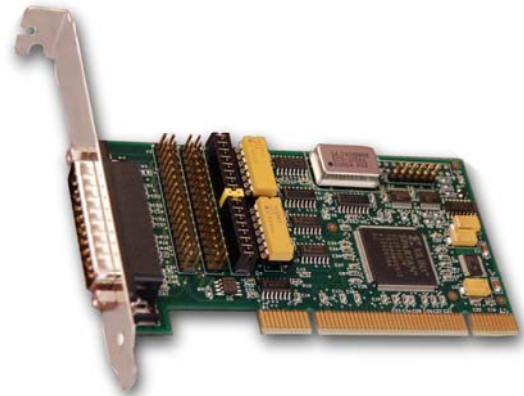




## SyncLink Frame Relay Adapters for Windows

The SyncLink *GT*, SyncLink *GT4* and the SyncLink PCMCIA Frame Relay Adapters for Windows NT/2000/XP and Server 2003 provide high-speed, wide area networking over frame relay connections. This eliminates the need for costly hardware frame relay access devices (FRADs). The Windows NT/2000/XP and Server 2003 Routing and Remote Access Service (RRAS) provides multiprotocol routing which runs on the SyncLink adapters and eliminates the need for hardware routers. SyncLink adapters also feature an agent and console for management of the frame relay link.

The SyncLink card is a full-duplex serial communications adapter designed for use with digital CSU/DSU equipment over 56 Kbps to 10 Mbps frame relay connections. (128Kbps and higher on PCMCIA connections)



Through its serial data interface, which can be configured as V.35, RS-232, or RS-422/485 (RS-530, RS-449, X.21), the SyncLink *GT* adapter cables directly to data communications equipment such as high-speed synchronous modems and digital service CSU/DSUs, as well as satellite and RF modems. The 4-port SyncLink *GT4* also supports these same connections through independently configured serial data interfaces. Available conversion cables are required for each port for V.35, RS-449, RS-530, and X.21 applications.



SyncLink adapters feature Plug and Play configuration of adapter resources, such as I/O base address and interrupt request level. The number of adapters that can be installed is limited only by the number of available PCI and PCMCIA slots.

To verify installation or test SyncLink adapters at any time after installation, comprehensive board-level diagnostics can be activated in the Control Panel and Device Manager.

### PRODUCT CONFIGURATIONS

Single Port Adapters	Product Code
SyncLink <i>GT</i> Frame Relay Adapter for Windows/PCI/V.35	191133
SyncLink <i>GT</i> Frame Relay Adapter for Windows/PCI/RS-232	192133
SyncLink <i>GT</i> Frame Relay Adapter for Windows/PCI/RS-422/X.21	193133
SyncLink <i>GT</i> Low-Profile Bracket	LPB000
PCMCIA Adapters	
SyncLink Frame Relay Adapter for Windows/PCMCIA	P10133
4-port Adapters	
SyncLink <i>GT4</i> Frame Relay for Windows/PCI/V.35/4p	491133
SyncLink <i>GT4</i> Frame Relay for Windows/PCI/RS-232/4p	492133
SyncLink <i>GT4</i> Frame Relay for Windows/PCI/RS-422/X.21/4p	493133
Cables	
V.35 cable	2534GT
RS-232 cable	CMF000
RS-449 cable	2537FM
RS-530 cable	CMF000
X.21 cable	2515FM

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## FEATURES

### LAN Emulation

SyncLink appears to Windows as a LAN adapter supported by a standard NDIS network driver. LAN packets sent by Windows to the adapter are converted to frames and transmitted over the frame relay link. Received frames are converted to LAN packets and passed up to Windows for processing. These conversions are transparent to LAN applications.

### Network Management

The SyncLink Frame Relay adapter includes an agent and a console for SNMPv1 management of the frame relay link. The SNMP agent is implemented by an extension DLL for the Microsoft extendable SNMP agent. The frame relay agent fully supports RFC1315 including DLCMI tables, circuit tables, error tables, and traps. The management console monitors and controls the RFC1315 agent using the Microsoft SNMP management API.

### Routing

SyncLink supports IP and IPX routing through the Windows Routing and Remote Access Service (RRAS).

### Protocols

SyncLink supports a variety of networking protocols using the IETF RFC1490 standard for multiprotocol encapsulation over frame relay. IP and IPX protocols are supported in both routed and bridged forms. The ARP and Inverse ARP protocols are supported for dynamic protocol address discovery.

### Virtual Circuits

The aggregate bandwidth of the frame relay circuit can be configured into one or more Permanent Virtual Circuits (PVCs). Each PVC corresponds to a Data Link Connection Identifier (DLCI) assigned by the Frame Relay service provider. Up to 16 PVCs can be assigned for each SyncLink adapter.

### Logical Adapters

Each physical SyncLink adapter can support multiple logical adapters. When a logical adapter is installed using the control panel, the adapter configuration allows the selection of the physical adapter and a grouping of PVCs into a virtual network segment for the logical adapter.

### Tracing

A tracing utility program is provided that allows starting, stopping, and viewing of traces. Tracing provides multiple levels of detail and records data and adapter events in a disk file for later analysis.

### Monitoring

A monitor program is provided for collecting and displaying serial signals, PVC connections, and link statistics in real time.

## APPLICATIONS

Windows networking applications for the SyncLink frame relay adapter include: Internet gateways for LANs, high-speed Internet and Intranet servers (WWW, FTP, etc.), LAN to remote LAN connections, high-speed WAN connections between Windows and remote devices over frame relay links, and IP & IPX routing with Windows Routing and Remote Access Service.

## SyncLink Frame Relay Adapters for Windows

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### **SPECIFICATIONS (SyncLink GT)**

Controller: MicroGate FPGA  
Serial Ports: One  
Serial Interface: Jumper-selectable as V.35, RS-232, RS-422/485 (RS-530 & RS-449, X.21)  
Serial Data Format: Bit-synchronous, SDLC, HDLC  
Data Rates: Up to 10 Mbps  
Clocking: Internal or external  
I/O Base Address: Plug and Play configurable  
Interrupt Request Level: Plug and Play configurable  
Environmental: Temperature 0-60oC; humidity 0 to 95% non-condensing; alt. - 200 to +10,000 ft.  
Mechanical: Low-Profile PCI MD1; length 4.7 ", height 2.5 ", Weight 2.7 Oz  
PCI 3.0 compliant, 32-bit, 33mhz (5v, 3.3v and PCI-X compatible), Low-profile compatible w/optional bracket.  
Power usage: 0.2A +5V, 23 mA +12V, 23mA -12V  
Certification: Complies with FCC limits for a Class B digital device; conforms with CE requirements  
Connector: DB-25 (male)  
Cable Options: DB-25 (female) to DB-25 (male); DB-25 (female) to 34-pin V.35 (male); DB-25 (female) to 37-pin RS-449 (male); DB-25 (female) to 15-pin X.21 (male)

### **SPECIFICATIONS (SyncLink GT4)**

Controller(s): MicroGate FPGA  
Serial Ports: Two (2) or four (4); custom designs offer more ports-per-adapter  
Serial Interface: Jumper-selectable as V.35, RS-232, RS-422/485 (RS-530,RS-449, X.21)  
Serial Data Format: bit-synchronous: HDLC, SDLC; asynchronous  
Data Rates: Up to 10 Mbps per port synchronous; 921600 bps asynchronous  
Interrupt Request Level: Plug and Play configurable  
Environmental: Temperature 0-60oC; humidity 0 to 95% non- condensing; alt. - 200 to +10,000 ft.  
Mechanical: Standard PCI short card; length 6.875", height 4.2", Weight 5.5 Oz  
PCI 3.0 compliant, 32-bit, 33mhz (5v, 3.3v, and PCI-X compatible)  
Power usage: 300mA 5V, 80mA +12V, 80mA -12V  
Certification: Complies with FCC limits for a Class B digital device; conforms with CE requirements  
Connectors: LFH-60  
Supplied Adapter Cable: LFH-60 to dual DB-25 (male)  
Cable Options: DB-25 (female) to DB-25 (male); DB-25 (female) to 34-pin V.35 (male); DB-25 (female) to 37-pin RS-449 (male); DB-25 (female) to 15-pin X.21 (male)

### **SPECIFICATIONS (SyncLink PCMCIA)**

Controller(s): SAB82532  
Serial Ports: One  
Serial Interface: Software-selectable as V.35, RS-232, RS-422 (RS-530,RS-449, X.21)  
Serial Data Format: bit-synchronous: HDLC, SDLC; BSC; async  
Data Rates: 128Kbps and higher  
I/O Base Address: Plug and Play configurable (PC Card)  
Interrupt Request Level: Plug and Play configurable  
Environmental: Temperature 0-60oC; humidity 0 to 95% non- condensing; alt. - 200 to +10,000 ft.  
Mechanical: Standard Type II PCMCIA card; length 3.37 inches, width 2.126 inches, weight 1.0 Oz  
Power usage: 200 mA +5V  
Certification: Complies with FCC limits for a Class B digital device; conforms with CE requirements  
Supplied Adapter Cable: PCMCIA I/O connector to DB-25 (male)  
Cable Options: DB-25 (female) to DB-25 (male) DB-25 (female) to 34-pin V.35 (male); DB-25 (female) to 37-pin RS-449 (male); DB-25 (female) to 15-pin X.21 (male)