

Test Report

Report No. : MTi250807016-0120E3

Date of issue : 2025-09-30

Applicant : Tinyphoton (Wuhan) Technology Co., Ltd.

Product : DWARF mini Smart Telescope

Model(s) : CCT1D1DM0100

Shenzhen Microtest Co., Ltd.

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Test Result Certification		
Applicant	Tinyphoton (Wuhan) Technology Co., Ltd.	
Applicant Address	2101 Huigushikong, No.4 Luoyu East Road, Wuhan, Hubei, China.	
Manufacturer	Meca (Wuhan) Technology Co., Ltd.	
Manufacturer Address	Room 06, 21st Floor, Building 1, Huigu Shikong, No. 206, Old Wuhuang Highway, East Lake New Technology Development Zone, Wuhan City, Hubei Province, China	
Factory	Meca (Wuhan) Technology Co., Ltd.	
Factory Address	Room 06, 21st Floor, Building 1, Huigu Shikong, No. 206, Old Wuhuang Highway, East Lake New Technology Development Zone, Wuhan City, Hubei Province, China	
Product description		
Product name	DWARF mini Smart Telescope	
Trademark	DWARFLAB	
Model name	CCT1D1DM0100	
Series Model(s)	N/A	
Standards	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	
Testing Information		
Date of test	2025-09-16 to 2025-09-26	
Test result	Pass	
Prepared by:	Letter Lan	<i>Letter Lan</i>
Reviewed by:	David Lee	<i>David Lee</i>
Approved by:	Lewis Lian	<i>Lewis Lian</i>

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1 General Description

1.1 Description of the EUT

Product name:	DWARF mini Smart Telescope
Model name:	CCT1D1DM0100
Series Model(s):	N/A
Model difference:	N/A
Electrical rating:	Input: DC 5V/3A, 9V/2A, 12V/3A MAX Battery 1: DC 3.85V 7000mAh 27Wh Battery 2: DC 3.85V 7000mAh 26.95Wh
Accessories:	Cable: USB-C to USB-C cable 1m*1
Hardware version:	A01
Software version:	V1.0.13
Test sample(s) number:	MTi250807016-01-R001
RF specification	
Operating frequency range:	W52: 802.11a/n(HT20)/ac(VHT20): 5180MHz to 5240MHz; 802.11n(HT40)/ac(VHT40): 5190MHz to 5230MHz; 802.11ac(VHT80): 5210MHz;
Channel number:	W52: 802.11a/n(HT20)/ac(VHT20): 4; 802.11n(HT40)/ac(VHT40): 2; 802.11ac(VHT80): 1;
Modulation type:	802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM);
Antenna(s) type:	FPC
Antenna(s) gain:	4.3dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	802.11a mode
Mode2	802.11n(HT20) mode
Mode3	802.11n(HT40) mode
Mode4	802.11ac(VHT20) mode
Mode5	802.11ac(VHT40) mode
Mode6	802.11ac(VHT80) mode
Mode7	Receiving mode (20MHz)
Mode8	Receiving mode (40MHz)

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Mode9	Receiving mode (80MHz)
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1.2.1 Operation channel list

U-NII Band 1

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	/	/
44	5220	/	/	/	/
48	5240	/	/	/	/

Test Channel List

Operation Band: 5150~5250MHz

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
20	5180	5200	5240
40	5190	/	5230
80	/	5210	/

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software: CMD

For power setting, refer to below table.

Mode	LCH	MCH	HCH
802.11a	10	10	10
802.11n(HT20)	6	6	6
802.11n(HT40)	6	6	6
802.11ac(VHT20)	6	6	6
802.11ac(VHT40)	6	6	6
802.11ac(VHT80)	6	6	6

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1.3 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

Test Conditions		Power Supply (V)	Input Voltage to the circuit of RF unit (V)
NTNV (V_{normal})	/	3.85	3.3
NTHV ($V_{\text{max.}}$)	+10%	4.235	3.3
NTLV ($V_{\text{min.}}$)	-10%	3.465	3.3

Note: If the fluctuation of input voltage to the circuit of RF unit (except power supply) of test equipment is under $\pm 1\%$, when input voltage from external power supply to the test equipment is fluctuated by $\pm 10\%$: conduct the test with the rated voltage only

1.4 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list

Description	Model	Serial No.	Manufacturer
Laptop	e485	/	Lenovo

Support cable list

Description	Length (m)	From	To
/	/	/	/

1.5 Measurement uncertainty

Parameter	Measurement uncertainty
Frequency tolerance	± 10 ppm
Occupied channel bandwidth	± 3 %
RF output power, conducted	± 1 dB
Power Spectral Density, conducted	± 1 dB
Unwanted Emissions, conducted	± 1 dB
All emissions, radiated	± 4.7 dB
Temperature	± 1 °C
Supply voltages	± 1 %
Time	± 1 %

Note: the measurement uncertainty is calculated and correspond to a factor $k=2$ (which provide confidence levels of 95.45%)

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2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Tolerance of Frequency	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
2	Occupied Bandwidth (99%)	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
3	Antenna Power and Tolerance	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
4	E.I.R.P	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
5	Out of Band Emission	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
6	Adjacent Channel Emitted Power	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
7	Spurious Emission Intensity	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
8	Secondary Radiated Emissions	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
9	Transmission Burst Length	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
10	Carrier Sensing 1	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass
11	Interference Prevention Function	Article 2-1, Item 19-3-MIC Notice No. 88 Appendix No. 45	Article 2-1, Item 19-3	Pass

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3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093

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4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due	Calibration method
Secondary Radiated Emissions Transmission Burst Length Occupied Bandwidth (99%) Antenna Power and Tolerance E.I.R.P Spurious Emission Intensity Tolerance of Frequency Out of Band Emission Adjacent Channel Emitted Power							
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2025-03-18	2026-03-17	C
2	ESG Series Analog Signal Generator	Agilent	E4421B	GB40051240	2025-03-14	2026-03-13	C
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2025-03-14	2026-03-13	C
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2025-03-14	2026-03-13	C
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2025-03-14	2026-03-13	C
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2025-03-18	2026-03-17	C
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2025-03-14	2026-03-13	C
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2025-03-14	2026-03-13	C
9	DC Power Supply	Agilent	E3632A	MY40027695	2025-03-18	2026-03-17	C

Remark:

(a) Calibration conducted by the National institute of information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.

(b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).

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

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

From JRL Article 24-2, paragraph 4, Item 2

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5 Radio Spectrum Matter Test Results (RF)

5.1 Interference Prevention Function

Test Requirement:	The EUT shall support one of the following functions: - Automatic identification transmission - Automatic identification reception
Test Method:	Notification No.88 of MIC, 2004
Procedure:	(1) For EUTs capable of automatically transmitting identification data a. Transmit identification data from EUT to Demodulator b. Confirm identification data is correctly received by Demodulator (2) For EUTs capable of automatically receiving identification data a. Transmit identification data from Link Partner to EUT b. Confirm communication link is established c. Link Partner shall respond by transmitting different identification data back to the EUT d. Confirm EUT stops transmitting, or confirm EUT recognizes that the two identification data are different

5.1.1 Conclusion:

The detected ID of the device is below:
9C: B8: B4: BC: 4F: F6

Test result: The device meet the requirements
PASS

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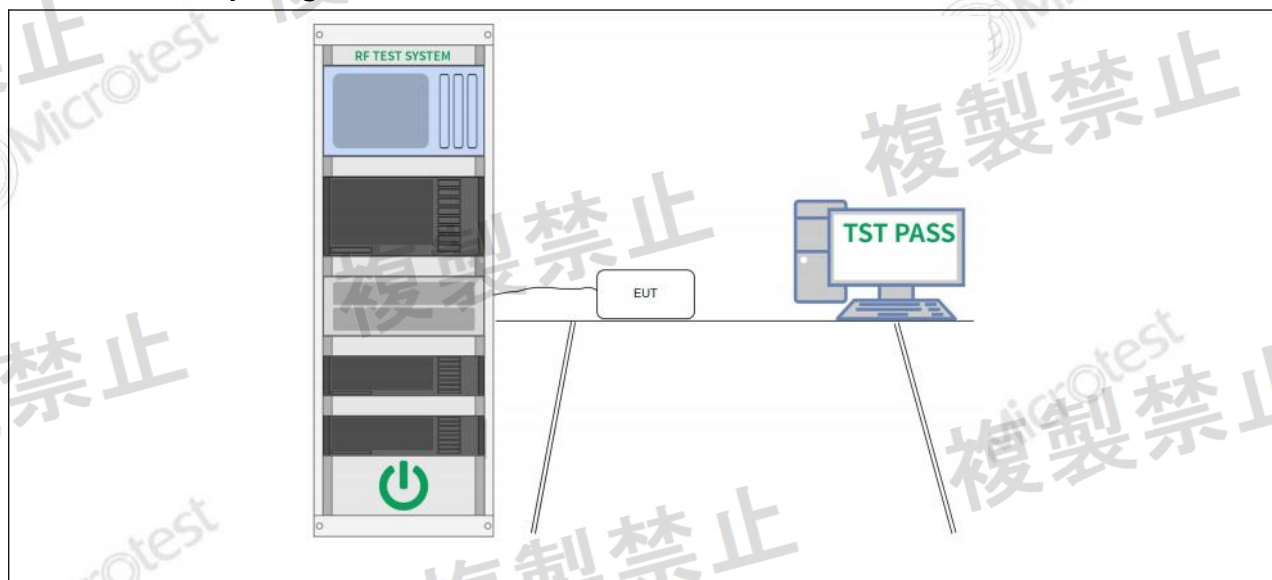
5.2 Tolerance of Frequency

Test Requirement:	Article 2-1, Item 19-3		
Test Limit:	± 20ppm		
Test Method:	Center frequency:	Test frequency	
	Span:	1 MHz	
	RBW:	10 kHz	
	VBW:	10 kHz	
	Sweep data points:	1001 or greater	
	Sweep time:	Auto	
	Detector mode:	Positive peak	
	Indication mode:	Max hold	
Procedure:	(1) Find the peak carrier signal and measure its frequency (2) For multiple antenna systems each antenna shall be measured (3) For an EUT with multiple antennas it is permissible to test a single antenna only, provided all the antenna measurement values are expected to be same for either of the following reasons: a) The frequency of all antenna transmissions are phase-synchronized to a common (fundamental) oscillator b) The antenna transmissions share a common clock signal		

5.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

5.2.2 Test Setup Diagram:



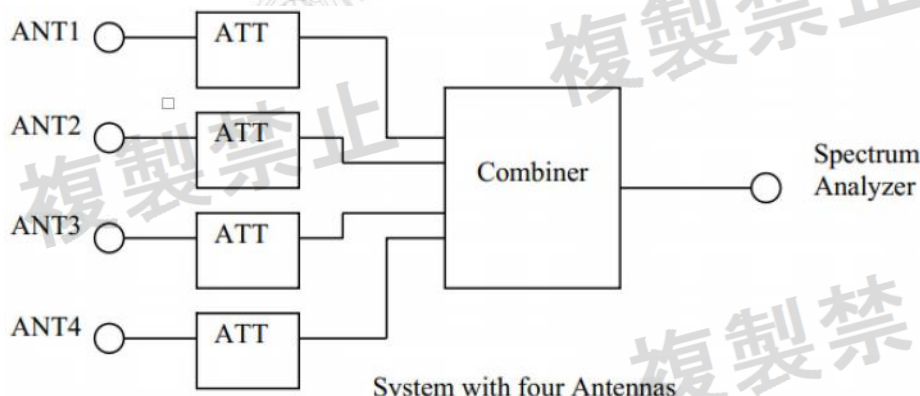
5.2.3 Test Data:

Please Refer to Appendix for Details.

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5.3 Occupied Bandwidth (99%)

Test Requirement:	Article 2-1, Item 19-3		
Test Limit:	DSSS: 18MHz OFDM:20/40/80/160MHz		
Test Method:	[Occupied Bandwidth (99%)]		
	Center Frequency:	Test frequency	
	Span:	2 – 3.5 times the technical standard	
	RBW:	Within 3% of the technical standard	
	VBW:	Same as RBW	
	Sweep time:	Auto	
	Sweep data points:	1001 or greater	
	Detector mode:	Positive peak	
	Indication mode:	Max hold	
	BW setting:	99%	
Procedure:	(1) Measure the signal bandwidth using a spectrum analyzer		
	(2) For multiple antenna systems: a) Each antenna shall be individually measured b) If the measured occupied bandwidth for any antenna exceeds [(Occupied Bandwidth Limit) – 100kHz] then, in addition, the occupied bandwidth shall be measured with all antennas combined – see diagram below:		
	 System with four Antennas		

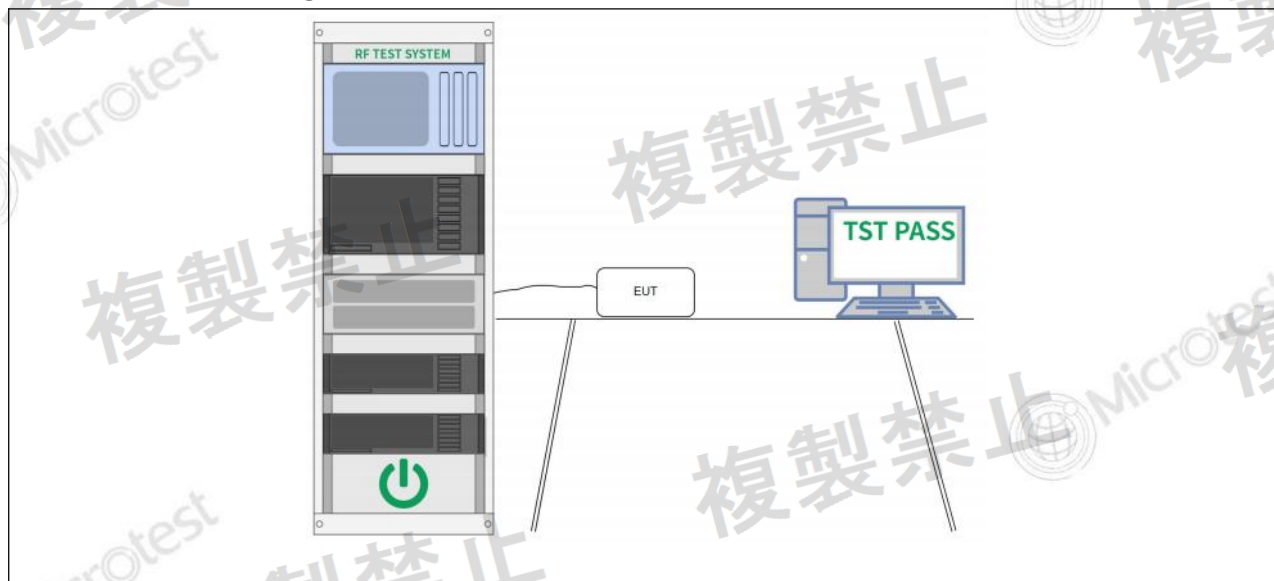
5.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

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5.3.2 Test Setup Diagram:



5.3.3 Test Data:

Please Refer to Appendix for Details.

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5.4 Antenna Power and Tolerance

Test Requirement:	Article 2-1, Item 19-3	
Test Limit:	10 mW/MHz or less for DSSS and OFDM 20MHz Bandwidth; 5mW/MHz or less for OFDM 40MHz Bandwidth; 2.5mW/MHz or less for OFDM 80MHz Bandwidth; 1.25mW/MHz or less for OFDM 80+80MHz or 160MHz Bandwidth; Antenna power tolerance: -80% ~ +20% for 5150~5250MHz and 5250~5350MHz; -50% ~ +50% for 5470~5725MHz;	
Test Method:	[Setting 1] – Search for peak power frequency	
	Center Frequency:	Test frequency
	Span:	Approximately twice the occupied bandwidth
	RBW:	1MHz
	VBW:	Approximately three times the RBW
	Sweep time:	Auto
	Sweep data points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold
	[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM	
	Frequency:	Frequency of peak power found using [Setting 1]
	Span:	0 Hz
	RBW:	3 MHz (FHSS in 7.4.1.1) 1MHz (DSSS, OFDM, FHSS in 7.4.1.2)
	Detector mode:	Sample
	Sweep:	Minimum time required to make an accurate measurement.
		For burst type (intermittent) transmission sweep time shall be greater than one burst interval
	Sweep data points:	1001 or greater
	[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM	
	Frequency:	Frequency of peak power found using [Setting 1]
	Span:	0 Hz
	RBW:	Bandwidth sufficient to cover that occupied by the carrier
	VBW:	Bandwidth sufficient to cover that occupied by the carrier
	Detector mode:	Sample
	Sweep:	Minimum time required to make an accurate measurement.
		For burst type (intermittent) transmission sweep time shall be greater than one burst interval

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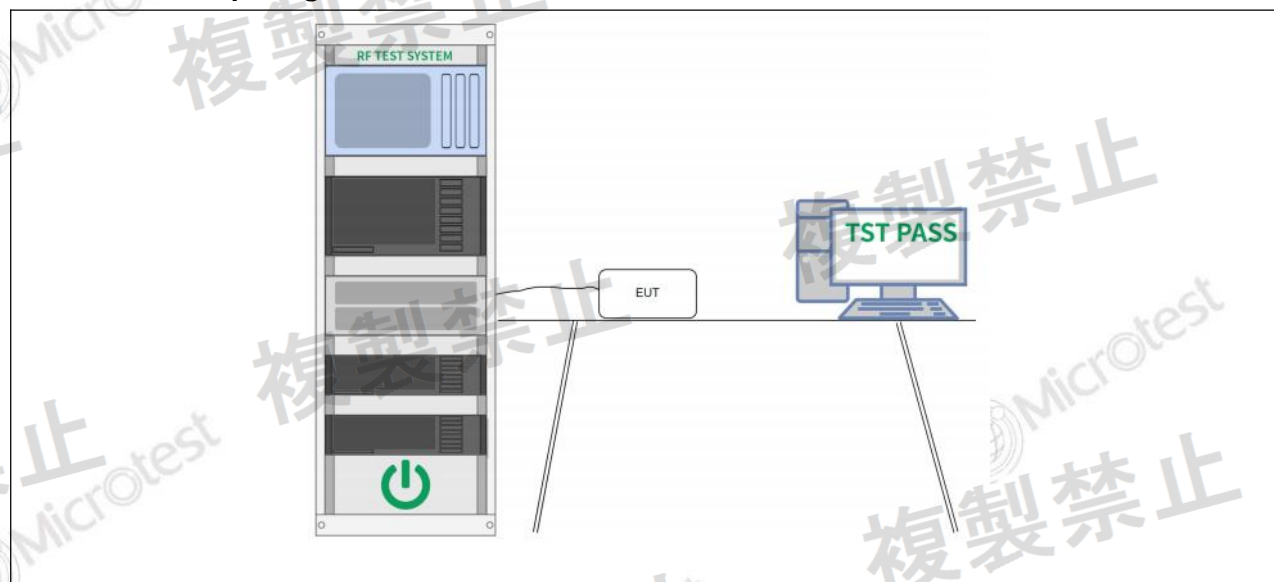
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	Sweep data points:	1001 or greater
Procedure:	(1) After configuring the spectrum analyzer to [Setting 1], find the frequency of maximum transmitted power (2) After configuring the spectrum analyzer to [Setting 2], measure the Average Burst Power of the frequency found in (1) Antenna Power (W/MHz) = Average Burst Power (3) If the EUT has an 80+80MHz bandwidth system then antenna power shall be measured separately, on each channel, but with both 80MHz transmitters simultaneously enabled.	

5.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

5.4.2 Test Setup Diagram:



5.4.3 Test Data:

Please Refer to Appendix for Details.

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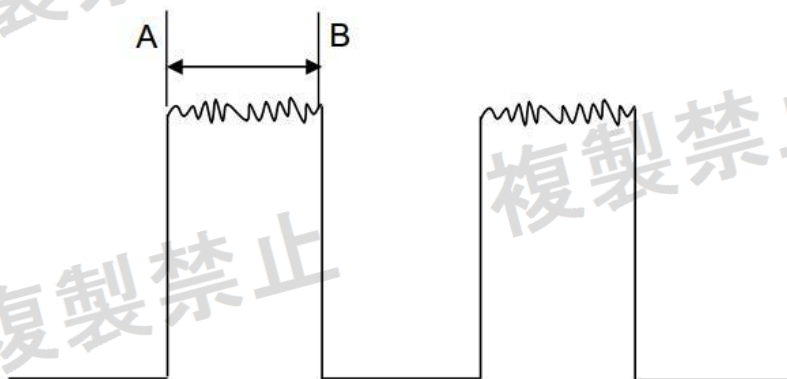
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5.5 E.I.R.P

Test Requirement:	Article 2-1, Item 19-3																																											
Test Limit:	5150~5250MHz: 10mW/MHz for DSS and OFDM 20MHz; 5mW/MHz for OFDM 40MHz; 2.5mW/MHz for OFDM 80MHz; 1.25mW/MHz for OFDM 80+80MHz and 160MHz; 5250~5350MHz with TPC: 10mW/MHz for DSS and OFDM 20MHz; 5mW/MHz for OFDM 40MHz; 2.5mW/MHz for OFDM 80MHz; 1.25mW/MHz for OFDM 80+80MHz and 160MHz; 5250~5350MHz without TPC: 5mW/MHz for DSS and OFDM 20MHz; 2.5mW/MHz for OFDM 40MHz; 1.25mW/MHz for OFDM 80MHz; 0.625mW/MHz for OFDM 80+80MHz and 160MHz; 5470~5725MHz with TPC: 50mW/MHz for DSS and OFDM 20MHz; 25mW/MHz for OFDM 40MHz; 12.5mW/MHz for OFDM 80MHz; 1.25mW/MHz for OFDM 80+80MHz; 6.25mW/MHz for and 160MHz; 5250~5350MHz without TPC: 25mW/MHz for DSS and OFDM 20MHz; 12.5mW/MHz for OFDM 40MHz; 6.25mW/MHz for OFDM 80MHz; 0.625mW/MHz for OFDM 80+80MHz; 3.125mW/MHz for and 160MHz;																																											
Test Method:	<table><tr><td colspan="2">[Setting 1] – Search for peak power frequency</td></tr><tr><td>Center Frequency:</td><td>Test frequency</td></tr><tr><td>Span:</td><td>Approximately twice the occupied bandwidth</td></tr><tr><td>RBW:</td><td>1MHz</td></tr><tr><td>VBW:</td><td>Approximately three times the RBW</td></tr><tr><td>Sweep time:</td><td>Auto</td></tr><tr><td>Sweep data points:</td><td>1001 or greater</td></tr><tr><td>Detector mode:</td><td>Positive peak</td></tr><tr><td>Indication mode:</td><td>Max hold</td></tr><tr><td colspan="2">[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM</td></tr><tr><td>Frequency:</td><td>Frequency of peak power found using [Setting 1]</td></tr><tr><td>Span:</td><td>0 Hz</td></tr><tr><td>RBW:</td><td>3 MHz (FHSS in 7.4.1.1) 1MHz (DSSS, OFDM, FHSS in 7.4.1.2)</td></tr><tr><td>Detector mode:</td><td>Sample</td></tr><tr><td>Sweep:</td><td>Minimum time required to make an accurate measurement.</td></tr><tr><td></td><td>For burst type (intermittent) transmission sweep time shall be greater than one burst interval</td></tr><tr><td>Sweep data points:</td><td>1001 or greater</td></tr><tr><td colspan="2">[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM</td></tr><tr><td>Frequency:</td><td>Frequency of peak power found using [Setting 1]</td></tr><tr><td>Span:</td><td>0 Hz</td></tr><tr><td>RBW:</td><td>Bandwidth sufficient to cover that occupied by the carrier</td></tr></table>		[Setting 1] – Search for peak power frequency		Center Frequency:	Test frequency	Span:	Approximately twice the occupied bandwidth	RBW:	1MHz	VBW:	Approximately three times the RBW	Sweep time:	Auto	Sweep data points:	1001 or greater	Detector mode:	Positive peak	Indication mode:	Max hold	[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM		Frequency:	Frequency of peak power found using [Setting 1]	Span:	0 Hz	RBW:	3 MHz (FHSS in 7.4.1.1) 1MHz (DSSS, OFDM, FHSS in 7.4.1.2)	Detector mode:	Sample	Sweep:	Minimum time required to make an accurate measurement.		For burst type (intermittent) transmission sweep time shall be greater than one burst interval	Sweep data points:	1001 or greater	[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM		Frequency:	Frequency of peak power found using [Setting 1]	Span:	0 Hz	RBW:	Bandwidth sufficient to cover that occupied by the carrier
[Setting 1] – Search for peak power frequency																																												
Center Frequency:	Test frequency																																											
Span:	Approximately twice the occupied bandwidth																																											
RBW:	1MHz																																											
VBW:	Approximately three times the RBW																																											
Sweep time:	Auto																																											
Sweep data points:	1001 or greater																																											
Detector mode:	Positive peak																																											
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[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM																																												
Frequency:	Frequency of peak power found using [Setting 1]																																											
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RBW:	3 MHz (FHSS in 7.4.1.1) 1MHz (DSSS, OFDM, FHSS in 7.4.1.2)																																											
Detector mode:	Sample																																											
Sweep:	Minimum time required to make an accurate measurement.																																											
	For burst type (intermittent) transmission sweep time shall be greater than one burst interval																																											
Sweep data points:	1001 or greater																																											
[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM																																												
Frequency:	Frequency of peak power found using [Setting 1]																																											
Span:	0 Hz																																											
RBW:	Bandwidth sufficient to cover that occupied by the carrier																																											

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	VBW:	Bandwidth sufficient to cover that occupied by the carrier
	Detector mode:	Sample
	Sweep:	Minimum time required to make an accurate measurement.
		For burst type (intermittent) transmission sweep time shall be greater than one burst interval
	Sweep data points:	1001 or greater
Procedure: - A hopping transmission separation of 1MHz or less with a constant transmission interval - The transmission probability is equal for all hopping frequencies Procedure: (1) After configuring the spectrum analyzer to [Setting 1], find the frequency of maximum transmitted power (2) After configuring the spectrum analyzer to [Setting 2], measure the Average Burst Power of the frequency found in (1) Note: Measure the period A-B in the figure below:  Measurement of Average Burst Power (A to B) (3) Calculate Antenna Power using the following formula: $\text{Antenna Power (W/MHz)} = \text{Average Burst Power (W)} / \text{Spread Bandwidth (MHz)}$ [Note] Spread Bandwidth in the formula above is derived from the data collected in section 5 (Occupied Bandwidth (99%)) (4) If the EUT has multiple antennas then each antenna power output shall be measured individually – the sum of these individual measurements shall represent the power output value (1) After configuring the spectrum analyzer to [Setting 1], find the frequency of maximum transmitted power (2) After configuring the spectrum analyzer to [Setting 2], measure the Average Burst Power of the frequency found in (1) $\text{Antenna Power (W/MHz)} = \text{Average Burst Power}$		

5.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

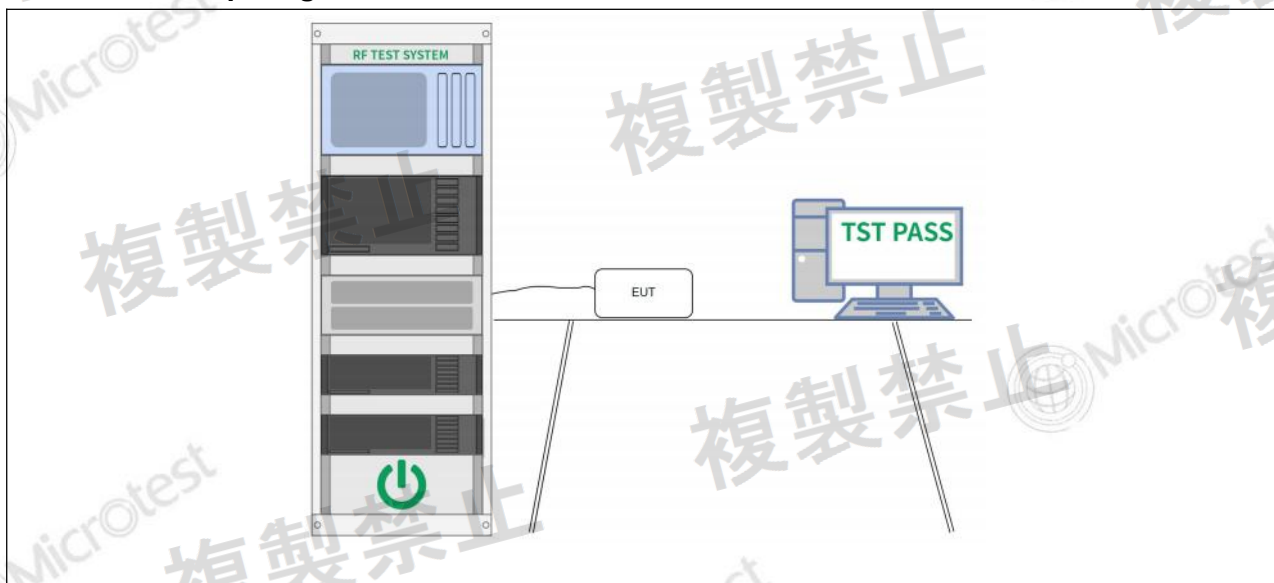
TEST REPORT

Report No.: MTi250807016-0120E3

Final test mode:

Mode1, Mode2, Mode3, Mode4, Mode5, Mode6

5.5.2 Test Setup Diagram:



5.5.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTi250807016-0120E3

5.6 Out of Band Emission

Test Requirement:	Article 2-1, Item 19-3																																							
Test Limit:	<table><tr><th colspan="2">20MHz system</th><th>40MHz system</th><th>80MHz system</th></tr><tr><td>OBW: 18MHz or less</td><td>OBW: 18 - 20 MHz</td><td></td><td></td></tr><tr><td>5.142 MHz or less: 2.5 µV/MHz</td><td>5.142 MHz or less: 2.5 µV/MHz</td><td>5.142 MHz or less: 2.5 µV/MHz</td><td>5.123.2 MHz or less: 2.5 µV/MHz</td></tr><tr><td>5.142 - 5.150 MHz: 15 µV/MHz</td><td>5.142 - 5.150 MHz: 15 µV/MHz</td><td>5.142 - 5.150 MHz: 15 µV/MHz</td><td>5.123.2 - 5.150 MHz: 15 µV/MHz</td></tr><tr><td>5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td></tr><tr><td>5.251 - 5.260 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.251 - 5.260 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.251 - 5.270 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.251 - 5.260 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td></tr><tr><td>5.260 - 5.267 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.260 - 5.267 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.270 - 5.276.4 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td><td>5.260 - 5.267 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)</td></tr><tr><td>5.267 MHz or more: 2.5 µV/MHz</td><td>5.267 MHz or more: 2.5 µV/MHz</td><td>5.276.4 MHz or more: 2.5 µV/MHz</td><td>5.267 MHz or more: 2.5 µV/MHz</td></tr><tr><td>f = kHz, Difference from 5240 (MHz)</td><td>f = kHz, Difference from 5240 (MHz)</td><td>f = kHz, Difference from 5270 (MHz)</td><td>f = kHz, Difference from 5210 (MHz)</td></tr></table>				20MHz system		40MHz system	80MHz system	OBW: 18MHz or less	OBW: 18 - 20 MHz			5.142 MHz or less: 2.5 µV/MHz	5.142 MHz or less: 2.5 µV/MHz	5.142 MHz or less: 2.5 µV/MHz	5.123.2 MHz or less: 2.5 µV/MHz	5.142 - 5.150 MHz: 15 µV/MHz	5.142 - 5.150 MHz: 15 µV/MHz	5.142 - 5.150 MHz: 15 µV/MHz	5.123.2 - 5.150 MHz: 15 µV/MHz	5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.250 - 5.251 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.251 - 5.260 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.251 - 5.260 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.251 - 5.270 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.251 - 5.260 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.260 - 5.267 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.260 - 5.267 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.270 - 5.276.4 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.260 - 5.267 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.267 MHz or more: 2.5 µV/MHz	5.267 MHz or more: 2.5 µV/MHz	5.276.4 MHz or more: 2.5 µV/MHz	5.267 MHz or more: 2.5 µV/MHz	f = kHz, Difference from 5240 (MHz)	f = kHz, Difference from 5240 (MHz)	f = kHz, Difference from 5270 (MHz)	f = kHz, Difference from 5210 (MHz)
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5.240 - 5.249 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.240 - 5.249 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.230 - 5.249 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)	5.210 - 5.240 MHz: $10^{-12} \times f^{1.5}$ (µV/MHz)																																					
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5.260 - 5.267 MHz: 2.5 µV/MHz	5.260 - 5.267 MHz: 2.5 µV/MHz	5.471 - 5.471.5 MHz: 15 µV/MHz																																						
5.267 - 5.470.5 MHz: 15 µV/MHz	5.267 - 5.470.5 MHz: 15 µV/MHz	5.471.5 - 5.472 MHz: 15 µV/MHz																																						
5.470.5 - 5.471 MHz: 15 µV/MHz	5.470.5 - 5.471 MHz: 15 µV/MHz	5.472 MHz or more: 15 µV/MHz																																						
5.471 - 5.471.5 MHz: 15 µV/MHz	5.471 - 5.471.5 MHz: 15 µV/MHz																																							
5.471.5 - 5.472 MHz: 15 µV/MHz	5.471.5 - 5.472 MHz: 15 µV/MHz																																							
5.472 MHz or more: 15 µV/MHz	5.472 MHz or more: 15 µV/MHz																																							

| Test Method: | | | | |--------------------|---| | [Setting 1] | | | Frequency range: | Test frequency range as required | | RBW: | 1 MHz | | VBW: | 1 MHz | | Sweep time: | Minimum time required to make an accurate measurement | | Sweep Data Points: | 1001 or greater | | Detector mode: | Positive peak | | Indication mode: | Max hold (see Note 1) | | Note 1: | Sweep shall be repeated until the max hold waveform is stable. | | [Setting 2] | | | Center frequency: | Frequency of spurious emission found using [Setting 1] | | Span: | 0 Hz | | RBW: | 1 MHz | | VBW: | 1 MHz | | Sweep time: | Minimum time required to make an accurate measurement.
For burst type (intermittent) spurious emissions. | | | | |

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		sweep time shall be greater than one burst interval	
	Sweep Data Points:	1001 or greater	
	Detector mode:	Sample	
Procedure:	(1) After configuring the spectrum analyzer to [Setting 1], search for spurious emissions from 30 MHz to 12.5 GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to be divided into sufficient sections of size [RBW x Sweep Data Points]. If spurious emissions greater than [Limit - 3dB] are found, then more detailed measurements are required, go to step (2) (2) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude. If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time. (3) Calculate the spurious emission value (Calculated Value) using following the formula below: Calculated Value = (Measured Value using (3) + 15.2dB) Note: 15.2dB adjustment is derived from the Conversion Factor of RBW Conversion Factor of RBW = 10 x Log (Reference Bandwidth / RBW of measurement) = 15.2 [dB] Where: Reference Bandwidth = 1 MHz RBW of measurement = 30 kHz (4) If the calculated value using (4) is over the Limit (section 6.7), go to (6) (6) Configure the spectrum analyzer to [Setting 3] then make the following changes: Frequency: Frequency of spurious emission Span: 1 MHz (6) After sweep, send the span data set to the PC (7) Convert measured data from dBm to Watts (8) Sum all the data using the formula below. If the sum is within the limit, the test result is Pass, otherwise, Fail $P_s = \left(\sum_{i=1}^n E_i \right) \times \frac{S_w}{RBW \times k \times n}$ Ps: Sum (Watts) Ei: Measured value at each point in the Span (Watts) Sw: Span (1MHz) n: Number of measurement points in the Span k: Correction factor for Equivalent Noise Bandwidth, specific to each spectrum analyzer, check the instrument user guide RBW: Resolution Bandwidth (MHz). (9) If the EUT has multiple antennas, measure the spurious emission form each individual antenna using steps (1) through (9) (10) Convert the individual antenna spurious level measurements (step (10)) from dB to absolute values (11) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions) (12) Ensure that the composite spectrum does not exceed the Limit defined in 6.7 (Technical Standard) (13) Configuring the spectrum analyzer using [Setting 3] and measure the spurious emissions with all the antennas electrically combined		

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5.6.1 E.U.T. Operation:

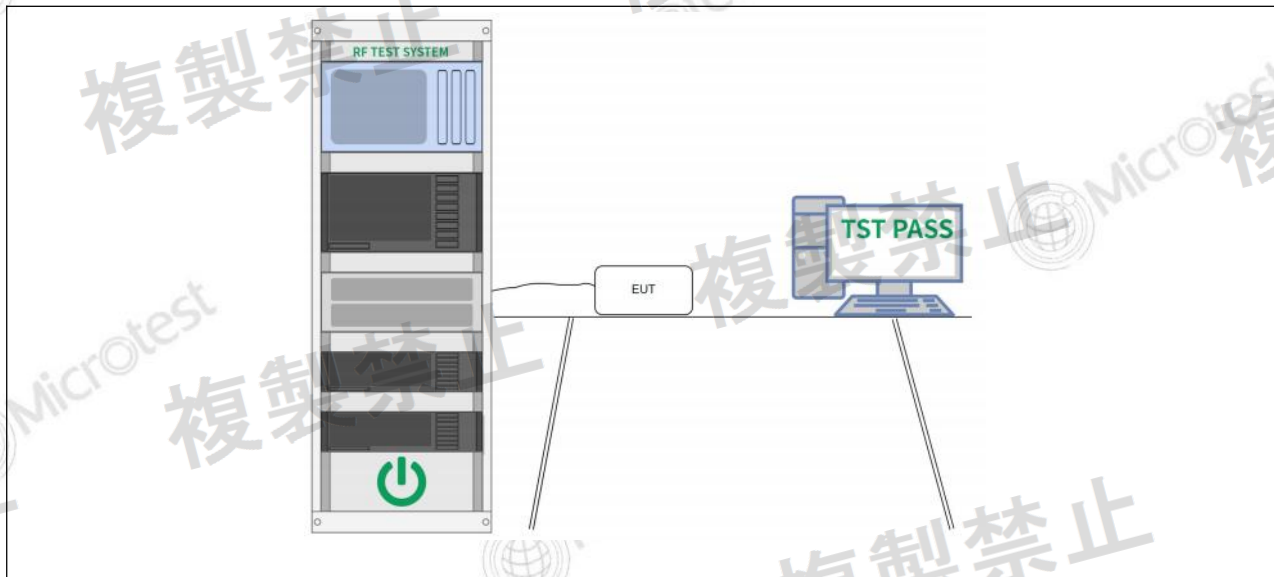
Operating Environment:

Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
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Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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5.6.2 Test Setup Diagram:



5.6.3 Test Data:

Please Refer to Appendix for Details.

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5.7 Adjacent Channel Emitted Power

Test Requirement:	Article 2-1, Item 19-3
Test Limit:	For Bandwidth equal to 20MHz and 40MHz: $F_c \pm 20\text{MHz} : -25\text{dBc}$ $F_c \pm 40\text{MHz} : -40\text{dBc}$ For Bandwidth above 40MHz: $F_c \pm 80\text{MHz} : -25\text{dBc}$
Test Method:	Center Frequency: Test Frequency Span: (see Note1) RBW: 300kHz VBW: 300kHz Sweep time: Auto Sweep data points: 1001 or greater Detector mode: Sample (for Continuous Type) Positive peak (for Burst Type) Indication mode: Single sweep (for Continuous Type) Max hold (for Burst Type) Note1: 5.2GHz and 5.3GHz Band: $\text{OBW} \leq 18\text{MHz} : 18\text{MHz}$ $18\text{MHz} < \text{OBW} \leq 19\text{MHz} : 19\text{MHz}$ $19\text{MHz} < \text{OBW} \leq 38\text{MHz} : 38\text{MHz}$ $38\text{MHz} < \text{OBW} \leq 78\text{MHz} : 78\text{MHz}$ 5.6GHz Band: OFDM: $\text{OBW} \leq 19.7\text{MHz} : 19\text{MHz}$ $19.7\text{MHz} < \text{OBW} \leq 38\text{MHz} : 38\text{MHz}$ $38\text{MHz} < \text{OBW} \leq 78\text{MHz} : 78\text{MHz}$ Others: 18MHz
Procedure:	(1) Configure the spectrum analyzer to [Setting 1] and set the EUT to transmit mode (2) Measure the transmitter power (defined as P_C) using the procedure shown below: (a) Set the center of the span to the transmit frequency (b) After sweeping the entire span, send the span data set to the PC (c) Convert measured data from dBm to Watts (d) Sum all the data to derive the P_C (3) Measure the Upper Adjacent Channel Leakage Power (defined as P_U) using the procedure shown below. For measurement frequency, see Note2. (a) Set the center of the span to [Transmit Frequency + 20 MHz (or 40 MHz)] (b) Sweep the entire span, send the span data set to the PC (c) Convert measured data from dBm to Watts (d) Sum all the data to derive the P_U (e) After setting the center of the span to [Transmit Frequency + 40MHz (or 80 MHz)], repeat steps (b) through step (d) (4) Measure the Lower Adjacent Channel Leakage Power (defined as P_L) using the procedure shown below. For measurement frequency, see Note2. (a) Set the center of the span to [Transmit Frequency + 20 MHz (or 40 MHz)] (b) Sweep the entire span, send the span data set to the PC

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- (c) Convert measured data from dBm to Watts
(d) Sum all the data to derive the PL
(e) After setting the center of the span to [Transmit Frequency + 40MHz (or 80 MHz)], repeat steps (b) through step (d)
(5) Derive all the Adjacent Channel Leakage Power Ratios using the formula shown below:
- Upper Adjacent Channel Leakage Power Ratio = $10 \log (P_U / P_C)$
- Lower Adjacent Channel Leakage Power Ratio = $10 \log (P_L / P_C)$
(6) If the EUT has multiple antennas then the following steps shall be taken:
(a) Repeat steps (1) through step (5) for each individual antenna
(b) Repeat steps (1) through step (5) with all the antennas combined
(c) To derive the total P_C , sum the individual antenna P_C measurements from step (a)
(d) Derive the total P_U and total P_L using the same procedure as step (c)
(e) Calculate the Adjacent Channel Leakage Power Ratio using the total P_C , total P_U and total P_L using the formula in step (5)
(f) Note 2:
5.2 GHz and 5.3 GHz band:
OBW $\leq$ 18 MHz: Transmit frequency ± 20 MHz, ± 40 MHz
18MHz < OBW $\leq$ 19MHz: Transmit frequency ± 20 MHz, ± 40 MHz
19MHz < OBW $\leq$ 38MHz: Transmit frequency ± 40 MHz, ± 80 MHz
38MHz < OBW $\leq$ 78MHz: Transmit frequency ± 80 MHz
5.6GHz Band:
OFDM:
OBW $\leq$ 19.7MHz: Transmit frequency ± 20 MHz, ± 40 MHz
19.7MHz < OBW $\leq$ 38MHz: Transmit frequency ± 40 MHz, ± 80 MHz
38MHz < OBW $\leq$ 78MHz: Transmit frequency ± 80 MHz
Other than OFDM: Transmit frequency ± 20 MHz, ± 40 MHz

5.7.1 E.U.T. Operation:

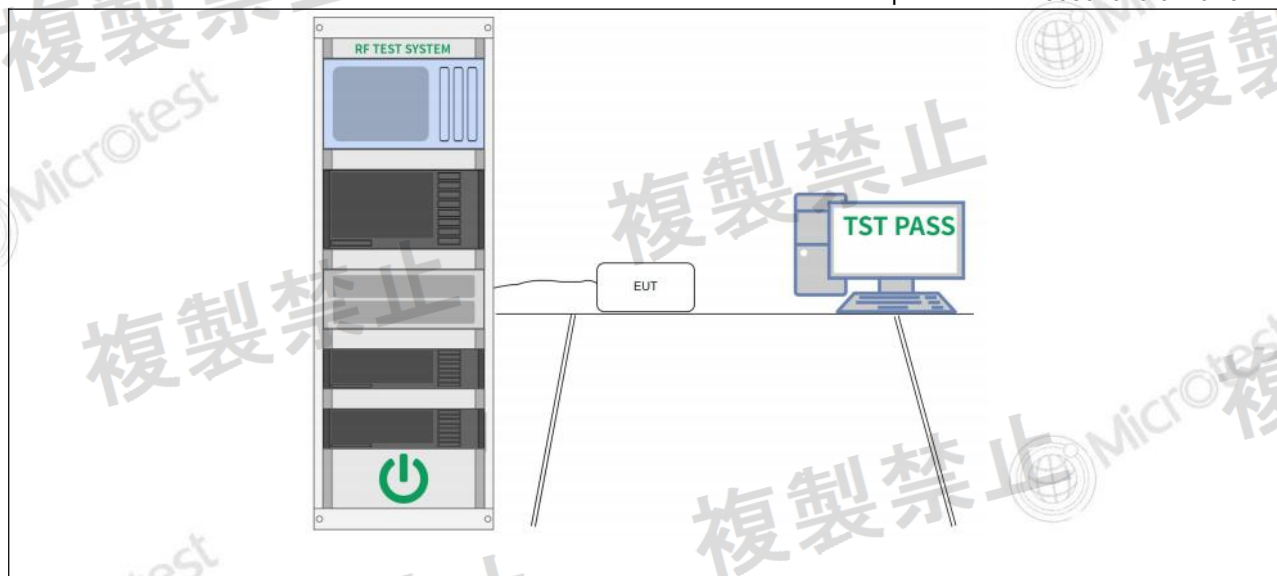
Operating Environment:

Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

5.7.2 Test Setup Diagram:

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5.7.3 Test Data:

Please Refer to Appendix for Details.

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5.8 Spurious Emission Intensity

Test Requirement:
Test Limit:

Article 2-1, Item 19-3

W52			
20MHz system	40MHz system	80MHz system	
OBW: 18MHz or less	OBW: 18 - 20 MHz		
5.142 MHz or less: 2.5 μ V/MHz	5.142 MHz or less: 2.5 μ V/MHz	5.142 MHz or less: 2.5 μ V/MHz	
5.142 - 5.150 MHz: 15 μ V/MHz	5.142 - 5.150 MHz: 15 μ V/MHz	5.142 - 5.150 MHz: 15 μ V/MHz	
5.250 - 5.251 MHz: 10^{-12} W/MHz	5.250 - 5.251 MHz: 10^{-12} W/MHz	5.250 - 5.251 MHz: 10^{-12} W/MHz	
5.251 - 5.260 MHz: 10^{-11} W/MHz	5.251 - 5.260 MHz: 10^{-11} W/MHz	5.251 - 5.260 MHz: 10^{-11} W/MHz	
5.260 - 5.267 MHz: 10^{-10} W/MHz	5.260 - 5.267 MHz: 10^{-10} W/MHz	5.260 - 5.267 MHz: 10^{-10} W/MHz	
5.267 MHz or more: 2.5 μ V/MHz	5.267 MHz or more: 2.5 μ V/MHz	5.267 MHz or more: 2.5 μ V/MHz	
f = 3MHz, Difference from 5240 (MHz)	f = 3MHz, Difference from 5240 (MHz)	f = 3MHz, Difference from 5240 (MHz)	
W53			
20MHz system	40MHz system	80MHz system	
OBW: 18MHz or less	OBW: 18 - 20 MHz		
5.233.3 MHz or less: 2.5 μ V/MHz	5.233.3 MHz or less: 2.5 μ V/MHz	5.233.3 MHz or less: 2.5 μ V/MHz	
5.233.3 - 5.240 MHz: 10^{-10} W/MHz	5.233.3 - 5.240 MHz: 10^{-10} W/MHz	5.233.3 - 5.240 MHz: 10^{-10} W/MHz	
5.240 - 5.249 MHz: 10^{-9} W/MHz	5.240 - 5.249 MHz: 10^{-9} W/MHz	5.240 - 5.249 MHz: 10^{-9} W/MHz	
5.249 - 5.250 MHz: 10^{-12} W/MHz	5.249 - 5.250 MHz: 10^{-12} W/MHz	5.249 - 5.250 MHz: 10^{-12} W/MHz	
5.250 MHz or more: 2.5 μ V/MHz	5.250 MHz or more: 2.5 μ V/MHz	5.250 MHz or more: 2.5 μ V/MHz	
f = 3MHz, Difference from 5205 (MHz)	f = 3MHz, Difference from 5205 (MHz)	f = 3MHz, Difference from 5205 (MHz)	
W56			
20MHz system	40MHz system	80MHz system	
DSSS, etc.	OFDM		
5.470 MHz or less: 12.5 μ V/MHz	5.460 MHz or less: 12.5 μ V/MHz	5.460 MHz or less: 12.5 μ V/MHz	
5.730 MHz or more: 12.5 μ V/MHz	5.460 - 5.470 MHz: 12.5 μ V/MHz	5.460 - 5.470 MHz: 12.5 μ V/MHz	
	5.470 - 5.730 MHz: 12.5 μ V/MHz	5.460 - 5.470 MHz: 12.5 μ V/MHz	
	Clear 5.730 MHz: 2.5 μ V/MHz	5.770 MHz or more: 12.5 μ V/MHz	
W52 + W53			
100MHz system			
5.099.9 MHz or less: 2.5 μ V/MHz	5.410.6 MHz or less: 12.5 μ V/MHz		
5.099.9 - 5.100 MHz: 15 μ V/MHz	5.410.6 - 5.470 MHz: 50 μ V/MHz		
5.390 - 5.400.4 MHz: 15 μ V/MHz	5.720 MHz or more: 12.5 μ V/MHz		
5.400.4 MHz or more: 2.5 μ V/MHz			
5.53GHz & 5.69GHz			
5.210GHz & (5.53GHz, 5.61GHz or 5.69GHz)	5.290GHz & (5.53GHz, 5.61GHz or 5.69GHz)	5.53GHz & 5.69GHz	
80MHz + 80MHz system (Not adjacent radio)			
5.134.8 MHz or less: 2.5 μ V/MHz	5.214.8 MHz or less: 2.5 μ V/MHz	5.410.6 MHz or less: 12.5 μ V/MHz	
5.134.8 - 5.150 MHz: 162.5 μ V/MHz	5.214.8 - 5.249 MHz: 10^{-10} W/MHz	5.410.6 - 5.470 MHz: 50 μ V/MHz	
5.250 - 5.251 MHz: 10^{-12} W/MHz	5.249 - 5.250 MHz: 10^{-12} W/MHz	5.770 MHz or more: 15 μ V/MHz	
5.251 - 5.265.2 MHz: 10^{-10} W/MHz	5.350 - 5.365.2 MHz: 15 μ V/MHz		
5.265.2 - 5.370 MHz: 2.5 μ V/MHz	5.365.2 - 5.410 MHz: 2.5 μ V/MHz		
5.370 - 5.404.8 MHz (When used simultaneously with a 5.2GHz band high-power radio station: 12.5 μ V/MHz)	5.410 - 5.404.8 MHz: 2.5 μ V/MHz		
5.404.8 - 5.470 MHz (When used simultaneously with a 5.2GHz band high-power radio station: 50 μ V/MHz)	5.404.8 - 5.470 MHz: 15 μ V/MHz		
5.730 MHz or more: 15 μ V/MHz	5.730 MHz or more: 15 μ V/MHz		
(When used 560MHz)	(When used 560MHz)		
5.770 MHz or more: 15 μ V/MHz	5.770 MHz or more: 15 μ V/MHz		
f = 3MHz, Difference from 5210 (MHz)	f = 3MHz, Difference from 5200 (MHz)		

Test Method:

[Setting 1]

Frequency range:	Test frequency range as required
RBW:	1 MHz
VBW:	1 MHz
Sweep time:	Minimum time required to make an accurate measurement
Sweep Data Points:	1001 or greater
Detector mode:	Positive peak
Indication mode:	Max hold (see Note 1)
Note 1:	Sweep shall be repeated until the max hold waveform is stable.

[Setting 2]

Center frequency:	Frequency of spurious emission found using [Setting 1]
Span:	0 Hz
RBW:	1 MHz
VBW:	1 MHz
Sweep time:	Minimum time required to make an accurate measurement. For burst type (intermittent) spurious emissions,

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		sweep time shall be greater than one burst interval
	Sweep Data Points:	1001 or greater
	Detector mode:	Sample
Procedure:	(1) After configuring the spectrum analyzer to [Setting 1], search for spurious emissions from 30 MHz to 12.5 GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to be divided into sufficient sections of size [RBW x Sweep Data Points]. If spurious emissions greater than [Limit - 3dB] are found, then more detailed measurements are required, go to step (2) (2) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude. If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time. (3) Calculate the spurious emission value (Calculated Value) using following the formula below: Calculated Value = (Measured Value using (3) + 15.2dB) Note: 15.2dB adjustment is derived from the Conversion Factor of RBW Conversion Factor of RBW = 10 x Log (Reference Bandwidth / RBW of measurement) = 15.2 [dB] Where: Reference Bandwidth = 1 MHz RBW of measurement = 30 kHz (4) If the calculated value using (4) is over the Limit (section 6.7), go to (6) (6) Configure the spectrum analyzer to [Setting 3] then make the following changes: Frequency: Frequency of spurious emission Span: 1 MHz (6) After sweep, send the span data set to the PC (7) Convert measured data from dBm to Watts (8) Sum all the data using the formula below. If the sum is within the limit, the test result is Pass, otherwise, Fail $P_s = \left(\sum_{i=1}^n E_i \right) \times \frac{S_w}{RBW \times k \times n}$ Ps: Sum (Watts) Ei: Measured value at each point in the Span (Watts) Sw: Span (1MHz) n: Number of measurement points in the Span k: Correction factor for Equivalent Noise Bandwidth, specific to each spectrum analyzer, check the instrument user guide RBW: Resolution Bandwidth (MHz). (9) If the EUT has multiple antennas, measure the spurious emission form each individual antenna using steps (1) through (9) (10) Convert the individual antenna spurious level measurements (step (10)) from dB to absolute values (11) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions) (12) Ensure that the composite spectrum does not exceed the Limit defined in 6.7 (Technical Standard) (13) Configuring the spectrum analyzer using [Setting 3] and measure the spurious emissions with all the antennas electrically combined	

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5.8.1 E.U.T. Operation:

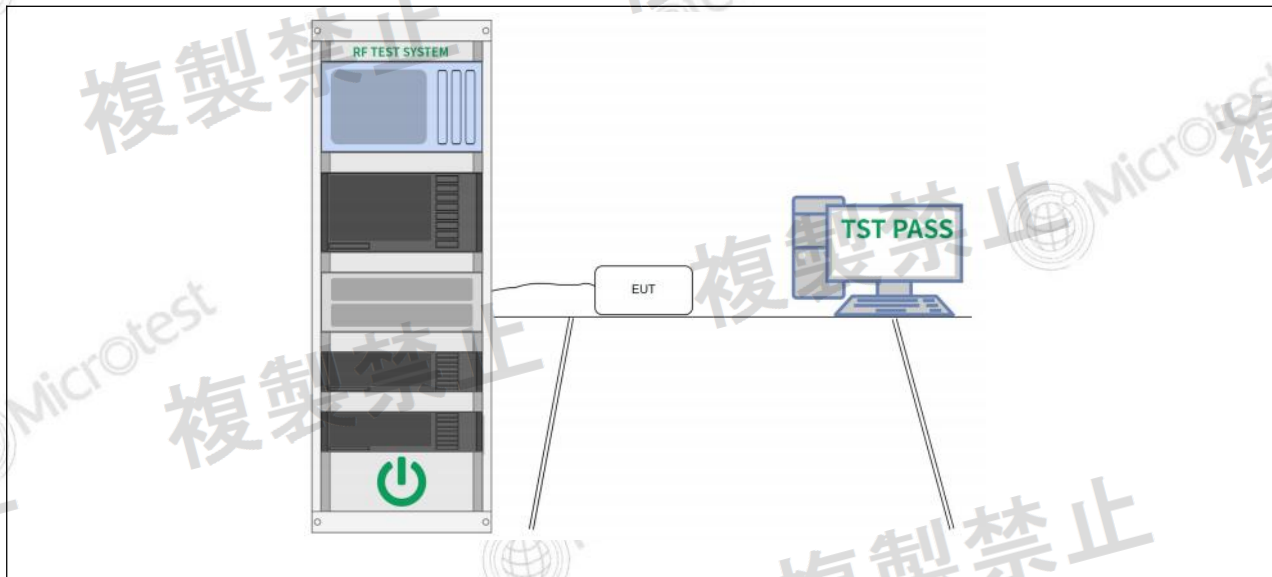
Operating Environment:

Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
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Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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5.8.2 Test Setup Diagram:



5.8.3 Test Data:

Please Refer to Appendix for Details.

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5.9 Secondary Radiated Emissions

Test Requirement:	Article 2-1, Item 19-3		
Test Limit:	(1) Below 1 GHz: 4 nW (-54dBm) or less (2) Above 1 GHz: 20 nW (-47dBm) or less		
Test Method:	[Setting 1]		
	Frequency range:	30 MHz ~ 12.5 GHz	
	RBW:	Below 1 GHz:100 kHz	
		Above 1 GHz:1 MHz	
	VBW:	Below 1 GHz:100 kHz	
		Above 1 GHz:1 MHz	
	Sweep time:	Auto	
	Sweep data points:	1001 or greater	
	Detector mode:	Positive peak	
	Indication mode:	Max hold	
	[Setting 2]		
	Center Frequency:	Frequency of spurious emission found using [Setting 1]	
	Span:	0 Hz	
	RBW:	Below 1 GHz:100 kHz	
		Above 1 GHz:1 MHz	
	VBW:	Below 1 GHz:100 kHz	
		Above 1 GHz:1 MHz	
	Sweep time:	Auto	
Sweep data points:	1001 or greater		
Detector mode:	Sample		
Procedure:	(1) Configure the spectrum analyzer to [Setting 1] and then search for spurious emissions in the range 30 MHz to 12.5GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to be divided into sufficient sections of size [RBW x Sweep Data Points]. (2) If spurious emissions are found with an amplitude greater than [Limit - 10dB] then perform further detailed measurements as described in (3) (3) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude. If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time Multiple Antenna Systems If the EUT has multiple antennas then emissions from each antenna shall be measured individually, as described below (4) For each antenna repeat steps (1) through (3). Convert all spurious level measurements from dB to absolute value (5) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions) (6) Ensure that the composite spectrum does not exceed the Limit		

5.9.1 E.U.T. Operation:

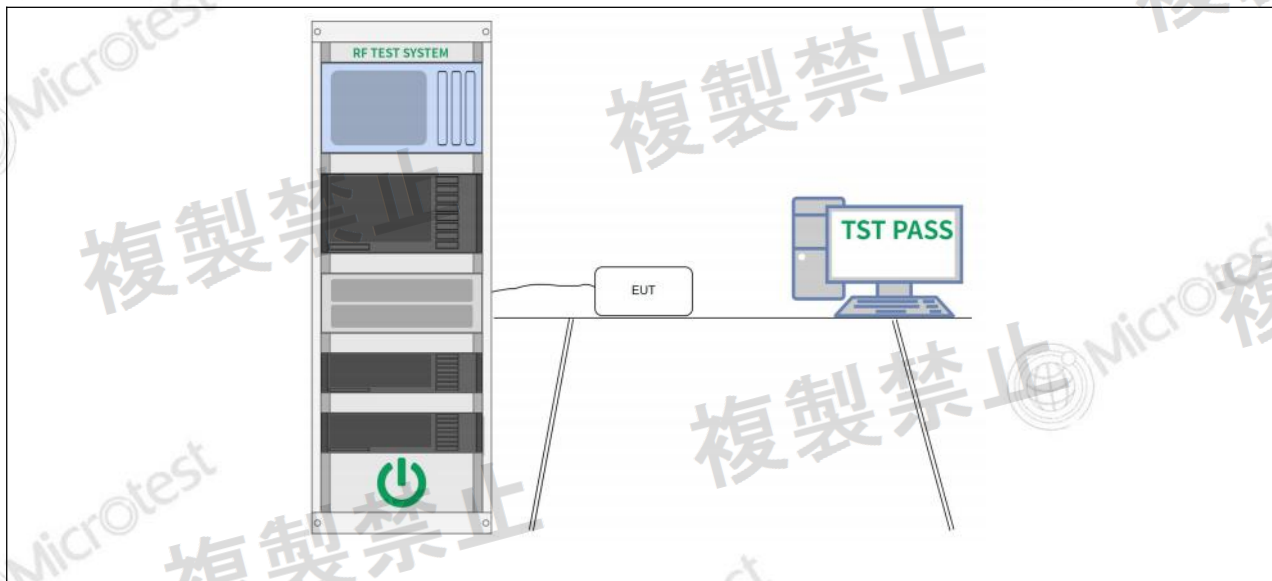
Operating Environment:					
Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode7, Mode8, Mode9				

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Final test mode:	Mode7, Mode8, Mode9
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5.9.2 Test Setup Diagram:



5.9.3 Test Data:

Please Refer to Appendix for Details.

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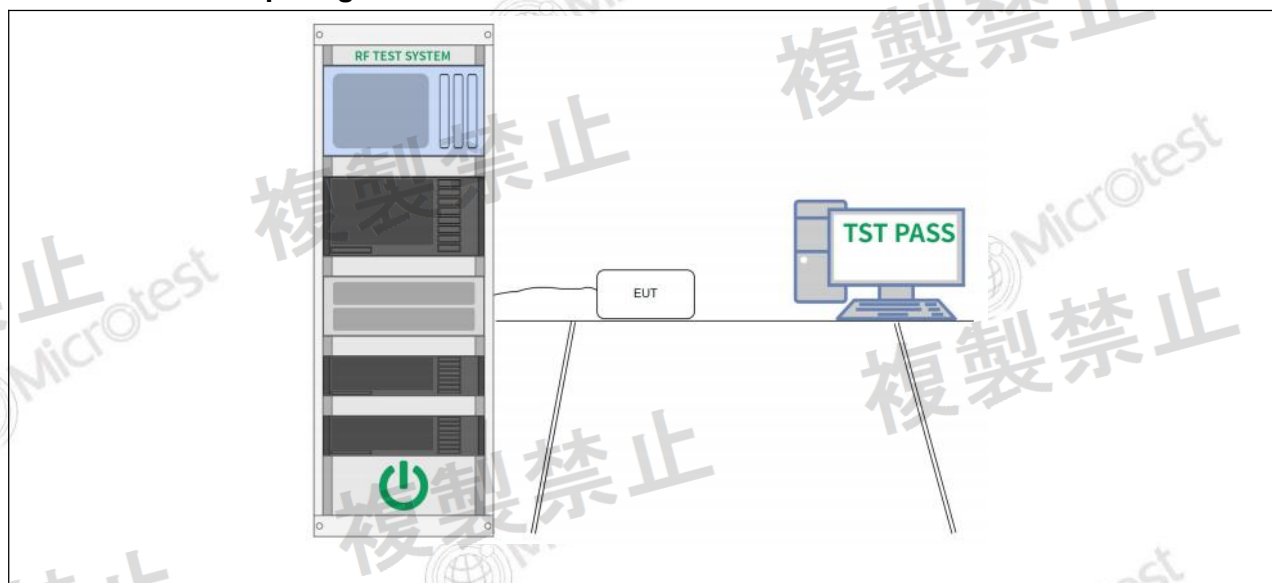
5.10 Transmission Burst Length

Test Requirement:	Article 2-1, Item 19-3
Test Limit:	8ms or less
Test Method:	Frequency: Center of tested frequency Span:0 Hz RBW: 1 MHz VBW: 1 MHz Sweep time: Auto Sweep data points: 1001 or greater Detector mode: Sample
Procedure:	Configure the spectrum analyzer to [Setting 1] and then search the max pulse, and measure the transmission time.

5.10.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	49.8 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

5.10.2 Test Setup Diagram:



5.10.3 Test Data:

Please Refer to Appendix for Details.

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Photographs of the test setup

Refer to Appendix - Test Setup Photos

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Photographs of the EUT

Refer to Appendix - EUT Photos

Appendix

5.11 Appendix A: Frequency Error

5.11.1 Test Result

TestCondition	TestMode	Antenna	Frequen cy[MHz]	CenterFreq [MHz]	Result [ppm]	Limit [ppm]	Verdict
NTNV	unmodul ated carrier	Ant1	5180	5179.962	-7.33591	±20	PASS
			5200	5199.959	-7.88462	±20	PASS
			5220	5219.957	-8.23755	±20	PASS
			5240	5239.957	-8.20611	±20	PASS
		Ant1	5190	5189.979	-4.04624	±20	PASS
			5230	5229.964	-6.88337	±20	PASS
		Ant1	5210	5209.962	-7.29367	±20	PASS

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5.11.2 Test Graphs



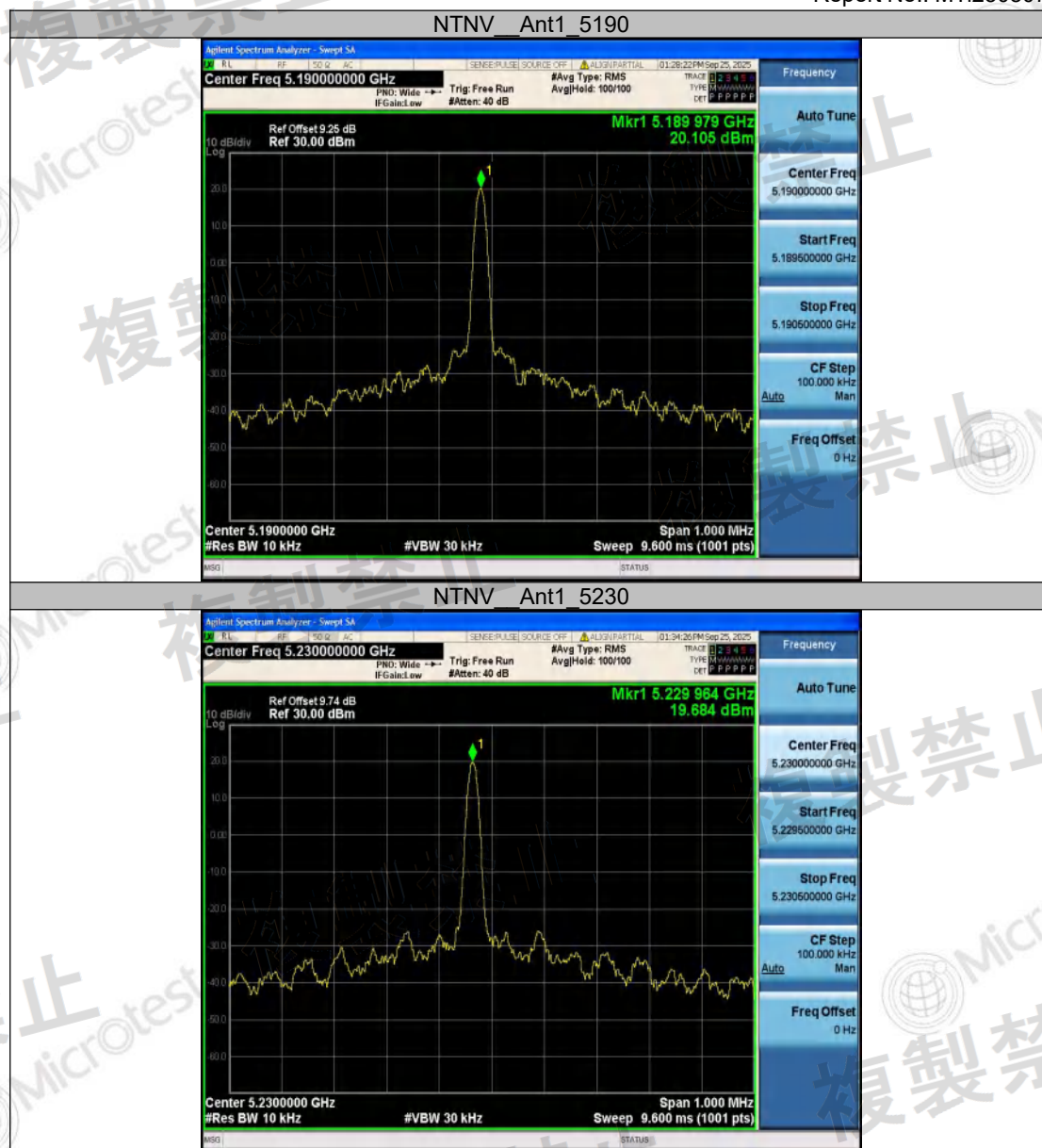
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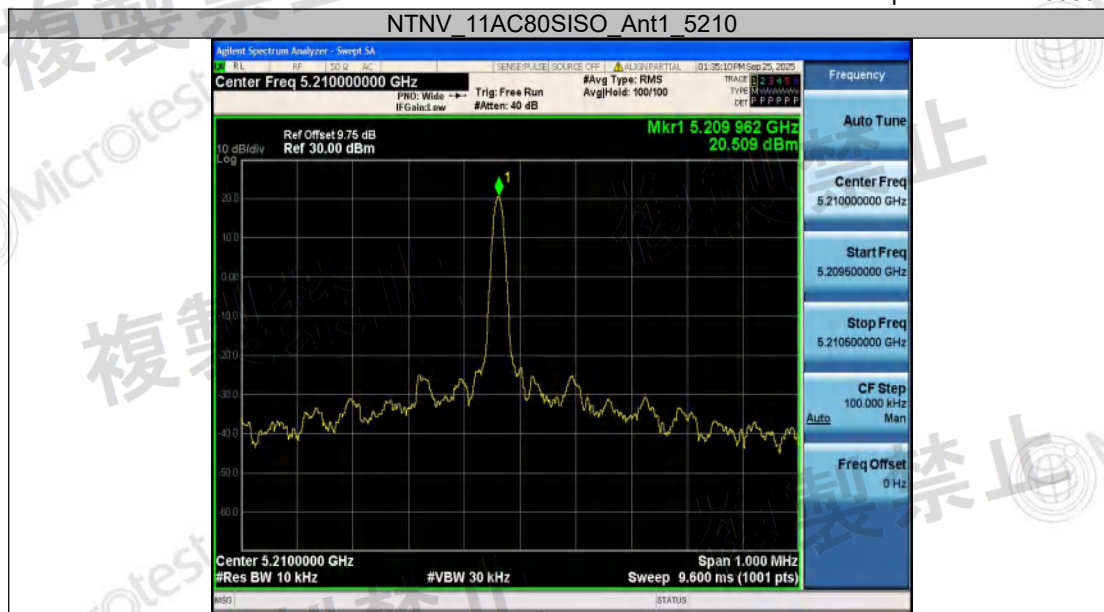
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5.12 Appendix B: Antenna Power

Antenna Power							
Test Condition	Test Mode	Antenna	Frequency [MHz]	Result(dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	11A	Ant1	5180	5.083	3.223	≤10	PASS
			5200	5.180	3.296	≤10	PASS
			5240	-0.970	0.800	≤10	PASS
	11N20SISO	Ant1	5180	-4.147	0.385	≤10	PASS
			5200	-2.322	0.586	≤10	PASS
			5240	-0.828	0.826	≤10	PASS
	11N40SISO	Ant1	5190	-8.074	0.156	≤5	PASS
			5230	-6.452	0.226	≤5	PASS
	11AC20SISO	Ant1	5180	-4.700	0.339	≤10	PASS
			5200	-2.858	0.518	≤10	PASS
			5240	-1.116	0.773	≤10	PASS
	11AC40SISO	Ant1	5190	-8.242	0.150	≤5	PASS
			5230	-6.816	0.208	≤5	PASS
	11AC80SISO	Ant1	5210	-10.351	0.092	≤2.5	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency [MHz]	Power (mW/MHz)	RatedPower (mW/MHz)	Result (%)	Limit (%)	Verdict
NTNV	11A	Ant1	5180	3.223	3	7.43	+20~-80	PASS
			5200	3.296	3	9.87		PASS
			5240	0.800	3	-73.33		PASS
	11N20SISO	Ant1	5180	0.385	1	-61.51		PASS
			5200	0.586	1	-41.41		PASS
			5240	0.826	1	-17.36		PASS
	11N40SISO	Ant1	5190	0.156	0.3	-48.00		PASS
			5230	0.226	0.3	-24.67		PASS
			5180	0.339	1	-66.12		PASS
NTNV	11AC20SISO	Ant1	5200	0.518	1	-48.22	+20~-80	PASS
			5240	0.773	1	-22.66		PASS
			5190	0.150	0.3	-50.03		PASS
	11AC40SISO	Ant1	5230	0.208	0.3	-30.61		PASS
			5210	0.092	0.3	-69.25		PASS
	11AC80SISO	Ant1	5210	0.092	0.3	-69.25		PASS

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EIRP							
Test Condition	Test Mode	Antenna	Frequency [MHz]	Result(dBm/MHz)	EIRP (dBm/MHz)	Limit	Verdict
NTNV	11A	Ant1	5180	5.083	9.383	≤10 dBm/MHz	PASS
			5200	5.180	9.480	≤10 dBm/MHz	PASS
			5240	-0.970	3.330	≤10 dBm/MHz	PASS
	11N20SISO	Ant1	5180	-4.147	0.153	≤10 dBm/MHz	PASS
			5200	-2.322	1.978	≤10 dBm/MHz	PASS
			5240	-0.828	3.472	≤10 dBm/MHz	PASS
	11N40SISO	Ant1	5190	-8.074	-3.774	≤6.99 dBm/MHz	PASS
			5230	-6.452	-2.152	≤6.99 dBm/MHz	PASS
	11AC20SISO	Ant1	5180	-4.700	-0.400	≤10 dBm/MHz	PASS
			5200	-2.858	1.442	≤10 dBm/MHz	PASS
			5240	-1.116	3.184	≤10 dBm/MHz	PASS
	11AC40SISO	Ant1	5190	-8.242	-3.942	≤6.99 dBm/MHz	PASS
			5230	-6.816	-2.516	≤6.99 dBm/MHz	PASS
	11AC80SISO	Ant1	5210	-10.351	-6.051	≤3.98 dBm/MHz	PASS

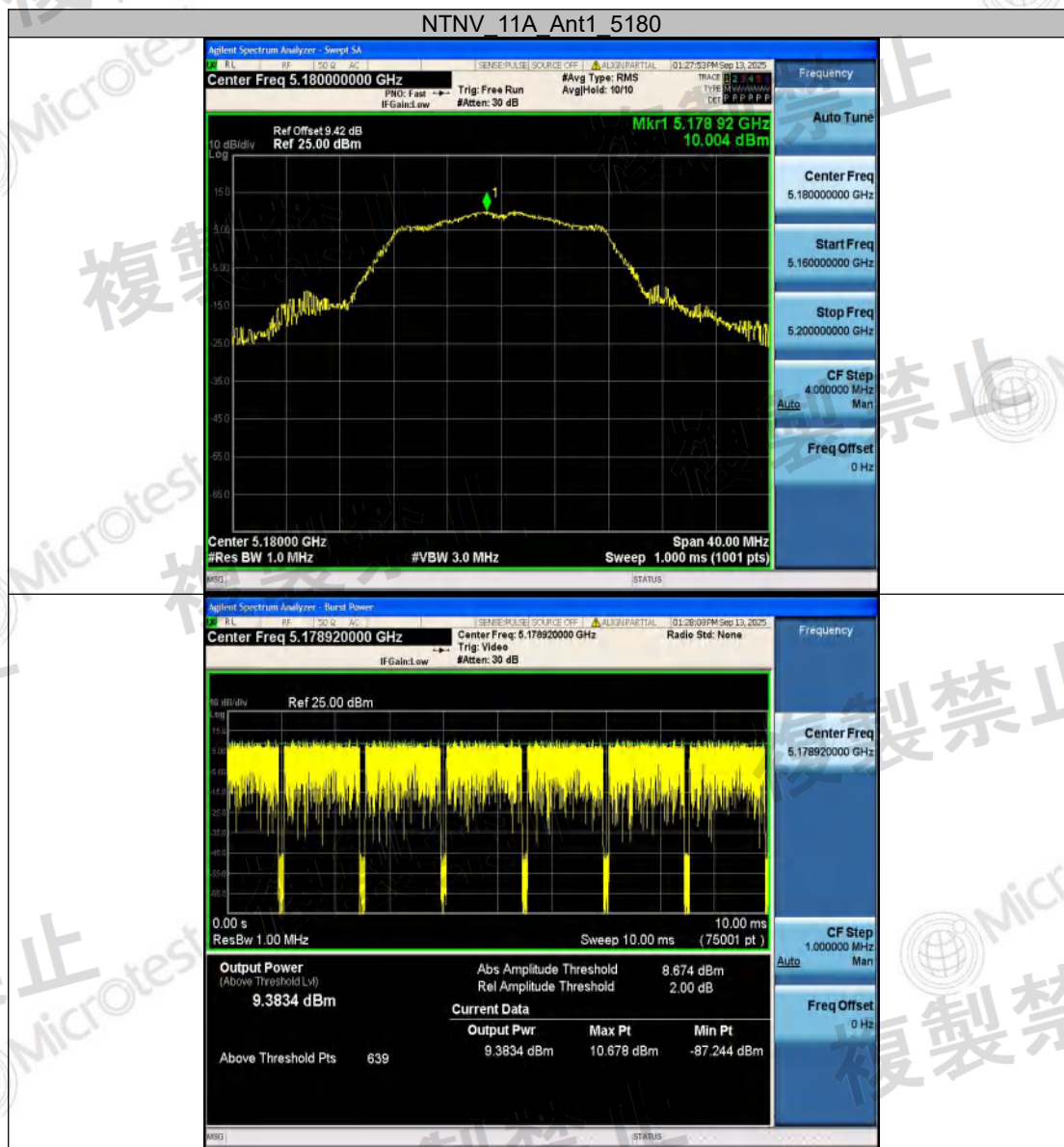
Note:

1. Antenna gain is 4.3dBi
2. EIRP= Result + antenna gain
3. Antenna gain has been added during the testing process.

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5.12.1 Test Graphs



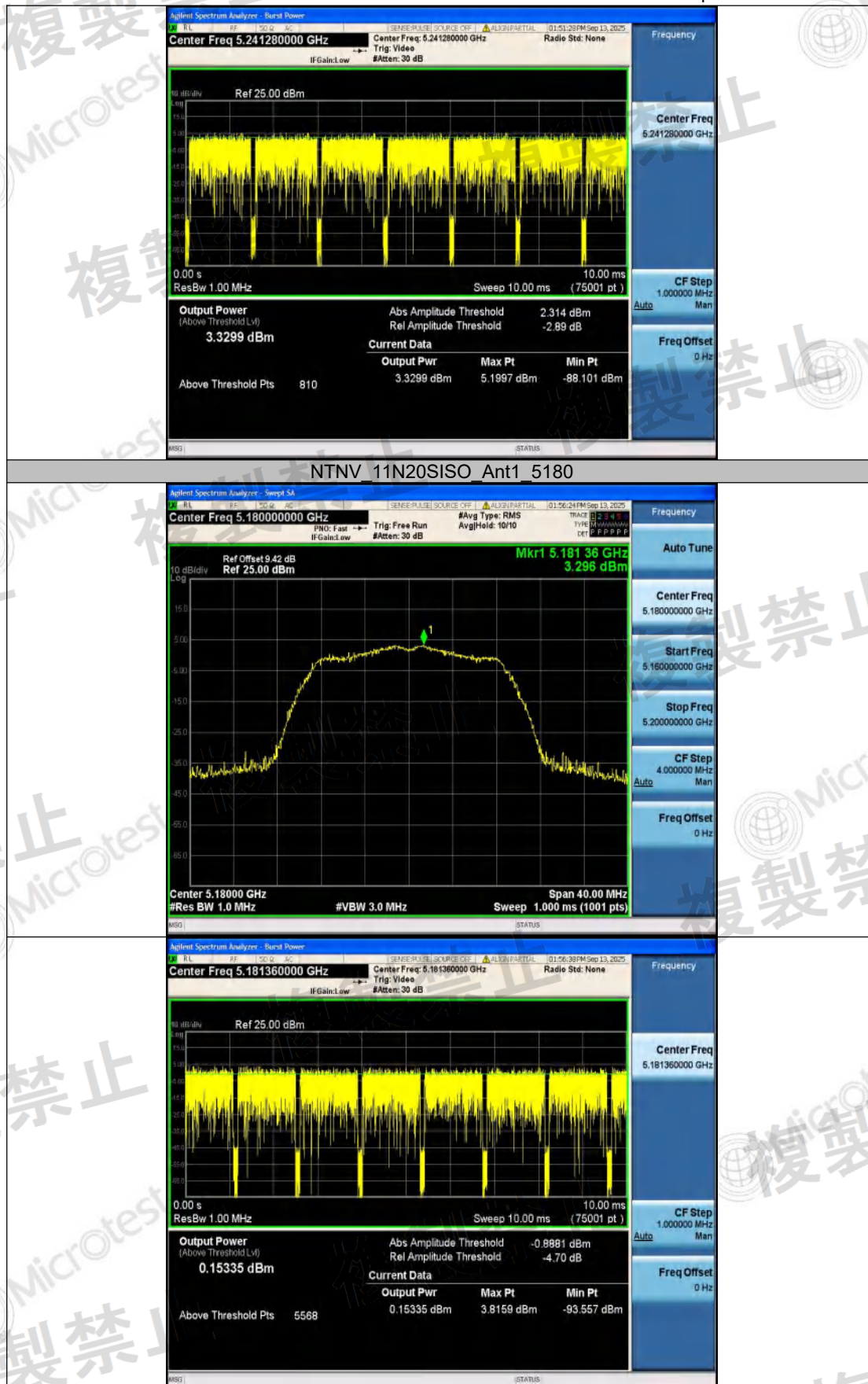
TEST REPORT

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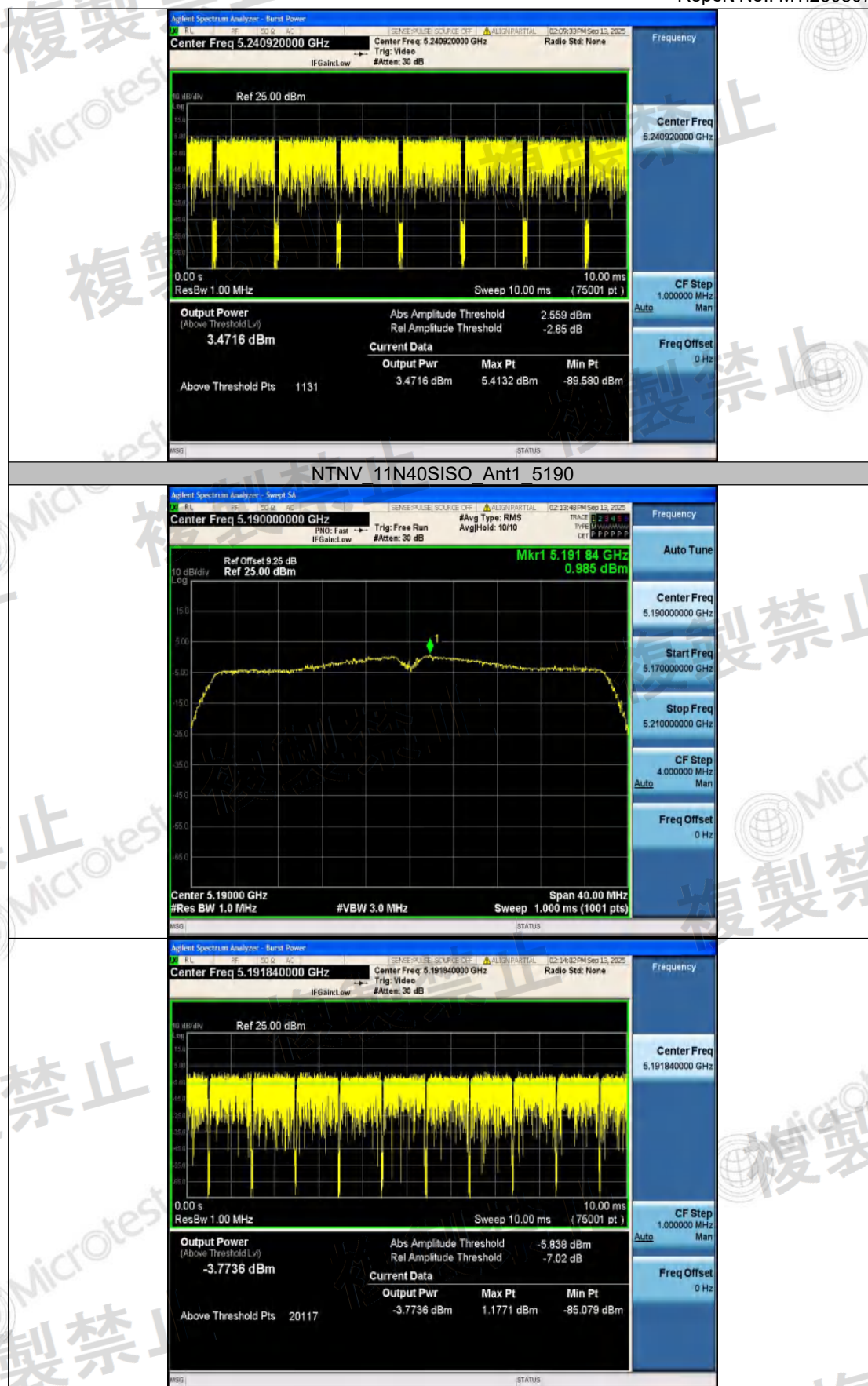
TEST REPORT

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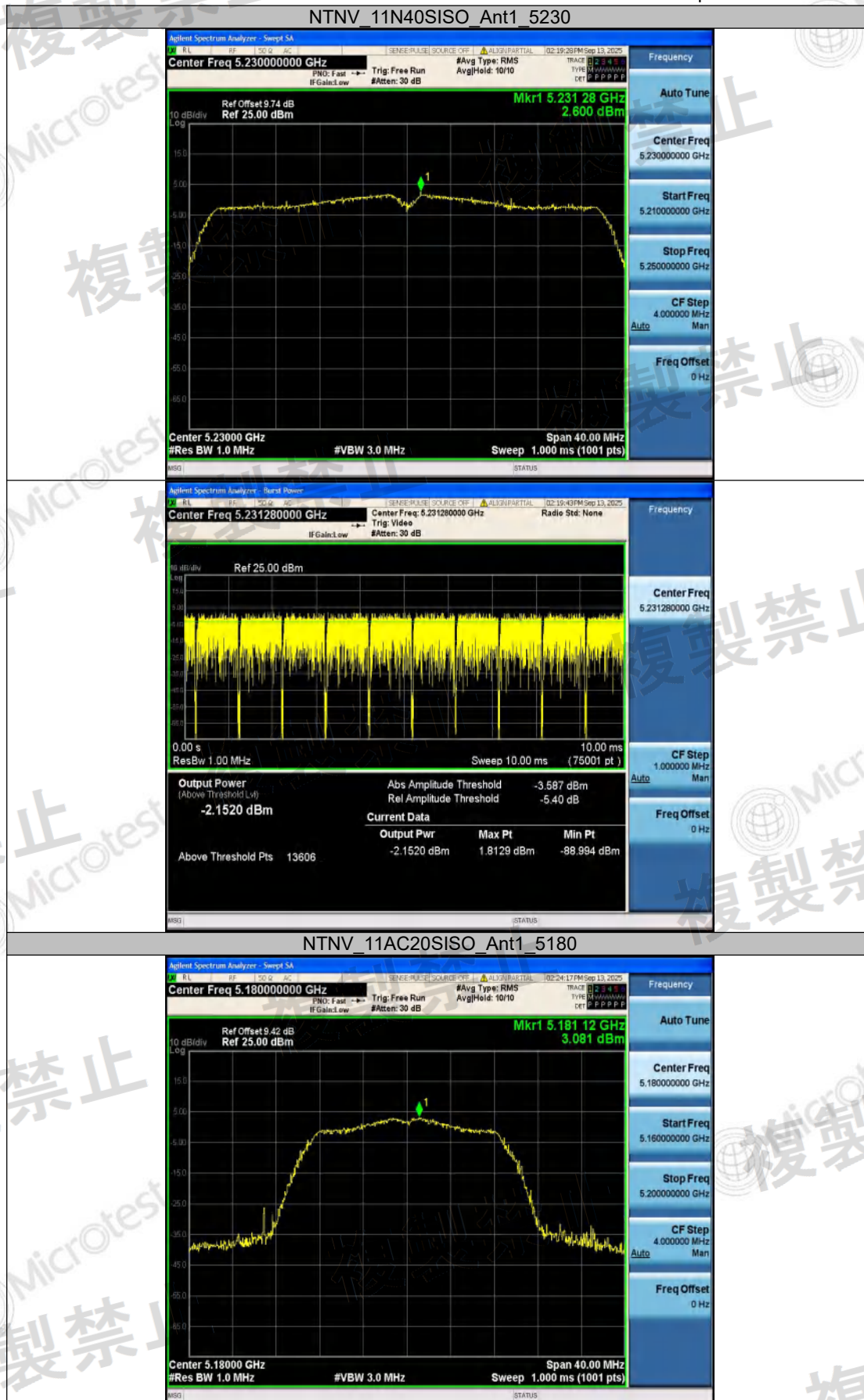
TEST REPORT

Report No.: MTi250807016-0120E3



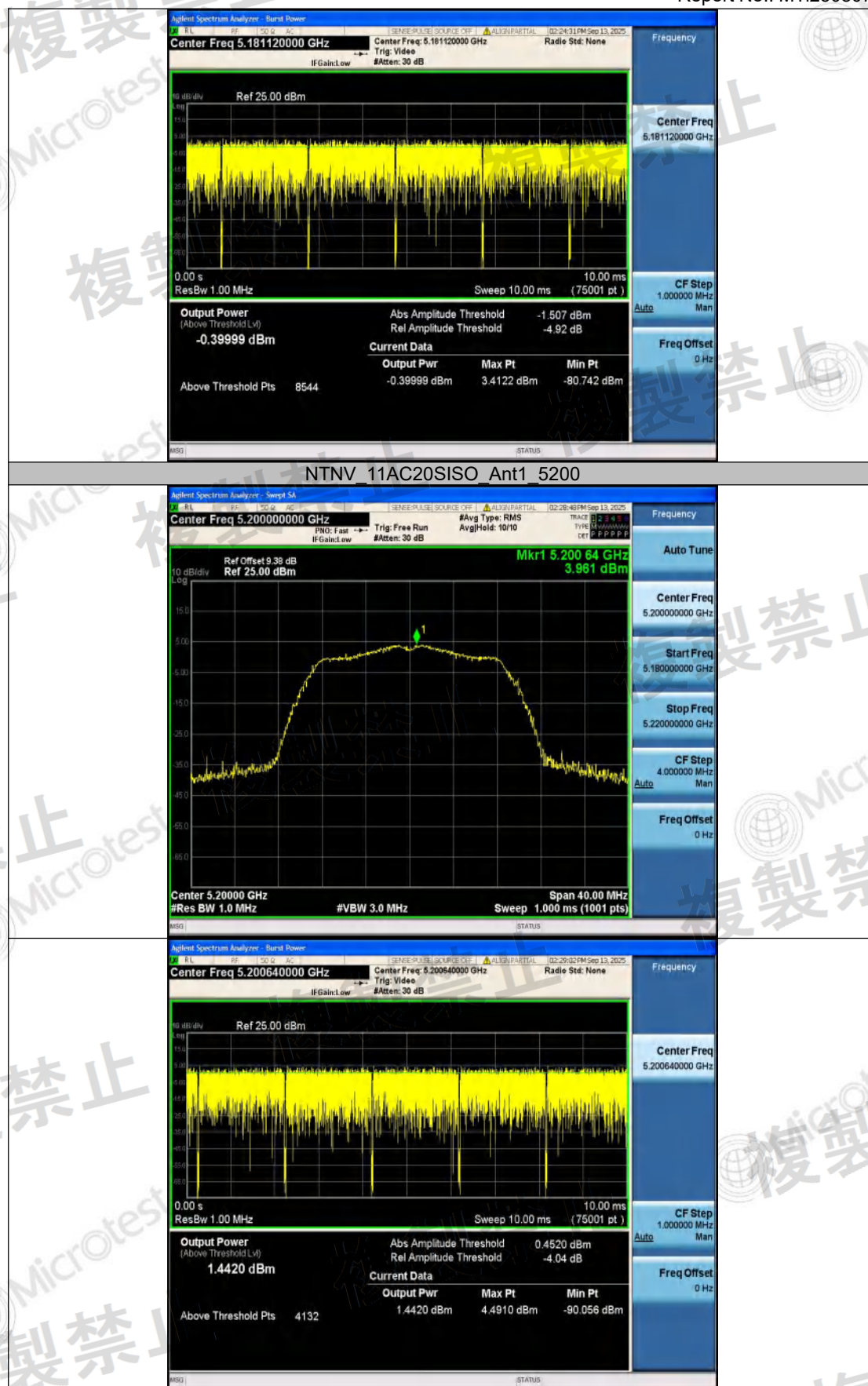
TEST REPORT

Report No.: MTi250807016-0120E3



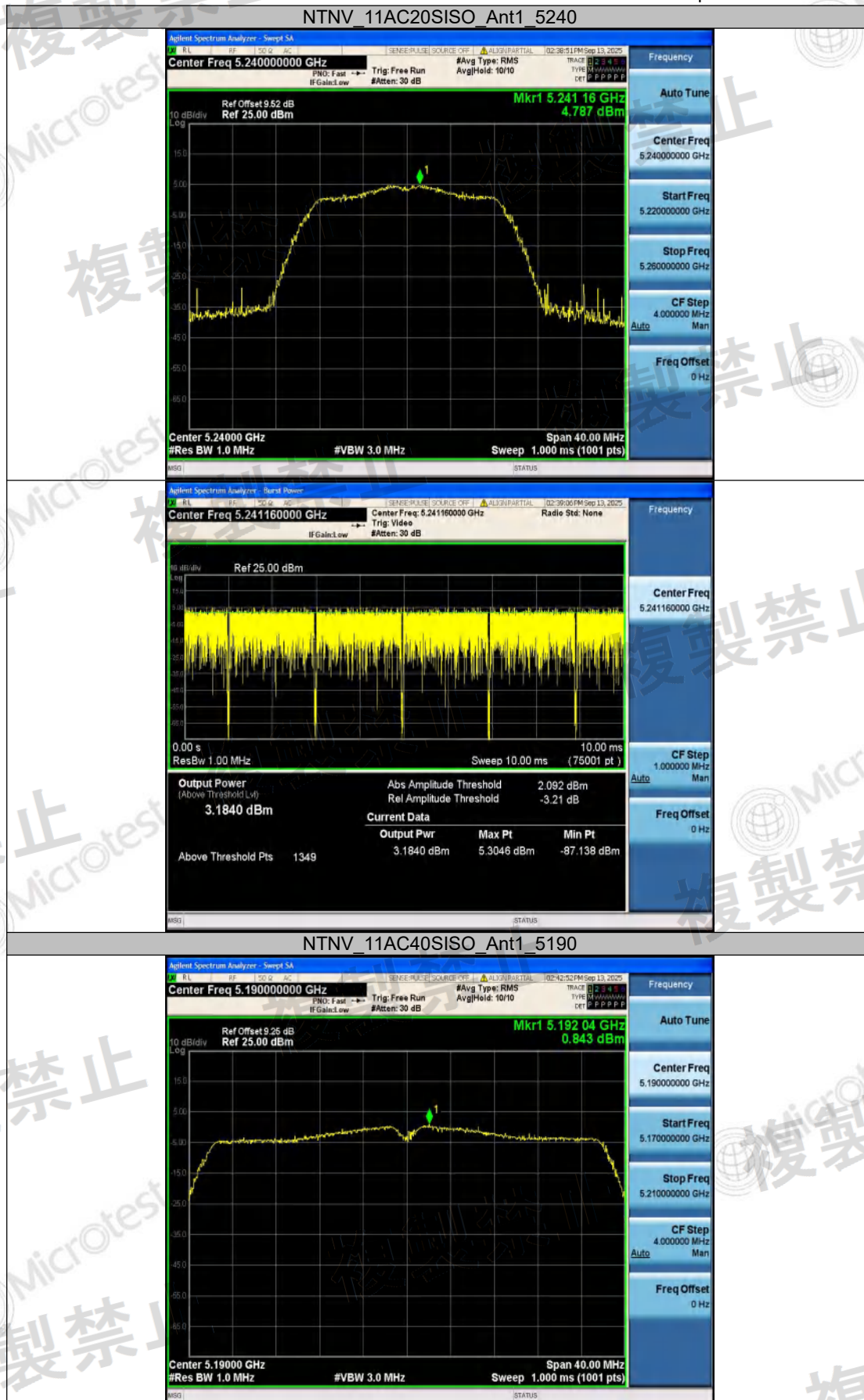
TEST REPORT

Report No.: MTi250807016-0120E3



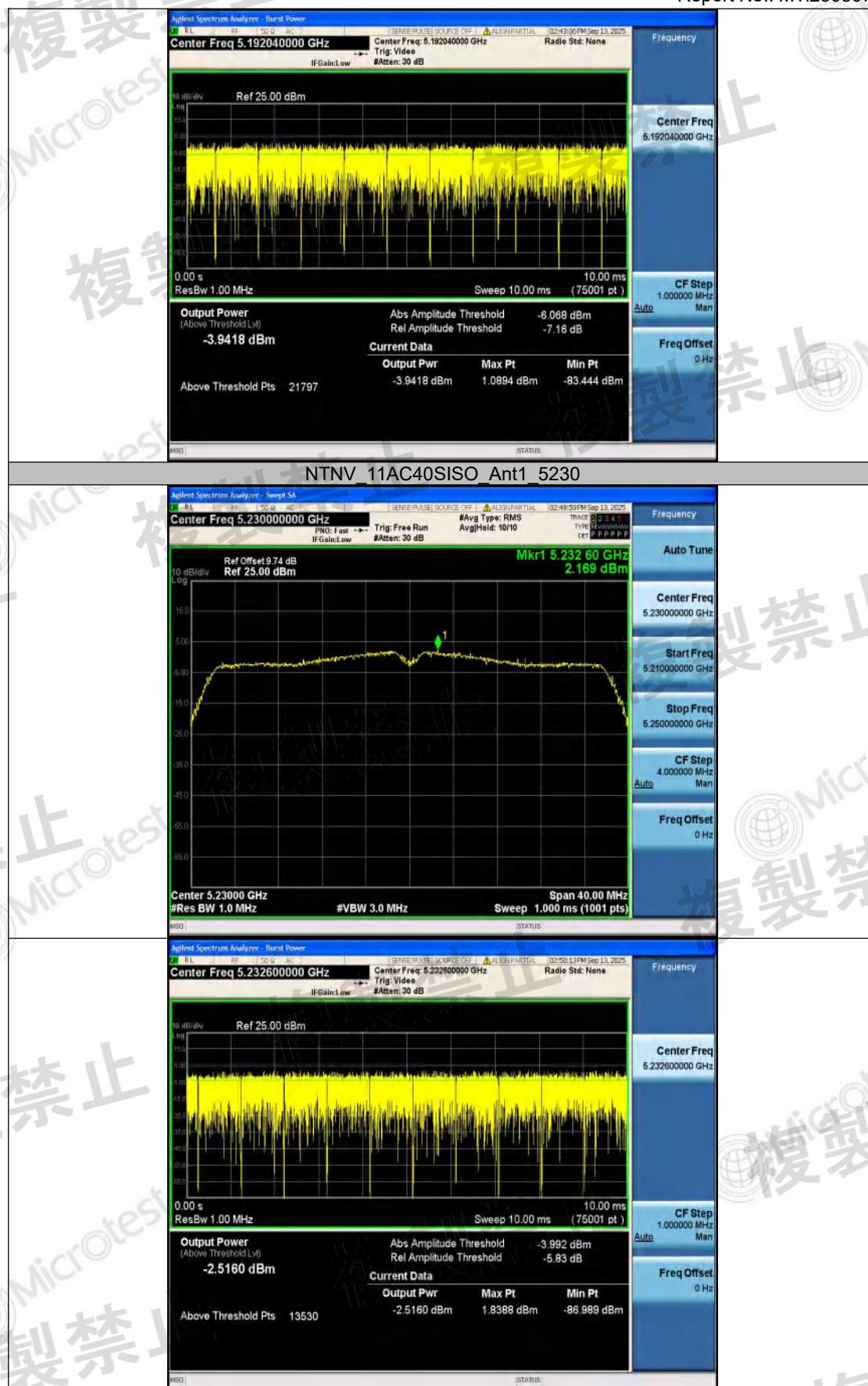
TEST REPORT

Report No.: MTi250807016-0120E3



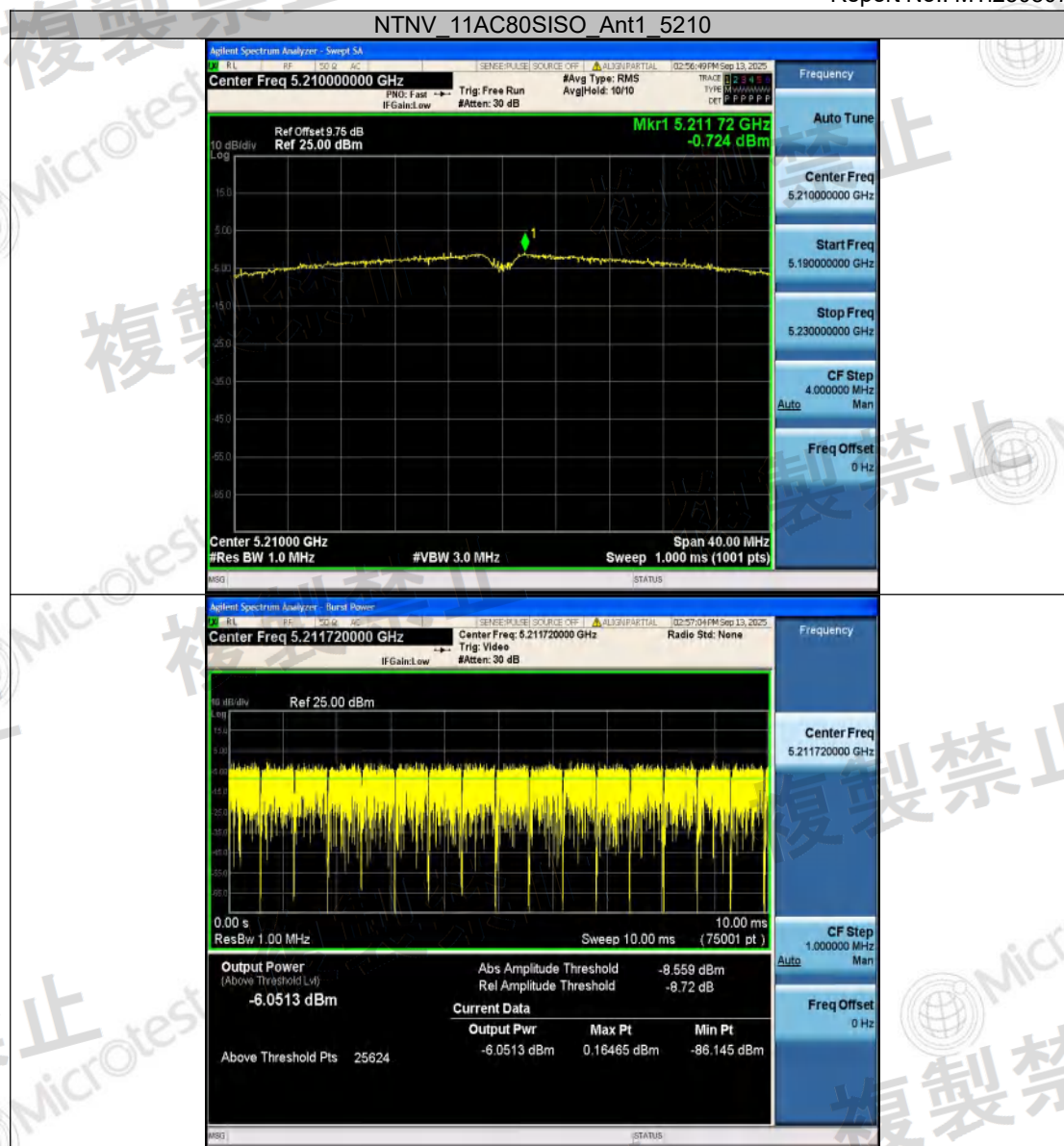
TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

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5.13 Appendix C: Occupied Bandwidth

5.13.1 Test Result

Test Condition	Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	11A	Ant1	5180	17.134	≤20	PASS
			5200	17.094	≤20	PASS
			5240	16.652	≤20	PASS
	11N20SI SO	Ant1	5180	17.758	≤20	PASS
			5200	17.753	≤20	PASS
			5240	17.790	≤20	PASS
	11N40SI SO	Ant1	5190	36.004	≤40	PASS
			5230	36.102	≤40	PASS
	11AC20S ISO	Ant1	5180	17.728	≤20	PASS
			5200	17.745	≤20	PASS
			5240	17.800	≤20	PASS
	11AC40S ISO	Ant1	5190	36.010	≤40	PASS
			5230	36.072	≤40	PASS
	11AC80S ISO	Ant1	5210	75.316	≤80	PASS

TEST REPORT

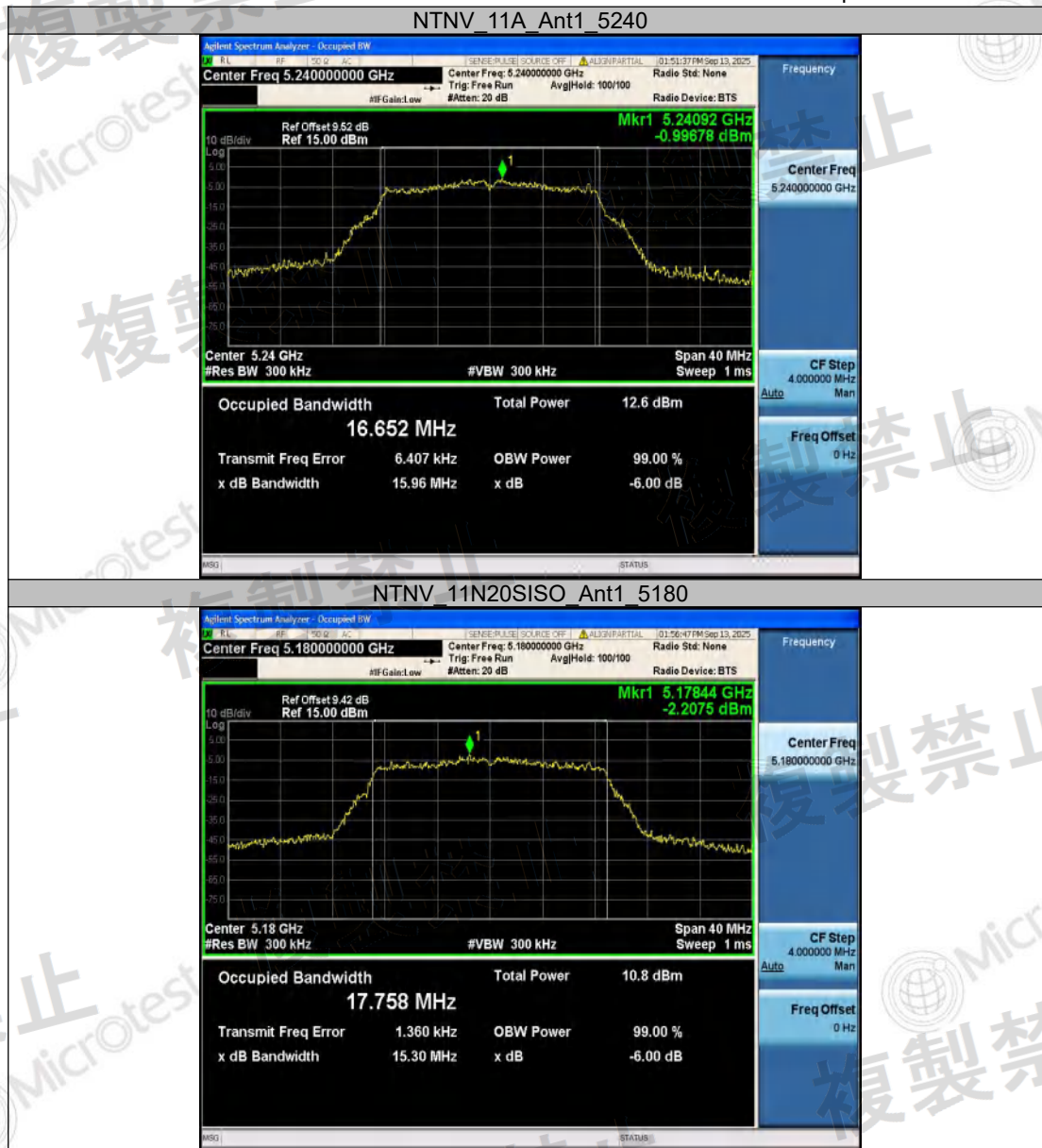
Report No.: MTi250807016-0120E3

5.13.2 Test Graphs



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3

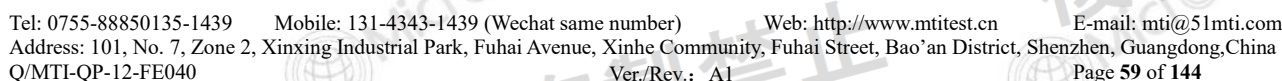
5.14 Appendix D: Spread Bandwidth

5.14.1 Test Result

Test Condition	Test Mode	Antenna	Frequency [MHz]	Result [MHz]
NTNV	11A	Ant1	5180	13.983
			5200	14.085
			5240	13.936
	11N20SISO	Ant1	5180	15.055
			5200	14.958
			5240	15.065
	11N40SISO	Ant1	5190	31.082
			5230	31.636
	11AC20SISO	Ant1	5180	15.040
			5200	14.882
			5240	15.071
	11AC40SISO	Ant1	5190	31.485
			5230	31.320
	11AC80SISO	Ant1	5210	64.157

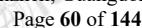


5.14.2 Test Graphs



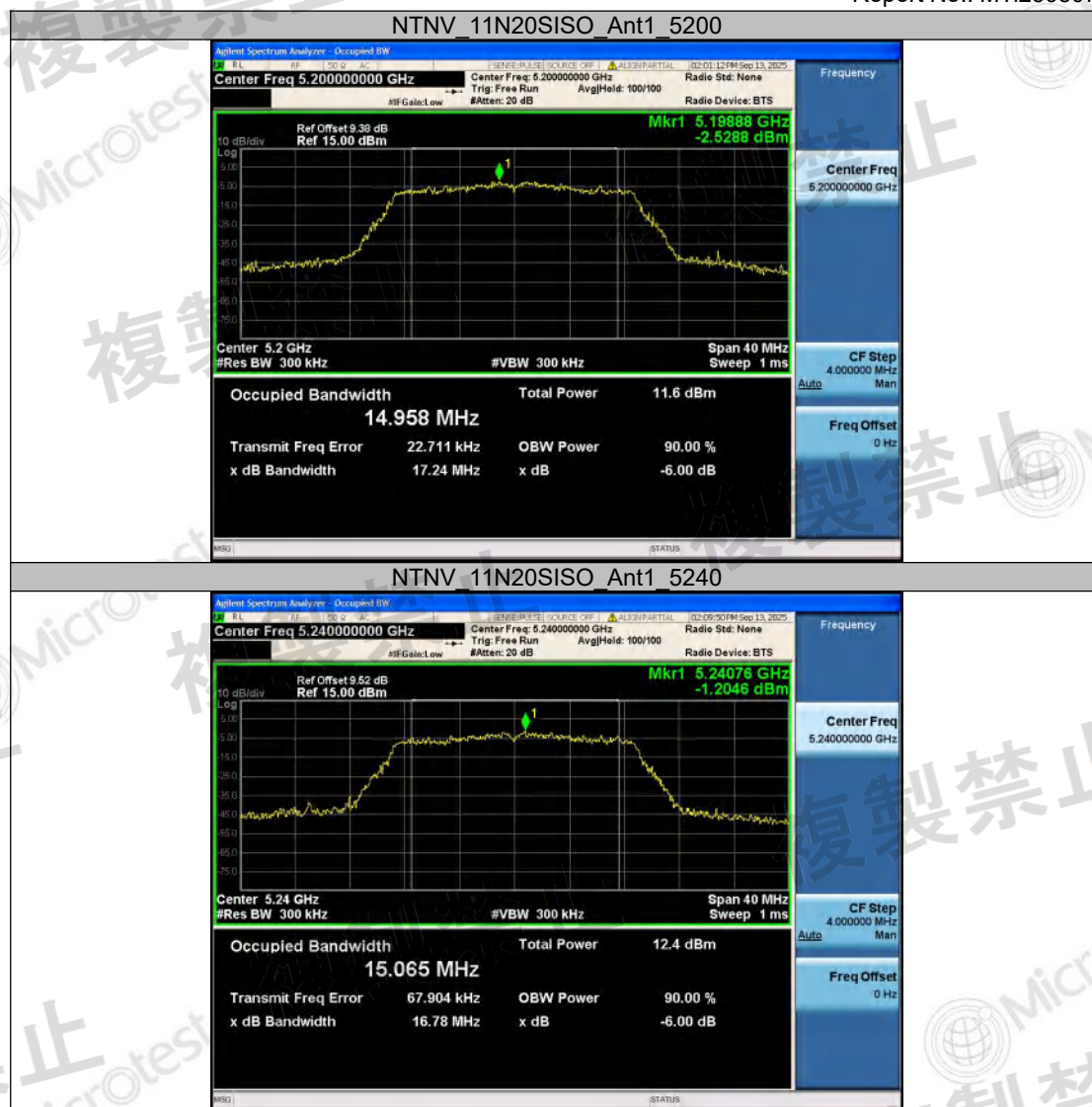


NTNV 11A Ant1 5240



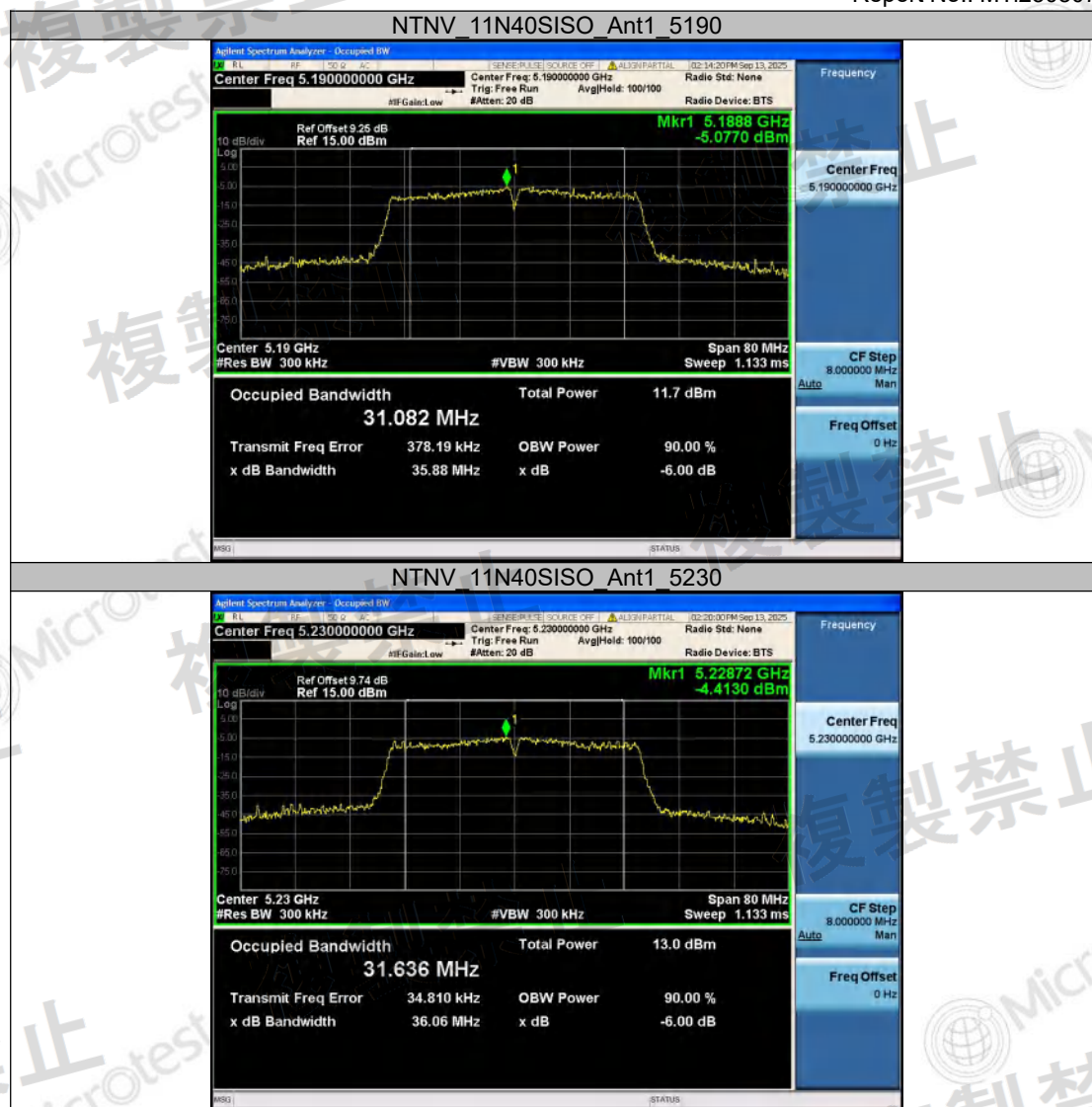
TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



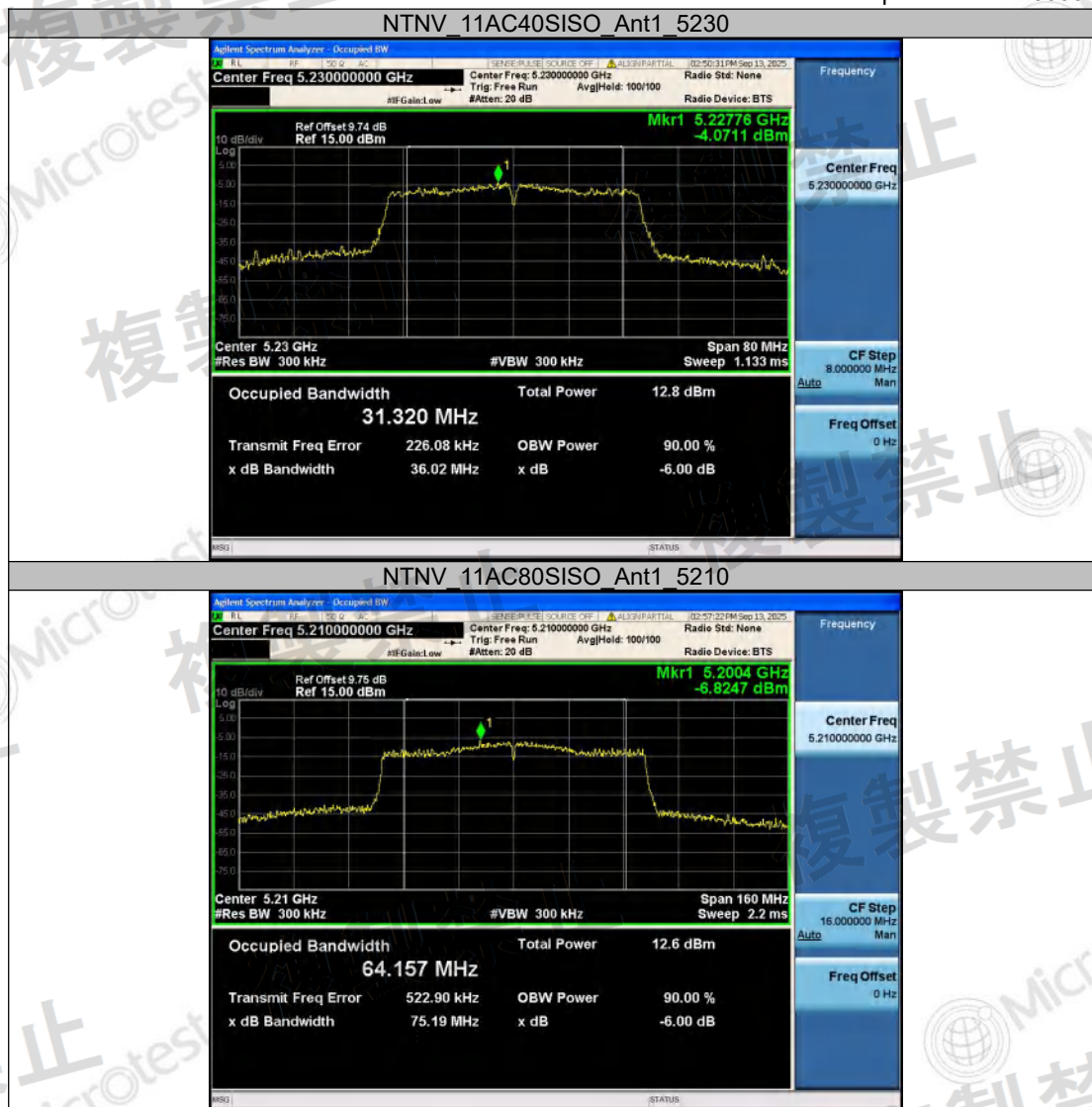
TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3

5.15 Appendix E: Spurious Emission of TX

5.15.1 Test Result

TestCondition	TestMode	Antenna	Frequen cy[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	11A	Ant1	5180	30~5142	-38.22	≤ 26.02	0.25468	≤2.5	PASS
				5142~5150	-29.28	≤ 18.24	1.99526	≤15	PASS
				5250~5251	-47.18	≤-9.4	0.03236	≤114.8	PASS
				5251~5260	-48.20	≤ 17.97	0.02559	≤15.9	PASS
				5260~5266.7	-48.12	≤ 18.02	0.02606	≤15.8	PASS
				5266.7~26000	-38.79	≤ 26.02	0.22336	≤2.5	PASS
			5200	30~5142	-46.40	≤ 26.02	0.03873	≤2.5	PASS
				5142~5150	-39.29	≤ 18.24	0.19907	≤15	PASS
				5250~5251	-42.16	≤-9.7	0.10280	≤107.2	PASS
				5251~5260	-40.24	≤ 14.35	0.15996	≤36.8	PASS
				5260~5266.7	-42.95	≤ 18.01	0.08570	≤15.8	PASS
				5266.7~26000	-38.92	≤ 26.02	0.21677	≤2.5	PASS
			5240	30~5142	-48.03	≤ 26.02	0.02661	≤2.5	PASS
				5142~5150	-49.57	≤ 18.24	0.01866	≤15	PASS
				5250~5251	-18.29	≤-9.9	25.0610 ₉	≤102.3	PASS
				5251~5260	-18.99	≤ 10.04	21.3304 ₅	≤99.0	PASS
				5260~5266.7	-34.69	≤-18	0.57412	≤15.8	PASS
				5266.7~26000	-39.12	≤ 26.02	0.20701	≤2.5	PASS
	11N20SI SO	Ant1	5180	30~5142	-48.91	≤ 26.02	0.02173	≤2.5	PASS
				5142~5150	-42.56	≤ 18.24	0.09376	≤15	PASS
				5250~5251	-50.52	≤-9.6	0.01500	≤109.6	PASS
				5251~5260	-50.75	≤ 17.27	0.01422	≤18.7	PASS
				5260~5266.7	-49.93	≤-18	0.01718	≤15.8	PASS
				5266.7~26000	-39.22	≤ 26.02	0.20230	≤2.5	PASS
			5200	30~5142	-48.40	≤ 26.02	0.02443	≤2.5	PASS
				5142~5150	-48.53	≤ 18.24	0.02371	≤15	PASS
				5250~5251	-49.21	≤-9.9	0.02028	≤102.3	PASS
				5251~5260	-50.82	≤ 17.93	0.01400	≤16.1	PASS
				5260~5266.7	-49.41	≤ 18.03	0.01936	≤15.7	PASS
				5266.7~26000	-39.03	≤ 26.02	0.21135	≤2.5	PASS
			5240	30~5142	-48.11	≤ 26.02	0.02612	≤2.5	PASS
				5142~5150	-49.74	≤ 18.24	0.01795	≤15	PASS

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11N40SI SO	Ant1	5190	5250~5251	-15.46	≤-10	48.0839 3	≤100.0	PASS
			5251~5260	-17.38	≤-10.02	30.9029 5	≤99.6	PASS
			5260~5266.7	-33.71	≤-18	0.71945	≤15.8	PASS
			5266.7~26000	-39.08	≤-26.02	0.20893	≤2.5	PASS
		5230	30~5141.6	-45.53	≤-26.02	0.04732	≤2.5	PASS
			5141.6~5150	-37.36	≤-18.24	0.31046	≤15	PASS
			5250~5251	-46.40	≤-11.81	0.03873	≤65.9	PASS
			5251~5270	-48.45	≤-20.8	0.02415	≤8.3	PASS
			5270~5278.4	-49.41	≤-25.83	0.01936	≤2.6	PASS
			5278.4~26000	-39.14	≤-26.02	0.20606	≤2.5	PASS
			30~5141.6	-48.18	≤-26.02	0.02570	≤2.5	PASS
			5141.6~5150	-47.14	≤-18.24	0.03266	≤15	PASS
			5250~5251	-27.09	≤-11.91	3.30370	≤64.4	PASS
			5251~5270	-32.63	≤-16.94	0.92257	≤20.2	PASS
			5270~5278.4	-40.49	≤-22.62	0.15101	≤5.5	PASS
			5278.4~26000	-38.80	≤-26.02	0.22284	≤2.5	PASS
		5180	30~5142	-48.02	≤-26.02	0.02667	≤2.5	PASS
			5142~5150	-41.81	≤-18.24	0.11143	≤15	PASS
			5250~5251	-50.15	≤-9.1	0.01633	≤123.0	PASS
			5251~5260	-50.45	≤-17.79	0.01524	≤16.6	PASS
			5260~5266.7	-50.30	≤-18.01	0.01578	≤15.8	PASS
			5266.7~26000	-39.15	≤-26.02	0.20559	≤2.5	PASS
		5200	30~5142	-48.04	≤-26.02	0.02655	≤2.5	PASS
			5142~5150	-48.85	≤-18.24	0.02203	≤15	PASS
			5250~5251	-48.90	≤-9.7	0.02178	≤107.2	PASS
			5251~5260	-49.21	≤-17.15	0.02028	≤19.3	PASS
			5260~5266.7	-48.98	≤-18.01	0.02138	≤15.8	PASS
			5266.7~26000	-39.07	≤-26.02	0.20941	≤2.5	PASS
		5240	30~5142	-48.66	≤-26.02	0.02301	≤2.5	PASS
			5142~5150	-50.33	≤-18.24	0.01567	≤15	PASS
			5250~5251	-14.00	≤-8.1	67.2976 7	≤154.9	PASS
			5251~5260	-18.39	≤-10.12	24.4906 3	≤97.2	PASS
			5260~5266.7	-32.29	≤-18	0.99770	≤15.8	PASS
			5266.7~26000	-39.22	≤-26.02	0.20230	≤2.5	PASS

Tel: 0755-88850135-1439 Mobile: 131-4343-1439 (Wechat same number)

Web: <http://www.mttest.cn>

E-mail: mti@51mti.com

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Q/MTI-QP-12-FE040

Ver./Rev.: A1

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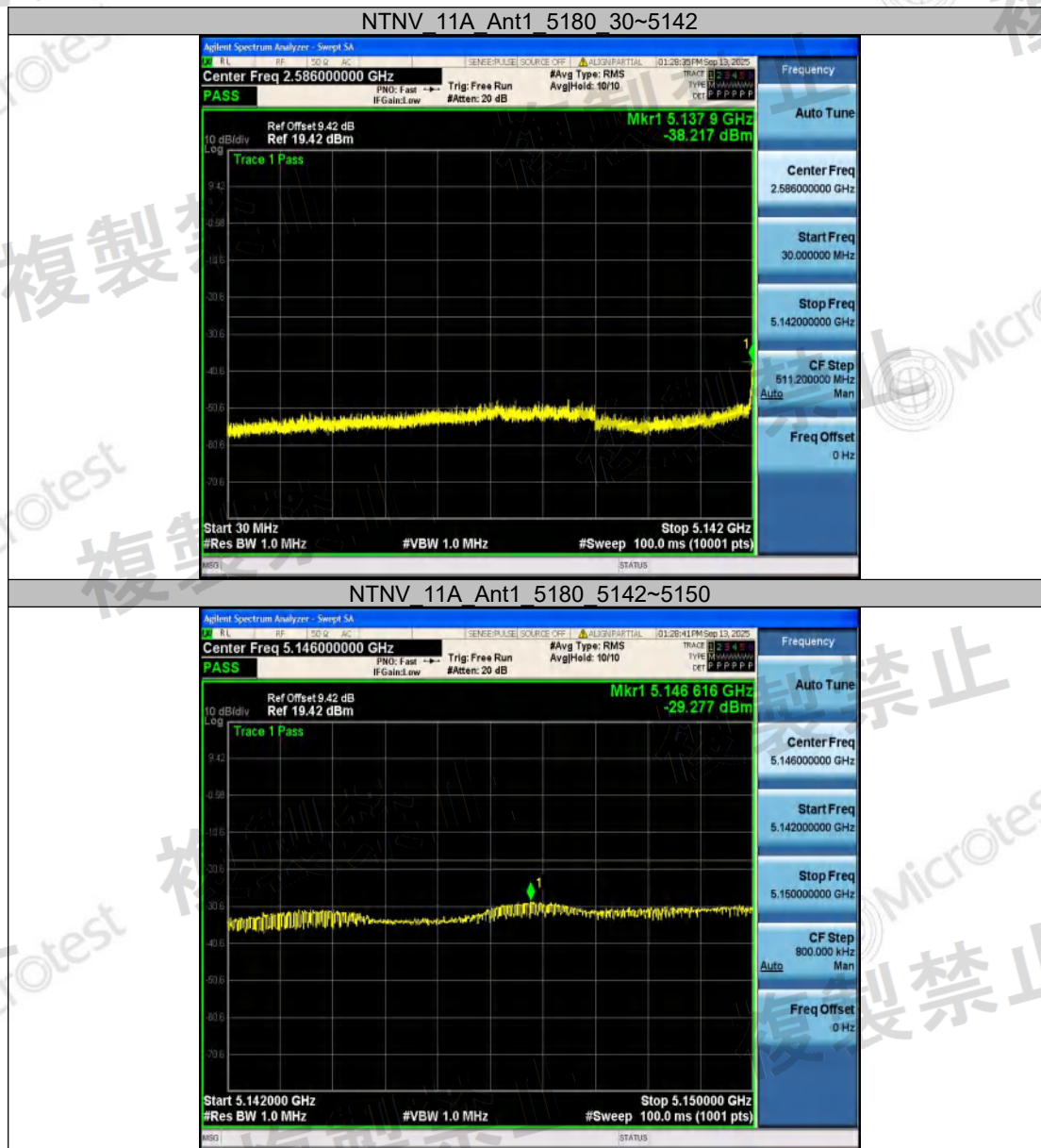
Report No.: MTi250807016-0120E3

11AC40S ISO	Ant1	5190	30~5141.6	-43.28	$\leq$ 26.02	0.07943	$\leq$ 2.5	PASS
			5141.6~5150	-37.69	$\leq$ 18.24	0.28774	$\leq$ 15	PASS
			5250~5251	-48.83	$\leq$ 12.81	0.02213	$\leq$ 52.4	PASS
			5251~5270	-48.07	$\leq$ 19.6	0.02636	$\leq$ 11.0	PASS
			5270~5278.4	-48.50	$\leq$ -25	0.02388	$\leq$ 3.2	PASS
			5278.4~26000	-39.64	$\leq$ 26.02	0.18365	$\leq$ 2.5	PASS
		5230	30~5141.6	-48.56	$\leq$ 26.02	0.02355	$\leq$ 2.5	PASS
			5141.6~5150	-47.27	$\leq$ 18.24	0.03170	$\leq$ 15	PASS
			5250~5251	-27.84	$\leq$ 12.81	2.77971	$\leq$ 52.4	PASS
			5251~5270	-30.85	$\leq$ 14.35	1.38995	$\leq$ 36.8	PASS
			5270~5278.4	-43.45	$\leq$ 25.97	0.07638	$\leq$ 2.5	PASS
			5278.4~26000	-38.96	$\leq$ 26.02	0.21478	$\leq$ 2.5	PASS
11AC80S ISO	Ant1	5210	30~5123.2	-40.55	$\leq$ 26.02	0.14894	$\leq$ 2.5	PASS
			5132.5~5150	-35.57	$\leq$ 18.24	0.46881	$\leq$ 15	PASS
			5250~5251	-27.52	$\leq$ 15.92	2.99226	$\leq$ 25.6	PASS
			5251~5290	-28.16	$\leq$ 16.05	2.58226	$\leq$ 24.9	PASS
			5290~5296.7	-43.19	$\leq$ 25.62	0.08110	$\leq$ 2.7	PASS
			5296.7~26000	-39.12	$\leq$ 26.02	0.20701	$\leq$ 2.5	PASS

TEST REPORT

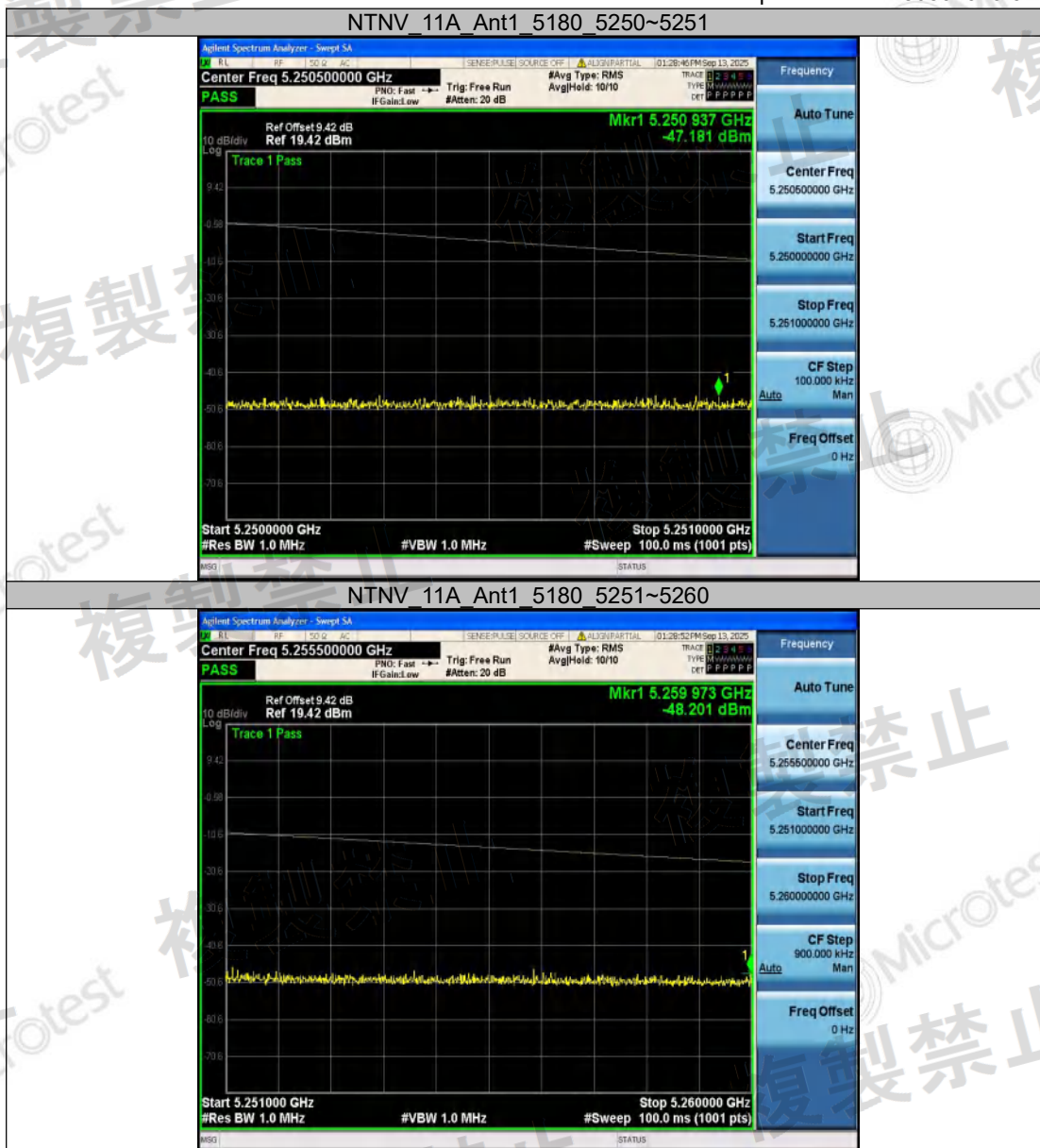
Report No.: MTi250807016-0120E3

5.15.2 Test Graphs



TEST REPORT

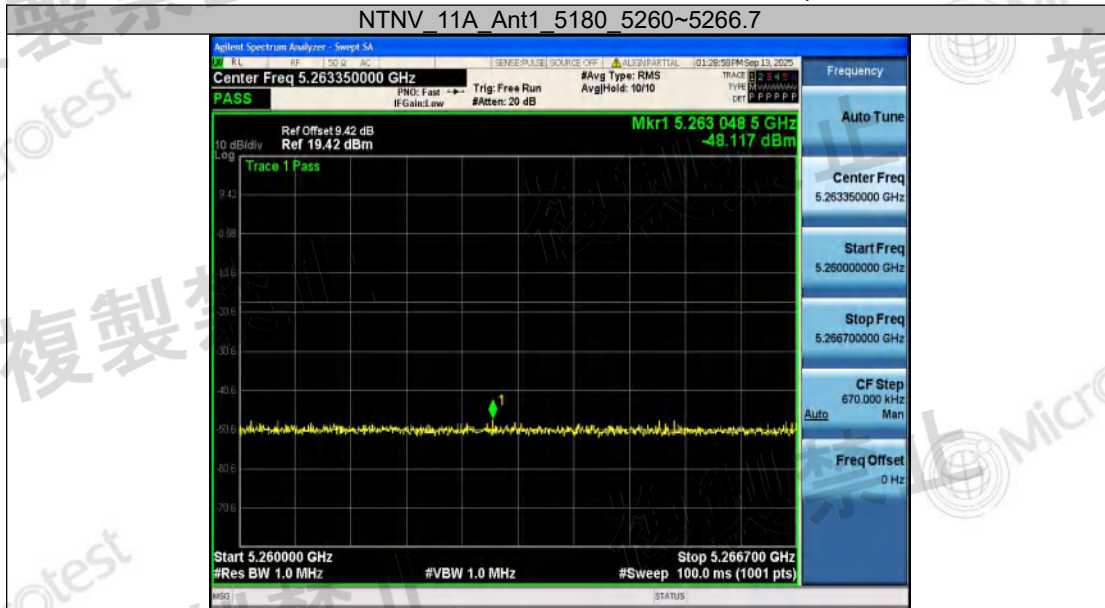
Report No.: MTI250807016-0120E3



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Report No.: MTI250807016-0120E3

NTNV_11A_Ant1_5180_5260~5266.7

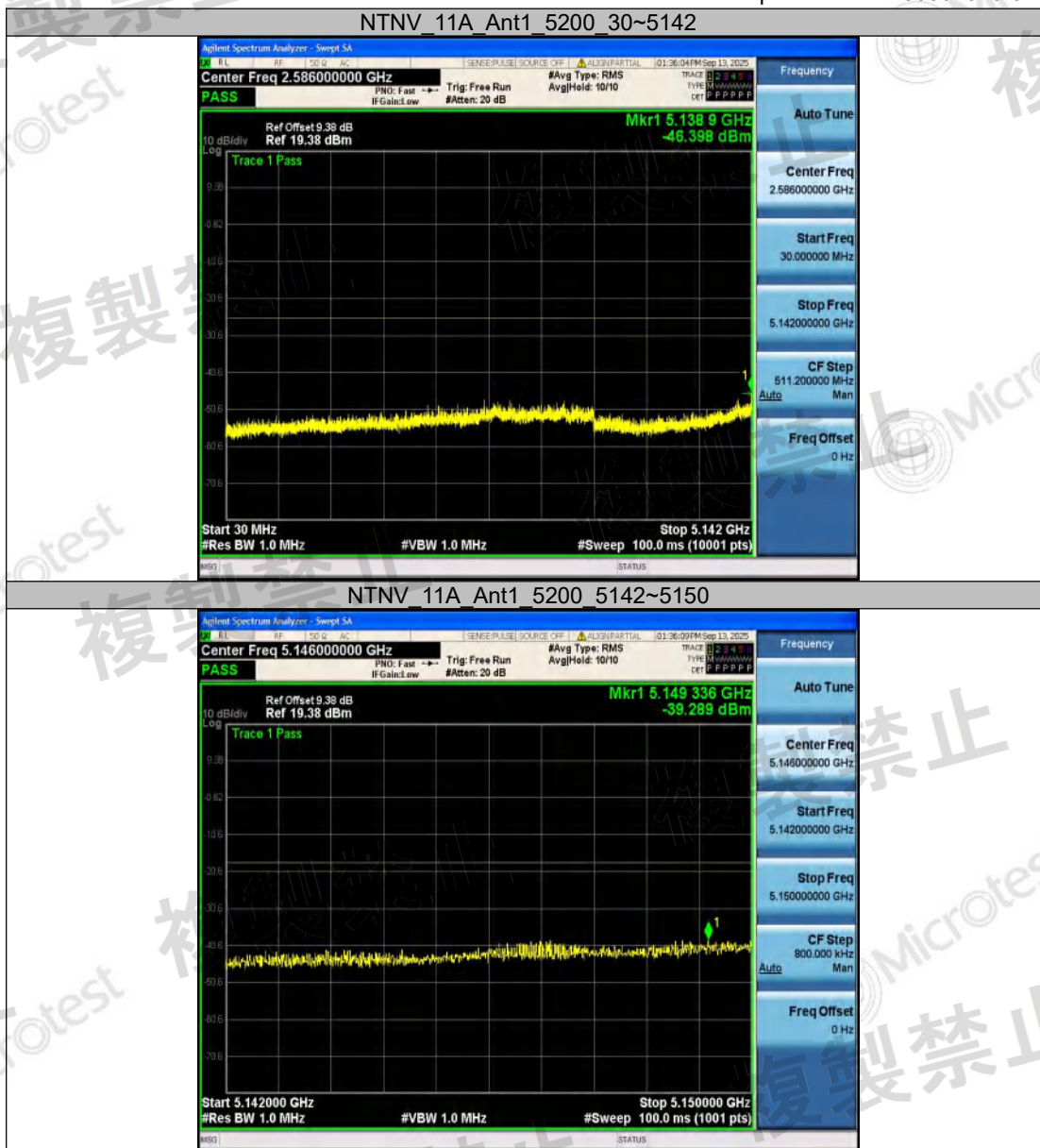


NTNV_11A_Ant1_5180_5266.7~26000



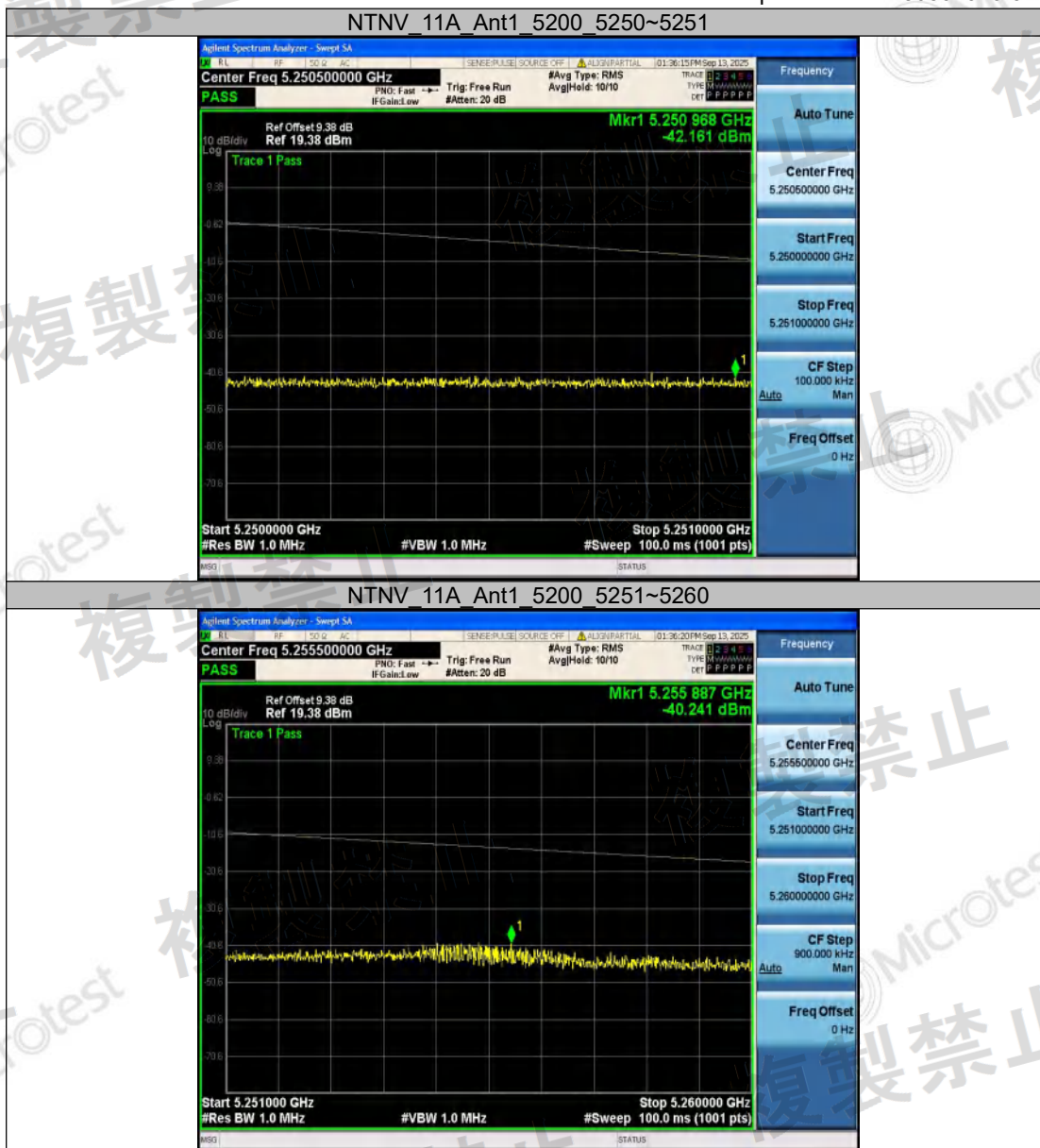
TEST REPORT

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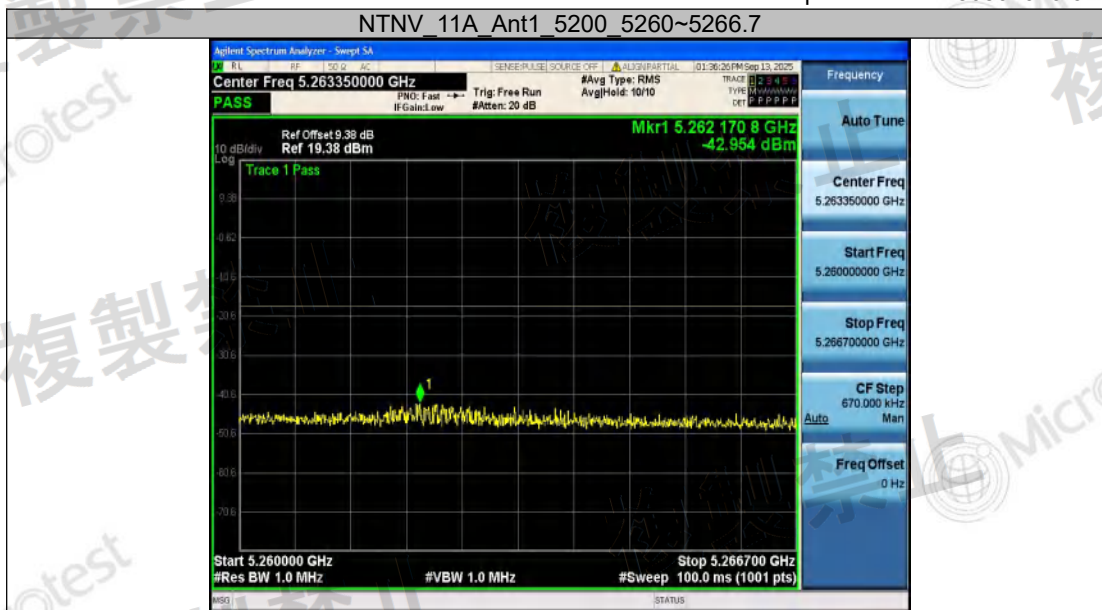
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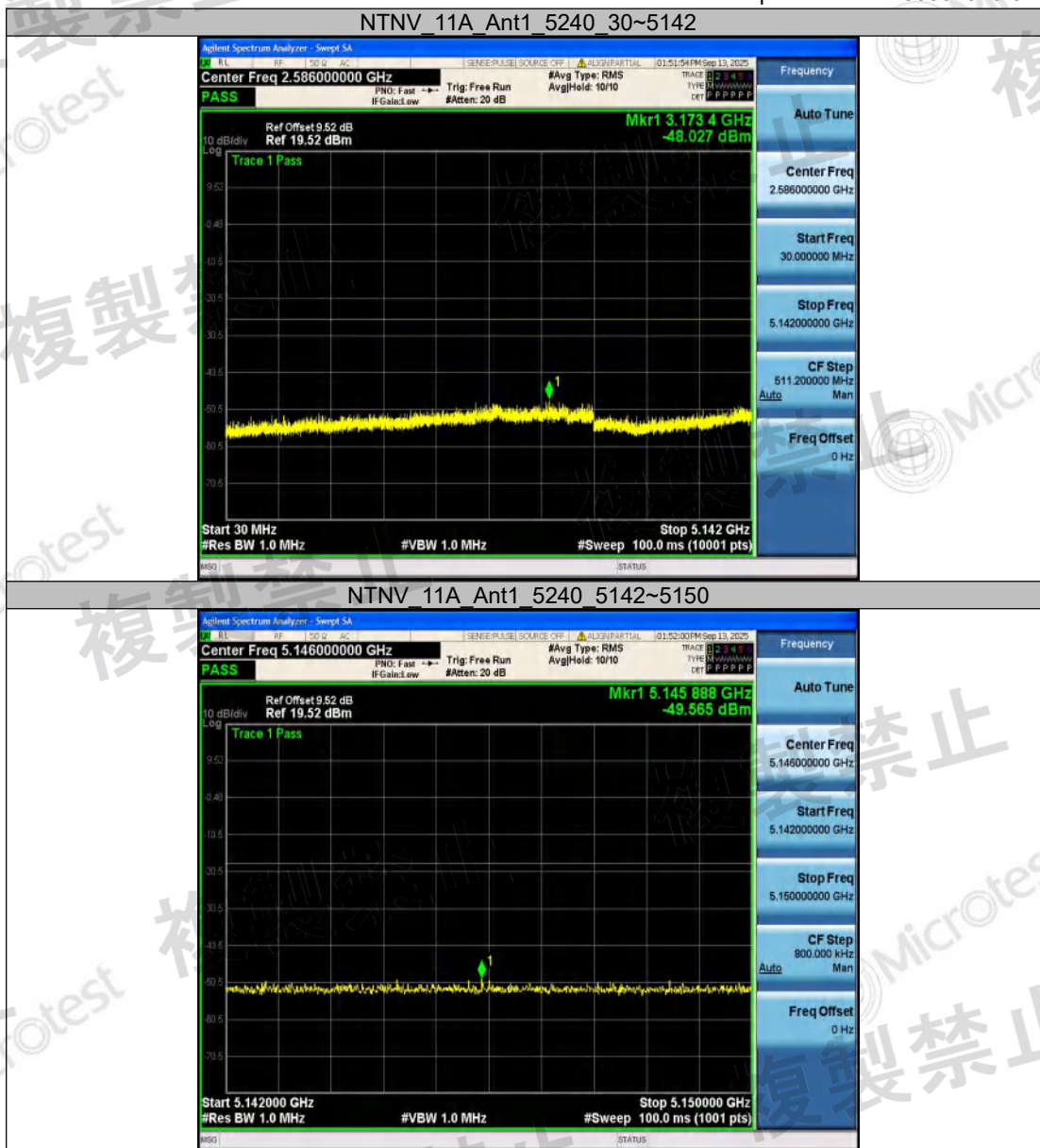


NTNV_11A_Ant1_5200_5266.7~26000



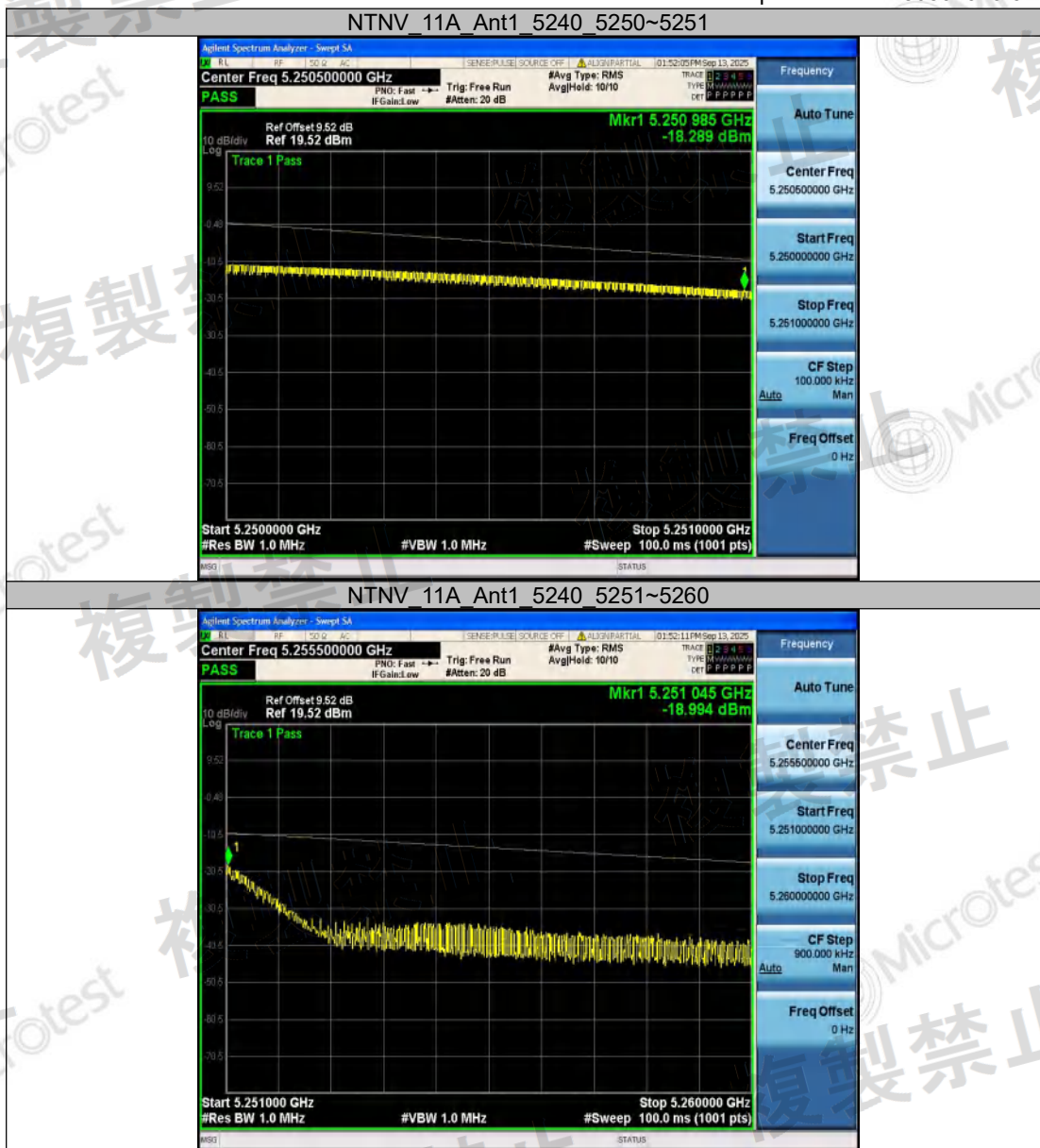
TEST REPORT

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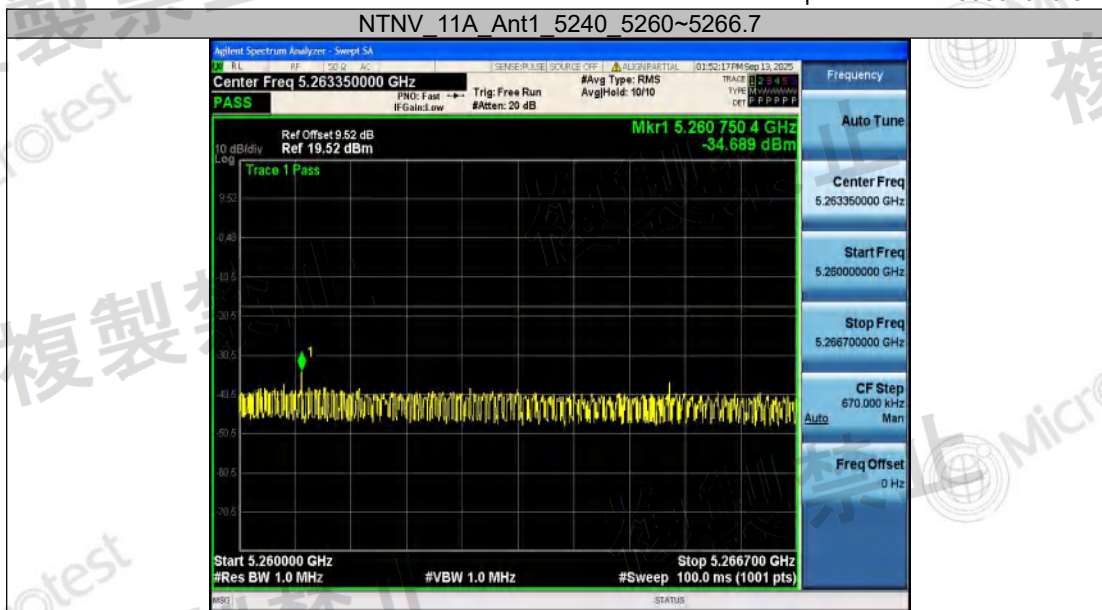
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TEST REPORT

Report No.: MTi250807016-0120E3

NTNV_11A_Ant1_5240_5260~5266.7



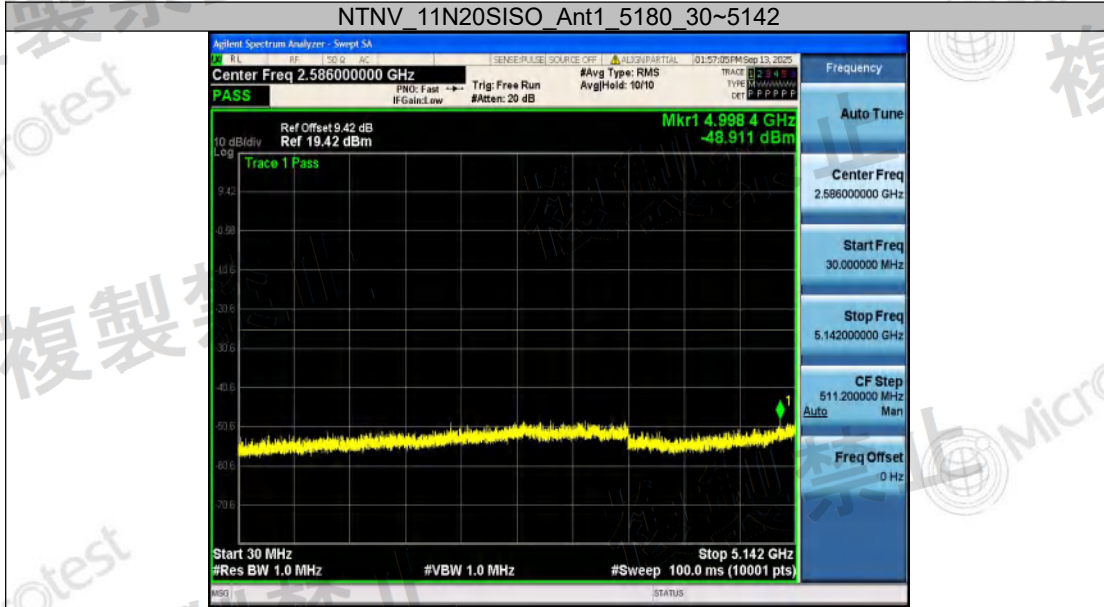
NTNV_11A_Ant1_5240_5266.7~26000



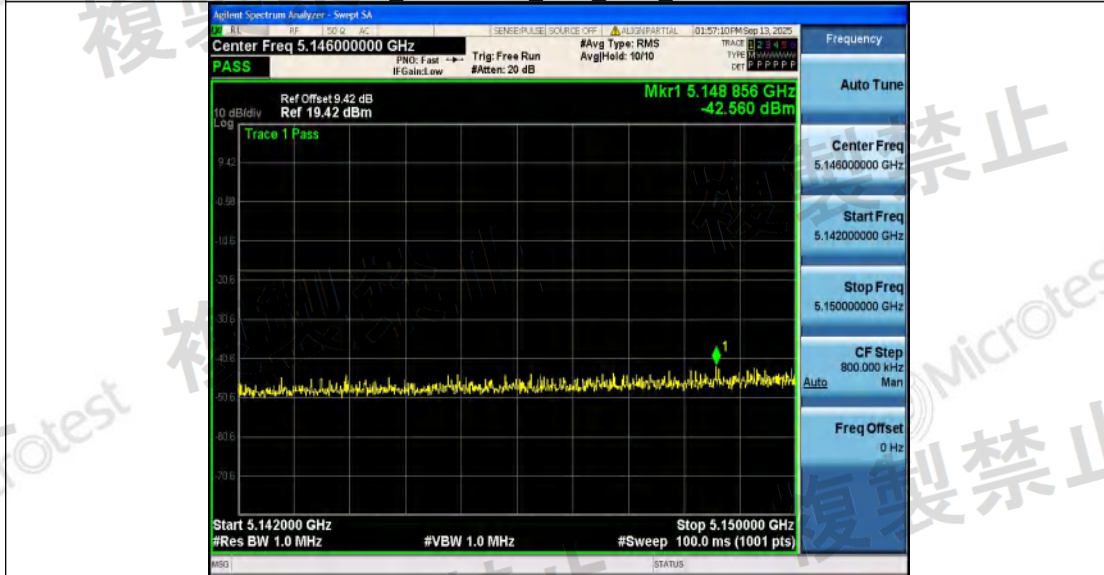
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO Ant1 5180 30~5142



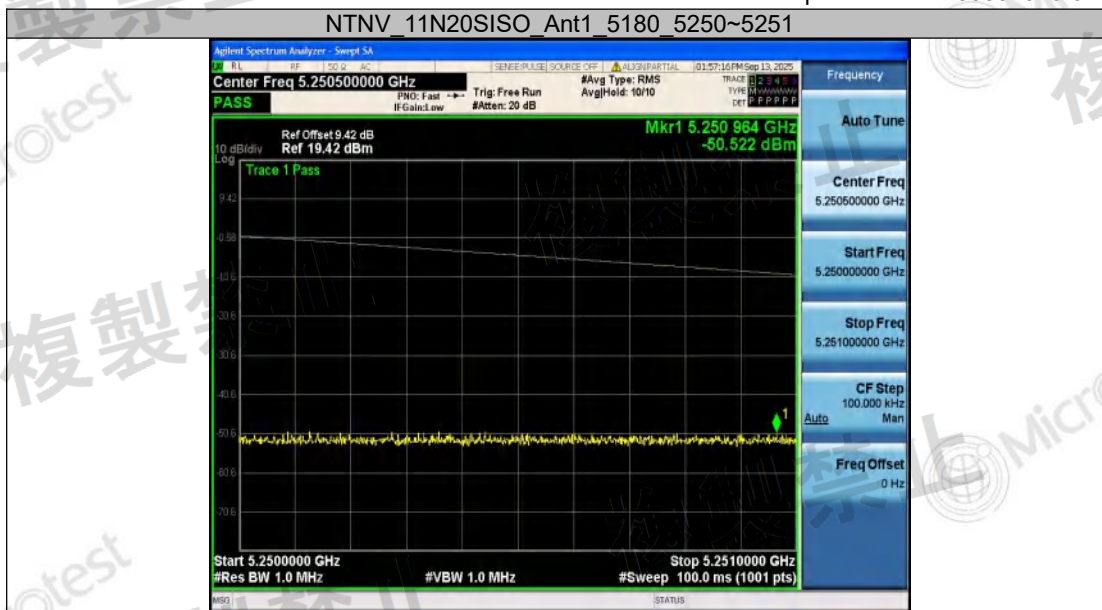
NTNV 11N20SISO Ant1 5180 5142~5150



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11N20SISO Ant1 5180 5250~5251



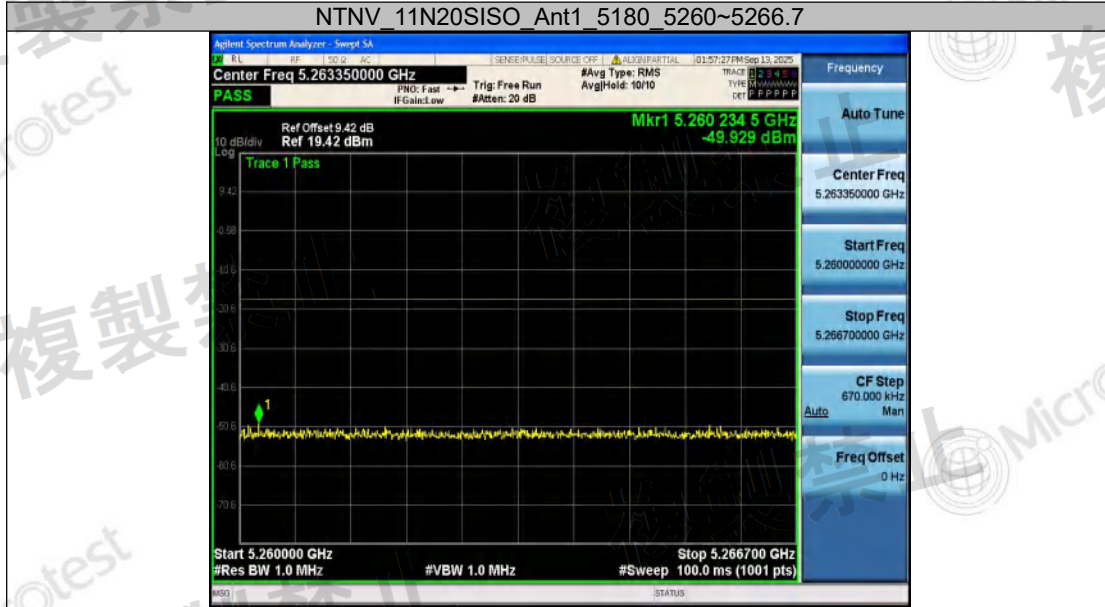
NTNV 11N20SISO Ant1 5180 5251~5260



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO_Ant1 5180 5260~5266.7



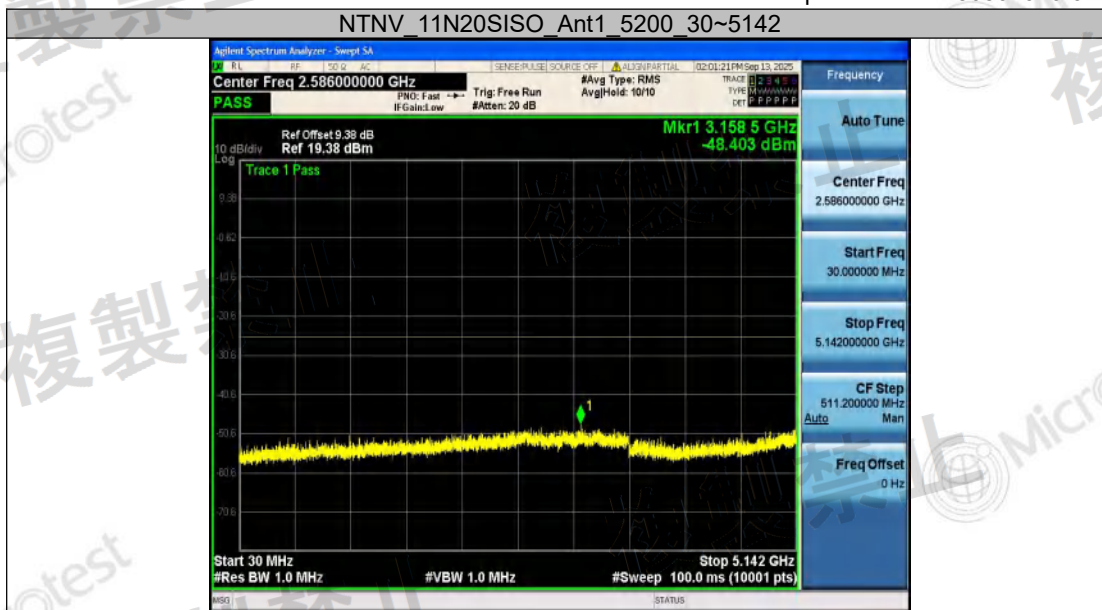
NTNV 11N20SISO_Ant1 5180 5266.7~26000



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO Ant1 5200 30~5142

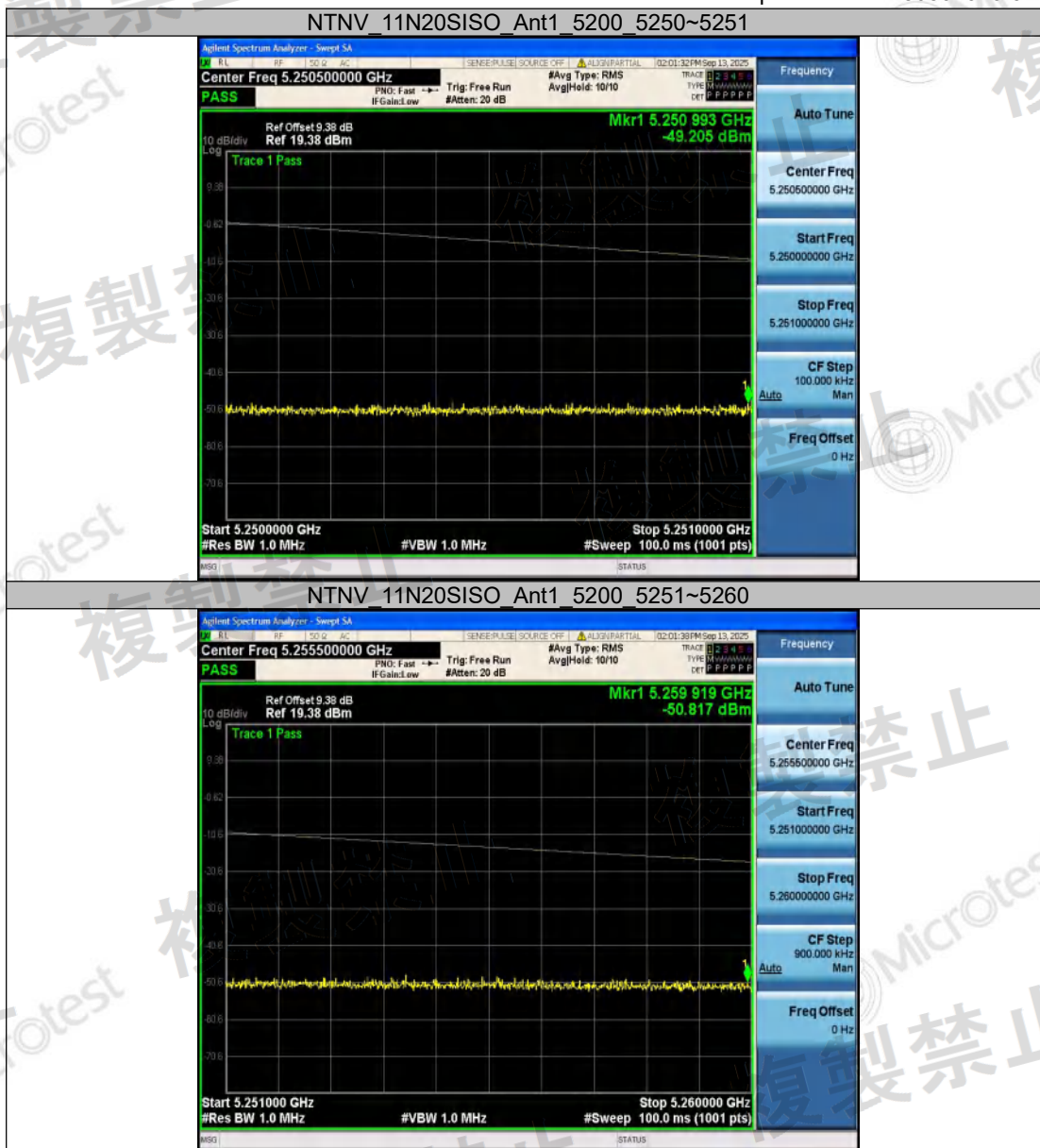


NTNV 11N20SISO Ant1 5200 5142~5150



TEST REPORT

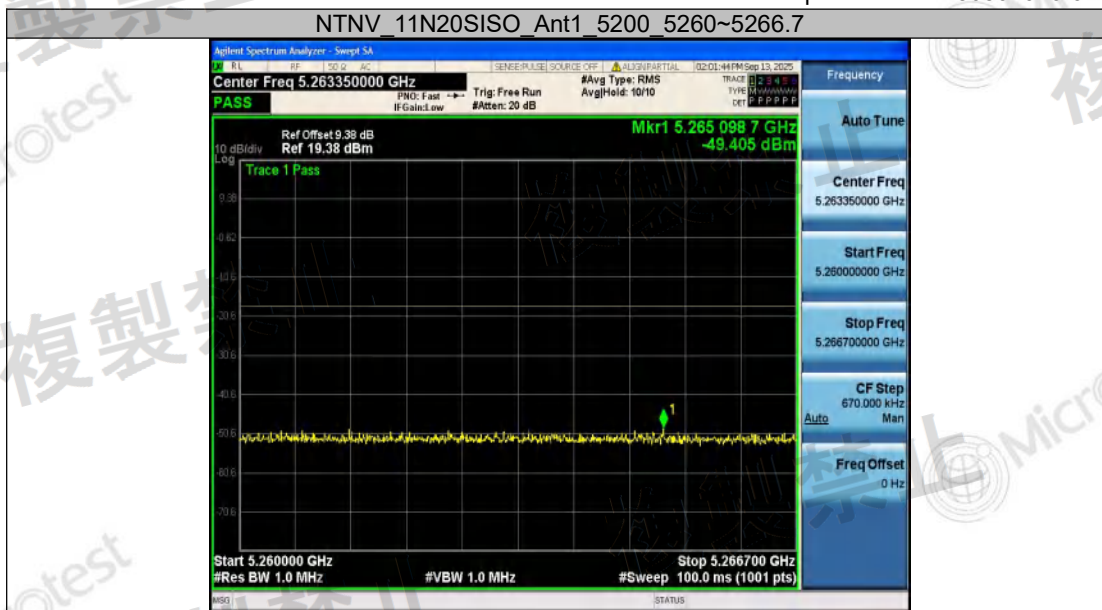
Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO_Ant1 5200 5260~5266.7



NTNV 11N20SISO_Ant1 5200 5266.7~26000



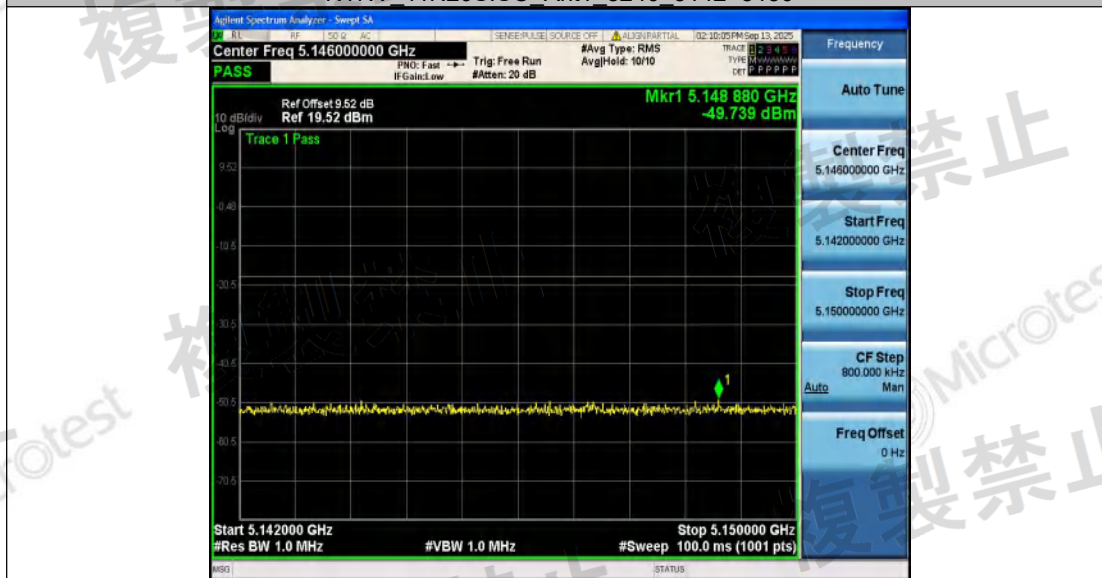
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO Ant1 5240 30~5142



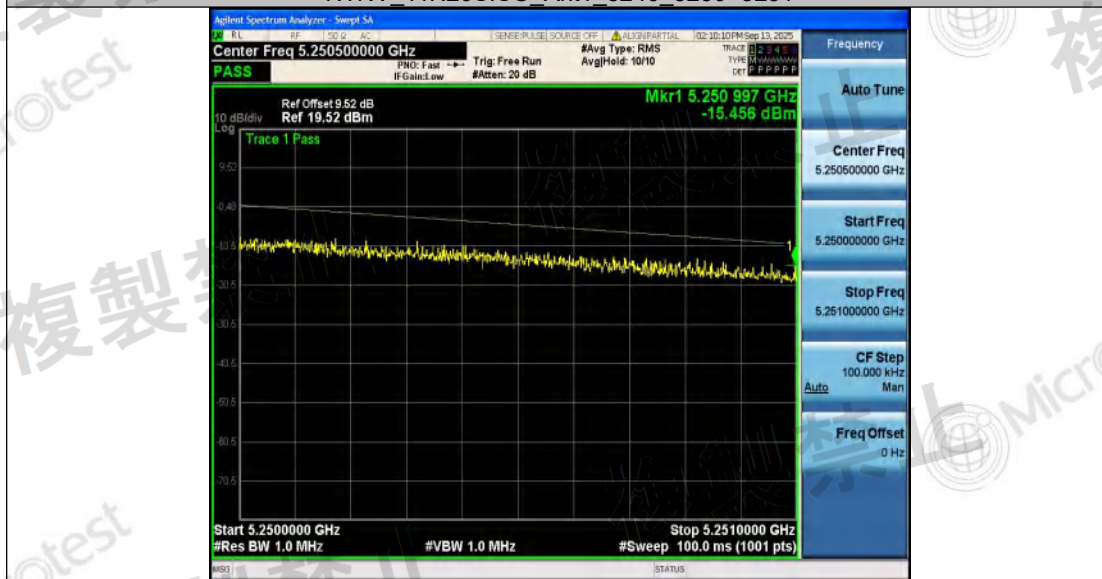
NTNV 11N20SISO Ant1 5240 5142~5150



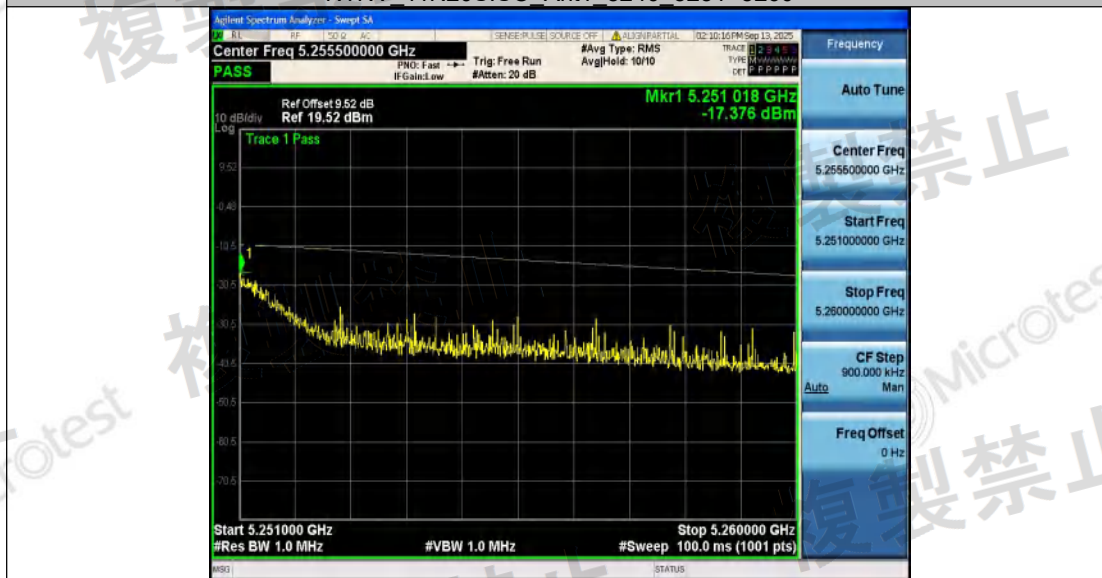
TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11N20SISO Ant1 5240 5250~5251



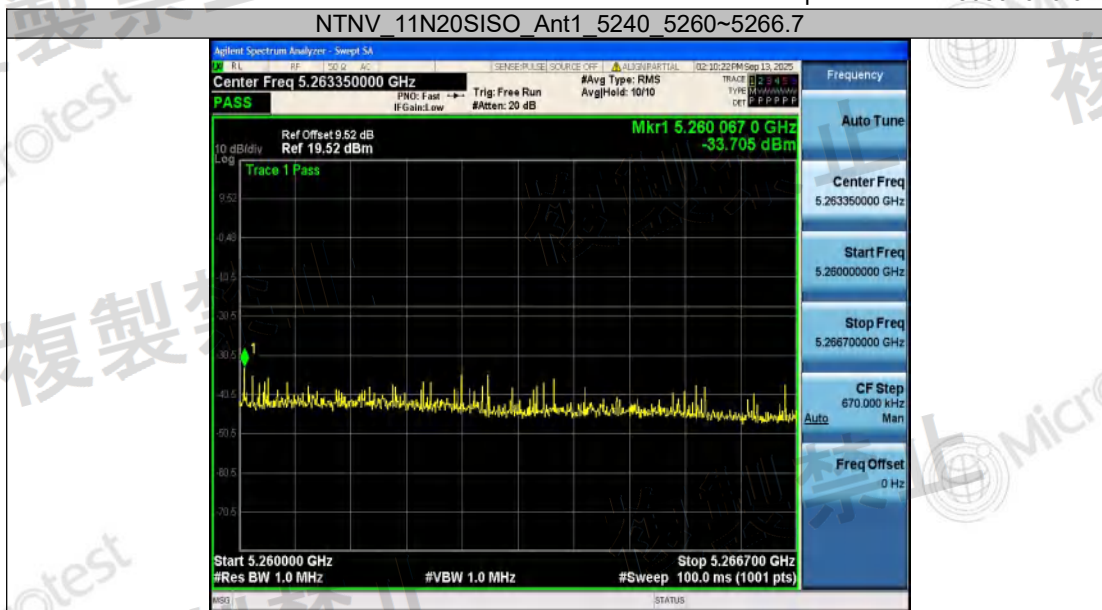
NTNV 11N20SISO Ant1 5240 5251~5260



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO Ant1 5240 5260~5266.7



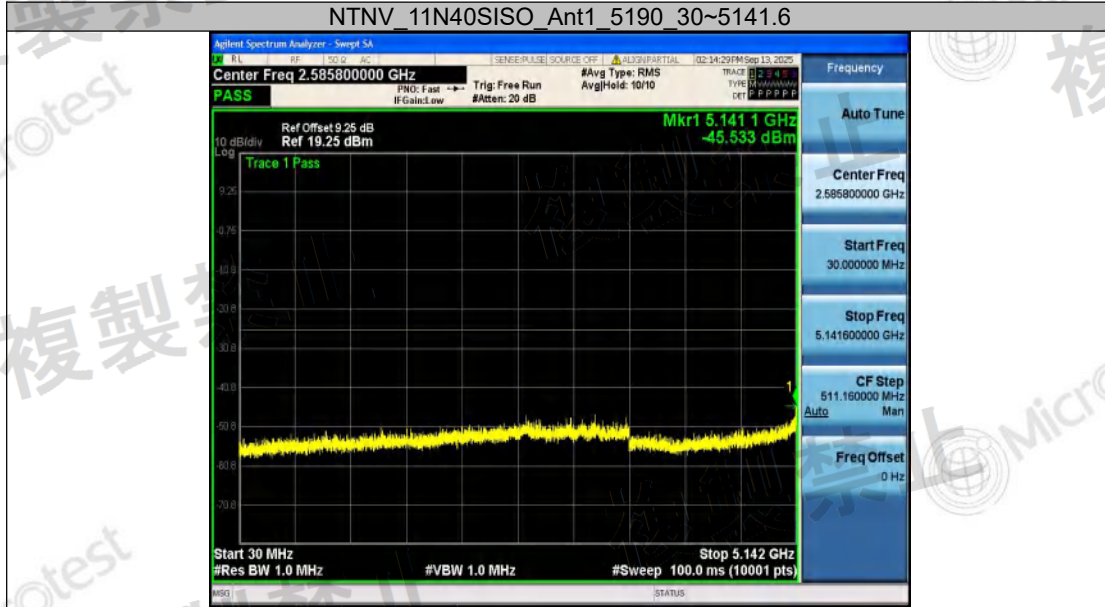
NTNV 11N20SISO Ant1 5240 5266.7~26000



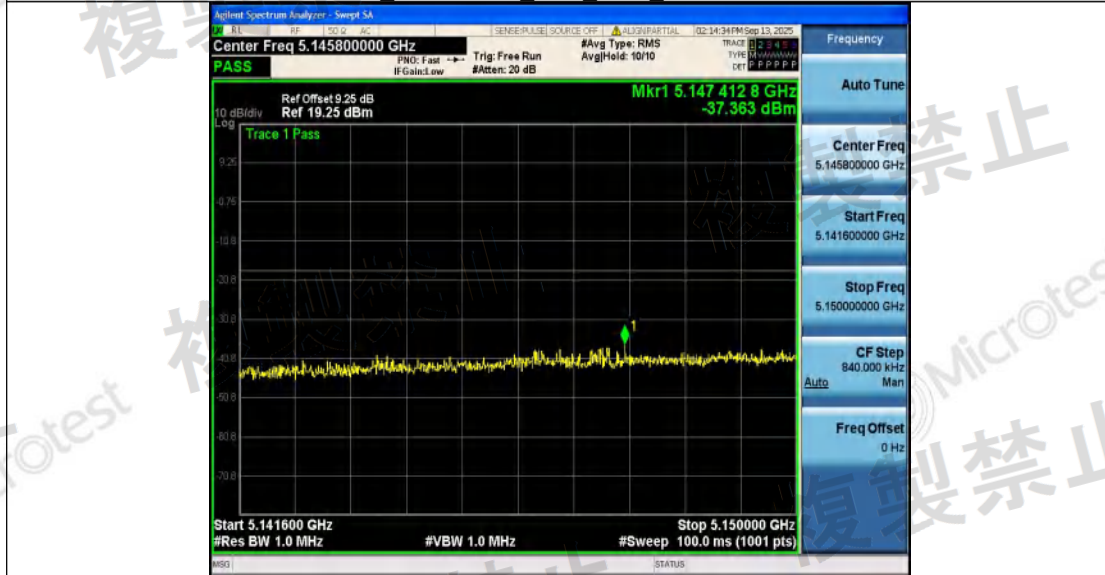
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N40SISO Ant1 5190 30~5141.6

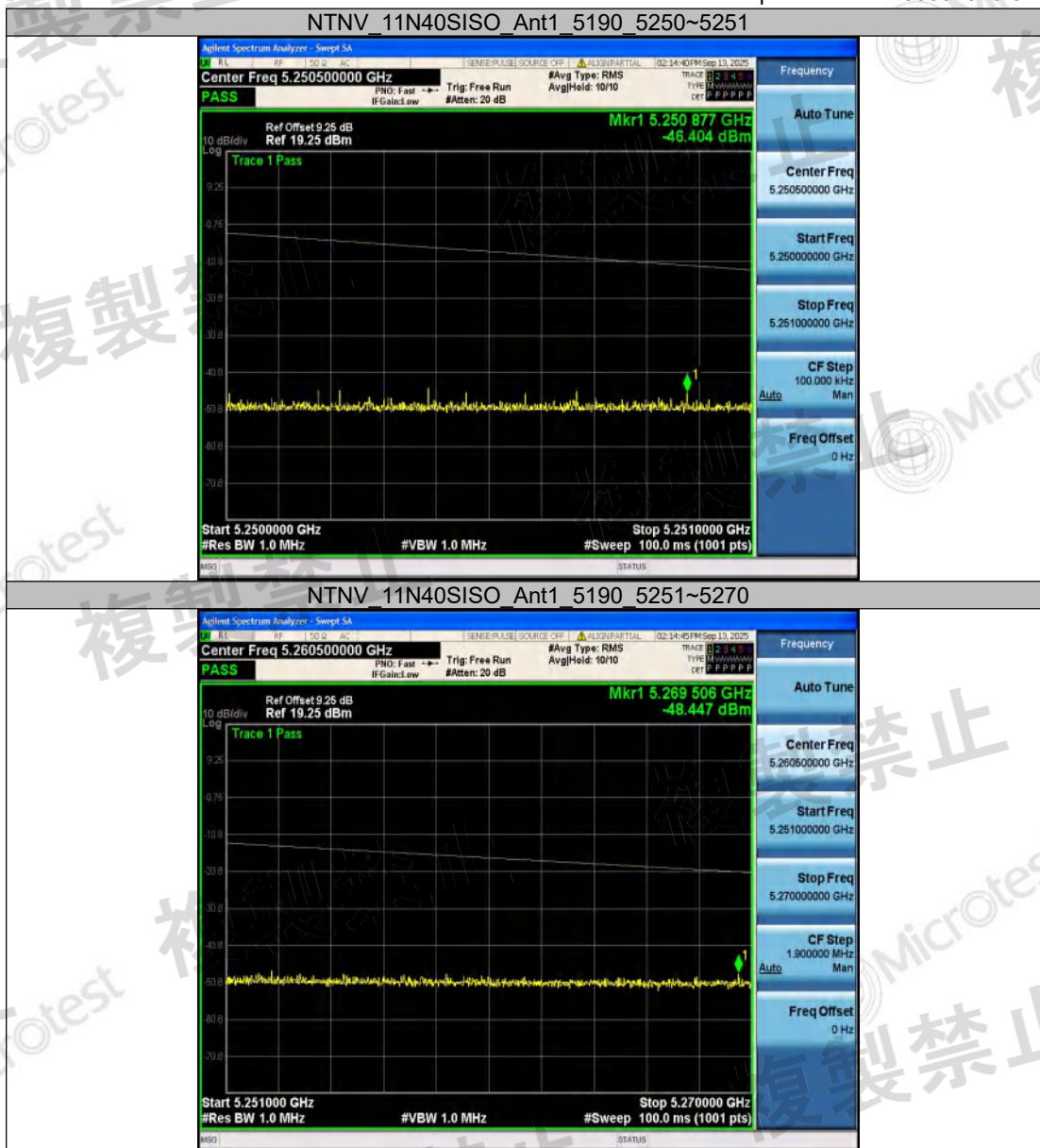


NTNV 11N40SISO Ant1 5190 5141.6~5150



TEST REPORT

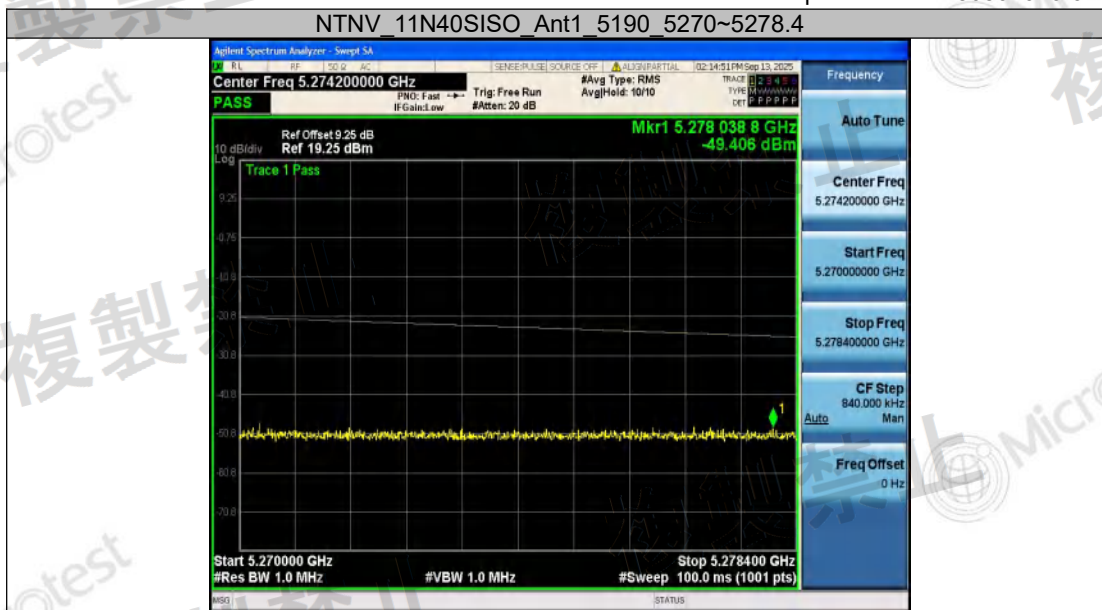
Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N40SISO_Ant1 5190 5270~5278.4



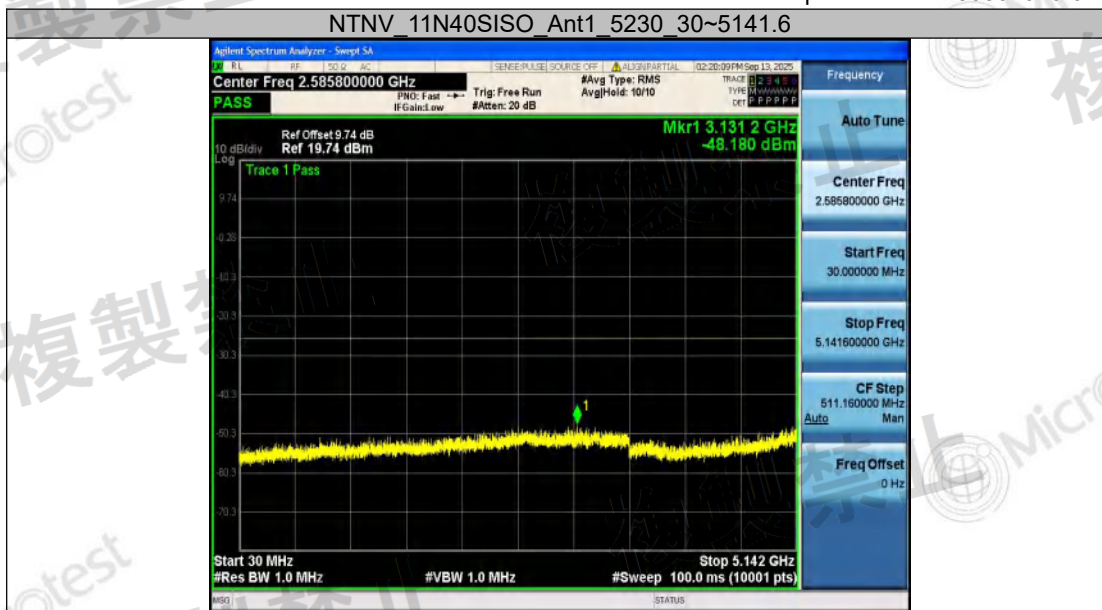
NTNV 11N40SISO_Ant1 5190 5278.4~26000



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N40SISO Ant1 5230 30~5141.6



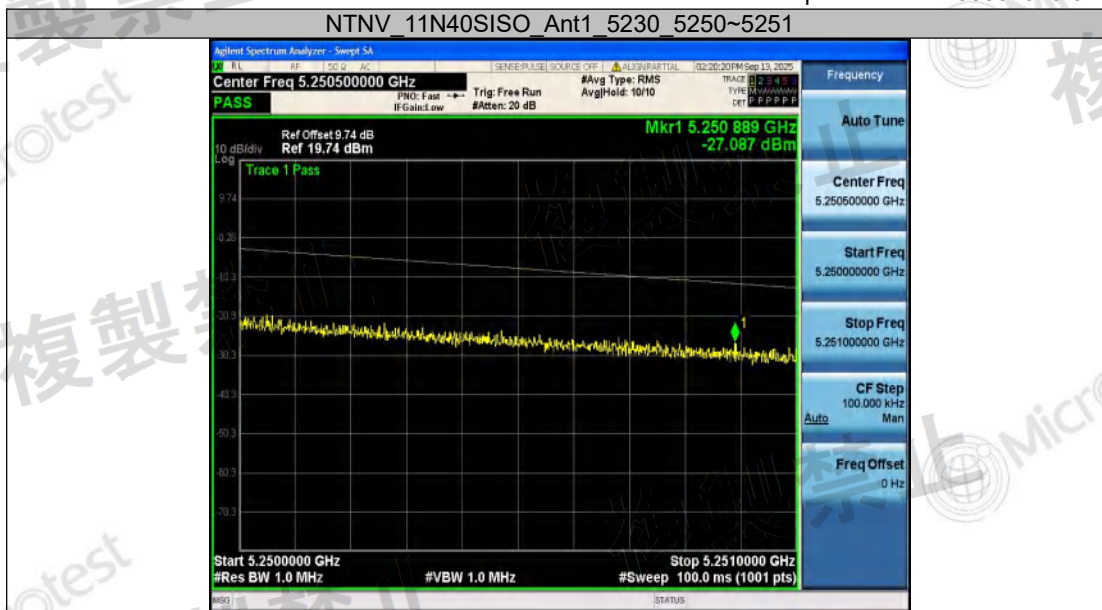
NTNV 11N40SISO Ant1 5230 5141.6~5150



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N40SISO Ant1 5230 5250~5251



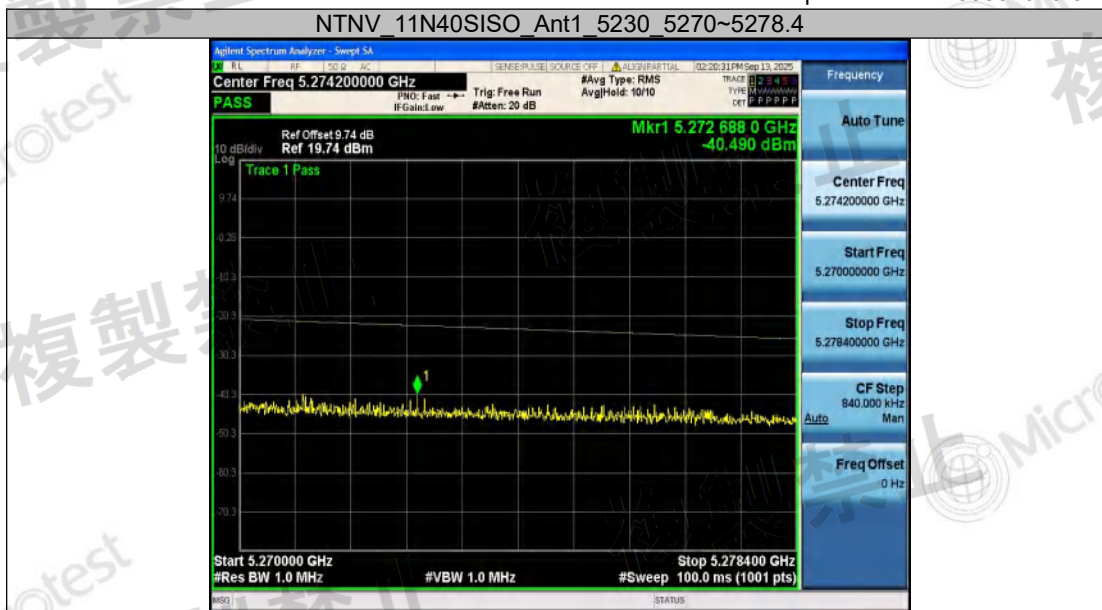
NTNV 11N40SISO Ant1 5230 5251~5270



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N40SISO_Ant1 5230 5270~5278.4



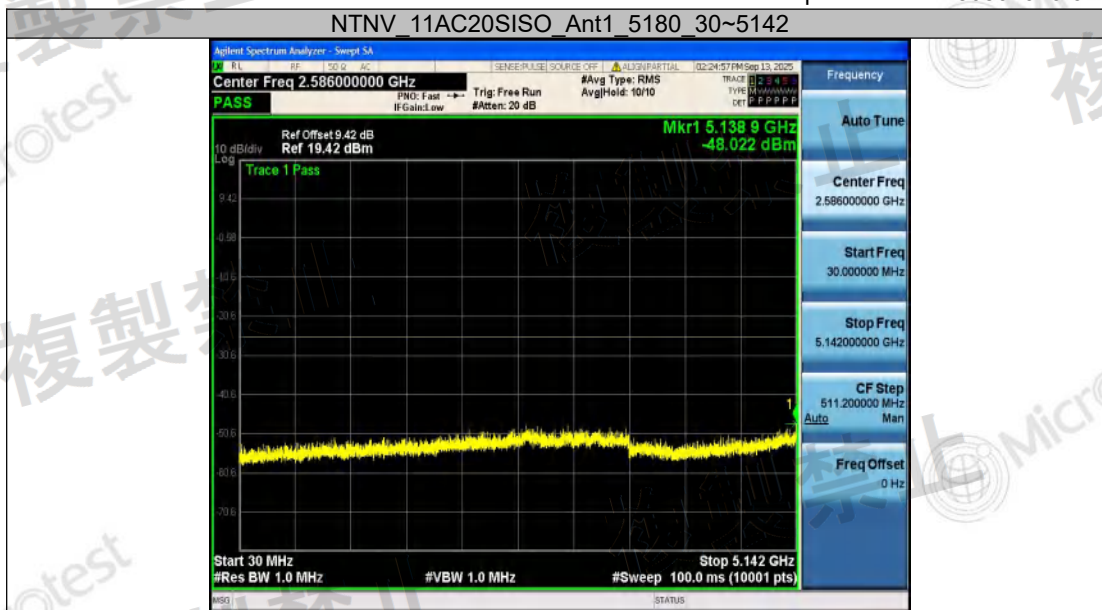
NTNV 11N40SISO_Ant1 5230 5278.4~26000



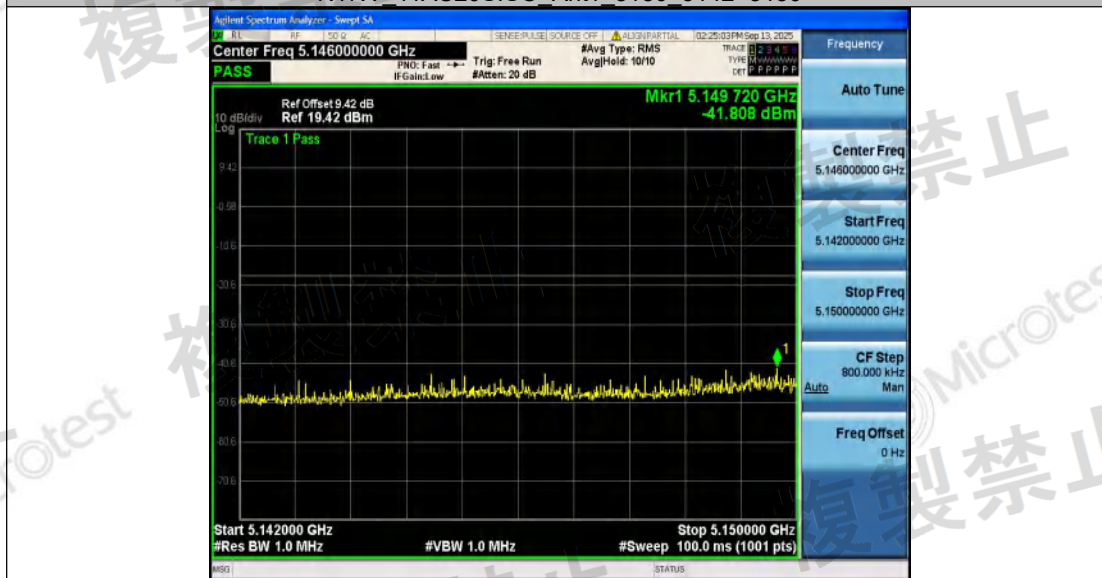
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO_Ant1 5180 30~5142



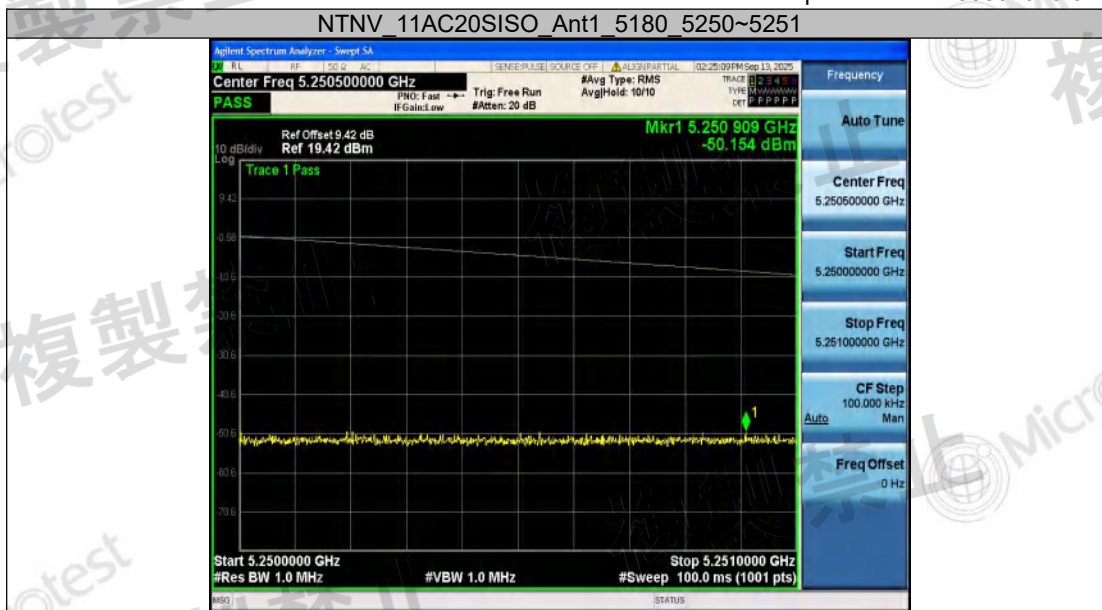
NTNV 11AC20SISO_Ant1 5180 5142~5150



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11AC20SISO_Ant1 5180 5250~5251



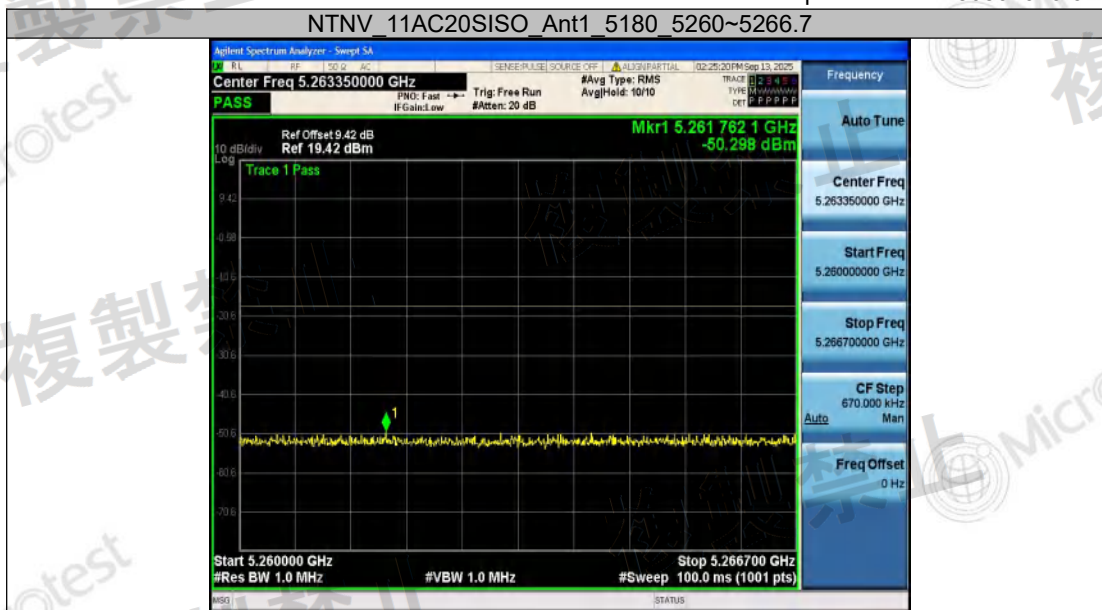
NTNV 11AC20SISO_Ant1 5180 5251~5260



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO Ant1 5180 5260~5266.7



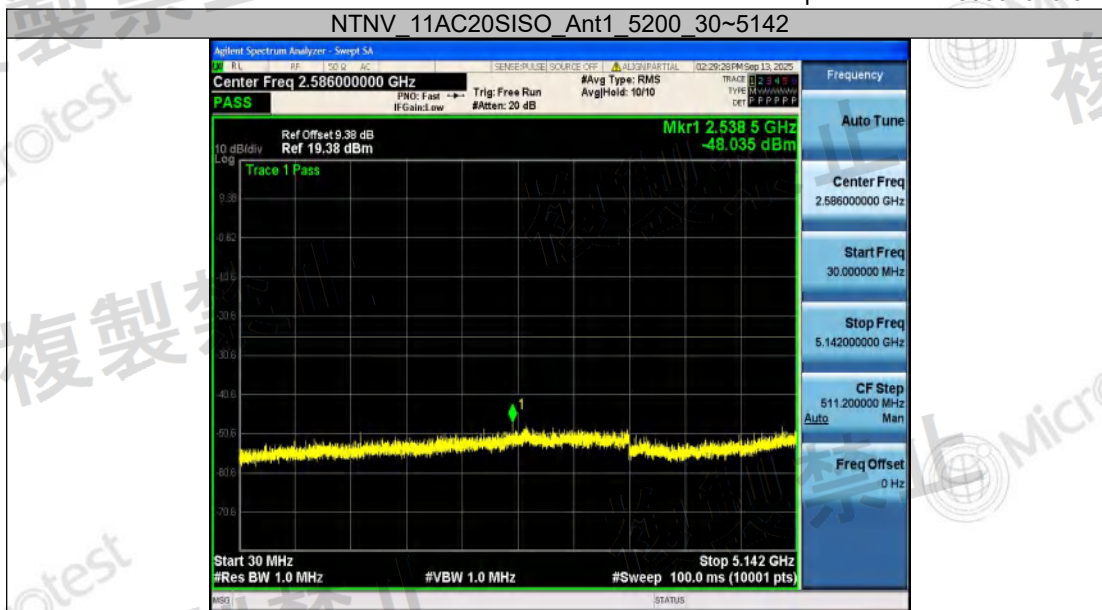
NTNV 11AC20SISO Ant1 5180 5266.7~26000



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO_Ant1 5200 30~5142



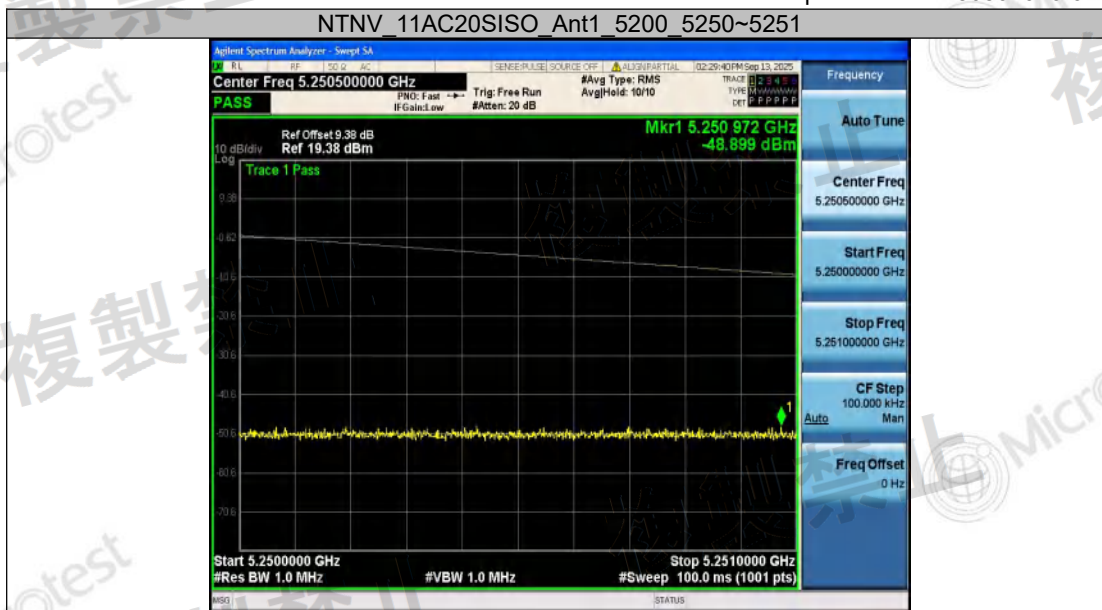
NTNV 11AC20SISO_Ant1 5200 5142~5150



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11AC20SISO_Ant1 5200 5250~5251



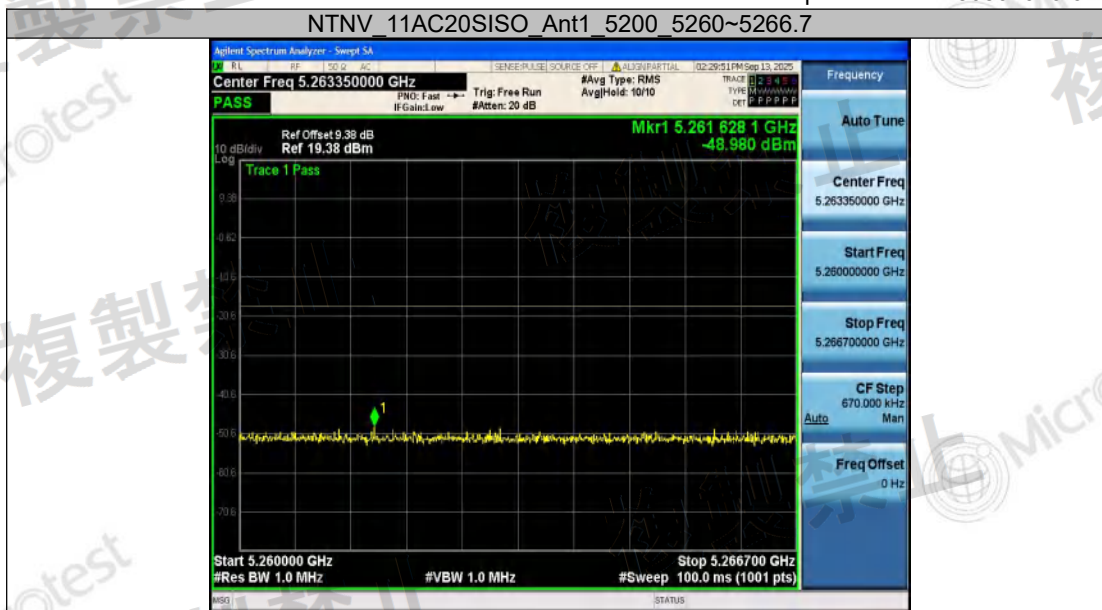
NTNV 11AC20SISO_Ant1 5200 5251~5260



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO Ant1 5200 5260~5266.7



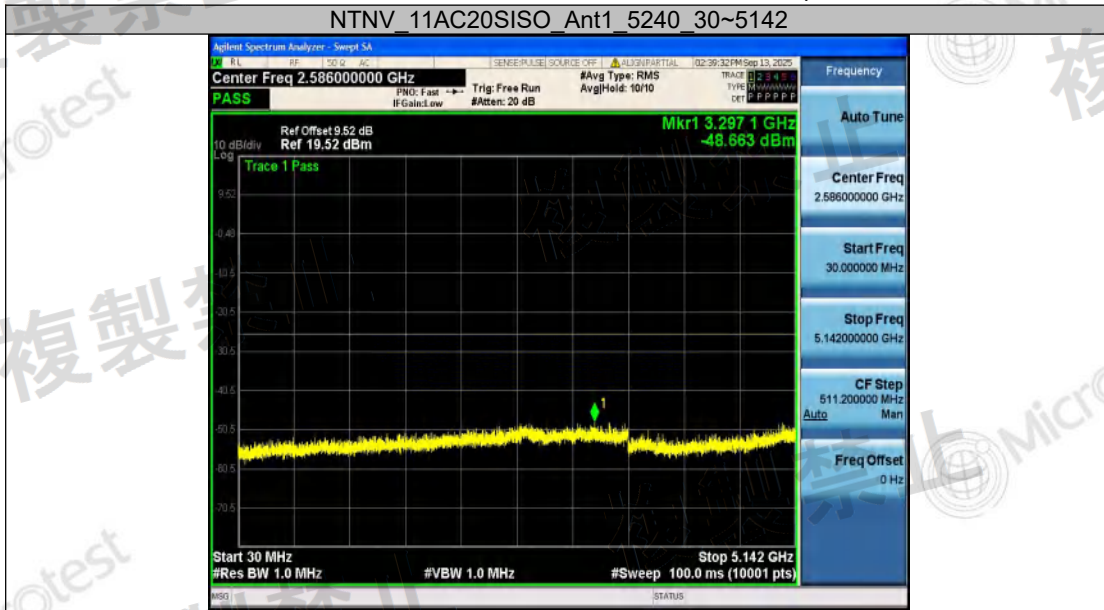
NTNV 11AC20SISO Ant1 5200 5266.7~26000



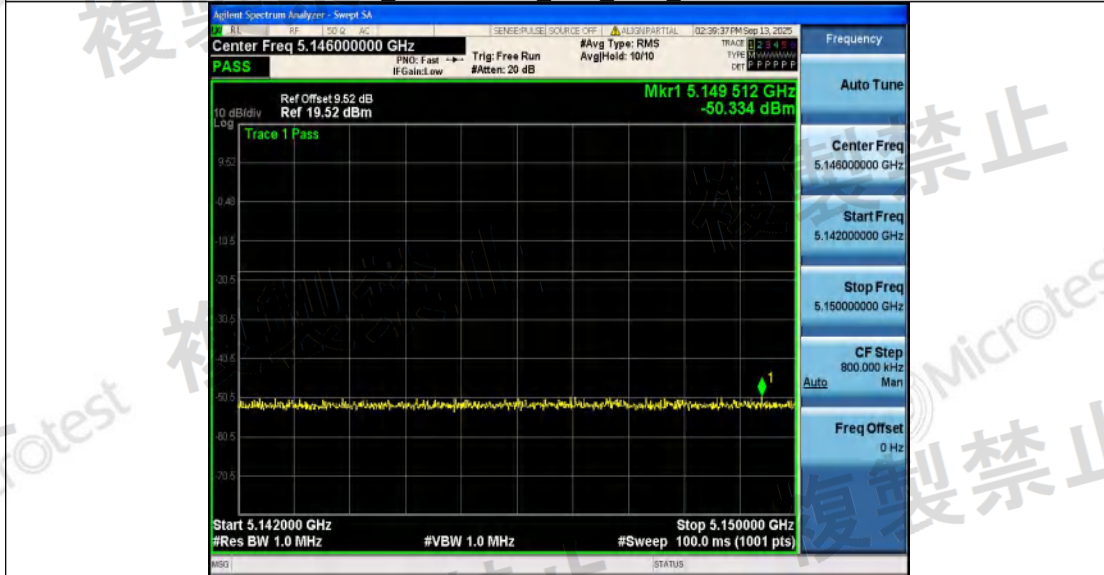
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO Ant1 5240 30~5142



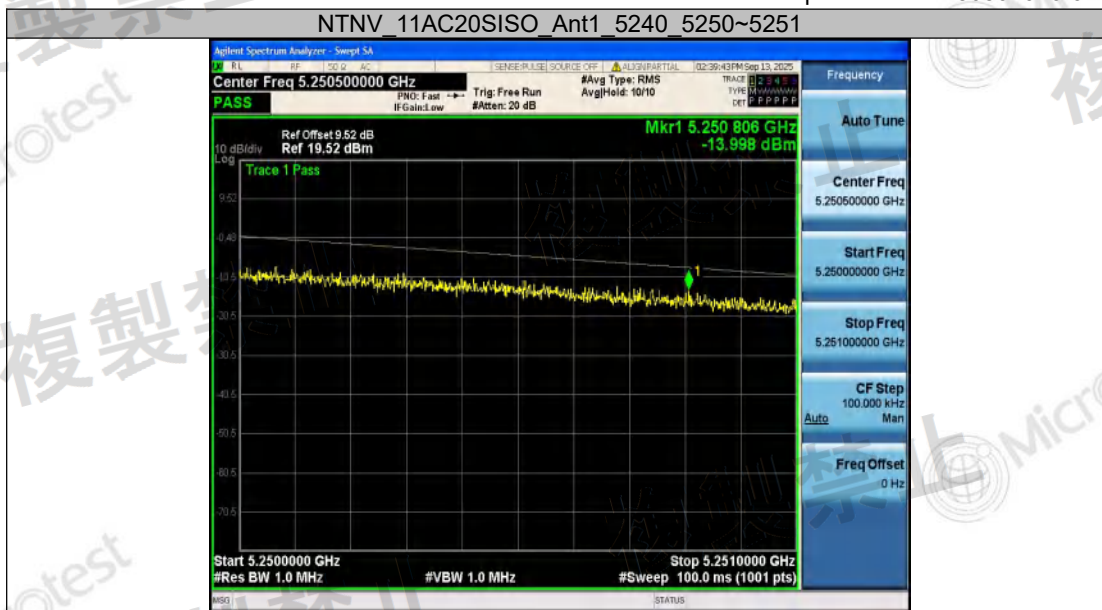
NTNV 11AC20SISO Ant1 5240 5142~5150



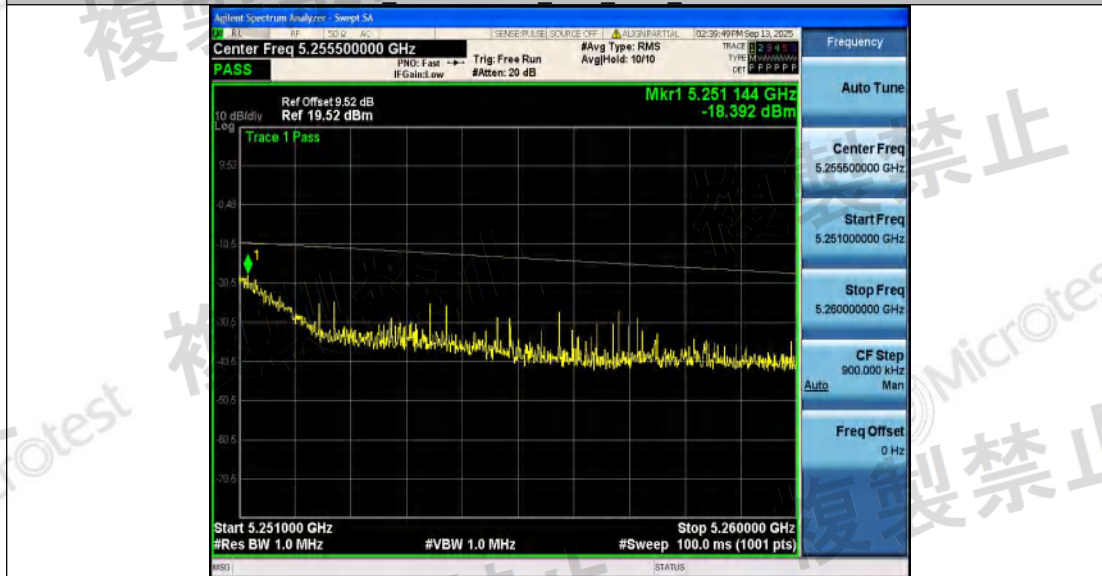
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO_Ant1 5240 5250~5251



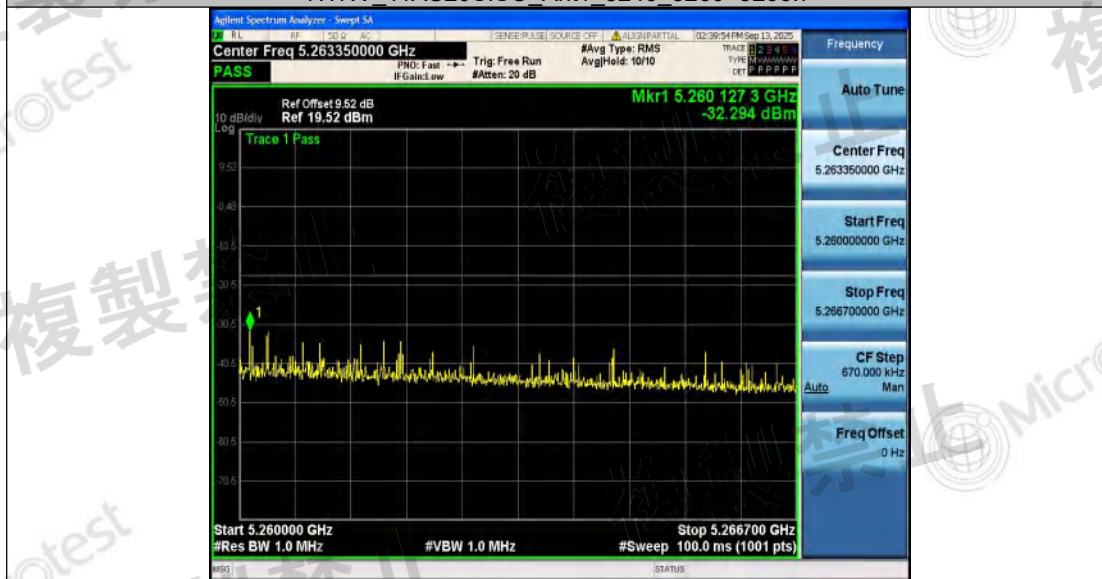
NTNV 11AC20SISO_Ant1 5240 5251~5260



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC20SISO Ant1 5240 5260~5266.7



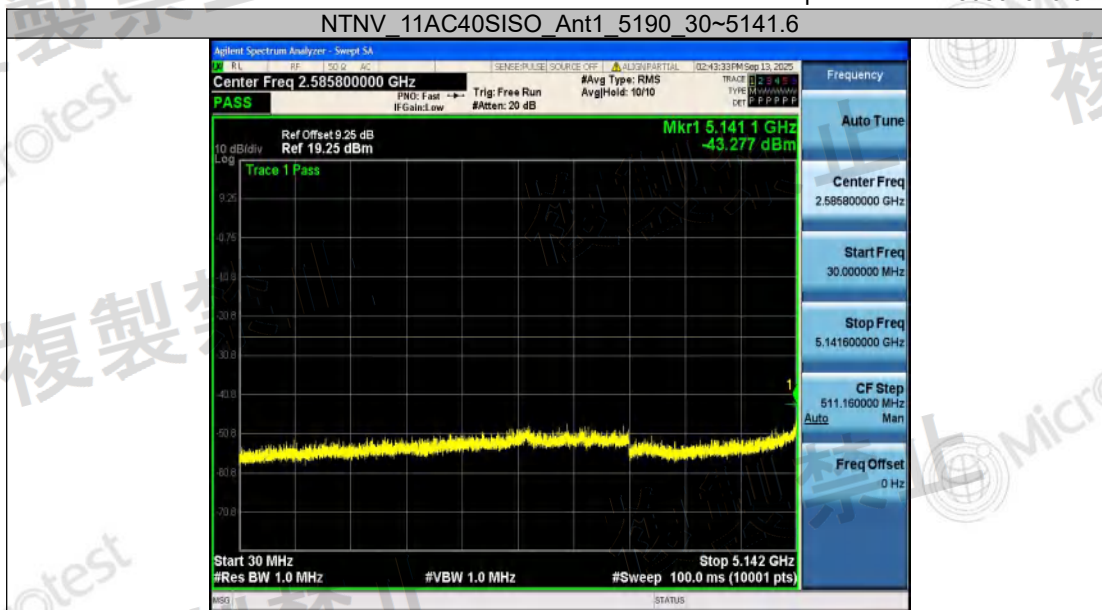
NTNV 11AC20SISO Ant1 5240 5266.7~26000



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC40SISO Ant1 5190 30~5141.6



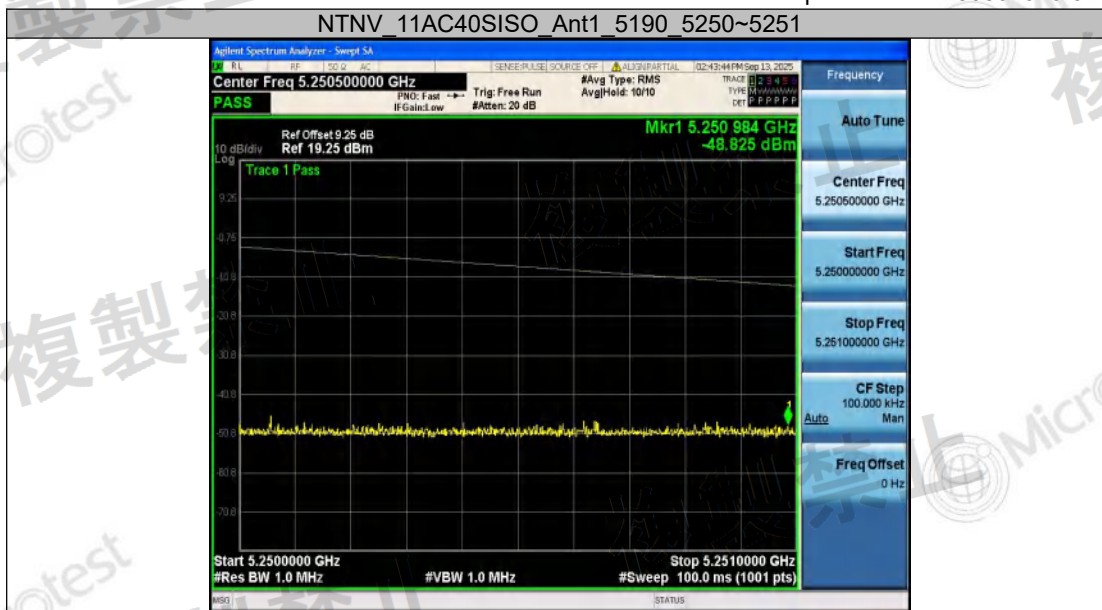
NTNV 11AC40SISO Ant1 5190 5141.6~5150



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11AC40SISO_Ant1 5190 5250~5251



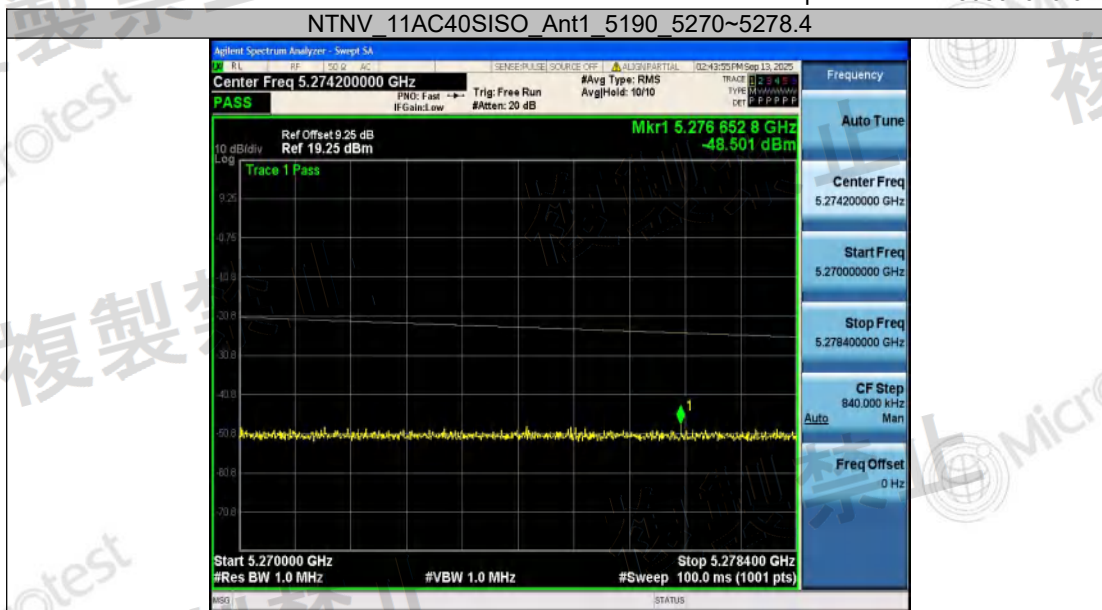
NTNV 11AC40SISO_Ant1 5190 5251~5270



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC40SISO Ant1 5190 5270~5278.4



NTNV 11AC40SISO Ant1 5190 5278.4~26000



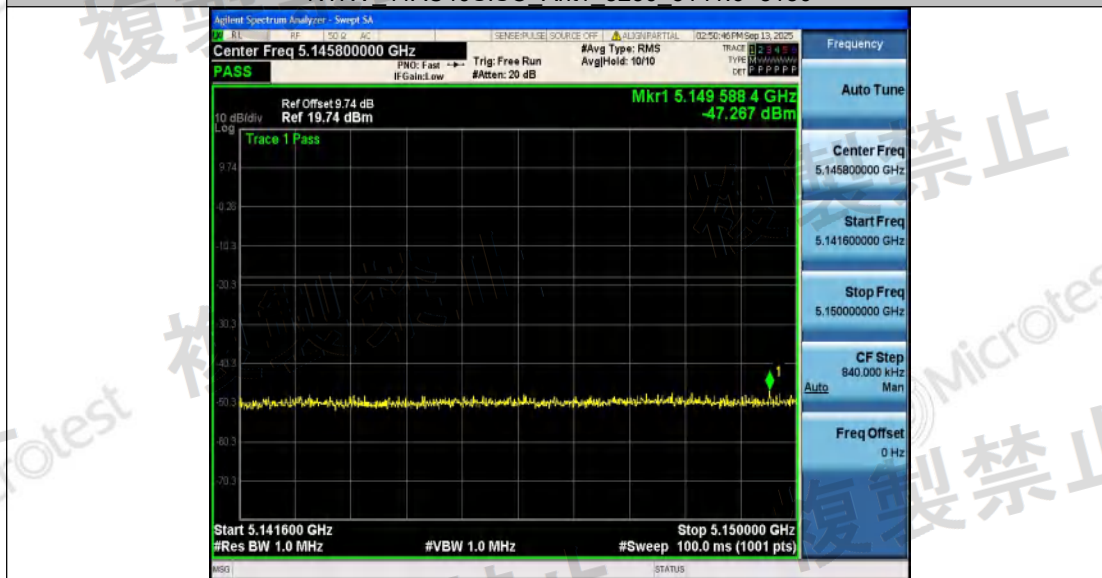
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC40SISO Ant1 5230 30~5141.6



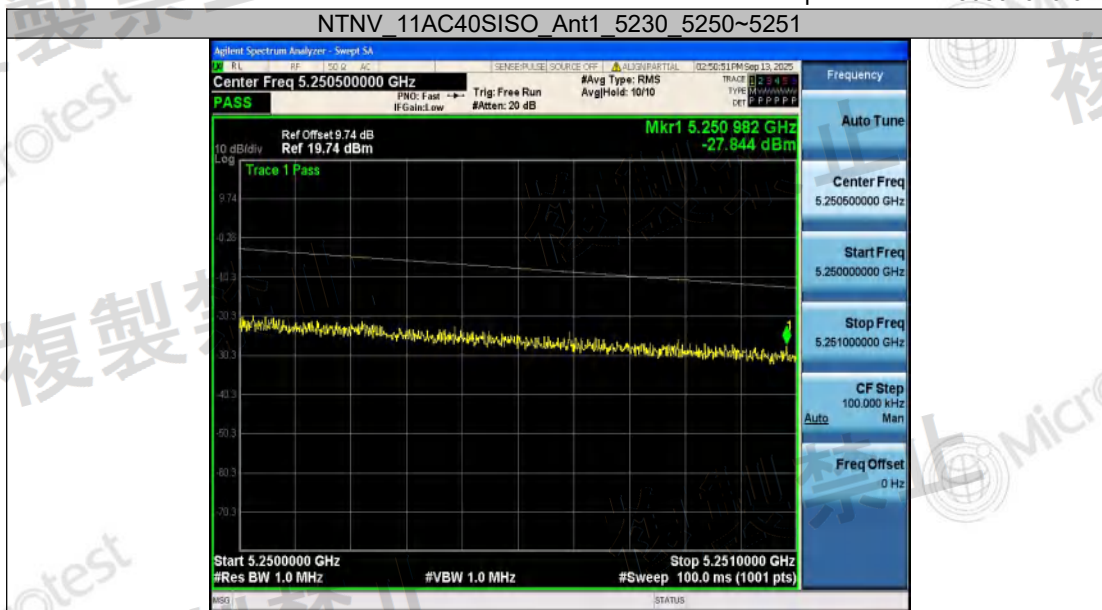
NTNV 11AC40SISO Ant1 5230 5141.6~5150



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC40SISO_Ant1 5230 5250~5251



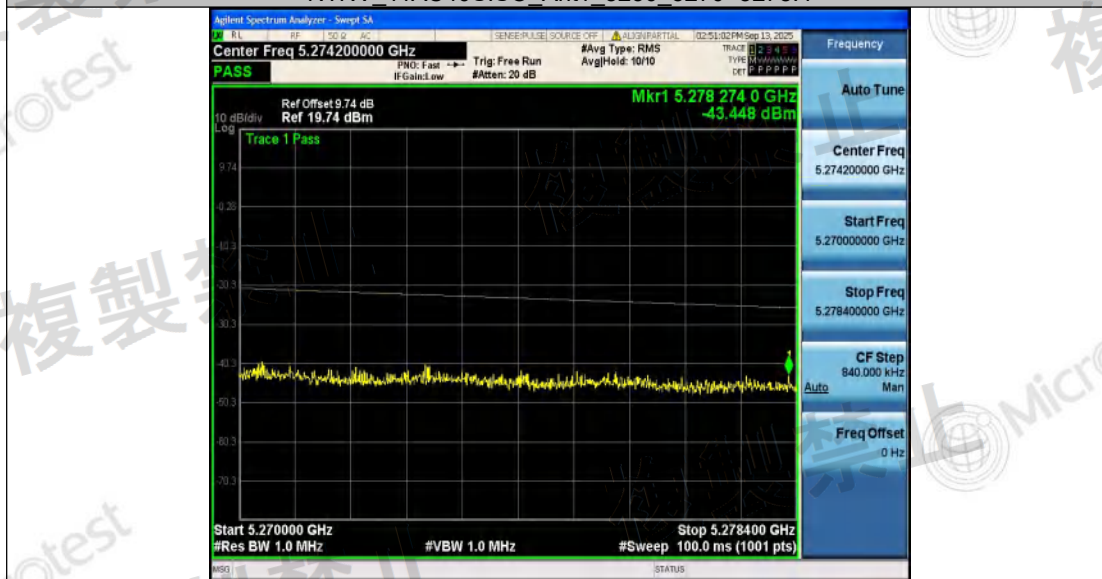
NTNV 11AC40SISO_Ant1 5230 5251~5270



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC40SISO Ant1 5230 5270~5278.4



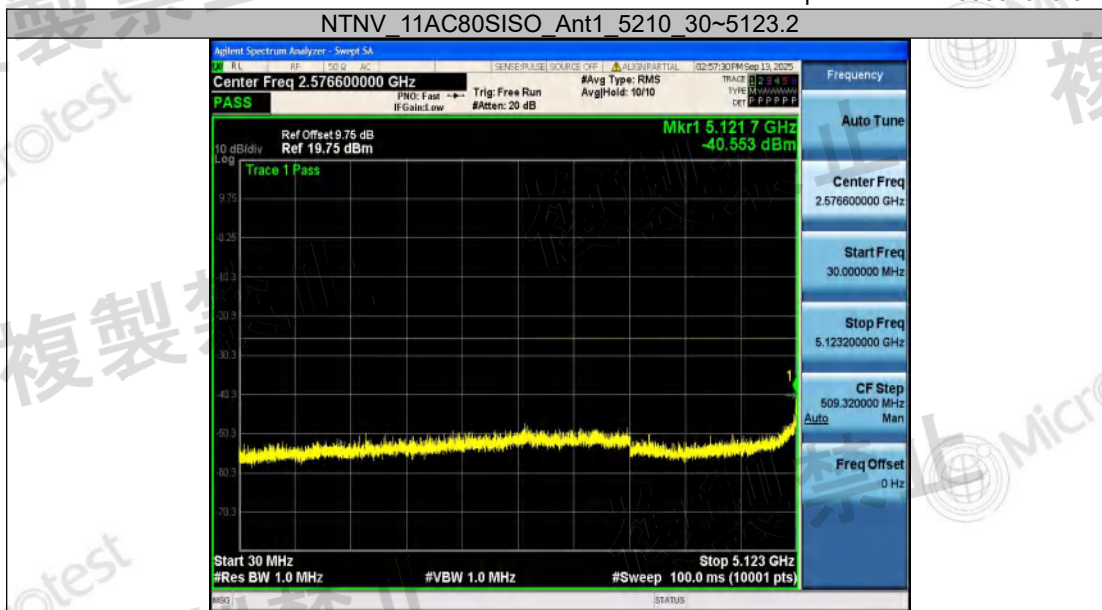
NTNV 11AC40SISO Ant1 5230 5278.4~26000



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC80SISO Ant1 5210 30~5123.2



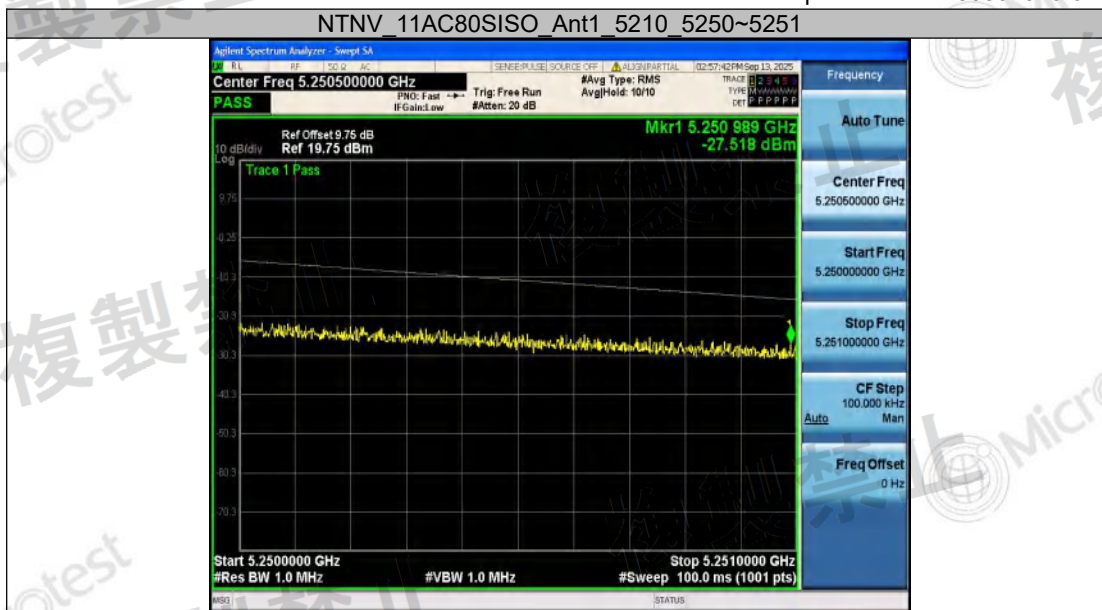
NTNV 11AC80SISO Ant1 5210 5132.5~5150



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11AC80SISO_Ant1 5210 5250~5251



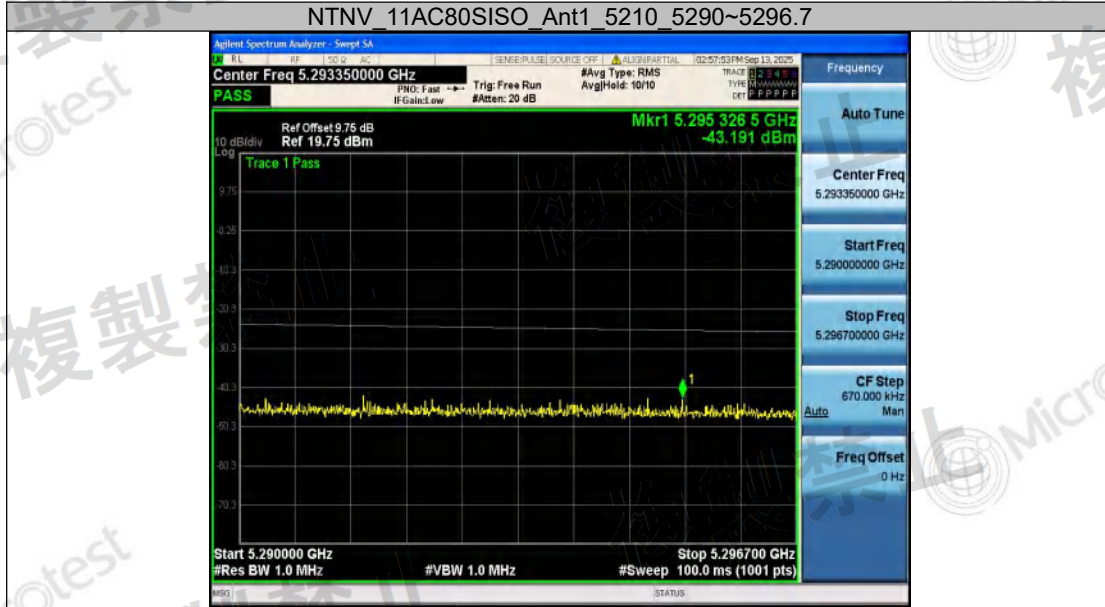
NTNV 11AC80SISO_Ant1 5210 5251~5290



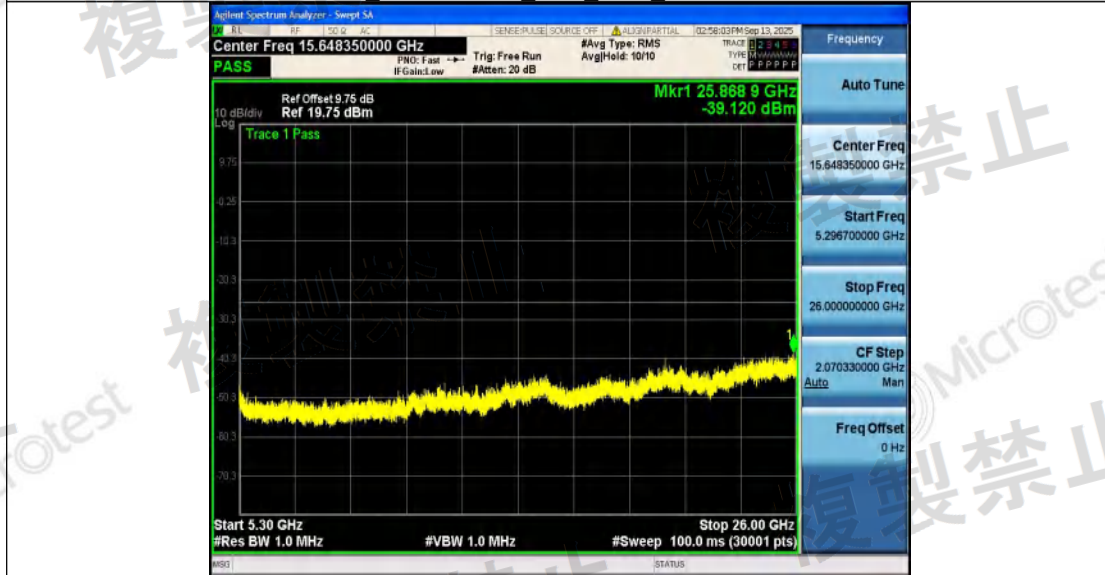
TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11AC80SISO Ant1 5210 5290~5296.7



NTNV 11AC80SISO Ant1 5210 5296.7~26000



Note: The testing process has incorporated antenna gain.

TEST REPORT

Report No.: MTi250807016-0120E3

5.16 Appendix F: Spurious Emission of RX

5.16.1 Test Result

TestCondition	TestMode	Antenna	Frequen cy[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	11A	Ant1	5180	30~1000	-80.95	≤-54	0.0080 4	≤4	PASS
				1000~26000	-58.81	≤-47	1.3152 2	≤20	PASS
			5200	30~1000	-80.87	≤-54	0.0081 8	≤4	PASS
				1000~26000	-59.32	≤-47	1.1695 0	≤20	PASS
			5240	30~1000	-81.39	≤-54	0.0072 6	≤4	PASS
				1000~26000	-58.79	≤-47	1.3213 0	≤20	PASS
	11N20SI SO	Ant1	5180	30~1000	-80.44	≤-54	0.0090 4	≤4	PASS
				1000~26000	-58.24	≤-47	1.4996 8	≤20	PASS
			5200	30~1000	-80.20	≤-54	0.0095 5	≤4	PASS
				1000~26000	-58.09	≤-47	1.5523 9	≤20	PASS
			5240	30~1000	-80.56	≤-54	0.0087 9	≤4	PASS
				1000~26000	-58.24	≤-47	1.4996 8	≤20	PASS
	11N40SI SO	Ant1	5190	30~1000	-81.08	≤-54	0.0078 0	≤4	PASS
				1000~26000	-58.65	≤-47	1.3645 8	≤20	PASS
			5230	30~1000	-80.40	≤-54	0.0091 2	≤4	PASS
				1000~26000	-59.18	≤-47	1.2078 1	≤20	PASS
	11AC20S ISO	Ant1	5180	30~1000	-80.57	≤-54	0.0087 7	≤4	PASS
				1000~26000	-59.12	≤-47	1.2246 2	≤20	PASS
			5200	30~1000	-81.28	≤-54	0.0074 5	≤4	PASS
				1000~26000	-59.16	≤-47	1.2133 9	≤20	PASS
			5240	30~1000	-81.21	≤-54	0.0075 7	≤4	PASS
				1000~26000	-59.54	≤-47	1.11173	≤20	PASS
	11AC40S ISO	Ant1	5190	30~1000	-80.56	≤-54	0.0087 9	≤4	PASS
				1000~26000	-58.86	≤-47	1.3001 7	≤20	PASS
			5230	30~1000	-78.93	≤-54	0.0127 9	≤4	PASS
				1000~26000	-59.24	≤-47	1.1912 4	≤20	PASS
	11AC80S ISO	Ant1	5210	30~1000	-80.69	≤-54	0.0085 3	≤4	PASS
				1000~26000	-58.64	≤-47	1.3677 3	≤20	PASS

Note: Antenna gain has been added during the testing process.

TEST REPORT

Report No.: MTi250807016-0120E3

5.16.2 Test Graphs



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

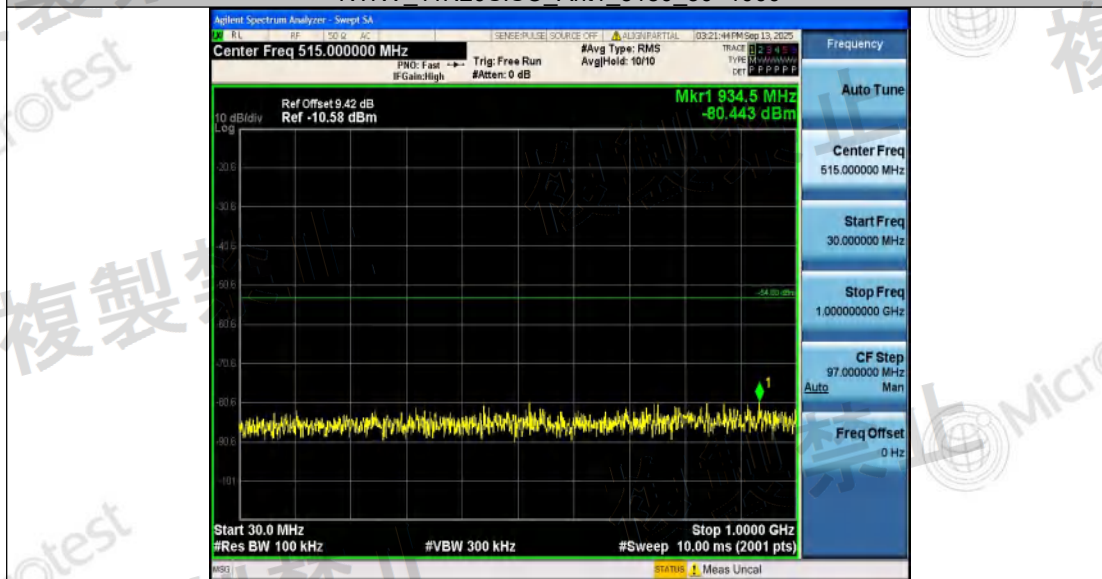
Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11N20SISO Ant1 5180 30~1000



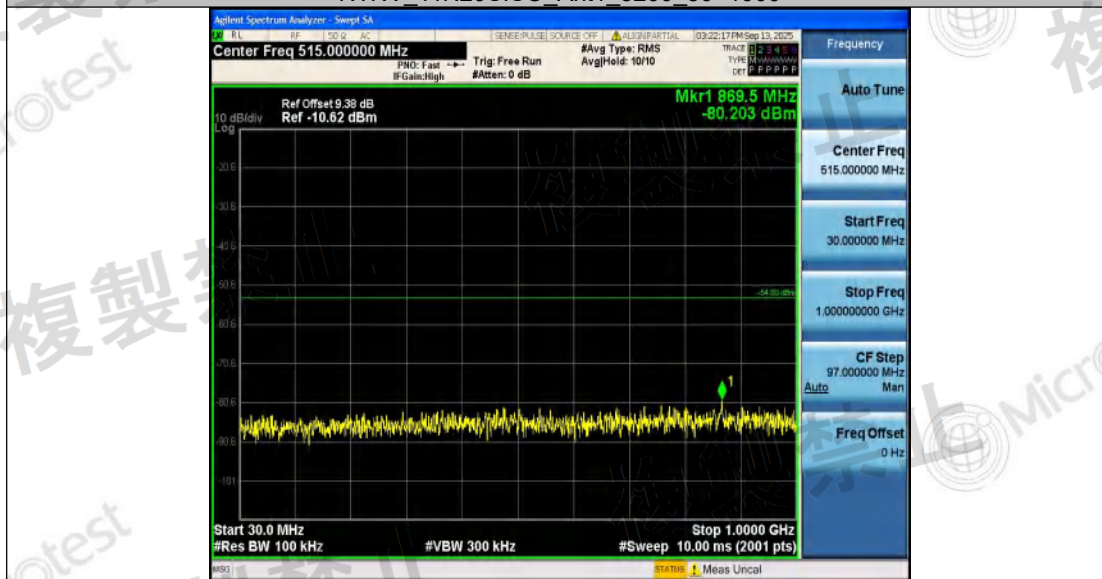
NTNV 11N20SISO Ant1 5180 1000~26000



TEST REPORT

Report No.: MTi250807016-0120E3

NTNV 11N20SISO Ant1 5200 30~1000



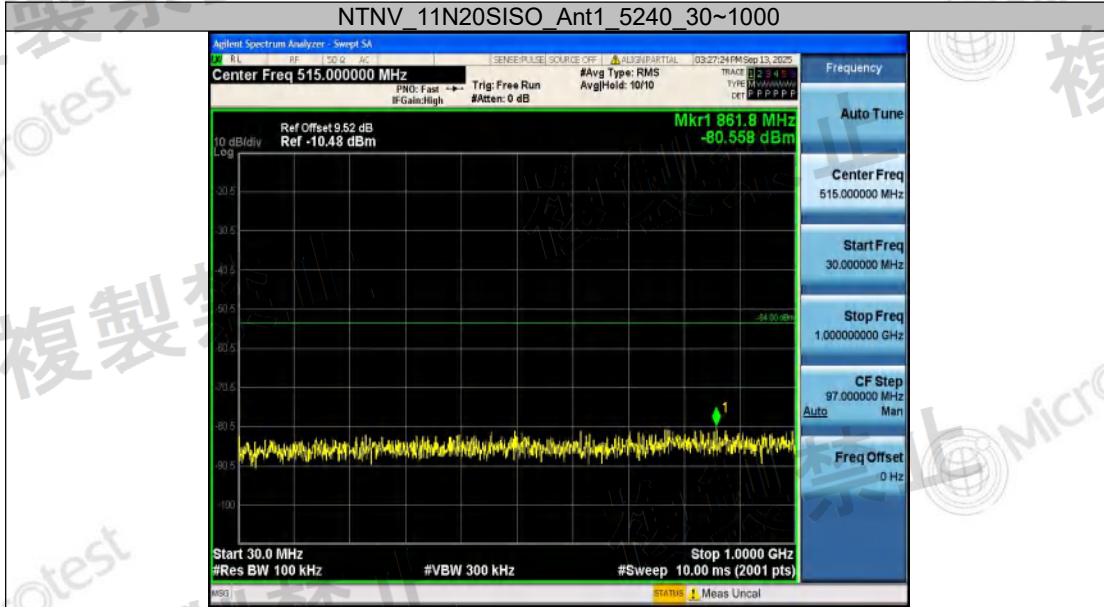
NTNV 11N20SISO Ant1 5200 1000~26000



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11N20SISO Ant1 5240 30~1000



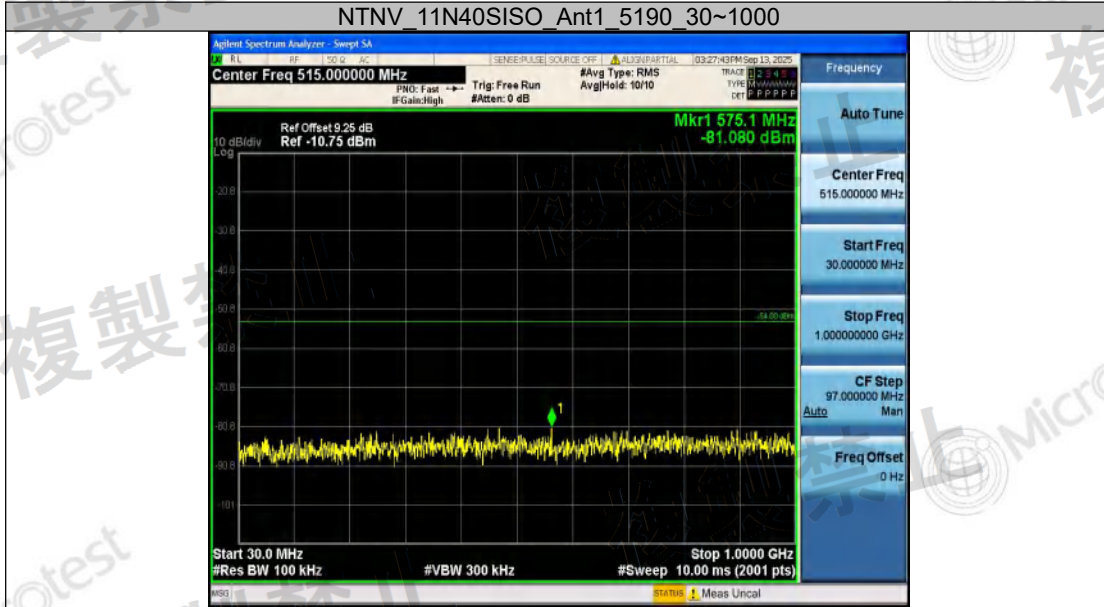
NTNV 11N20SISO Ant1 5240 1000~26000



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11N40SISO Ant1 5190 30~1000



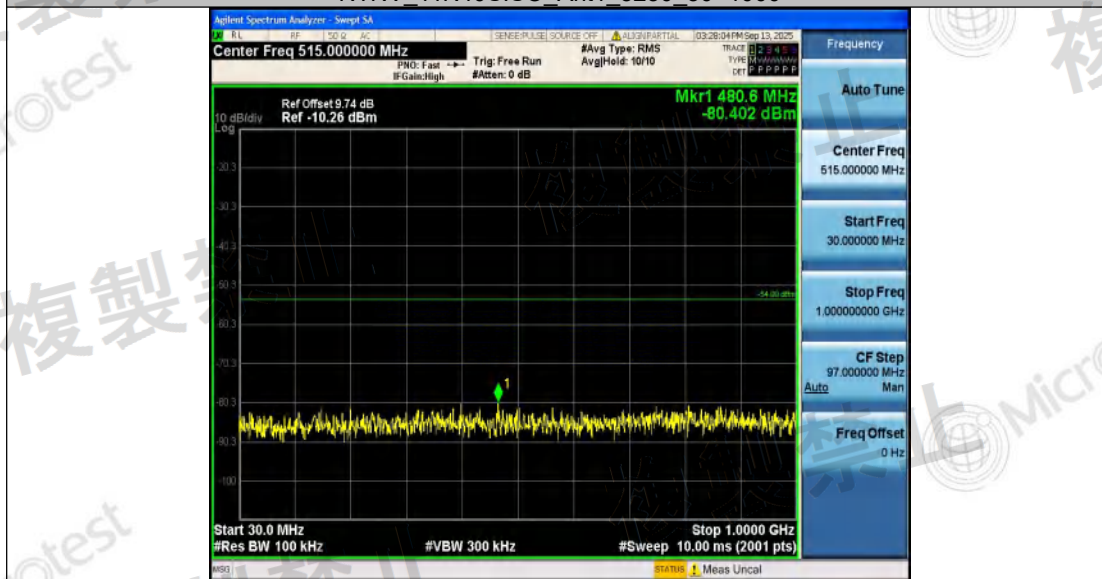
NTNV 11N40SISO Ant1 5190 1000~26000



TEST REPORT

Report No.: MTI250807016-0120E3

NTNV 11N40SISO Ant1 5230 30~1000



NTNV 11N40SISO Ant1 5230 1000~26000



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3



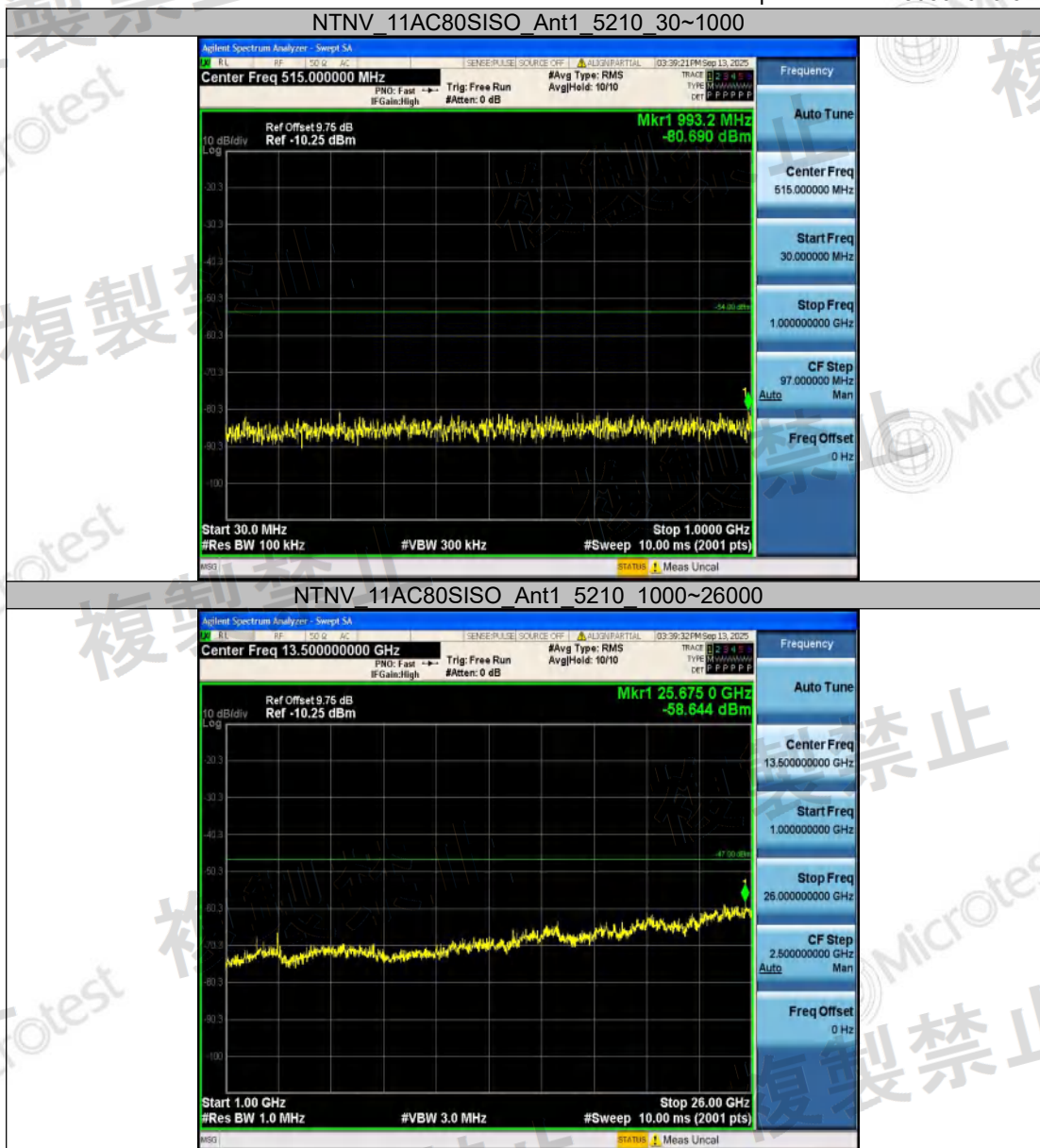
TEST REPORT

Report No.: MTi250807016-0120E3



TEST REPORT

Report No.: MTI250807016-0120E3



TEST REPORT

Report No.: MTi250807016-0120E3

5.17 Appendix G: Transmission Burst Length

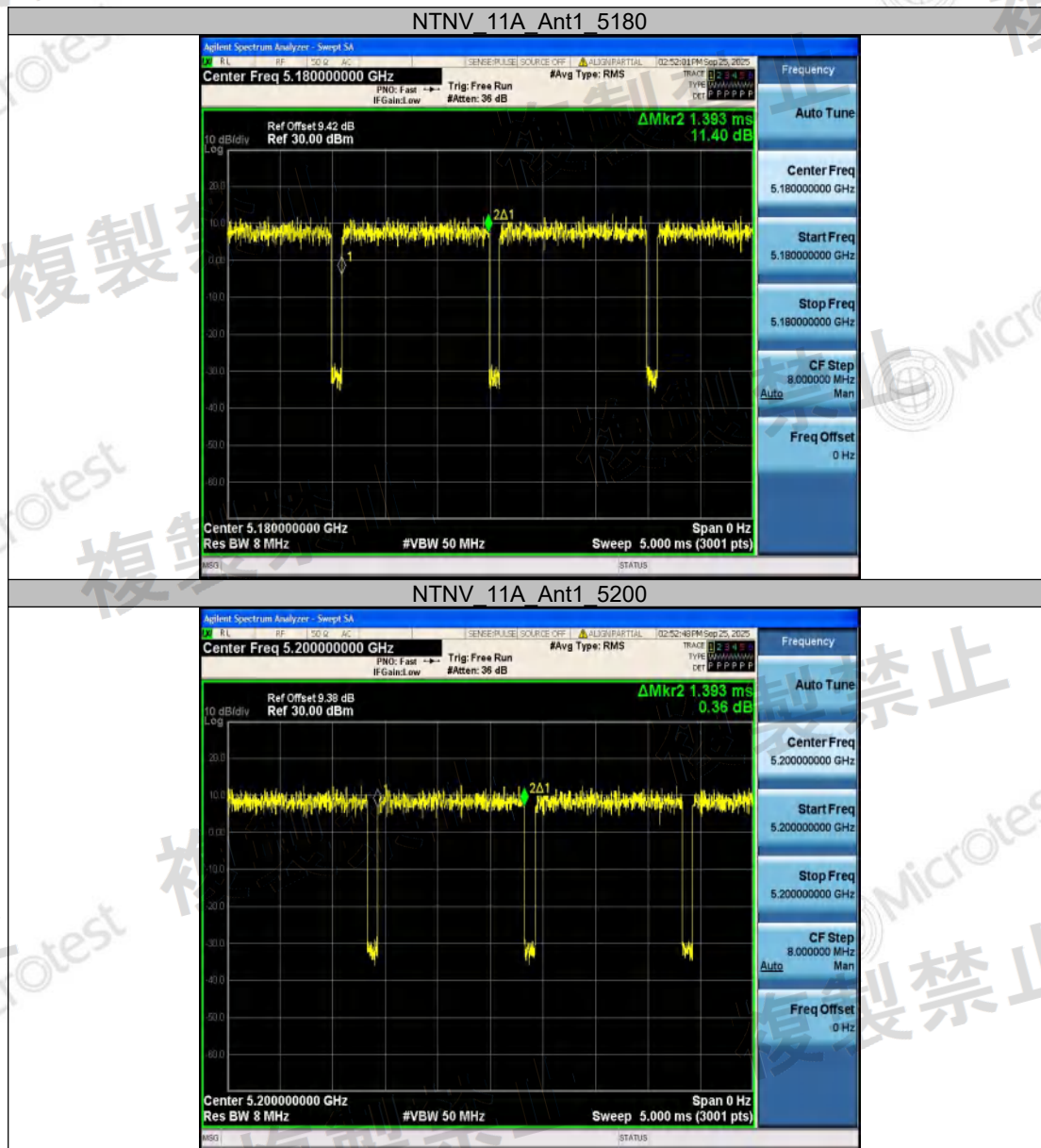
5.17.1 Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ms]	Limit[ms]	Verdict
NTNV	11A	Ant1	5180	1.39	≤8	PASS
			5200	1.39	≤8	PASS
			5240	1.39	≤8	PASS
	11N20SI SO	Ant1	5180	1.30	≤8	PASS
			5200	1.31	≤8	PASS
			5240	1.30	≤8	PASS
	11N40SI SO	Ant1	5190	0.94	≤8	PASS
			5230	0.94	≤8	PASS
	11AC20S ISO	Ant1	5180	1.93	≤8	PASS
			5200	1.93	≤8	PASS
			5240	1.93	≤8	PASS
	11AC40S ISO	Ant1	5190	0.95	≤8	PASS
			5230	0.95	≤8	PASS
	11AC80S ISO	Ant1	5210	0.60	≤8	PASS

TEST REPORT

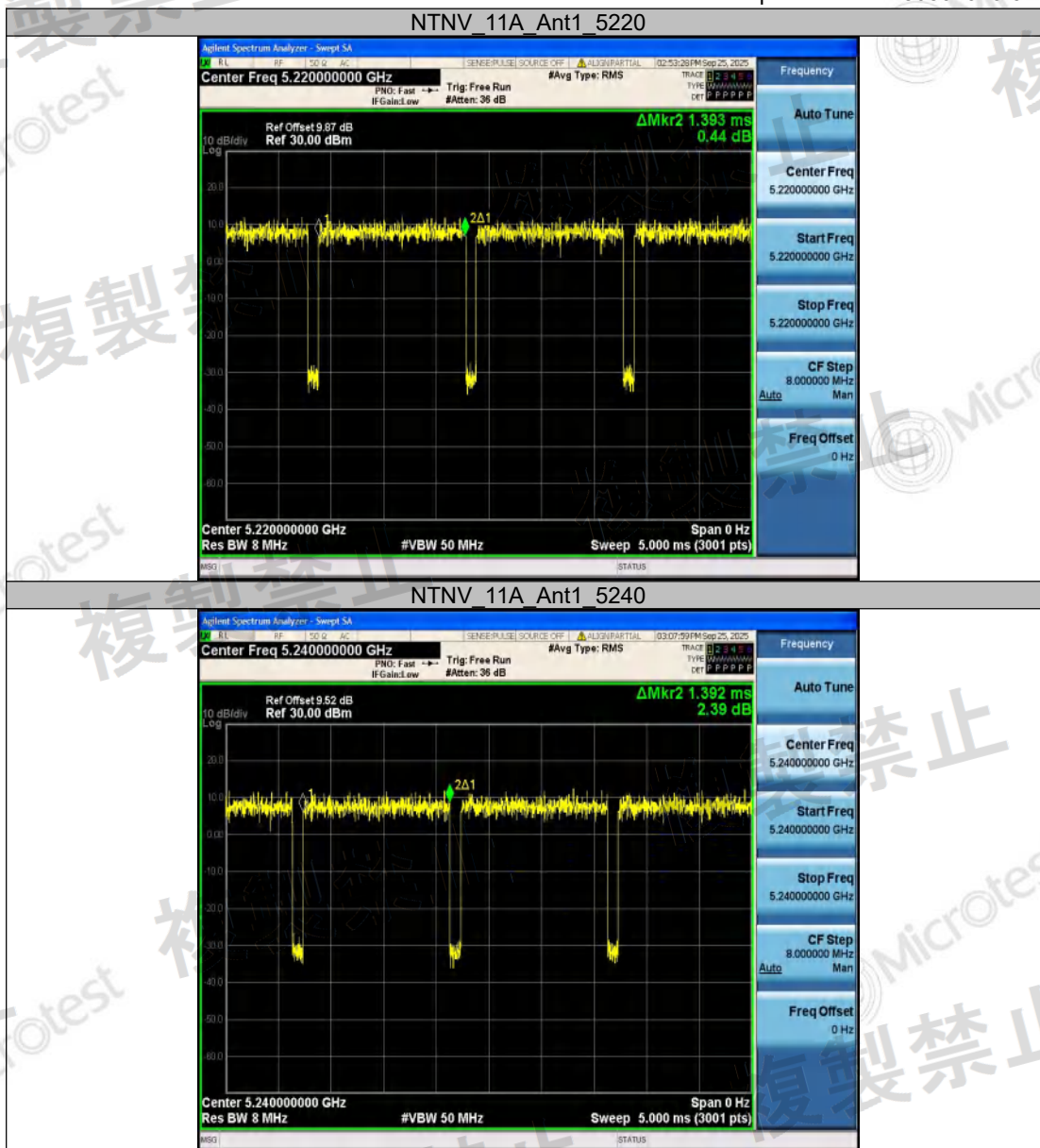
Report No.: MTi250807016-0120E3

5.17.2 Test Graphs



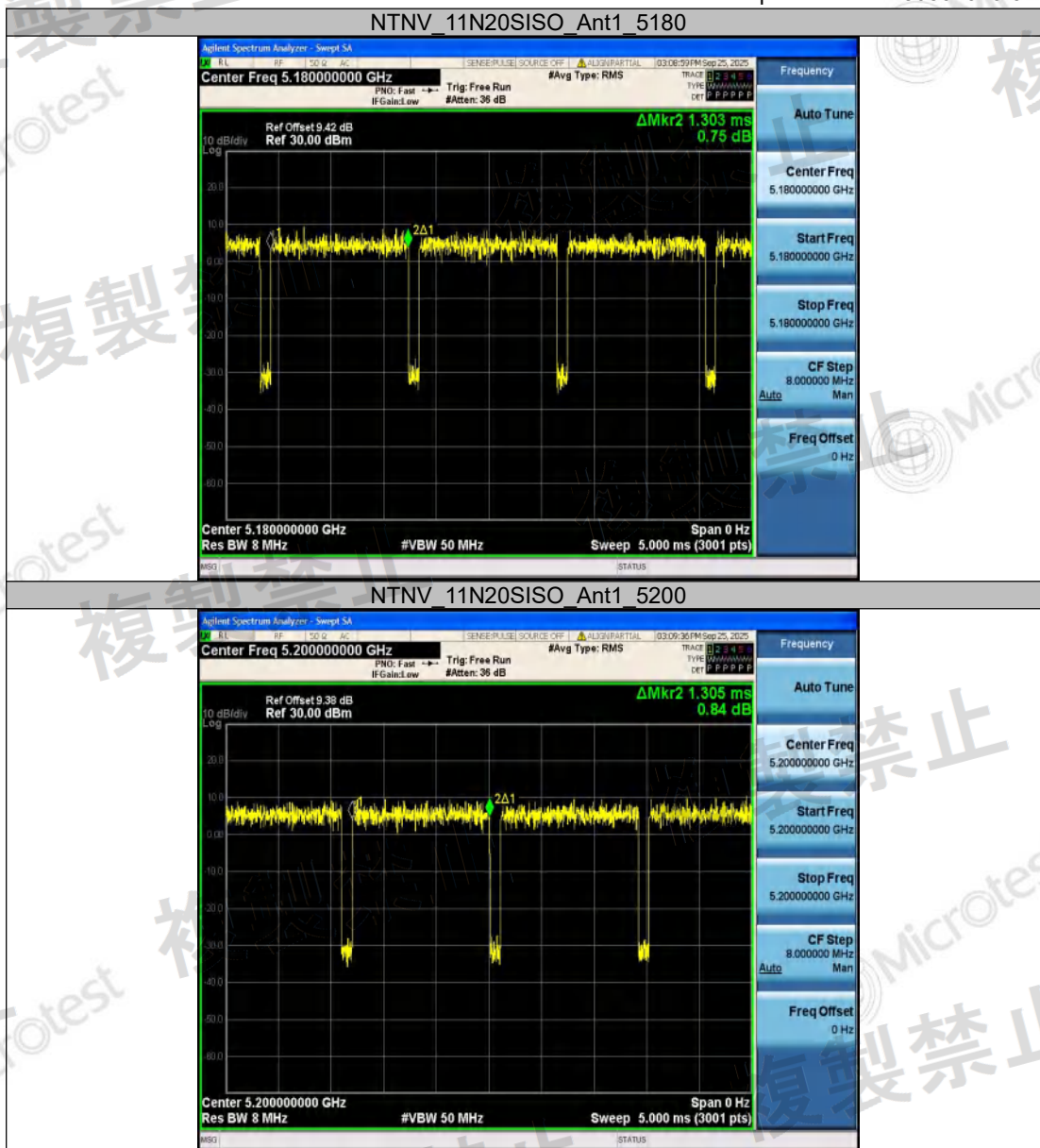
TEST REPORT

Report No.: MTi250807016-0120E3



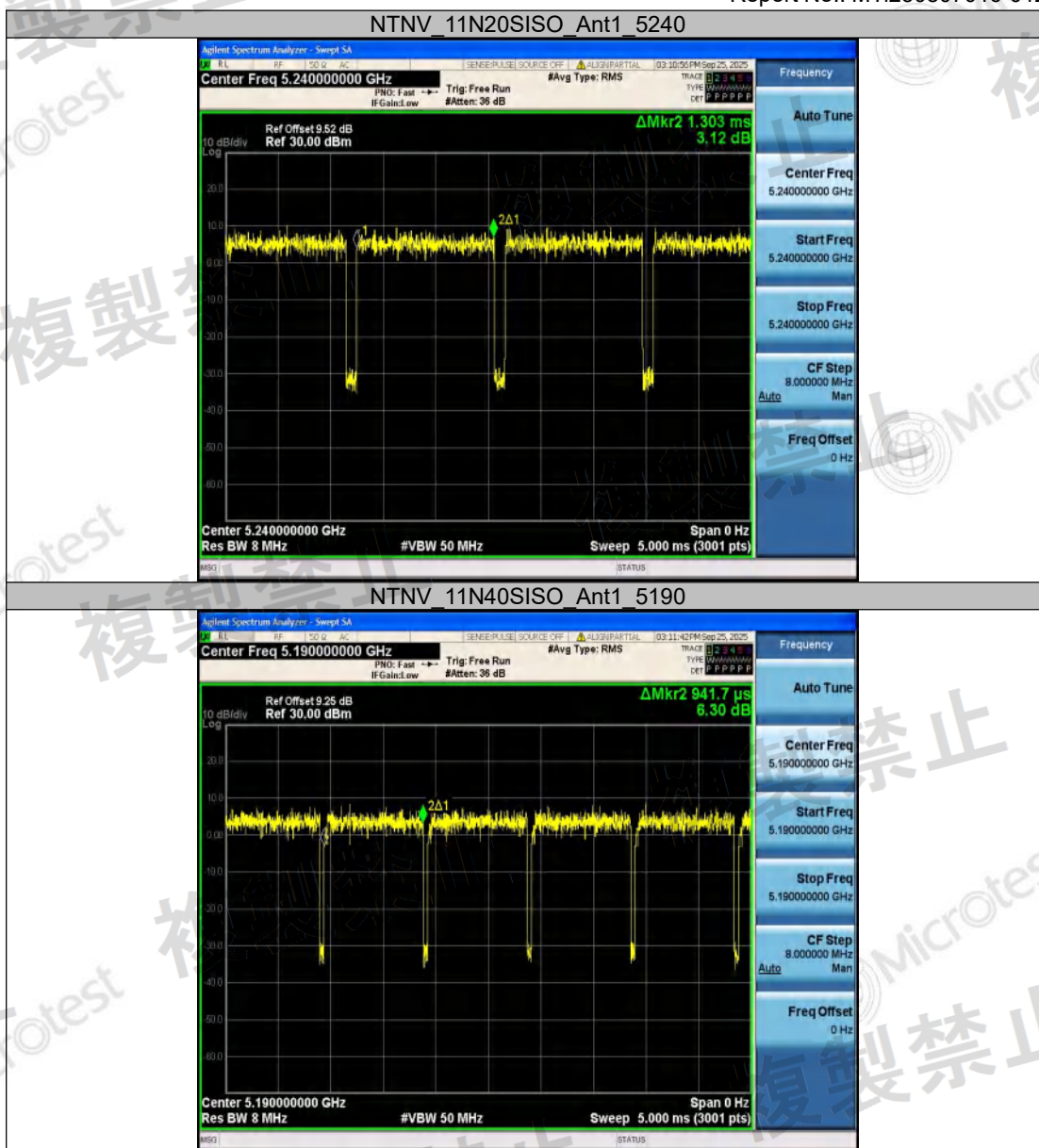
TEST REPORT

Report No.: MTi250807016-0120E3



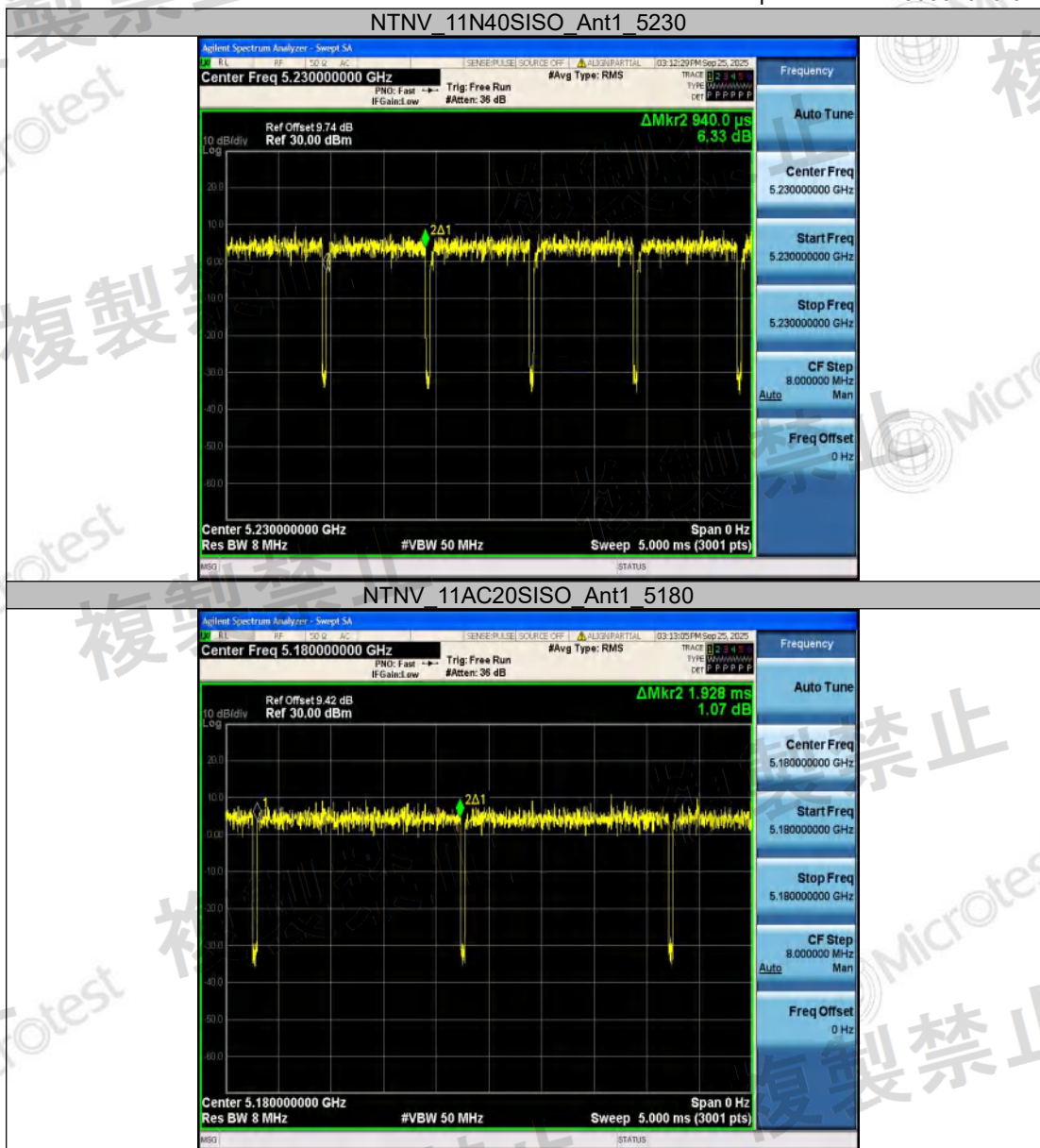
TEST REPORT

Report No.: MTi250807016-0120E3



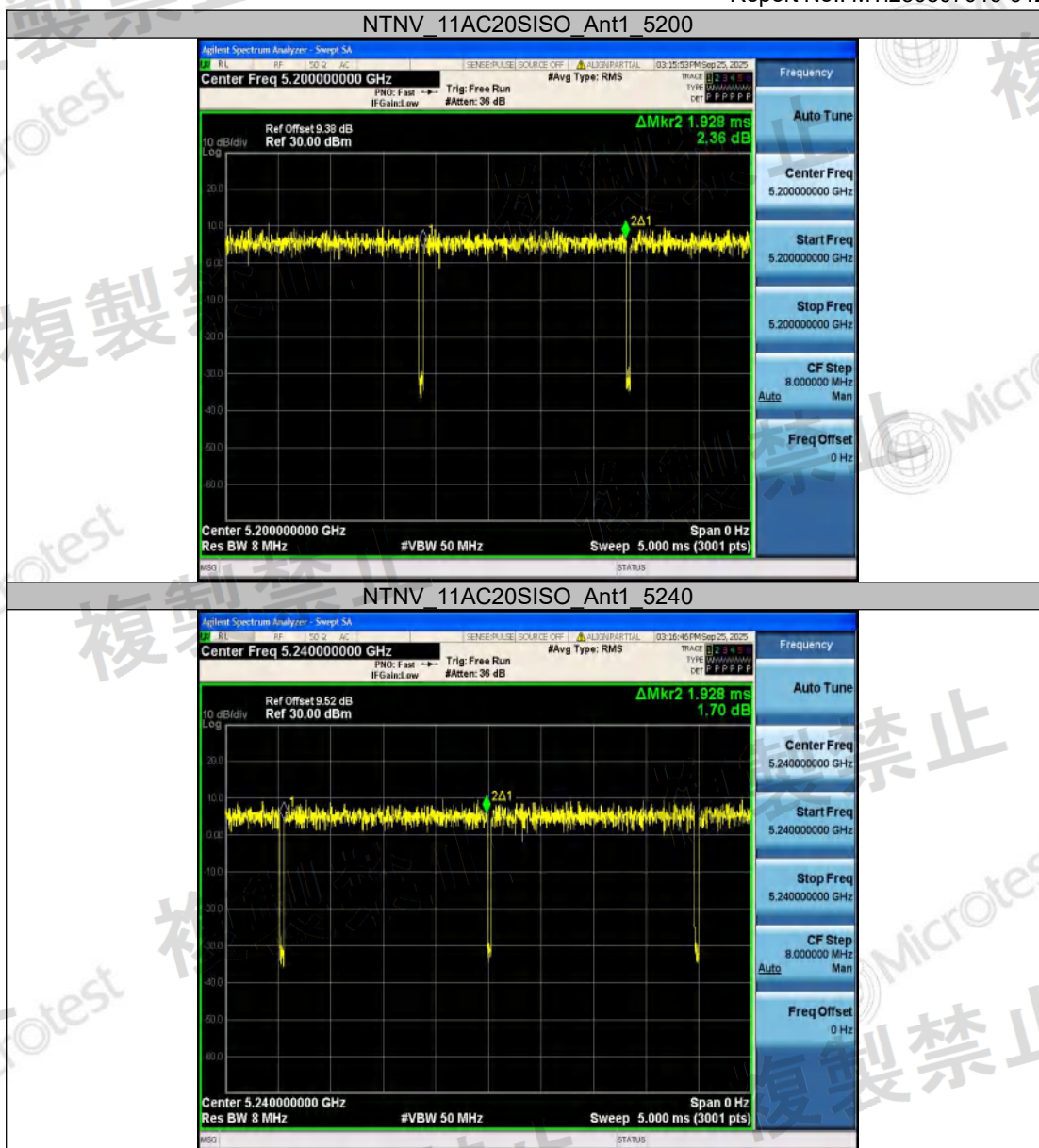
TEST REPORT

Report No.: MTi250807016-0120E3



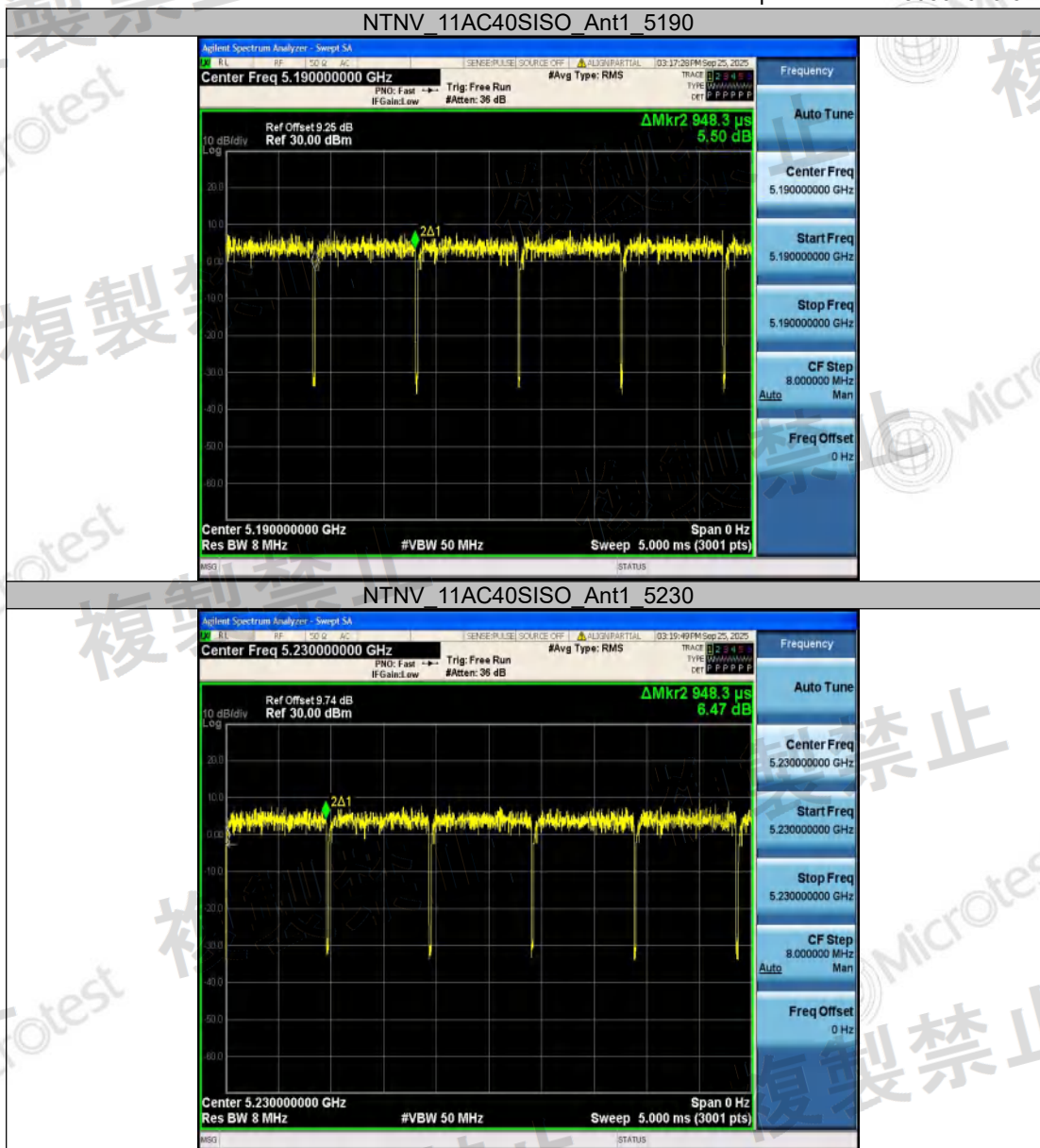
TEST REPORT

Report No.: MTi250807016-0120E3



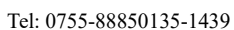
TEST REPORT

Report No.: MTi250807016-0120E3





Report No.: MTi250807016-0120E3



Mobile: 131-4343-1439 (Wechat same number)

Web: <http://www.mtitest.cn>

E-mail: mti@51mti.com

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhé Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Q/MTI-QP-12-FE040

Ver./Rev.: A1

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5.18 Appendix H: Adjacent Channel Power Tolerance

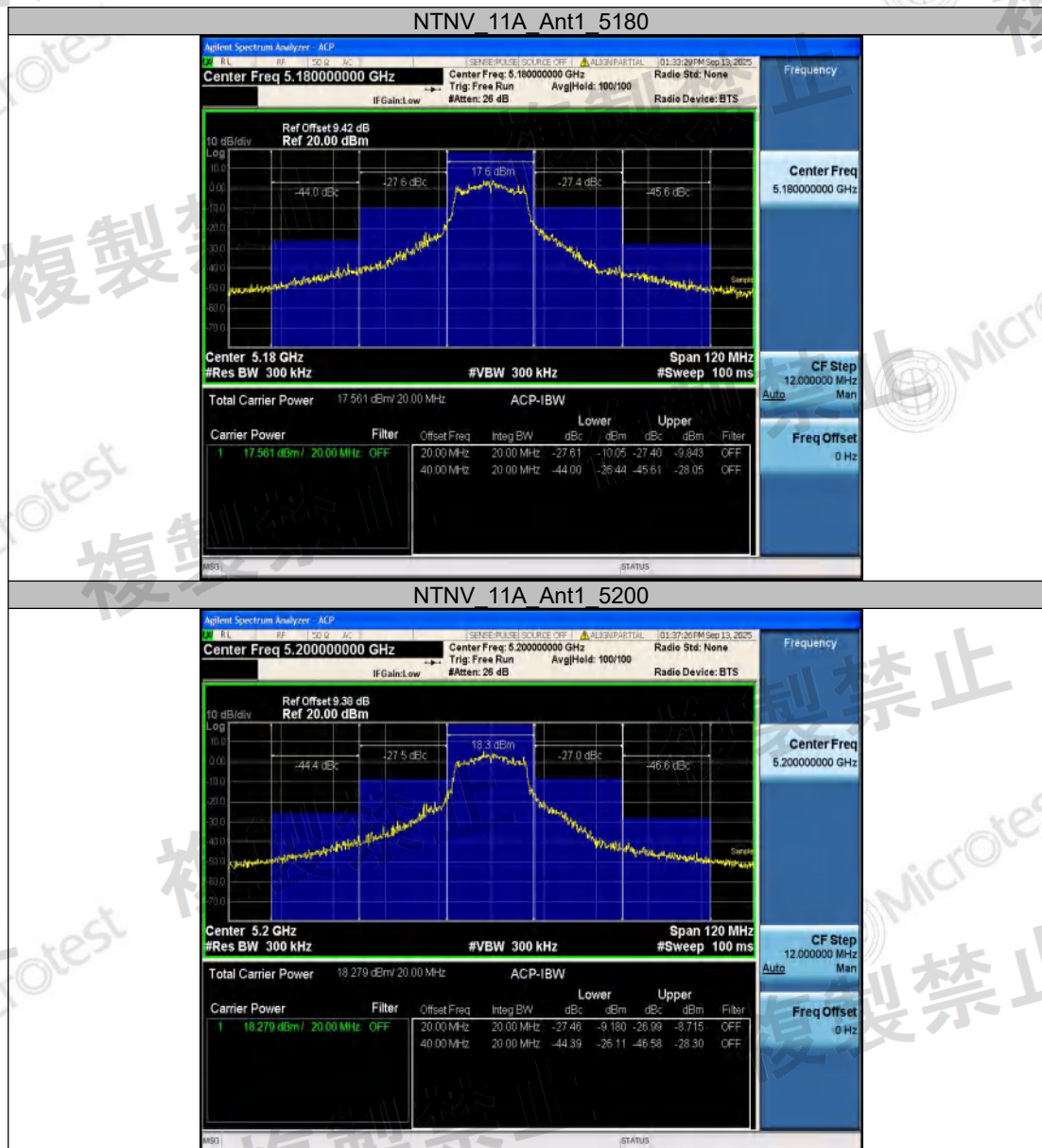
5.18.1 Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Offset [MHz]	Result [dBc]	Limit [dBc]	Verdict
NTNV	11A	Ant1	5180	-40	-44.00	≤-40	PASS
				-20	-27.61	≤-25	PASS
				+20	-27.40	≤-25	PASS
				+40	-45.61	≤-40	PASS
			5200	-40	-44.39	≤-40	PASS
				-20	-27.46	≤-25	PASS
				+20	-26.99	≤-25	PASS
				+40	-46.58	≤-40	PASS
			5240	-40	-47.24	≤-40	PASS
				-20	-33.59	≤-25	PASS
				+20	-34.21	≤-25	PASS
				+40	-47.03	≤-40	PASS
	11N20SISO	Ant1	5180	-40	-45.88	≤-40	PASS
				-20	-32.04	≤-25	PASS
				+20	-32.42	≤-25	PASS
				+40	-46.10	≤-40	PASS
			5200	-40	-46.52	≤-40	PASS
				-20	-32.86	≤-25	PASS
				+20	-32.77	≤-25	PASS
				+40	-46.62	≤-40	PASS
			5240	-40	-46.75	≤-40	PASS
				-20	-32.87	≤-25	PASS
				+20	-33.30	≤-25	PASS
				+40	-47.01	≤-40	PASS
	11N40SISO	Ant1	5190	-80	-43.41	≤-40	PASS
				-40	-36.44	≤-25	PASS
				+40	-37.44	≤-25	PASS
				+80	-43.79	≤-40	PASS
			5230	-80	-44.29	≤-40	PASS
				-40	-36.23	≤-25	PASS
				+40	-38.69	≤-25	PASS
				+80	-43.98	≤-40	PASS
	11AC20SISO	Ant1	5180	-40	-45.84	≤-40	PASS
				-20	-31.88	≤-25	PASS
				+20	-32.57	≤-25	PASS
				+40	-45.79	≤-40	PASS
			5200	-40	-46.67	≤-40	PASS
				-20	-32.88	≤-25	PASS
				+20	-33.07	≤-25	PASS
				+40	-46.63	≤-40	PASS
			5240	-40	-46.94	≤-40	PASS
				-20	-31.92	≤-25	PASS
				+20	-33.53	≤-25	PASS
				+40	-47.13	≤-40	PASS
	11AC40SISO	Ant1	5190	-80	-43.23	≤-40	PASS
				-40	-36.28	≤-25	PASS
				+40	-37.28	≤-25	PASS
				+80	-43.39	≤-40	PASS
			5230	-80	-44.16	≤-40	PASS
				-40	-35.51	≤-25	PASS
				+40	-38.03	≤-25	PASS
				+80	-43.77	≤-40	PASS
	11AC80SISO	Ant1	5210	-80	-34.01	≤-25	PASS
				+80	-36.67	≤-25	PASS

TEST REPORT

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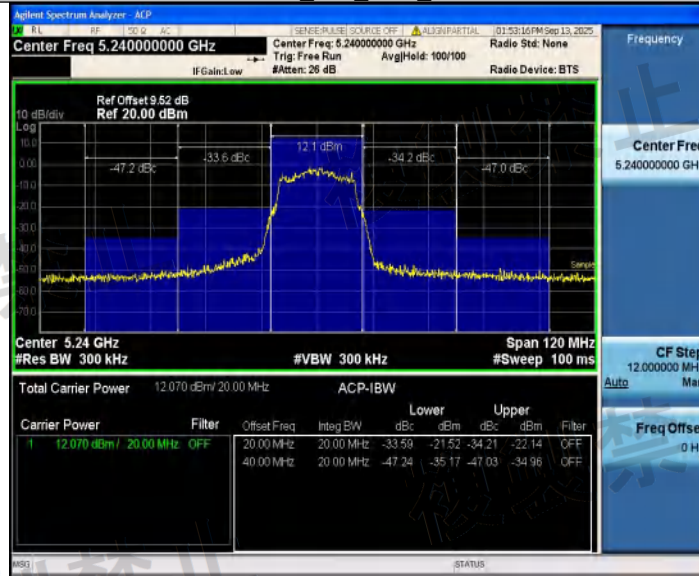
5.18.2 Test Graphs



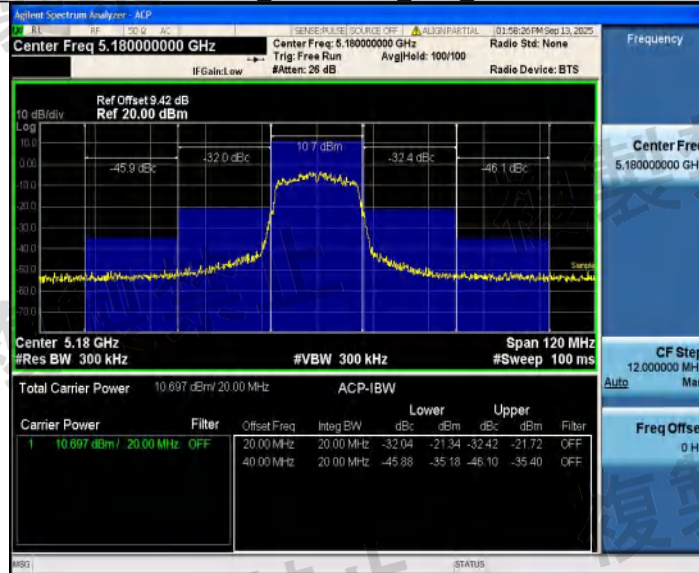
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NTNV_11A_Ant1_5240

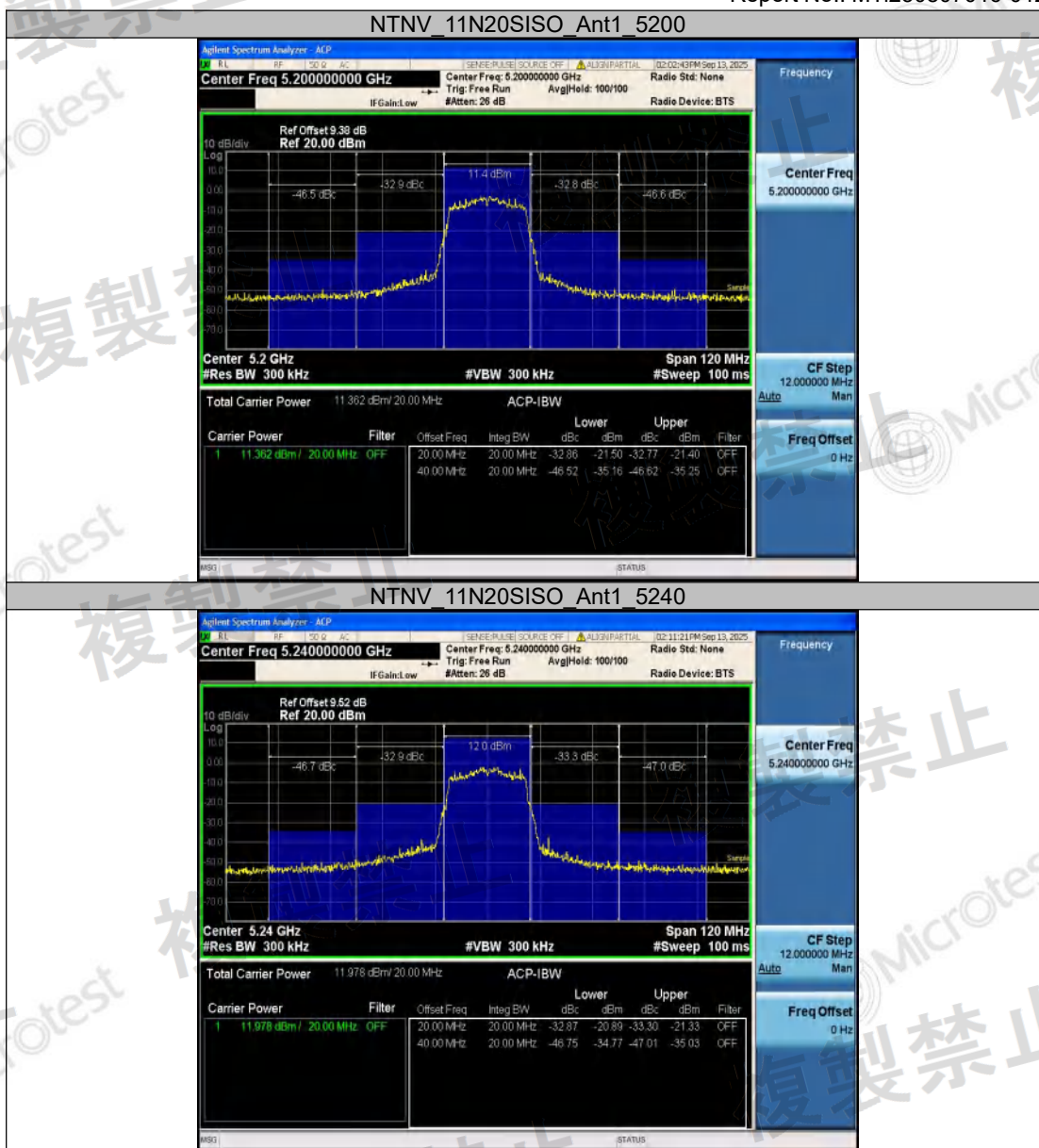


NTNV_11N20SISO_Ant1_5180



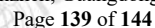
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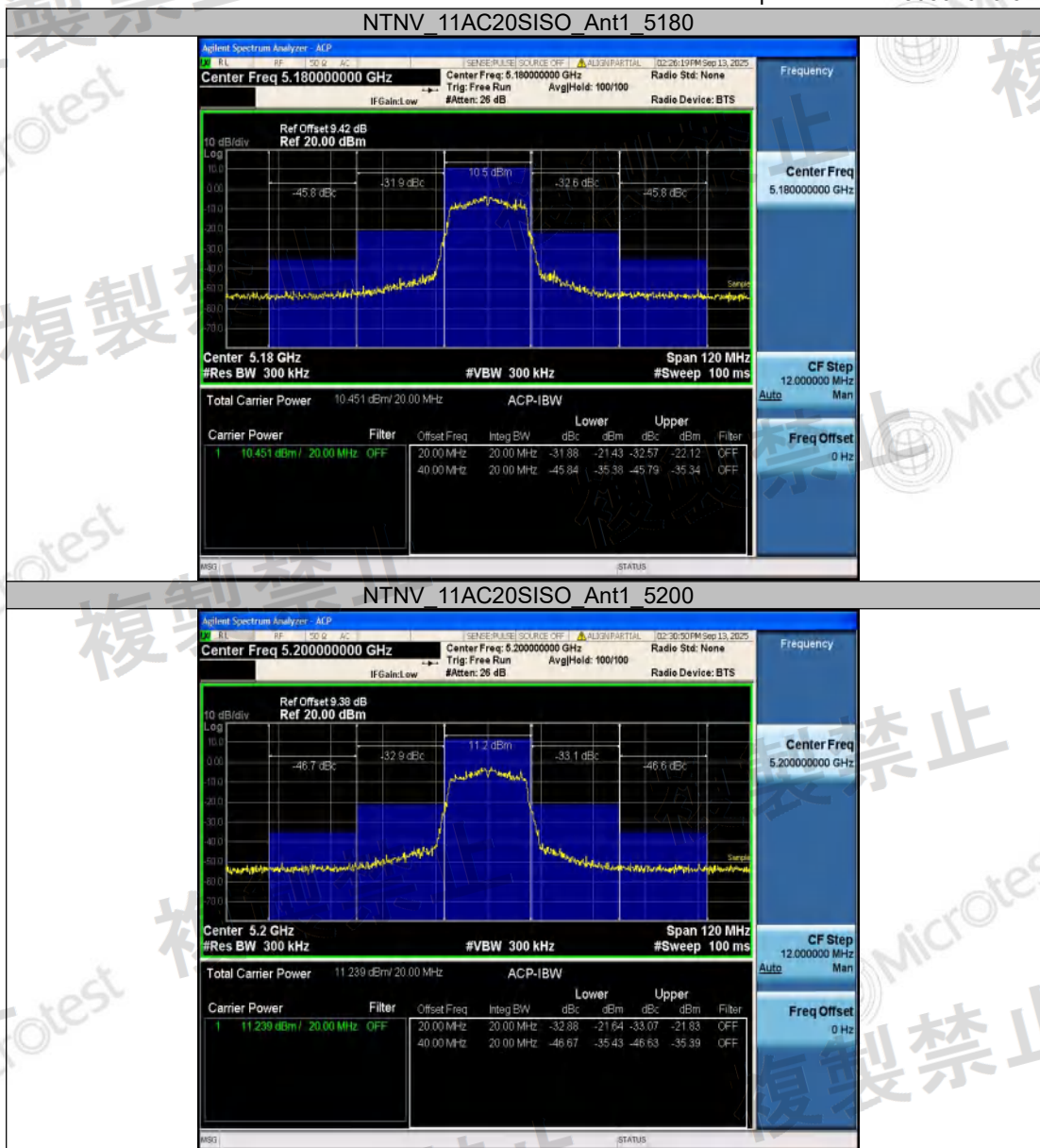


NTNV 11N40SISO Ant1 5190



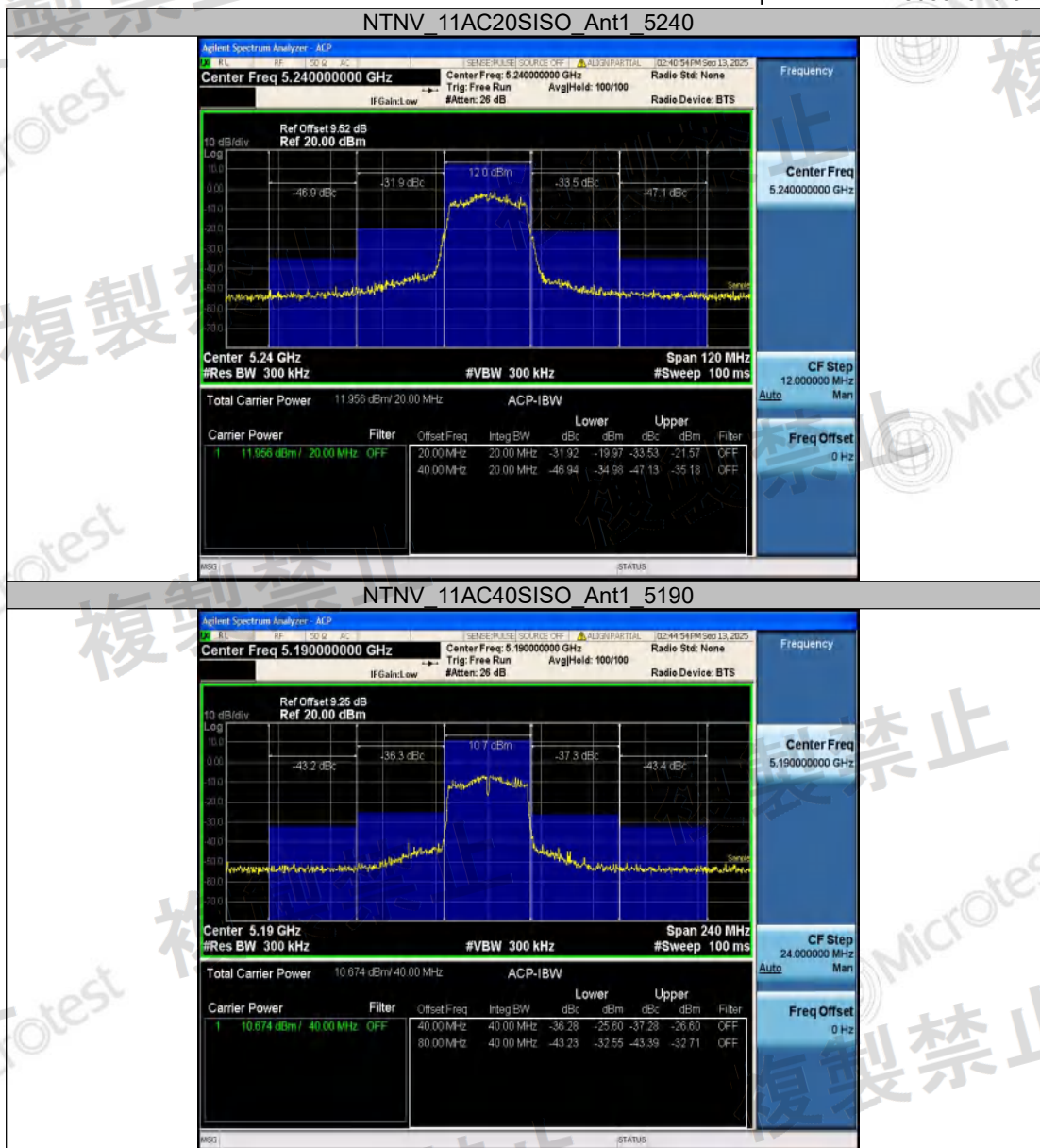
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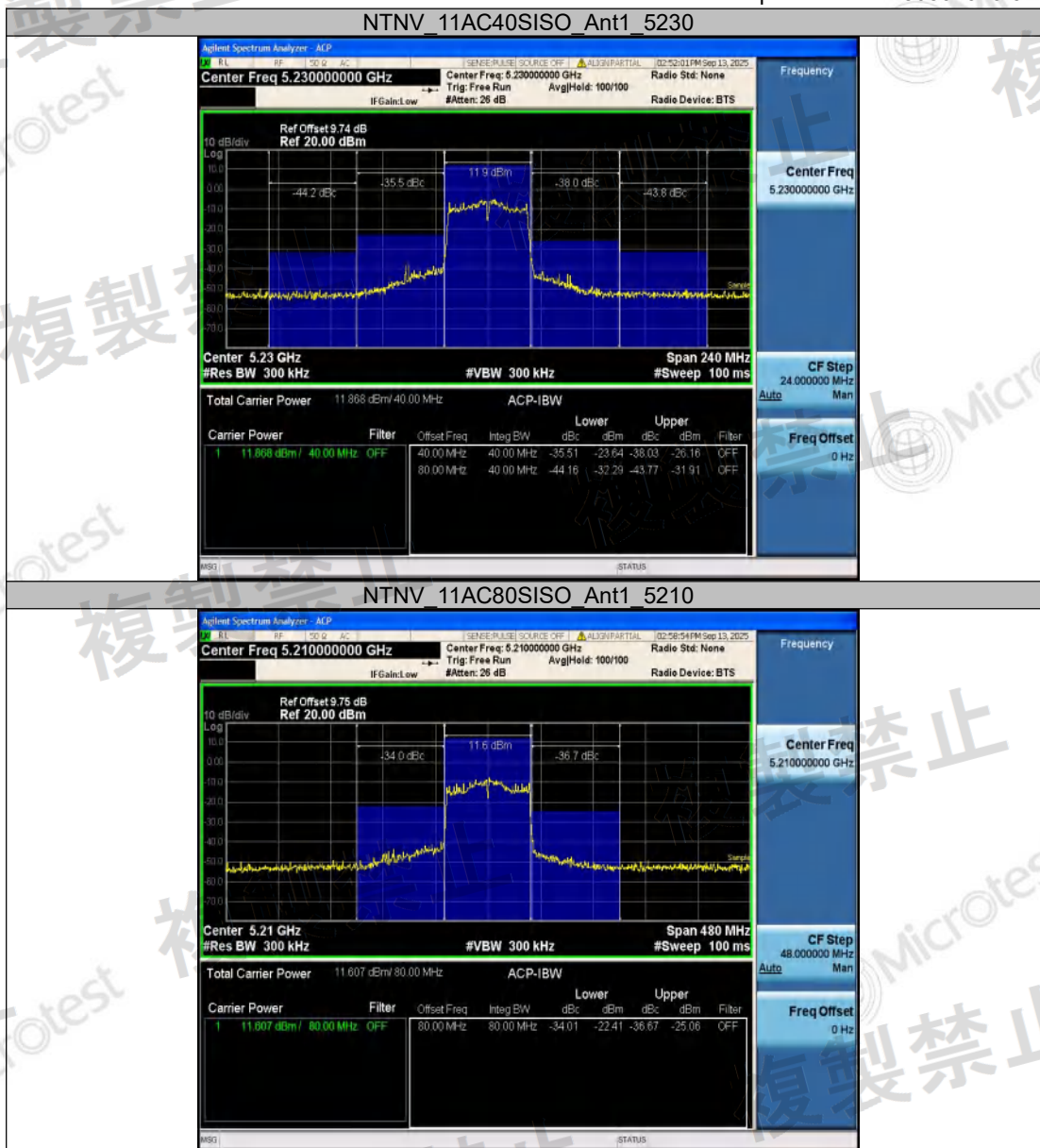
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5.19 Appendix I: Carrier Sense Function

5.19.1 Test Result

Test Mode	Test Voltage	Channel	Results
11A	NV	Low	GOOD
		Middle	GOOD
		High	GOOD
11N20SISO	NV	Low	GOOD
		Middle	GOOD
		High	GOOD
11N40SISO	NV	Low	GOOD
		Middle	GOOD
		High	GOOD
11AC20SISO	NV	Low	GOOD
		Middle	GOOD
		High	GOOD
1AC40SISO	NV	Low	GOOD
		Middle	GOOD
		High	GOOD
11AC80SISO	NV	Low	GOOD
		Middle	GOOD
		High	GOOD

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Statement

1. This report is invalid without the seal and signature of the laboratory.
2. The test results of this report are only responsible for the samples submitted. Client shall be responsible for representativeness of the sample and authenticity of the material.
3. The report shall not be partially reproduced without the written consent of the Laboratory.
4. This report is invalid if transferred, altered or tampered with in any form without authorization.
5. The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.
6. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

***** END OF REPORT *****