

WELLAND

TEST REPORT

MODEL NO. : ME747AN-S

eSATA / USB2.0 / Mega NAS
to SATA

ISSUED DATE : Sep 4, 2009

ISSUED BY : WELLAND INDUSTRIAL CO., LTD.

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1. Overall Test Summary



2. Test Environment

2.1 Device

- Chipset & Version : ST8132 、SPI225
- Search Tool Version : NetShare-1.0.1.4
- FW Version : 20090818-WELLAND-STR8132-8MB-D01UI-0110

2.2 Host System

- Win Vista SP1 : Microsoft Windows Vista SP1
- Win XP SP3 : Microsoft Windows XP Professional SP3
- Win 2000 SP4 : Microsoft 5.0.2195 (Microsoft Windows 2000 Professional SP4)
- Linux : Fedora 10 (Kernal: Linux 2.6.27.21-170.256.fc10.i686 GOME 2.24.3)
- Mac OS : Mac OS X 10.4.11

2.3 Test Tool

- Burn in Test Tool : Copytest 、Winthrax 3.4.5.0
- HDD Bench Tool : HDBENCH Ver 3.40 beta6

2.4 Peripheral Device

- Router :
 - D-Link DIR-615(10/100)
 - Buffalo WHR-G300N (10/100)
- Switch :
 - D-Link DES-1060D(10/100)
 - Buffalo LSW2-TX-16NSRRTW(10/100)
- Hard disk :

| Detail HD | Brand | Model Name | Size | Interface | Capacity | Speed |
|--------------|---------|-----------------|----------|--------------|----------|----------|
| HD1 | Fujitsu | MHT2040BH | 3.5 inch | SATA 1.5Gb/s | 40GB | 7200 rpm |
| HD2 | Fujitsu | MHT2080BH | 3.5 inch | SATA 1.5Gb/s | 80GB | 7200 rpm |
| HD3 | Hitachi | HDS722516VLSA80 | 3.5 inch | SATA 1.5Gb/s | 160GB | 7200 rpm |
| HD4 | Hitachi | HDS722525VLSA80 | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |

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| | | | | | | |
|-------------|----------------|------------------------|-----------------|------------------------|---------------|-----------------|
| HD5 | Hitachi | HDS724040KLSA80 | 3.5 inch | SATA 1.5Gb/s | 400GB | 7200 rpm |
| HD6 | Hitachi | HDS728040PLSA20 | 3.5 inch | SATA II (3Gb/s) | 41.1GB | 7200 rpm |
| HD7 | Hitachi | HDS728080PLA380 | 3.5 inch | SATA II (3Gb/s) | 80GB | 7200 rpm |
| HD8 | Hitachi | HDS728080PLSA80 | 3.5 inch | SATA II (3Gb/s) | 82.3GB | 7200 rpm |
| HD9 | Hitachi | HDT722516DLA380 | 3.5 inch | SATA II (3Gb/s) | 160GB | 7200 rpm |
| HD10 | Hitachi | HDT722525DLA380 | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD11 | Hitachi | HDS725050KLA360 | 3.5 inch | SATA II (3Gb/s) | 500GB | 7200 rpm |
| HD12 | Maxtor | 6Y160Mo-0 | 3.5 inch | SATA 1.5Gb/s | 160GB | 7200 rpm |
| HD13 | Maxtor | 6L160M0 | 3.5 inch | SATA II (3Gb/s) | 160GB | 7200 rpm |
| HD14 | Maxtor | 6Y200Mo-1 | 3.5 inch | SATA 1.5Gb/s | 200GB | 7200 rpm |
| HD15 | Maxtor | 6B200M0-1 | 3.5 inch | SATA 1.5Gb/s | 200GB | 7200 rpm |
| HD16 | Maxtor | 7Y250Mo-1 | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |
| HD17 | Maxtor | 6B250S0-1 | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |
| HD18 | Maxtor | 7L250S0 | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |
| HD19 | Maxtor | 6L250S0 | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |
| HD20 | Maxtor | 7B300S0-0 | 3.5 inch | SATA 1.5Gb/s | 300GB | 7200 rpm |
| HD21 | Maxtor | 6G160E0 | 3.5 inch | SATA II (3Gb/s) | 160GB | 7200 rpm |
| HD22 | Maxtor | 6L200M0 | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
| HD23 | Maxtor | 6V200E0 | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
| HD24 | Maxtor | 6V250F0 | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD25 | Maxtor | 6V300F0 | 3.5 inch | SATA II (3Gb/s) | 300GB | 7200 rpm |
| HD26 | Maxtor | 6H400F0-3 | 3.5 inch | SATA II (3Gb/s) | 400GB | 7200 rpm |
| HD27 | Maxtor | 6H500F0-3 | 3.5 inch | SATA II (3Gb/s) | 500GB | 7200 rpm |
| HD28 | Samsung | SP1213C | 3.5 inch | SATA 1.5Gb/s | 120GB | 7200 rpm |
| HD29 | Samsung | SP1614C | 3.5 inch | SATA 1.5Gb/s | 160GB | 7200 rpm |
| HD30 | Samsung | SP2004C | 3.5 inch | SATA 1.5Gb/s | 200GB | 7200 rpm |
| HD31 | Samsung | SP1614C | 3.5 inch | SATA II (3Gb/s) | 160GB | 7200 rpm |
| HD35 | Samsung | SP2004C | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
| HD36 | Seagate | ST3120827AS | 3.5 inch | SATA 1.5Gb/s | 120GB | 7200 rpm |
| HD34 | Seagate | ST3160023AS | 3.5 inch | SATA 1.5Gb/s | 160GB | 7200 rpm |
| HD35 | Seagate | ST3200822AS | 3.5 inch | SATA 1.5Gb/s | 200GB | 7200 rpm |
| HD36 | Seagate | ST3250823AS | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |
| HD37 | Seagate | ST3300831AS | 3.5 inch | SATA 1.5Gb/s | 300GB | 7200 rpm |
| HD38 | Seagate | ST3400832AS | 3.5 inch | SATA 1.5Gb/s | 400GB | 7200 rpm |
| HD39 | Seagate | ST3120813AS | 3.5 inch | SATA II (3Gb/s) | 120GB | 7200 rpm |
| HD40 | Seagate | ST31600812AS | 3.5 inch | SATA II (3Gb/s) | 160GB | 7200 rpm |

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|-------------|----------------|---------------------|-----------------|------------------------|--------------|-----------------|
| HD41 | Seagate | ST3200827AS | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
| HD42 | Seagate | ST3250620AS | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD43 | Seagate | ST3300622AS | 3.5 inch | SATA II (3Gb/s) | 300GB | 7200 rpm |
| HD44 | Seagate | ST3320620AS | 3.5 inch | SATA II (3Gb/s) | 320GB | 7200 rpm |
| HD45 | Seagate | ST3400633AS | 3.5 inch | SATA II (3Gb/s) | 400GB | 7200 rpm |
| HD46 | Seagate | ST3500641AS | 3.5 inch | SATA II (3Gb/s) | 500GB | 7200 rpm |
| HD47 | Seagate | ST3750640AS | 3.5 inch | SATA II (3Gb/s) | 750GB | 7200 rpm |
| HD48 | WD | WD360GD | 3.5 inch | SATA 1.5Gb/s | 36.7GB | 7200 rpm |
| HD49 | WD | WD740 | 3.5 inch | SATA 1.5Gb/s | 74.8GB | 10000 rpm |
| HD50 | WD | WD800JD-00LSA0 | 3.5 inch | SATA 1.5Gb/s | 80GB | 7200 rpm |
| HD51 | WD | WD1200JD | 3.5 inch | SATA 1.5Gb/s | 120GB | 7200 rpm |
| HD52 | WD | WD1600JD | 3.5 inch | SATA 1.5Gb/s | 160GB | 7200 rpm |
| HD53 | WD | WD1600YD | 3.5 inch | SATA 1.5Gb/s | 160GB | 7200 rpm |
| HD54 | WD | WD2000JD | 3.5 inch | SATA 1.5Gb/s | 200GB | 7200 rpm |
| HD55 | WD | WD2500JD | 3.5 inch | SATA 1.5Gb/s | 250GB | 7200 rpm |
| HD56 | WD | WD3000JD | 3.5 inch | SATA 1.5Gb/s | 300GB | 7200 rpm |
| HD57 | WD | WD4000YR | 3.5 inch | SATA 1.5Gb/s | 400GB | 7200 rpm |
| HD58 | WD | WD360ADFD | 3.5 inch | SATA II (3Gb/s) | 36GB | 7200 rpm |
| HD59 | WD | WD740ADFD | 3.5 inch | SATA II (3Gb/s) | 74GB | 7200 rpm |
| HD60 | WD | WD800JD | 3.5 inch | SATA II (3Gb/s) | 80GB | 7200 rpm |
| HD61 | WD | WD1200JS | 3.5 inch | SATA II (3Gb/s) | 120GB | 7200 rpm |
| HD62 | WD | WD1500ADFD | 3.5 inch | SATA II (3Gb/s) | 150GB | 7200 rpm |
| HD63 | WD | WD1500AHFD | 3.5 inch | SATA II (3Gb/s) | 150GB | 7200 rpm |
| HD64 | WD | WD2000JS | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
| HD65 | WD | WD2500JS | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD66 | WD | WD2500KS | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD67 | WD | WD2500YS | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD68 | WD | WD3000JS | 3.5 inch | SATA II (3Gb/s) | 300GB | 7200 rpm |
| HD69 | WD | WD3200KS | 3.5 inch | SATA II (3Gb/s) | 320GB | 7200 rpm |
| HD70 | WD | WD3200YS | 3.5 inch | SATA II (3Gb/s) | 320GB | 7200 rpm |
| HD71 | WD | WD4000KS | 3.5 inch | SATA II (3Gb/s) | 400GB | 7200 rpm |
| HD72 | WD | WD5000KS | 3.5 inch | SATA II (3Gb/s) | 500GB | 7200 rpm |
| HD73 | WD | WD5000YS | 3.5 inch | SATA II (3Gb/s) | 500GB | 7200 rpm |
| HD74 | WD | WD10EACS | 3.5 inch | SATA II (3Gb/s) | 1TB | 7200 rpm |
| HD75 | ExcelStor | J880S | 3.5 inch | SATA II (3Gb/s) | 80GB | 7200 rpm |
| HD76 | Hitachi | HDT722525DLA38 | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD77 | Seagate | ST31500341AS | 3.5inch | SATA II (3Gb/s) | 1.5TB | 7200rpm |

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|-------------|-----------|-------------------|-----------------|------------------------|-------------|----------------------|
| HD78 | Maxtor | 6V080E0 | 3.5inch | SATA II (3Gb/s) | 80GB | 7200rpm |
| HD79 | Maxtor | 6V160E0 | 3.5inch | SATA II (3Gb/s) | 160GB | 7200rpm |
| HD80 | Maxtor | 6V250S0 | 3.5 inch | SATA II (3Gb/s) | 250GB | 7200 rpm |
| HD81 | Maxtor | 6L300S0 | 3.5 inch | SATA 1.5Gb/s | 300GB | 7200 rpm |
| HD82 | Seagate | ST380817AS | 3.5 inch | SATA 1.5Gb/s | 80G | 7200 rpm |
| HD83 | Seagate | ST380819AS | 3.5 inch | SATA 1.5Gb/s | 80G | 7200 rpm |
| HD84 | Seagate | ST380811AS | 3.5 inch | SATA 1.5Gb/s | 80G | 7200 rpm |
| HD85 | Seagate | ST3808110AS | 3.5 inch | SATA II (3Gb/s) | 80G | 7200 rpm |
| HD86 | Seagate | ST380013AS | 3.5 inch | SATA 1.5Gb/s | 80G | 7200 rpm |
| HD87 | Seagate | ST3200826AS | 3.5 inch | SATA 1.5Gb/s | 200G | 7200 rpm |
| HD88 | Seagate | ST3160811AS | 3.5 inch | SATA II (3Gb/s) | 160G | 7200 rpm |
| HD89 | Seagate | ST3200827AS | 3.5 inch | SATA II (3Gb/s) | 200G | 7200 rpm |
| HD90 | Seagate | ST3250820AS | 3.5 inch | SATA II (3Gb/s) | 250G | 7200 rpm |
| HD91 | Seagate | ST3320820AS | 3.5 inch | SATA II (3Gb/s) | 320G | 7200 rpm |
| HD92 | Seagate | ST3400832AS | 3.5 inch | SATA II (3Gb/s) | 400G | 7200 rpm |
| HD93 | WD | WD20EADS | 3.5 inch | SATA II (3Gb/s) | 2TB | 5400-7200 rpm |
| HD94 | WD | WD7500AAKS | 3.5 inch | SATA II (3Gb/s) | 750G | 7200 rpm |
| HD95 | WD | WD10EADS | 3.5 inch | SATA II (3Gb/s) | 1 TB | 7200 rpm |

● PC Platform :

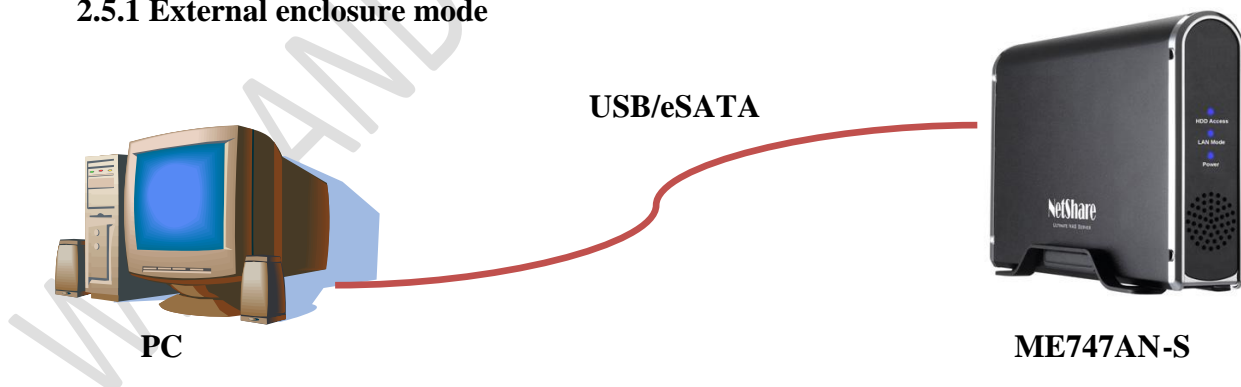
| Detail PC | Motherboard | CPU | South Bridge | RAM |
|----------------------|--------------------|--------------------|--------------------------|---------------------------|
| PC1 | ASUS-P4P800SE | Intel P4 3EG | ICH5R | Transcend DDR400 512MB |
| PC2 | ASUS-P4S800D-X | Intel P4 3EG | SIS964 | Transcend DDR400 512MB |
| PC3 | MSI 915P Neo2 | Intel P4 2.8G | ICH6R | Transcend DDRII512MB |
| PC4 | MSI-KT800Delta | Sempron 3000+ | VT8237 | Transcend DDR400 512MB |
| PC5 | GA-K8NF-9 | Athlon 64 3200+ | NVIDIA nForce4 MCP04 | Transcend DDR400 512MB |
| PC6 | GA-K8NSC-939 | Athlon 64 3200+ | NVIDIA nForce3 MCP2-5 | Transcend DDR400 512MB |
| PC7 | ASUS-P5GDC-V | Intel P4 3EG | ICH6 | SYNNEX DDR400 256MB |
| PC8 | ASUS-A7V880 | Sempron 2600+ | VT8237 | Transcend DDR400 512MB |
| PC9 | ASUS-A7N8X | Athlon 1.1GB | NVIDIA nForce2 MCP-T | Transcend DDR400 512MB |
| PC10 | GA-8TRS350MT | Intel P4 2.8G | ATI9100 IGP PRO | SYNNEX DDR400 256MB |
| PC11 | Intel demo board | Intel P4 3EG | ICH7 | Transcend DDRII 512MB |

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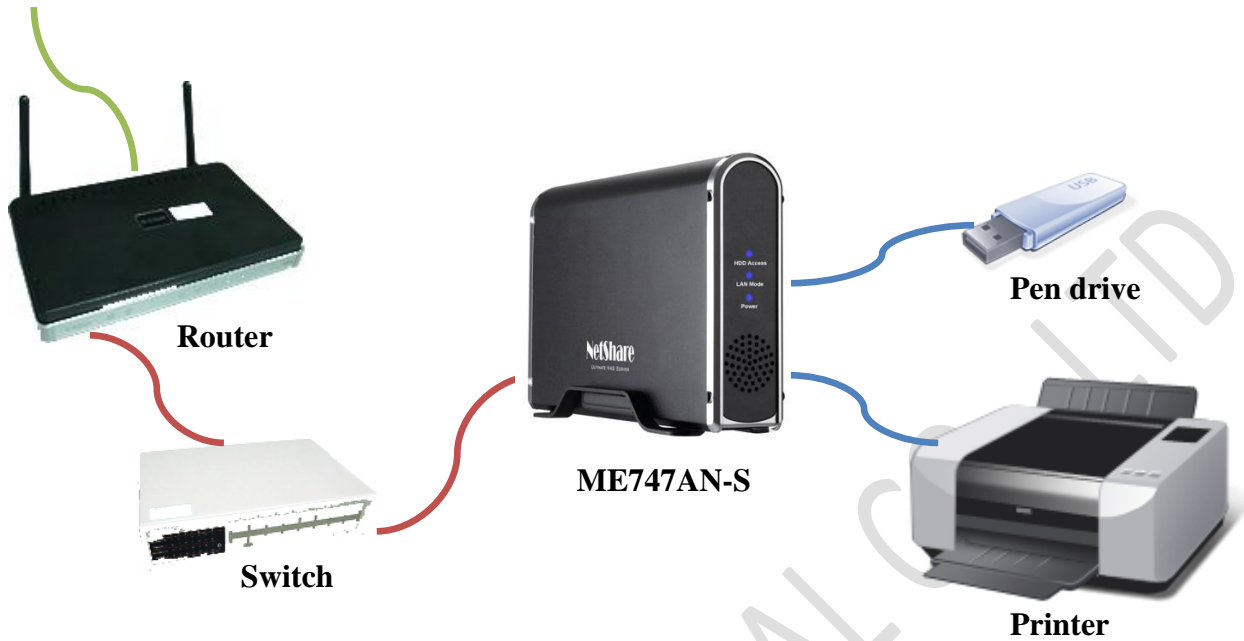
| | | | | |
|-------------|-----------------------|---------------------------|-----------------------|-------------------------|
| PC12 | GA-K8VT890 | Athlon 64 3200+ | VIA 8237R | Transcend DDR400 512MB |
| PC13 | GA-8TRX330L | Intel P4 2.8G | ATI RX330 | Transcend DDR400 512MB |
| PC14 | ASUS P4U800-X | Intel P4 3EG | ULI M1563 | Transcend DDR400 512MB |
| PC15 | MSI K8M Neo-V | Athlon 64 3200+ | KT8237 | Transcend DDR400 512MB |
| PC16 | ASUS P5LD2 | Intel P4 3EG | ICH7 | Transcend DDRII 512MB |
| PC17 | ASUS P5RD1 | Intel P4 3EG | ULI M1573 | Transcend DDR400 512MB |
| PC18 | ASUS P5S800-VM | Intel P4 3EG | SIS 964 | Transcend DDR400 512MB |
| PC19 | SG-71 | Intel Celeron 1.7GHz | SiS651-962L | KingStone |
| PC20 | MSI P35 Neo2 | Intel Core2 Duo E6550 | Intel 83801 IR(ICH9R) | KingStone |
| PC21 | MSI K92A CF | AMD Phenom™9550 Quad-Core | ATI SB600 | KingStone DDR2800 1GBx2 |
| PC22 | ASUS M3A32-MVP Deluxe | AMD Phenom™9550 Quad-Core | ATI SB600 | KingStone DDR2800 1GBx2 |
| MAC | Power Mac G4 | 733MHz Power PC | Orange Micro 3.1.2 | 256MB SD-RAM |

2.5 Test Block Diagram

2.5.1 External enclosure mode



2.5.2 LAN Mode



3. Functionality Test

3.1 Test Summary



3.2 Tested Software Functions

| | | |
|-------------|------------------------------------|-------------------------------------|
| NAS Info | 1. HD info correct? | <input checked="" type="checkbox"/> |
| | 2. System info correct? | <input checked="" type="checkbox"/> |
| IP Config | 1. Automatically IP correctly? | <input checked="" type="checkbox"/> |
| | 2. Static IP correctly? | <input checked="" type="checkbox"/> |
| System Info | 1. Change settings correctly? | <input checked="" type="checkbox"/> |
| FTP Server | 1. Enable FTP correct? | <input checked="" type="checkbox"/> |
| | 2. Enable anonymous login correct? | <input checked="" type="checkbox"/> |
| | 3. Connection Setting correctly? | <input checked="" type="checkbox"/> |
| | 4. Client PC's Language correctly? | <input checked="" type="checkbox"/> |

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|------------------|---|-------------------------------------|
| SMB Server | 1. Adding new user correctly? | <input checked="" type="checkbox"/> |
| | 2. Change Password correctly? | <input checked="" type="checkbox"/> |
| | 3. Delete user correctly? | <input checked="" type="checkbox"/> |
| Share Folder | 1. Modify properties correctly? | <input checked="" type="checkbox"/> |
| Print Server | 1. Printer information correct? | <input checked="" type="checkbox"/> |
| | 2. Print documents correctly? | <input checked="" type="checkbox"/> |
| UPnP | 1. Enable UPnP server correctly? | <input checked="" type="checkbox"/> |
| | 2. Install UPnP Module correctly? | <input checked="" type="checkbox"/> |
| | 3. Play media files correctly? | <input checked="" type="checkbox"/> |
| iTunes | 1. Enable/Disable iTune server correctly? | <input checked="" type="checkbox"/> |
| | 2. Install iTune Module correctly? | <input checked="" type="checkbox"/> |
| | 3. Change iTune server info correctly? | <input checked="" type="checkbox"/> |
| | 4. Play mp3 via iTune correctly? | <input checked="" type="checkbox"/> |
| BitTorrent | 1. Global settings correctly? | <input checked="" type="checkbox"/> |
| | 2. Add a new job correctly? | <input checked="" type="checkbox"/> |
| | 3. Download files correctly? | <input checked="" type="checkbox"/> |
| Restart | 1. Restart function correctly? | <input checked="" type="checkbox"/> |
| Harddisk Utility | 1. HDD information correct? | <input checked="" type="checkbox"/> |
| | 2. Format HDD to FAT32 correctly? | <input checked="" type="checkbox"/> |
| | 3. Format HDD to XFS correctly? | <input checked="" type="checkbox"/> |
| FW Upgrade | 1. FW update correctly? | <input checked="" type="checkbox"/> |
| Save Config | 1. Save config correctly? | <input checked="" type="checkbox"/> |
| | 2. Restore config correctly? | <input checked="" type="checkbox"/> |
| Factory Default | 1. Restore default settings correctly? | <input checked="" type="checkbox"/> |
| Login Setting | 1. Change name and password correctly? | <input checked="" type="checkbox"/> |
| System Log | 1. System log correct? | <input checked="" type="checkbox"/> |

3.3 Tested Hardware Functions

| | | |
|-----------------|--|-------------------------------------|
| USB Device Port | 1. Connected to PC as a external enclosure. | <input checked="" type="checkbox"/> |
| USB Host Port | 1. Connected with printer or external mass storage device. | <input checked="" type="checkbox"/> |
| eSATA Port | 1. Connected to PC as a external enclosure. | <input checked="" type="checkbox"/> |

4. Electrical Test

4.1 Test Summary



4.2 USB High Speed Signal Quality Test

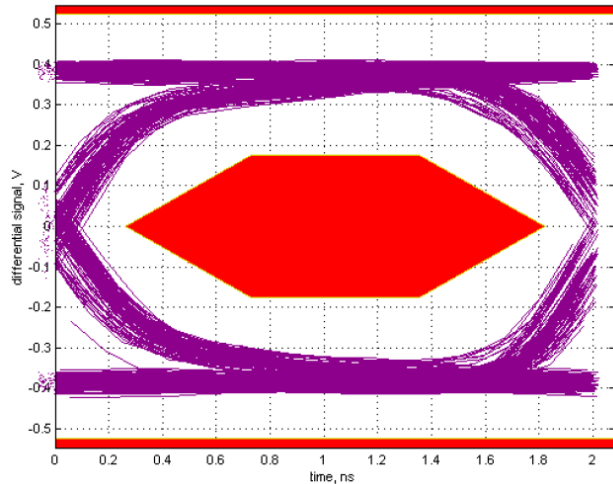
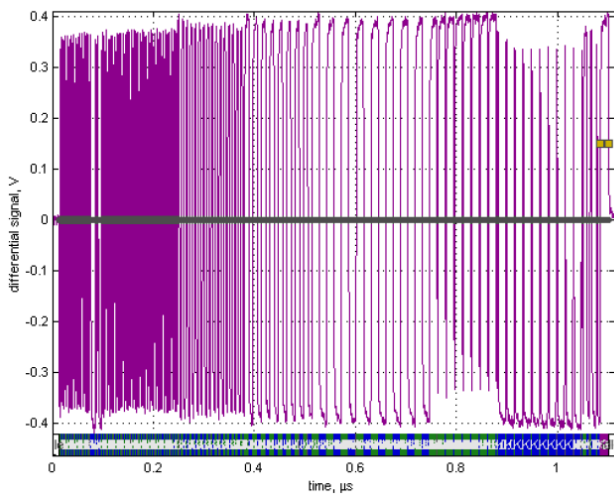
4.2.1 Required Tests

- Signal eye : **Eye passes**
- EOP width : **7.87 bits**
- Receivers : **Reliable operation on tier 6**
- Measured signaling rate : **479.9711MHz**

4.2.2 Additional Information

- Consecutive jitter range : **-118.0ps to 103.6ps, RMS jitter 46.9ps**
- Paired JK jitter range : **-69.0ps to 83.1ps, RMS jitter 36.9ps**
- Paired KJ jitter range : **-65.2ps to 59.5ps, RMS jitter 24.2ps**

4.2.3 Signal Data and Eye



5. Performance Test

5.1 USB Performance Test

5.1.1 Test OS and Host Driver List

- Test OS : Win Vista SP1
- Test Host Driver : Microsoft 5.1.2600

5.1.2 Test System and Hard Disk List

| Detail PC | Motherboard | CPU | South Bridge | RAM |
|--------------|---------------|--------------|--------------|------------------------|
| PC1 | ASUS-P4P800SE | Intel P4 3EG | ICH5R | Transcend DDR400 512MB |

| Detail HD | Brand | Model Name | Size | Interface | Capacity | Speed |
|--------------|---------|--------------|----------|-----------------|----------|---------------|
| HD74 | WD | WD10EACS | 3.5 inch | SATA II (3Gb/s) | 1TB | 7200 rpm |
| HD93 | WD | WD20EADS | 3.5 inch | SATA II (3Gb/s) | 2TB | 5400-7200 rpm |
| HD94 | Seagate | ST31500341AS | 3.5 inch | SATA II (3Gb/s) | 1.5TB | 7200 rpm |

5.1.3 Test Result

- Filesize : 100MB
- Unit : KByte/Sec

| HDD | System | Disk Format | Read | Write | Random Read | Random Write |
|------|--------|-------------|-------|-------|-------------|--------------|
| HD74 | PC1 | FAT32 | 30908 | 23914 | 13796 | 12723 |
| HD93 | | FAT32 | 31343 | 24265 | 17661 | 12848 |
| HD94 | | FAT32 | 31498 | 23068 | 20800 | 12157 |

- Filesize : 500MB
- Unit : KByte/Sec

| HDD | System | Disk Format | Read | Write | Random Read | Random Write |
|------|--------|-------------|-------|-------|-------------|--------------|
| HD74 | PC1 | FAT32 | 31505 | 23847 | 14537 | 12794 |
| HD93 | | FAT32 | 30852 | 22628 | 17327 | 12598 |
| HD94 | | FAT32 | 31597 | 23188 | 20530 | 12337 |

5.2 eSATA Performance Test

5.2.1 Test OS and Host Driver List

- Test OS : Win Vista SP1
- Test Host Driver : Microsoft 5.1.2600

5.2.2 Test System and Hard Disk List

| Detail PC | Motherboard | CPU | South Bridge | RAM |
|--------------|---------------|--------------|--------------|------------------------|
| PC1 | ASUS-P4P800SE | Intel P4 3EG | ICH5R | Transcend DDR400 512MB |

| Detail HD | Brand | Model Name | Size | Interface | Capacity | Speed |
|--------------|---------|--------------|----------|-----------------|----------|---------------|
| HD74 | WD | WD10EACS | 3.5 inch | SATA II (3Gb/s) | 1TB | 7200 rpm |
| HD93 | WD | WD20EADS | 3.5 inch | SATA II (3Gb/s) | 2TB | 5400-7200 rpm |
| HD94 | Seagate | ST31500341AS | 3.5 inch | SATA II (3Gb/s) | 1.5TB | 7200 rpm |

5.2.3 Test Result

- Filesize : 100MB
- Unit : KByte/Sec

| HDD | System | Disk Format | Read | Write | Random Read | Random Write |
|------|--------|-------------|--------|--------|-------------|--------------|
| HD74 | PC1 | FAT32 | 39158 | 39460 | 16098 | 18159 |
| HD93 | | FAT32 | 97338 | 70914 | 23448 | 33739 |
| HD94 | | FAT32 | 123076 | 120046 | 38424 | 40731 |

- Filesize : 500MB
- Unit : KByte/Sec

| HDD | System | Disk Format | Read | Write | Random Read | Random Write |
|------|--------|-------------|--------|--------|-------------|--------------|
| HD74 | PC1 | FAT32 | 39266 | 39296 | 13825 | 17622 |
| HD93 | | FAT32 | 100234 | 89667 | 21553 | 36594 |
| HD94 | | FAT32 | 124362 | 124665 | 37533 | 40378 |

5.3 Samba and FTP Performance Test

- Samba

| File System | Read | Write |
|--------------|------|-------|
| USB w/ XFS | 4.7 | 4.4 |
| USB w/ FAT32 | 4.9 | 4.3 |

- FTP

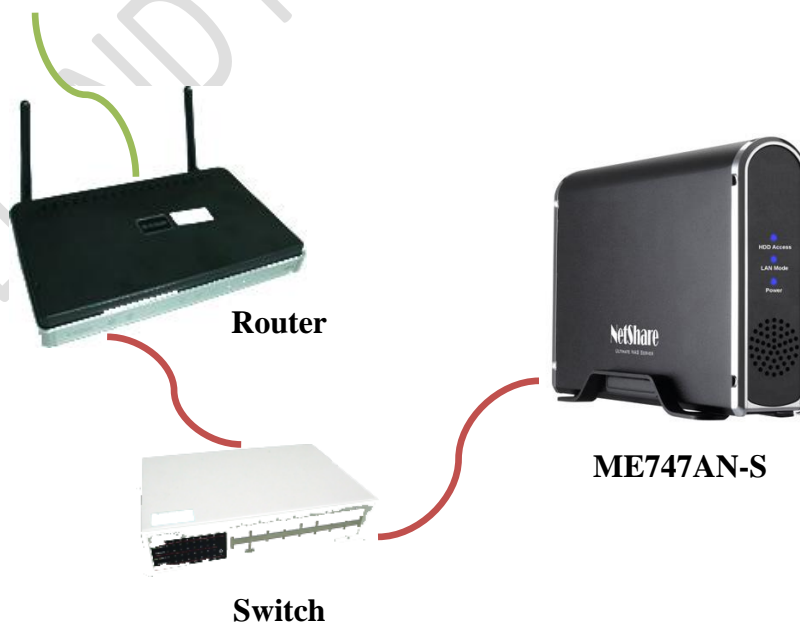
| File System | Read | Write |
|--------------|------|-------|
| USB w/ XFS | 6.8 | 4.8 |
| USB w/ FAT32 | 6.5 | 4.5 |

6. Reliability Test

6.1 Test Summary



6.2 Test Environment



- Router :
D-Link DIR-615(10/100)
Buffalo WHR-G300N (10/100)
- Switch :
D-Link DES-1060D(10/100)
Buffalo LSW2-TX-16NSRRTW(10/100)
- HDD :

| | | | | | | |
|-------------|--------|------------|----------|-----------------|-------|----------|
| HD23 | Maxtor | 6V200E0 | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
| HD95 | WD | WD7500AAKS | 3.5 inch | SATA II (3Gb/s) | 750G | 7200 rpm |

6.3 Test Items

6.3.1 LAN Mode Functions

| | | |
|---------------------|--|-------------------------------------|
| FTP | Does this function work correctly after a 5 days free run? | <input checked="" type="checkbox"/> |
| B.T | Does this function work correctly after a 5 days free run? | <input checked="" type="checkbox"/> |
| SAMBA | Does this function work correctly after a 5 days free run? | <input checked="" type="checkbox"/> |
| Media Server | Does this function work correctly after a 5 days free run? | <input checked="" type="checkbox"/> |

6.3.2 Temperature Test

- Tested HDD :

| | | | | | | |
|-------------|--------|---------|----------|-----------------|-------|----------|
| HD23 | Maxtor | 6V200E0 | 3.5 inch | SATA II (3Gb/s) | 200GB | 7200 rpm |
|-------------|--------|---------|----------|-----------------|-------|----------|

- Result : 500MB

| | | |
|------------------|------------------------|---------------|
| Test Item | Free run for 24 hours. | 40.5°C |
|------------------|------------------------|---------------|

7. Compatibility Test

7.1 Test Summary



7.2 Host System Compatibility Test

7.2.1 Windows System

- Tested PC :

| | | | | |
|-------------|--------------|-----------------------|-----------------------|-----------|
| PC20 | MSI P35 Neo2 | Intel Core2 Duo E6550 | Intel 83801 IR(ICH9R) | KingStone |
|-------------|--------------|-----------------------|-----------------------|-----------|

- Host System :

Win Vista SP1 : **Microsoft Windows Vista SP1**

Win XP SP3 : **Microsoft Windows XP Professional SP3**

Win 2000 SP4 : **Microsoft 5.0.2195 (Microsoft Windows 2000 Professional SP4)**

- Result :

| No. | Test Items | Test Step Description | Result |
|-----|----------------------------------|---|-------------------------------------|
| 1 | Plug & Play Test | 1. Hot plug and play. | <input checked="" type="checkbox"/> |
| | | 2. Check USB icon is displayed or not. | <input checked="" type="checkbox"/> |
| | | 3. Check Disk capacity is correct or not | <input checked="" type="checkbox"/> |
| 2 | Read and Write Test | 1. Copy files to Local disk (over 2GB). | <input checked="" type="checkbox"/> |
| | | 2. Copy Local disk files to this device (over 2GB). | <input checked="" type="checkbox"/> |
| | | 3. Use Media Player to play video files. | <input checked="" type="checkbox"/> |
| | | 4. Check Access LED is blinking or not. | <input checked="" type="checkbox"/> |
| 3 | Safely Remove Test | Use Safely Remove function to detach the device and then reattach the cable, check function is normal or not. | <input checked="" type="checkbox"/> |
| 4 | Partition & Format Function Test | 1. Create partition (primary and logical) | <input checked="" type="checkbox"/> |
| | | 2. Format disk FAT32 and NTFS (quick and non-quick) | <input checked="" type="checkbox"/> |
| 5 | Suspend Function Test | 1. Inactive S1, after resume check function is normal or not. | <input checked="" type="checkbox"/> |
| | | 2. Inactive S3, after resume check function is normal or not. | <input checked="" type="checkbox"/> |
| | | 3. Active S1, after resume check function is normal or not. | <input checked="" type="checkbox"/> |
| | | 4. Active S3, after resume check function is normal or not. | <input checked="" type="checkbox"/> |
| 6 | Reboot Test | 1. Warm Reboot, check function is normal or not. | <input checked="" type="checkbox"/> |
| | | 2. Cold Reboot, check function is normal or not. | <input checked="" type="checkbox"/> |
| 7 | Over Night Test | Run burning tool over 12 hours and check the data transfer is correct or not. | <input checked="" type="checkbox"/> |

7.2.2 Mac System

- Tested PC :

| | | | | |
|------------|------------------------------|--------------------|-----------------|--------------|
| MAC | Power Mac G4 / OS 10.4.11 | 733MHz Power PC | onboard 1.1/2.0 | 256MB SD-RAM |
|------------|------------------------------|--------------------|-----------------|--------------|

- Result :

| No. | Test Items | Test Step Description | Result |
|-----|--|---|-------------------------------------|
| 1 | Plug & Play Test | 1. Plug-in USB cable. | <input checked="" type="checkbox"/> |
| | | 2. Check Disk icon is displayed or not. | <input checked="" type="checkbox"/> |
| | | 3. Check Disk capacity is correct or not. | <input checked="" type="checkbox"/> |
| | | 4. Unplug USB cable. | <input checked="" type="checkbox"/> |
| 2 | Read and Write Test | 1. Copy files to Local disk (over 2GB). | <input checked="" type="checkbox"/> |
| | | 2. Copy Local disk files to this device (over 2GB). | <input checked="" type="checkbox"/> |
| | | 3. Use Quick Time to play video files. | <input checked="" type="checkbox"/> |
| 3 | Eject Function Test | Check the function is normal or not. | <input checked="" type="checkbox"/> |
| 4 | Safely Remove Test | Check the function and icon is normal or not. | <input checked="" type="checkbox"/> |
| 5 | Partition and Erase Function Test | 1. Use Disk Utility to partition several disk. | <input checked="" type="checkbox"/> |
| | | 2. Use Disk Utility to erase disk of Extended and Standard. | <input checked="" type="checkbox"/> |
| 6 | Reboot Test | 1. Warm Reboot. | <input checked="" type="checkbox"/> |
| | | 2. Cold Reboot. | <input checked="" type="checkbox"/> |
| 7 | Compatibility with other USB Device Test | 1. Plug both devices on USB1.1 or USB 2.0 port. | <input checked="" type="checkbox"/> |
| | | 2. Plug one device on USB1.1 and another on USB2.0. | <input checked="" type="checkbox"/> |

7.2.3 Linux System

- Tested PC :

| | | | | |
|------------|--------------|--------------------|--------------------------|---------------------------|
| PC6 | GA-K8NSC-939 | Athlon 64 3200+ | NVIDIA nForce3 MCP2-5 | Transcend DDR400 512MB |
|------------|--------------|--------------------|--------------------------|---------------------------|

- Host System : Fedora 10 (Kernal: Linux 2.6.27.21-170.256.fc10.i686 GOME 2.24.3)

- Result :

| No. | Test Items | Test Step Description | Result |
|-----|--|---|-------------------------------------|
| 1 | Plug & Play Test | 1. Plug-in USB cable. | <input checked="" type="checkbox"/> |
| | | 2. Check Disk icon is displayed or not. | <input checked="" type="checkbox"/> |
| | | 3. Check Disk capacity is correct or not. | <input checked="" type="checkbox"/> |
| | | 4. Unplug USB cable. | <input checked="" type="checkbox"/> |
| 2 | Read and Write Test | 1. Copy files to Local disk (over 2GB). | <input checked="" type="checkbox"/> |
| | | 2. Copy Local disk files to this device (over 2GB). | <input checked="" type="checkbox"/> |
| | | 3. Use Quick Time to play video files. | <input checked="" type="checkbox"/> |
| 3 | Eject Function Test | Check the function is normal or not. | <input checked="" type="checkbox"/> |
| 4 | Safely Remove Test | Check the function and icon is normal or not. | <input checked="" type="checkbox"/> |
| 5 | Partition and Erase Function Test | 1. Use Disk Utility to partition several disk. | <input checked="" type="checkbox"/> |
| | | 2. Use Disk Utility to erase disk of Extended and Standard. | <input checked="" type="checkbox"/> |
| 6 | Reboot Test | 1. Warm Reboot. | <input checked="" type="checkbox"/> |
| | | 2. Cold Reboot. | <input checked="" type="checkbox"/> |
| 7 | Compatibility with other USB Device Test | 1. Plug both devices on USB1.1 or USB 2.0 port. | <input checked="" type="checkbox"/> |
| | | 2. Plug one device on USB1.1 and another on USB2.0. | <input checked="" type="checkbox"/> |

7.3 Hard Disk Compatibility Test

- Tested Hard Disk : : Please refer to the **2.4 Peripheral Device** section.
- Tested Router : : Please refer to the **2.4 Peripheral Device** section.
- Tested Switch : : Please refer to the **2.4 Peripheral Device** section.

7.4 USB Host Compatibility Test

7.4.1 USB Pen Drive

Transcend

TS2GJF150

TS2GJFV30

TS1GJFV20

Apacer

WELLAND

Handy Seno AH326

Handy Seno AH323

Handy Seno AH222

ADATA

N702

PD10

PD14

PQI

i810plus

U330

i201

7.4.2 HDD External Enclosure

Welland

ME740Q

ME740A

ME740J

ME740T

ME601J

ME740SD-S

ME740PS-S

ME747AP-SI

ME747GK-S

ME747K-SI

Transcend

TS160GSJ25M

TS250GSJ25M

TS250GSJ25C

WD

My Passport Elite

SEAGATE

FreeAgent Go

7.4.3 Printer

Canon

Canon BubbleJet BJ10e

Canon BubbleJet BJ20

Canon BubbleJet BJ200

WELLAND

Canon BubbleJet BJC 610
Canon BubbleJet BJC-1000
Canon BubbleJet BJC-2000
Canon BubbleJet BJC-210 B/W only
Canon BubbleJet BJC-210 Color only
Canon BubbleJet BJC-240 B/W only
Canon BubbleJet BJC-240 Color only
Canon BubbleJet BJC-250
Canon BubbleJet BJC-250 B/W only
Canon BubbleJet BJC-4000
Canon BubbleJet BJC-4100 B/W only
Canon BubbleJet BJC-4200
Canon BubbleJet BJC-4300
Canon BubbleJet BJC-4300 Color
Canon BubbleJet BJC-4550
Canon BubbleJet BJC-4650
Canon BubbleJet BJC-50
Canon BubbleJet BJC-600
Canon BubbleJet BJC-6000
Canon BubbleJet BJC-610
Canon BubbleJet BJC-70
Canon BubbleJet BJC-7000 Color.
Canon BubbleJet BJC-80
Canon BubbleJet BJC-800
Canon Laser LBP-600
Canon LBP4+
Canon MultiPASS C2500 color printer/fax/copier

Epson

Epson EPL5700 300dpi OK
Epson Stylus (Any) Color 360x360dpi 4-bit, PostScript halftoning
Epson Stylus (Original) and Stylus Pro Color
Epson Stylus 500
Epson Stylus 600
Epson Stylus 800

HP

WELLAND

HP Color LaserJet
HP Color LaserJet 5
HP Color LaserJet 5m
HP Color LaserJet Printer 4500
HP Color LaserJet Printer 8500
HP Color LaserJet Printer 8550
HP Design Jet 1200 Family
HP Design Jet 1600 Family
HP Design Jet 2500
HP Design Jet 2500cm
HP DesignJet 2500CP
HP DeskJet
HP DeskJet 1200C
HP DeskJet 1600C
HP DeskJet 200
HP DeskJet 2000cp
HP DeskJet 220
HP DeskJet 230
HP DeskJet 250c
HP DeskJet 330
HP DeskJet 350c
HP DeskJet 400
HP DeskJet 430
HP DeskJet 450c
HP DeskJet 455ca
HP DeskJet 500 B/W
HP DeskJet 500C
HP DeskJet 500C
HP DeskJet 500C
HP DeskJet 510
HP DeskJet 520
HP DeskJet 540C
HP DeskJet 540C
HP DeskJet 550C
HP DeskJet 560C
HP DeskJet 600
HP DeskJet 600 margins wrong
HP DeskJet 650

WELLAND

HP DeskJet 660C
HP DeskJet 670C
HP DeskJet 680
HP DeskJet 682C
HP DeskJet 683C
HP DeskJet 690C
HP DeskJet 692C
HP DeskJet 693C
HP DeskJet 694C
HP DeskJet 695C
HP DeskJet 700
HP DeskJet 750c
HP DeskJet 750cplus
HP DeskJet 755cm
HP DeskJet 850
HP DeskJet 855
HP DeskJet 870Cse
HP DeskJet 870Cxi
HP DeskJet 890C
HP DeskJet 895Cxi
HP DeskJet 970
HP DeskJet Plus
HP DeskJet Portable B/W
HP HP4050 Series
HP LaserJet 1100
HP LaserJet 1100 600dpi OK.
HP LaserJet 2100 Series
HP LaserJet 4
HP LaserJet 4 Family, Generic PCL 5 Printer
HP LaserJet 4000
HP LaserJet 4L
HP LaserJet 4lc
HP LaserJet 4m
HP LaserJet 4ml
HP LaserJet 4mp
HP LaserJet 4mplus
HP LaserJet 4mv
HP LaserJet 4p

WELLAND

HP LaserJet 4pj
HP LaserJet 4plus
HP LaserJet 4si
HP LaserJet 4simx
HP LaserJet 4v
HP LaserJet 5
HP LaserJet 5 300dpi or 600dpi
HP LaserJet 5l
HP LaserJet 5L 300dpi or 600dpi
HP LaserJet 5M
HP LaserJet 5mp
HP LaserJet 5p
HP LaserJet 5si
HP LaserJet 5SiMopier
HP LaserJet 5sims
HP LaserJet 6l
HP LaserJet 6L 600dpi
HP LaserJet 6mp
HP LaserJet 6p
HP Laserjet 8000 Series, HP8000
HP Laserjet 8000 Series, HP8100
HP LaserJet II
HP LaserJet III, LaserJet 3
HP LaserJet Plus
HP LaserJet Pro
HP OfficeJet 590
HP OfficeJet 590 B/W
HP Paint Jet XL 300 Family
HP PaintJet XL300