

# Reliability Test Report

<b>Product Name:</b>	<b>Ai-M62-13</b>
<b>Product Model:</b>	<b><u>Wi-Fi Series</u></b>
<b>Test Date:</b>	<b>2023.5.13-2023.5.19</b>
<b>Tested by:</b>	<b>Kang Penghui</b>
<b>Reviewed by:</b>	<b>Lu Xingui</b>

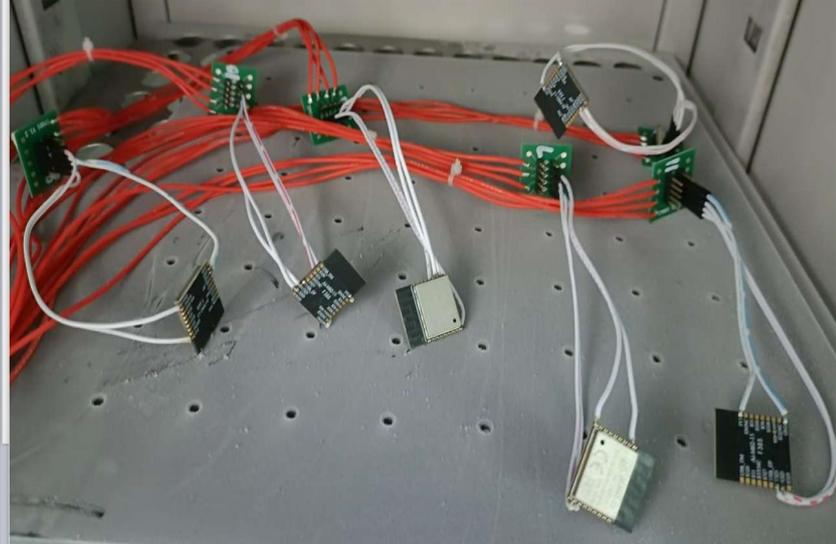
## 1. Inspection Standard

No.	Process Name	Inspection Item	Inspection Equipment	Sampling Level (Refer to GB/T 2828.1-2012)	Acceptable Quality Level		
					CR (Critical Defect)	MA (Major Defect)	MI (Minor Defect)
1	Reliability test	High/low temperature storage; high/room/low temperature power on/off; high/low temperature operation; alternating hot and humid; thermal shock	Constant temperature and humidity chamber	Normal single sampling, special inspection S-1	0 accept, 1 reject		

## 2. Test Items

No.	Item	Test Conditions
1	Low temperature storage test	Test conditions: -40°C Test duration: 8h After an 8-hour soak at -40°C, perform a cold start test.
2	High temperature storage test	Test conditions: 100°C + 93% RH Test duration: 8h After restoring to 85°C and a 1-hour soak, perform a hot start test.
3	Low temperature operation test	Test conditions: -40°C Test duration: 24h
4	High temperature operation test	Test conditions: 85°C + 93% RH Test duration: 24h
5	AC power on/off test with temperature	A) Temperature: -40°C B) Temperature: 25°C + 93% RH C) Temperature: 85°C + 93% RH Cycle each condition 200 times, with 30s ON and 30s OFF
6	Alternating hot and humid test	A) Operate at 85°C + 93% RH for 4h; B) Operate at 25°C + 93% RH for 4h; Cycle steps A and B for a total of 2 cycles.
7	Thermal shock test	Test conditions: -40°C–100°C + 93% RH, soak for 30min at each temperature Temperature transition time: 50min for heating, 2h for cooling Test duration: 5 cycles

### 3. Test Preparation

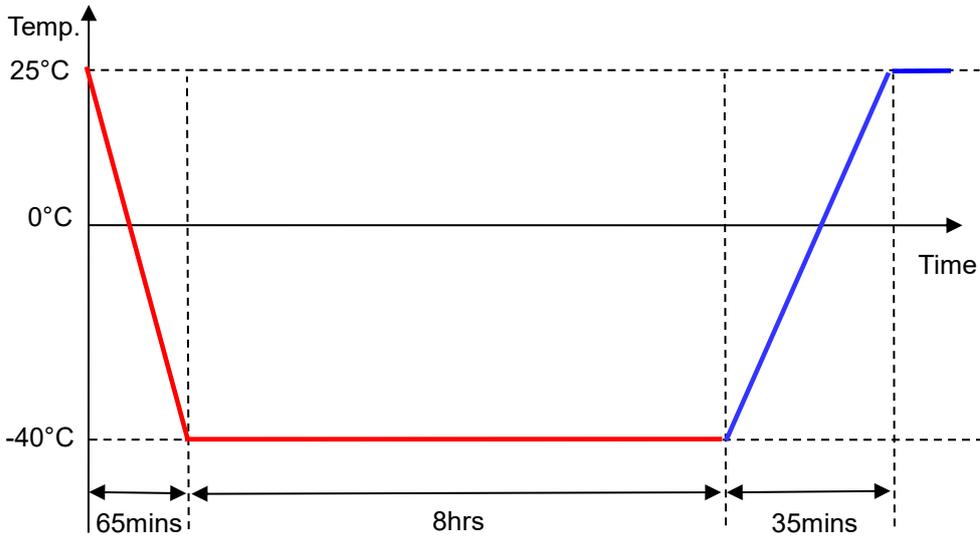
No.	Item	Image/Attachment
1	Reliability documentation	Refer to the M61 and M62 series reliability documentation
2	Test equipment	
3	Sample placement	
4	Test reason	New product reliability verification

## 4.Low Temperature Storage Test

**Test Conditions:** Power-off test. Store the product at -40°C for 8h, then perform a cold start test.

**Test Profile:**

Is Power Off ——  
Is Power On ——



### Test Criteria:

1. During the cold start test, the module functions normally. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

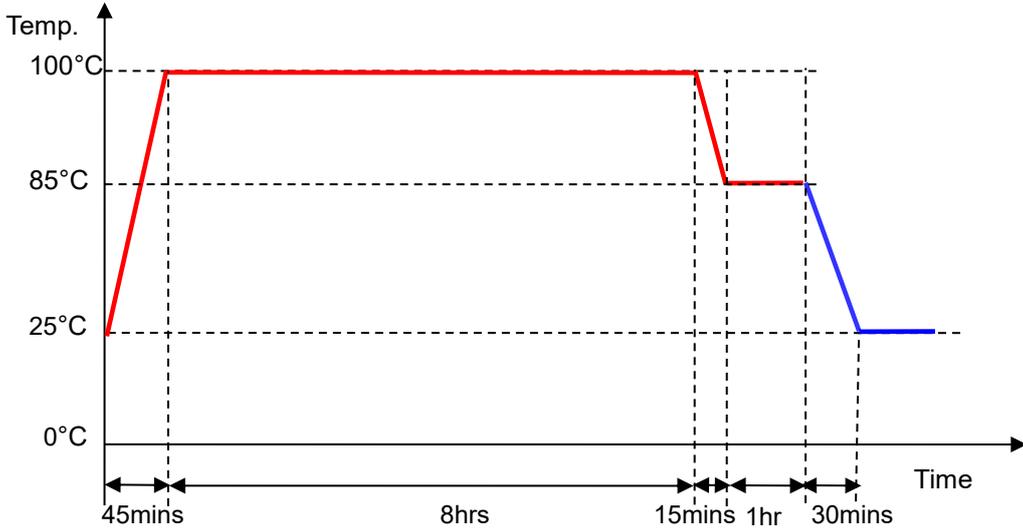
Sample Quantity	Test Data	Test Results
6PCS	<p>The screenshot shows three instances of the ATKOPING application. Each instance displays 'Ping 统计信息' (Ping Statistics) with the following data:</p> <ul style="list-style-type: none"> <li>Sample 1: 发送包 2064, Ping 最小值 1 毫秒, 开始时间 00:53:56, 超时 0, Ping 最大值 266 毫秒, 经过时间 00:00:3, 包丢失 0.00%, Ping 平均值 2.70 毫秒, 停止时间 --</li> <li>Sample 2: 发送包 1971, Ping 最小值 1 毫秒, 开始时间 00:53:57, 超时 0, Ping 最大值 407 毫秒, 经过时间 00:00:3, 包丢失 0.00%, Ping 平均值 3.03 毫秒, 停止时间 --</li> <li>Sample 3: 发送包 1939, Ping 最小值 1 毫秒, 开始时间 00:53:58, 超时 0, Ping 最大值 411 毫秒, 经过时间 00:00:3, 包丢失 0.00%, Ping 平均值 2.79 毫秒, 停止时间 --</li> </ul> <p>Below the statistics, there are lists of ping responses for each sample, all showing successful replies from 192.168.199.x.</p>	PASS

# 5.High Temperature Storage Test

**Test Conditions:** Power-off test. Store the product at 100°C + 93% RH for 8h, then restore it to 85°C + 93% RH for a 1-hour soak, and perform a hot start test.

**Test Profile:**

**Is Power Off** ——  
**Is Power On** ——



**Test Criteria:**

1. During the hot start test, the module functions normally. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

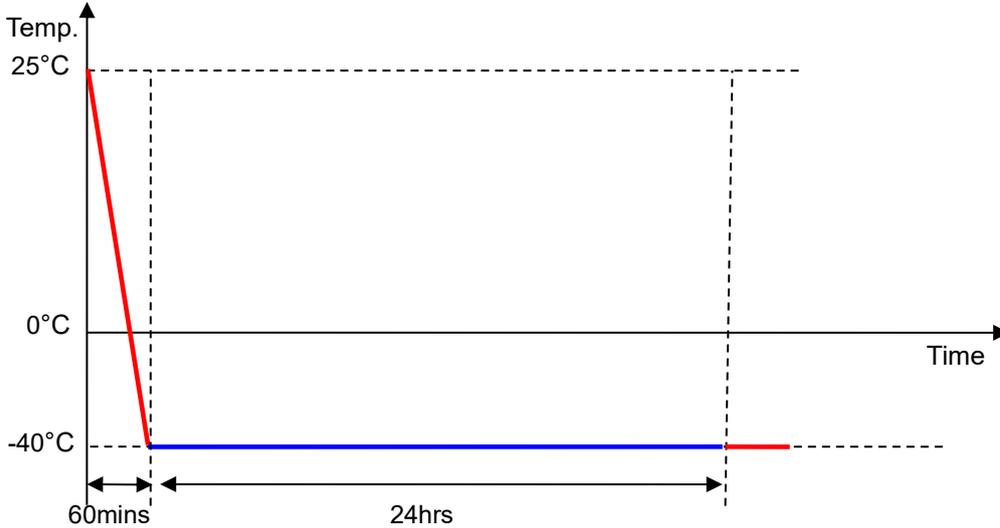
Sample Quantity	Test Data	Test Results
6PCS		PASS

# 6.Low Temperature Operation Test

Test Conditions: Power-on test. Operate at -40°C for 24h.

Test Profile:

Is Power Off ———  
 Is Power On ———



## Test Criteria:

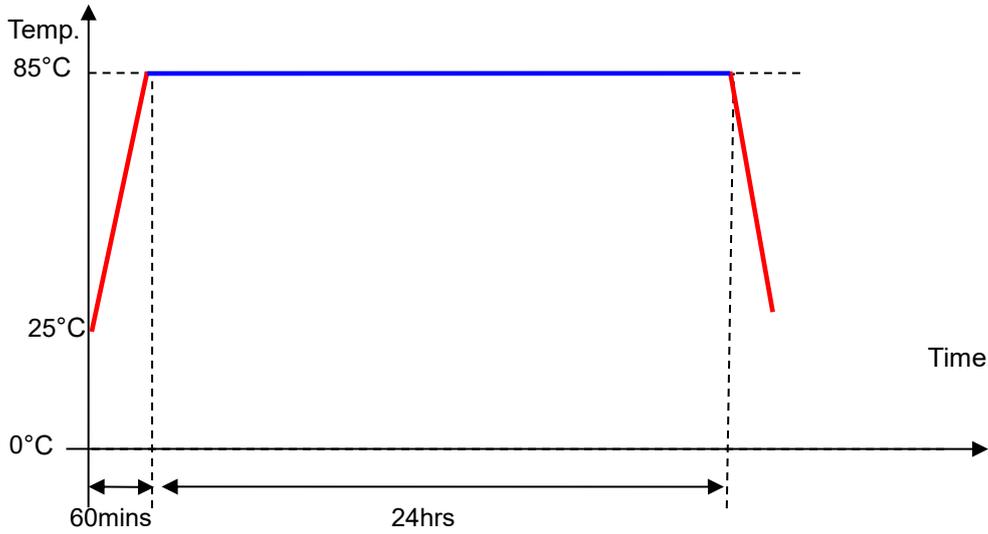
1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
<p style="text-align: center; font-size: 24px;">6PCS</p>	<p>The screenshots show ATKOPING test results for three samples. Each screenshot includes fields for 'Ping 间隔时间', 'Ping 次数', and 'Ping 统计信息'. The statistics show 100% success rates and low packet loss (0.00%).</p>	<p style="text-align: center; font-size: 24px;">PASS</p>

# 7.High Temperature Operation Test

Test Conditions: Operate at 85°C+ 93% RH for 24h.

Test Profile:



## Test Criteria:

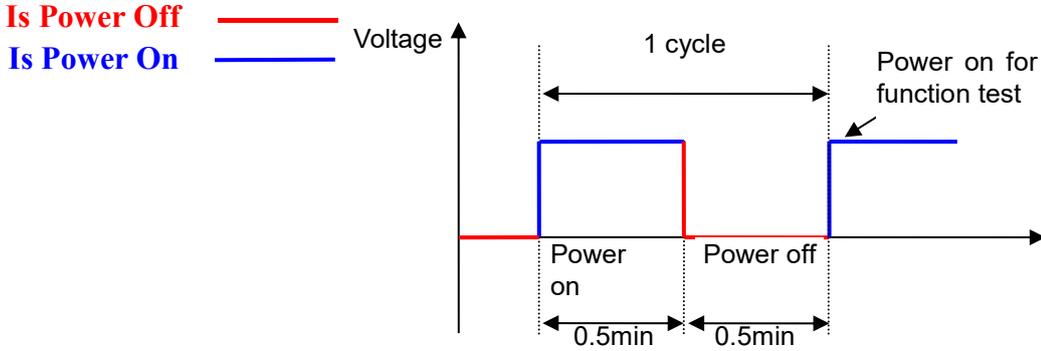
1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
6PCS		PASS

# 8.AC Power On/Off Test with Temperature

- Test Conditions:**
1. Power on: 30s; power off: 30s.
  2. Temperature: -40°C, 25°C + 93% RH, 85°C + 93% RH.
  3. Cycle: Each test condition cycles 200 times.

**Test Profile:**



**Test Criteria:**

1. After power-up, the module boots normally. During the test, if the module boots normally and there is connectivity for every ping packet, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Item	Sample Quantity	Test Data	Test Results
Power on/off at room temperature	6PCS		PASS
Power on/off at low temperature	6PCS		PASS
Power on/off at high temperature	6PCS		PASS

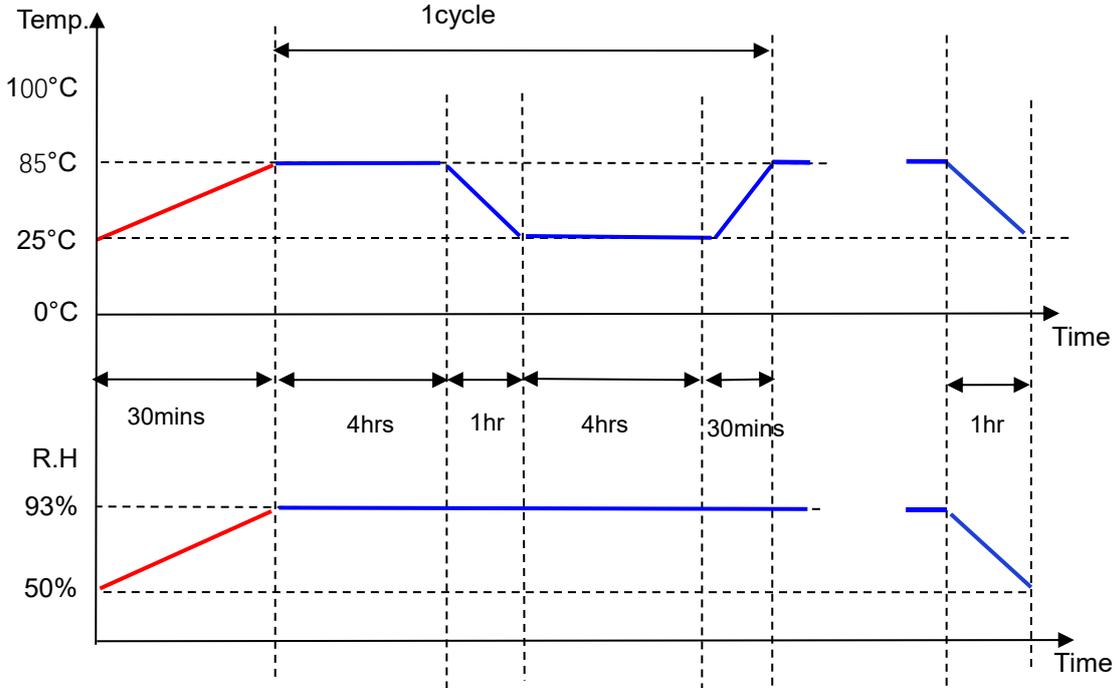
# 9. Alternating Hot and Humid Test

## Test Conditions:

1. Operate at 85°C + 93% RH for 4h;
  2. Operate at 25°C + 93% RH for 4h;
- Cycle step 1 and step 2, a total of 2 cycles.

## Test Profile:

Is Power Off —



Is Power On —

## Test Criteria:

1. No network disconnections occurred during the test. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
<p>6PCS</p>		<p>PASS</p>

# 10. Thermal Shock Test

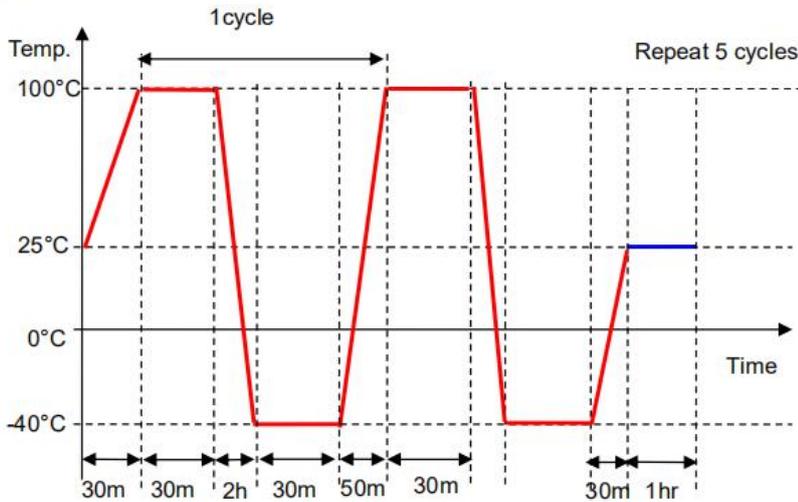
## Test Conditions:

Power-off test. Temperature cycling between -40–100°C + 93% RH, with a heating time of 50min and a cooling time of 2h. Each stage is held for 30min, for a total of 5 cycles.

## Test Profile:

Is Power Off

Is Power On



## Test Criteria:

1. After power-up, the module boots normally. If ping packets are confirmed not to be lost, the module is considered to be functional.
2. After the test, the product shows no visible damage such as shrinkage, peeling, or discoloration.

Sample Quantity	Test Data	Test Results
6PCS		PASS