3003040

PC/104-Plus SCSI Module

Description

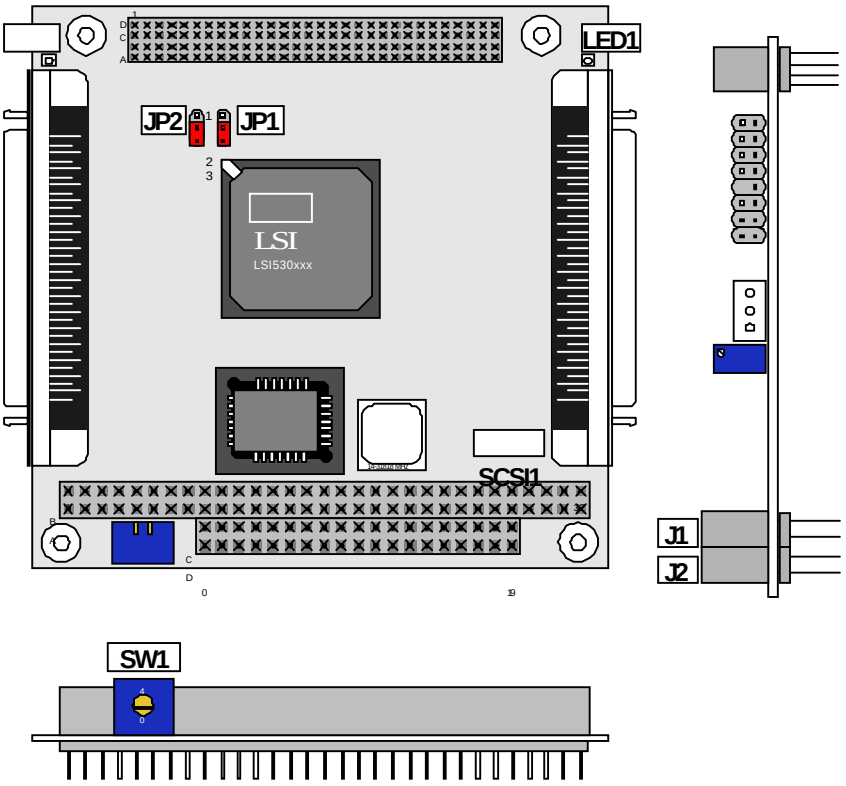
Dual Ultra3 LVD SCSI (U3D version)

- **Protocols Supported** : Ultra3 LVD, Ultra2 LVD, Ultra-Wide SCSI
- **SCSI Processor** : LSI Symbios 1010-33
- **Max Transfer Rate** : 160 MB/s (Ultra3)

Dual Ultra3 LVD SCSI (U2D version)

- **Protocols Supported** : Ultra2 LVD, Ultra-Wide SCSI
- **SCSI Processor** : LSI Symbios 896
- **Max Transfer Rate** : 80 MB/s (Ultra2)
- **Max. Devices Supported** : 30 (2x 15)
- **Connector** : dual external 68-Pin LVD
- **Cable length** : LVD SCSI Cable length up to 12 meters
- **PCI standards** : PCI 2.1 compliant with full Plug & Play support Level triggering allows interrupt sharing between multiple adapters High speed 32-bit PCI bus master DMA transfers up to 133 MB/s in burst mode
- **OS Support** : DOS, Windows, Windows NT, OS/2, NetWare, Linux(Red Hat, Caldera, Slack-Ware, Turbo-Linux, S.U.S.E. and Debian), FreeBSD, Solaris, SCO Unix and Unixware
- **Pressfit PC/104 Connectors** : High quality pressfit connectors for ISA and PCI bus to gurantee optimal connection and fit

1. Board Layout



2. Jumper Settings / Connector Reference

Jumpers and Switches

JP1 Termination Channel 1
- 1-2 Enable Termination
- 2-3 Auto Terminate

JP2 Termination Channel 2
- 1-2 Enable Termination
- 2-3 Auto Terminate

SW1 PCI ID/CLK
(see page 4)

Connector

J1 PC/104 8-bit ISA

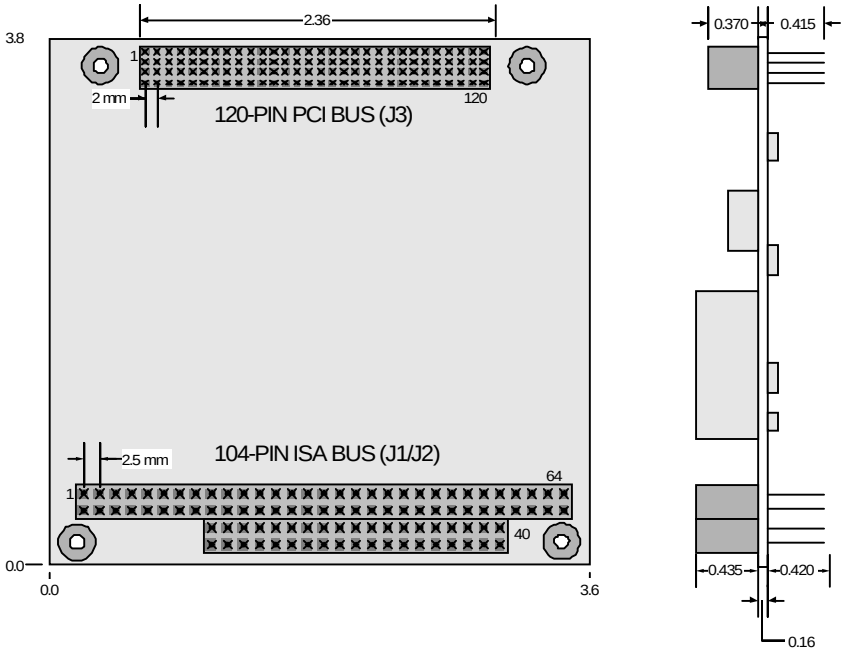
J2 PC/104 16-bit ISA extension

J3 PC/104-Plus PCI

SCSI1 SCSI Channel 1

SCSI2 SCSI Channel 2

3. Module Dimenions



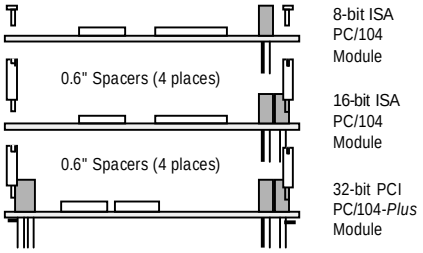
(Dimensions in inches)

3. Stacking and PCI ID / CLK assignemnt

PC/104-plus modules confrom to the same limitations as normal PCI based add-on cards that dictates no more than 4 boards (PC/104-plus modules) in a stack. When combined with a single board computer further limitations may apply depending on the PCI resources that are alrrady occupied by onboard functions that claim their own share of the total avaialble PCI resources. When mixed and matched with 8/16 bit ISA PC/104 modules the total amount of modules could reach ten.

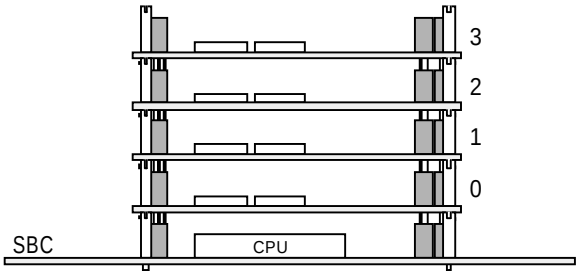
Mixing PC/104-Plus and PC/104 Modules

When using a combination of these types make sure that the sequnce of the boards is always as follows : pc/104-plus nearest to the core board (SBC or PC/104-plus) tnam 16-bit PC/104 boards and on the top the 8-bit PC/104 modules.

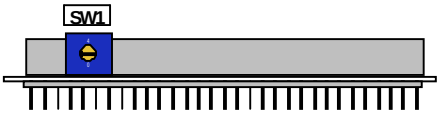


PC/104-Plus Clock and ID Select (SW1)

Every module in the PC/104-Plus stack has to be configured to reflect a unique set of PCI slot signals (ID and CLK)



The octal rotary switch on every PC/104-Plus module is used to set its own unique ID. The module closest to the SBC or Core Module starts with ID 0. Because the in the stack no more than four modules are supported the only meaningfull values are : 0, 1, 2 and 3



4. System Resources

Memory Mapping

Address	Size	Description
000C8000h-000C8FFFh	16K	Reserved for SCSI ROM device

I/O Address Mapping

I/O Address	Description Notes
DC00-DCFF	SCSI Channel 1
E000-E0FF	SCSI Channel 2

SCSI BIOS Setup Guide

A SCSI BIOS is the bootable ROM code that manages SCSI hardware resources. It is specific to a family of LSI Logic SCSI controllers or processors. An SDMS SCSI BIOS integrates with a standard system BIOS, extending the standard disk service routine provided through INT13h.

During the boot time initialization, the SCSI BIOS determines if there are other hard disks, such as an IDE drive, already installed by the system BIOS. If there are, the SCSI BIOS maps any SCSI drives it finds behind the drive(s) already installed. Otherwise, the SCSI BIOS installs drives starting with the system boot drive. In this case, the system boots from a drive controlled by the SCSI BIOS. For 4.05 versions and higher, LSI Logic supports the BIOS Boot Specification (BBS). The section, “Boot Initialization with BIOS Boot Specification (BBS),” discusses selecting boot and drive order.

Features

The SDMS SCSI BIOS features include:

- Configuration for up to 256 adapters-any 4 can be chosen for INT13 (bootrom) support
- All LSI53C8xx devices including LSI53C895A
- LSI53C1510 device
- LSI53C1010 device
- SPI-3 Parallel Protocol Request (PPR)
- Basic Domain Validation

Boot Initialization with BIOS Boot Specification (BBS)

The SDMS SCSI BIOS provides support for the BIOS Boot Specification (BBS), which allows you to choose which device to boot from by selecting the priority.

To use this feature, the system BIOS must also be compatible with the BBS. If your system supports the BBS, then you will use the system BIOS setup menu to select the boot and drive order. In the system BIOS setup, the Boot Connection Devices menu appears with a list of available boot options. Use that menu to select the device and rearrange the order. Then exit to continue the boot process.

CD-ROM Boot Initialization

The SDMS SCSI BIOS supports boot initialization from a CD-ROM drive. The five types of emulation are:

- No emulation disk
- Floppy 1.2 Mbyte emulation disk
- Floppy 1.44 Mbyte emulation disk
- Floppy 2.88 Mbyte emulation disk
- Hard disk emulation

The type of emulation assigns the drive letter for the CD-ROM. For example, if a 1.44 Mbyte floppy emulation CD-ROM was loaded, then the CD-ROM drive would become the designated A: drive, and the existing floppy would become drive B:.

Starting the SCSI BIOS Configuration Utility

If you have SCSI BIOS version 4.XX, and it includes the SDMS SCSI BIOS Configuration Utility, you can change the default configuration of your SCSI host adapters. You may decide to alter these default values if there is a conflict between device settings or if you need to optimize system performance.

You can see the version number of the SCSI BIOS in a banner displayed on your computer monitor during boot. If the utility is available, this message also appears on your monitor:

`Press Ctrl-C to start LSI Logic Configuration Utility...`

This message remains on your screen for about five seconds, giving you time to start the utility. If you decide to press “Ctrl-C”, the message changes to:

`Please wait, invoking LSI Logic Configuration Utility...`
After a brief pause, your computer monitor displays the Main menu of the SDMS PCI SCSI BIOS Configuration Utility.

To make changes with this menu driven utility, one or more SDMS SCSI host adapters must have NonVolatile Random Access Memory (NVRAM) to store the changes.

These messages may appear during the boot process:

1. “Adapter removed from boot order, parameters will be updated accordingly” appears when an adapter is removed from the system or relocated behind a PCI bridge.
2. “Configuration data invalid, saving default configuration!” appears if none of the information in the NVRAM is valid.
3. “Found SCSI Controller not in following Boot Order List, to Add: Press Ctrl-C to start LSI Logic Configuration Utility...” or “Adapter configuration may have changed, reconfiguration is suggested!” could appear when fewer than four adapters are in the boot order and adapters exist in the system which are not in the boot order.

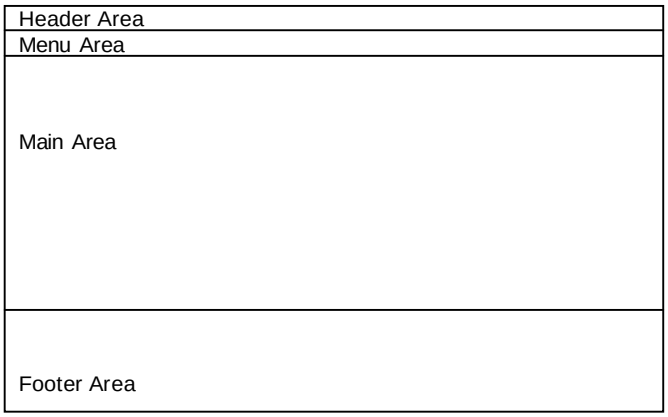
IMPORTANT:

The SCSI BIOS Configuration Utility is a powerful tool. If, while using it, you somehow disable all of your controllers, pressing Ctrl-A (or Ctrl-E on version 4.04 or later) after memory initialization during reboot allows you to re-enable and reconfigure. Also, if the system locks up due to NonVolatile Storage (NVS), press Ctrl-N to bypass the BIOS in order to reflash the card.

Not all devices detected by the SCSI BIOS Configuration Utility can be controlled by the BIOS. Devices such as tape drives and scanners require that a device driver specific to that peripheral be loaded. The SCSI BIOS Configuration Utility does allow parameters to be modified for these devices.

Using the Configuration Utility

All SCSI BIOS Configuration Utility screens are partitioned into the fixed areas. Here is an example:



Header Area This area provides static information text, which is typically the product title and version.

Menu Area This area provides the current Main Area's menu, if any. This area has a cursor for menu item selection.

Main Area This is the main area for presenting data. This area has a cursor for item selection, horizontal scrolling, and vertical scrolling. The horizontal and vertical scroll bars appear here.

Footer Area This area provides general help information text.

Throughout the GUI, selections that are not permissible are grayed out.

F1 = Help	Context sensitive help for the cursor-resident field.
F2 = Menu	Sets cursor context to the menu selection area. Select a menu item and press Enter.
Arrow Keys	Select Item
Home/End	Select Item
Up, down, L, R	position the cursor.
+/-	Change [Item]

Items with values in [] brackets are modifiable.
Use the '+' or '-' keys in the top row of the main keyboard or use the mumeric keypad '+' and '-' keys to change a modifiable field. When pressed, they toggle a modifiable field to its next relative value. For example, '+' toggles the value up and '-' toggles the value down.

Esc = Abort/Exit
Escape aborts the current context operation and/or exits the current screen. User confirmation is solicited as required.

Enter = Execute <Item> Items with values in <> brackets are executable.
Press Enter to execute the field's associated function.

Main Menu

When you invoke the SDMS SCSI BIOS Configuration Utility, the Main menu appears. This menu displays a scrolling list of up to 256 LSI Logic PCI to SCSI host adapters in the system and information about each of them.

Use the arrow keys to select an adapter, then press Enter to view and modify the selected adapter's properties (and to gain access to the attached devices). Only adapters with LSI Logic Control enabled can be accessed. Adapters with no NVM will show default settings and cannot be changed. After selecting an adapter and pressing Enter, the adapter's SCSI bus is scanned and the Adapter Properties menu appears. An example is shown after the descriptions about the Boot Adapter List and Global Properties menus.

On the Main menu, two selections are: Boot Adapter List and Global Properties. Press F2 to access these menus, use the arrow keys to select the desired menu, and press Enter.

Boot Adapter List allows selection and ordering of boot adapters. Refer to the section on Boot Adapter List below.

Global Properties allows changes to global scope settings. Refer to the section on Global Properties below. To execute an item, select it and press Enter. Here is an example of the Main menu:

```
LSI Logic SDMS (TM) PCI SCSI Configuration Utility  Version PCI-x.xx
<Boot Adapter List>  <Global Properties>
LSI Logic Host Bus Adapters


Adapter            PCI   Dev/   Port    IRQ    NVM    Boot   LSI Logic
                   Bus   Func   Number                Order  Control

<53C1010-33        0     60>    E400    10     Yes    0      Enabled
<53C1010-33        0     61>    E000    12     Yes    1      Enabled
```

Adapter : Indicates the specific family of LSI Logic Host Adapters.

PCI Bus : Indicates the PCI Bus number (range 0x00 - 0xFF, 0 - 255 decimal) assigned by the system BIOS to an adapter.

Dev/Func : Indicates the PCI Device/Function assigned by the system BIOS to an adapter.

An 8-bit value mapped as follows:

```
Bit # 7  6  5  4  3  2  1  0
     |_____________| |_____|
           |            |> Bits 2-0: Function (range 0 - 7)
           |> Bits 7-3: Device (range 0x00 - 0x1F, 0 - 31 decimal).
```

Port Number : Indicates the I/O Port Number that communicates with an adapter. The system BIOS assigns this number.

IRQ : Indicates the Interrupt Request Line used by an adapter.
The system BIOS also assigns this value.

NVM : Indicates whether an adapter has non-volatile memory (NVM) associated with it. An adapter's configuration is stored in its associated NVM. NVM can refer to NVRAM that is resident on a host adapter or to system NVS.

Boot Order : Indicates the relative boot order (0 to 3) of an adapter The SDMS SCSI BIOS traverses up to four adapters in the specified order in search of bootable media. Access the "Boot Adapter List" Menu to modify this item.

LSI Logic : Indicates whether an adapter is eligible for LSI Logic software Control control or is reserved for control by non-LSI Logic software.

Global : Indicates global properties that are not associated with a Properties specific adapter or device.

Boot Adapter List

The Boot Adapter List menu specifies the order in which adapters will boot when more than one LSI Logic adapter is in a system. Up to four of the total adapters in a system can be selected as bootable. Adapters can be added or deleted using this menu.

To add an adapter to the boot list, press the Insert key while on the Boot Adapter List. This puts the cursor on the adapter select list. Use the arrow keys to select the desired adapter and press Enter to add it to the end of Boot Adapter List.

To remove an adapter from the boot list, press the Delete key while on the desired adapter in the Boot Adapter List. You can also change the boot order by using the '+' or '-' keys. For example, place the cursor on the adapter that you want to change, and use the '+' or '-' key to raise or lower the boot order.

Here is an example of the Boot Adapter List menu:

```
LSI Logic SDMS (TM) PCI SCSI Configuration Utility  Version PCI-x.xx

Boot Adapter List
Insert=Add an adapter     Delete=Remove an adapter

Adapter            PCI   Dev/   Boot    Current       Next
                   Bus   Func   Order   Status        Boot

<53C1010-33        0     60>    [0]     On            [On]
<53C1010-33        0     61>    [1]     On            [On]

Hit Insert to select an adapter from this list:
<53C1010-33        0     60>
<53C1010-33        0     61>
```

Adapter : Indicates the specific family of LSI Logic Host Bus Adapters.

PCI Bus : Indicates the PCI Bus number (range 0x00 - 0xFF, 0 - 255 decimal) assigned by the system BIOS to an adapter.

Dev/Func : Indicates the PCI Device/Function assigned by the System BIOS to an adapter.

An 8-bit value mapped as follows:

```
Bit # 7  6  5  4  3  2  1  0
     |_____________| |_____|
           |            |> Bits 2-0: Function (range 0 - 7)
          |> Bits 7-3: Device (range 0x00 - 0x1F, 0 - 31 decimal).
```

Boot Order : Specifies the relative boot order (0 to 3) of an adapter.
- : decreases an adapter's relative boot order.
+ : increases an adapter's relative boot order.

Current Status : Indicates whether an adapter in the boot list was enabled during the most recent boot. Disabled adapters and their attached devices are ignored by the SDMS SCSI BIOS, they are still visible to the configuration utility.

Next Boot : Specifies whether to enable an adapter upon the next boot. The SDMS SCSI BIOS ignores disabled adapters and their attached devices although they are still visible to the configuration utility.

Global Properties

The Global Properties option on the Main menu allows you to view boot information, to set display and video modes, pause if an alert message has been displayed along with other options. Here is an example of the Global

Properties menu:

```
LSI Logic SDMS (TM) PCI SCSI Configuration Utility  Version PCI-x.xx

Global Properties
        Pause When Boot Alert Displayed      [Yes]
        Boot Information Display Mode        [Verbose]
        Negotiate with devices               [Supported]
        Language                             [English]
        Video Mode                           [Color]
        Support Interrupt                    [Hook interrupt,the Default


        <Restore Defaults>
```

Pause When Boot Alert Displayed : This option specifies whether to pause for user acknowledgement after displaying an alert message during boot. The Boot Alert setting can be either No or Yes. To continue after displaying a message, specify No. To wait for any key after displaying a message, specify Yes.

Boot Information Display Mode : This option specifies the information display mode of the BIOS during boot. It controls how much information about adapters and devices are displayed during boot. The Display Mode setting can be either Terse or Verbose. To display minimum information, specify Terse mode. To display detailed information, specify Verbose mode.

Negotiate with devices : This option sets the default value for synchronous and wide negotiations with specified devices. Options are: All, None, or Supported.

Language : This option specifies the current language set for using this utility.
Video Mode : This option specifies the default video mode for the SCSI BIOS Configuration Utility. The Video Mode setting can be either Color or Monochrome. The monochrome setting enhances readability on a monochrome monitor.

Support Interrupt : This option allows the ability to prevent a hook on INT40, if required. The two settings are: Hook Interrupt, the default, and Bypass Interrupt Hook. Hook Interrupt is the normal operation that supports booting CD-ROMs in floppy emulation mode on most machines. On certain platforms, the system BIOS uses the INT40h interrupt chain in a non-standard way. On these platforms, you should use the “Bypass Interrupt Hook” setting. This setting prevents a hook into the INT40h chain. If the “Bypass Interrupt Hook” setting is used on systems that do not require it, the CD-ROM may fail to boot and an error message may appear and indicate it is unable to read the boot device. Note: Try toggling this value if your machine fails to boot a CD-ROM in floppy emulation mode.

Restore Defaults : Press Enter to obtain default settings.

Adapter Properties

The Adapter Properties menu allows you to view and modify adapter settings and SCSI devices connected to it. It also provides access to an adapter's device settings. To display this menu, select a device under the Adapter field on the Main menu and press Enter. Here is an example of the Adapter

Properties menu:

```
LSI Logic SDMS (TM) PCI SCSI Configuration Utility  Version PCI-x.xx

Adapter Properties

        Adapter                              PCI         Dev/
                                             Bus         Func
       53C1010-33                           0           60

       <Device Properties>
        SCSI Parity                         [Yes]
        Host SCSI ID                        [ 7]
        SCSI Bus Scan Order                 [Low to High (0..Max)]
        Removable Media Support             [None]
        CHS Mapping                         [SCSI Plug and Play Mapping]
        Spinup Delay (Secs)                 [    2]
       Secondary Cluster Server             [No]
       Termination Control                  [Auto]

<Restore Defaults>
```

If the field displays in grey or yellow text, it is available for changes. If it displays in white text, it is not available.

<Device Properties>

This option allows you to view and modify device properties. The Device Properties menu appears. Go to the next section for information about this menu.

SCSI Parity : This field indicates whether SCSI parity is enabled for an adapter. When disabled, it is also necessary to disable disconnects for all devices, as parity checking for the reselection phase is NOT disabled. If a non-parity generating device disconnects, its operation will never complete because the reselection fails due to parity error.

Host SCSI ID : This field indicates the SCSI identifier of an adapter [0-7] or [0-15]. It is recommended that this field be set to the highest priority SCSI identifier, which is 7. Note: 8-bit SCSI devices cannot see identifiers greater than 7.

SCSI Bus Scan Order : This field indicates the order in which to scan SCSI identifiers on an adapter. Changing this item will affect drive letter assignment(s) if more than one device is attached to an adapter.

Note: Changing this item may conflict with an operating system that automatically assigns drive order.

Removable Media Support : This field specifies the removable media support option for an adapter. Three settings are allowed: None indicates no removable media support whether the drive is selected as first (BBS), or is first in the scan order (non-BBS). Boot Drive Only provides removable media support for a removable hard drive if it is first in the scan order. With Media Installed provides removable media regardless of the drive number assignment.

CHS Mapping : This field defines how the Cylinder Head Sector values are mapped onto a disk without pre-existing partition information. CHS Mapping allows two settings: SCSI Plug and Play Mapping (default value) and Alternate CHS Mapping. SCSI Plug and Play Mapping automatically determines the most efficient and compatible mapping. Alternate CHS Mapping utilizes an alternate, possibly less efficient mapping that may be required if a device is moved between adapters from different vendors.

Caution : Neither of these options has any effect after a disk has been partitioned using the FDISK command. The FDISK utility is a tool that you can use to delete partition entries, one or all of them. If all partition entries are deleted, it is necessary to reboot to clear memory or the old partitioning data will be reused, thus nullifying the previous operation. Use care to ensure that the correct disk is the target of an FDISK command.

Spinup Delay (Secs) : This field indicates the delay in seconds between spinups of devices attached to an adapter. Staggered spinups will balance the total electrical current load on the system during boot. The default value is 2 seconds with choices between 1 and 10 seconds.

Secondary Cluster Server : This field indicates whether an adapter has one or more devices attached that are shared with one or more other adapters and therefore, the SDMS SCSI BIOS should avoid SCSI Bus resets as much as possible. This option allows you to enable an adapter to join a cluster of adapters without doing any SCSI bus resets. This is a requirement for Microsoft Cluster Server. The default value is No with an alternate option of Yes.

Termination Control : This field indicates whether an adapter has automatic termination control. If not available, its current status is either: Auto or Off. Auto means that the adapter automatically determines whether it should enable or disable its termination. Off means termination at the adapter is off, and the devices at the ends of the SCSI bus must terminate the bus.

Note:
If Auto is grayed out, it means that termination is automatic, not programmable.

Restore Defaults : To obtain default settings, press Enter.

Device Properties

The Device Properties menu allows you to view and update individual device settings for an adapter. Changing a setting for the host device (for example, SCSI ID 7) changes the setting for all devices.

The number of fields displayed requires the menu to scroll left/right in order to dsiplay the information. When accessing this menu online, use the Home/End keys to scroll to columns currently not displayed. The scroll indicator on the bottom of the menu shows where the cursor is relative to the first and last columns.

Here is an example of the Device Properties menu :

```
LSI Logic SDMS (TM) PCI SCSI Configuration Utility  Version PCI-x.xx

SCSI Device Identifier    MB/Sec  MT/Sec  Data     Scan   Scan    Dis-
ID                        Width   Id      LUNs>0   connect
0      -                  [160]   [80]    [16]     [Yes]  [Yes]   [On]
1      -                  [160]   [80]    [16]     [Yes]  [Yes]   [On]
2      -                  [160]   [80]    [16]     [Yes]  [Yes]   [On]
3      SEAGATE ST31055N  [160]   [80]    [16]     [Yes]  [Yes]   [On]
4      [160]              [80]    [16]    [Yes]    [Yes]  [On]
5      [160]              [80]    [16]    [Yes]    [Yes]  [On]
6      [160]              [80]    [16]    [Yes]    [Yes]  [On]
7      53C1010-33         [160]   [80]    [16]     [Yes]  [Yes]   [On]
8      [160]              [80]    [16]    [Yes]    [Yes]  [On]
9      [160]              [80]    [16]    [Yes]    [Yes]  [On]
10     [160]              [80]    [16]    [Yes]    [Yes]  [On]
11     [160]              [80]    [16]    [Yes]    [Yes]  [On]
12     [160]              [80]    [16]    [Yes]    [Yes]  [On]
13     [160]              [80]    [16]    [Yes]    [Yes]  [On]
14     [160]              [80]    [16]    [Yes]    [Yes]  [On]
15     [160]              [80]    [16]    [Yes]    [Yes]  [On]
                          << Scroll Indicator>>

SCSI   Device Identifier  SCSI     Queue   Boot    Format
ID     Timeout            Tags     Choice
0      -                  <  10>  [On]    [No]    <Format>
1      -                  <  10>  [On]    [No]     <Format>
2      -                  <  10>  [On]    [No]     <Format>
3      SEAGATE ST31055N  <  10>  [On]    [No]     <Format>
4      -                  <  10>  [On]    [No]     <Format>
5      -                  <  10>  [On]    [No]     <Format>
6      -                  <  10>  [On]    [No]     <Format>
7      53C1010-33         <  10>  [On]    [No]     <Format>
8      -                  <  10>  [On]    [No]     <Format>
9      -                  <  10>  [On]    [No]     <Format>
10     -                  <  10>  [On]    [No]     <Format>
11     -                  <  10>  [On]    [No]     <Format>
12     -                  <  10>  [On]    [No]     <Format>
13     -                  <  10>  [On]    [No]     <Format>
14     -                  <  10>  [On]    [No]     <Format>
15     -                  <  10>  [On]    [No]     <Format>
                          << Scroll Indicator>>]

SCSI Device Identifier    Verify      Restore
ID                                    Defaults
0      -                  <Verify>    <Defaults>
1      -                  <Verify>    <Defaults>
2      -                  <Verify>    <Defaults>
3      SEAGATE ST31055N  <Verify>    <Defaults>
4      -                  <Verify>    <Defaults>
5      -                  <Verify>    <Defaults>
6      -                  <Verify>    <Defaults>
7      53C1010-33         <Verify>    <Defaults>
8      -                  <Verify>    <Defaults>
9      -                  <Verify>    <Defaults>
10     -                  <Verify>    <Defaults>
11     -                  <Verify>    <Defaults>
12     -                  <Verify>    <Defaults>
13     -                  <Verify>    <Defaults>
14     -                  <Verify>    <Defaults>
15     -                  <Verify>    <Defaults>
                          << Scroll Indicator>>
```

SCSI ID : This field indicates the device's SCSI Identifier.

Device Identifier : This field indicates the ASCII device identifier string extracted from the device's Inquiry Data.

Sync Rate (MB/Sec and MT/Sec) : MB/Sec is a field that displays information [0/ 5/ 10/ 20/ 40/ or 160]. This field indicates the maximum synchronous data transfer rate of the adapter in mega bytes per second corresponding to the width and transfer rate settings that follow. MT/Sec is a configuration field where these values [0/ 5/ 10/ 20/ 40/ or 80] can be changed. This field indicates the maximum synchronous data transfer rate of the adapter in mega transfers per second. It can be changed to a lower transfer rate.

Data Width : This field indicates the maximum data width in bits.

Scan ID : This field indicates whether to scan for this SCSI identifier at boot time. This item can be used to ignore a device and to decrease boot time by disabling the inquiry of unused SCSI identifiers. Set this option to "No" if there is a device that you do not want to be available to the system. Also, on a bus with only a few devices attached, the user can speed up boot time by changing this setting to "No" for all unused SCSI IDs.

Scan LUNs > 0 : This field indicates whether to scan for LUNs greater than zero for a device. LUN zero is always queried. This option should be used if a multi-LUN device responds to unoccupied LUNs or if it is desired to reduce the visibility of a multi-LUN device to LUN zero only. Set this option to "No" if you have problems with a device that responds to all LUNs whether they are occupied or not. Also, if a SCSI device with multiple LUNs exists on your system but you do not want all of those LUNs to be available to the system, then set this option to "No." This will limit the scan to LUN 0 only.

Disconnect : This field indicates whether to allow a device to disconnect during SCSI operations. Some (mostly newer) devices run faster with disconnect enabled, while some (mostly older) devices run faster with disconnect disabled.

SCSI Timeout : This field indicates the maximum amount of time [0 to 9999] in seconds to wait for a SCSI operation to complete. Since timeouts provide a safeguard that allows the system to recover should an operation fail, it is recommended that a value greater than zero be used. A value of zero allows unlimited time for an operation to complete and could result in the system hanging (waiting forever) should an operation fail. Press Enter, type in a value, and then press Enter again to specify a new timeout value.

Queue Tags : This field indicates whether to allow the use of queue tags for a device. Currently the BIOS does not use queue tags. This item specifies queue tag control to higher level device drivers.

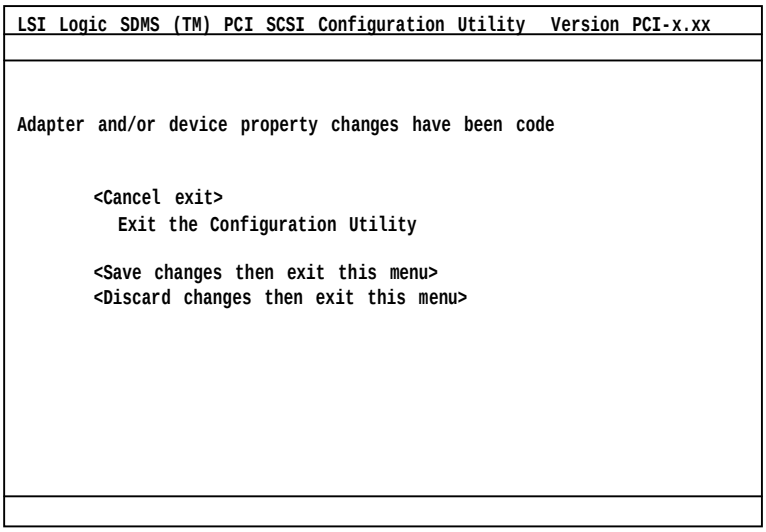
Boot Choice : This field indicates whether this device may possibly be selected as the boot device. This option is only applicable to devices attached to adapter number zero (in the boot list) on non-BBS systems. It provides primitive BBS flexibility to non-BBS systems.

Format : Press Enter to low-level format the device. If enabled, this option allows low-level formatting on a disk drive. Low-level formatting will completely and irreversibly erase all data on the drive. Note: Formatting will default the drive to a 512-byte sector size even if the drive had previously been formatted to another sector size.

Verify : Press Enter to verify all sectors on the device and to reassign defective Logical Block Addresses (LBAs)

Exiting the SCSI BIOS Configuration Utility

The Exit menu for the SCSI BIOS Configuration Utility is used for all five of the menus listed above. However, the available functionality is different for the Main menu and the four subordinate menus. Here is an example of the Exit menu:



To exit from the Adapter Properties, Device Properties, Boot Adapter List, or global Properties menus, use these exit options:

Cancel exit : This option returns you to the previous menu.

Save changes then exit this menu : This option implements any changes you made on the previous menu and returns you to the Main menu.

Discard changes then exit this menu : This option restores the default settings and to the Main menu.

To exit from the Main menu, use these exit options:

Cancel exit : This returns you to the Main menu.

Exit the Configuration Utility : This option exits the configuration and automatically reboots your system.

Important : If you reboot the system without properly exiting from this utility, some changes may not take effect.

Contact Information

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