Report NO:18I010003

FWS-2360

Intel® Denverton

Desktop Network Appliance

Firewall Product
P5
Compatibility Test Report

Summary	☒ Pass ☐ Fail ☐ Pass with Deviation (Comment: _____)

Test Results Category				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	QE Manager	Test Engineer
2018-05-04	KJ Wang	Max Chang

Version Released Records

Date	Version	Change History	Note
01/27/2016	A0	1. First release	
01/06/2017	A1	1. Add NIM card compatibility test. 2. Add 10G、40G LAN function test. 3. Update BIOS test plan. 4. Update Stability test item. 5. Add 10G, 40G Throughput performance test.	
07/17/2017	A2	1. Add Linux Burnintest 2. Add PCIe GEN3 bear card test	

Note :

For all test items in this report, 3 results have been defined and described as following:

Pass: Functionality work perfectly

Fail: Functionality failed and must be resolved in the next version

N/A: Functionality Not Applicable or Not Available

This test report would be updated when re-test completed in product next change version.

Specification Validation

Main Specification

Item	Specification	Result			Note
		Pass	Fail	N/A	
Form Factor	Desktop Network Appliance	☒	☐	☐	
Processor	Denverton up to 4 core	☒	☐	☐	
Chipset	SoC	☒	☐	☐	
Graphics controller	1 x VGA port via Mini Card	☒	☐	☐	
System Memory	2 x DDR4 SO-DIMM (ECC) Default 1 solt	☒	☐	☐	
Ethernet	2 x RJ45/SFPEthernet ports (Intel i210IS/11AT colay) 4 x RJ45 Switch Lan (Marvell88E1543) with Bypass	☒	☐	☐	
Bypass	2 segment	☒	☐	☐	
BIOS	AMI BIOS ROM	☒	☐	☐	
Serial ATA	1 x SATA III port on board	☒	☐	☐	
Serial Port	RJ45 console	☒	☐	☐	
Keyboard and Mouse	Reserve pin-header	☒	☐	☐	
Universal Serial Bus	2 x USB 3.0 Type A on I/O side , 1 x internal USB 2.0 Pin header (If use Mini card the 1 of External Dual USB 3.0 ports will reduce to 2.0)	☒	☐	☐	
Expansion Interface	1 x Mini PCIe with SIM socket via main board	☒	☐	☐	
RTC	Internal RTC	☒	☐	☐	
TPM	Optional TPM v1.2 9660/TPM2.0 9665	☒	☐	☐	
Watchdog Timer	1~255 step by software programmable	☒	☐	☐	
Storage	1 x SATA III Port, 2.5” HDD and SATA DOM	☒	☐	☐	
GPIO	Reserve internal pin header 8-bit Digital I/O interface (4-in /4-out)	☒	☐	☐	
Case Open	Pin Header	☒	☐	☐	
Power Requirement	40W ~60W Adaptor	☒	☐	☐	
Front I/O panel	1x Power LED 1 x LAN Status LED 1 x x HDD Active LED 2 x Bypass LED	☒	☐	☐	
Rear I/O panel	1 x RJ-45 Console 1 x AC Power Input 1 x Power Switch 1 x Software Programmable Button 2 x RJ45/SFP port 4 x RJ45 GbE DC Jack	☒	☐	☐	

O.S. Support

Item	Specification	Result			Note
		Pass	Fail	N/A	
Microsoft Windows	Windows 8.1 Enterprise 64 bits	☒	☐	☐	
Linux	CentOS7 kernel:3.10.0-693.el7.x86_64	☒	☐	☐	Testing environment 1. Linux as first priority
	Ubuntu16.04 x86_64 kernel 4.4.0-21-generic	☒	☐	☐	

Platform Information

Item	Device Information	Note
Product of department	NSD	
System Model	FWS-2360	
PCB Model / Version	NMB-2360 A0.2	
BIOS / Version	FWS-2360 R1.0(K236AM10) (03/19/2018)	
Driver folder	\\nas3\sap-beta\Products\FWS-2360	
CPU Type	Intel® Atom™ CPU C3558 @ 2.20 GHz	
Memory Type	Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC	
SATA HDD	Onboard eMMC 16GB	
	Kingston HyperX FURY 2.5” SHFS37A 120GB SSD	
USB DVD-ROM	Pioneer 8X (DVR-XD11T)	
VGA Monitor	Philips 244E2SB/96 24”	
Operating System	☐ CentOS7 kernel: 3.10.0-693.el7.x86_64	
	☐ Ubuntu16.04 x86_64 kernel 4.4.0-62-generic	
	☐ Windows 8 Enterprise 64bit English version	
Power Supply	ATX Power Supply : N/A	
	Adapter : FSP FSP060-DBAB1 12V/5A	
Battery Model	N/A	
	Chipset Information	
SOC Chip	Denverton up to 4 core	
Super IO Chipset	ITE IT8728F/CX	
Ethernet Chipset	Intel i210IS/11AT & Marvell88E1543	

Summary Table of contents:

1. Hardware Compatibility Test

1.1. CPU Compatibility Test

Procedure:

Step1. Check CPU information and frequency should show correct value during POST screen and O.S.
<Linux CPU info # dmidecode -t processor|grep "Version:">

Step2. CPU supported must meet specification.

Test Result:

Test item	Result			Note
	Pass	Fail	N/A	
Below CPU information and frequency should show correct value				
Intel® Atom™ CPU C3558 @ 2.20 GHz	☒	☐	☐	
Intel® Atom™ CPU C3308 @ 1.60 GHz	☒	☐	☐	

1.2. Memory Compatibility Test

Procedure:

Step1. Boot up function test

Step2. Check Memory frequency should show correct value during POST screen and O.S.
<<Linux Memory info # dmidecode -t memory|grep "Size:">

Step3. Memory supported must meet specification.

Test Result:

Test item	AAEON P/N	Result			Note
		Pass	Fail	N/A	
a. Boot up normal. b. Below Memory Information and frequency should show correct value.					
U-DIMM					
Transcend DDR4 2133 8GB SEC 449 K4A4G085WD BCPB	N/A	☒	☐	☐	
Transcend DDR4 2133 4GB SEC 446 K4A4G085WD BCPB	N/A	☒	☐	☐	
Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC	N/A	☒	☐	☐	
Transcend DDR4 2400 4GB SEC 637 K4A4G085WE BCRC	N/A	☒	☐	☐	
Innodisk DDR4 2133 8GB M4U0-8GSSOCRG-26 SEC 449 K4A4G085WD BCPB	N/A	☒	☐	☐	
Innodisk DDR4 2133 4GB M4U0-4GSSNCRG-26 SEC 449 K4A4G085WD BCPB	N/A	☒	☐	☐	
DSL DDR4 2133 8GB CL15 SEC 446 K4A4G085WD BCPB	N/A	☒	☐	☐	
DSL DDR4 2133 4GB CL15 SEC 446 K4A4G085WD BCPB	N/A	☒	☐	☐	
Crucial CT16G4SFD8213.16FA1 16GB DDR4-2133 SODIMM 1.2V CL15	N/A	☒	☐	☐	

1.3. SATA Compatibility Test

1.3.1 SATA AHCI Mode

Procedure:

Step1. BIOS select AHCI mode, check SATA devices information/ size should show correct value in BIOS setup.

Step2. Boot into OS, check SATA devices information/size should show correct value.

OS: Ubuntu16.04.2 kernel:4.4.0-62-generic x86_64

Test Result:

Test item			Result			Note
			Pass	Fail	N/A	
Below SATA devices information and size should show correct value with UEFI mode.						
SATAII	TOSHIBA MK3276GSX 2.5” 320GB		☒	☐	☐	
SATAIII	TOSHIBA MQ01ABF032 2.5” 320GB		☒	☐	☐	
SATAIII	WD WD5000BPKX 2.5” 500GB		☒	☐	☐	
SATAIII	HGST HTS541010A9E680 2.5” 1TB		☒	☐	☐	
SATAIII	WD WD10SPCX 2.5” 1TB		☒	☐	☐	
SSD	Kingston HyperX FURY 2.5” SHFS37A 120GB SSD		☒	☐	☐	
SSD	Transcend TS32GSSD370 2.5”.32GB.SATA III SSD MLC.	968C032G2D	☒	☐	☐	
SSD	Transcend.TS64GSSD370 2.5”.64GB. SATA III.SSD.MLC	968C64G003	☒	☐	☐	
SSD	Transcend.TS128GSSD370 2.5” SATA3 SSD.128GB.MLC.	968C128G0W	☒	☐	☐	
SSD	Innodisk. 3MG2-P 2.5" 16GB MLC SATA SSD 15nm. DGS25-16GD81BC3SC-26	AP-SS968C016G3K	☒	☐	☐	
SSD	Innodisk. 3MG2-P 2.5" 32GB MLC SATA SSD 15nm. DGS25-32GD81BC3DC-26	AP-SS968C032G1P	☒	☐	☐	
SSD	Innodisk. 3MG2-P 2.5" 64GB MLC SATA SSD 15nm. DGS25-64GD81BC3QC-26	968C064G39	☒	☐	☐	
SSD	Innodisk. 3MG2-P 2.5" 128GB MLC SATA SSD 15nm. DGS25-A28D81BC3QC-26	AP-SS968C128G1P	☒	☐	☐	
SSD	Innodisk. 3MG2-P 2.5" 256GB. MLC SATA SSD 15nm. DGS25-B56D81BC3QC-26	AP-SS968C256G16	☒	☐	☐	

2. Basic Function Test

2.1. CPU Function Test

Configuration:

CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz

Memory: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC

Procedure:

Step1. Connected CPU with product specification max supported.

Step2. Boot into BIOS manual and check CPU information is correct.

Step4. Confirm CPU max speed can meet CPU specification in OS environment.

<#watch –n 1 “cat /proc/cpuinfo | grep MHz”>

Step5. Install and execute benchmark AP “sysbench”, recode the benchmark.

<1 thread #sysbench --test=cpu --cpu-max-prime=20000 run>

<8 threads #sysbench --test=cpu --cpu-max-prime=20000 --num-threads=4 run>

Test result:

No.	Test item			Result			Note
				Pass	Fail	N/A	
1	System can boot properly			☒	☐	☐	
2	BIOS\CPU information is correct.			☒	☐	☐	
3	CPU speed should meet specification			☒	☐	☐	
4	Recode CPU Benchmark	Intel 2.20 G	1 thread	22.6162 s			
			4 threads	5.7319 s			

2.2. Memory Function Test

Configuration:

CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz

Memory: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC

Procedure:

Step1. Connected memory with product specification max supported.

Step2. Boot into BIOS manual and check memory information is correct.

Step3. Slot test.

Step4. Execute benchmark AP” sysbench”, recode the benchmark.

<read # sysbench --test=memory --memory-block-size=8K --memory-total-size=1G --memory-oper=read run >

<write # sysbench --test=memory --memory-block-size=8K --memory-total-size=1G run >

Test result:

No.	Test item			Result			Note
				Pass	Fail	N/A	
1	System should boot properly.			☒	☐	☐	
2	BIOS\Memory information is correct.			☒	☐	☐	
3	Slot 1	System should boot up properly.		☒	☐	☐	
	Slot 2			☒	☐	☐	
4.	Recode Memory Benchmark		read	Transferred:21208.37MB/s Total time:0.0368 s			
			write	Transferred:3724.34MB/s Total time:0.2624s			

2.3. SATA Function Test

Configuration:

SATA: Kingston HyperX FURY 2.5” SHFS37A 120GB SSD

Procedure:

Step1. Connect SATA HDD / SSD and CF.
Step2. Boot into BIOS manual and check SATA/CF information is correct.
Step3. Install Linux OS with SATA storage / CF.
Step4. Check SATA/CF read/write speed can meet the specification.
<update# apt-get update>
<check HDD# fdisk -l>
<Read command#: hdparm -t /dev/sda>
<Write command#: hdparm -t --direct /dev/sda>

Test result:

No.	Test item	Result			Note
		Pass	Fail	N/A	
1	SATA storage and CF information should correct during POST and OS.	☒	☐	☐	
2	SATA ports speed should meet specification. (SATAII max read speed > 150MB/s) (SATAIII max read speed> 300MB/s)	☒	☐	☐	SATA 1 port Read: 472.12 MB/s Write: 495.58 MB/s
3	eMMC R/W speed should meet specification.	☒	☐	☐	Read: 170.48 MB/s Write: 183.79 MB/s

2.4. Video Function Test

Procedure:

Step1. Connect mini PCI-E to PCI-E x1 display card
Step2. Connect VGA monitor.
Step3. Install Linux OS to DUT system.
Step4. After installation and boot to Linux OS for test X-windows mode and Text mode.
Step5. Check EDID function if kernel supported.

Test result:

No.	Test item		Result			Note
			Pass	Fail	N/A	
1	Display shouldn’t loss during OS installation.	VGA	☒	☐	☐	
		HDMI	☐	☐	☒	
2	Display shouldn’t flicker during POST and OS.	VGA	☒	☐	☐	
		HDMI	☐	☐	☒	
3	VGA should display normal with x-window and text mode.		☒	☐	☐	
4	HDMI should display normal with x-window and text mode.		☐	☐	☒	
5.	VGA EDID should function properly		☒	☐	☐	
6	HDMI EDID should function properly		☐	☐	☒	

2.5 Console Function Test

Procedure:

Step1. Execute “Hyper-Terminal” in HOST PC.
Step2. Boot up DUT system and press ESC key of HOST keyboard to boot into BIOS manual.
Step3. To check HOST keyboard can control properly in BIOS manual.
Step4. DUT boot to DOS (USB flash) and check console redirection work properly.
Step5. Under Linux OS, install minicom AP and check console transmission.

Test Result:

No.	Test item	Result			Note
		Pass	Fail	N/A	
1	Console support BIOS display and control.	☒	☐	☐	Test with 9600/38400/115200
2	Console support UEFI display and command typing.	☒	☐	☐	Test with 9600/38400/115200
3	Under Linux OS, console support minicom transmission.	☒	☐	☐	Test with 9600/38400/115200 ttyS0

2.6 Com Port Function Test

Procedure:

Step1. Execute “Hyper-Terminal” in Server PC.
Step2. Install “minicom” on DUT. <apt-get install mincom or yum install minicom>
Step3. To run “minicom” and set com port for test. (#minicom –s)(com1=ttyS0; com2=ttyS1….)
Step4. Connect “Null cable” between Server PC and DUT.
Step5. Transmit words between server and DUT.

Test Result:

No.	Test item	Result			Note
		Pass	Fail	N/A	
1	Transmission words should not loss or error.	☒	☐	☐	COM1: ttyS0

2.7 USB ports Function Test

2.7.1 USB basic function test

Procedure:

Step1. Connect USB keyboard and check it works properly under BIOS/DOS/Linux.
Step2. Connect USB DVD ROM, check system can boot from USB DVD ROM and USB DVD ROM can work properly under Linux OS.
Step3. Connect USB2.0/3.0 Flash, check system can boot from USB flash and USB flash can work properly under Linux OS.
Step4. Check USB2.0/3.0 flash read speed can meet the Flash specification.
<Read command#: hdparm -t /dev/sdb>

Test Result:

No.	Test item	Result			Note
		Pass	Fail	N/A	
1	Boot from USB DVD ROM and drive should work properly.	☒	☐	☐	USB1/2
2	USB 1.1 / 2.0 /3.0 devices (Flash, keyboard, mouse, DVD ROM) can work properly on	☒	☐	☐	USB1/2

	USB 3.0 ports.				
3	USB2.0 R/W speed should meet specification.	☒	☐	☐	
4	USB3.0 R/W speed should meet specification.	☒	☐	☐	USB1 Read:78.23 MB/s

2.7.2 USB compatibility test

Procedure:

Step1. Insert USB device to USB2.0 / 3.0 ports.

Step2. Test each USB device function.

Test Result

Test Item		Result			Note
		Pass	Fail	N/A	
USB devices function should work properly.					
keyboard	Microsoft 1366	☒	☐	☐	
Mouse	Microsoft MSK-1113(B)	☒	☐	☐	
DVD ROM	Pioneer DVR-XD11T	☒	☐	☐	
HUB	Mini 4ports HUB High speed USB2.0	☒	☐	☐	
HDD	Transcend TS500GSJ25D3 USB3.0 500GB	☒	☐	☐	
USB2.0 Flash	Sandisk cruzer 8GB	☒	☐	☐	
	Transcend16GB	☒	☐	☐	
USB3.0 Flash	Sandisk SDCZ43 32GB	☒	☐	☐	
	Transcend 32GB	☒	☐	☐	

2.8 LED / LCM / Button Function Test

Procedure:

Step1. Check power LED when system power on.

Step2. Check HDD LED blinks when install OS to HDD/CF.

Step3. Check Bypass LED when AAEON Test AP set Bypass status.

Step4. Check Test AP resume are correct which press LCM function button.
(Up/Down/ESC/Enter)

Step5. Check Test AP resume is correct which press program reset button.
SDK: Button <1.#make clean 2# make 3# ./button>

Step6. Check status LED action same with Test AP setting.

Step7. To check Ethernet LED status can follow below methods.

A. Use LAN cable to connect 1GB switch between Server PC and DUT, transmit some packets between Server PC and DUT.

B. Use LAN cable to connect 100MB switch between Server PC and DUT, transmit some packets between Server PC and DUT.

C. Use LAN cable to connect 10MB switch between Server PC and DUT, transmit some packets between Server PC and DUT.

	Speed LED
40GB/s	Color Blue
10GB/s	Color Blue
1GB/s	Color Orange
100MB/s	Color Green
10MB/s	Color Blank

	Link/Act LED
Un-Linked	Blank
Linked	TBD
Transmit	LED Blink

Result:

No.	Test item	Result			Remark
		Pass	Fail	N/A	
1	Power LED should turn on when system power on.	☒	☐	☐	
2	HDD LED should blinks when install OS to HDD and CF.	☒	☐	☐	
3	Bypass LED should turn on when SDK set bypass status.	☒	☐	☐	
4	Status LED color and action should same with SDK setting.	☒	☐	☐	SDK: LED
5	Reset value of SDK should show high when press the program reset button.	☒	☐	☐	Open: show high Press: show low
6	LCM value of SDK should show correct when press LCM function button.	☐	☐	☒	SDK: LCM ./lcm –getkey return ./lcm –lcmon ./lcm –lcmoff ./lcm –set String
7	10G connection LAN LED action as below: Speed LED: Green Link LED: Blue / Blinking	☒	☐	☐	
8	1000M connection LAN LED action as below: Speed LED: Orange Link LED: Yellow / Blinking	☒	☐	☐	
9	100M connection LAN LED action as below: Speed LED: Green Link LED: Yellow / Blinking	☒	☐	☐	
10	10M connection LAN LED action as below: Speed LED: blank Link LED: Yellow / Blinking	☒	☐	☐	

2.9. Bypass Function Test

Procedure:

Step1. Under Linux, execute AAEON SDK(LanByPass) to test Bypass function under power on and power off mode.

Step2. SDK set "power on" is "PassTru and "power off" is "ByPass, and remove the AC power cord. (G3 status)

Step3. BIOS set power on is “PassTru” and power off is “Bypass”, boot up system from G3 status..

Step4. SDK set "power on" is "PassTru" and "WDT-ByPass", execute watch Dog.

Step5. SDK set “save to BIOS” and reboot to BIOS, check BIOS Bypass value.

Test result:

No.	Test item	Power on	Power off	Result			Remark
				Pass	Fail	N/A	
1	PassTru / ByPass should work properly by SDK control.	Bypass	Bypass	☒	☐	☐	SDK: LanByPass
		Bypass	PassTru	☒	☐	☐	
		PasTru	Bypass	☒	☐	☐	
		PassTru	PassTru	☒	☐	☐	
2	LAN should switch to ByPass mode when system AC loss.(G3 status)	PassTru	ByPass	☒	☐	☐	
3	Boot up from G3, LAN should switch to PassTru.	PassTru	ByPass	☒	☐	☐	
4	WDT ByPass should work properly.			☒	☐	☐	
5	Save to BIOS			☒	☐	☐	

2.10. LAN Function Test

Configuration:

1G switch: D-Link DGS-1210-16
100M switch D-Link DES-1008A
10M HUB SVEC FD916H
100 meters CAT6 cable

Procedure:

(PXE and WOL support or not, define in SPEC)

Step1. Each LAN port connect DHCP server. ; 10G & 40G LAN port connect to Host PC
Step2. Connect internet and ping Google (8.8.8.8) ; 10G & 40G ping Host PC.
Step3. Each LAN port connect host PXE PC and DUT BIOS enable PXE function.
Step4. BIOS select boot from LAN.
Step5. Test each LAN port WOL function properly which from OS shutdown.
Step6. Client PC to install and execute iperf3 and host PC execute iperf3 –s
Step7. Iperf test with 1G, 100M, 10M switch/Hub. ; 10G & 40G iperf test with Host PC.
<#yum install iperf>
<#iperf3 –c 192.168.3.58 –w 100M –i 1 –t 120 >

Test result:

Test item	LAN 1~4 1G			LAN 5~6 1G			Note
	Pass	Fail	N/A	Pass	Fail	N/A	
Internet Browser (DHCP Server) Ping website(8.8.8.8) should work properly	☒	☐	☐	☒	☐	☐	
LAN Boot (PXE) Boot from LAN should work properly	☒	☐	☐	☐	☐	☒	LAN1/LAN2
Wake On LAN WOL should work properly when resume from S5	☒	☐	☐	☒	☐	☐	
1Gbps connection Iperf test result should not loss and	☒	☐	☐	☒	☐	☐	

max bandwidth must be in 900Mbps or more.							
100Mbps connection Iperf test result should not loss and max bandwidth must be in 90Mbps or more.	☒	☐	☐	☒	☐	☐	
10Mbps connection Iperf test result should not loss and max bandwidth must be in 9Mbps or more.	☒	☐	☐	☒	☐	☐	

2.11. Digital IO Function Test

Procedure:

Step1. Use SDK to set DIO high/low output.
Step2. Use meter to measure DIO output value.

Test result:

No.	Test item	Result			Remark
		Pass	Fail	N/A	
1	DIO ports should be controlled correct by SDK.	☒	☐	☐	BIOS control pass

2.12. TPM2.0 Function Test

Procedure:

Step1. Enable BIOS\TPM device and status.
Step2. $ wget https://drive.google.com/open?id=0B2qBRy2H60mEaF9NTG5tWWVIRzA
<#get eltt2 >
Step3. $ unzip ELTT2_v1.0_Released.zip.
Step4. $ dmesg | grep －i tpm
<#to check if tpm module has been loaded during boot process>
Step5. Do the following command to rebuild the tool:
a. $ cd ./eltt2/eltt2/
b. $ make clean
c. $ make
Step6. $ sudo ./eltt2 -g
#to read the tpm information:
Step7. $ ls /dev/tpm*
check if the tpm device has been included in the system devices
Step8. $ sudo ./eltt2 -a 61
encrypt ascii 61 with sha-1 algorithm

Test result:

No.	Test item	Result			Remark
		Pass	Fail	N/A	
1	TPM 2.0 information should show correct.	☒	☐	☐	
2	“hash value extracted from tpm response” should show correct.	☒	☐	☐	

2.13. Jumper and connector Function Test

Configuration:

Procedure:

Step1. Test power button function under BIOS and OS environment.
Step2. Test PS/2 keyboard / mouse under BIOS and OS environment.
Step3. Connect PWB/Reset/HDD LED/PWR LED cable to FP1, check if each function can work properly
Step4. Set keyboard lock jumper to close and check PS/2 keyboard function.
Step5. Set “auto power on” jumper” to enable & disable and test auto power on feature.
Step6. Use meter to measure the CFD voltage.
Step7. Connect IPMI module and open JP3, check if IPMI function can work properly.
Step8. Remove AC cable and CMOS jumper set 2-3 close, check if CMOS all data will be cleaned.

Test result:

No.	Test item		Result			Remark
			Pass	Fail	N/A	
1	Power switch	System on /off under BIOS.	☒	☐	☐	
		System shutdown or suspend when press PWB under OS.	☒	☐	☐	
		System force shutdown when press PWB > 4SEC under OS.	☒	☐	☐	
2	PS/2 Keyboard, mouse.		☒	☐	☐	
3	CN10 Power Button		☒	☐	☐	
4	CN11 System Reset		☒	☐	☐	
5	CN12 CASEOPEN		☒	☐	☐	
6	CN9 PS/2		☒	☐	☐	
7	Auto power 1-2 disable 2-3 enable		☐	☐	☒	
8	Clear CMOS 1-3 2-4 Normal 3-5 4-6 Clear CMOS		☒	☐	☐	

3. Expansion card and Application Test

3.1. PCI-Express Bear Card Test:

Procedure:

Step1. Connect PCIe bear card and boot into DOS or Windows.

Step2. Execute test command for PCIe MLW test.

Test result:

Test Item		Result			Remark
		Pass	Fail	N/A	
Mini PCIe	1.5V, 3.3V, reset power LED check	☒	☐	☐	
	Wake# function	☒	☐	☐	
	PCIe x1 / GEN3	☒	☐	☐	

Remark: GENx by specification supported.

3.2. Mini PCIe Compatibility Test:

Procedure:

Step1. Connect Mini PCIe device and boot into OS.

Step2. Test PCI-e card basic function.

OS: Windows 8.1 Enterprise 64 bits

Test result:

Test Item	Result			Remark
	Pass	Fail	N/A	
Function should work properly as below item				
AAEON PER-V09V	☒	☐	☐	
AAEON PER-C11L Intel 82574 Gigabit LAN + USB port	☒	☐	☐	
AAEON PER-C41C-A10 4 port RS-232	☒	☐	☐	
AzureWave AW-NB159H 802.11b/g/n RTL8723BE combo module	☒	☐	☐	
AzureWave AW-CB161H 802.11a/b/g/n/ac(PCI-e Wireless+ USB Bluetooth) Realtek RTL8821AE	☒	☐	☐	
Bointec DPE909-AA WIFI	☒	☐	☐	
Quectel UC20 3G Card (USB interface)	☒	☐	☐	1. Ping 168.95.1.1 for 1000 clcyes, loss<2 times. 2. Download 1GB file from website. Tested on Mini card1 and Mini card2 slot
Sierra Wireless AirPrime MC7304 Qualcomm 4G	☒	☐	☐	

3.3. Expansion Card Integration Test

Procedure:

Step1. Connect devices to all of expansion slots.

Step2. Install OS.

Step3. Test expansion cards basic function.

OS: Ubuntu16.04.2 kernel:4.4.0-62-generic x86_64

Test Item		Result			Remark
		Pass	Fail	N/A	
OS installation	No error during OS and driver installation	☒	☐	☐	
Expansion function	All of expansion cards should work normal.	☒	☐	☐	

4. Time Accuracy Test

4.1. System Clock & RTC Clock Test

Procedure:

Step1. Check RTC time deviation after 24 hrs at power on status.
Step2. Check RTC time deviation after 24 hrs at power off status.
Step3. Press power button to check system with “beep” sound.
Step4. Run watchdog timer test with last version SDK.
<#./wdt -w 0> to set Normal Reset
<#./wdt -t 10> to set time for 10sec, 60sec, 255sec

Test Result:
Under Room Temperature: 26 °C

No.	Test item	Actual		Result			Remark
				Pass	Fail	N/A	
1	RTC Clock in Power On less 2 sec deviation	0	Sec	☒	☐	☐	
2	RTC Clock in Power Off less 2 sec deviation	1	Sec	☒	☐	☐	
3	System boot on in 60 sec	19.85	Sec	☒	☐	☐	
4	Watch dog time in 6+/-10% sec	10.30	Sec	☒	☐	☐	
5	Watch dog time in 60+/-10% sec	61.84	Sec	☒	☐	☐	
6	Watch dog time in 255+/-10% sec	261.38	sec	☒	☐	☐	

5. Power Consumption Test

Configuration	
CPU	Intel® Atom™ CPU C3558 @ 2.20 GHz
Memory	Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC
Storage	Kingston HyperX FURY 2.5” SHFS37A 120GB SSD
O.S	Ubuntu16.04.2 kernel:4.4.0-62-generic x86_64

5.1. Power Consumption

Test Equipment				
Equipment	Programmable AC Source			
Manufacturer	Chroma			
Model name	62012P-600-8			
Power Supply		**P**		**Note**
Full Loading Mode Test AP: Stress Test	+100VAC 60Hz	15.1	W	# stress –c 4 (CPU total cores)
Win. Idle mode: Measure the current value when system in windows mode and without running any program	+100VAC 60Hz	8.9	W	
S5 mode: Measure the current value when system in S5 mode of windows and without running any	+100VAC 60Hz	4.2	W	

5.2. PC Health Status

Procedure:

Step1. Use meter to measure each voltage of H/W monitor supported.
Step2. Use thermometer to measure each Temp of H/W monitor supported.
Step3. Use Tachometer to measure each FAN speed of H/W monitor supported.

Test Result:

H/W monitor	Result			BIOS		Actual		Note
	Pass	Fail	N/A					
(+) Vcore Actual and monitor must be ±5%	☒	☐	☐	0.888	V	0.88	V	
(+) VMEM Actual and monitor must be ±5%	☒	☐	☐	1.200	V	1.18	V	
(+) 12V Actual and monitor must be ±5%	☒	☐	☐	12.229	V	12.26	V	
(+) 5V Actual and monitor must be ±5%	☒	☐	☐	5.032	V	5.02	V	
(+) 3.3V Actual and monitor must be ±5%	☒	☐	☐	3.355	V	3.36	V	
(+) 5VDual Actual and monitor must be ±5%	☒	☐	☐	5.040	V	5.02	V	
3VSB Actual and monitor must be ±5%	☒	☐	☐	3.024	V	2.89	V	

VBAT Actual and monitor must be ±5%	☒	☐	☐	3.072	V	3.34	V	
System Fan Speed Actual and monitor must be ±10%	☒	☐	☐	3244	rpm	3218	rpm	
CPU DTS Temp Actual and monitor must be ±15℃	☒	☐	☐	57	℃	47.2	℃	
CPU Temp Actual and monitor must be ±15℃	☒	☐	☐	54	℃	53.4	℃	
System Temp Actual and monitor must be ±5℃	☒	☐	☐	51	℃	46.8	℃	

5.3. CMOS Battery Test

Procedure:

Step1. DUT AC loss, use meter to measure voltage of CMOS battery

Step2. Use ammeter to measure current of CMOS battery.

Test Result:

(Calculate result=225mAh/measured current / 365days/24hours)

Check item	Measured Voltage		Measured Current		Calculate Result		Result			Note
							Pass	Fail	N/A	
Battery leakage 1. Voltage should be >3V. 2. Calculated result should be > 5 years.	3.02	V	3.1	uA	8.28	years	☒	☐	☐	

6. O.S Compatibility Test

6.1. Linux OS Compatibility Test

Procedure:

Step1. Install Linux x86 & x64 serial from USB DVD ROM.
Step2. Install all required driver to system.
Step3. Execute the following command to test LAN basic control.
Step 5.1 Force speed
(1) Execute command “ethtool –s ethx speed 1000 duplex full” ,link cable to confirm speed light is orange
(2) Execute command “ethtool –s ethx speed 100 duplex full” ,link cable to confirm speed light is green
(3) Execute command “ethtool –s ethx speed 10 duplex full” ,link cable to confirm speed light is blank
Step 5.2 ifconfig Ethernet
(1) Execute command “ifdown ethx” close ethernet interface
(2) Execute command “ifup ethx” start ethernet interface
Step 5.3 Jumbo Frame
Setting #ifconfig LAN mtu 9000
Check #ifconfig LAN (mtu will change from 1500 to 9000)
Step 6 Enter ping Google command (ping 8.8.8.8) or HOST PC, test networks function are whether normal
Step.7 Test USB R/W, check USB ports function.
Step.8 Execute “minicom” to test COM ports function.
Step 9 Execute command “init 0” or “shutdown –h” to shutdown system.
Step 10 Execute command “init 6” or “reboot” to reset system.
Step 11 Execute command “systemctl suspend –i” to suspend system.

Test result:

6.1.1 CentOS7 kernel:3.10.0-693.el7.x86_64

Test Item		Result			Note
		Pass	Fail	N/A	
System should not any error during install process.		☒	☐	☐	
System should not error during LAN driver installation.		☒	☐	☐	
Force speed	LAN connection speed should show 1000Mb when execute command “ ethtool –s ethx speed 1000 duplex full”	☒	☐	☐	
	LAN connection speed should show 100Mb when execute command “ ethtool –s ethx speed 100 duplex full”	☒	☐	☐	
	LAN connection speed should show 10Mb when execute command “ ethtool –s ethx speed 10 duplex full”	☒	☐	☐	
Ifconfig	Ethernet interface should be closed when execute command ““ifdown ethx”	☒	☐	☐	
	Ethernet interface should be started when execute command ““ifup ethx”	☒	☐	☐	
Jumbo	Jumbo function should work properly	☒	☐	☐	

Connected internet and ping the website should work properly. (Google: 8.8.8.8)	Onboard port1~6	☒	☐	☐	
	1G NIM module: port 1~8 <NIM-C13B>	☐	☐	☒	
USB2.0 /3.0 function should work properly		☒	☐	☐	
COM ports function should work properly.		☒	☐	☐	
Shutdown	System should be shutdown when execute command "init 0"	☒	☐	☐	
Reboot	System should be reset when execute command "init 6"	☒	☐	☐	
suspend	1. System should be suspend when execute command “systemctl suspend –l”. 2. Resume from suspend should work properly	☒	☐	☐	Kernel need to support graphics drvier.

6.1.2 Ubuntu16.04.2 kernel:4.4.0-62-generic x86_64

Test Item		Result			Note
		Pass	Fail	N/A	
System should not any error during install process.		☒	☐	☐	
System should not error during LAN driver installation.		☒	☐	☐	ixgbe-5.1.3.tar.gz
Force speed	LAN connection speed should show 1000Mb when execute command “ethtool –s ethx speed 1000 duplex full”	☒	☐	☐	
	LAN connection speed should show 100Mb when execute command “ethtool –s ethx speed 100 duplex full”	☒	☐	☐	
	LAN connection speed should show 10Mb when execute command “ethtool –s ethx speed 10 duplex full”	☒	☐	☐	
Ifconfig	Ethernet interface should be closed when execute command ““ifconfig ethx down”	☒	☐	☐	
	Ethernet interface should be started when execute command ““ifconfig ethx up”	☒	☐	☐	
Jumbo	Jumbo function should work properly	☒	☐	☐	
Connected internet and ping the website should work properly. (Google: 8.8.8.8)	Onboard port1~6	☒	☐	☐	
	NIM module: port 1~8 <NIM-C13B>	☐	☐	☒	
USB2.0 / 3.0 function should work properly		☒	☐	☐	
COM ports function should work properly.		☒	☐	☐	
Shutdown	System should be shutdown when execute command "init 0"	☒	☐	☐	
Reboot	System should be reset when execute command "init 6"	☒	☐	☐	

6.2. Windows OS Compatibility Test

Procedure:

Step1. Install Windows OS from USB DVD ROM.
Step2. Install all required driver to system.
Step3. Connect internet, check each LAN port function.
Step4. Insert USB flash, check each USB port function.
Step5. ACPI S5 and reset function test.
Step6. ACPI S3 and S4 function test if support graphics driver.

Test result:

6.2.1 Windows 8 Enterprise 64bit English version

Test Item			Result			Note
			Pass	Fail	N/A	
System should not any error during install process.			☒	☐	☐	UEFI mode
All required driver should be installed.			☒	☐	☐	
Connected internet and ping the website should work properly. (Google: 8.8.8.8)		Onboard port1~6	☒	☐	☐	
		NIM module: port 1~8 <NIM-C13B>	☐	☐	☒	
USB ports should work properly and speed should meet specification.			☒	☐	☐	
Monitor should display normal and should detect monitor EDID.		VGA	☒	☐	☐	
Transmission should work properly. Baud rate: 115200bps		Console	☒	☐	☐	
		COM1	☒	☐	☐	
Shutdown	System should be shutdown when click “shutdown” icon		☒	☐	☐	
Reboot	System should be reset when click "Reset" icon.		☒	☐	☐	

7. BIOS Function Test

Procedure:

Step1. Flash BIOS process will complete and run correctly
Step2. Press Keyboard " DEL" Key into BIOS.
Step3. To ensure the BIOS setting can be controlled correctly.
Step4. Please add or del test item from your test BIOS Version.

Test Result:

7.1. Flash BIOS

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
*Execute Go.bat for flash BIOS	☒	☐	☐	
*Press keyboard Del into BIOS setup	☒	☐	☐	

7.2. Advanced Test

Test Item			Result			Note
			Pass	Fail	N/A	
Trusted Computing	security device support		☒	☐	☐	
	Pending operation		☒	☐	☐	
	Device Select		☒	☐	☐	
CPU Configuration	CPU info.		☒	☐	☐	
	Intel Virtualization Technology		☒	☐	☐	
	Intel VT-d		☒	☐	☐	
	EIST		☒	☐	☐	
SDIO Configuration	MMC-M52516		☒	☐	☐	
USB Configuration	Legacy USB support		☒	☐	☐	
HW Monitor			☒	☐	☐	
Super IO Configuration	Serial Port 1		☒	☐	☐	
Serial port console redirection			☒	☐	☐	
LAN Bypass Status LED configuration	LED off		☒	☐	☐	
	RED LED on		☒	☐	☐	
	RED LED Blink		☒	☐	☐	
	RED LED Fast Blink		☒	☐	☐	
	Green LED on		☒	☐	☐	
	Green LED Blink		☒	☐	☐	
	Green LED Fast Blink		☒	☐	☐	
LAN Bypass configuration	LAN Bypass kit 1Power on		☒	☐	☐	
	LAN Bypass kit 1Power off		☒	☐	☐	
	LAN Bypass kit 2Power on		☒	☐	☐	
	LAN Bypass kit 2Power off		☒	☐	☐	
	WDT	Reset	☒	☐	☐	
		Bypass	☒	☐	☐	
Power Manager	S5 RTC Wake Setting		☒	☐	☐	
	Fixed Time		☒	☐	☐	
	Dynamic Time		☒	☐	☐	
Restore AC Power Loss	Power on		☒	☐	☐	
	Power Off		☒	☐	☐	
	Last State		☒	☐	☐	
Dynamic Digital IO	DIO1~8		☒	☐	☐	

Case open Warning		☒	☐	☐	

7.3.Chipset Test

Test Item		Result			Note
		Pass	Fail	N/A	
Processor Configuration	EIST	☒	☐	☐	
	Turbo	☒	☐	☐	
Server ME Configuration		☒	☐	☐	
North Bridge	Memory Information	☒	☐	☐	
South Bridge	SATA Configuration	☒	☐	☐	

7.4. Boot Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Quiet Boot	☒	☐	☐	
Launch PXE ROM	☒	☐	☐	Support LAN1 /2
Boot From Hard Disk	☒	☐	☐	
Boot From USB HDD	☒	☐	☐	
Boot From USB CD-ROM	☒	☐	☐	
Boot from LAN	☒	☐	☐	
Disable	☒	☐	☐	

7.5. Clear CMOS and Load Default Test

Test Item (Following item should work properly)		Result			Note
		Pass	Fail	N/A	
Clear CMOS by jumper (under G3 status)		☒	☐	☐	Clear date, time, setting, password
Clear CMOS by remove battery(under G3 status)		☒	☐	☐	Clear date, time, setting, password
Load default	Date, time, password should be kept	☒	☐	☐	
	BIOS setting should be restored to default.	☒	☐	☐	
	Boot option priorities should restore from disable to default.	☒	☐	☐	

7.6. AAEON Tag Check Utility

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Check AAEON BIOS OK	☒	☐	☐	Cks.nsh

7.7. Supervisor / User Password Test

Test Item (Following item should work properly)	Result			Note
	Pass	Fail	N/A	
Administrator Password	☒	☐	☐	
User Password	☒	☐	☐	

7.8. Negative Test

7.8.1 USB Keyboard Negative Test

Methods	Result			Note
	Pass	Fail	N/A	
1. Boot into BIOS setup manual. 2. Press NumLock or ScrLk and press arrow key. 3. confirm arrow key function are normally	☒	☐	☐	

7.8.2 UEFI Mode Negative Test

Methods	Result			Note
	Pass	Fail	N/A	
1. Install Windows with UEFI mode. 2. Clear CMOS. 3. Confirm BIOS\Boot device was not loss “Windows boot manager” and should boot into Windows properly.	☒	☐	☐	

8. Stability Test

8.1. Run in Test

Configuration:

CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz
RAM: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC
Storage: onboard eMMC 16GB
Graphics: PCI-E x1 VGA card
OS: Ubuntu16.04.2 kernel:4.4.0-62-generic x86_64

Procedure:

Step1. Install test AP : Burnintest Linux V3.3.
Step2. Select test item: CPU, RAM, COM, 2D, 3D, Disk, Network / loading select 100%.
.

Test Result:

Test Item			Result			Note
			Pass	Fail	N/A	
Burn In Test Linux V3.3 Duty: 100 Time: over 12 hours <System should not error or hang during testing.>	CPU		☒	☐	☐	
	RAM		☒	☐	☐	
	COM		☒	☐	☐	ttyS0
	2D		☒	☐	☐	
	3D		☐	☐	☒	
	Disk	SATA	☒	☐	☐	
		CF	☐	☐	☒	
		CFast (option)	☐	☐	☒	CFast colay with CF
	Sound		☐	☐	☒	
	Network <default>		☒	☐	☐	

Note: COM PORT Speed Set [cycle to 115200].

8.2. Cold Boot Test

8.2.1 ACPI G3 Cold Boot Test

Configuration:

CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz
RAM: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC
Storage: Transcend USB3.0 Flash 8GB
Graphics: Onboard Graphics
OS: UEFI

Procedure:

Step1. Set auto power on jumper for enable or set BIOS\restore AC loss for always on.
Step2. Set power on with 90 second and power off with 20 second.
Step3. Run the on/off test over 1000 cycles to test system boot up stability at room temp.
Step4. Set H/W auto power on.
Step5. Set power on with 60 second and power off with 5 second.
Step6. Run the on/off test over 20 cycles to test system AC power restored in short time

Test Result:

Test item	Result			Note
	Pass	Fail	N/A	
AC loss cold boot over 1000 cycles <loss rate: 0 /1000 times>	☒	☐	☐	☐Jumper set auto power button ☒BIOS select " power on"
G3(AC loss) cold boot over 20 cycles Setting: Power on- 60sec ; Power off- 5sec. <loss rate: 0 /20 times>	☐	☐	☒	☒Jumper set auto power button

8.2.2 Power Button Cold Boot Test

Configuration:

CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz
RAM: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC
Storage: Transcend USB3.0 Flash 8GB
Graphics: Onboard Graphics
OS: UEFI

Procedure:

Step1. Set auto power on jumper for disable.
Step2. Set each ON/OFF cycle with 180 second.
Step3. Run the power button on/off test over 500 cycles to test system boot up stability at room temp.

Test Result:

Test item	Result			Note
	Pass	Fail	N/A	
Power button boot over 500 cycles <loss rate: 0 /500 times>	☒	☐	☐	

8.3. Memory Test

Configuration:
OS: UEFI
Tool: Passmark Memtest version7.0 UEFI
Memory information: Transcend DDR4 2400 16GB (SPEC max support size).

Test item	Result			Note
	Pass	Fail	N/A	
Memory Test for 3 loops. < Memtest result should not error or hang..>	☒	☐	☐	

Remark: If system support UEFI mode only, the test tool is [Memtest86 Version 5.0 Experimental UEFI Beta]

9. 1G LAN Performance Test

9.1 DUT and Test Equipment

9.1.1. DUT Specification

Hardware:

- Model name: FWS-2360 (NMB-2360 A0.2)
- CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz
- RAM: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC
- HDD: Transcend TS32GSSD420I 2.5".32GB.SATA III SSD MLC.

Software:

- BIOS: FWS-2360 R0.6 (K236AM06)(12/22/2017)
- Operating System: CentOS7 kernel:3.10.0-693.el7.x86_64

9.1.2. Test Equipments Specification

SPIRENT Smartbits

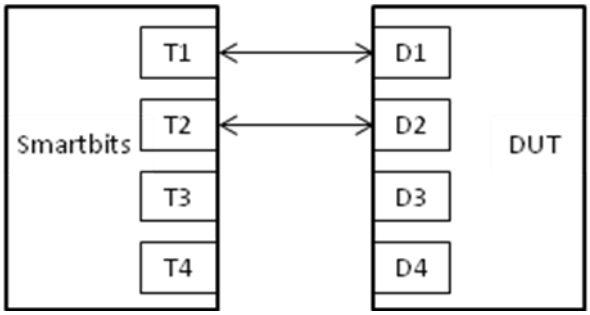
- Chassis: SPIRENT Smartbits 600B
- Chassis Version: 2.80.003 (Cur) 2.50.000
- Chassis Serial #: 06014047
- Library: 6.00-29
- API: 5.50.42.01
- File: 0550042
- Module: 2 * LAN-3324A SmartMetrics XD 4-Port 10/100/1000Base-T Gigabit Ethernet
- Test Software: SmartFlow5.50.42.1

9.2 RFC-2544 performance test (2 port)

9.2.1. Throughput test (2 port)

Test Description:

1. In DUT System, set routing function enabled.
   <# echo 1 > /proc/sys/net/ipv4/ip_forward>
2. Test Configuration as below Figure.

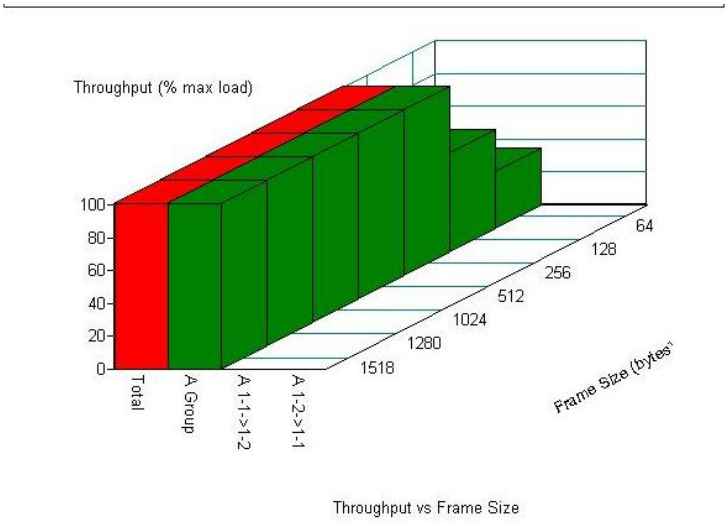


3. Smartflow\Test Group to add port1<->port2 with Bi-directional,
4. The tester set loading traffic from 1% to 100% and the traffic step is 50%.
5. Interaction Constants Duration Time Set to 60 Sec.
6. Test all LAN ports performance.

Test Result:

Test Group: <LAN1-LAN2 bi-directional>

Speed: 1000_Full	Frame Size(bytes)						
LAN ports	64	128	256	512	1024	1280	1518
1-2 (I211)	34.257812	59.78125	100	100	100	100	100
3-4	32.710937	55.91406	100	100	100	100	100
5-6	31.164062	69.0625	100	100	100	100	100



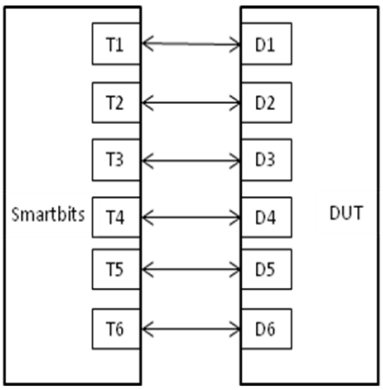
Throughput vs Frame Size

9.3 RFC-2544 performance test (6 ports)

9.3.1. Throughput test

Test Description:

1. In DUT System, set routing function enabled.
   <# echo 1 > /proc/sys/net/ipv4/ip_forward>
2. Test Configuration as below Figure.

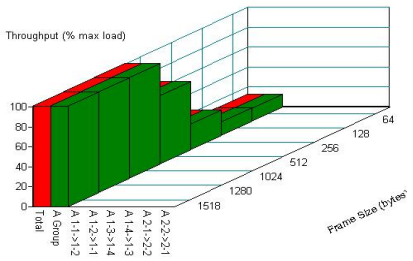


3. Smartflow\Test Group to add port1<->port2 with Bi-directional, port3<->port4 with Bi-directional, port5<->port6 with Bi-directional, port7<->port8 with Bi-directional.
4. The tester set loading traffic from 1% to 100% and the traffic step is 50%.
5. Interaction Constants Duration Time Set to 60 Sec.
6. Test all LAN ports performance.

Test Result:

Test Group: <LAN1-LAN2 bi-directional> ; <LAN3-LAN4 bi-directional>
<LAN5-LAN6 bi-directional>

Speed: 1000_Full	Frame Size(bytes)						
LAN ports	64	128	256	512	1024	1280	1518
1 ~6	12.60156	13.375	24.97656	68.28906	100	100	100



Throughput vs Frame Size

Name/Framesize	64	128	256	512	1024	1280	1518
Total	12.6015625	13.375	24.9765625	68.2890625	100	100	100
A Group	12.6015625	13.375	24.9765625	68.2890625	100	100	100
A 1-1->1-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-2->1-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-3->1-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 1-4->1-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 2-1->2-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A 2-2->2-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

9.4 LAN Endurance Test

Configuration:

CPU: Intel® Atom™ CPU C3558 @ 2.20 GHz

RAM: Transcend DDR4 2400 16GB SEC 546 K4A8G085WB BCRC

HDD: Transcend TS32GSSD420I 2.5”.32GB.SATA III SSD MLC.

Software:

BIOS: FWS-2360 R0.6 (K236AM06)(12/22/2017)

Operating System: CentOS7 kernel:3.10.0-693.el7.x86_64

Procedure:

Step1. Use SmartBits to test LAN endurance.

Step2. Test Group: <LAN1-LAN2 bi-directional> ; <LAN3-LAN4 bi-directional>
<LAN5-LAN6 bi-directional>;

Step3. To set Frame size=1518 / loading=100 / time=43200sec

Test Result:

Test item	Result			Note
	Pass	Fail	N/A	
Onboard LAN1~6 Endurance Test <Test result should not frame loss.>	☒	☐	☐	

Throughput Detail Report

Summary Report Stray Frames Report Port Errors Report Packet Rate Report

Name	Time	FrameSize	ILoad	TxFrames	RxFrames	LostFrames	Lost (%)	Throughput	Tx fps	Tx L2 bps	Rx fps	Rx L3 bps	Rx L2 bps
Total	01/04/18 04:29:58	1518	100.00000	24577372470	24577372470	0	0.00000	100.00000	487646	5999999819	487646	5851755350	5999999819
A Group	01/04/18 04:29:58	1518	100.00000	24577372470	24577372470	0	0.00000	100.00000	487646	5999999819	487646	5851755350	5999999819
A 1-1->1-2	01/04/18 04:29:58	1518	100.00000	4096228745	4096228745	0	0.00000	N/A	81274	999999970	81274	975292558	999999970
A 1-2->1-1	01/04/18 04:29:58	1518	100.00000	4096228745	4096228745	0	0.00000	N/A	81274	999999970	81274	975292558	999999970
A 1-3->1-4	01/04/18 04:29:58	1518	100.00000	4096228745	4096228745	0	0.00000	N/A	81274	999999970	81274	975292558	999999970
A 1-4->1-3	01/04/18 04:29:58	1518	100.00000	4096228745	4096228745	0	0.00000	N/A	81274	999999970	81274	975292558	999999970
A 2-1->2-2	01/04/18 04:29:58	1518	100.00000	4096228745	4096228745	0	0.00000	N/A	81274	999999970	81274	975292558	999999970
A 2-2->2-1	01/04/18 04:29:58	1518	100.00000	4096228745	4096228745	0	0.00000	N/A	81274	999999970	81274	975292558	999999970