



NitroAV Vanguard 5

4. LCD Configuration Menu

The RAID subsystem LCD configuration utility is a character-based utility that you can run after powering the unit. Use LCD Configuration Utility to:

- Create RAID set,
- Expand RAID set,
- Define volume set,
- Add physical drive
- Modify volume set
- Modify RAID level/stripe size,
- Define pass-through disk drives,
- Modify system function and
- Designate drives as hot spares.

The LCD display front panel function keys are the primary user interface for the RAID subsystem. Except for the "Firmware update", all configurations can be performed through this interface.

Function Key Definitions

The four function keys at the bottom of the front panel perform the following functions:

Key	Function
Up Arrow	Use to scroll the cursor Upward / Rightward
Down Arrow	Use to scroll the cursor Downward / Leftward
ENT Key	Submit Select ion Function (Confirm a selected item)
ESC Key	Return to Previous Screen (Exit a selection configuration)

4.1 Starting LCD Configuration Utility

The main menu appears on the LCD screen, as shown below:

Use the up and down arrow buttons to move left and right and highlight a menu item. Press **ENT** to select the highlighted item. Press the **UP/DOWN** to browse the selection. Press **ESC** to return to the previous screen.

4.2 LCD Configuration Utility Main Menu Options

Select an option and the related information or submenu items display beneath it. The submenus for each item are explained on the section 4.8.3. The configuration utility main menu options are:

Option	Description
Quick Volume And RAID Set Setup	Create a default configurations which are based on the number of physical disk installed
RAID Set Functions	Create a customized RAID set
Volume Set Functions	Create a customized volume set
Physical Drive Functions	View individual disk information
RAID System Functions	Setting the RAID system configurations
Views System Events	Record all system events in the buffer
Clear Event Buffer	Clear all event buffer information
Hardware Monitor	Show all system environment status

System Information	View the controller information
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4.3 Configuring RAID Sets and Volume Sets

You can configure RAID sets and volume sets with LCD configuration utility using Quick Volume And RAID Set Setup, RAID Set Functions/Volume Set Functions configuration method. Each configuration method requires a different level of user input. The general flow of operations for RAID set and volume set configuration is:

Step	Action
1	Designate hot spares/pass-through (optional).
2	Choose a configuration method.
3	Create RAID set using the available physical drives.
4	Define volume set using the space in the RAID set.
5	Initialize the volume set and use volume set in the HOST OS.

4.4 Designating Drives as Hot Spares

To designate drives as hot spares, press **ENT** to enter the Main menu. Press **UP/DOWN** to select the **RAID Set Functions** option and then press **ENT**. All RAID set functions will be displayed. Press **UP/DOWN** to select the **Create Hot Spare Disk** option and then press **ENT**. The first unused physical device connected to the current controller appears: Press **UP/DOWN** to scroll the unused physical devices and select the target disk to assign as a Hot Spare and press **ENT** to designate it as a hot spare.

4.5 Using Quick Volume and RAID Set Setup

In Quick Volume And RAID Setup Configuration, The RAID set you create is associated with exactly one volume set, and you can modify the RAID level, stripe size, and capacity. Designating Drives as Hot Spares will also combine with RAID level in this setup.

The volume set default settings will be:

Parameter	Setting
Volume Name	Volume Set # 00
IDE Host channel/IDE Drive Select	0/0-Master (For Vanguard V-FW)
Cache Mode	Write Back
Tag Queuing	Yes
IDE Xfer Mode	Depend your host adapter setting (For Vanguard V-FireWire 800)

The default setting values can be changed after configuration is complete.

Follow the steps below to create RAID set using Quick Volume And RAID Setup Configuration:

Step	Action
1	Choose Quick Volume And RAID Setup from the main menu. The available RAID levels and associated Hot Spare for the current volume set drive are displayed.
2	RAID Level Try to use drives of the same capacity in a specific array. If you use drives with different capacities in an array, all the drives in the array is treated as though they have the capacity of the <i>smallest</i> drive in the array. The number of physical drives in a specific array determines the RAID levels that can be implemented with the array. RAID 0 requires one or more physical drives, RAID 1 requires at least 2 physical drives, RAID 1+ Spare requires more than 2 physical drives, RAID 3 requires at least three physical drives, RAID 5 requires at least three physical drives, RAID 3+ Spare requires at least four physical drives, and RAID 5 + Spare requires at least four physical drives.

	Using the UP/DOWN key to select the RAID for the volume set and presses ENT to confirm it.
3	<i>Available Capacity</i> Set the capacity size for the volume set. After select <i>RAID level</i> and press ENT . The selected capacity for the current volume set is displayed. Using the UP/DOWN to create the current volume set capacity size and press ENT to confirm it. The available stripe sizes for the current volume set are displayed.
4	<i>Select Stripe size</i> This parameter specifies the size of the stripes written to each disk in a RAID 0, 1, 3, or 5 Volume Set. You can set the stripe size to 4 KB, 8 KB, 16 KB, 32 KB, 64 KB, or 128 KB. A larger stripe size provides better-read performance, especially if your computer does mostly sequential reads. However, if you are sure that your computer does random read requests more often, choose a small stripe size. Using the UP/DOWN to select stripe size and press ENT to confirm it.
5	When you are finished defining the volume set, press ENT to confirm the Quick Volume And RAID Set Setup function.
6	<i>Fast Initialization</i> Press ENT to define fast initialization and ESC to normal initialization. In the Normal Initialization, the initialization proceeds as a background task, the volume set is fully accessible for system reads and writes. The operating system can instantly access to the newly created arrays without requiring a reboot and waiting the initialization complete. In Fast Initialization, the initialization proceeds must be completed before the volume set ready for system accesses.
7	The controller will begin to Initialize the volume set you have just configured
8	If you need to add additional volume set using main menu Create RAID Volume Set function.

4.6 Using RAID Set and Volume Set Functions

In RAID Set Function, you can use the Create RAID Set function to generate the new RAID set. In Volume Set Function, you can use the create volume set function to generate its associated volume set and parameters.

If the current controller has unused physical devices connected, you can choose the *Create Hot Spare* option in the RAID Set Function to define a global hot spare.

Select this method to configure new RAID sets and volume sets. This configuration option allows you to associate volume set with partial and full RAID set.

Step	Action
1	To setup the Hot Spare (option), choose RAID Set Functions from the main menu. Select the Create Hot Spare Disk to set the Hot Spare.
2	Choose RAID Set Function from the main menu. Select the Create A New RAID Set .
3	A Select Drive IDE Channel in the next displayed showing the IDE drive connected to the current controller.
4	Press the UP/ DOWN to select specific physical drives. Press the ENT to associate the selected physical drive with the current RAID set. Try to use drives of the same capacity in a specific RAID set. If you use drives with different capacities in an array, all the drives in the array is treated as though they have the capacity of the <i>smallest</i> drive in the array. The number of physical drives in a specific RAID set determines the RAID levels that can be implemented with the RAID set. RAID 0 requires one or more physical drives per RAID set. RAID 1 requires at least two physical drives per RAID set. RAID 1 + Spare requires at least three physical drives per RAID set. RAID 3 requires at least three physical drives per RAID set. RAID 5 requires at least three physical drives per RAID set. RAID 3 + Spare requires at least four physical drives per RAID set. RAID 5 + Spare requires at least four physical drives per RAID set.
5	After adding physical drives to the current RAID set as desired, press ESC to confirm the Select Drive IDE Channel function.
6	Press ENT when you are finished creating the current RAID set. To continue defining another RAID set, repeat step 3. To begin volume set

	configuration, go to step 7.
7	Choose Volume Set Functions from the main menu. Select the Create RAID Volume Set and press ENT .
8	Choose one RAID set from the Select RAID Set screen. Press ENT to confirm it.
9	The volume set attributes screen appears: The volume set attributes screen shows the volume set default configuration value that is currently being configured. The volume set attributes are: The RAID Level, The Stripe Size, The IDE Host Channel/IDE Drive Select (For Vanguard V-FireWire), The Cache Mode, The Tagged Queuing, The IDE Xfer Mode (For Vanguard V- FireWire), and The Volume Name (number). All value can be changing by the user. Press the UP/ DOWN to select the attributes. Press the ENT to modify each attribute of the default value. Using the UP/DOWN to select attribute value and press the ENT to accept the default value
10	After user completes modifying the attribute, press the ESC to enter the Select Capacity for the volume set. Using the UP/DOWN to set the volume set capacity and press ENT to confirm it.
11	When you are finished defining the volume set, press ENT to confirm the Create function.
12	Press ENT to define fast initialization and ESC to normal initialization. The controller will begin to Initialize the volume set you have just configured. If space remains in the RAID set, the next volume set can be configured. Repeat steps 7 to 12 to configure another volume set.

4.7 Navigation Map of the LCD For NitroAV Vanguard V-FireWire

The password option allows user to set or clear the RAID subsystem's password protection feature. Once the password has been set, the user can only monitor and configure the RAID subsystem by providing the correct password. The password is used to protect the external RAID subsystem from unauthorized entry. The controller will check the password only when entering the Main menu from the initial screen. The RAID subsystem will automatically go back to the initial screen when it does not receive any command in twenty seconds. The RAID subsystem password is default setting at 0000 by the manufacture.

4.7.1 Quick Volume/RAID Setup

Quick Volume And RAID Setup is the fastest way to prepare a RAID set and volume set. It only needs a few keystrokes to complete it. Although disk drives of different capacity may be used in the RAID set, it will use the smallest capacity of the disk drive as the capacity of all disk drives in the RAID set. The Quick Volume And RAID Setup option creates a RAID set with the following properties:

1. All of the physical disk drives are contained in a RAID set.
2. The RAID levels associated with hot spare, capacity, and stripe size are selected during the configuration process.
3. A single volume set is created and consumed all or a portion of the disk capacity available in this RAID set.
4. If you need to add additional volume set, using main menu Volume Set functions

Detail procedure references to this chapter section 4.5.

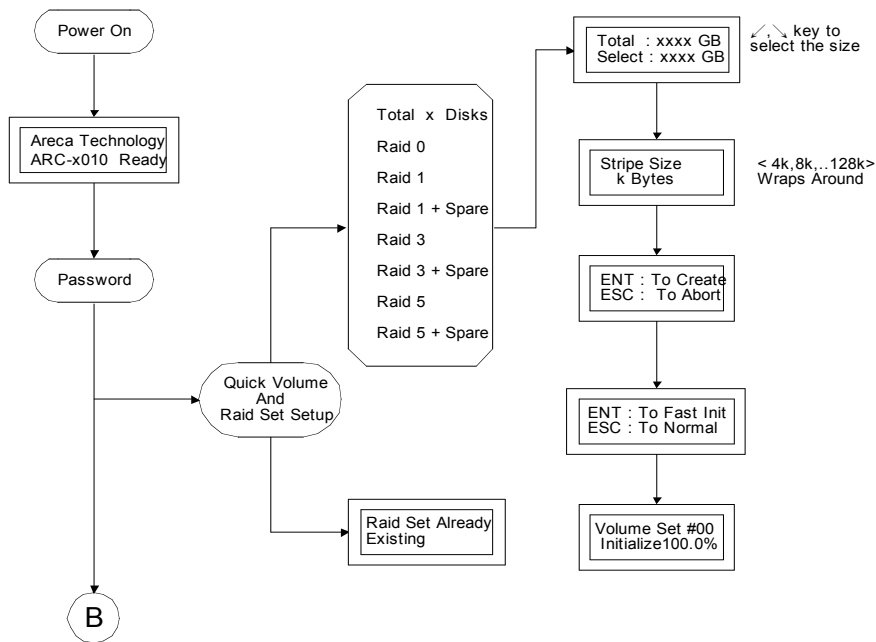
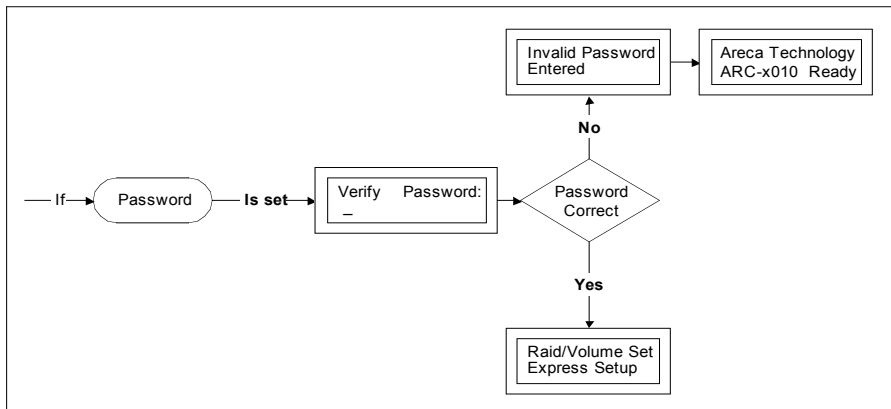
4.7.2 RAID Set Function

User manual configuration can complete control of the RAID set setting, but it will take longer time to complete than the Quick Volume And RAID Setup configuration. Select the RAID Set Function to manually configure the RAID set for the first time or deletes existing RAID set and reconfigures the RAID set.

To enter a RAID Set Functions, press **ENT** to enter the Main menu. Press **UP/DOWN** to select the **RAID Set Functions** option and then press **ENT** to enter further submenus. All RAID set submenus will be displayed.

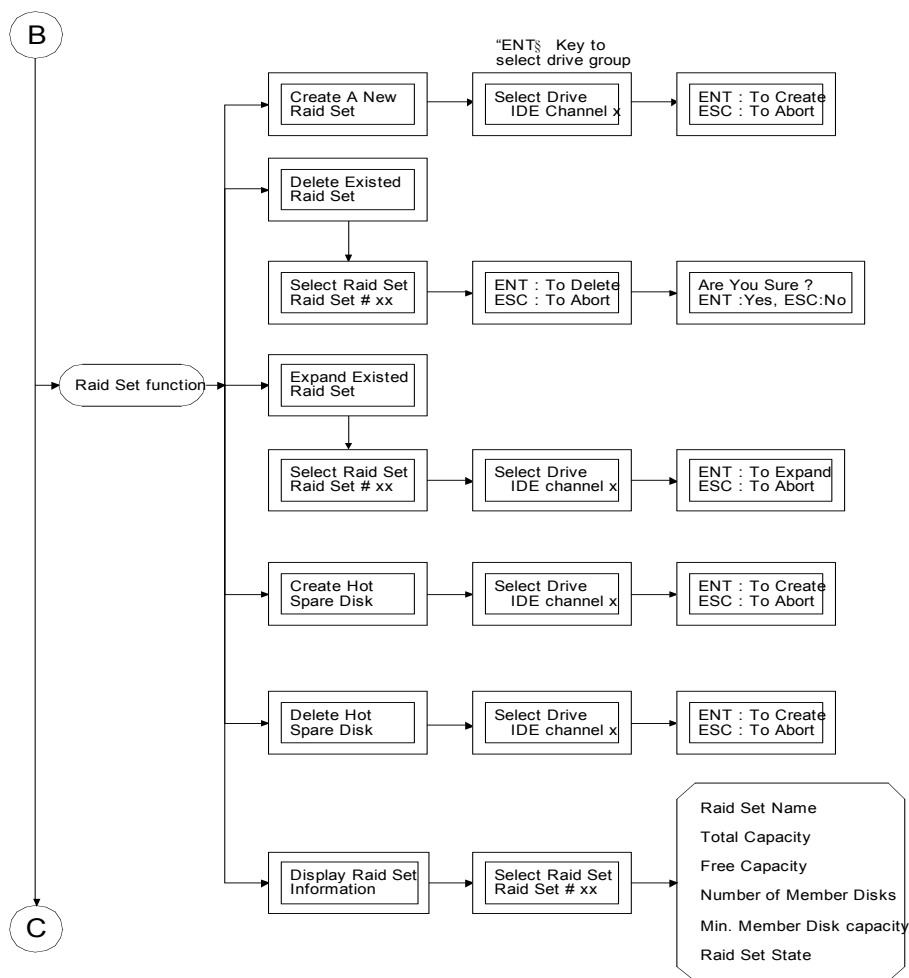
4.7.2.1 Create A New RAID Set

Detail procedure references to this chapter section 4.6.



4.7.2.2 Delete Existed RAID Set

Press **UP/DOWN** to choose the **Delete Existed RAID Set** option. Using **UP/DOWN** to select the RAID set number that user want to delete and then press **ENT** to accept the RAID set number. The Confirmation screen appears, then press **ENT** to accept the delete existed RAID set function. The double confirmation screen appears, then press **Yes** to make sure of the delete existed RAID set function



4.7.2.3 Expand Existed RAID Set

Instead of deleting a RAID set and recreating it with additional disk drives, the Expand Existed RAID Set function allows the user to add disk drives to the RAID set that was created.

To expand existed RAID set, press **UP/DOWN** to choose the **Expand Existed RAID Set** option. Using **UP/DOWN** to select the RAID set number that user want to expand and then press **ENT** to accept the RAID set number. If there is an available disk, then the **Select Drive IDE Channel x** appears. Using **UP/DOWN** to select the target disk and then press **ENT** to select it. Press **ENT** to start expanding the existed RAID set.

The new add capacity will be define one or more volume sets. Follow the instruction presented in the Volume Set Function to create the volume sets.

Note:

1. Once the Expand RAID Set process has started, user cannot stop it. The process must be completed.
2. If a disk drive fails during RAID set expansion and a hot spare is available, an auto rebuild operation will occur after the RAID set expansion completes.

Migrating occurs when a disk is added to a RAID set. Migration status is displayed in the RAID status area of the RAID Set information when a disk is added to a RAID set. Migrating status is also displayed in the associated volume status area of the volume set Information when a disk is added to a RAID set

4.7.2.4 Activate Incomplete RAIDSet

When one of the disk drive is removed in power off state, the RAID set state will change to Incomplete State. If user wants to continue to work, when the RAID subsystem is power on. User can use the **Activate Incomplete RAIDSet** option to active the RAID set. After user complete the function, the RAID State will change to Degraded Mode.

4.7.2.5 *Create Hot Spare Disk*

Please reference this chapter section 4.4: Designating Drives as Hot Spares.

4.7.2.6 *Delete Hot Spare Disk*

To delete hot spare, press **UP/DOWN** to choose the **Delete Hot Spare Disk** option. Using **UP/DOWN** to select the hot spare number that user want to delete and then press **ENT** to select it. The confirmation screens appear and press **ENT** to delete the hot spare.

4.7.2.7 *Display RAID Set Information*

Using **UP/DOWN** to choose the **Display RAID Set Information** option and press **ENT**. Using **UP/DOWN** to select the RAID set number that user want to display. The RAID set information will be displayed.

Using **UP/DOWN** to scroll the RAID set information, it shows RAID Set Name, Total Capacity, Free Capacity, Number of Member Disks, Min. Member Disk Capacity and RAID Set State.

4.7.3 **Volume Set Function**

A volume set is seen by the host system as a single logical device. It is organized in a RAID level with one or more physical disks. RAID level refers to the level of data performance and protection of a Volume Set. A Volume Set capacity can consume all or a portion of the disk capacity available in a RAID Set. Multiple Volume Sets can exist on a group of disks in a RAID Set. Additional Volume Sets created in a specified RAID Set will reside on all the physical disks in the RAID Set. Thus each Volume Set on the RAID Set will have its data spread evenly across all the disks in the RAID Set.

To enter a Volume Set Functions, press **ENT** to enter the main menu. Press **UP/DOWN** to select the **Volume Set Functions** option and then press **ENT** to enter further submenus. All volume set submenus will be displayed.

4.7.3.1 *Create RAID Volume Set*

To create a volume set, Please reference this chapter section 4.6: Using RAID Set and Volume Set Functions.

All value can be changing by the user. Press the **UP/DOWN** to select attribute. Press the **ENT** to modify the default value. Using the **UP/DOWN** to select attribute value and press the **ENT** to accept the default value. The following is the attributes descriptions. Please reference this chapter section 4.6 Using RAID Set and Volume Set Functions to complete the create volume set function.

4.7.3.1.1 **Capacity**

The maximum volume size is default in the first setting. Enter the appropriate volume size to fit your application. The capacity can also increase or decrease by the .UP and DOWN arrow key. Each volume set has a selected capacity which is less than or equal to the total capacity of the RAID set on which it resides.

4.7.3.1.2 **RAID Level**

Vanguard V – FireWire800 can support RAID level 0,1(0+1),3 and 5.

4.7.3.1.3 **Strip Size**

This parameter sets the size of the segment written to each disk in a RAID 0, 1, 3, or 5 logical drive. You can set the stripe size to 4 KB, 8 KB, 16 KB, 32 KB, 64 KB, or 128 KB.

A larger stripe size produces better-read performance, especially if your computer does mostly sequential reads. However, if you are sure that your computer does random reads more often, select a small stripe size.

4.7.3.1.4 **Volume Name**

The default volume name will always appear as Volume Set. #. You can rename the volume set name providing it does not exceed the 15 characters limit.

4.7.3.1.5 **IDE Host Channel**

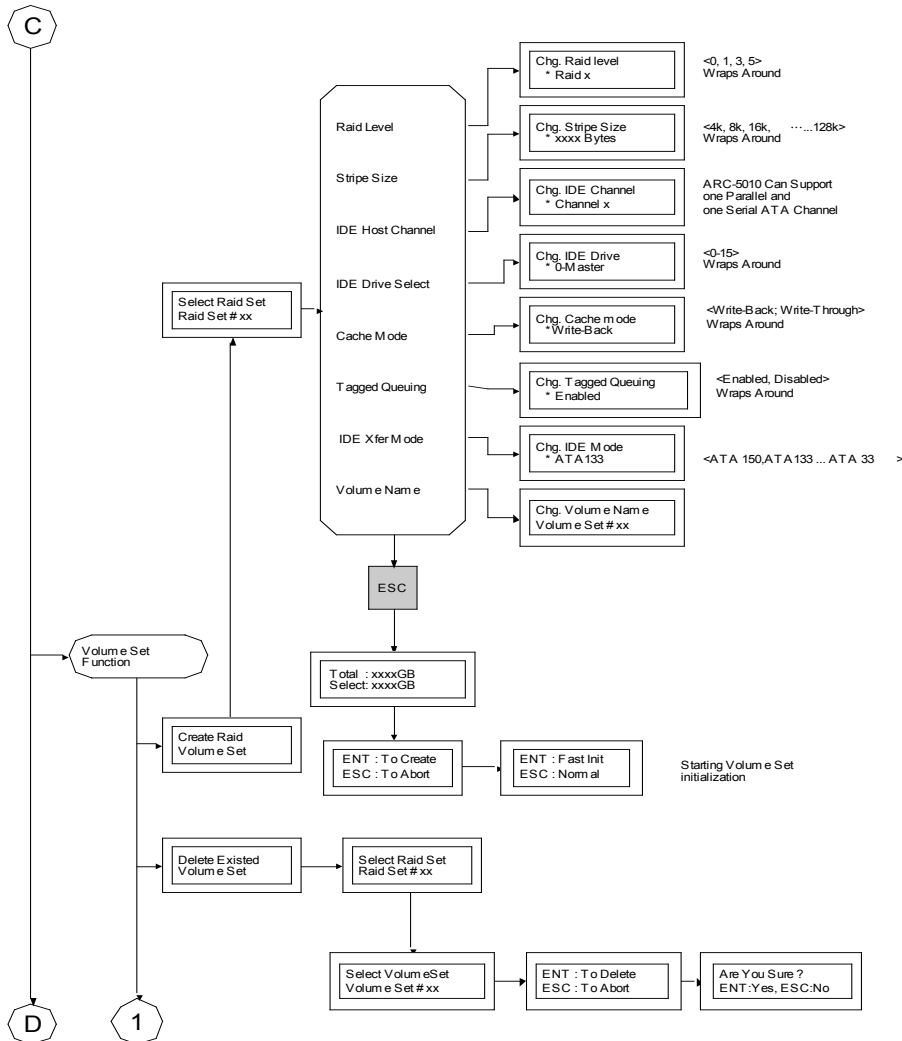
IDE Channel: The Vanguard V-FW can support Firewire(Channel 0) and Serial ATA (Channel 1). Multiple IDE channel can be applied to the external RAID subsystem if user selects the **Independent** option in the **Interface Mode** at RAID System Function. Single channel can be applied to the external RAID subsystem if user selects the **Share Volume** option in the **Interface Mode** at RAID System Function. Both Firewire and SATA connection are setting as Channel 0.

4.7.3.1.6 **IDE Drive Select**

Host Channel setting at Independent-Firewire and SATA host channel can concurrently access different volume sets. The Firewire(Channel 0) can support Master and Slave volume set. The SATA (Channel 1) can support one master volume set.

The Max volume set can be accessed by Vanguard V-FW is 3.

Host Channel setting at Share Volume-The Vanguard V-FW can support Firewire and Serial ATA accesses same volume set. But user can only connect one channel at one time. If user connects the Firewire(Host Channel 0), the RAID subsystem supports 2 volumes (Master/Slave). If user connects the SATA, the RAID subsystem supports 1 volume (Master) (Host Channel 0). Both Firewire and SATA connection are setting as Channel 0.



4.7.3.1.7 Cache Mode

User can set the cache mode as Write-Through Cache or Write-Back Cache.

4.7.3.1.8 Tag Queuing

The Enabled option is useful for enhancing overall system performance under multi-tasking operating systems. The Command Tag (Drive Channel) function controls the SCSI command tag queuing support for each drive channel. This function should normally remain enabled. Disable this function only when using older SCSI drives that do not support command tag queuing

4.7.3.1.9 IDE Xfer Mode

The Vanguard V-FW RAID subsystem supports ATA133, ATA100, ATA66, and ATA33 Mode.

4.7.3.2 Delete Volume Set

Press **UP/DOWN** to choose the **Delete Existed Volume Set** option. Using **UP/DOWN** to select the RAID set number that user want to delete and press **ENT**. Scrolling the **UP/DOWN** to select the volume set number that user want to delete and press **ENT**. The Confirmation screen appears, and then press **ENT** to accept the delete volume set function. The double confirmation screen appears, then press **Yes** to make sure of the delete volume set function.

4.7.3.3 Modify Volume Set

Use this option to modify volume set configuration. To modify volume set attributes from RAID set system function, press **UP/DOWN** to choose the **Modify Volume Set Attribute** option. Using **UP/DOWN** to select the RAID set number that user want to modify and press **ENT**. Scrolling the **UP/DOWN** to select the volume set number that user want to modify and press **ENT**. Press **ENT** to select the existed volume set attribute. The volume set attributes screen shows the volume set setting configuration attributes that was currently being configured. The attributes are RAID Level, Stripe Size, Cache Mode, SCSI HOST, SCSI ID, SCSI LUN, Tagged Queuing, SCSI Max Rate, and Volume Name (number). All value can be modifying by the user. Press the **UP/DOWN** to select attribute. Press the **ENT** to modify the default value. Using the **UP/DOWN** to select attribute value and press the **ENT** to accept the selection value. Choose this option to display the properties of the selected Volume Set; you can modify all values except the capacity.

4.7.3.3.1 Volume Set Migration

Migrating occurs when a volume set is migrating from one RAID level to another, a volume set strip size changes, or when a disk is added to a RAID set. Migration status is displayed in the volume state area of the **Display Volume Set Information** when one RAID level to another, a Volume set strip size changes or when a disk is added to a RAID set.

4.7.3.4 Check Volume Set Consistency

Use this option to check volume set consistency. To check volume set consistency from volume set system function, press **UP/DOWN** to choose the **Check Volume Set Consistency** option. Using **UP/DOWN** to select the RAID set number that user want to check and press **ENT**. Scrolling the **UP/DOWN** to select the volume set number that user want to check and press **ENT**. The Confirmation screen appears, press **ENT** to start the check volume set consistency.

4.7.3.5 Stop Volume Set Consistency Check

Use this option to stop volume set consistency check. To stop volume set consistency check from volume set system function, press **UP/DOWN** to choose the **Stop Volume Set Consistency Check** option and then press **ENT** to stop the check volume set consistency.

4.7.3.6 Display Volume Set Information

Use this option to display volume set information. To display volume set information from Volume set system function, press **UP/DOWN** to choose the **Display Volume Set Information** option. Using **UP/DOWN** to select the RAID set number that user wants to show and press **ENT**. Scrolling the **UP/DOWN** to select the volume set number that user want to display and press **ENT**. The volume set attributes screen shows the volume set setting configuration value that was currently being configured. The attributes are RAID Level, Stripe Size, Cache Mode, SCSI HOST, SCSI ID, SCSI LUN, Tagged Queuing, SCSI Max Rate, and Volume Name (number). All value cannot be modifying by this option.

4.7.4 Physical Drive

Choose this option from the Main Menu to select a physical disk and to perform the operations listed below. To enter a Physical Drive Functions, press **ENT** to enter the main menu. Press **UP/DOWN** to select the **Physical Drive Functions** option and then press **ENT** to enter further submenus. All physical drive submenus will be displayed.

4.7.4.1 Display Drive Information

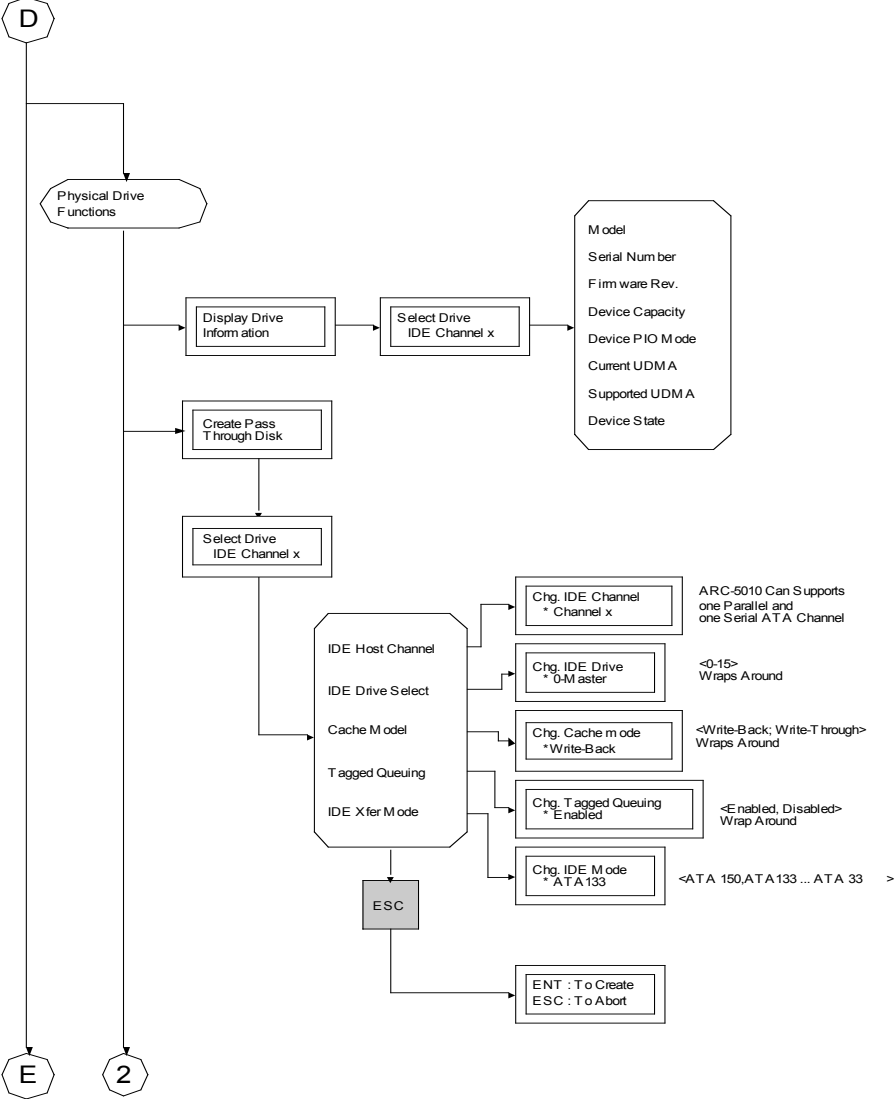
Using **UP/DOWN** to choose the **View Drive Information** option and press **ENT**. Using **UP/DOWN** to select the drive IDE number that user want to display. The drive information will be displayed. The drive information screen shows the Model Name, Serial Number, Firmware Rev., Device Capacity, Device PIO Mode, Current UDMA, Supported UDMA, and Device State.

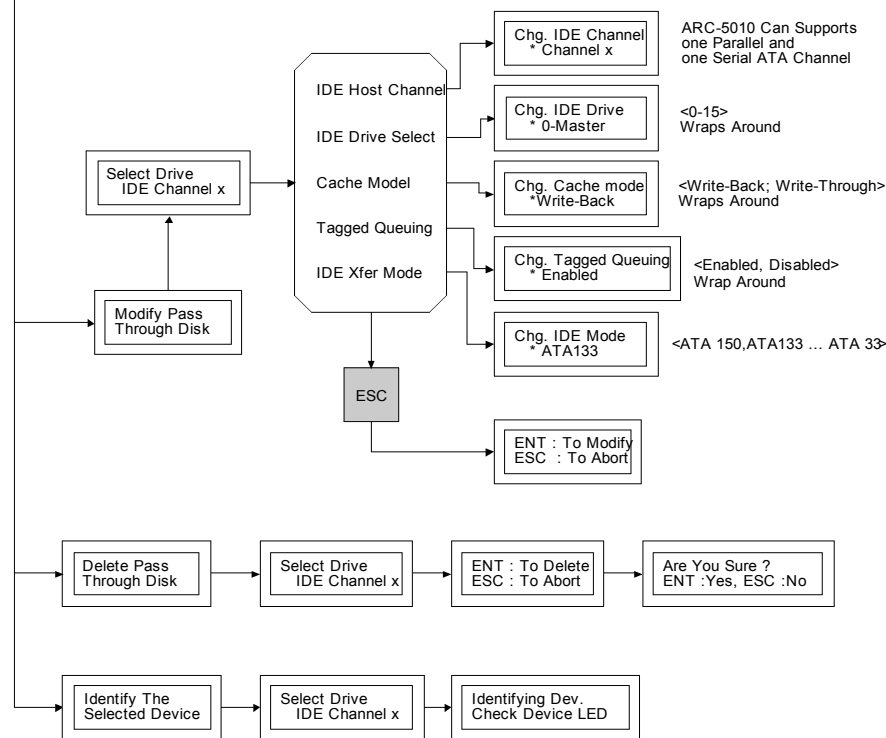
4.7.4.2 Create Pass-Through Disk

Disk is no controlled by the RAID subsystem firmware and thus cannot be a part of a RAID set. The disk is available to the operating system as an individual disk. It is typically used on a system where the operating system is on a disk not controlled by the RAID subsystem firmware.

Using **UP/DOWN** to choose the **Create Pass-Through Disk** option and press **ENT**. Using **UP/DOWN** to select the drive IDE number that user want to create. The drive attributes will be displayed. The drive attributes show the Cache Model, SCSI

Host, SCSI ID, SCSI LUN, Tagged Queuing, and SCSI Sync Rate.
All values can be changing by the user. Press the **UP/DOWN** to select attribute and then press the **ENT** to modify the default value. Using the **UP/ DOWN** to select attribute value and press the **ENT** to accept the selection value.





4.7.4.3 Modify Pass-Through Disk

Use this option to modify the Pass-Through Disk attributes. To modify Pass-Through Disk attributes from Pass-Through Disk pool, press **UP/DOWN** to choose the **Modify Pass-Through Drive** option, and then press **ENT** key. The Select Drive Function menu will show all Pass-Through Drive number items. Using **UP/DOWN** to select the Pass-Through Disk that user want to modify and press **ENT**. The attributes screen shows the Pass-Through Disk setting value that was currently being configured. The attributes are Cache Mode, SCSI HOST, SCSI ID, SCSI LUN, Tagged Queuing, and SCSI Max Rate. All value can be modifying by the user. Press the **UP/DOWN** arrow keys to select attribute. Press the **ENT** to modify the default value. Using the **UP/ DOWN** key to select attribute value and press the **ENT** to accept the selection value. After completing the modification, press **ESC** to enter the confirmation screen and then press **ENT** to accept the Modify Pass-Through Disk function.

4.7.4.4 Delete Pass-Through Disk

To delete pass-through drive from the pass-through drive pool, press **UP/DOWN** to choose the **Delete Pass-Through Drive** option, and then press **ENT**. The Select Drive Function menu will show all Pass-Through Drive number items. Using **UP/DOWN** to select the Pass-Through Disk that user want to delete and press **ENT**. The Delete Pass-Through confirmation screen will appear, presses **ENT** to delete it.

4.7.4.5 Identify Selected Drive

To prevent removing the wrong drive, the selected disk HDD LED Indicator will light for physically locating the selected disk when the Identify Selected Drive function is selected..

To identify selected drive from the physical drive pool, press **UP/DOWN** to choose the **Identify Selected Drive** option, then press **ENT** key. The Select Drive function menu will show all physical drive number items. Using **UP/DOWN** to select the Disk that user want to identify and press **ENT**. The selected disk HDD LED indicator will flash.

4.7.5 RAID System Function

To enter a RAID System Function, press **ENT** to enter the Main menu. Press **UP/DOWN** to select the **RAID System Function** option and then press **ENT** to enter further submenus. All RAID system submenus will be displayed. Using **UP/DOWN** to select the submenus option and then press **ENT** to enter the selection function.

4.7.5.1 Mute The Alert Beeper

The Mute The Alert Beeper function item is used to control the RAID subsystem Beeper. Select the "No" and press **Enter** key in the dialog box to turn the beeper off temporarily. The beeper will still activate on the next event.

4.7.5.2 Alert Beeper Setting

The Alert Beeper function item is used to Disabled or Enable the RAID subsystem controller alarm tone generator. Using the **UP/DOWN** to select alert beeper and then press the **ENT** to accept the selection. After completing the selection, the confirmation screen will be displayed and then press **ENT** to accept the function

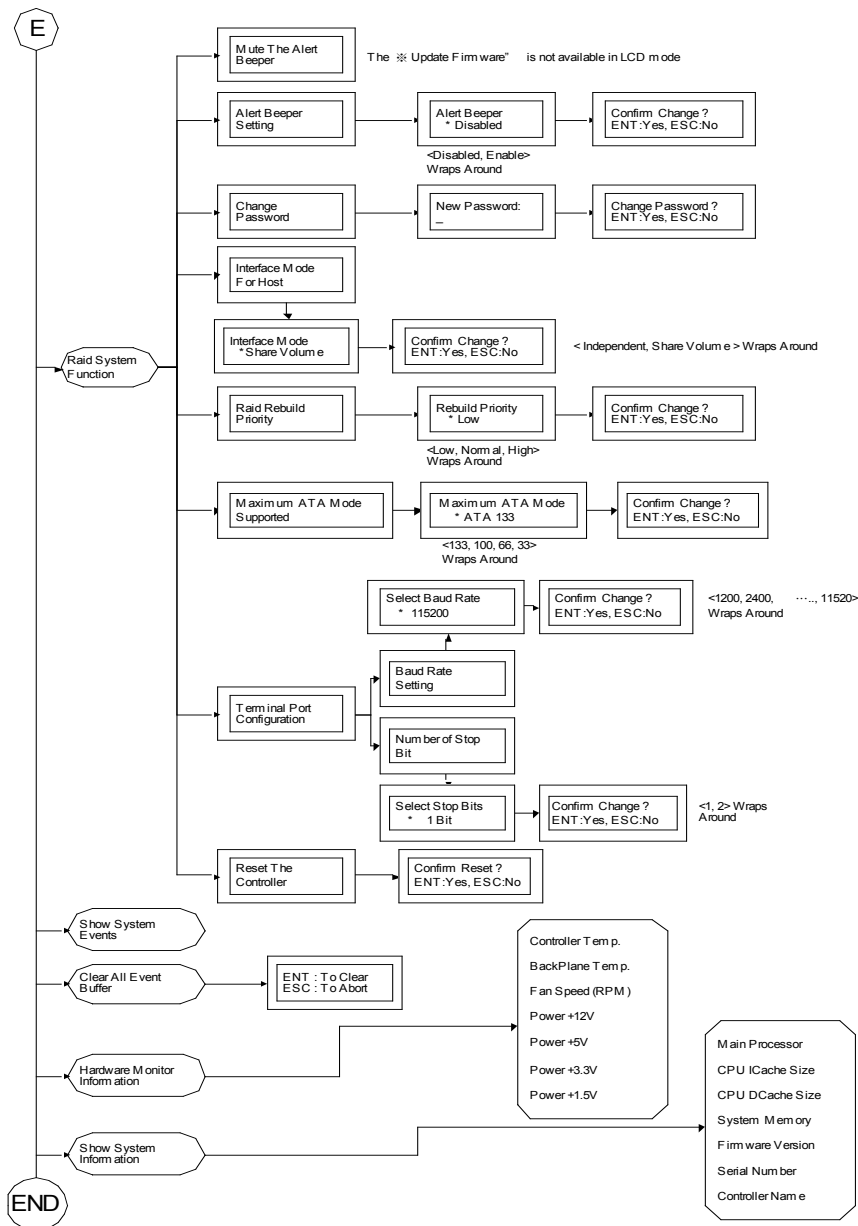
Select the **Disabled** and press **Enter** key in the dialog box to turn the beeper off temporarily. The beeper will still activate on the next event.

4.7.5.3 Change Password

To set or change the RAID subsystem password, press the **UP/DOWN** to select **Change Password** and then press the **ENT** to accept the selection. The **New Password:** screen appears and enter new password that user want to change.

Using the **UP/DOWN** to set the password value. After completing the modification, the confirmation screen will be displayed and then press **ENT** to accept the function

To disable the password, presses **ENT** only in the **New Password:** column. The existing password will be cleared. No password checking will occur when entering the main menu from the starting screen.



4.7.5.4 Interface Mode

This function can only active at no volume set defined in any RAID set.

Host Interface Mode:

Independent-Firewire and SATA host channel can concurrently access different volume sets. The Firewire can support Master and Slave volume set. The SATA can support one master volume set. The Max volume set can be accessed by Vanguard V-FW is 3.

Share Volume-The Vanguard V-FW can support Firewire and Serial ATA accesses same volume set. But user can only connect one channel at one time. If user connects the Firewire(Host Channel 0), the RAID subsystem supports 2 volumes (Master/Slave). If user connects the SATA, the RAID subsystem supports 1 volume (Master) (Host Channel 0). Both Firewire and SATA connection are setting as Channel 0.

To set or change the RAID subsystem RAID Host Channel Mode, press the **UP/DOWN** to select **Interface Mode** and press the **ENT** to accept the selection. The interface mode selection screen appears and uses the **UP/DOWN** to set the interface mode. After completing the modification, the confirmation screen will be displayed and then press **ENT** to accept the function

4.7.5.5 RAID Rebuild Priority

The "RAID Rebuild Priority" is a relative indication of how much time the controller devotes to a rebuild operation. The RAID subsystem allows user to choose the rebuild priority (low, normal, high) to balance volume set access and rebuild tasks appropriately.

To set or change the RAID subsystem RAID Rebuild Priority, press the **UP/DOWN** to select **RAID Rebuild Priority** and press the **ENT** to accept the selection. The rebuild priority selection screen appears and uses the **UP/DOWN** to set the rebuild value. After completing the modification, the confirmation screen will be displayed and then press **ENT** to accept the function

4.7.5.6 Maximum ATA Mode

Within the subsystem, one Ultra 160 SCSI chip acts as a target and 5 Ultra ATA bus are connected to the drive. The 5 Ultra ATA drive channel can support up to ATA133, which runs up to 133MB/s.

To set or change the RAID subsystem maximum ATA mode, press the **UP/ DOWN** to select **Maximum ATA Mode** and then press the **ENT** to accept the selection. The maximum ATA mode selection screen appears and uses the **UP/DOWN** to set the maximum ATA mode. After completing the modification, the confirmation screen will be displayed and then press **ENT** to accept the function.

4.7.5.7 COMA Configuration

Parity value is fixed at None.

Handshaking value is fixed at None.

Speed setting values are 1200, 2400, 4800, 9600, 19200,38400, 57600, and 115200.

Stop Bits values are 1 bit and 2 bits.

To set or change the RAID subsystem COMA configuration, press the **UP/ DOWN** to select **COMA Configuration** and then press the **ENT** to accept the selection. The baud rate setting or number of stop bit screen appears and uses the **UP/DOWN** select the setting function. The respect selection screen appears and uses the **UP/DOWN** arrow to set the value. After completing the modification, the confirmation screen will be displayed and then press **ENT** to accept the function.

4.7.5.8 Reset Controller

Use the Reset Controller to reset the entire configuration from the RAID subsystem controller non-volatile memory. To reset the RAID subsystem, press the **UP/ DOWN** to select **Reset Controller** and then press the **ENT** to accept the selection. The confirmation screen will be displayed and then press **ENT** to accept the function.

Note: It can only work properly at Host and Drive without any activity.

4.7.6 Show System Events

To view the RAID subsystem events, press **ENT** to enter the Main menu. Press **UP/DOWN** key to select the **Show System Events** option, and then press **ENT**. The system events will be displayed. Press **UP/DOWN** to browse all the system events.

4.7.7 Clear all Event Buffers

Use this feature to clear the entire events buffer information.

To clear all event buffers, press **ENT** to enter the main menu. Press **UP/DOWN** to select the **Clear all Event Buffers** option, and then press **ENT**. The confirmation message will be displayed and press the **ENT** to clear all event buffers or **ESC** to abort the action.

4.7.8 Hardware Information

To view the RAID subsystem controller's hardware monitor information, press **ENT** to enter the main menu. Press **UP/DOWN** to select the **Hardware Information** option, and then press **ENT**. All hardware information will be displayed. Press **UP/DOWN** to browse all the hardware information.

The Hardware Monitor Information provides the temperature, fan speed (chassis fan) and voltage of the RAID subsystem. The temperature items list the current states of the controller board and backplane. All items are also unchangeable. The warning messages will indicate through the LCM, LED and alarm buzzer.

Item	Warning Condition
Controller Board Temperature	> 60 Celsius
Backplane Temperature	> 60 Celsius
Controller Fan Speed	< 1900 RPM
Power Supply +12V	< 10.5V or > 13.5V
Power Supply +5V	< 4.7V or > 5.3V
Power Supply +3.3V	< 3.0V or > 3.6V
CPU Core Voltage +1.5V	< 1.35V or > 1.65V

4.7.9 System Information

Choose this option to display Main processor, CPU Instruction cache/ and data cache size, firmware version, serial number, controller model name, and the cache memory size. To check the system information, press **ENT** to enter the main menu. Press **UP/DOWN** to select the **Show System Information** option, and then press **ENT**. All major controller system information will be displayed. Press **UP/DOWN** to browse all the system information.