

1. Qualification Test: Rev.012

1.1 CPU Function Test:

Test Purpose	Test CPU functions work normally under Windows Operating System
Test Procedure	<ol style="list-style-type: none"> 1. Install Windows Operating System 2. Install M/B Device Driver 3. CPU-Z check CPU info 4. Run Passmark Performance Test 8.0 Build1051 1 time 5. Run AIDA64 Cache and Memory Benchmark Ver.5.50.3600 1 time 6. Run 3DMark for Windows Ver.1.5.915 BenchMark 3 times 7. S3/Hibernate Test 3 times
Test Criteria	It should be no problem for all tests

No.	CPU	Type	Result
1	Intel / 1.7GHz	Core i7-4650U (Haswell-ULT/C0-SR16H) / 15W / FCBGA1168	Pass
2	Intel / 1.9GHz	Core i5-4300U (Haswell-ULT/D0-SR1ED) / 15W / FCBGA1168	Pass

1.2 Memory Function Test:

Test Purpose	Test Memory functions work normally under Windows Operating System
Test Procedure	<ol style="list-style-type: none"> 1. Install Windows Operating System 2. Install M/B Device Driver 3. Run Passmark Performance Test 8.0 Build1051 1 time 4. Run AIDA64 Cache and Memory Benchmark Ver.5.50.3600 1 time 5. Run 3DMark for Windows Ver.1.5.915 BenchMark 3 times 6. S3/Hibernate Test 3 times
Test Criteria	It should be no problem for the test

No.	DDR3 Module	Test Environment	Result
1	Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1	DUT#1: ES520-HU Rev.012 (1.7-3) M/B: HU551-N-4650U Rev.A (012) (BSF430300008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i7-4650U (Haswell-ULT/CO-SR16H) / 1.7GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54,10CE0096-02,EVERFLOW,RoHS DIMM Slot: DIMM-1 (Single channel) SSD: Intel / SSDSC2BW120A401 SATA3 120GB/2.5" (port SATA3_1) Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: Environment Temp:29°C CPU Temp.:44°C CPU Temp. after 3DMark:53°C 1.Passmark Performance Test 8.0 Build1051 CPU Mark:4313 Memory Mark:1686 2.AIDA64 Cache and Memory Benchmark Ver.5.50.3600 READ:12285MB/s WRITE:12502MB/s COPY:12023MB/s 3.3DMark for Windows Ver.1.5.915 Cloud Gate:4552 Ice Storm:30025 Skydiver:2990 Strike Test:630 Overnight looping under 11 hours	Pass

No.	DDR3 Module	Test Environment	Result
		<p>DUT#2: ES520-HU Rev.011 (1.5-3)</p> <p>M/B: HU551-N-4300U Rev.A (012) (BSF430400008)</p> <p>M/B BIOS: AMI-Aptio 08/27/2015</p> <p>System Driver: Demo Nov/16/2015</p> <p>CPU: Intel / Core i5-4300U (Haswell-ULT/D0-SR1ED) / 1.9GHz</p> <p>CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54,10CE0096-02,EVERFLOW,RoHS</p> <p>DIMM Slot: DIMM-1 (Single channel)</p> <p>SSD: Intel / SSDSC2BW120A401 SATA3 120GB/2.5" (port SATA3_1)</p> <p>Display: On Board</p> <p>DVD-RW: Pioneer / DVR-XT11T USB2.0</p> <p>USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0</p> <p>Power: EDAC / EA10521C-120</p> <p>O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English)</p> <p>Test Summary: Environment Temp:28°C</p> <p>CPU Temp.:32°C</p> <p>CPU Temp. after 3DMark:40°C</p> <p>1.Passmark Performance Test 8.0 Build1051</p> <p>CPU Mark:3761</p> <p>Memory Mark:1630</p> <p>2.AIDA64 Cache and Memory Benchmark Ver.5.50.3600</p> <p>READ:12285MB/s</p> <p>WRITE:12472MB/s</p> <p>COPY:12027MB/s</p> <p>3.3DMark for Windows Ver.1.5.915</p> <p>Cloud Gate:4352</p> <p>Ice Storm:28253</p> <p>Skydiver:2492</p> <p>Strike Test:547</p> <p>Overnight looping under 11 hours</p>	Pass

1.3 HDD/SSD (SATA) Function Test:

Test Purpose	Test whether Hard disk devices functions work normally under Windows Operating System
Test Procedure	<ol style="list-style-type: none"> 1. Install Windows Operating System 2. Install M/B Device Driver 3. Check the performance by using application AIDA64 Extreme Edition or CrystalDiskMark 4. Read/Write 4GB File Test 5. S3/Hibernate Test 3 times
Test Criteria	It should be no problem for hard disk device

1.3.1 SATA:

No.	Function		Result
1	Disk/O.S install		Pass
2	SATA Port 1		Pass
No.	Function	Test Environment	Result
3	AHCI Function	DUT#1: ES520-HU Rev.012 (1.7-3) M/B: HU551-N-4650U Rev.A (012) (BSF430300008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 Intel 8 Series Chipset Family SATA AHCI Controller (ver. 13.0.0.1098 WHQL) CPU: Intel / Core i7-4650U (Haswell-ULT/C0-SR16H) / 1.7GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 SSD: Intel / SSDSC2BW120A401 SATA3 120GB/2.5" (port SATA3_1) Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English)	Pass

		<p>DUT#2: ES520-HU Rev.011 (1.5-3)</p> <p>M/B: HU551-N-4300U Rev.A (012) (BSF430400008)</p> <p>M/B BIOS: AMI-Aptio 08/27/2015</p> <p>System Driver: Demo Nov/16/2015</p> <p>Intel 8 Series Chipset Family SATA AHCI Controller (ver.13.0.0.1098 WHQL)</p> <p>CPU: Intel / Core i5-4300U (Haswell-ULT/D0-SR1ED) / 1.9GHz</p> <p>CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS</p> <p>DR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1</p> <p>SSD: Crucial / CT120M500SSD1 SATA3 120GB/2.5" (port SATA3_1)</p> <p>Display: On Board</p> <p>DVD-RW: Pioneer / DVR-XT11T USB2.0</p> <p>USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0</p> <p>Power: EDAC / EA10521C-120</p> <p>O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English)</p>	<p>Pass</p>
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1.3.2 SATA Performance:

No.	Function	Test Environment	Result															
1	SATA Port 1	DUT#1: ES520-HU Rev.012 (1.7-3) M/B: HU551-N-4650U Rev.A (012) (BSF430300008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i7-4650U (Haswell-ULT/C0-SR16H) / 1.7GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 SSD: Intel / SSDSC2BW120A401 SATA3 120GB/2.5" (port SATA3_1) Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: (port SATA3_1) 1.AIDA64 Extreme Edition Ver.5.50.3600 Linear Read (Begin): 512.3MB/s Linear Read (Middle): 525.3MB/s Linear Read (End): 525.3MB/s 2.CrystalDiskMark Ver.5.0.2 <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th>Read(MB/s)</th> <th>Write(MB/s)</th> </tr> </thead> <tbody> <tr> <td>SEQ Q32T1</td> <td>414.1</td> <td>122.2</td> </tr> <tr> <td>4K Q32T1</td> <td>0.964</td> <td>114.9</td> </tr> <tr> <td>SEQ</td> <td>457.2</td> <td>106.3</td> </tr> <tr> <td>4k</td> <td>23.43</td> <td>100.8</td> </tr> </tbody> </table>		Read(MB/s)	Write(MB/s)	SEQ Q32T1	414.1	122.2	4K Q32T1	0.964	114.9	SEQ	457.2	106.3	4k	23.43	100.8	Pass
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SEQ Q32T1	414.1	122.2																
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	<p>DUT#2: ES520-HU Rev.011 (1.5-3)</p> <p>M/B: HU551-N-4300U Rev.A (012) (BSF430400008)</p> <p>M/B BIOS: AMI-Aptio 08/27/2015</p> <p>System Driver: Demo Nov/16/2015</p> <p>CPU: Intel / Core i5-4300U (Haswell-ULT/D0-SR1ED) / 1.9GHz</p> <p>CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS</p> <p>DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1</p> <p>SSD: Crucial / CT120M500SSD1 SATA3 120GB/2.5" (port SATA3_1)</p> <p>Display: On Board</p> <p>DVD-RW: Pioneer / DVR-XT11T USB2.0</p> <p>USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0</p> <p>Power: EDAC / EA10521C-120</p> <p>O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English)</p> <p>Test Summary: (port SATA3_1)</p> <p>1.AIDA64 Extreme Edition Ver.5.50.3600</p> <p style="padding-left: 40px;">Linear Read (Begin): 512.3MB/s</p> <p style="padding-left: 40px;">Linear Read (Middle): 525.3MB/s</p> <p style="padding-left: 40px;">Linear Read (End): 525.3MB/s</p> <p>2.CrystalDiskMark Ver.5.0.2</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Read(MB/s)</th> <th style="text-align: center;">Write(MB/s)</th> </tr> </thead> <tbody> <tr> <td>SEQ Q32T1 -</td> <td style="text-align: center;">404.4</td> <td style="text-align: center;">141.2</td> </tr> <tr> <td>4K Q32T1 -</td> <td style="text-align: center;">1.123</td> <td style="text-align: center;">142.8</td> </tr> <tr> <td>SEQ -</td> <td style="text-align: center;">493.4</td> <td style="text-align: center;">142.2</td> </tr> <tr> <td>4k -</td> <td style="text-align: center;">28.91</td> <td style="text-align: center;">119.7</td> </tr> </tbody> </table>		Read(MB/s)	Write(MB/s)	SEQ Q32T1 -	404.4	141.2	4K Q32T1 -	1.123	142.8	SEQ -	493.4	142.2	4k -	28.91	119.7	<p>Pass</p>
	Read(MB/s)	Write(MB/s)															
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4K Q32T1 -	1.123	142.8															
SEQ -	493.4	142.2															
4k -	28.91	119.7															



1.3.3 HDD (SATA):

No.	Device	Test Keypoint	Test Environment	Result
1	WD / WD10JPVX-22JC3T0 SATA3 6Gb/S NCQ (1TB,5400RPM,8MB Cache,2.5", Internal transfer rate(max): 144 MB/s)	<ol style="list-style-type: none"> 1. Check device detect. 2. Install O.S. 3. Check HDD information & specification under Windows Device Manager. 4. Check performance and the transfer rate should be 300MB/s ~ 600MB/s. 5. Run S3/S4/S5 - 3 times. 	DUT#2: ES520-HU Rev.011 (1.5-3) M/B: HU551-N-4300U Rev.A (012) (BSF430400008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i5-4300U (Haswell-ULT/D0-SR1ED) / 1.9GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: (port SATA3_1) AIDA64 Extreme Edition Ver.5.50.3600 Buffered Read Result: 407.2MB/s	Pass

<p>2</p>	<p>Seagate / ST250LT012 SATA2/300 3Gb/S,NCO (250GB,Momentus Thin Series, 2.5",16MB Cache,5,400RPM)</p>	<ol style="list-style-type: none"> 1. Check device detect. 2. Install O.S. 3. Check HDD information & specification under Windows Device Manager. 4. Check performance and the transfer rate should be 150MB/s ~ 300MB/s. 5. Run S3/S4/S5 - 3 times. 	<p>DUT#1: ES520-HU Rev.012 (1.7-3) M/B: HU551-N-4650U Rev.A (012) (BSF430300008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i7-4650U (Haswell-ULT/C0-SR16H) / 1.7GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: (port SATA3_1) AIDA64 Extreme Edition Ver.5.50.3600 Buffered Read Result: 228.9MB/s</p>	<p>Pass</p>
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1.3.4 Solid State Drive (SATA):

No.	Device	Test Keypoint	Test Environment	Result
1	Intel / SSDSC2CW120A3K5 (Intel SSD 520 Series) (2.5",120GB,SATA3- 6Gb/s, 25nm,MLC NAND Type, Sequential Read/Write (Max): 55/500 MB/s, Firmware:400i)	1. Check device detect. 2. Install O.S. 3. Check SSD information & specification under Windows. 4. Check performance and the transfer rate should be 300MB/s ~ 600MB/s. 5. Run S3/S4/S5 - 3 times.	DUT#2: ES520-HU Rev.011 (1.5-3) M/B: HU551-N-4300U Rev.A (012) (BSF430400008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i5-4300U (Haswell-ULT/D0-SR1ED) / 1.9GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: (port SATA3_1) 1.AIDA64 Extreme Edition Ver.5.50.3600 Linear Read (Begin): 525.3MB/s Linear Read (Middle): 525.3MB/s Linear Read (End): 526.1MB/s 2.CrystalDiskMark Ver.5.0.2 Read(MB/s) Write(MB/s) SEQ Q32T1 - 394.1 158.0 4K Q32T1 - 1.020 39.10 SEQ - 483.1 177.8 4k - 27.05 128.3	Pass

2	<p>SanDisk / SDSSDHP-128G (Ultra Plus Series SATA III) (128GB (Multi-Level Cell(MLC) SATA 3,2.5 Inch, Sequential Reads:530MB/s, Sequential Writes:290MB/s, Random 4k Read:80K IOPS, Random 4k Write:33K IOPS)</p>	<ol style="list-style-type: none"> 1. Check device detect. 2. Install O.S. 3. Check SSD information & specification under Windows. 4. Check performance and the transfer rate should be 300MB/s ~ 600MB/s. 5. Run S3/S4/S5 - 3 times. 	<p>DUT#1: ES520-HU Rev.012 (1.7-3) M/B: HU551-N-4650U Rev.A (012) (BSF430300008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i7-4650U (Haswell-ULT/C0-SR16H) / 1.7GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: (port SATA3_1) 1.AIDA64 Extreme Edition Ver.5.50.3600 Linear Read (Begin): 525.3MB/s Linear Read (Middle): 525.3MB/s Linear Read (End): 525.3MB/s 2.CrystalDiskMark Ver.5.0.2 <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Read(MB/s)</th> <th style="text-align: center;">Write(MB/s)</th> </tr> </thead> <tbody> <tr> <td>SEQ Q32T1 -</td> <td style="text-align: center;">387.5</td> <td style="text-align: center;">223.2</td> </tr> <tr> <td>4K Q32T1 -</td> <td style="text-align: center;">1.031</td> <td style="text-align: center;">13.56</td> </tr> <tr> <td>SEQ -</td> <td style="text-align: center;">530.0</td> <td style="text-align: center;">295.9</td> </tr> <tr> <td>4k -</td> <td style="text-align: center;">35.69</td> <td style="text-align: center;">118.1</td> </tr> </tbody> </table> </p>		Read(MB/s)	Write(MB/s)	SEQ Q32T1 -	387.5	223.2	4K Q32T1 -	1.031	13.56	SEQ -	530.0	295.9	4k -	35.69	118.1	Pass
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SEQ Q32T1 -	387.5	223.2																	
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4k -	35.69	118.1																	

No.	Device	Test Keypoint	Test Environment	Result
3	Crucial / CT120M500SSD1 20nm (M500 Series SATA III) (120GB (Micron MLC NND), SATA 3,2.5 Inch, Sequential Reads:500MB/s, Sequential Writes:130MB/s, Random 4k Read:62000 IOPS, Random 4k Write:35000 IOPS)	1. Check device detect. 2. Install O.S. 3. Check SSD information & specification under Windows. 4. Check performance and the transfer rate should be 300MB/s ~ 600MB/s. 5. Run S3/S4/S5 - 3 times.	DUT#2: ES520-HU Rev.011 (1.5-3) M/B: HU551-N-4300U Rev.A (012) (BSF430400008) M/B BIOS: AMI-Aptio 08/27/2015 System Driver: Demo Nov/16/2015 CPU: Intel / Core i5-4300U (Haswell-ULT/D0-SR1ED) / 1.9GHz CPU Cooler: CPU COOLER, AL6063-T5,68x50x16.5mm, 2 BALL,12V, 5500rpm,3PIN,2.54, 10CE0096-02,EVERFLOW,RoHS DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b,CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1 Display: On Board DVD-RW: Pioneer / DVR-XT11T USB2.0 USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0 Power: EDAC / EA10521C-120 O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English) Test Summary: (port SATA3_1) 1.AIDA64 Extreme Edition Ver.5.50.3600 Linear Read (Begin): 512.3MB/s Linear Read (Middle): 525.3MB/s Linear Read (End): 525.3MB/s 2.CrystalDiskMark Ver.5.0.2 Read(MB/s) Write(MB/s) SEQ Q32T1 - 404.4 141.2 4K Q32T1 - 1.123 142.8 SEQ - 493.4 142.2 4k - 28.91 119.7	Pass

4	<p>Intel / SSDSC2BW120A401 (Intel SSD 530 Series) (120GB, 2.5in SATA 6Gb/s, 20nm, MLC NAND Type (Multi-Level Cell), Sequential Read/Write (Max): 540/480 MB/s)</p>	<ol style="list-style-type: none"> 1. Check device detect. 2. Install O.S. 3. Check SSD information & specification under Windows. 4. Check performance and the transfer rate should be 300MB/s ~ 600MB/s. 5. Run S3/S4/S5 - 3 times. 	<p>DUT#1: ES520-HU Rev.012 (1.7-3)</p> <p>M/B: HU551-N-4650U Rev.A (012) (BSF430300008)</p> <p>M/B BIOS: AMI-Aptio 08/27/2015</p> <p>System Driver: Demo Nov/16/2015</p> <p>CPU: Intel / Core i7-4650U (Haswell-ULT/C0-SR16H) / 1.7GHz</p> <p>CPU Cooler: CPU COOLER, AL6063-T5, 68x50x16.5mm, 2 BALL, 12V, 5500rpm, 3PIN, 2.54, 10CE0096-02, EVERFLOW, RoHS</p> <p>DDR3: Apacer (75.C93DL.G000C 1.35V/1.5V) [512Mx8b-x16/1024Mx64b, CL=11] / Micron (2ED27-D9PCP) / PC3L-12800 (DDR3L-1600) / 8GB *1</p> <p>Display: On Board</p> <p>DVD-RW: Pioneer / DVR-XT11T USB2.0</p> <p>USB Pen Drive: Transcend / TS16GJF370 16GB/USB2.0</p> <p>Power: EDAC / EA10521C-120</p> <p>O.S.: Windows 8.1 Embedded Pro 64Bit (with update 1) (English)</p> <p>Test Summary: (port SATA3_1)</p> <p>1.AIDA64 Extreme Edition Ver.5.50.3600</p> <p style="padding-left: 40px;">Linear Read (Begin): 512.3MB/s</p> <p style="padding-left: 40px;">Linear Read (Middle): 525.3MB/s</p> <p style="padding-left: 40px;">Linear Read (End): 525.3MB/s</p> <p>2.CrystalDiskMark Ver.5.0.2</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Read(MB/s)</th> <th>Write(MB/s)</th> </tr> </thead> <tbody> <tr> <td>SEQ Q32T1</td> <td>- 414.1</td> <td>122.2</td> </tr> <tr> <td>4K Q32T1</td> <td>- 0.964</td> <td>114.9</td> </tr> <tr> <td>SEQ</td> <td>- 457.2</td> <td>106.3</td> </tr> <tr> <td>4k</td> <td>- 23.43</td> <td>100.8</td> </tr> </tbody> </table>		Read(MB/s)	Write(MB/s)	SEQ Q32T1	- 414.1	122.2	4K Q32T1	- 0.964	114.9	SEQ	- 457.2	106.3	4k	- 23.43	100.8	Pass
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