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Hanlin 14/12/18, 08:53

# Release Note for AIC SAS 6G 4U60server Expander

Dec 18, 2014

## Changelog

12/18/2014 (firmware 1.11.16.3 + mfg 1.16.0.1) - Part Number (B98-004U60E0111603 + B98-004TS4G0160001)
Old Part Number B98-004U60E0111602 is replaced by B98-004U60E0111603.
1. Resolve the drive fault LED issue when multiple Array control events happen at the same time

12/04/2014 (firmware 1.11.16.2 + mfg 1.16.0.1) - Part Number (B98-004U60E0111602 + B98-004TS4G0160001)
Old Part Number B98-004U60E0111601 is replaced by B98-004U60E0111602.
1. Re-building the code with RVDS3.1 to resolve the blue LED issue

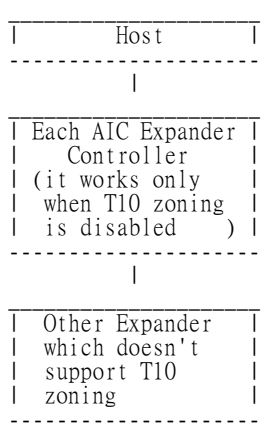
11/18/2014 (firmware 1.11.16.1 + mfg 1.16.0.1) - Part Number (B98-004U60E0111601 + B98-004TS4G0160001)
1. Initial revision

## Definition of the visual LED indicators (blue and red) associated with a disk drive

| Host Control Bit | Blue LED | Red LED |
|---|---|---|
| OK | ON | OFF |
| RSVD DEVICE | ON | OFF |
| HOT SPARE | ON | OFF |
| CONS CHECK | ON | Fast blink |
| IN CRIT ARRAY | ON | Slow blink |
| IN FAILED ARRAY | ON | Slow blink |
| REBUILD/REMAP | ON | Fast blink |
| R/R ABORT | ON | Slow blink |
| ACTIVE | ON | OFF |
| DO NOT REMOVE | ON | OFF |
| MISSING | ON | ON |
| INSERT | ON | Slow blink |
| REMOVE | ON | Slow blink |
| IDENT | Slow blink | Slow blink |
| FAULT | ON | ON |
| DEVICE OFF | ON | OFF |

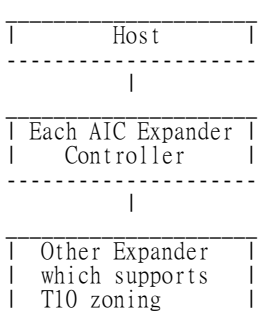
## Supported Configuration

(1)

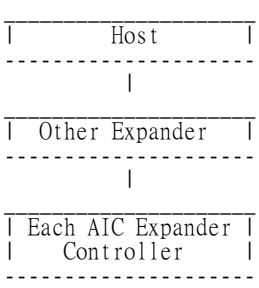



Most 3G Expanders don't support T10 zoning.

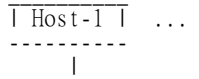
(2)



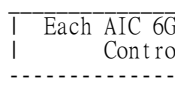

(3)




(4)




To have multiple host access support (the host number can be up to the number of wide ports on each AIC 6G Expander Controller), only the following drives are supported for shared access:




1. SAS drive
2. SATA drive with an interposer which provides SATA-to-SAS convertion

Unsupported Configuration

1. This only applies to the enclosure which supports dual AIC 6G Expander Controllers.
   The enclosure with dual AIC 6G Expander Controllers attached is inserted with a SATA drive without any interposer. It will cause the drive LEDs behaves incorrect.

Command Line Interface Operation

1. How to enable/disable T10 zoning
   The default T10 zoning configuration is off.
   (A) Check the current zoning state
       cmd> phyzone state
       Zoning is OFF

   (B) Enable zoning
       cmd> phyzone on

   (C) Disable zoning
       cmd> phyzone off

2. How to configure T10 zoning
   After enabling T10 zoning, three predefined groups are Group1, Group8, and Group9. Each PHY should be in one of the three group, and all PHYs in a wide port should be in the same group. Each PHY in Group1 can access any PHY in other groups, and vice versa. Each PHY in Group8 cannot access any PHY in Group9, and vice versa.

   The default configuration, which allows two wide ports can access all drives, follows.
   (A) PHY0 - PHY3 for drive : Group1
   (B) PHY4 - PHY7 for the UP/DOWN wide port (the second port) : Group1
   (C) PHY8 - PHY11 for the UP wide port (the first port) : Group8
   (D) PHY12 - PHY27 for drive : Group1

   The command syntax is "phyzone phy_index group". The following example shows how to setup one drive accessed only the first port and another drive accessed only by the second port.

   Step 1: Read the current group for PHY4
           cmd> phyzone 4
           Phy 4 for Zone Group 1

   Step 2: Assign the second port (PHY4 - PHY7) for Group9
           cmd> phyzone 4 9
           cmd> phyzone 5 9
           cmd> phyzone 6 9
           cmd> phyzone 7 9

   Step 3: Assign the drive on PHY12 to be accessed only by the first port instead of the second port
           cmd> phyzone 12 8

   Step 4: Assign the drive on PHY13 to be accessed only by the second port instead of the first port
           cmd> phyzone 13 9

   Step 5: Reset

3. How to get all revisions in AIC SAS 6G Expander
   (A) Expander firmware revision
       cmd> rev

   (B) Expander configuration revision
       cmd> showmfg

   (C) Microchip firmware for managing sensors
       cmd> sensor

4. How to configure temperature sensor
    Two temperature settings in Celsius are warning threshold and alarm (critical) threshold.
    (A) Get the current temperature settings
        cmd> temperature
        Temperature in Celsius (warning=50 C, alarm=55 C)

    (B) Set temperature with new warning threshold=48 C and alarm threshold=54 C. The new setting will take effect after reset.
        cmd> temperature 48 54
        cmd> reset

5. How to configure SAS standby timer
    This feature is applicable for SAS drives instead of SATA drives. SAS standby timer is in units of minutes. Setting SAS standby timer with 0 minute disables this feature.

    (A) Get the current SAS standby timer
        cmd> sas_standby_timer
        SAS standby timer : 0 minutes

    (B) Set the SAS standby timer with 10 minutes. The new setting will take effect after reset.
        cmd> sas_standby_timer 10
        cmd> reset

6. How to configure serial number
    (A) Get the current serial number
        cmd> serial_number
        Expander number: 421-12021704510010
        or
        Expander number: 421-12021704510010    Enclosure number: 526-12071100500088

    (B) Only set Expander serial number with 421-12021704510010.
        cmd> serial_number 421-12021704510010

    (C) Set both of Expander serial number (421-12021704510010) and Enclosure serial number (526-12071100500088).
        cmd> serial_number 421-12021704510010 526-12071100500088

7. How to turn on/off the power of a drive slot
    The "DEVICE OFF" for a drive slot is defined in the bit4, byte3 of the "Array Device Slot control element" in the SES-3 specification. Set the bit to turn off a slot power, and vice versa. Please install a software package "sg_utils" on your host computer, and have a SAS HBA and a cable to connect your host with the 5U90swap. We use Linux for example.

    (A) Show the device for AIC Expander Controller (canister)
        $ sg_map -i

        /dev/sg61   AIC CORP   4U60server Exp-L   0b10

    (B) Get the current state of a slot power. In this example the "Device off=0" means the slot power is on.
        $ sg_ses --page=2 /dev/sg61

        Element 0 descriptor:
          App client bypass B=0, Fault sensed=0, Fault reqstd=0, Device off=0

    (C) Get the descriptor of a slot power
        $ sg_ses --page=7 /dev/sg61

        Element 0 descriptor: Disk001

    (D) Turn off a slot power
        $ sg_ses --descriptor=Disk001 --set=3:4:1 /dev/sg61

    (E) Turn on a slot power
        $ sg_ses --descriptor=Disk001 --clear=3:4:1 /dev/sg61