Test Report

Test Date	2019-07-02
Test Location	KRL RF TEST ROOM
Temp. / Humid.	26.7 ℃ 53 %

Specified Radio Eqipment	Class	Article 2 Paragraph 1 Item 19		Test Mode	GFSK(BDR)		Test Conducted By	MooHong, Kim
	Model	Cork Light		Frequency	2 402 MHz ~ 2 480 MHz (1MHz separation 79CH)		Name	KRL Co.,Ltd.
	Antenna Gain	2.58	dBi	Rated Power (mW/MHz)	0.03	mW	Department	RF
	E.I.R.P	-12.65	dBm	Rated Power (dBm/MHz)	-15.23	dBm	Emission Designator	F1D

1. Test Results

Testing for Electrical Specification	Test Voltage		V	Low Voltage - 10 % (3.33 Vdc)			Normal Voltage (3.70 V)			High Voltage + 10 % (4.07 V)			Remarks
	1. Frequency Tolerance		MHz	2402.00	2441.00	2480.00	2402.00	2441.00	2480.00	2402.00	2441.00	2480.00	All test items have been conducted by hopping freq and three frequencies; low middle high.
			ppm	-18.014	-17.726	-17.447	-18.014	-17.726	-17.447	-18.014	-17.726	-17.447	
	2. Occupied Bandwidth		MHz	78.365			78.365			78.365			
	3. Spread-spectrum Bandwidth		MHz	71.314			71.474			71.314			
	4. Spurious Emission Intensity	※1	μW	0.007638			0.008610			0.005358			
		※2	μW	2.546830			2.511886			2.546830			
		※3	μW	0.039355			0.028576			0.033113			
		※4	μW	0.043652			0.044157			0.043752			
	5. Antenna Power		W/MHz	0.000017			0.000017			0.000017			
	Antenna Power Error		W	-0.012589			-0.013179			-0.012788			
			%	-41.96			-43.93			-42.63			
	6. Limitation of Collateral Emission of Receiver	※5	nW	0.114288			0.189671			0.180302			Measured by the continuous receiving mode.
		※6	nW	0.093325			0.217771			0.143219			
	7. Hopping Frequency Dwell Time		sec	0.166654			0.166389			0.166016			Data Rate 1Mbps
	8. Radio Interference Prevention Function		ID Code	MAC ADDRESS : 61:ac:ce:24:c2:58									Carrier sense is not required

※1: Frequency Band 1 (10MHz ~ less than 2,387MHz) : Equal or less than 2.5μW/MHz(≒ -26dBm)
※2: Frequency Band 2 (2,387MHz ~ less than 2,400MHz) : Equal or less than 25 μW/MHz(≒ -16dBm)
※3: Frequency Band 3 (2,483.5MHz ~ 2,496.5MHz) : Equal or less than 25 μW/MHz(≒ -16dBm)
※4: Frequency Band 4 (more than 2,496.5MHz ~ 13GHz : Equal or less than 2.5μW/MHz(≒ -26dBm)
※5: Frequency Band 5 (10MHz ~ less than 1GHz) : Equal or less than 4nW(≒ -53.98dBm)
※6: Frequency Band 6 (1GHz ~ 13GHz) : Equal or less than 20nW(≒ -46.99dBm)

Measurement equipment list

USE	Equipment	Company	Model No.	Serial No.	Calibrated by	Cal. Method	Cal. Due	Cal. Date
	FREQUENCY COUNTER	EIP	28B	9205-00369	KTICC	ハ(c)	Oct. 2019	Oct. 18, 2018
	SPECTRUM ANALYZER	ROHDE&SCHWARZ	FSP	100665	KTICC	ハ(c)	Nov. 2019	Nov. 13, 2018
X	Auto Range DC Power Supply	ITECH	IT6721	600104011 726910097	BCS	ハ(c)	Nov. 2019	Nov. 26, 2018
	AC POWER SUPPLY	DAELIM	D-45	KRL-002	KTICC	ハ(c)	Aug. 2019	Aug. 9, 2018
	TEMP & HUMI. CHAMBER	HITACHI	EC-25MHHPS	U5539026	KTICC	ハ(c)	Oct. 2019	Oct. 12, 2018
X	SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ26	100044	KTICC	ハ(c)	Jan. 2020	Jan. 10, 2019
X	USB Average Power Sensor	KEYSIGHT	U2004A	MY53340013	BCS	ハ(c)	Oct. 2019	Oct. 18, 2018
	POWER DIVIDER	HP	11636A	03871	BCS	ハ(c)	Jan. 2020	Jan. 11, 2019
	STEP ATTENUATOR	AEROFLEX	AF9010-60-31	12987	BCS	ハ(c)	Jan. 2020	Jan. 11, 2019
	WIDEBAND RADIO COMMUNICATION TEST	ROHDE&SCHWARZ	CMW500	104194	BCS	ハ(c)	Jul. 2019	Jul. 26, 2018
	FIXED ATTENUATOR	XMA CORP	4882-6140-10	KRL-010	KTICC	ハ(c)	Oct. 2019	Oct. 18, 2018

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)

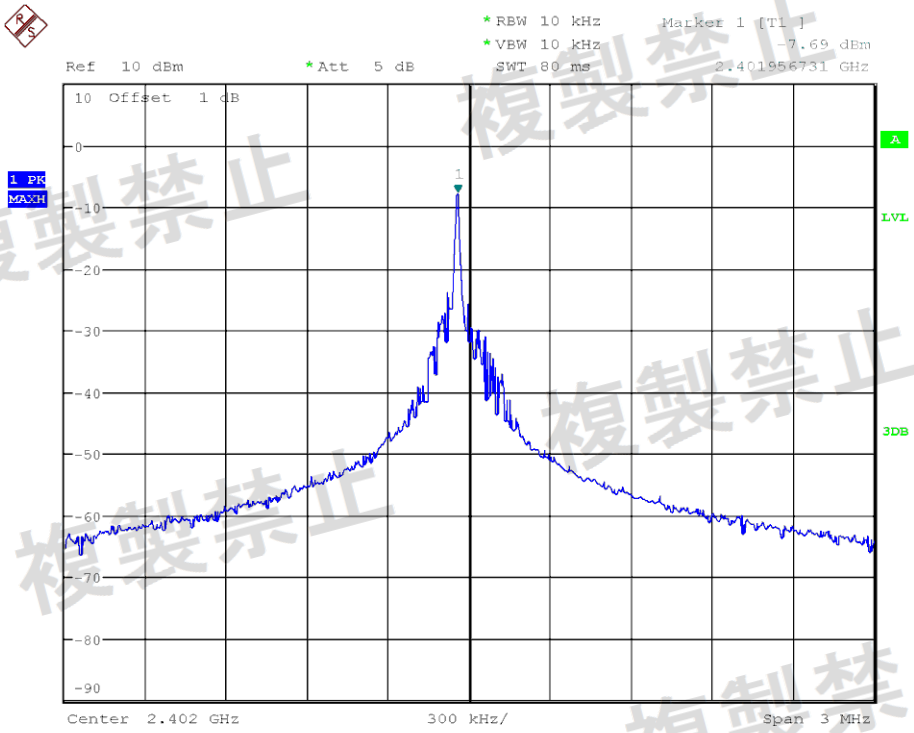
c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)

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)

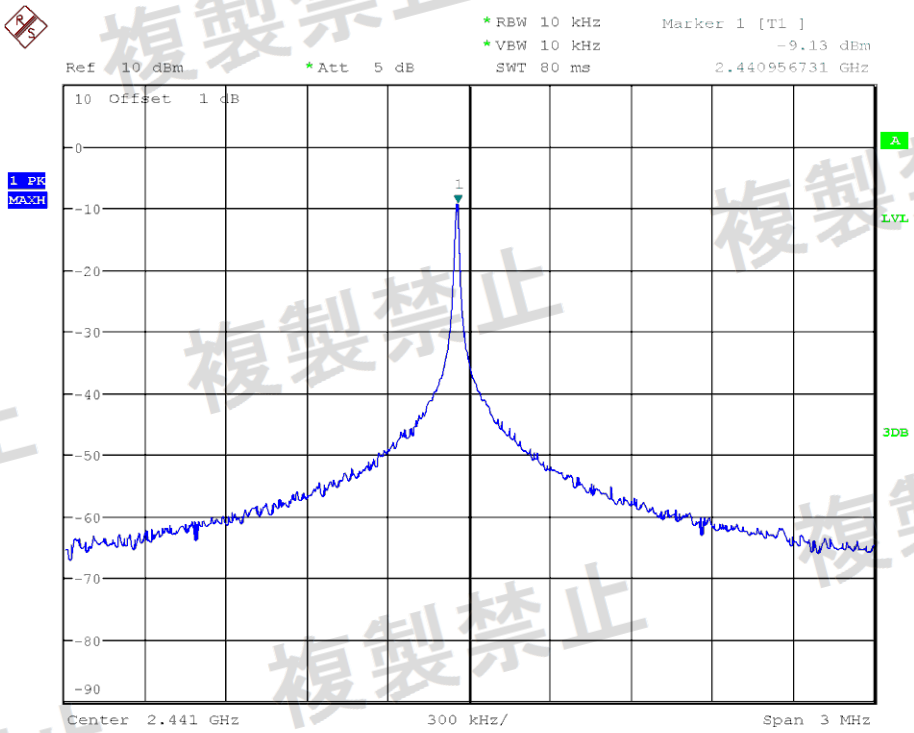
Test Result

Frequency Tolerance

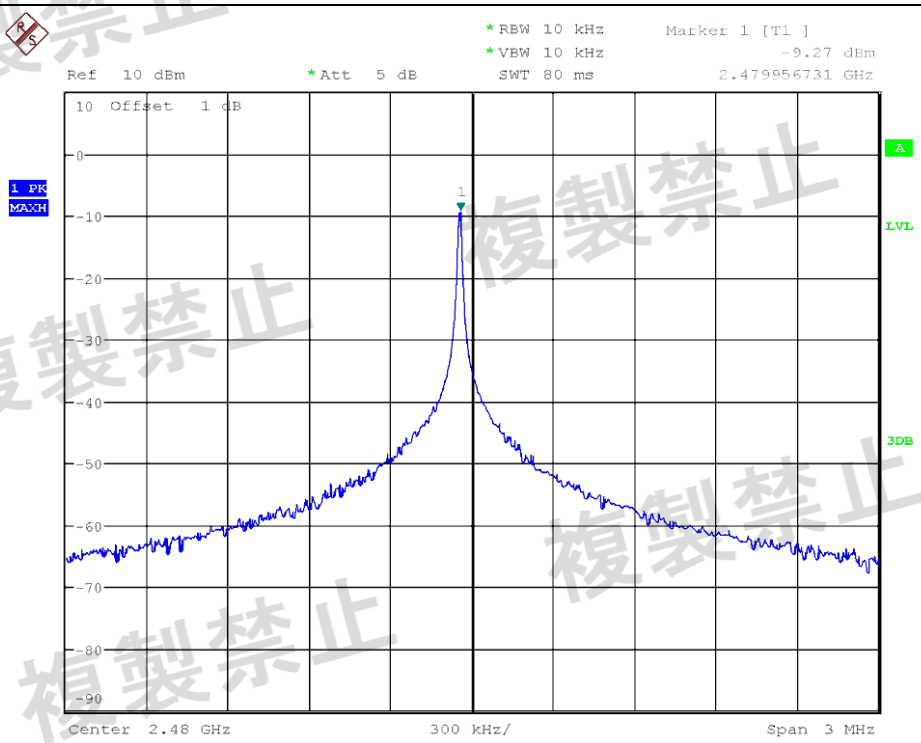
Normal Voltage / LOW CH



Normal Voltage / MID CH

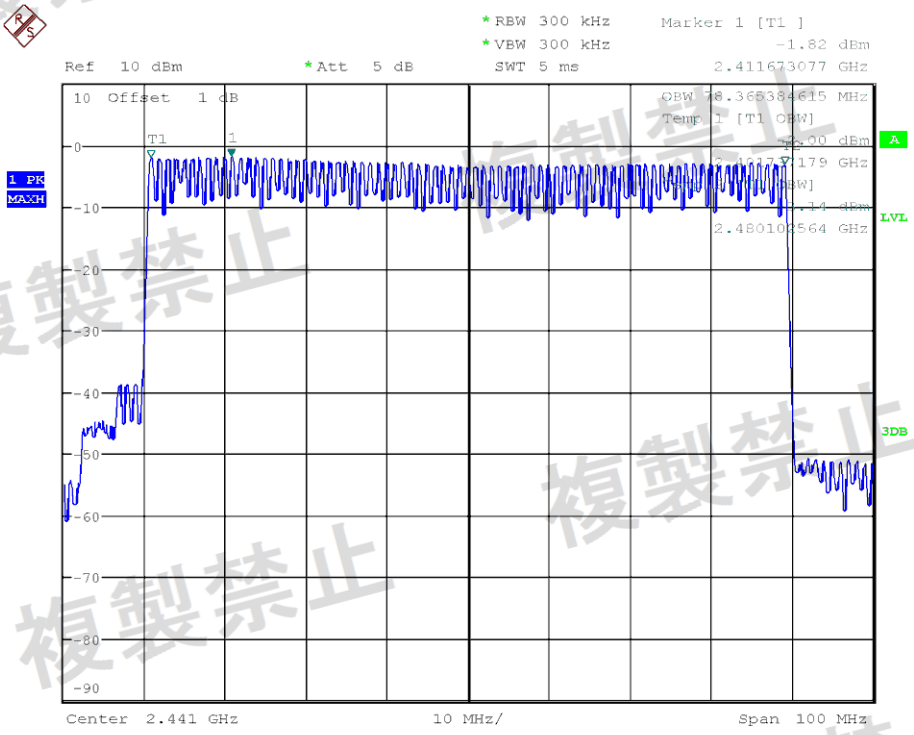


Normal Voltage / HIGH CH



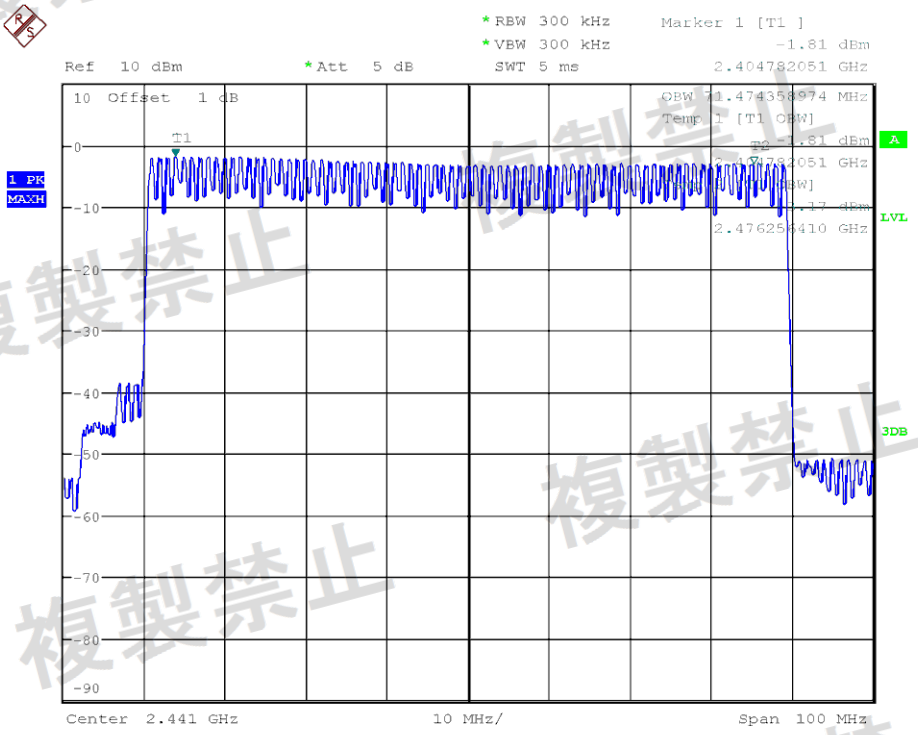
Occupied Bandwidth

Normal Voltage / HOPPING



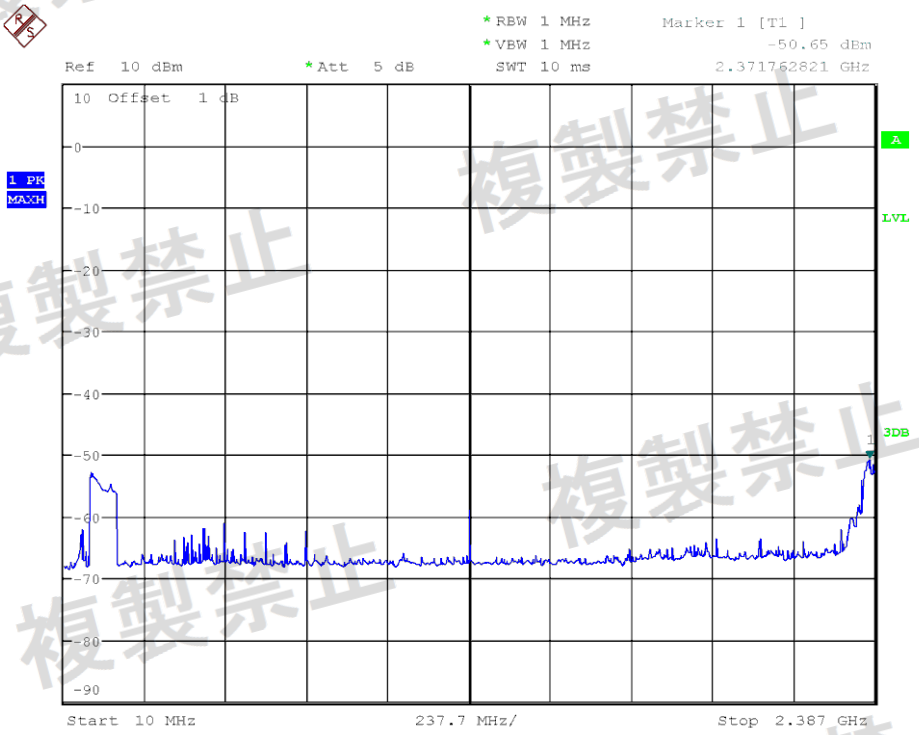
Spread-spectrum Bandwidth

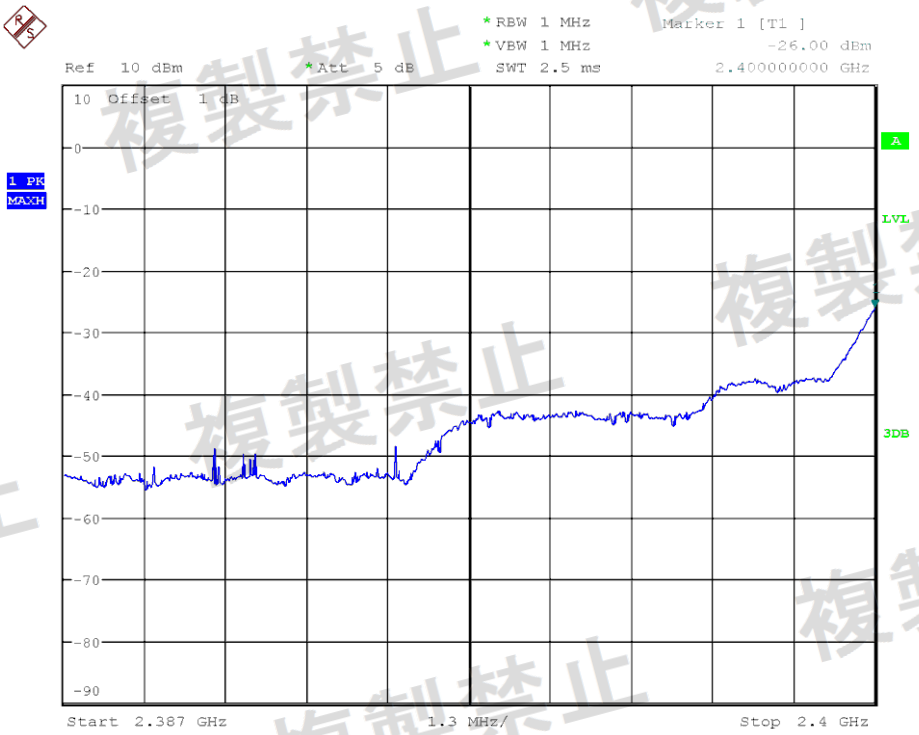
Normal Voltage / HOPPING

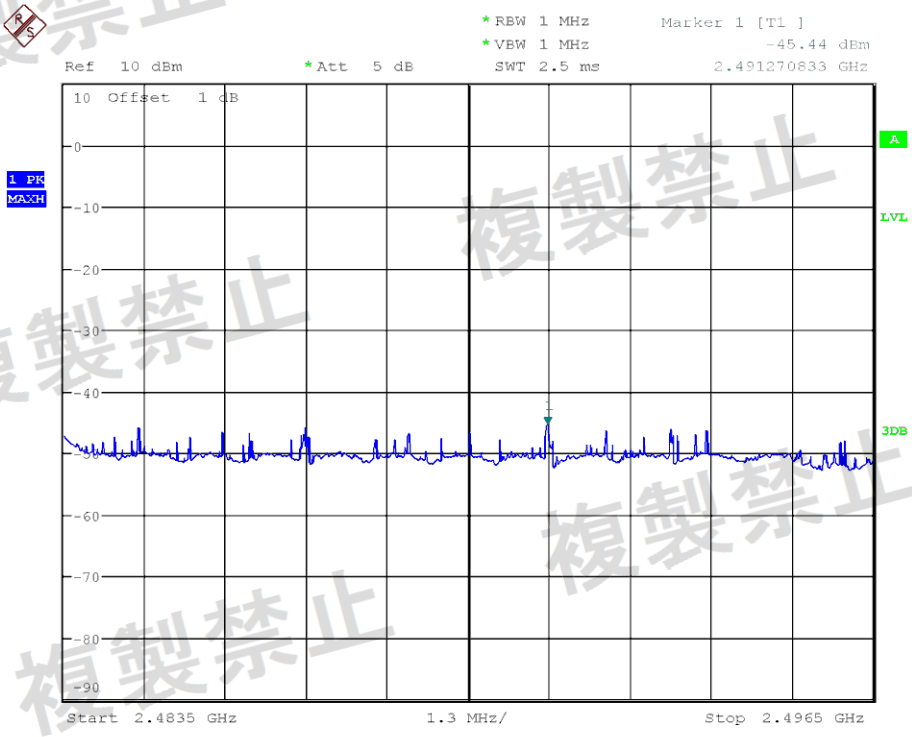


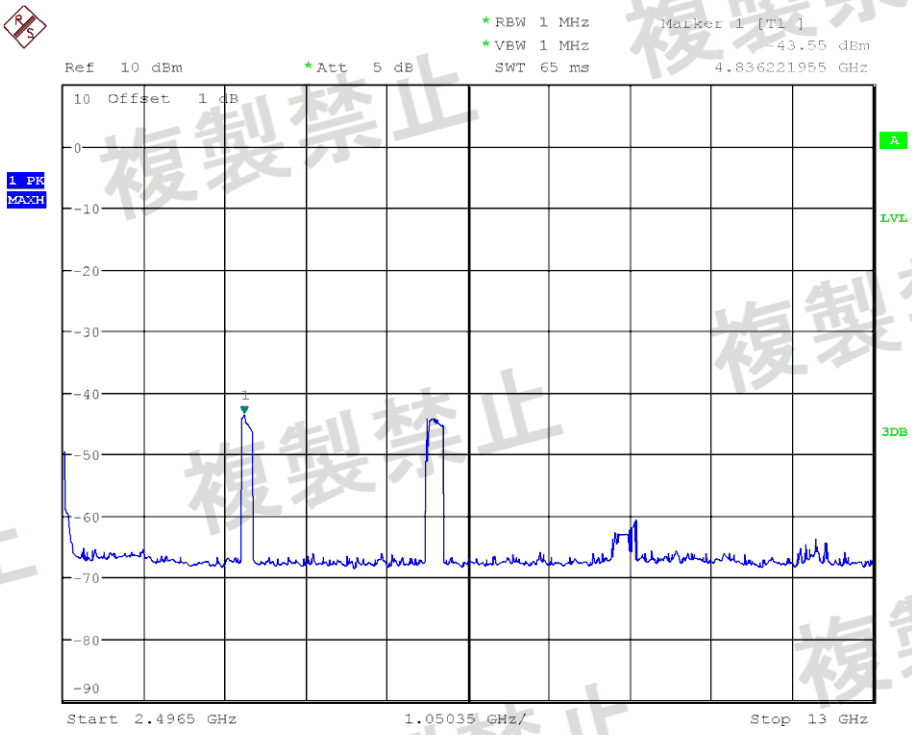
Spurious Emission Intensity

Normal Voltage / HOPPING



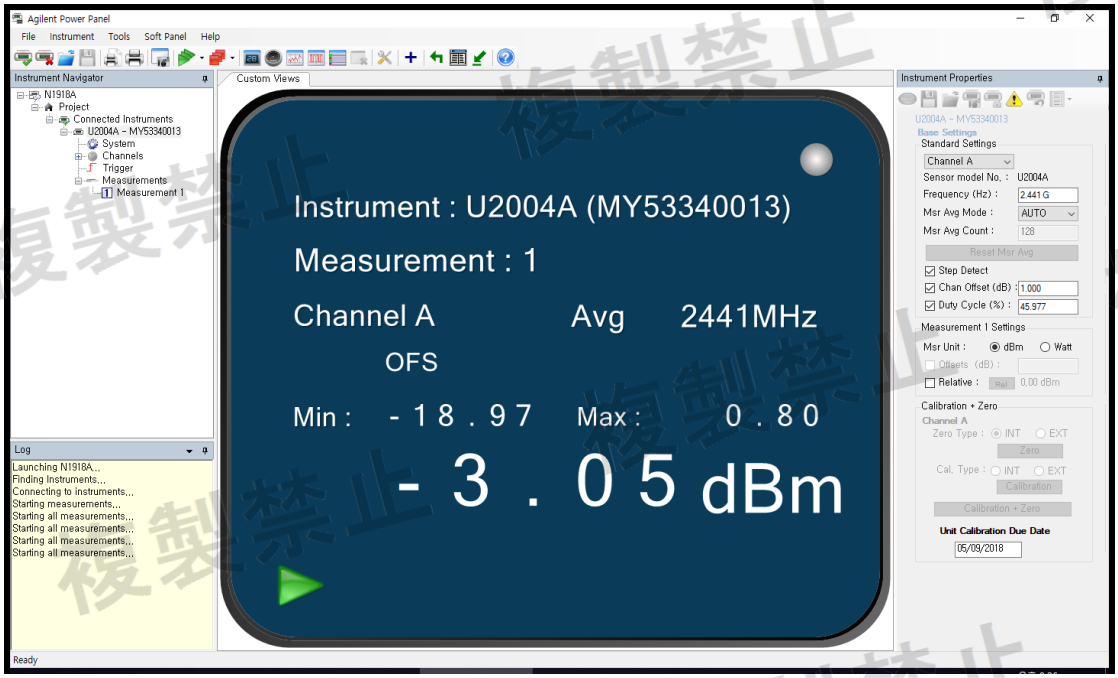



RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
-45.44 dBm
2.491270833 GHz
Ref 10 dBm
Att 5 dB
10 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Start 2.4835 GHz
1.3 MHz/
Stop 2.4965 GHz


RBW 1 MHz
VBW 1 MHz
SWT 65 ms
Marker 1 [T1]
-43.55 dBm
4.836221955 GHz
Ref 10 dBm
Att 5 dB
10 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Start 2.4965 GHz
1.05035 GHz/
Stop 13 GHz

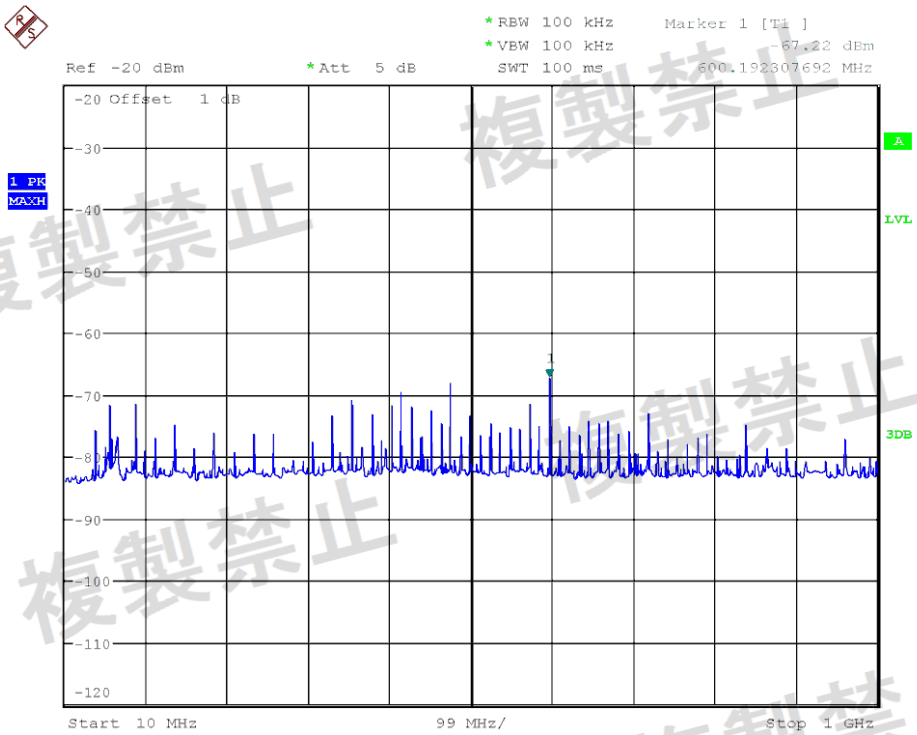
Antenna Power

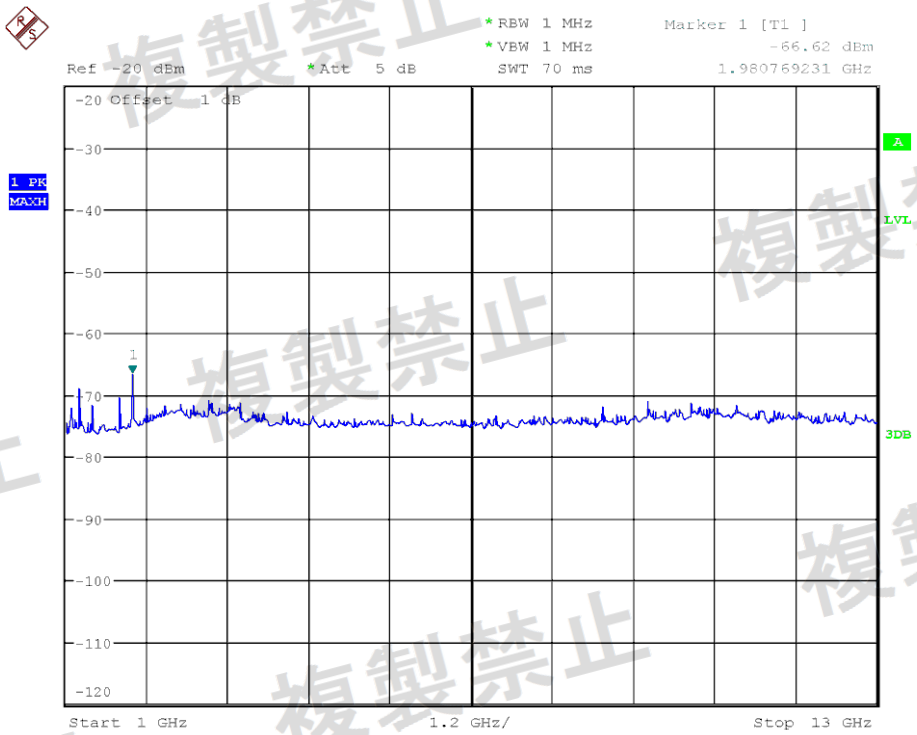
Normal Voltage / HOPPING



Limitation of Collateral Emission of Receiver

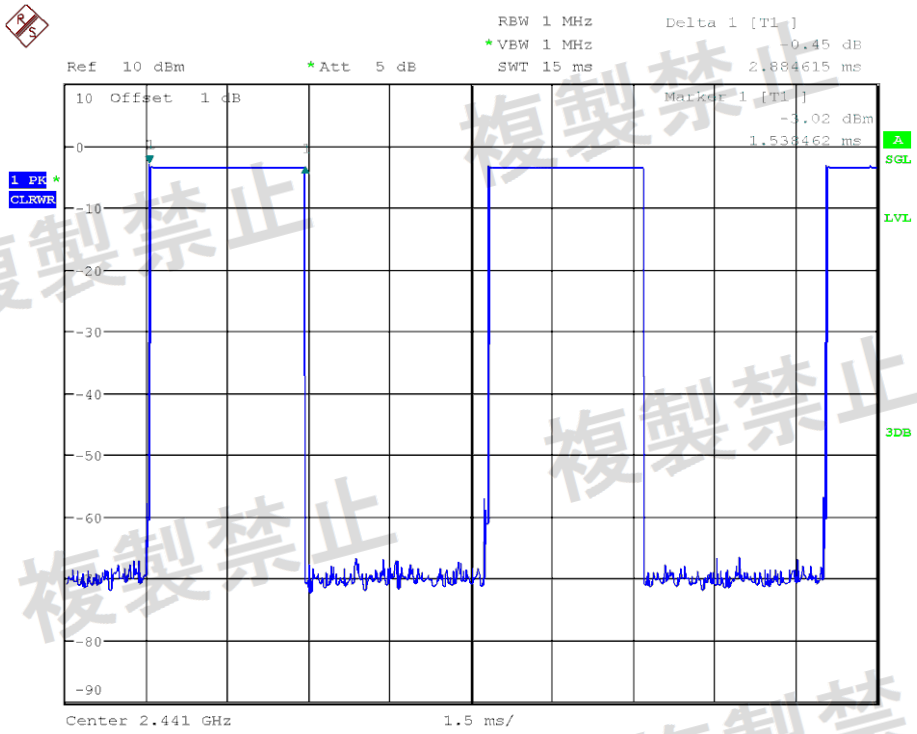
Normal Voltage / HOPPING



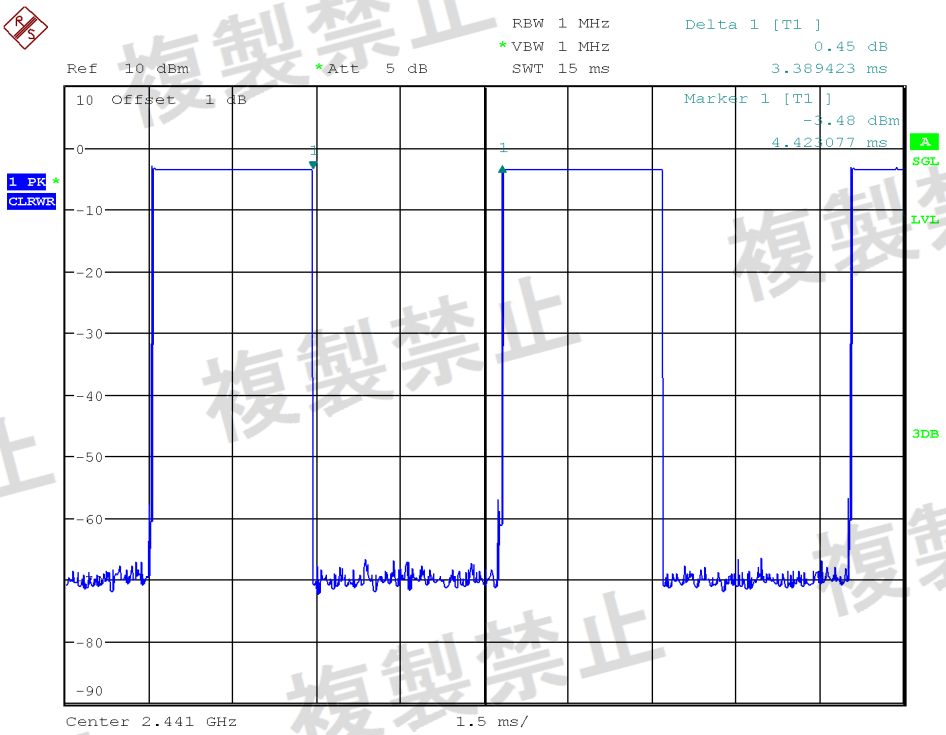


Hopping Frequency Dwell Time

Normal Voltage / ON TIME

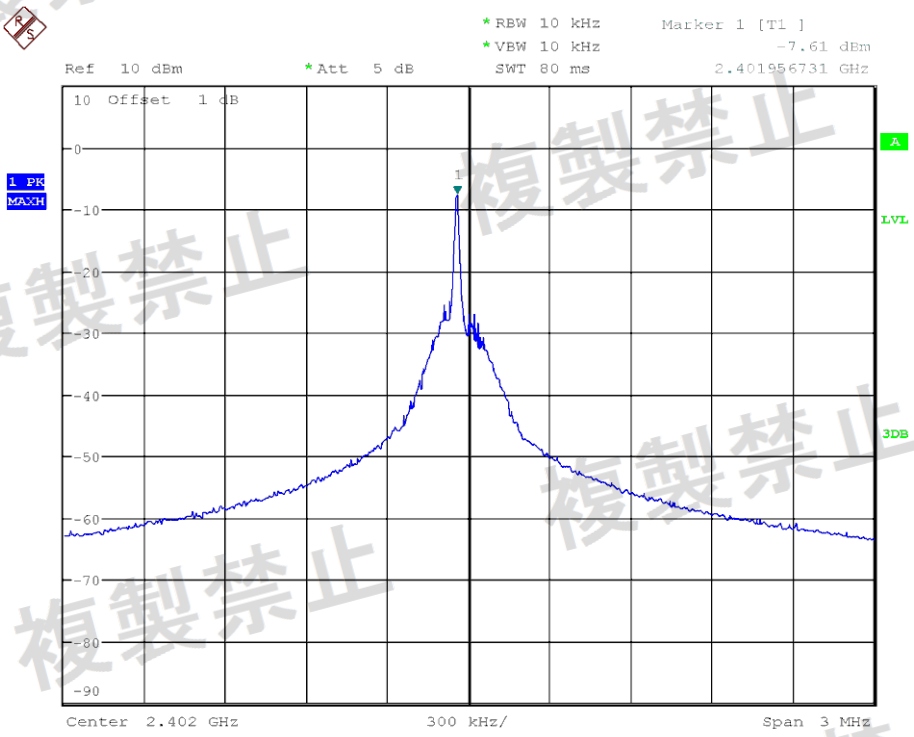


Normal Voltage / OFF TIME

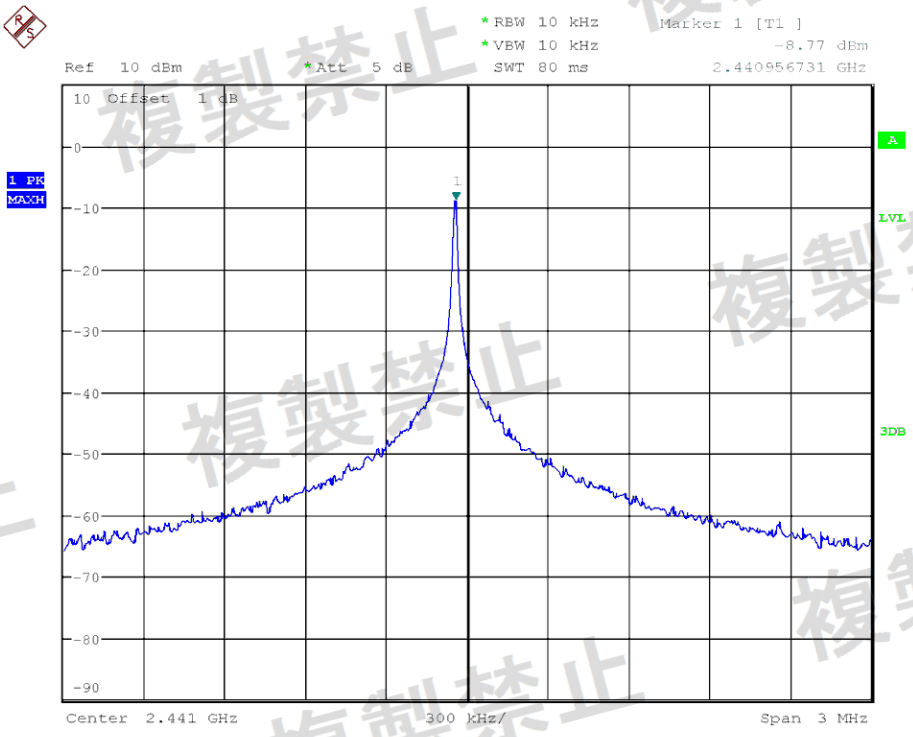


Frequency Tolerance

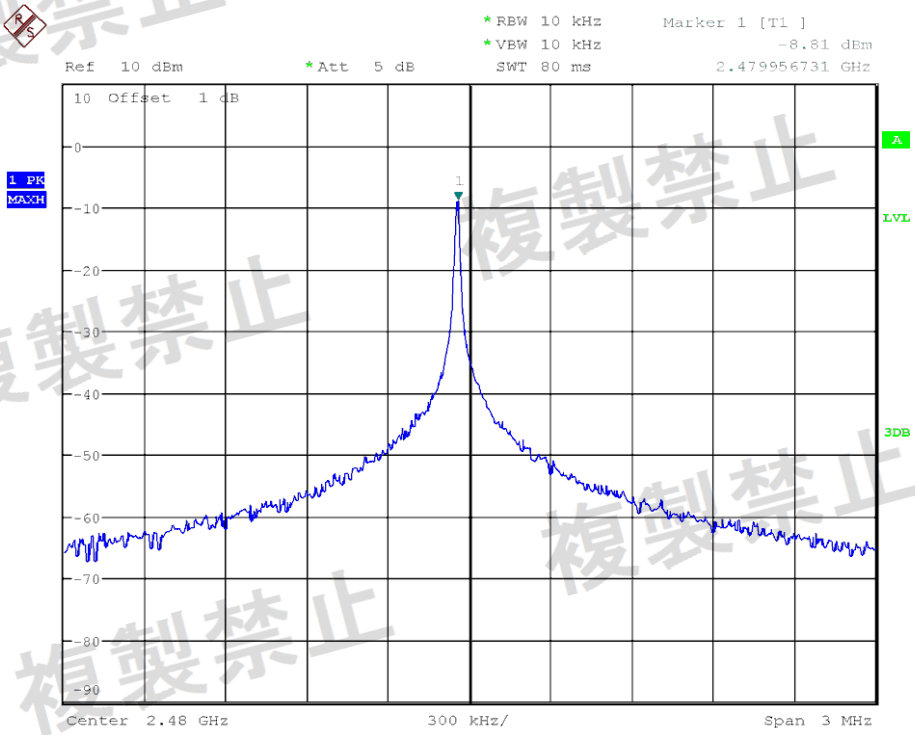
Low Voltage / LOW CH



Low Voltage / MID CH

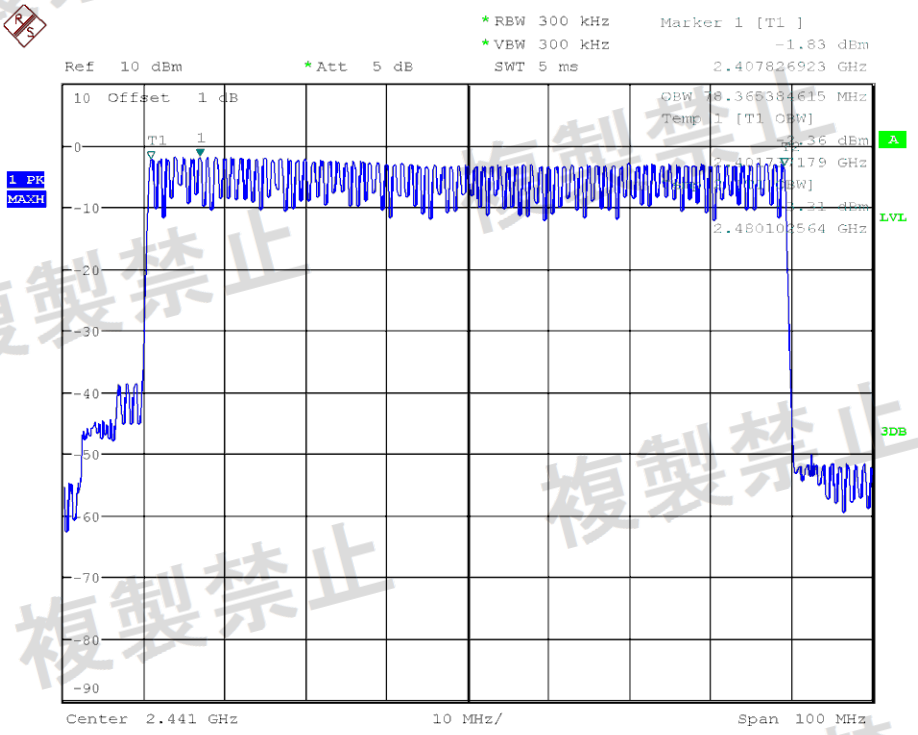


Low Voltage / HIGH CH



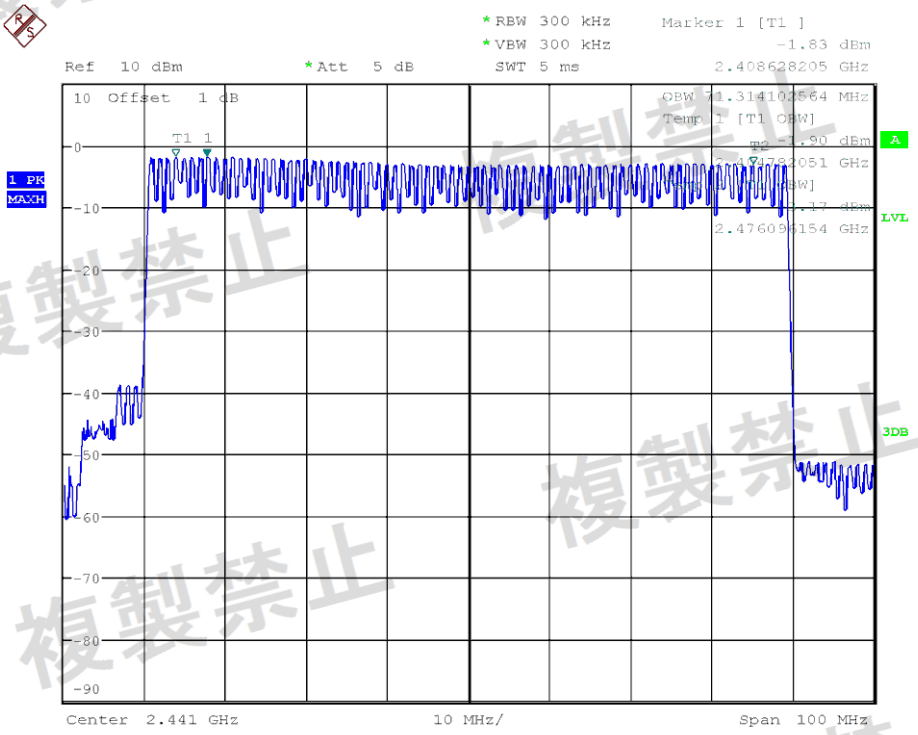
Occupied Bandwidth

Low Voltage / HOPPING



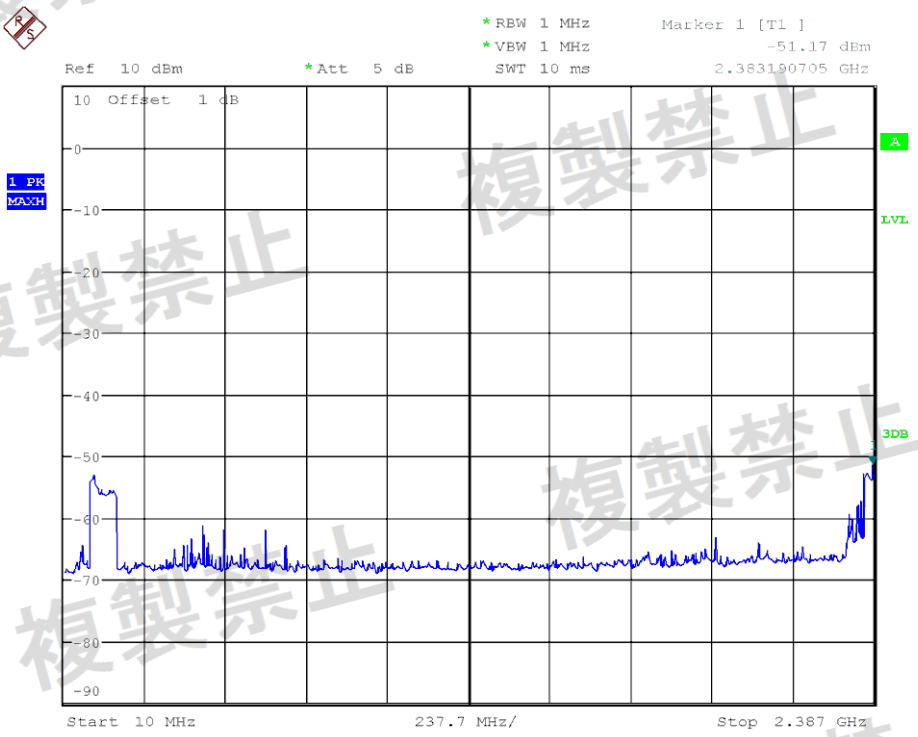
Spread-spectrum Bandwidth

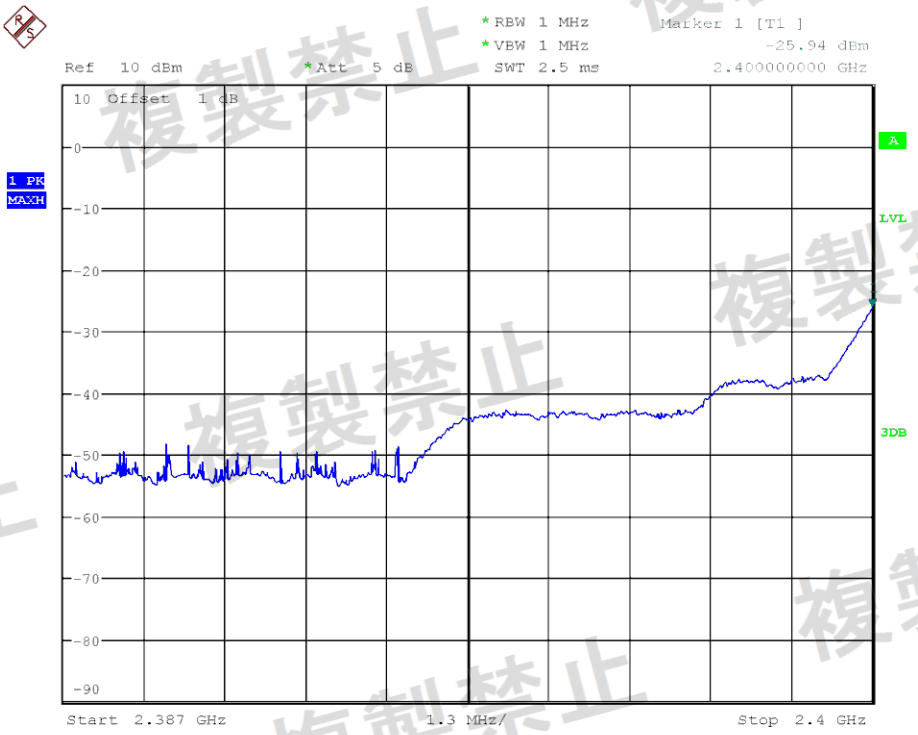
Low Voltage / HOPPING

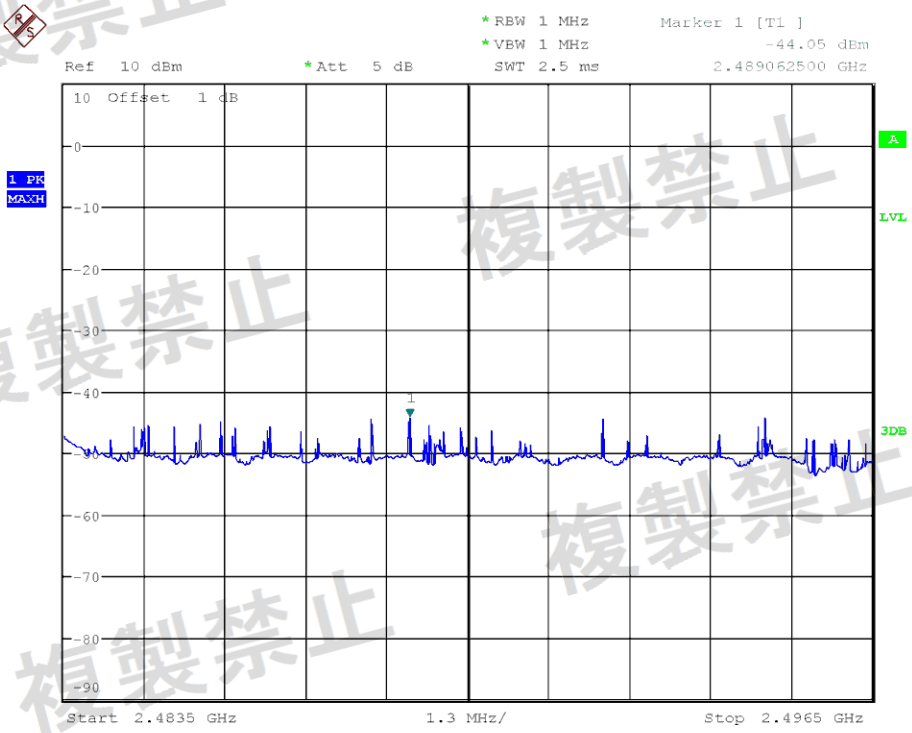


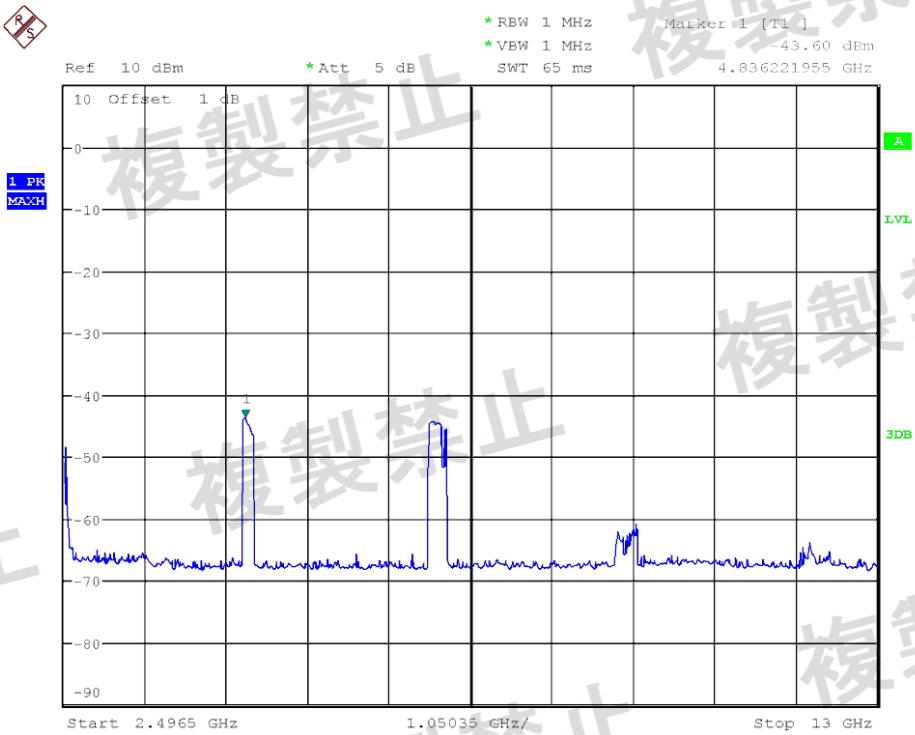
Spurious Emission Intensity

Low Voltage / HOPPING



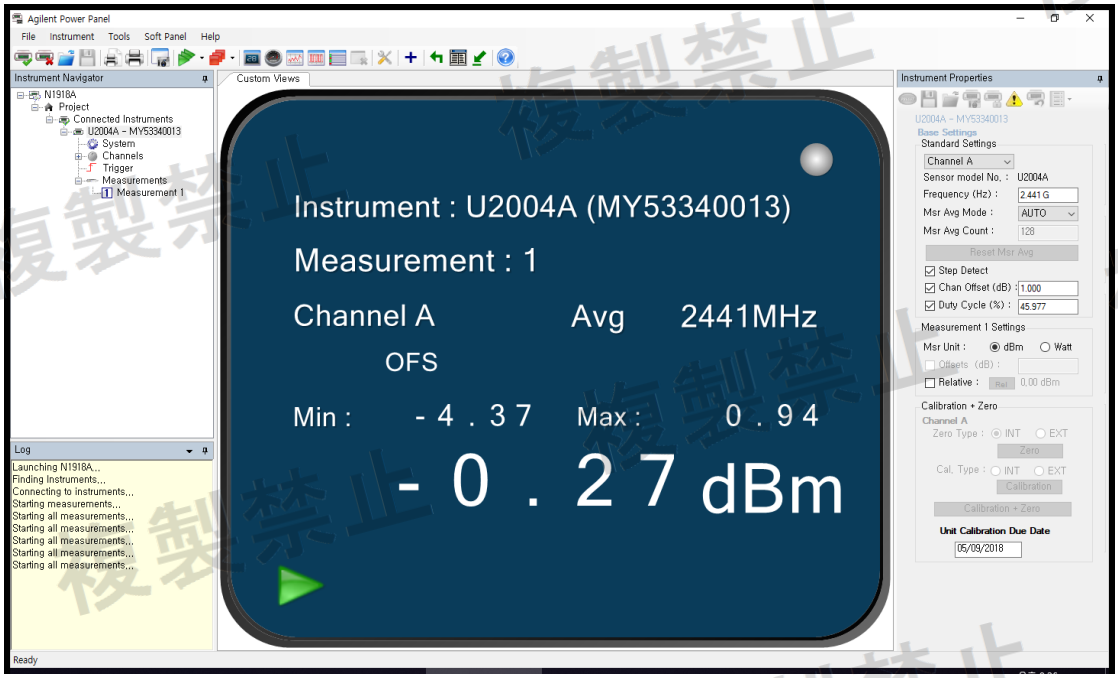



*RBW 1 MHz
*VBW 1 MHz
Marker 1 [T1]
-44.05 dBm
Ref 10 dBm
*Att 5 dB
SWT 2.5 ms
2.489062500 GHz
10 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Start 2.4835 GHz
1.3 MHz/
Stop 2.4965 GHz


*RBW 1 MHz
*VBW 1 MHz
Marker 1 [T1]
-43.60 dBm
Ref 10 dBm
*Att 5 dB
SWT 65 ms
4.836221955 GHz
10 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Start 2.4965 GHz
1.05035 GHz/
Stop 13 GHz

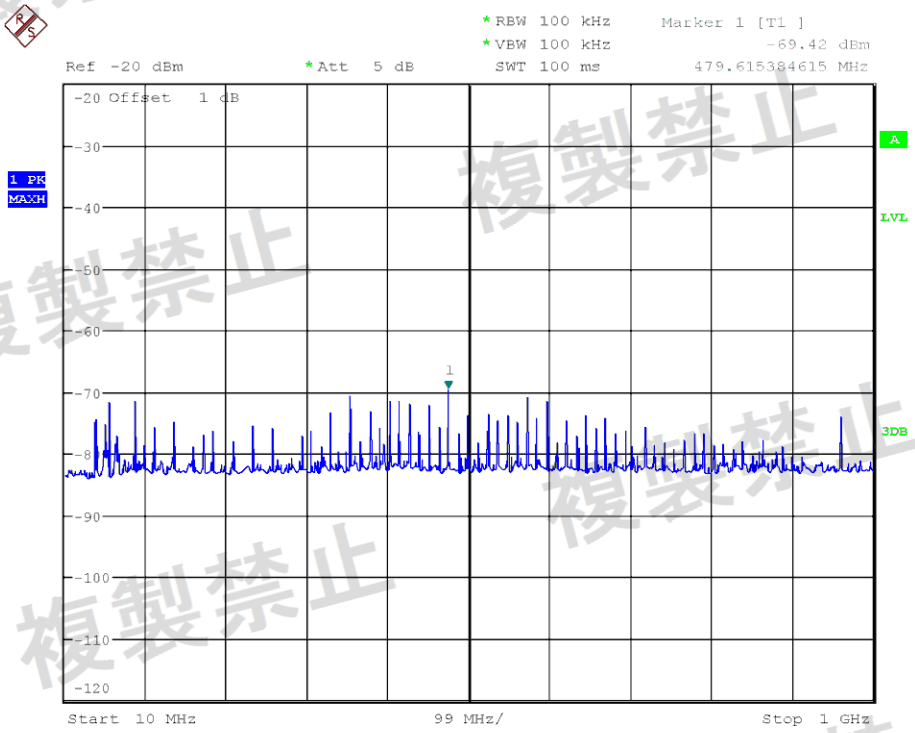
Antenna Power

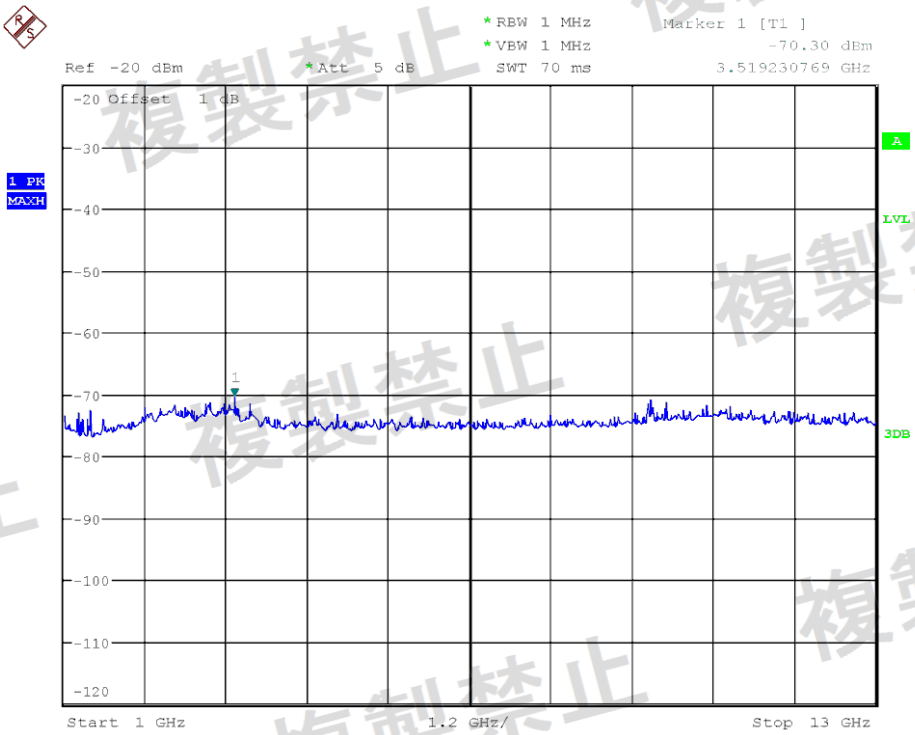
Low Voltage / HOPPING



Limitation of Collateral Emission of Receiver

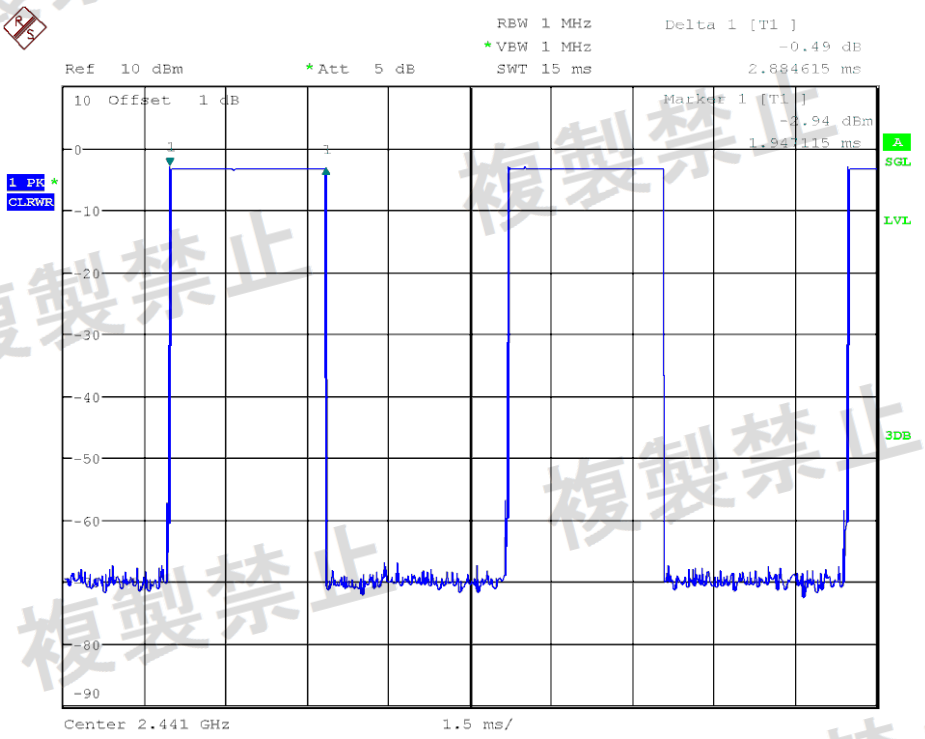
Low Voltage / HOPPING



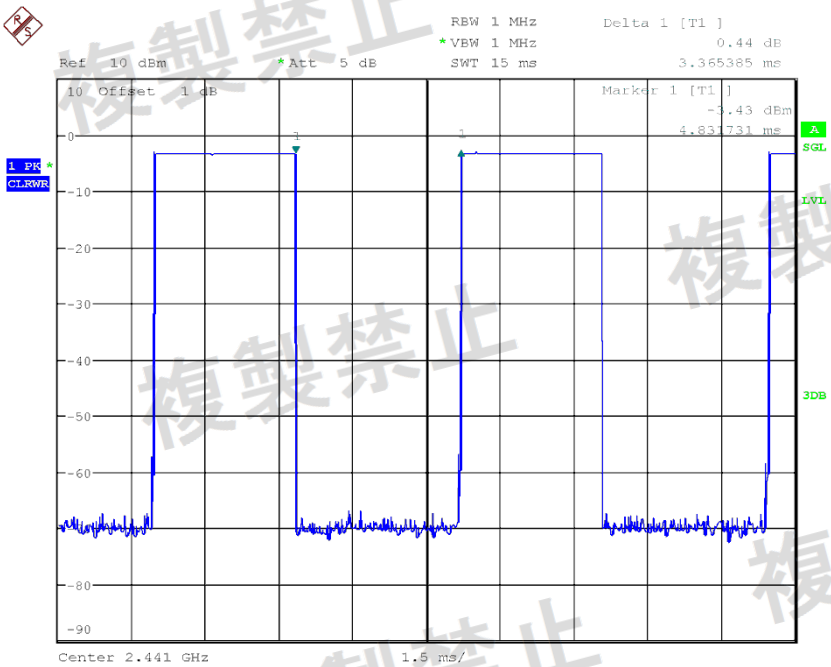


Hopping Frequency Dwell Time

Low Voltage / ON TIME

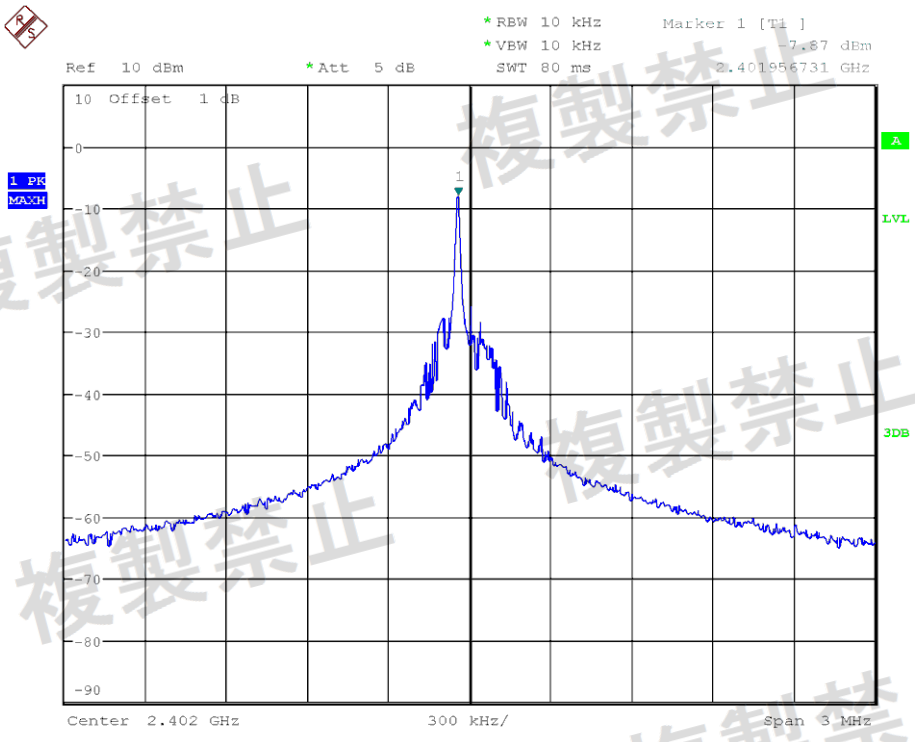


Low Voltage / OFF TIME

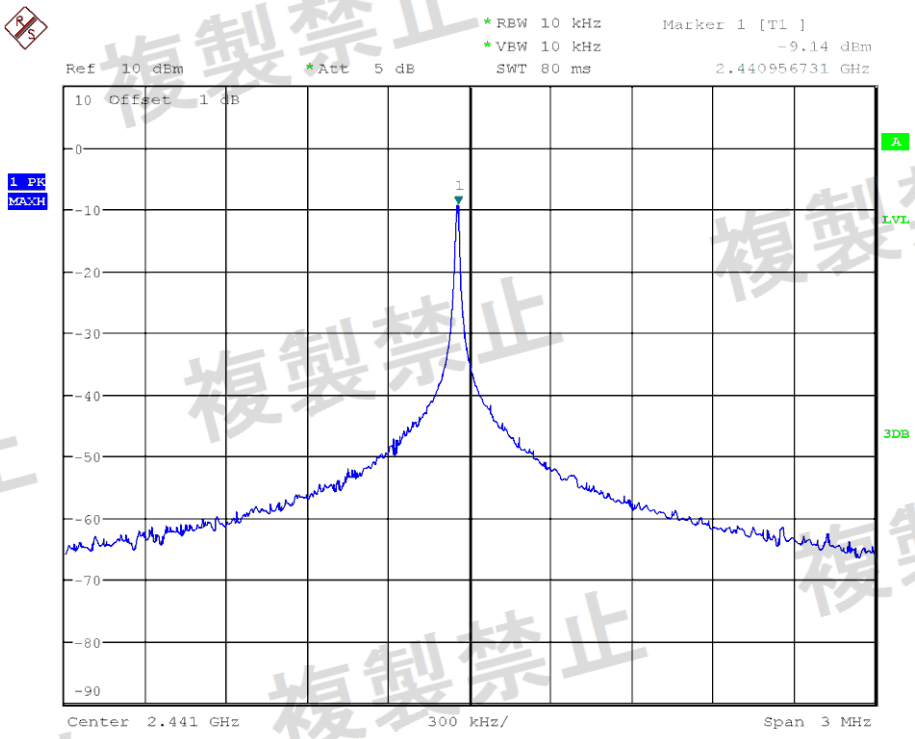


Frequency Tolerance

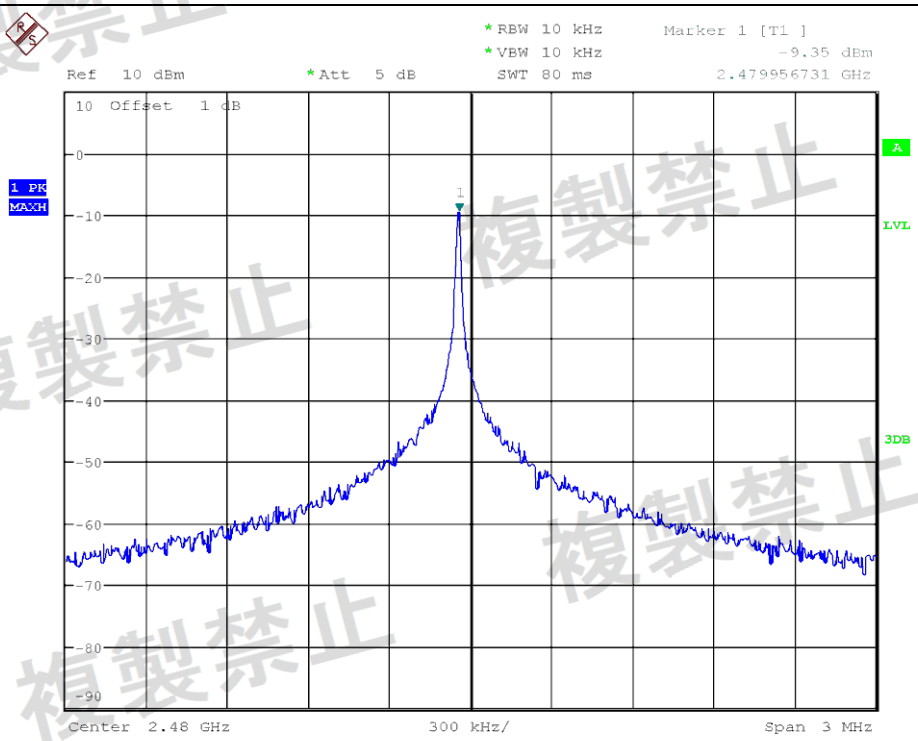
High Voltage / LOW CH



High Voltage / MID CH

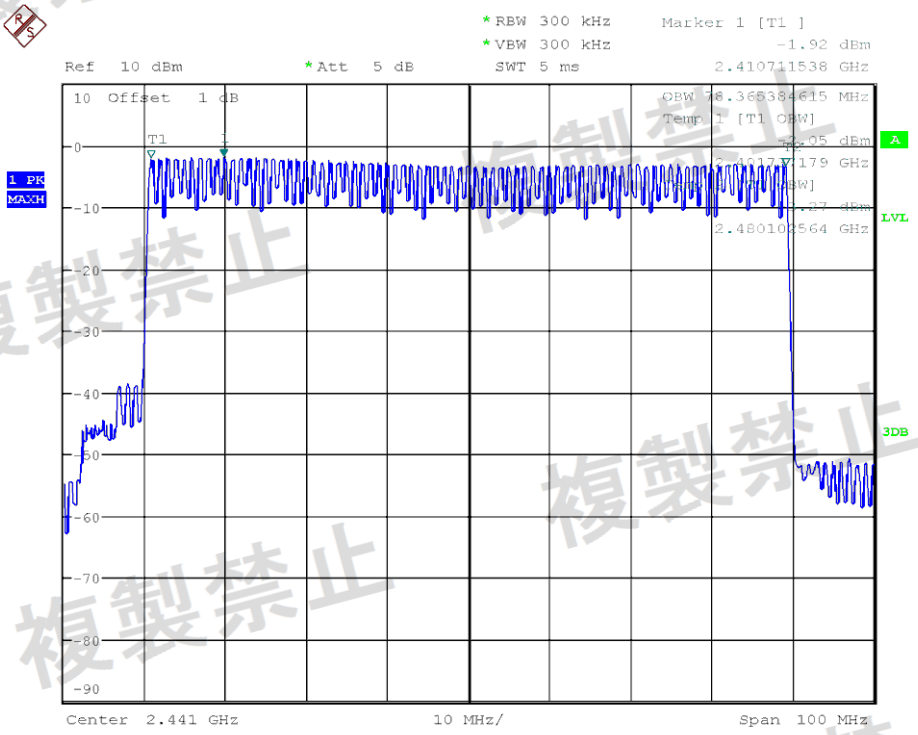


High Voltage / HIGH CH



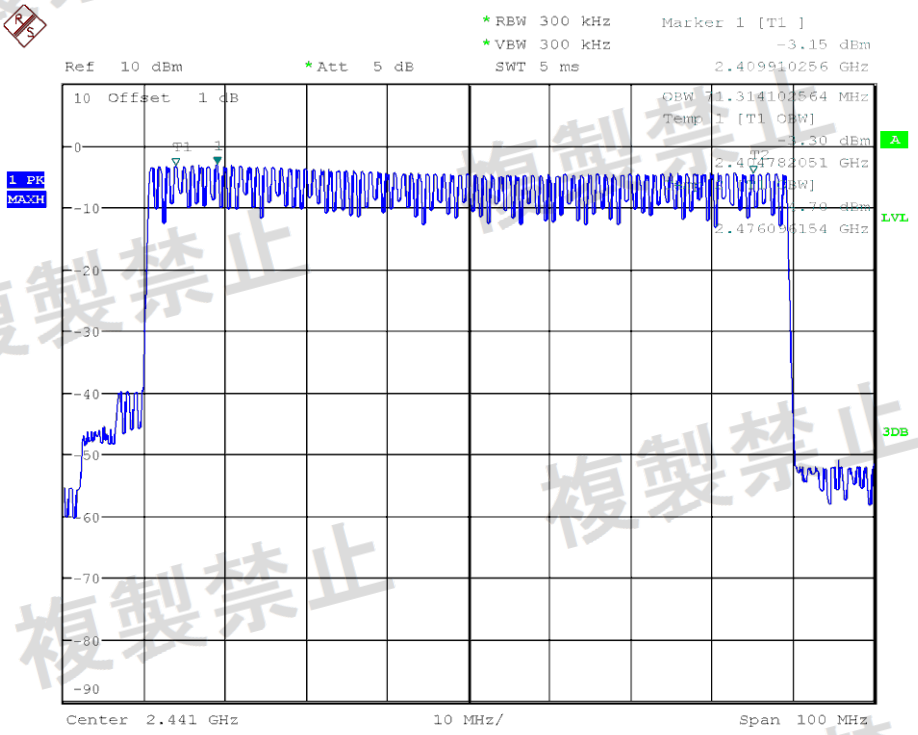
Occupied Bandwidth

High Voltage / HOPPING



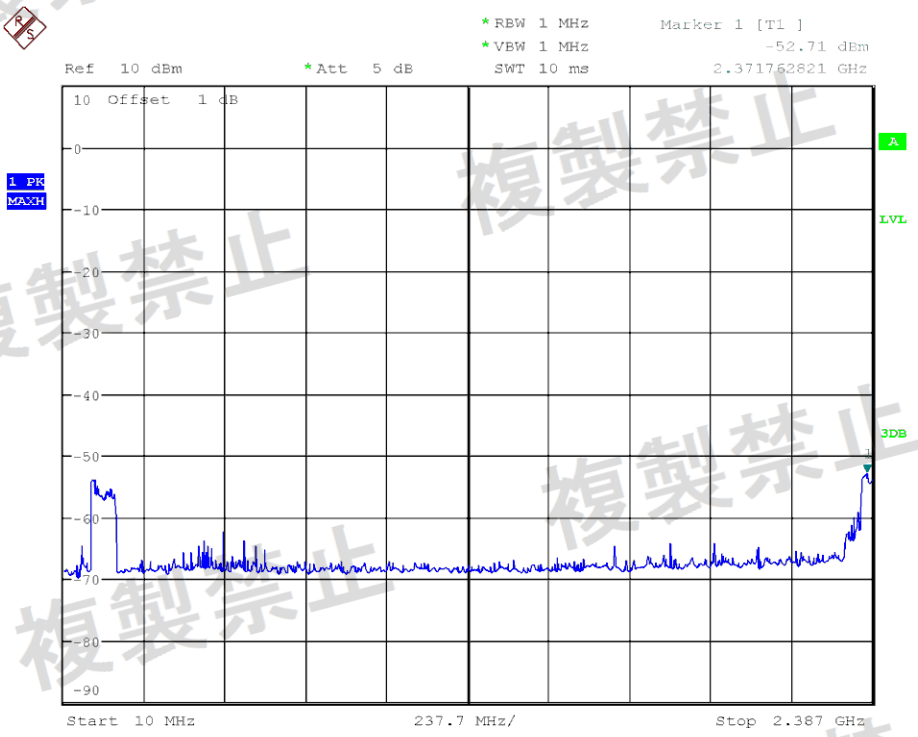
Spread-spectrum Bandwidth

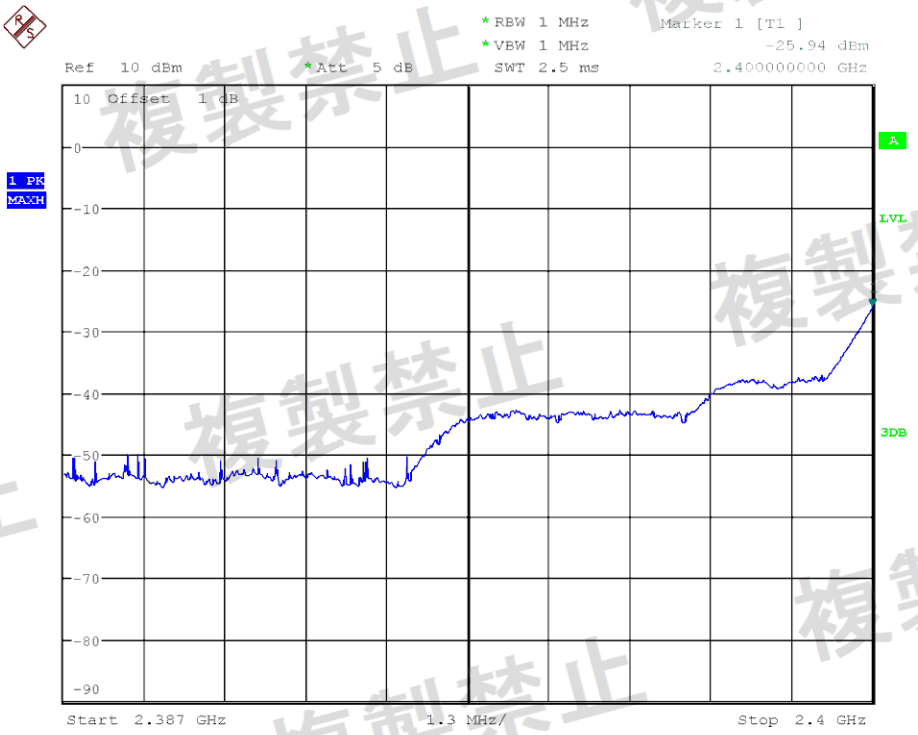
High Voltage / HOPPING

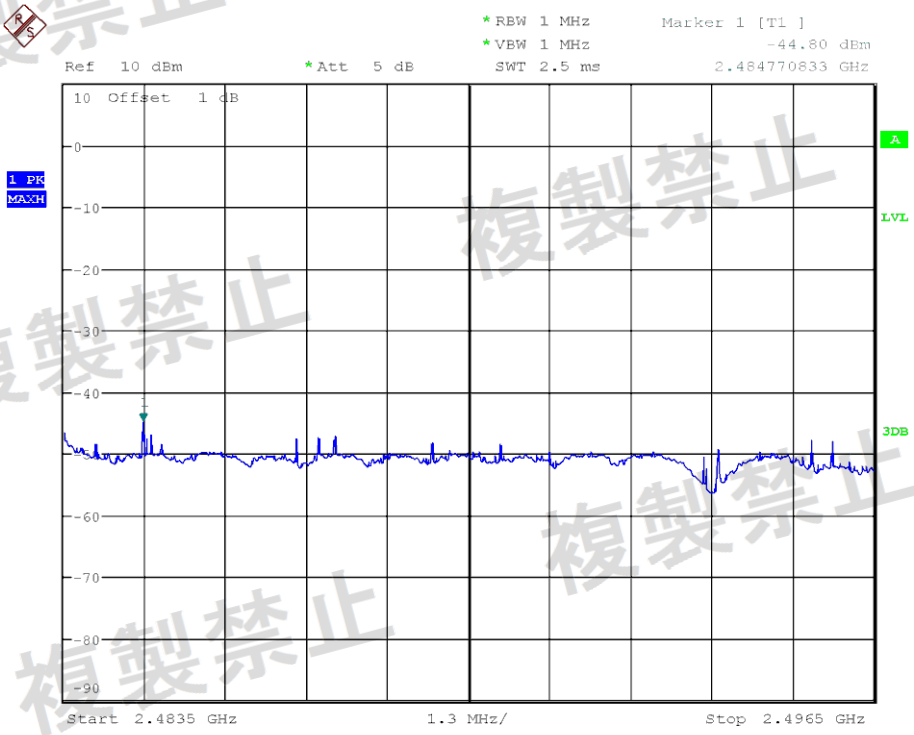


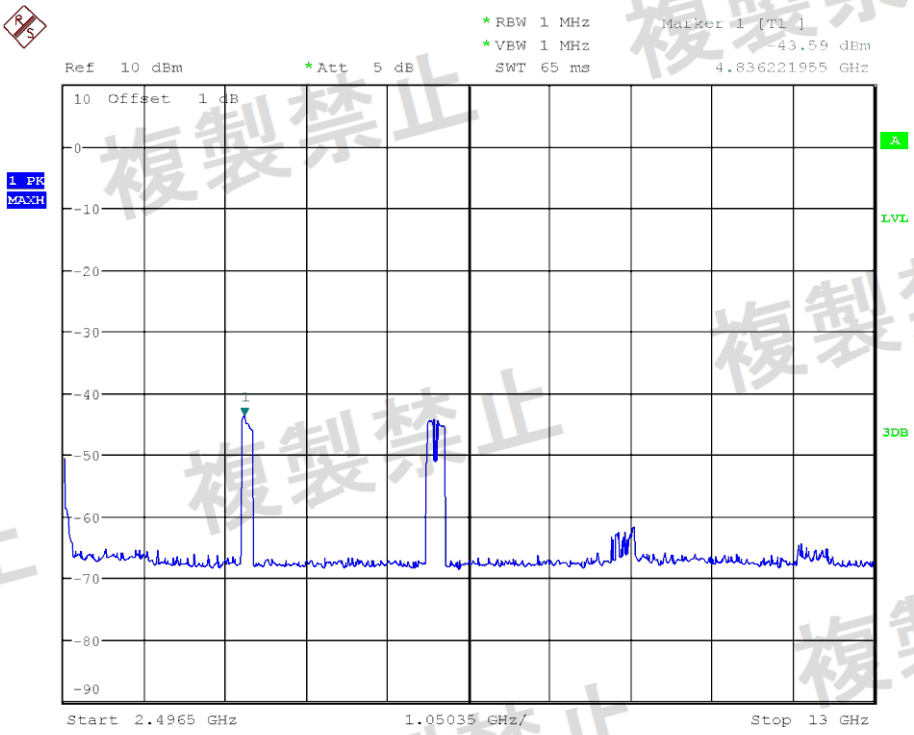
Spurious Emission Intensity

High Voltage / HOPPING



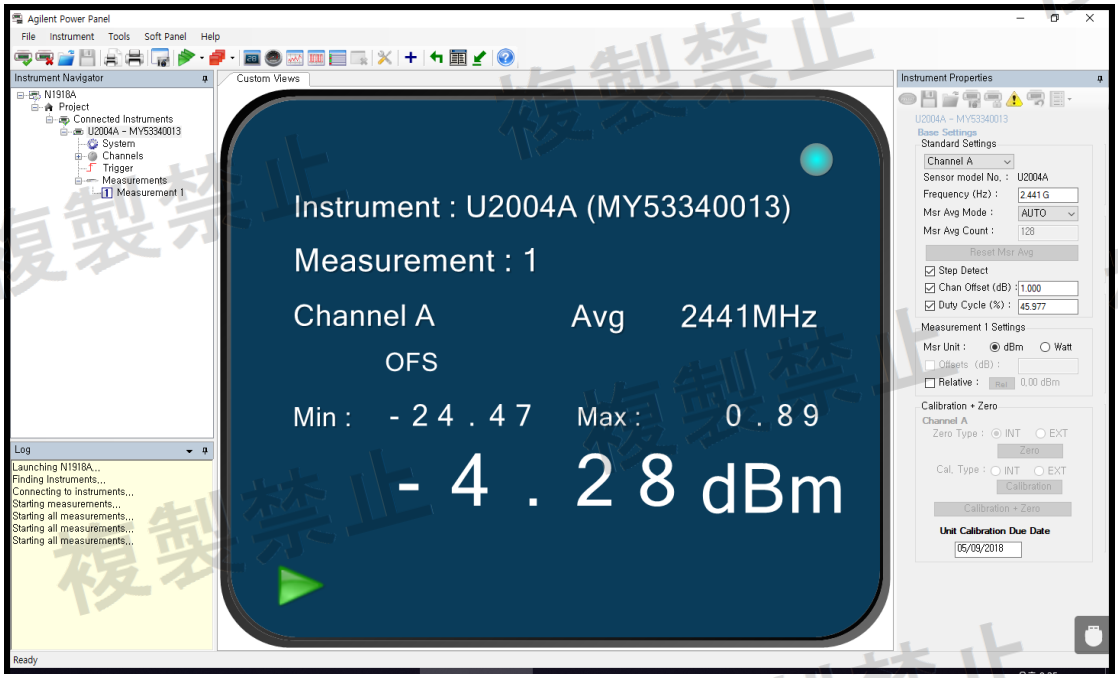



RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
-44.80 dBm
2.484770833 GHz
Ref 10 dBm
Att 5 dB
10 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Start 2.4835 GHz
1.3 MHz/
Stop 2.4965 GHz


RBW 1 MHz
VBW 1 MHz
SWT 65 ms
Marker 1 [T1]
-43.59 dBm
4.836221955 GHz
Ref 10 dBm
Att 5 dB
10 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Start 2.4965 GHz
1.05035 GHz/
Stop 13 GHz

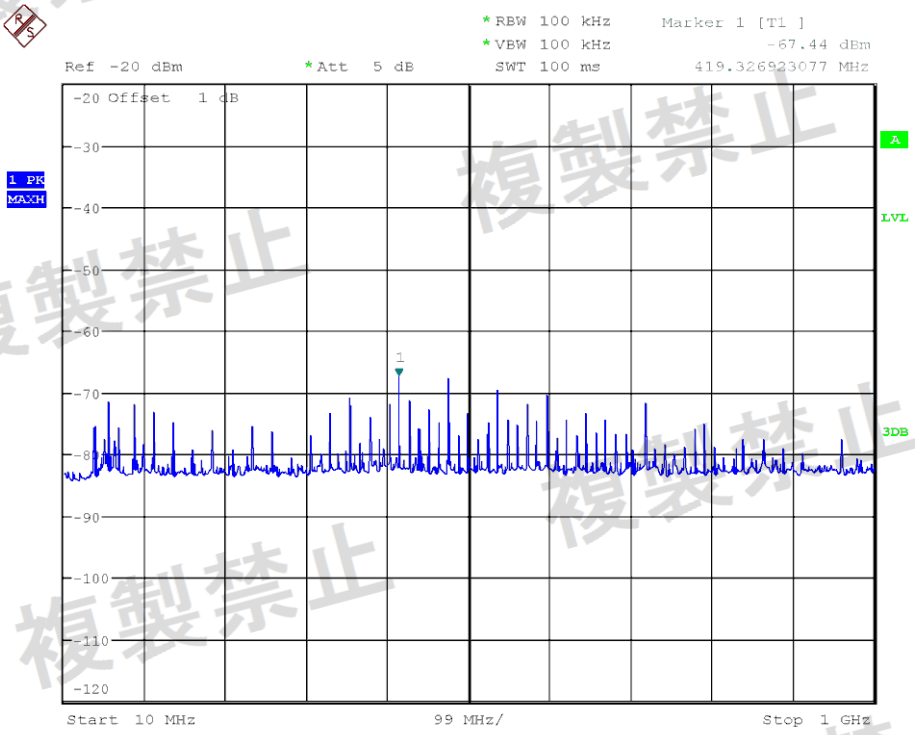
Antenna Power

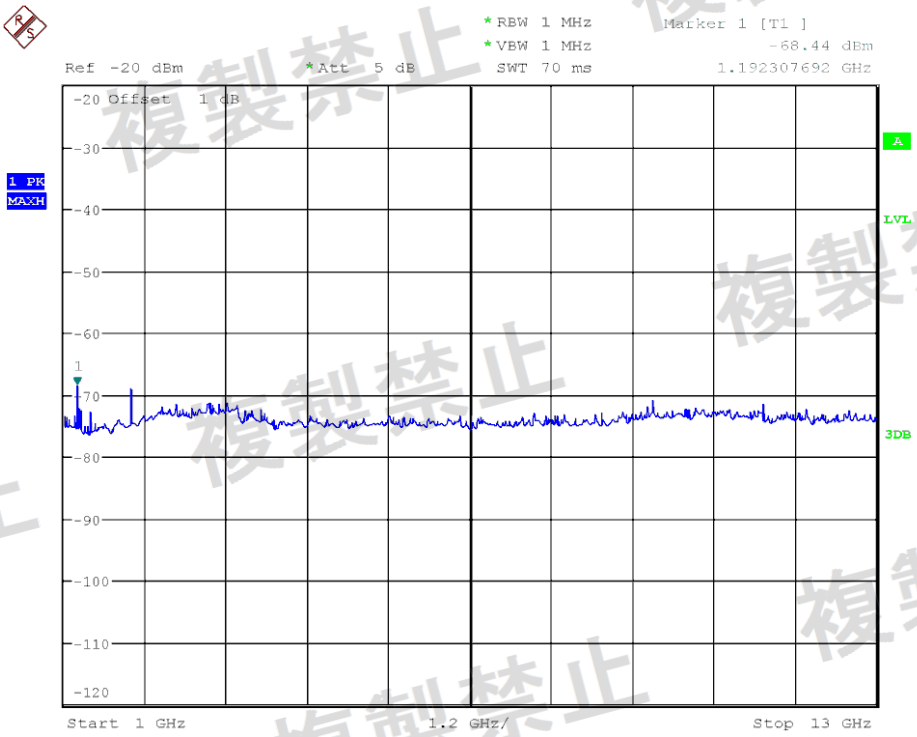
High Voltage / HOPPING



Limitation of Collateral Emission of Receiver

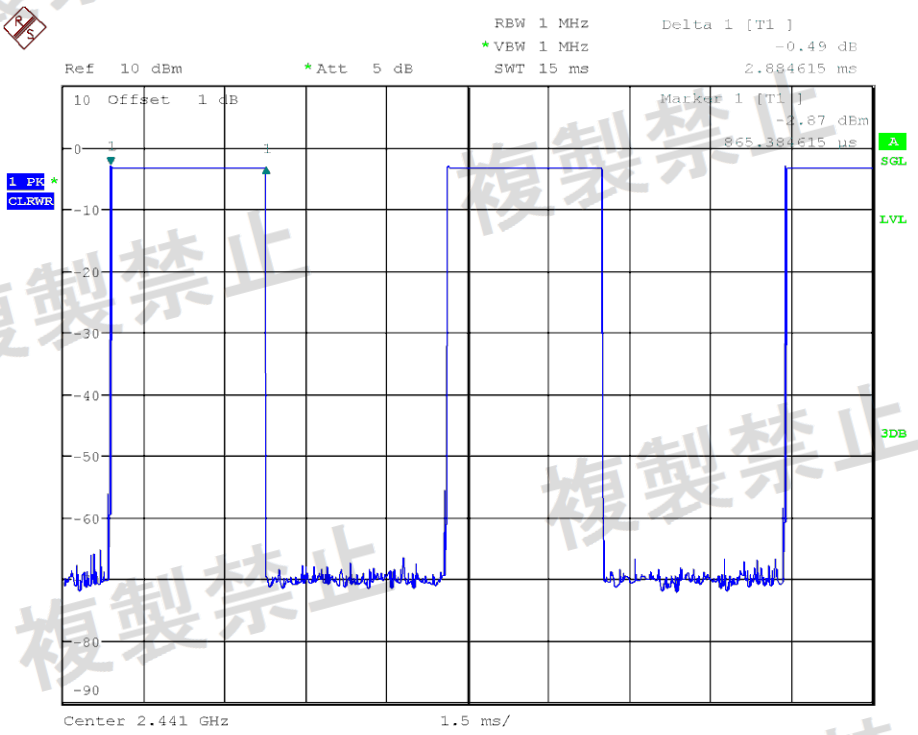
High Voltage / HOPPING





Hopping Frequency Dwell Time

High Voltage / ON TIME



High Voltage / OFF TIME