

### Key Features

- High performance adapters at competitive prices
- PCI / PCI-X (Universal PCI) 1, 2 and 4 port cards
- Network interface choice: X.21, V.35, RS530 and V.24
- Multiple adapter support with seamless installation
- Line speeds up to 10 Mbits/s using bus mastering DMA
- PCI-X, PCI 2.2 compliant adapter
- Supported on Redhat, SuSE, Slackware, Mandrake, Debian, Fedora and more
- Linux support for TCP/IP over PPP, Cisco HDLC and Frame Relay



### Overview

The versatile intelligent FarSync WAN T-Series adapter products provide from 2400 baud to 10 Mbits/s per port WAN solutions for your X.21, V.35 and RS530 connectivity requirements. Whether you are connecting to the Internet, satellite links, private networks using TCP/IP or interconnecting sites using leased lines a FarSync adapter provides the connectivity solution, replacing standalone routers and firewalls with an integrated solution on a PC/Server.

The adapters install seamlessly under Linux kernel series 2.2, 2.4 and 2.6 on both single and multiprocessor 32 and 64 bit systems. The drivers are included as standard in the kernel. **Distributions by Redhat, SuSE, Slackware, Mandrake, Debian, Fedora and many more are supported.**

The **link level protocol can be PPP, Cisco HDLC or Frame Relay.** Each serial port provides a standard point-to-point network interface controllable with all the standard Linux networking tools.

Multiple adapters can be installed to create a very low cost high speed Wide Area Network (WAN) hub using 12 or more cards (48+ ports).

### Typical Applications

The FarSync WAN T-Series adapter products are suitable for connection to TCP/IP and Frame Relay networks and HDLC lines. Typical applications include:

- High speed Internet Access
- Internet access over Frame Relay
- Remote office access over leased lines
- PC-based multi-port wide area network hub (Routers & Firewalls)
- Integration with embedded Linux based Products
- Satellite multicasting
- Video Teleconferencing

## High Performance and Flexibility

The FarSync T-Series intelligent adapters have been designed for high performance and flexibility. The cards are driven by a AMD processor with 1Mbyte of on board zero wait state SRAM memory mapped to the PC. The PCI Bus mastering DMA interface provides a very high performance interface to the adapter whilst minimising PCI and PC CPU loads.

A large number of ports can be supported by the installation of multiple FarSync cards. The T1U, T2U and T4U adapters can be intermixed. In a typical mini tower PC 4 cards can be supported providing up to 16 ports, rack mounted Servers can support 12 or more adapters utilising more than one PCI bus; the card limit is only dependent on the number of general purpose PCI / PCI-X slots available in the host PC.

- Line speeds up to 10 Mbits/s using PCI bus mastering DMA technology
- PCI / PCI-X (Universal PCI) 1, 2 and 4 port cards
- Network interfaces for X.21 (V.11 / RS422), V.35, RS530 (EIA530) and V.24 (RS232C)
- 12 or more FarSync WAN Multiport cards in a single server

## PCI Bus Compatibility

The FarSync WAN T1U, FarSync WAN T2U and FarSync WAN T4U are PCI version 2.2 compliant and PCI-X compatible, these Universal PCI adapters can operate in PCs using either 3.3 volt or 5 volt signaling. The cards are suitable for PCs with both 32 bit bus and 64 bit bus configurations. The power for the adapters is derived from the 3.3 volt supply rail.

## Installation and Configuration

A simple installation procedure will make the device driver available via the standard kernel configuration mechanism. The driver may be either permanently linked to the kernel or used as a dynamically loadable module.

A configuration tool is provided to set line speed, interface and the protocol, after which the ports may be configured with standard networking tools. Examples and default configurations are provided with the on-line documentation.

For kernel versions 2.2.21, 2.4.9, 2.6.1 and above the drivers are included as standard.

## Port Monitoring

A daemon is included that allows the signals on any or all ports to be automatically monitored. The network interface associated with a specific port can then be brought up or down to reflect the line state. This allows routing tables to be dynamically recalculated to reflect destinations actually available.

## Product Packaging

The product includes the communications adapter, driver software (with source), utilities and documentation supplied on CD-ROM. The cables are ordered separately.

## Cables

The cable and connector configurations for each adapter type are described here. Crossover cables, sometimes referred to as null modem cables, are also available, they allow the adapter to present a full DCE interface as well as allowing the cards to be linked back to back for test purposes.

### FarSync WAN T1U and FarSync WAN T2U




These one and two port adapters have separate high-density D type connector for each port on the card. Cables supporting RS232C (V.24, X.21bis), X.21 (V.11, RS422), RS530 and V.35 are available.

Name	Description	Product Code
UCR1	Single RS232C (V.24, X.21bis) cable, 1.5 metres	FS6061
UCX1	Single X.21 (V.11, RS422) cable, 1.5 metres	FS6062
UCV1	Single V.35 cable, 1.5 metres	FS6063
U530	Single RS530 (EIA530) cable, 1.5 metres	FS6064

### FarSync WAN T4U

This four port adapter uses a single large high-density D type connector on the card with all four lines available though this connector. The quad port cables split out the four network interfaces into separate network connectors. Cables supporting X.21 (V.11, RS422), RS530, V.35 and RS232C (V.24, X.21bis) are available and using the MTU4 can be intermixed on the same adapter

Name	Description	Product Code
MCX4	Quad X.21 (V.11) cable with male 15 pin D type connectors, 1.5 metres	FS6041
MCV4	Quad V.35 cable with standard MRAC-34 (brick) male connectors, 1.5 metres	FS6042
MCR4	Quad RS232C (V.24) cable with male 25 pin D type connectors, 1.5 metres	FS6043
<i>A MTU4 conversion cable is available that allows cables listed above for the FarSync T1U and T2U to also be used</i>		
MTU4	Quad port conversion cable, 0.5 metres, permits UCR1, UCX1, U530 and UCV1 cables to be used	FS6074

<b>Technical Specifications</b>			
<b>Product name</b>	<b>FarSync WAN T1U</b>	<b>FarSync WAN T2U</b>	<b>FarSync WAN T4U</b>
<b>Product code</b>	<b>FS8141</b>	<b>FS8241</b>	<b>FS8441</b>
			
<b>Warranty</b>	5 years	5 years	5 years
<b>Max port count</b>	1 port	2 ports	4 ports
<b>Hardware Features</b>			
<b>Adapter type</b>	Intelligent Universal PCI bus mastering PCI adapter, PCI-X compatible, PCI v2.2 compliant, Compatible with 3.3 & 5 volt signalling, Suitable for 32 and 64 bit PCI bus slots Short card - height 107mm, length 167mm, 1Mbyte zero wait state SRAM, AMD Processor		
<b>Network connectors</b>	X.21 (V.11, RS422) - 15 pin male D type, V.35 - MRAC-34 male 'brick' type, RS530 (EIA-530) - 25 pin male D type, RS232C (V.24, X.21bis) - 25 pin male D type		
<b>Link speed range</b>	X.21, V.35, RS530: 2,400 baud to 10 Mbits/s RS232C: 2,400 baud to 128 Kbits/s		
<b>ESD Protection</b>	Yes, Littelfuse high speed ESD and over-voltage protection on each port		
<b>LEDs on back panel</b>	One line status	Two line status	Four line status
<b>Approvals</b>	EN55022 class B, CE, FCC	EN55022 class B, CE, FCC	EN55022 class B, CE, FCC
<b>Power requirements</b>	< 1 Amp @ +3.3v < 5mA @ +/- 12v < 3.3 watts	< 1.2 Amp @ +3.3v < 5mA @ +/- 12v < 4 watts	< 1.75 Amp @ +3.3v < 10mA @ +/- 12v < 6 watts
<b>Line clocking (internal / external)</b>	Both, internal clock range 9600 baud to 76 Kbits/s on X.21 and RS232C connections. <sup>2</sup>		
	<sup>2</sup> The standard cables used to connect to the card are suitable for both internal and external clocking. V.35 and RS-530 connections are external clocking only		
<b>Cables</b>	Cables are ordered separately, see the Cables section on the preceding page for details		
<b>Software Features (applies to all cards)</b>			
<b>Standard interfaces</b>	Configurable and controllable with the standard networking tools		
<b>Multiple cards</b>	Yes, up to 12 or more in a Server, only limited by PCI slots, 1, 2 and 4 port adapters can be intermixed		
<b>Protocols</b>	TCP/IP, PPP, Cisco HDLC, Frame Relay		
<b>Utilities</b>	Port Monitoring Daemon - Monitors signals and configures the network interfaces		
<b>Documentation</b>	Full installation and configuration instructions provided on-line		
<b>Operating Systems supported</b>	Linux distributions by Redhat, SuSE, Slackware, Mandrake, Debian, Fedora and many more. Drivers for kernel series 2.2, 2.4 and 2.6 on both single and multiprocessor 32 and 64 bit systems. Windows XP, 2000, Server 2003 and NT 4.0 are supported as part of the same product see the FarSync WAN T-Series Adapters for Windows datasheet for further details		