

5GHz Wideband Low Power Data Communication System Test Report

Product Name	QCast Mirror
Model No.	QP30

Applicant	BenQ Corporation
Address	16, Jihu Road, Taipei Neihu 114 Taiwan

Date of Receipt	Sep. 14, 2022
Issued Date	Nov. 18, 2022
Report No.	2290395R-RFJPWL5V01-A
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

Issued Date: Nov. 18, 2022

Report No.: 2290395R-RFJPWL5V01-A



Product Name	QCast Mirror
Applicant	BenQ Corporation
Address	16, Jihu Road, Taipei Neihsu 114 Taiwan
Manufacturer	BenQ Corporation
Model No.	QP30
EUT Rated Voltage	DC 5V (Power By USB)
EUT Test Voltage	DC 5V (Power By USB)
Trade Name	BenQ
Measurement Standard	Test method temporarily determined by TELEC. Article 2 paragraph 1 item 19-3
Test Result	Complied

Documented By :

Ida Tung

(Project Specialist / Ida Tung)

Tested By :

Ivan Chuang

(Senior Engineer / Ivan Chuang)

Approved By :

Jack Hsu

(Senior Engineer / Jack Hsu)

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Revision History

Report No.	Version	Description	Issued Date
2290395R-RFJPWL5V01-A	V1.0	Initial issue of report.	Nov. 18, 2022

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	QCast Mirror		
Trade Name	BenQ		
Model No.	QP30		
MAC Address	D0:C0:BF:1A:2E:38		
Frequency Range	802.11a/n/ac-20 MHz: 5180-5240 MHz 802.11n/ac-40 MHz: 5190-5230 MHz 802.11ac-80 MHz: 5210 MHz		
Number of Channels	802.11a/n/ac-20 MHz: 19 CH 802.11n/ac-40 MHz: 9 CH 802.11ac-80 MHz: 4 CH		
Data Rate	802.11a: 6 – 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 1733.3 Mbps		
Type of Modulation	802.11a/n/ac: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM		
Antenna Type	PIFA Antenna		
Antenna Gain	Refer to the table “Antenna List”		
Channel Control	Auto		
Declared Output Power		Antenna 1	Antenna 2
	802.11a	1.850 mW/MHz	1.850 mW/MHz
	802.11n20	0.465 mW/MHz	0.414 mW/MHz
	802.11n40	0.243 mW/MHz	0.214 mW/MHz
	802.11ac20	0.578 mW/MHz	0.375 mW/MHz
	802.11ac40	0.268 mW/MHz	0.172 mW/MHz
	802.11ac80	0.106 mW/MHz	0.056 mW/MHz

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Actions Microelectronics Co., Ltd	ANT-PCB-PRO-DONGLE-2 (Main)(Aux)	PIFA	1.18dBi For 5150~5250 MHz

802.11a/n/ac-20 MHz Center Frequency of Each Channel (WLAN):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
036	5180	040	5200	044	5220	048	5240

802.11n/ac-40 MHz Center Frequency of Each (WLAN)

Channel	Frequency (MHz)	Channel	Frequency (MHz)
038	5190 MHz	046	5230 MHz

802.11ac-80 MHz Carrier Frequency of Each (WLAN)

Channel	Frequency (MHz)
042	5210 MHz

Note:

1. The EUT is a QCast Mirror with built-in WLAN transceiver ,This report for 5GHz WLAN.
2. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.

Test Mode	Mode 1	Transmitter (802.11a 6 Mbps)
		Transmitter (802.11n20 14.4 Mbps)
		Transmitter (802.11n40 30 Mbps)
		Transmitter (802.11ac20 14.4Mbps)
		Transmitter (802.11ac40 30 Mbps)
		Transmitter (802.11ac80 65 Mbps)
	Mode 2	Receiver (802.11a 6 Mbps)
		Receiver (802.11n20 14.4 Mbps)
		Receiver (802.11n40 30 Mbps)
		Receiver (802.11ac20 14.4 Mbps)
		Receiver (802.11ac40 30 Mbps)
		Receiver (802.11ac80 65 Mbps)

1.2. EUT Exercise Software

- (1) 1. Execute “MPTool Version 0.0006.03.20180914” program on the Notebook PC.
- (2) 2. Configure the test mode, the test channel, and the data rate.
- (3) Press “OK” to start the continuous transmission.
- (4) Verify that the EUT works properly.

1.3. Parament of test software setting

The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Test Software	MPTool Version 0.0006.03.20180914	
Frequency	5180 MHz	5240 MHz
IEEE 802.11a	47/52	48/53
IEEE 802.11n-20	45/49	45/49
IEEE 802.11ac-20	41/46	41/46

Test Software	MPTool Version 0.0006.03.20180914	
Frequency	5190 MHz	5230 MHz
IEEE 802.11n-40	45/49	45/49
IEEE 802.11ac-40	40/45	40/45

Test Software	MPTool Version 0.0006.03.20180914	
Frequency	5210 MHz	
IEEE 802.11ac-80	41/46	

1.4. Test Conditions

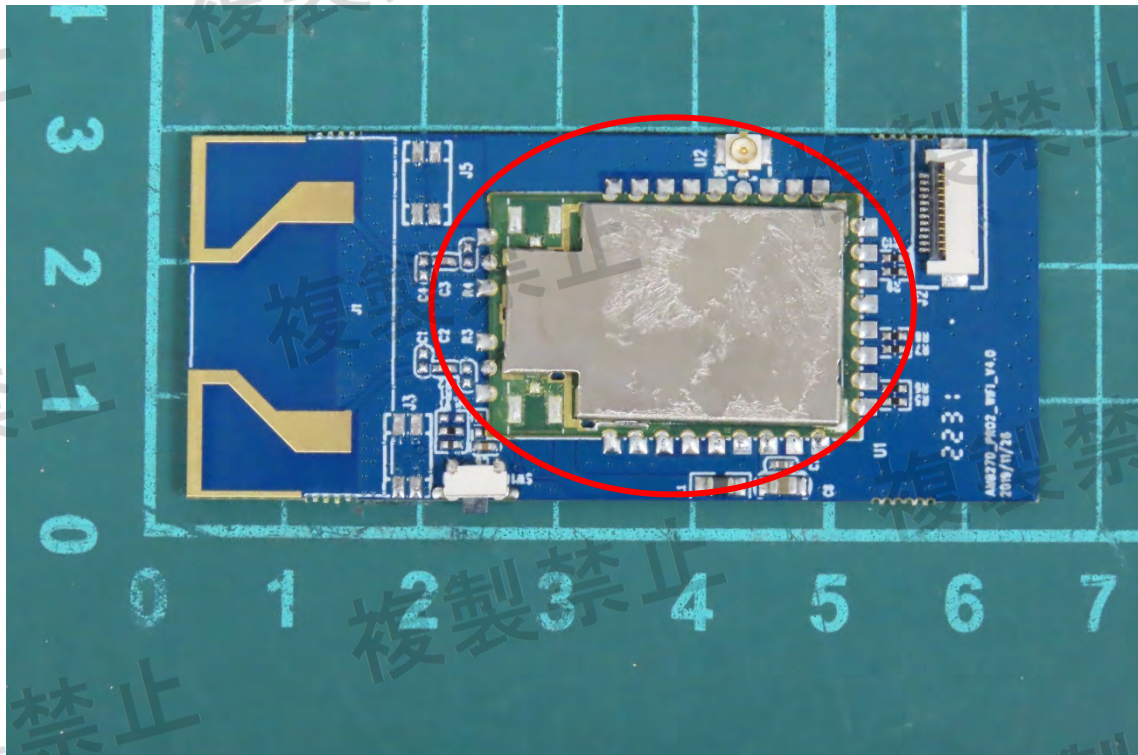
Voltage Test Item	Test Voltage	Voltage meter reading value (U1 pin 30)
Nominal Voltage	DC 5V	3.27V
Highest Voltage	DC 5.5V	3.27V
Lowest Voltage	DC 4.5V	3.27V

Note: 1. The Voltage supply for U1 Pin30 is DC 3.27V .

2. The internal supply gives a fluctuation value less than 1 % (**Around 0% from max. to min.**)

1.5. RF and IF section must be tamper requirement

Requirement	Comments	Result
RF, IF and Modulation section must be tamper	☐ Use Special Screw ☒ Metal Shielding is Soldered ☒ Use Ball Grid Array (BGA)	Complete
	☒ RF module/Chip pin >10 ☒ RF module/Chip pins distance <1.5mm	Complete



1.6. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Conductive	Temperature (°C)	15~35 °C	23.5 °C
	Humidity (%RH)	20~75 %	56.8 %

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 5-22, Ruishukeng Linkou District, New Taipei City,
24451, Taiwan

Performed Location : No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City
333411, Taiwan, R.O.C.

Phone Number : +886-3-275-7255

Fax Number : +886-3-327-8031

Email Address : info.tw@dekra.com

Website : <http://www.dekra.com.tw>

1.7. List of Test Equipment

For Conducted measurements /HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Calibrated	Cal. Method	Cal. Date	Due Date
V	Spectrum Analyzer	R&S	FSV40	101149	ETC	*(c)	2022/03/25	2023/03/24
V	Spectrum Analyzer	KEYSIGHT	N9010A	MY55150401	ETC	*(c)	2022/09/27	2023/09/26
V	Peak Power Analyzer	Anritsu	ML2496A/ 34NKF50	2002004	ETC	*(c)	2022/01/09	2023/01/08
V	Power Sensor	Anritsu	MA2411B	1911080	ETC	*(c)	2022/01/09	2023/01/08
V	Power Sensor	Anritsu	MA2411B	1911081	ETC	*(c)	2022/01/09	2023/01/08

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software version : RF Conducted Test Tools R3 V3.0.0.14
4.
 - a) Calibration conducted by the National Institute of Information and Communications Technology(NICT) (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1)
 - b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)
 - c) Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated agency under Article 102-18 paragraph (1).
 - d) Calibration conducted by using other equipment that listed above from a) to c).

1.8. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

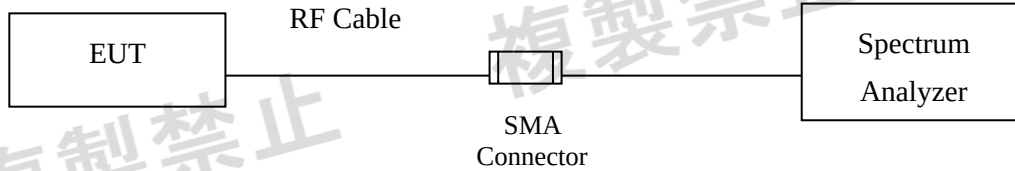
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty	
Output Power and Output Power Tolerance	Power Meter	Spectrum Analyzer
	± 0.89 dB	± 2.06 dB
Spread Bandwidth	± 1544.74 Hz	
Occupied Bandwidth	± 1544.74 Hz	
Frequency Tolerance	± 2.06 dB	
Transmitter Spurious Emissions	± 2.06 dB	
Adjacent Channel Emitted Power	± 2.06 dB	
Out-Band Leakage Power	± 2.06 dB	
Receiver Spurious Emissions	± 2.06 dB	
Transmission burst length	± 2.31 ms	
Carrier Sensing	± 2.31 ms	

2. Output Power and Output Power Tolerance

2.1. Test Setup



2.2. Limits

802.11a,n-20

	W52	W53	W56
Output power	10mW/MHz	10mW/MHz	10mW/MHz
EIRP (with TPC)	--	10mW/MHz	50mW/MHz
EIRP (without TPC)	10mW/MHz	5mW/MHz	25mW/MHz

802.11n-40

	W52	W53	W56
Output power	5mW/MHz	5mW/MHz	5mW/MHz
EIRP (with TPC)	--	5mW/MHz	25mW/MHz
EIRP (without TPC)	5mW/MHz	2.5mW/MHz	12.5mW/MHz

802.11ac-80

	W52	W53	W56
Output power	2.5mW/MHz	2.5mW/MHz	2.5mW/MHz
EIRP (with TPC)	--	2.5mW/MHz	12.5mW/MHz
EIRP (without TPC)	2.5mW/MHz	1.25mW/MHz	6.25mW/MHz

Output Power Tolerance: +20% to -80% (W52;W53)

Output Power Tolerance: +50% to -50% (W56)

2.3. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A sample detector function must be used.
- (b) A measurement instrument with an integrated 1MHz power bandwidth function may be used to automate the test process.
- (c) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (d) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

2.4. Test method

According to MIC Notice No. 88 Annex 45.

2.5. Test Result of Output Power and Output Power Tolerance

Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 1
Test Date : 2022/09/27

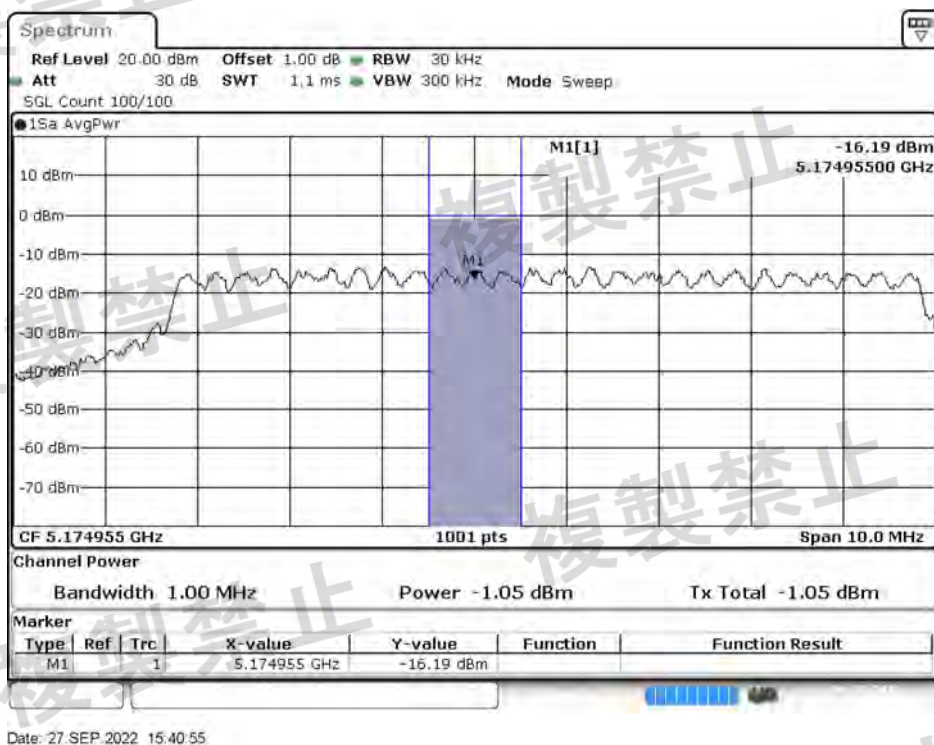
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5180	-1.05	0.785	10
5240	-2.59	0.551	10

Antenna Gain: 1.18 dBi for 5150~5250 MHz

Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5180	-1.05	0.13	1.03	10
5240	-2.59	-1.41	0.72	10

E.I.R.P = Real Value + Antenna Gain.

5180 MHz



5240 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 2
Test Date : 2022/09/27

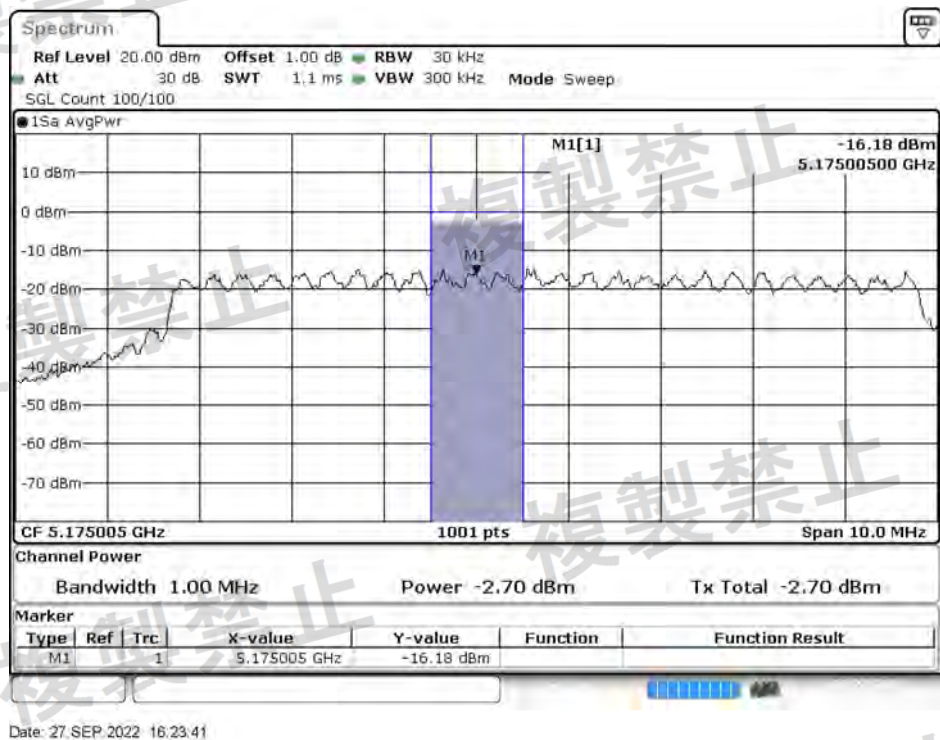
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5180	-2.70	0.537	10
5240	-3.84	0.413	10

Antenna Gain: 1.18 dBi for 5150~5250 MHz

Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5180	-2.70	-2.70	-1.52	10
5240	-3.84	-3.84	-2.66	10

E.I.R.P = Real Value + Antenna Gain.

5180 MHz



5240 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 1
Test Date : 2022/09/27

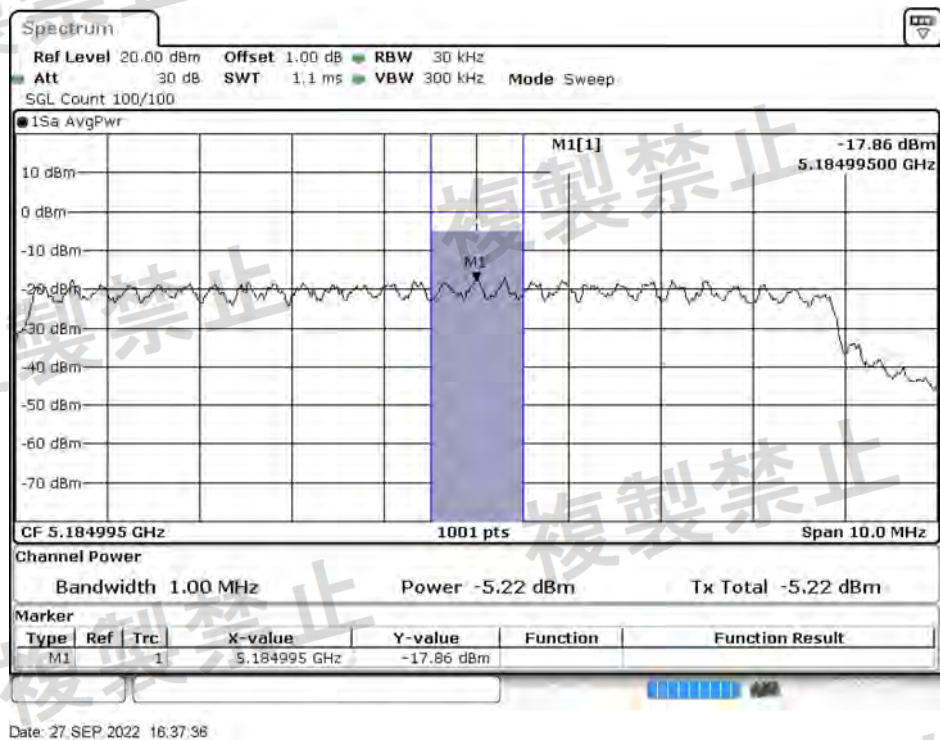
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5180	-5.22	0.537	10
5240	-4.55	0.413	10

Antenna Gain: 1.18 dBi for 5150~5250 MHz

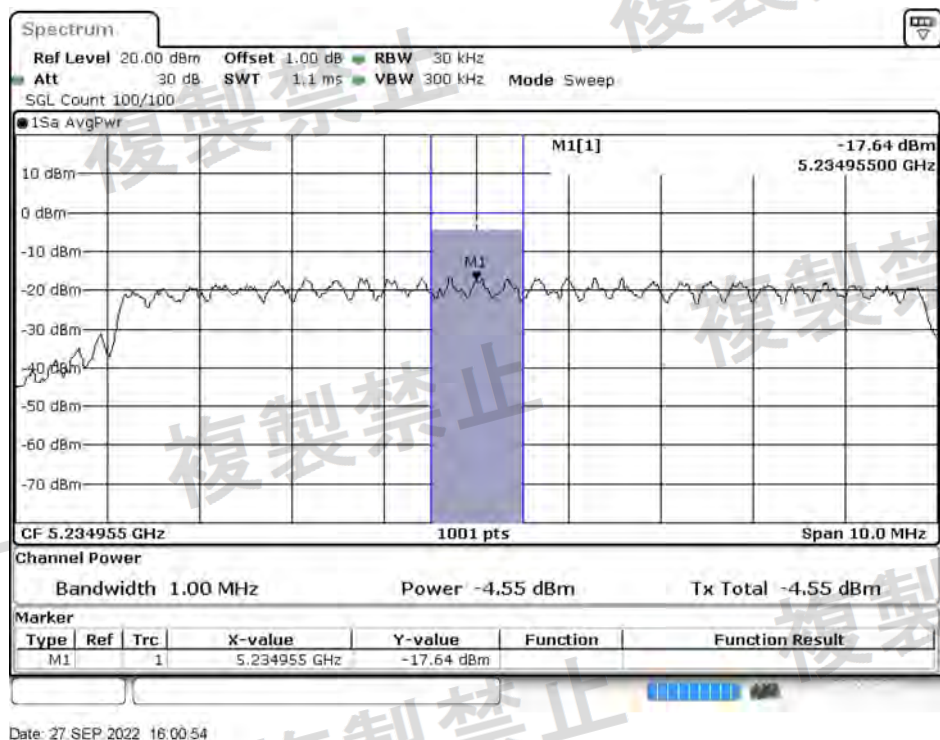
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5180	-5.22	-4.04	0.39	10
5240	-4.55	-3.37	0.46	10

E.I.R.P = Real Value + Antenna Gain.

5180 MHz



5240 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 2
Test Date : 2022/09/27

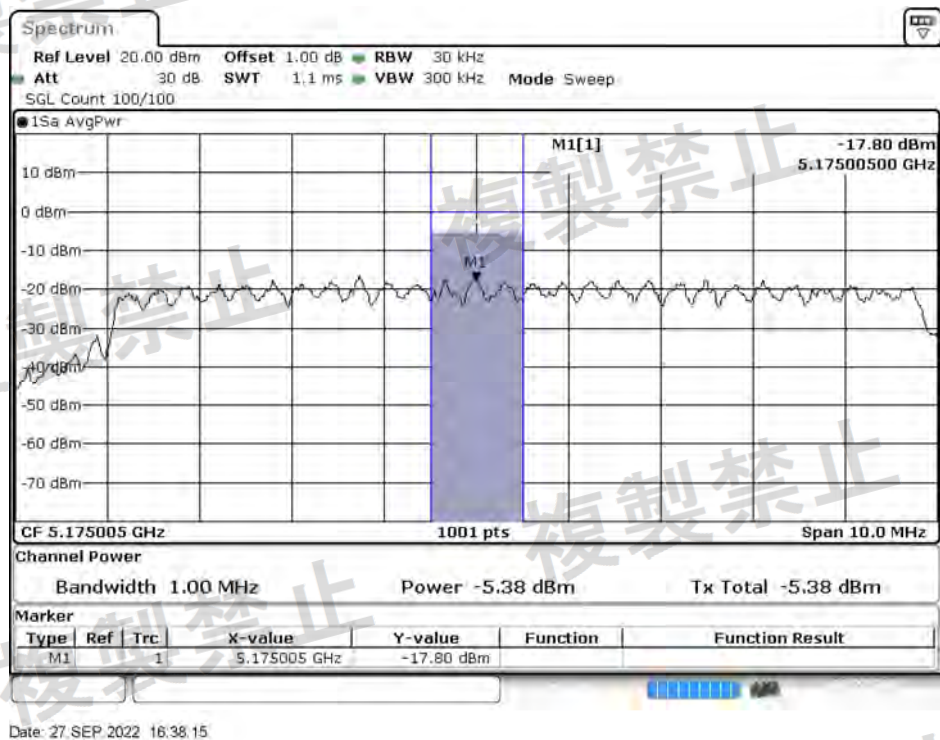
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5180	-5.38	0.290	10
5240	-5.38	0.290	10

Antenna Gain: 1.18 dBi for 5150~5250 MHz

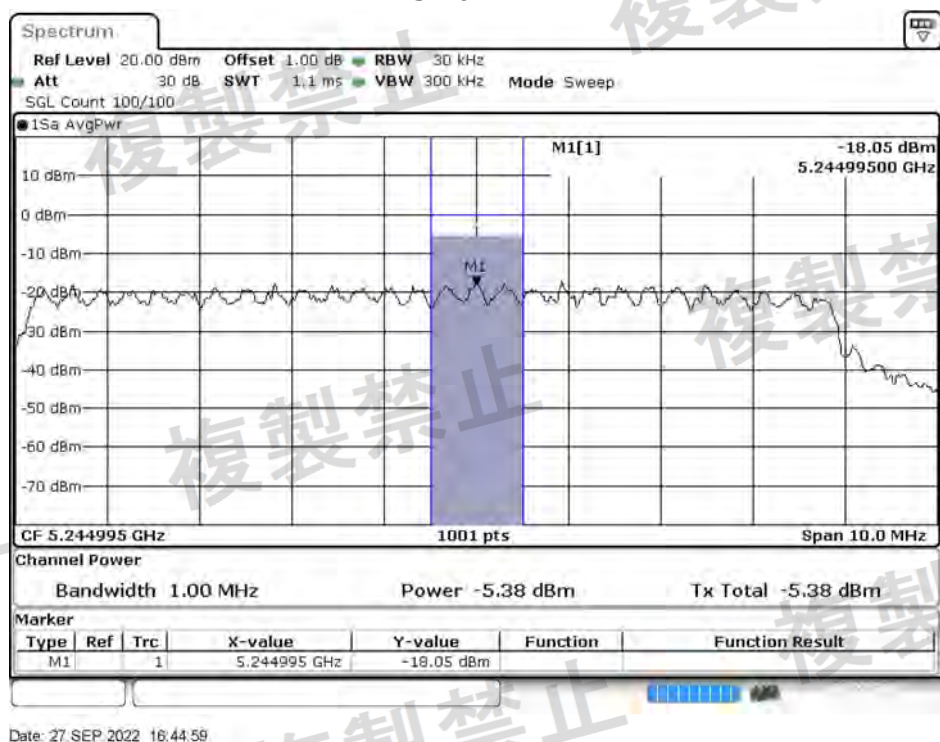
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5180	-5.38	-4.20	0.38	10
5240	-5.38	-4.20	0.38	10

E.I.R.P = Real Value + Antenna Gain.

5180 MHz



5240 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 1
Test Date : 2022/09/27

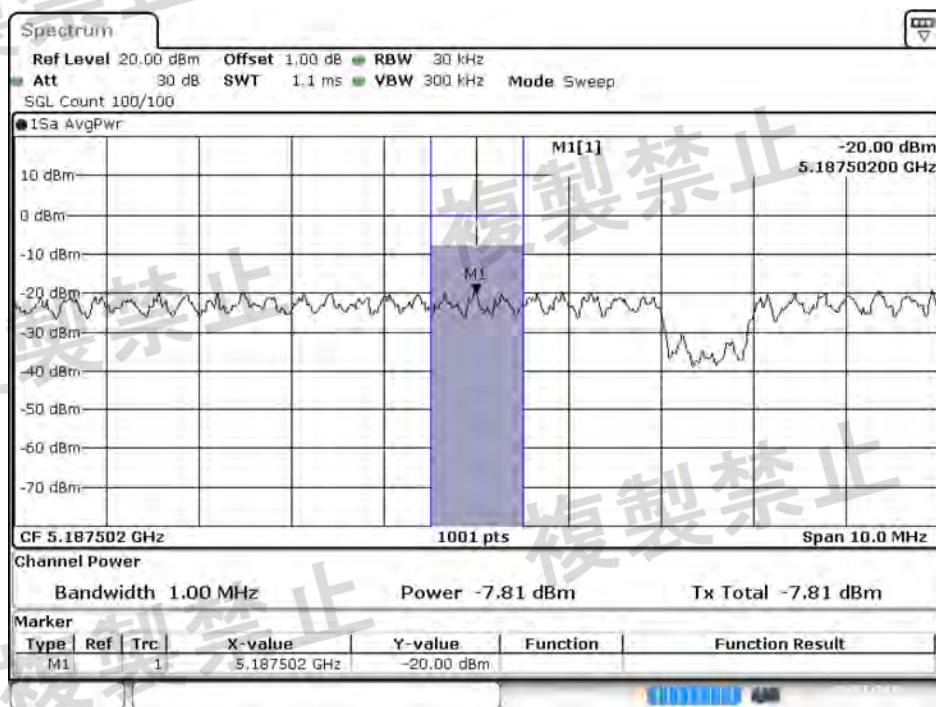
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5190	-7.81	0.166	6.98
5230	-7.58	0.175	6.98

Antenna Gain: 1.18 dBi for 5150~5250 MHz

Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5190	-7.81	-6.63	0.22	6.98
5230	-7.58	-6.40	0.23	6.98

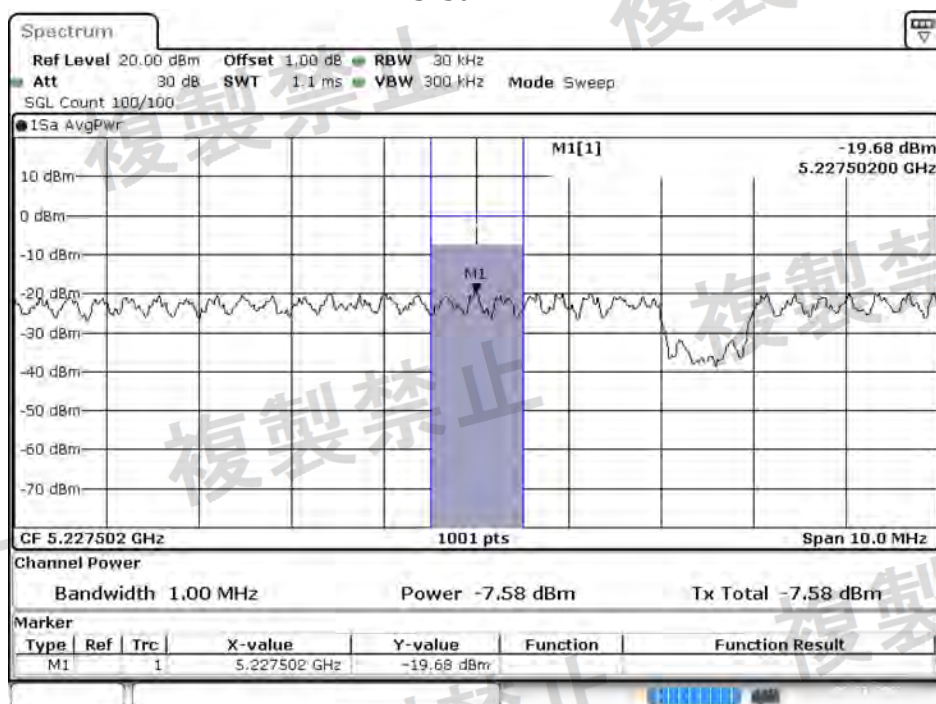
E.I.R.P = Real Value + Antenna Gain.

5190 MHz



Date: 27.SEP.2022 16:07:08

5230 MHz



Date: 27.SEP.2022 16:13:25

Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 2
Test Date : 2022/09/27

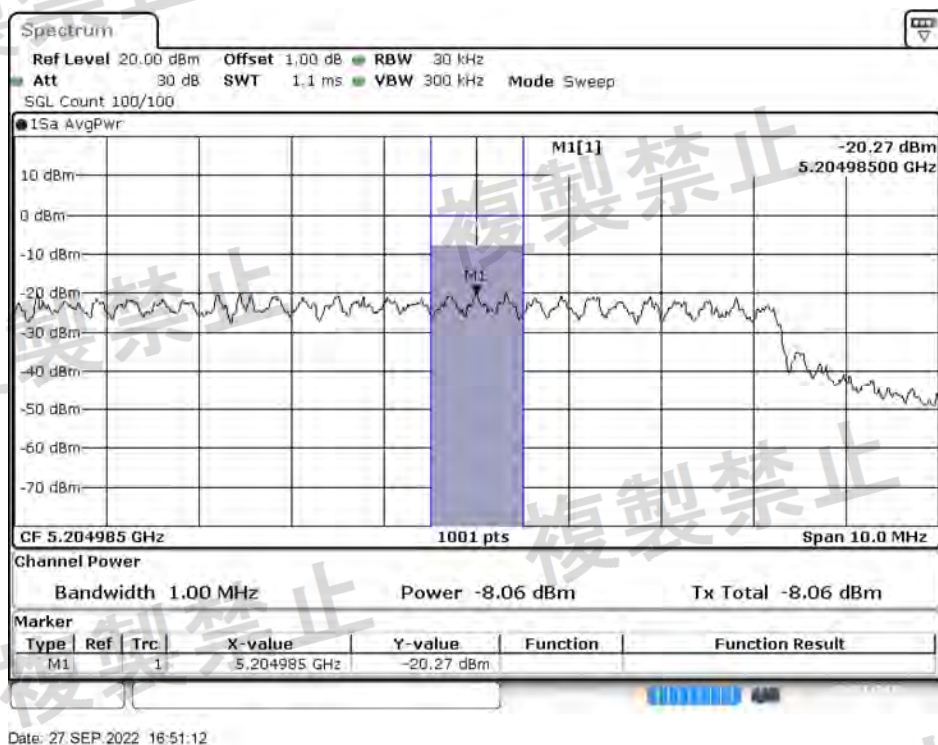
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5190	-8.06	0.156	6.98
5230	-8.44	0.143	6.98

Antenna Gain: 1.18 dBi for 5150~5250 MHz

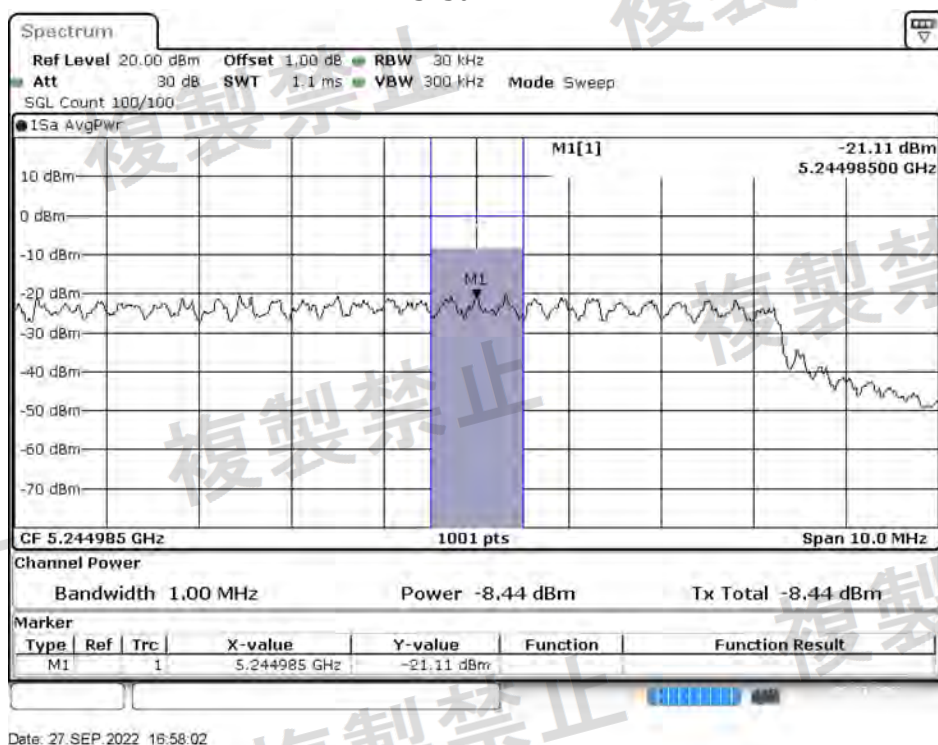
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5190	-8.06	-6.88	0.21	6.98
5230	-8.44	-7.26	0.19	6.98

E.I.R.P = Real Value + Antenna Gain.

5190 MHz



5230 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 1
Test Date : 2022/09/28

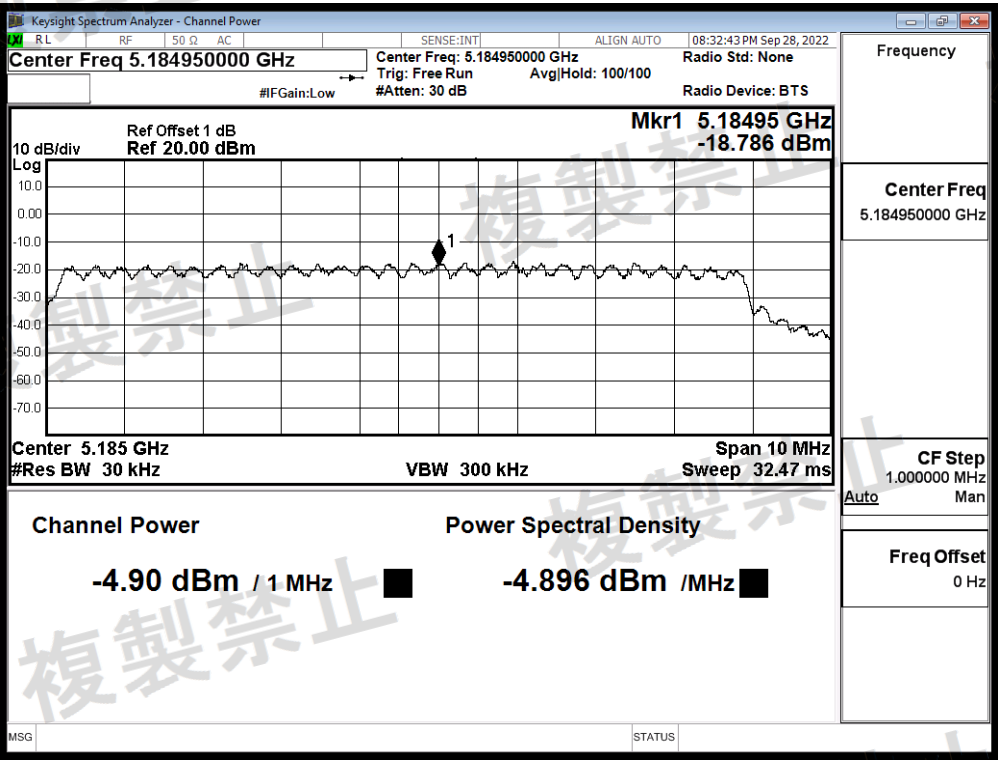
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5180	-4.90	0.324	10
5240	-3.13	0.486	10

Antenna Gain: 1.18 dBi for 5150~5250 MHz

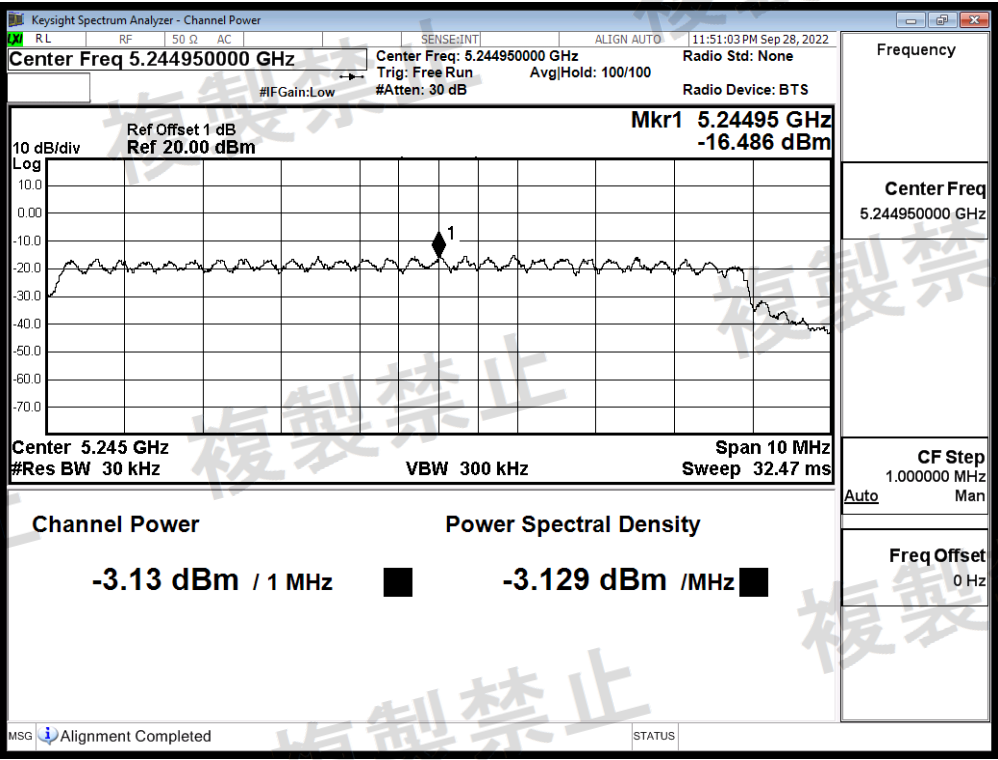
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5180	-4.90	-3.72	0.42	10
5240	-3.13	-1.95	0.64	10

E.I.R.P = Real Value + Antenna Gain.

5180 MHz



5240 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 2
Test Date : 2022/09/28

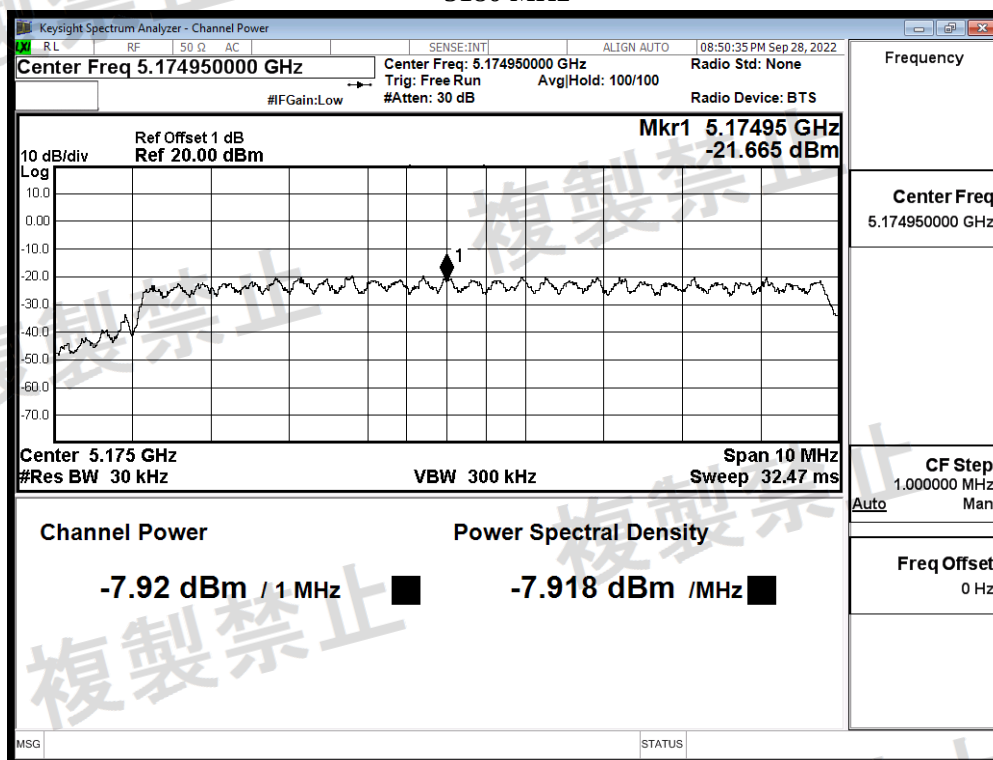
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5180	-7.92	0.161	10
5240	-4.38	0.365	10

Antenna Gain: 1.18 dBi for 5150~5250 MHz

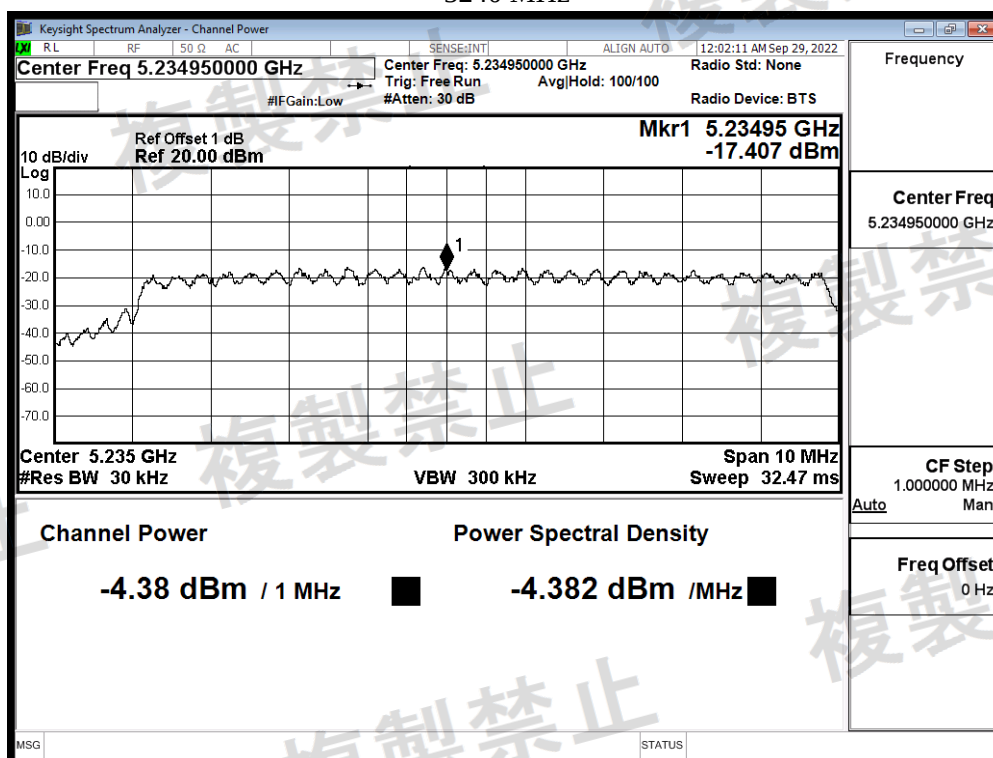
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5180	-7.92	-6.74	0.21	10
5240	-4.38	-3.20	0.48	10

E.I.R.P = Real Value + Antenna Gain.

5180 MHz



5240 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 1
Test Date : 2022/09/28

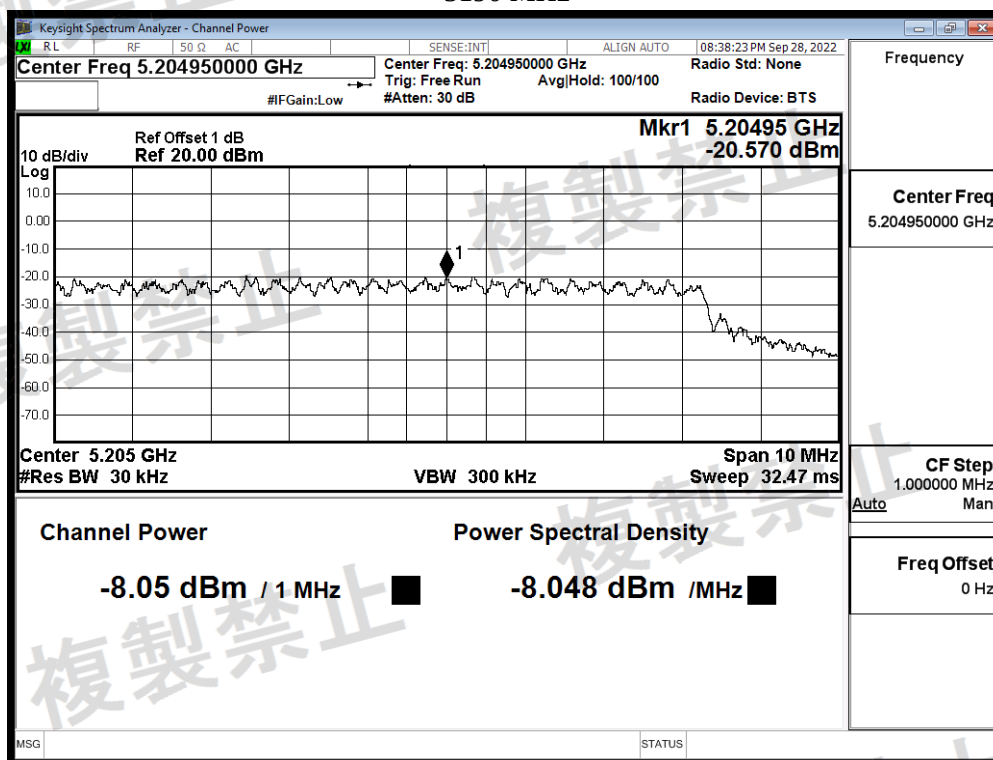
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5190	-8.05	0.157	6.98
5230	-6.60	0.219	6.98

Antenna Gain: 1.18 dBi for 5150~5250 MHz

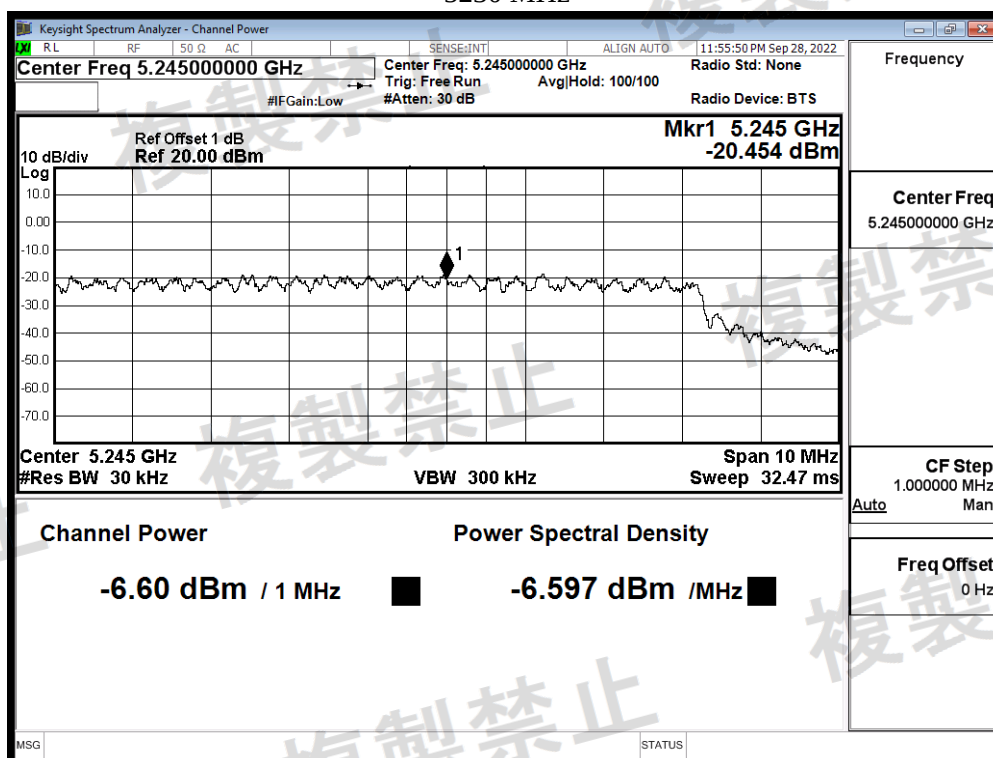
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5190	-8.05	-6.87	0.21	6.98
5230	-6.60	-5.42	0.29	6.98

E.I.R.P = Real Value + Antenna Gain.

5190 MHz



5230 MHz



Product : QCast Mirror
Test Item : Output Power
Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 2
Test Date : 2022/09/28

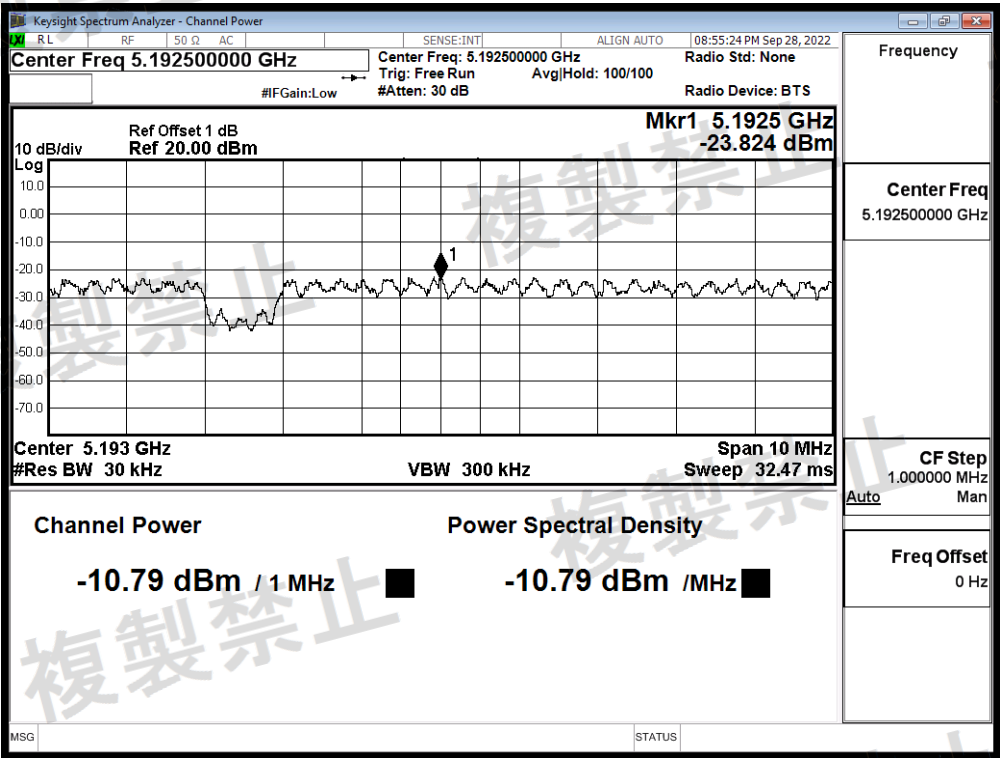
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5190	-10.79	0.083	6.98
5230	-8.03	0.157	6.98

Antenna Gain: 1.18 dBi for 5150~5250 MHz

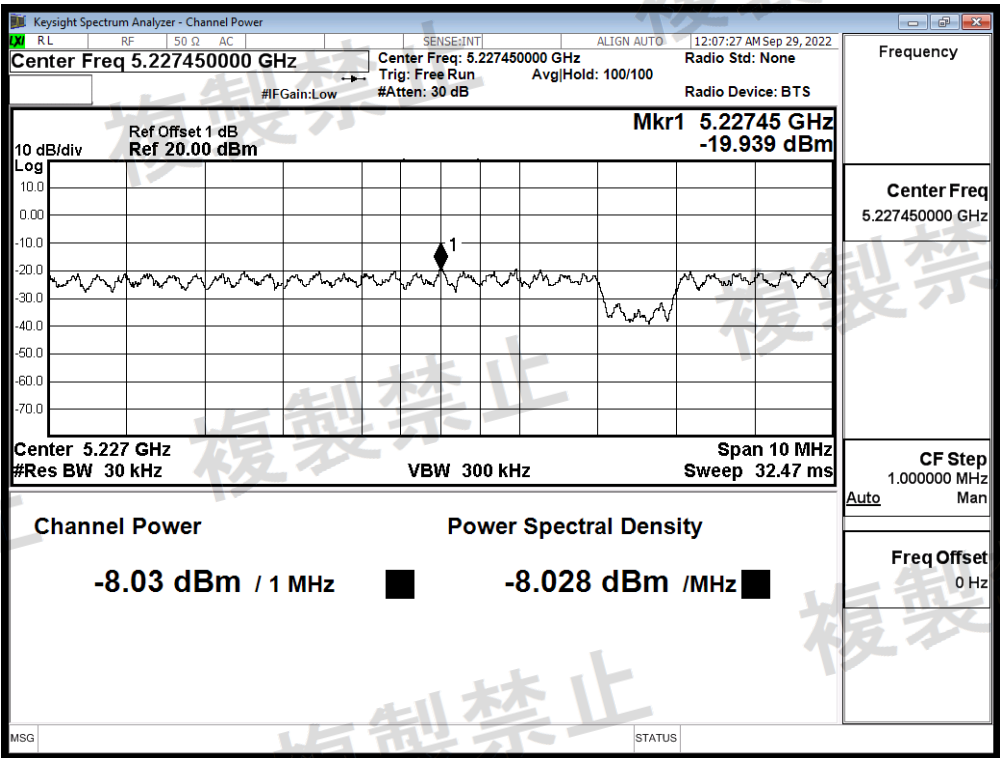
Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5190	-10.79	-9.61	0.11	6.98
5230	-8.03	-6.85	0.21	6.98

E.I.R.P = Real Value + Antenna Gain.

5190 MHz



5230 MHz



Product : QCast Mirror
 Test Item : Output Power
 Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 1
 Test Date : 2022/09/28

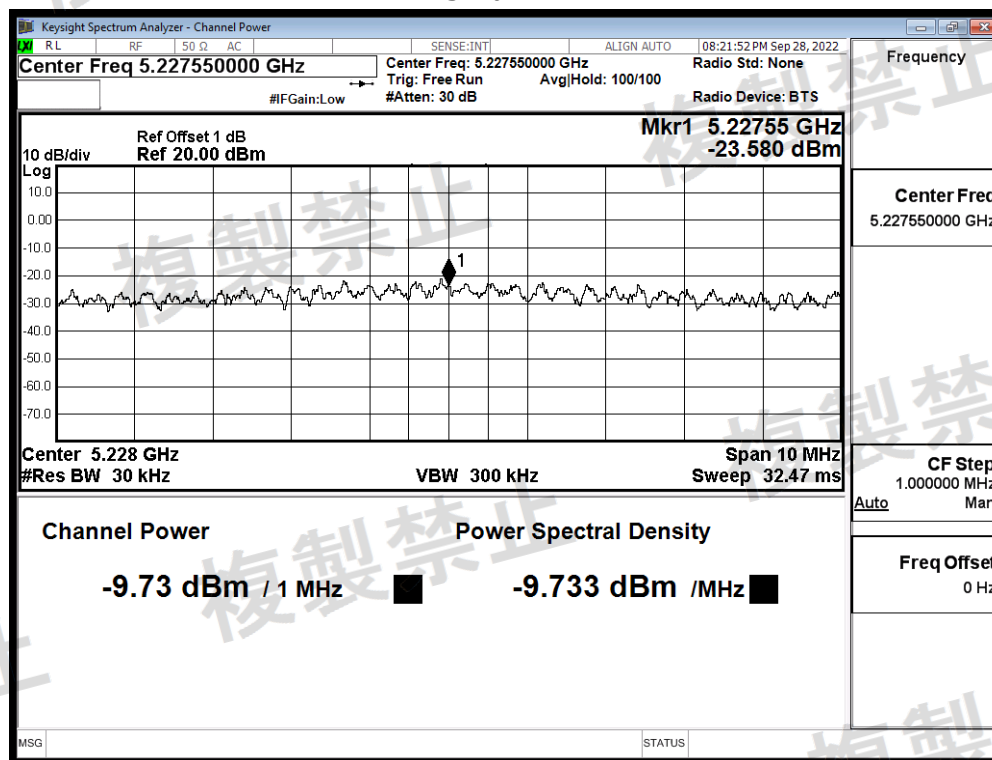
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5210	-9.73	0.106	3.97

Antenna Gain: 1.18 dBi for 5150~5250 MHz

Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5210	-9.73	-8.55	0.14	3.97

E.I.R.P = Real Value + Antenna Gain.

5210 MHz



Product : QCast Mirror
 Test Item : Output Power
 Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 2
 Test Date : 2022/09/28

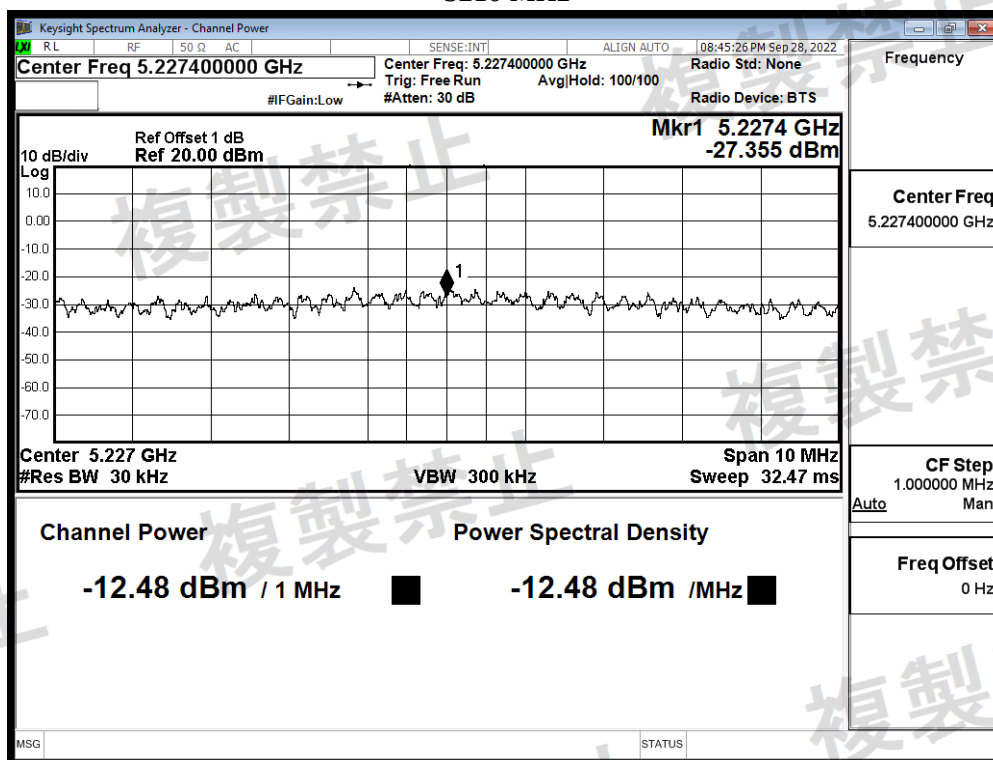
Frequency (MHz)	Real Value (dBm/MHz)	Real Value (mW/MHz)	Limit (mW/MHz)
5210	-12.48	0.056	3.97

Antenna Gain: 1.18 dBi for 5150~5250 MHz

Frequency (MHz)	Real Value (dBm/MHz)	E.I.R.P (dBm/MHz)	E.I.R.P (mW/MHz)	Limit (mW/MHz)
5210	-12.48	-11.30	0.07	3.97

E.I.R.P = Real Value + Antenna Gain.

5210 MHz



Test Result	PASS
--------------------	------

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 1
Test Date : 2022/09/27

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5180	1.850	0.785	-57.55	+20% to -80%
5240	1.850	0.551	-70.23	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 2
Test Date : 2022/09/27

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5180	1.850	0.537	-70.97	+20% to -80%
5240	1.850	0.413	-77.67	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 1
Test Date : 2022/09/27

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5180	0.465	0.301	-35.35	+20% to -80%
5240	0.465	0.351	-24.57	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 2
Test Date : 2022/09/27

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5180	0.414	0.290	-30.02	+20% to -80%
5240	0.414	0.290	-30.02	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 1
Test Date : 2022/09/27

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5190	0.243	0.166	-31.85	+20% to -80%
5230	0.243	0.175	-28.15	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 2
Test Date : 2022/09/27

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5190	0.214	0.156	-26.94	+20% to -80%
5230	0.214	0.143	-33.06	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 1
Test Date : 2022/09/28

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5180	0.578	0.324	-44.01	+20% to -80%
5240	0.578	0.486	-15.85	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 2
Test Date : 2022/09/28

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5180	0.375	0.161	-56.95	+20% to -80%
5240	0.375	0.365	-2.73	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 1
Test Date : 2022/09/28

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5190	0.268	0.157	-41.58	+20% to -80%
5230	0.268	0.219	-18.42	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 2
Test Date : 2022/09/28

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5190	0.172	0.083	-51.52	+20% to -80%
5230	0.172	0.157	-8.48	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 1
Test Date : 2022/09/28

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5210	0.106	0.106	0.00	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Product : QCast Mirror
Test Item : Output Power Tolerance
Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 2
Test Date : 2022/09/28

Frequency (MHz)	Declared Output Power (mW/MHz)	Channel Power (mW/MHz)	Tolerance (%)	Limit (dBm/MHz)
5210	0.056	0.056	0.00	+20% to -80%

Note: Deviation = (Channel Power - Declared Output Power) / Declared Output Power * 100%

Test Result	PASS
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3. Occupied Bandwidth

3.1. Test Setup



3.2. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) A measurement instrument with an integrated 99% power bandwidth function may be used to automate the test process.
- (c) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (d) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

3.3. Test method

According to MIC Notice No. 88 Annex 45.

3.4. Limits

≤ 20 MHz for BW=20 MHz (W52, W53, W56 Band)

≤ 40 MHz for BW=40 MHz (W52, W53, W56 Band)

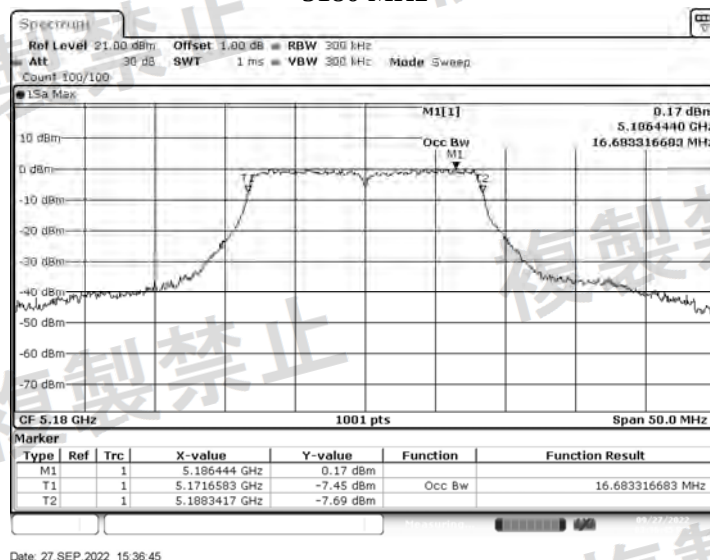
≤ 80 MHz for BW=80 MHz (W52, W53, W56 Band)

3.5. Test Result of Occupied Bandwidth

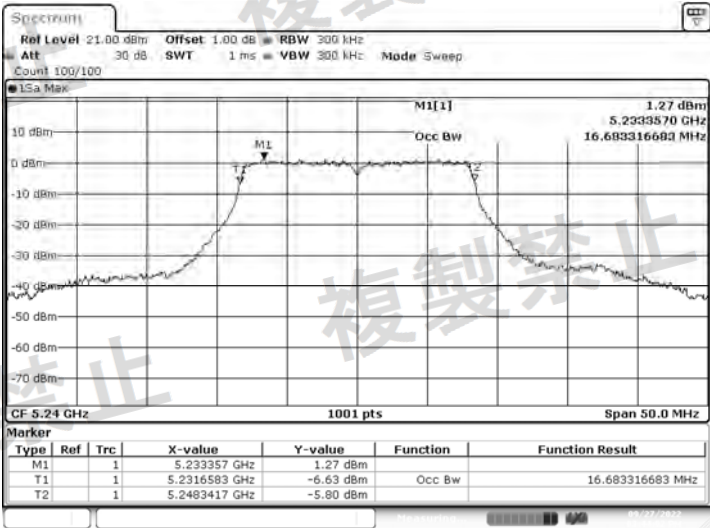
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 1
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	16.683	<= 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	16.683	<= 20

5180 MHz



5240 MHz

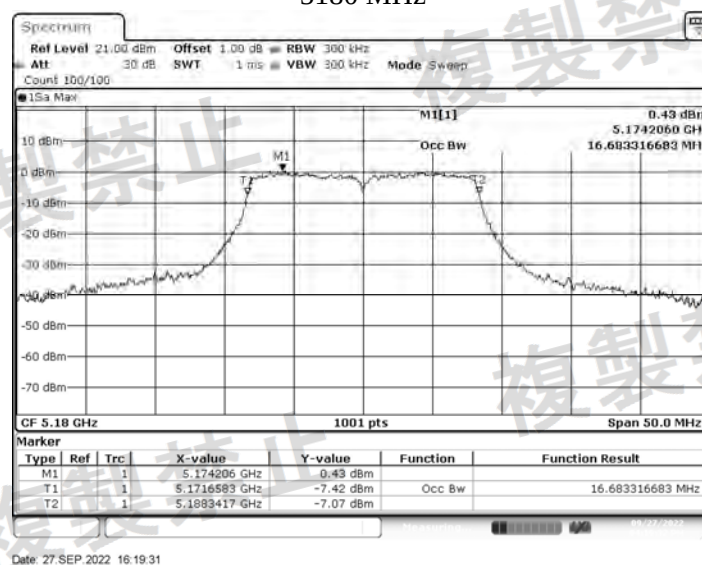


Date: 27 SEP.2022 15:44:02

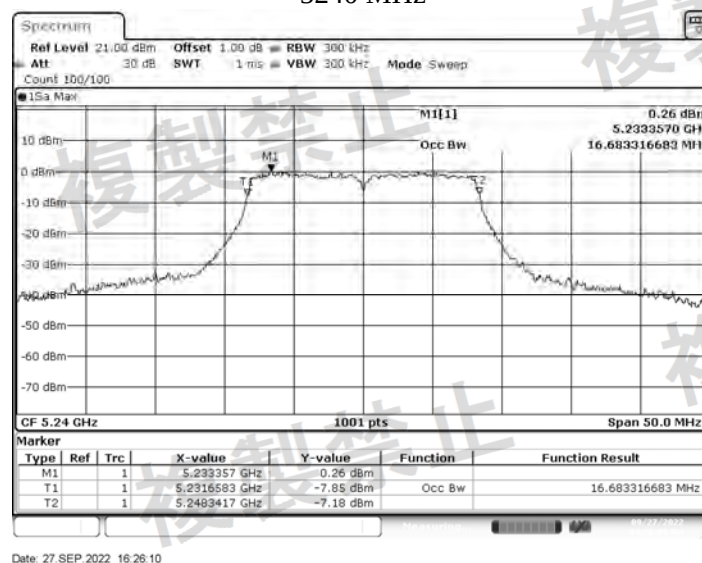
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	16.683	<= 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	16.683	<= 20

5180 MHz



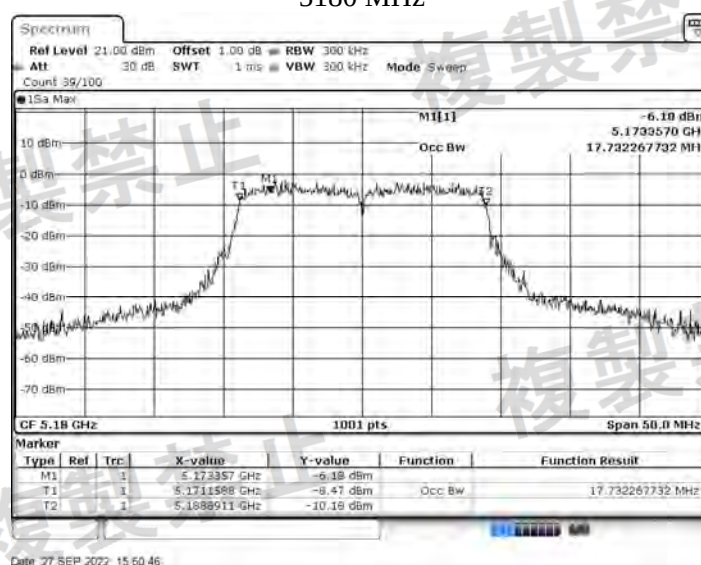
5240 MHz



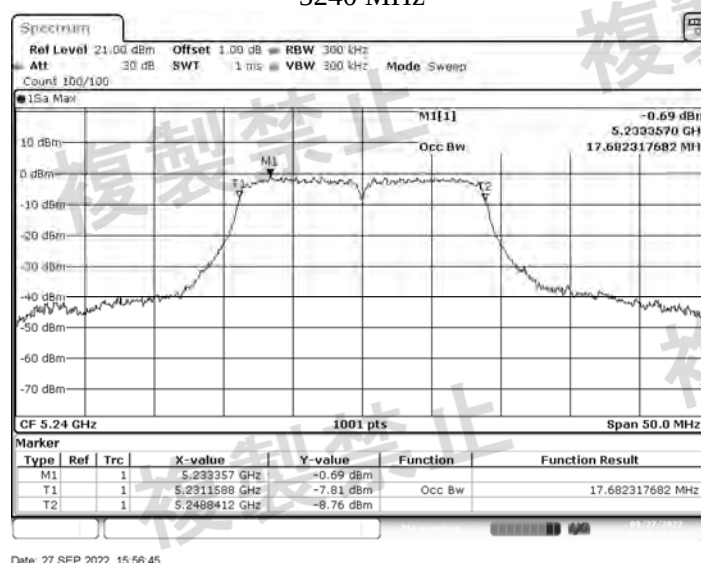
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 1
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	17.732	<= 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	17.682	<= 20

5180 MHz



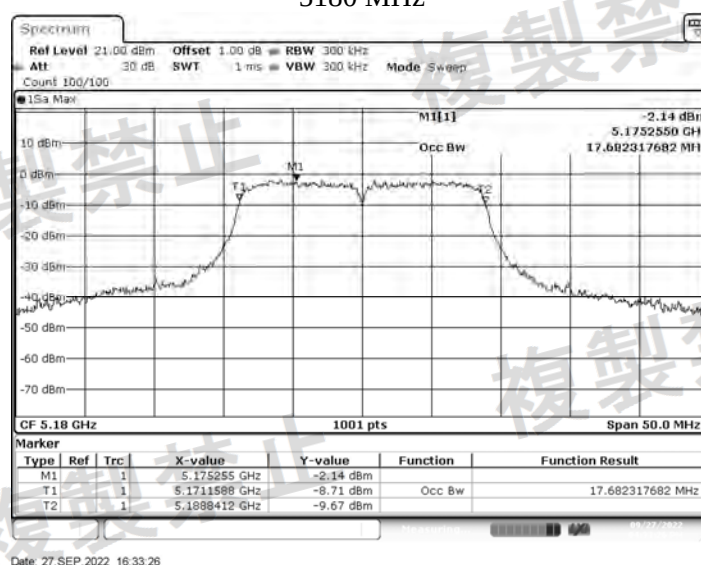
5240 MHz



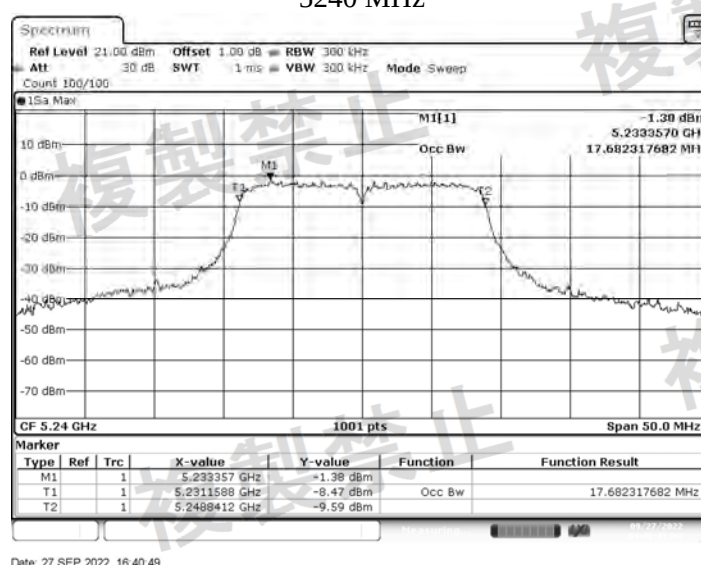
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	17.682	<= 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	17.682	<= 20

5180 MHz



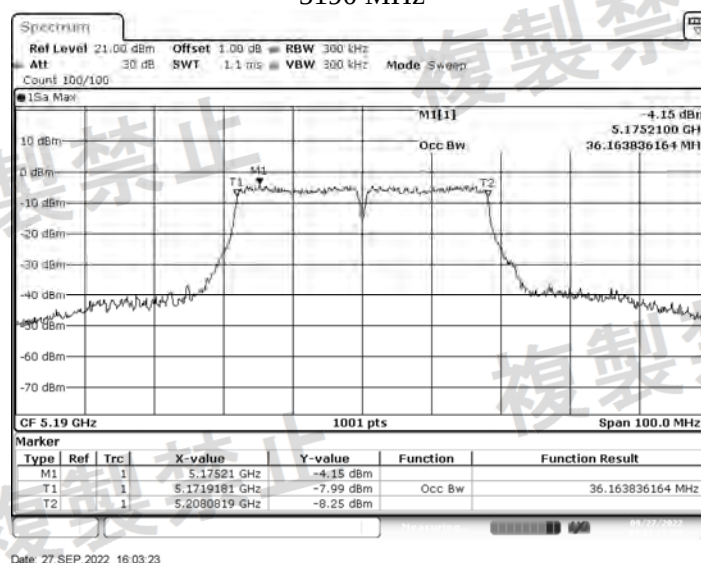
5240 MHz



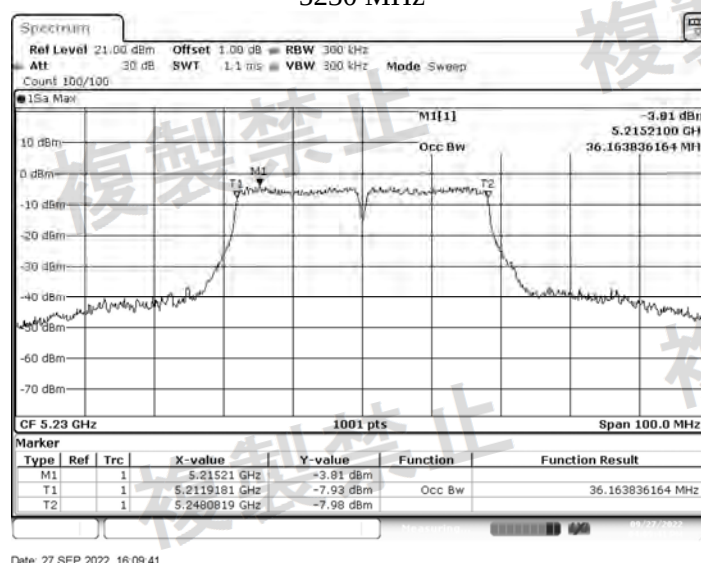
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 1
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	36.163	<= 40
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	36.163	<= 40

5190 MHz



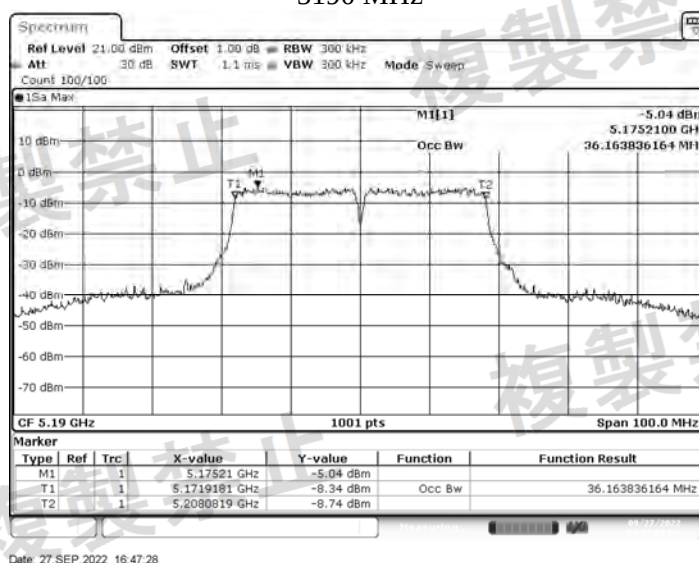
5230 MHz



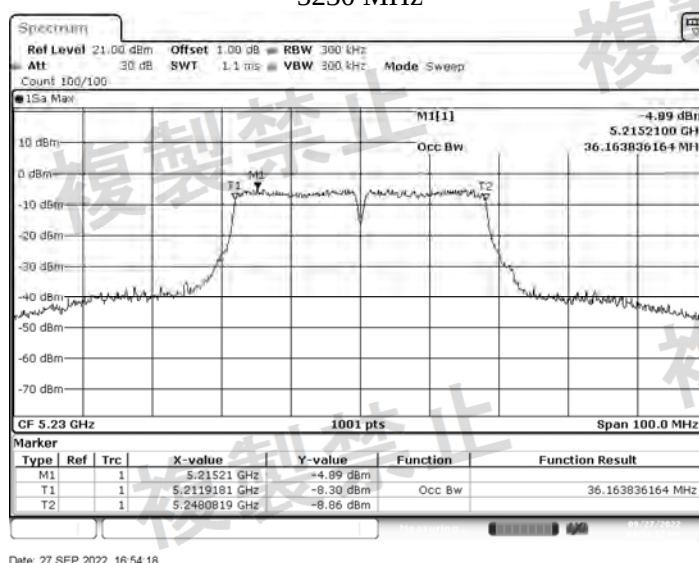
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	36.163	<= 40
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	36.163	<= 40

5190 MHz



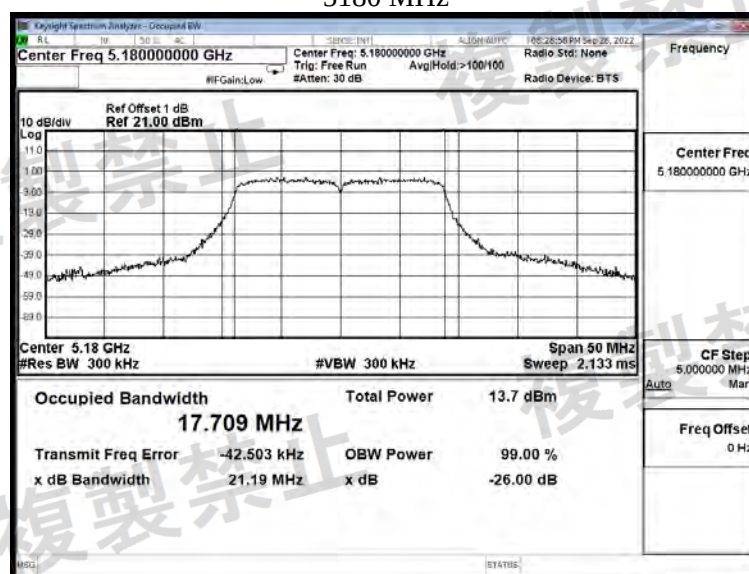
5230 MHz



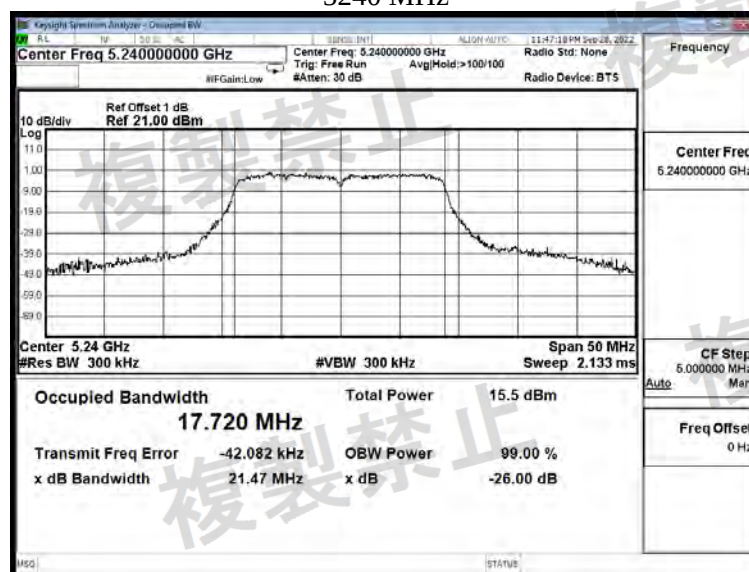
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	17.709	<= 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	17.720	<= 20

5180 MHz



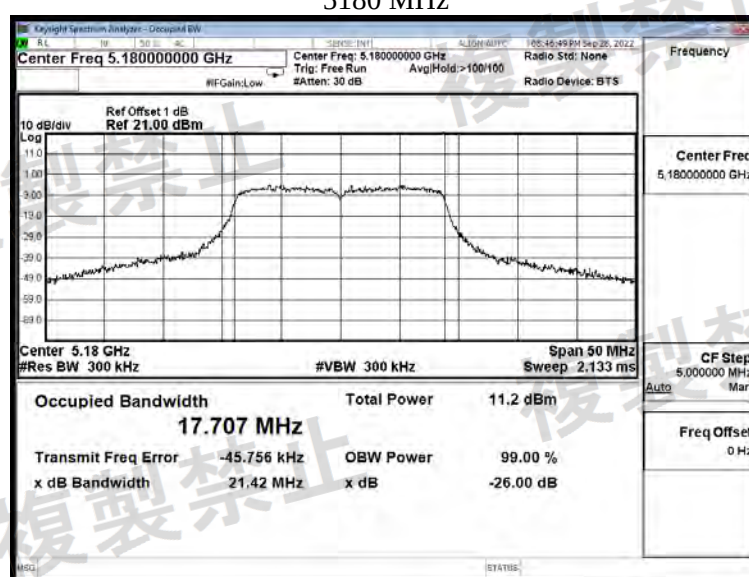
5240 MHz



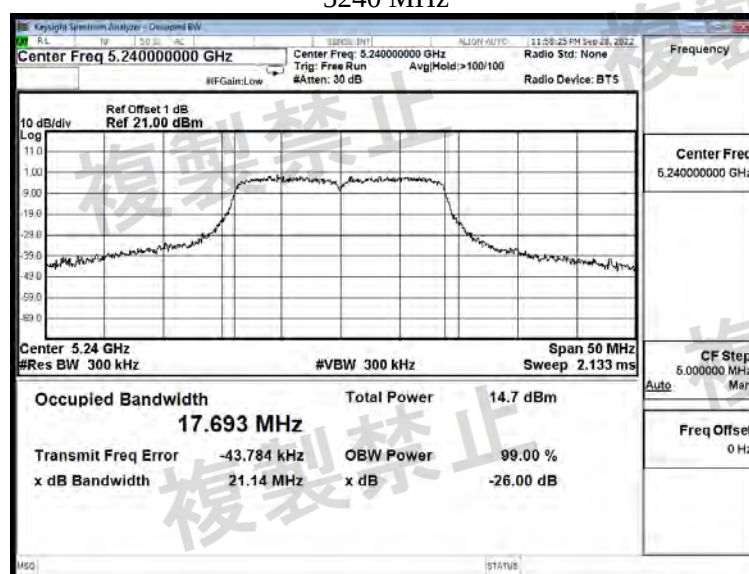
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	17.707	<= 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	17.693	<= 20

5180 MHz



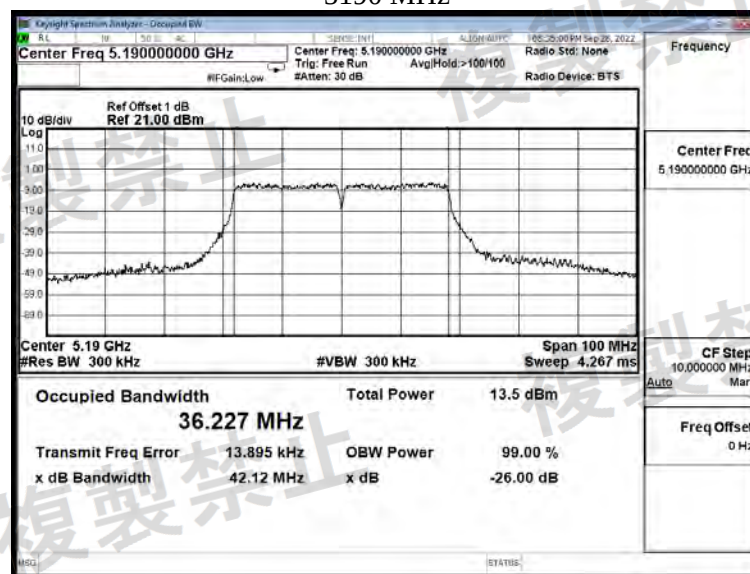
5240 MHz



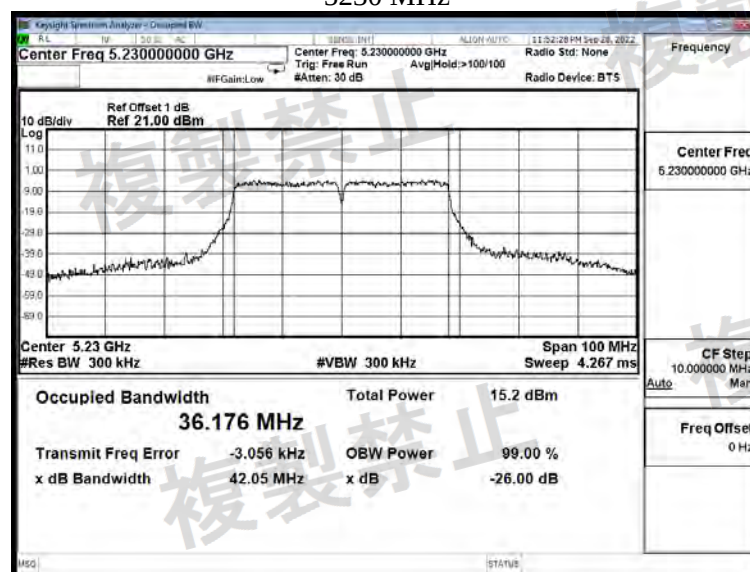
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	36.227	<= 40
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	36.176	<= 40

5190 MHz



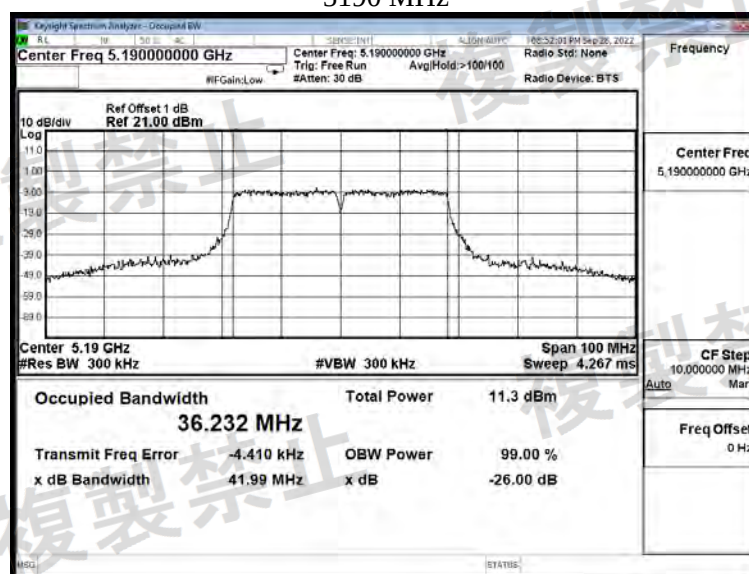
5230 MHz



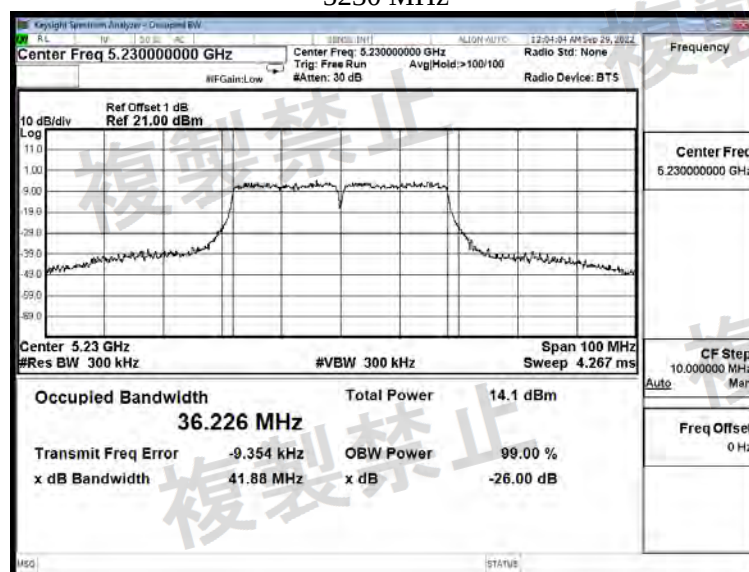
Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	36.232	<= 40
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	36.226	<= 40

5190 MHz



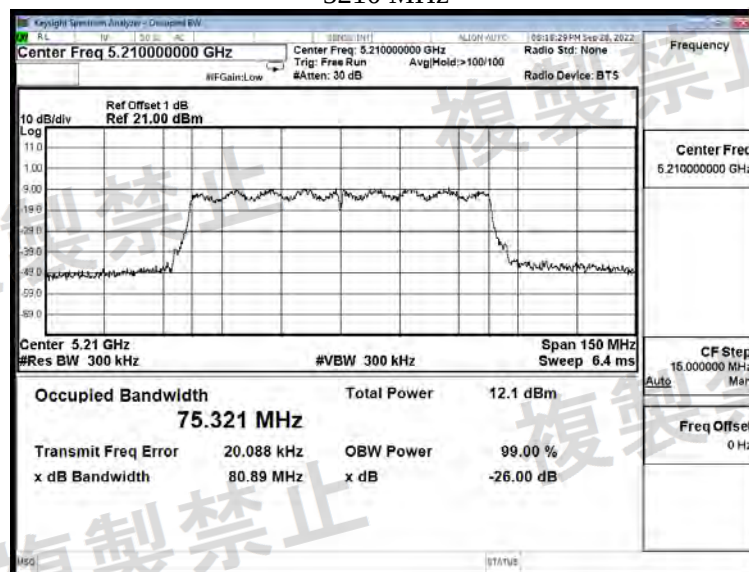
5230 MHz



Product : QCast Mirror
Test Item : Occupied Bandwidth
Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 1
Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5210	75.321	<= 80

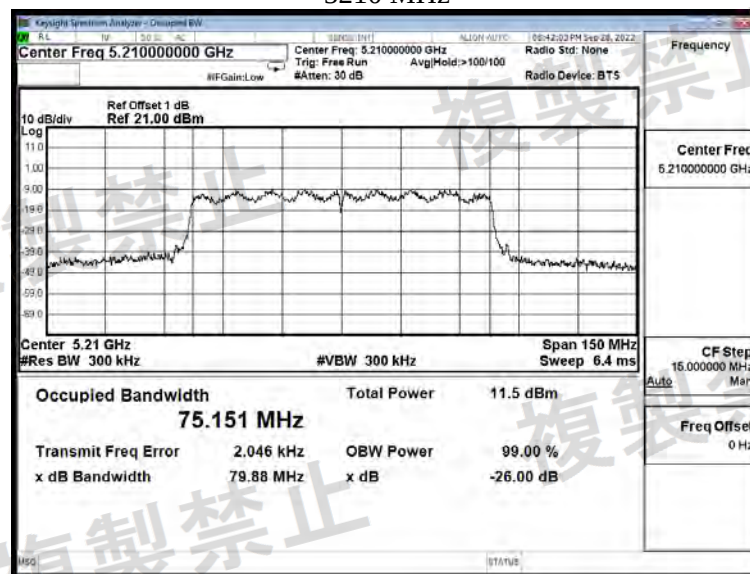
5210 MHz



Product : QCast Mirror
 Test Item : Occupied Bandwidth
 Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Limit (MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5210	75.151	<= 80

5210 MHz



Test Result	PASS
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4. Frequency Tolerance

4.1. Test Setup



4.2. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (c) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

4.3. Test method

According to MIC Notice No. 88 Annex 45.

4.4. Limits

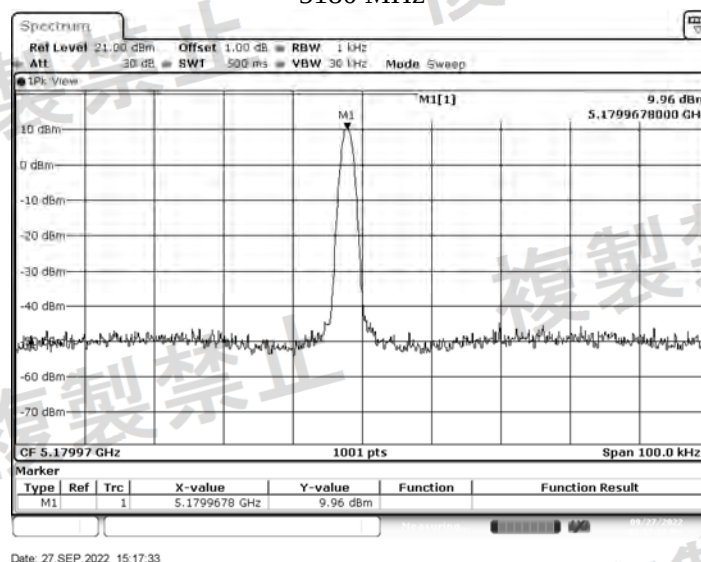
± 20 ppm

4.5. Test Result of Frequency Tolerance

Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 1
 Test Date : 2022/09/27

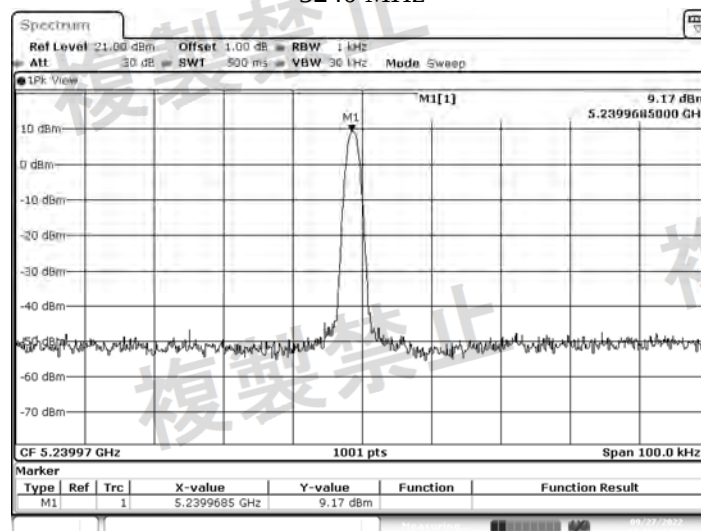
Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	5179.968	-6.216	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	5239.969	-6.011	± 20

5180 MHz



Date: 27.SEP.2022 15:17:33

5240 MHz

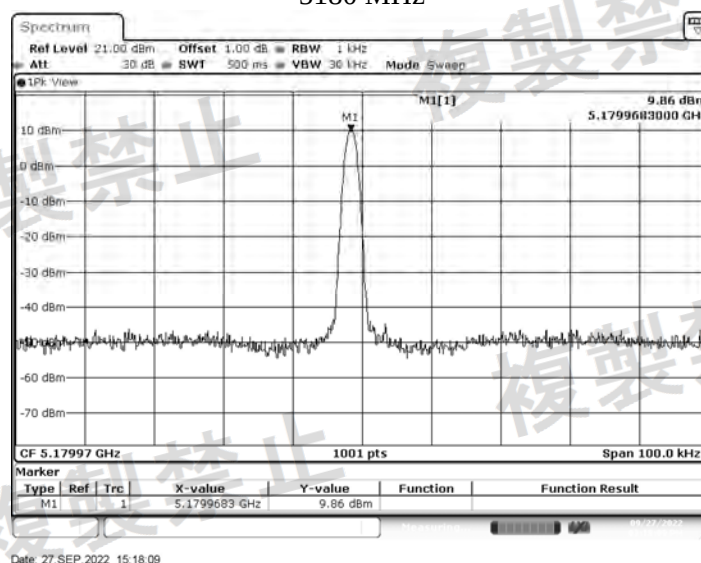


Date: 27.SEP.2022 15:19:08

Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11a 6 Mbps)_Antenna 2
 Test Date : 2022/09/27

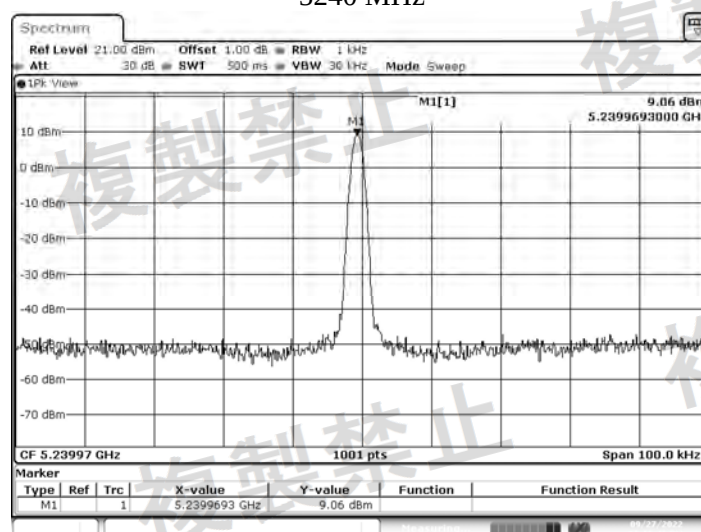
Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	5179.968	-6.120	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	5239.969	-5.859	± 20

5180 MHz



Date: 27.SEP.2022 15:18:09

5240 MHz

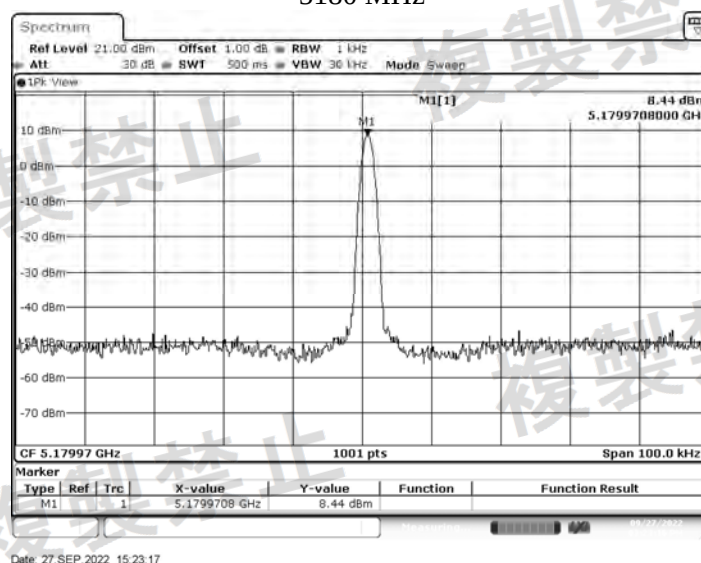


Date: 27.SEP.2022 15:19:46

Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 1
 Test Date : 2022/09/27

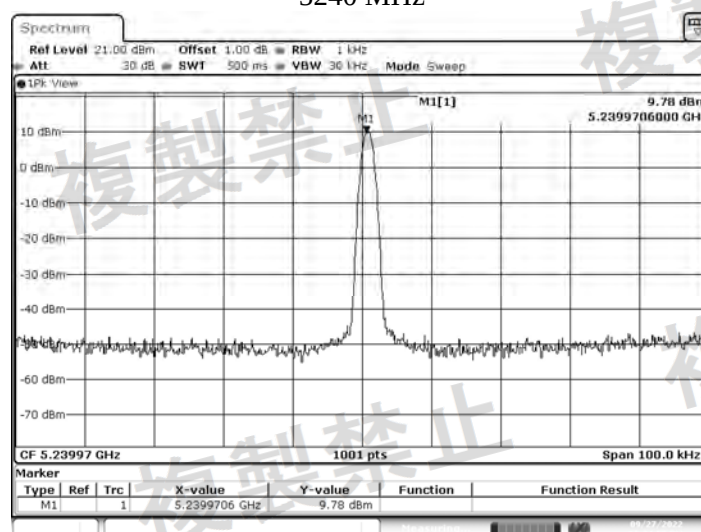
Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	5179.971	-5.637	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	5239.971	-5.611	± 20

5180 MHz



Date: 27.SEP.2022 15:23:17

5240 MHz

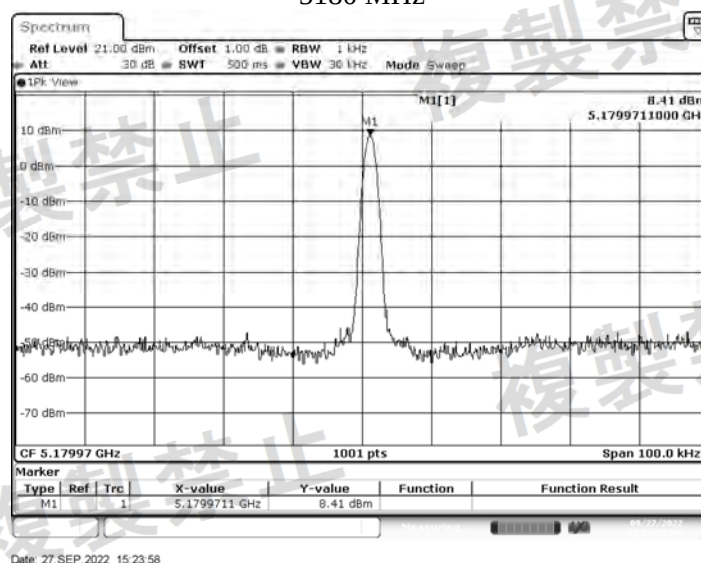


Date: 27.SEP.2022 15:24:56

Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11n20 14.4 Mbps)_Antenna 2
 Test Date : 2022/09/27

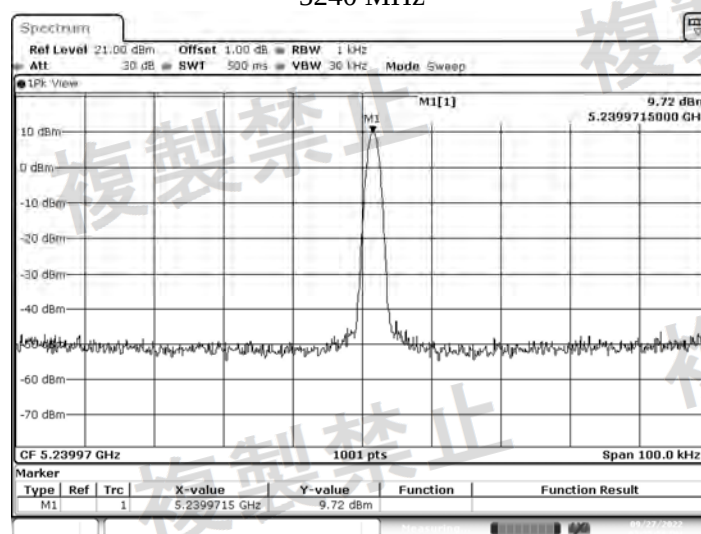
Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	5179.971	-5.579	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	5239.972	-5.439	± 20

5180 MHz



Date: 27.SEP.2022 15:23:58

5240 MHz

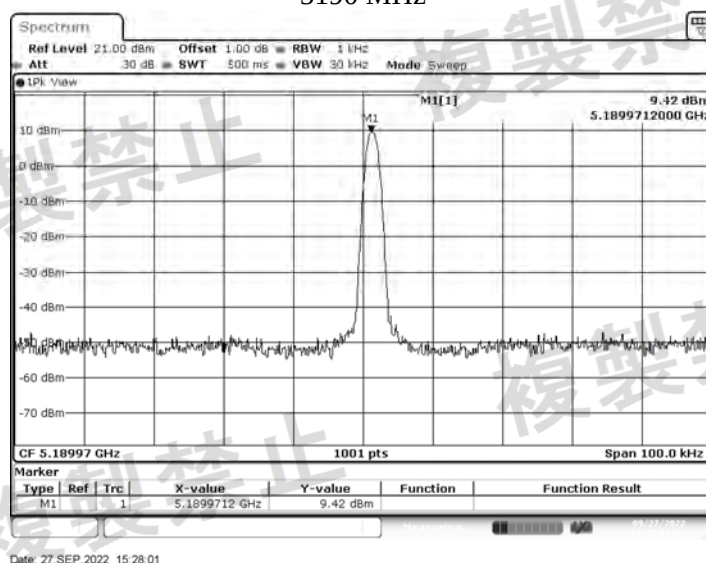


Date: 27.SEP.2022 15:25:56

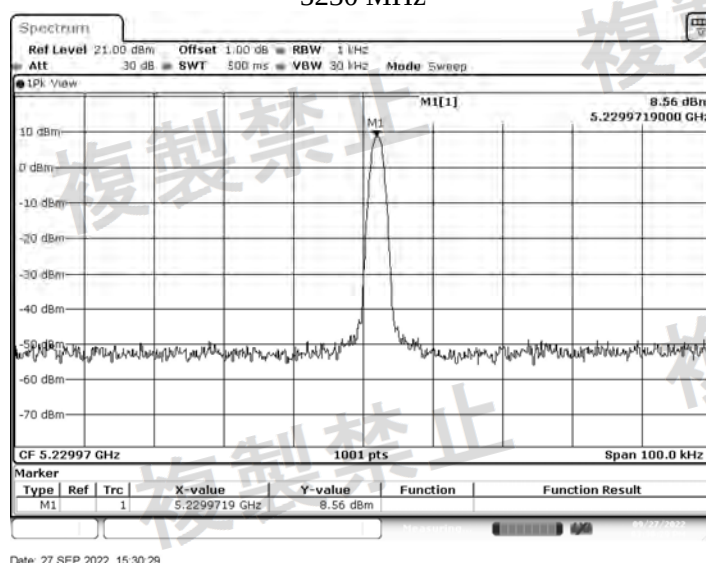
Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 1
 Test Date : 2022/09/27

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	5189.9712	-5.5492	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	5229.9719	-5.3729	± 20

5190 MHz



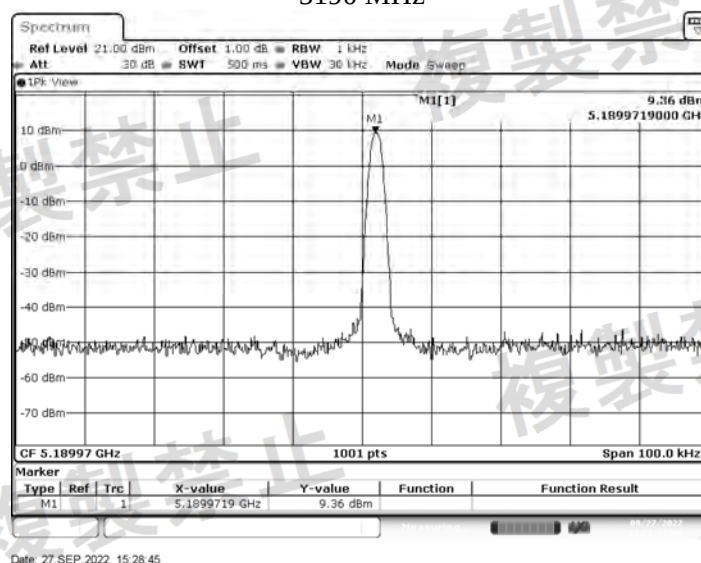
5230 MHz



Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11n40 30 Mbps)_Antenna 2
 Test Date : 2022/09/27

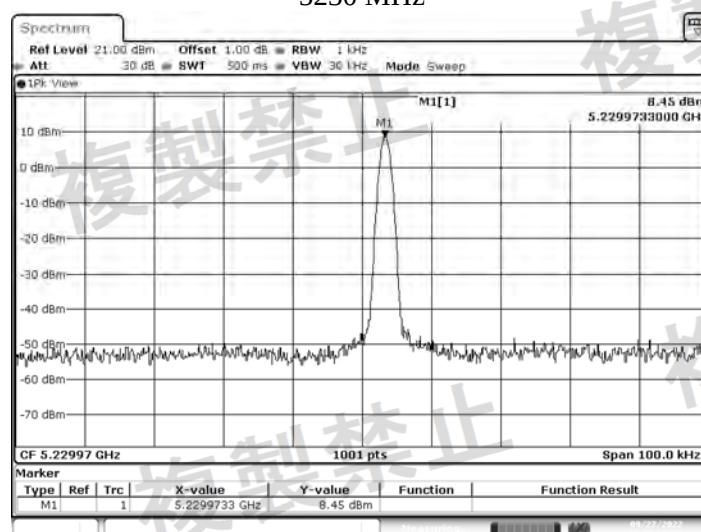
Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	5189.9719	-5.4143	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	5229.9733	-5.1052	± 20

5190 MHz



Date: 27.SEP.2022 15:28:45

5230 MHz

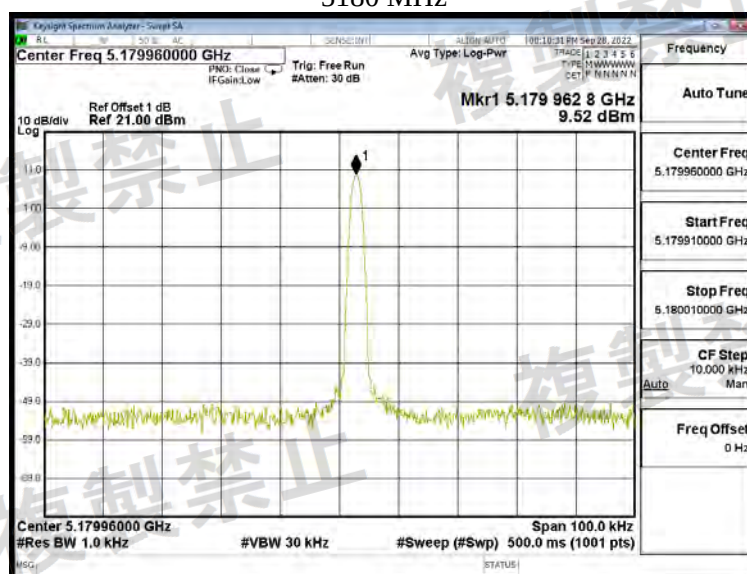


Date: 27.SEP.2022 15:33:24

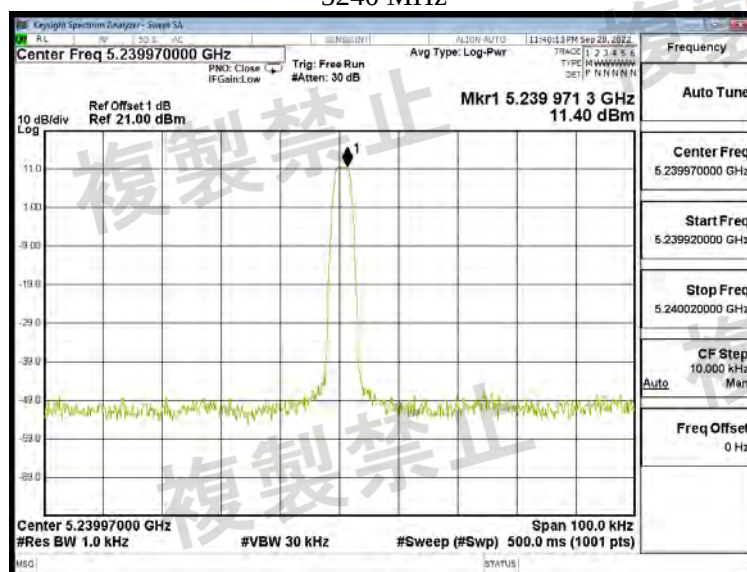
Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	5179.963	-7.182	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	5239.971	-5.477	± 20

5180 MHz



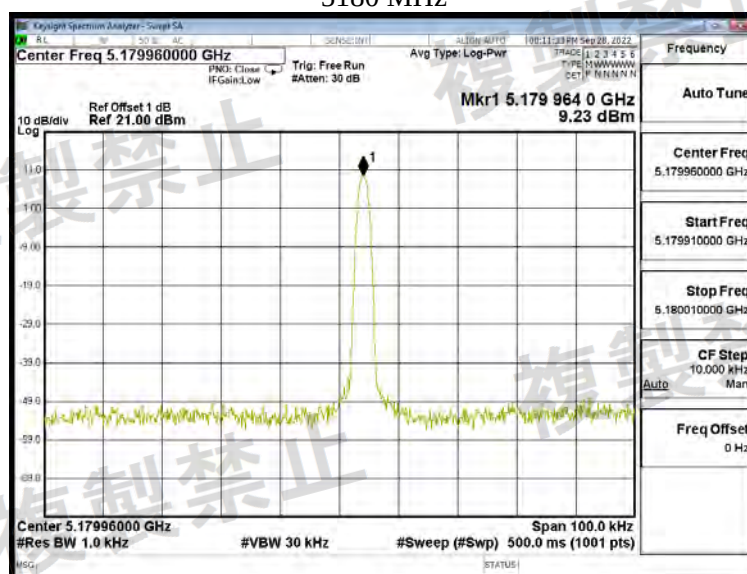
5240 MHz



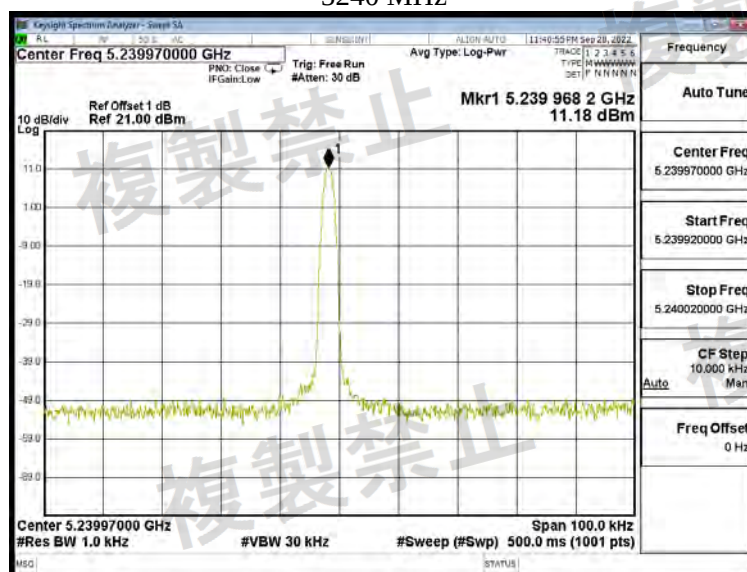
Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11ac20 14.4Mbps)_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5180	5179.964	-6.950	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5240	5239.968	-6.069	± 20

5180 MHz



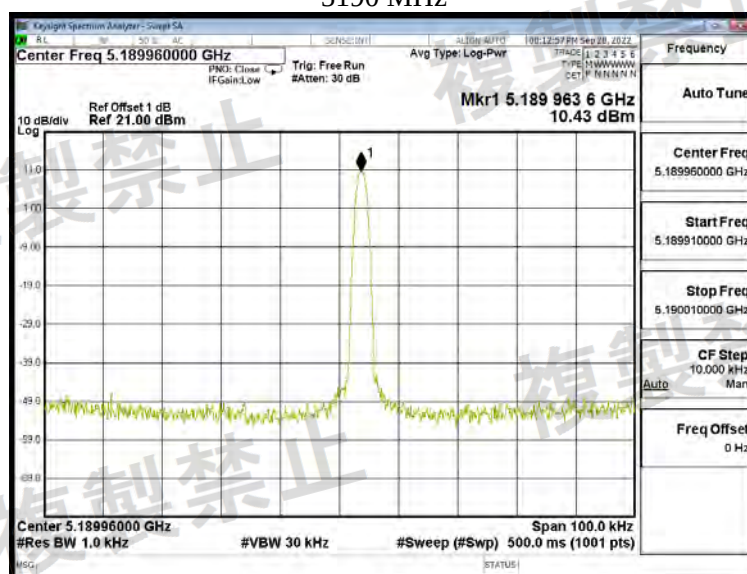
5240 MHz



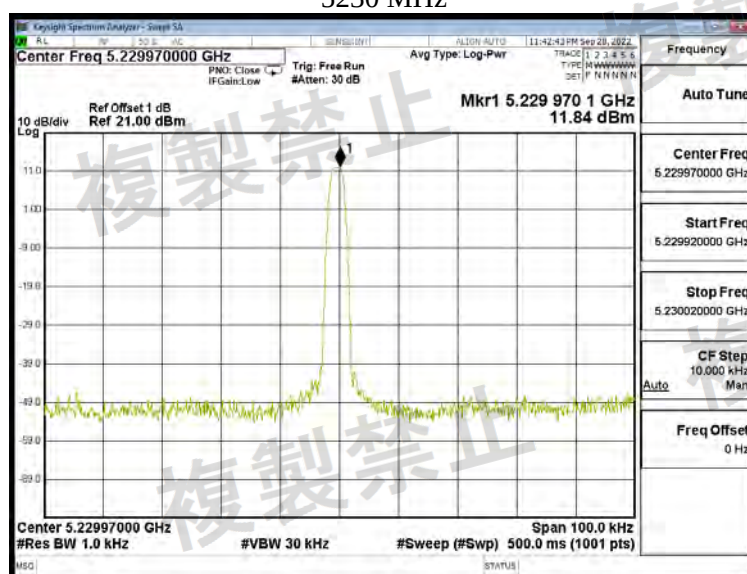
Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	5189.9636	-7.0135	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	5229.9701	-5.7170	± 20

5190 MHz



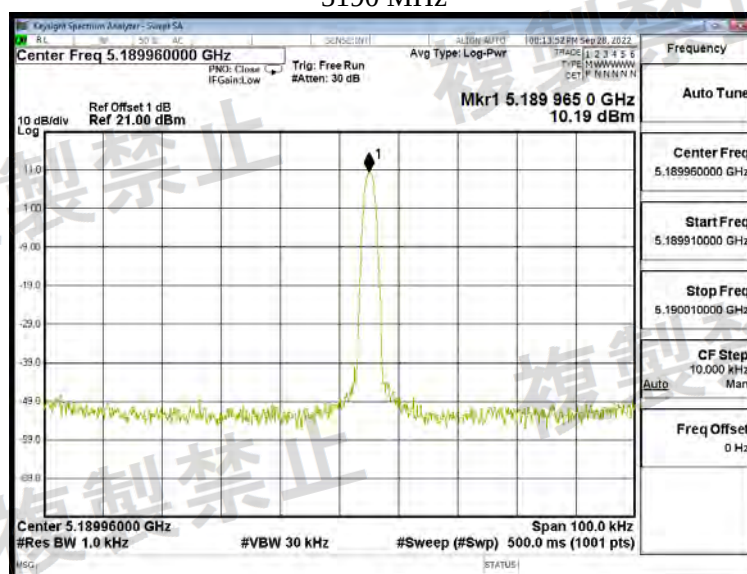
5230 MHz



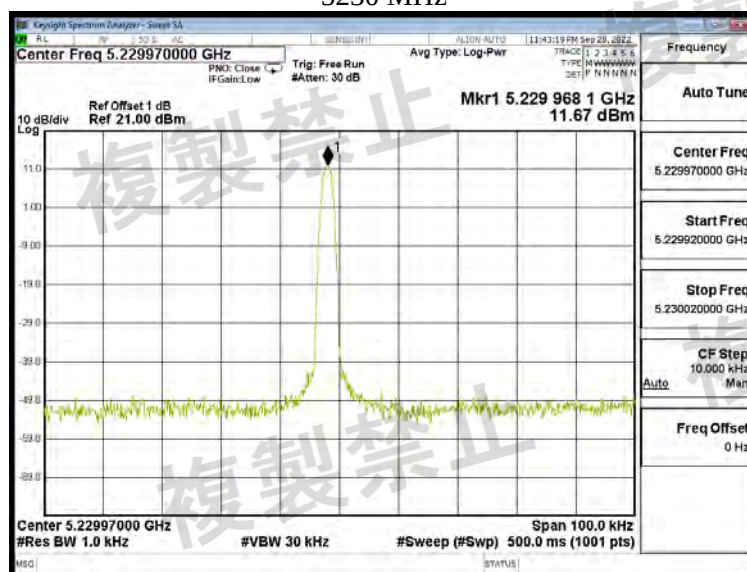
Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11ac40 30 Mbps)_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5190	5189.9650	-6.7438	± 20
T _{nom} (23.5 °C)	V _{nom} (5V)	5230	5229.9681	-6.0995	± 20

5190 MHz



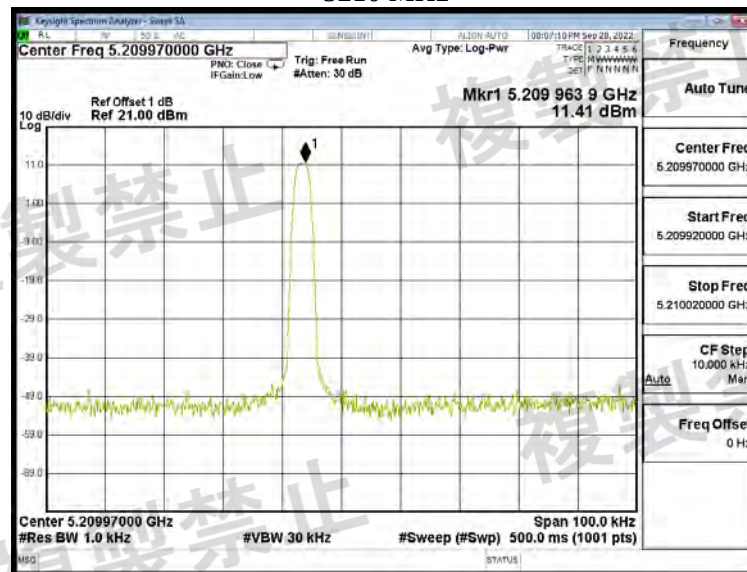
5230 MHz



Product : QCast Mirror
 Test Item : Frequency Tolerance
 Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5210	5209.9639	-6.9290	± 20

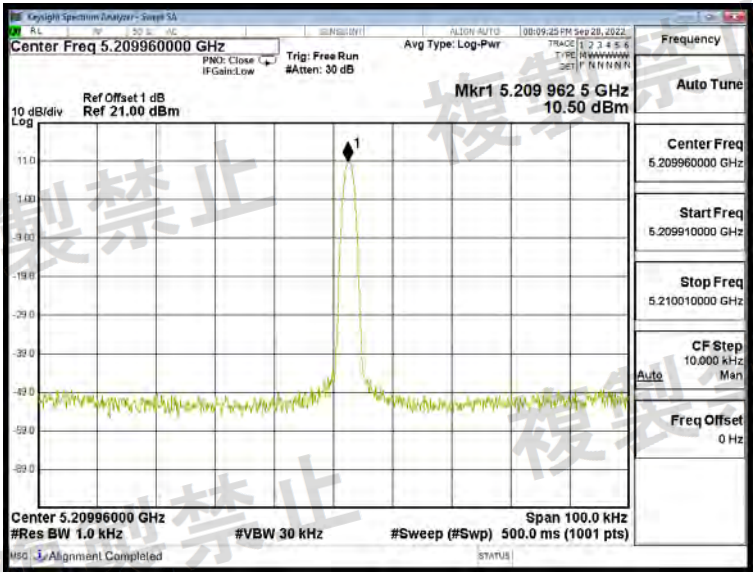
5210 MHz



Product : QCast Mirror
Test Item : Frequency Tolerance
Test Mode : Transmitter (802.11ac80 65 Mbps)_Antenna 2
Test Date : 2022/09/28

Test Conditions		Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
T _{nom} (23.5 °C)	V _{nom} (5V)	5210	5209.9625	-7.1977	± 20

5210 MHz



Test Result	PASS
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5. Transmitter Spurious Emissions

5.1. Test Setup



5.2. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (c) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

5.3. Test method

According to MIC Notice No. 88 Annex 45.

5.4. Limits

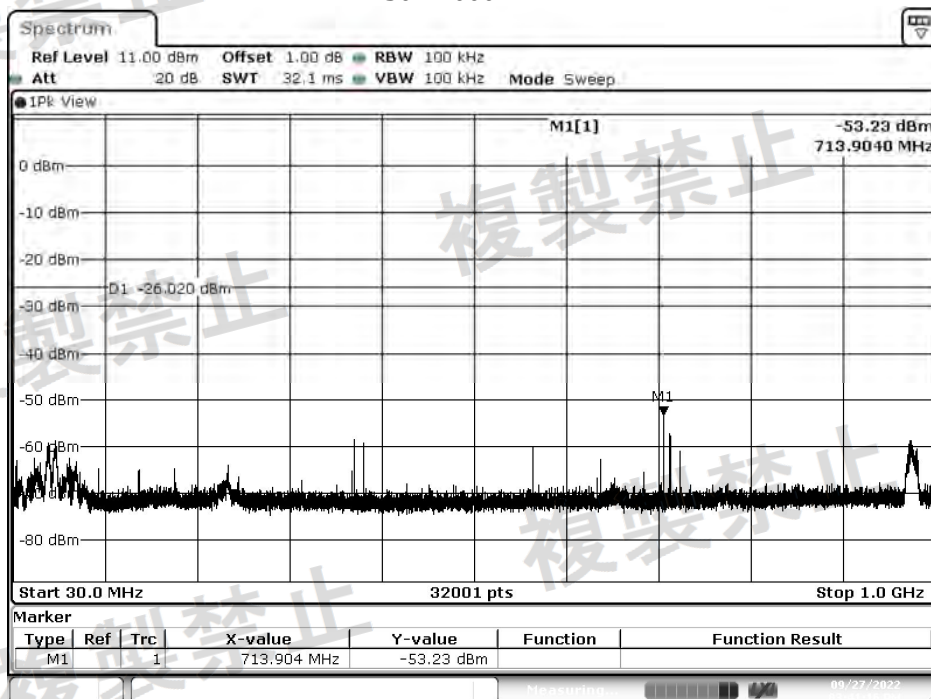
$\leq 2.5 \mu\text{W}/\text{MHz}$

5.5. Test Result of Transmitter Spurious Emissions

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11a 6 Mbps) 5180 MHz_Antenna 1
Test Date : 2022/09/27

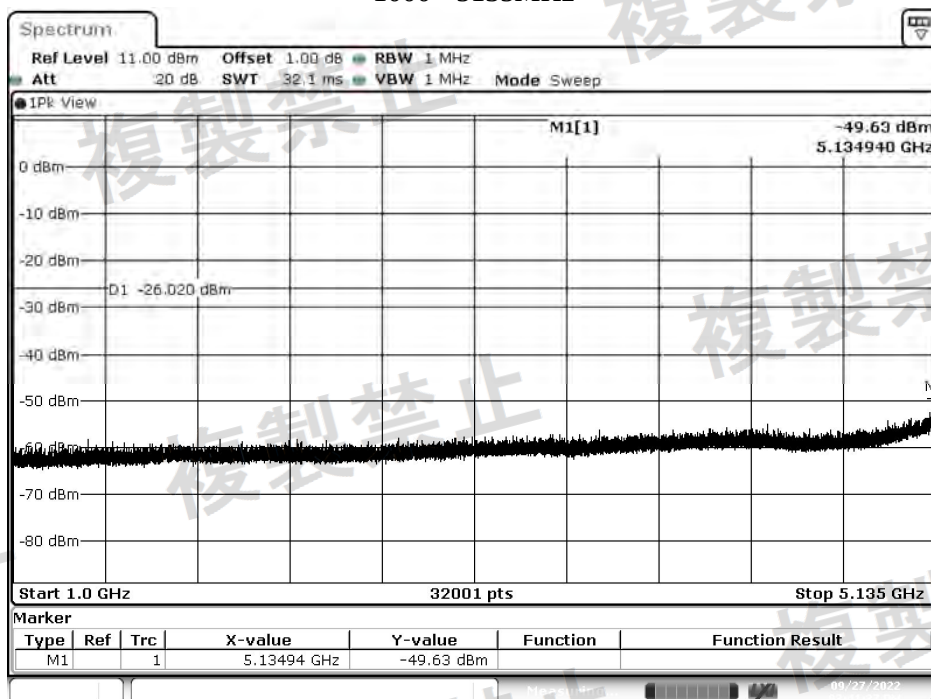
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	713.90	0.004753	2.5
1000 - 5135	5134.94	0.010889	2.5
5365 - 16000	10361.13	0.006124	2.5
16000 - 26000	16382.64	0.003890	2.5

30 - 1000 MHz



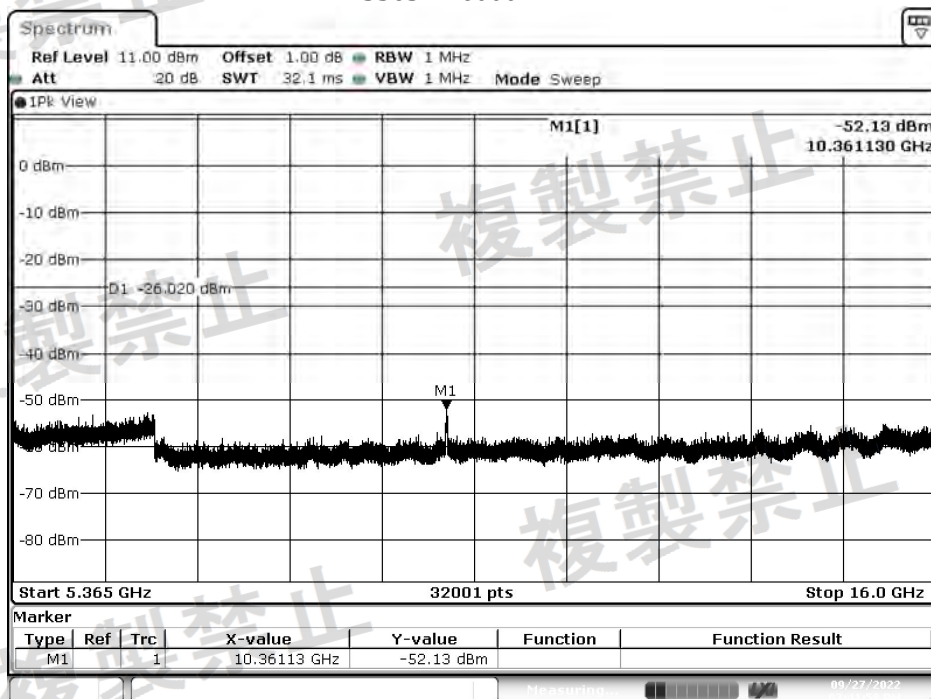
Date: 27.SEP.2022 15:41:16

1000 - 5135MHz



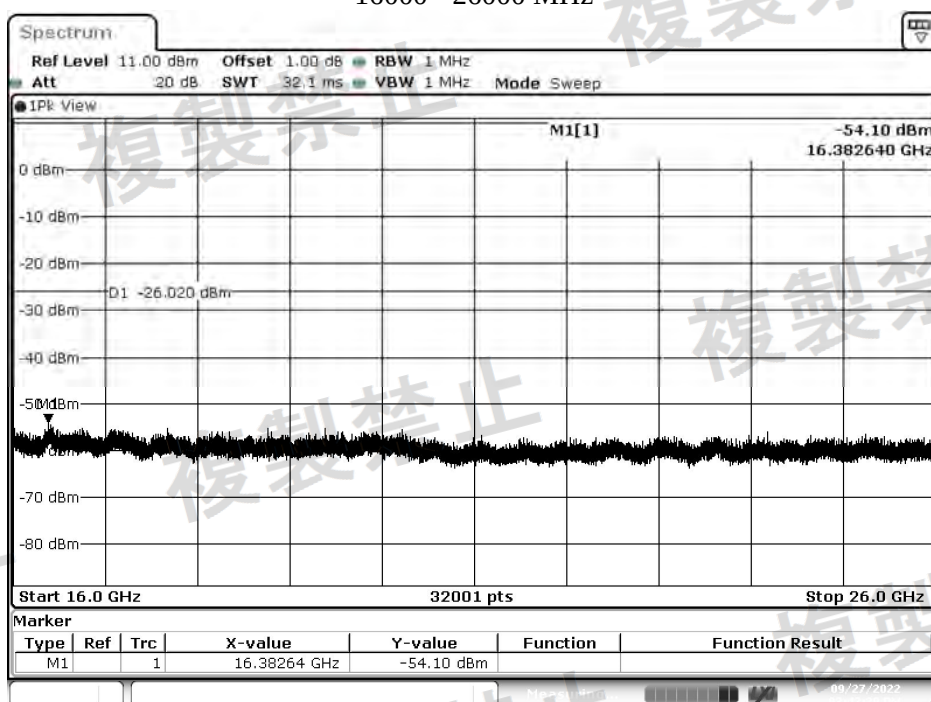
Date: 27.SEP.2022 15:41:38

5365 - 16000 MHz



Date: 27.SEP.2022 15:41:59

16000 - 26000 MHz

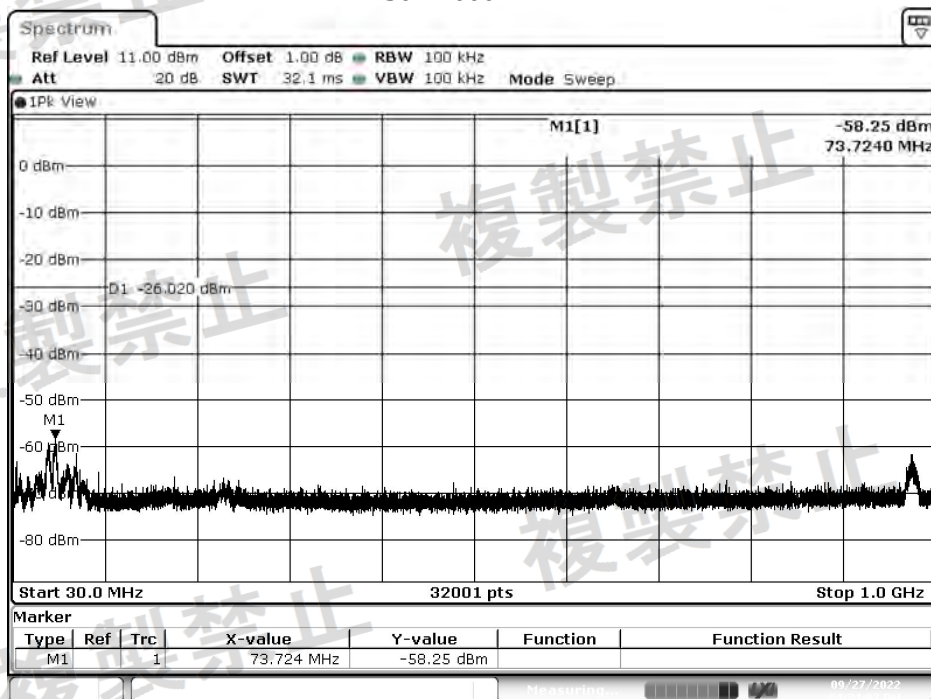


Date: 27.SEP.2022 15:42:21

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11a 6 Mbps) 5180 MHz_Antenna 2
Test Date : 2022/09/27

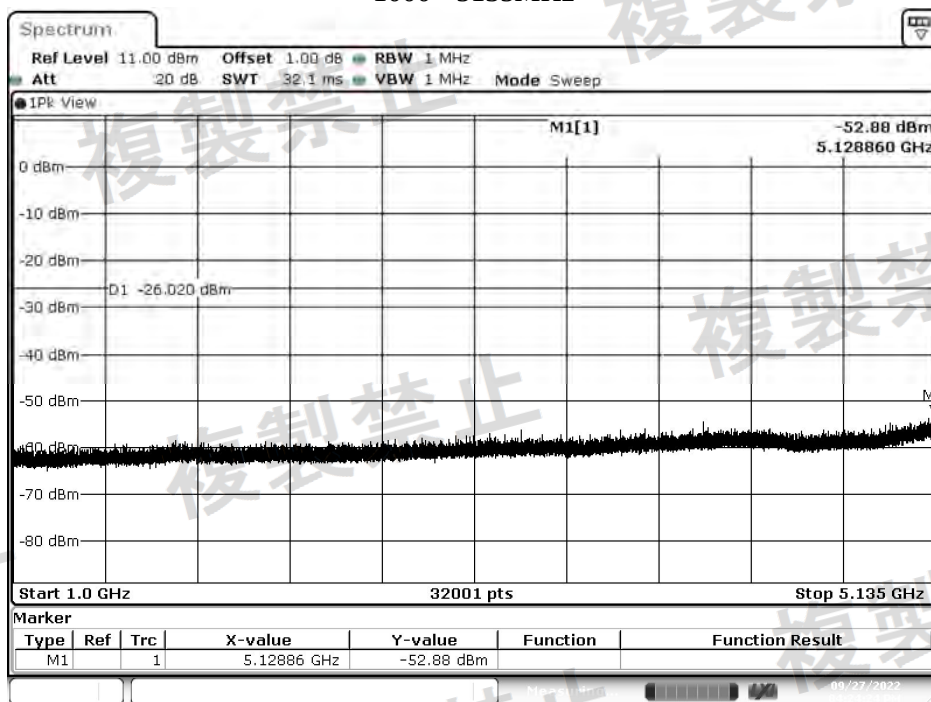
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	73.72	0.001496	2.5
1000 - 5135	5128.86	0.005152	2.5
5365 - 16000	10357.48	0.019055	2.5
16000 - 26000	16366.08	0.003707	2.5

30 - 1000 MHz



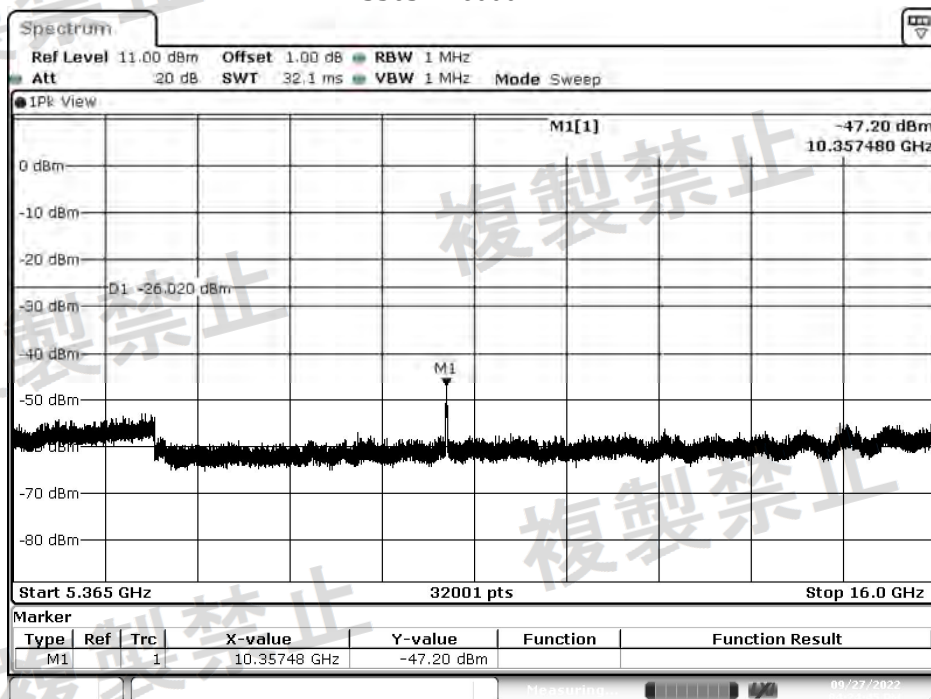
Date: 27.SEP.2022 16:24:03

1000 - 5135MHz



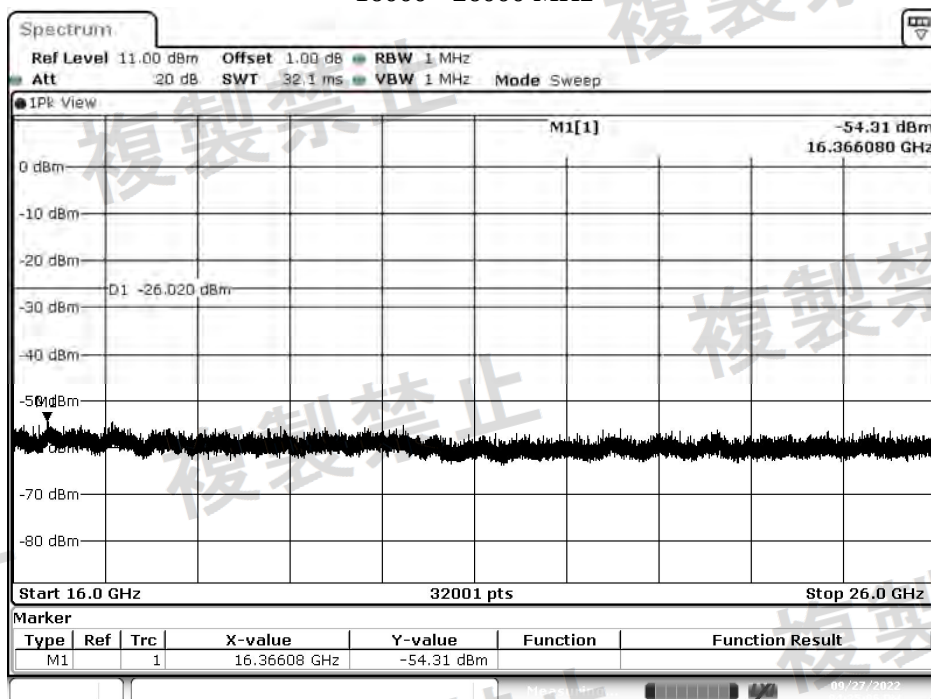
Date: 27.SEP.2022 16:24:24

5365 - 16000 MHz



Date: 27.SEP.2022 16:24:45

16000 - 26000 MHz

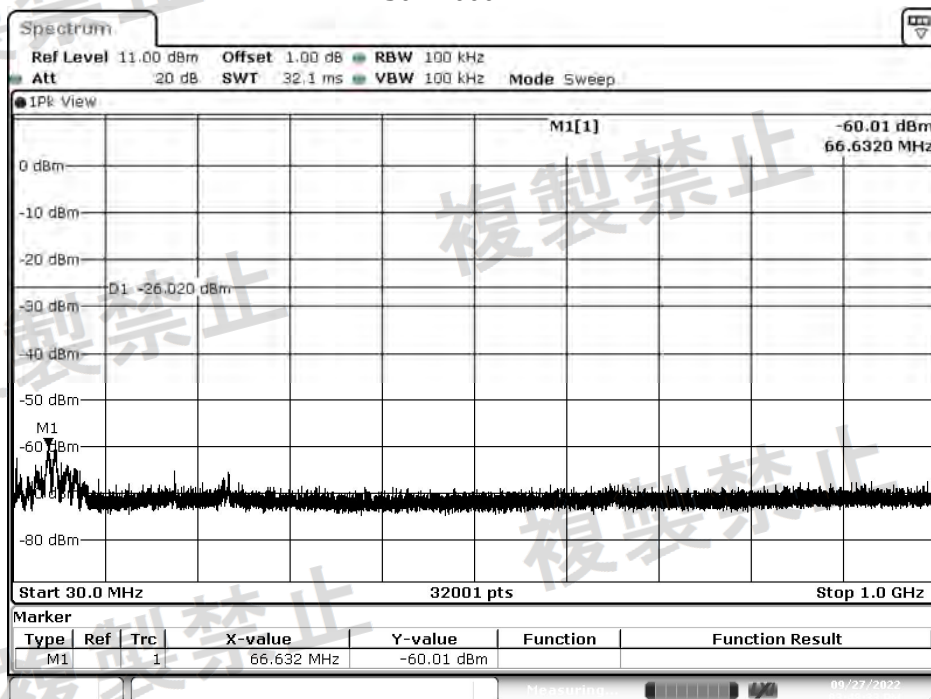


Date: 27.SEP.2022 16:25:07

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11a 6 Mbps) 5240 MHz_Antenna 1
Test Date : 2022/09/27

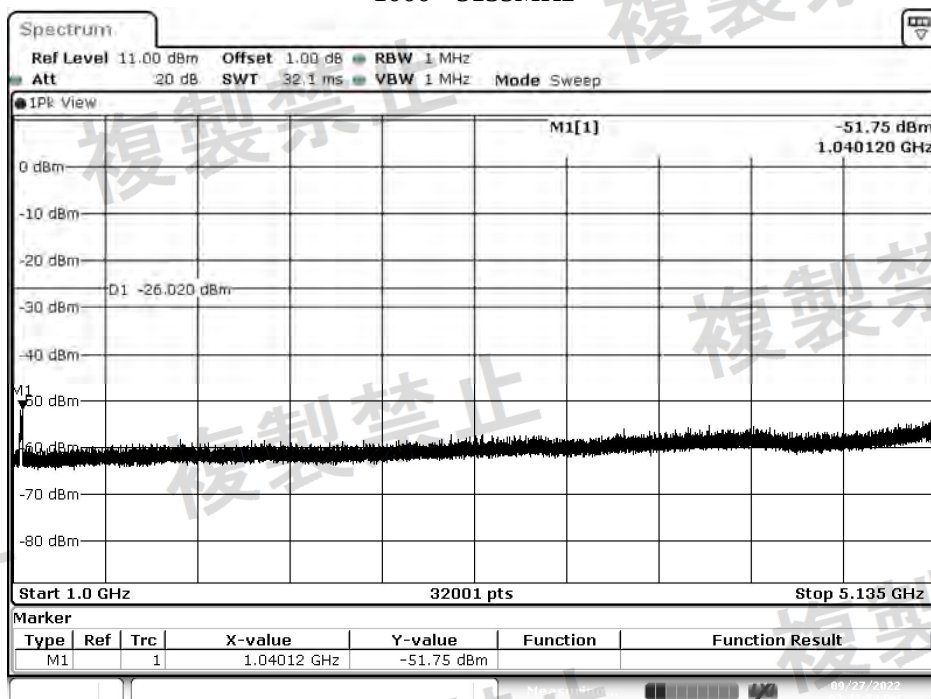
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.63	0.000998	2.5
1000 - 5135	1040.12	0.006683	2.5
5365 - 16000	6956.05	0.005000	2.5
16000 - 26000	16018.91	0.003917	2.5

30 - 1000 MHz



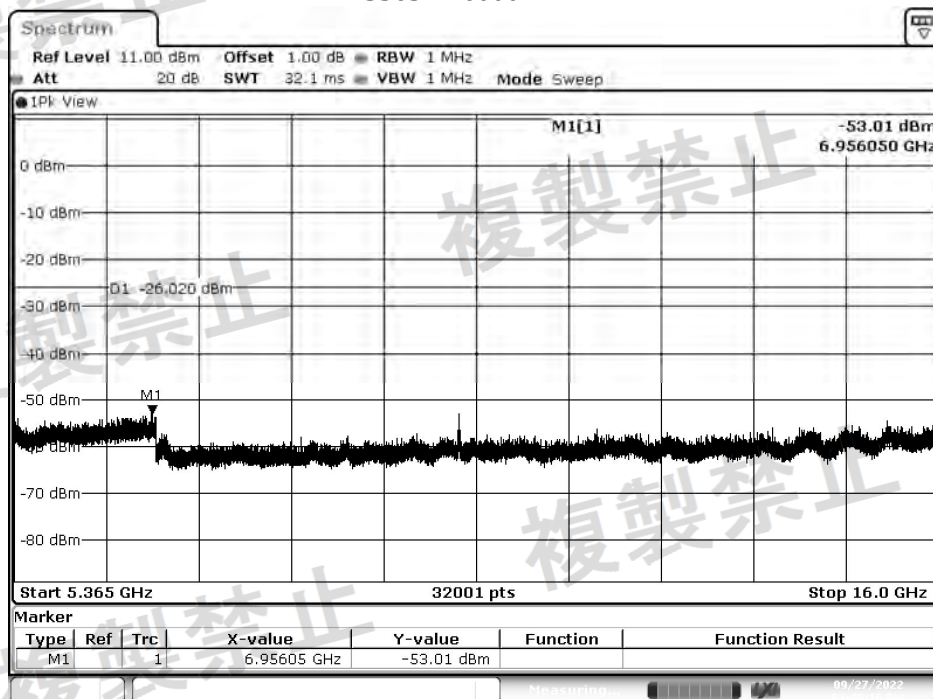
Date: 27.SEP.2022 15:48:34

1000 - 5135MHz



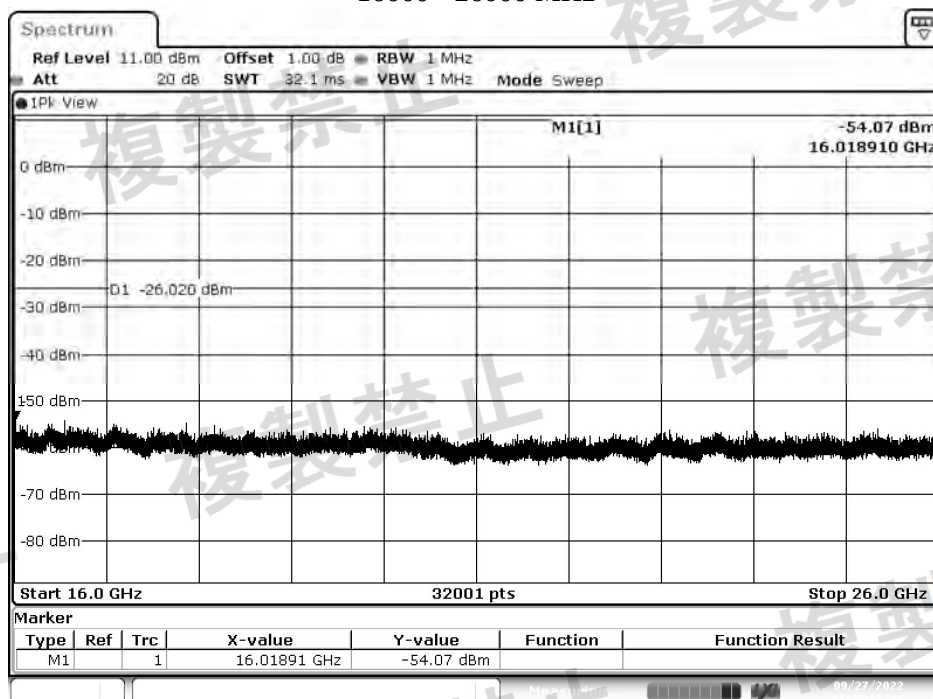
Date: 27.SEP.2022 15:48:55

5365 - 16000 MHz



Date: 27.SEP.2022 15:49:16

16000 - 26000 MHz

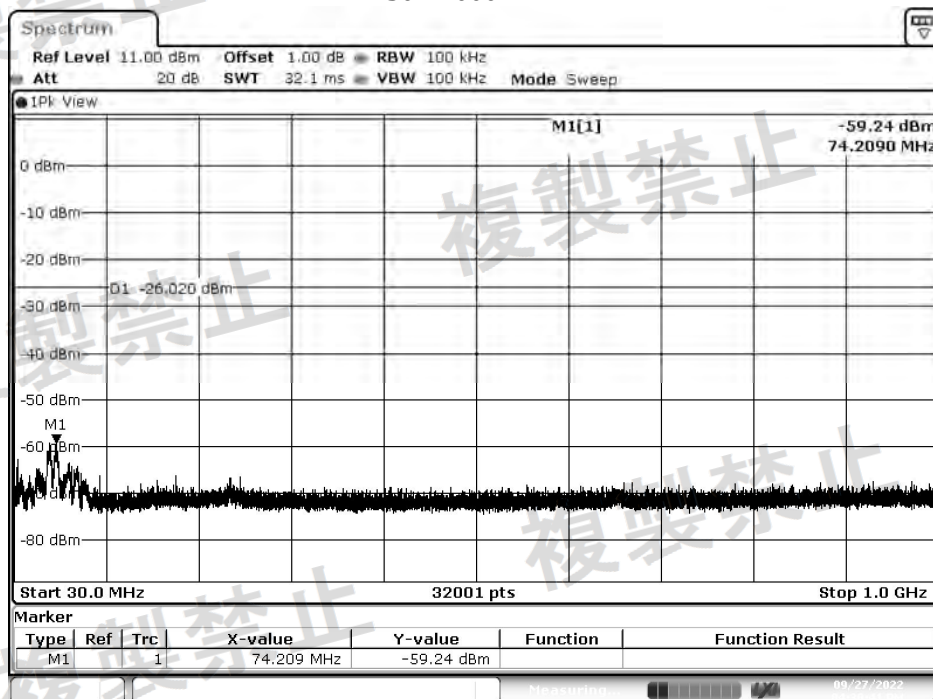


Date: 27.SEP.2022 15:49:38

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11a 6 Mbps) 5240 MHz_Antenna 2
Test Date : 2022/09/27

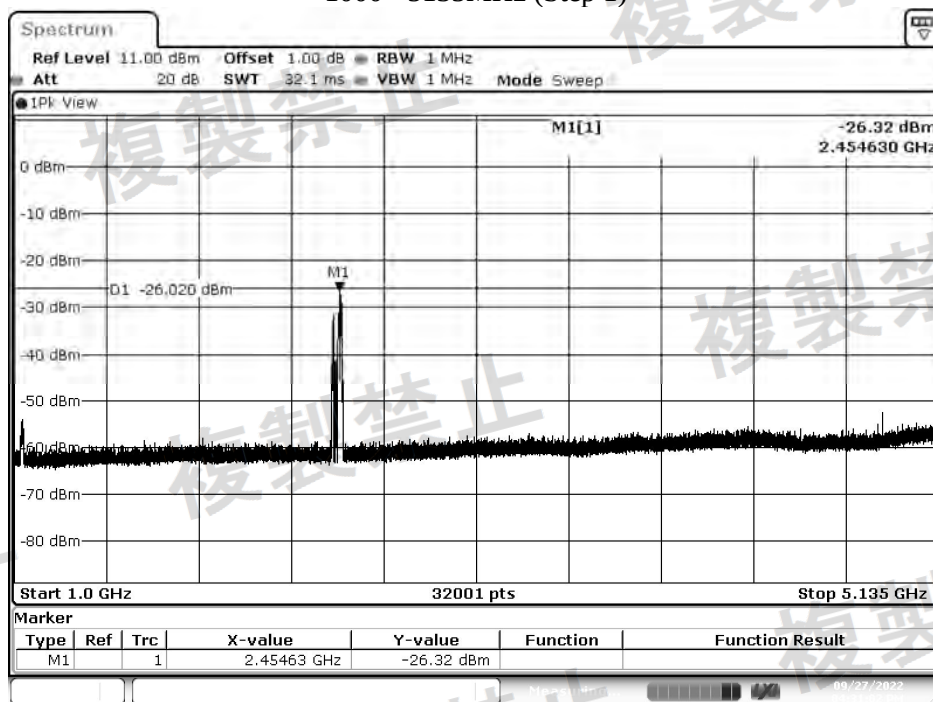
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	74.21	0.001191	2.5
1000 - 5135	5120.33	0.003573	2.5
5365 - 16000	10480.11	0.021979	2.5
16000 - 26000	16366.08	0.003811	2.5

30 - 1000 MHz



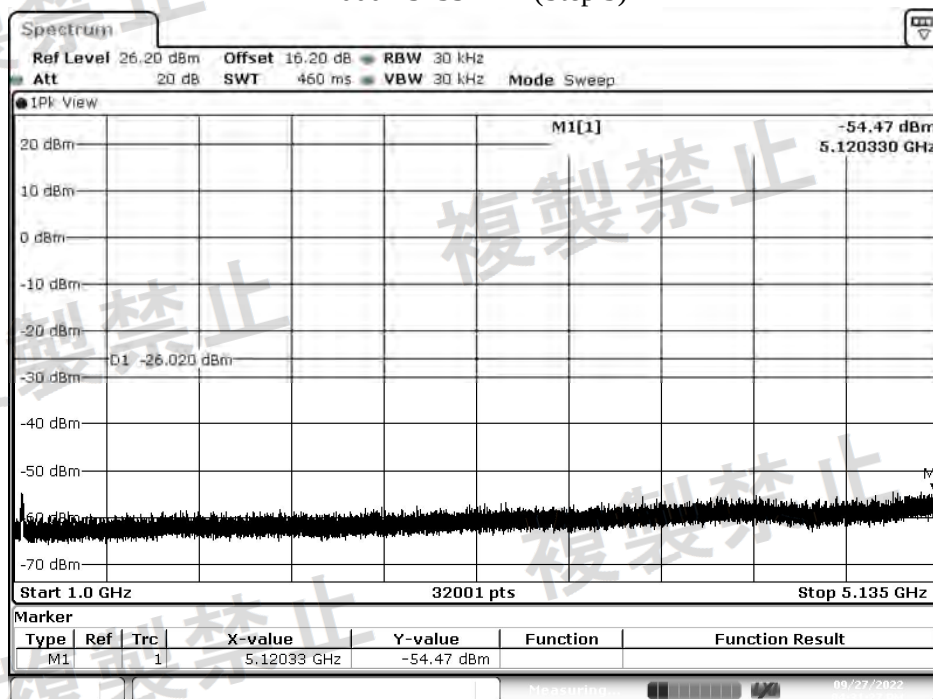
Date: 27.SEP.2022 16:30:41

1000 - 5135MHz (Step 1)



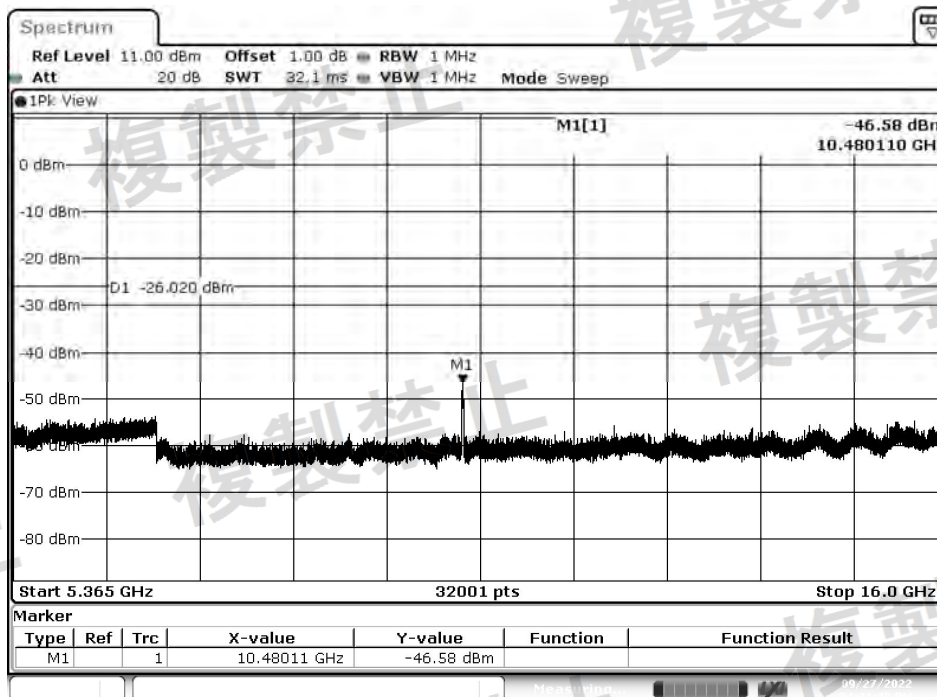
Date: 27.SEP.2022 16:31:02

1000 - 5135MHz (Step 3)



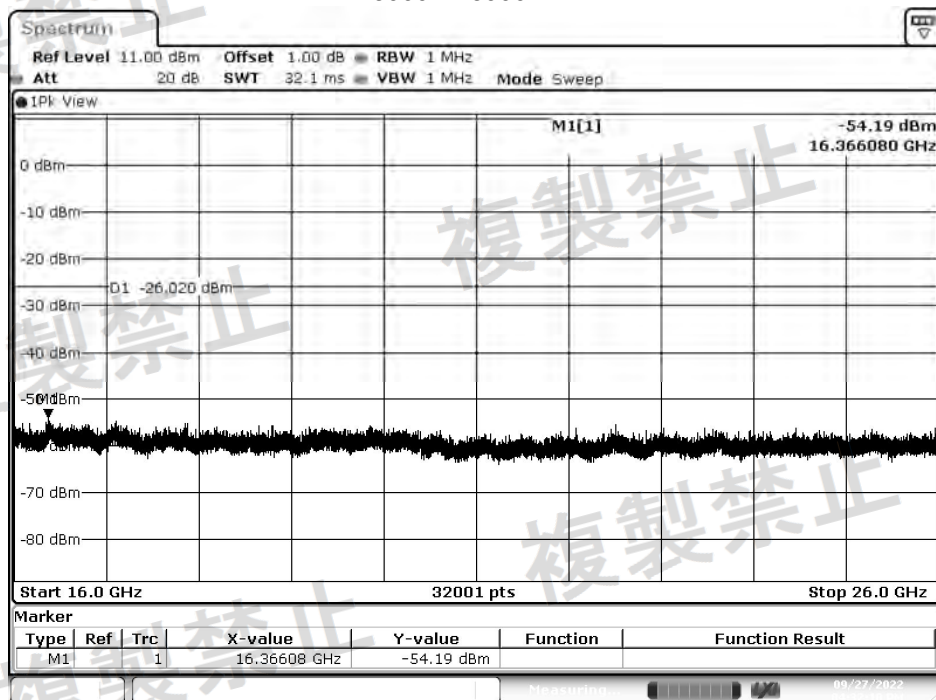
Date: 27.SEP.2022 16:31:28

5365 - 16000 MHz



Date: 27.SEP.2022 16:31:49

16000 - 26000 MHz

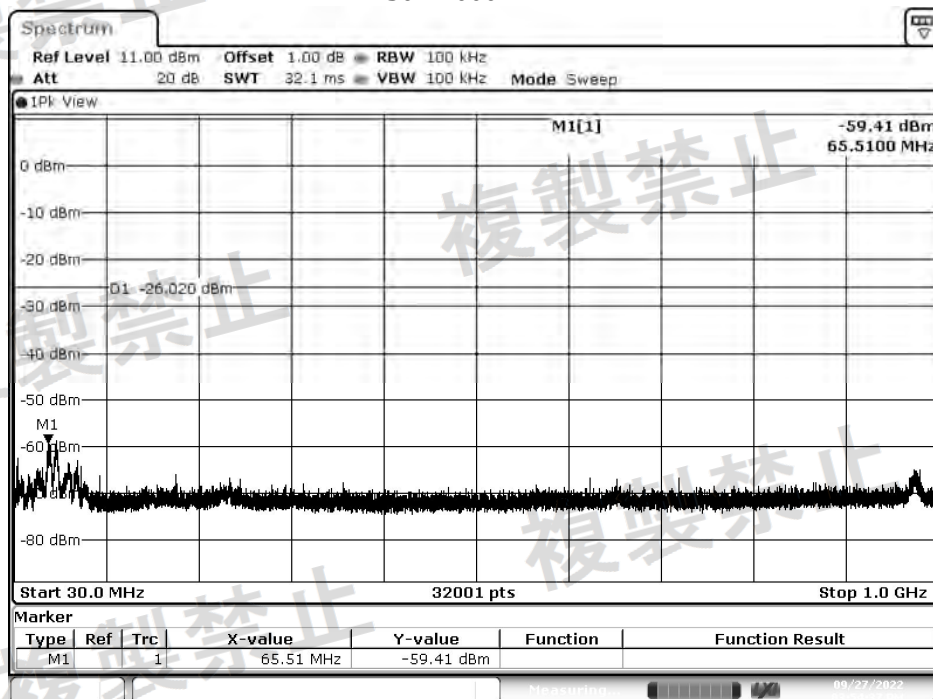


Date: 27.SEP.2022 16:32:11

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n20 14.4 Mbps) 5180 MHz_Antenna 1
Test Date : 2022/09/27

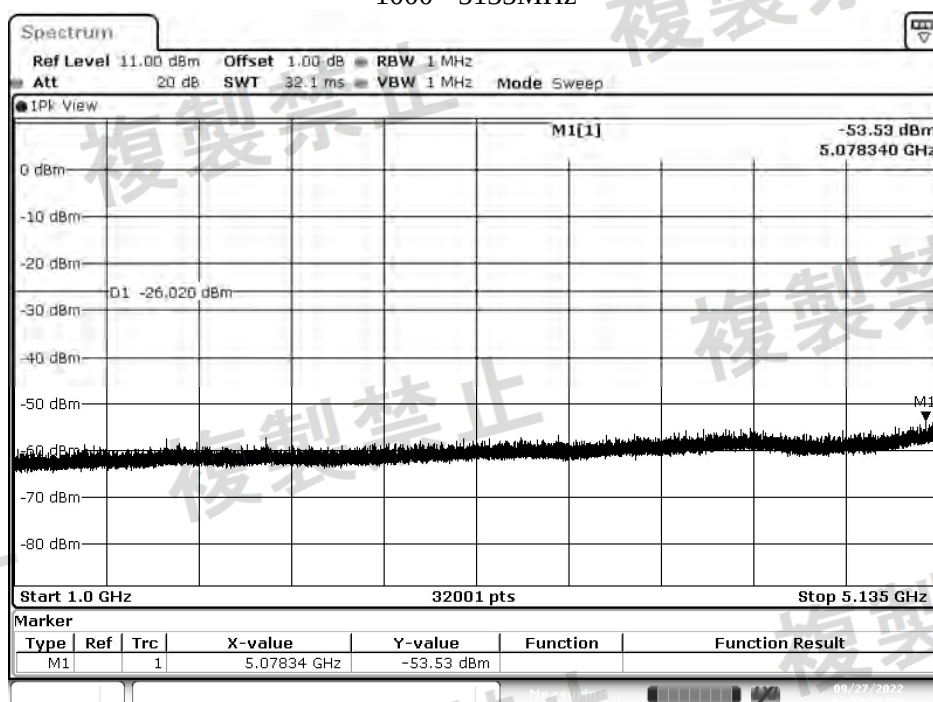
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	65.51	0.001146	2.5
1000 - 5135	5078.34	0.004436	2.5
5365 - 16000	6702.48	0.004977	2.5
16000 - 26000	20220.34	0.003508	2.5

30 - 1000 MHz



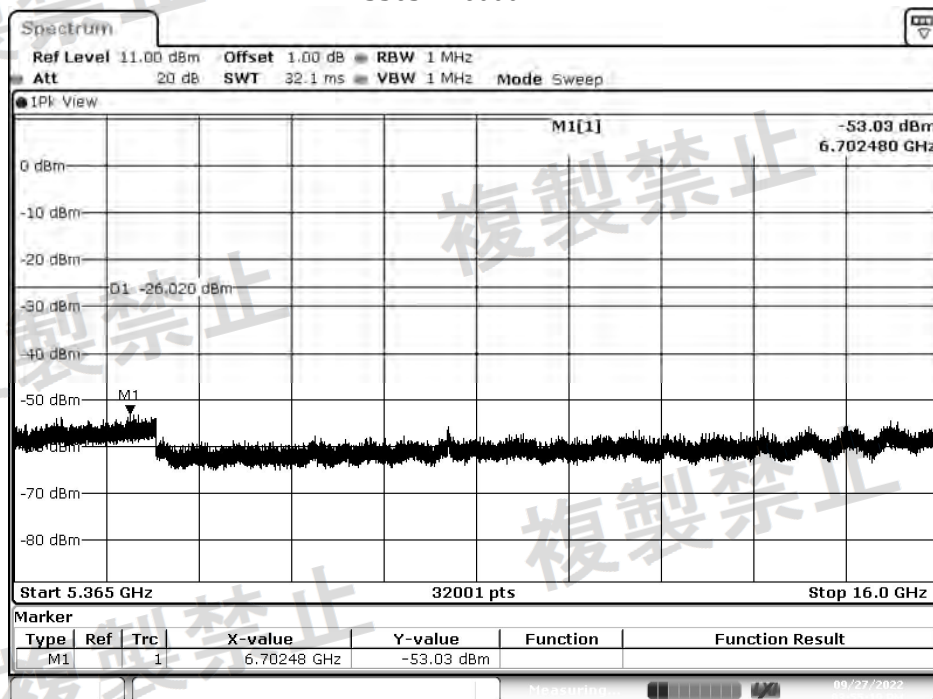
Date: 27.SEP.2022 15:54:37

1000 - 5135MHz



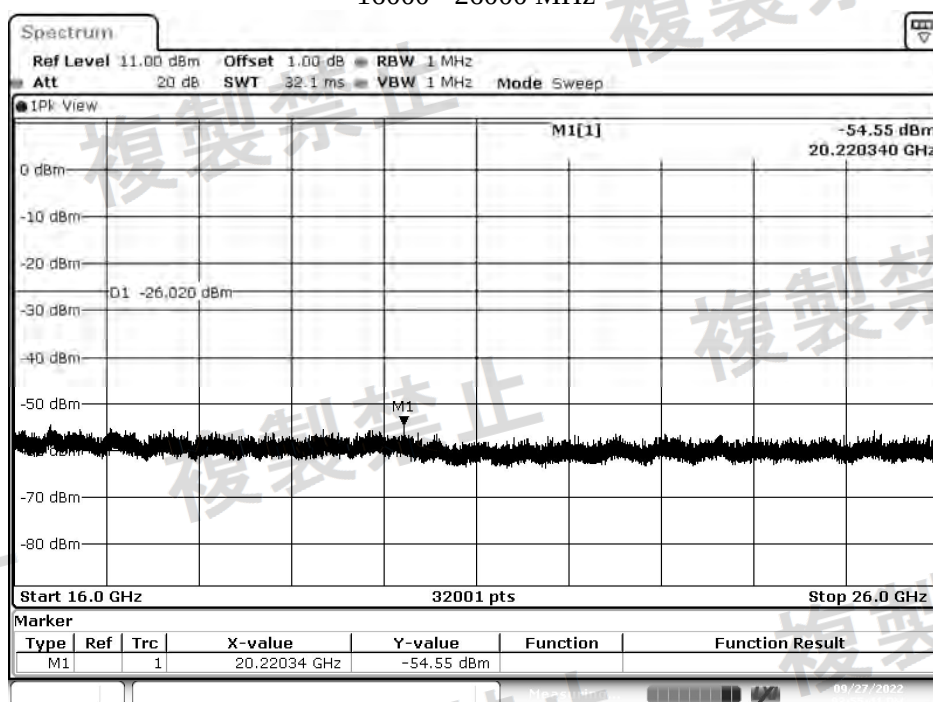
Date: 27.SEP.2022 15:54:59

5365 - 16000 MHz



Date: 27.SEP.2022 15:55:20

16000 - 26000 MHz

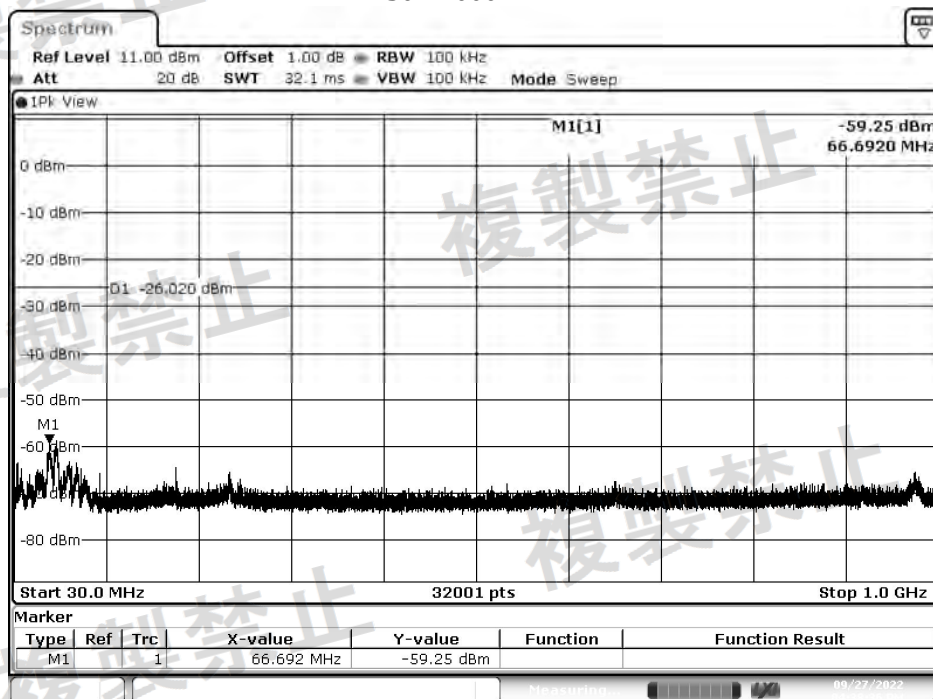


Date: 27.SEP.2022 15:55:42

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n20 14.4 Mbps) 5180 MHz_Antenna 2
Test Date : 2022/09/27

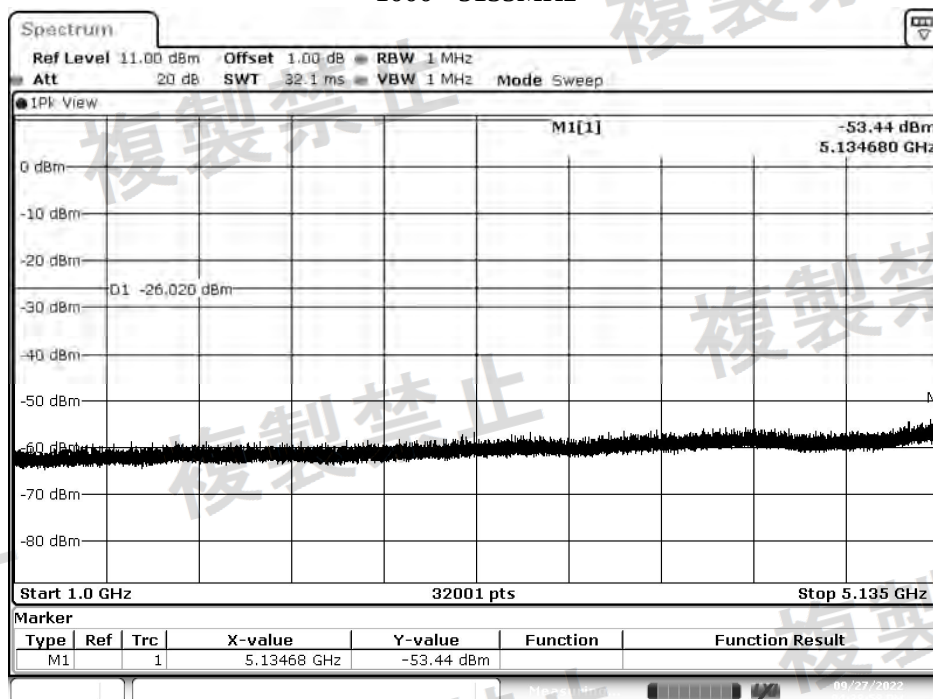
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.69	0.001189	2.5
1000 - 5135	5134.68	0.004529	2.5
5365 - 16000	10362.46	0.008166	2.5
16000 - 26000	16416.71	0.003917	2.5

30 - 1000 MHz



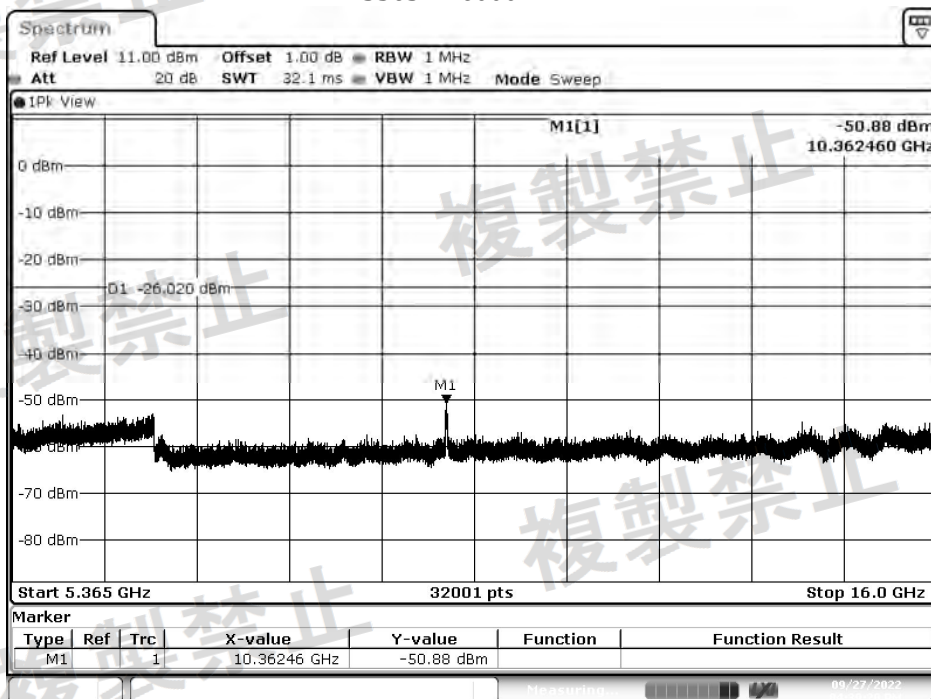
Date: 27.SEP.2022 16:38:37

1000 - 5135MHz



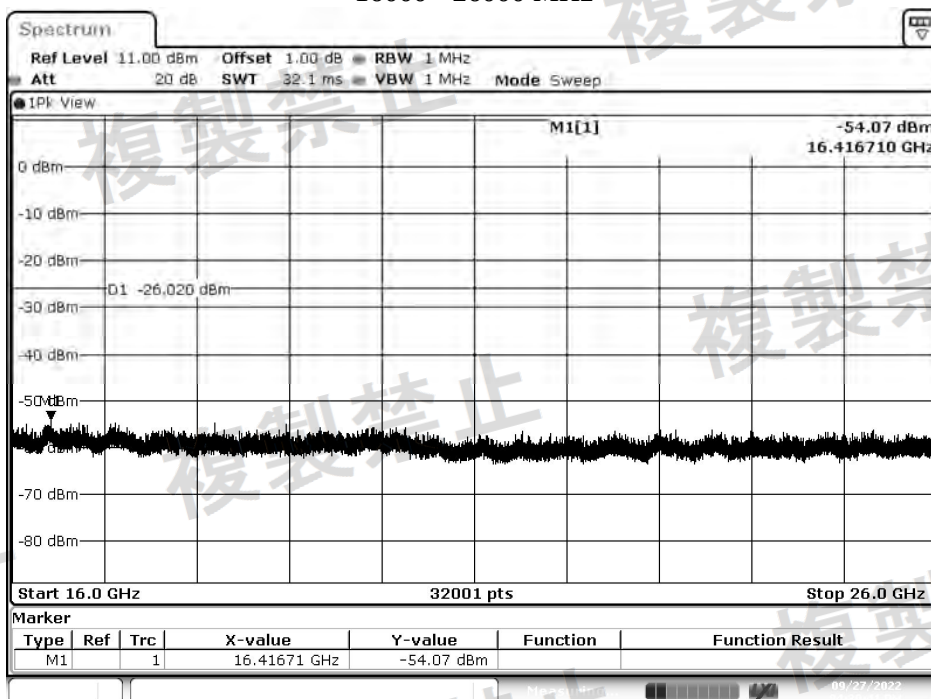
Date: 27.SEP.2022 16:38:58

5365 - 16000 MHz



Date: 27.SEP.2022 16:39:20

16000 - 26000 MHz

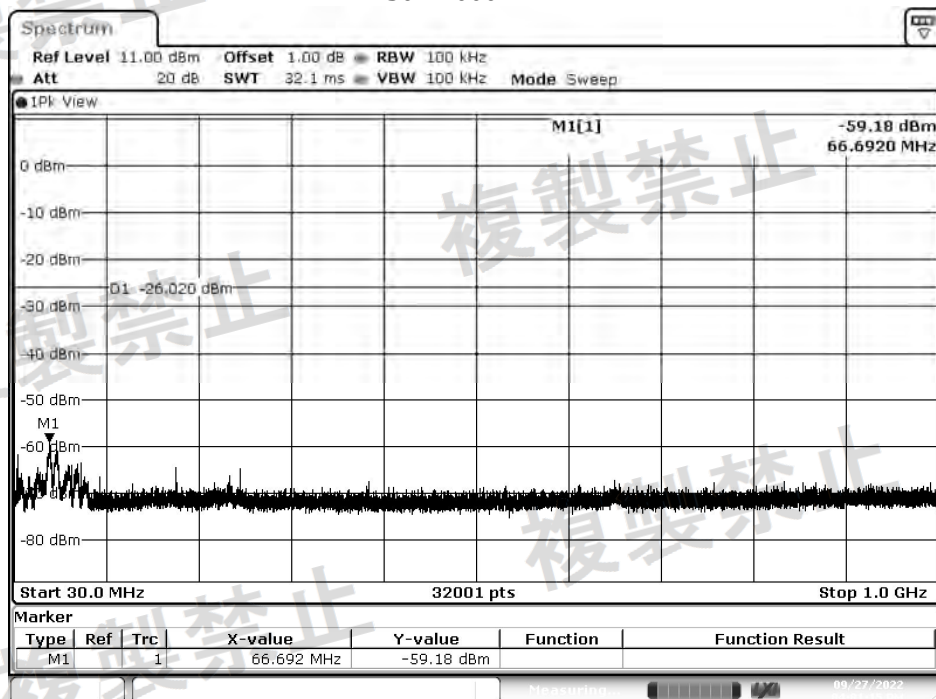


Date: 27.SEP.2022 16:39:41

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n20 14.4 Mbps) 5240 MHz_Antenna 1
Test Date : 2022/09/27

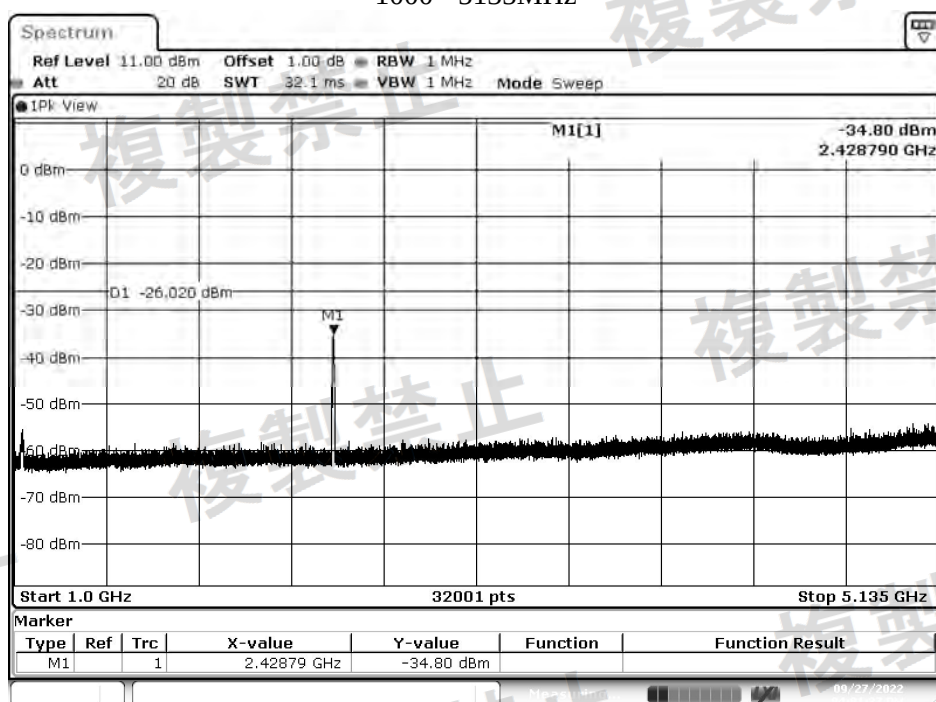
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.69	0.001208	2.5
1000 - 5135	2428.79	0.331131	2.5
5365 - 16000	6666.58	0.005012	2.5
16000 - 26000	17113.56	0.003890	2.5

30 - 1000 MHz



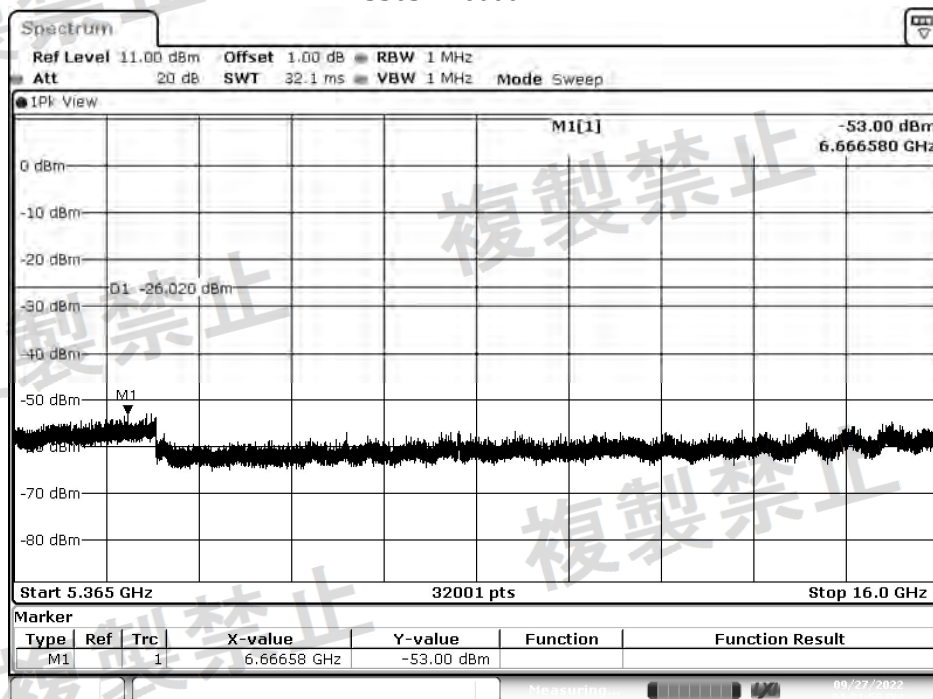
Date: 27.SEP.2022 16:01:16

1000 - 5135MHz



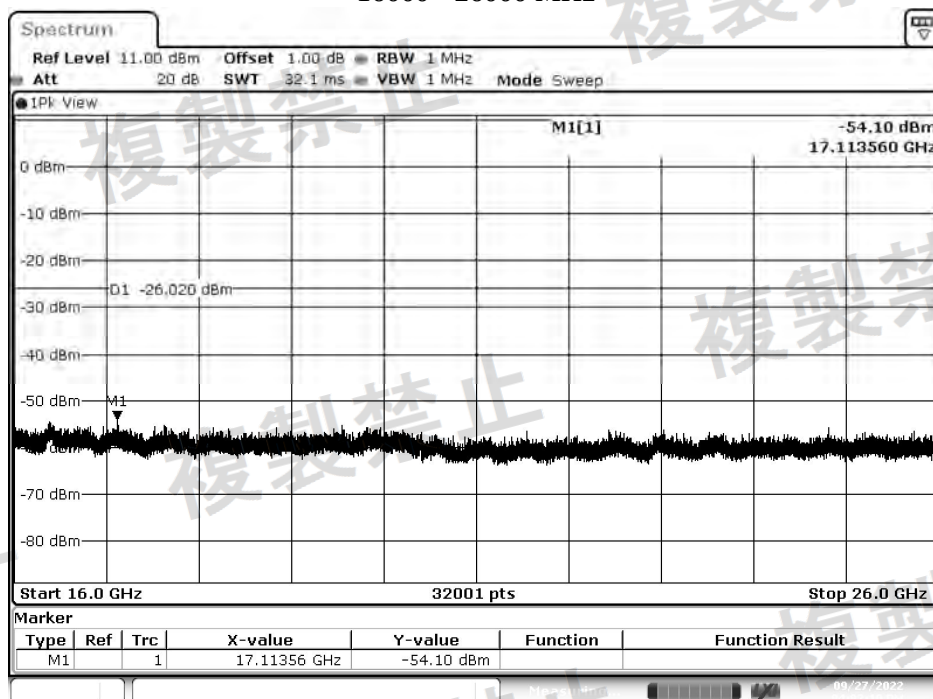
Date: 27.SEP.2022 16:01:37

5365 - 16000 MHz



Date: 27.SEP.2022 16:01:58

16000 - 26000 MHz

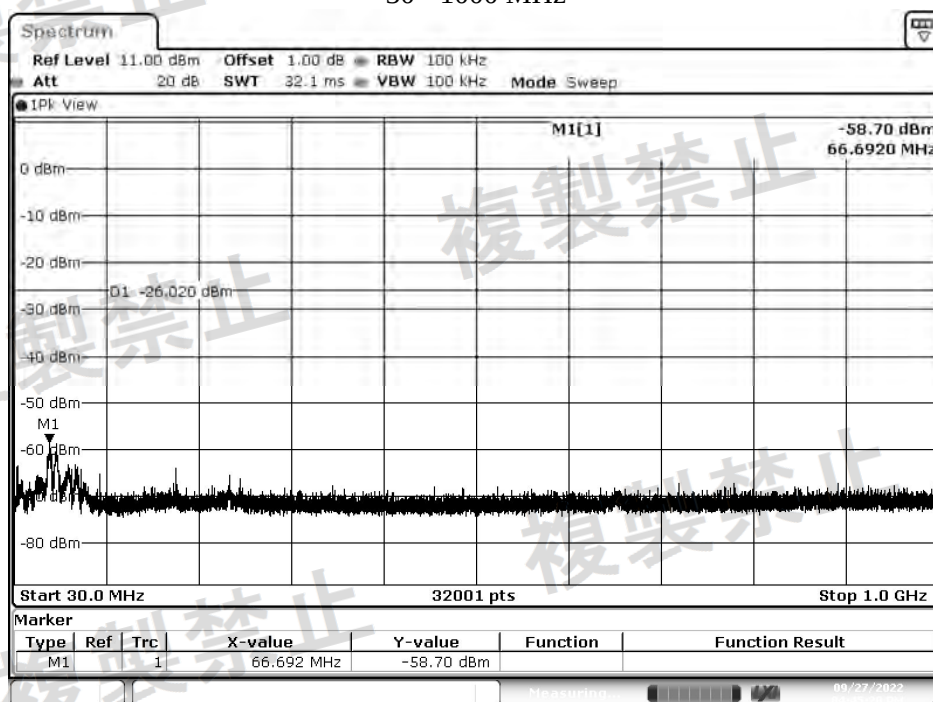


Date: 27.SEP.2022 16:02:20

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n20 14.4 Mbps) 5240 MHz_Antenna 2
Test Date : 2022/09/27

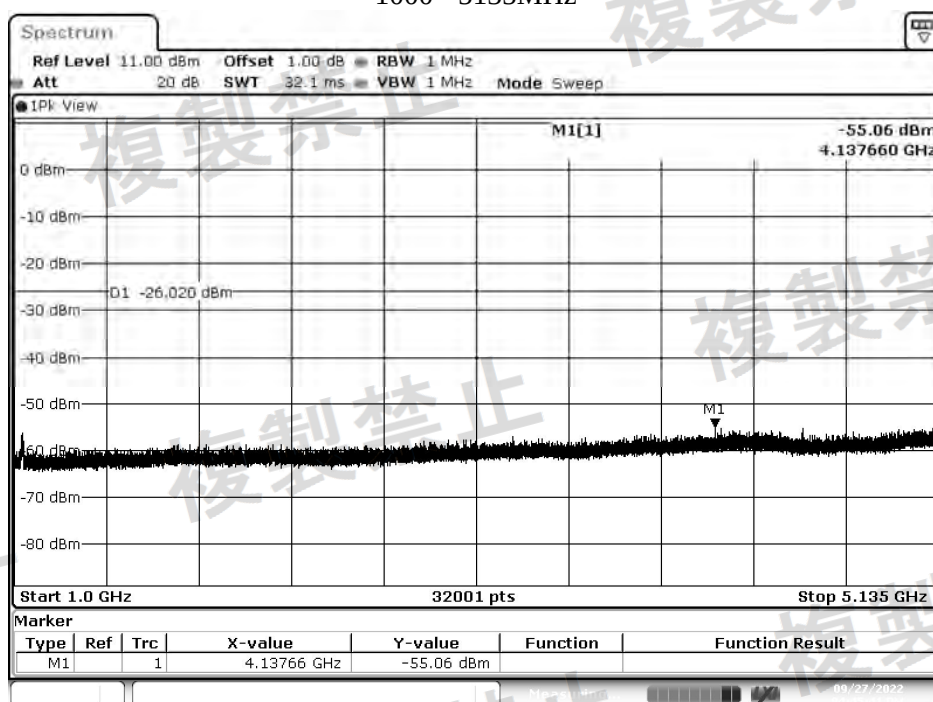
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.69	0.001349	2.5
1000 - 5135	4137.66	0.003119	2.5
5365 - 16000	10479.44	0.010914	2.5
16000 - 26000	16411.08	0.003890	2.5

30 - 1000 MHz



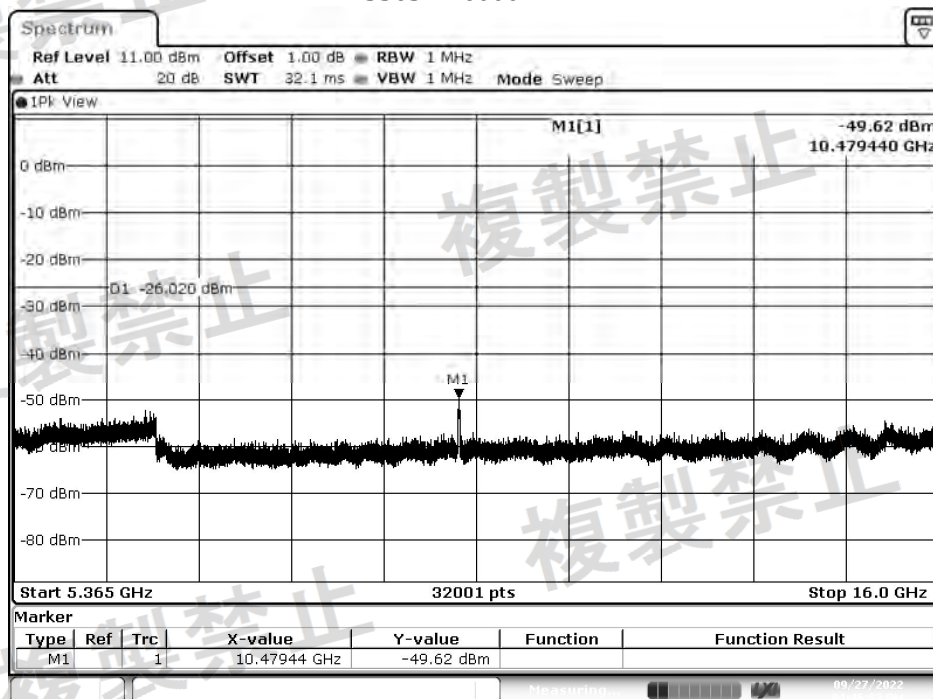
Date: 27.SEP.2022 16:45:20

1000 - 5135MHz



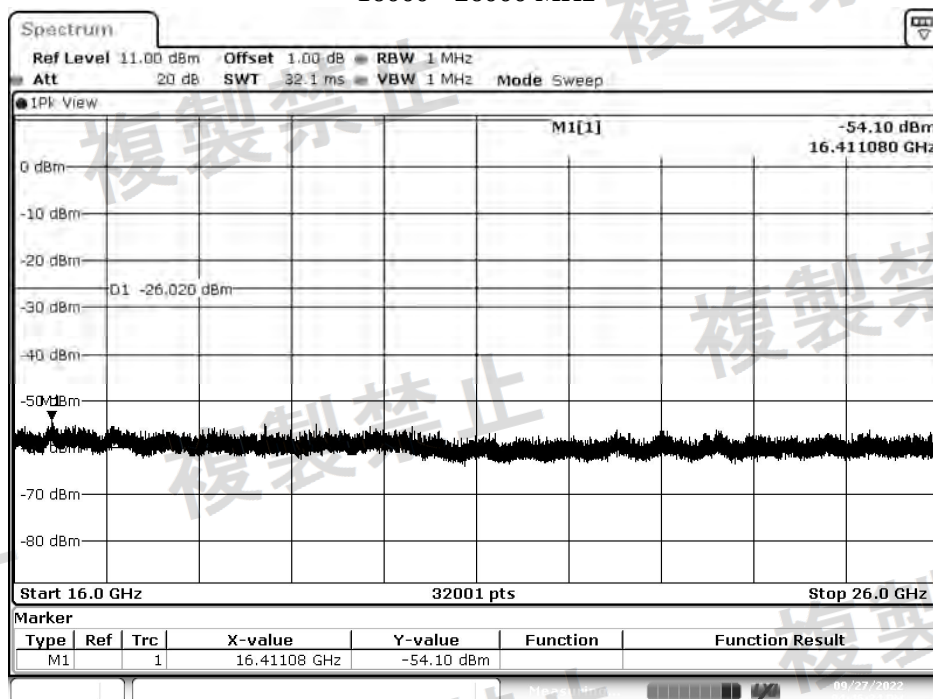
Date: 27.SEP.2022 16:45:42

5365 - 16000 MHz



Date: 27.SEP.2022 16:46:03

16000 - 26000 MHz

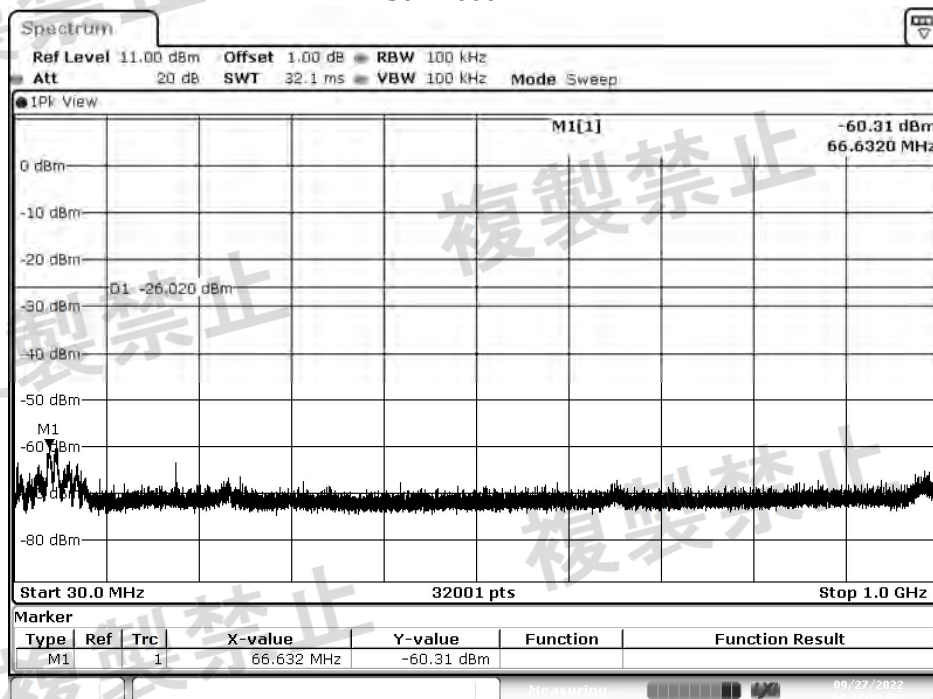


Date: 27.SEP.2022 16:46:25

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n40 30 Mbps) 5190 MHz_Antenna 1
Test Date : 2022/09/27

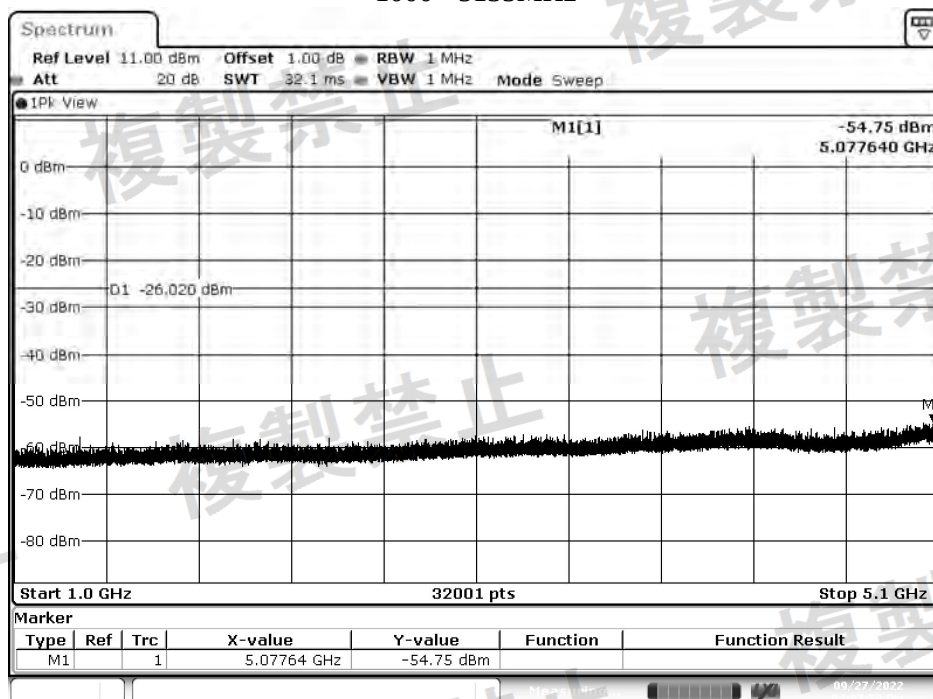
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.63	0.000931	2.5
1000 - 5135	5077.64	0.003350	2.5
5365 - 16000	6849.34	0.004842	2.5
16000 - 26000	19821.29	0.003589	2.5

30 - 1000 MHz



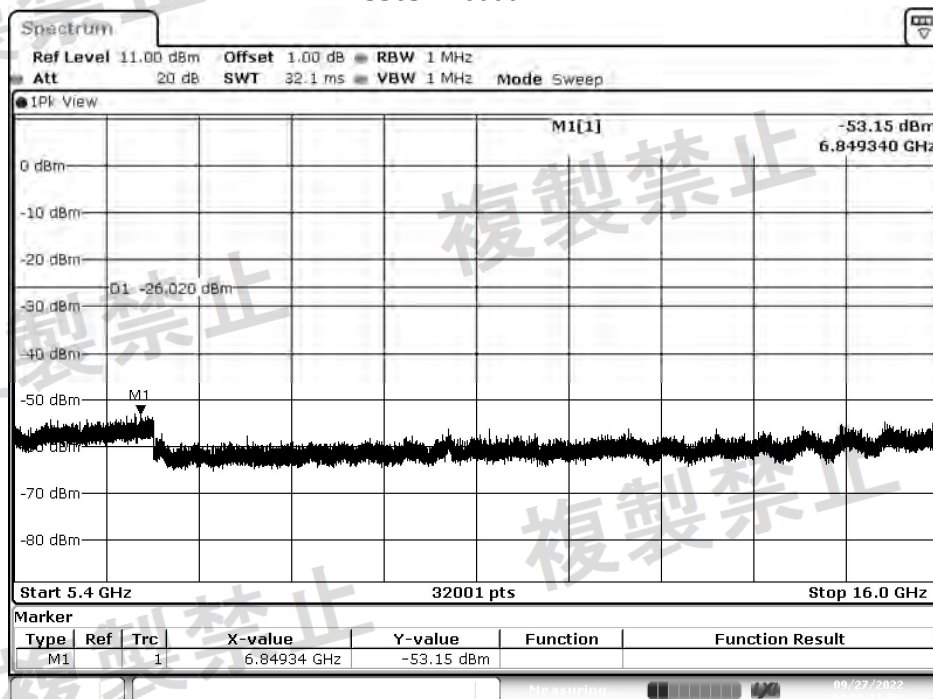
Date: 27.SEP.2022 16:07:29

1000 - 5135MHz



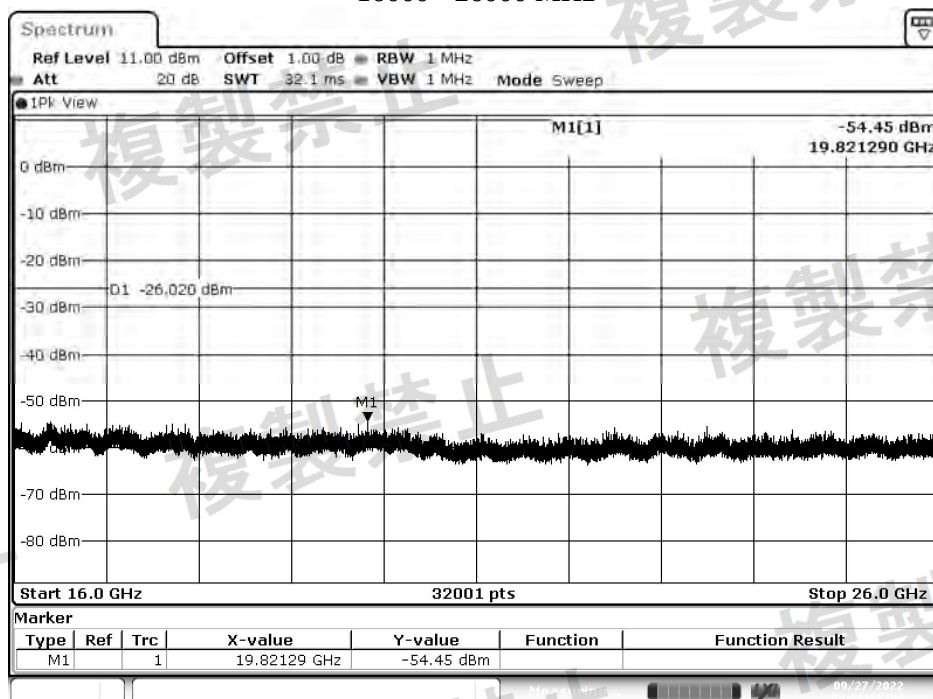
Date: 27.SEP.2022 16:07:50

5365 - 16000 MHz



Date: 27.SEP.2022 16:08:12

16000 - 26000 MHz

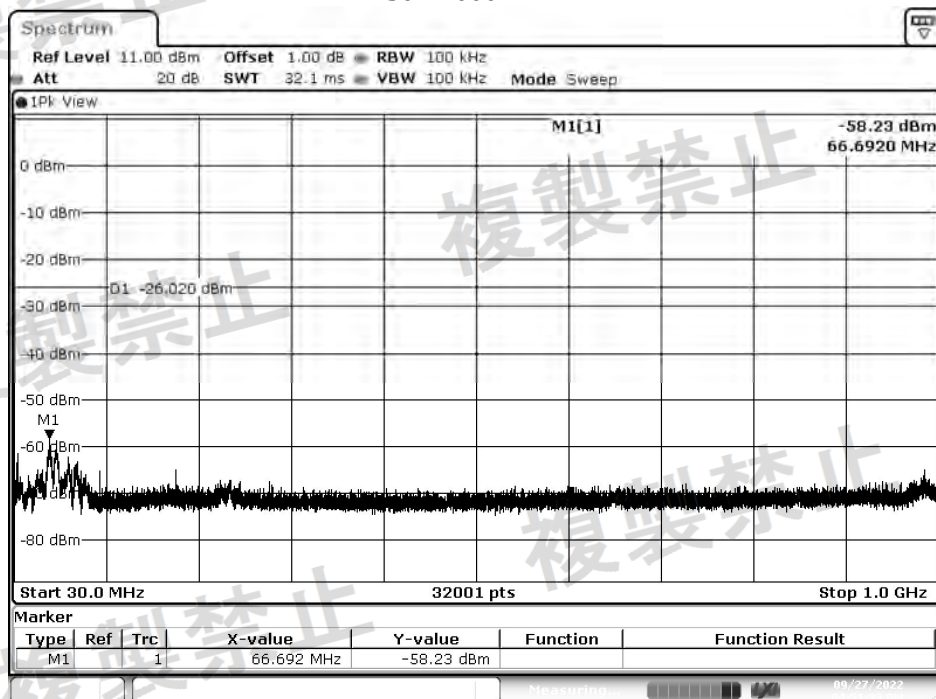


Date: 27.SEP.2022 16:08:33

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n40 30 Mbps) 5190 MHz_Antenna 2
Test Date : 2022/09/27

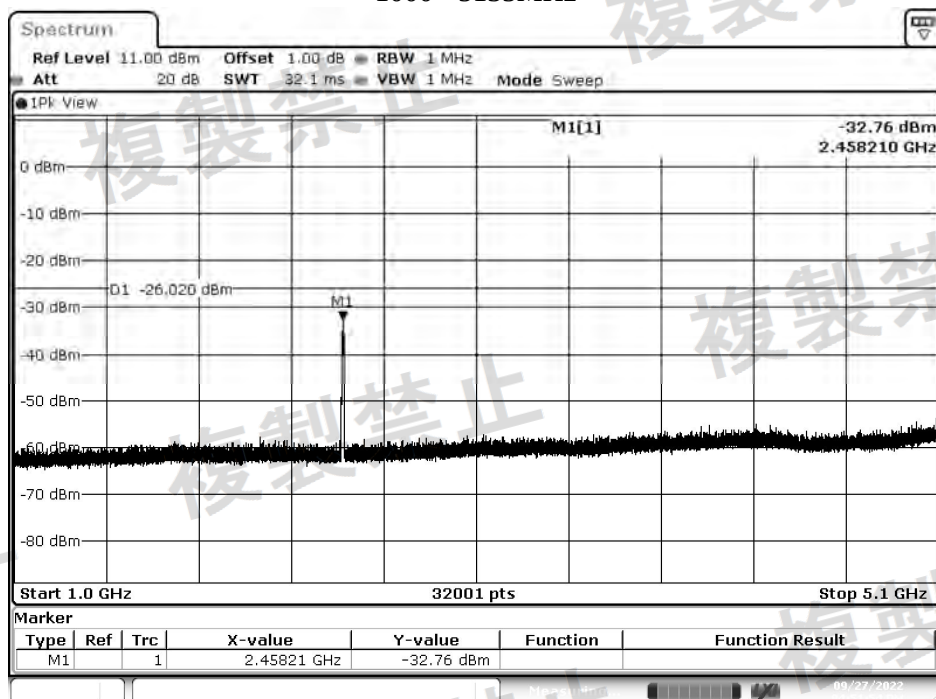
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.69	0.001503	2.5
1000 - 5135	2458.21	0.529663	2.5
5365 - 16000	10378.70	0.005970	2.5
16000 - 26000	16393.89	0.003926	2.5

30 - 1000 MHz



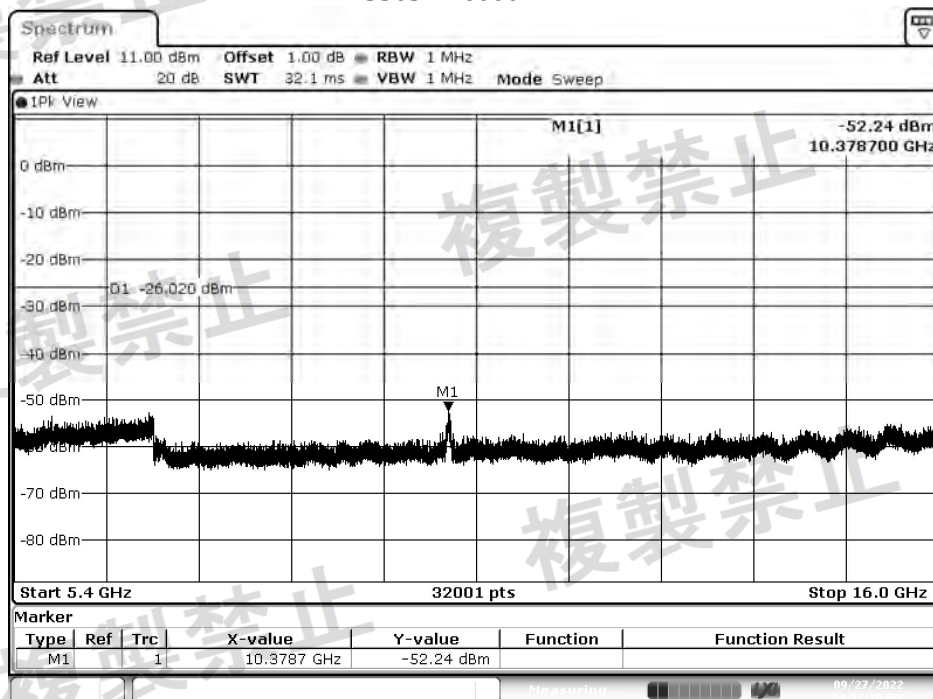
Date: 27.SEP.2022 16:51:34

1000 - 5135MHz



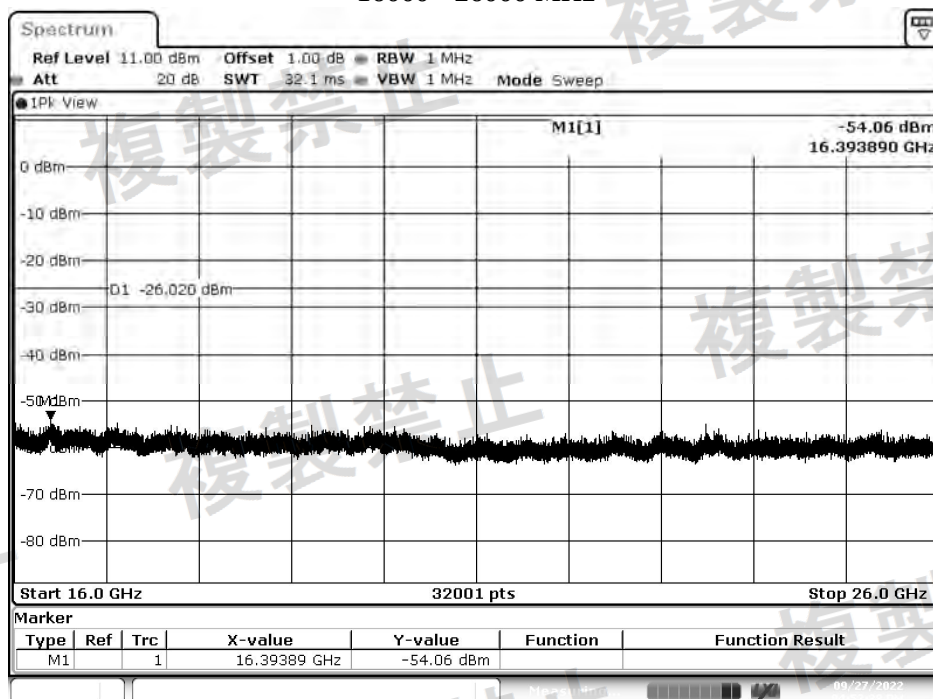
Date: 27.SEP.2022 16:51:55

5365 - 16000 MHz



Date: 27.SEP.2022 16:52:16

16000 - 26000 MHz

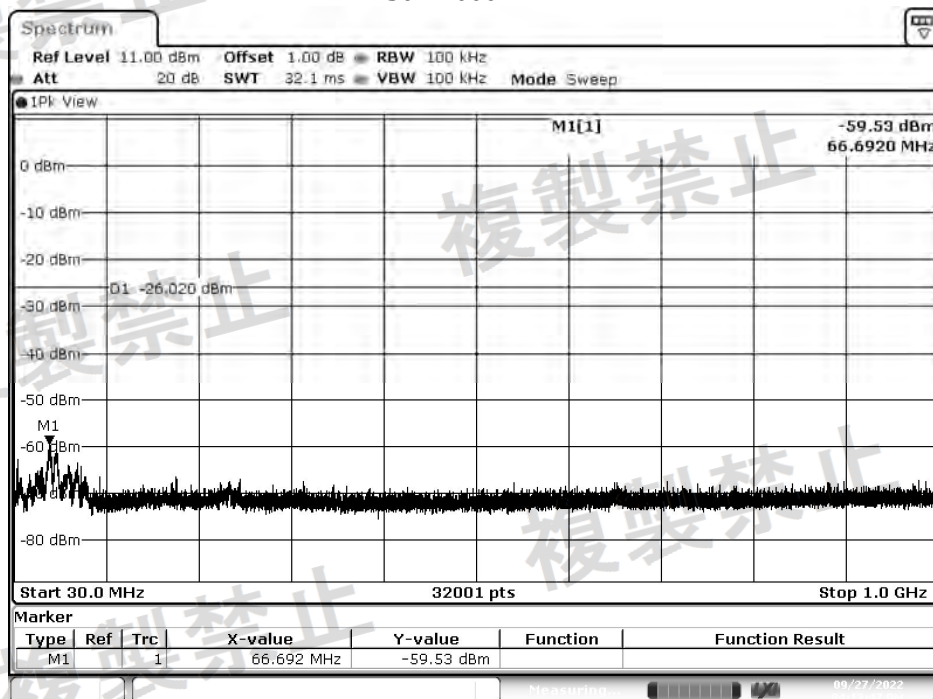


Date: 27.SEP.2022 16:52:38

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n40 30 Mbps) 5230 MHz_Antenna 1
Test Date : 2022/09/27

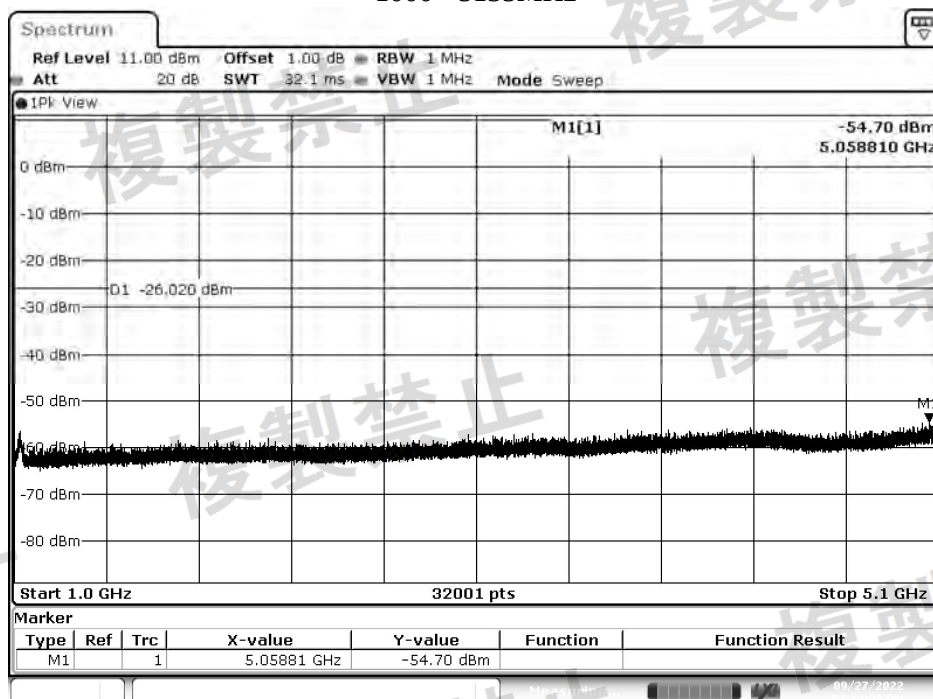
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	66.69	0.001114	2.5
1000 - 5135	5058.81	0.003388	2.5
5365 - 16000	6656.23	0.004436	2.5
16000 - 26000	16352.33	0.003873	2.5

30 - 1000 MHz



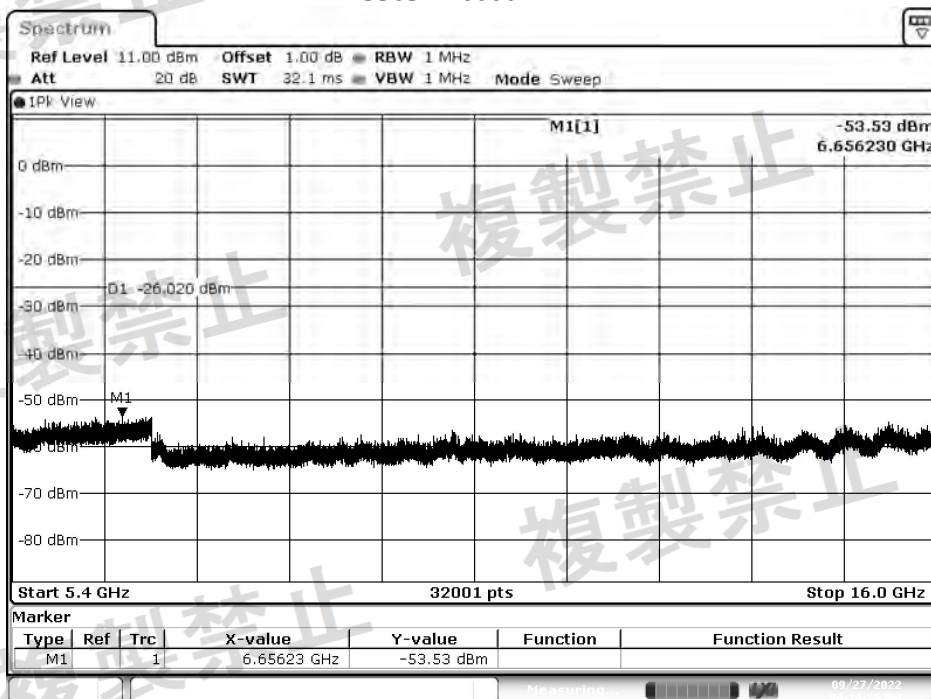
Date: 27.SEP.2022 16:13:47

1000 - 5135MHz



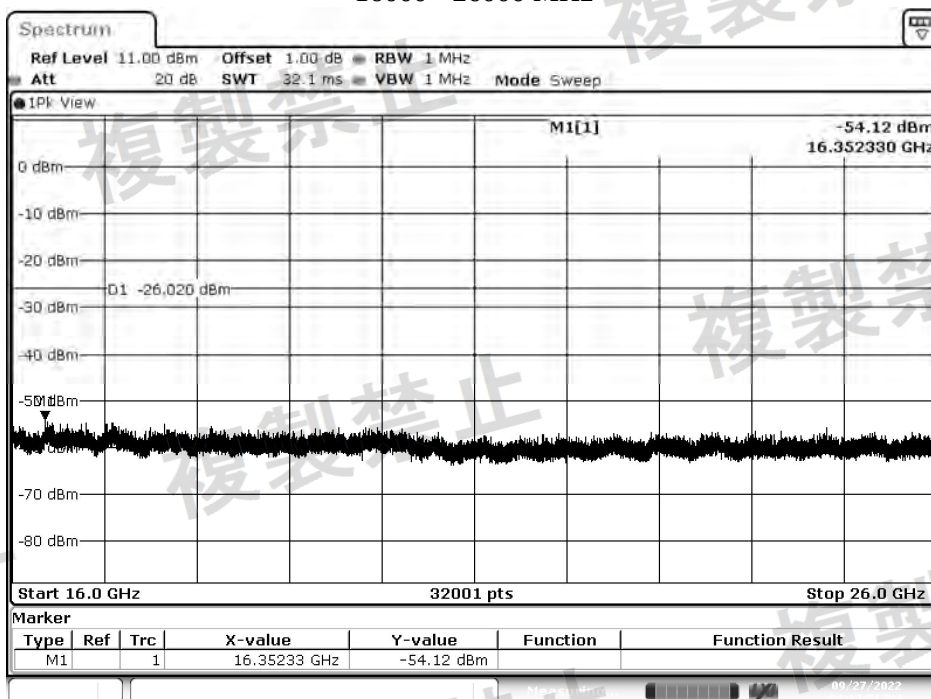
Date: 27.SEP.2022 16:14:08

5365 - 16000 MHz



Date: 27.SEP.2022 16:14:30

16000 - 26000 MHz

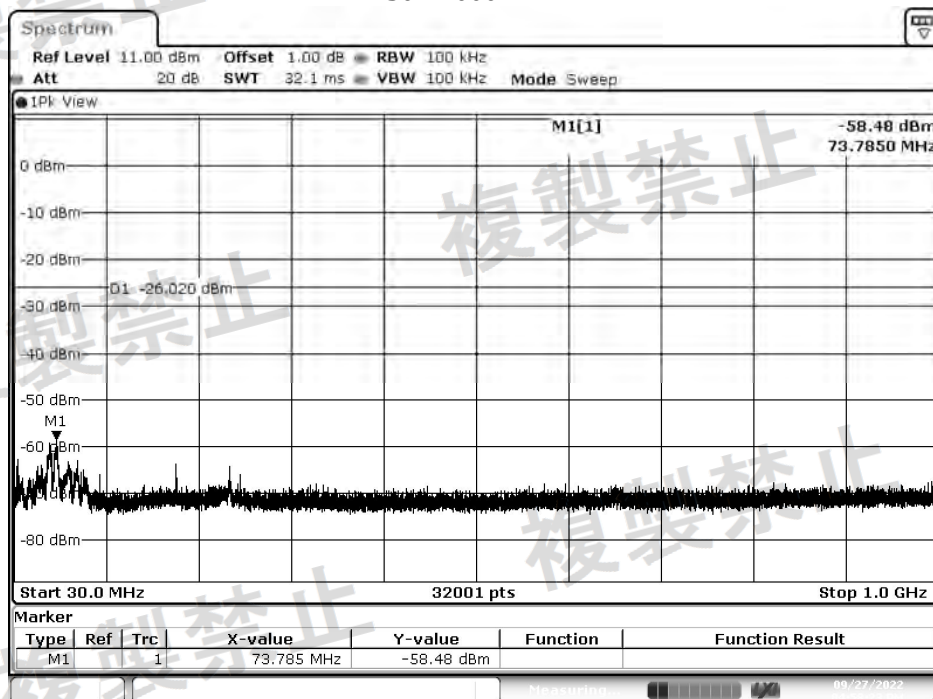


Date: 27.SEP.2022 16:14:51

Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11n40 30 Mbps) 5230 MHz_Antenna 2
Test Date : 2022/09/27

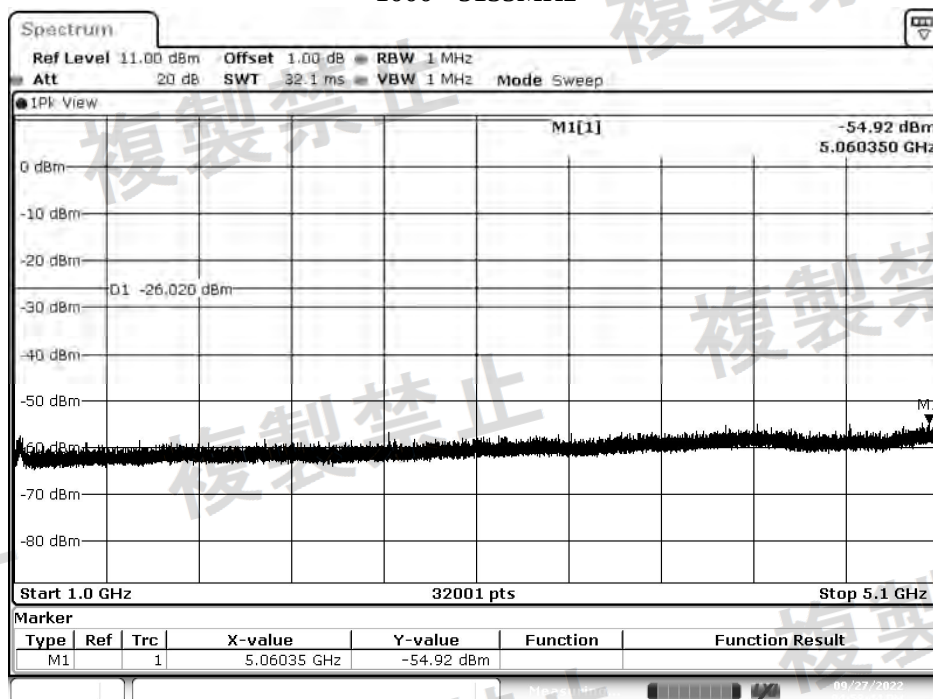
Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	73.79	0.001419	2.5
1000 - 5135	5060.35	0.003221	2.5
5365 - 16000	10465.48	0.006053	2.5
16000 - 26000	16421.39	0.003864	2.5

30 - 1000 MHz



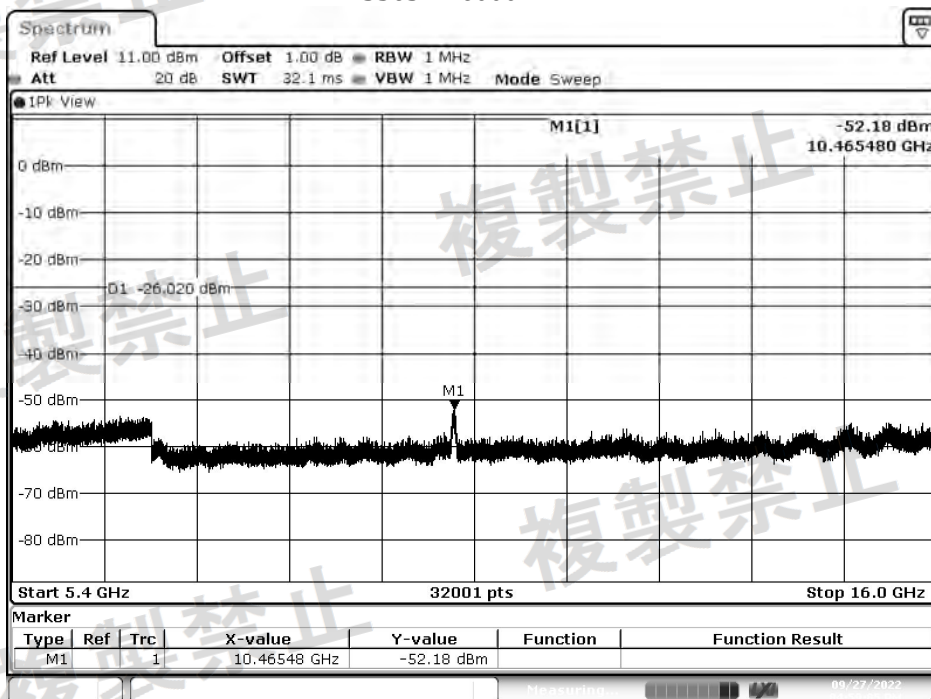
Date: 27.SEP.2022 16:58:23

1000 - 5135MHz



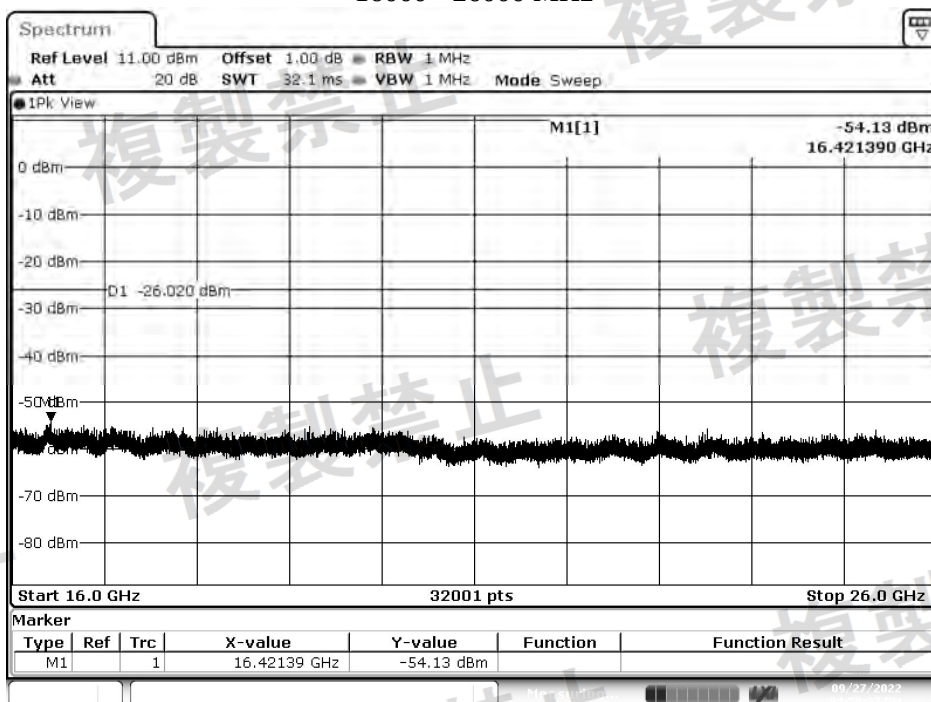
Date: 27.SEP.2022 16:58:44

5365 - 16000 MHz



Date: 27.SEP.2022 16:59:06

16000 - 26000 MHz

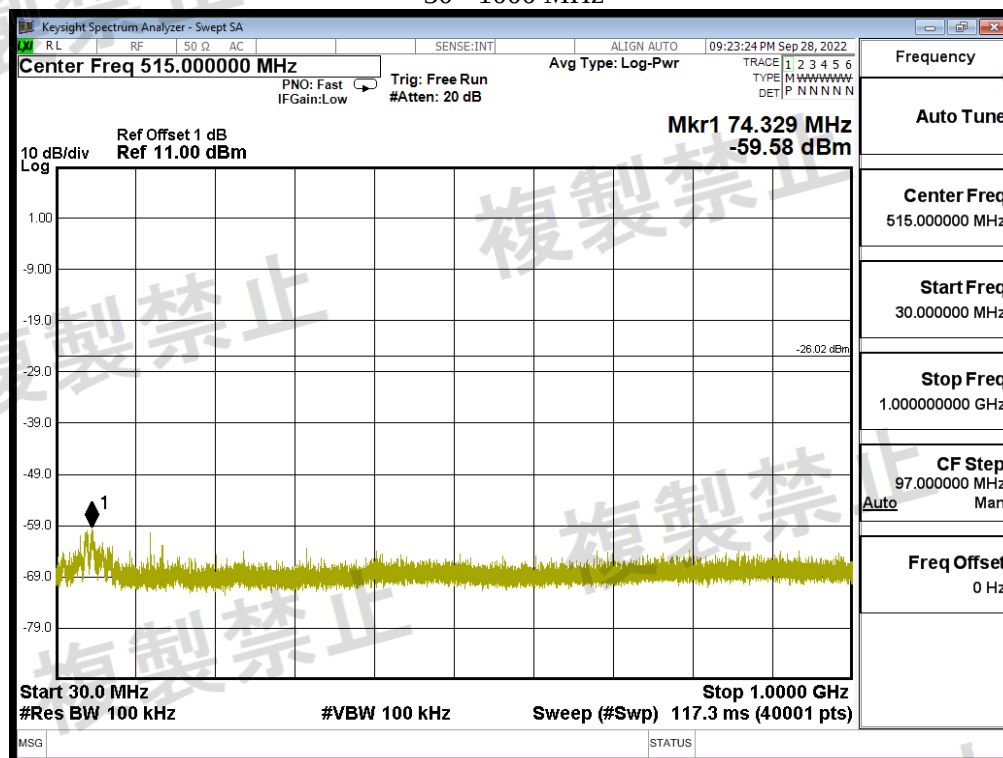


Date: 27.SEP.2022 16:59:27

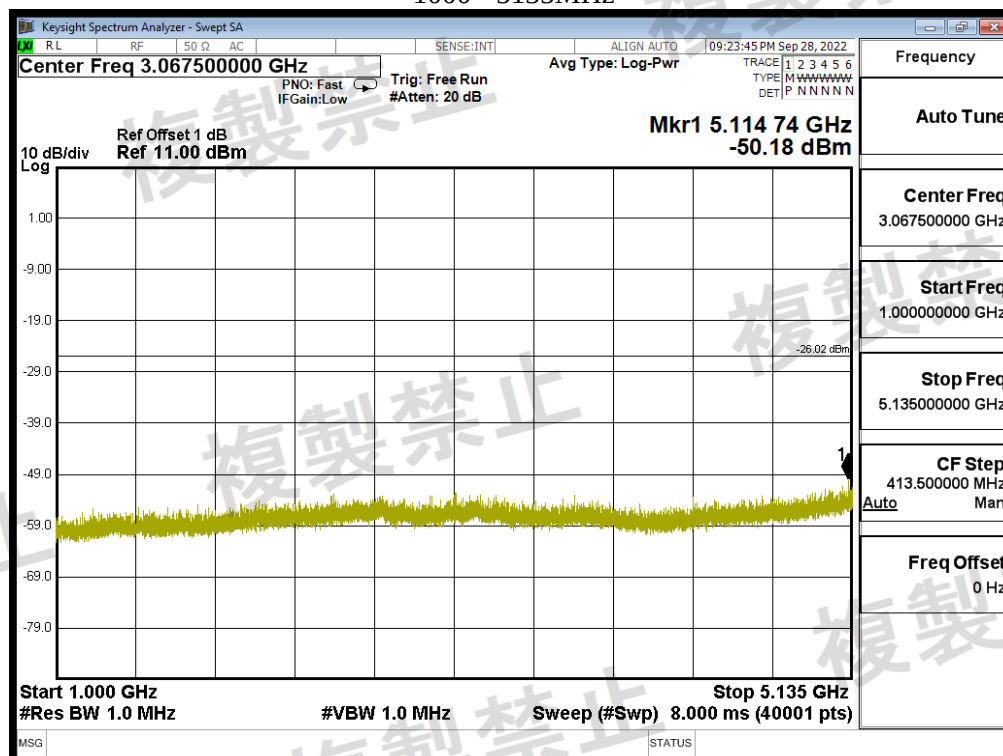
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac20 14.4Mbps) 5180 MHz_Antenna 1
Test Date : 2022/09/28

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	74.33	0.001102	2.5
1000 - 5135	5114.74	0.009594	2.5
5365 - 16000	15625.38	0.014588	2.5
16000 - 26000	25339.00	0.127938	2.5

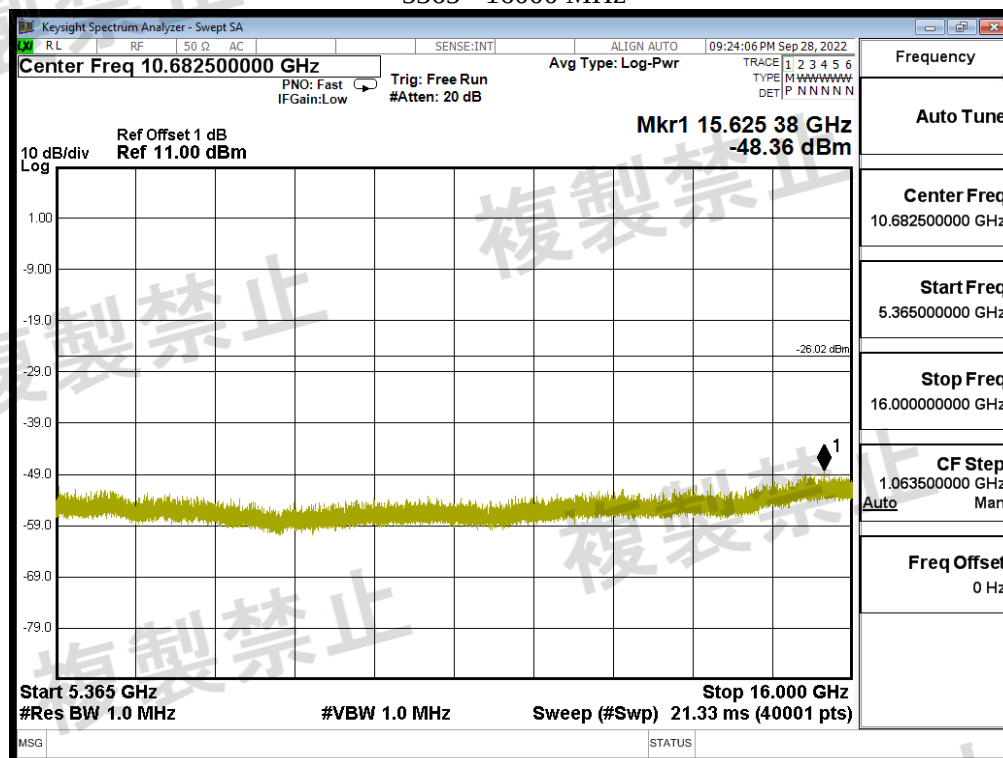
30 - 1000 MHz



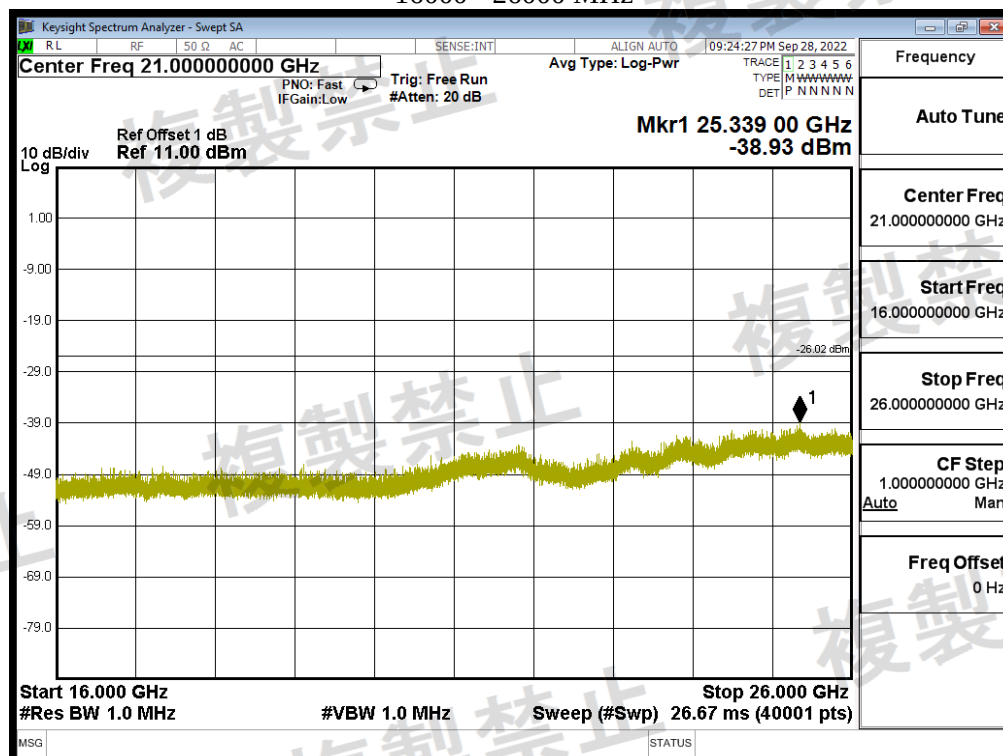
1000 - 5135MHz



5365 - 16000 MHz



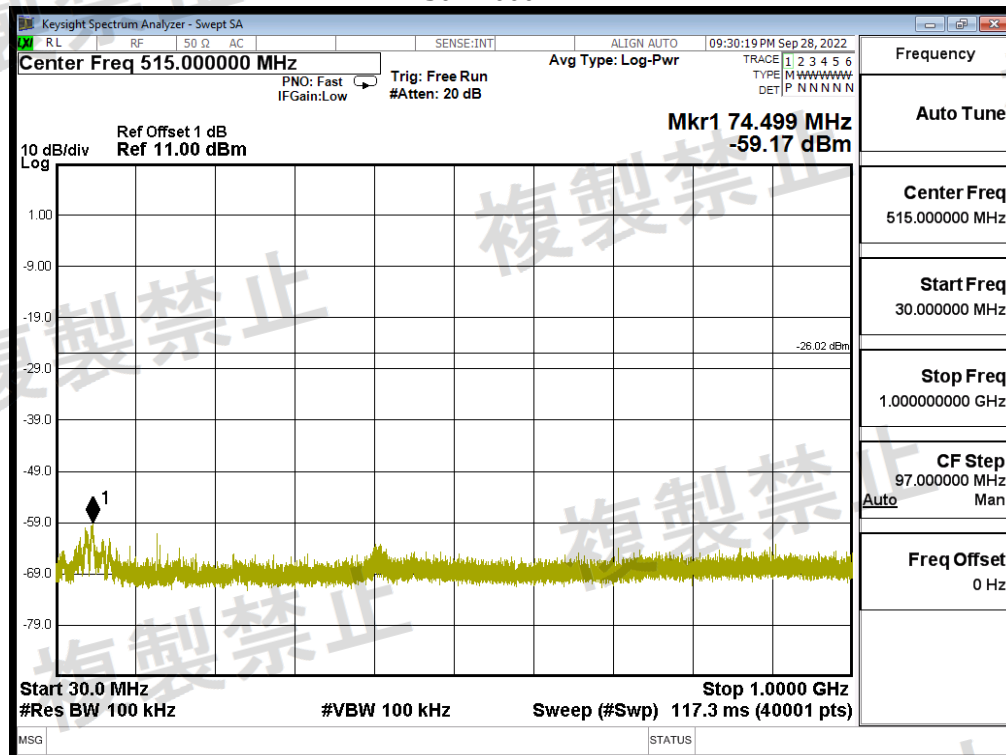
16000 - 26000 MHz



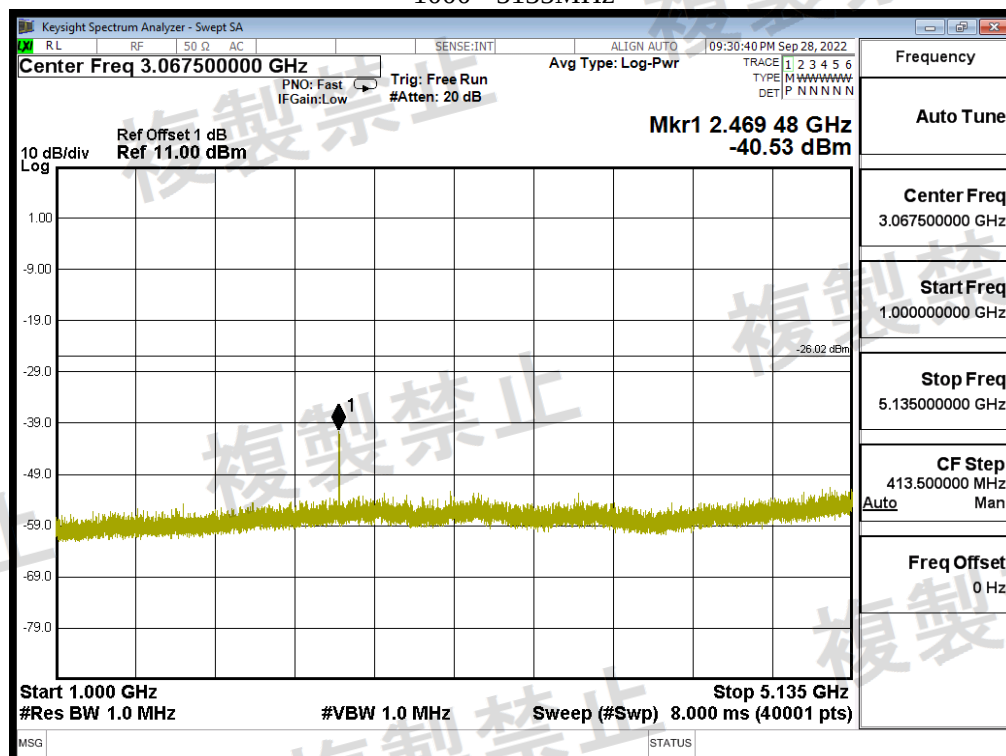
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac20 14.4Mbps) 5180 MHz_Antenna 2
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	74.50	0.001211	2.5
1000 - 5135	2469.48	0.088512	2.5
5365 - 16000	15904.55	0.014588	2.5
16000 - 26000	24868.50	0.121619	2.5

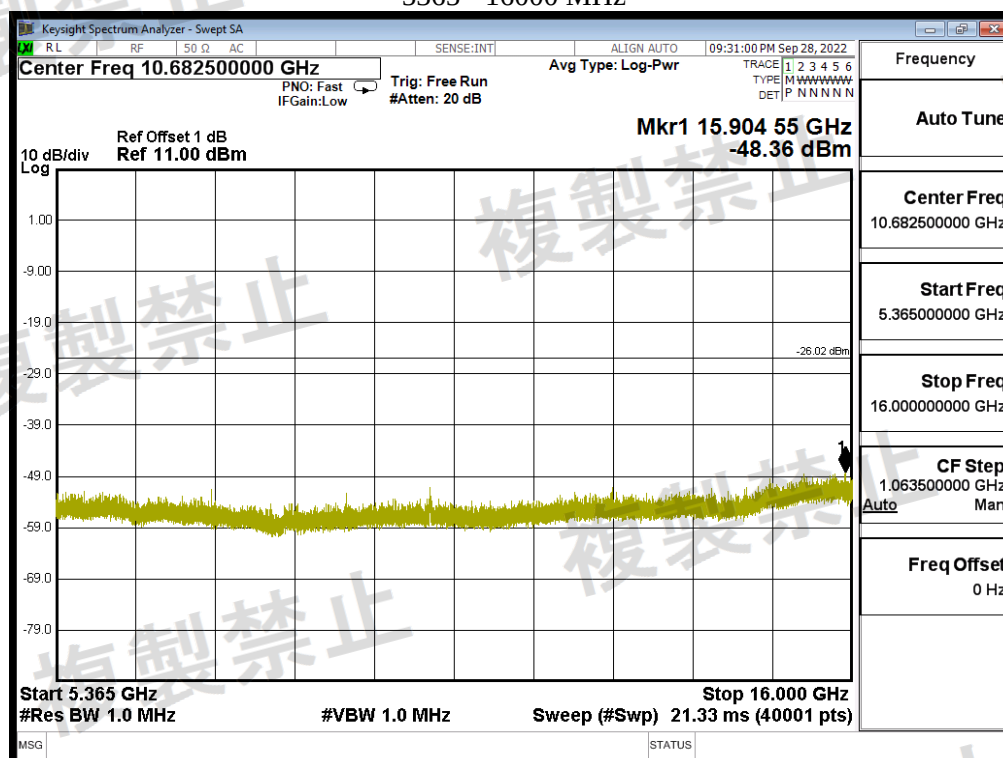
30 - 1000 MHz



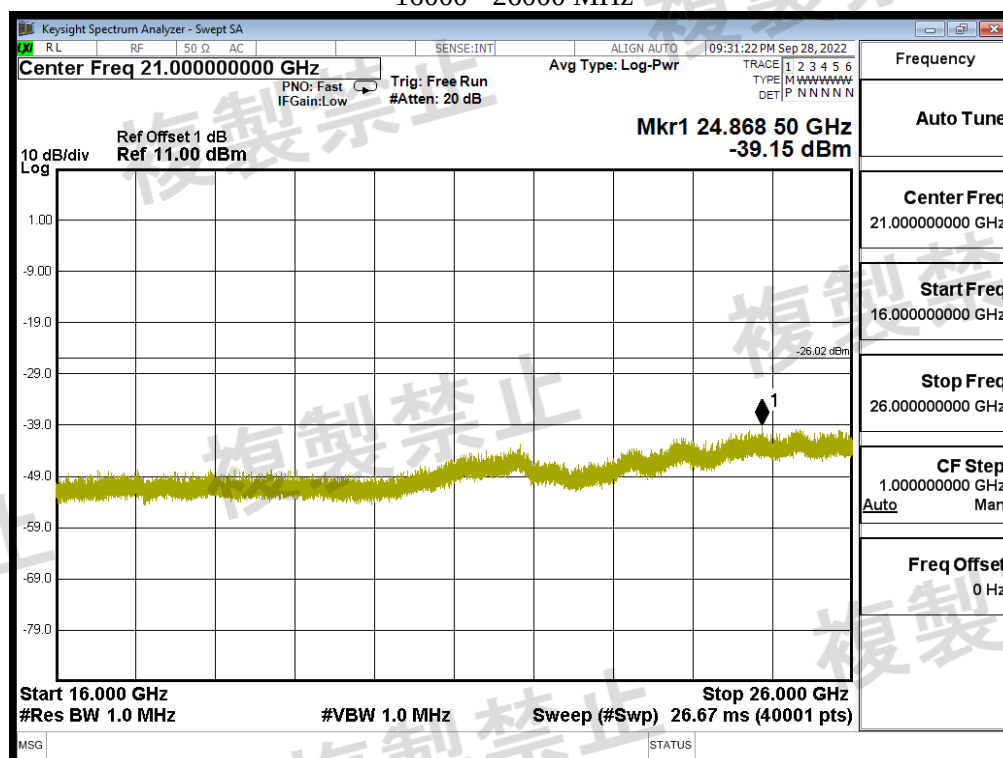
1000 - 5135MHz



5365 - 16000 MHz



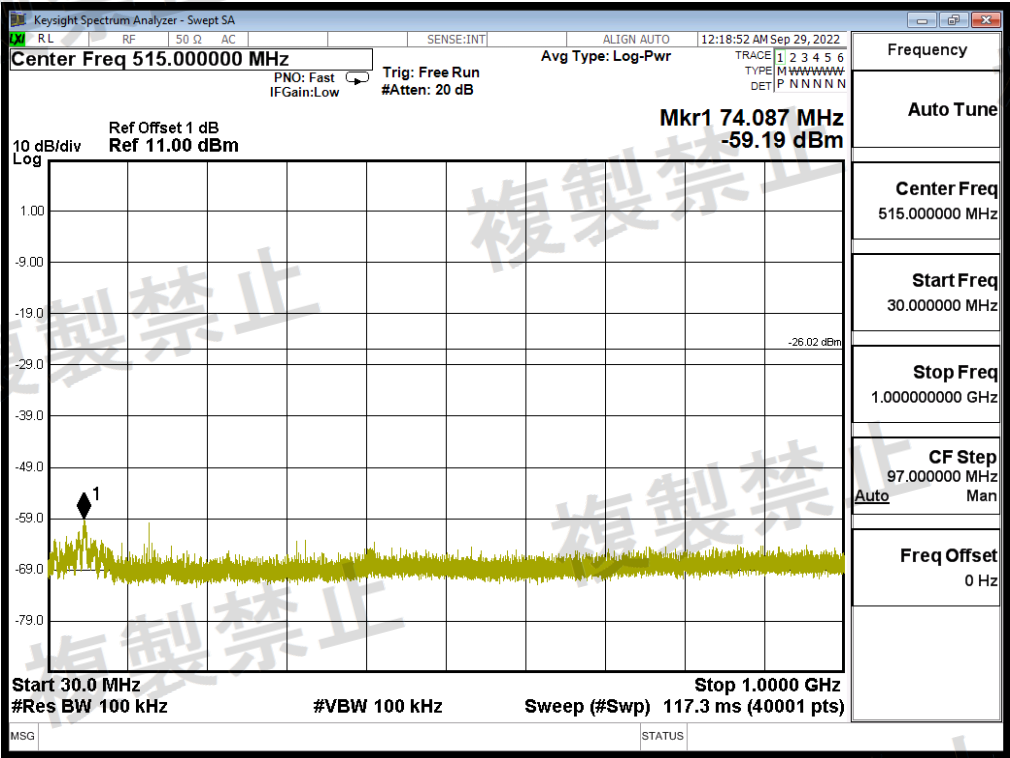
16000 - 26000 MHz



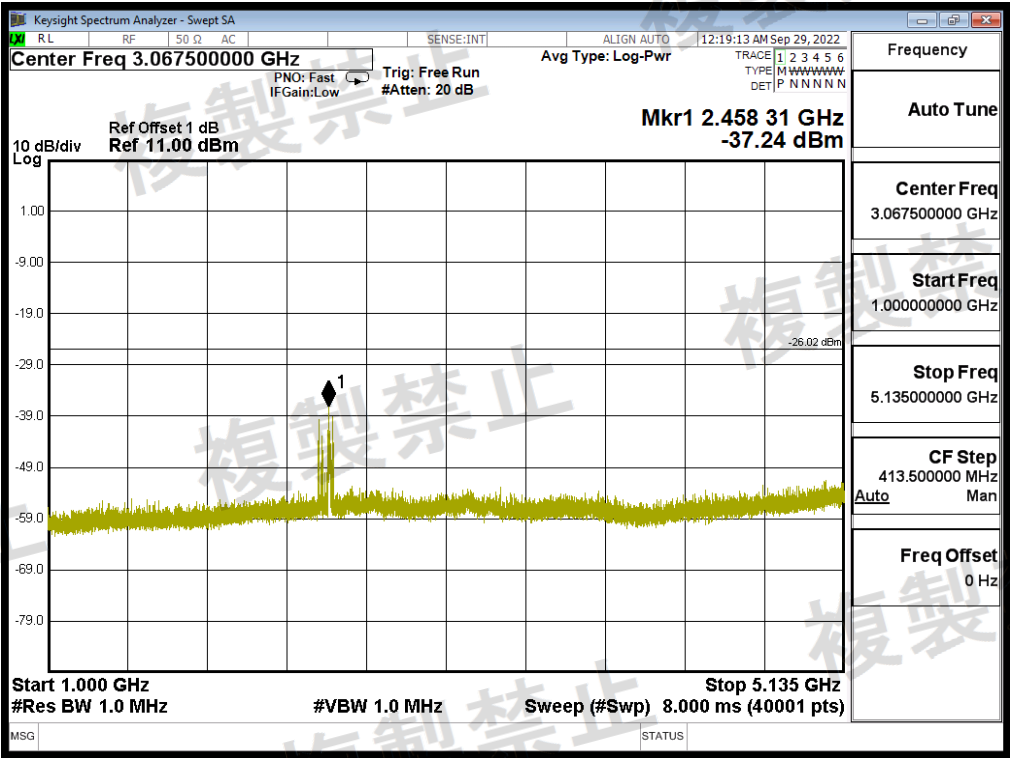
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac20 14.4Mbps) 5240 MHz_Antenna 1
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	74.09	0.001205	2.5
1000 - 5135	2458.31	0.188799	2.5
5365 - 16000	15534.98	0.014158	2.5
16000 - 26000	25306.00	0.120504	2.5

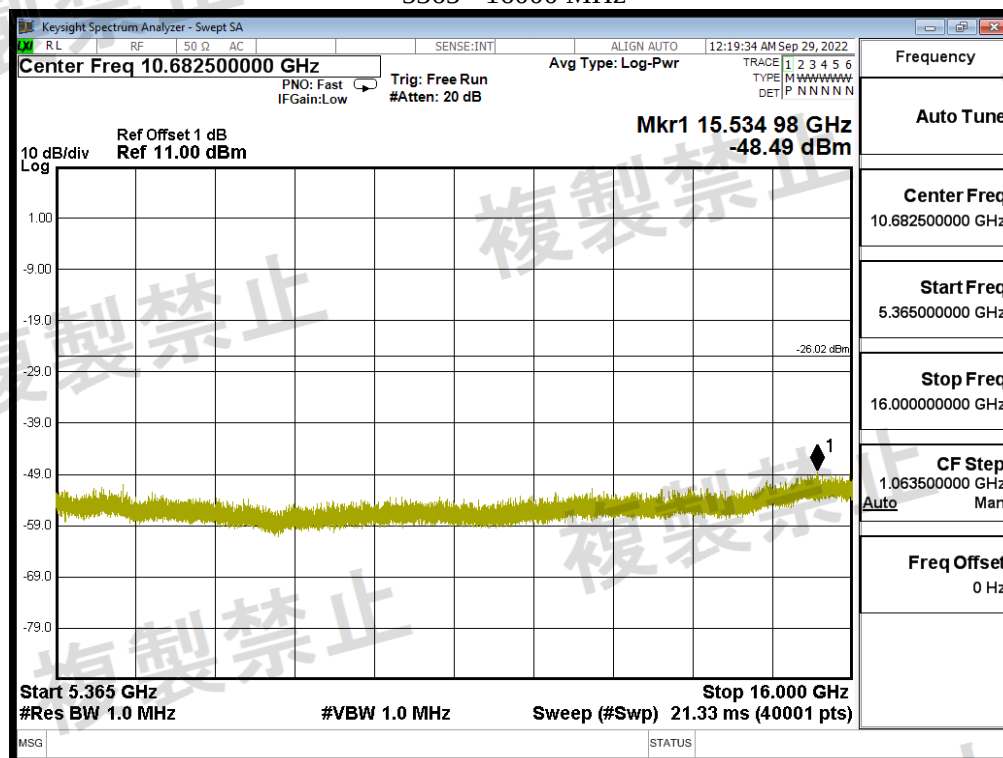
30 - 1000 MHz



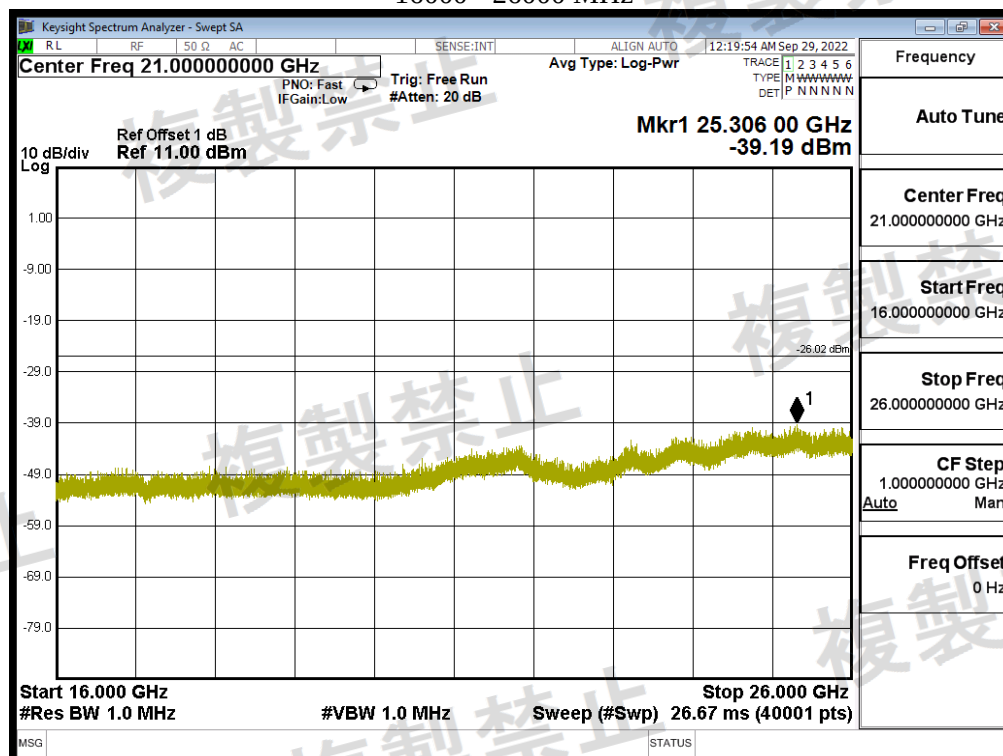
1000 - 5135MHz



5365 - 16000 MHz



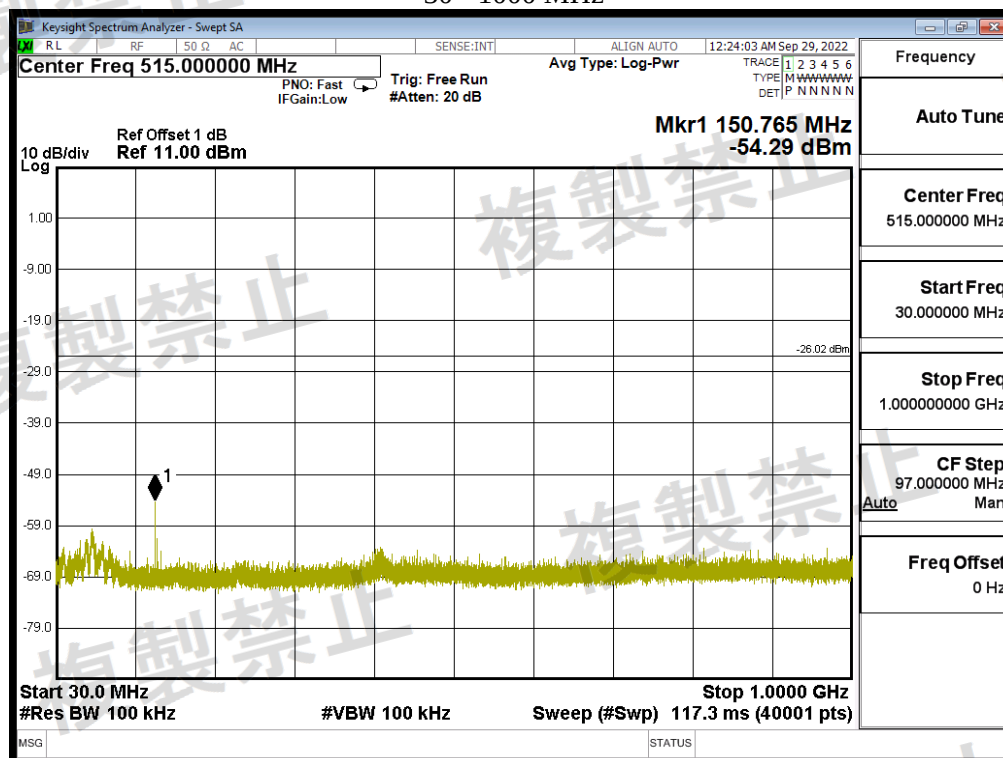
16000 - 26000 MHz



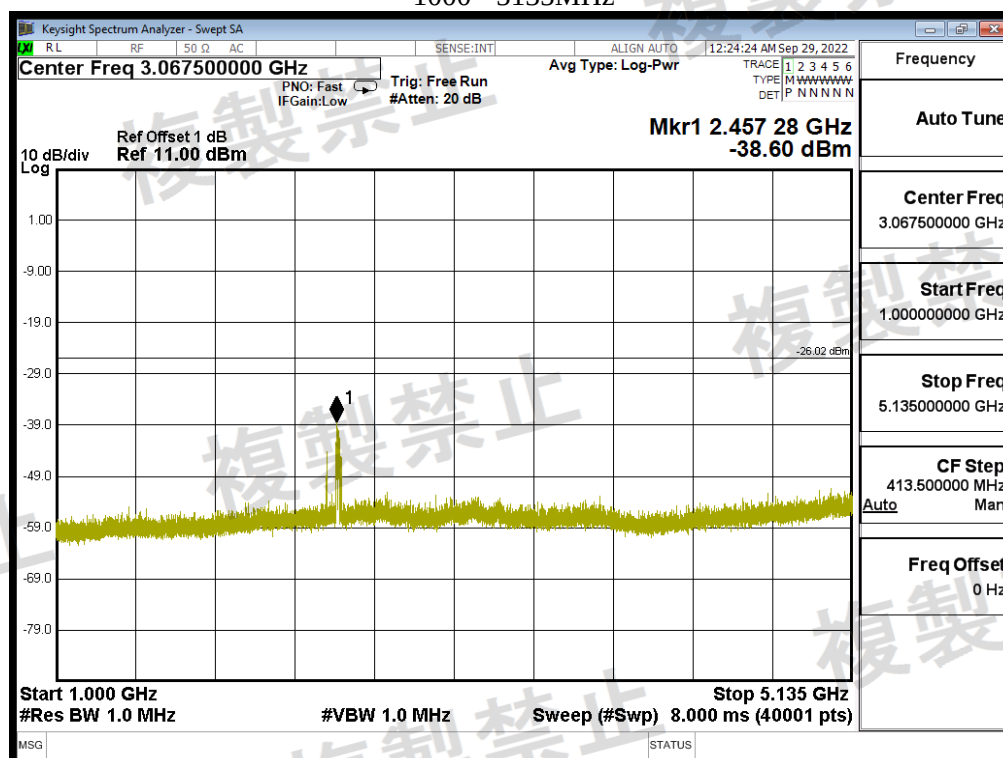
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac20 14.4Mbps) 5240 MHz_Antenna 2
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	150.77	0.003724	2.5
1000 - 5135	2457.28	0.138038	2.5
5365 - 16000	15682.81	0.013964	2.5
16000 - 26000	25834.00	0.110917	2.5

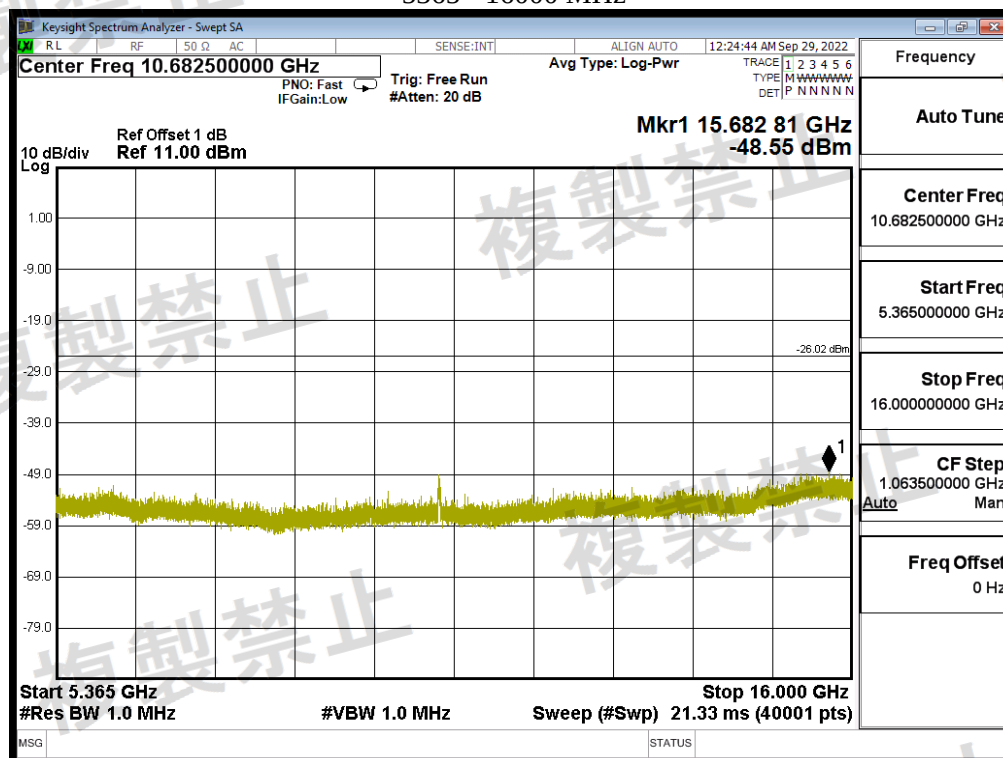
30 - 1000 MHz



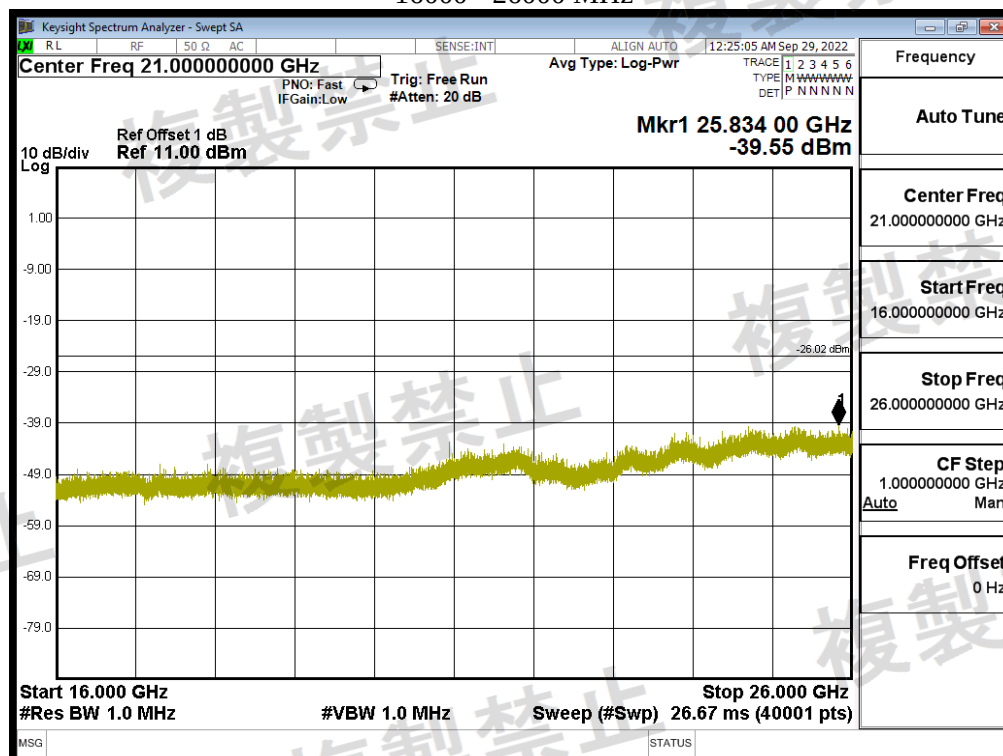
1000 - 5135MHz



5365 - 16000 MHz



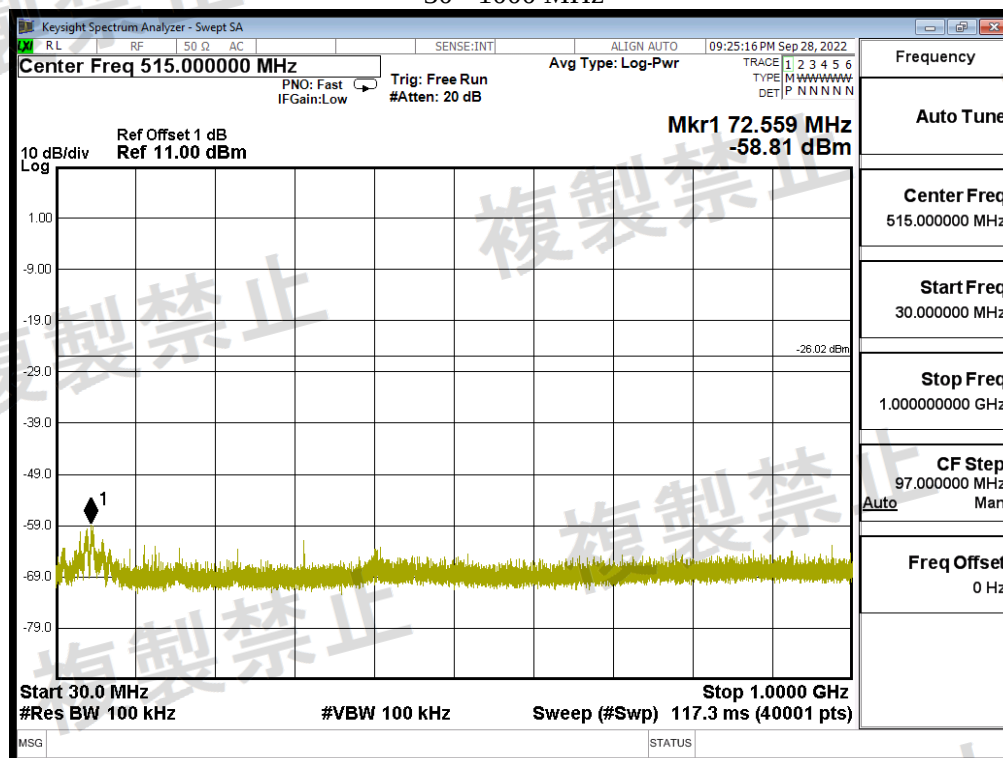
16000 - 26000 MHz



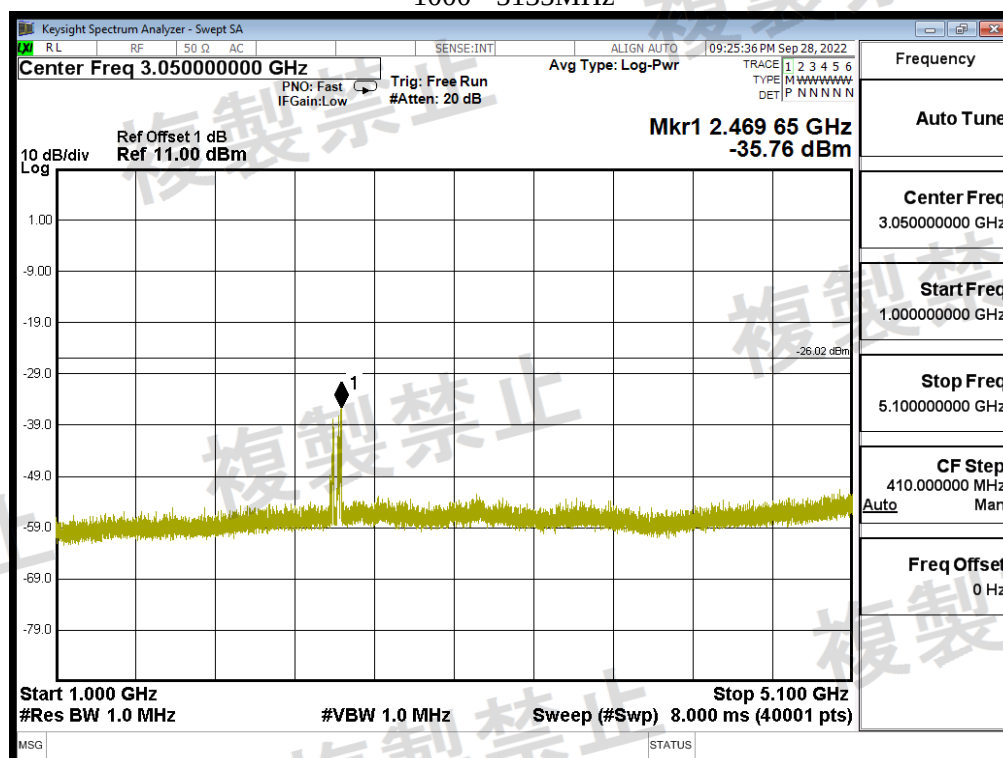
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac40 30 Mbps) 5190 MHz_Antenna 1
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	72.56	0.001315	2.5
1000 - 5135	2469.65	0.265461	2.5
5365 - 16000	15603.30	0.015171	2.5
16000 - 26000	25390.75	0.113240	2.5

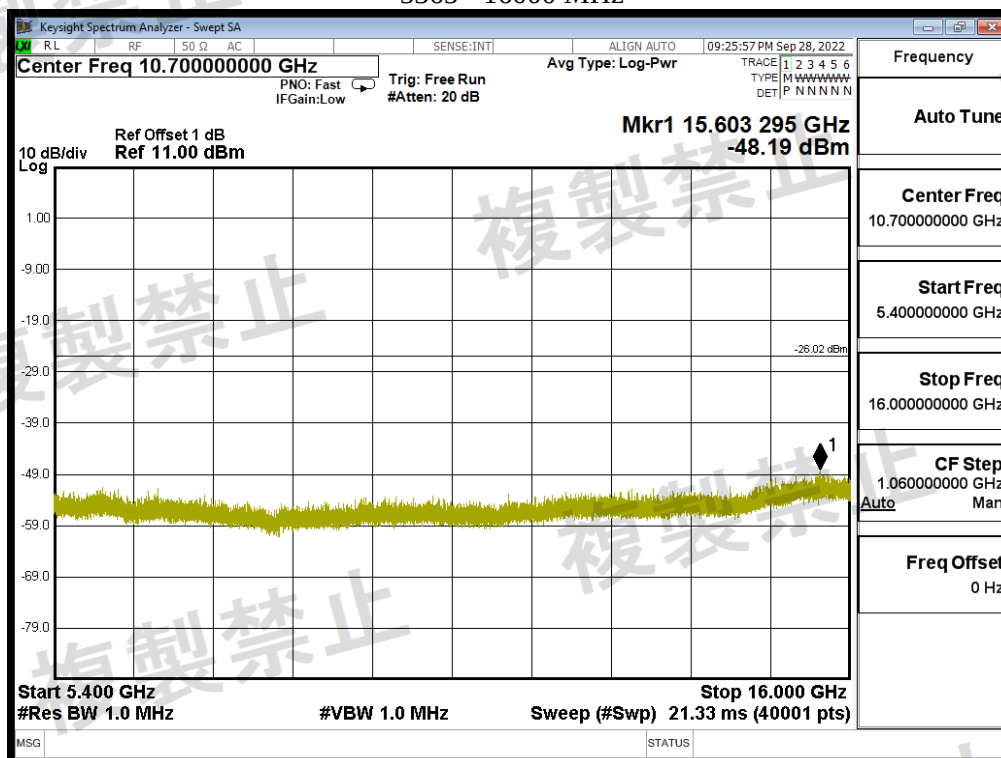
30 - 1000 MHz



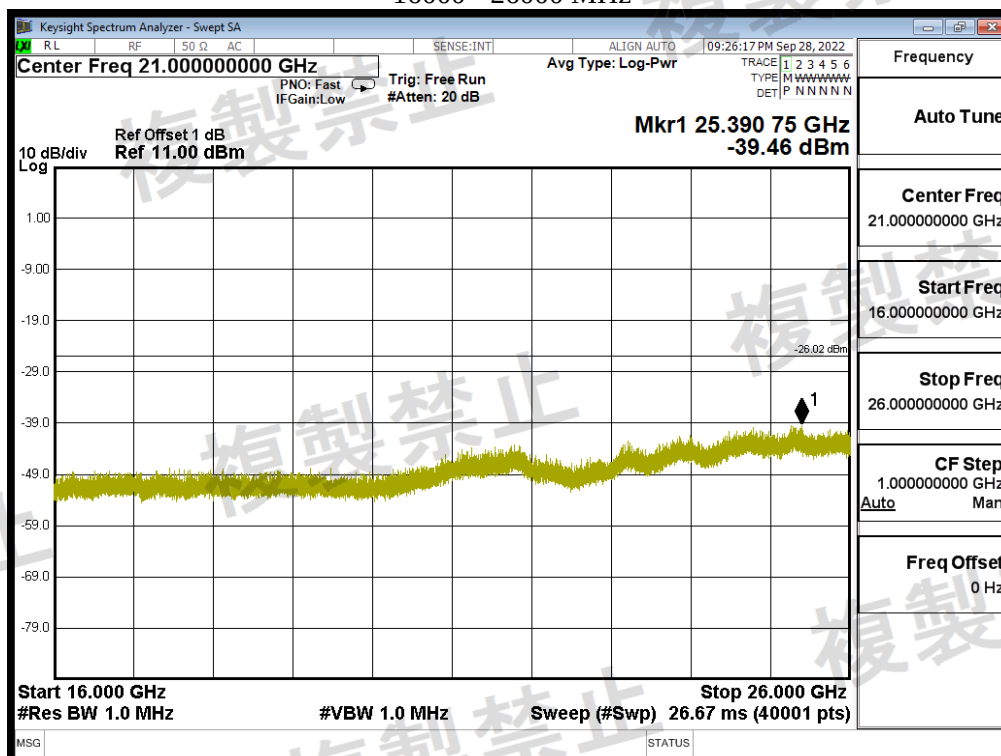
1000 - 5135MHz



5365 - 16000 MHz



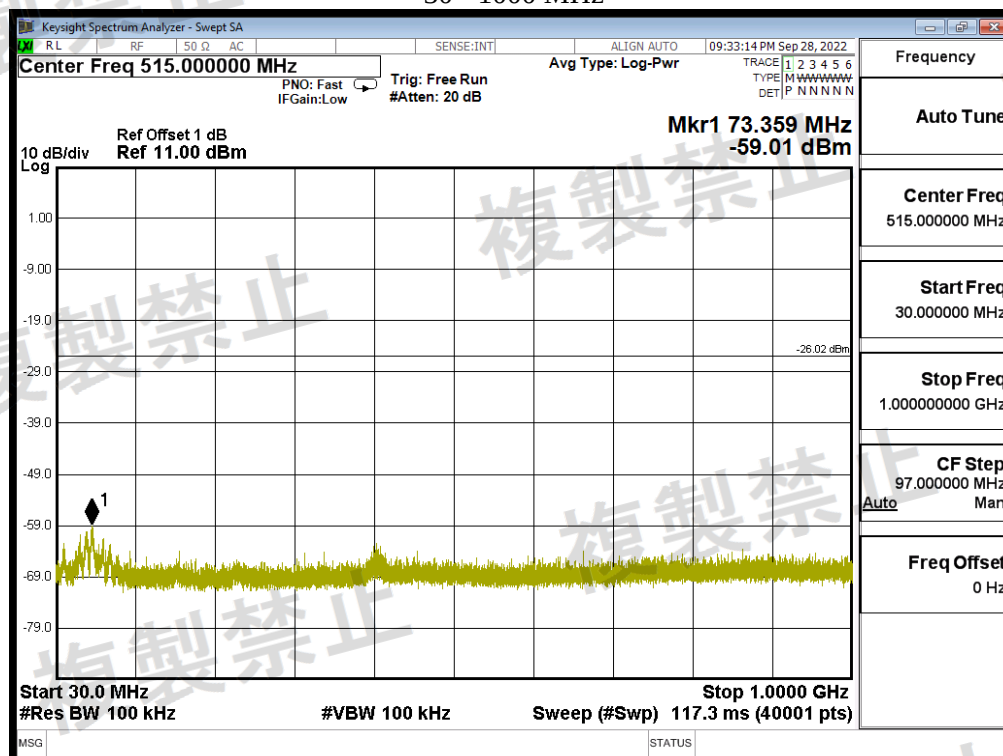
16000 - 26000 MHz



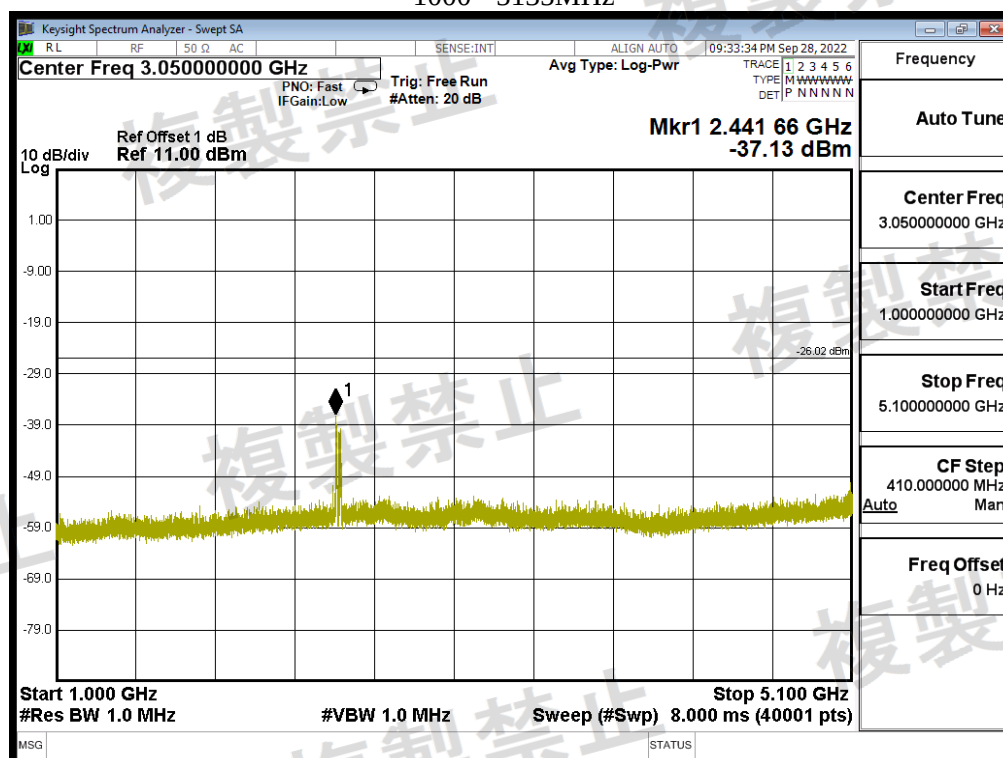
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac40 30 Mbps) 5190 MHz_Antenna 2
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	73.36	0.001256	2.5
1000 - 5135	2441.66	0.193642	2.5
5365 - 16000	15738.18	0.013804	2.5
16000 - 26000	25254.00	0.139637	2.5

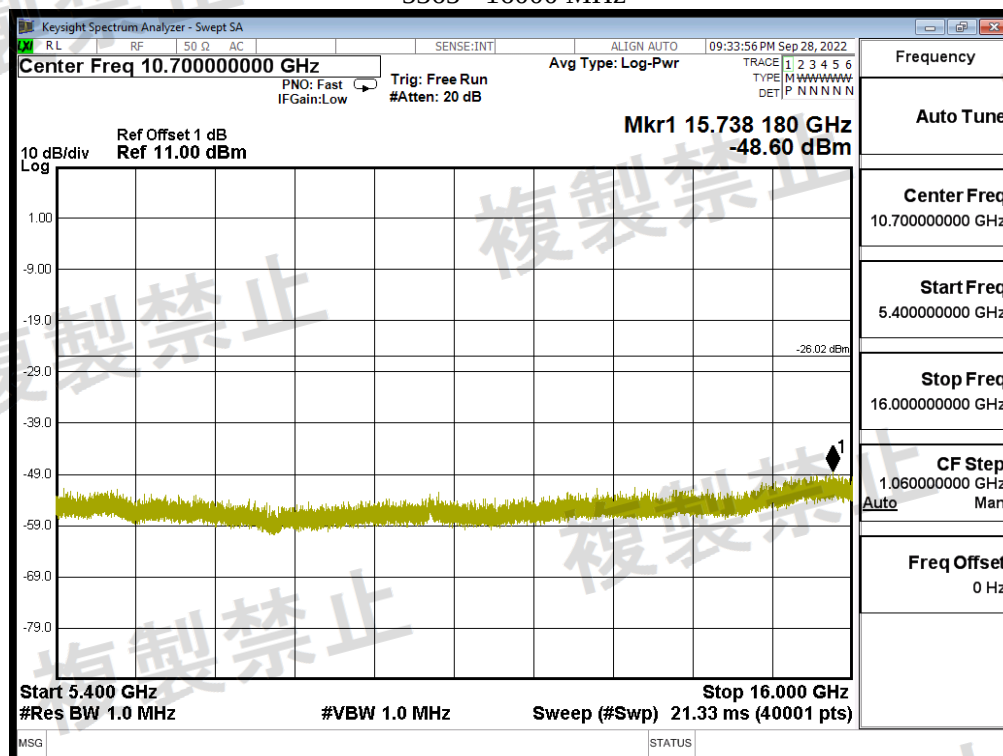
30 - 1000 MHz



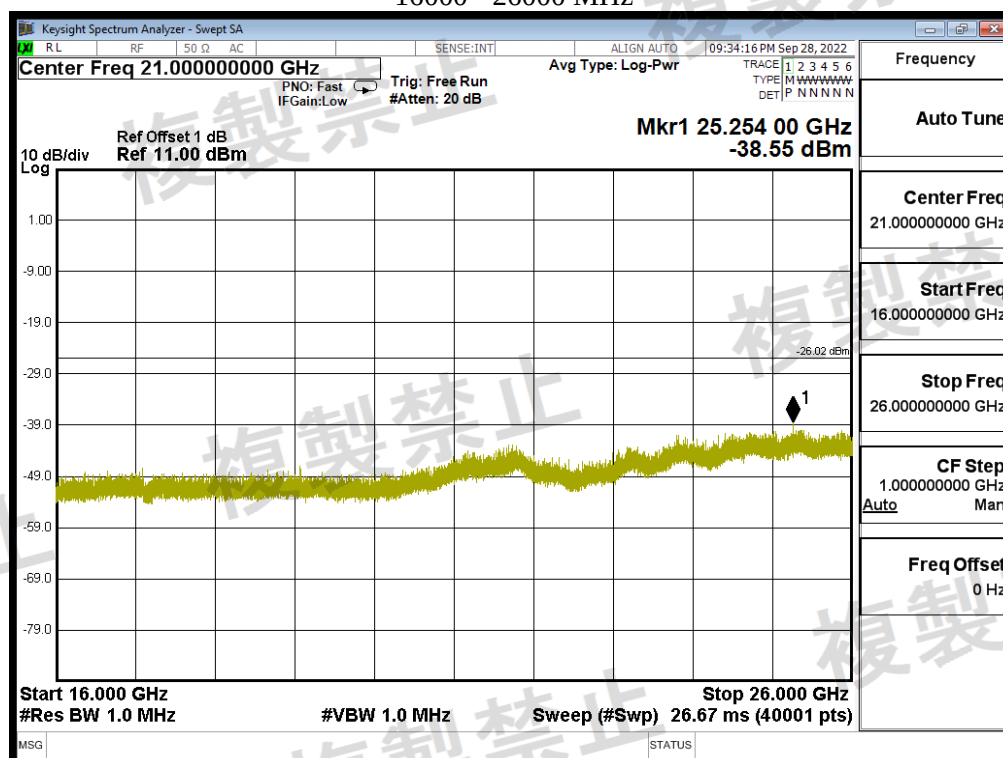
1000 - 5135MHz



5365 - 16000 MHz



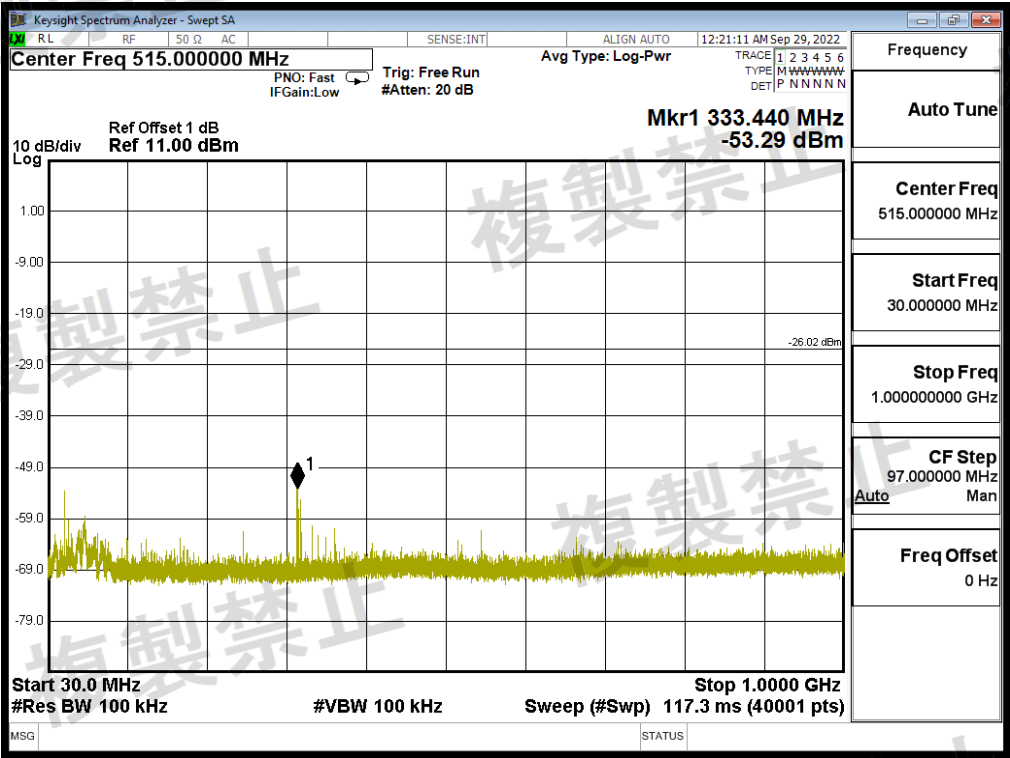
16000 - 26000 MHz



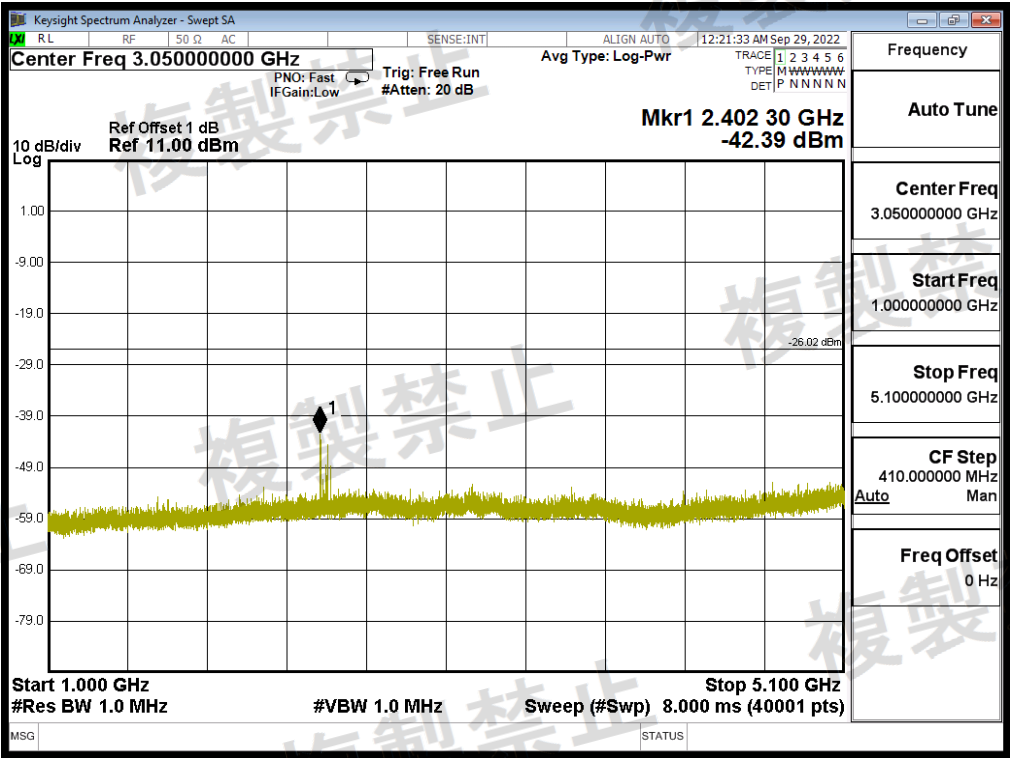
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac40 30 Mbps) 5230 MHz_Antenna 1
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	333.44	0.004688	2.5
1000 - 5135	2402.30	0.057677	2.5
5365 - 16000	15775.28	0.015171	2.5
16000 - 26000	25832.25	0.114815	2.5

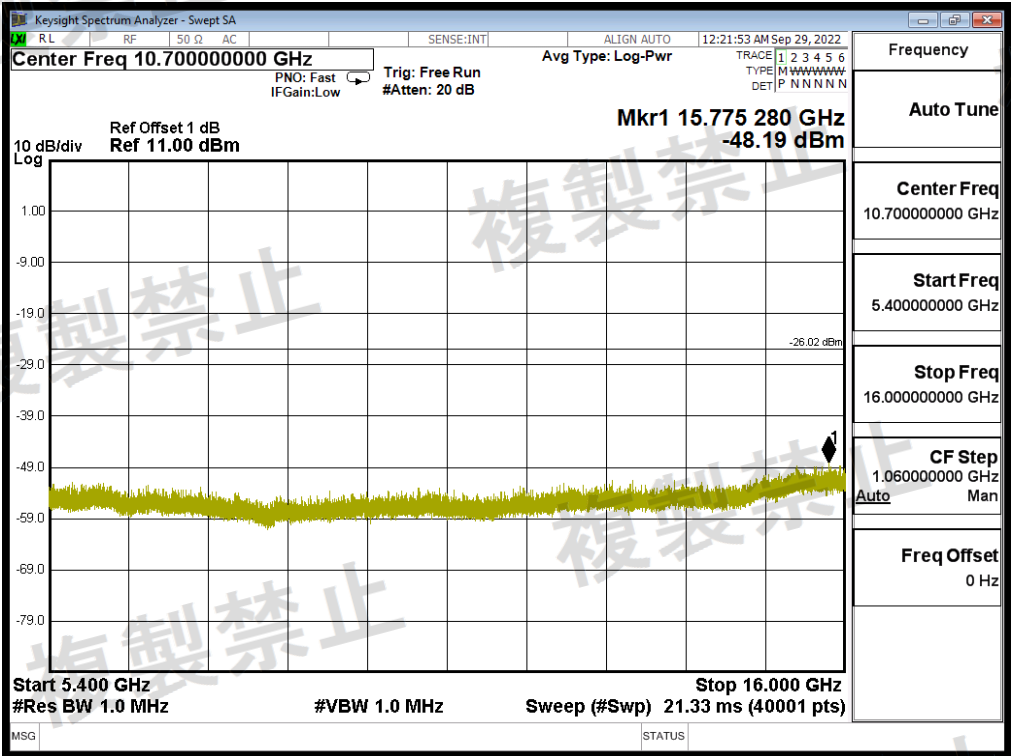
30 - 1000 MHz



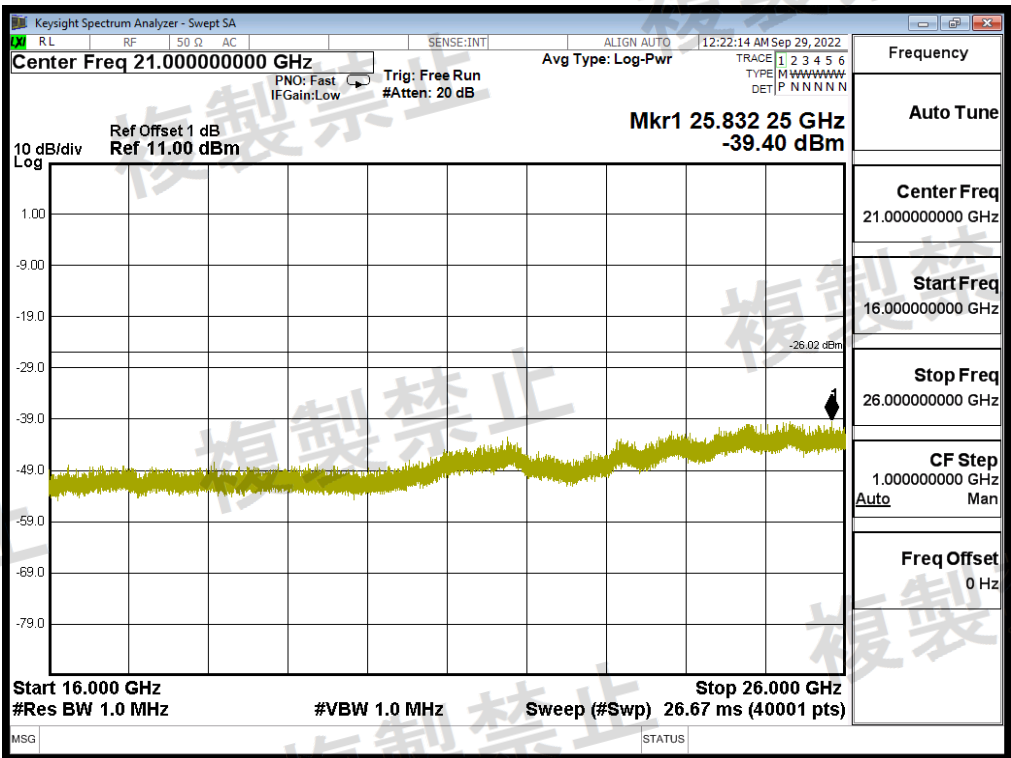
1000 - 5135MHz



5365 - 16000 MHz



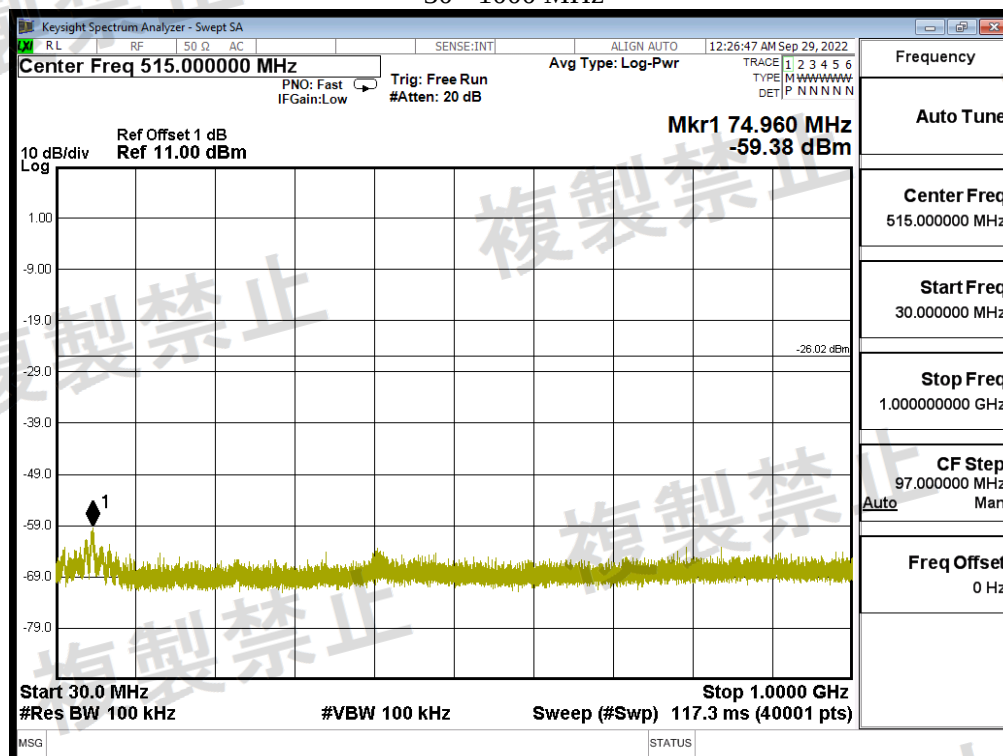
16000 - 26000 MHz



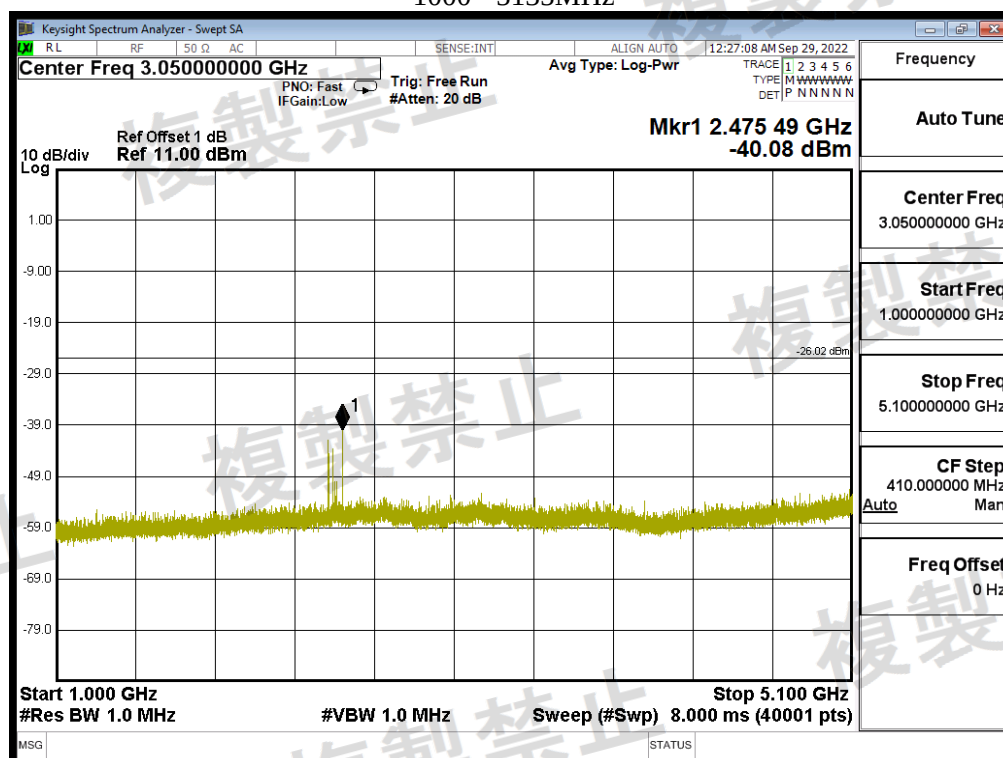
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac40 30 Mbps) 5230 MHz_Antenna 2
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	74.96	0.001153	2.5
1000 - 5135	2475.49	0.098175	2.5
5365 - 16000	15608.86	0.013490	2.5
16000 - 26000	25283.00	0.133968	2.5

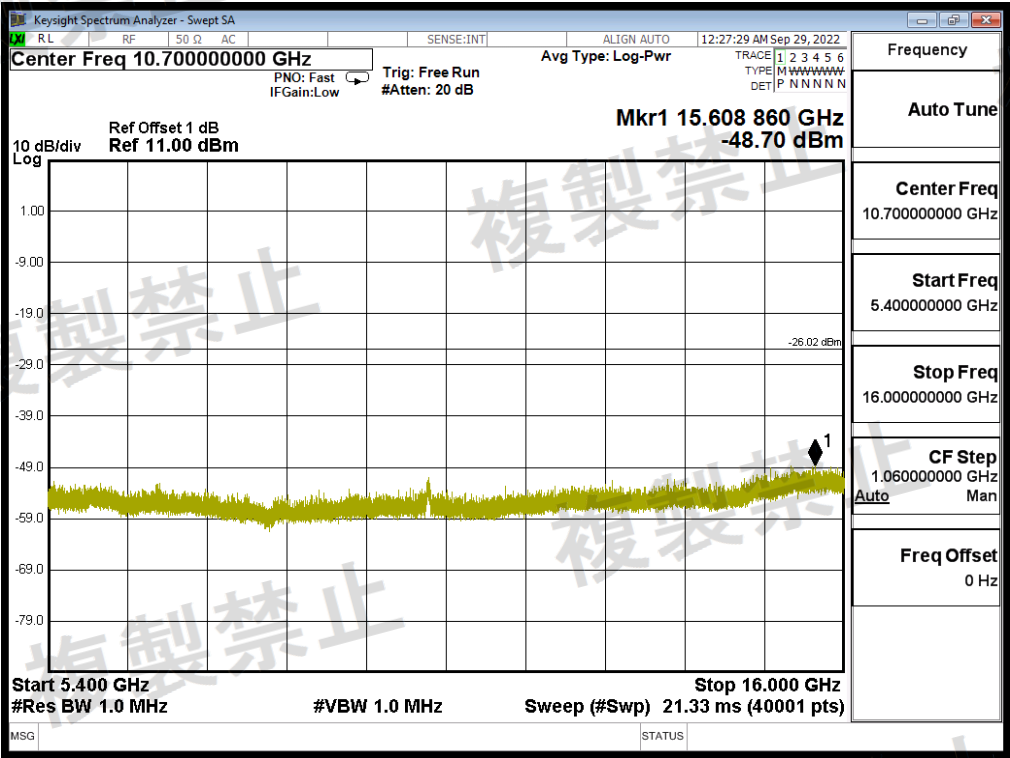
30 - 1000 MHz



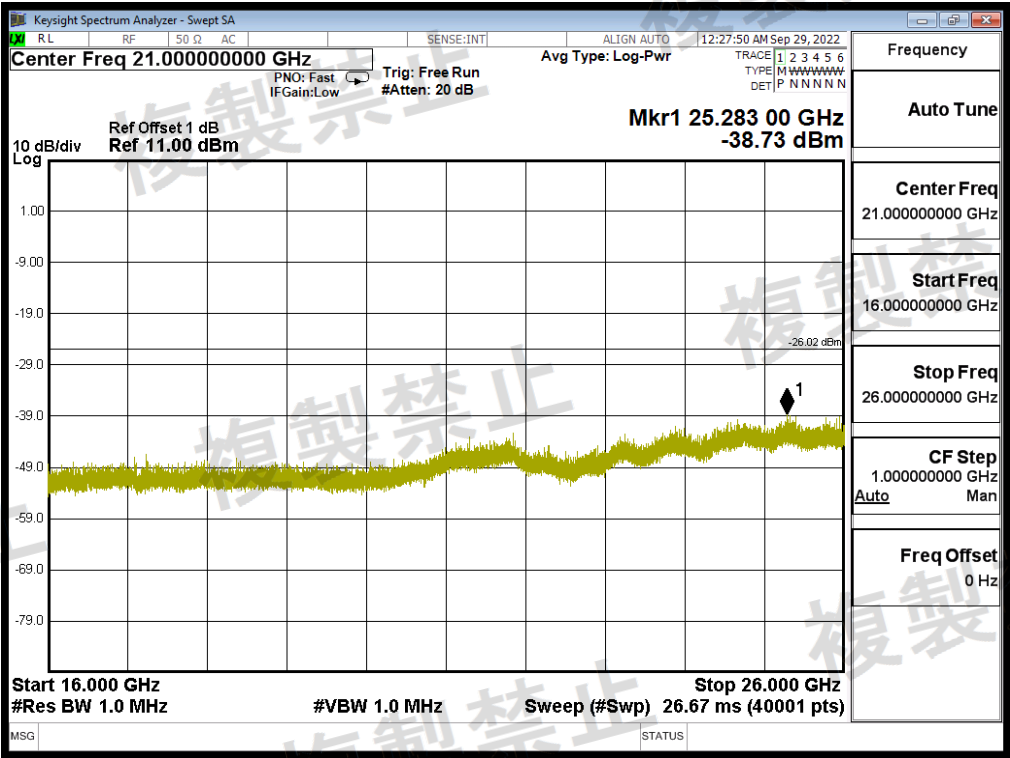
1000 - 5135MHz



5365 - 16000 MHz



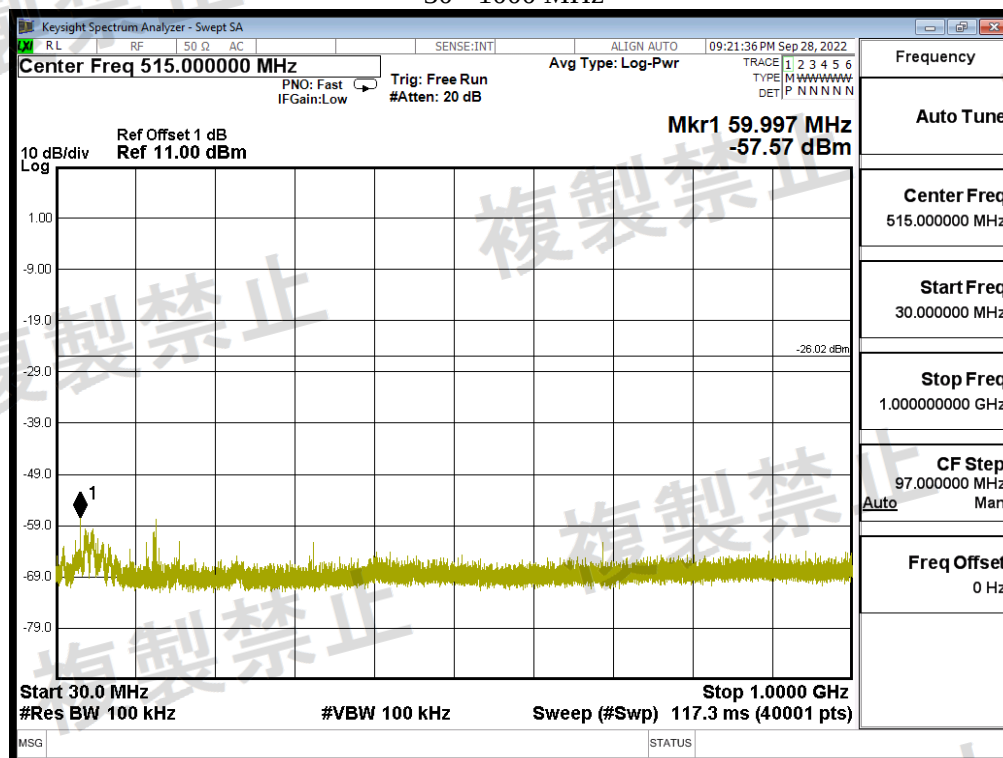
16000 - 26000 MHz



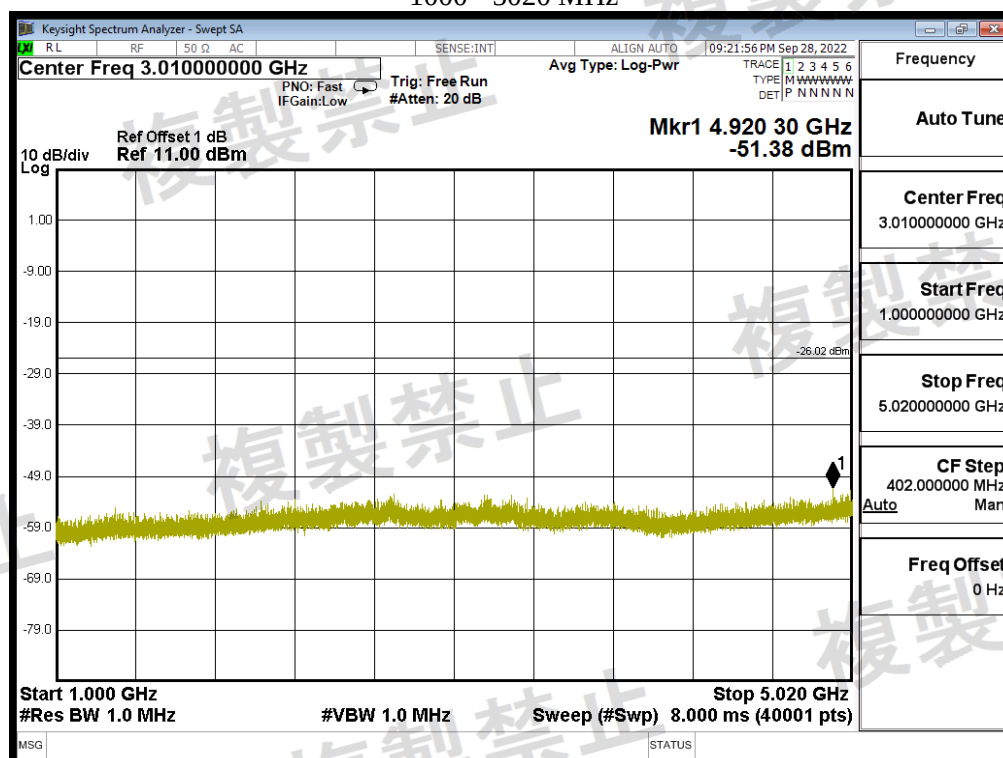
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac80 65 Mbps) 5210 MHz_Antenna 1
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	60.00	0.001750	2.5
1000 - 5020	4920.30	0.007278	2.5
5480 - 16000	15901.90	0.013677	2.5
16000 - 26000	24840.75	0.150661	2.5

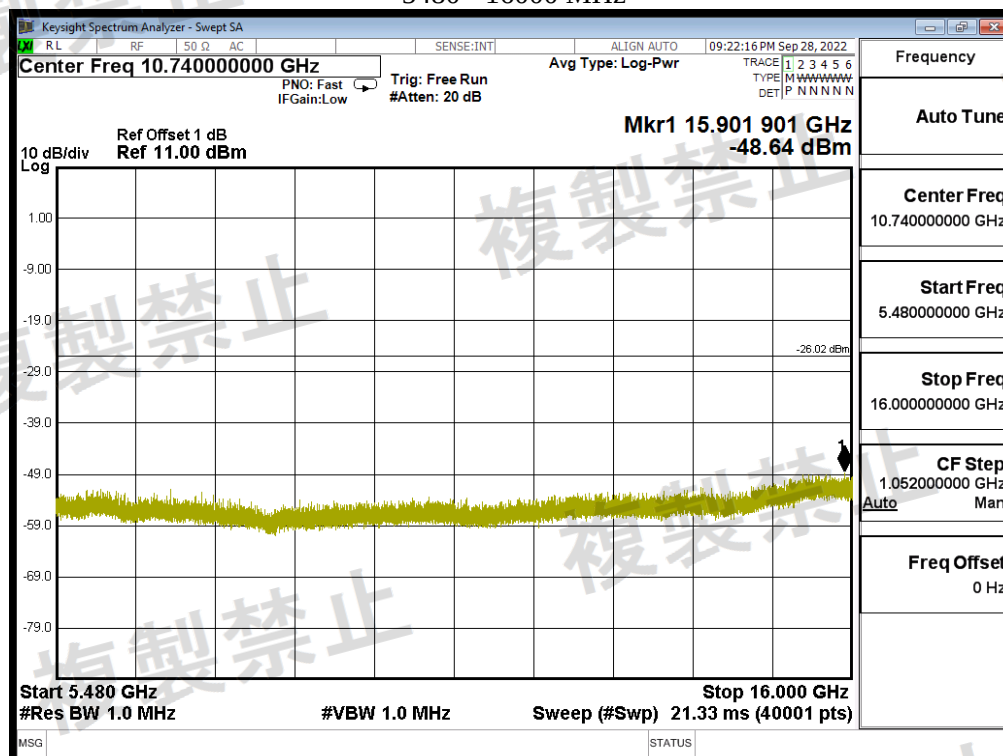
30 - 1000 MHz



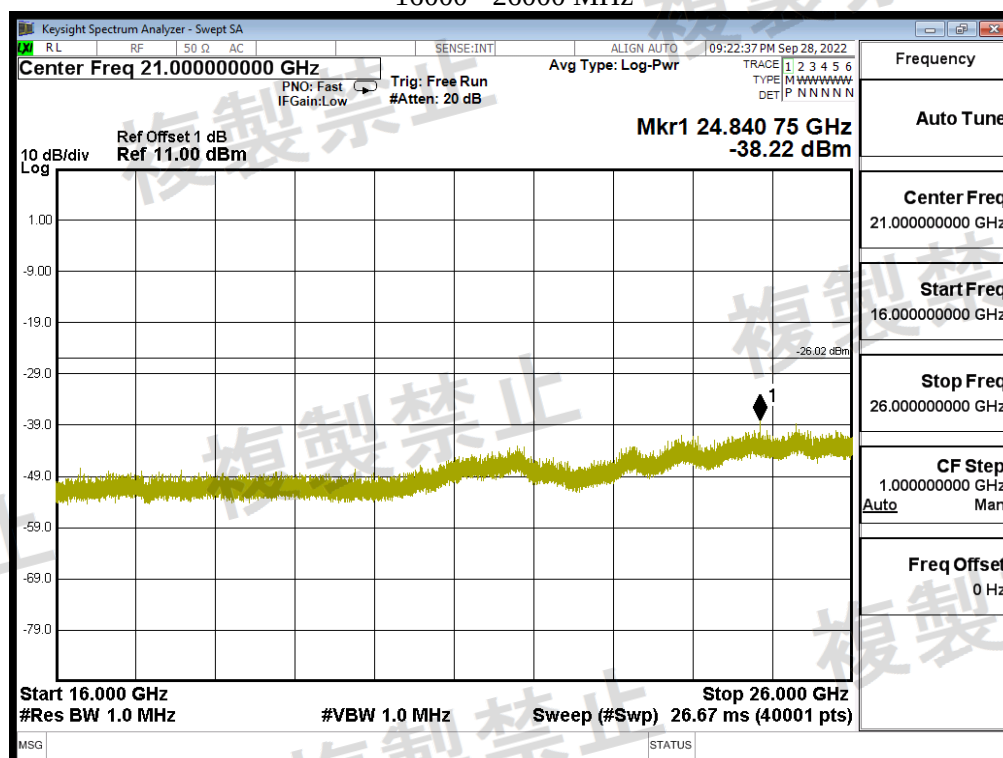
1000 - 5020 MHz



5480 - 16000 MHz



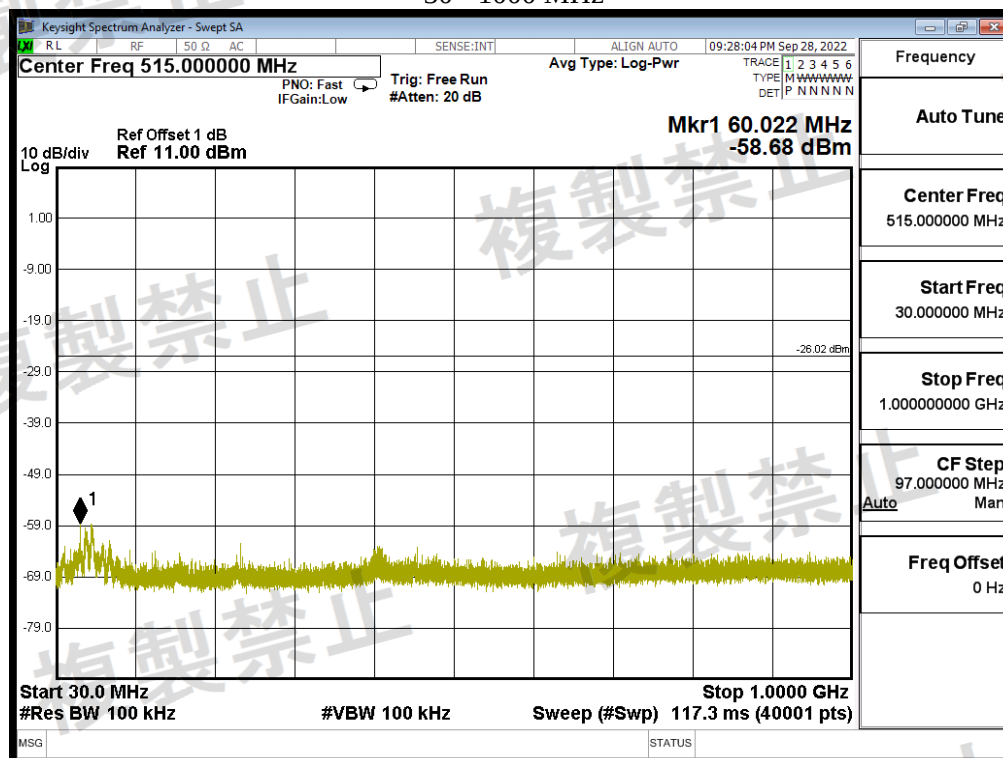
16000 - 26000 MHz



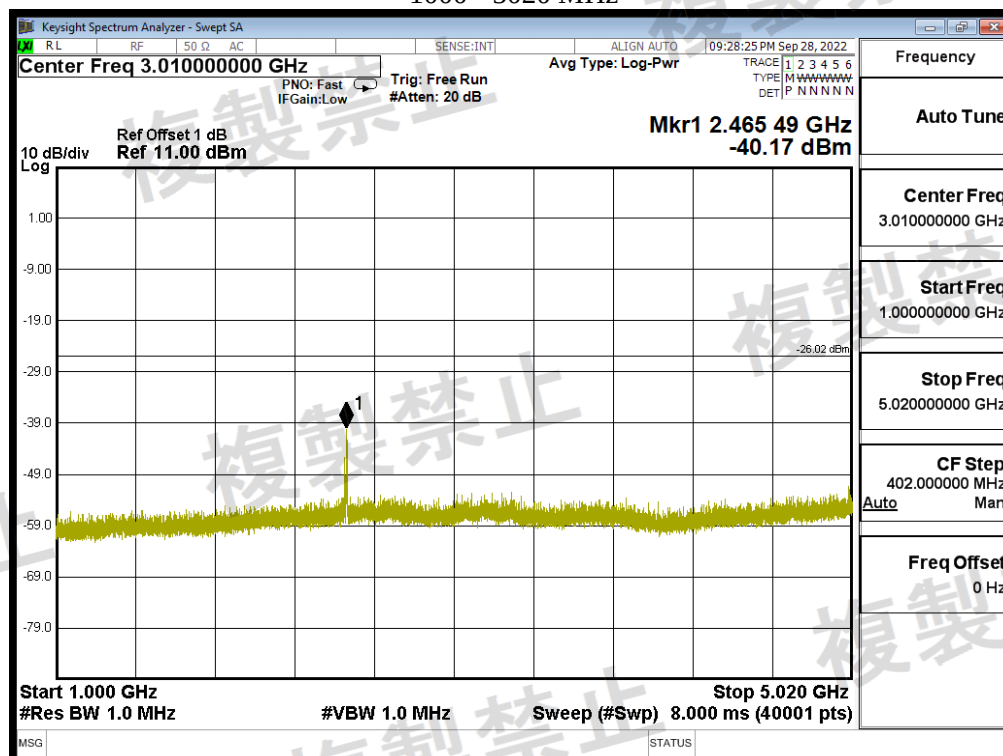
Product : QCast Mirror
Test Item : Transmitter Spurious Emissions
Test Mode : Transmitter (802.11ac80 65 Mbps) 5210 MHz_Antenna 2
Test Date : 2022/09/27

Frequency Range (MHz)	Frequency (MHz)	Reading Value (μ W/MHz)	Limit (μ W/MHz)
30 - 1000	60.02	0.001355	2.5
1000 - 5020	2465.49	0.096161	2.5
5480 - 16000	15730.43	0.016482	2.5
16000 - 26000	25264.00	0.144212	2.5

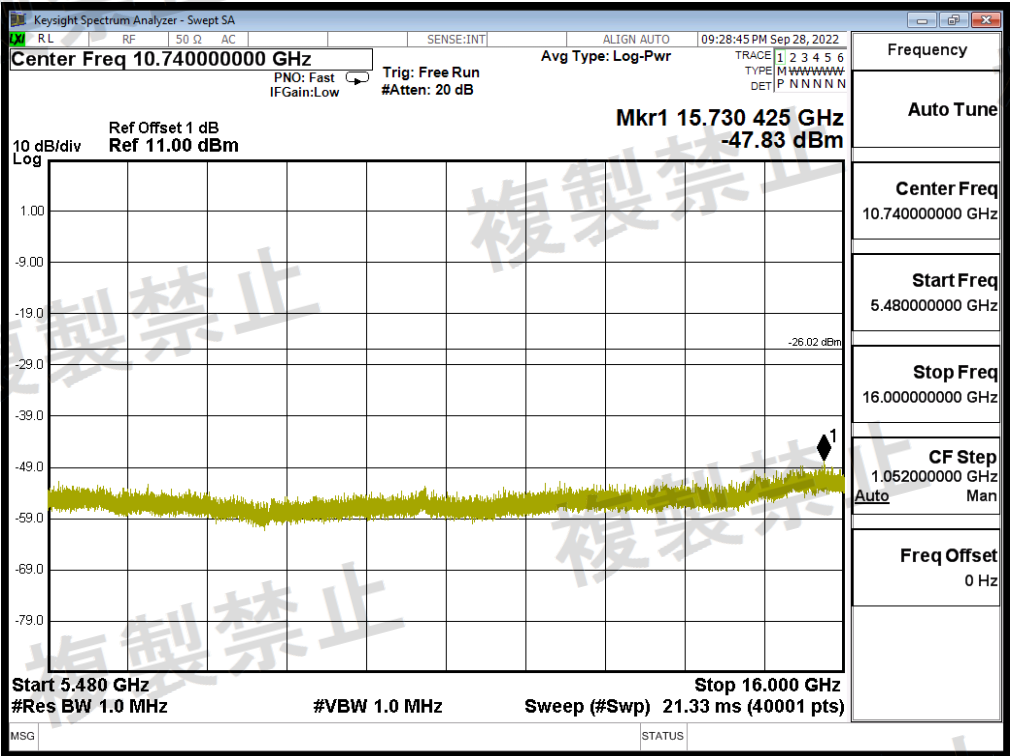
30 - 1000 MHz



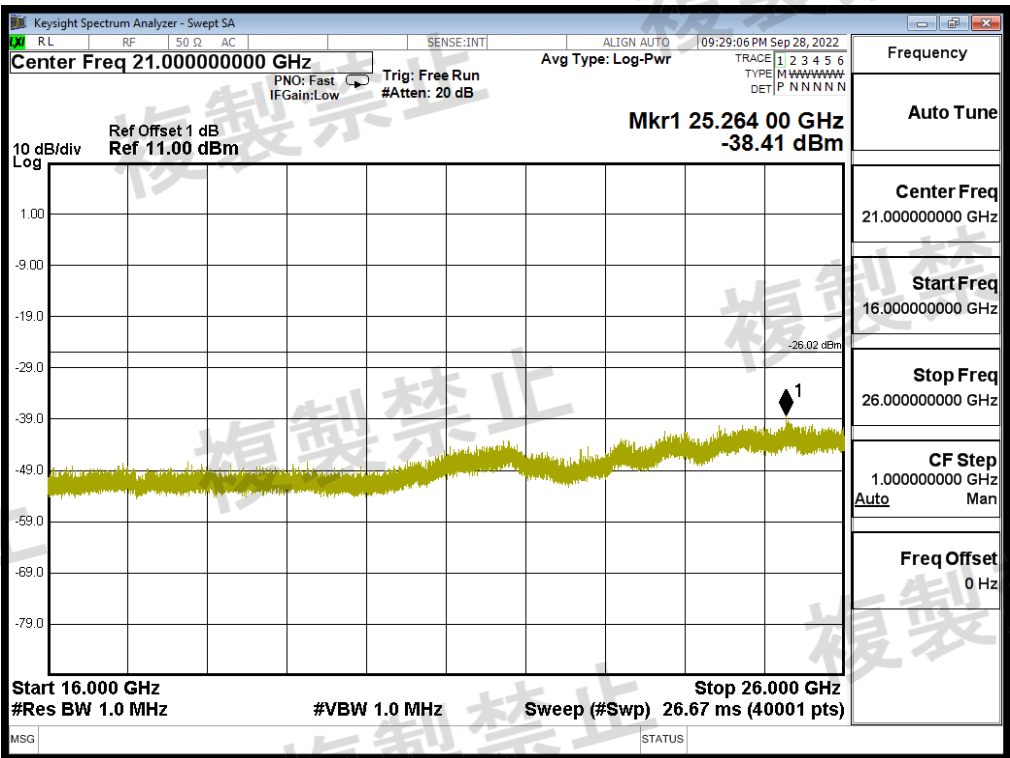
1000 - 5020 MHz



5480 - 16000 MHz



16000 - 26000 MHz



Test Result

PASS

6. Adjacent Channel Emitted Power

6.1. Test Setup



6.2. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- A sample detector function must be used.
- Open spectrum analyzer 'Adj Channel Power' function.
- Set points of ± 20 MHz and ± 40 MHz as 18MHz band.
- The measurement instrument bandwidth and span must be set sufficiently with, and the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

6.3. Test method

According to MIC Notice No. 88 Annex 45.

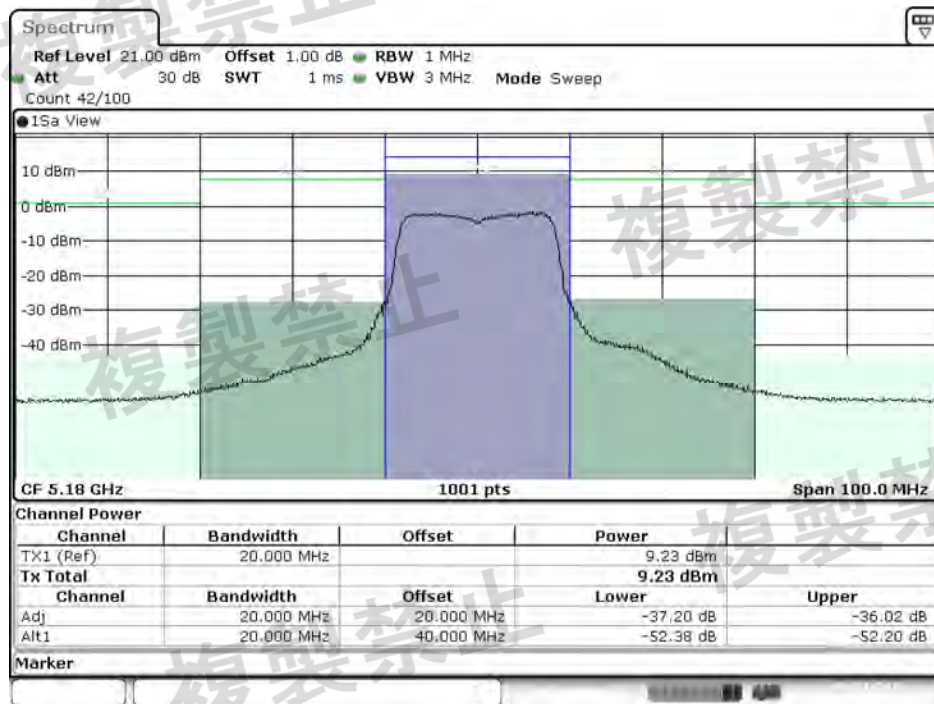
6.4. Limits

802.11a, 802.11-n20 (W52, W53, W56 Band)	802.11-n40 (W52, W53, W56 Band)	802.11-ac80 (W52, W53, W56 Band)
$F_c \pm 20$ MHz -25 dBc for ± 10 MHz BW $F_c \pm 40$ MHz -40 dBc for ± 10 MHz BW	$F_c \pm 40$ MHz -25 dBc for ± 20 MHz BW $F_c \pm 80$ MHz -40 dBc for ± 20 MHz BW	$F_c \pm 80$ MHz -25 dBc for ± 40 MHz BW

6.5. Test Result of Adjacent Channel Emitted Power

Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11a 6 Mbps) 5180 MHz_Antenna 1
 Test Date : 2022/09/27

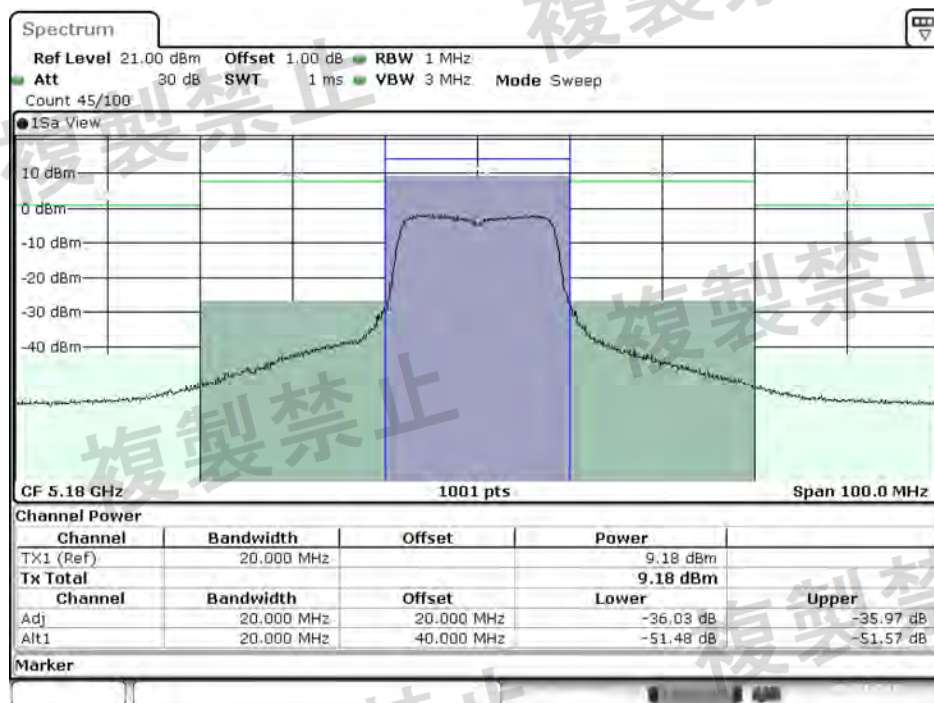
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-52.38	-40
		-20	-37.20	-25
		+20	-36.02	-25
		+40	-52.20	-40



Date: 27.SEP.2022 15:38:24

Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11a 6 Mbps) 5180 MHz_Antenna 2
 Test Date : 2022/09/27

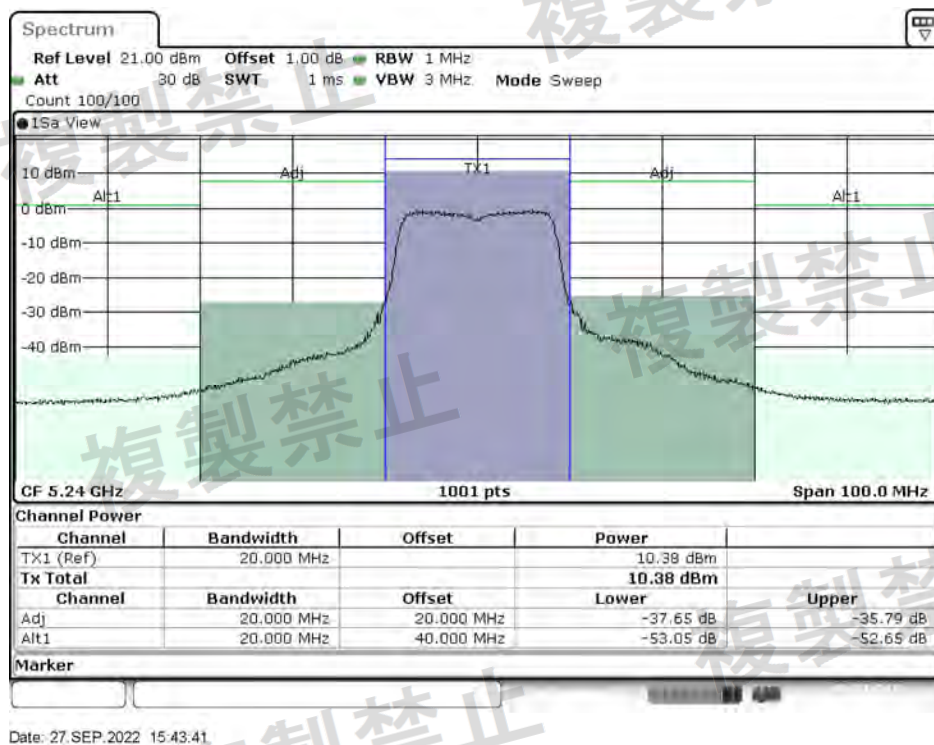
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-51.48	-40
		-20	-36.03	-25
		+20	-35.97	-25
		+40	-51.57	-40



Date: 27.SEP.2022 16:19:10

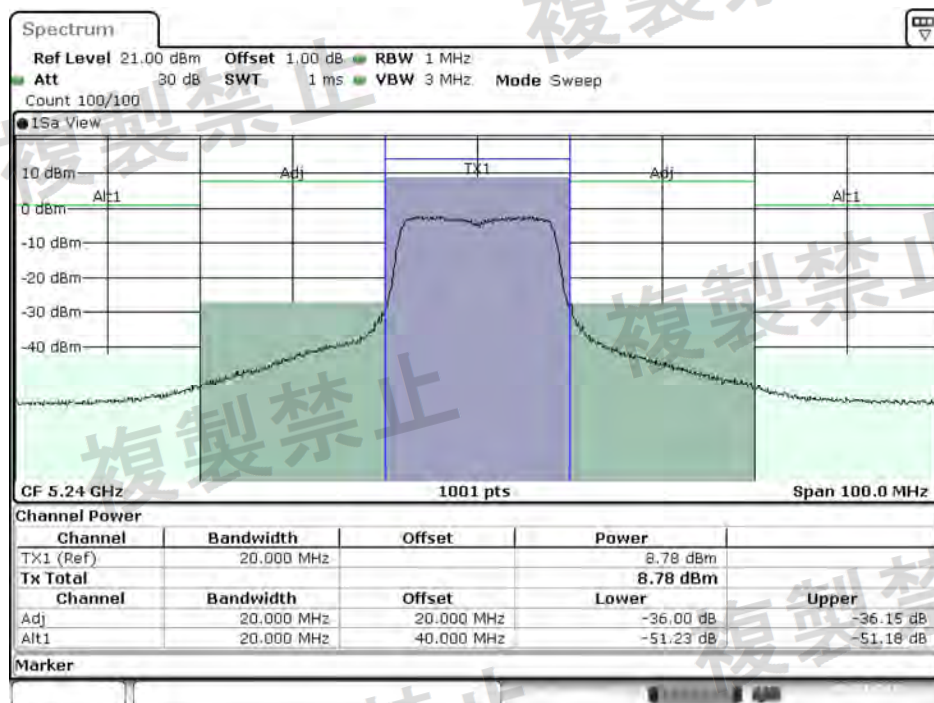
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11a 6 Mbps) 5240 MHz_Antenna 1
 Test Date : 2022/09/27

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-53.05	-40
		-20	-37.65	-25
		+20	-35.79	-25
		+40	-52.65	-40



Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11a 6 Mbps) 5240 MHz_Antenna 2
 Test Date : 2022/09/27

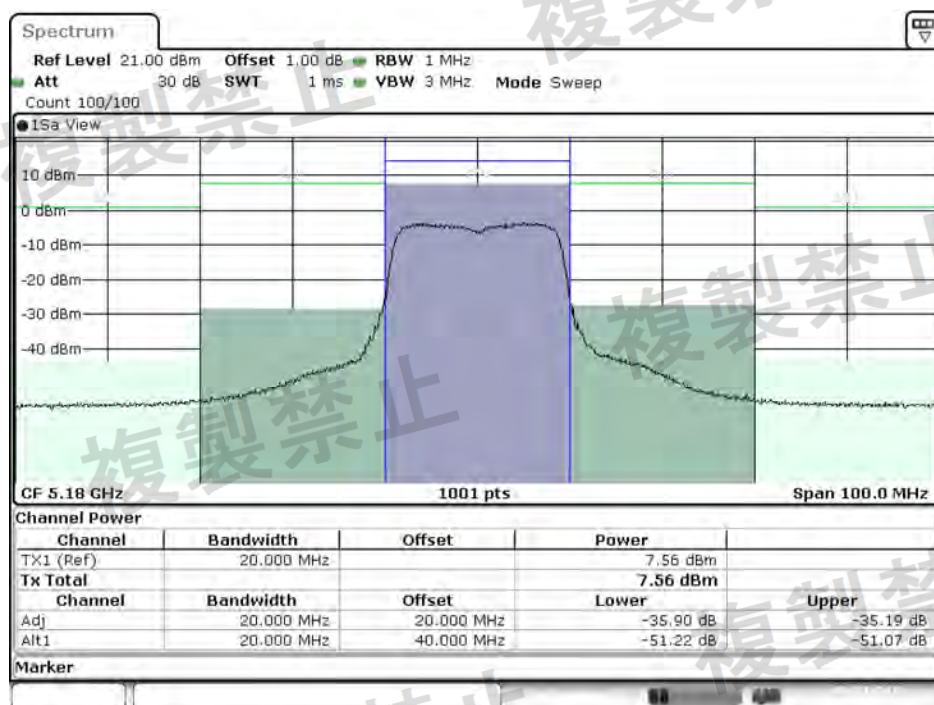
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-51.23	-40
		-20	-36.00	-25
		+20	-36.15	-25
		+40	-51.18	-40



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Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n20 14.4 Mbps) 5180 MHz_Antenna 1
 Test Date : 2022/09/27

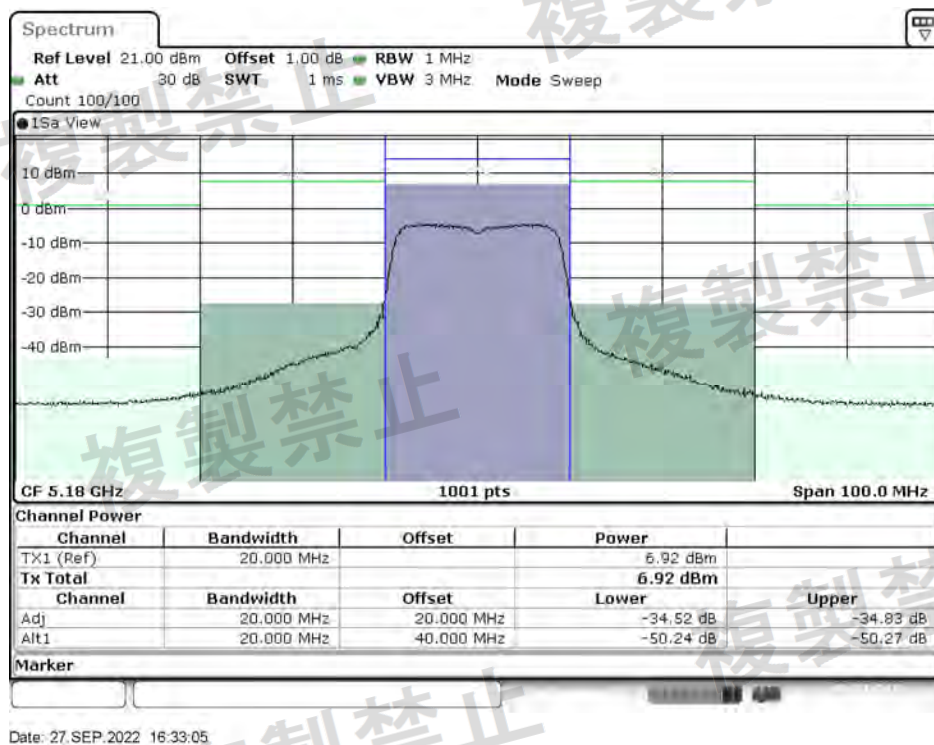
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-51.22	-40
		-20	-35.90	-25
		+20	-35.19	-25
		+40	-51.07	-40



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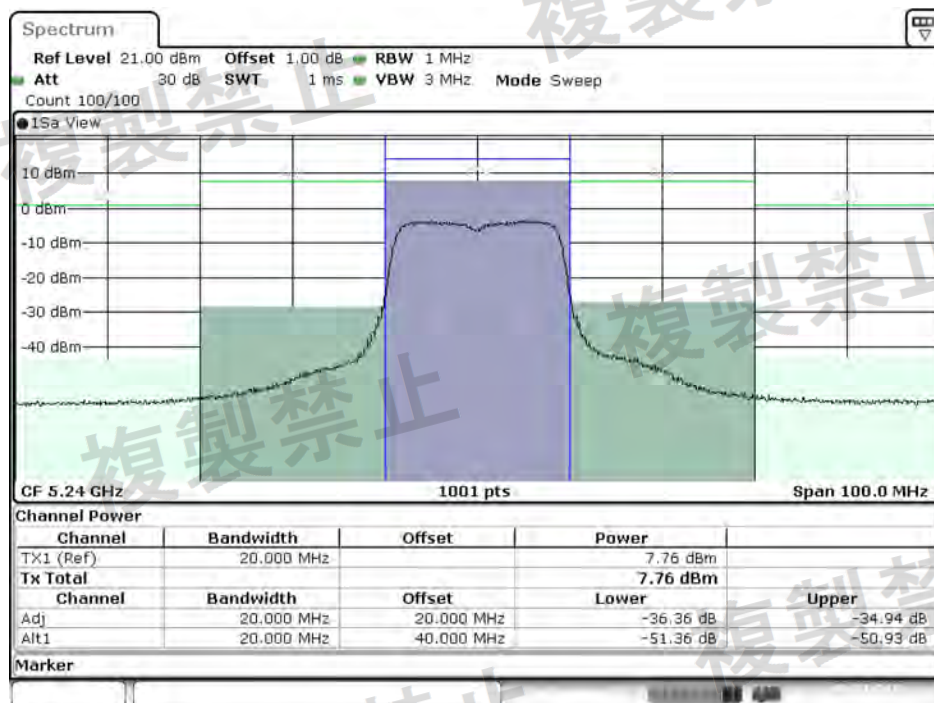
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n20 14.4 Mbps) 5180 MHz_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-50.24	-40
		-20	-34.52	-25
		+20	-34.83	-25
		+40	-50.27	-40



Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n20 14.4 Mbps) 5240 MHz_Antenna 1
 Test Date : 2022/09/27

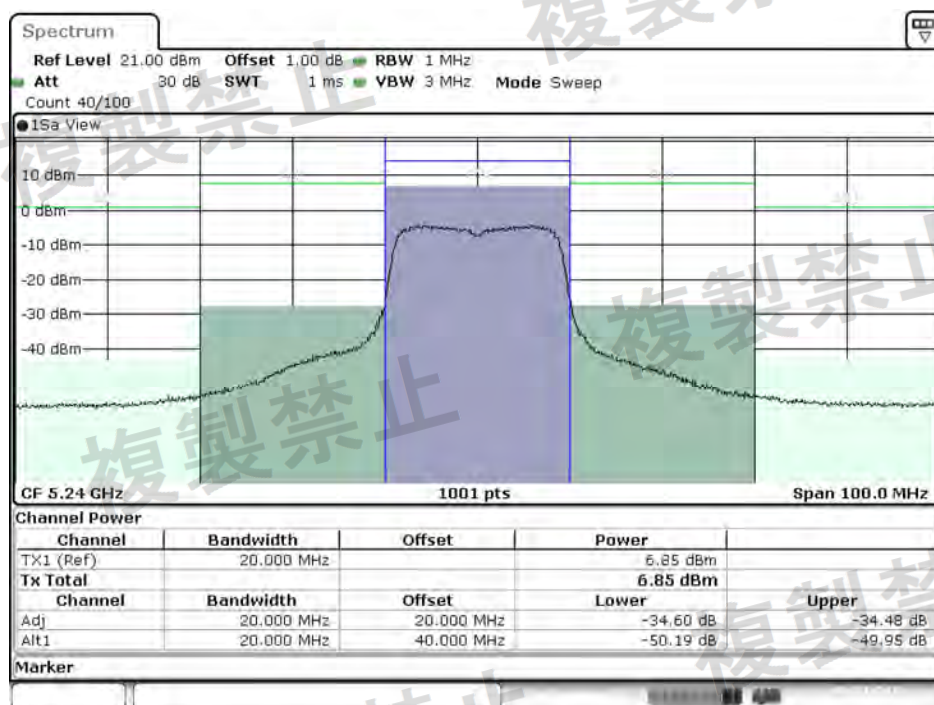
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-51.36	-40
		-20	-36.36	-25
		+20	-34.94	-25
		+40	-50.93	-40



Date: 27. SEP. 2022 15:58:24

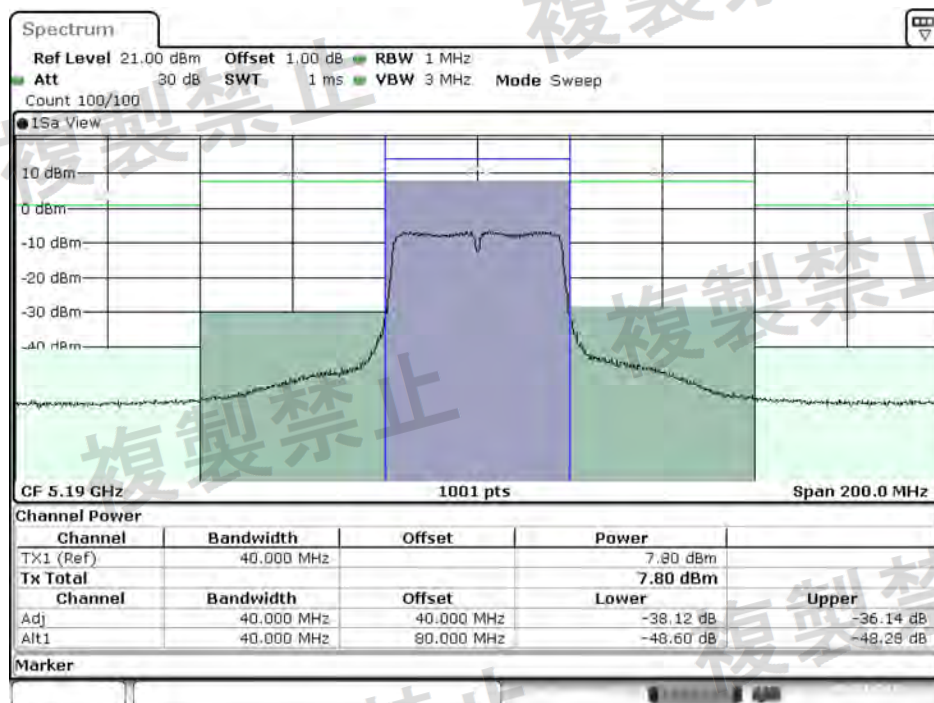
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n20 14.4 Mbps) 5240 MHz_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-50.19	-40
		-20	-34.60	-25
		+20	-34.48	-25
		+40	-49.95	-40



Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n40 30 Mbps) 5190 MHz_Antenna 1
 Test Date : 2022/09/27

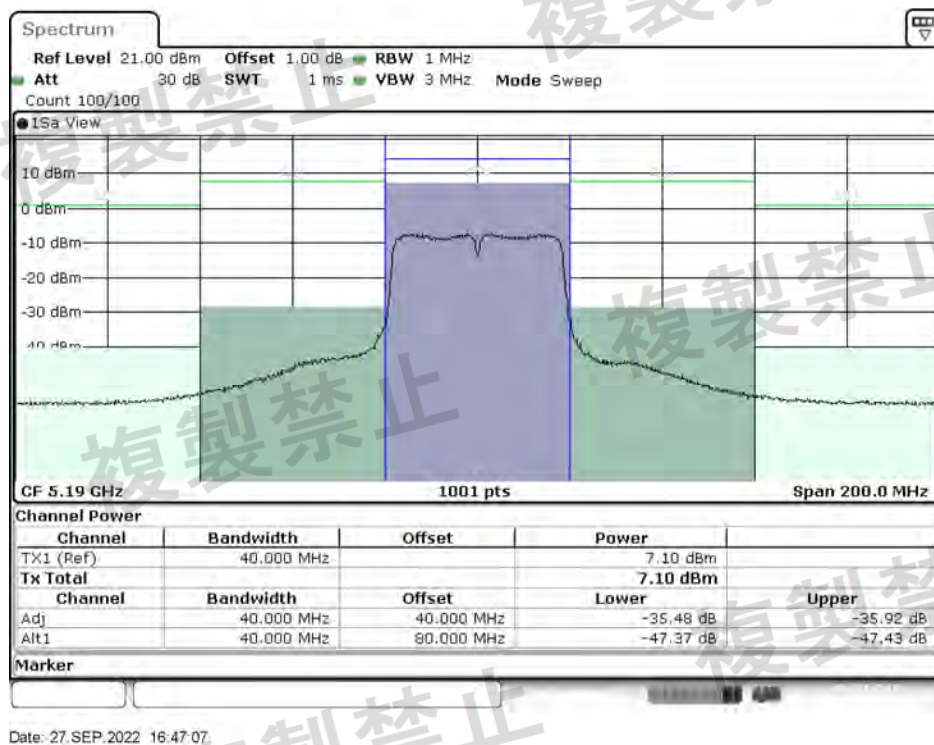
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-48.60	-40
		-40	-38.12	-25
		+40	-36.14	-25
		+80	-48.28	-40



Date: 27.SEP.2022 16:03:02

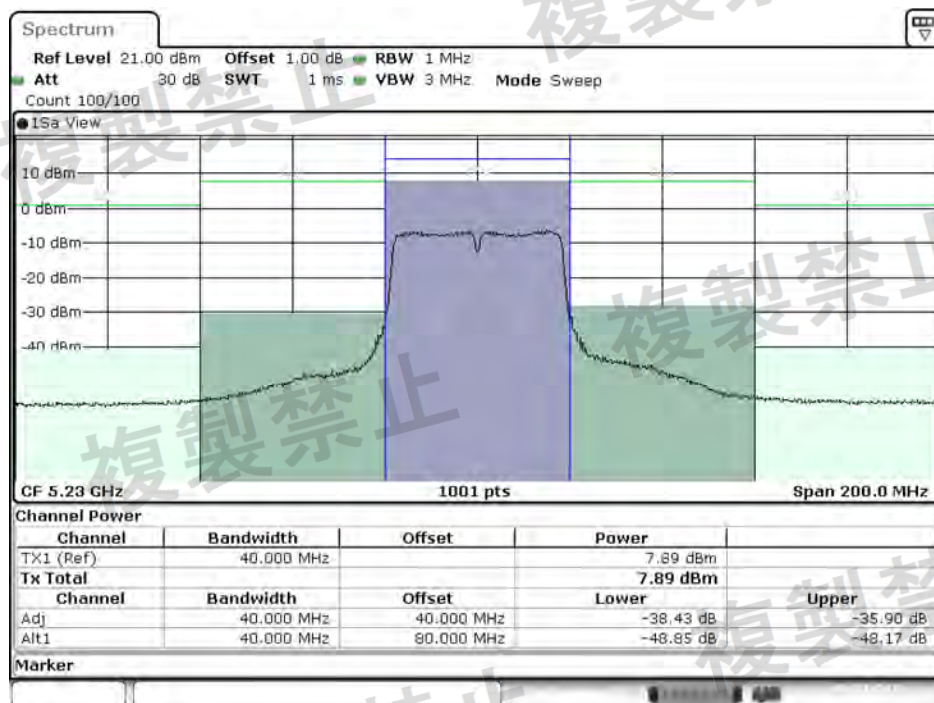
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n40 30 Mbps) 5190 MHz_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-47.37	-40
		-40	-35.48	-25
		+40	-35.92	-25
		+80	-47.43	-40



Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n40 30 Mbps) 5230 MHz_Antenna 1
 Test Date : 2022/09/27

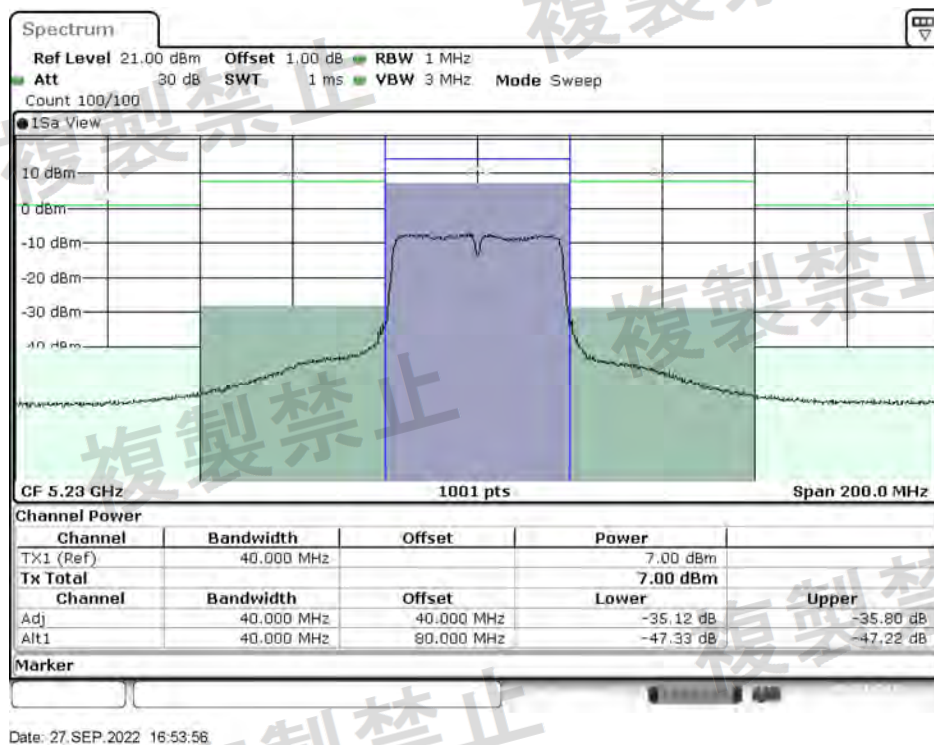
Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-48.85	-40
		-40	-38.43	-25
		+40	-35.90	-25
		+80	-48.17	-40



Date: 27.SEP.2022 16:09:20

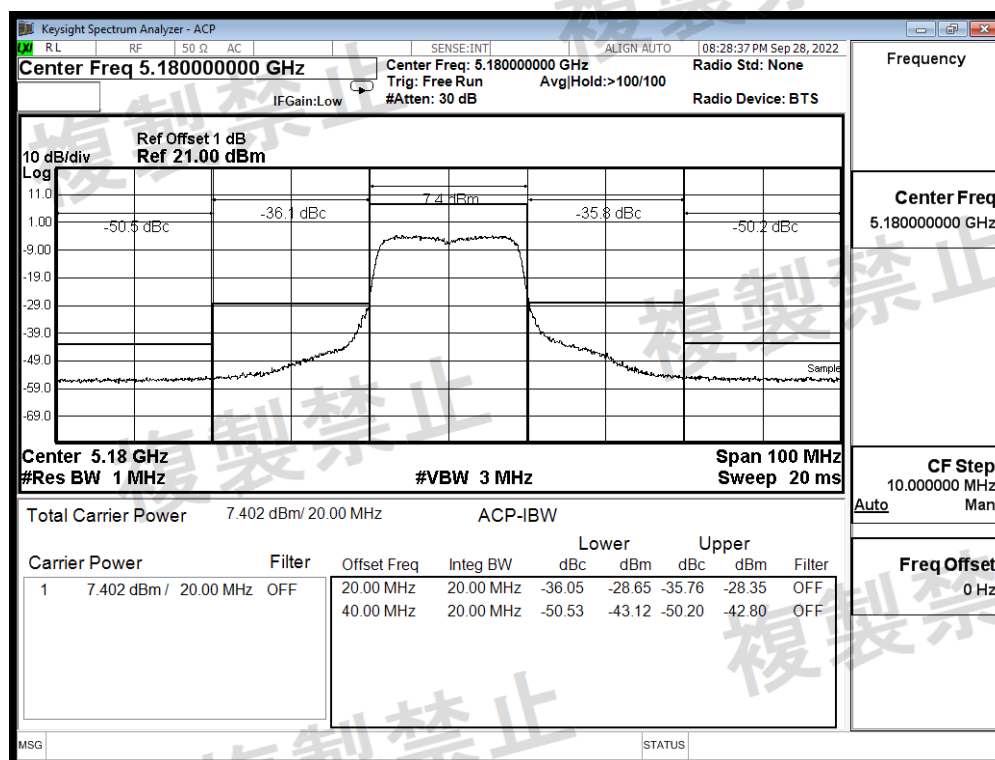
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11n40 30 Mbps) 5230 MHz_Antenna 2
 Test Date : 2022/09/27

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-47.33	-40
		-40	-35.12	-25
		+40	-35.80	-25
		+80	-47.22	-40



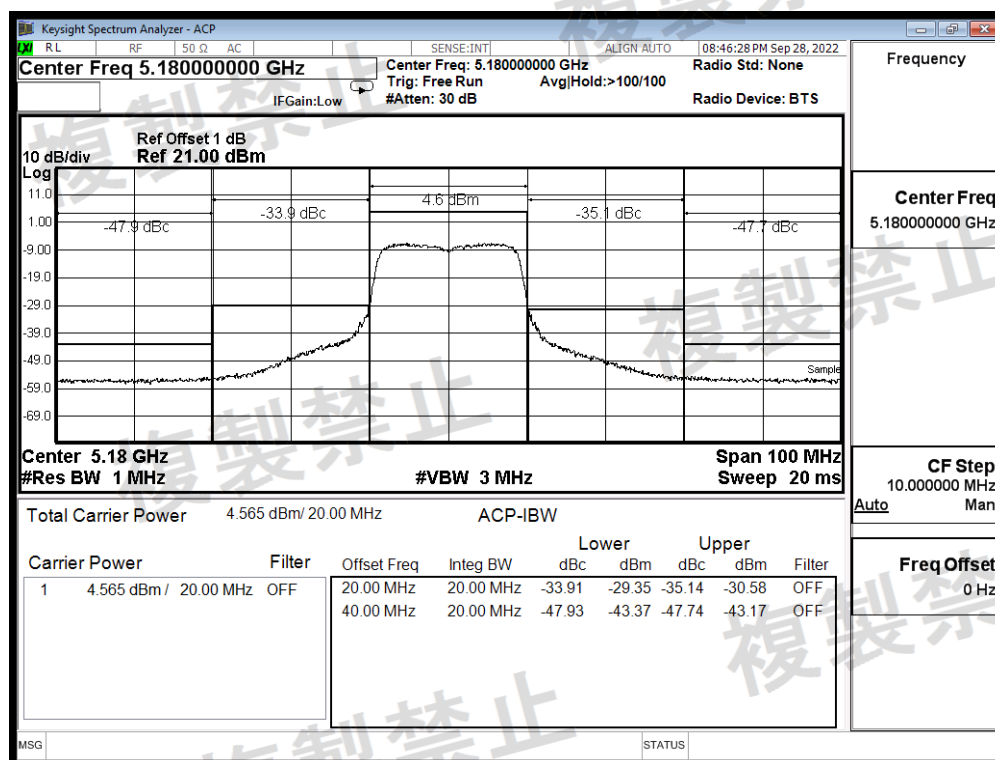
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11ac20 14.4Mbps) 5180 MHz_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-50.53	-40
		-20	-36.05	-25
		+20	-35.76	-25
		+40	-50.20	-40



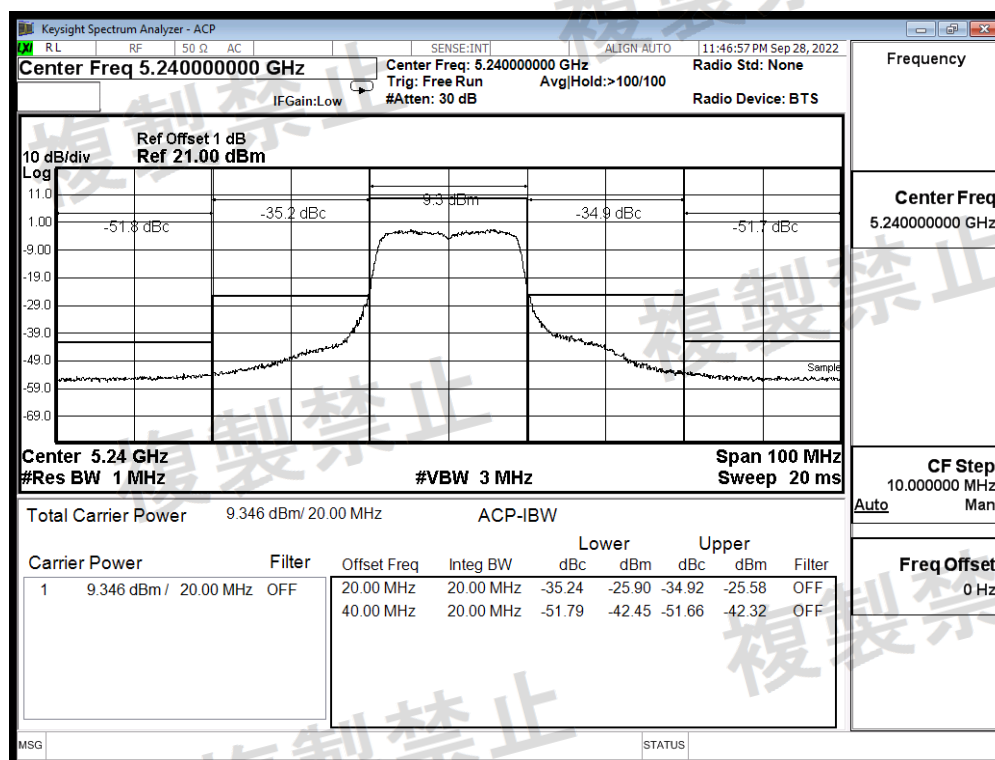
Product : QCast Mirror
 Test Item : Adjacent Channel Emited Power
 Test Mode : Transmitter (802.11ac20 14.4Mbps) 5180 MHz_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-47.93	-40
		-20	-33.91	-25
		+20	-35.14	-25
		+40	-47.74	-40

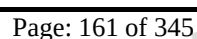


Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11ac20 14.4Mbps) 5240 MHz_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-51.79	-40
		-20	-35.24	-25
		+20	-34.92	-25
		+40	-51.66	-40

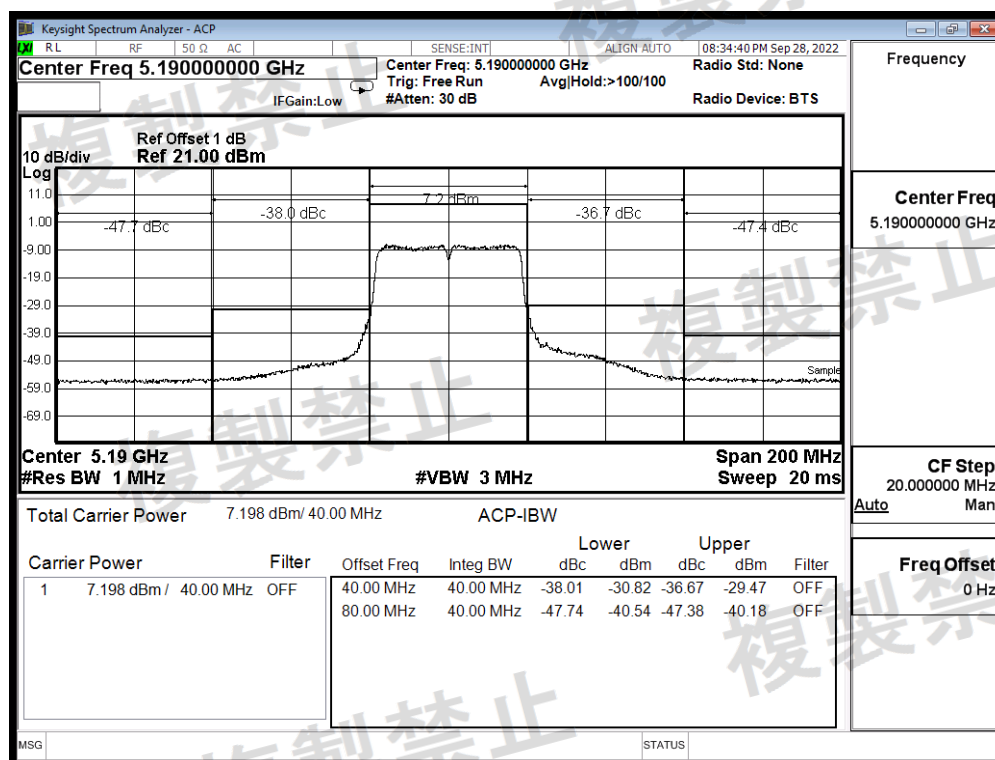


Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-40	-50.38	-40
		-20	-33.15	-25
		+20	-36.08	-25
		+40	-50.43	-40



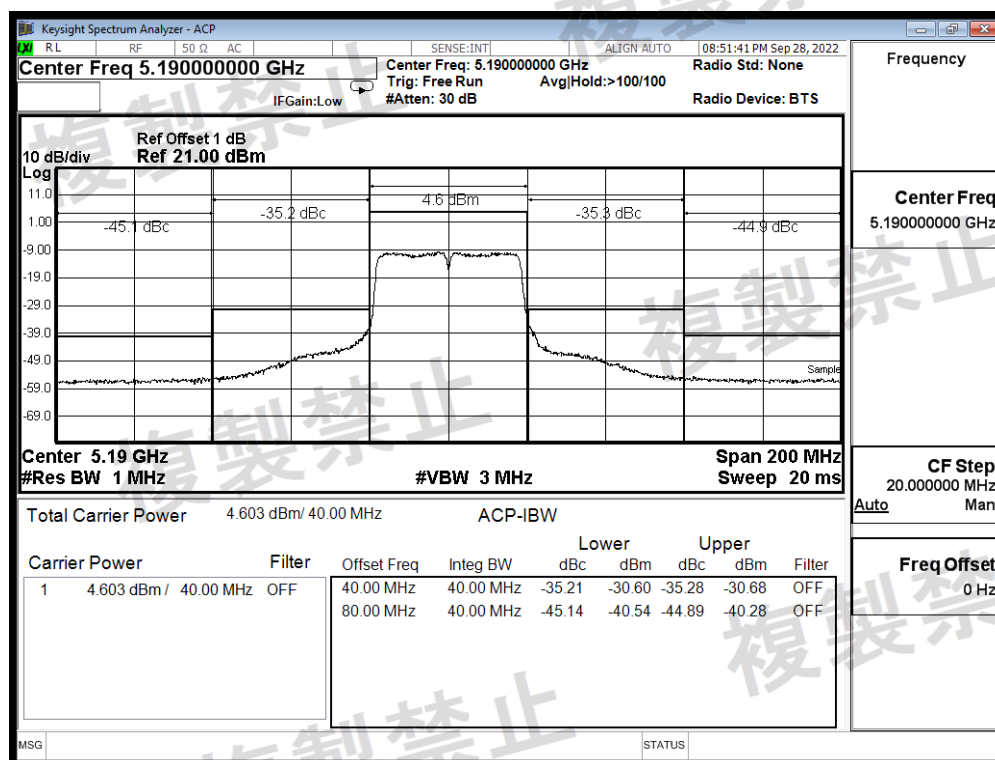
Product : QCast Mirror
 Test Item : Adjacent Channel Emited Power
 Test Mode : Transmitter (802.11ac40 30 Mbps) 5190 MHz_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-47.74	-40
		-40	-38.01	-25
		+40	-36.67	-25
		+80	-47.38	-40



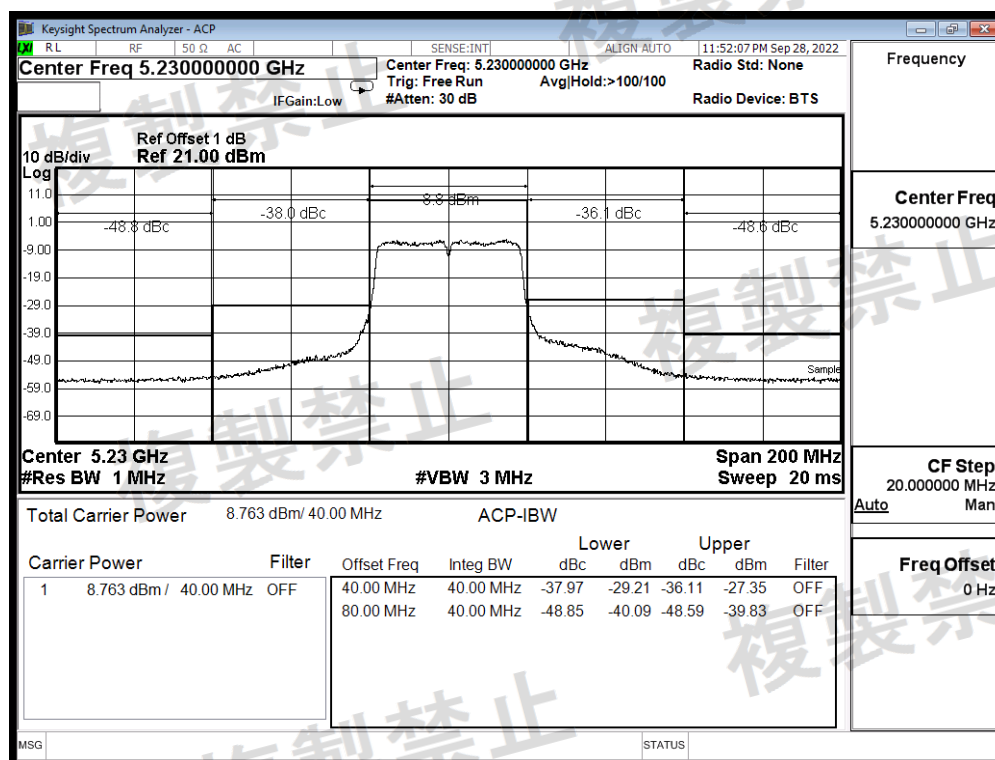
Product : QCast Mirror
 Test Item : Adjacent Channel Emitted Power
 Test Mode : Transmitter (802.11ac40 30 Mbps) 5190 MHz_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-45.14	-40
		-40	-35.21	-25
		+40	-35.28	-25
		+80	-44.89	-40



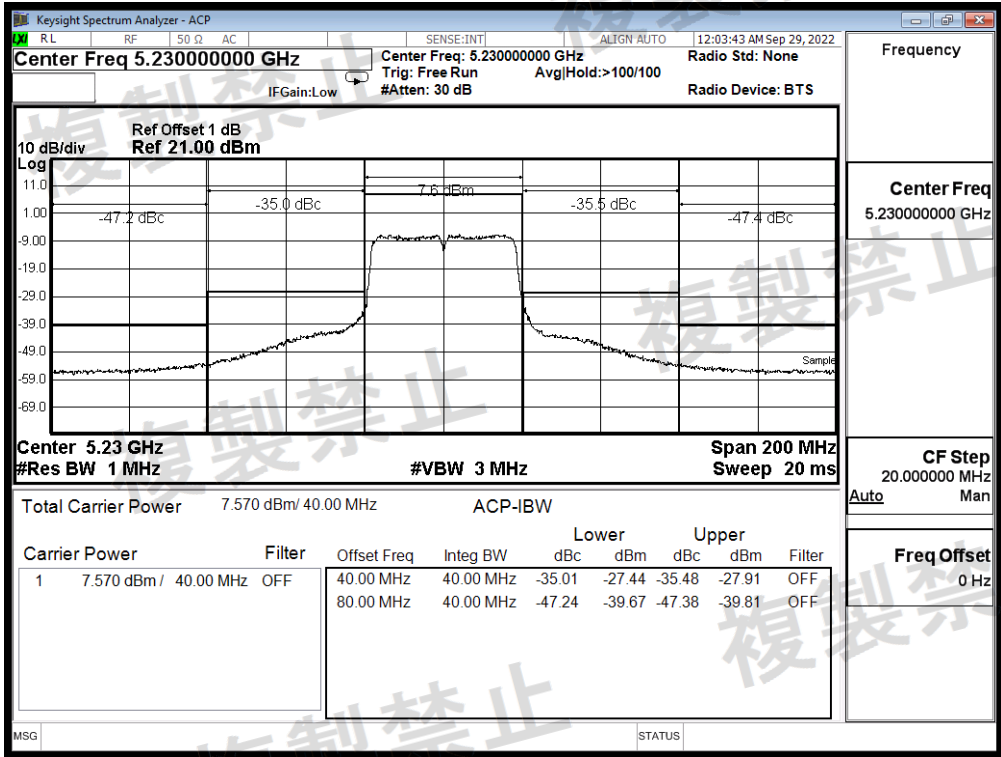
Product : QCast Mirror
 Test Item : Adjacent Channel Emited Power
 Test Mode : Transmitter (802.11ac40 30 Mbps) 5230 MHz_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-48.85	-40
		-40	-37.97	-25
		+40	-36.11	-25
		+80	-48.59	-40



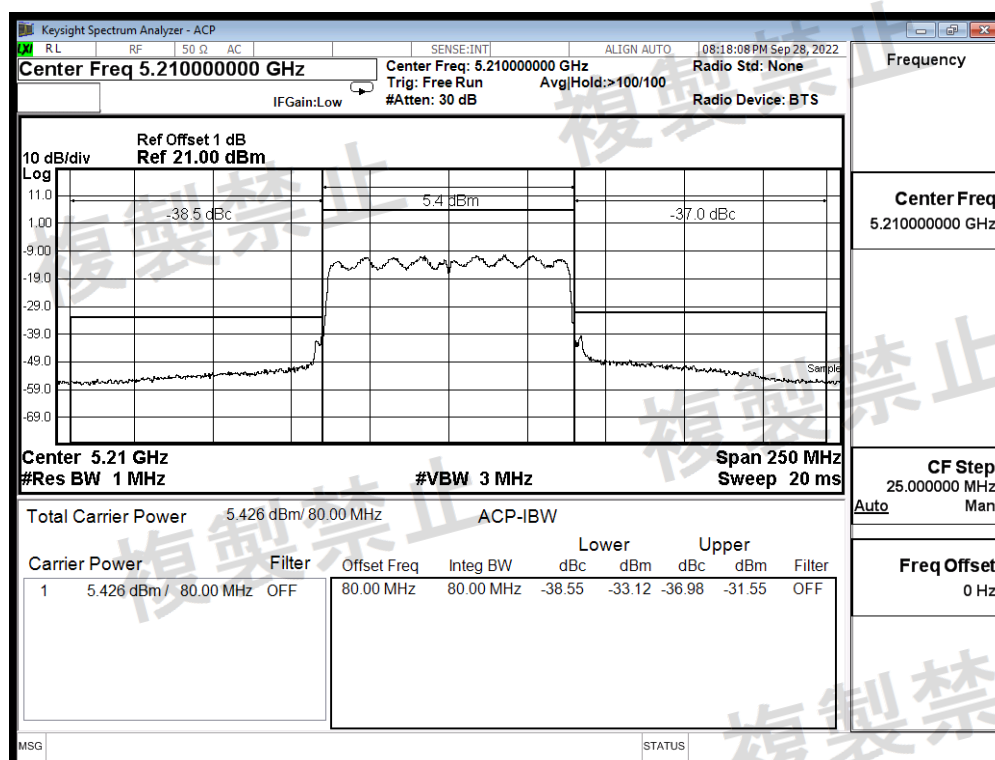
Product : QCast Mirror
Test Item : Adjacent Channel Emitted Power
Test Mode : Transmitter (802.11ac40 30 Mbps) 5230 MHz_Antenna 2
Test Date : 2022/09/29

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-47.24	-40
		-40	-35.01	-25
		+40	-35.48	-25
		+80	-47.38	-40



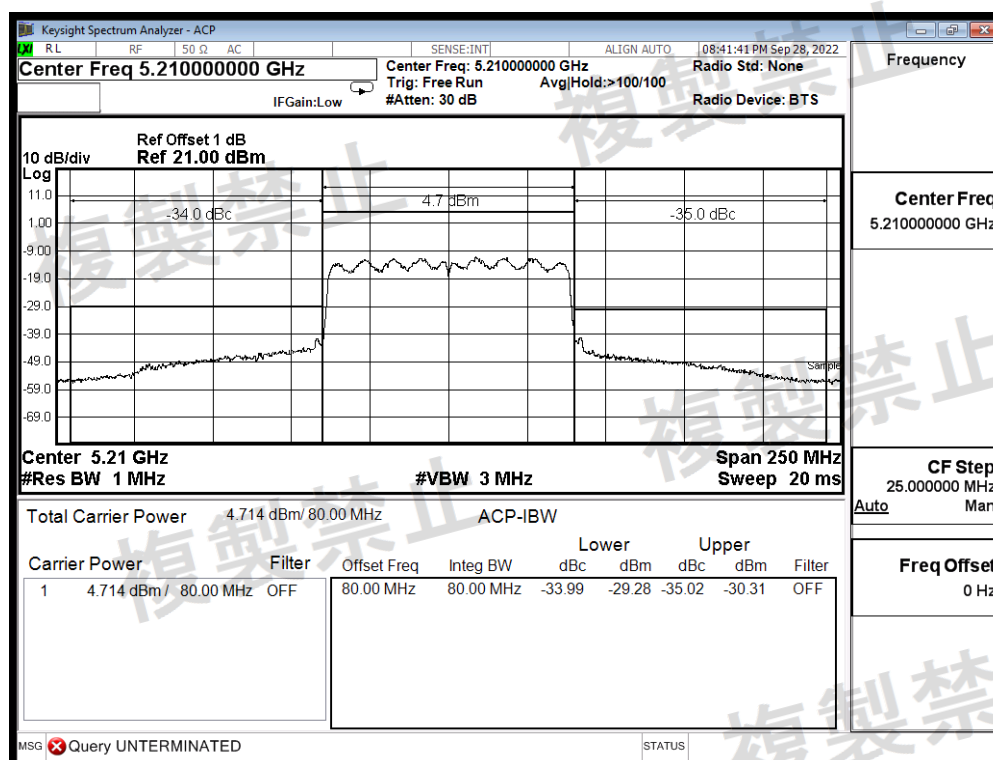
Product : QCast Mirror
 Test Item : Adjacent Channel Emittet Power
 Test Mode : Transmitter (802.11ac80 65 Mbps) 5210 MHz_Antenna 1
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-38.55	-25
		+80	-36.98	-25



Product : QCast Mirror
 Test Item : Adjacent Channel Emittted Power
 Test Mode : Transmitter (802.11ac80 65 Mbps) 5210 MHz_Antenna 2
 Test Date : 2022/09/28

Test Conditions		Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
T _{nom} (23.5 °C)	V _{nom} (5V)	-80	-33.99	-25
		+80	-35.02	-25

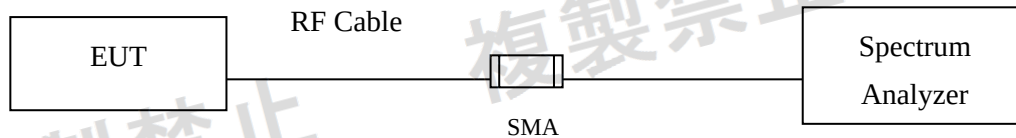


Test Result

PASS

7. Out-Band Leakage Power

7.1. Test Setup



7.2. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (c) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

7.3. Test method

According to MIC Notice No. 88 Annex 45.

7.4. Limits

20 MHz

W52

20MHz system	
OBW : 18MHz or less	OBW : 18 - 20 MHz
5,142 MHz or less : 2.5 μ W/MHz	5,142 MHz or less : 2.5 μ W/MHz
5,142 - 5,150 MHz : 15 μ W/MHz	5,142 - 5,150 MHz : 15 μ W/MHz
	5,250 - 5,250.2 MHz : $10^{1-(8/3)(f-9.75)}$ mW/MHz
5,250 - 5,251 MHz : $10^{1-(f-9)}$ mW/MHz	5,250.2 - 5,251 MHz : $10^{1-(f-9)}$ mW/MHz
5,251 - 5,260 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz	5,251 - 5,260 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz
5,260 - 5,266.7 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz	5,260 - 5,266.7 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz
5,266.7 MHz or more : 2.5 μ W/MHz	5,266.7 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5240 (MHz)

W53

20MHz system	
OBW : 18MHz or less	OBW : 18 - 20 MHz
5,233.3 MHz or less : 2.5 μ W/MHz	5,233.3 MHz or less : 2.5 μ W/MHz
5,233.3 - 5,240 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz	5,233.3 - 5,240 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz
5,240 - 5,249 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz	5,240 - 5,249 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz
5,249 - 5,250 MHz : $10^{1-(f-9)}$ mW/MHz	5,249 - 5,249.8 MHz : $10^{1-(f-9)}$ mW/MHz
	5,249.8 - 5,250 MHz : $10^{1-(8/3)(f-9.75)}$ mW/MHz
5,350 MHz or more : 2.5 μ W/MHz	5,350 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5260 (MHz)	f = MHz, Difference from 5260 (MHz)

W56

20MHz system	
DSSS, etc.	OFDM
5,470 MHz or less : 12.5 μ W/MHz	5,460 MHz or less : 2.5 μ W/MHz
	5,460 - 5,470 MHz : 12.5 μ W/MHz
5,730 MHz or more : 12.5 μ W/MHz	5,745 - 5,765 MHz : 12.5 μ W/MHz
	Over 5,765 MHz : 2.5 μ W/MHz

40 MHz**W52**

40MHz system
5,141.6 MHz or less : 2.5 μ W/MHz
5,141.6 - 5,150 MHz : 15 μ W/MHz
5,250 - 5,251 MHz : $10^{-(f-20)+\log(1/2)} \text{ mW/MHz}$
5,251 - 5,270 MHz : $10^{-(8/190)(f-21)-1+\log(1/2)} \text{ mW/MHz}$
5,270 - 5,278.4 MHz : $10^{-(8/50)(f-40)-1.8+\log(1/2)} \text{ mW/MHz}$
5,278.4 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5230 (MHz)

W53

40MHz system
5,221.6 MHz or less : 2.5 μ W/MHz
5,221.6 - 5,230 MHz : $10^{-(8/50)(f-40)-1.8+\log(1/2)} \text{ mW/MHz}$
5,230 - 5,249 MHz : $10^{-(8/190)(f-21)-1+\log(1/2)} \text{ mW/MHz}$
5,249 - 5,250 MHz : $10^{-(f-20)+\log(1/2)} \text{ mW/MHz}$
5,350 - 5,358.4 MHz : 15 μ W/MHz
5,358.4 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5270 (MHz)

W56

40MHz system
5,460 MHz or less : 12.5 μ W/MHz
5,460 - 5,470 MHz : 50 μ W/MHz
5,770 MHz or more : 12.5 μ W/MHz

80 MHz**W52**

80MHz system
5,123.2 MHz or less : 2.5 μ W/MHz
5,123.2 - 5,150 MHz : 15 μ W/MHz
5,250 - 5,251 MHz : $10^{-(f-40)+\log(1/4)} \text{ mW/MHz}$
5,251 - 5,290 MHz : $10^{-(8/390)(f-41)-1+\log(1/4)} \text{ mW/MHz}$
5,290 - 5,296.7 MHz : $10^{-(8/100)(f-80)-1.8+\log(1/4)} \text{ mW/MHz}$
5,296.7 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5210 (MHz)

W53

80MHz system
5,203.3 MHz or less : 2.5 μ W/MHz
5,203.3 - 5,210 MHz : $10^{-(3/100)(f-80)-1.8+\log(1/4)} \text{ mW/MHz}$
5,210 - 5,249 MHz : $10^{-(8/390)(f-41)-1+\log(1/4)} \text{ mW/MHz}$
5,249 - 5,250 MHz : $10^{-(f-40)+\log(1/4)} \text{ mW/MHz}$
5,350 - 5,376.8 MHz : 15 μ W/MHz
5,376.8 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5290 (MHz)

W56

80MHz system
5,460 MHz or less : 12.5 μ W/MHz
5,460 - 5,469.5 MHz : 50 μ W/MHz
5,469.5 - 5,470 MHz : 51.2 μ W/MHz
5,770 MHz or more : 12.5 μ W/MHz

7.5. Test Result of Out-Band Leakage Power

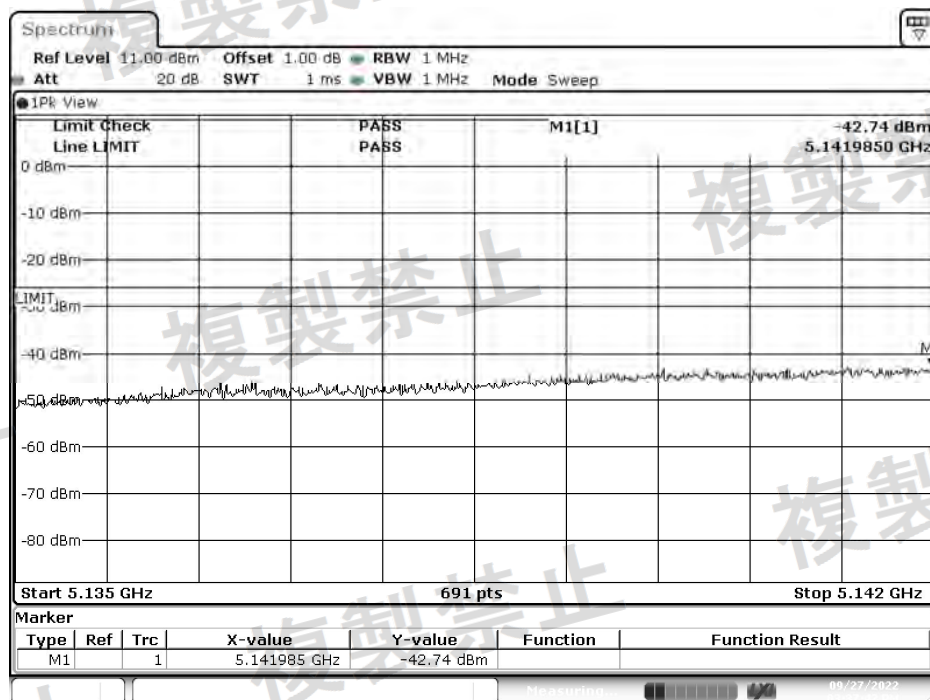
Product : QCast Mirror
 Test Item : Out-Band Leakage Power
 Test Mode : Transmitter (802.11a 6 Mbps) 5180 MHz_Antenna 1
 Test Date : 2022/09/27

Antenna gain: 1.18 dBi

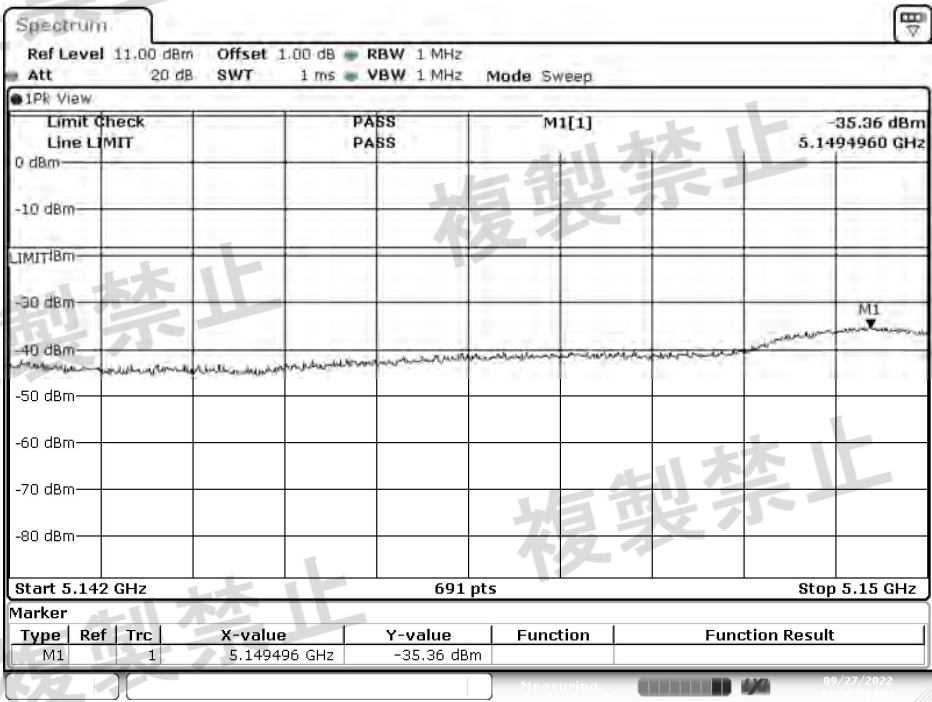
Test Conditions		Frequency Range (MHz)	Reading Value (dBm)	Measurement Level (μW)	Limit (μW/MHz)
T _{nom} (23.5 °C)	V _{nom} (5V)	5135 - 5142	-42.74	0.0698	≤2.5
		5142 - 5150	-35.36	0.3819	≤15.0
		5250 - 5250.2	-50.43	0.0119	≤1900.6698
		5250.2 - 5251	-50.61	0.0114	≤344.9848
		5251 - 5260	-50.27	0.0123	≤33.5635
		5260 - 5266.7	-51.06	0.0103	≤11.5997
		5266.7 - 5365	-51.77	0.0087	≤2.5

Measurement Level (μW) = $10^{((\text{Reading Value (dBm)} + \text{Antenna Gain} + \text{Cable loss})/10)*1000}$

5135 - 5142MHz

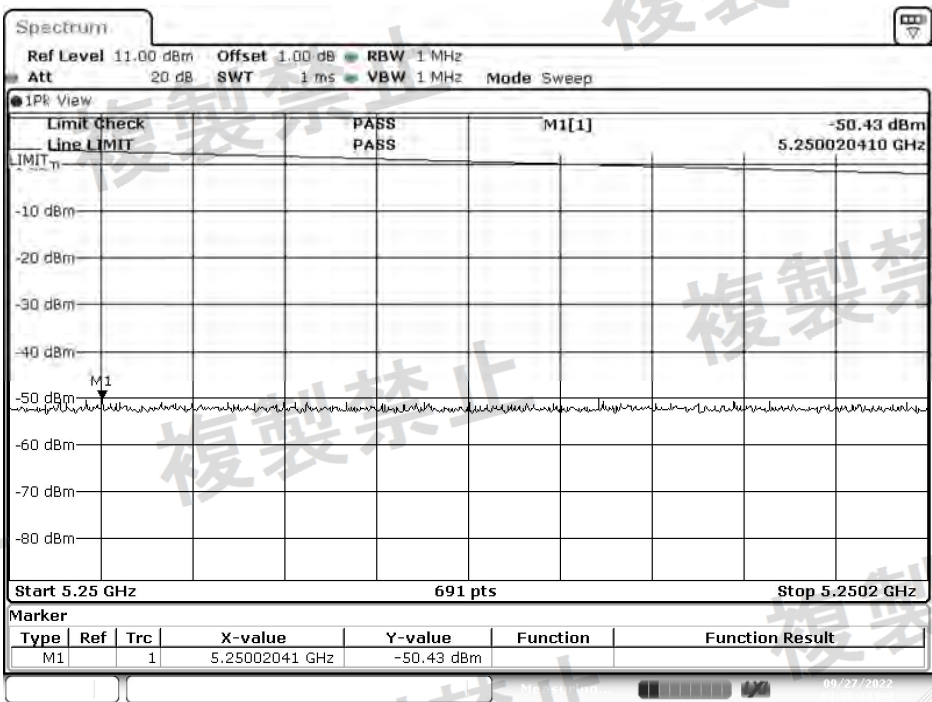


5142 - 5150 MHz



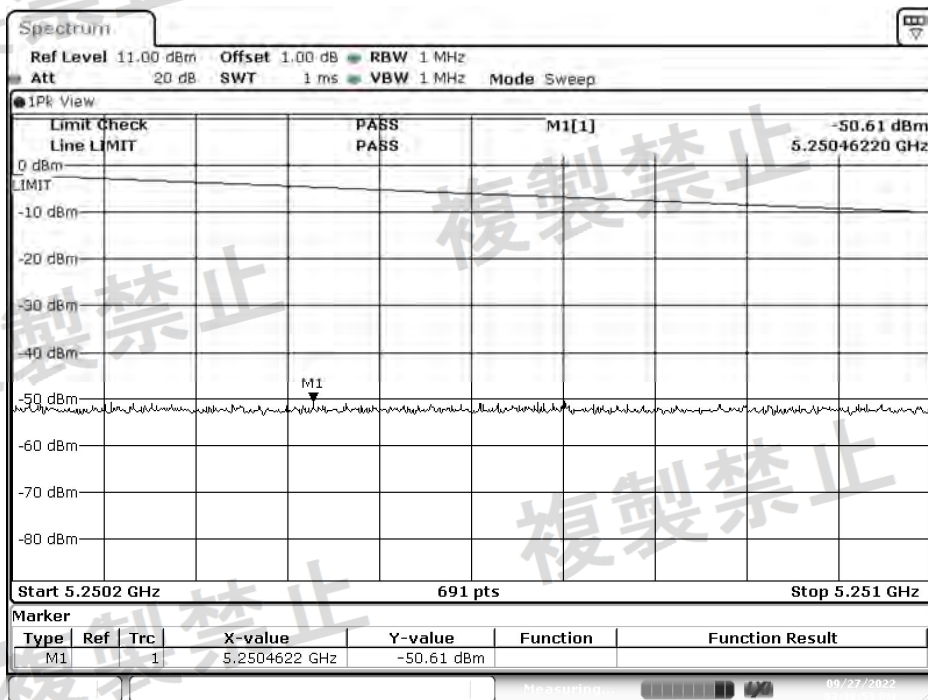
Date: 27.SEP.2022 15:38:08

5250 - 5250.2MHz



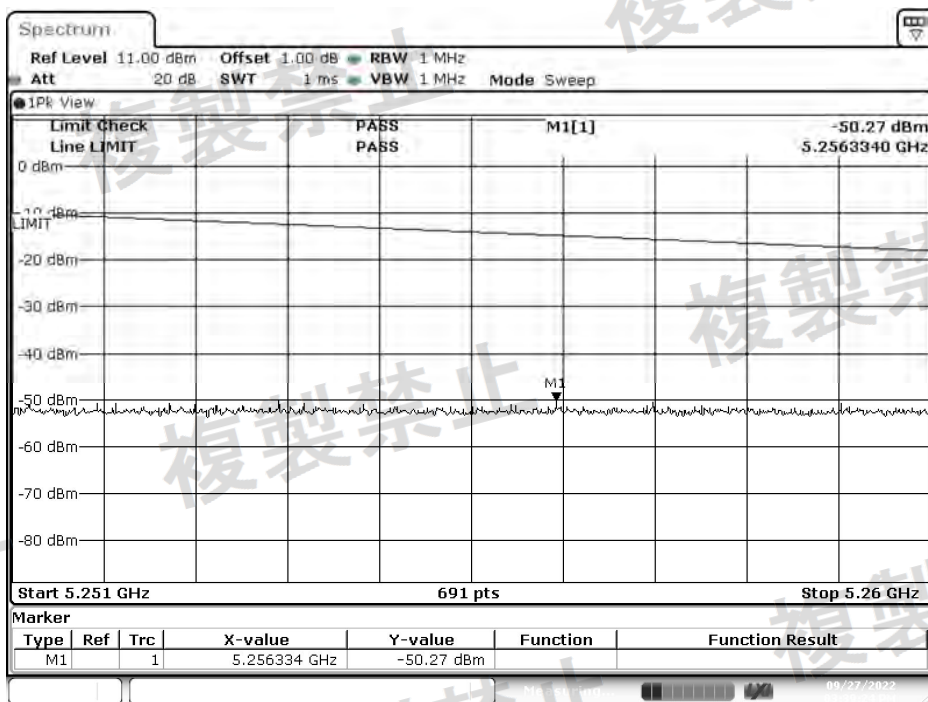
Date: 27.SEP.2022 15:38:34

5250.2 - 5251MHz



Date: 27.SEP.2022 15:38:59

5251 - 5260 MHz



Date: 27.SEP.2022 15:39:24