

# 1. Qualification Test: Rev.021

## 1.1 CPU Test:

Procedure:

- (1) Install O.S.
- (2) Check CPU information & specification with CPU-Z.
- (3) Run Passmark Performance Test 8.0 Build1027 - 1 time.
- (4) Run AIDA64 Cache and Memory Benchmark Ver.4.30.2900 - 1 time.
- (5) Run 3DMark for Windows Ver.1.2.362 BenchMark - 3 times.
- (6) Check CPU temperature in the BIOS after running 3DMark.
- (7) Run S3/S4/S5 - 3 times.

No.	CPU	Type	CPU Temp.	Result
1	Intel / 1.7GHz	Core i7-4650U (Haswell-ULT/C0-SR16H) / 15W / FCBGA1168	45 °C	Pass
2	Intel / 1.9GHz	Core i5-4300U (Haswell-ULT/C0-SR1ED) / 15W / FCBGA1168	37 °C	Pass
3	Intel / 1.7GHz	Core i3-4010U (Haswell-ULT/C0-SR16Q) / 15W / FCBGA1168	38 °C	Pass
4	Intel / 1.6GHz	Celeron 2980U (Haswell-ULT/D0-SR1DM) / 15W / FCBGA1168	35 °C	Pass



## 1.2 DDR3 Module Test Procedures:

### Procedure:

- (1) Install O.S.
- (2) Check CPU information & specification with CPU-Z.
- (3) Run Passmark Performance Test 8.0 Build1027 - 1 time.
- (4) Run AIDA64 Cache and Memory Benchmark Ver.4.30.2900 - 1 time.
- (5) Run 3DMark for Windows Ver.1.2.362 BenchMark - 3 times.
- (6) Run S3/S4/S5 - 3 times.



No.	DDR3 Module	Test Environment	Result
1	NANYA (NT5CC128M16FP-DI) 2Gb DDR3L DRAM *8 (128Mx16b (16Mbitx16 I/Ox8 Banks, Clock:800MHz, Data Rate:DDR3L-1600 Bb/s,96 Ball BGA))	M/B: HU968-B24-4300U Rev.2 (021) (BSE150800023) & COM331-B Rev.A (0A2) (BMC150100015) EC FW Rev.: 1.3 (2014-02-26) M/B BIOS: AMI-Aptio 05/05/2014 M/B Driver: Demo Apr/25/2014 CPU: Intel / Core i5-4300U (Haswell-ULT/C0-SR1ED) / 1.9GHz DIMM Slot: DIMM-1/2 SSD: Silicon Power / SP120GBSS3V60S25 SATA3 120GB/2.5" Display: On Board DVD-ROM: Pioneer / DVD-230DW 18X SATA Power: Jagier / KY-580ATX 480W O.S.: Windows 7 Ultimate 32Bit (English) & SP1 Test Summary: Environment Temp.:27°C CPU Temp.:35°C CPU Temp. after 3DMark:37°C 1.Passmark Performance Test 8.0 Build1027 CPU Mark:2883 Memory Mark:1196 2.AIDA64 Cache and Memory Benchmark Ver.4.30.2900 READ:21750MB/s WRITE:23792MB/s COPY:19926MB/s 3.3DMark for Windows Ver.1.2.362 Fire Strike Extreme:163 Fire Strike:610 Cloud Gate:4973 Ice Storm Unlimited:47690 Ice Storm Extreme:29637 Ice Storm:48837	Pass

No.	DDR3 Module	Test Environment	Result
2	NANYA (NT5CC256M16CP-DI) 4Gb DDR3L DRAM *8 (256Mx16b (32Mbitx16 I/Ox8 Banks, Clock:800MHz, Data Rate:DDR3L-1600 Bb/s,96 Ball BGA))	M/B: HU968-B44-4010U Rev.2 (021) (BSE150800017) & COM331-B Rev.A (0A2) (BMC150100050) EC FW Rev.: 1.3 (2014-02-26) M/B BIOS: AMI-Aptio 05/05/2014 M/B Driver: Demo Apr/25/2014 CPU: Intel / Core i3-4010U (Haswell-ULT/C0-SR16Q) / 1.7GHz DIMM Slot: On Board (DDR3L-1600/4GB) SSD: Silicon Power / SP120GBSS3V60S25 SATA3 120GB/2.5" Display: On Board DVD-ROM: Pioneer / DVD-230DW 18X SATA Power: Jagier / KY-580ATX 480W O.S.: Windows 7 Ultimate 64Bit (English) & SP1 Test Summary: Environment Temp.:27°C CPU Temp.:36°C CPU Temp. after 3DMark:38°C 1.Passmark Performance Test 8.0 Build1027 CPU Mark:2699 Memory Mark:1398 2.AIDA64 Cache and Memory Benchmark Ver.4.30.2900 READ:17825MB/s WRITE:19825MB/s COPY:18447MB/s 3.3DMark for Windows Ver.1.2.362 Fire Strike Extreme:266 Fire Strike:575 Cloud Gate:4005 Ice Storm Unlimited:39156 Ice Storm Extreme:27499 Ice Storm:41250	Pass

### 1.3 NANDrive Drive (SATA):

No.	Device	Test Keypoint	Test Environment	Result
1	Greenliant / GLS85LS1004A-M-C-FZJE 4GB SATA NANDrive (Industrial (0°C to 70°C, 3.3V,MLC NAND))	1. Check device detect. 2. Check NANDrive information & specification under Windows. 3. Get performance. 4. Run S3/S4/S5 - 3 times.	M/B: HU968-B24-2980U Rev.2 (021) (BSE150800027) & COM331-B Rev.A (0A2) (BMC150100034) EC FW Rev.: 1.3 (2014-02-26) M/B BIOS: AMI-Aptio 05/05/2014 M/B Driver: Demo Apr/25/2014 CPU: Intel / Celeron 2980U (Haswell-ULT/D0-SR1DM) / 1.6GHz DDR3: On Board (DDR3L-1600/2GB) SSD: SanDisk / SDSSDHP-128G SATA3 128GB/2.5" (SATA port 1) Display: On Board (using D-Sub) DVD-ROM: Pioneer / DVD-231DW 18X (SATA port 0) USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: Delta / GPS-500BB 500W O.S.: Windows 7 Ultimate 64Bit (English) & SP1 Test Summary: (SATA port 2) (AHCI mode)  1.AIDA64 Extreme Edition Ver.4.30.2900 Linear Read (Begin):39.4MB/s Linear Read (Middle):116.2 MB/s Linear Read (End):116.2 MB/s  2.CrystalDiskMark Ver.3.0.3  Read(MB/s) Write(MB/s) SEQ - 37.53 9.345 512k - 37.47 1.609 4K - 17.07 1.358 4k QD32 - 6.992 1.294	Pass