FIBER CHANNEL for SCSI
SMALL COMPUTER FIBER INTERFACE

SCFI

What's New and Different

Physical Layer
Simplifies Parallel Bus
Adds Fiber Channel Bus
Eliminates Artifacts
FIBER CHANNEL TOPOLOGIES

POINT-TO-POINT

SWITCHED POINT-TO-POINT

RING (String)
FIBER CHANNEL BUS

Reset or Protocol Error

BUS FREE

NEXUS TRANSFER
The word "or" in the figure indicates a mutually exclusive choice of phase sets during a connection.
PARALLEL BUS SELECTION MENU

SINGLE ENDED

Shielded Alternative 1
Termination Alternative 2
8 or 16 Bit -- No Intermix
Synchronous
Wide (16 bit only)

DIFFERENTIAL

Shielded Alternative 1
Termination (Best)
8 or 16 Bit -- No Intermix
Synchronous
Fast
Wide (16 bit only)
LOGICAL OPERATION MODEL

A SCSI-3 MULTIPLE PATH LOGICAL SYSTEM

Logical Paths

ICID = ABC

Physical Paths

HOST | INIT | TARG | TAR PORT | LUNITAR
---|---|---|---|---
ABC | 7 | 2 | 0 | LUN 0
ABC | 6 | 1 | 0 | LUN 0
ABC | 6 | 1 | 0 | LUN 0
ABC | 6 | 1 | 0 | LUN 0
ABC | 7 | 2 | 0 | TRN 0
ABC | 7 | 2 | 0 | TRN 0
ABC | 6 | 1 | 0 | TRN 0
ABC | 6 | 1 | 0 | TRN 0

(potential path group)
SMALL COMPUTER FIBER INTERFACE

SCFI

What's New and Different

Logical Layer - Packetized
Preserves Command Set
Multiple Port Operation
Bus Independent
Packetizing SCSI

Logical Command Interface
- Block Devices
- Stream Devices
- Other Devices
- Common Commands

Message System

Physical Interface
- Packetized, Multiport Serial
- Parallel Improvements Dual Port
Packetizing SCSI

IDENTIFY DATA CONTENT TYPES

Interface Logical Elements

Message
Command Descriptor Block
Command Parameter Data
Command Response Data
Logical Block Data
Status
Autosense (New)
Packetizing SCSI

INFORMATION PACKETS

FIBER CHANNEL HEADER

COMMON

{ INFORMATION PACKET PREFIX

INTERFACE LOGICAL ELEMENTS

INFORMATION PACKET SUFFIX

FIBER CHANNEL TRAILER

370
Packetizing SCSI

INFORMATION PACKETS

PREFIX

Length
Type
Control
Identification

INTERFACE

LOGICAL

ELEMENTS

SUFFIX

0–3 Pad Bytes
Round to Multiple of 4 bytes
SCFI LOGICAL MODEL - INFORMATION FLOW

TARGET CONTROLLER
SCFI LOGICAL MODEL - INFORMATION FLOW

LOGICAL LEVEL

INITIATING CONTROLLER

HARDWARE

COMMON SERVICES

PORT 0
LOGICAL ELEMENT
PORT 1

INBOUND FRAMES
OUTBOUND FRAMES
FREE FRAMES
RESEND FRAMES
QUEUED I/O PROCESSES
ACTIVE I/O PROCESSES
INTERPRETATION