

TEST REPORT

Report number : KR21220524A

Issue date : 2022/05/24

Applicant : DMBH Co. Ltd
401-603, 655, Pyeongcheon-ro, Wonmi-gu, Bucheon-si,
Gyeonggi-do, Republic of Korea
Tel. +82-32-203-8889 Fax. +82-32-712-4907

Model name : InBirdie SW

Serial number : N/A

Test procedure : Radio equipment according to Certification Ordinance
Article 2 Section 1 No. 19


Date of test : 2022/5/10

Name of facility : KRL Co., Ltd.


The results in this report are applicable only to the equipment tested.

This report shall not be re-produced except in full without the written approval of KRL Co.,Ltd.

Tested by :


Moo-Hong, KIM

Approved by :


Kyu-Hyun, LEE

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Antenna Information

<i>Antenna Type</i>	<i>Chip Antenna</i>
<i>Antenna Gain</i>	<i>1,90 dBi</i>
<i>Frequency Range</i>	<i>2400 ~ 2483.5 MHz</i>
<i>Model no.</i>	<i>InBirdie SW</i>
<i>Manufacturer</i>	<i>DMBH Co. Ltd</i>

Measurement equipment list

USE	Equipment	Company	Model No.	Serial No.	Calibrated by	Cal. Method	Cal. Due	Cal. Date
X	FREQUENCY COUNTER	EIP	25B	9105-00535	KTICC	ㄆ(c)	Oct. 2022	Oct. 15, 2021
	SPECTRUM ANALYZER	ROHDE&SCHWARZ	FSP	100665	KTICC	ㄆ(c)	Nov. 2022	Nov. 10, 2021
X	Auto Range DC Power Supply	ITECH	IT6721	600104011717610069	BCS	ㄆ(c)	May. 2022	May. 26, 2021
X	TEMP & HUMI. CHAMBER	HITACHI	EC-25MHPS	U5539026	KTICC	ㄆ(c)	May. 2022	May. 26, 2021
X	SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ26	100044	KTICC	ㄆ(c)	Jan. 2023	Jan. 5, 2022
X	USB Average Power Sensor	AGILENT	U2004A	MY53340013	KTICC	ㄆ(c)	Oct. 2022	Oct. 15, 2021
	POWER DIVIDER	WILTRON	K240C	890093	KTICC	ㄆ(c)	Oct. 2022	Oct. 15, 2021
	STEP ATTENUATOR	AEROFLEX	AF9010-60-31	12987	BCS	ㄆ(c)	Jan. 2023	Jan. 7, 2022
	AC POWER SUPPLY	DAELIM	D-45	KRL-002	BCS	ㄷ(d)	Aug. 2022	Aug. 6, 2021
	FIXED ATTENUATOR	XMA CORP	4882-6140-06	KRL-009	KTICC	ㄆ(c)	Oct. 2022	Oct. 15, 2021

Note1: The calibration of measurement equipment is valid for one year period.

Note2: "X" used equipment.

Note3: Cal.Method ...

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 calibration agency under Article 102-18 paragraph (1)

d): Calibration conducted by using measuring instruments and other equipment listed in the right column of Table No. 3 attached hereto, which shall have been given any of calibration, etc. listed above from a) to c)

Specified Radio Equipment Test Report (BT-LE)

Test Date : 2022-05-10

Class: Article 2 Paragraph 1 Item 19	Frequency : (2 402 ~ 2 480) MHz
Rated Power (mW) : 2 mW	Antenna Gain : 1.90 dBi
Rated Power (dBm) : 3.01 dBm	E.I.R.P : 4.91 dBm
Emission Designator : F1D	
Model Name : InBirdie SW	Test Location : RF TEST ROOM
Serial No. : N/A	Temp / Humid. : 20℃ / 50%
Type of Emission : BT LE	Tested by : MooHong, Kim

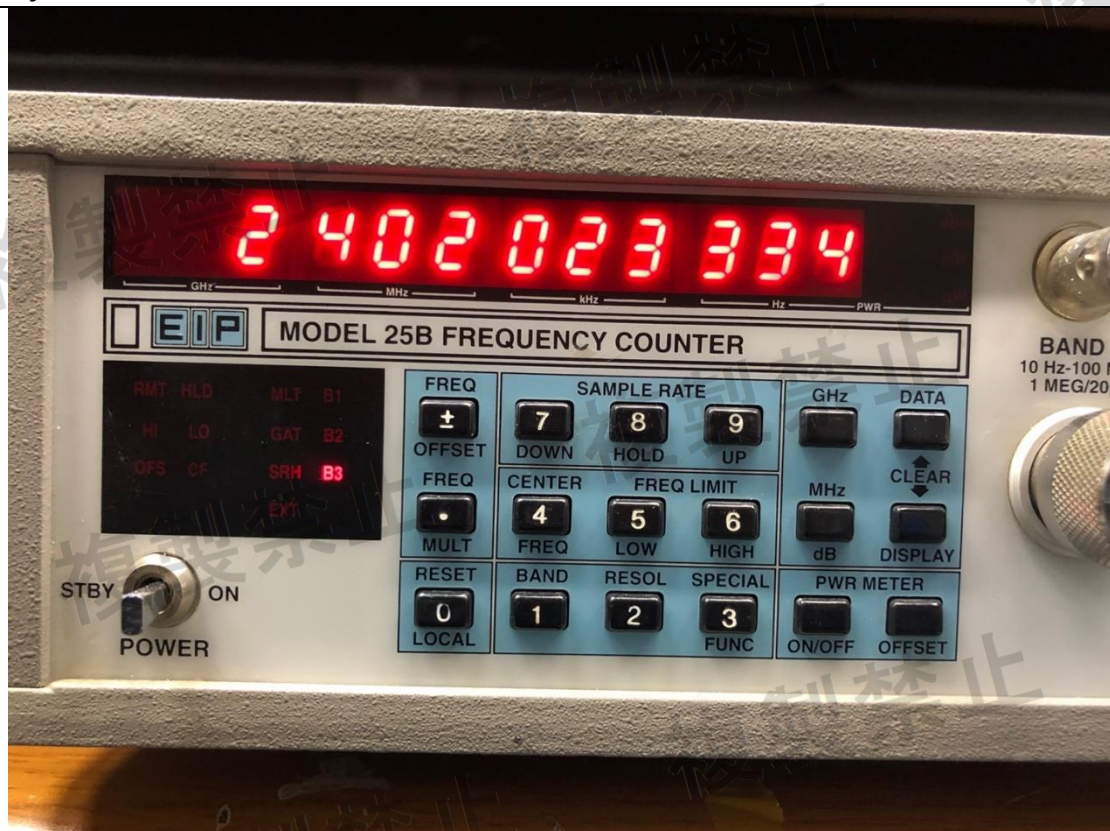
No.	Test Items	Test ch	Test Frequency MHz	Test Result			Unit	Technical Regulations
				High Voltage	Nominal Voltage	Low Voltage		
					DC 3.70 V			
1	Frequency Tolerance	0	2402.0		2402.023334		MHz	50 PPM or less
					9.714		PPM	
		19	2440.0		2440.023650		MHz	
					9.693		PPM	
		39	2480.0		2480.024457		MHz	
					9.862		PPM	
2	Occupied Bandwidth	0	2402.0		1.380		MHz	26MHz or less
		19	2440.0		1.380		MHz	
		39	2480.0		1.380		MHz	
3	Spurious Emission Intensity	0	2402__ (1)		-47.16		dBm	(1) Below 2387 MHz : -26dBm (2) 2387 to 2400 MHz : -16dBm (3) 2483.5 to 2496.5 MHz : -16dBm (4) Over 2496.5 MHz : -26dBm
			2402__ (2)		-20.71		dBm	
			2402__ (3)		-58.10		dBm	
			2402__ (4)		-39.51		dBm	
		19	2440__ (1)		-48.26		dBm	
			2440__ (2)		-58.48		dBm	
			2440__ (3)		-58.43		dBm	
			2440__ (4)		-41.37		dBm	
		39	2480__ (1)		-46.92		dBm	
			2480__ (2)		-58.20		dBm	
			2480__ (3)		-32.27		dBm	
			2480__ (4)		-44.27		dBm	
4	Antenna Power	0	2402.0		0.001222		W	0.01 W or less Error+ 20%-80%
					-38.90		%	
		19	2440.0		0.001276		W	
					-36.20		%	
		39	2480.0		0.001390		W	
					-30.50		%	
5	<div>Spread-spectrum Bandwidth</div>	0	2402.0				kHz	500kHz or more
		19	2440.0				kHz	
		39	2480.0				kHz	
6	Secondary Radiated Emissions	0	2402__ (1)		-73.40		dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz or higher : -47dBm
			2402__ (2)		-48.54		dBm	
		19	2440__ (1)		-73.26		dBm	
			2440__ (2)		-48.10		dBm	
		39	2480__ (1)		-73.66		dBm	
			2480__ (2)		-48.09		dBm	
7	<div>Holding Time</div>	0	2402.0				Sec	less than 0.4sec
		19	2440.0				Sec	
		39	2480.0				Sec	
8	Radio Interference Prevention Function	ID Code		MAC ADDRES : 3C:97:0E:6E:41:4E				Carrier sense is not required

The input voltage to receiver RF circuit varies below ± 1% as the input voltage from the external power supply to the receiver varies ± 10%(excluding power supply).

BT LE Test Result (3.70 V)

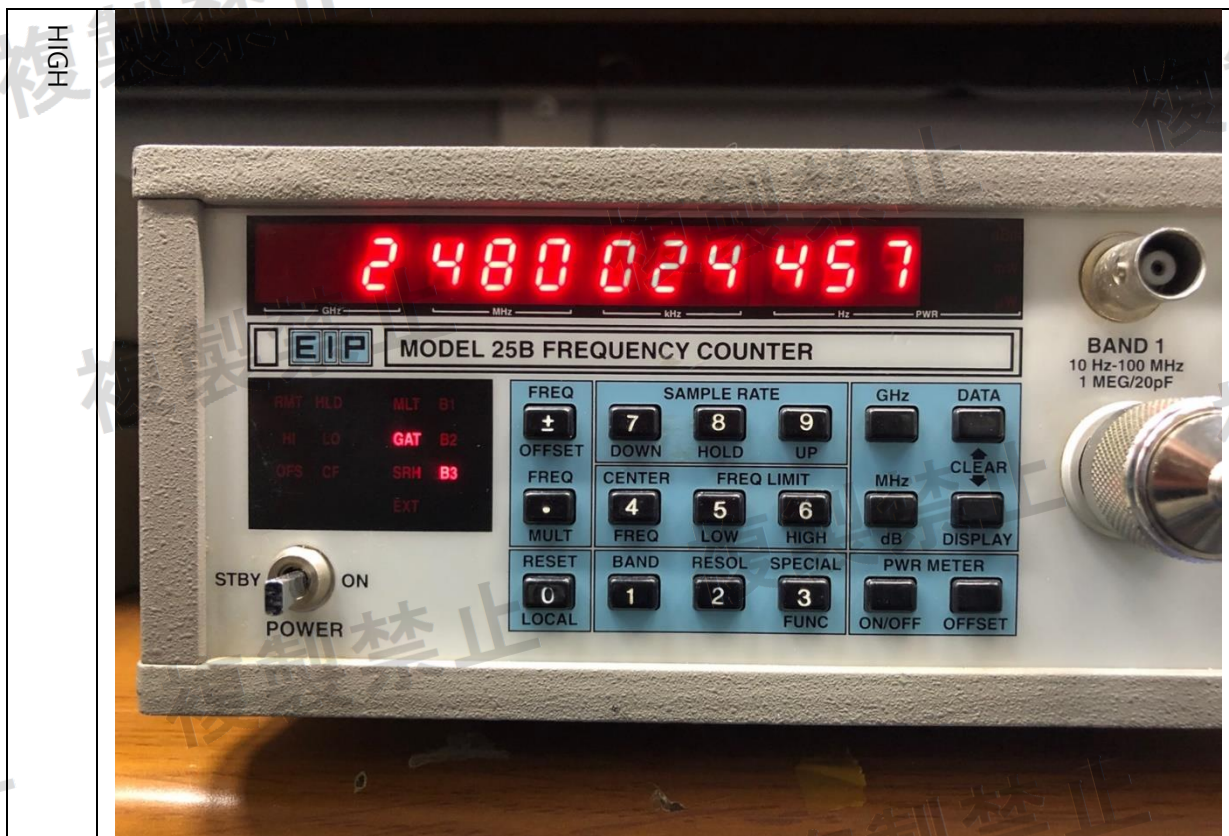
Frequency error

LOW



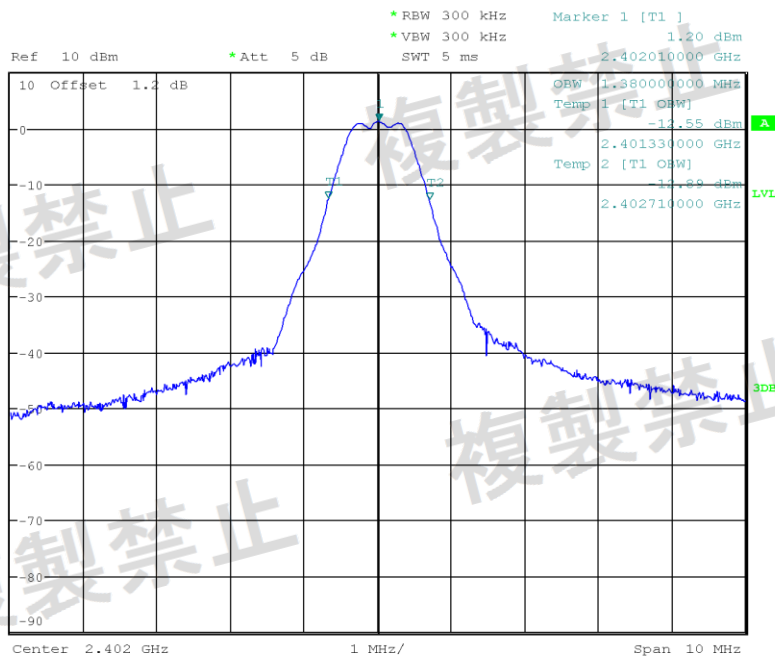
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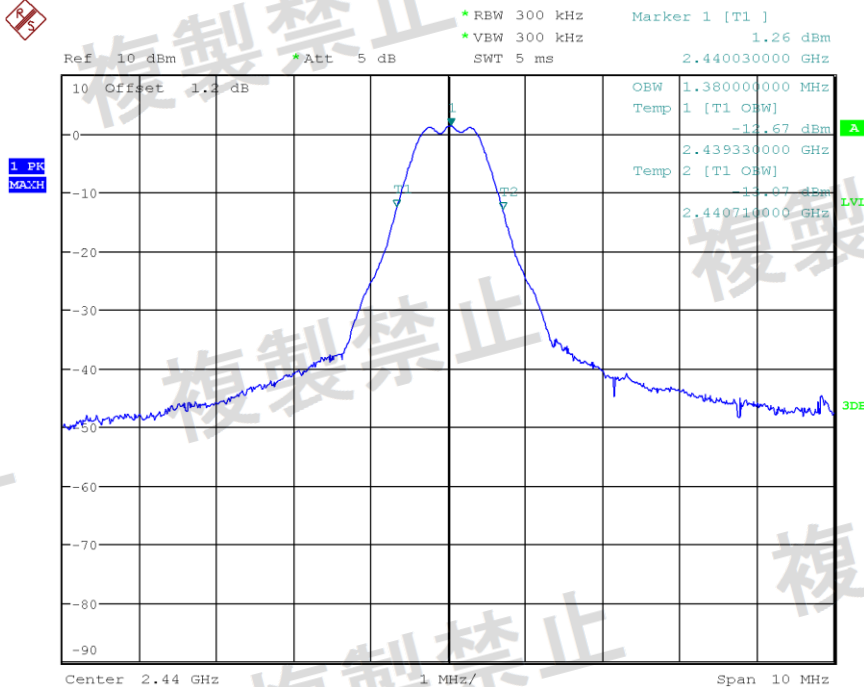
Occupied Bandwidth

LOW

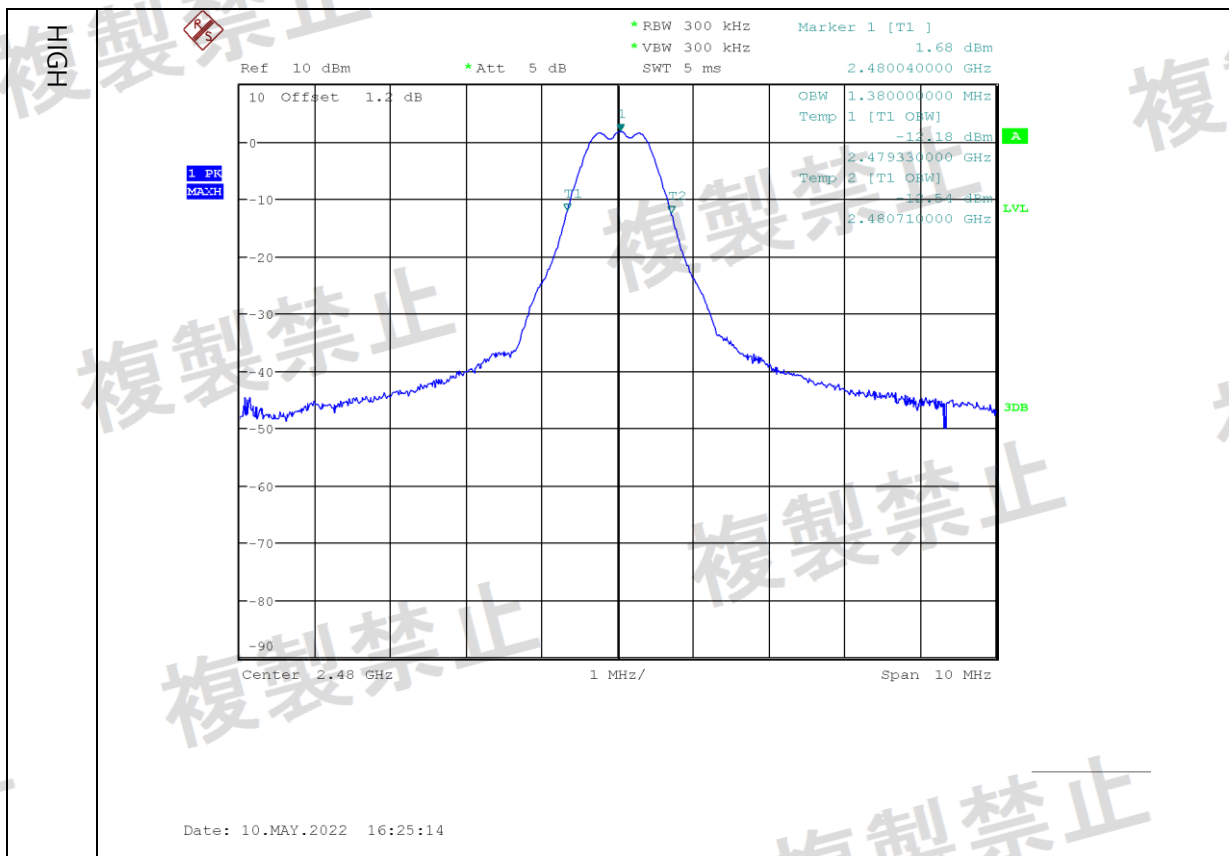


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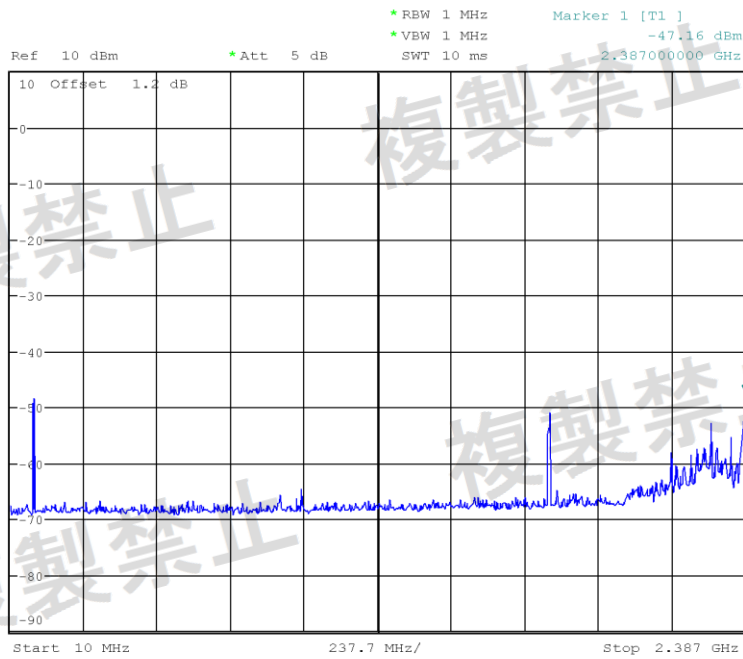


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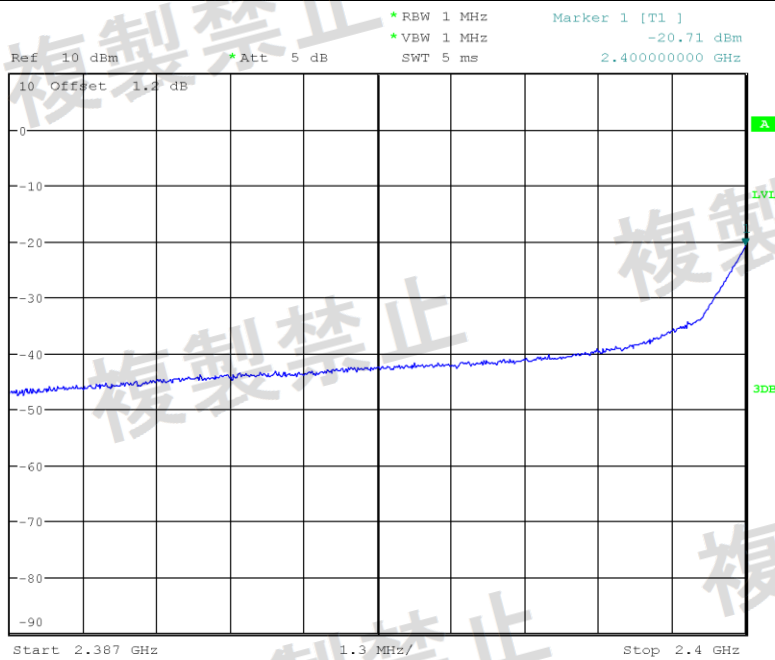


Spurious Emission Intensity

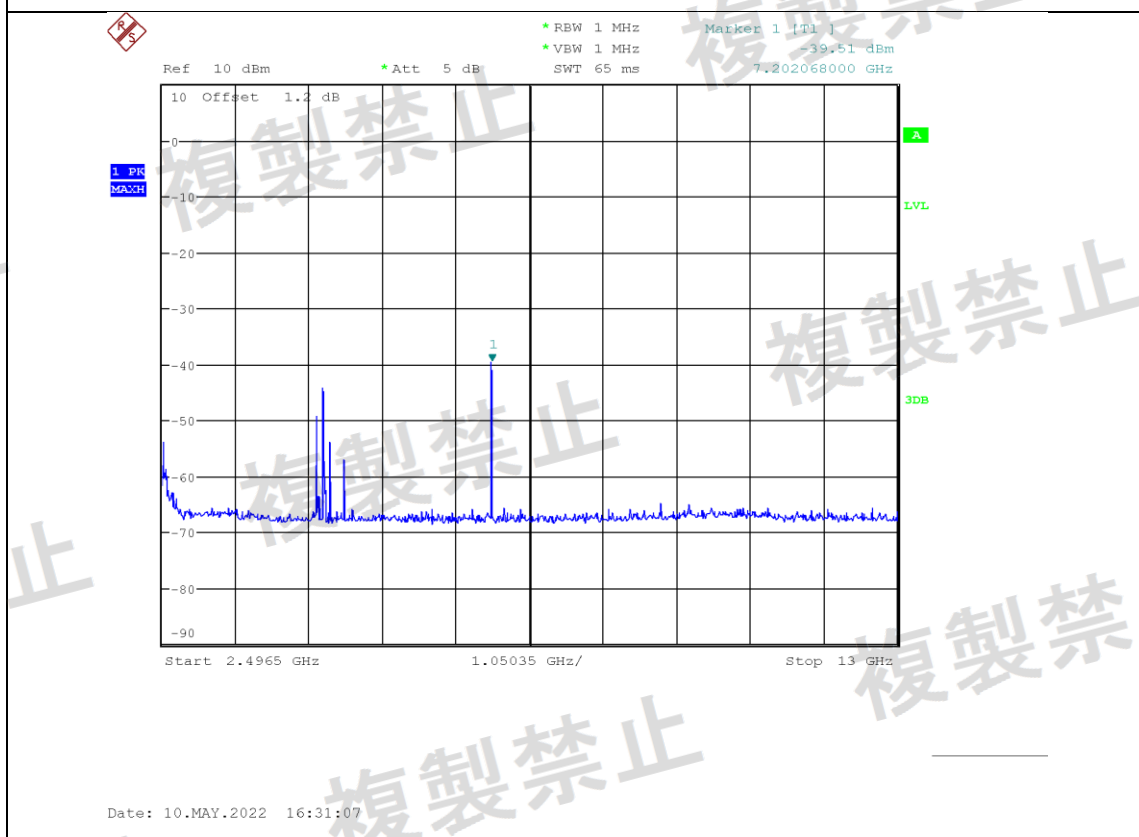
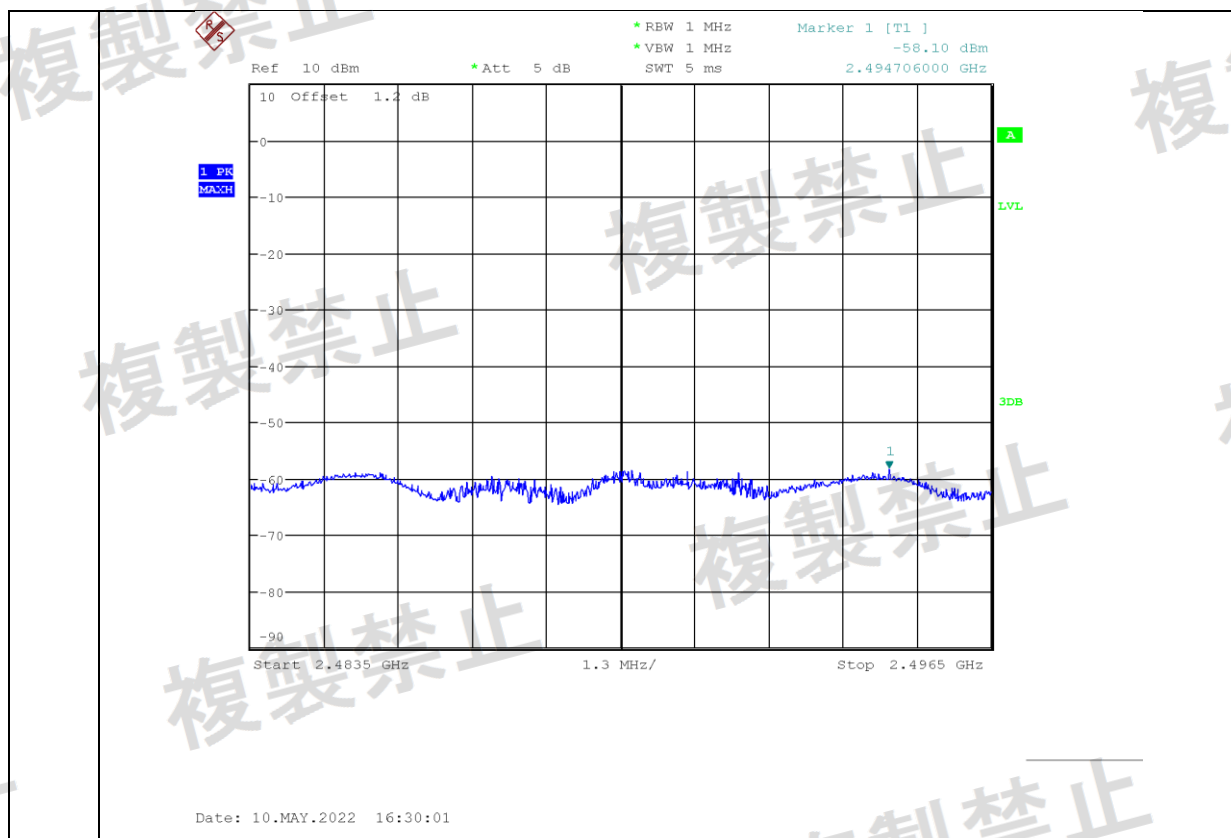
LOW



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Date: 10.MAY.2022 16:28:29

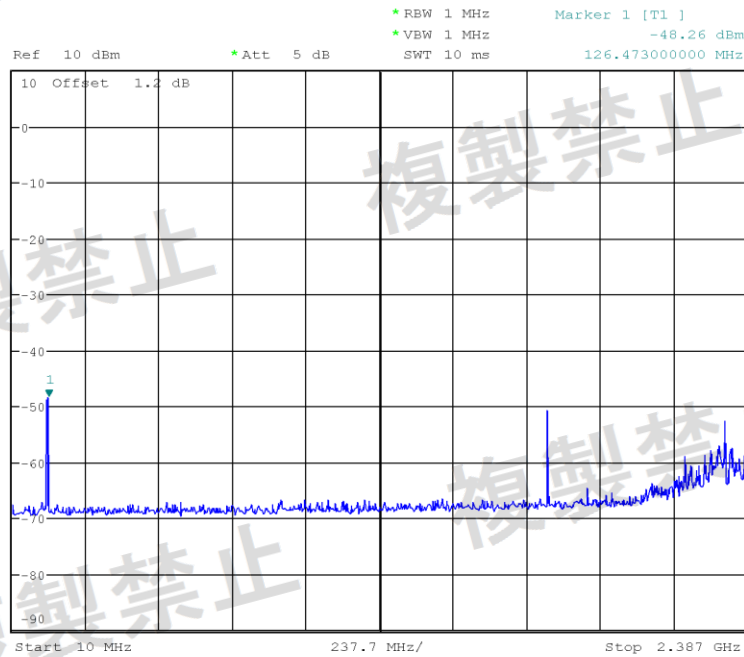


Spurious Emission Intensity

MID



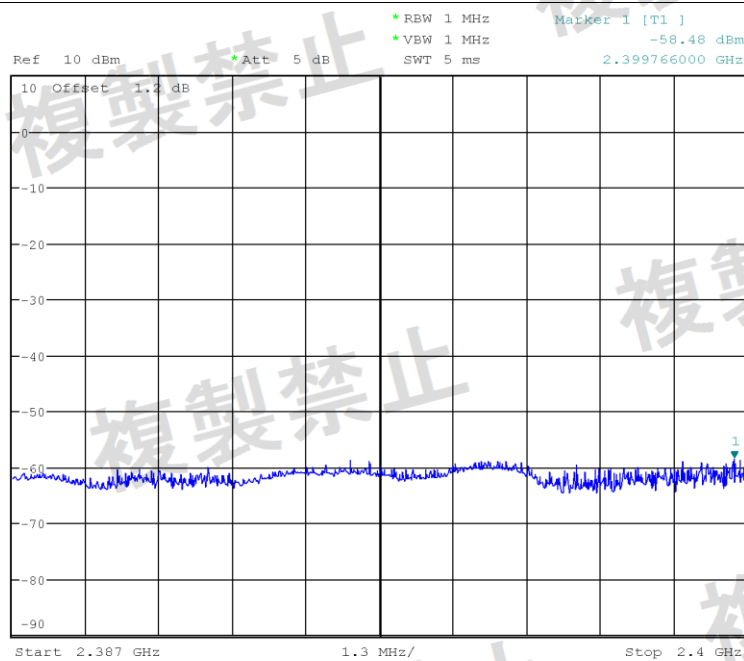
1 PK
MAXH



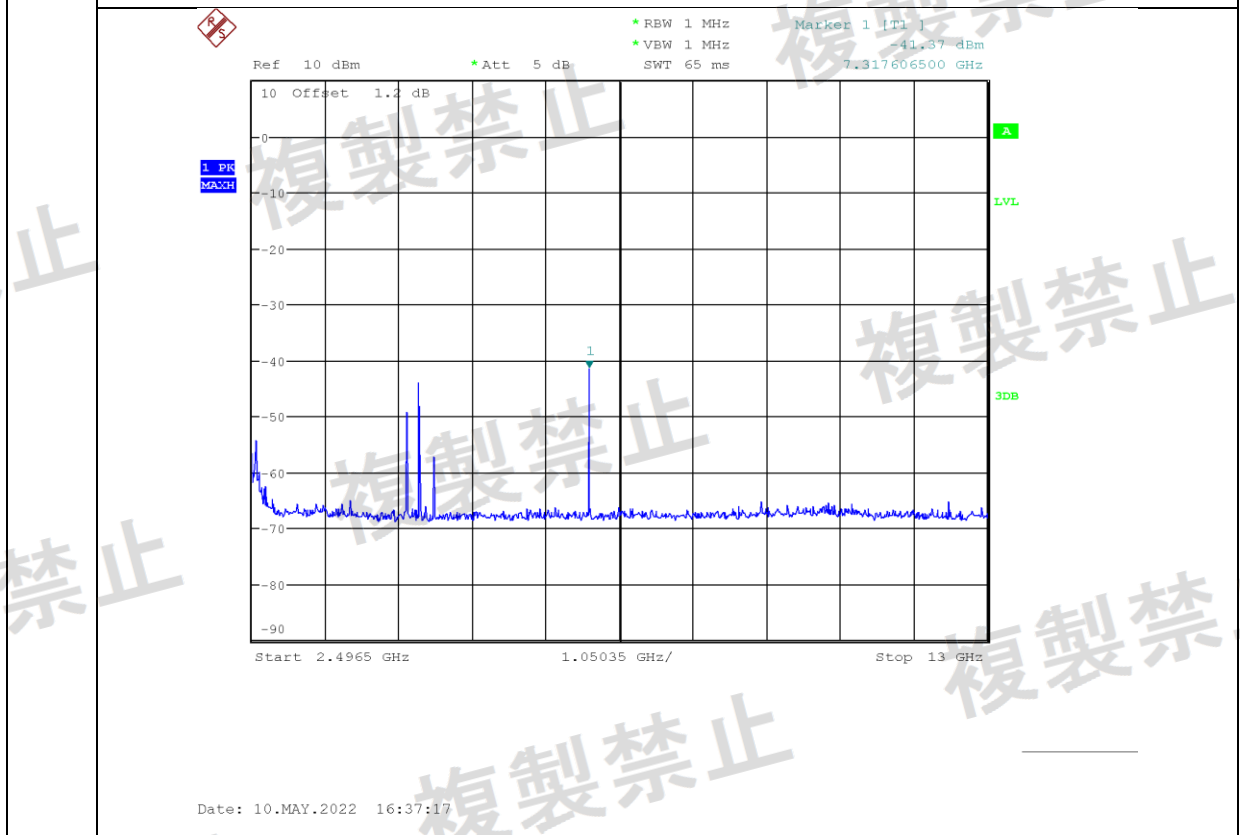
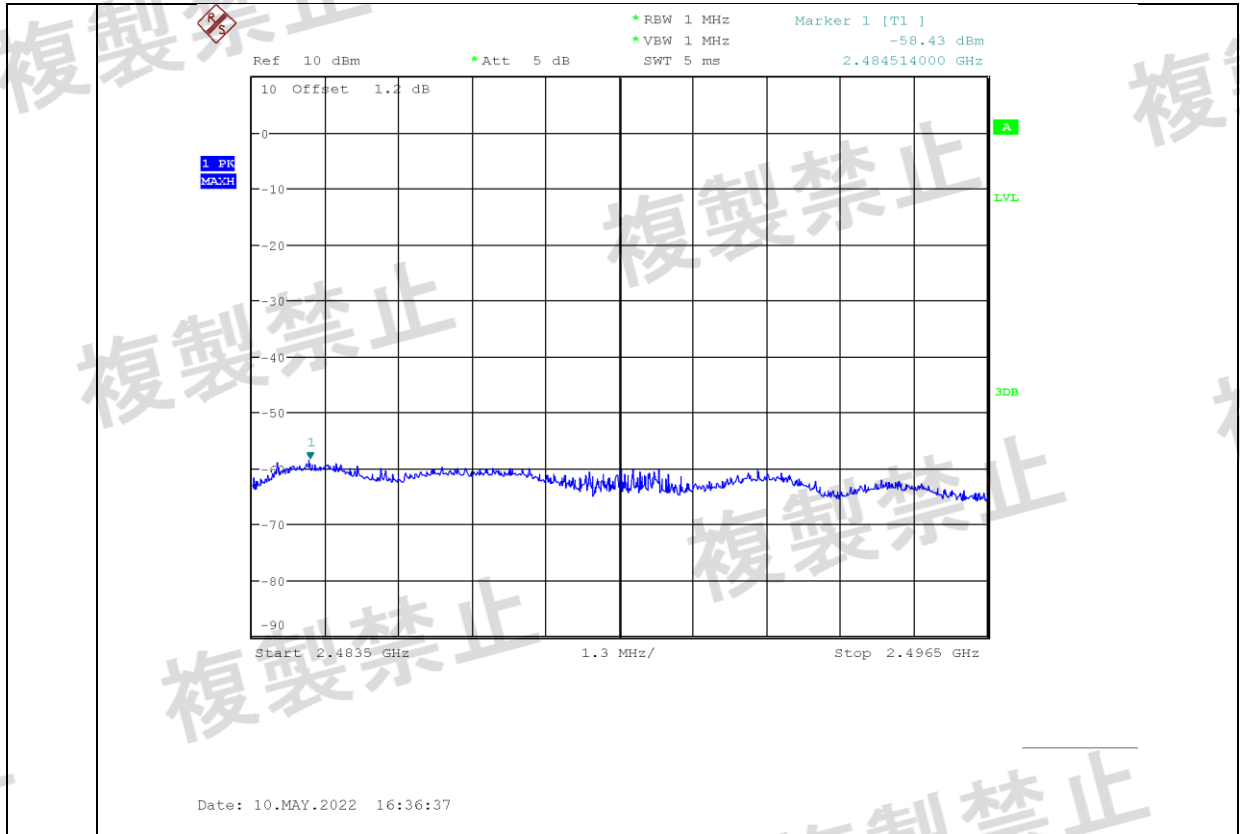
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1 PK
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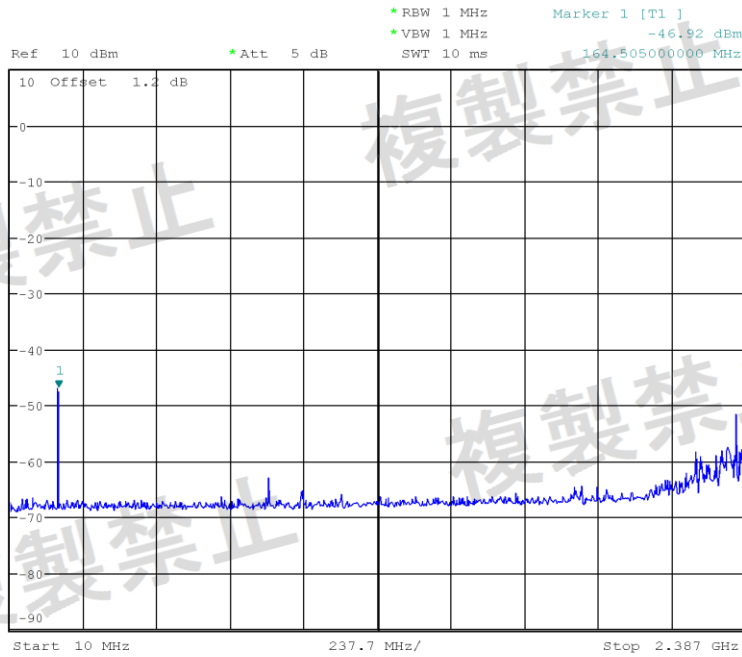


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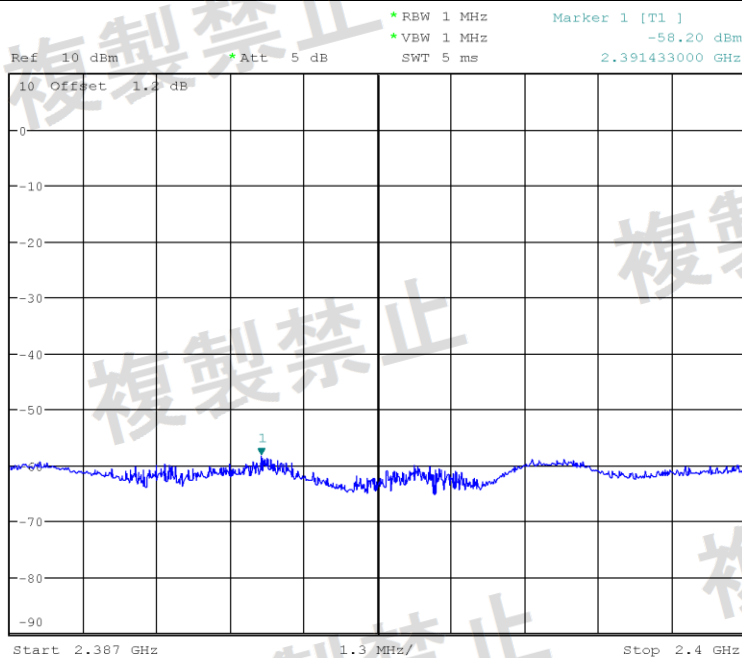


Spurious Emission Intensity

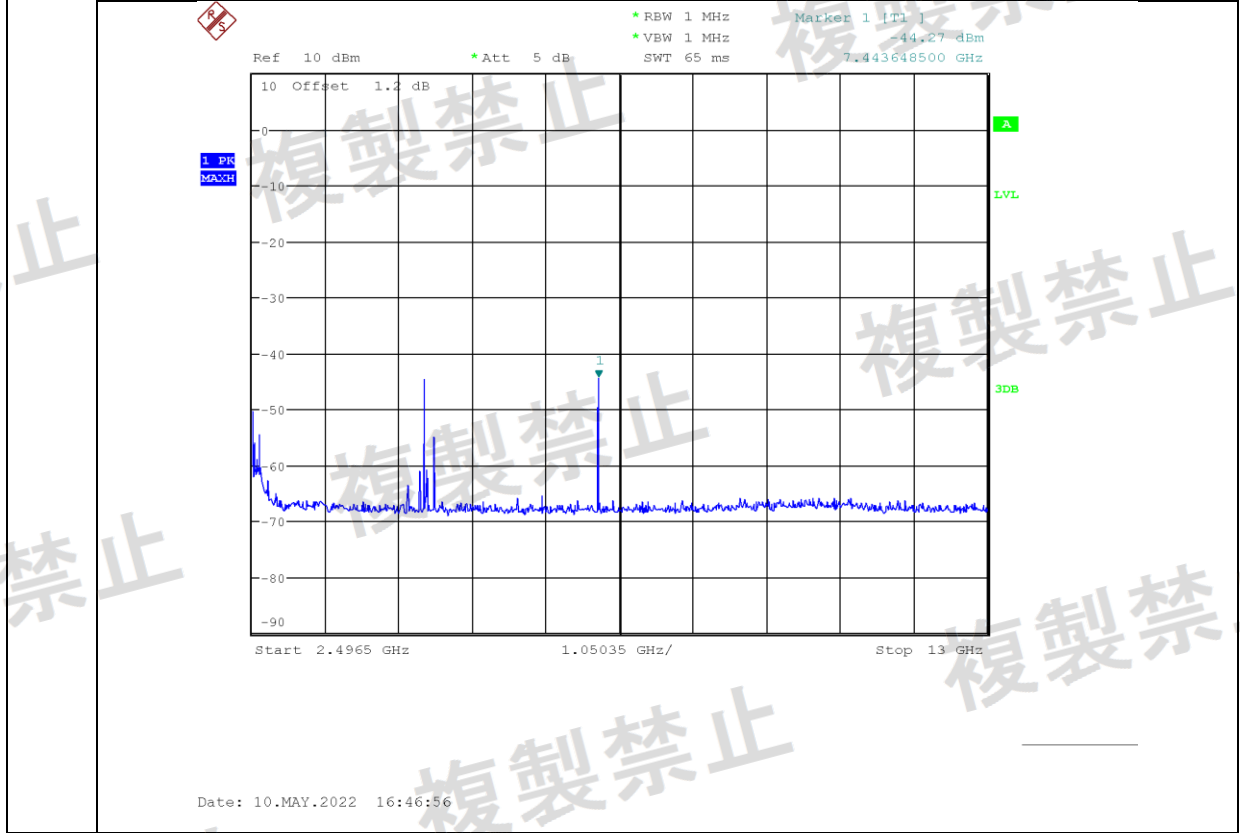
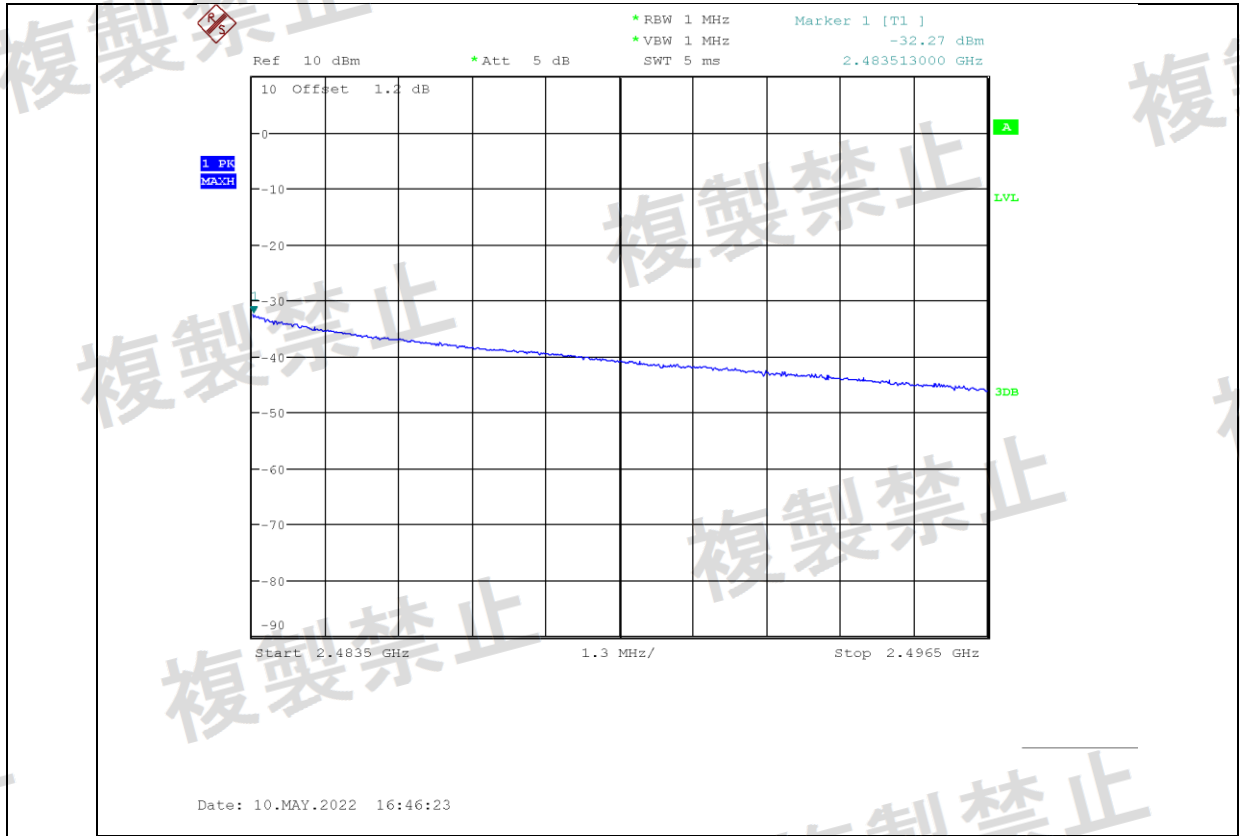
HIGH



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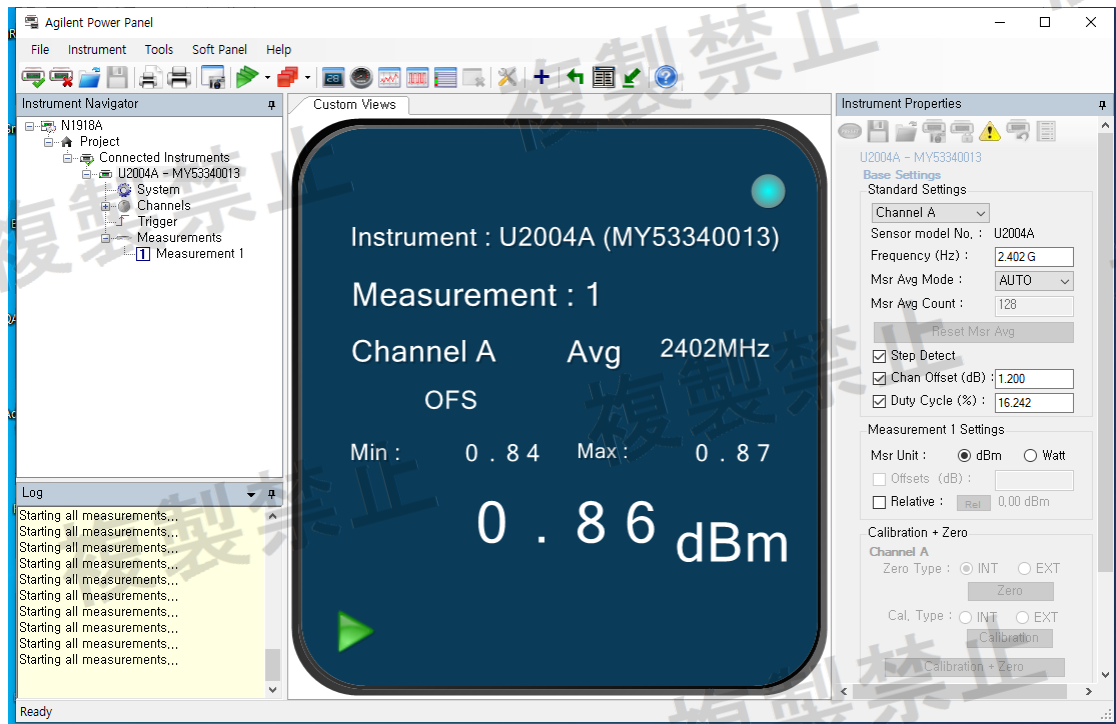


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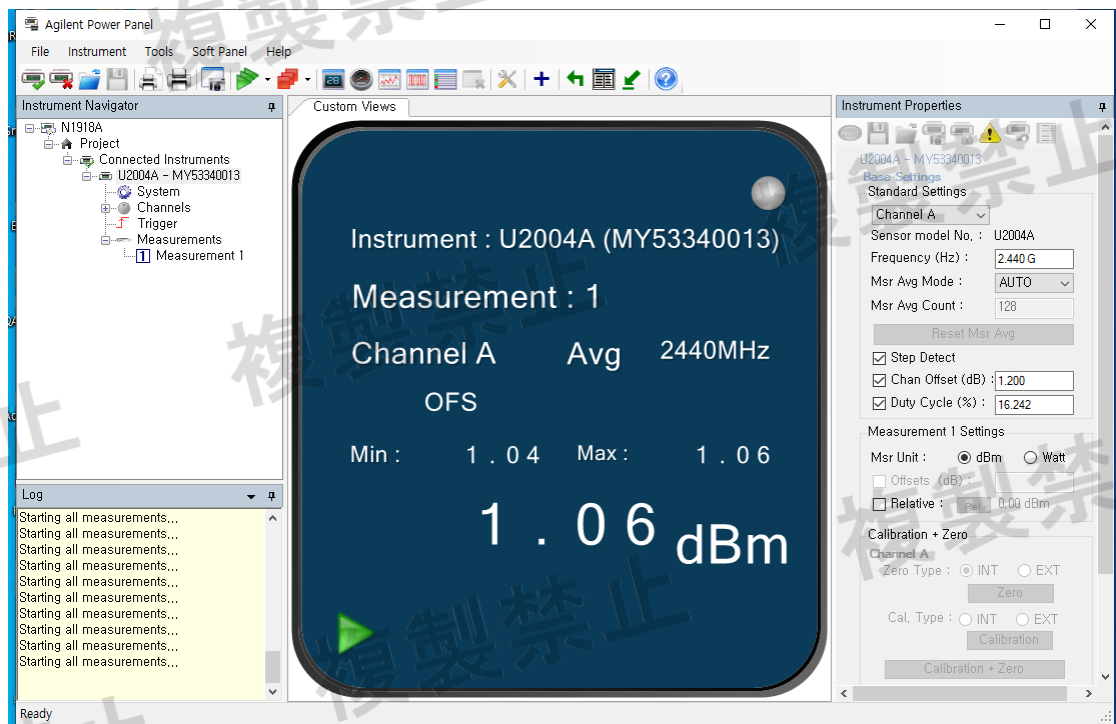


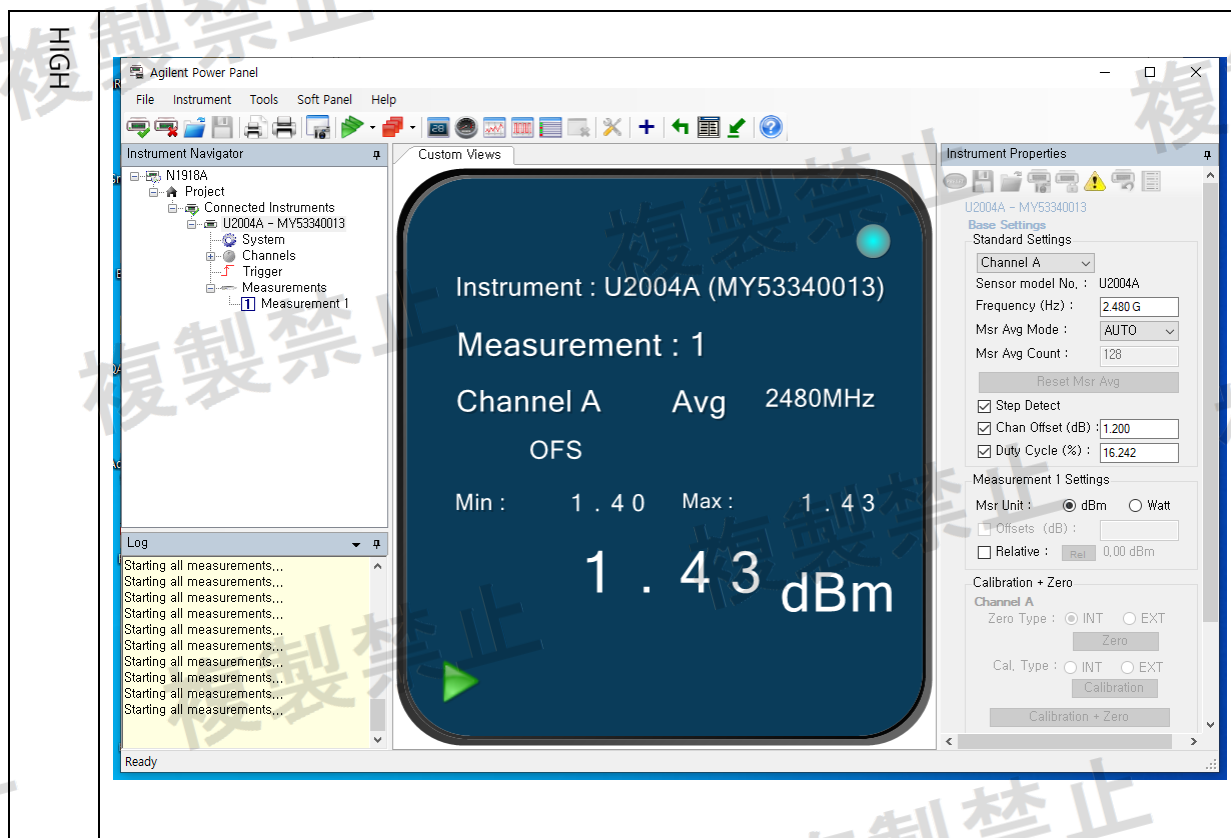
Antenna Power

LOW



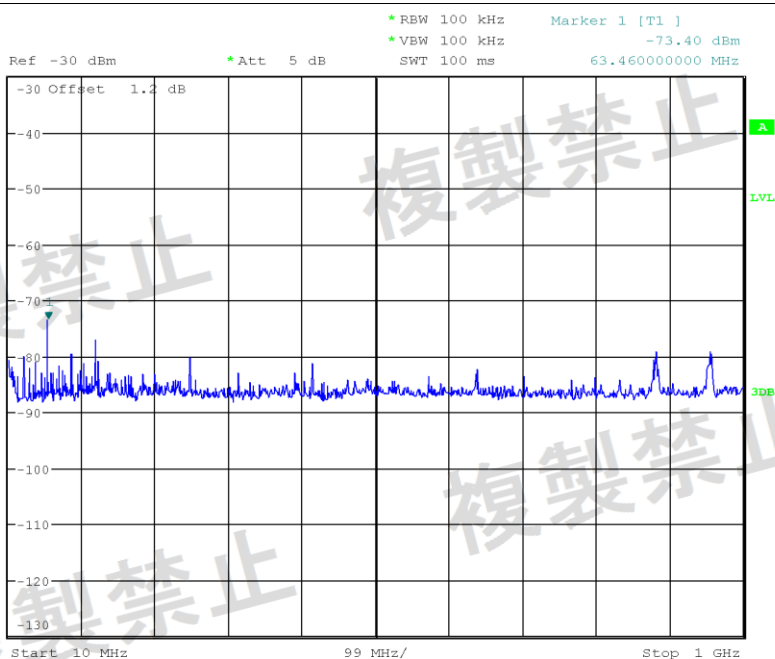
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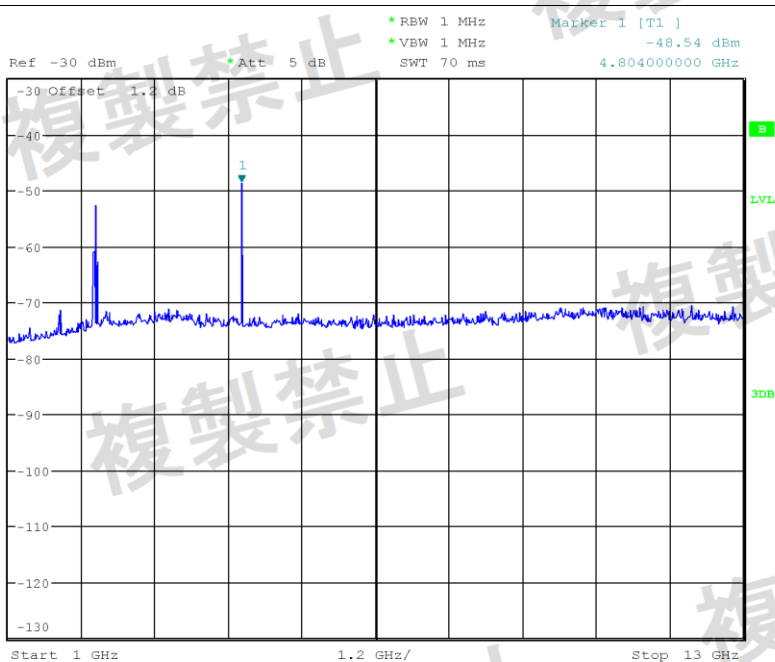


Secondary Radiated Emissions

LOW



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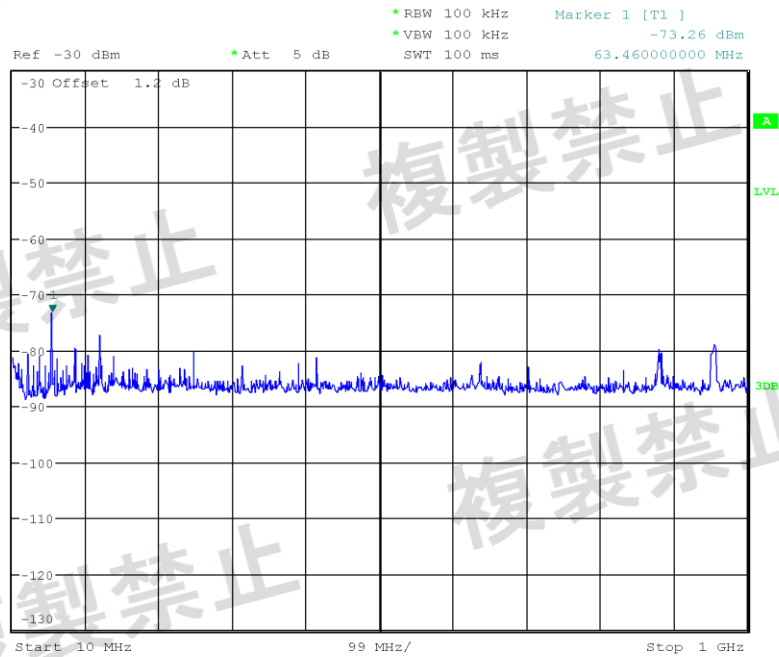
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Secondary Radiated Emissions

MID



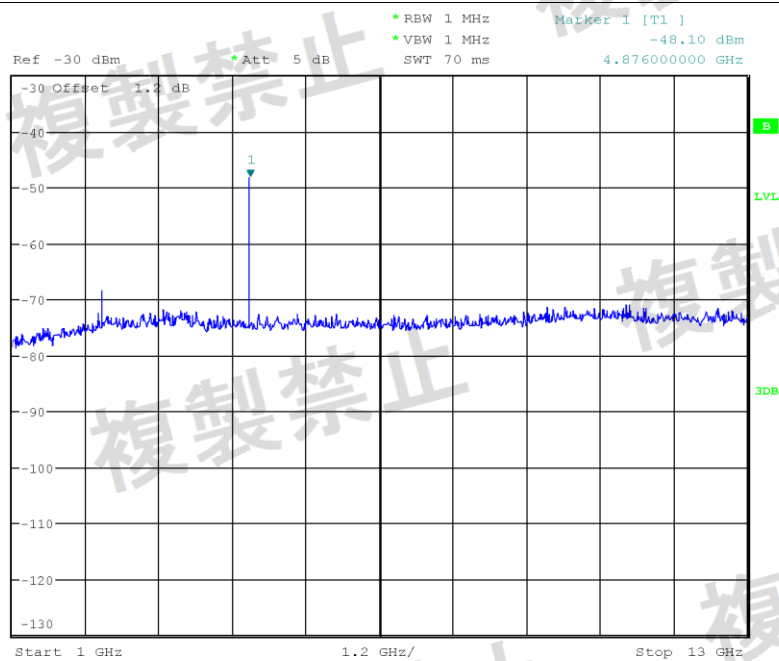
1 PK
MAXH



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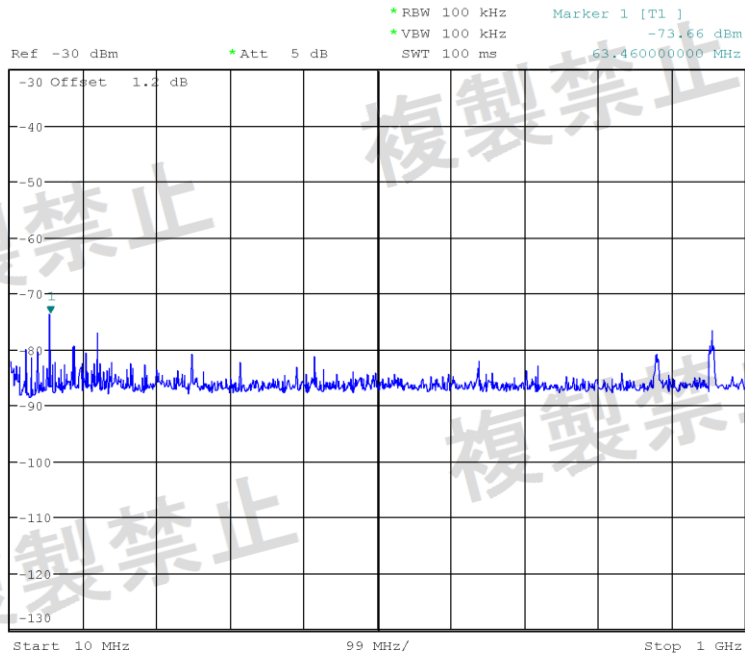
1 PK
MAXH



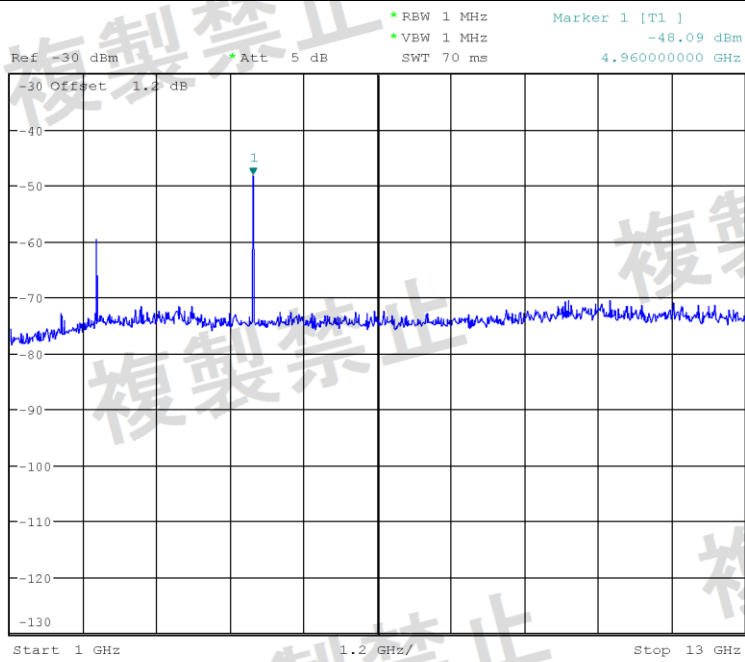
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Secondary Radiated Emissions

HIGH



Date: 10.MAY.2022 16:57:39



Date: 10.MAY.2022 16:58:02