

TEST REPORT

Report number : KR21220106A

Issue date : 2022/01/06

Applicant : FASTPONG CORP.
401, 8, Hangang-daero 44-gil, Yongsan-gu, Seoul,
Republic of Korea
Tel. +82-10-2272-9376 Fax. -

Model name : FP01

Serial number : N/A

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

Date of test : 2022/1/5

Name of facility : KRL Co., Ltd.

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

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Tested by :



Moo-Hong, KIM

Approved by :



Kyu-Hyun, LEE

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Summary of Test Results

Test report No.	Description	Result
1	Frequency Tolerance	Pass
2	Occupied Bandwidth	Pass
3	Spurious emission intensity	Pass
4	Antenna Power	Pass
5	Spread-spectrum Bandwidth	NA
6	Secondary radiated emission	Pass
7	Holding Time	NA
8	Radio Interference Prevention Function	Pass

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	/(c)	Oct. 2022	Oct. 15, 2021
X	SPECTRUM ANALYZER	ROHDE&SCHWARZ	FSP	100665	KTICC	/(c)	Nov. 2022	Nov. 10, 2021
X	Auto Range DC Power Supply	ITECH	IT6721	600104011717610000	BCS	/(c)	Aug. 2022	May. 26, 2021
X	TEMP & HUMI. CHAMBER	HITACHI	EC-25MHPS	U5539026	KTICC	/(c)	Nov. 2022	Nov. 19, 2021
	SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ26	100044	KTICC	/(c)	Jan. 2022	Jan. 8, 2021
X	USB Average Power Sensor	AGILENT	U2004A	MY53340013	KTICC	/(c)	Oct. 2022	Oct. 15, 2021
	POWER DIVIDER	HP	11636A	03871	BCS	/(c)	Jan. 2022	Jan. 8, 2021
	STEP ATTENUATOR	AEROFLEX	AF9010-60-31	12987	BCS	/(c)	Jan. 2022	Jan. 8, 2021
	AC POWER SUPPLY	DAELIM	D-45	KRL-002	BCS	=(d)	Aug. 2022	Aug. 6, 2021
	FIXED ATTENUATOR	XMA CORP	4882-6140-06	KRL-009	KTICC	/(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

Test Date : 2022-01-05

Class: Article 2 Paragraph 1 Item 19		Frequency : (2 402 ~ 2 480) MHz	
Rated Power (mW) : 1 mW		Antenna Gain : 2.12 dBi	
Rated Power (dBm) : 0.00 dBm		E.I.R.P : 2.12 dBm	
Emission Designator : F1D			
Model Name : FP01		Test Location : RF TEST ROOM	
Serial No. : N/A		Temp / Humid. 20°C / 50%	
Type of Emission : BLE		Tested By : MooHong, Kim	

No.	Test Items	Test ch	Test Frequency MHz	Test Result			Unit	Technical Regulations
				Voltage	Voltage	Voltage		
1	Frequency Tolerance	0	2402.0		2401.981056		MHz	50 PPM or less
		19	2440.0		-7.887		PPM	
		39	2480.0		2439.980689		MHz	
					-7.914		PPM	
2	Occupied Bandwidth	0	2402.0		2479.980364		MHz	26MHz or less
		19	2440.0		-7.918		PPM	
		39	2480.0		1.370		MHz	
3	Spurious Emission Intensity	0	2402 (1)		1.370		MHz	(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)		-55.90		dBm	
			2402 (3)		-22.87		dBm	
			2402 (4)		-59.00		dBm	
		19	2440 (1)		-45.97		dBm	
			2440 (2)		-56.54		dBm	
			2440 (3)		-59.76		dBm	
			2440 (4)		-60.03		dBm	
		39	2480 (1)		-44.70		dBm	
			2480 (2)		-55.68		dBm	
			2480 (3)		-59.27		dBm	
			2480 (4)		-37.91		dBm	
4	Antenna Power	0	2402.0		0.000993		W	0.01 W or less Error +20%-80%
					-0.70		%	
		19	2440.0		0.001005		W	
					0.50		%	
		39	2480.0		0.001019		W	
			1.90		%			
5	Spread-spectrum Bandwidth	0	2402.0				kHz	500kHz or more
		19	2440.0				kHz	
		39	2480.0				kHz	
6	Secondary Radiated Emissions	0	2402 (1)		-80.86		dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz or higher : -47dBm
			2402 (2)		-64.58		dBm	
		19	2440 (1)		-80.75		dBm	
			2440 (2)		-63.27		dBm	
		39	2480 (1)		-80.64		dBm	
			2480 (2)		-63.59		dBm	
7	Holding Time	0	2402.0				Sec	less than 0.4sec
		19	2440.0				Sec	
		39	2480.0				Sec	
8	Radio Interference Prevention Function	ID Code		MAC ADDRESS : 21:06:27:00:7E:3F				Carrier sense is not required

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

BLE Test Result

Frequency error

MOT



MID



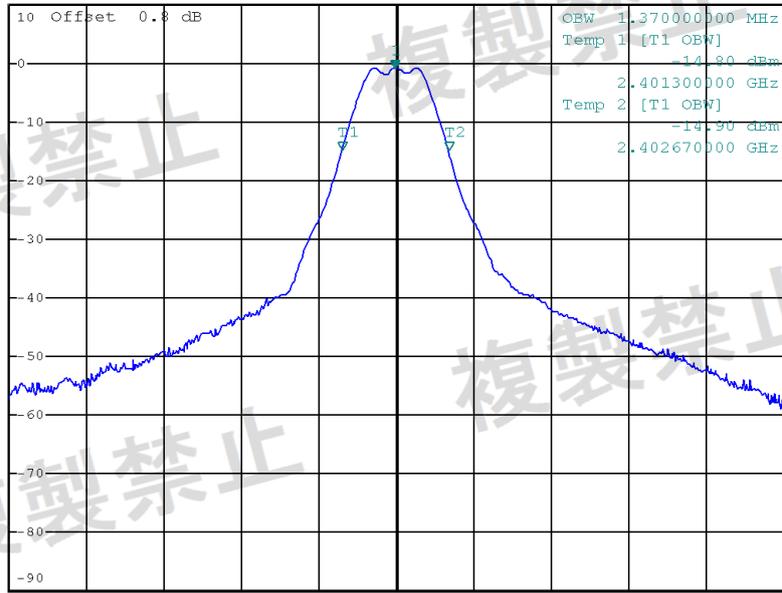


Occupied Bandwidth

LOW



Ref 10 dBm *Att 20 dB *REW 300 kHz *VEW 300 kHz *SWT 5 ms Marker 1 [T1] -0.84 dBm 2.401980000 GHz

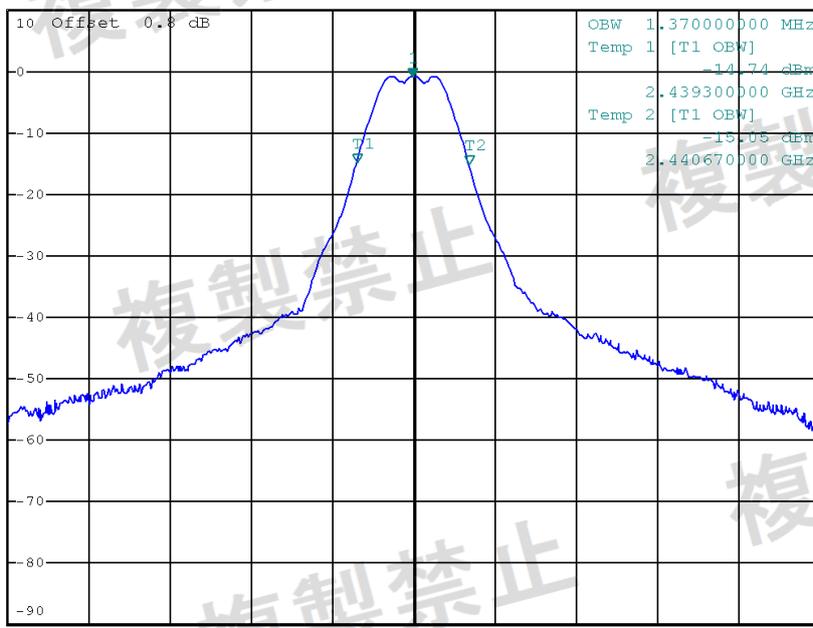


Date: 5.JAN.2022 10:50:23

MID



Ref 10 dBm *Att 20 dB *REW 300 kHz *VEW 300 kHz *SWT 5 ms Marker 1 [T1] -0.78 dBm 2.439980000 GHz



Date: 5.JAN.2022 10:55:04

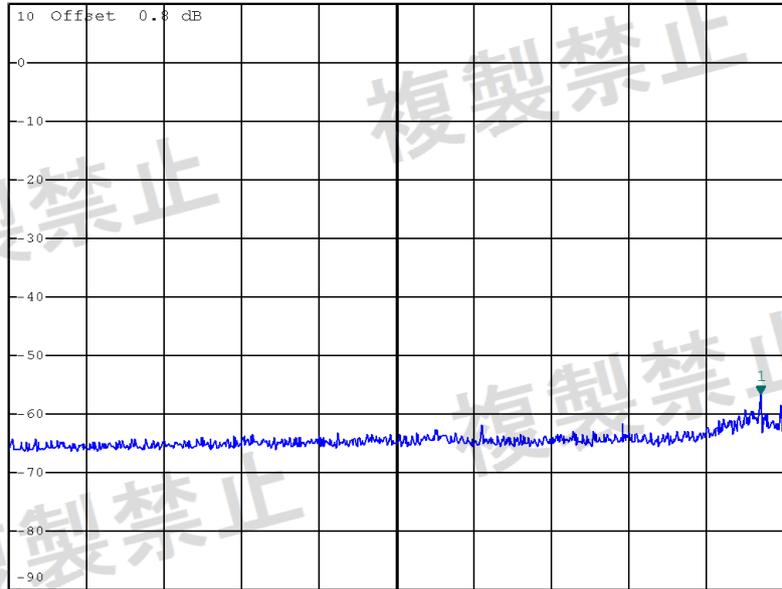
Spurious Emission Intensity

MID



1 PK
MAXH

Ref 10 dBm *Att 20 dB *REW 1 MHz *VEW 1 MHz Marker 1 [T1] -56.54 dBm
SWT 15 ms 2.313313000 GHz

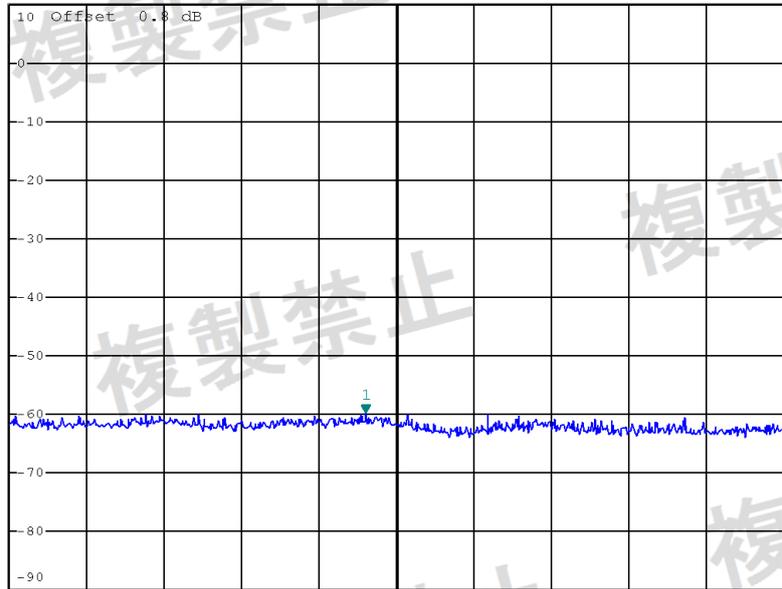


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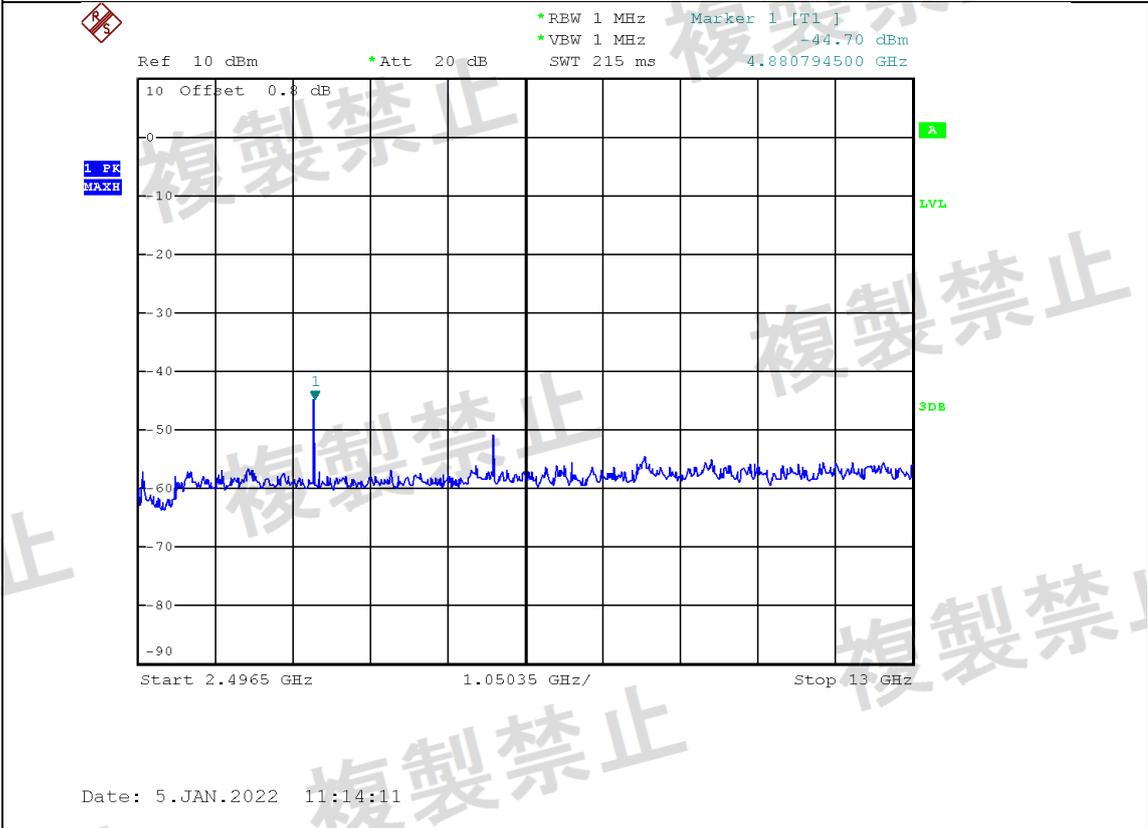
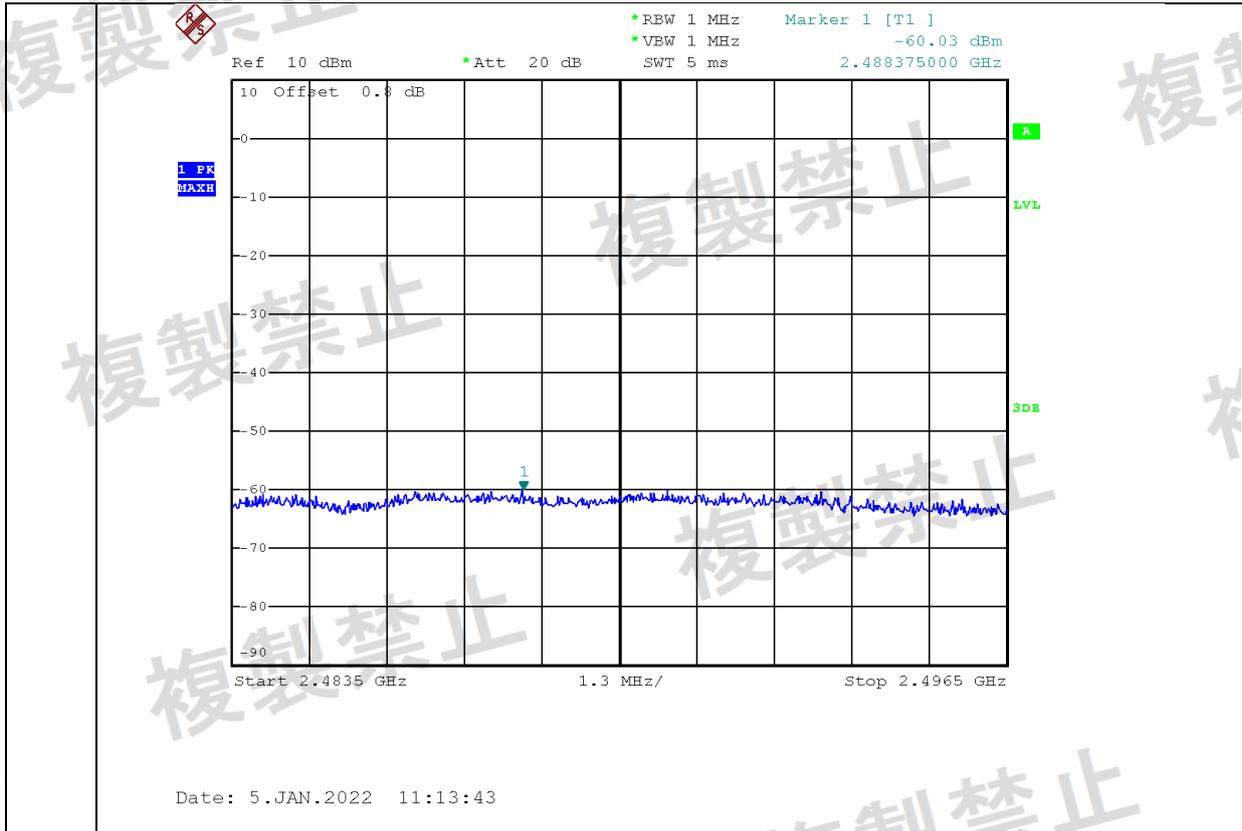


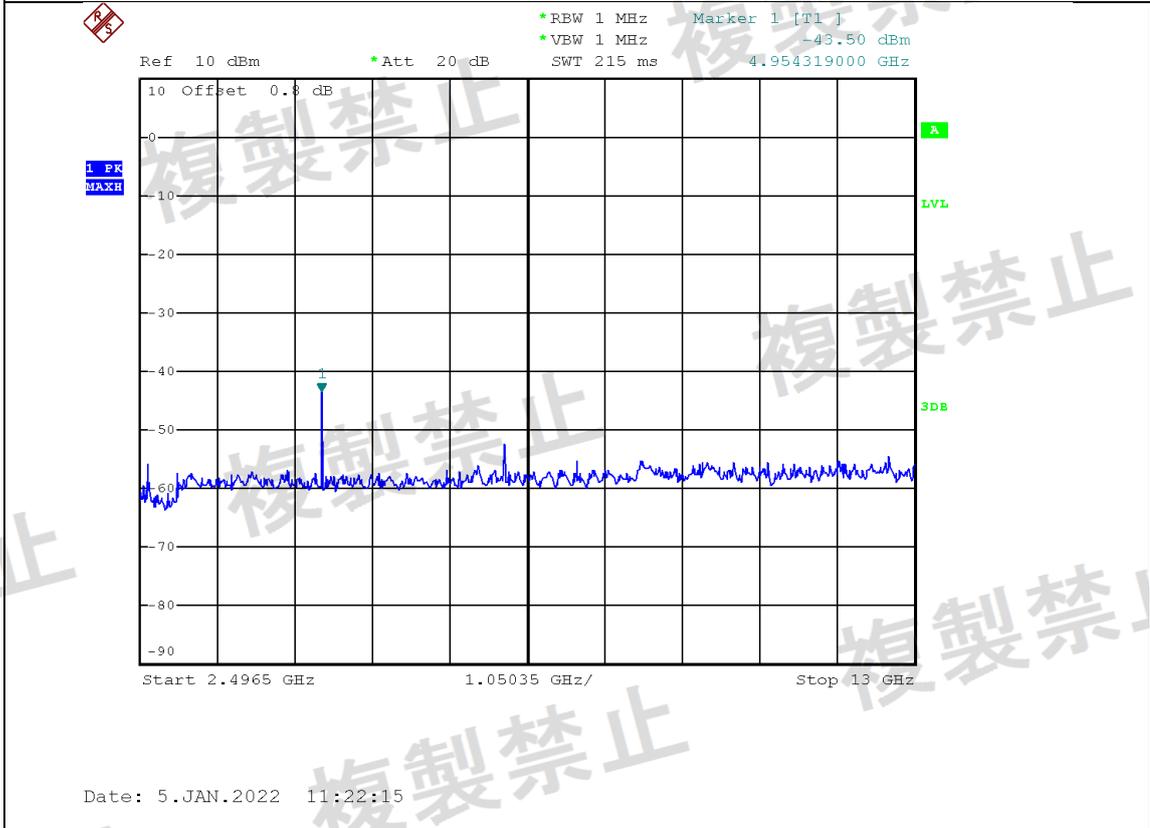
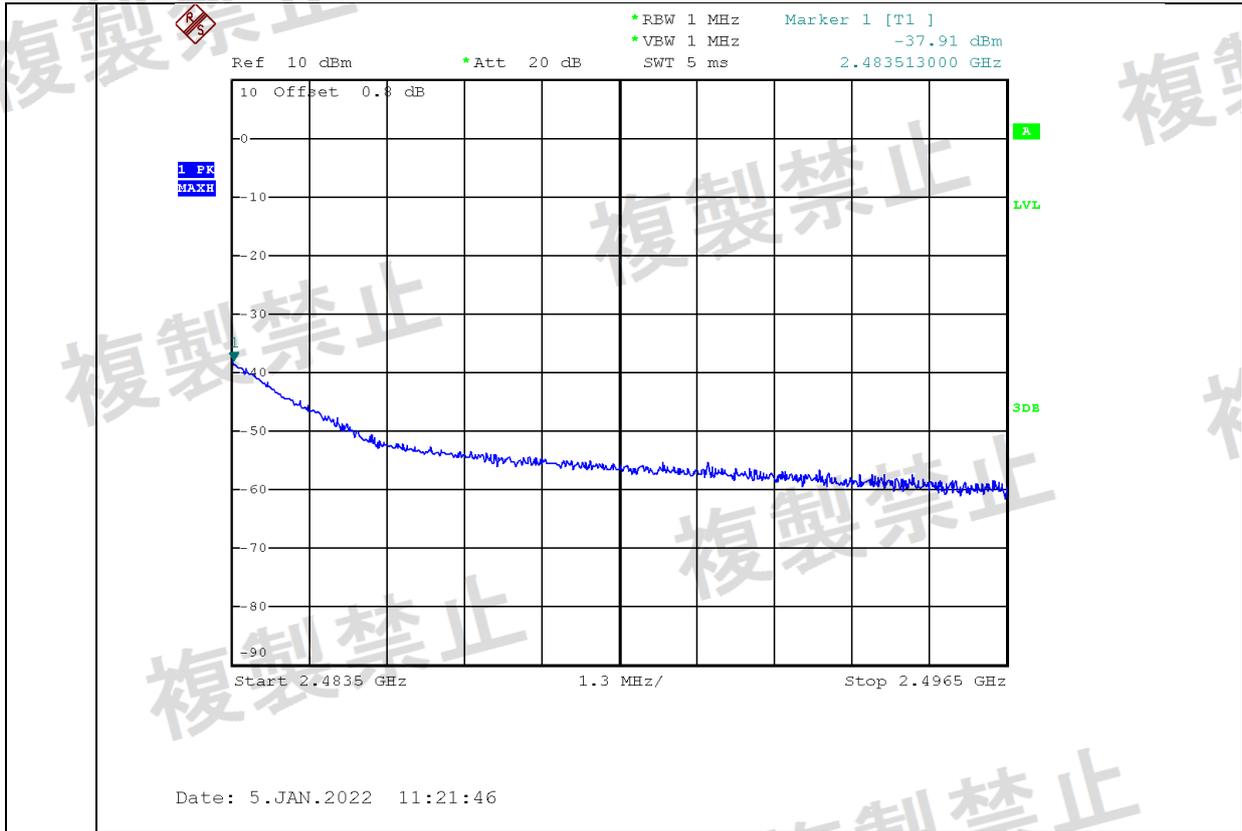
1 PK
MAXH

Ref 10 dBm *Att 20 dB *REW 1 MHz *VEW 1 MHz Marker 1 [T1] -59.76 dBm
SWT 5 ms 2.392980000 GHz



Date: 5.JAN.2022 11:13:14





Antenna Power

LOW

Agilent Power Panel

Instrument Navigator

Project

- Connected Instruments
 - U2004A - MY53340013
 - System
 - Channels
 - Trigger
 - Measurements
 - Measurement 1

Log

Launching N1918A...
Finding Instruments...
Connecting to instruments...
Starting measurements...
Starting all measurements...
Starting all measurements...
Starting all measurements...

Ready

Instrument : U2004A (MY53340013)

Measurement : 1

Channel A Avg 2402MHz

OFS

Min : - 0 . 11 Max : - 0 . 03

- 0 . 03 dBm

Instrument Properties

U2004A - MY53340013

Base Settings

Standard Settings

Channel A

Sensor model No. : U2004A

Frequency (Hz) : 2402G

Msr Avg Mode : AUTO

Msr Avg Count : 1

Reset Msr Avg

Step Detect

Chan Offset (dB) : 800.000m

Duty Cycle (%) : 62.200

Measurement 1 Settings

Msr Unit : dBm Watt

Offsets (dB) :

Relative : 0.00 dBm

Calibration + Zero

Channel A

Zero Type : INT EXT

Zero

Cal. Type : INT EXT

Calibration

Calibration + Zero

Unit Calibration Due Date

05/03/2018

MID

Agilent Power Panel

Instrument Navigator

Project

- Connected Instruments
 - U2004A - MY53340013
 - System
 - Channels
 - Trigger
 - Measurements
 - Measurement 1

Log

Launching N1918A...
Finding Instruments...
Connecting to instruments...
Starting measurements...
Starting all measurements...

Ready

Instrument : U2004A (MY53340013)

Measurement : 1

Channel A Avg 2440MHz

OFS

Min : - 0 . 06 Max : 0 . 02

- 0 . 03 dBm

Instrument Properties

U2004A - MY53340013

Base Settings

Standard Settings

Channel A

Sensor model No. : U2004A

Frequency (Hz) : 2440G

Msr Avg Mode : AUTO

Msr Avg Count : 1

Reset Msr Avg

Step Detect

Chan Offset (dB) : 800.000m

Duty Cycle (%) : 62.200

Measurement 1 Settings

Msr Unit : dBm Watt

Offsets (dB) :

Relative : 0.00 dBm

Calibration + Zero

Channel A

Zero Type : INT EXT

Zero

Cal. Type : INT EXT

Calibration

Calibration + Zero

Unit Calibration Due Date

05/03/2018

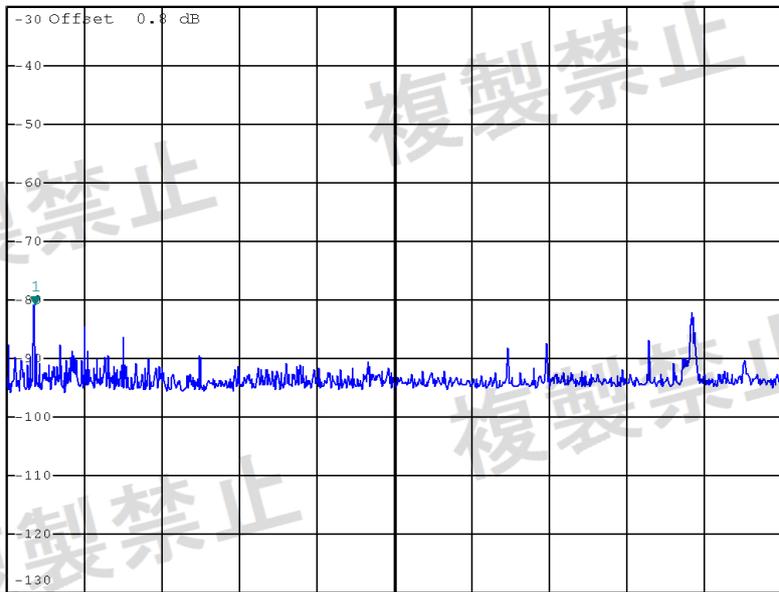
Secondary Radiated Emissions

LOW



1 PK
MAXH

Ref -30 dBm *Att 0 dB *REW 100 kHz Marker 1 [T1]
*VEW 100 kHz -80.86 dBm
SWT 100 ms 63.95000000 MHz



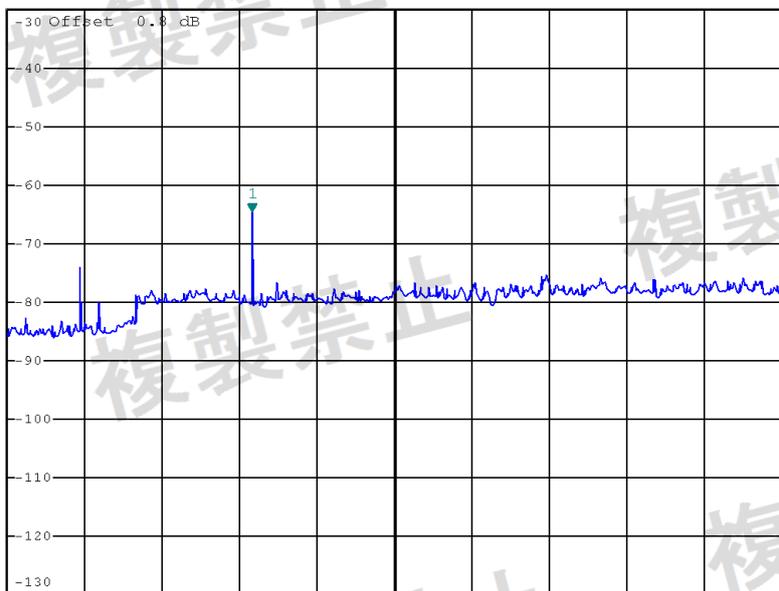
Start 30 MHz 97 MHz/ Stop 1 GHz

Date: 5.JAN.2022 11:55:51



1 PK
MAXH

Ref -30 dBm *Att 0 dB *REW 1 MHz Marker 1 [T1]
*VEW 1 MHz -64.58 dBm
SWT 240 ms 4.792000000 GHz



Start 1 GHz 1.2 GHz/ Stop 13 GHz

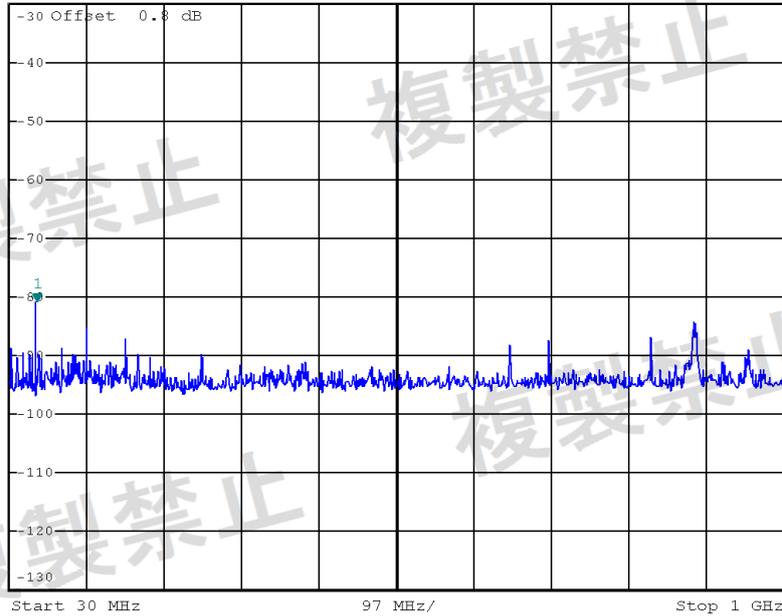
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Secondary Radiated Emissions

MID



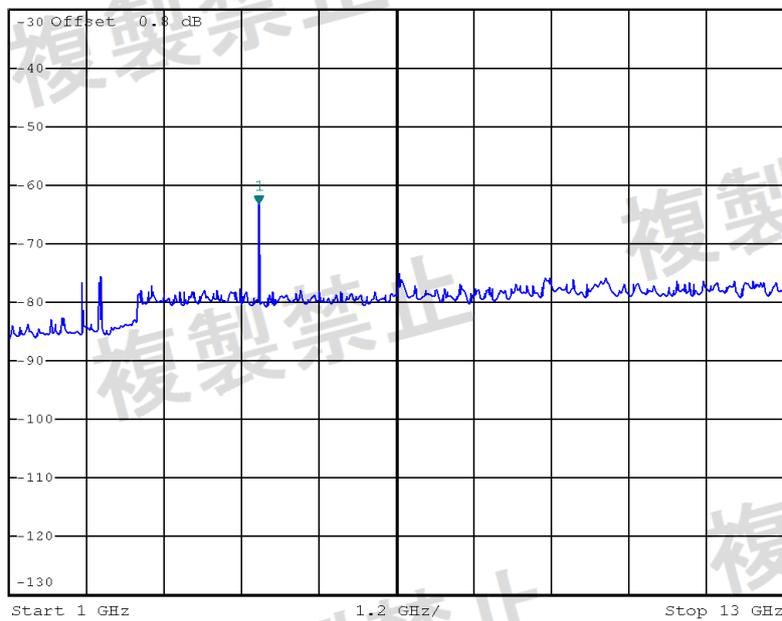
Ref -30 dBm *Att 0 dB *REW 100 kHz Marker 1 [T1] -80.75 dBm
*VEW 100 kHz 63.95000000 MHz
SWT 100 ms



Date: 5.JAN.2022 11:58:04



Ref -30 dBm *Att 0 dB *REW 1 MHz Marker 1 [T1] -63.27 dBm
*VEW 1 MHz 4.864000000 GHz
SWT 240 ms



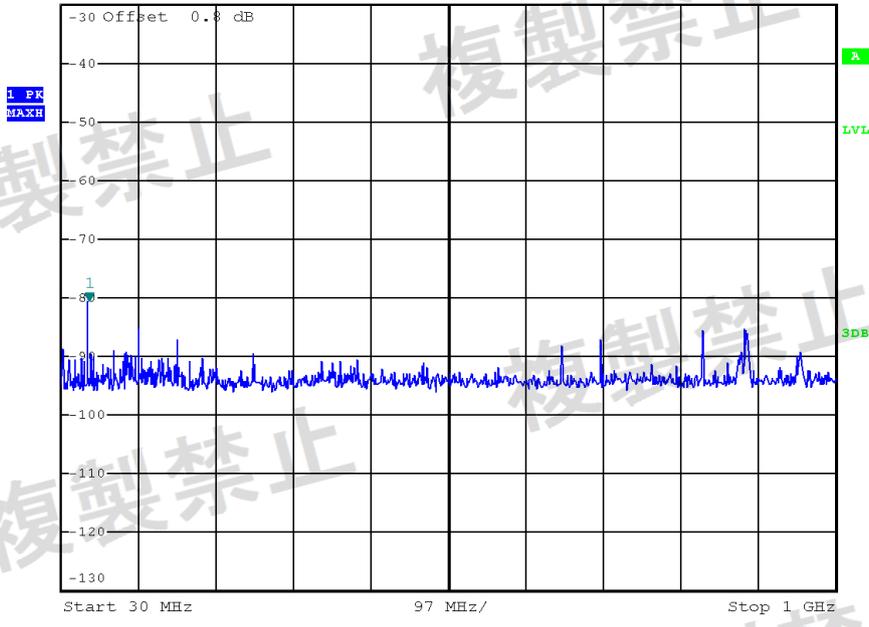
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Secondary Radiated Emissions

HIGH



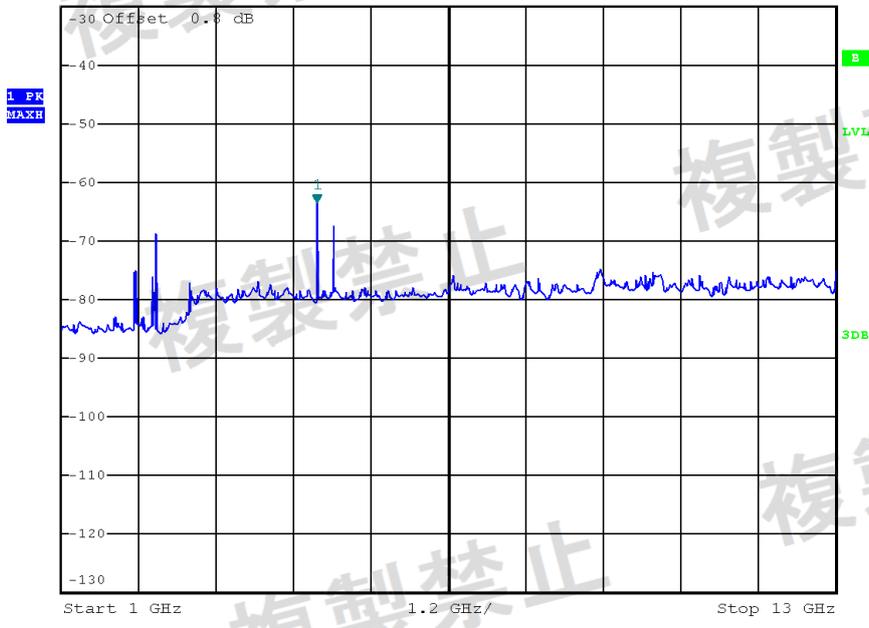
*REW 100 kHz Marker 1 [T1]
*VEW 100 kHz -80.64 dBm
SWT 100 ms 63.95000000 MHz



Date: 5.JAN.2022 12:00:49



*REW 1 MHz Marker 1 [T1]
*VEW 1 MHz -63.59 dBm
SWT 240 ms 4.960000000 GHz



Date: 5.JAN.2022 12:01:06