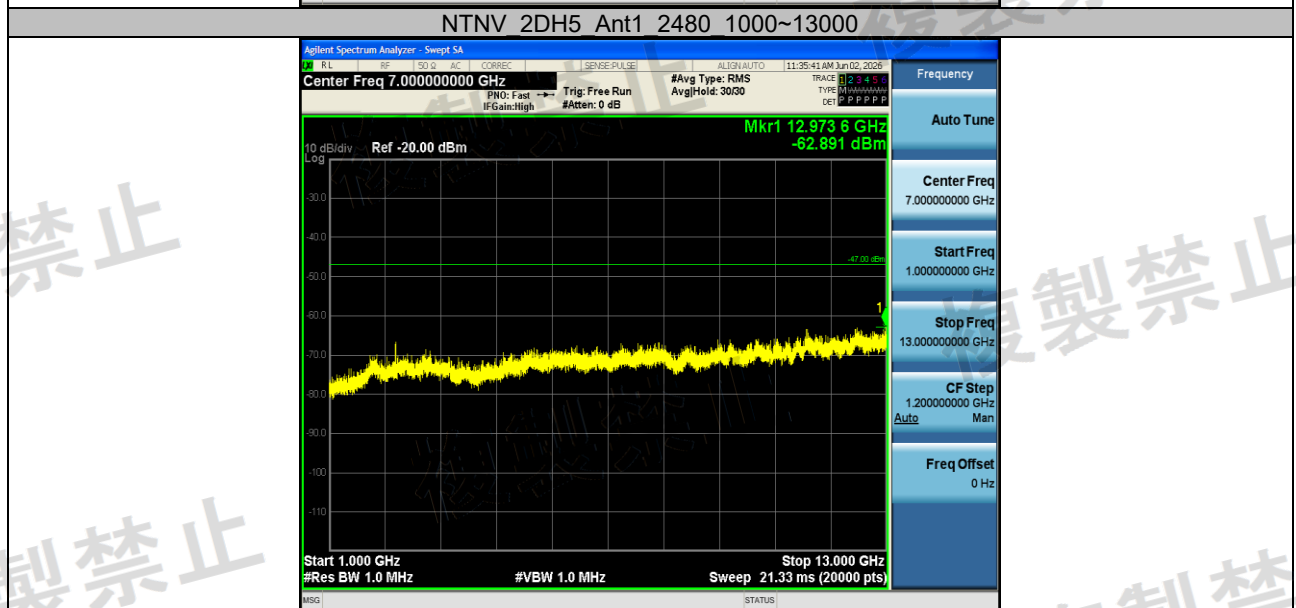
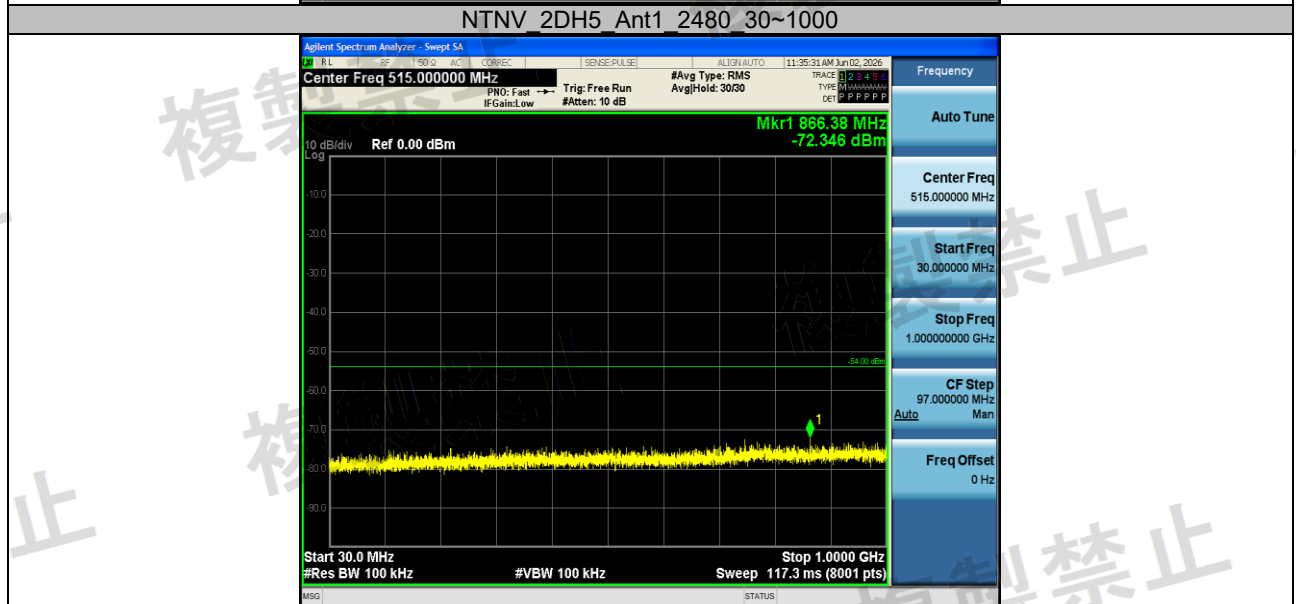
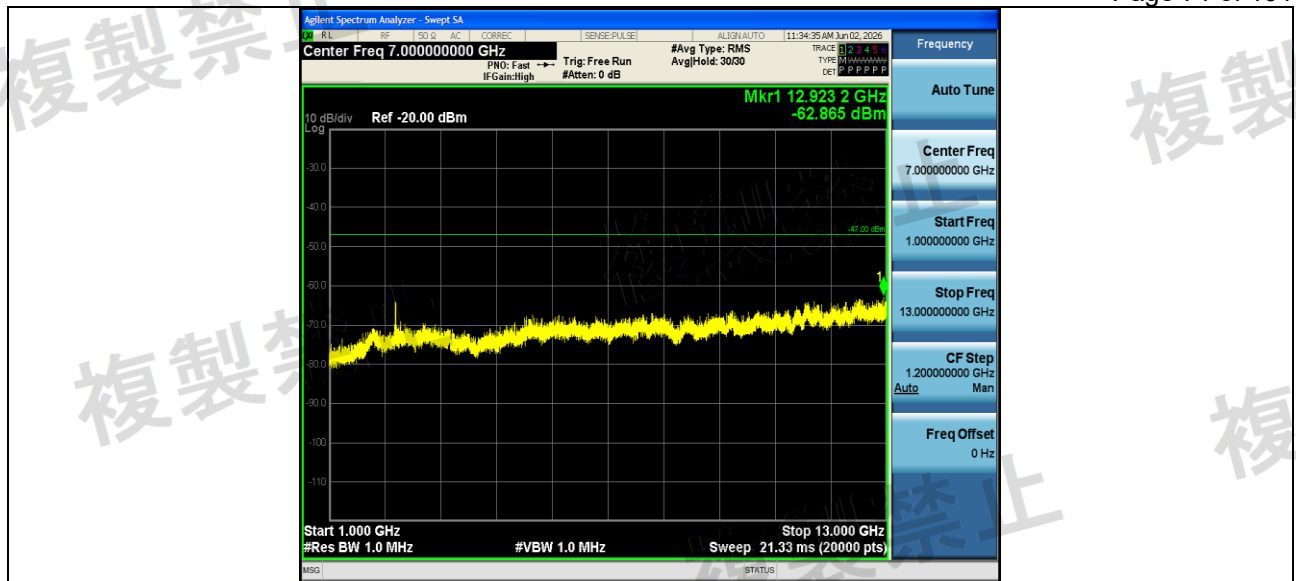
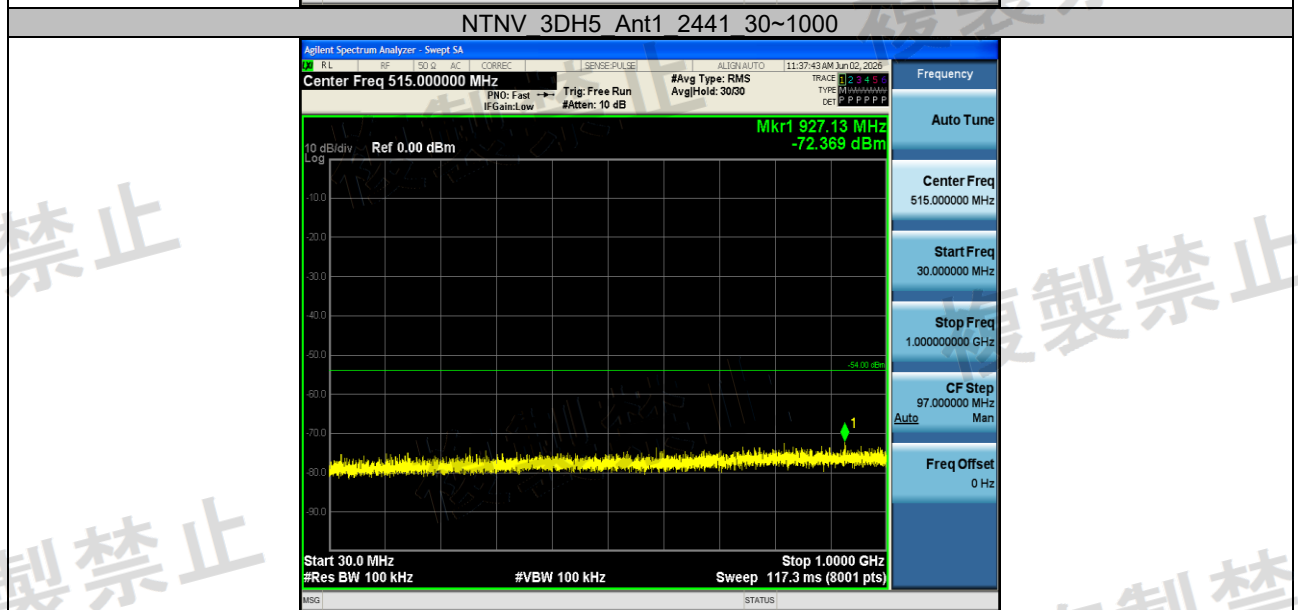
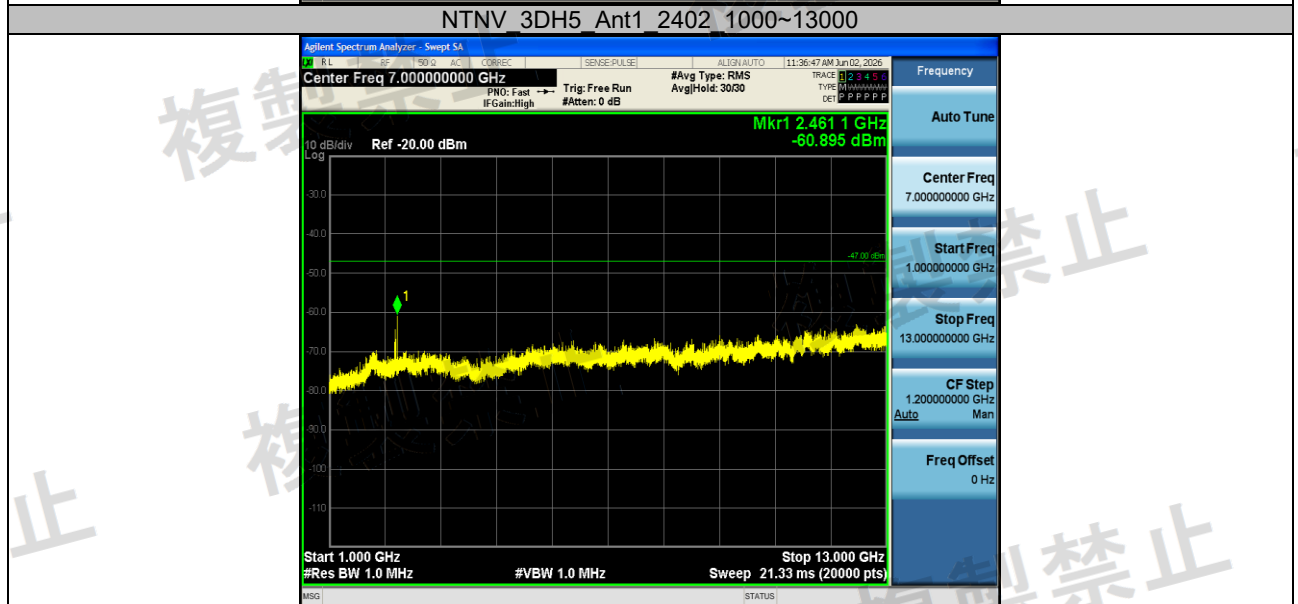
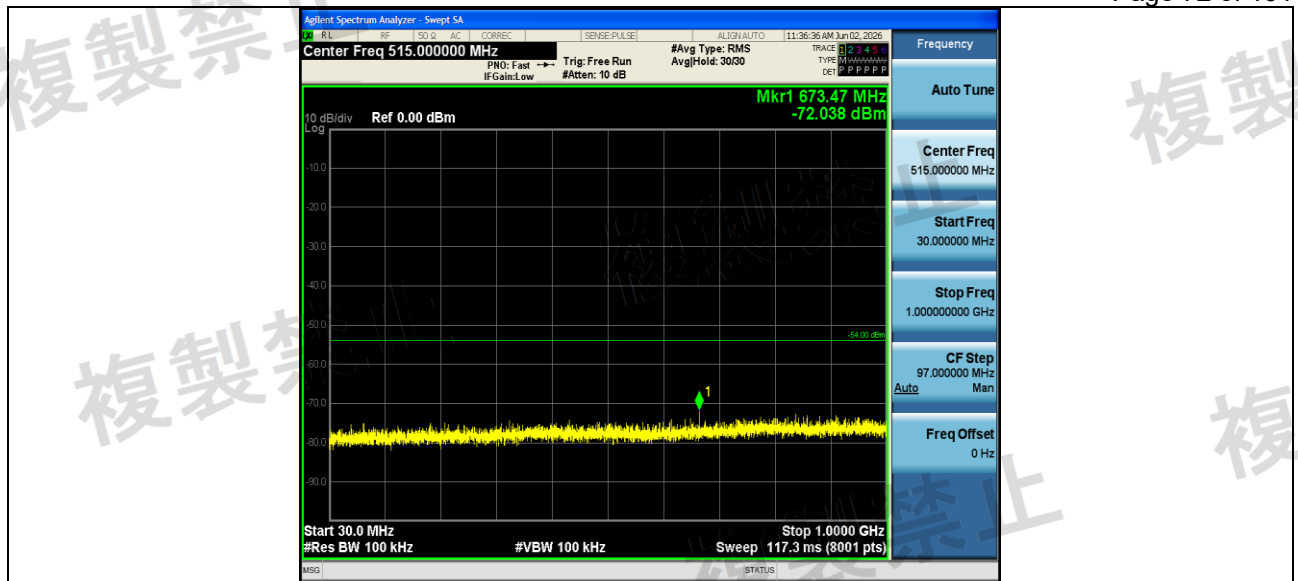
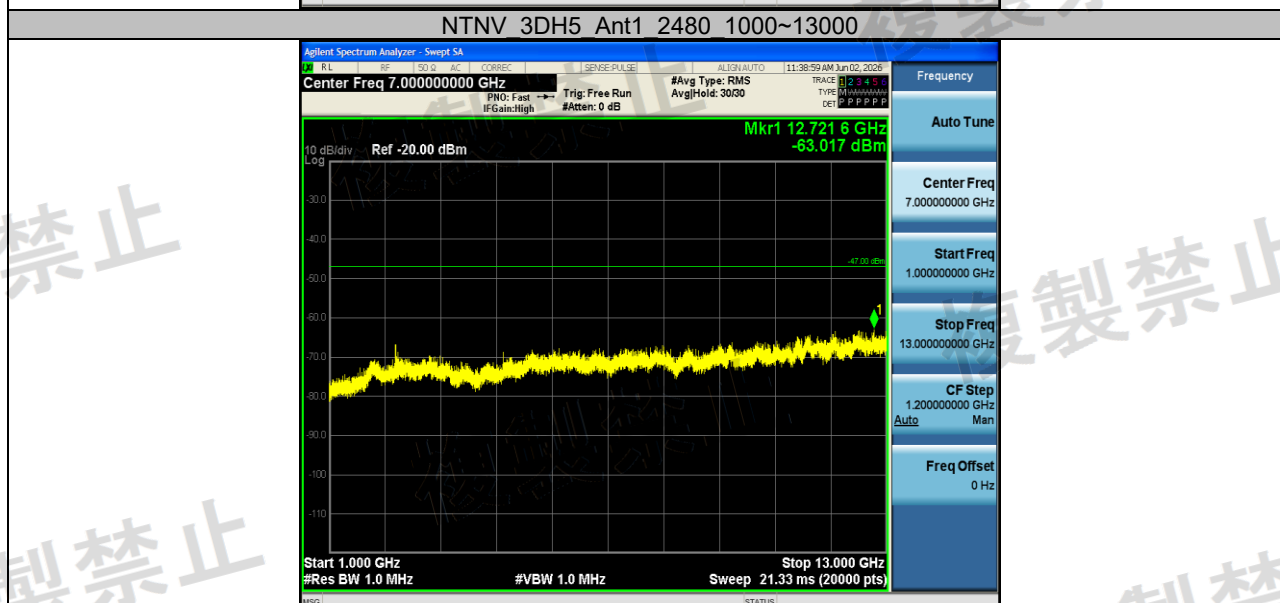
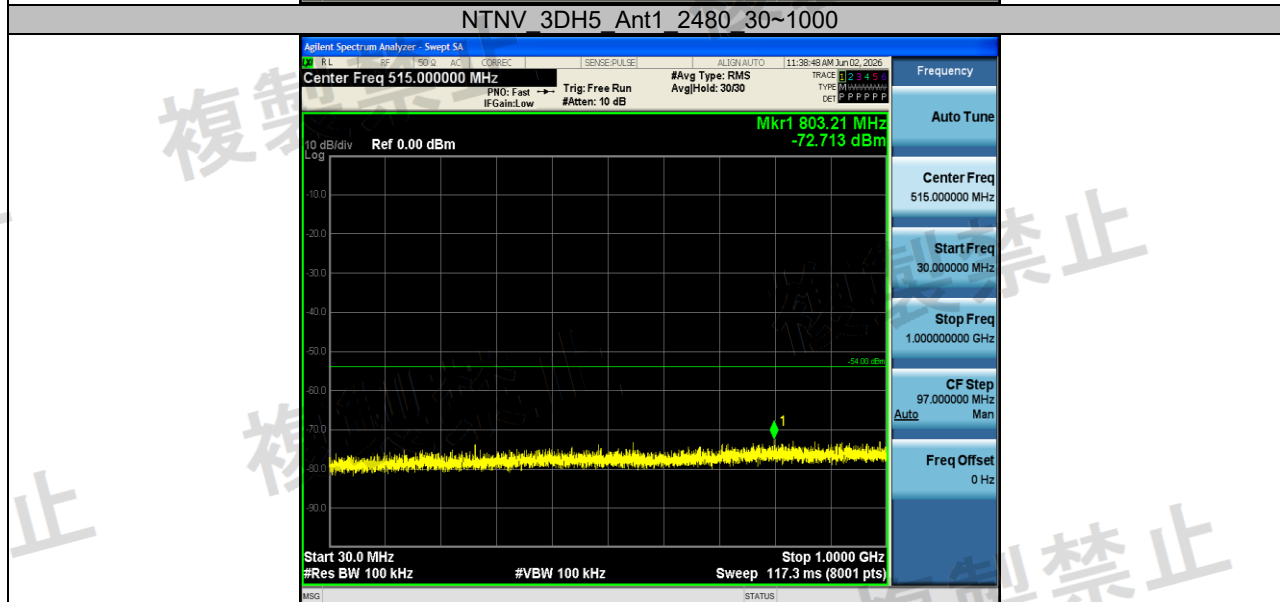
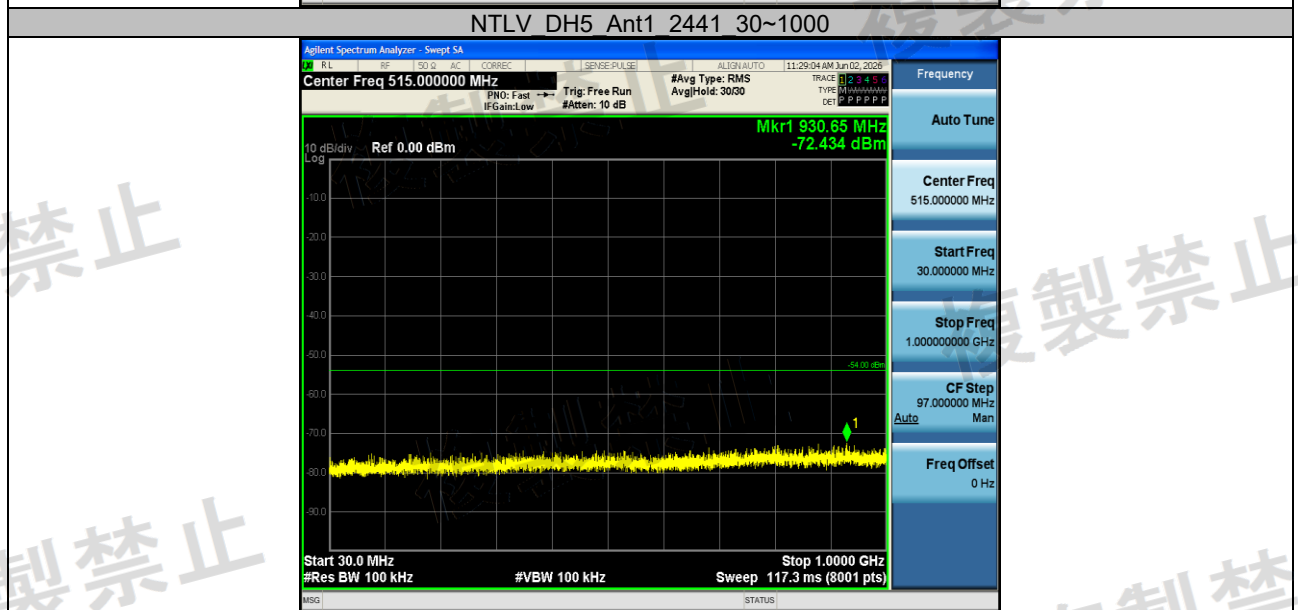
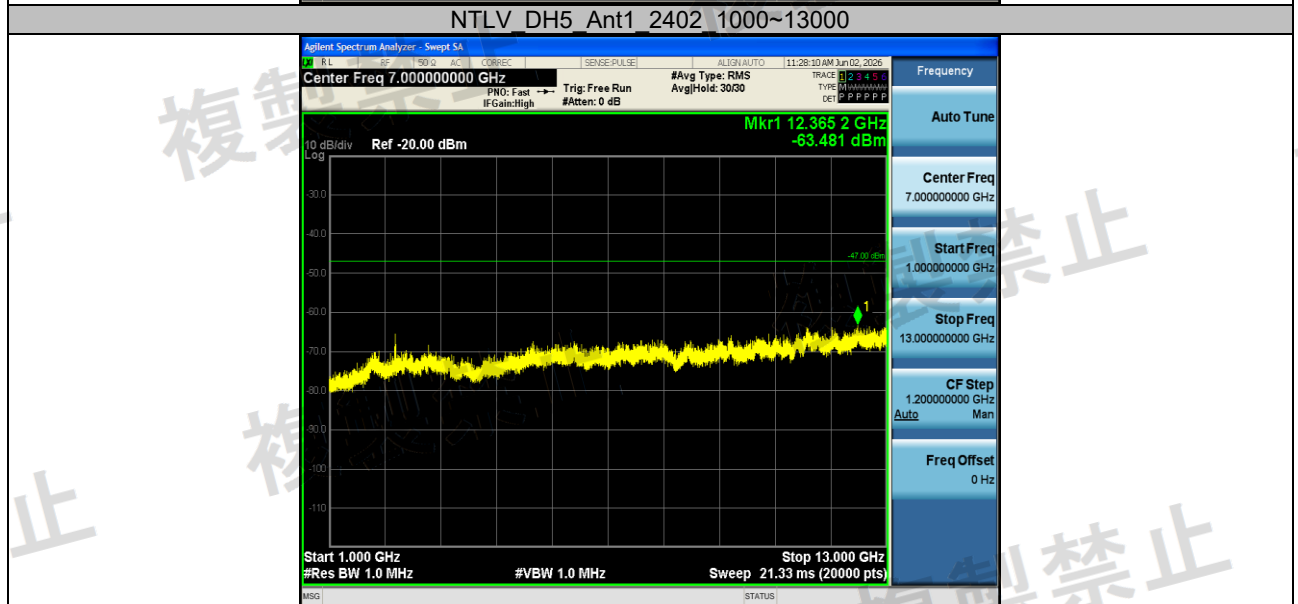
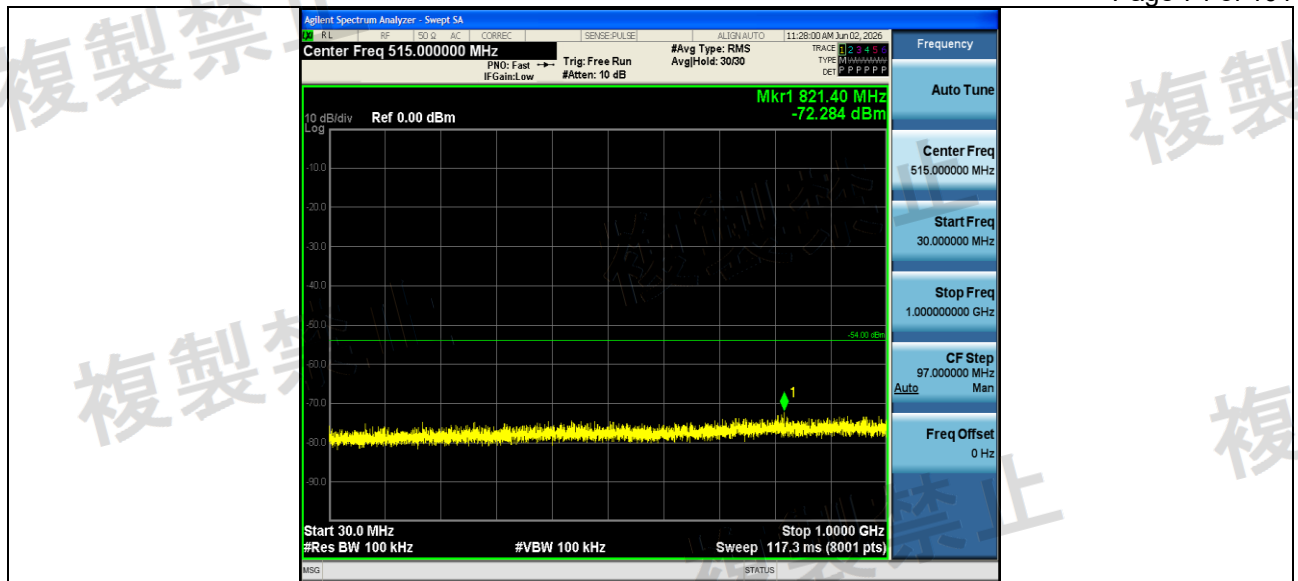
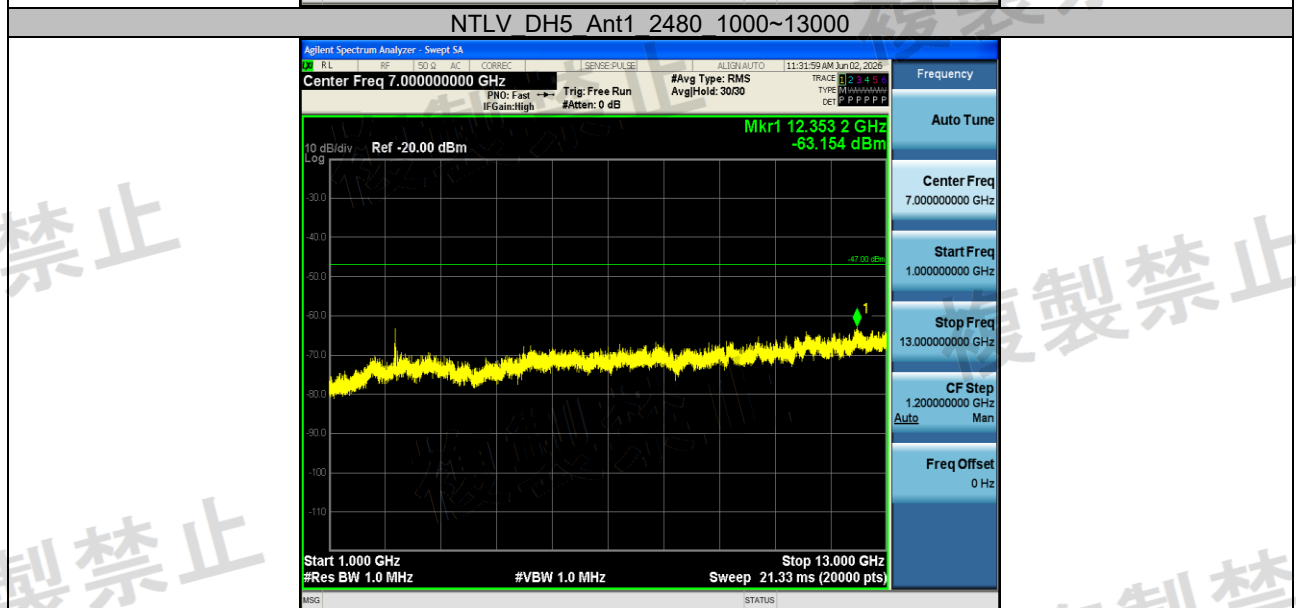
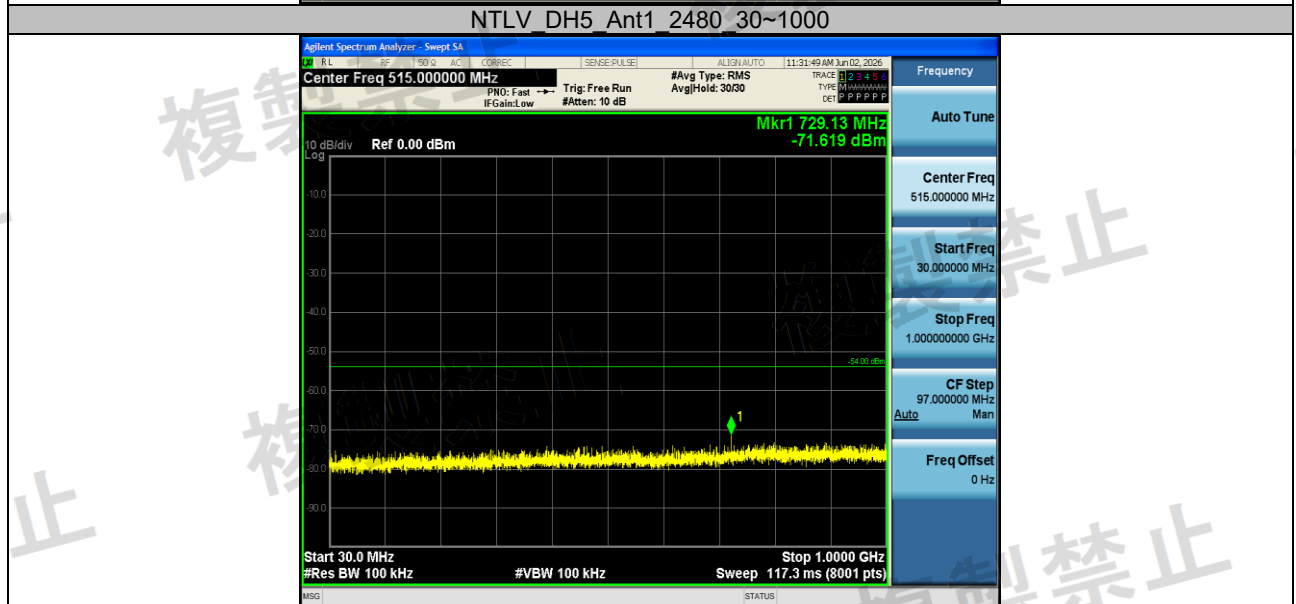
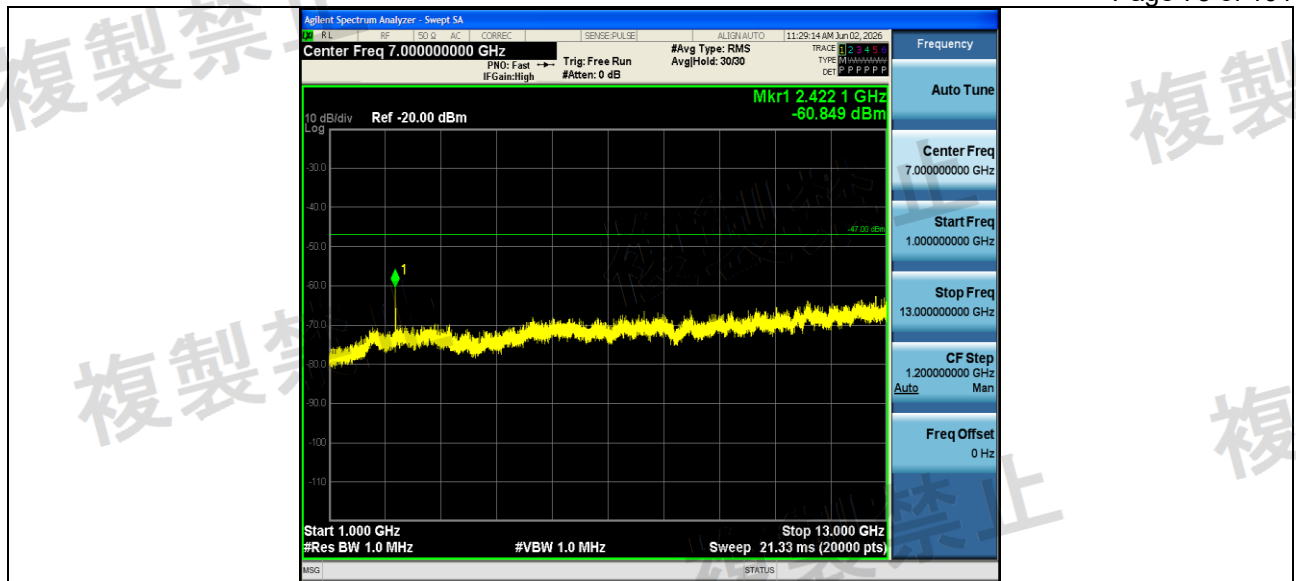


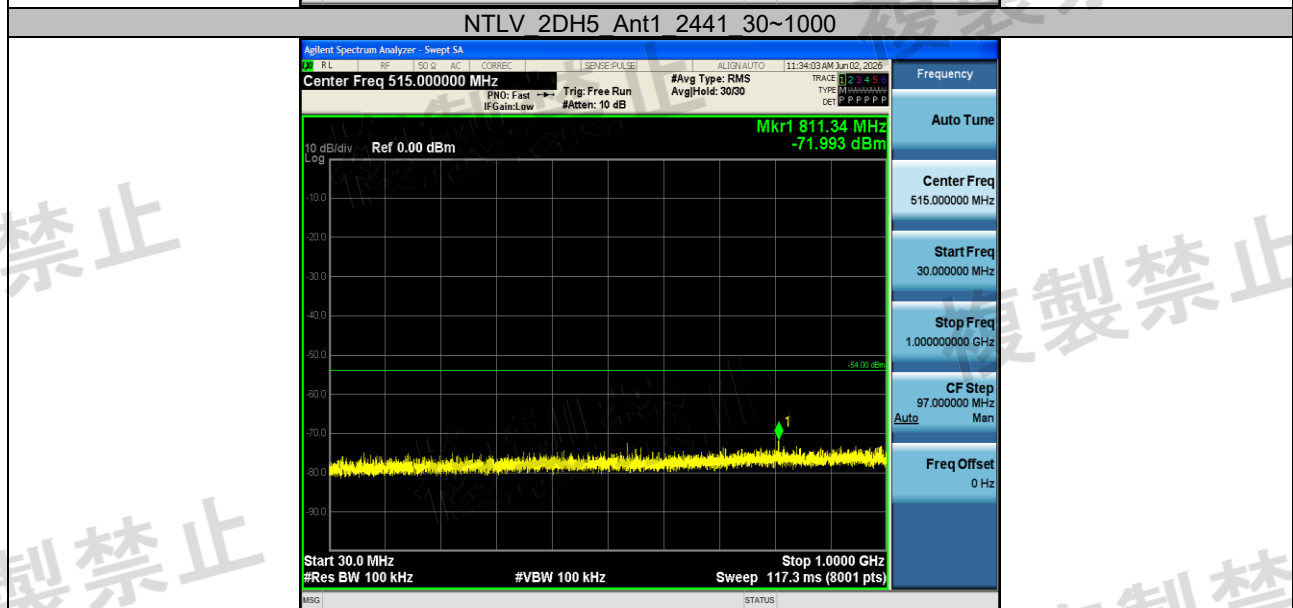
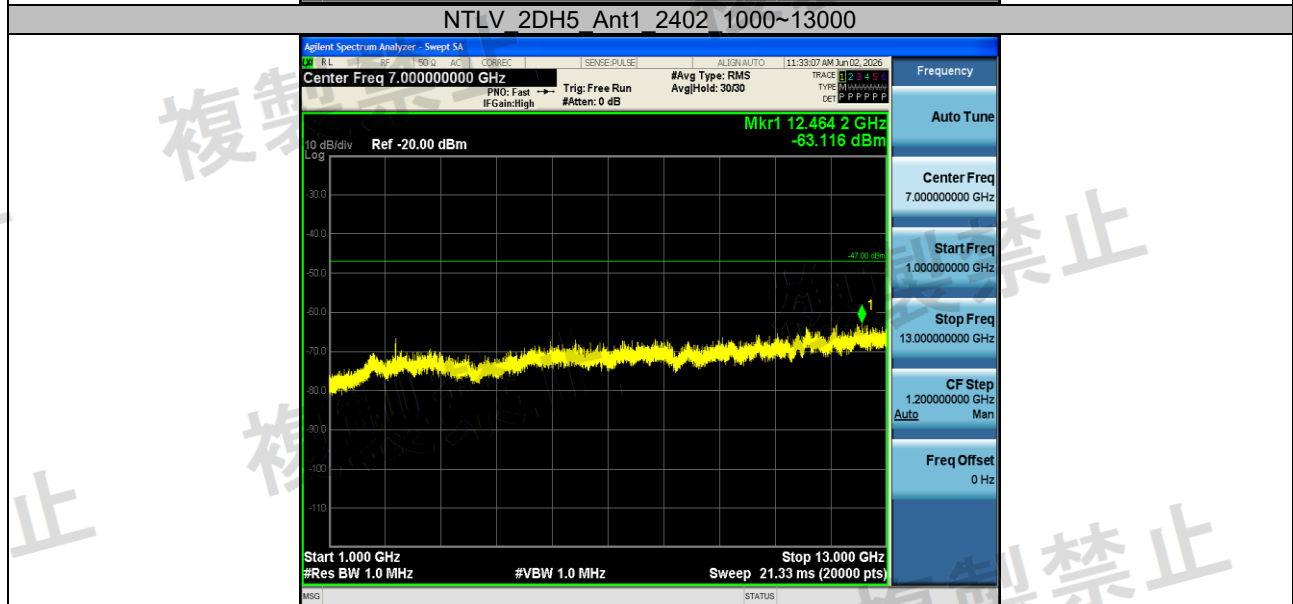
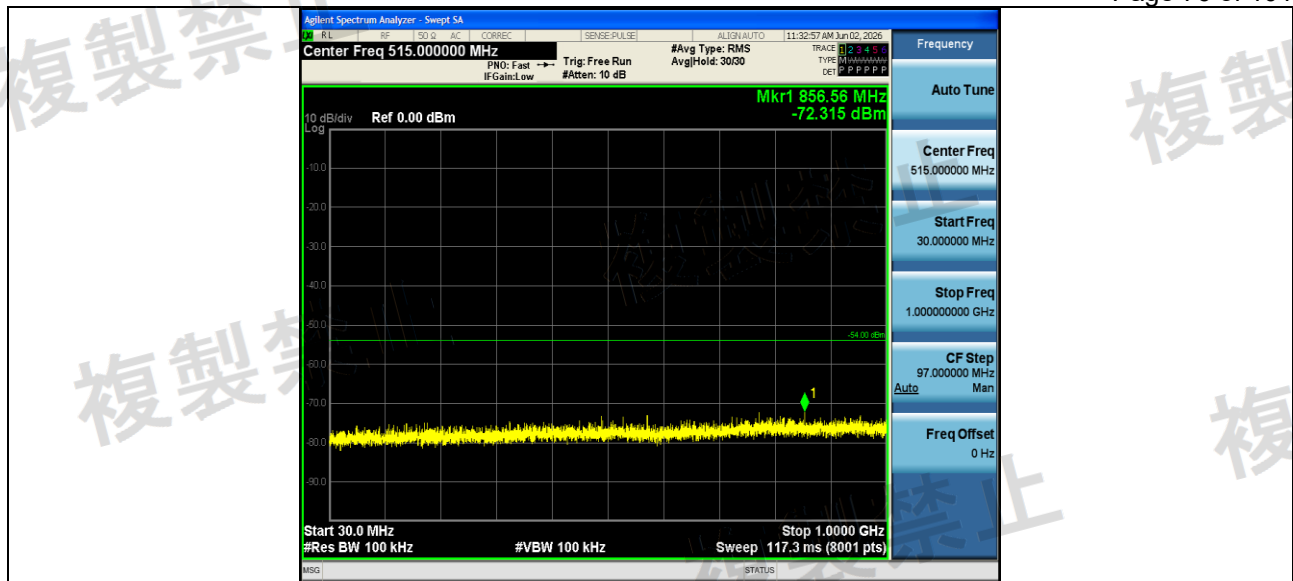


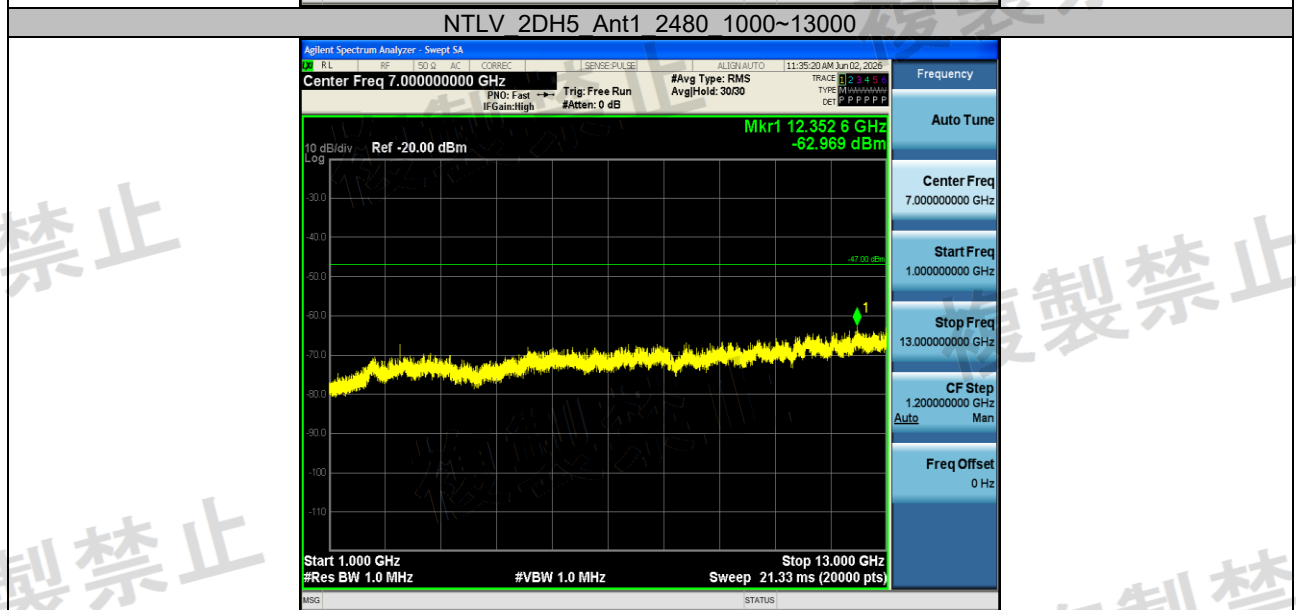
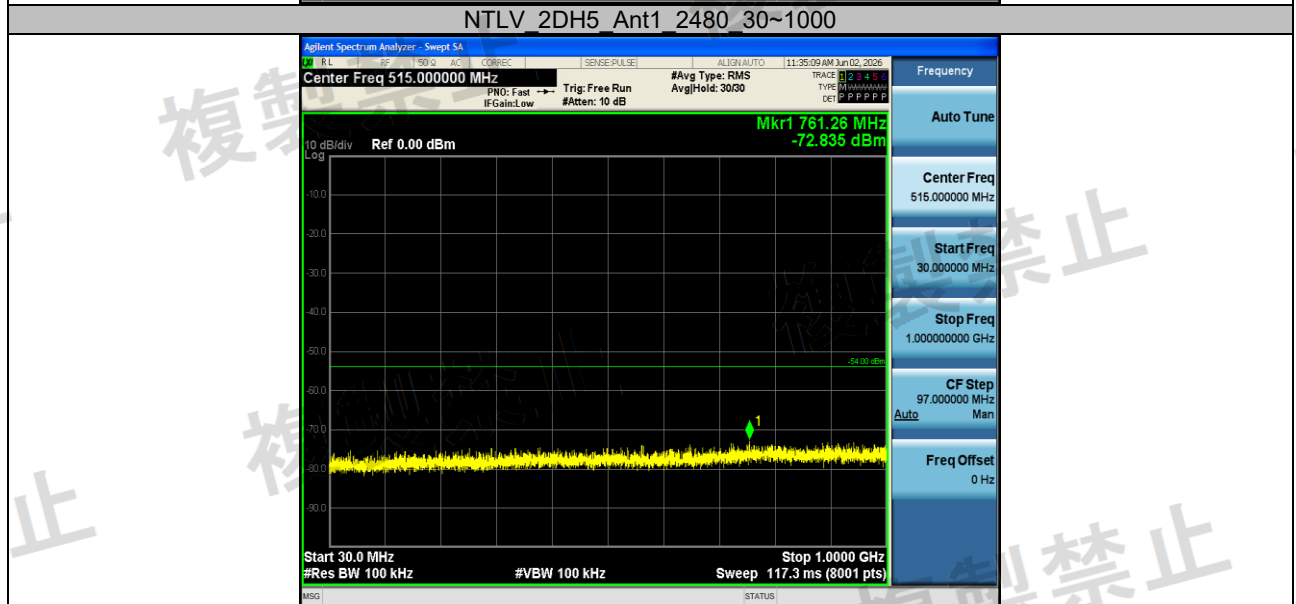
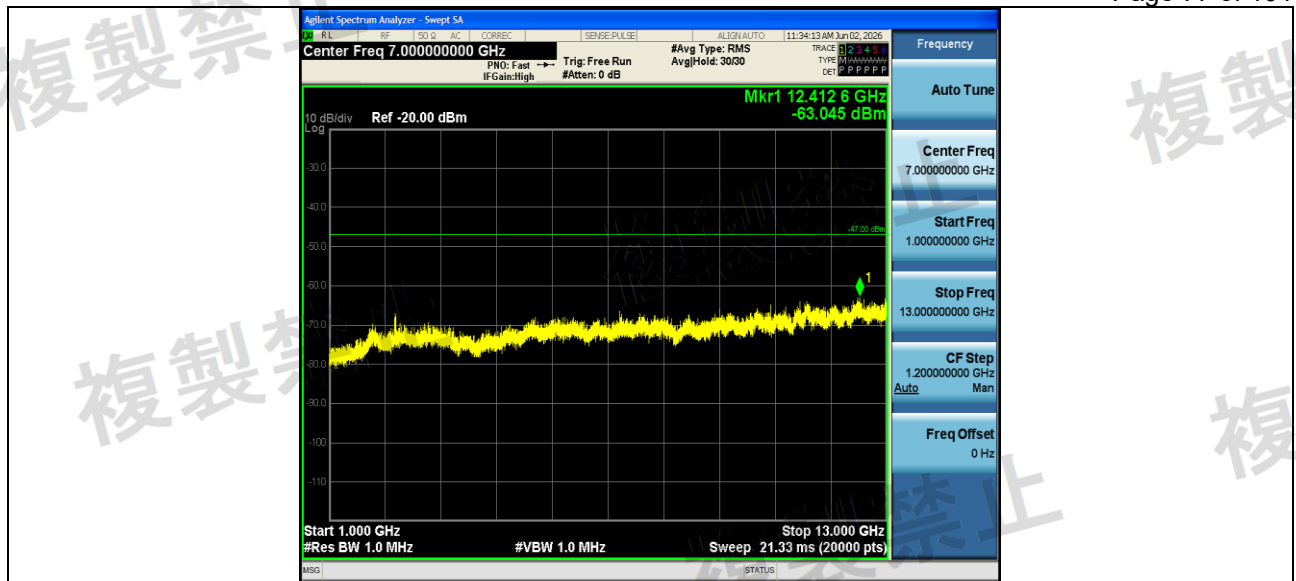


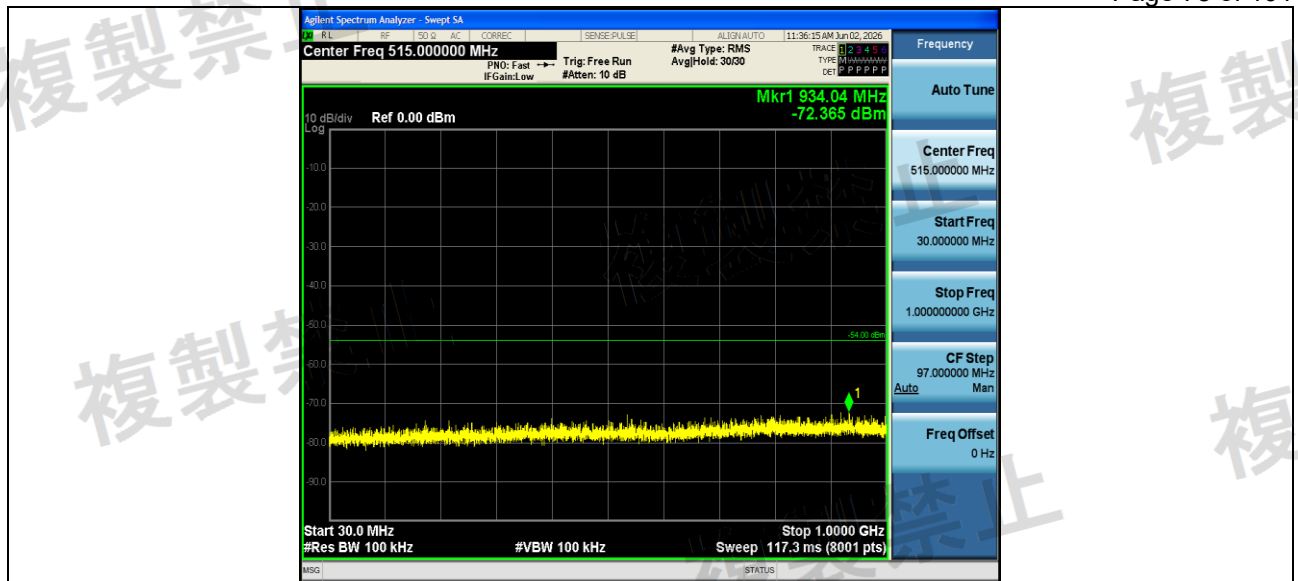




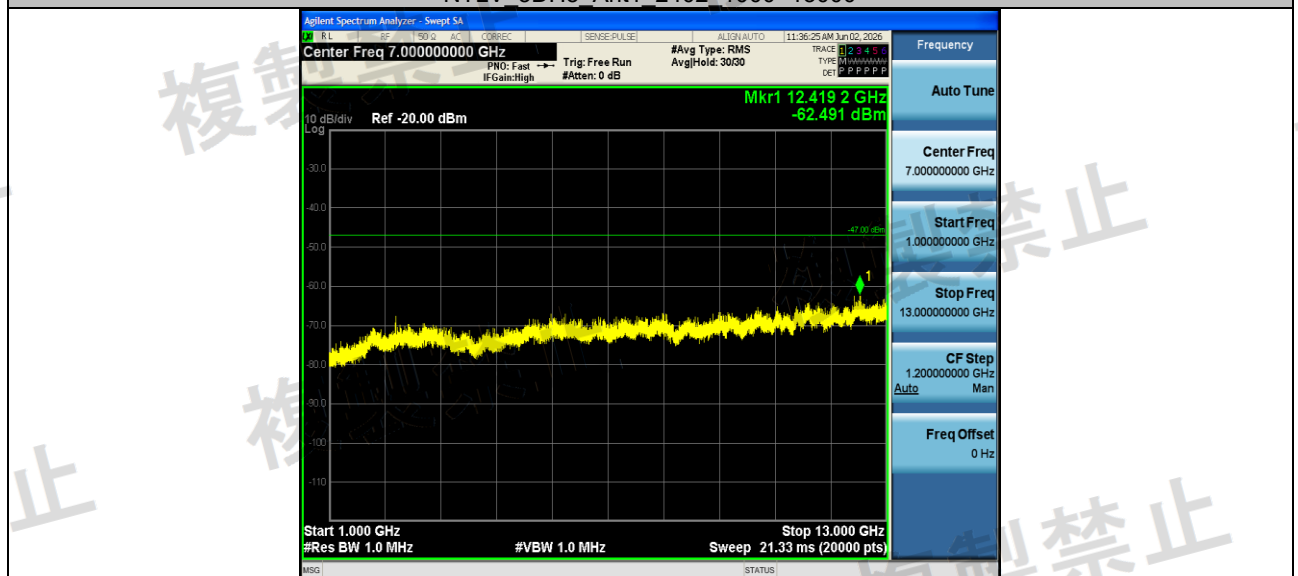




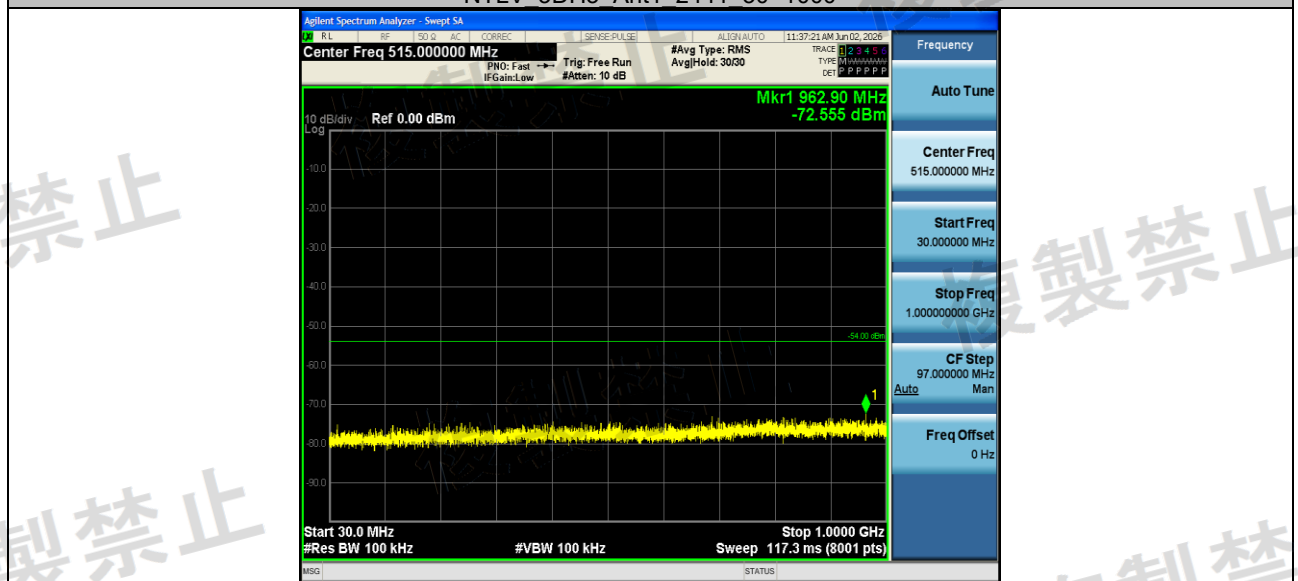




NTLV 3DH5 Ant1 2402 1000~13000

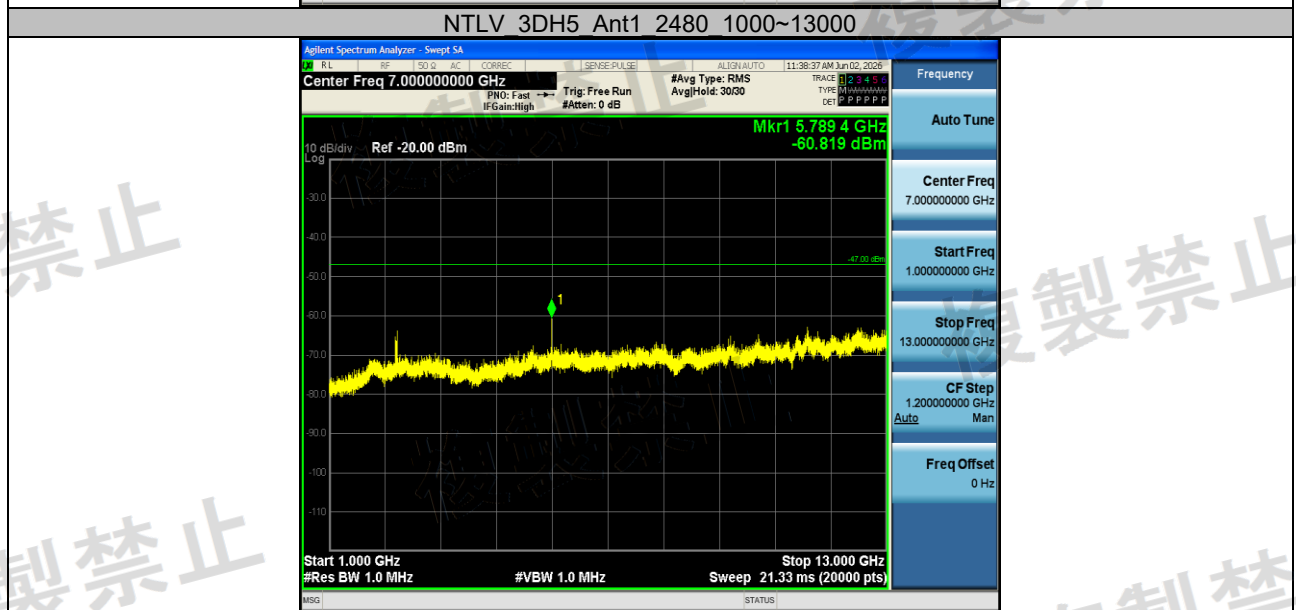
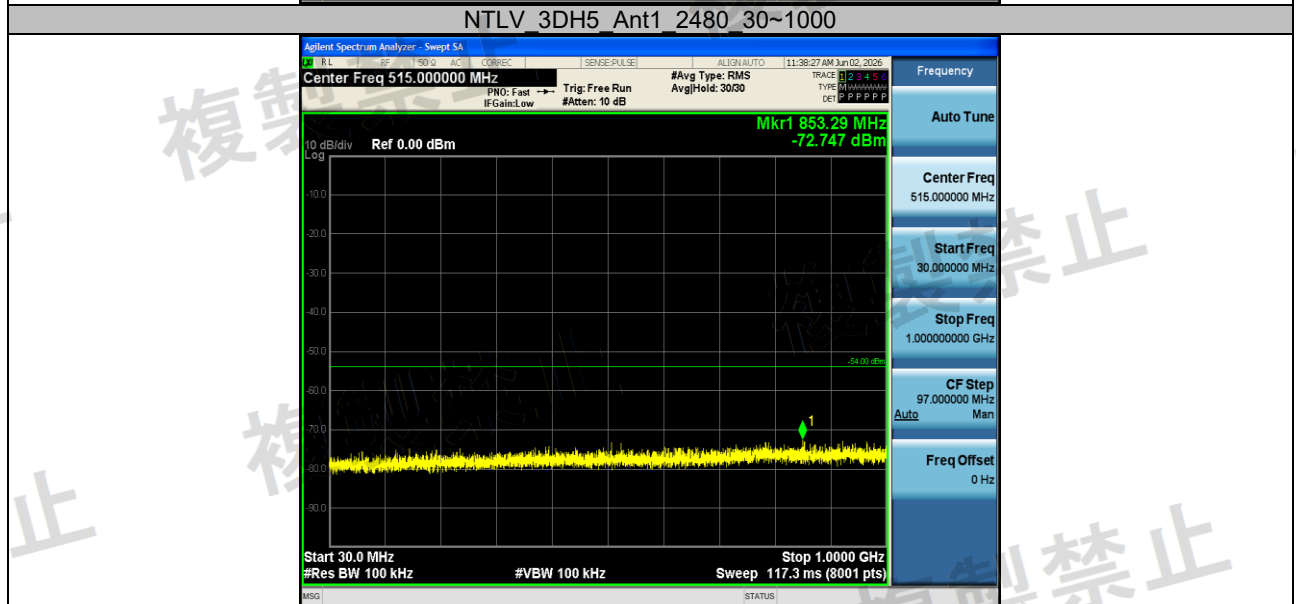
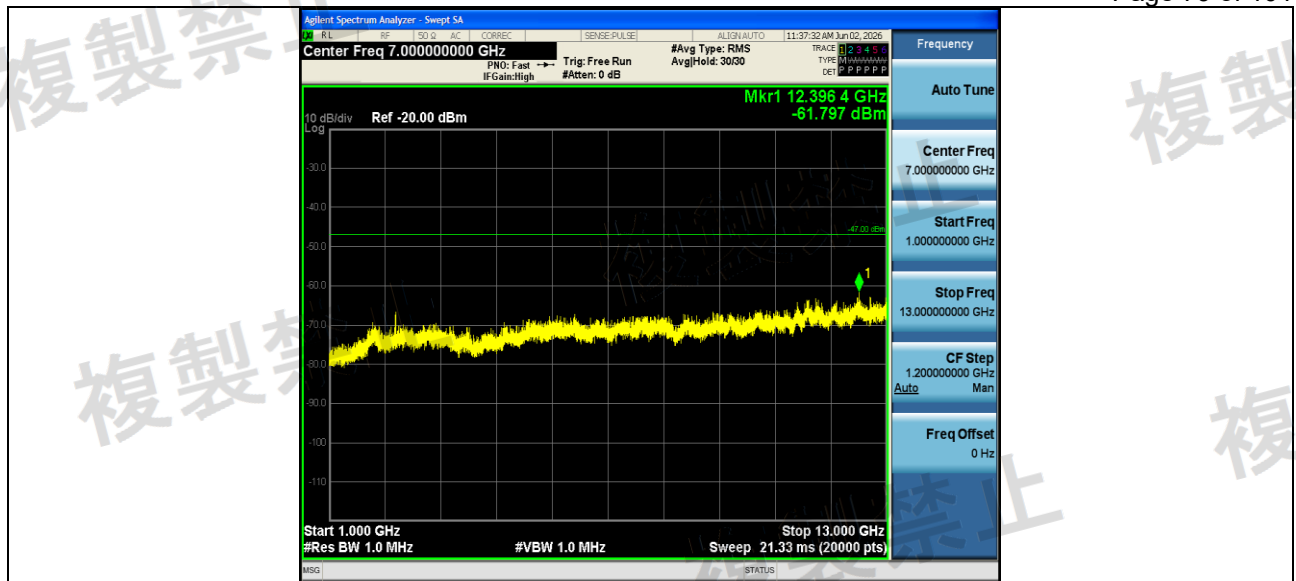


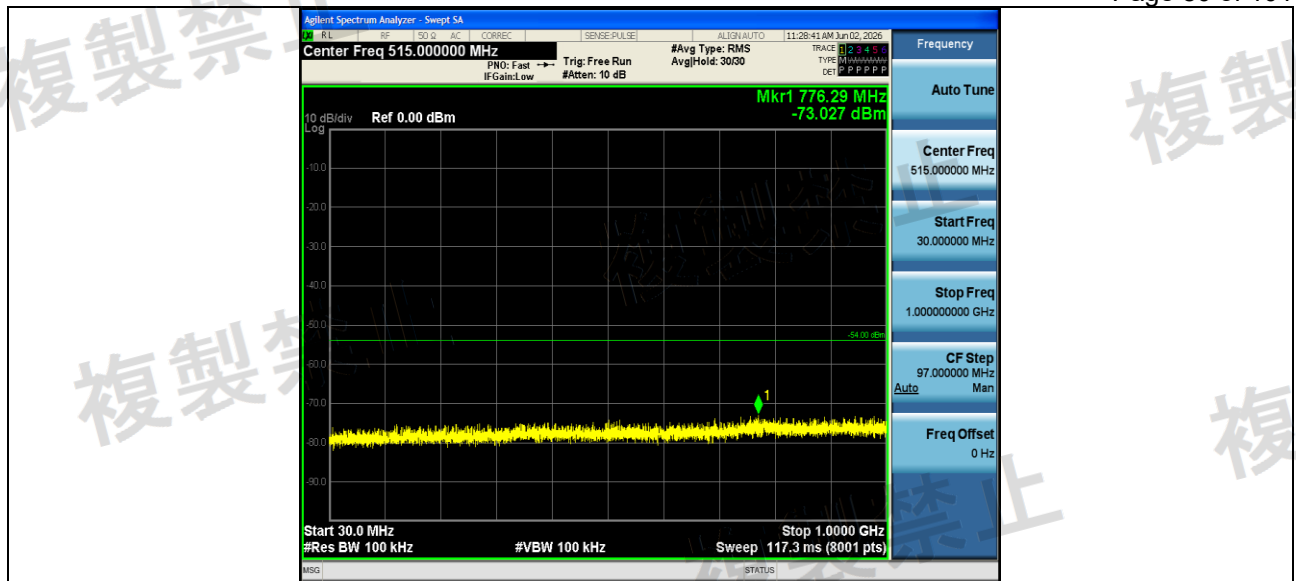
NTLV 3DH5 Ant1 2441 30~1000



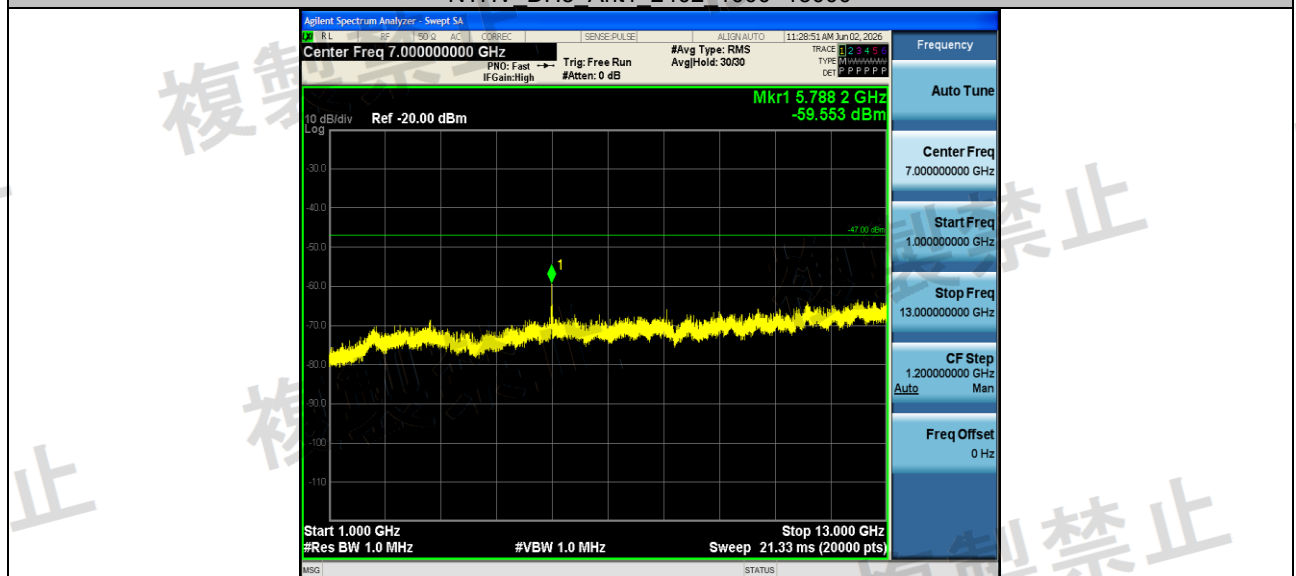
NTLV 3DH5 Ant1 2441 1000~13000



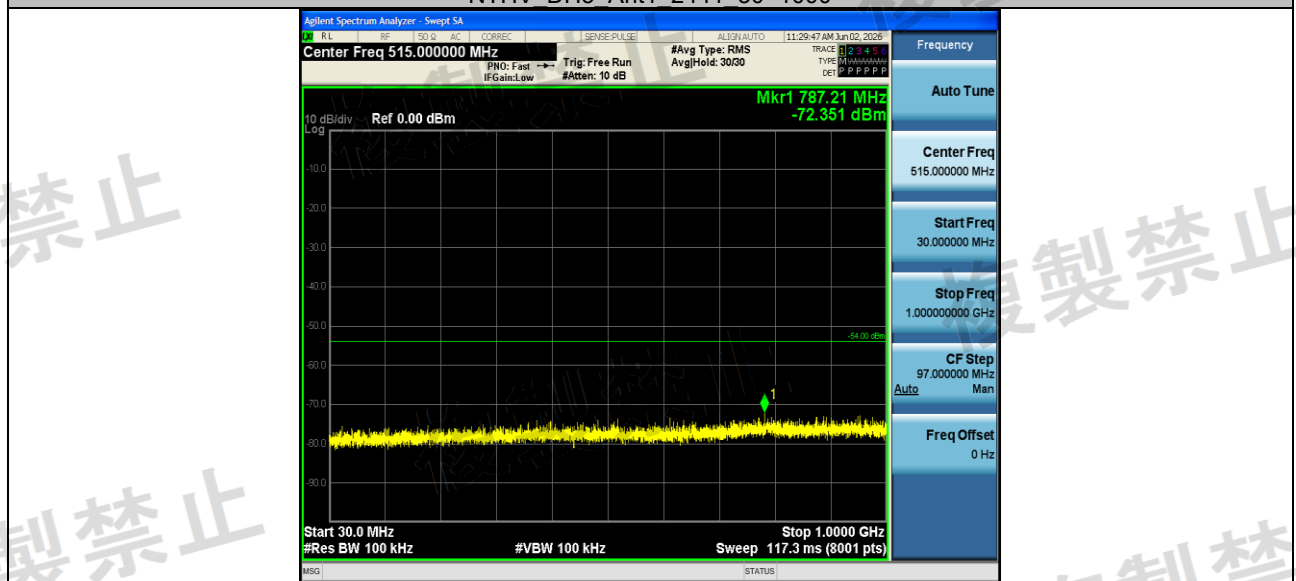




NTHV DH5 Ant1 2402 1000~13000

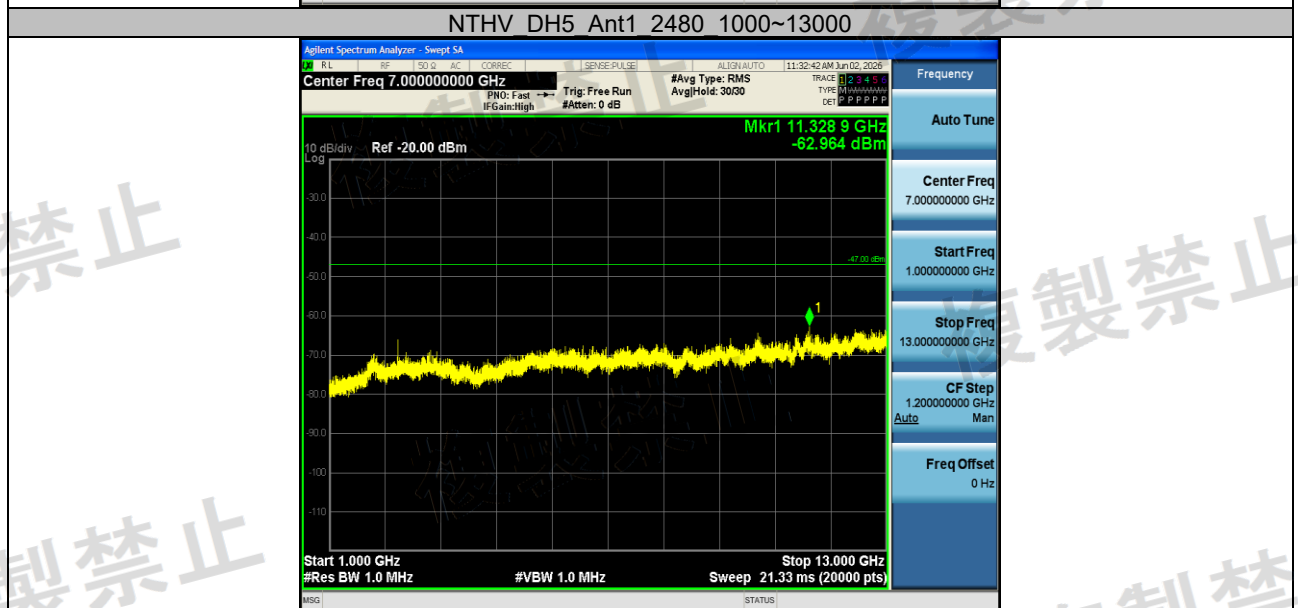
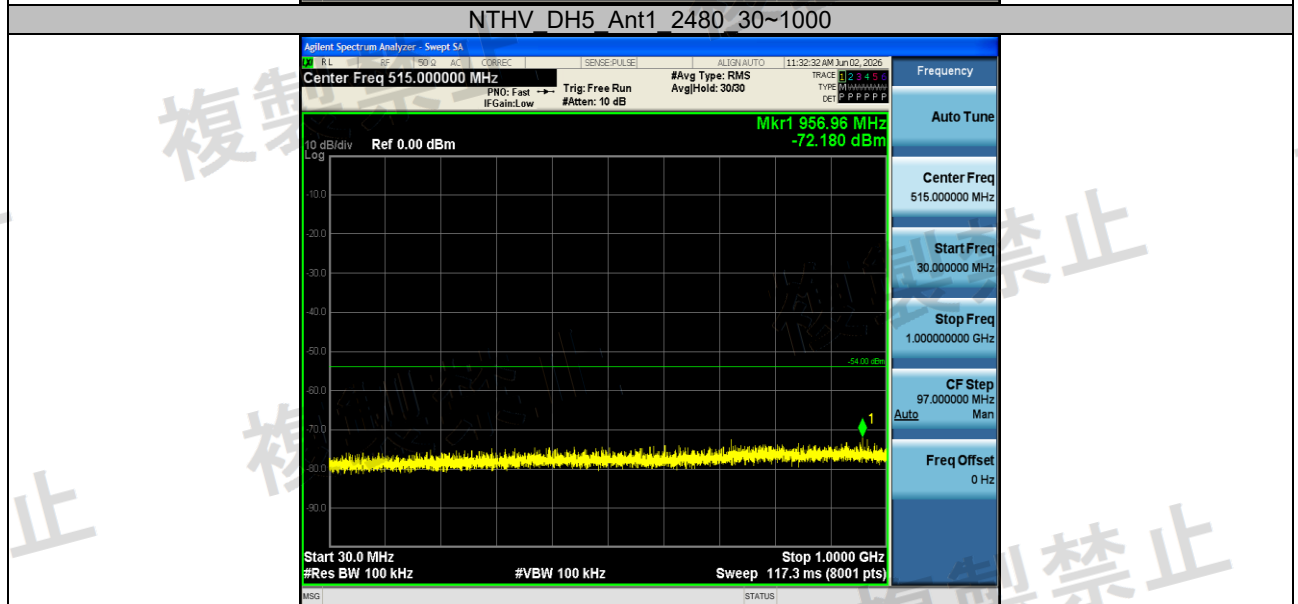
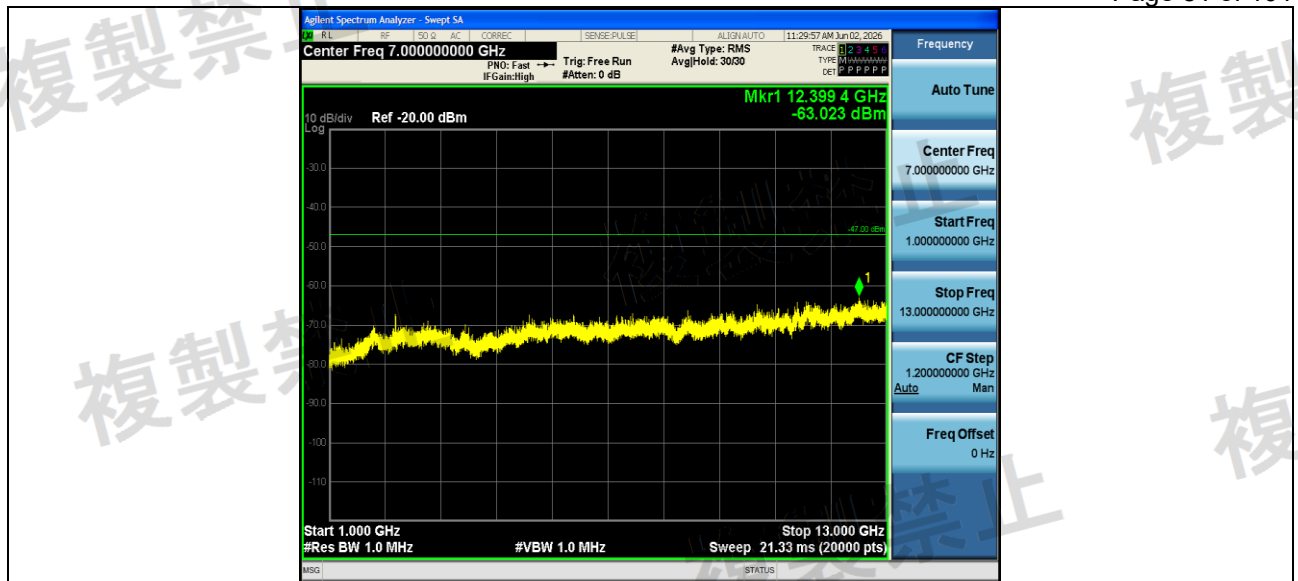


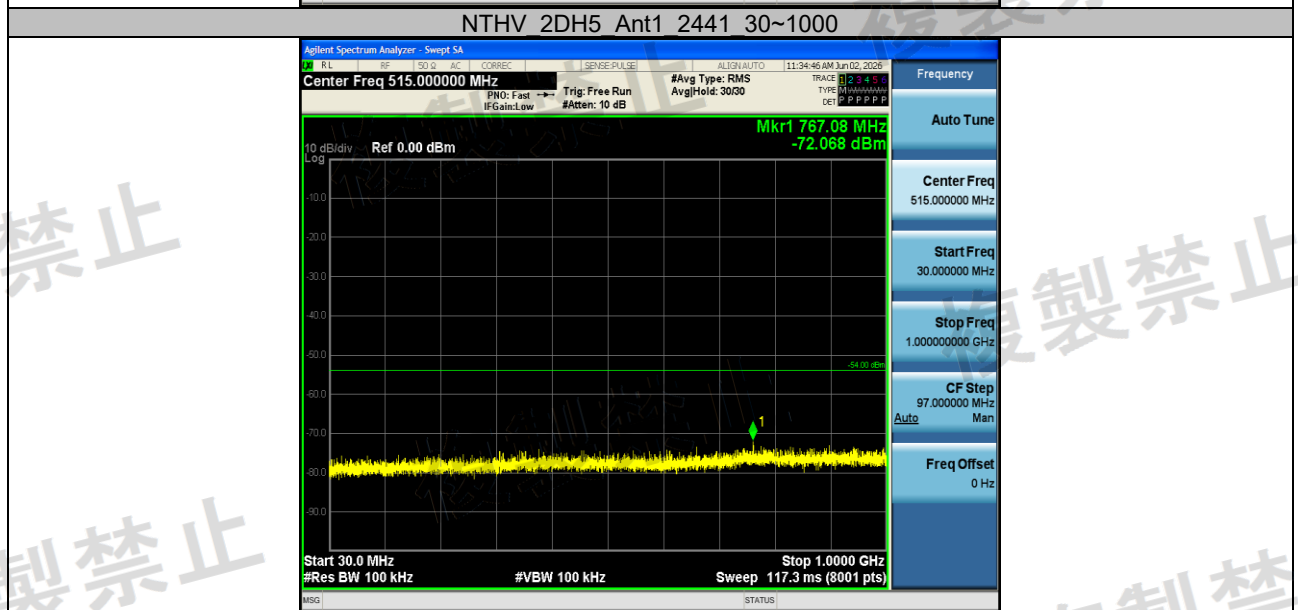
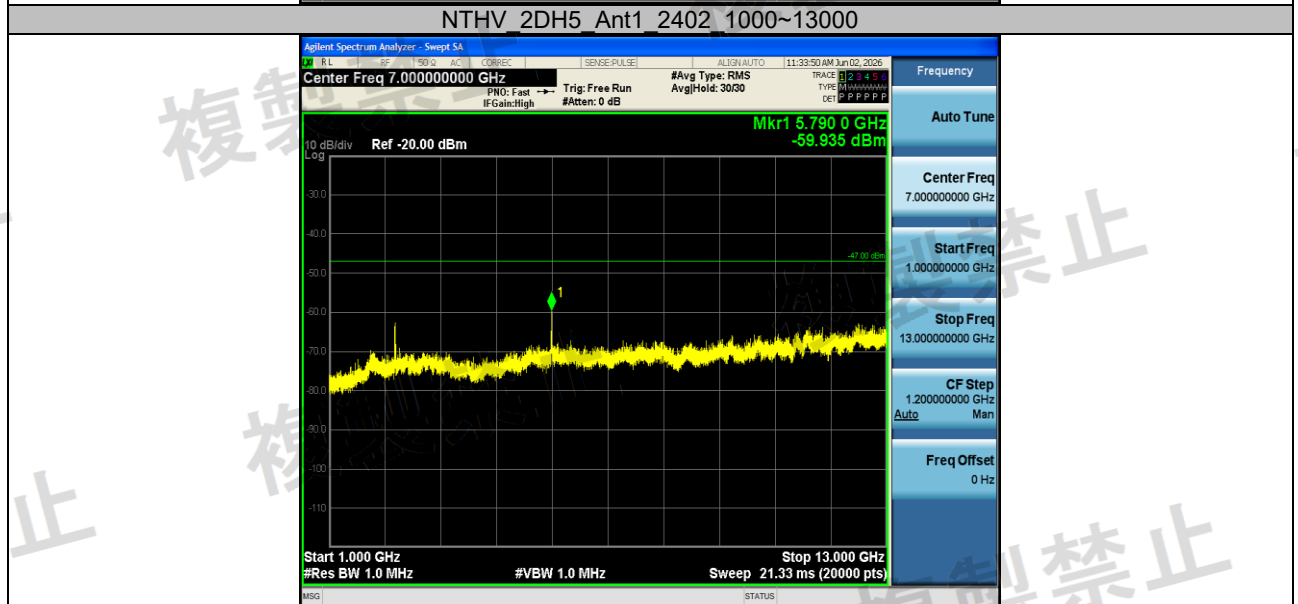
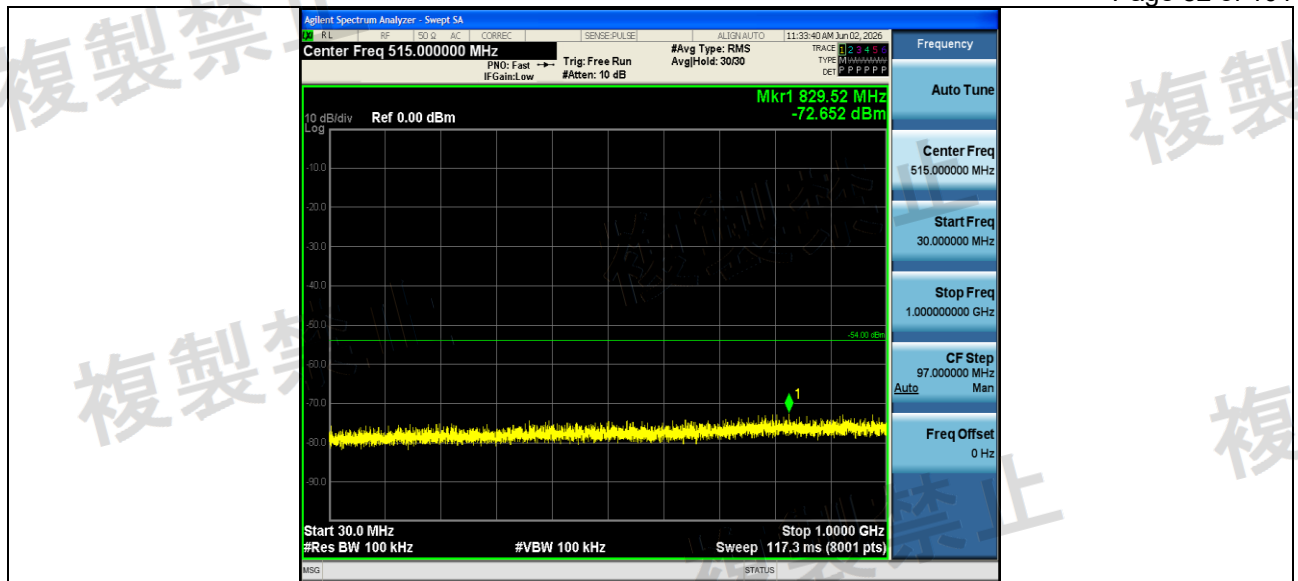
NTHV DH5 Ant1 2441 30~1000

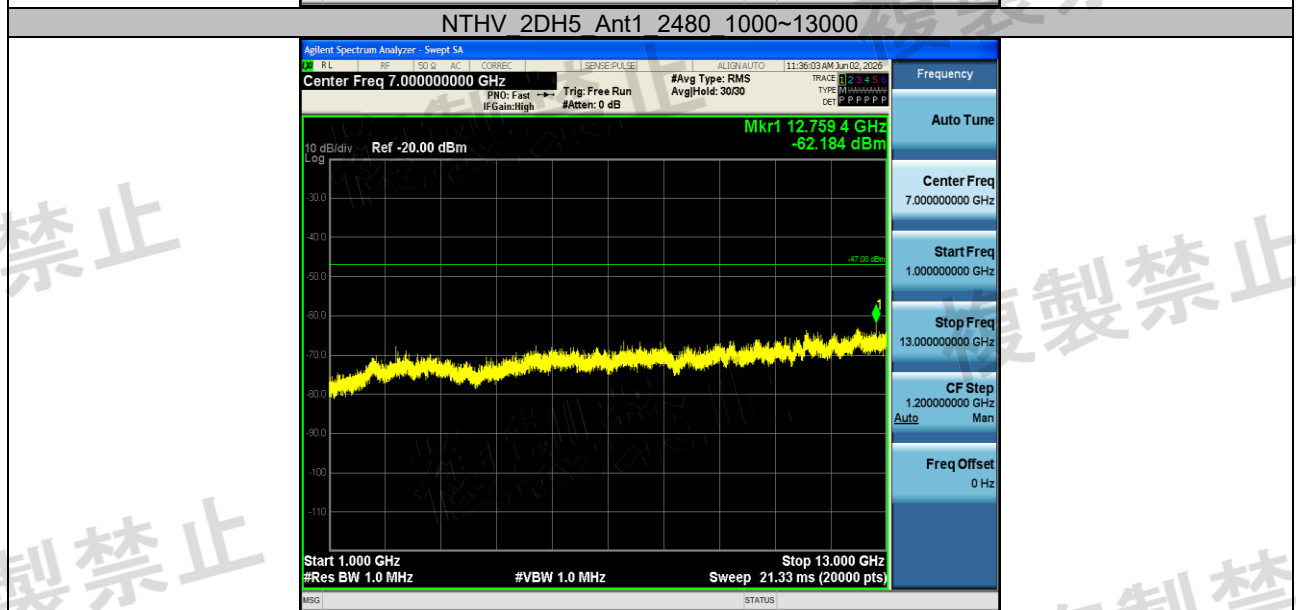
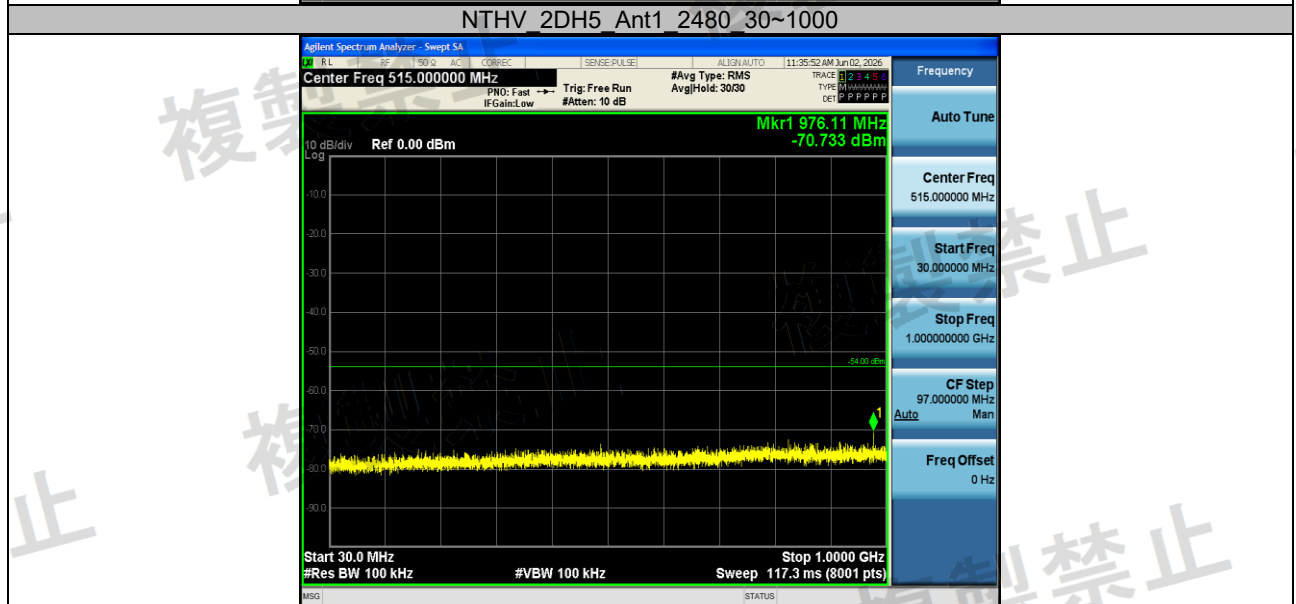
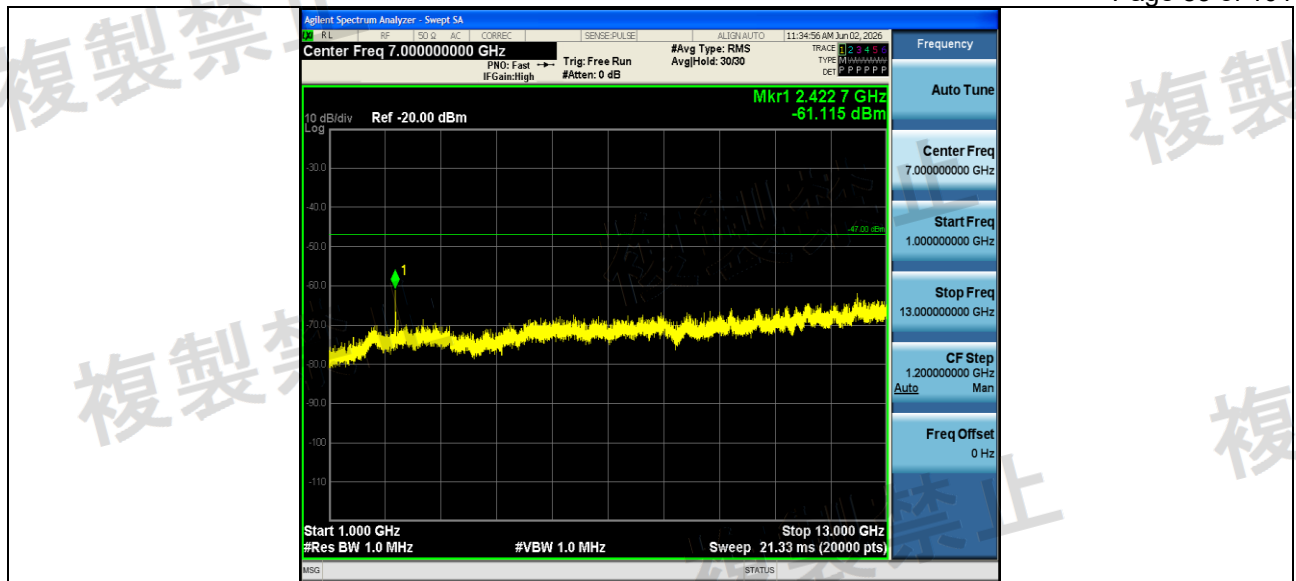


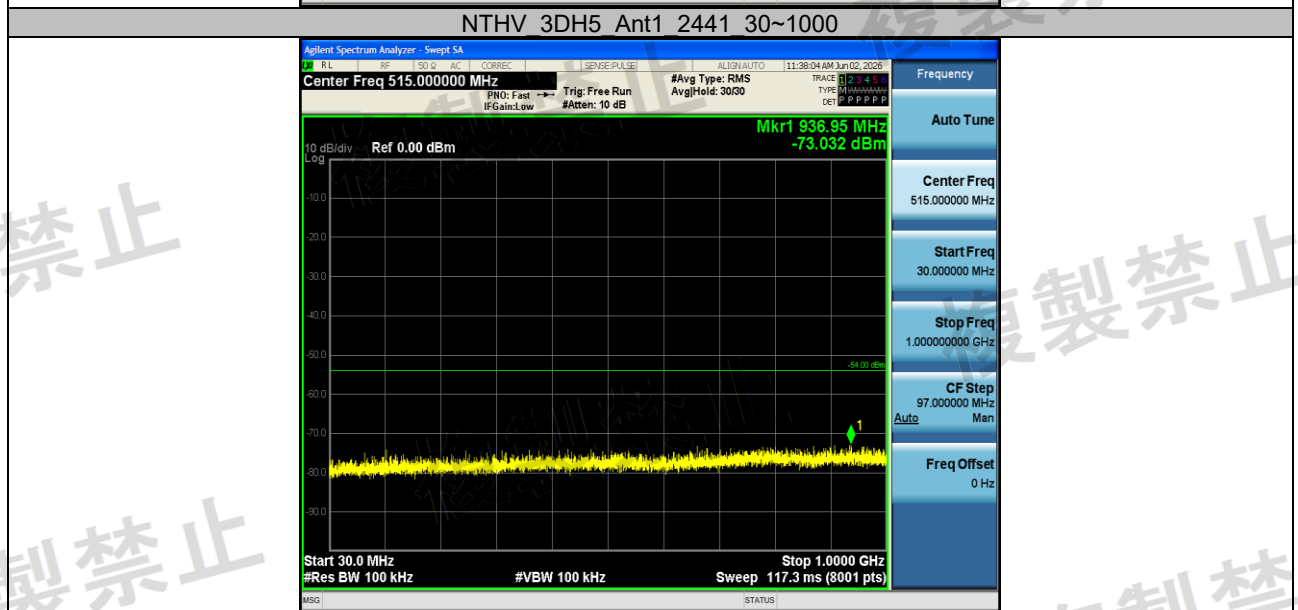
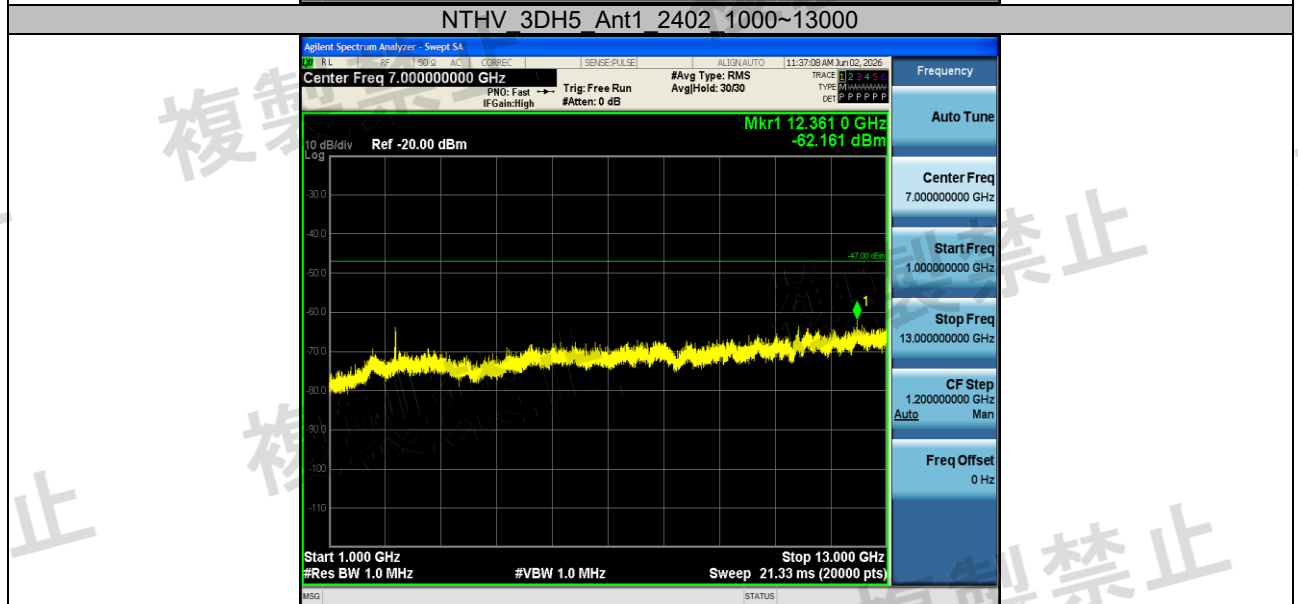
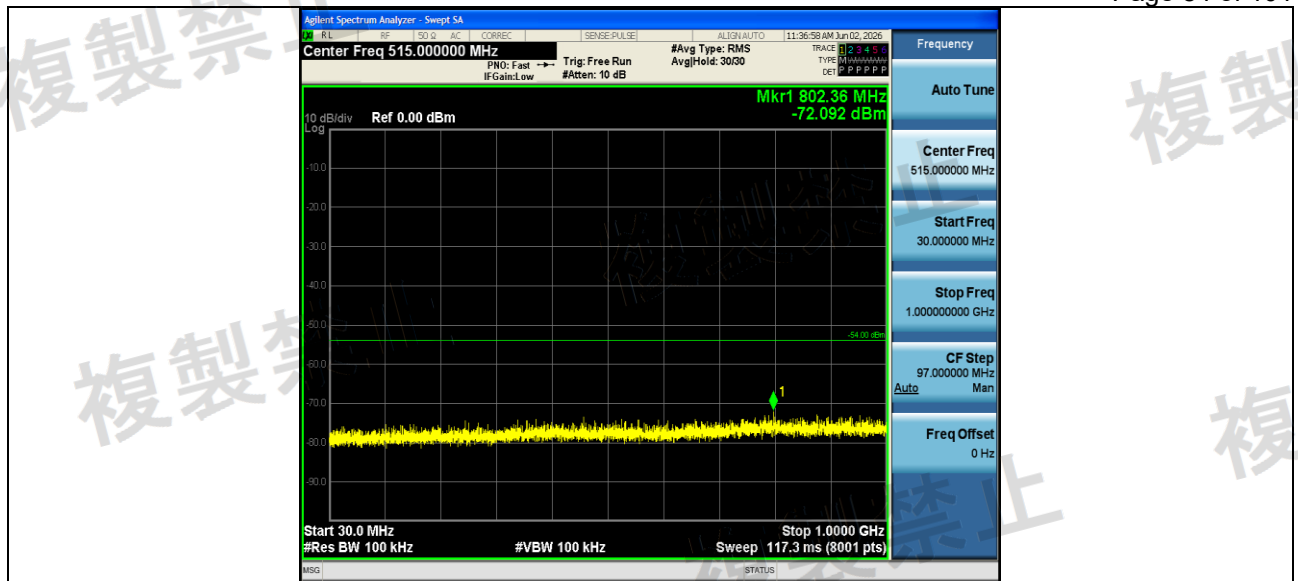
NTHV DH5 Ant1 2441 1000~13000

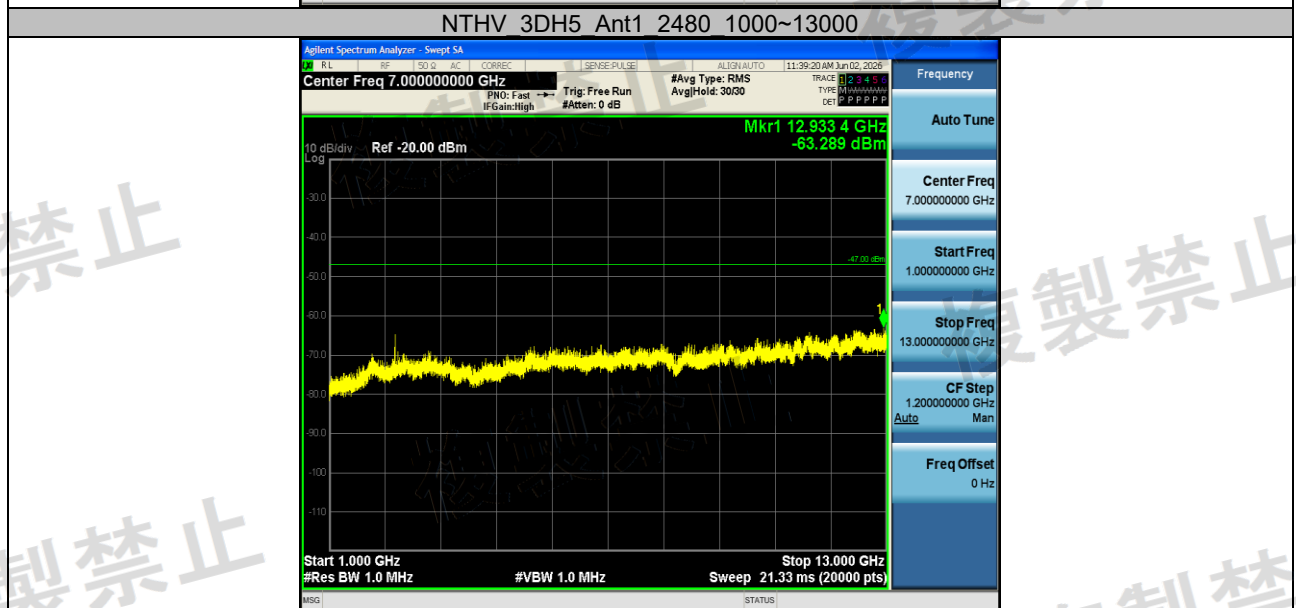
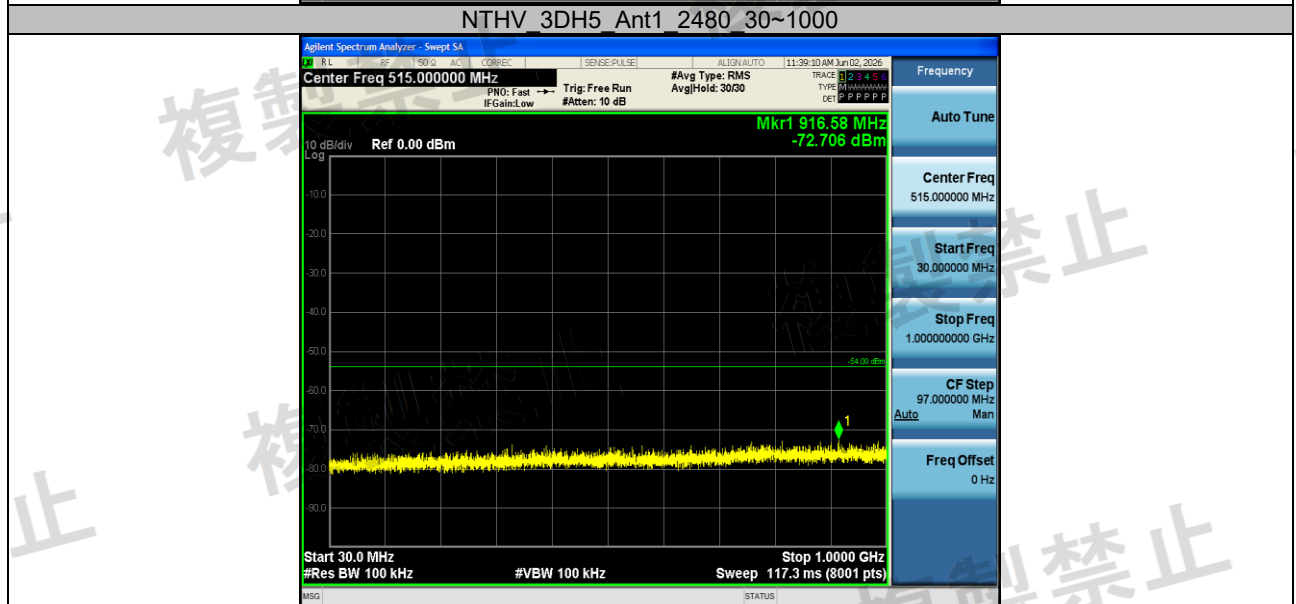
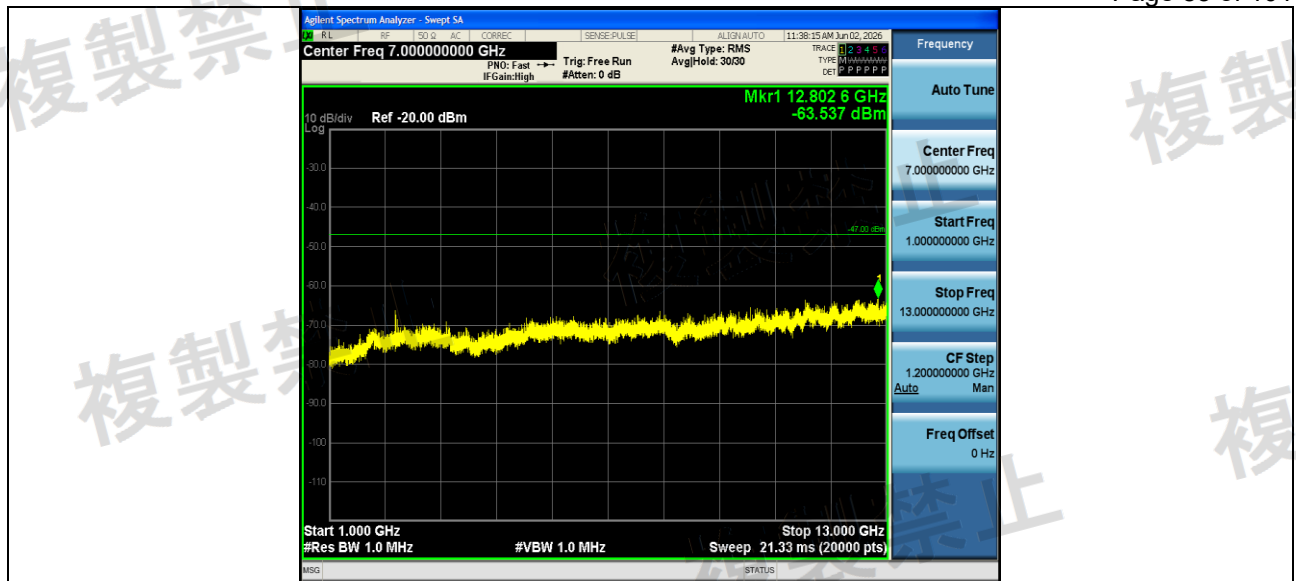










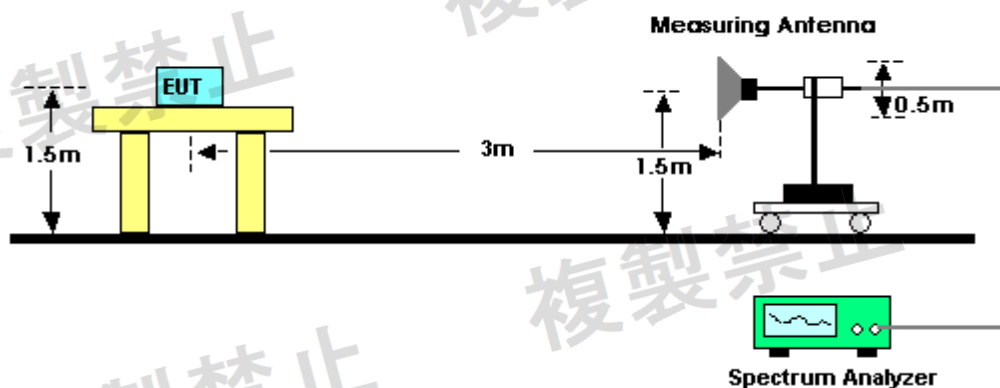




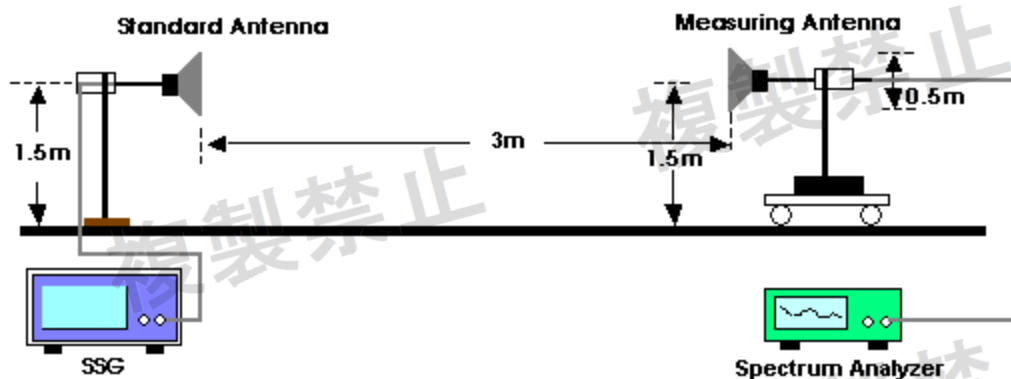
4.7. Transmission Antenna Gain (EIRP antenna power) Measurement

TEST CONFIGURATION

For EUT radiation measurement



For standard antenna measurement



TEST PROCEDURE

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read as "E".
3. Remove the EUT from the turn table and put the replacing antenna facing to measuring antenna at same height. Set the standard signal generator (SSG) at same frequency and transmit on then receive the signal
4. Swing the replacing antenna give a maximum receiving level.
5. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of replacing antenna height and swing it to find the maximum receiving level.
6. Set SSG output power at P_t to give the equivalent output level of "E" or calculate P_t with SSG output which gives the nearest of "E" and difference ($\pm 1\text{dB}$). Record the P_t .
7. Calculate EIRP by the formula below $\text{EIRP} = G_t - L + P_t$.
Gt: gain of replacing antenna (dBi)





L: feeder loss between SSG and replacing antenna

Pt: Output power of the SSG

8. If the antenna for the EUT has circular polarization, sum of V-field and H-field will be result if measuring antenna is linear polarization.

LIMIT

Modulation system	Frequency band used	Antenna power (max.)	EIRP (max.)	
			Omnidirectional case	Directional case
DS, OFDM	2,400 - 2,483.5 MHz	10 mW/MHz	12.14 dBm/MHz	22.14 dBm/MHz
FH, DS-FH FH-OFDM	2,400 - 2,483.5 MHz	3 mW/MHz	6.91 dBm/MHz	16.91 dBm/MHz
	Excluding 2,427 - 2,470.75 MHz	10 mW/MHz	12.14 dBm/MHz	22.14 dBm/MHz
Other than the above	2,400 - 2,483.5 MHz	10 mW	12.14 dBm	22.14 dBm

Note: it is not applicable when Antenna gain do not exceed 2.14 dBi.

TEST RESULTS

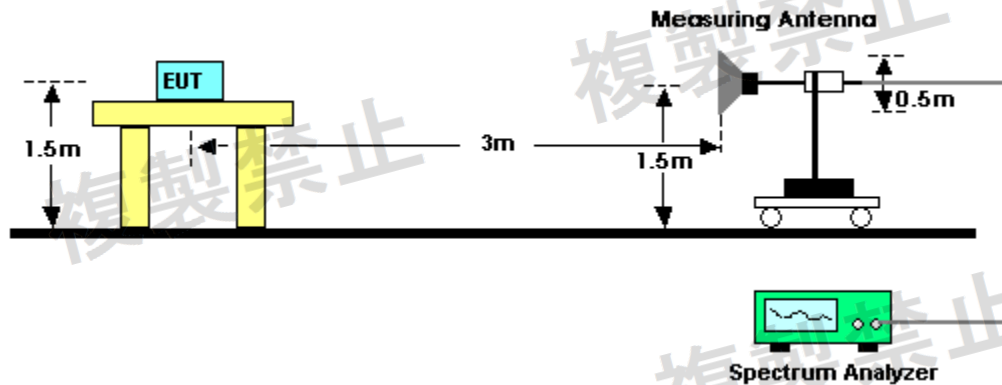
EIRP							
Test Condition	Test Mode	Antenna	Freq (MHz)	Result (dBm/MHz)	EIRP (dBm/MHz)	Limit (dBm/MHz)	Verdict
NTNV	DH5	Ant1	Hop	-1.60	1.40	≤6.91	PASS
	2DH5	Ant1	Hop	-3.24	-0.24	≤6.91	PASS
	3DH5	Ant1	Hop	-2.28	0.72	≤6.91	PASS
NTLV	DH5	Ant1	Hop	-0.26	2.74	≤6.91	PASS
	2DH5	Ant1	Hop	-0.48	2.52	≤6.91	PASS
	3DH5	Ant1	Hop	-2.27	0.73	≤6.91	PASS
NTHV	DH5	Ant1	Hop	0.19	3.19	≤6.91	PASS
	2DH5	Ant1	Hop	-2.05	0.95	≤6.91	PASS
	3DH5	Ant1	Hop	-2.06	0.94	≤6.91	PASS





4.8. Transmission Radiation Angle Width (3db Beamwidth) Measurement

TEST CONFIGURATION



TEST PROCEDURE

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 4.8 and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of measuring antenna. The output level at the spectrum analyzer is read as "E".
5. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below $360/A$ (If $A < 1$; then $A = 1$).
 $A = \{ \text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM} \} = \{ \text{EIRP Power [dBm]} / 12.14 \text{ for DS, OFDM} \}$ or
 $A = \{ \text{EIRP Power [mW]} / 4.9 \text{ for FH} \} = \{ \text{EIRP Power [dBm]} / 6.91 \text{ for FH} \}$

LIMIT

Item	Upper Limits
3dB antenna beam width	$360/A$ (If $A < 1$; then $A = 1$) $A = \{ \text{EIRP [mW]} / 16.36 \text{ for DS, OFDM} \}$ or $A = \{ \text{EIRP [mW]} / 4.9 \text{ for FH} \}$
Note: it is not applicable when Antenna gain do not exceed 2.14 dBi or EIRP do not exceed the omnidirectional EIRP upper limit..	

TEST RESULTS

N/A

AS:

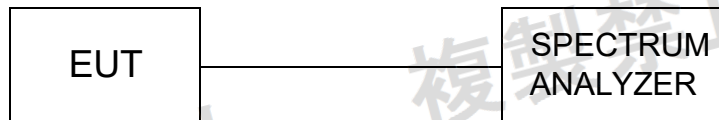
- ☐ Antenna gain do not exceed than 2.14 dBi
☒ EIRP do not exceed the omnidirectional EIRP upper limit





4.9. Dwell Time

TEST CONFIGURATION



TEST PROCEDURE

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set the spectrum analyzer as follows:
Center frequency: Measurement hopping frequency
Sweep frequency width: 0 Hz
Resolution bandwidth: About 1 MHz
Video bandwidth: Approximately the same as the resolution bandwidth
Sweep time: Hopping period
Trigger condition: Video trigger
Sweep mode: Single sweep
Detection mode: Positive peak
3. Set the EUT for DH5 packet transmitting.
4. Measure the maximum time duration of one single pulse.
5. Dwell time = [Spreading factor/79] x duty-cycle x 0.4 seconds (to be determined for each mode, DH5)
Duty-cycle = [on time/total time] x 100%

LIMIT

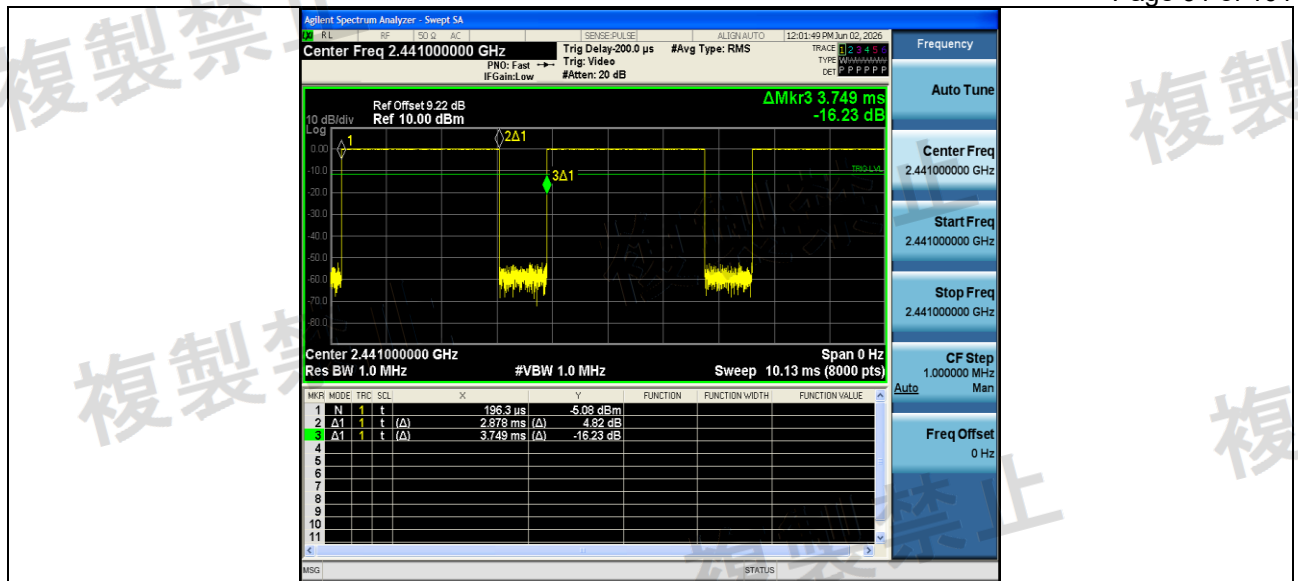
Item	Upper Limits
Dwell Time	≤ 0.4 sec

TEST RESULTS

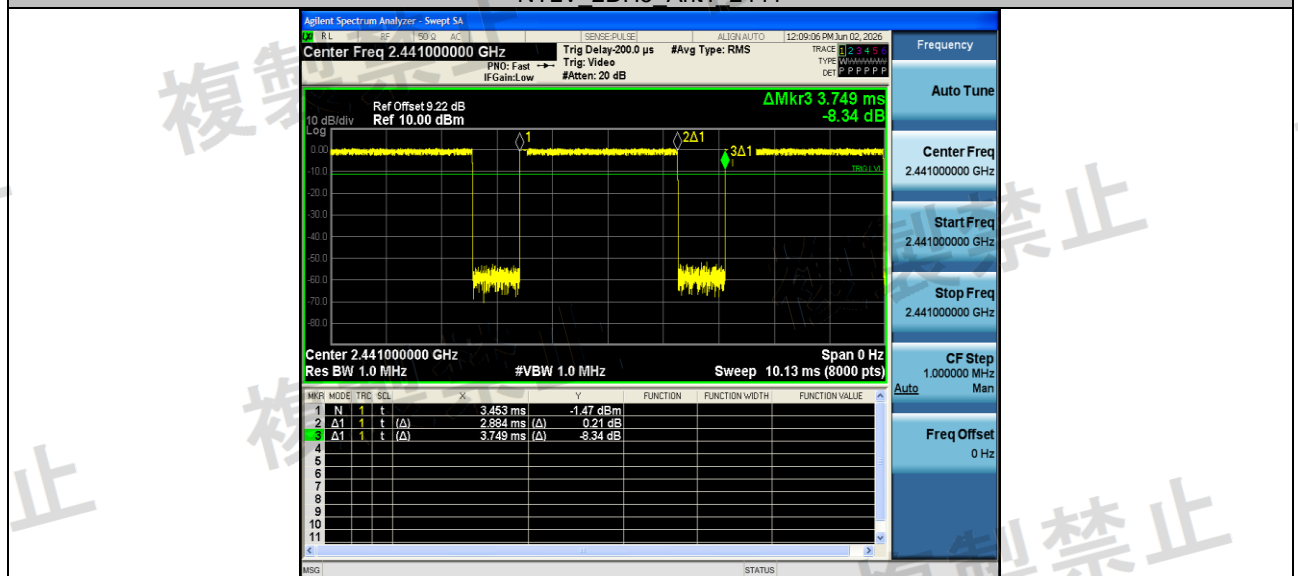
Test Condition	Test Mode	Antenna	Frequency [MHz]	BurstWidth [ms]	Result [s]	Limit [s]	Verdict
NTNV	DH5	Ant1	2441	2.88	0.28	<0.4	PASS
	2DH5	Ant1	2441	2.88	0.28	<0.4	PASS
	3DH5	Ant1	2441	2.89	0.28	<0.4	PASS
NTLV	DH5	Ant1	2441	2.88	0.28	<0.4	PASS
	2DH5	Ant1	2441	2.88	0.28	<0.4	PASS
	3DH5	Ant1	2441	2.89	0.28	<0.4	PASS
NTHV	DH5	Ant1	2441	2.88	0.28	<0.4	PASS
	2DH5	Ant1	2441	2.89	0.28	<0.4	PASS
	3DH5	Ant1	2441	2.89	0.28	<0.4	PASS



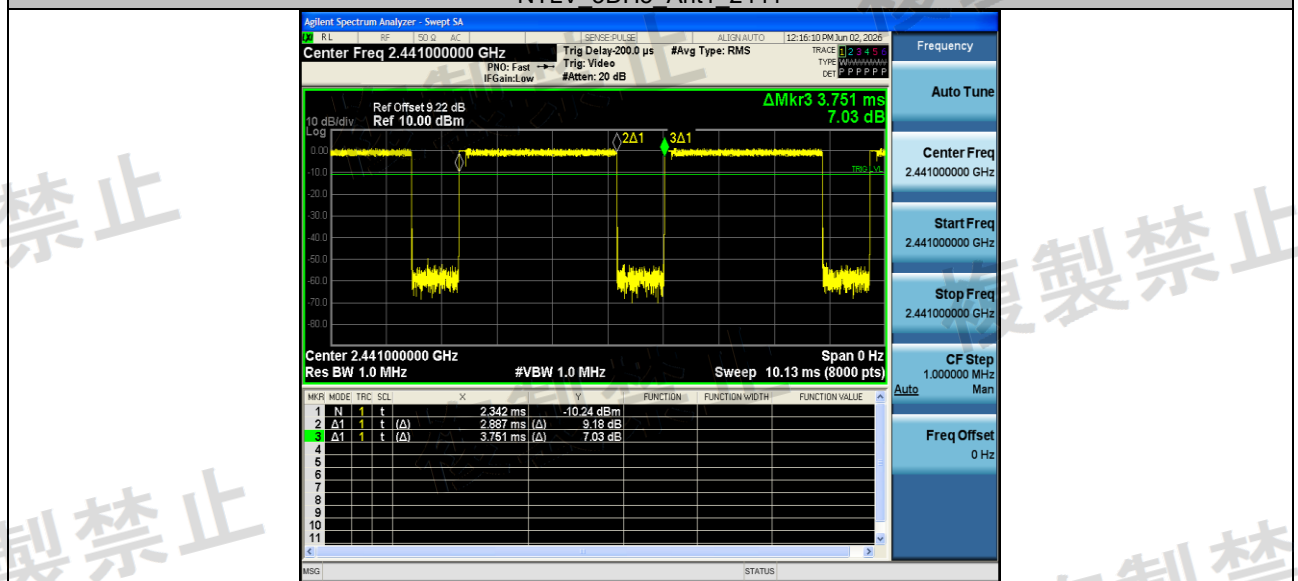




NTLV 2DH5 Ant1 2441

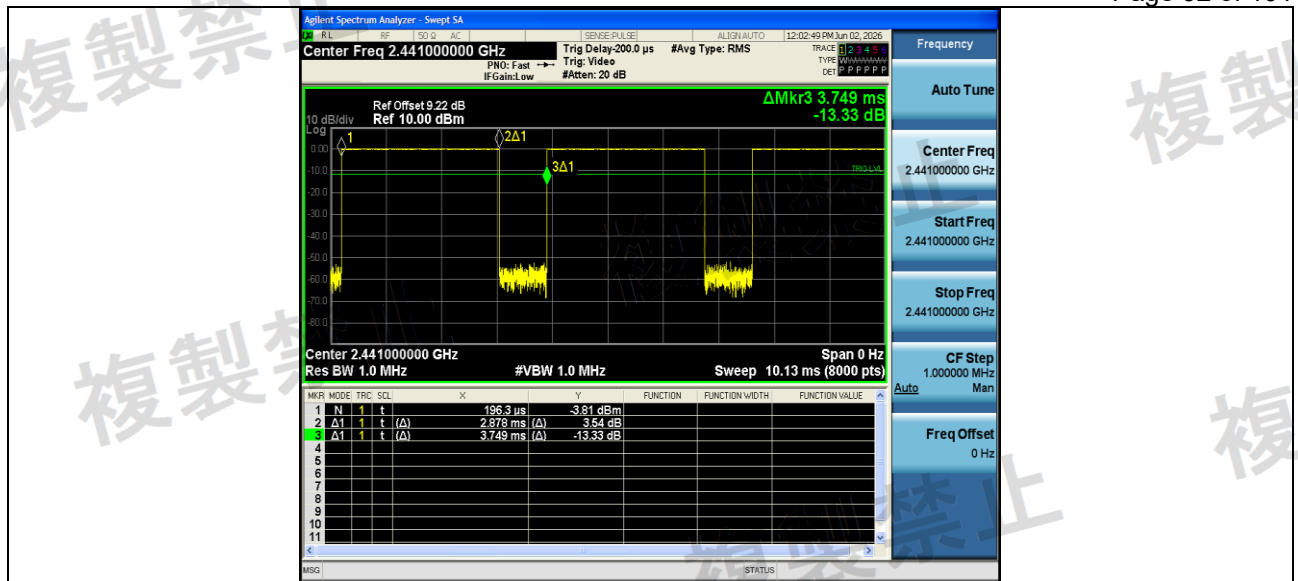


NTLV 3DH5 Ant1 2441

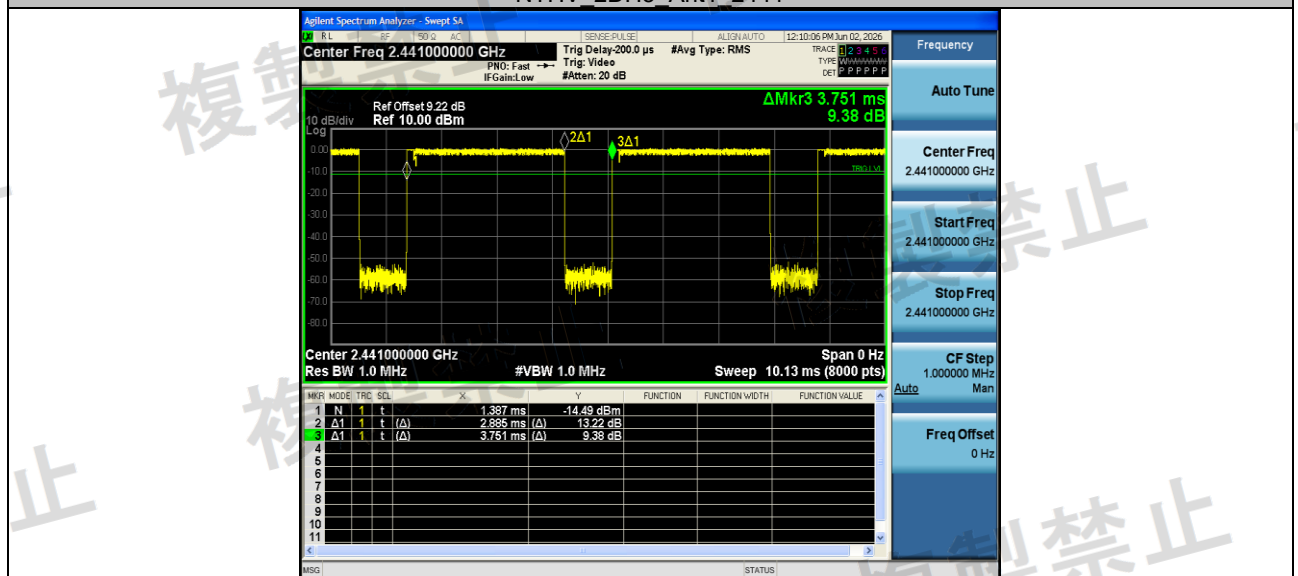


NTHV DH5 Ant1 2441

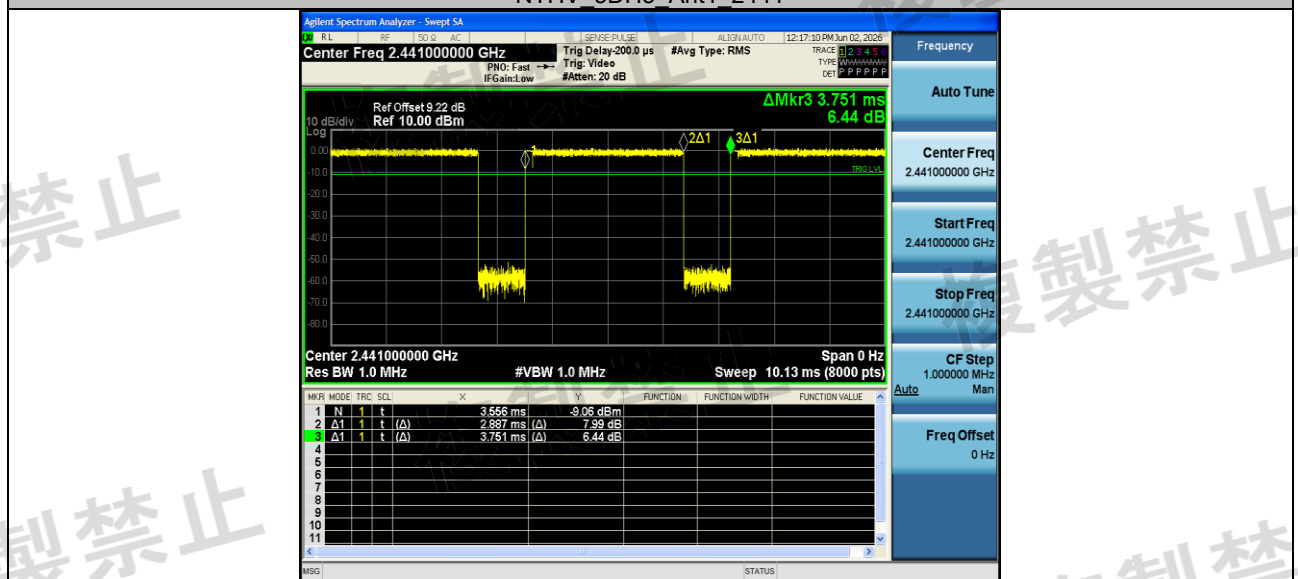




NTHV_2DH5_Ant1_2441

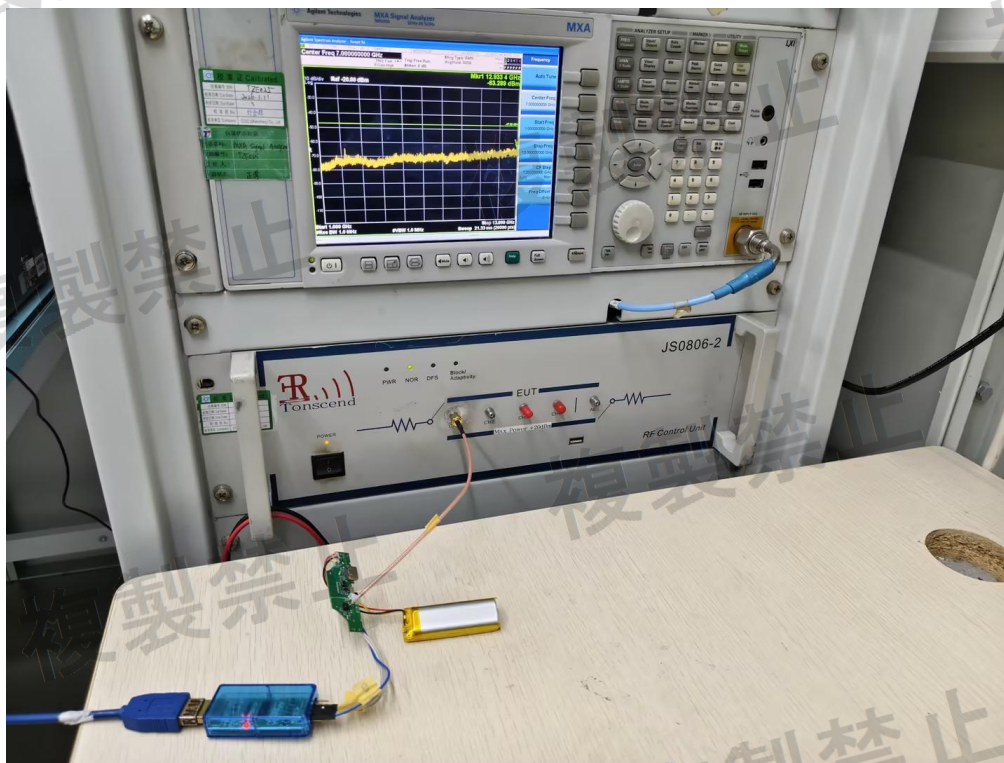


NTHV_3DH5_Ant1_2441





5. Test Setup Photos of the EUT





6. External and Internal Photos of the EUT

External Photos



External Photo 1



External Photo 2





複製禁止



External Photo 3



External Photo 4





External Photo 5



External Photo 6





External Photo 7



External Photo 8

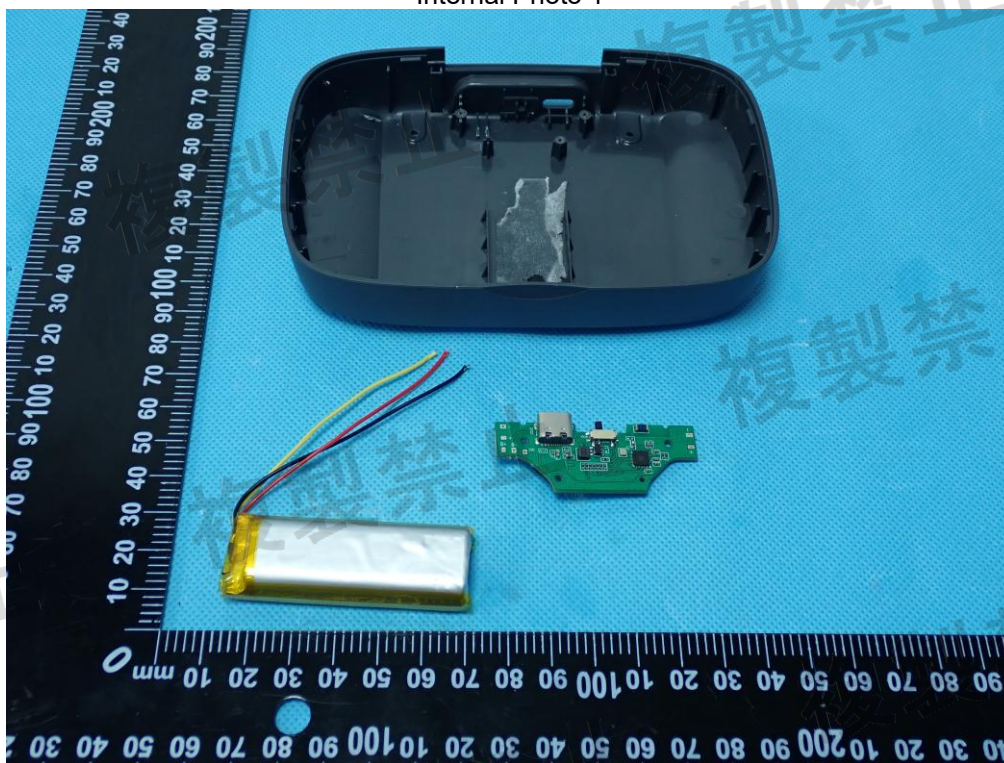




Internal Photos



Internal Photo 1

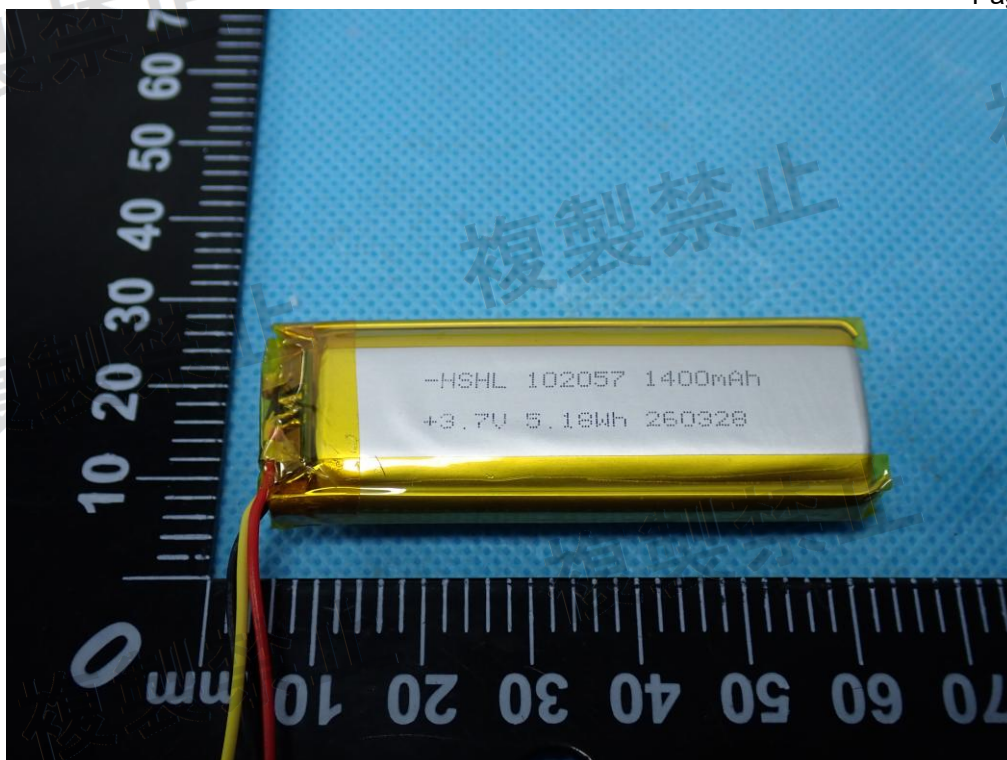


Internal Photo 2





複製禁止



Internal Photo 3

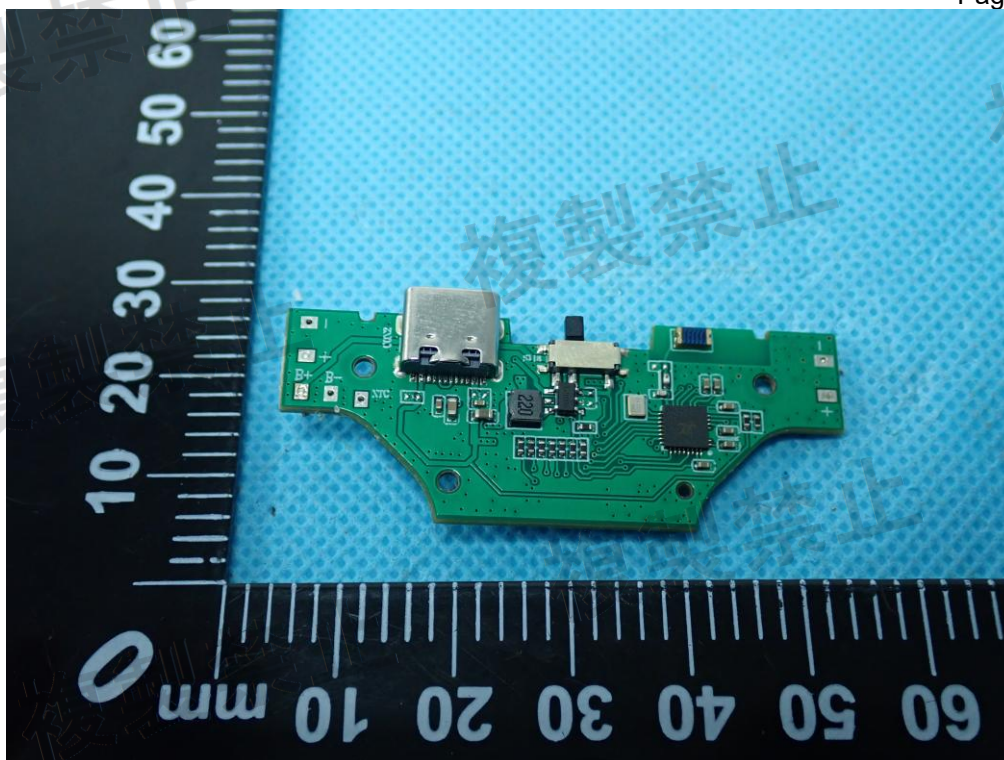


Internal Photo 4

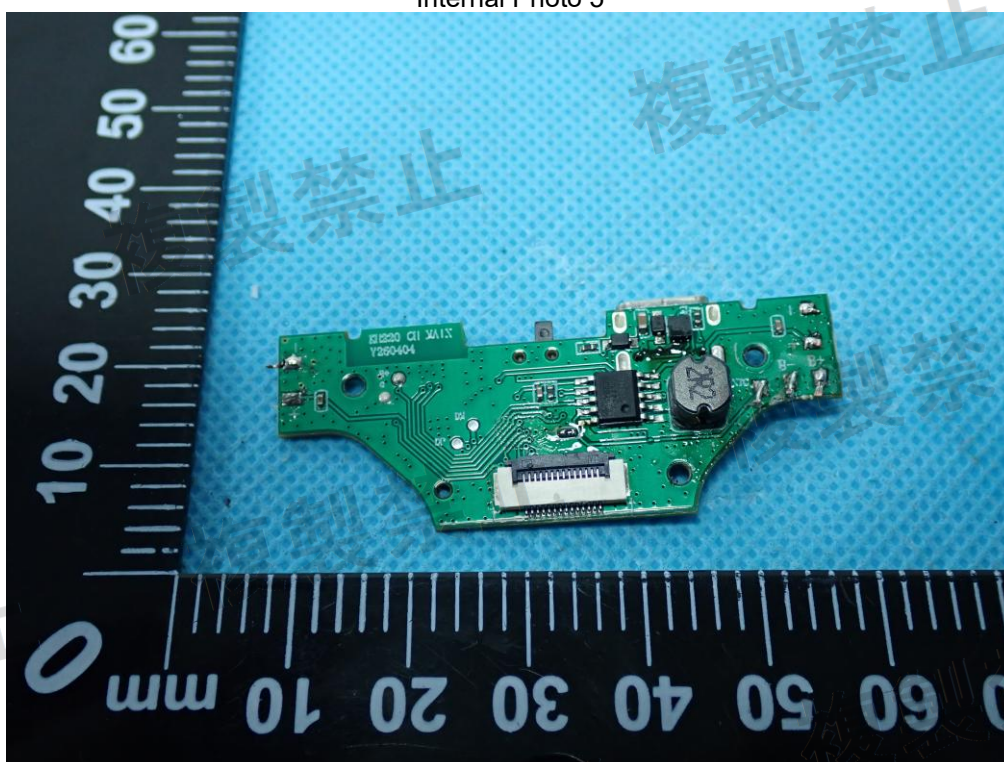




複製禁止

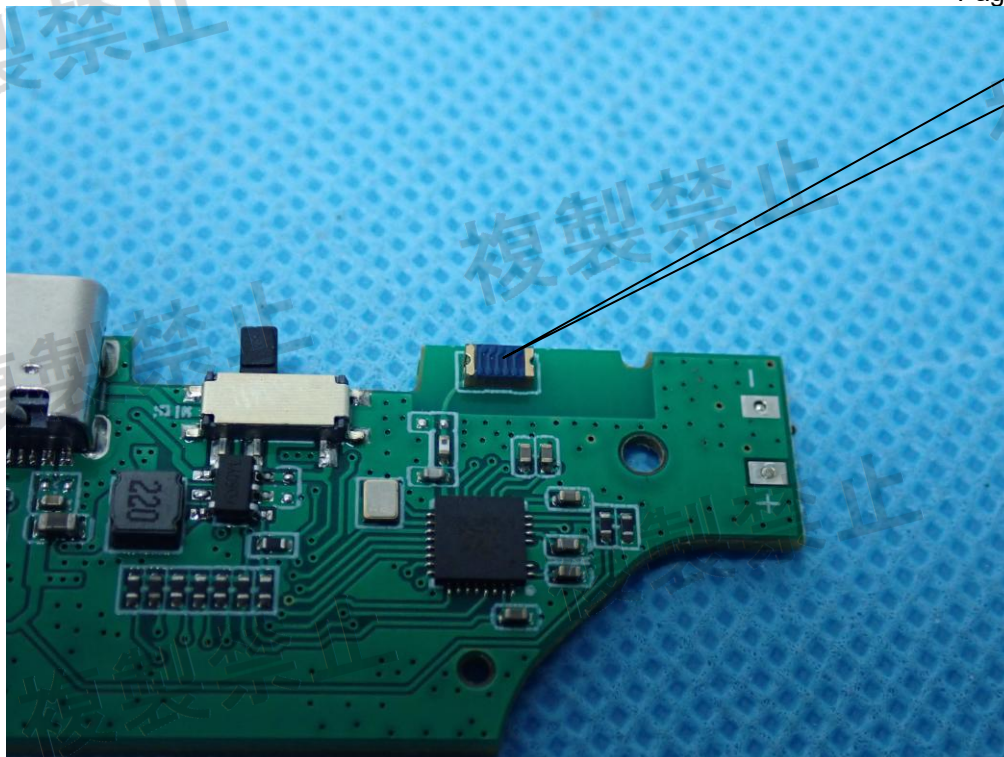


Internal Photo 5



Internal Photo 6





Internal Photo 7

.....End of Report.....

