



## Key Features

- Flexible, customisable translation and routing of data between X.25 (SVC and PVC) and TCP connections
- From 1 to 16 X.25 lines per Gateway, allows concentration of X.25 resources
- High performance, up to 4,000 simultaneous connections handling over 2,000 messages per second
- Multiple built in data translation schemes, just select the one to suit your requirement

## Overview

The FarSync TCP-X25 Gateway provides a flexible and reliable means of efficiently transferring data between TCP connections and X.25 virtual circuits. The Gateway runs as a software application on Servers supporting Windows XP, 2000 and Server 2003. The X.25 connections are handled by using FarSync X25 T-Series PCI / PCI-X cards or the FarSync M-Series PCMCIA cards.

The FarSync TCP-X25 Gateway is designed for **non-stop operation**, and can support a large number of IP-connected clients wishing to communicate with an X.25 server. It can also support X.25 clients connecting to a TCP/IP-based Server. Both many-to-one connectivity (many clients connecting to a single host) and peer-to-peer connectivity are supported.

The Gateway can support up to 4000 simultaneous connections over from 1 to 16 separate X.25 lines. The total number of connections is limited only by buffer memory requirements.

The Gateway is supplied with unique **Personality Modules that define the rules for connection mapping, session control and data packetisation between TCP and X.25 connections**. The suite of Personality Modules supplied with the product suit most common applications without change. More unusual or complex requirements are catered for by using the Developers Toolkit supplied with the product to allow a new Personality Module to be quickly constructed and integrated into the Gateway.

As an option the Gateway can be supplied pre installed and configured on high quality Rack Mountable or Tower Servers. Windows Server 2003 is installed as the O/S with NLB and Terminal Services enabled.

## Applications

- TCP to X.25 network bridge
- X.25 to TCP/IP Network Migration
- Satellite connections
- TCP Sockets access to X.25
- SMS Message Handling (a specialist Gateway is available for this, see the SMS Router Datasheet)
- POS transactions (credit card, charge card, debit card) transfer between TCP and X.25 (a specialist version of the gateway is available for APACS, HGEPOS and ISO 8583, see the POS Gateway Datasheet)

## Operation of the FarSync TCP-X25 Gateway

The Gateway comprises 2 major components, the basic Gateway itself and the Personality Modules :

The Gateway manages the X.25 and TCP interfaces and general connection and data transfer functions. **A minimal thread count design is utilised to permit a very large number of sessions to be supported with a very low overhead to the operating system.**

**The Personality Modules give the Gateway its particular characteristics. It's responsible for session mapping between TCP and X.25, session control, data conversion, packetisation and event logging.** There are 3 Personality Modules supplied with the Gateway, described below are their main features:

**DRPD** (Dynamic call Routing, Packetised Data transfer)

**Most flexible of the Personality Modules.** It supports dynamic routing, and uses a message header over the TCP connection containing the length of the message body, plus an explicit message type indicator (so that non-data messages can be differentiated). Supports dynamic configuration of the full set of X.25 call facilities. A sample TCP application is provided so that developers can quickly use the Gateway and its dynamic facilities.

**SRSD** (Static call Routing, character Stream Data transfer)

Static IP address to X.25 NUA connection configured on the Gateway PC. This simplified multi-session module, simply treats the X.25 connections as a character stream and therefore performs no data conversion.

**SRPD** (Static call Routing, Packetised Data transfer)

Static IP address to X.25 NUA connection configured on the Gateway PC. This multi-session module supports message headers over the TCP connection, and thus performs data packetisation.

**The FarSync TCP-X25 Gateway normally runs as a Windows service.** A console application version is also supplied to allow the more flexible environment for developers testing and debugging if customisation of a Personality Module is required. For customisation of the Modules see the Developers Toolkit section.

## Performance and Expandability

The FarSync TCP-X25 Gateway easily handles very high message loads, in conjunction with the support for large numbers of X.25 lines enormous scalable expansion capability is available. The main performance and expansion capabilities of the Gateway are:

- **X.25 line speeds from 2,400 baud to 8.448 Mbits/s**
- **From 1 to 16 X.25 lines per Gateway**
- **X.25 Networks, Leased Lines and X.25 Dialup connections supported**
- **Up to 4,000 simultaneous connections (recommended maximum)**
- **Over 2,000 messages (blocks of data) per second handled**
- **Both SVC and PVC connections**

## Configuration

Configuration details are held in the registry and applied without reloading the gateway as dictated by the needs of the application. Customised Personality Modules can add their own unique configuration items to the registry or use other methods if required.

## X.25 adapters

**The FarSync TCP-X25 Gateway uses the FarSync X25 T-Series or M-Series cards to provide the X.25 connection.** One or more of these high performance PCI-X / PCI / PCMCIA cards are required to connect to the physical X.25 line/s that allow access to the X.25 attached Hosts. Further information on the FarSync X.25 T-Series PCI / PCI-X cards and FarSync M-Series PCMCIA cards can be obtained from their respective datasheets available from [www.farsite.co.uk](http://www.farsite.co.uk).

## FarSync Gateway Supervisor

A Gateway Supervisor application is supplied with the FarSync TCP-X25 Gateway, it monitors the state of the X.25 network lines and logs changes in the availability of any of the X.25 lines to the Windows event log.

## Developers Toolkit for the Personality Modules

The suite of Personality Modules provided with the product suit most common requirements without change. For more unusual requirements, any of the Modules can be customised, or even a completely new module developed by using the Developers Toolkit provided with the product.

The Personality Modules are written in well documented C source code. The standard Personality Modules are provided as DLLs in source form so any one of them can be adapted. All the function calls interfacing with the Gateway are documented in the Toolkit manual.

The Personality Module can perform the following types of functions:

### Data Conversion and Packetisation

Whereas X.25 data transfer is packet-based and provides message delimitation, TCP data transfer is character stream based and has no implicit message delimitation. Although the X.25 data transfer could simply be treated as a character stream, allowing end-to-end data transfer without any need for conversion, most X.25 applications make use of the message delimitation provided by the X.25 protocol. In such cases, any additional protocol on top of TCP providing message delimitation must be added by the Gateway on messages received from the X.25 network, and removed from messages before they are transmitted over the X.25 network.

### Connection Routing

The Personality Module provides the flexibility to determine the connection mapping between TCP and X.25 connections that meet the applications requirements. Examples of this include:

1. Mapping TCP sessions on different port numbers to different remote X.25 hosts
2. Optionally allowing the TCP client to provide the X.25 address information dynamically by means of a half-duplex dialogue between the client and the Personality Module.
3. Using information extracted from the Call User Data field of the X.25 Incoming Call packet to determine the IP and port address to connect to.

### Event Logging

The Personality Module contains the support to allow events to be logged to the system event log or other type of logs as required by the particular application.

### Remote Management

The dynamic routing dialogue can potentially be extended to allow a TCP client to manage the Gateway remotely. For example, one of the Gateway's TCP port numbers can be dedicated as a management port. Remote management via X.25 is also possible, given suitable routing.

## Maintenance Contract

FarSite recognises that this product is often used as a key component in systems and as such a guaranteed response to unexpected problems is required. A maintenance contract is available for the FarSync TCP-X25 Gateway and FarSync X.25 cards for priority service and rapid problem resolution.

<b>Product Name</b>	<b>FarSync TCP-X25 Gateway</b>
<b>Product code</b>	FS9001
<b>Product Features</b>	
<b>Multiple X.25 hosts</b>	Yes, no restriction on number
<b>TCP to X.25 session mapping</b>	Yes, statically configurable and dynamic
<b>Multiple TCP port numbers</b>	Yes, configurable
<b>Messages per second</b>	2,000 plus
<b>Maximum simultaneous connections</b>	4,000 (recommend maximum per Gateway)
<b>Types of connection</b>	one-to-one, many-to-one and many-to-many
<b>Event Logging</b>	Yes, to text file, scope controlled in the Personality Modules
<b>Logging key events</b>	The Gateway Supervisor logs key operational events, eg <i>X.25 line down</i> , <i>X.25 line up</i> to the Windows event log
<b>Maximum X.25 lines</b>	Up to 16 lines per Gateway
<b>Types of X.25 connections</b>	X.25 networks, Leased Lines and X.25 Dialup. SVC and PVC sessions
<b>Non stop operation</b>	Yes, most configuration changes applied dynamically
<b>TCP/IP connections to the Gateway</b>	Standard PC LAN cards FarSync WAN cards for leased line / internet / intranet connections using X.21 and V.35 network connectors
<b>Operation in Windows</b>	As a Service or a console application
<b>Develops Toolkit</b>	Yes, includes a Toolkit manual, C source for Personality Modules and Sample applications
<b>X.25 cards supported</b>	One or more FarSync X.25 cards must be used with this product, the supported cards are: <b>PCI-X / PCI cards</b> - FarSync X25 T1U, FarSync X25 T2U, FarSync X25 T4U <b>PCI cards</b> - FarSync X25 T2P, FarSync X25 T4P <b>PCMCIA cards</b> - FarSync X25 M1P See the FarSync X.25 card datasheets for full details, available from <a href="http://www.farsite.co.uk">www.farsite.co.uk</a>
<b>FarSync X.25 card feature summary</b>	X.21, V.35 and V.24 network interfaces 4095 SVCs or PVCs per line Speeds from 1,200 Baud to 8.448 Mbits/s X.25 CCITT Compliance 1980, 84 and 88 Data packet size range 16 to 4096 bytes Reverse charging, Closed User Groups (CUG), Network User Identification (NUI), Fast Select, Throughput Class Negotiation Built in Line Monitor
<b>Supplied installed and configured on a Server</b>	Yes, as an option the Gateway can be supplied pre installed and configured on high quality Rack Mountable or Tower Servers. Windows Server 2003 is installed as the O/S with NLB and Terminal Services enabled
<b>Operating systems supported</b>	Windows XP Professional, Windows Server 2003, Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, Windows 2000 Datacenter Server