 NB-IoT Band13 Conducted RF Power Output Results

NB-IoT Band13

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.07	21.02	21.06
		1@47	21.06	20.98	21.03
	QPSK	1@0	20.99	20.91	21.08
		1@47	21.01	21.03	21.11
15	BPSK	1@0	21.19	21.24	21.26
		1@11	21.12	21.16	21.18
	QPSK	1@0	21.19	21.13	21.18
		1@11	21.08	21.14	21.22
		12@0	20.32	20.35	20.34

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5.1.6 NB-IoT Band25 Conducted RF Power Output Results

NB-IoT Band25

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.74	21.02	22.23
		1@47	21.58	21.16	22.06
	QPSK	1@0	21.72	21.13	22.30
		1@47	21.55	21.02	22.04
15	BPSK	1@0	21.65	20.68	21.89
		1@11	21.57	20.62	21.73
	QPSK	1@0	21.54	20.58	21.11
		1@11	21.58	20.63	21.91
		12@0	19.52	18.15	18.97

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5.1.7 NB-IoT Band66 Conducted RF Power Output Results

NB-IoT Band66

Maximum Average Conducted Power (dBm)					
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Channel		
			Low	Mid	High
3.75	BPSK	1@0	21.52	21.76	21.79
		1@47	21.34	21.65	21.73
	QPSK	1@0	21.74	21.71	21.51
		1@47	21.62	21.70	21.72
15	BPSK	1@0	21.68	20.69	21.32
		1@11	21.60	20.50	21.58
	QPSK	1@0	21.49	20.59	21.63
		1@11	21.58	20.62	21.53
		12@0	19.24	18.08	18.93

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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	22.39	21.26
			6#0	0	21.06	20.2
		18900	1#0	0	22.25	21.08
			6#0	0	21.24	20.21
		19193	1#5	0	22.33	21.19
			6#0	0	21.27	21.34
	3MHz	18615	1#0	0	21.17	20.67
			6#0	0	22.41	21.12
		18900	1#0	0	22.31	21.73
			6#0	0	21.92	20.96
		19185	1#5	1	22.21	21.19
			6#0	1	21.21	21.26
	5MHz	18620	1#0	0	21.15	21.65
			6#0	0	21.05	20.11
		18900	1#0	0	21.25	21.94
			6#0	0	21.03	20.07
		19180	1#5	3	21.68	22.01
			6#0	3	21.25	20.46
	10MHz	18640	1#0	0	21.12	21.96

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			4#0	0	21.12	21.23
		18900	1#0	0	21.10	21.85
			4#0	0	21.06	21.57
		19160	1#5	7	21.30	21.29
			4#2	7	21.44	21.44
	15MHz	18660	1#0	0	21.20	21.97
			6#0	0	21.15	21.53
		18900	1#0	0	21.15	21.95
			6#0	0	21.15	21.50
		19140	1#5	0	21.24	21.99
			6#0	0	21.22	21.65
	20MHz	18680	1#0	0	21.13	21.95
			6#0	0	21.09	21.51
		18900	1#0	0	21.07	21.83
			6#0	0	21.04	21.39
		19120	1#5	0	21.25	21.97
			6#0	0	21.20	21.52

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5.1.9 CAT-M B4 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band4	1.4MHz	19957	1#0	0	21.69	21.12
			6#0	0	19.78	20.65
		20175	1#0	0	21.37	20.72
			6#0	0	19.89	20.39
		20393	1#5	0	21.27	20.54
			6#0	0	19.85	20.50
	3MHz	19965	1#0	0	21.74	21.09
			6#0	0	19.79	20.55
		20175	1#0	0	21.39	20.82
			6#0	0	19.86	20.82
		20385	1#5	1	21.24	20.64
			6#0	1	19.79	20.52
	5MHz	19975	1#0	0	21.72	21.82
			6#0	0	20.69	20.60
		20175	1#0	0	21.48	22.17
			6#0	0	20.42	20.38
		20375	1#5	3	21.03	21.81
			6#0	3	20.19	20.54
	10MHz	20000	1#0	0	21.78	22.38

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			4#0	0	21.68	22.02
		20175	1#0	0	21.44	22.15
			4#0	0	21.48	21.78
		20350	1#5	7	21.19	21.82
			4#2	7	21.22	21.60
	15MHz	20025	1#0	0	21.68	21.78
			6#0	0	21.67	21.70
		20175	1#0	0	21.48	22.16
			6#0	0	21.44	21.72
		20325	1#5	0	21.22	21.96
			6#0	0	21.41	21.71
	20MHz	20050	1#0	0	21.66	22.30
			6#0	0	21.62	21.94
		20175	1#0	0	21.46	22.19
			6#0	0	21.40	21.77
		20300	1#5	0	21.01	21.80
			6#0	0	21.19	21.55

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5.1.10 CAT-M B5 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band5	1.4MHz	20407	1#0	0	21.48	20.92
			6#0	0	19.75	20.370
		20525	1#0	0	21.57	20.97
			6#0	0	19.72	20.44
		20643	1#5	0	21.38	20.79
			6#0	0	19.83	20.54
	3MHz	20415	1#0	0	21.43	20.85
			6#0	0	19.82	20.43
		20525	1#0	0	21.48	20.97
			6#0	0	19.77	20.36
		20635	1#5	1	21.36	20.81
			6#0	1	19.72	20.56
	5MHz	20425	1#0	0	21.50	21.94
			6#0	0	20.36	20.54
		20525	1#0	0	21.64	22.07
			6#0	0	20.52	20.53
		20625	1#5	3	21.70	22.09
			6#0	3	20.58	20.60
	10MHz	20450	1#0	0	21.47	22.36

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			4#0	0	21.46	21.60
		20525	1#0	0	21.53	21.94
			4#0	0	21.54	21.65
		20600	1#5	7	21.35	21.50
			4#2	7	21.53	21.82

5.1.11 CAT-M B12 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band12	1.4MHz	20315	1#0	0	22.09	21.45
			6#0	0	20.65	20.67
		23095	1#0	0	21.93	21.25
			6#0	0	20.68	20.78
		23175	1#5	0	21.34	21.00
			6#0	0	20.47	20.69
	3MHz	20320	1#0	0	21.98	21.41
			6#0	0	20.63	20.77
		23095	1#0	0	21.82	21.25
			6#0	0	20.61	20.79
		23170	1#5	1	21.56	21.03
			6#0	1	20.54	20.68
	5MHz	20330	1#0	0	22.07	22.59
			6#0	0	20.69	21.02
		23095	1#0	0	21.82	22.51
			6#0	0	20.75	20.79
		23160	1#5	3	21.59	22.09
			6#0	3	20.50	20.79
	10MHz	20345	1#0	0	22.03	22.59

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		23095	4#0	0	21.97	22.15
			1#0	0	21.84	22.66
			4#0	0	21.88	22.18
		23145	1#5	7	21.56	22.06
			4#2	7	21.72	21.80

5.1.12 CAT-M B13 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band13	5MHz	23200	1#0	0	21.65	22.21
			6#0	0	20.54	20.58
		23230	1#0	0	21.61	22.14
			6#0	3	20.50	20.50
		23254	1#5	3	21.31	21.95
			6#0	3	20.56	20.58
	10MHz	23225	1#0	0	21.59	22.16
			6#0	0	20.52	21.67
		23230	1#0	0	21.59	22.16
			6#0	0	20.52	21.67
		23235	1#5	7	21.41	21.90
			4#2	7	21.58	21.68

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5.1.13 CAT-M B25 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band25	1.4MHz	26047	1#0	0	21.13	20.56
			6#0	0	19.89	20.96
		26365	1#0	0	21.15	20.54
			6#0	0	19.86	20.95
		26683	1#5	0	21.59	20.95
			6#0	0	20.11	21.14
	3MHz	26055	1#0	0	21.10	20.49
			6#0	0	19.75	20.89
		26365	1#0	0	21.09	20.50
			6#0	0	19.92	20.90
		26675	1#5	1	21.41	20.84
			6#0	1	20.09	20.43
	5MHz	26065	1#0	0	21.03	21.56
			6#0	0	19.65	21.01
		26365	1#0	0	21.07	21.77
			6#0	0	19.96	21.01
		26665	1#5	3	21.40	22.32
			6#0	3	20.29	20.54
	10MHz	26090	1#0	0	21.17	21.86
			4#0	0	21.18	21.49
		26365	1#0	0	21.13	21.90
			4#0	0	21.17	21.52
		26640	1#5	7	21.40	22.32
			4#2	7	21.57	22.07
	15MHz	26115	1#0	0	21.15	21.82
			6#0	0	21.14	21.39
		26365	1#0	0	21.15	21.89
			6#0	0	21.15	21.42
		26615	1#5	0	21.35	21.90
			6#0	0	21.56	21.67

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	20MHz	26140	1#0	0	21.18	21.83
			6#0	0	21.15	21.39
		26365	1#0	0	21.13	21.83
			6#0	0	21.10	21.41
		26590	1#5	0	21.16	21.75
			6#0	0	21.43	21.50

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5.1.14 CAT-M B26 Conducted RF Power Output Results

(824MHz-849MHz)

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band26	1.4MHz	26797	1#0	0	22.00	20.69
			6#0	0	20.75	20.96
		26915	1#0	0	21.93	20.63
			6#0	0	20.71	20.87
		27033	1#5	0	21.63	20.29
			6#0	0	20.66	20.84
	3MHz	26805	1#0	0	22.00	20.89
			6#0	0	20.81	20.96
		26915	1#0	0	21.96	20.65
			6#0	0	20.72	20.91
		27025	1#5	1	21.55	20.26
			6#0	1	20.61	20.77
	5MHz	26815	1#0	0	22.00	22.01
			6#0	0	20.75	21.05
		26915	1#0	0	21.90	21.69
			6#0	0	20.64	20.95
		27015	1#5	3	21.62	21.38
			6#0	3	20.60	20.92
	10MHz	26840	1#0	0	21.95	21.94
			4#0	0	20.70	22.26
		26915	1#0	0	21.96	21.48
			4#0	0	20.70	22.08
		26990	1#5	7	21.47	21.25
			4#2	7	20.49	21.85

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(814MHz-824MHz)

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band26	1.4MHz	26697	1#0	0	21.78	20.48
			6#0	0	20.56	19.92
		26740	1#0	0	21.76	20.48
			6#0	0	20.55	19.92
		26783	1#5	0	21.98	20.41
			6#0	0	20.78	19.95
	3MHz	26705	1#0	0	21.87	20.52
			6#0	0	20.58	19.95
		26740	1#0	0	21.86	21.51
			6#0	0	20.61	19.97
		26775	1#5	1	21.67	20.52
			6#0	1	20.82	19.97
	5MHz	26715	1#0	0	21.79	21.88
			6#0	0	20.51	20.83
		26740	1#0	0	22.00	21.87
			6#0	0	20.61	21.04
		26765	1#5	3	21.73	21.67
			6#0	3	20.68	21.00
	10MHz	26740	1#0	0	21.91	21.78
			6#0	0	20.54	21.10

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5.1.15 CAT-M B66 Conducted RF Power Output Results

Mode	Bandwidth	Channel	RB	Index	Conducted Power	
					QPSK	16QAM
Band25	1.4MHz	131979	1#0	0	21.79	20.87
			6#0	0	20.44	20.58
		132322	1#0	0	20.97	20.91
			6#0	0	20.44	20.51
		132665	1#5	0	21.96	20.58
			6#0	0	19.98	20.60
	3MHz	131988	1#0	0	21.77	20.80
			6#0	0	20.42	21.53
		132322	1#0	0	20.88	20.90
			6#0	0	20.37	20.56
		132656	1#5	1	21.59	20.51
			6#0	1	20.27	21.55
	5MHz	131997	1#0	0	21.77	22.15
			6#0	0	20.46	20.93
		132322	1#0	0	20.84	21.33
			6#0	0	19.99	20.77
		132647	1#5	3	21.60	22.44
			6#0	3	20.48	20.97
	10MHz	132023	1#0	0	21.82	22.11
			4#0	0	21.68	21.83
		132322	1#0	0	20.88	21.41
			4#0	0	20.87	21.12
		132621	1#5	7	21.34	22.25
			4#2	7	21.48	22.11
	15MHz	132047	1#0	0	21.66	22.10
			6#0	0	21.59	21.85
		132322	1#0	0	20.87	21.44
			6#0	0	20.83	21.17
		132597	1#5	0	21.45	22.33
			6#0	0	21.44	22.08

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	20MHz	132072	1#0	0	21.37	21.83
			6#0	0	21.59	21.80
		132322	1#0	0	20.88	21.31
			6#0	0	20.72	21.07
		132571	1#5	0	21.08	21.96
			6#0	0	21.22	21.86

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5.2 ERP and EIRP

Specifications:	FCC Part 24.232(b), 27.50(d), 27.50(h)(2), 27.50(c), 90.635(b)
DUT Serial Number:	866884045622016
Test conditions:	Ambient Temperature: 15°C-35°C Relative Humidity: 30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

This is the test for the maximum radiated power from the EUT.

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

According to Part 24.232(c), "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

According to Part 27.50(d), “Fixed, mobile, and portable (handheld) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”.

According to Part 27.50(h)(2) “Mobile stations are limited to 2.0 watts EIRP.”.

According to Part 27.50(c), specifies “Portable stations (hand-held de-vices) are limited to 3 watts ERP.”.

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	0.52 dB (k=2)

Test Procedure:

ANSI C63.26:2015

KDB 971168 Section 5.6

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

$ERP/EIRP = P_{meas} + GT - LC$

where: ERP/ERP = effective or equivalent radiated power, respectively (expressed in the same units as P_{meas} , typically dBW or dBm);

P_{meas} = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd(ERP) or dBi(EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/ERP output powers as follows:

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5.2.1 NB-IoT Band2 Measurement result

NB-IoT Band 2

EIRP Averavge (dBm)						
Sub-carri er Spacing [kHz]	Modula tion	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	3	24.15	24.38	24.62
		1@47	3	24.08	24.64	24.43
	QPSK	1@0	3	24.12	24.72	24.52
		1@47	3	24.05	24.68	24.55
15	BPSK	1@0	3	24.61	23.77	24.09
		1@11	3	24.53	23.73	24.12
	QPSK	1@0	3	24.57	23.86	23.97
		1@11	3	24.48	23.76	24.03
		12@0	3	22.38	21.41	21.59

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5.2.2 NB-IoT Band4 Measurement result

NB-IoT Band 4

EIRP Average (dBm)						
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	4	25.67	25.55	25.58
		1@47	4	25.61	25.56	25.53
	QPSK	1@0	4	25.33	24.31	25.49
		1@47	4	25.50	25.28	25.55
15	BPSK	1@0	4	25.68	24.66	24.53
		1@11	4	25.60	24.58	24.55
	QPSK	1@0	4	25.71	24.30	24.62
		1@11	4	25.66	24.28	24.57
		12@0	4	23.21	22.12	22.09

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5.2.3 NB-IoT Band5 Measurement result

NB-IoT Band 5

ERP Averavge (dBm)						
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	4	23.07	22.99	22.84
		1@47	4	23.19	22.93	22.90
	QPSK	1@0	4	23.14	22.87	22.95
		1@47	4	23.08	22.90	22.80
15	BPSK	1@0	4	24.47	24.18	24.18
		1@11	4	24.38	24.10	24.10
	QPSK	1@0	4	24.46	24.06	24.22
		1@11	4	24.15	24.10	24.11
		12@0	4	22.19	22.03	24.00

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5.2.4 NB-IoT Band12 Measurement result

NB-IoT Band 12

ERP Averavge (dBm)						
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	4	23.67	23.27	-12.81
		1@47	4	23.60	23.12	-12.77
	QPSK	1@0	4	23.56	23.28	-12.75
		1@47	4	23.58	23.21	-12.79
15	BPSK	1@0	4	23.08	24.14	-12.83
		1@11	4	23.21	24.33	-12.98
	QPSK	1@0	4	23.28	24.47	-12.95
		1@11	4	23.23	24.31	-12.94
		12@0	4	22.39	24.20	-15.01

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5.2.5 NB-IoT Band13 Measurement result

NB-IoT Band 13

ERP Averavge (dBm)						
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	4	22.92	22.87	22.91
		1@47	4	22.91	22.83	22.88
	QPSK	1@0	4	22.84	22.76	22.93
		1@47	4	22.86	22.88	22.96
15	BPSK	1@0	4	23.04	23.09	23.11
		1@11	4	22.97	23.01	23.03
	QPSK	1@0	4	23.04	22.98	23.03
		1@11	4	22.93	22.99	23.07
		12@0	4	22.17	22.20	22.19

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5.2.6 NB-IoT Band25 Measurement result

NB-IoT Band 25

EIRP Average (dBm)						
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	3	24.74	24.02	25.23
		1@47	3	24.58	24.16	25.06
	QPSK	1@0	3	24.72	24.13	25.30
		1@47	3	24.55	24.02	25.04
15	BPSK	1@0	3	24.65	23.68	24.89
		1@11	3	24.57	23.62	24.73
	QPSK	1@0	3	24.54	23.58	24.11
		1@11	3	24.58	23.63	24.91
		12@0	3	22.52	21.15	21.97

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5.2.7 NB-IoT Band66 Measurement result

NB-IoT Band 66

EIRP Average (dBm)						
Sub-carrier Spacing [kHz]	Modulation	N _{tones}	Antenna Gain (dBi)	Channel		
				Low	Mid	High
3.75	BPSK	1@0	4	25.52	25.76	25.79
		1@47	4	25.34	25.65	25.73
	QPSK	1@0	4	25.74	25.71	25.51
		1@47	4	25.62	25.70	25.72
15	BPSK	1@0	4	25.68	24.69	25.32
		1@11	4	25.60	24.50	25.58
	QPSK	1@0	4	25.49	24.59	25.63
		1@11	4	25.58	24.62	25.53
		12@0	4	23.24	22.08	22.93

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5.2.8 CAT-M B2 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		EIRP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band2	1.4MHz	18607	1#0	0	3	22.39	21.26	25.39	24.26
			6#0	0	3	21.06	20.2	24.06	23.20
		18900	1#0	0	3	22.25	21.08	25.25	24.08
			6#0	0	3	21.24	20.21	24.24	23.21
		19193	1#5	0	3	22.33	21.19	25.33	24.19
			6#0	0	3	21.27	21.34	24.27	24.34
	3MHz	18615	1#0	0	3	21.17	20.67	24.17	23.67
			6#0	0	3	22.41	21.12	25.41	24.12
		18900	1#0	0	3	22.31	21.73	25.31	24.73
			6#0	0	3	21.92	20.96	24.92	23.96
		19185	1#5	1	3	22.21	21.19	25.21	24.19
			6#0	1	3	21.21	21.26	24.21	24.26
	5MHz	18620	1#0	0	3	21.15	21.65	24.15	24.65
			6#0	0	3	21.05	20.11	24.05	23.11
		18900	1#0	0	3	21.25	21.94	24.25	24.94
			6#0	0	3	21.03	20.07	24.03	23.07
		19180	1#5	3	3	21.68	22.01	24.68	25.01
			6#0	3	3	21.25	20.46	24.25	23.46

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	10MHz	18640	1#0	0	3	21.12	21.96	24.12	24.96
			4#0	0	3	21.12	21.23	24.12	24.23
		18900	1#0	0	3	21.10	21.85	24.10	24.85
			4#0	0	3	21.06	21.57	24.06	24.57
		19160	1#5	7	3	21.30	21.29	24.30	24.29
			4#2	7	3	21.44	21.44	24.44	24.44
	15MHz	18660	1#0	0	3	21.20	21.97	24.20	24.97
			6#0	0	3	21.15	21.53	24.15	24.53
		18900	1#0	0	3	21.15	21.95	24.15	24.95
			6#0	0	3	21.15	21.50	24.15	24.50
		19140	1#5	0	3	21.24	21.99	24.24	24.99
			6#0	0	3	21.22	21.65	24.22	24.65
	20MHz	18680	1#0	0	3	21.13	21.95	24.13	24.95
			6#0	0	3	21.09	21.51	24.09	24.51
		18900	1#0	0	3	21.07	21.83	24.07	24.83
			6#0	0	3	21.04	21.39	24.04	24.39
		19120	1#5	0	3	21.25	21.97	24.25	24.97
			6#0	0	3	21.20	21.52	24.20	24.52

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5.2.9 CAT-M B4 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		EIRP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band4	1.4MHz	19957	1#0	0	4	21.69	21.12	25.69	25.12
			6#0	0	4	19.78	20.65	23.78	24.65
		20175	1#0	0	4	21.37	20.72	25.37	24.72
			6#0	0	4	19.89	20.39	23.89	24.39
		20393	1#5	0	4	21.27	20.54	25.27	24.54
			6#0	0	4	19.85	20.50	23.85	24.50
	3MHz	19965	1#0	0	4	21.74	21.09	25.74	25.09
			6#0	0	4	19.79	20.55	23.79	24.55
		20175	1#0	0	4	21.39	20.82	25.39	24.82
			6#0	0	4	19.86	20.82	23.86	24.82
		20385	1#5	1	4	21.24	20.64	25.24	24.64
			6#0	1	4	19.79	20.52	23.79	24.52
	5MHz	19975	1#0	0	4	21.72	21.82	25.72	25.82
			6#0	0	4	20.69	20.60	24.69	24.60
		20175	1#0	0	4	21.48	22.17	25.48	26.17
			6#0	0	4	20.42	20.38	24.42	24.38
		20375	1#5	3	4	21.03	21.81	25.03	25.81
			6#0	3	4	20.19	20.54	24.19	24.54

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	10MHz	20000	1#0	0	4	21.78	22.38	25.78	26.38
			4#0	0	4	21.68	22.02	25.68	26.02
		20175	1#0	0	4	21.44	22.15	25.44	26.15
			4#0	0	4	21.48	21.78	25.48	25.78
		20350	1#5	7	4	21.19	21.82	25.19	25.82
			4#2	7	4	21.22	21.60	25.22	25.60
	15MHz	20025	1#0	0	4	21.68	21.78	25.68	25.78
			6#0	0	4	21.67	21.70	25.67	25.70
		20175	1#0	0	4	21.48	22.16	25.48	26.16
			6#0	0	4	21.44	21.72	25.44	25.72
		20325	1#5	0	4	21.22	21.96	25.22	25.96
			6#0	0	4	21.41	21.71	25.41	25.71
	20MHz	20050	1#0	0	4	21.66	22.30	25.66	26.30
			6#0	0	4	21.62	21.94	25.62	25.94
		20175	1#0	0	4	21.46	22.19	25.46	26.19
			6#0	0	4	21.40	21.77	25.40	25.77
		20300	1#5	0	4	21.01	21.80	25.01	25.80
			6#0	0	4	21.19	21.55	25.19	25.55

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5.2.10 CAT-M B5 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		ERP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band5	1.4MHz	20407	1#0	0	4	21.48	20.92	23.33	22.77
			6#0	0	4	19.75	20.370	21.60	22.22
		20525	1#0	0	4	21.57	20.97	23.42	22.82
			6#0	0	4	19.72	20.44	21.57	22.29
		20643	1#5	0	4	21.38	20.79	23.23	22.64
			6#0	0	4	19.83	20.54	21.68	22.39
	3MHz	20415	1#0	0	4	21.43	20.85	23.28	22.70
			6#0	0	4	19.82	20.43	21.67	22.28
		20525	1#0	0	4	21.48	20.97	23.33	22.82
			6#0	0	4	19.77	20.36	21.62	22.21
		20635	1#5	1	4	21.36	20.81	23.21	22.66
			6#0	1	4	19.72	20.56	21.57	22.41
	5MHz	20425	1#0	0	4	21.50	21.94	23.35	23.79
			6#0	0	4	20.36	20.54	22.21	22.39
		20525	1#0	0	4	21.64	22.07	23.49	23.92
			6#0	0	4	20.52	20.53	22.37	22.38
		20625	1#5	3	4	21.70	22.09	23.55	23.94
			6#0	3	4	20.58	20.60	22.43	22.45

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	10MHz	20450	1#0	0	4	21.47	22.36	23.32	24.21
			4#0	0	4	21.46	21.60	23.31	23.45
		20525	1#0	0	4	21.53	21.94	23.38	23.79
			4#0	0	4	21.54	21.65	23.39	23.50
		20600	1#5	7	4	21.35	21.50	23.20	23.35
			4#2	7	4	21.53	21.82	23.38	23.67

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5.2.11 CAT-M B12 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		ERP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band12	1.4MHz	20315	1#0	0	4	22.09	21.45	23.94	23.30
			6#0	0	4	20.65	20.67	22.50	22.52
		23095	1#0	0	4	21.93	21.25	23.78	23.10
			6#0	0	4	20.68	20.78	22.53	22.63
		23175	1#5	0	4	21.34	21.00	23.19	22.85
			6#0	0	4	20.47	20.69	22.32	22.54
	3MHz	20320	1#0	0	4	21.98	21.41	23.83	23.26
			6#0	0	4	20.63	20.77	22.48	22.62
		23095	1#0	0	4	21.82	21.25	23.67	23.10
			6#0	0	4	20.61	20.79	22.46	22.64
		23170	1#5	1	4	21.56	21.03	23.41	22.88
			6#0	1	4	20.54	20.68	22.39	22.53
	5MHz	20330	1#0	0	4	22.07	22.59	23.92	24.44
			6#0	0	4	20.69	21.02	22.54	22.87
		23095	1#0	0	4	21.82	22.51	23.67	24.36
			6#0	0	4	20.75	20.79	22.60	22.64
		23160	1#5	3	4	21.59	22.09	23.44	23.94
			6#0	3	4	20.50	20.79	22.35	22.64

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	10MHz	20345	1#0	0	4	22.03	22.59	23.88	24.44
			4#0	0	4	21.97	22.15	23.82	24.00
		23095	1#0	0	4	21.84	22.66	23.69	24.51
			4#0	0	4	21.88	22.18	23.73	24.03
		23145	1#5	7	4	21.56	22.06	23.41	23.91
			4#2	7	4	21.72	21.80	23.57	23.65

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5.2.12 CAT-M B13 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		ERP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band13	5MHz	23200	1#0	0	4	21.65	22.21	23.50	24.06
			6#0	0	4	20.54	20.58	22.39	22.43
		23230	1#0	0	4	21.61	22.14	23.46	23.99
			6#0	0	4	20.50	20.50	22.35	22.35
		23254	1#5	3	4	21.31	21.95	23.16	23.80
			6#0	3	4	20.56	20.58	22.41	22.43
	10MHz	23225	1#0	0	4	21.59	22.16	23.44	24.01
			4#0	0	4	20.52	21.67	22.37	23.52
		23230	1#0	0	4	21.59	22.16	23.44	24.01
			4#0	0	4	20.52	21.67	22.37	23.52
		23235	1#5	7	4	21.41	21.90	23.26	23.75
			4#2	7	4	21.58	21.68	23.43	23.53

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5.2.13 CAT-M B25 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		EIRP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band25	1.4MHz	26047	1#0	0	3	21.13	20.56	24.13	23.56
			6#0	0	3	19.89	20.96	22.89	23.96
		26365	1#0	0	3	21.15	20.54	24.15	23.54
			6#0	0	3	19.86	20.95	22.86	23.95
		26683	1#5	0	3	21.59	20.95	24.59	23.95
			6#0	0	3	20.11	21.14	23.11	24.14
	3MHz	26055	1#0	0	3	21.10	20.49	24.10	23.49
			6#0	0	3	19.75	20.89	22.75	23.89
		26365	1#0	0	3	21.09	20.50	24.09	23.50
			6#0	0	3	19.92	20.90	22.92	23.90
		26675	1#5	1	3	21.41	20.84	24.41	23.84
			6#0	1	3	20.09	20.43	23.09	23.43
	5MHz	26065	1#0	0	3	21.03	21.56	24.03	24.56
			6#0	0	3	19.65	21.01	22.65	24.01
		26365	1#0	0	3	21.07	21.77	24.07	24.77
			6#0	0	3	19.96	21.01	22.96	24.01
		26665	1#5	3	3	21.40	22.32	24.40	25.32
			6#0	3	3	20.29	20.54	23.29	23.54

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	10MHz	26090	1#0	0	3	21.17	21.86	24.17	24.86
			4#0	0	3	21.18	21.49	24.18	24.49
		26365	1#0	0	3	21.13	21.90	24.13	24.90
			4#0	0	3	21.17	21.52	24.17	24.52
		26640	1#5	7	3	21.40	22.32	24.40	25.32
			4#2	7	3	21.57	22.07	24.57	25.07
	15MHz	26115	1#0	0	3	21.15	21.82	24.15	24.82
			6#0	0	3	21.14	21.39	24.14	24.39
		26365	1#0	0	3	21.15	21.89	24.15	24.89
			6#0	0	3	21.15	21.42	24.15	24.42
		26615	1#5	0	3	21.35	21.90	24.35	24.90
			6#0	0	3	21.56	21.67	24.56	24.67
	20MHz	26140	1#0	0	3	21.18	21.83	24.18	24.83
			6#0	0	3	21.15	21.39	24.15	24.39
		26365	1#0	0	3	21.13	21.83	24.13	24.83
			6#0	0	3	21.10	21.41	24.10	24.41
		26590	1#5	0	3	21.16	21.75	24.16	24.75
			6#0	0	3	21.43	21.50	24.43	24.50

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5.2.14 CAT-M B26 Conducted RF Power Output Results

(824MHz-849MHz)

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		ERP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band26	1.4MHz	26797	1#0	0	4	22.00	20.69	23.85	22.54
			6#0	0	4	20.75	20.96	22.60	22.81
		26915	1#0	0	4	21.93	20.63	23.78	22.48
			6#0	0	4	20.71	20.87	22.56	22.72
		27033	1#5	0	4	21.63	20.29	23.48	22.14
			6#0	0	4	20.66	20.84	22.51	22.69
	3MHz	26805	1#0	0	4	22.00	20.89	23.85	22.74
			6#0	0	4	20.81	20.96	22.66	22.81
		26915	1#0	0	4	21.96	20.65	23.81	22.50
			6#0	0	4	20.72	20.91	22.57	22.76
		27025	1#5	1	4	21.55	20.26	23.40	22.11
			6#0	1	4	20.61	20.77	22.46	22.62
	5MHz	26815	1#0	0	4	22.00	22.01	23.85	23.86
			6#0	0	4	20.75	21.05	22.60	22.90
		26915	1#0	0	4	21.90	21.69	23.75	23.54
			6#0	0	4	20.64	20.95	22.49	22.80
		27015	1#5	3	4	21.62	21.38	23.47	23.23
			6#0	3	4	20.60	20.92	22.45	22.77

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	10MHz	26840	1#0	0	4	21.95	21.94	23.80	23.79
			4#0	0	4	20.70	22.26	22.55	24.11
		26915	1#0	0	4	21.96	21.48	23.81	23.33
			4#0	0	4	20.70	22.08	22.55	23.93
		26990	1#5	7	4	21.47	21.25	23.32	23.10
			4#2	7	4	20.49	21.85	22.34	23.70

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(814MHz-824MHz)

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		EIRP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band26	1.4MHz	26697	1#0	0	4	21.78	20.48	23.63	22.33
			6#0	0	4	20.56	19.92	22.41	21.77
		26740	1#0	0	4	21.76	20.48	23.61	22.33
			6#0	0	4	20.55	19.92	22.40	21.77
		26783	1#5	0	4	21.98	20.41	23.83	22.26
			6#0	0	4	20.78	19.95	22.63	21.80
	3MHz	26705	1#0	0	4	21.87	20.52	23.72	22.37
			6#0	0	4	20.58	19.95	22.43	21.80
		26740	1#0	0	4	21.86	21.51	23.71	23.36
			6#0	0	4	20.61	19.97	22.46	21.82
		26775	1#5	1	4	21.67	20.52	23.52	22.37
			6#0	1	4	20.82	19.97	22.67	21.82
	5MHz	26715	1#0	0	4	21.79	21.88	23.64	23.73
			6#0	0	4	20.51	20.83	22.36	22.68
		26740	1#0	0	4	22.00	21.87	23.85	23.72
			6#0	0	4	20.61	21.04	22.46	22.89
		26765	1#5	3	4	21.73	21.67	23.58	23.52
			6#0	3	4	20.68	21.00	22.53	22.85
	10MHz	26740	1#0	0	4	21.91	21.78	23.76	23.63

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			4#0	0	4	20.54	21.10	22.39	22.95
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5.2.15 CAT-M B66 Conducted RF Power Output Results

Mode	Band width	Channel	RB	Index	Antenna Gain (dBi)	Conducted Average Power(dBm)		EIRP Average (dBm)	
						QPSK	16QAM	QPSK	16QAM
Band66	1.4MHz	131979	1#0	0	4	21.79	20.87	25.79	24.87
			6#0	0	4	20.44	20.58	24.44	24.58
		132322	1#0	0	4	20.97	20.91	24.97	24.91
			6#0	0	4	20.44	20.51	24.44	24.51
		132665	1#5	0	4	21.96	20.58	25.96	24.58
			6#0	0	4	19.98	20.60	23.98	24.60
	3MHz	131988	1#0	0	4	21.77	20.80	25.77	24.80
			6#0	0	4	20.42	21.53	24.42	25.53
		132322	1#0	0	4	20.88	20.90	24.88	24.90
			6#0	0	4	20.37	20.56	24.37	24.56
		132656	1#5	1	4	21.59	20.51	25.59	24.51
			6#0	1	4	20.27	21.55	24.27	25.55
	5MHz	131997	1#0	0	4	21.77	22.15	25.77	26.15
			6#0	0	4	20.46	20.93	24.46	24.93
		132322	1#0	0	4	20.84	21.33	24.84	25.33
			6#0	0	4	19.99	20.77	23.99	24.77
		132647	1#5	3	4	21.60	22.44	25.60	26.44
			6#0	3	4	20.48	20.97	24.48	24.97

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	10MHz	132023	1#0	0	4	21.82	22.11	25.82	26.11
			4#0	0	4	21.68	21.83	25.68	25.83
		132322	1#0	0	4	20.88	21.41	24.88	25.41
			4#0	0	4	20.87	21.12	24.87	25.12
		132621	1#5	7	4	21.34	22.25	25.34	26.25
			4#2	7	4	21.48	22.11	25.48	26.11
	15MHz	132047	1#0	0	4	21.66	22.10	25.66	26.10
			6#0	0	4	21.59	21.85	25.59	25.85
		132322	1#0	0	4	20.87	21.44	24.87	25.44
			6#0	0	4	20.83	21.17	24.83	25.17
		132597	1#5	0	4	21.45	22.33	25.45	26.33
			6#0	0	4	21.44	22.08	25.44	26.08
	20MHz	132072	1#0	0	4	21.37	21.83	25.37	25.83
			6#0	0	4	21.59	21.80	25.59	25.80
		132322	1#0	0	4	20.88	21.31	24.88	25.31
			6#0	0	4	20.72	21.07	24.72	25.07
		132571	1#5	0	4	21.08	21.96	25.08	25.96
			6#0	0	4	21.22	21.86	25.22	25.86

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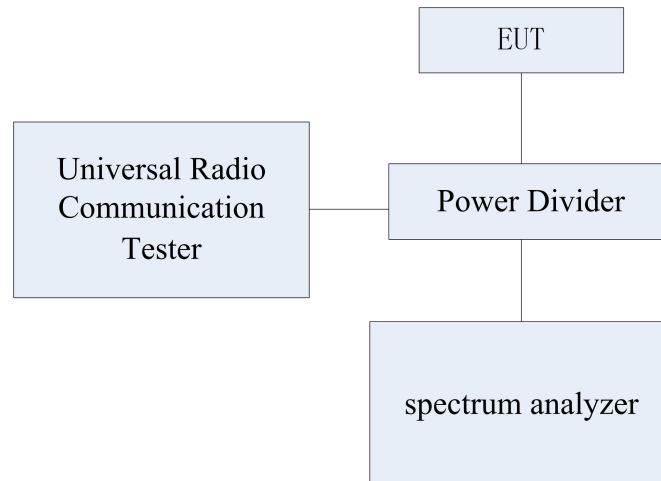
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5.3 Occupied Bandwidth

Specifications:	FCC Part 2.1049, 22.917(b), 24.238(b),90.209
DUT Serial Number:	866884045622016
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

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.



Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	69 kHz (k=2)

Test Method

The 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: Only worst case result is given below.

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5.3.1 NB-IoT B2 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	18900	15	199.56	197.49	232.8	231.7

5.3.2 NB-IoT B4 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	20175	15	326.34	595.3	614.98	633.4

5.3.3 NB-IoT B5 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	20525	15	447.62	785.2	756.12	814.5

5.3.4 NB-IoT B12 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	23095	15	282.86	403.0	322.49	376.3

5.3.5 NB-IoT B13 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	23230	15	288.29	404.8	282.24	337.6

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5.3.6 NB-IoT B25 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	26365	15	555.88	418.2	581.12	395.9

5.3.7 NB-IoT B66 Mode Occupied Bandwidth Results

Frequency ID	N _{UL}	Sub-carrier Spacing [kHz]	Occupied Bandwidth (99%) (kHz)		Occupied Bandwidth (26dB) (kHz)	
			QPSK	BPSK	QPSK	BPSK
Mid Range	132322	15	339.74	397.6	344.28	401.6

5.3.8 CAT-M B2 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	18900/1880	6#0	0	0.90	1.25
	16QAM	18900/1880			1.08	1.06
3MHz	QPSK	18900/1880	6#0	0	1.09	1.27
	16QAM	18900/1880			1.47	1.12
5MHz	QPSK	18900/1880	6#0	0	1.12	1.32
	16QAM	18900/1880			0.94	1.12
10MHz	QPSK	18900/1880	6#0	0	1.77	1.40
	16QAM	18900/1880			1.01	1.31
15MHz	QPSK	18900/1880	6#0	0	1.42	1.00
	16QAM	18900/1880			1.27	1.65
20MHz	QPSK	18900/1880	6#0	0	1.43	1.01
	16QAM	18900/1880			1.28	1.75

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5.3.9 CAT-M B4 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	20175/1732.5	6#0	0	1.08	1.25
	16QAM	20175/1732.5			0.91	1.05
3MHz	QPSK	20175/1732.5	6#0	0	1.08	1.38
	16QAM	20175/1732.5			0.91	1.10
5MHz	QPSK	20175/1732.5	6#0	0	1.11	1.20
	16QAM	20175/1732.5			0.94	1.12
10MHz	QPSK	20175/1732.5	6#0	0	1.17	1.37
	16QAM	20175/1732.5			1.00	1.24
15MHz	QPSK	20175/1732.5	6#0	0	1.42	1.77
	16QAM	20175/1732.5			1.32	1.64
20MHz	QPSK	20175/1732.5	6#0	0	1.26	1.63
	16QAM	20175/1732.5			1.68	1.77

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5.3.10 CAT-M B5 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	20525/836.5	6#0	0	1.08	1.24
	16QAM	20525/836.5			0.90	1.07
3MHz	QPSK	20525/836.5	6#0	0	1.09	1.27
	16QAM	20525/836.5			0.92	1.08
5MHz	QPSK	20525/836.5	6#0	0	1.11	1.20
	16QAM	20525/836.5			0.92	1.13
10MHz	QPSK	20525/836.5	6#0	0	1.16	1.30
	16QAM	20525/836.5			1.00	1.23

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5.3.11 CAT-M B12 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	23095/707.5	6#0	0	1.08	1.26
	16QAM	23095/707.5			0.90	1.06
3MHz	QPSK	23095/707.5	6#0	0	1.09	1.20
	16QAM	23095/707.5			0.92	1.10
5MHz	QPSK	23095/707.5	6#0	0	0.93	1.38
	16QAM	23095/707.5			1.11	1.12
10MHz	QPSK	23095/707.5	6#0	0	1.00	1.37
	16QAM	23095/707.5			1.16	1.24

5.3.12 CAT-M B13 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
5MHz	QPSK	23230/782	6#0	0	1.12	1.38
	16QAM	23230/782			0.94	1.14
10MHz	QPSK	23230/782	6#0	0	1.17	1.39
	16QAM	23230/782			1.00	1.29

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5.3.13 CAT-M B25 Mode Occupied Bandwidth Results

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	18900/1880	6#0	0	1.09	1.26
	16QAM	18900/1880			0.91	1.09
3MHz	QPSK	18900/1880	6#0	0	1.08	1.26
	16QAM	18900/1880			1.88	1.09
5MHz	QPSK	18900/1880	6#0	0	1.12	1.39
	16QAM	18900/1880			0.93	1.11
10MHz	QPSK	18900/1880	6#0	0	1.19	1.41
	16QAM	18900/1880			0.99	1.37
15MHz	QPSK	18900/1880	6#0	0	1.45	1.82
	16QAM	18900/1880			1.25	1.66
20MHz	QPSK	18900/1880	6#0	0	1.46	1.77
	16QAM	18900/1880			1.51	1.76

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5.3.14 CAT-M B26 Mode Occupied Bandwidth Results

(824MHz-849MHz)

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	26915/836.5	6#0	0	1.08	1.25
	16QAM	26915/836.5			0.91	1.07
3MHz	QPSK	26915/836.5	6#0	0	1.09	1.20
	16QAM	26915/836.5			0.92	1.10
5MHz	QPSK	26915/836.5	6#0	0	1.09	1.20
	16QAM	26915/836.5			0.93	1.11
10MHz	QPSK	26915/836.5	6#0	0	1.07	1.30
	16QAM	26915/836.5			1.00	1.21

(814MHz-824MHz)

Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	26740/819	6#0	0	1.08	1.25
	16QAM	26740/819			0.92	1.06
3MHz	QPSK	26740/819	6#0	0	1.09	1.11
	16QAM	26740/819			0.92	1.36
5MHz	QPSK	26740/819	6#0	0	1.12	1.38
	16QAM	26740/819			0.94	1.34
10MHz	QPSK	26740/819	6#0	0	1.17	1.30
	16QAM	26740/819			1.00	1.20

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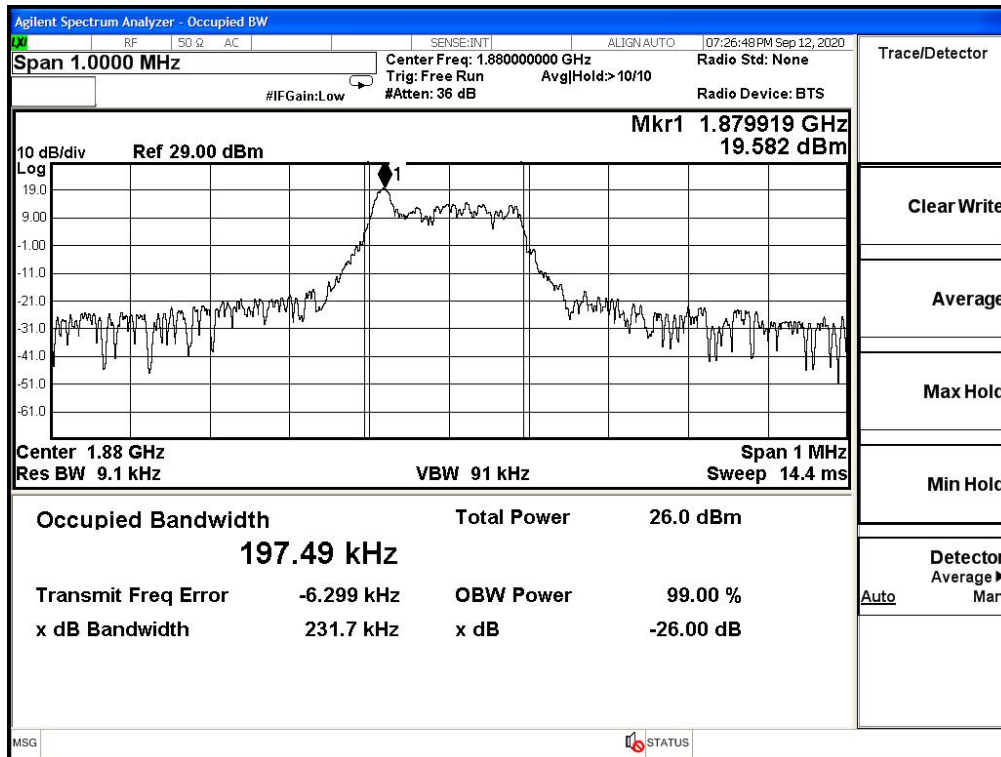
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5.3.15 CAT-M B66 Mode Occupied Bandwidth Results

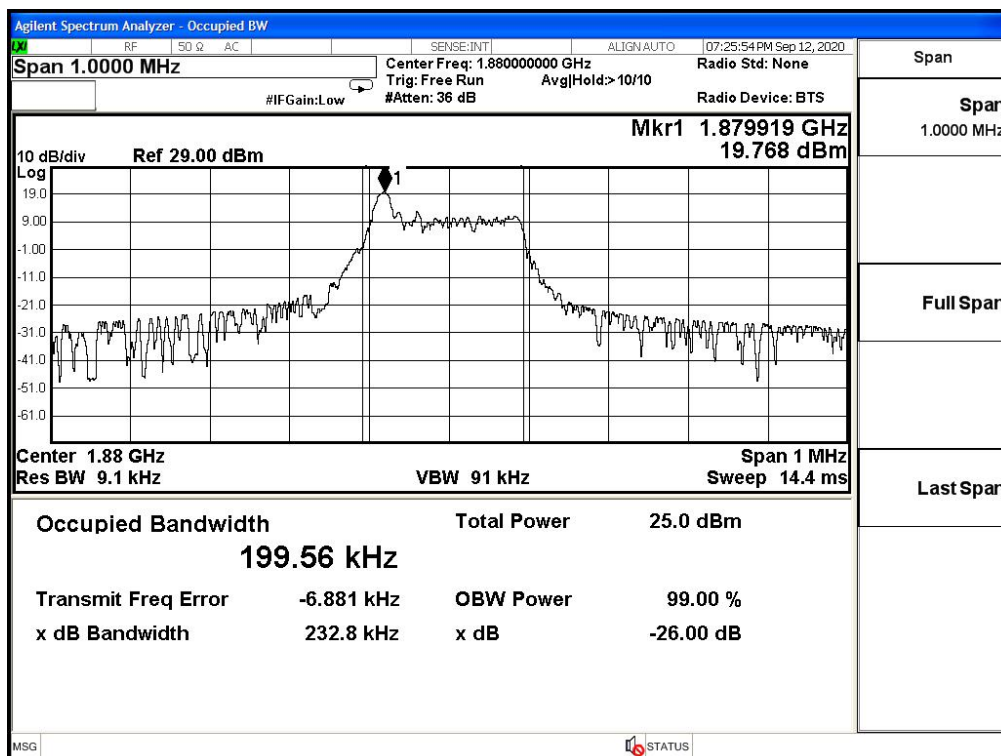
Bandwidth	Modulation	Channel/Ferquency (MHz)	RB	Index	Occupied Bandwidth 99% (MHz)	Occupied Bandwidth 26dB (MHz)
1.4MHz	QPSK	132322/1745	6#0	0	1.17	1.38
	16QAM	132322/1745			1.00	1.27
3MHz	QPSK	132322/1745	6#0	0	1.08	1.26
	16QAM	132322/1745			0.92	1.08
5MHz	QPSK	132322/1745	6#0	0	1.09	1.30
	16QAM	132322/1745			0.94	1.15
10MHz	QPSK	132322/1745	6#0	0	1.10	1.60
	16QAM	132322/1745			0.94	1.16
15MHz	QPSK	132322/1745	6#0	0	1.09	1.29
	16QAM	132322/1745			0.94	1.17
20MHz	QPSK	132322/1745	6#0	0	1.09	1.33
	16QAM	132322/1745			0.95	1.16

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Graphical results for NB-IoT:



Band2-26dB OBW-18900 Channel-BPSK

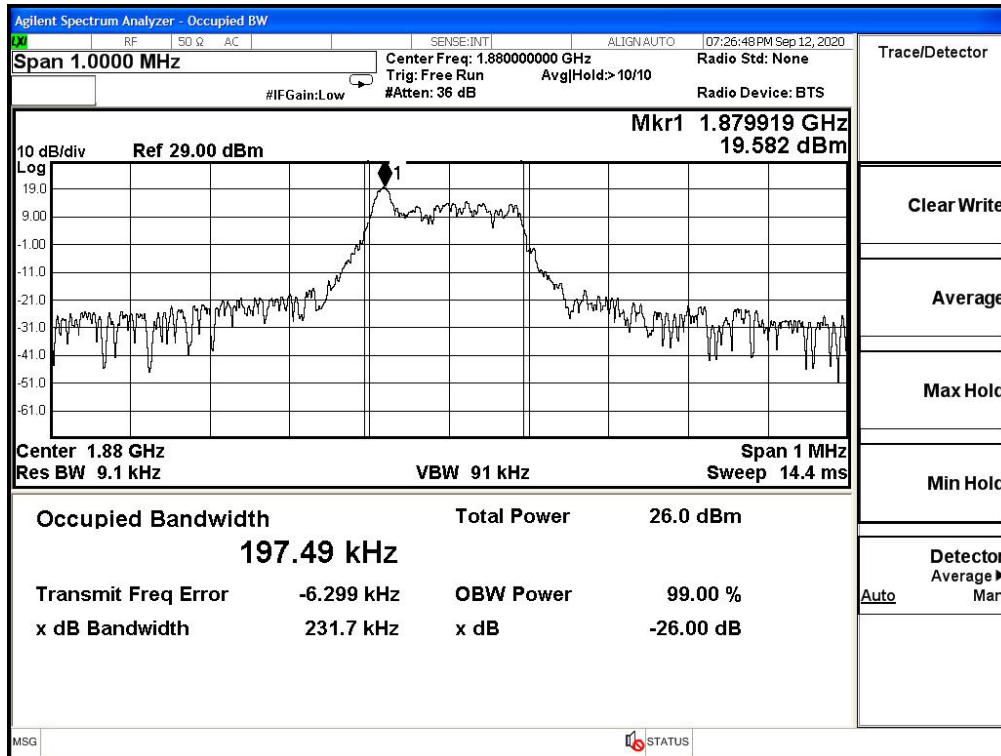


Band2-26dB OBW-18900 Channel-QPSK

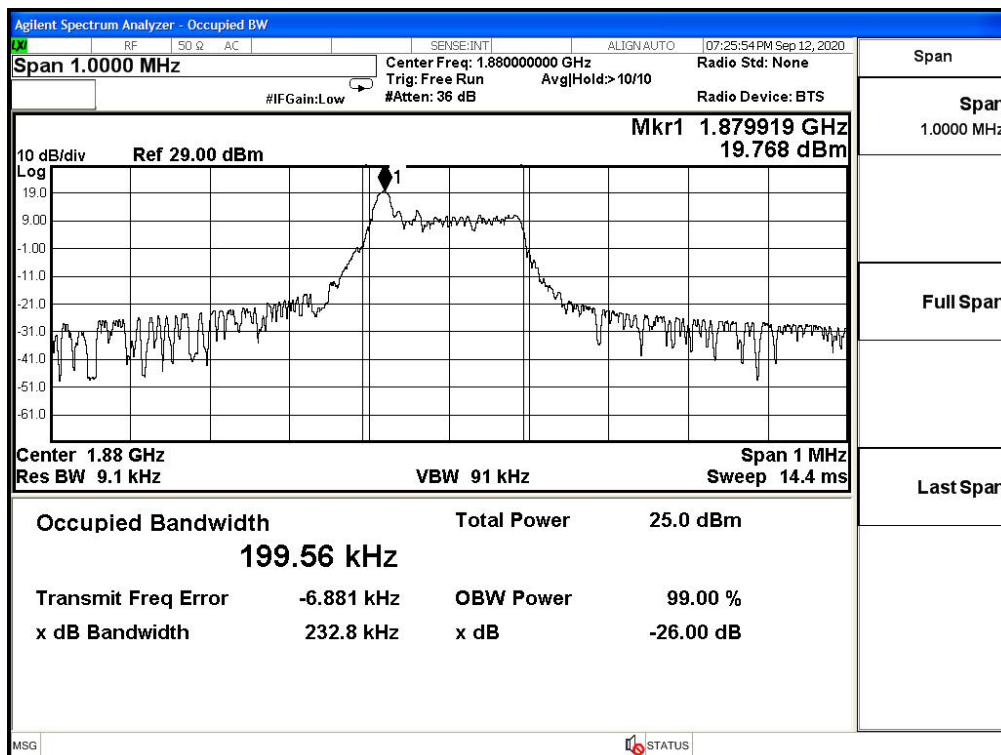
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Band2-99% OBW-18900 Channel-BPSK

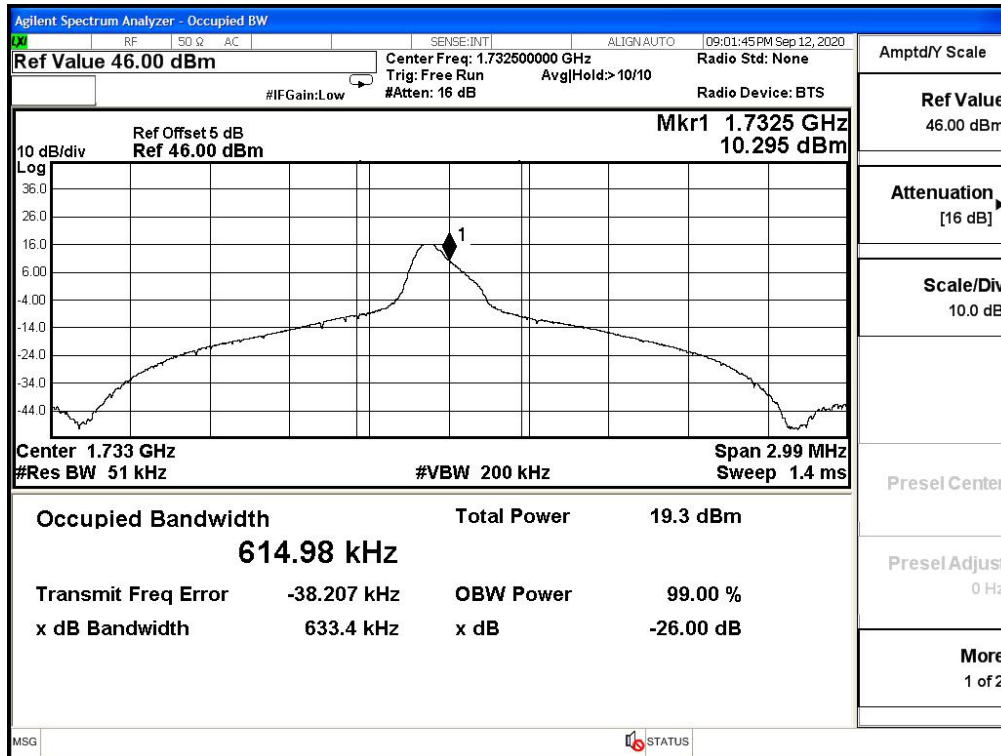


Band2-99% OBW-18900 Channel-QPSK

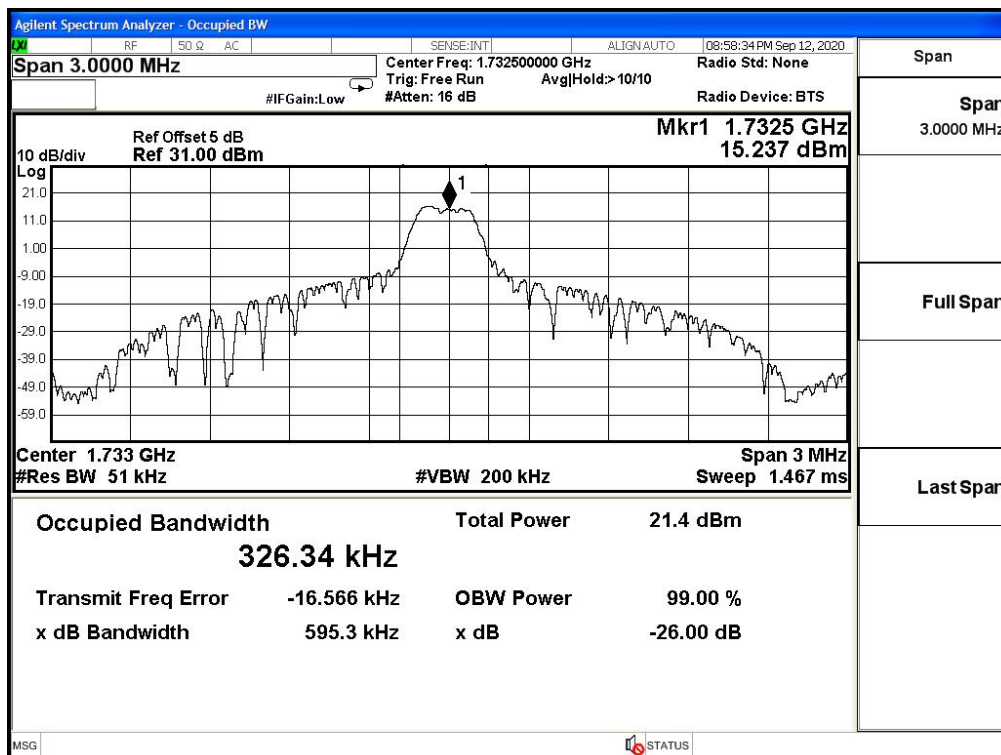
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Band4-26dB OBW-20175 Channel-BPSK

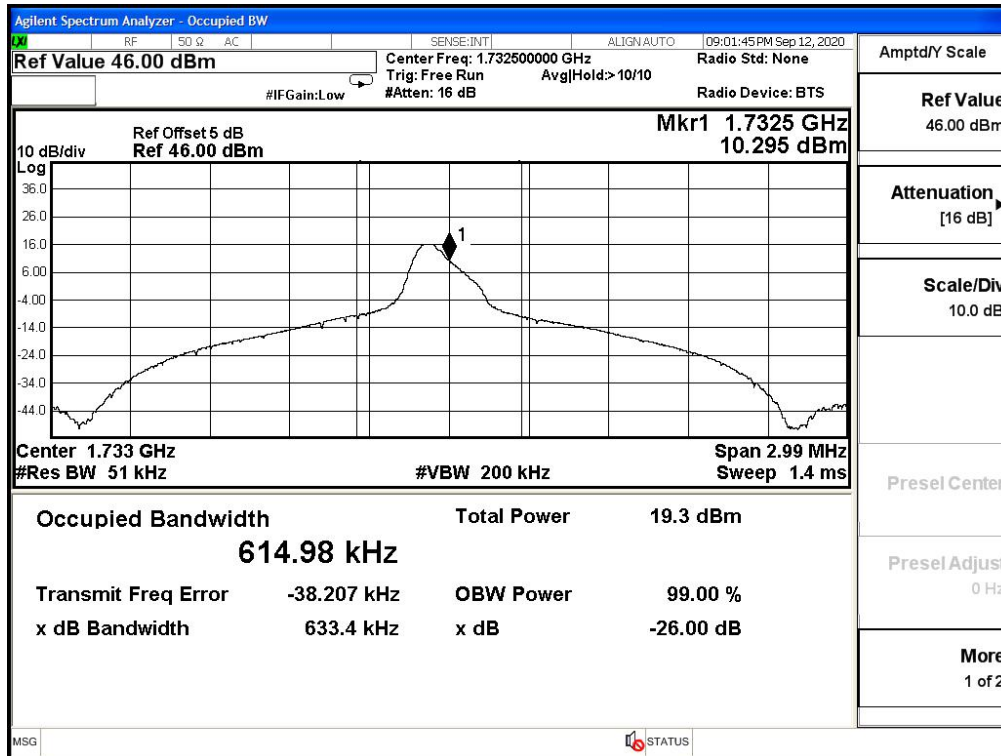


Band4-26dB OBW-20175 Channel-QPSK

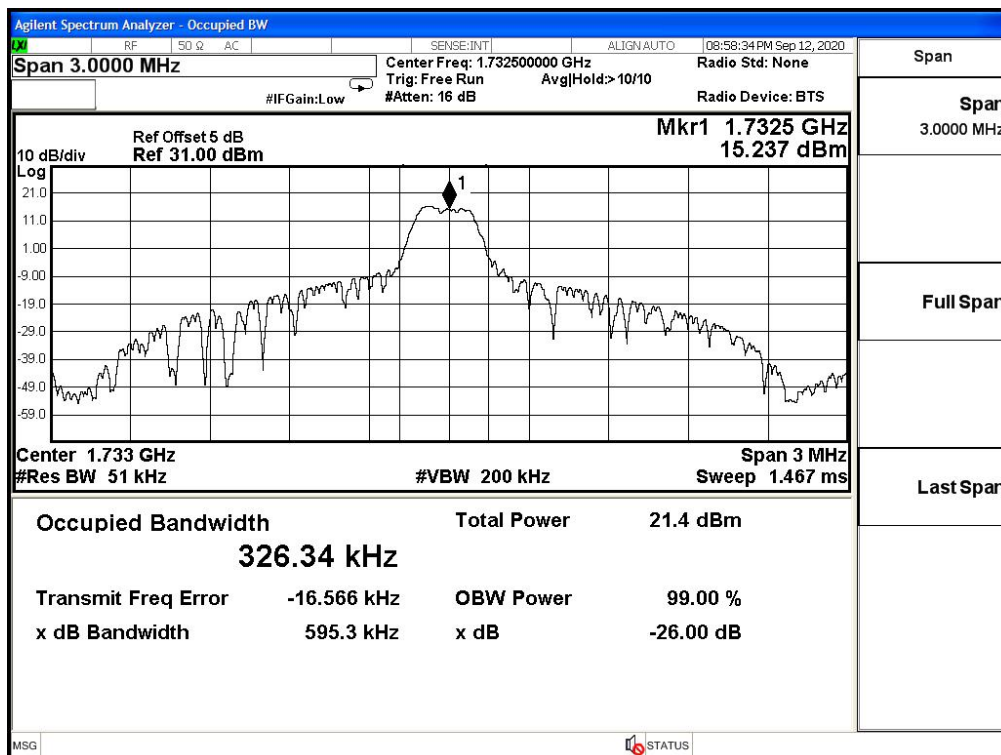
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Band4-99% OBW-20175 Channel-BPSK

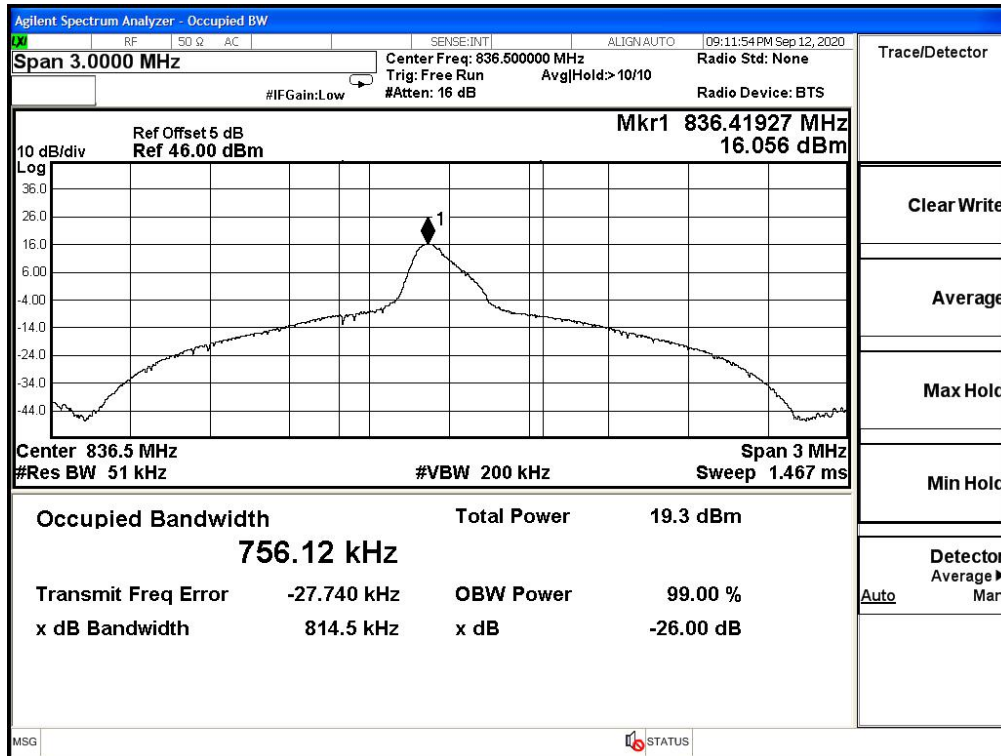


Band4-99% OBW-20175 Channel-QPSK

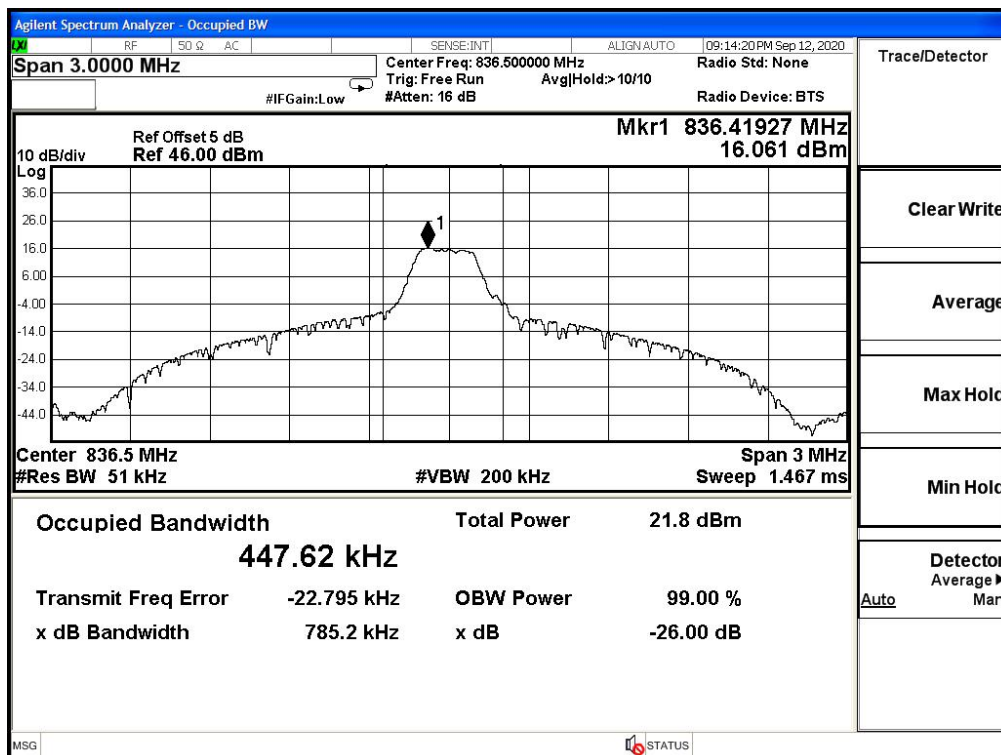
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Band5-26dB OBW-20525 Channel-BPSK

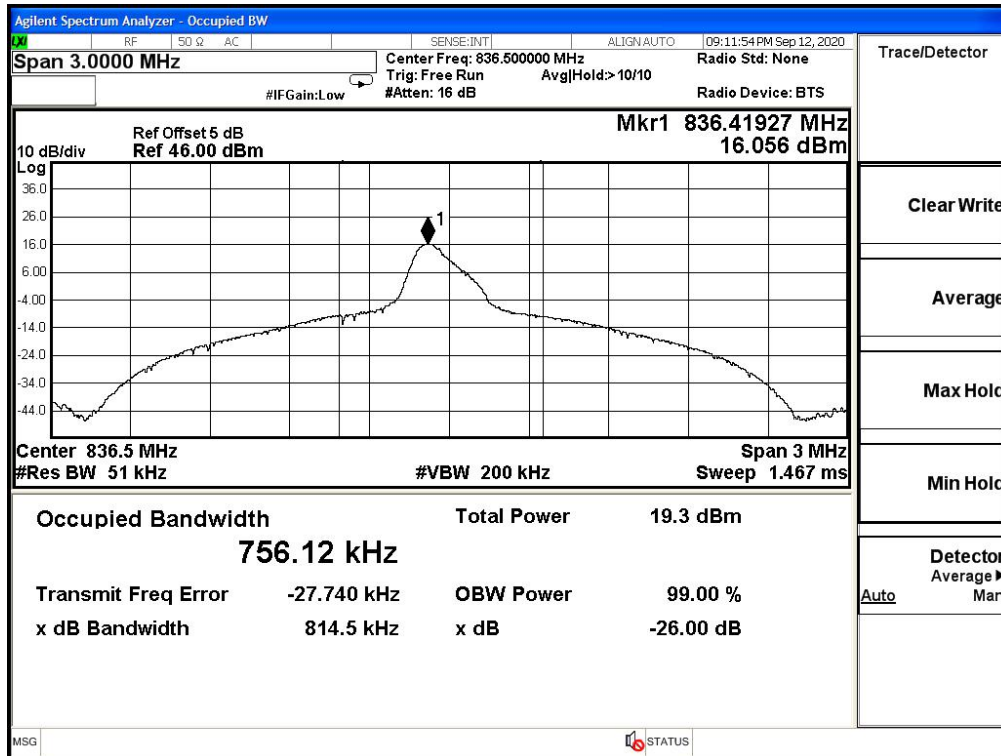


Band5-26dB OBW-20525 Channel-QPSK

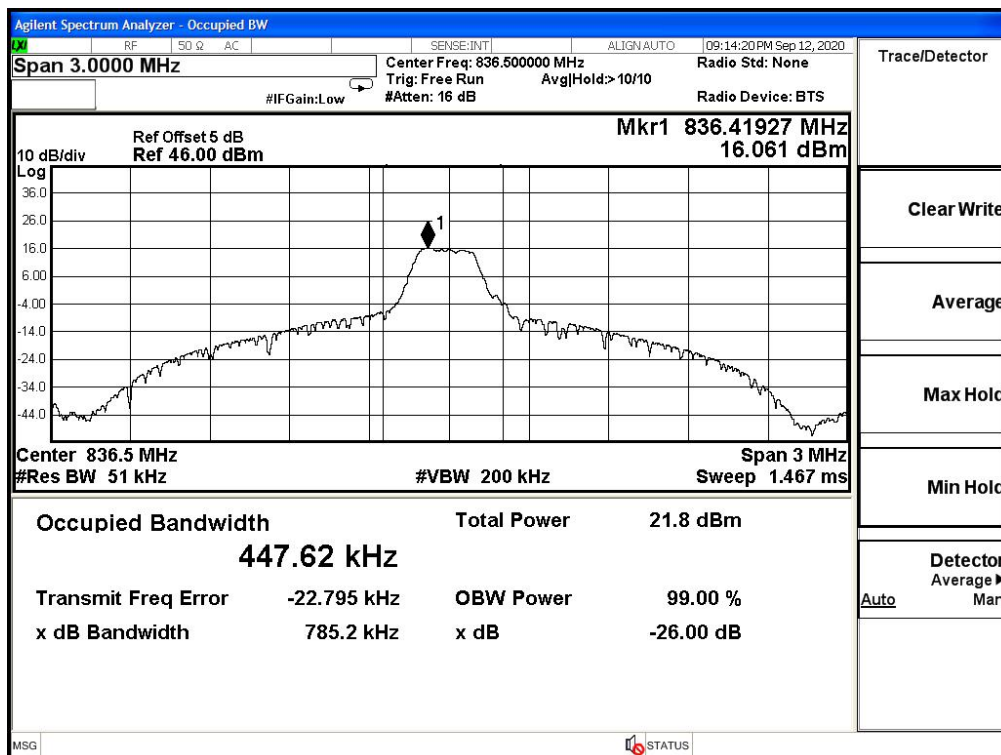
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Band5-99% OBW-20525 Channel-BPSK

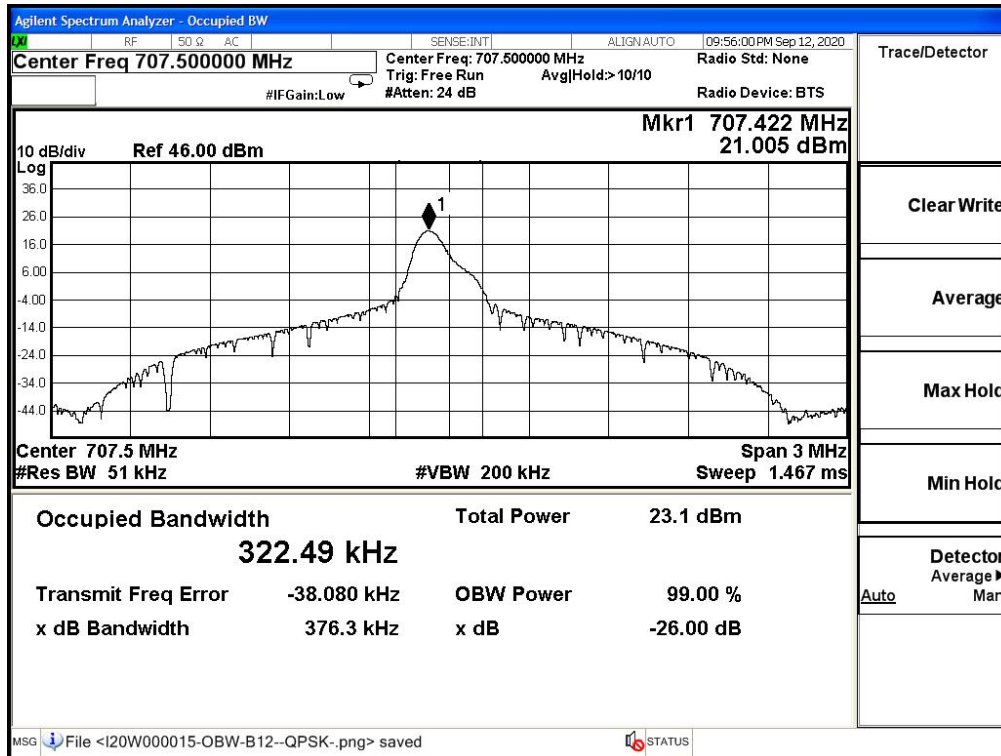


Band5-99% OBW-20525 Channel-QPSK

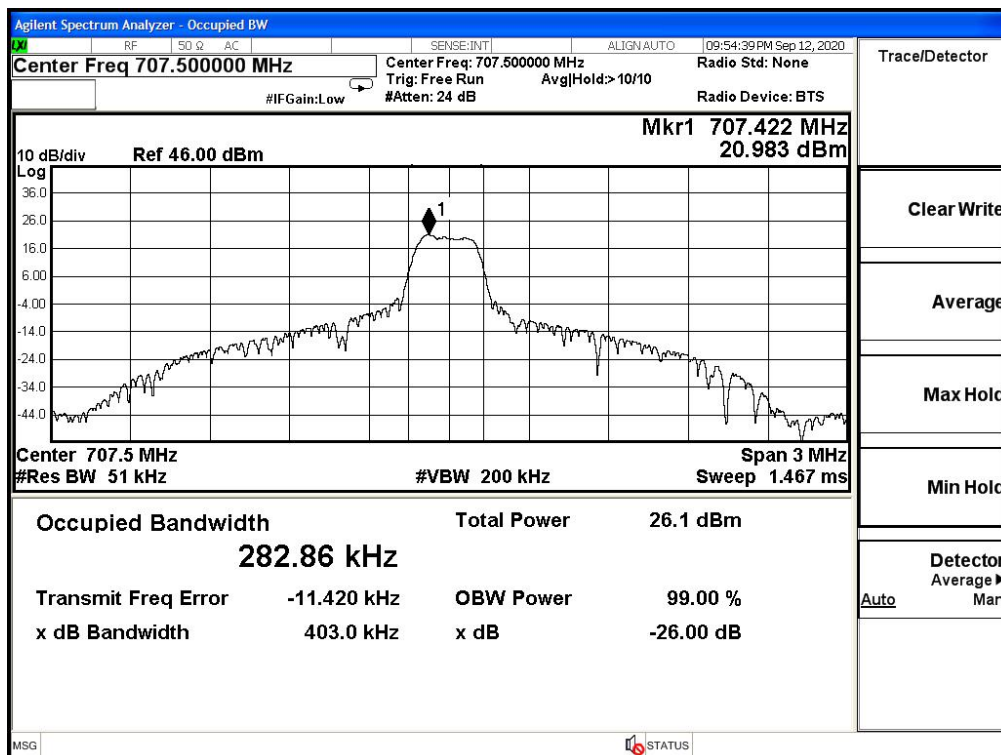
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Band12-26dB OBW-23095 Channel-BPSK

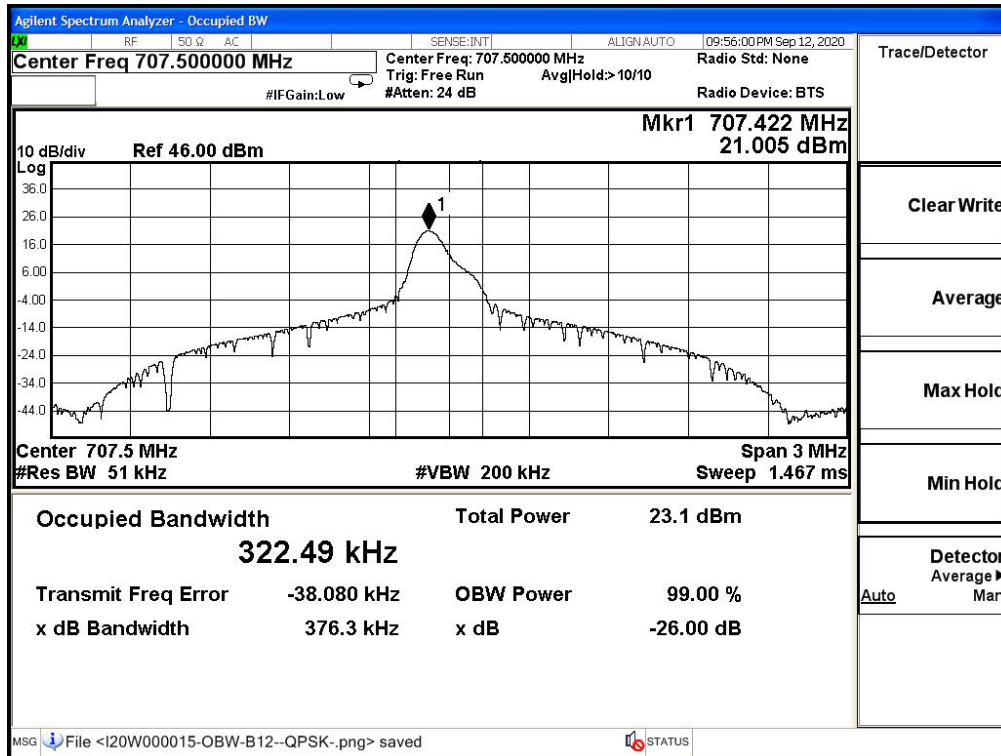


Band12-26dB OBW-23095 Channel-QPSK

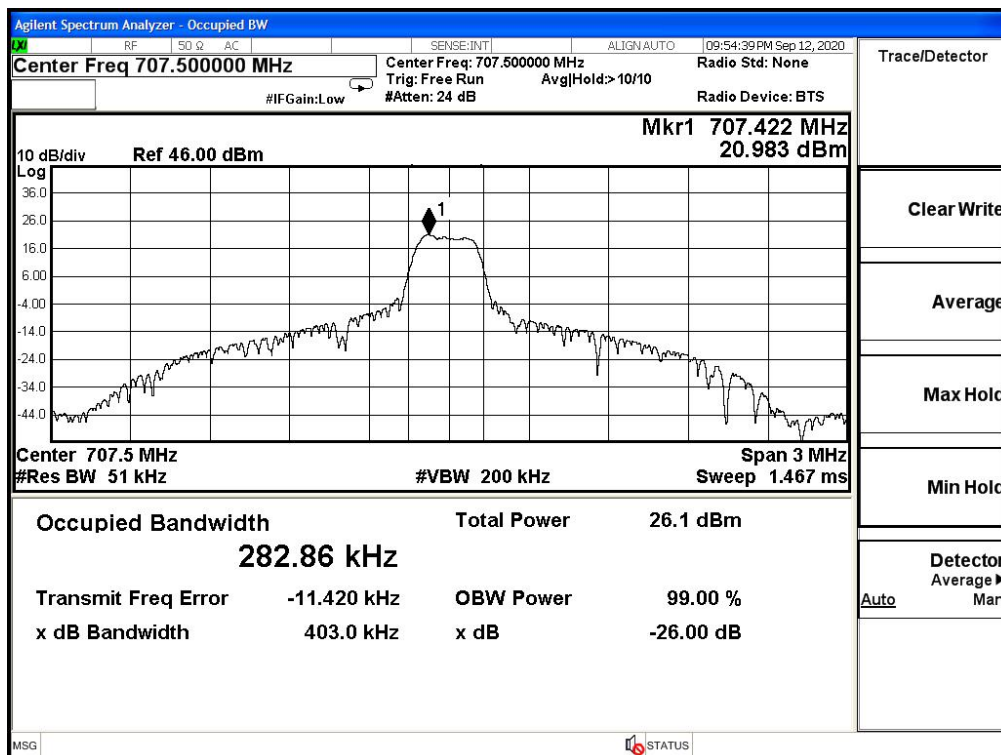
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Band12-99% OBW-23095 Channel-BPSK

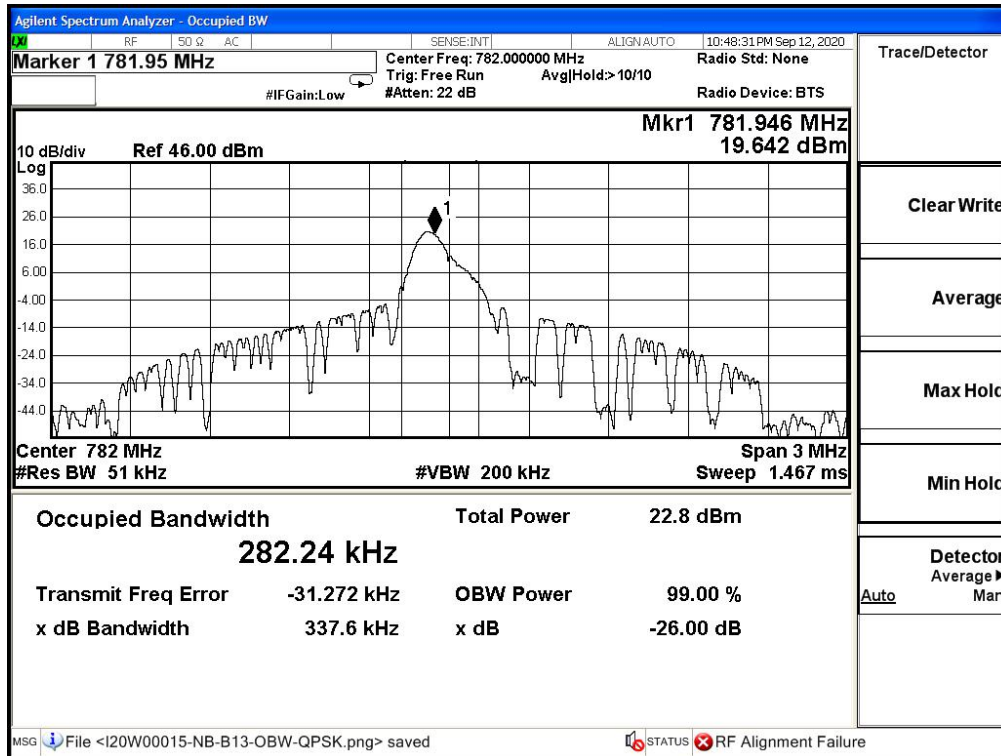


Band12-99% OBW-23095 Channel-QPSK

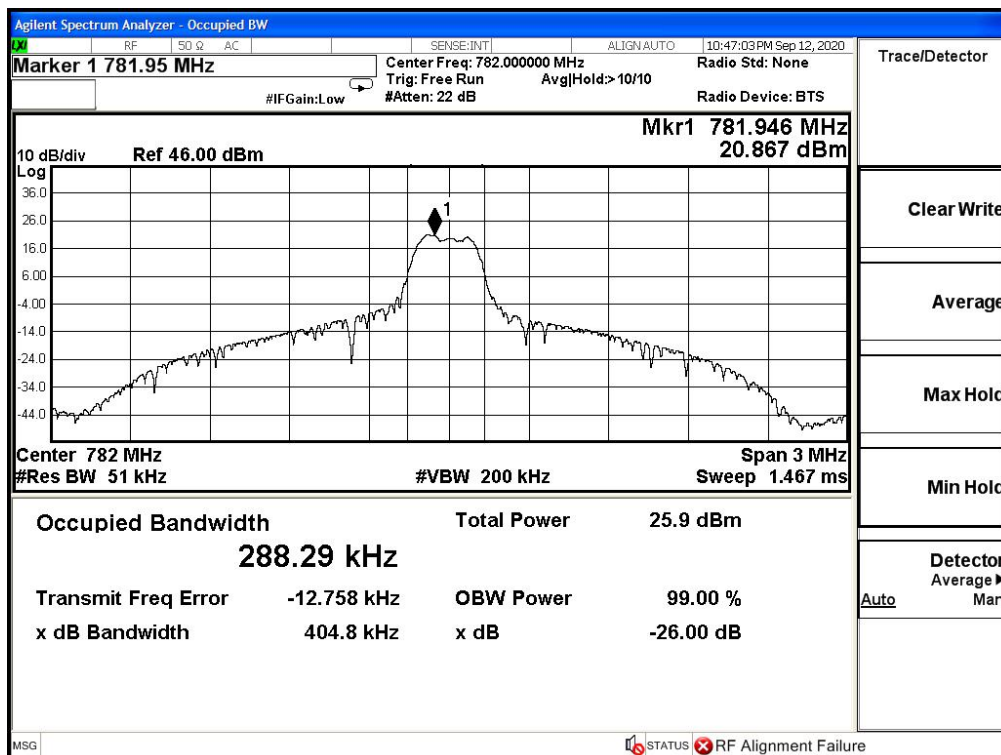
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Band13-26dB OBW-23230 Channel-BPSK

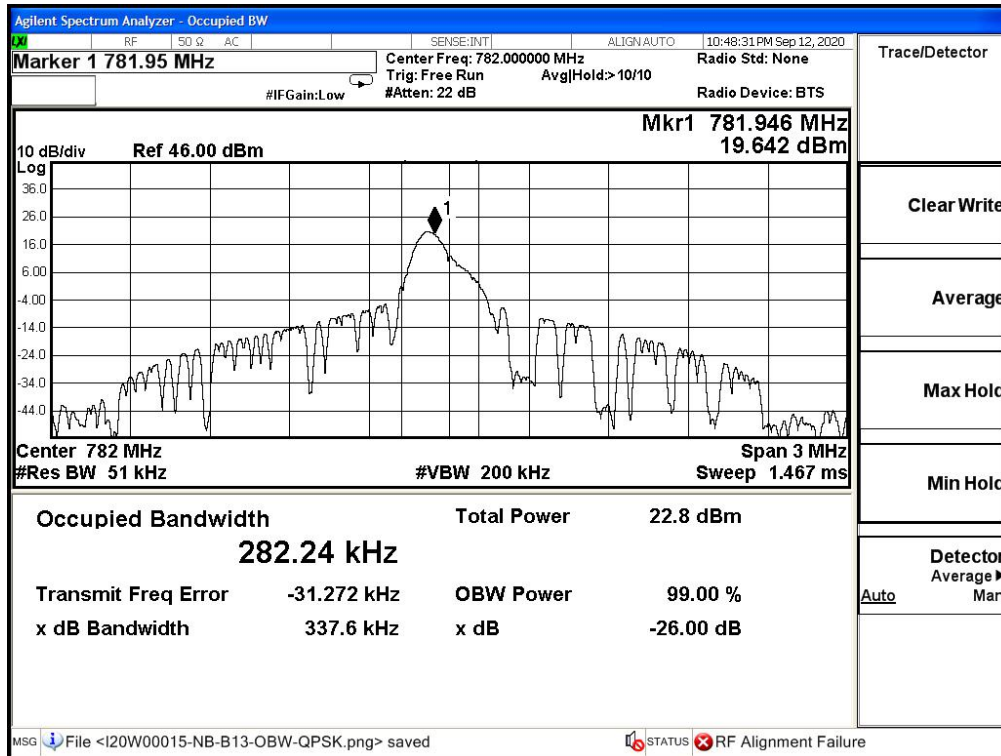


Band13-26dB OBW-23230 Channel-QPSK

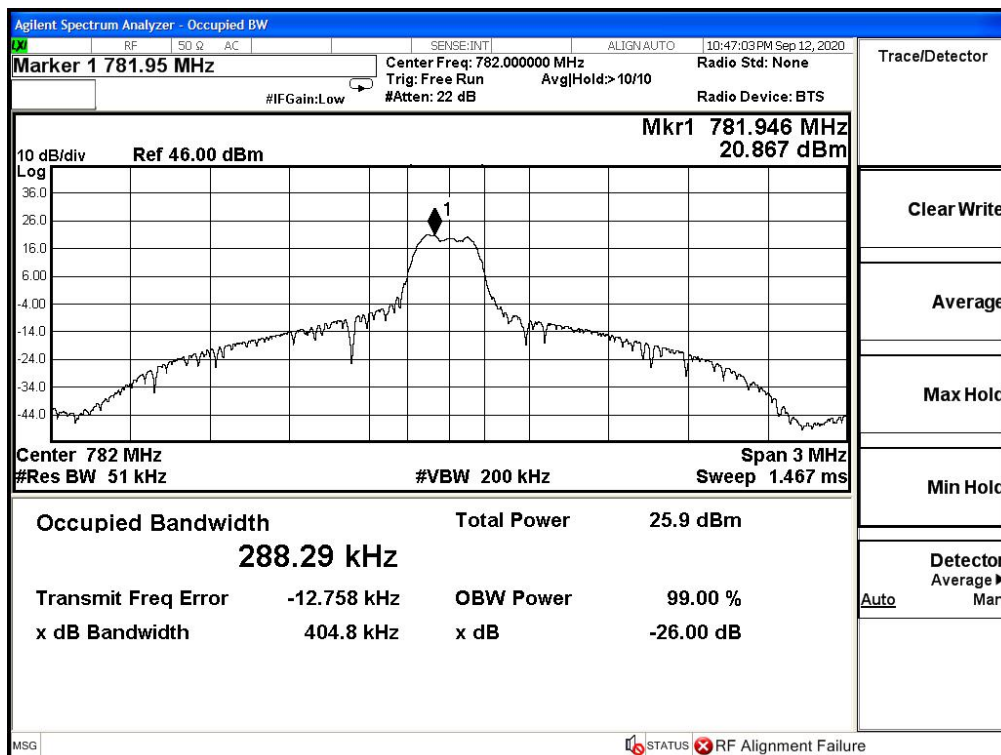
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Band13-99% OBW-23230 Channel-BPSK

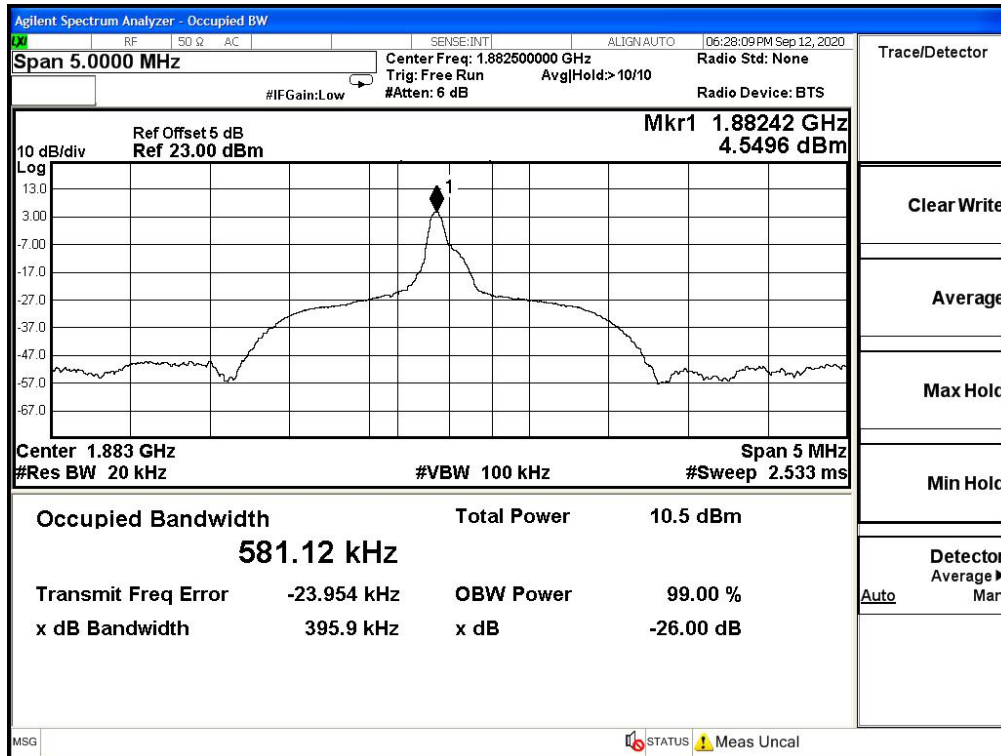


Band13-99% OBW-23095 Channel-QPSK

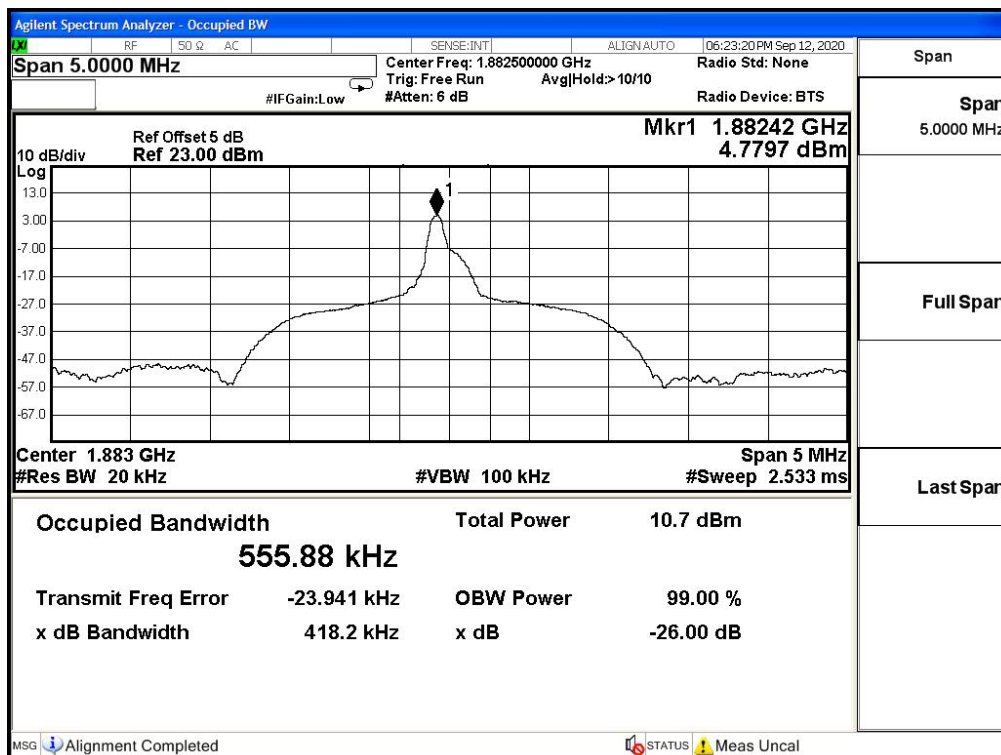
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Band25-26dB OBW-26365 Channel-BPSK

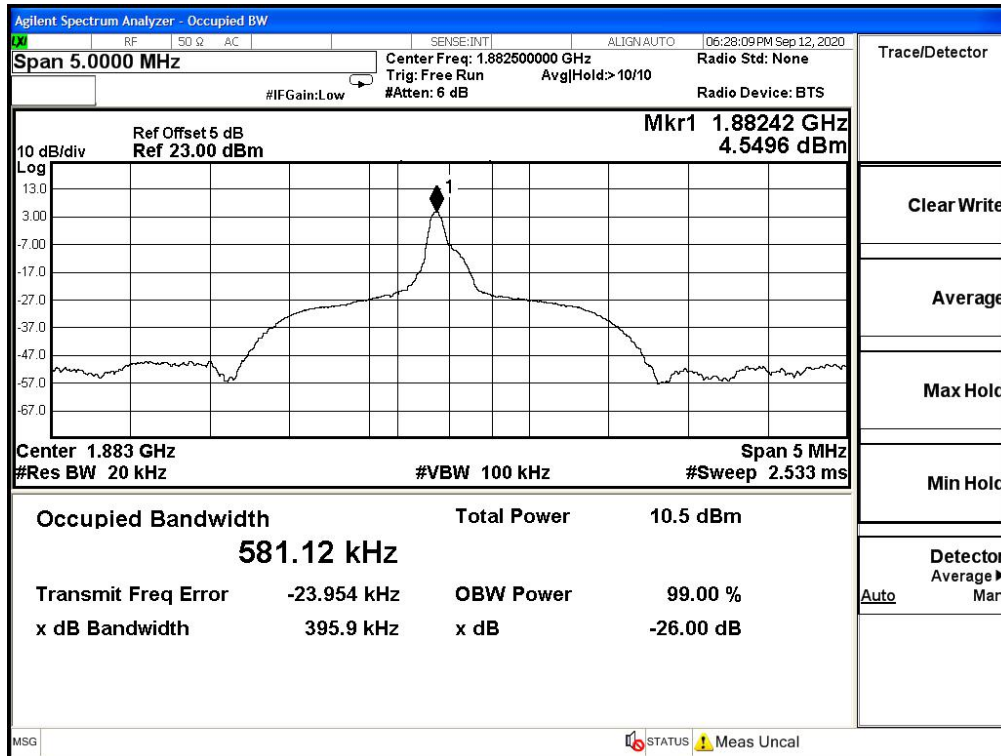


Band25-26dB OBW-26365 Channel-QPSK

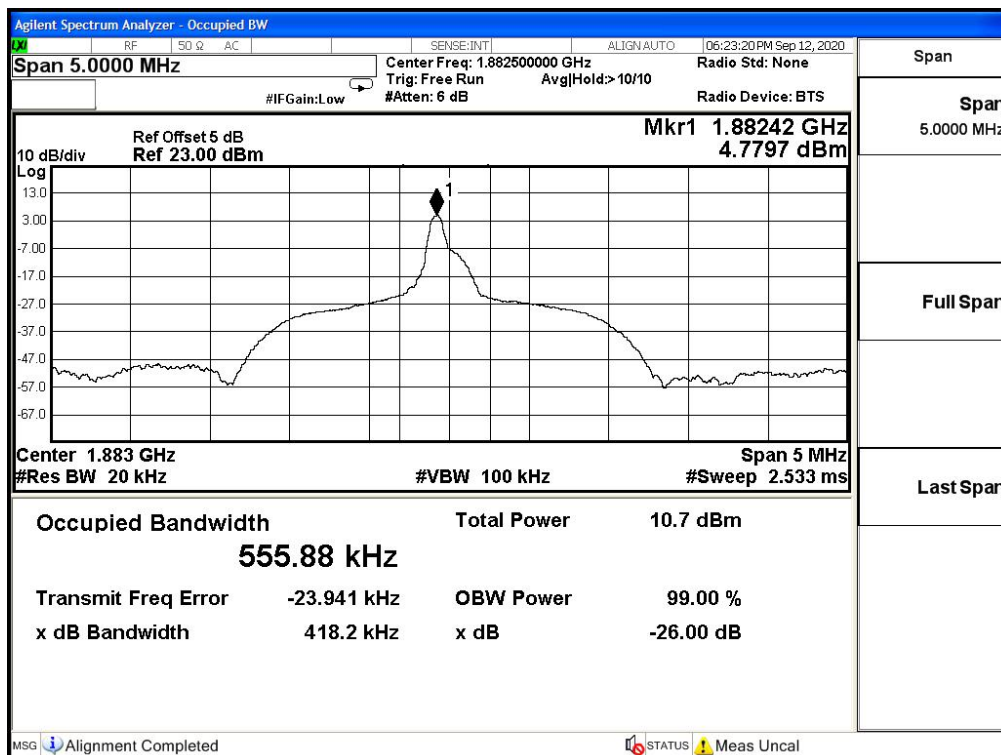
Chongqing Academy of Information and Communication Technology

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Band25-99% OBW-26365 Channel-BPSK

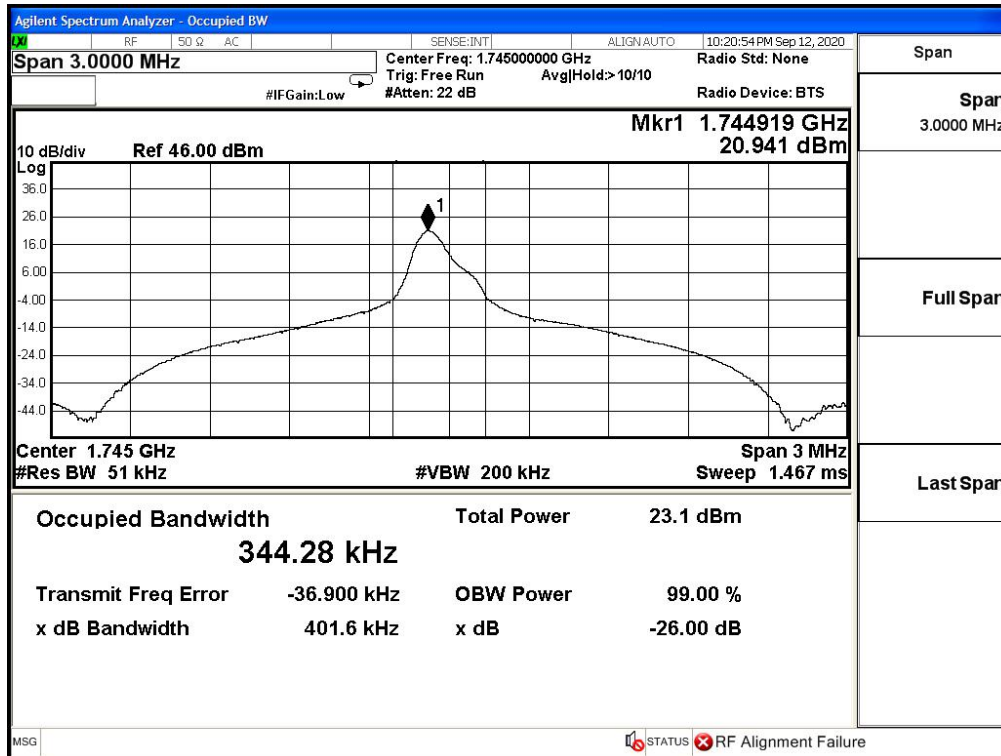


Band25-99% OBW-26365 Channel-QPSK

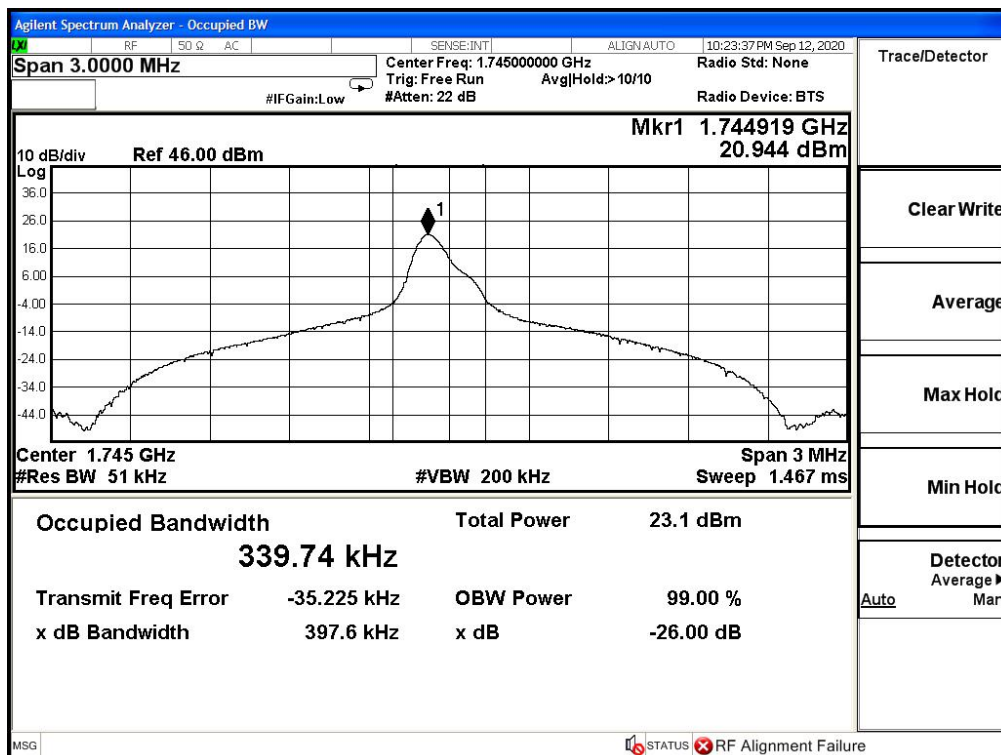
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Band66-26dB OBW-132322 Channel-BPSK

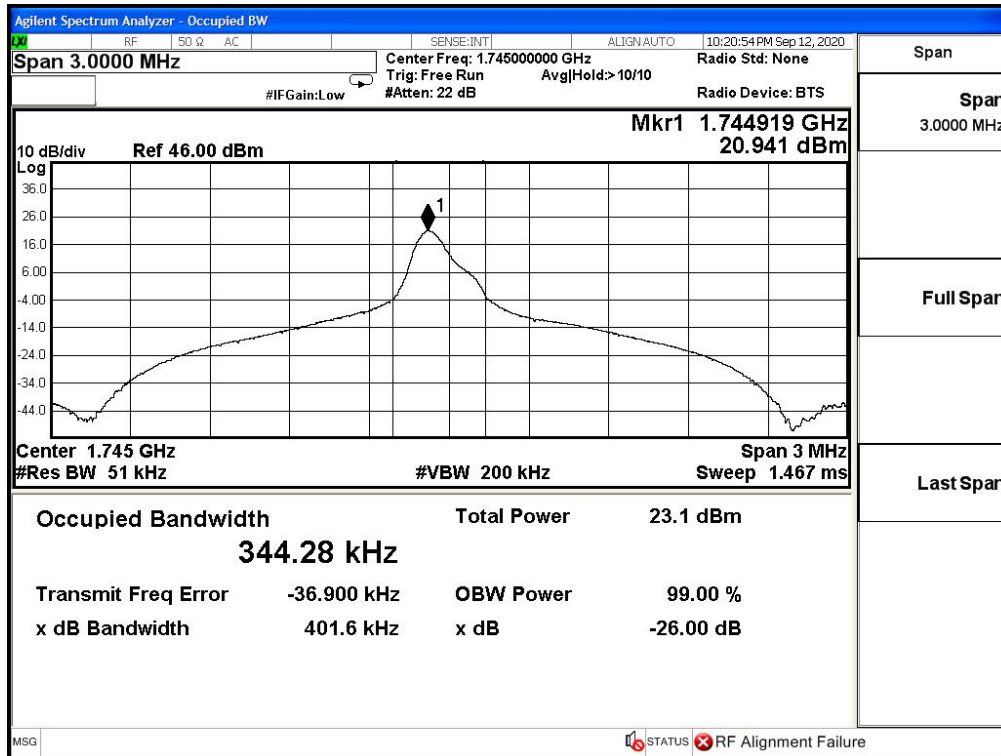


Band66-26dB OBW-132322 Channel-QPSK

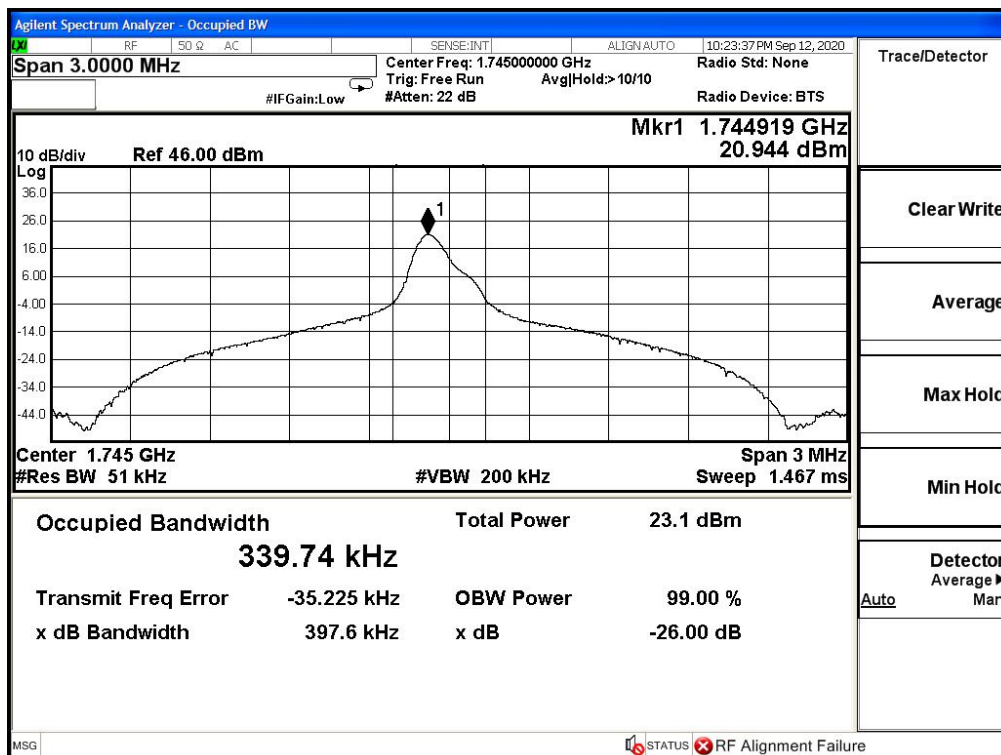
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Band66-99% OBW-132322 Channel-BPSK



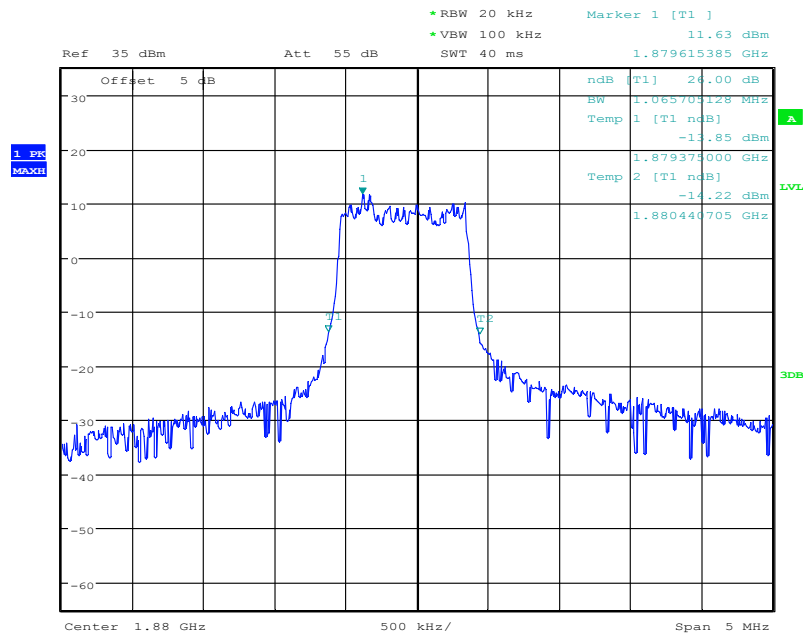
Band66-99% OBW-132322 Channel-QPSK

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

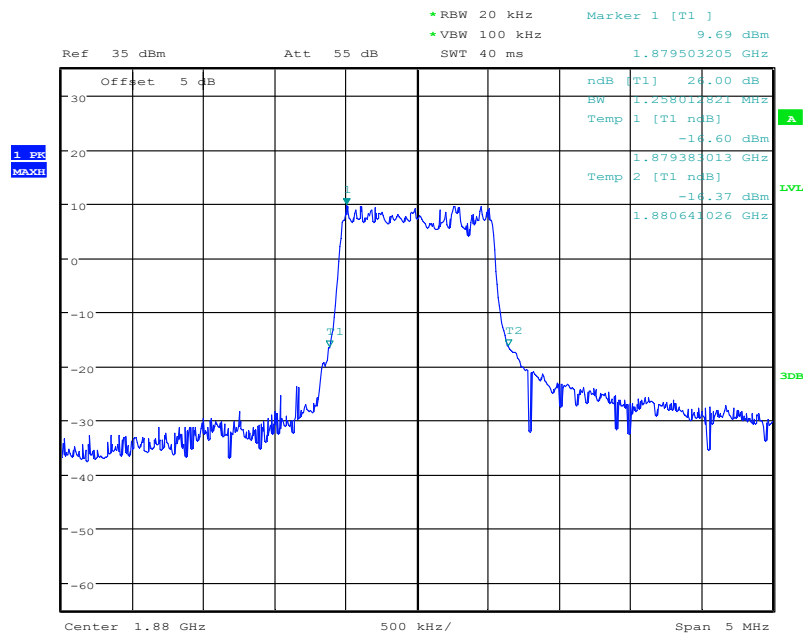
Report No.: I20W00014-WWAN_Rev2

Graphical results for CAT-M:



Date: 1.SEP.2020 22:02:54

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



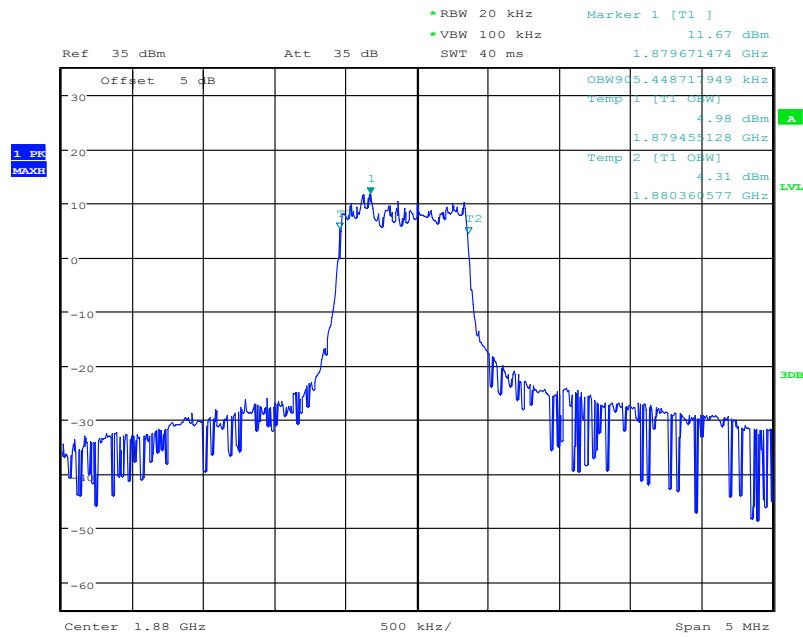
Date: 1.SEP.2020 22:02:21

Band2-26dB OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

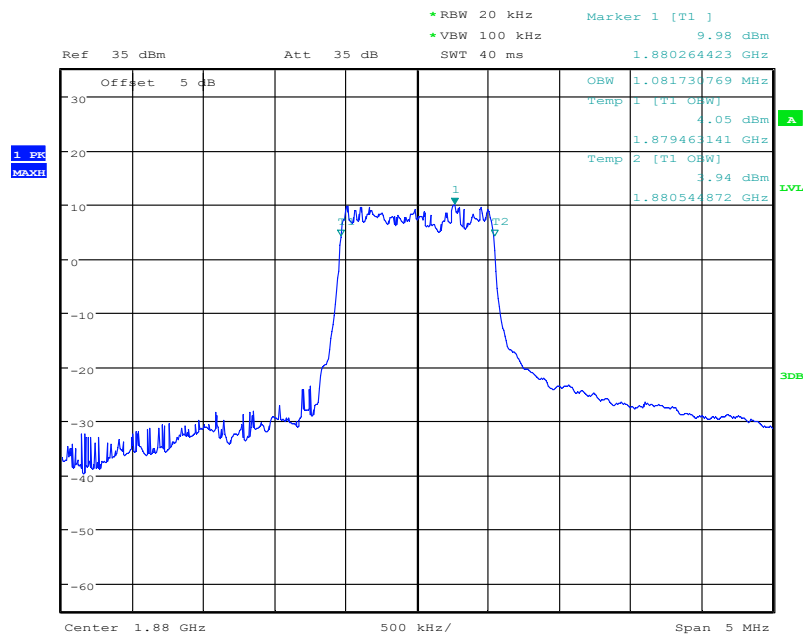
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:03:15

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



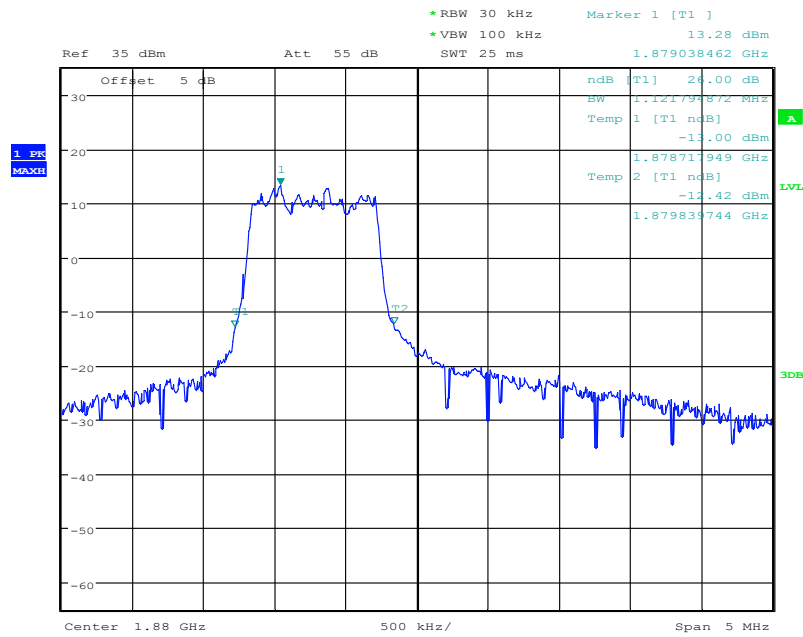
Date: 1.SEP.2020 22:01:48

Band2-99% OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

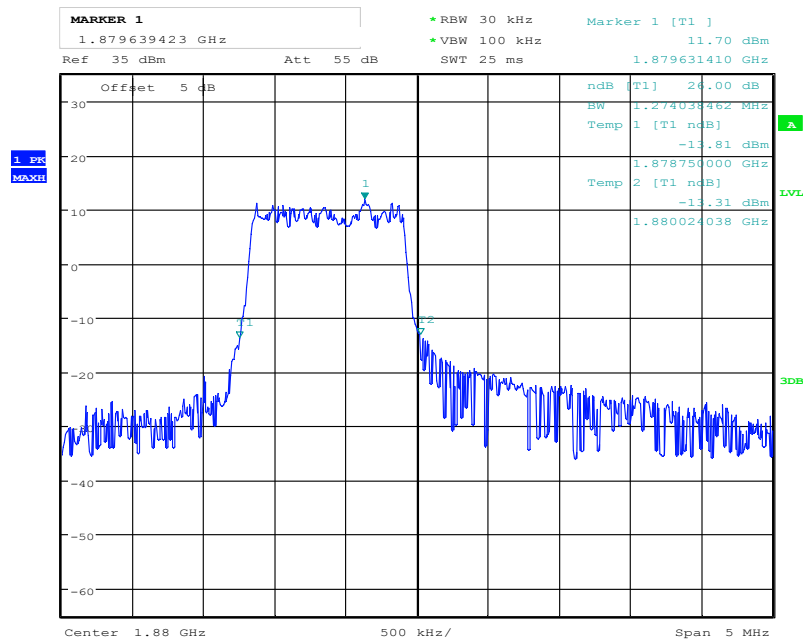
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:05:22

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



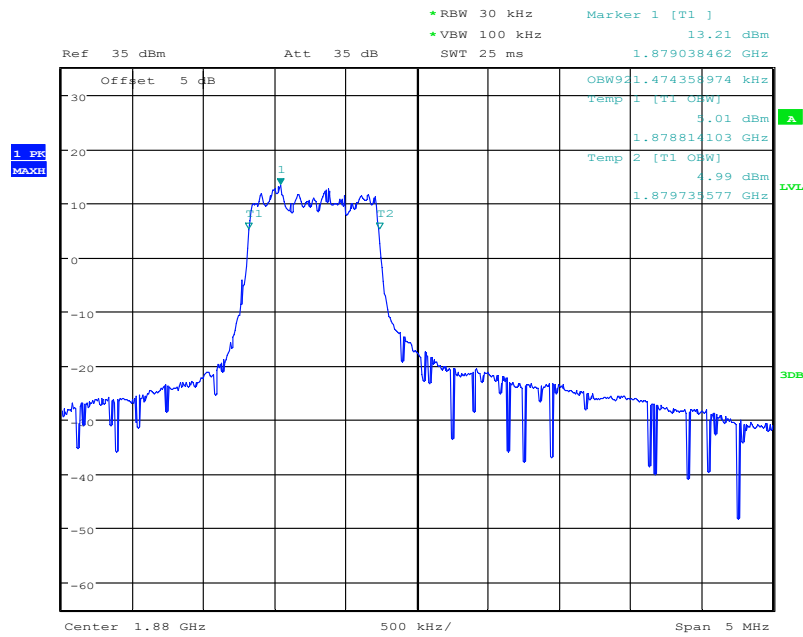
Date: 1.SEP.2020 22:04:45

Band2-26dB OBW-3MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

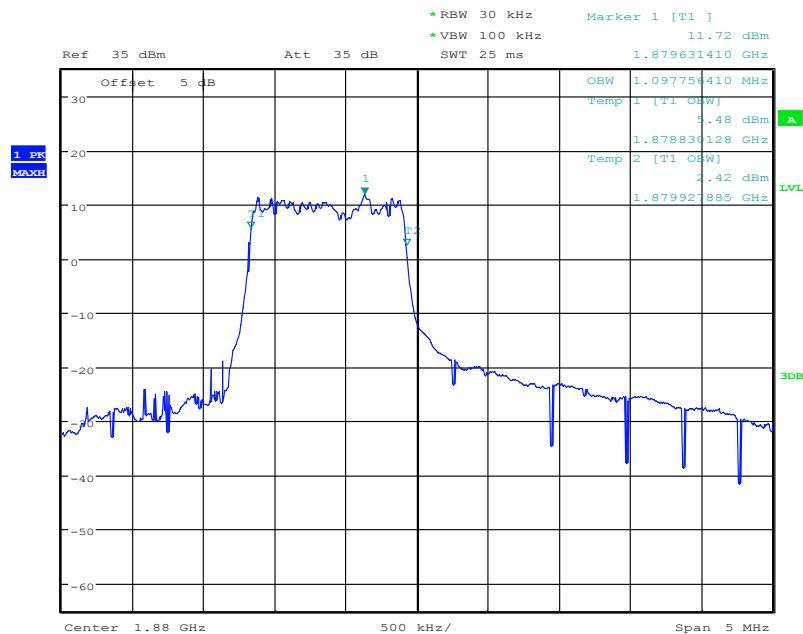
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:05:44

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



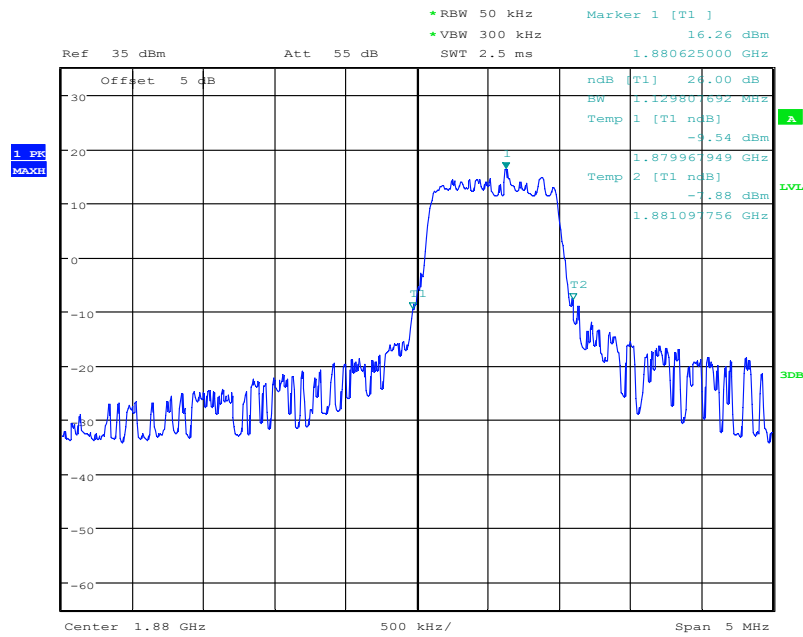
Date: 1.SEP.2020 22:04:32

Band2-99% OBW-3MHz Bandwidth-QPSK

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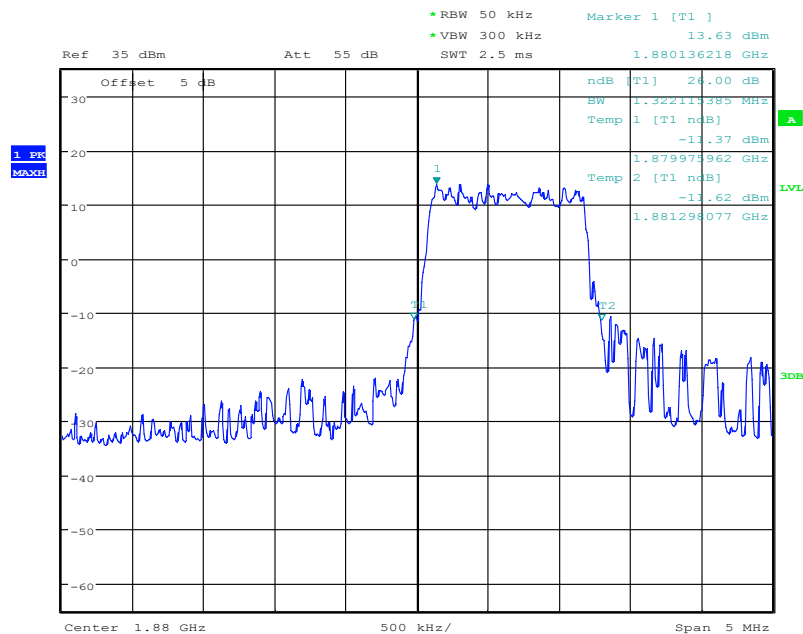
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:08:22

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



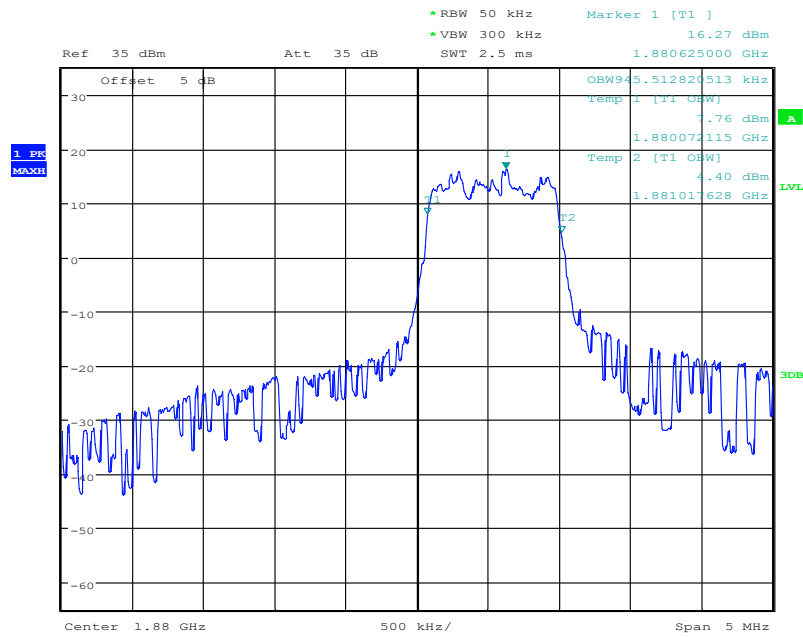
Date: 1.SEP.2020 22:07:58

Band2-26dB OBW-5MHz Bandwidth-QPSK

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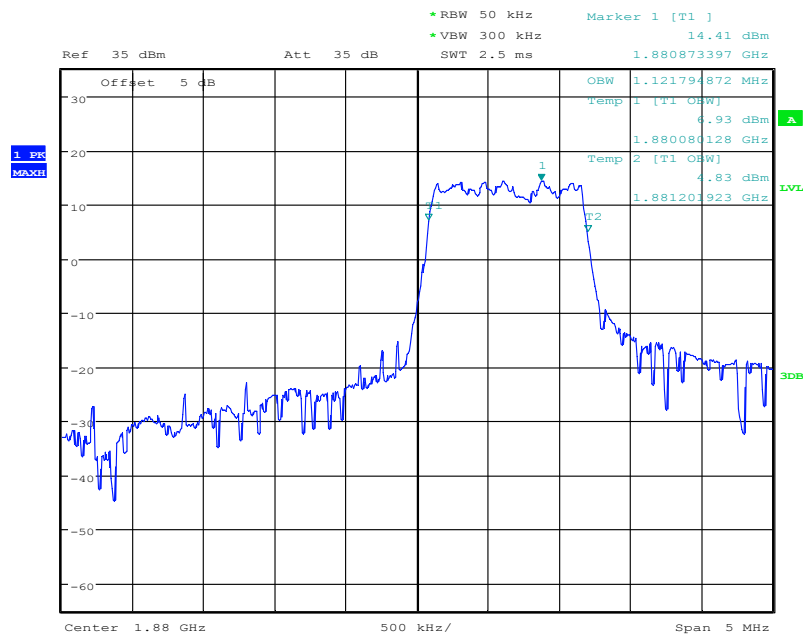
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:08:45

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



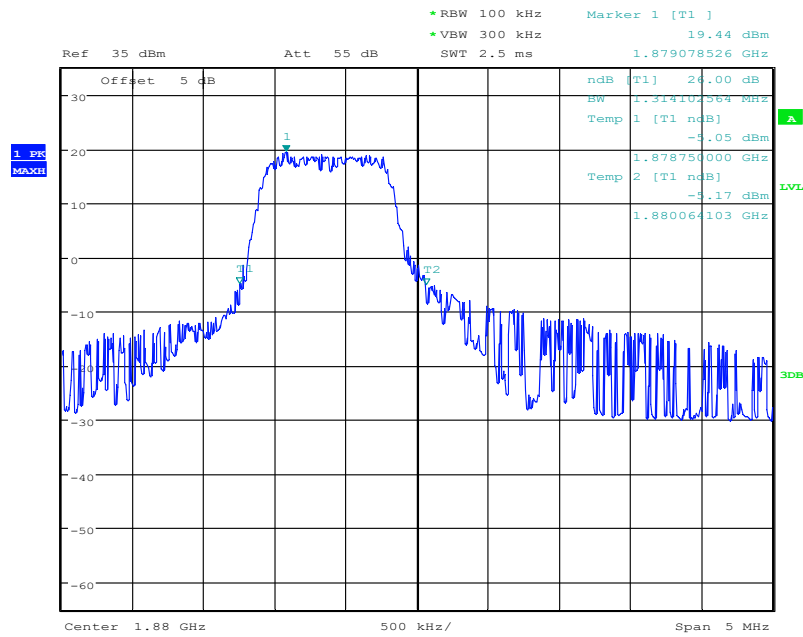
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Band2-99% OBW-5MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

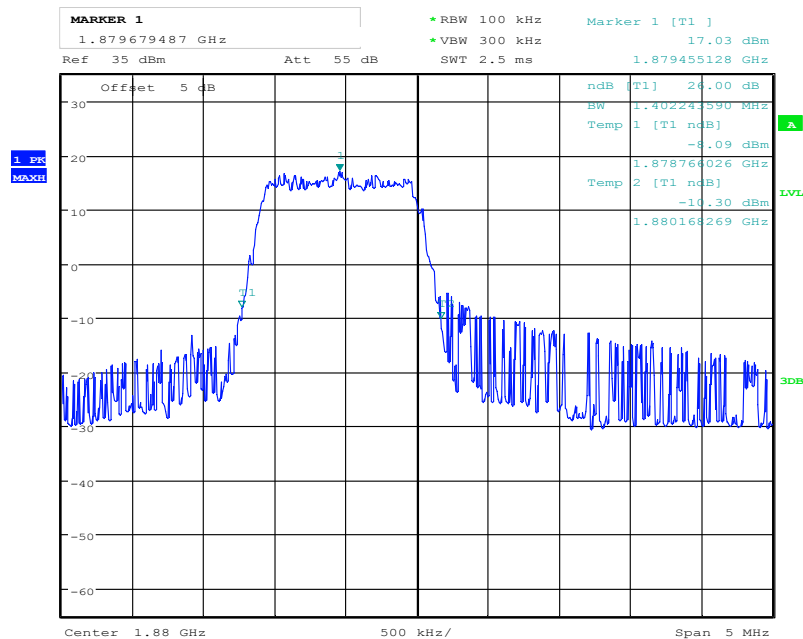
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:10:22

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



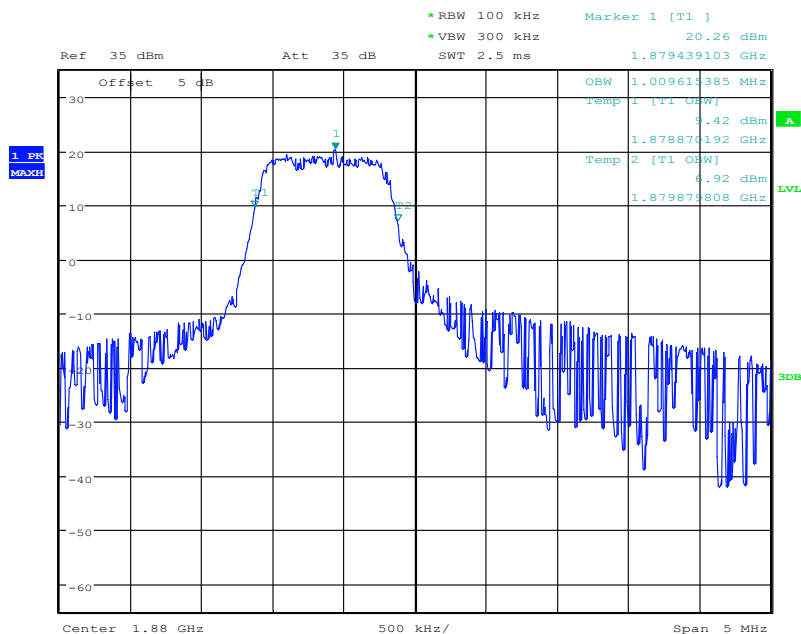
Date: 1.SEP.2020 22:09:56

Band2-26dB OBW-10MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

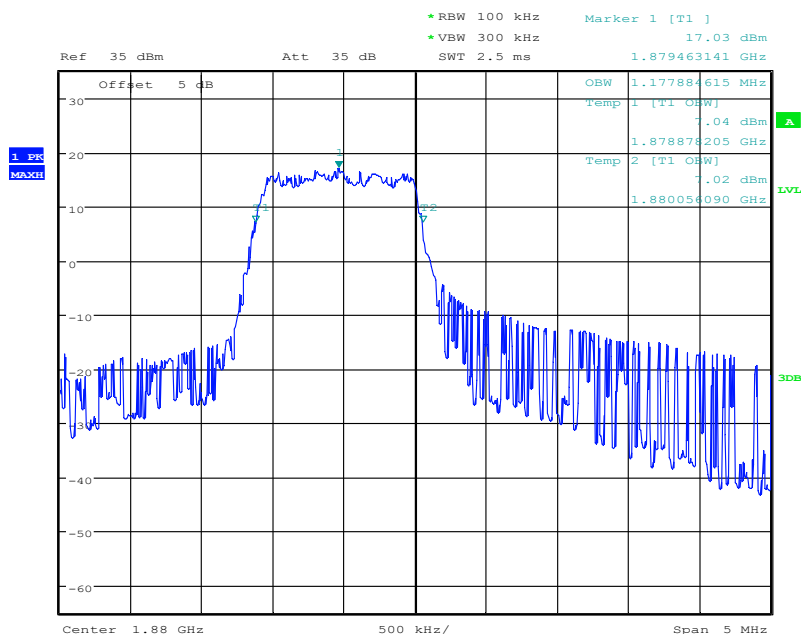
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:10:41

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



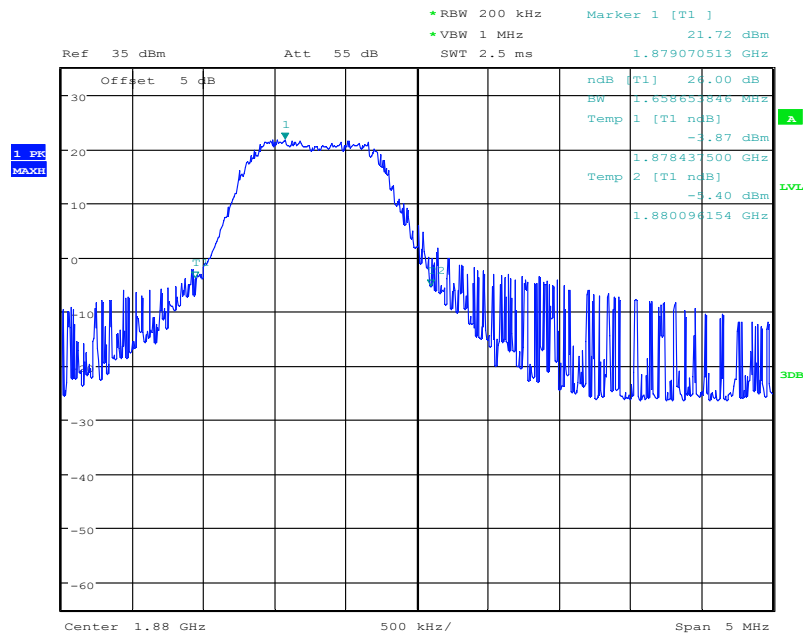
Date: 1.SEP.2020 22:09:40

Band2-99% OBW-10MHz Bandwidth-QPSK

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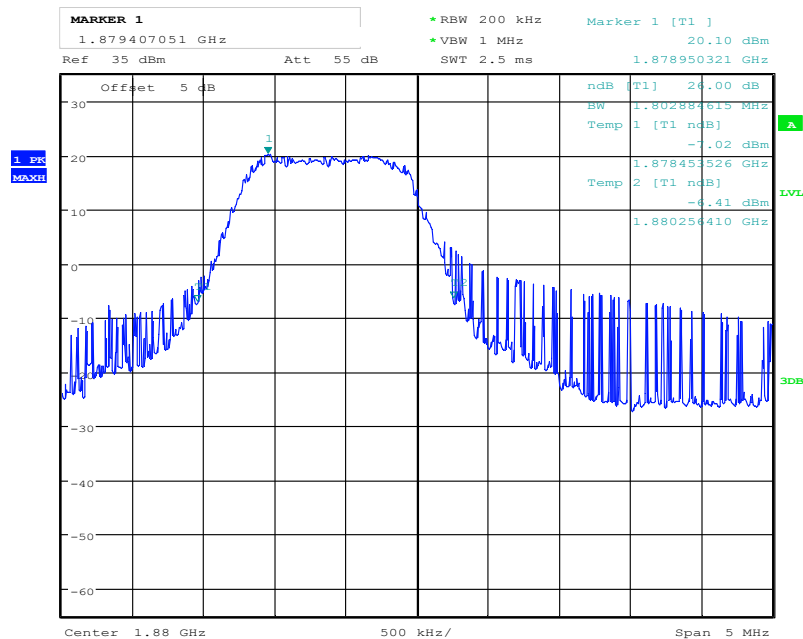
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:12:17

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



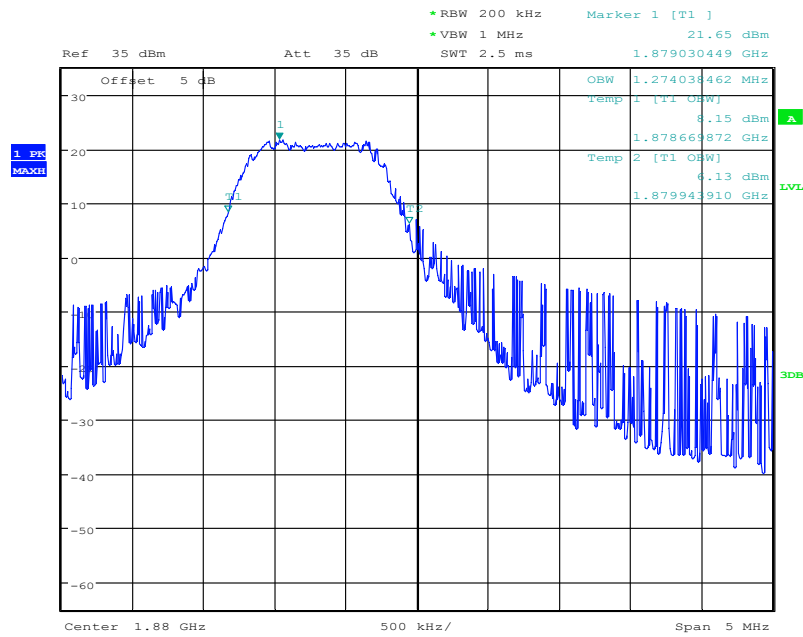
Date: 1.SEP.2020 22:11:53

Band2-26dB OBW-15MHz Bandwidth-QPSK

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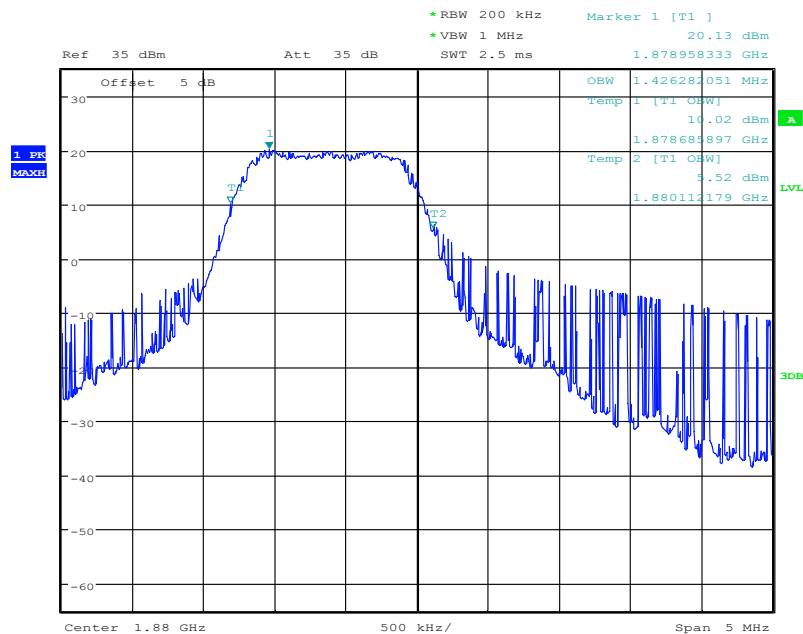
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:12:30

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



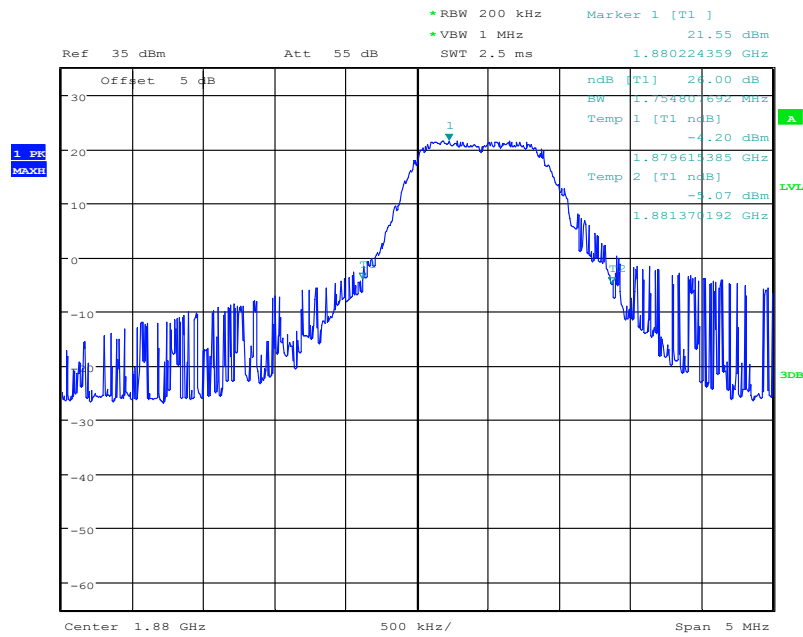
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Band2-99% OBW-15MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

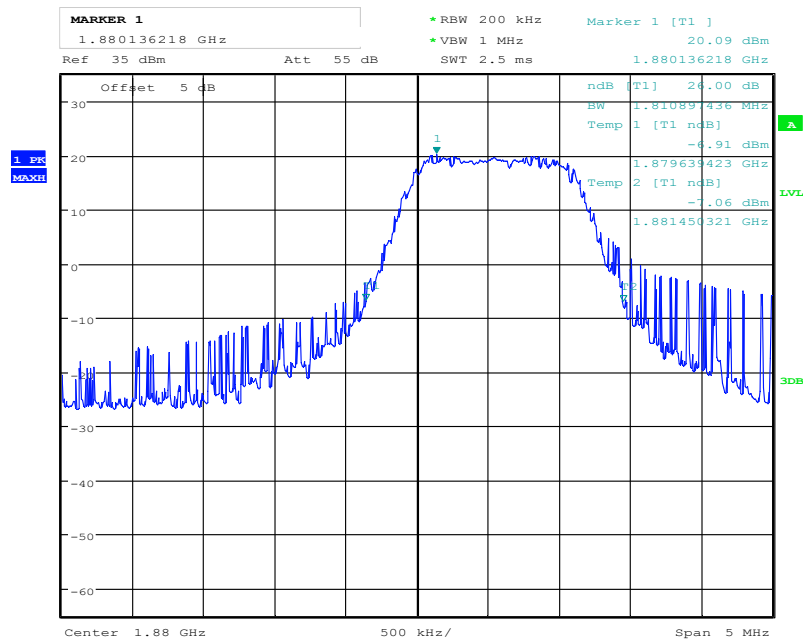
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:13:55

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



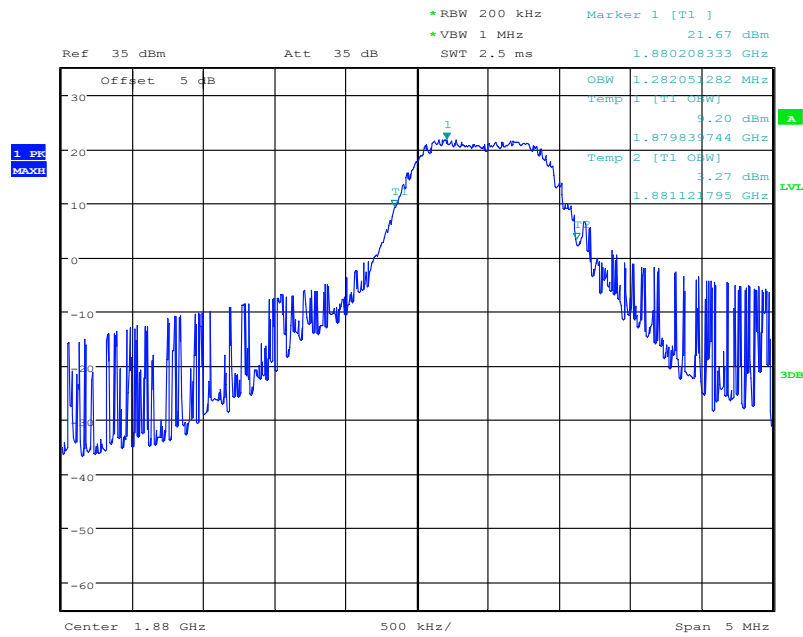
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Band2-26dB OBW-20MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

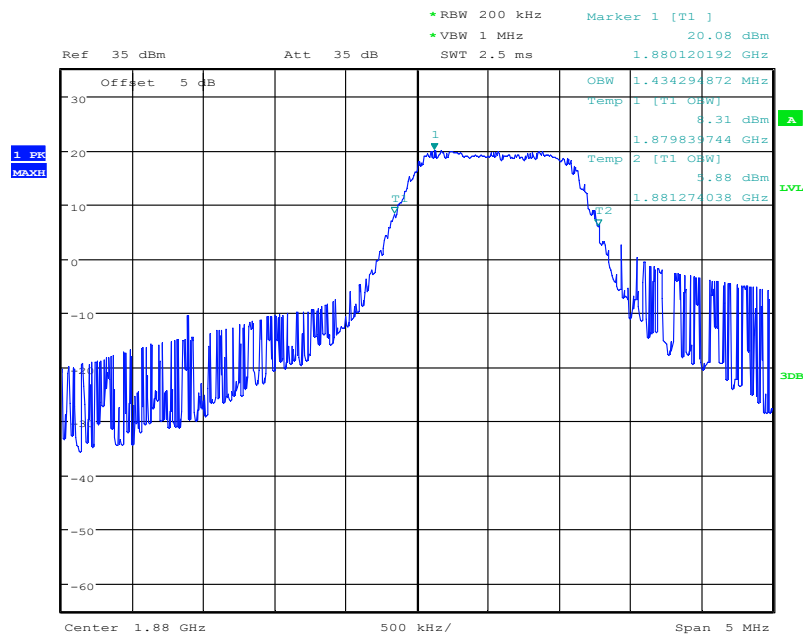
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:14:08

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



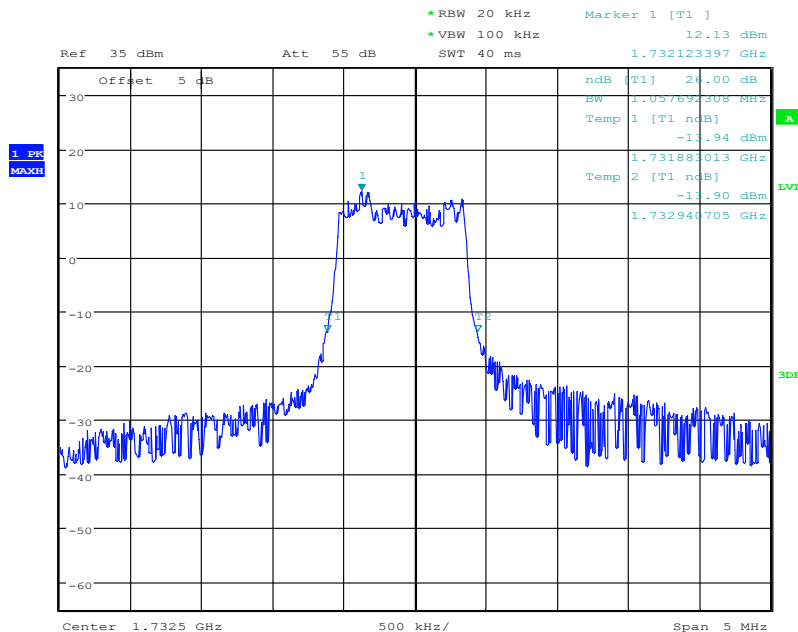
Date: 1.SEP.2020 22:13:22

Band2-99% OBW-20MHz Bandwidth-QPSK

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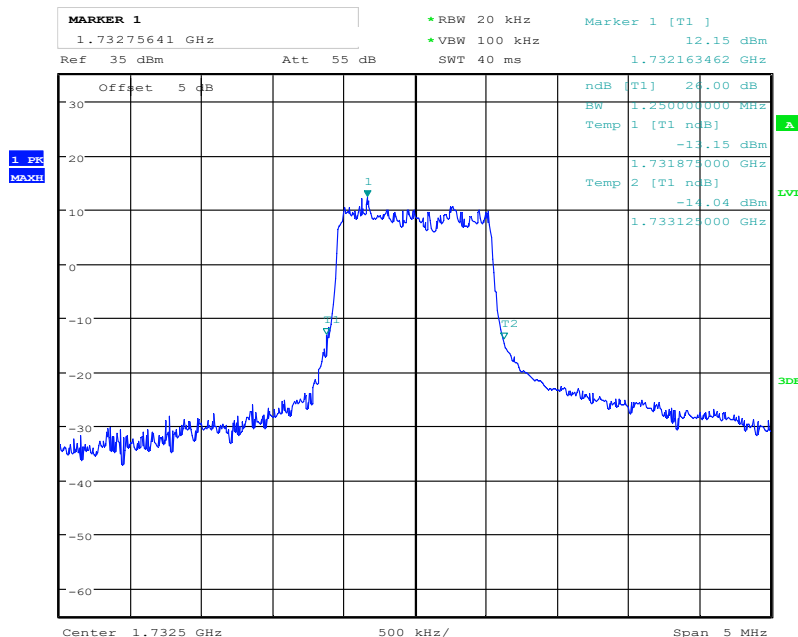
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:20:41

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



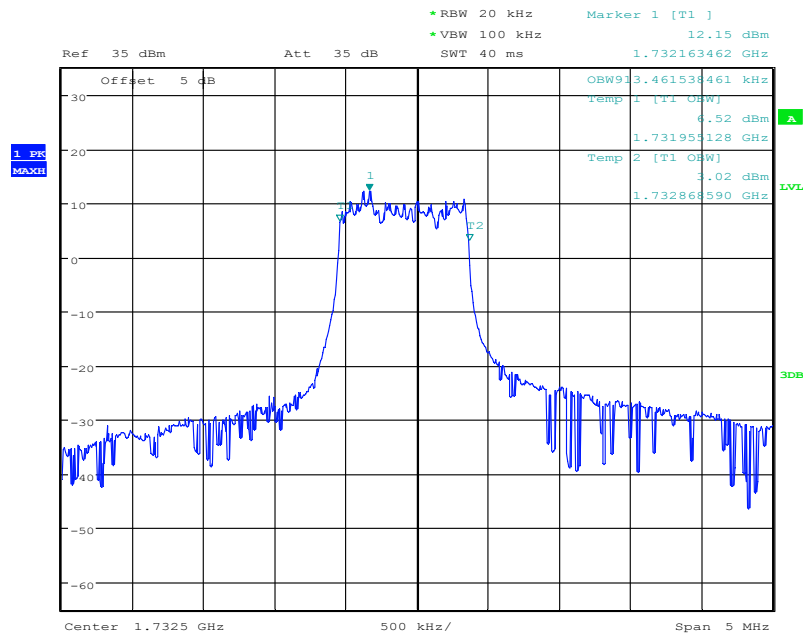
Date: 1.SEP.2020 22:20:26

Band4-26dB OBW-1.4MHz Bandwidth-QPSK

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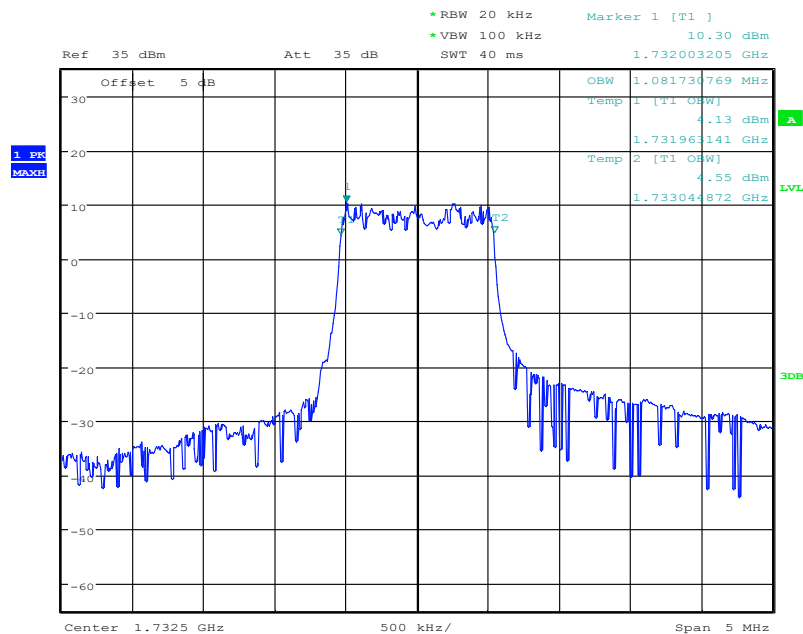
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:21:00

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



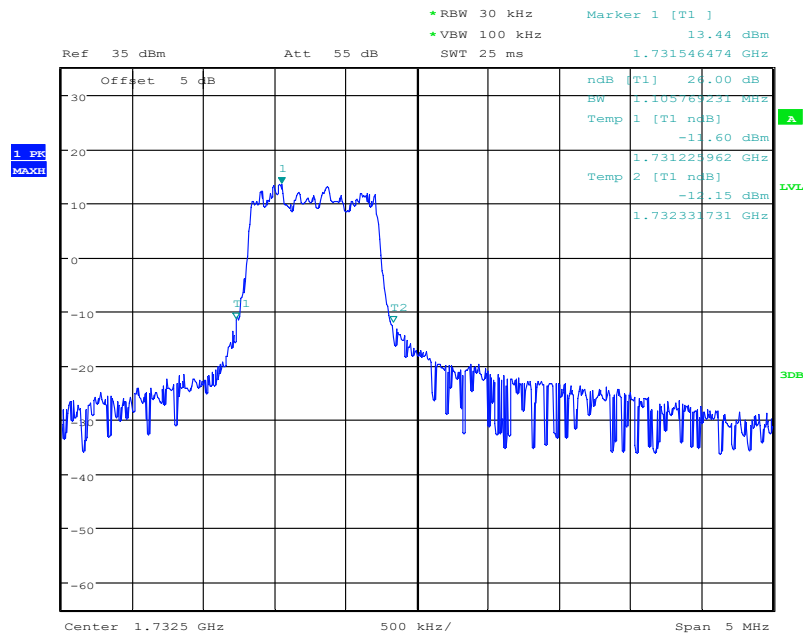
Date: 1.SEP.2020 22:19:46

Band4-99% OBW-1.4MHz Bandwidth-QPSK

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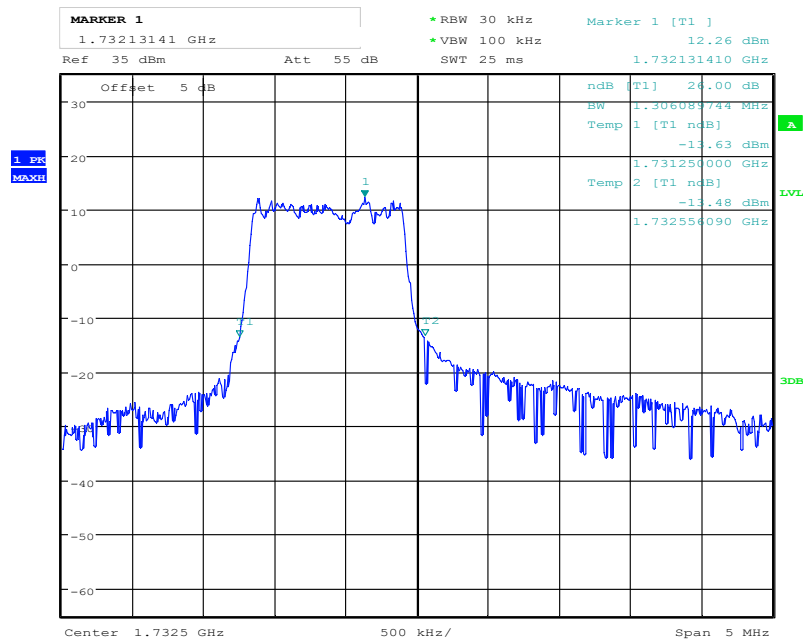
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:22:34

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



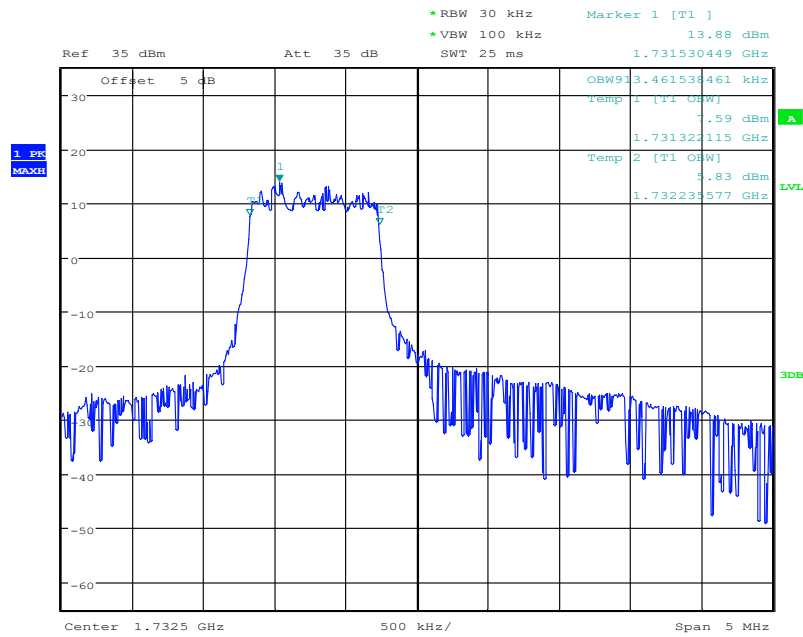
Date: 1.SEP.2020 22:22:08

Band4-26dB OBW-3MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

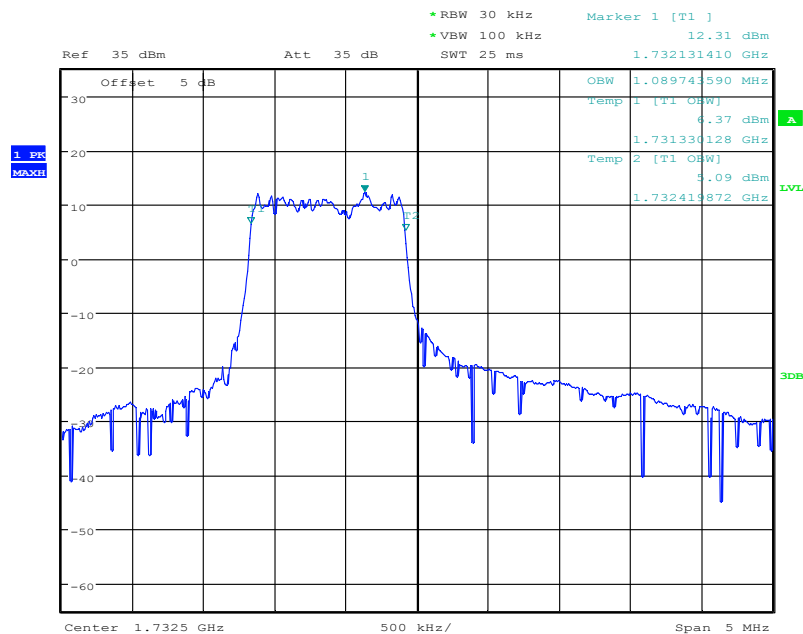
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:22:48

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



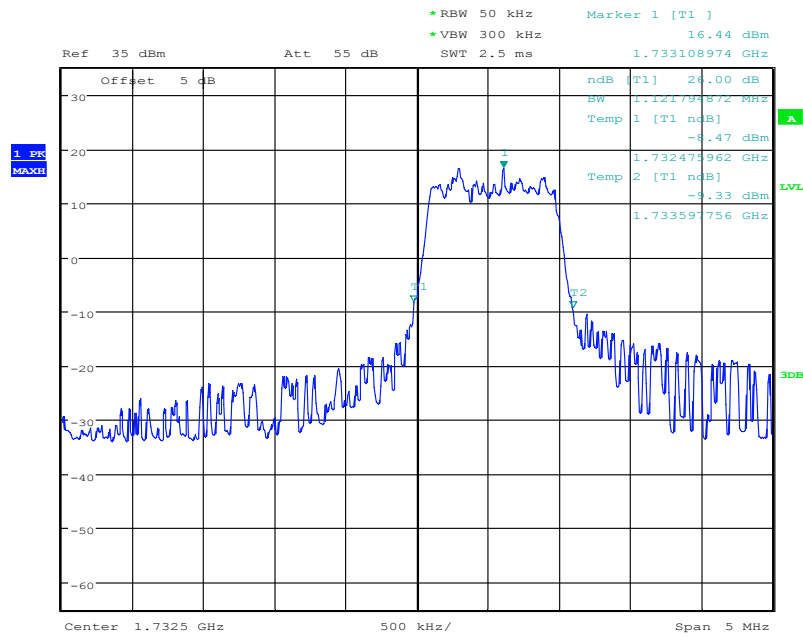
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Band4-99% OBW-3MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

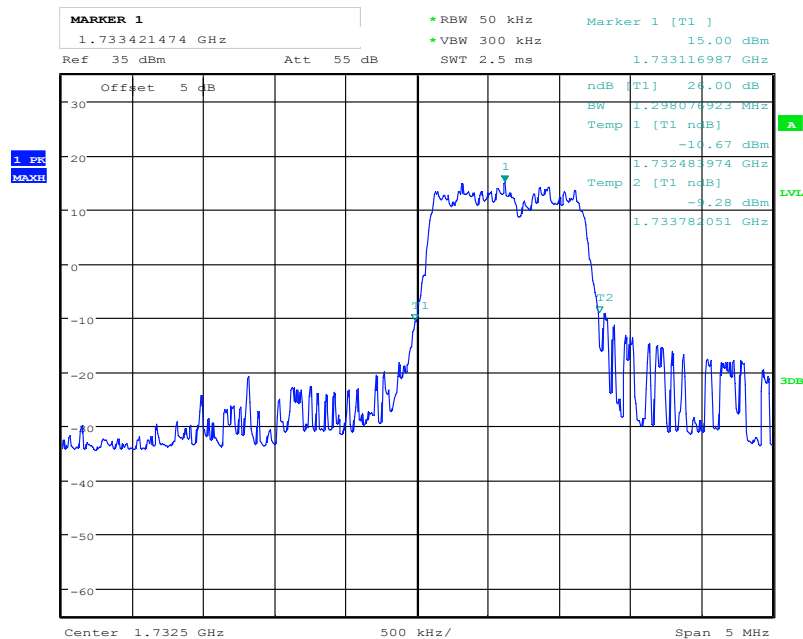
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:34:43

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



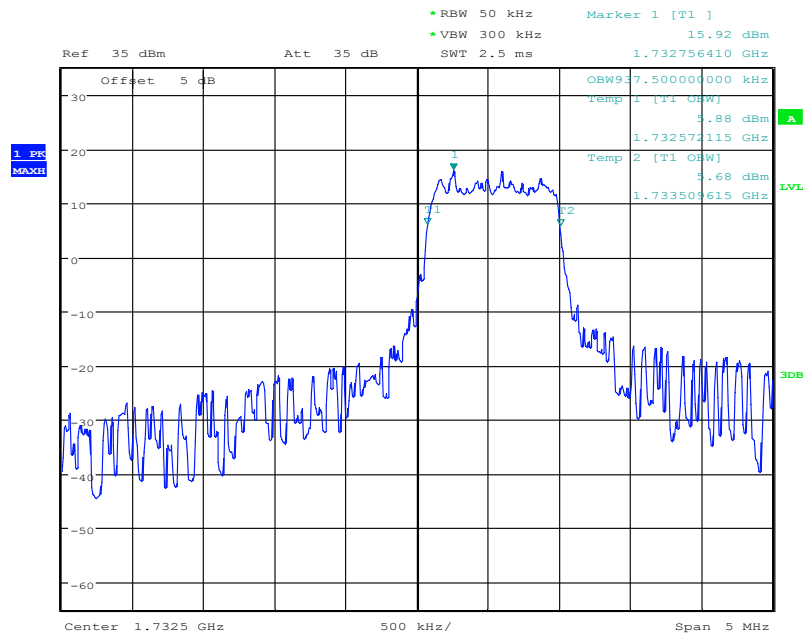
Date: 1.SEP.2020 22:34:21

Band4-26dB OBW-5MHz Bandwidth-QPSK

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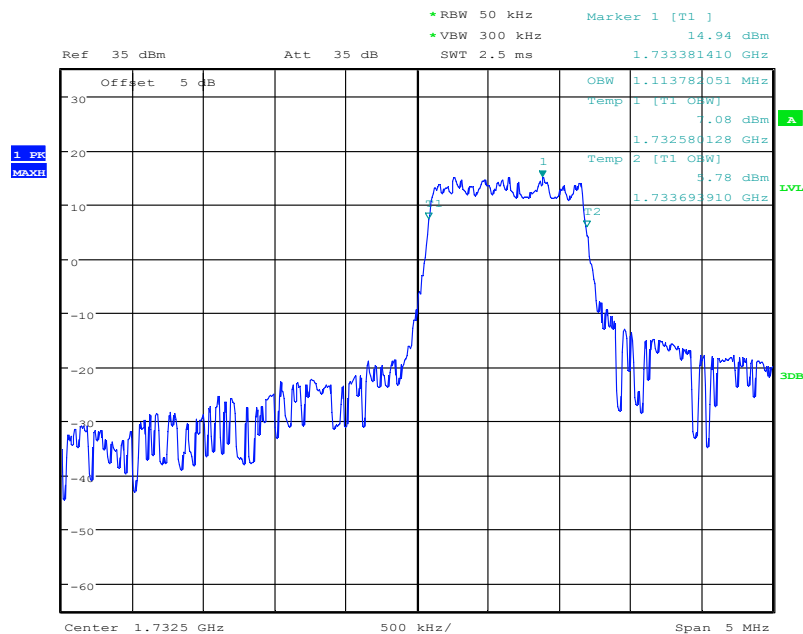
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:34:57

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



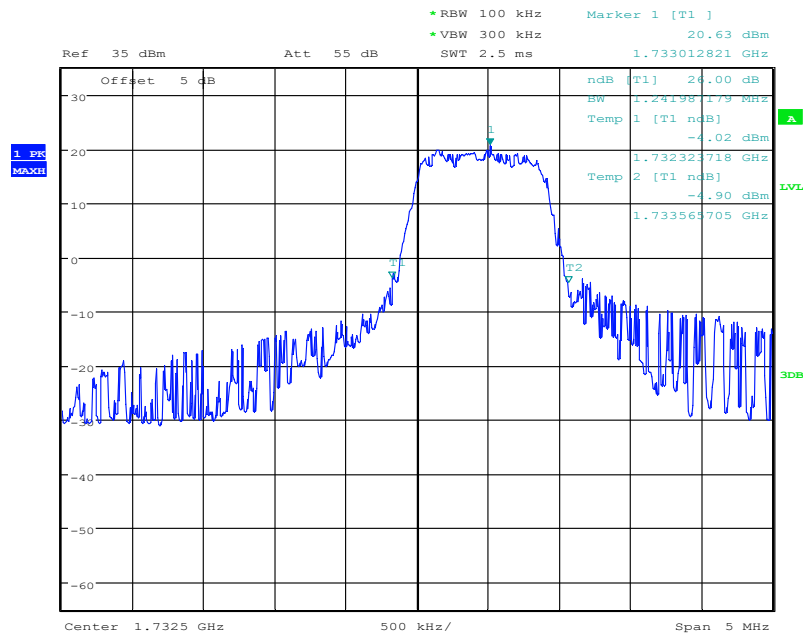
Date: 1.SEP.2020 22:34:09

Band4-99% OBW-5MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

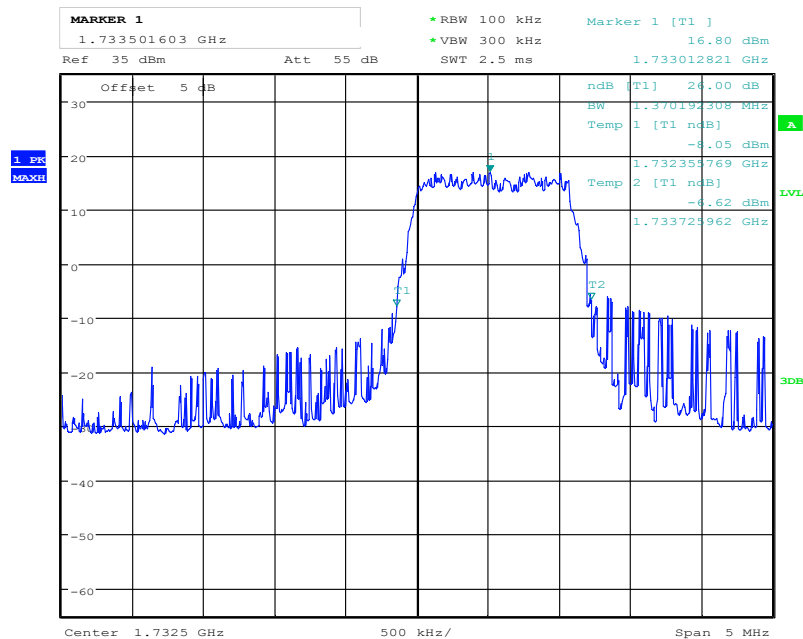
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:36:26

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



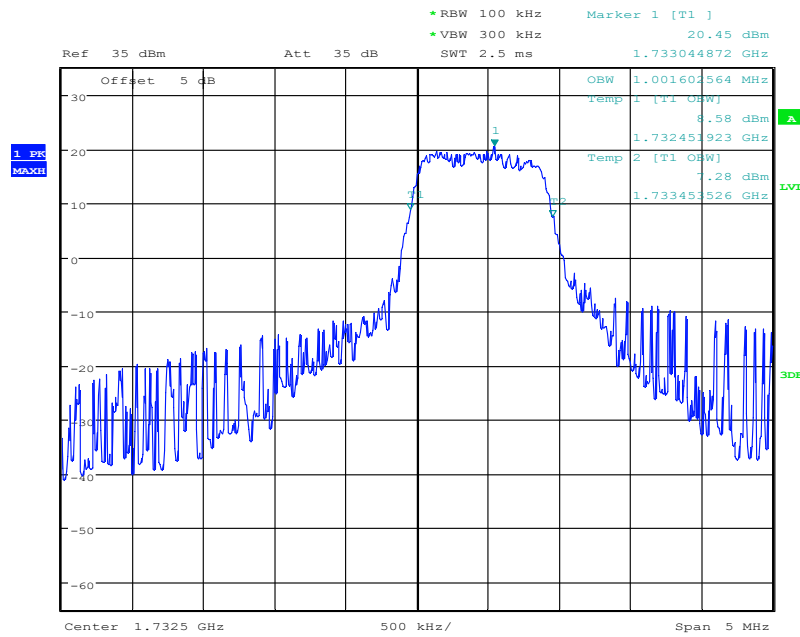
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Band4-26dB OBW-10MHz Bandwidth-QPSK

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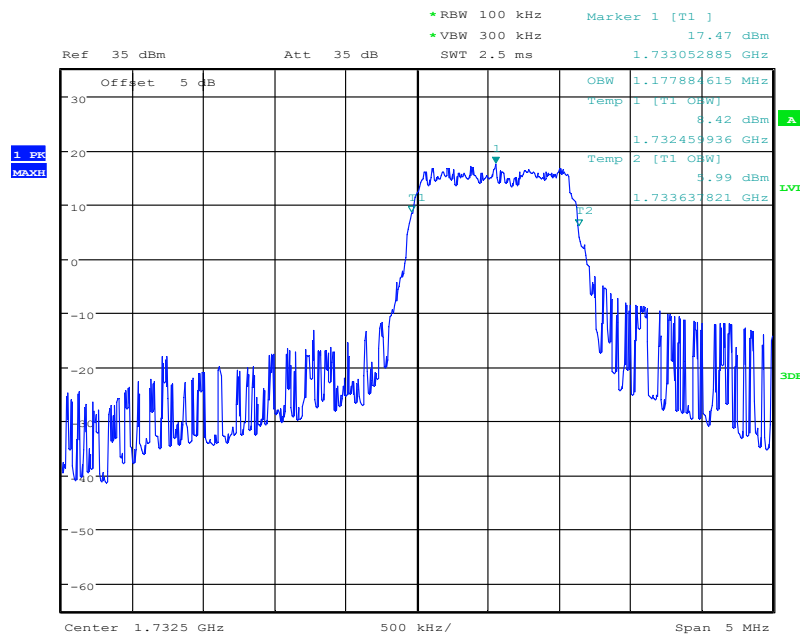
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:36:38

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



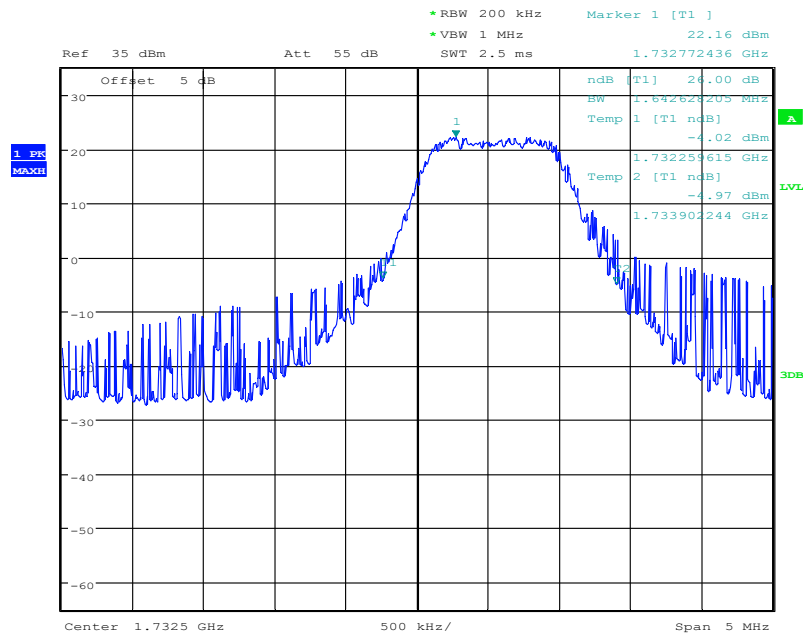
Date: 1.SEP.2020 22:35:56

Band4-99% OBW-10MHz Bandwidth-QPSK

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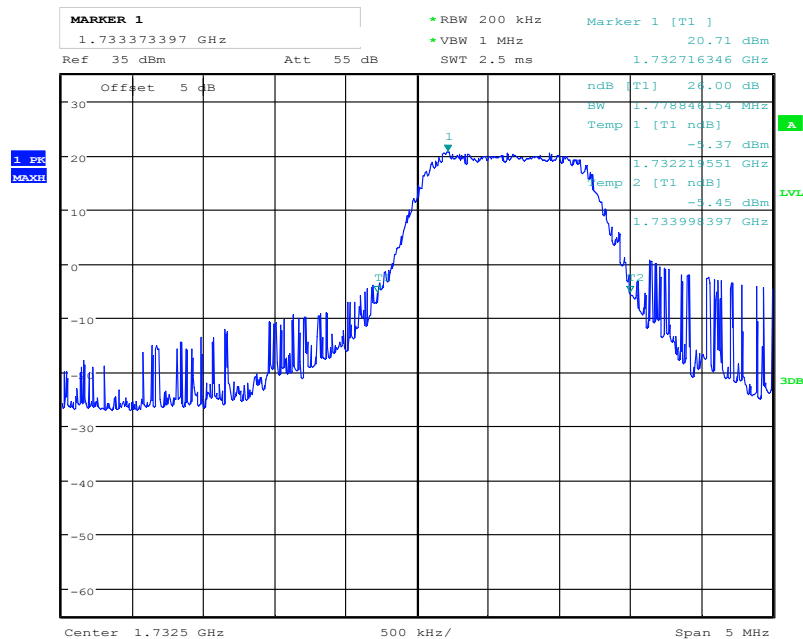
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:38:39

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



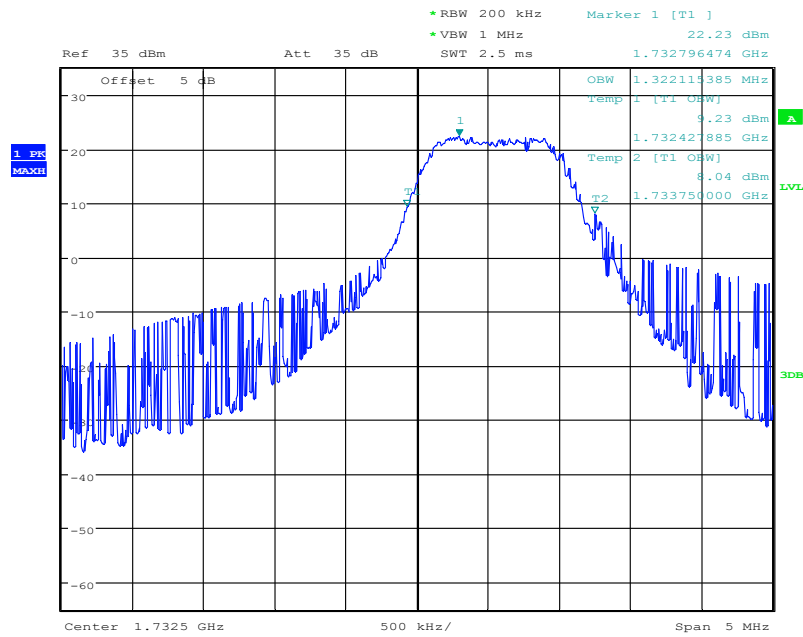
Date: 1.SEP.2020 22:38:18

Band4-26dB OBW-15MHz Bandwidth-QPSK

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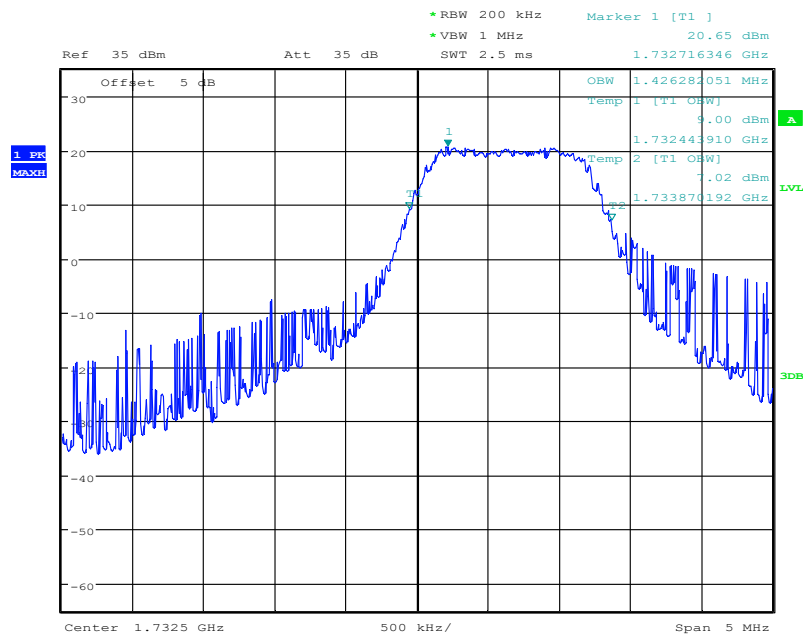
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:38:55

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



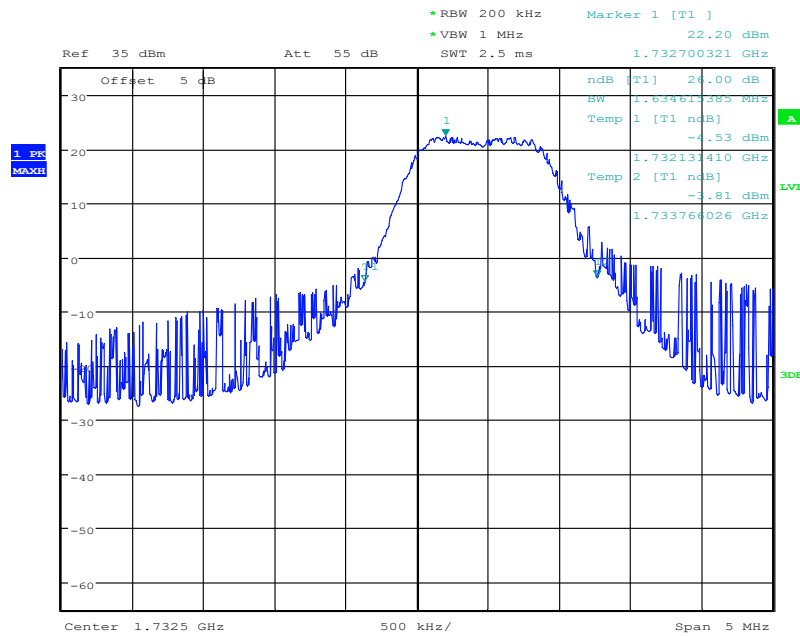
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Band4-99% OBW-15MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

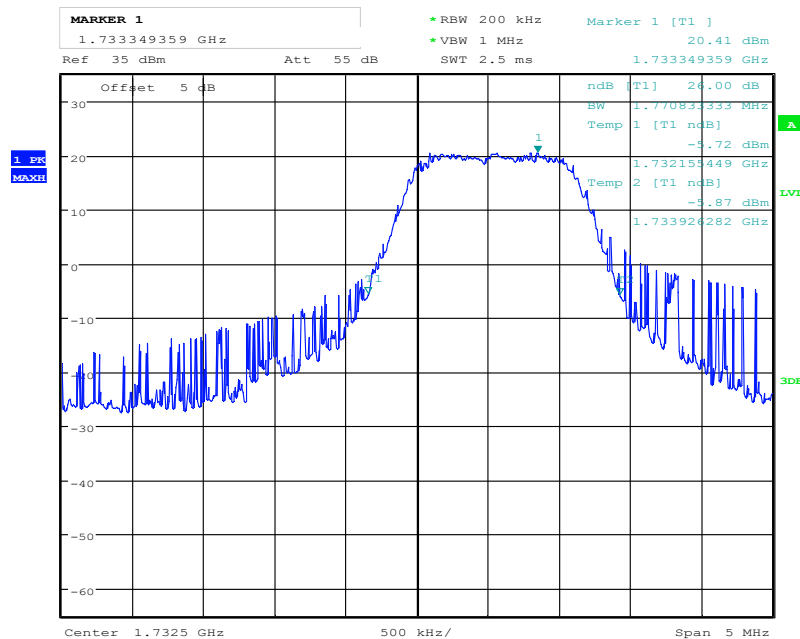
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:50:55

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



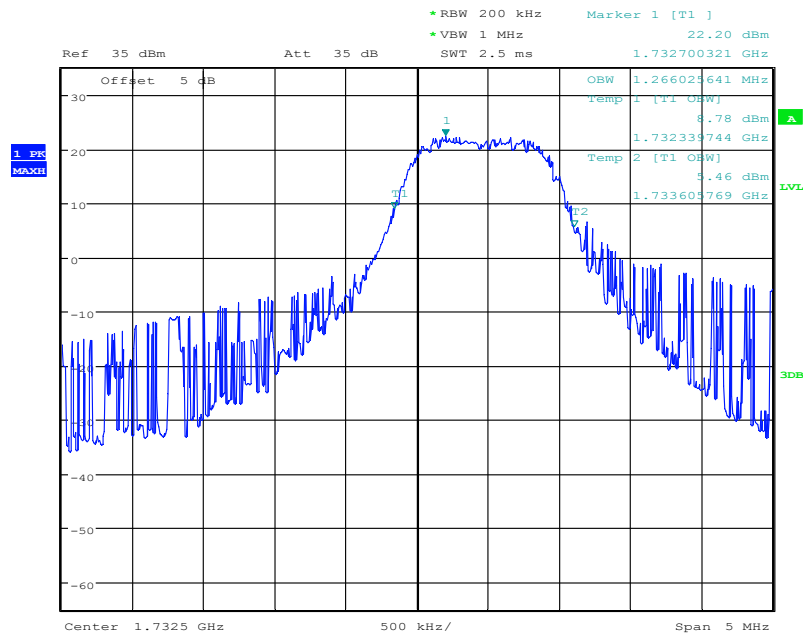
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Band4-26dB OBW-20MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

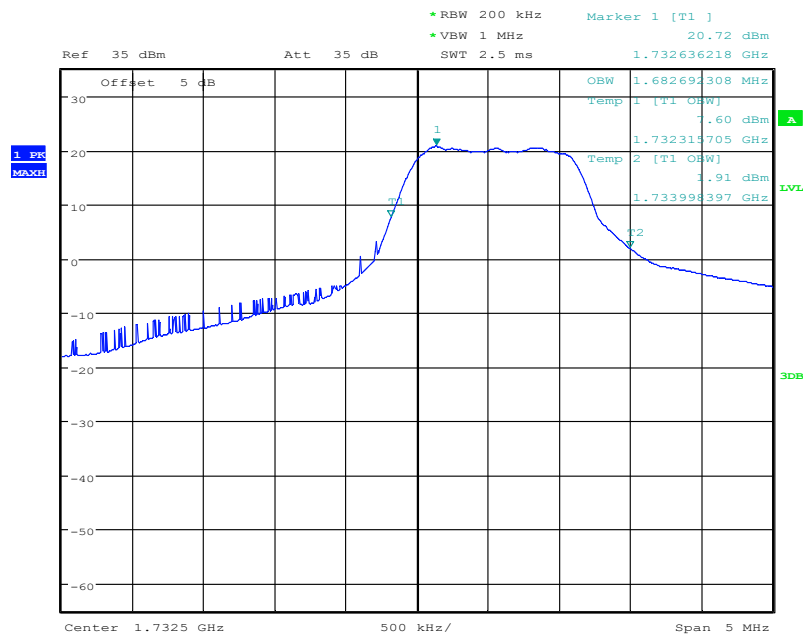
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:51:07

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



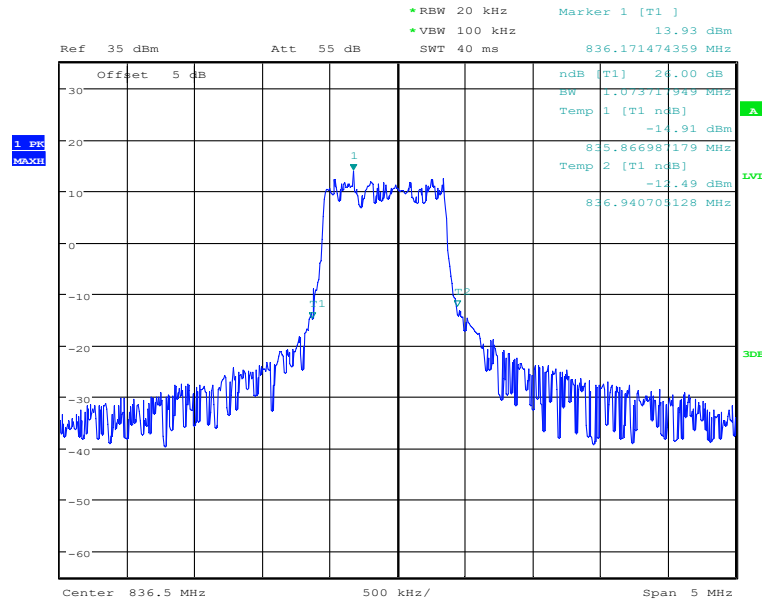
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Chongqing Academy of Information and Communication Technology

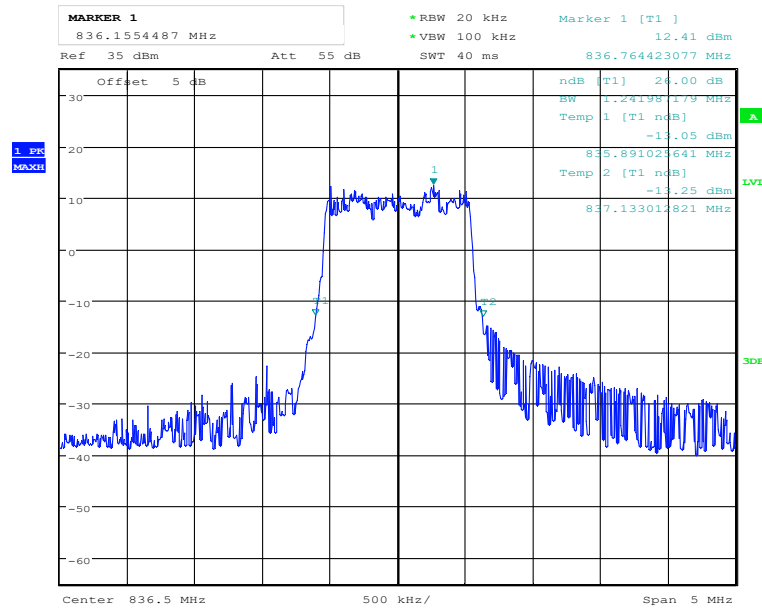
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:54:23

Band5-26dB OBW-1.4MHz Bandwidth-16QAM



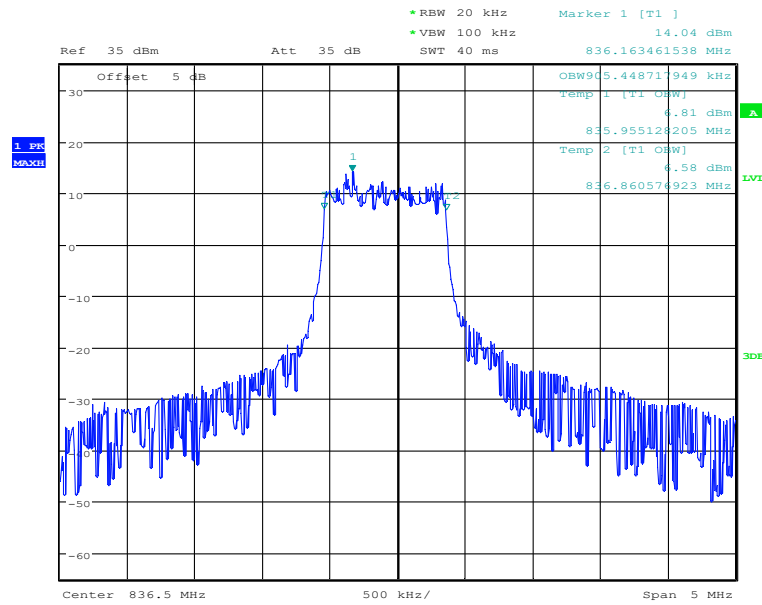
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Band5-26dB OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

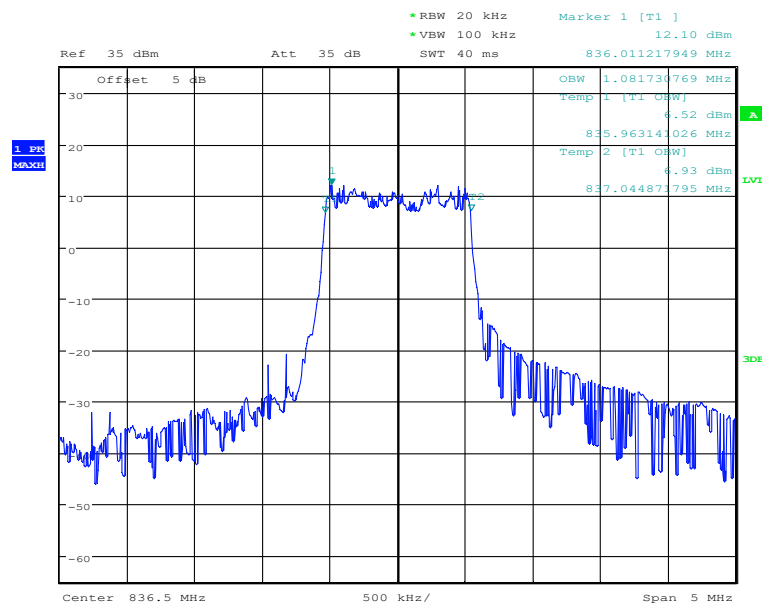
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:54:37

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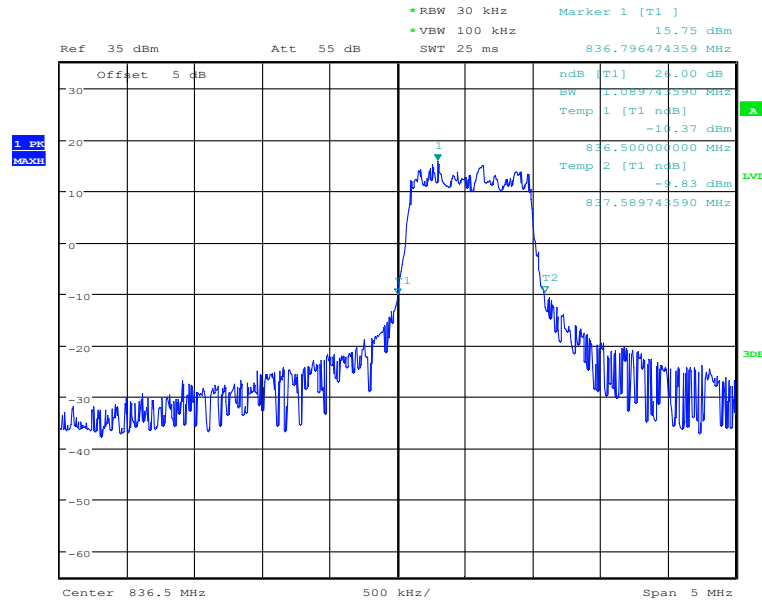
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Band5-99% OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

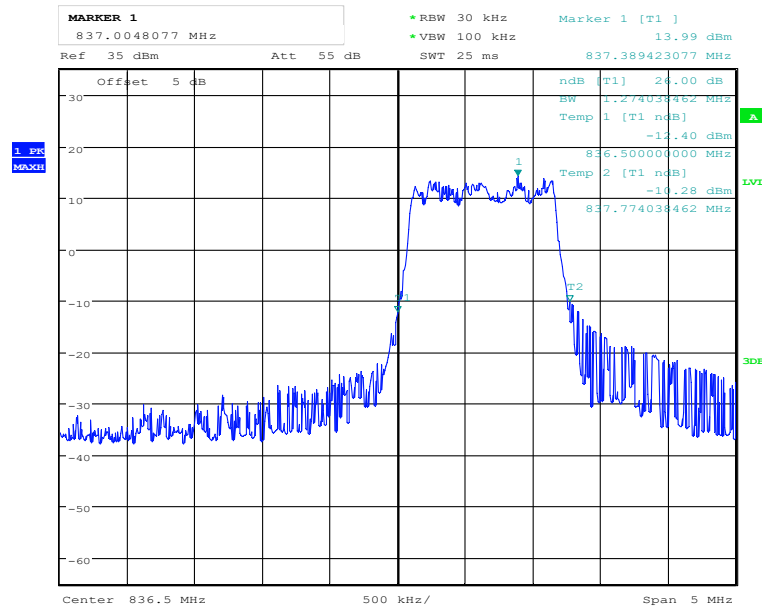
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:55:54

Band5-26dB OBW-3MHz Bandwidth-16QAM



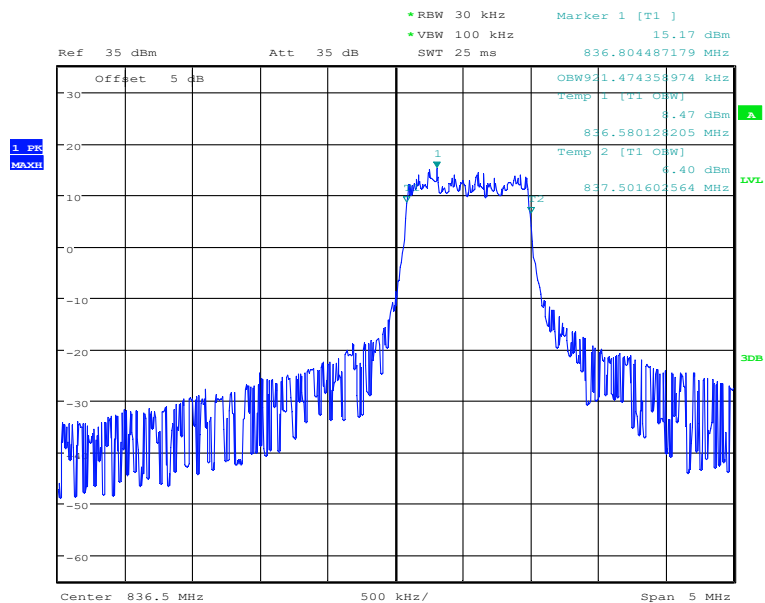
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Band5-26dB OBW-3MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

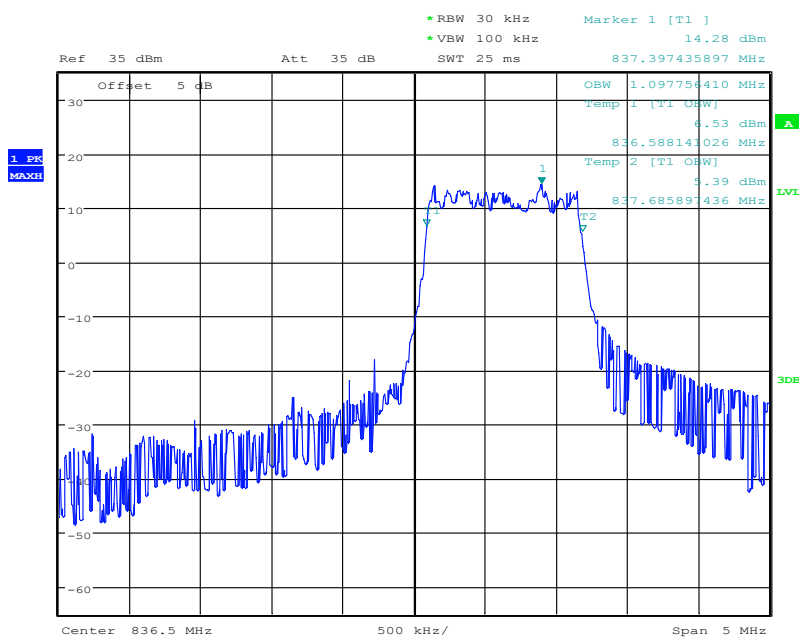
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:56:06

Band5-99% OBW-3MHz Bandwidth-16QAM



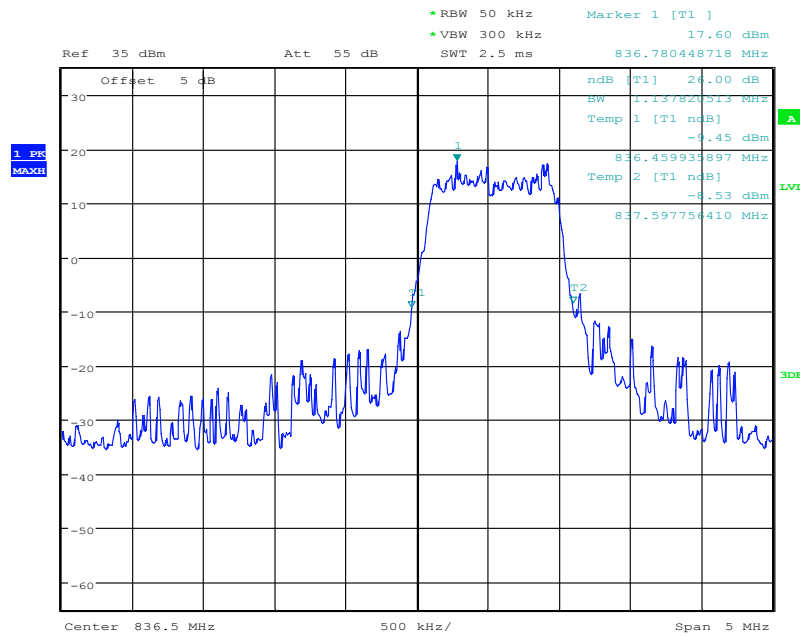
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Band5-99% OBW-3MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

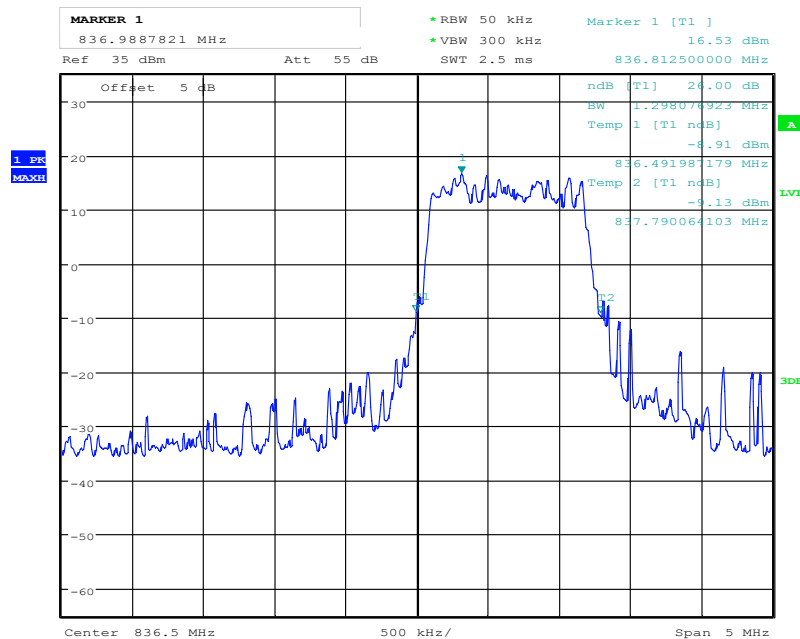
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:58:38

Band5-26dB OBW-5MHz Bandwidth-16QAM



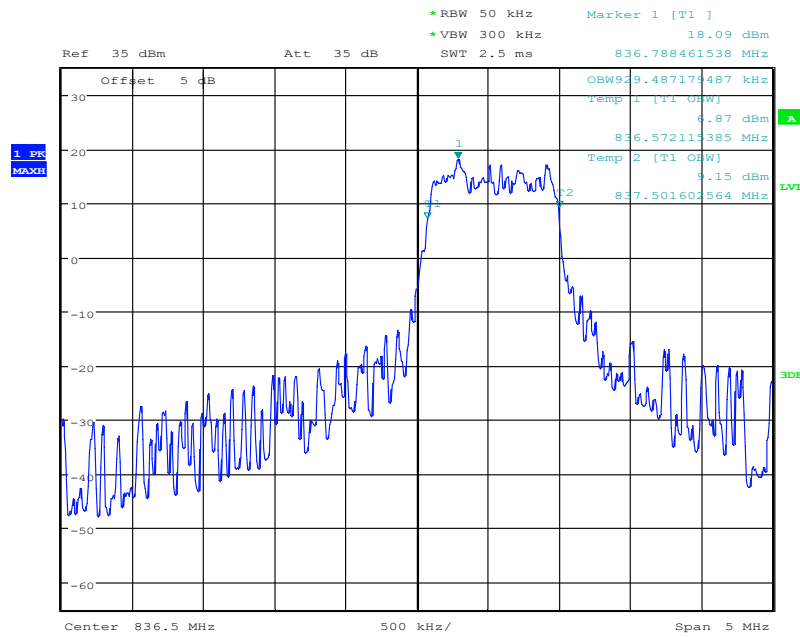
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Band5-26dB OBW-5MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

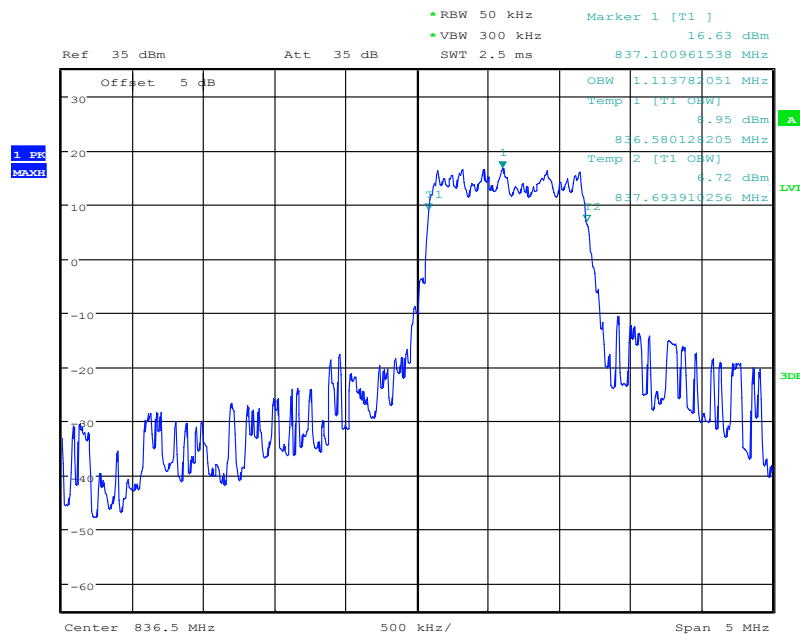
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 22:58:56

Band5-99% OBW-5MHz Bandwidth-16QAM



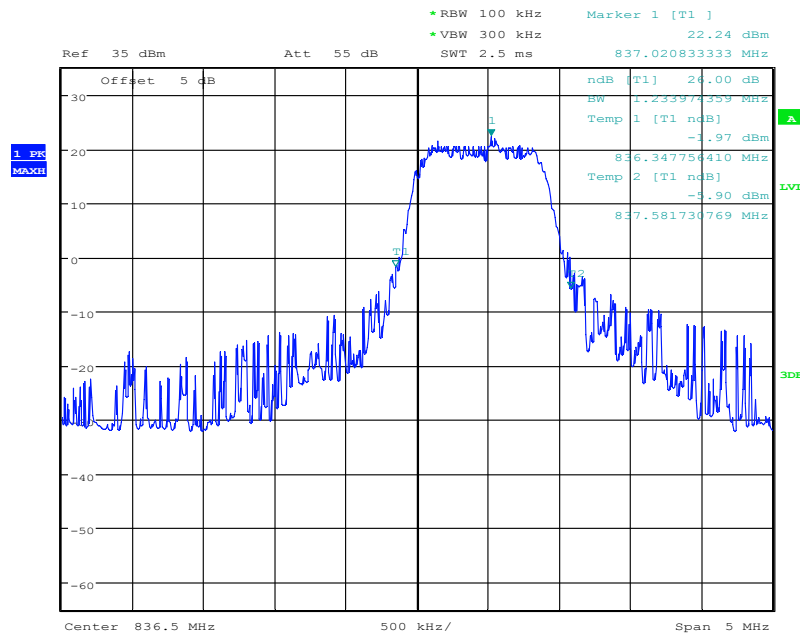
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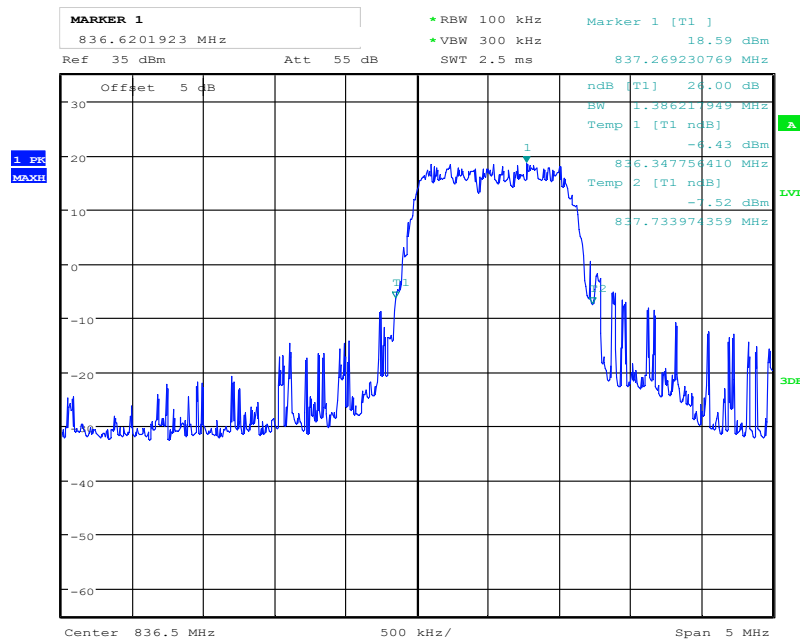
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:00:17

Band5-26dB OBW-10MHz Bandwidth-16QAM



Date: 1.SEP.2020 22:59:57

Band5-26dB OBW-10MHz Bandwidth-QPSK

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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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* RBW 100 kHz      Marker 1 [T1 ]
* VBW 300 kHz      22.27 dBm
SWT 2.5 ms         837.020833333 MHz
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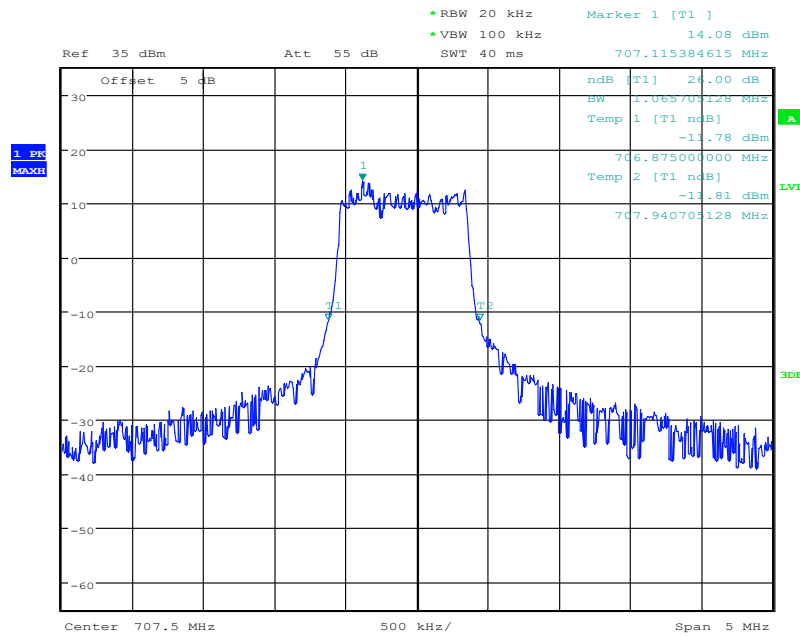


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* VBW 300 kHz      19.20 dBm
SWT 2.5 ms         837.028846154 MHz
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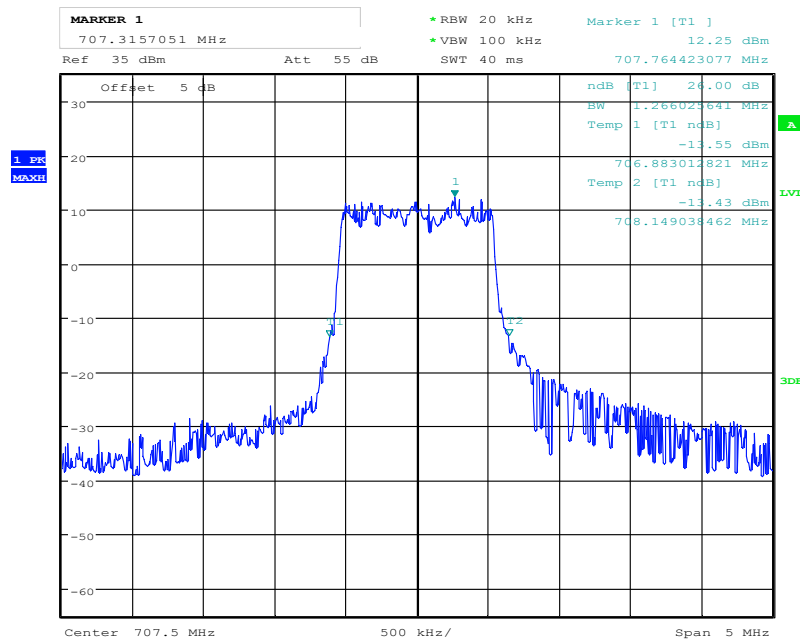
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:05:36

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



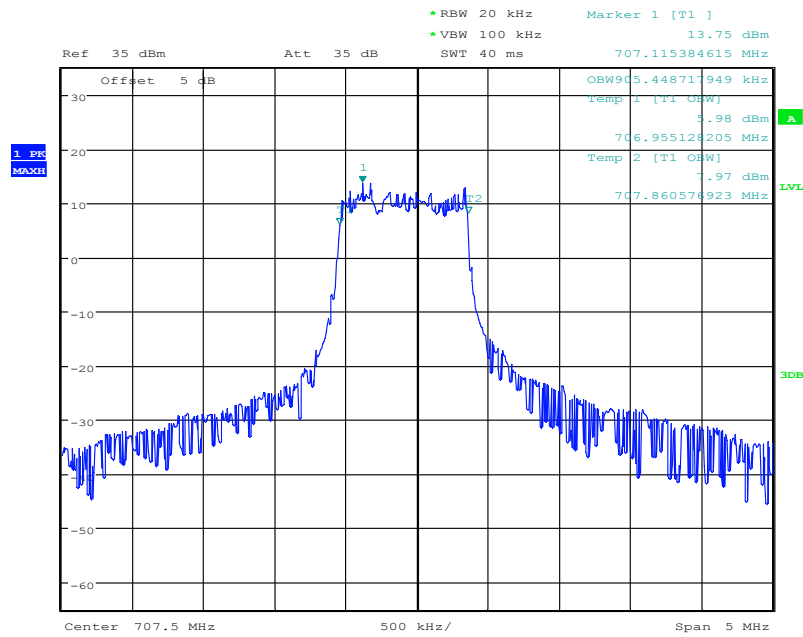
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Band12-26dB OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

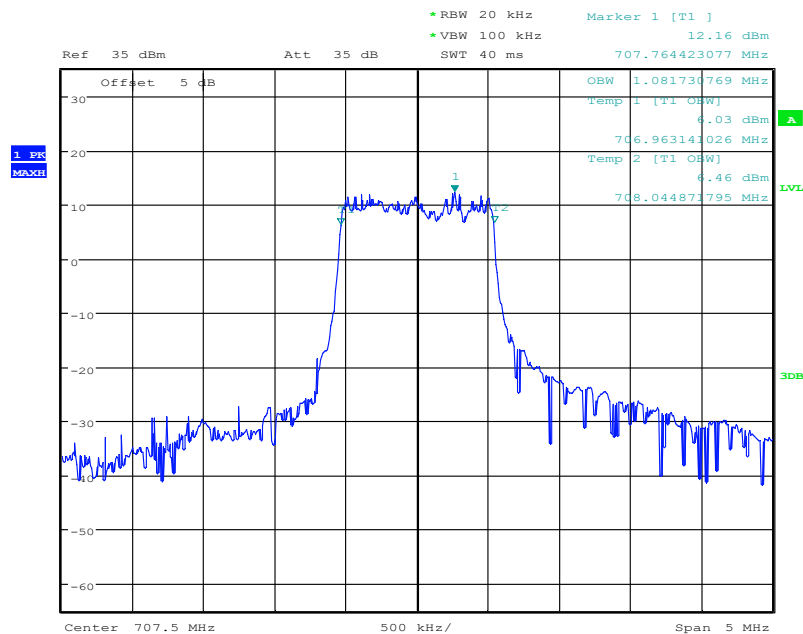
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:05:49

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



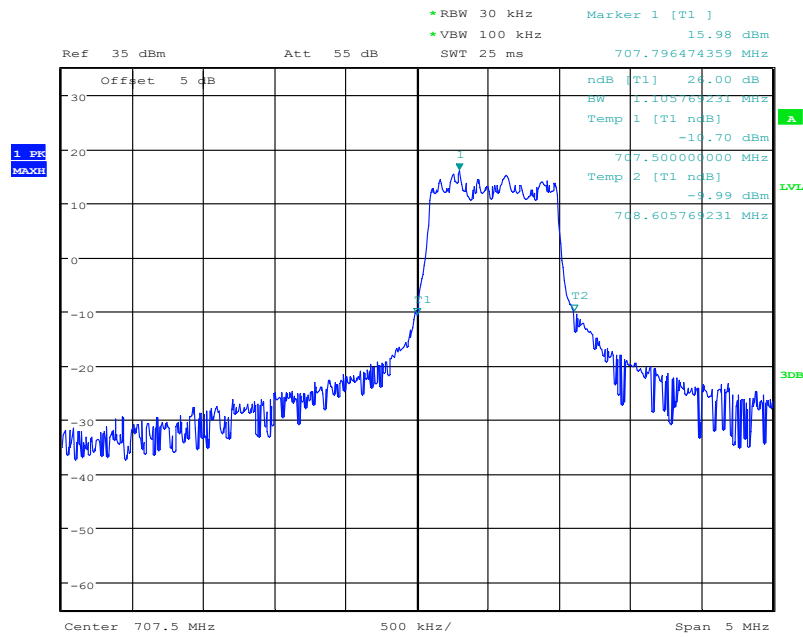
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Band12-99% OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

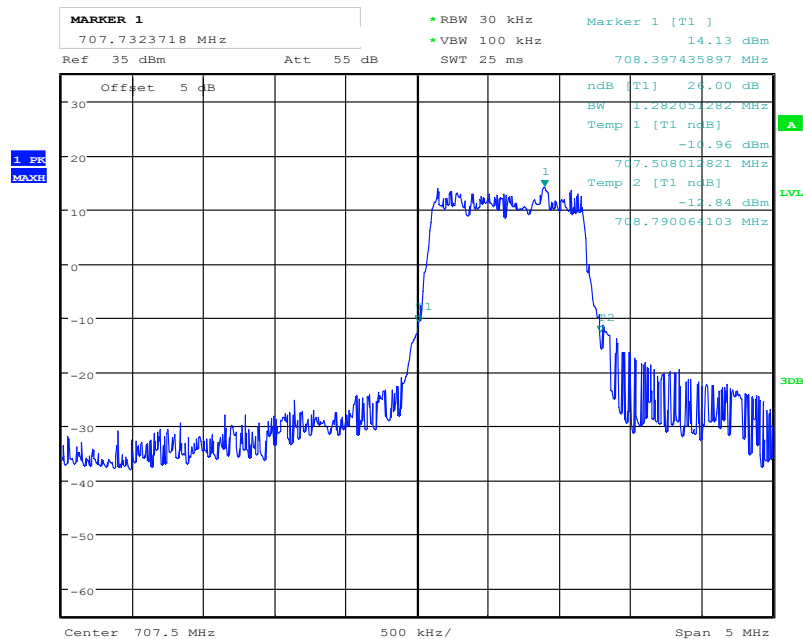
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:07:02

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



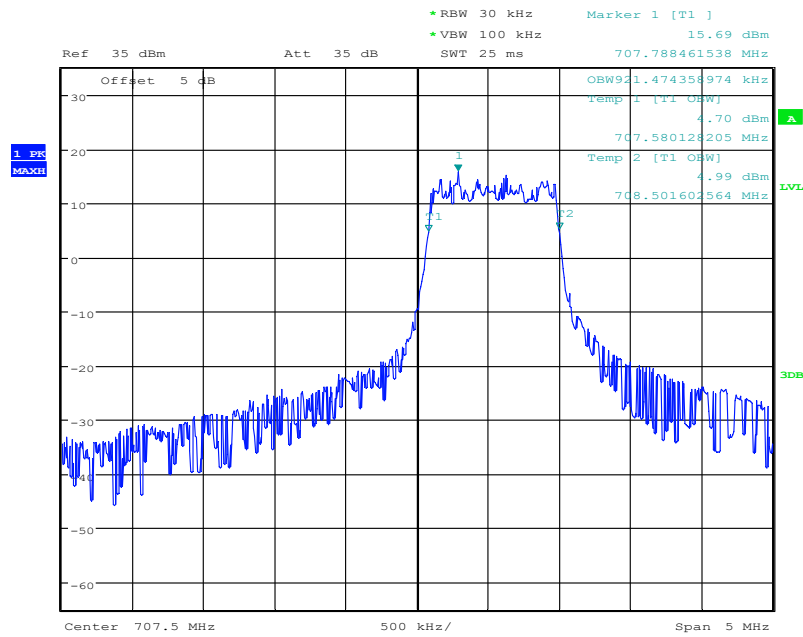
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Band12-26dB OBW-3MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

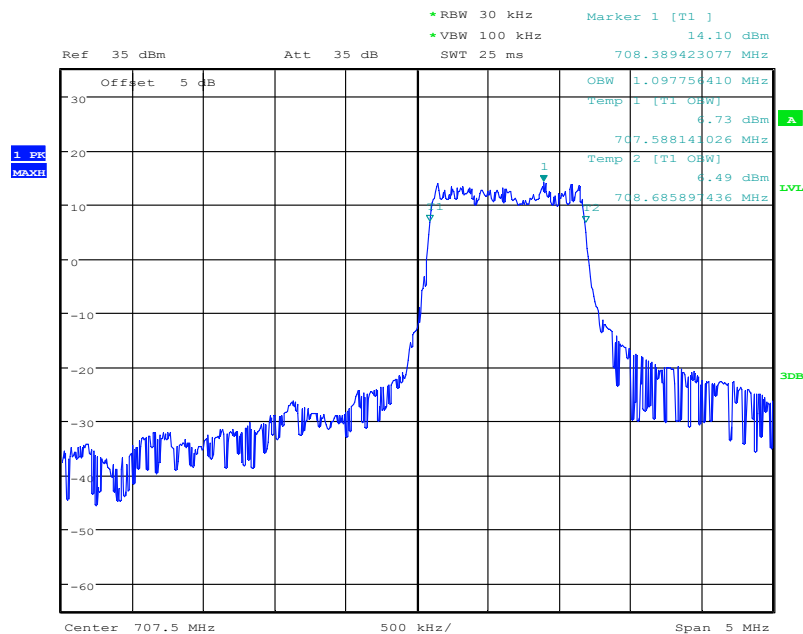
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:07:15

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



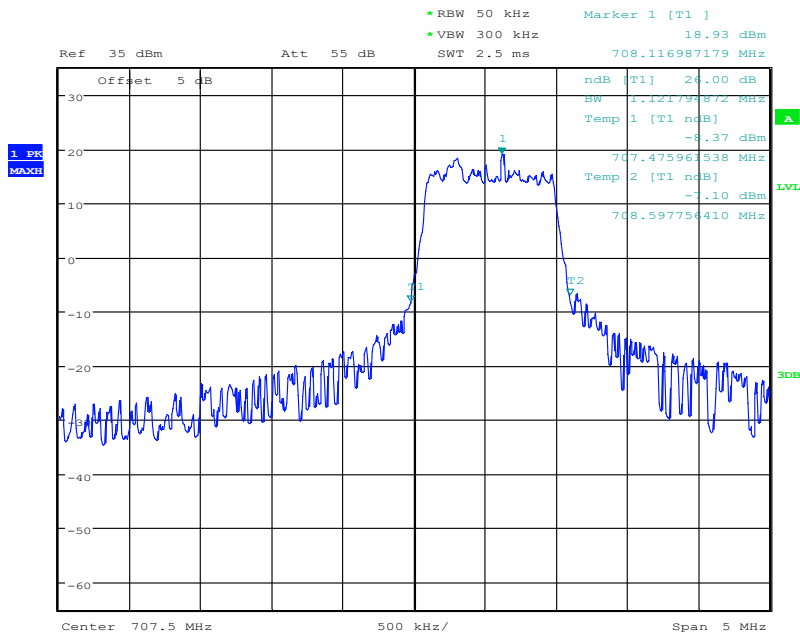
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Chongqing Academy of Information and Communication Technology

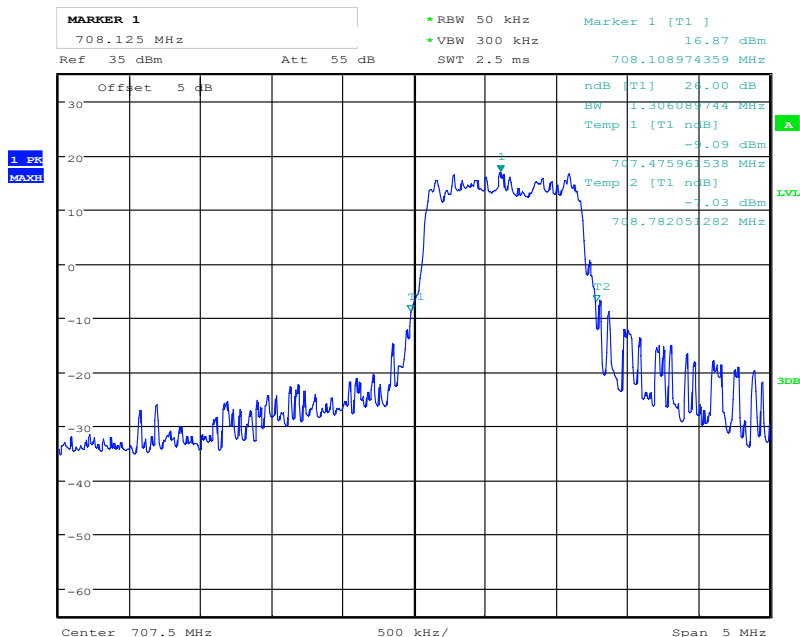
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:08:48

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



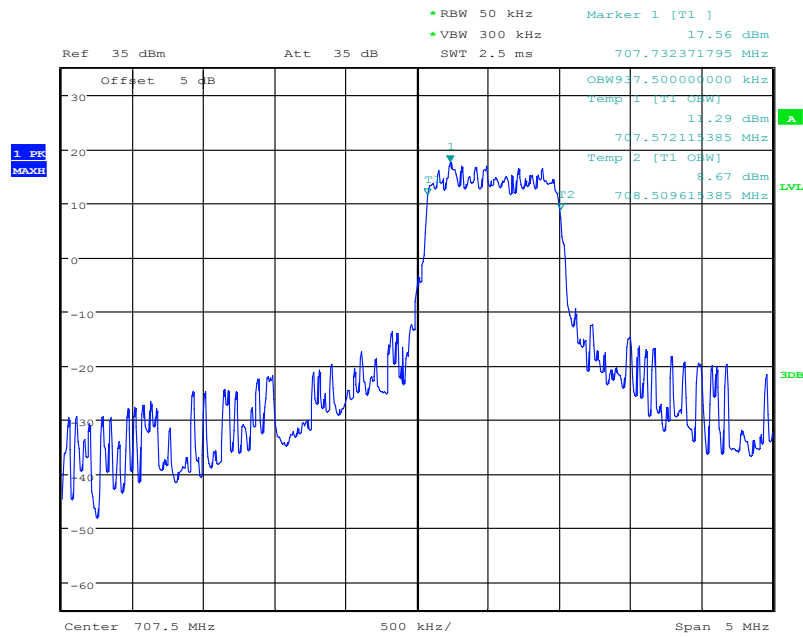
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Band12-26dB OBW-5MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

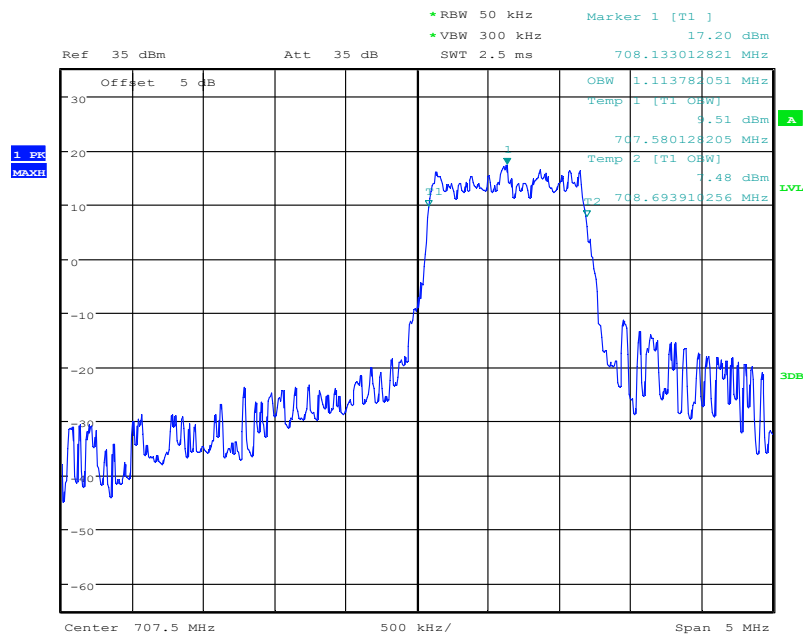
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:09:01

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



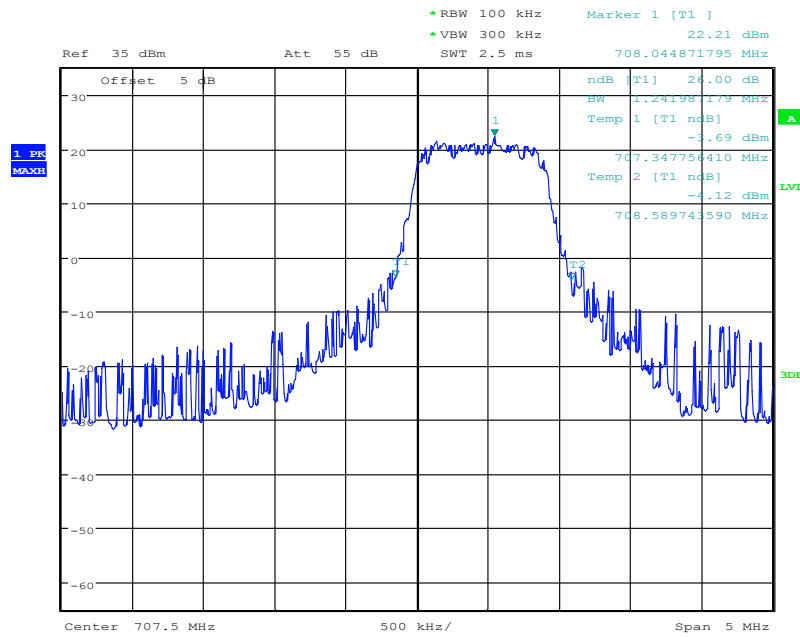
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Band12-99% OBW-5MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

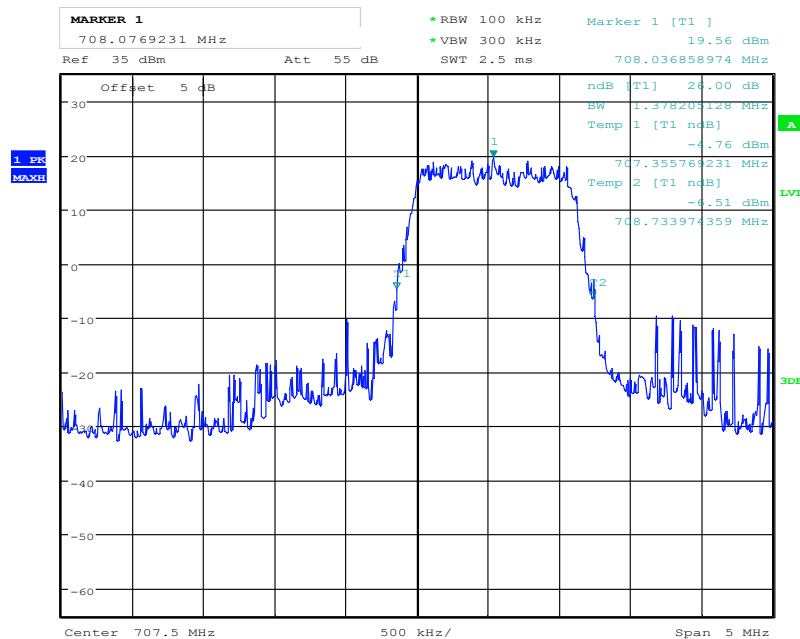
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:10:12

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



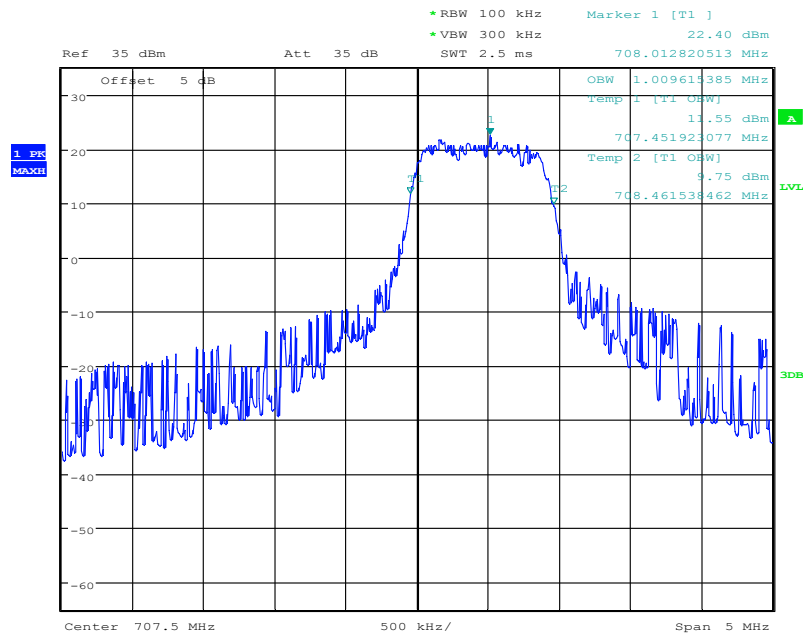
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Band12-26dB OBW-10MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

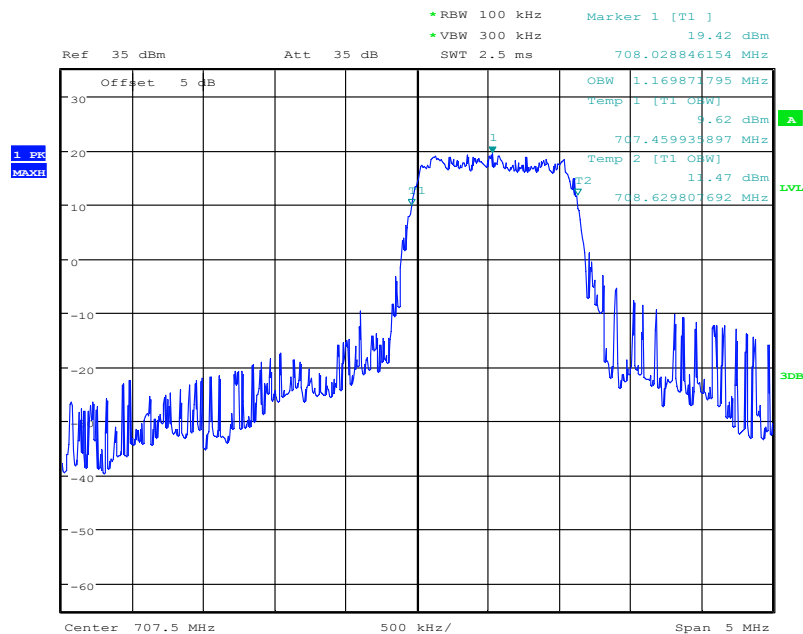
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:10:26

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



Date: 1.SEP.2020 23:09:36

Band12-99% OBW-10MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

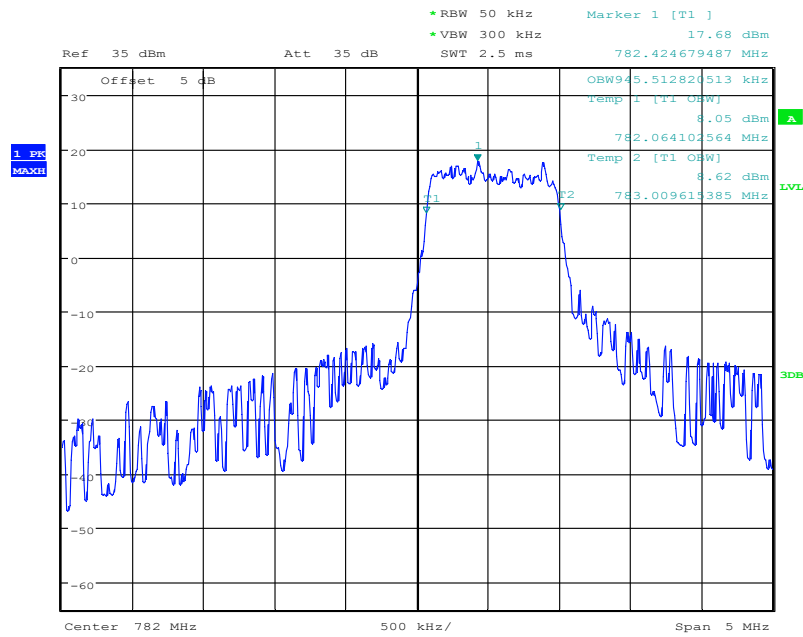
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Date: 1.SEP.2020 23:12:55

Date: 1.SEP.2020 23:12:36

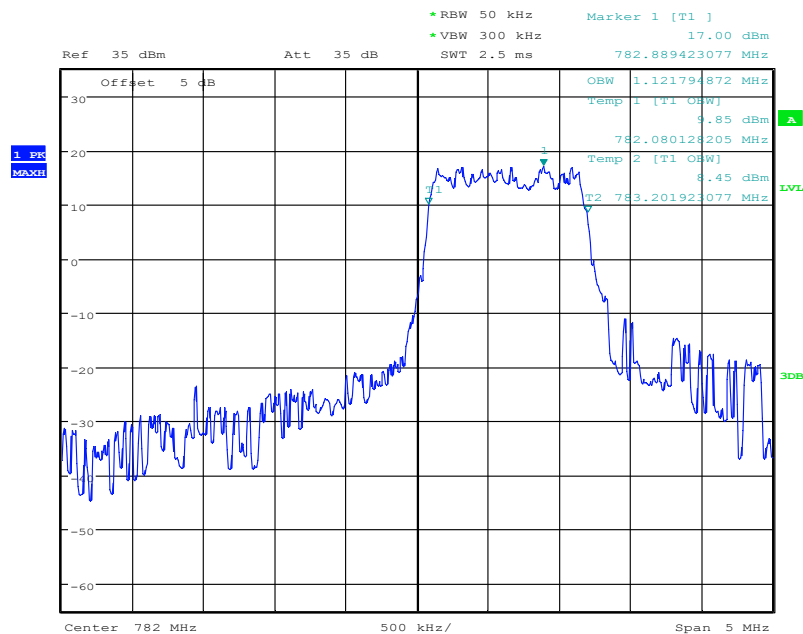
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Date: 1.SEP.2020 23:13:09

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



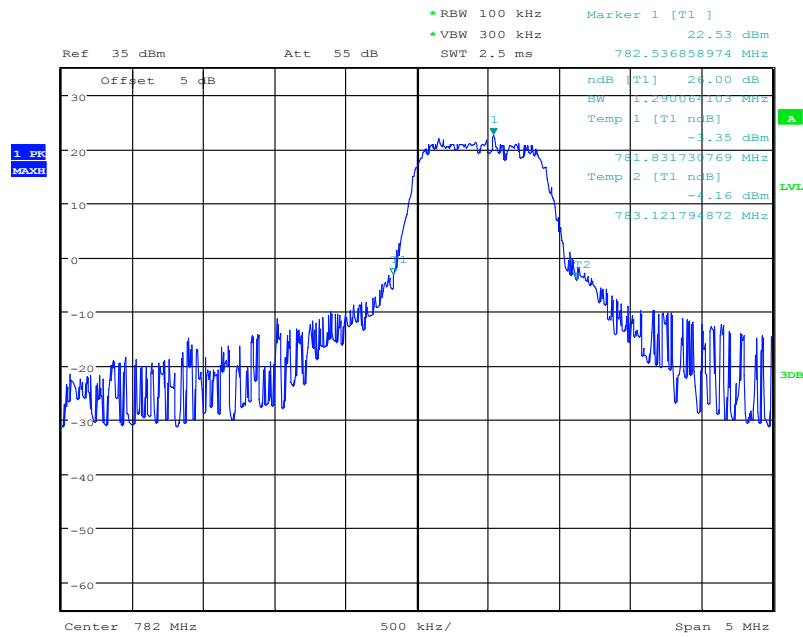
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Band13-99% OBW-5MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

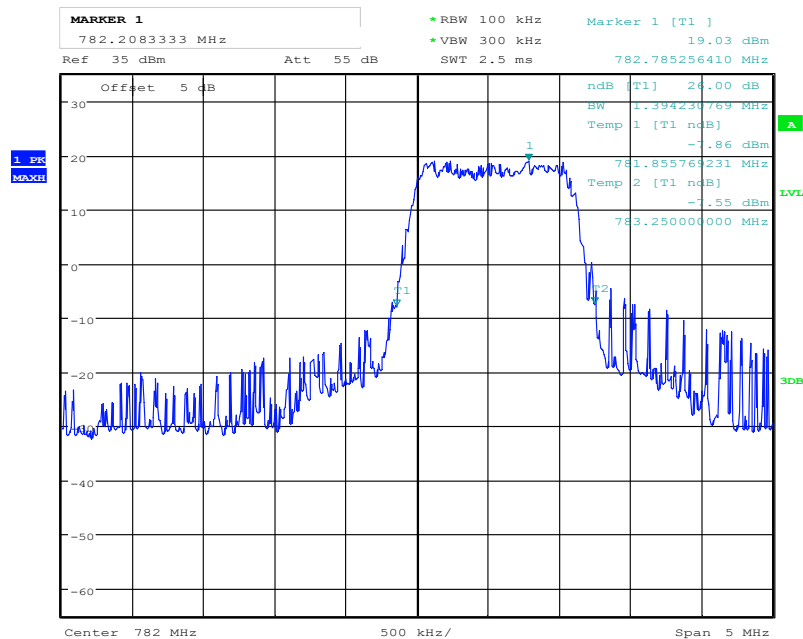
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:14:27

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



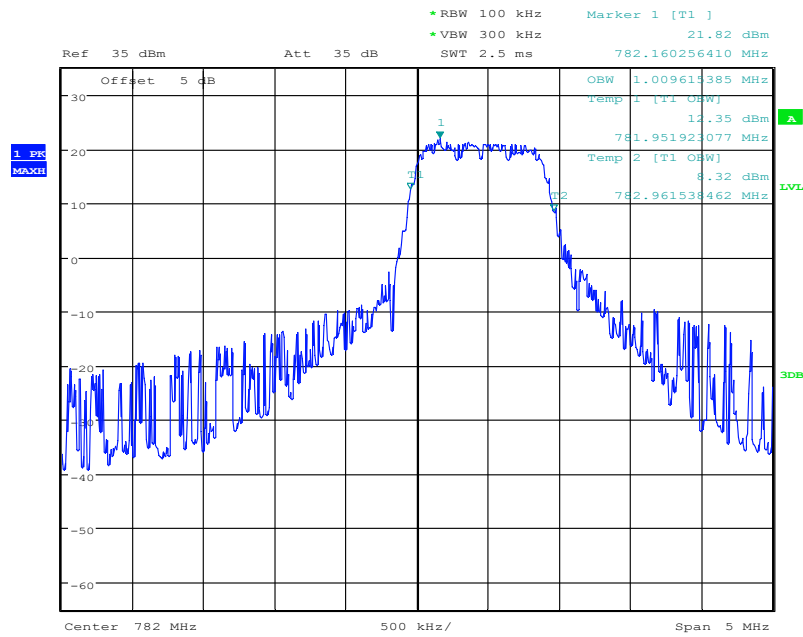
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Band13-26dB OBW-10MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

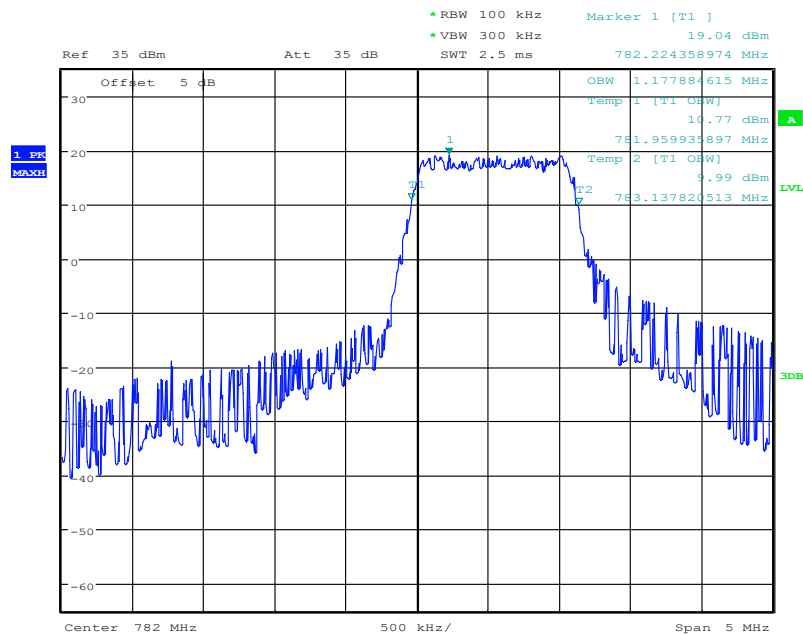
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Report No.: I20W00014-WWAN_Rev2



Date: 1.SEP.2020 23:14:39

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



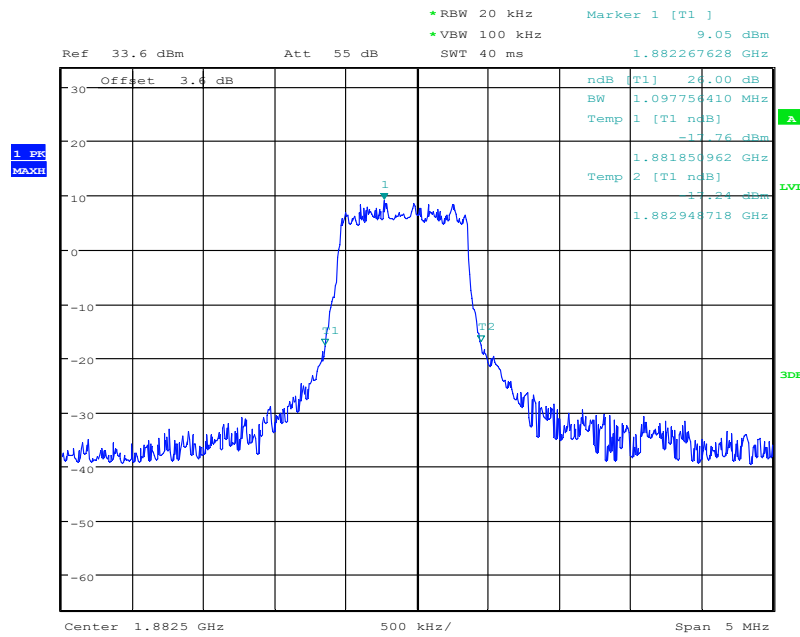
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Band13-99% OBW-10MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

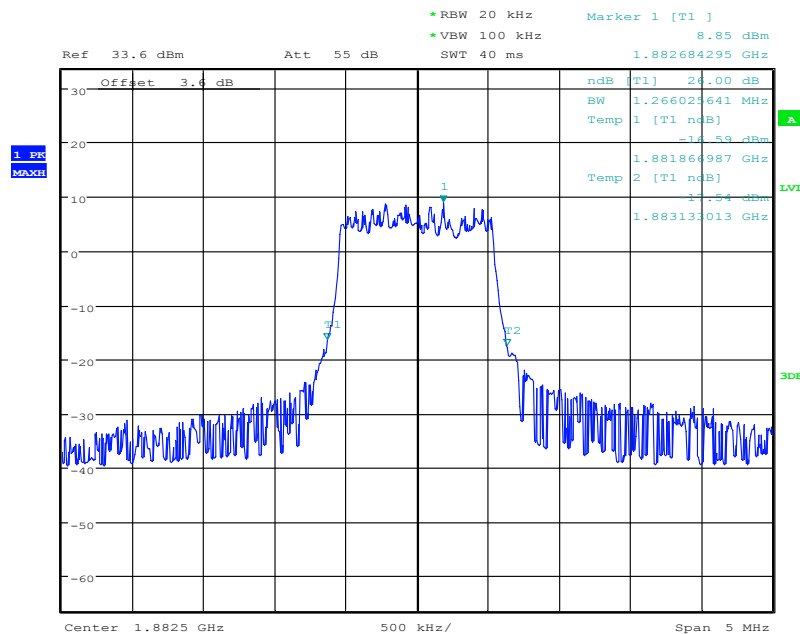
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Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:50:03

Band25-26dB OBW-1.4MHz Bandwidth-16QAM



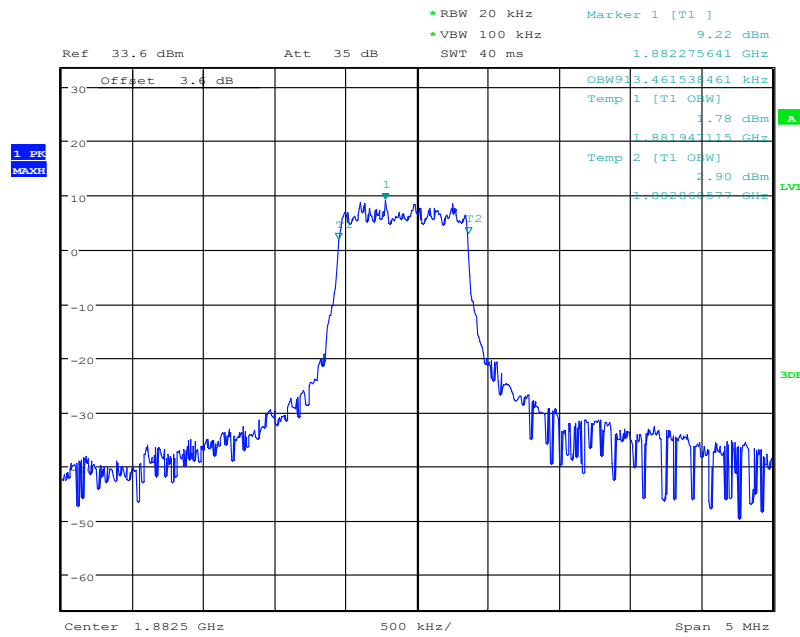
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Band25-26dB OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

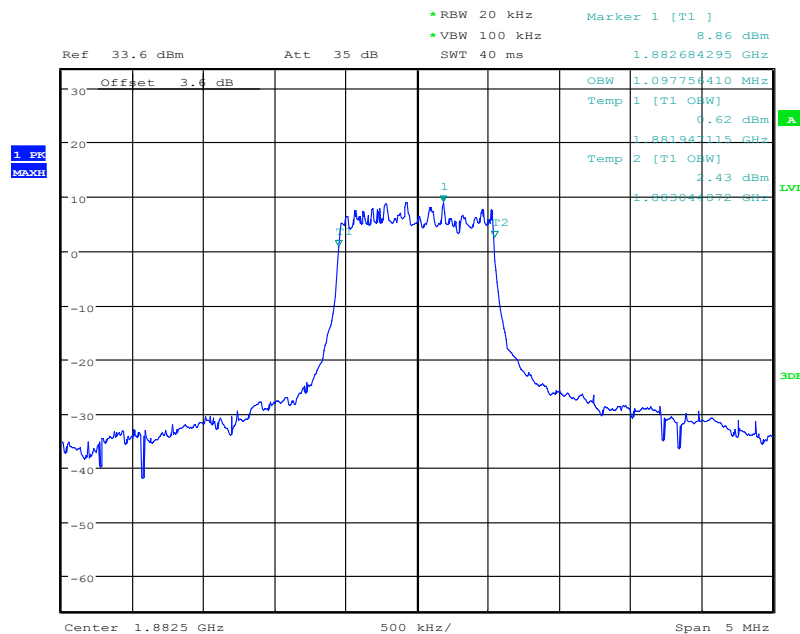
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:50:16

Band25-99% OBW-1.4MHz Bandwidth-16QAM



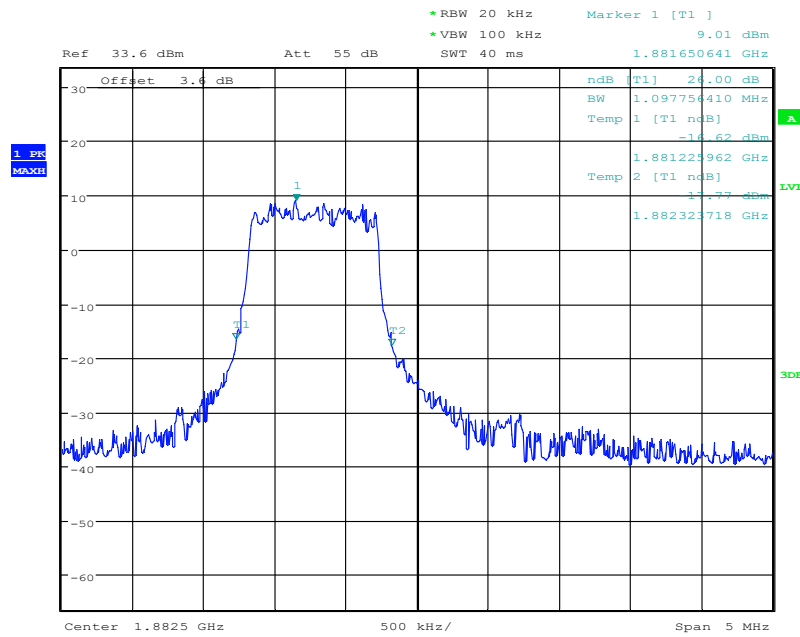
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Band25-99% OBW-1.4MHz Bandwidth-QPSK

Chongqing Academy of Information and Communication Technology

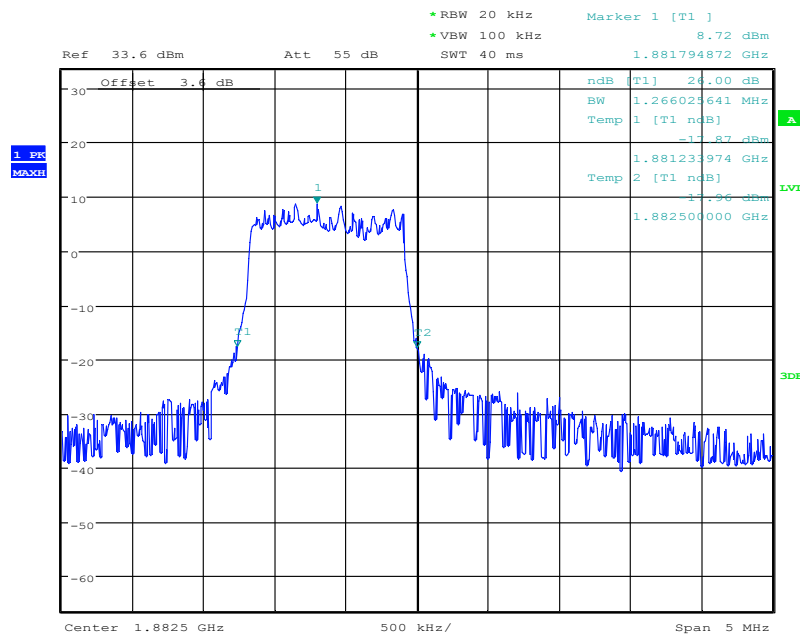
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Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:51:54

Band25-26dB OBW-3MHz Bandwidth-16QAM



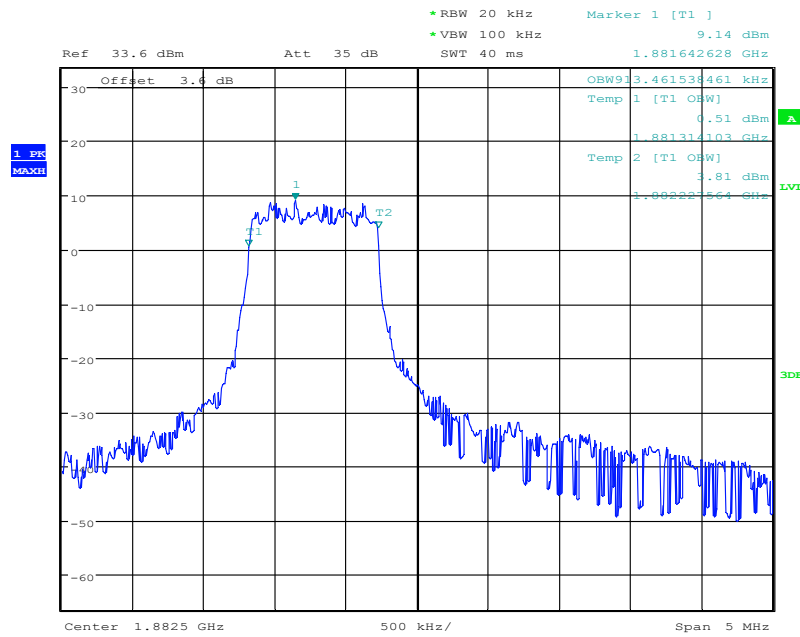
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Band25-26dB OBW-3MHz Bandwidth-QPSK

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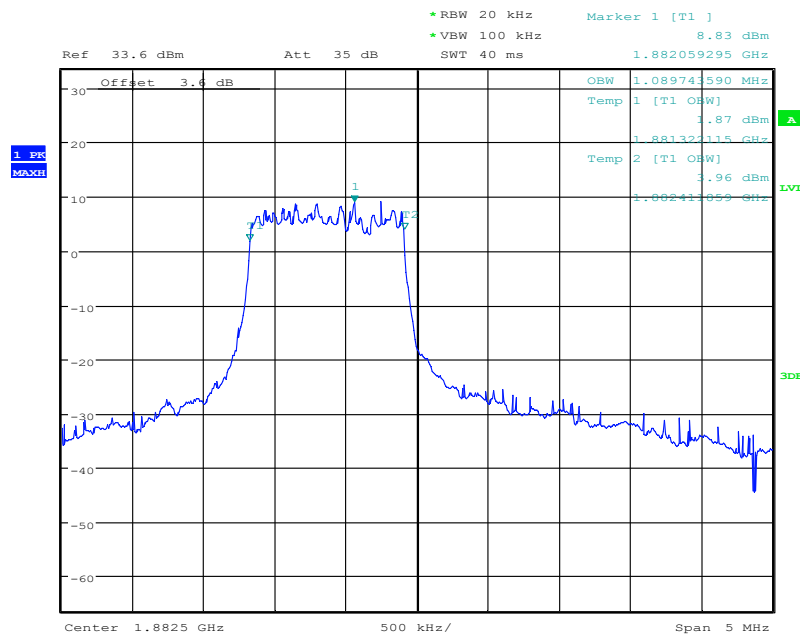
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:52:07

Band25-99% OBW-3MHz Bandwidth-16QAM



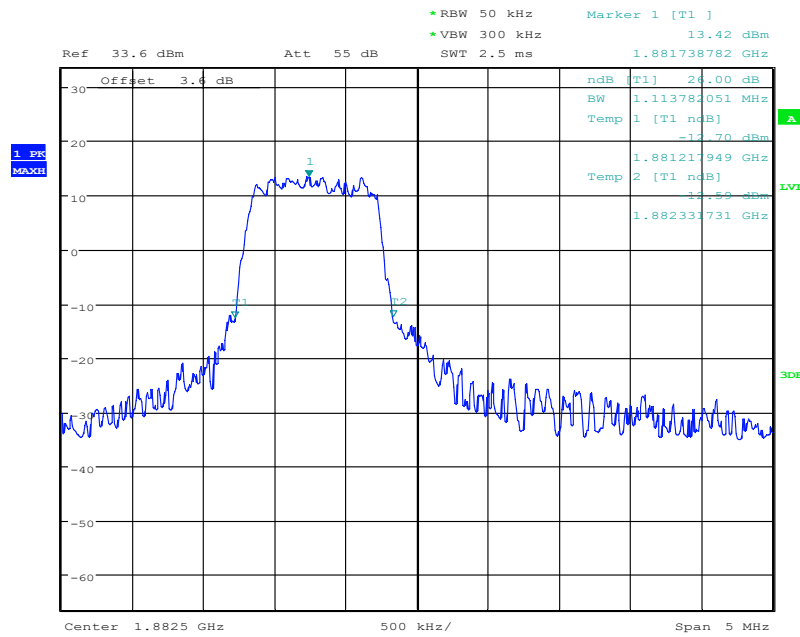
Date: 3.SEP.2020 05:51:17

Band25-99% OBW-3MHz Bandwidth-QPSK

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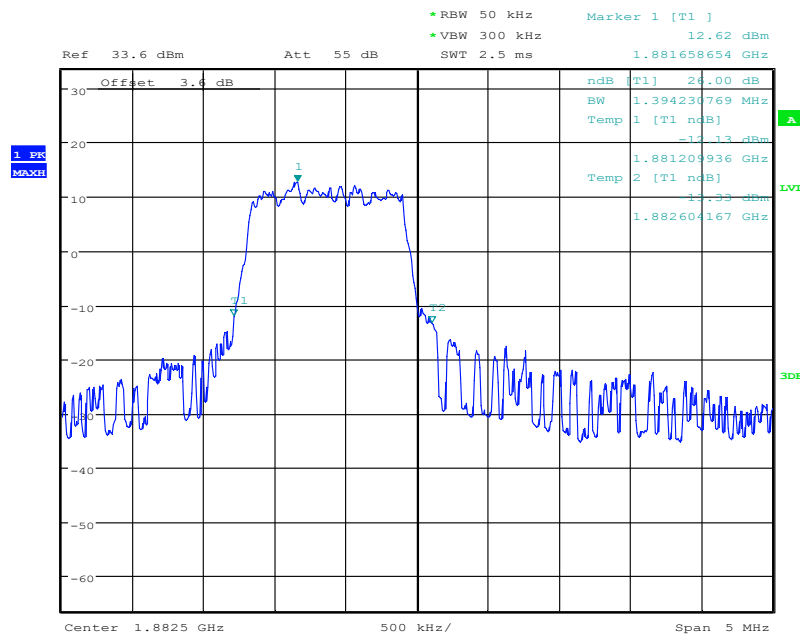
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:54:48

Band25-26dB OBW-5MHz Bandwidth-16QAM



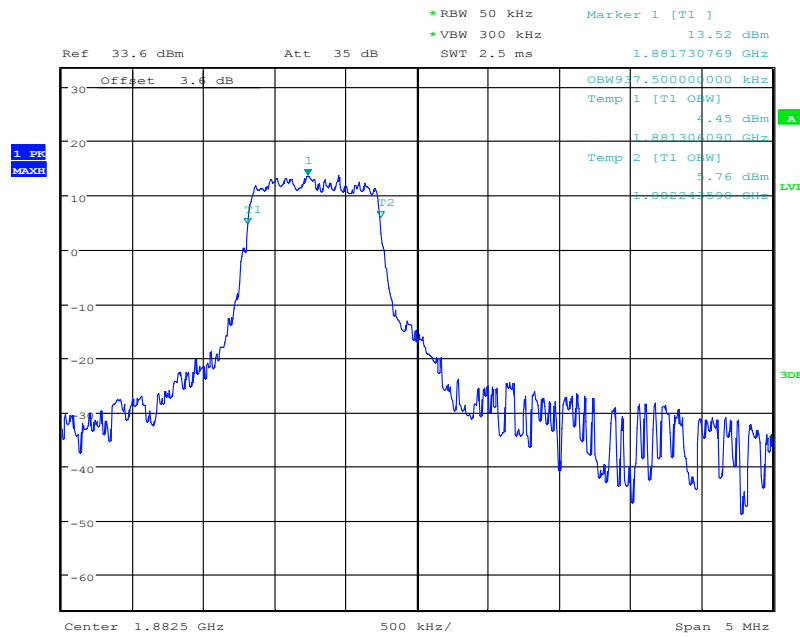
Date: 3.SEP.2020 05:54:20

Band25-26dB OBW-5MHz Bandwidth-QPSK

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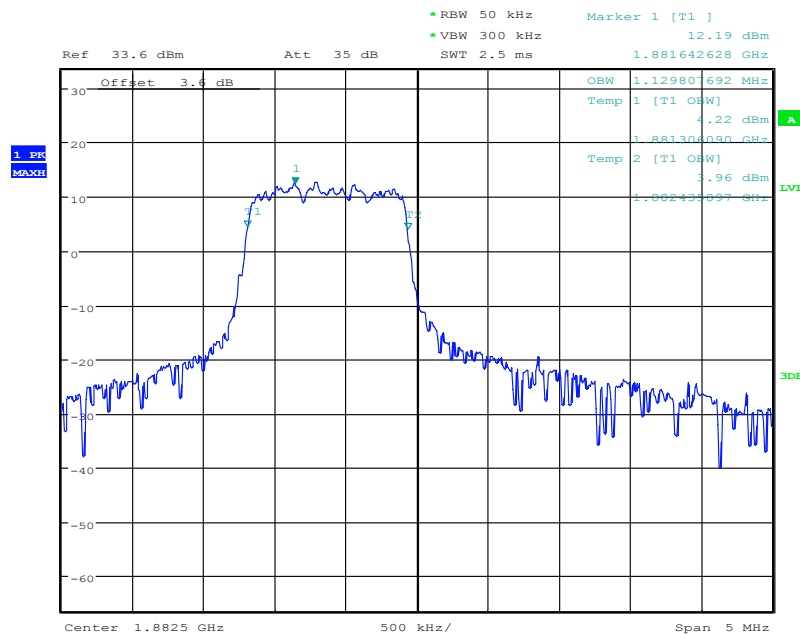
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:55:08

Band25-99% OBW-5MHz Bandwidth-16QAM



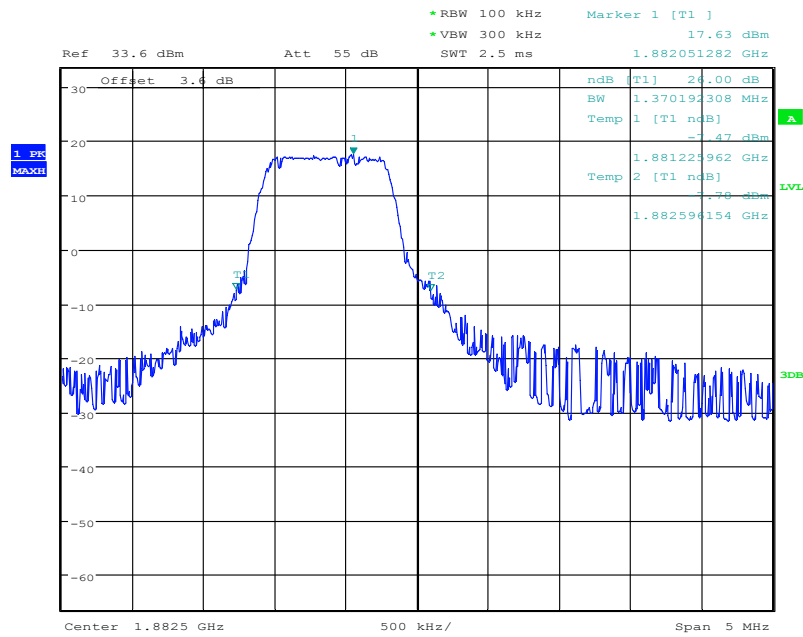
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Band25-99% OBW-5MHz Bandwidth-QPSK

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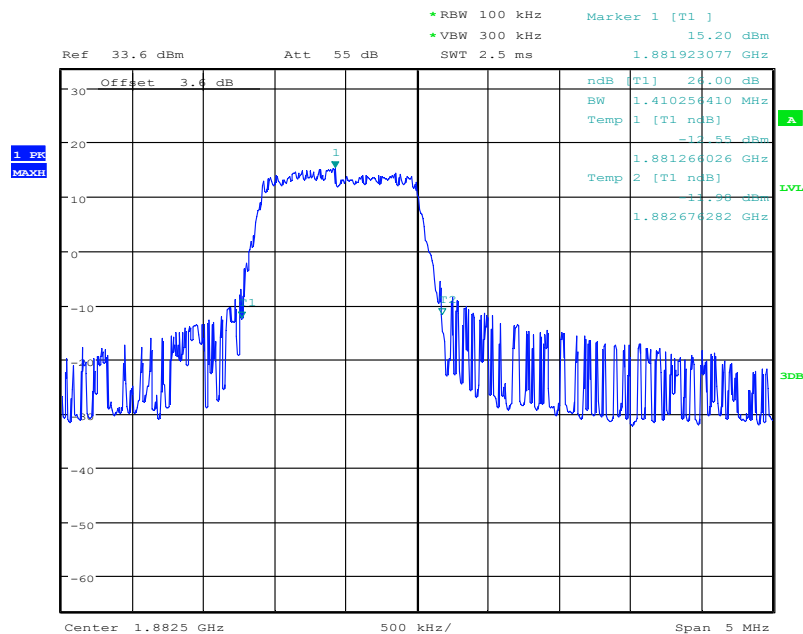
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:56:58

Band25-26dB OBW-10MHz Bandwidth-16QAM



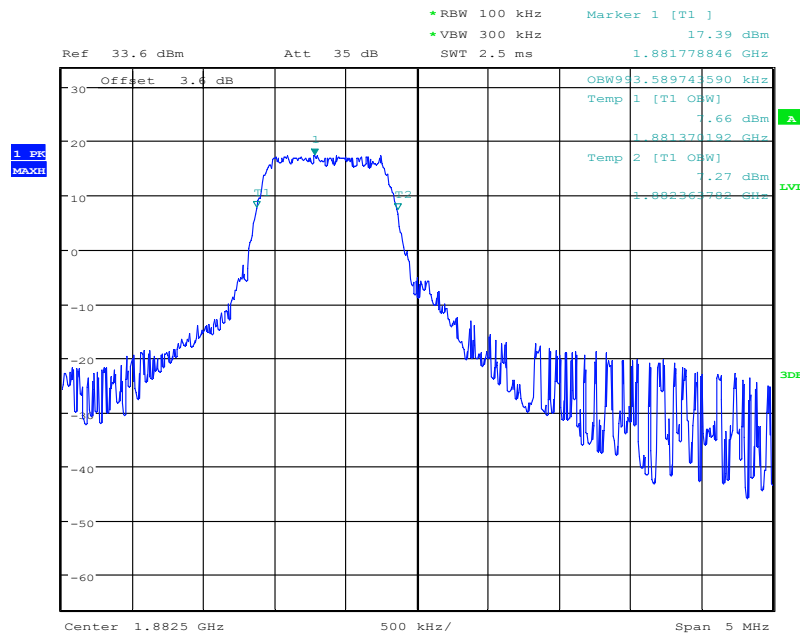
Date: 3.SEP.2020 05:56:30

Band25-26dB OBW-10MHz Bandwidth-QPSK

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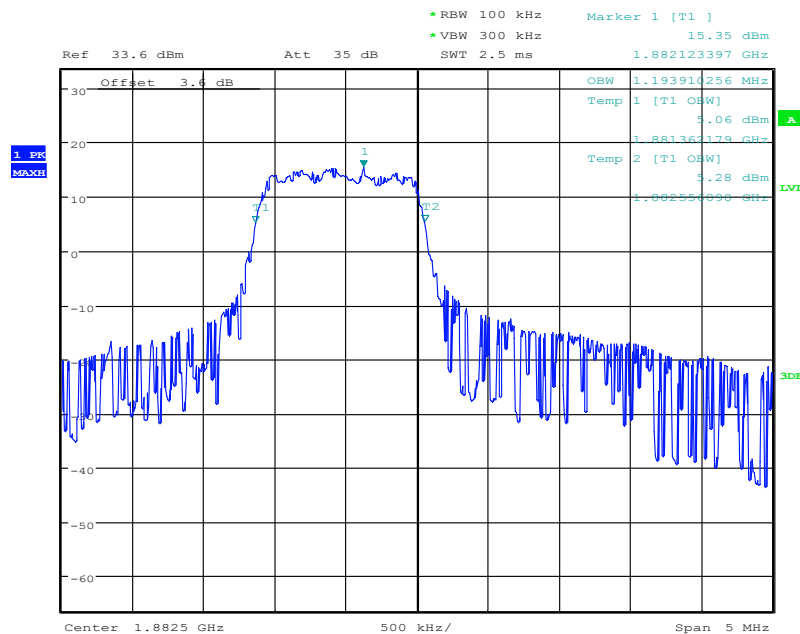
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:57:14

Band25-99% OBW-10MHz Bandwidth-16QAM



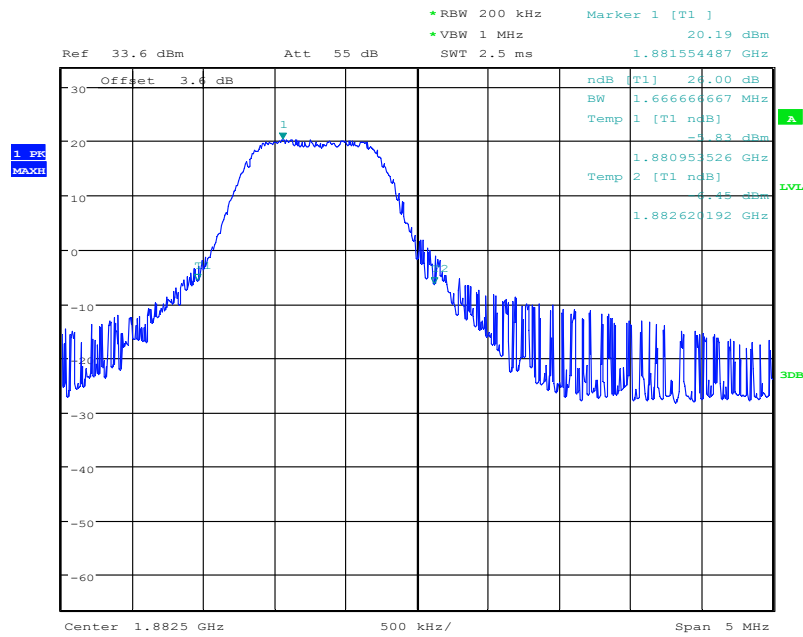
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Band25-99% OBW-10MHz Bandwidth-QPSK

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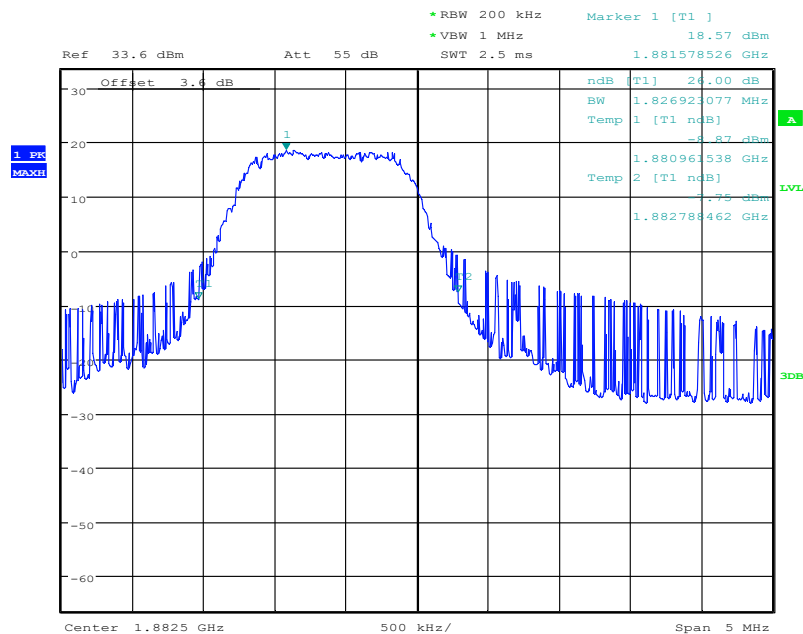
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:59:03

Band25-26dB OBW-15MHz Bandwidth-16QAM



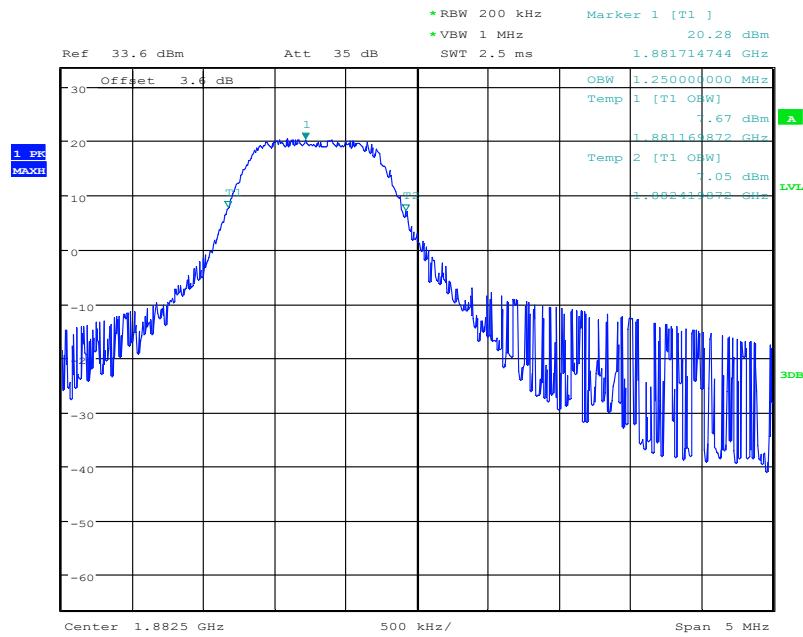
Date: 3.SEP.2020 05:58:35

Band25-26dB OBW-15MHz Bandwidth-QPSK

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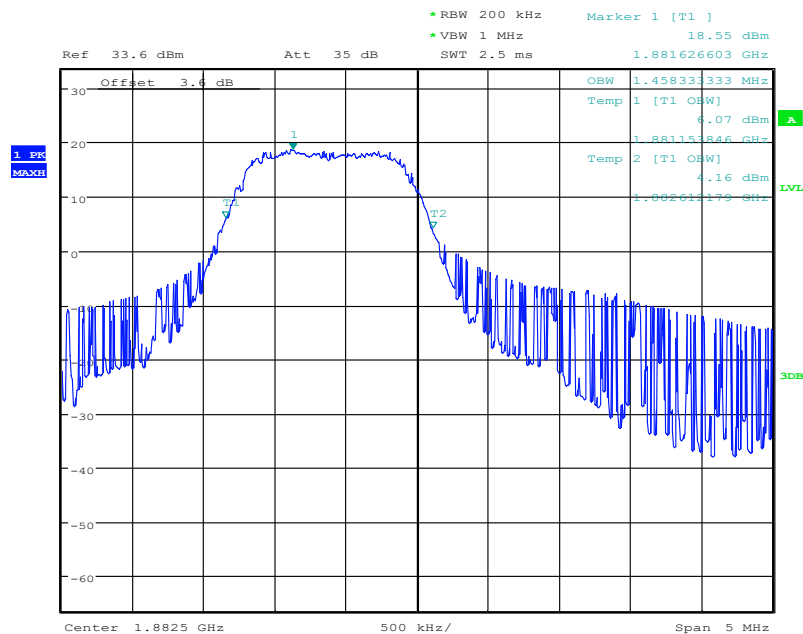
Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
 Tel: 0086-23-88069965 FAX:0086-23-88608777

Report No.: I20W00014-WWAN_Rev2



Date: 3.SEP.2020 05:59:20

Band25-99% OBW-15MHz Bandwidth-16QAM



Date: 3.SEP.2020 05:58:18

Band25-99% OBW-15MHz Bandwidth-QPSK

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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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*RBW 200 kHz      Marker 1 [T1 ]
*VBW 1 MHz                20.37 dBm
SWT 2.5 ms              1.881730769 GHz
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* RBW 200 kHz      Marker 1 [T1 ]
* VBW 1 MHz              18.73 dBm
  SWT 2.5 ms          1.881698718 GHz
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