

Full Test Report_Gigabit Mini Media Converter

Model	DS-MC1N-G0101Micro
Test Engineer	Chen Kai
Test Date	Dec. 31, 2020

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1. Verify the Equipment

Version of PCB Board: V1.1

Picture:



2. Verification Purpose

According to commercial-grade switch test standards, formulate product high and low temperature test items to verify the product's performance stability in high temperature and low temperature environments.

3. Verification Test Ideas and Requirements

According to commercial-grade switch test standards and specifications, the equipment is required to meet the requirements of the product to operate normally in a high temperature of 70°C and a low temperature of -30°C, with zero packet loss when running data traffic. And when it is running normally under high temperature 70°C and low temperature -30°C, the product can be restarted after power off, and the data flow will not be lost after the start is stable. Therefore, the equipment was verified by four test items including high temperature 70°C test, low temperature -30°C test, high temperature 70°C environment startup, and low temperature -30°C environment startup.

4. Verify Test Environment and Conditions

Equipment test environment

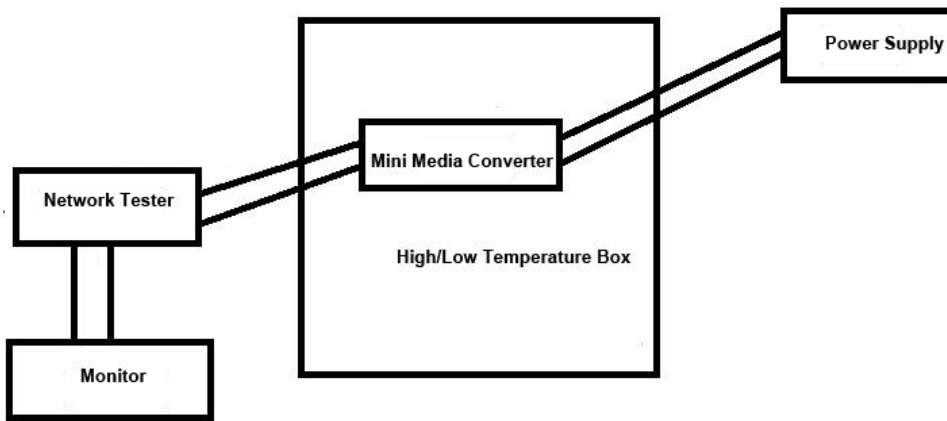


Figure 1

Note:

1. Place the device under test in the high and low temperature test box
2. Connect 5V DC power supply to the tested equipment
3. Connect the device under test with the network tester with a network cable, and connect the display to the network tester to monitor the network tester to send and receive data traffic to the device under test.

5. Verify Test Content

5.1 Rectification record

No.	Change description	Device specification or brand	Position number of PCB	Change time	After the rectification, the test passed	Note
1						
2						
3						

5.2 Summary of verification content

No.	Test Item	Note
1	High temperature test (70°)	
2	Low temperature test (-30°)	
3	Restart in high temperature environment (70°)	
4	Restart in low temperature environment (-30°)	

Note:

Generally, the temperature cycle test can be omitted (if there are special requirements, the temperature cycle test can be performed), but when testing high and low temperatures, it is necessary to check and record whether the device has packet loss when the temperature changes, and it needs to be performed in the verification conclusion. Brief description.

5.3 Continuous working test in high temperature environment

Item	Continuous working test in high temperature environment
Instrument	Network tester, high and low temperature box
Configuration	Configuration test 1
Sample Quantity	2pcs
Steps	<ol style="list-style-type: none"> Put the equipment to be tested in the high and low temperature box Connect the optical ports of the 2 devices to be tested with optical fibers, and connect the network ports of the 2 devices to be tested to the 1.2 port of the network tester, and the network tester is set to a fixed 64 bytes. Set the high and low temperature box to 70°C After the temperature stabilizes at the set 70°C, use the tester to continuously send data at full line speed to make the device under test work for 24 hours.
Result	Packet Loss: 0
Test Conclusion	Passed

5.4 High temperature environment start-up test

Item	High temperature environment start-up test
Instrument	Network tester, high and low temperature box
Configuration	Configuration test 1
Sample Quantity	2PCs
Steps	<ol style="list-style-type: none"> Put the equipment to be tested in the high and low temperature box Connect the optical port of the 2PCs device under test with optical fiber, and connect the

	<p>network port of the 2PCs device under test with the 1.2 port of the network tester, and the network tester is set to a fixed 64 bytes.</p> <p>3. Set the high and low temperature box to 70°C</p> <p>4. After the temperature stabilizes at the set 70°C, power off the device to be tested, power on the device after 5 minutes, observe whether the device is operating normally, and record the startup time (from power on to the rate returning to normal)</p> <p>5. Repeat step 4 to test twice</p>
Result	After restarting the device, the device can operate normally, send and receive data normally, and record the startup time
Test Conclusion	Passed

5.5 Continuous working test in low temperature environment

Item	Continuous working test in low temperature environment
Instrument	Network tester, high and low temperature box
Configuration	Configuration test 1
Sample Quantity	2PCs
Steps	<p>1. Put the equipment to be tested in the high and low temperature box</p> <p>2. Connect the optical ports of the two devices under test with optical fibers, and connect the network ports of the two devices under test with the 1.2 port of the network tester, and the network tester is set to a fixed 64 bytes.</p> <p>3. Set the high and low temperature box to -30°C</p> <p>4. After the temperature stabilizes at the set -30°C, use the tester to continuously send data at full line speed to make the device under test work for 24 hours.</p>
Result	Packet Loss: 0
Test Conclusion	Passed

5.6 Low temperature environment start-up test

Item	Low temperature environment start-up test
Instrument	Network tester, high and low temperature box
Configuration	Configuration test 1
Sample Quantity	2PCs
Steps	<p>1. Put the equipment to be tested in the high and low temperature box</p> <p>2. Connect the optical port of the 2PCs device under test with optical fiber, and connect the</p>

	<p>network port of the 2PCs device under test with the 1.2 port of the network tester</p> <p>3. Set the high and low temperature box to -30°C</p> <p>4. After the temperature stabilizes at the set -30°C, power off the device to be tested, power on the device 15 minutes later, observe whether the device is operating normally, and record the startup time (from power on to the rate returning to normal)</p> <p>5. Repeat step 4 to test 3 times</p>
Result	After restarting the device, the device can operate normally, send and receive data normally, and record the startup time
Test Conclusion	Passed

5.7 Full load power

During the full load test, the current measured by the ammeter is less than or equal to 260mA, so the full load power of the equipment is less than or equal to 1.3W

6. Verification Conclusion

No.	Test Items	Pass or not	Note
1	High temperature test (70°)	PASS	
2	Low temperature test (-30°)	PASS	
3	Restart in high temperature environment (70°)	PASS	
4	Restart in low temperature environment (-30°)	PASS	

Conclusion: It can be seen from the above experiment that all the items have passed the test; after the subsequent overtime test, the low temperature limit -35°C and the high temperature limit 80°C can pass the test.

7. RFC2544 Test Report

7.1 Test Data

Spirent Communications - SmartBits Throughput Test Results

Vendor Name: Vendor

Product Name: Product

Software Version: SmartApplications V 3.04

Library Version: 3.51-1

Firmware Version: 2.80.003.0 - Active

Serial Number: 60010158

Throughput test length: 20 seconds

Average of: 1 trial

Port pairs active: 1

Mode: Uni-directional

Date: Thu Dec 31 11:30:19 2020

Maximum port-pair throughput with no loss

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Frame size	64	128	256	512	1024	1280
1 Gb Max Rate	1488095	844595	452899	234962	119732	96154
Avg % passed	100.00	100.00	100.00	100.00	100.00	100.00
Acceptable Loss %	0.00	0.00	0.00	0.00	0.00	0.00
Avg Tx Time(s)	19.433	19.433	19.433	19.423	19.433	19.423

(01,08,03) to (01,08,04) 1488095 844595 452899 234962 119732 96154

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Frame size	64	128	256	512	1024	1280
(01,08,03) to (01,08,04)	100.00	100.00	100.00	100.00	100.00	100.00

Throughput SUMMARY: Total Port-Pairs

Frame size	64	128	256	512	1024	1280
Maximum Rate	1488095	844595	452899	234962	119732	96154
FPS Passed Rate	1488095	844595	452899	234962	119732	96154
Percentage	100.00	100.00	100.00	100.00	100.00	100.00

Spirent Communications - SmartBits Throughput Test Results

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Frame size	1518
1 Gb Max Rate	81274
Avg % passed	100.00
Acceptable Loss %	0.00
Avg Tx Time(s)	19.433

(01,08,03) to (01,08,04) 81274

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Frame size 1518
(01,08,03) to (01,08,04) 100.00

Throughput SUMMARY: Total Port-Pairs

Frame size 1518
Maximum Rate 81274
FPS Passed Rate 81274
Percentage 100.00

Spirent Communications - SmartBits Latency Test Results

Vendor Name: Vendor
Product Name: Product
Software Version: SmartApplications V 3.04
Library Version: 3.51-1
Firmware Version: 2.80.003.0 - Active
Serial Number: 60010158
Latency test length: 10 seconds
Average of: 20 trials
Port pairs active: 1
Mode: Uni-directional
Date: Thu Dec 31 11:41:49 2020

Mode: SmartMetrics Comp. Mode

(Cut Through) Port-Pair Latency in microseconds (us) [or ms where noted]

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Frame size 64 128 256 512 1024 1280
Percent load 100.00 100.00 100.00 100.00 100.00 100.00

(01,08,03) to (01,08,04) 4.1 4.1 4.1 4.3 4.0 4.0

(Store and Forward) Port-Pair Latency in microseconds (us) [or ms where noted]

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Frame size	64	128	256	512	1024	1280
Percent load	100.00	100.00	100.00	100.00	100.00	100.00

(01,08,03) to (01,08,04) 3.6 3.0 2.0 0.3 NA NA

Spirent Communications - SmartBits Latency Test Results

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Frame size	1518
Percent load	100.00

(01,08,03) to (01,08,04) 4.1

(Store and Forward) Port-Pair Latency in microseconds (us) [or ms where noted]

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Frame size	1518
Percent load	100.00

(01,08,03) to (01,08,04) NA

Spirent Communications - SmartBits PacketLoss Test Results

Vendor Name: Vendor
Product Name: Product

Software Version: SmartApplications V 3.04

Library Version: 3.51-1

Firmware Version: 2.80.003.0 - Active

Serial Number: 60010158

PacketLoss test length: 10 seconds

Average of: 1 trial

Port pairs active: 1

Mode: Uni-directional

Date: Thu Dec 31 12:20:24 2020

Port-Pair PacketLoss as a percentage of total

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Frame size	64	128	256	512	1024	1280
Max attempted	100.00	100.00	100.00	100.00	100.00	100.00

(01,08,03) to (01,08,04)	0.000	0.000	0.000	0.000	0.000	0.000

Spirent Communications - SmartBits Packet Loss Test Results

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Frame size	1518
Max attempted	100.00

(01,08,03) to (01,08,04)	0.000

Spirent Communications - SmartBits Back-to-back Test Results

Vendor Name: Vendor

Product Name: Product

Software Version: Smart Applications V 3.04

Library Version: 3.51-1

Firmware Version: 2.80.003.0 - Active

Serial Number: 60010158

Back-to-back test length: 2 seconds

Average of: 20 trials

Port pairs active: 1

Mode: Uni-directional

Date: Thu Dec 31 12:27:26 2020

Port-Pair Back-to-back

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Frame size	64	128	256	512	1024	1280
1 Gb offered	2976190	1689190	905798	469924	239464	192308
Burst Seconds	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Offered %	100.00	100.00	100.00	100.00	100.00	100.00

(01,08,03) to (01,08,04)	2976190	1689190	905798	469924	239464	192308
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Back-to-back SUMMARY: Total Port-Pairs

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Frame size	64	128	256	512	1024	1280
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Frames Rcv'd	2976190	1689190	905798	469924	239464	192308
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Spirent Communications - SmartBits Back-to-back Test Results

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Frame size	1518
1 Gb offered	155671
Burst Seconds	1.9154
Offered %	100.00

(01,08,03) to (01,08,04)	155671
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Back-to-back SUMMARY: Total Port-Pairs

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Frame size	1518
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Frames Rcv'd	155671
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