

Key Features

- High performance, competitively priced X.25 PC Card
- Network interfaces for RS232C, X.21 and V.35
- Wide speed range - 150 baud to 512 Kbits/s
- APIs to X.25 - Sockets, Java and COM Port
- APIs to HDLC LAPB and ISO Transport
- Drivers for Windows 2000, XP and Server 2003
- Up to 254 simultaneous sessions
- IP over X.25
- Support for *openFT/FTAM*
- Developers Toolkit and Line monitor included



Overview

The FarSync X.25 M1P adapter has been developed to provide high performance **X.25 connectivity for Windows XP and 2000**. The 1 port PCMCIA card can utilise lines up to 512 Kbits/s with support for **RS232C, X.21 and V.35 network interfaces**.

The X.25 software has a host of features including **ISO Transport (classes 0 to 3)**, **IP over X.25**, support for **OpenFT FTAM**, a WinSock2 compliant **Sockets API**, a **Java API**, a **COM Port API**, a **low level NCB API** and **LAP-B layer 2 (HDLC)** that is also directly accessible by its own API. The Sockets API is accessible from .NET applications.

The FarSync X25 adapters and software are well proven and very reliable making them ideal for non stop applications.

A comprehensive **Developers Toolkit is included with each product** together with a **GUI multi-port Line Monitor and a Line Statistics application**.

The API for the FarSync X25 M1P is compatible with the API for the FarSync X25 T-Series. Applications developed for one will work with the other.

Typical Applications

The FarSync X25 M1P is suitable for connection to all types of **X.25 networks, X.25 over the ISDN D channel, Dialup X.25 and leased lines**. Many thousands of FarSync X.25 cards are in use today in a variety of applications, including:

- **X.25 networks such as Military, Lottery, Police, Customs, Financial, Government and Airline**
- **E-Commerce gateways for credit verification**
- **Mixed X.25 and IP networks**
- **SMS message gateways**
- **Billing and Mediation**
- **FTAM access**
- **High speed Stock Exchange data feeds**
- **Control applications requiring a HDLC link**

The card is compatible with all public X.25 networks, including: Datex-P, BT X.25 Direct, Eirpac, Austpac, Transpac, Iberpac and Itapac and many more.

High Performance

The FarSync M-Series card offer high performance in a small package. The software supports a full set of X.25 features whilst still providing a high data packet throughput:

- Up to 254 simultaneous virtual connections
- Up to 500 pps (data packets per second)
- X.21 (V.11 / RS422), V.35 and RS232C (V.24 / X.21bis) network interfaces
- Line speeds of up to 512 Kbits/s

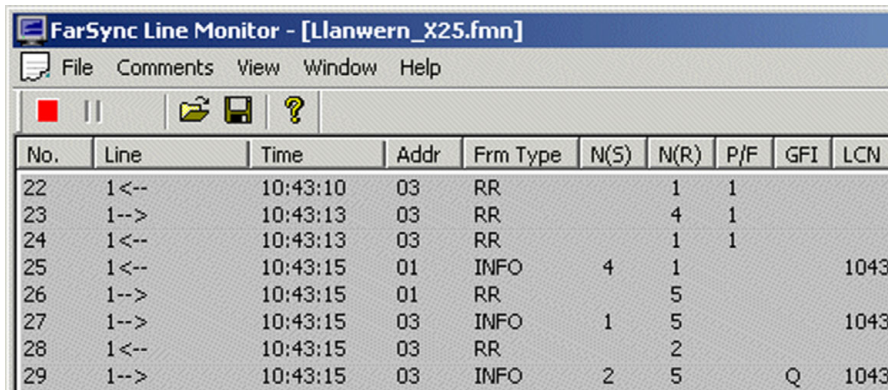
Fast Installation and Configuration

All cards support 'Plug and Play'. Fast installation and easy configuration are a feature of the product.

There is context sensitive help and an on-line manual should it be required. Many of the parameters such as DTE / DCE selection are determined automatically. Selecting the line speed by default automatically sets suitable timer and retry values. An advanced tab permits users to exactly specify the configuration of the line should it be required.

Line Monitor and Network Statistics Utilities

The product includes a **multi-port line monitor**, an invaluable tool when testing new applications and commissioning new systems. Line traces can be displayed in real time, recorded and reviewed with full protocol decoding, comments can even be inserted in the trace. A section of the screen from a typical line trace can be seen below.



The screenshot shows the 'FarSync Line Monitor - [Llanwern_X25.fmn]' window. It has a menu bar (File, Comments, View, Window, Help) and a toolbar with icons for a red square, a vertical bar, a folder, a floppy disk, and a question mark. Below the toolbar is a table with the following columns: No., Line, Time, Addr, Frm Type, N(S), N(R), P/F, GFI, LCN.

No.	Line	Time	Addr	Frm Type	N(S)	N(R)	P/F	GFI	LCN
22	1<--	10:43:10	03	RR		1	1		
23	1-->	10:43:13	03	RR		4	1		
24	1<--	10:43:13	03	RR		1	1		
25	1<--	10:43:15	01	INFO	4	1			1043
26	1-->	10:43:15	01	RR		5			
27	1-->	10:43:15	03	INFO	1	5			1043
28	1<--	10:43:15	03	RR		2			
29	1-->	10:43:15	03	INFO	2	5		Q	1043

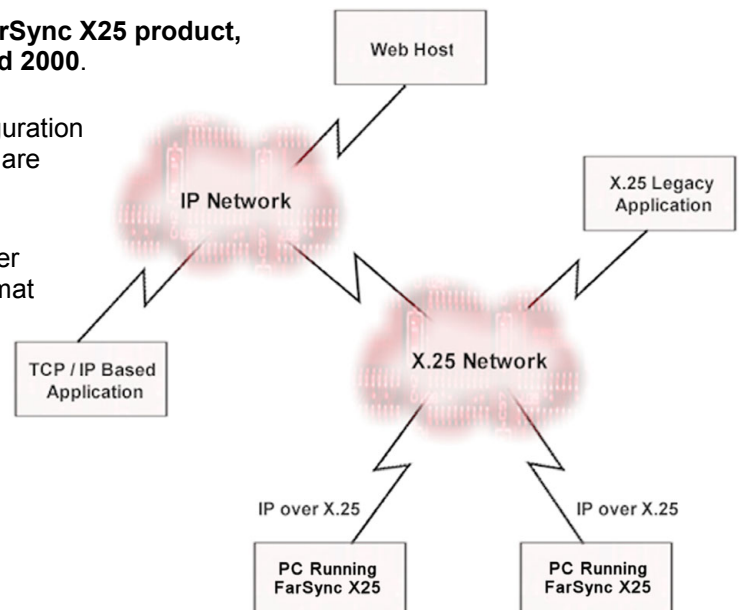
A connection status and statistics utility is also provided. It's functions include the display of the **channel connection status and statistics of user data, packet and frame types** passed over the X.25 line.

IP over X.25

The IP over X.25 support is included as part of the FarSync X25 product, it is fully integrated into Windows XP, Server 2003 and 2000.

Configuration is performed using standard network configuration menus. Multiple connections over multiple X.25 sessions are supported.

The IP over X.25 support complies with **RFC 1356** (IP over X.25), **RFC 1598** (PPP over X.25), **RFC 1662** (Async format PPP over X.25). Higher level protocols that run over IP including TCP, UDP, HTTP and FTP are supported



APIs for Application Development

Application developers have a choice of four APIs for X.25, one for ISO Transport and one for accessing HDLC. An API selector guide is provided to assist the developer in choosing the most appropriate interface for their application. The comprehensive **Developers Toolkit** is included with the product.

Sockets API - X.25 and ISO Transport

The Sockets API is extremely popular as a simple, easy to use API to access TCP/IP communications networks. The Sockets support for the FarSync X.25 cards retains this ease of use and also **allows the special features of X.25 and ISO Transport classes 0 to 3 to be accessed.**

The FarSync Windows Sockets interface is WinSock2 compliant, it supports standard AF_ISO / ISOPROTO_X25 sockets used by a number of applications, such as MS-Exchange. It also supports an alternative address family, AF_X25, to allow easy porting of applications between Windows and Linux.

Applications developed in most programming languages including Visual Basic, Delphi, C++ including .NET applications can use the Sockets API to the FarSync X.25 cards. Documentation and a wide variety of sample applications are provided.

Java API - X.25

The Java API allows applications written in Core Java Software (J2SE) and Enterprise Java Software (J2EE) easy access to the functions and features of X.25 offered by the FarSync X.25 cards. Full documentation and sample applications are provided.

COM Port API - X.25

The COM Port API provides a very quick and easy to use interface to X.25. Each X.25 session is represented by a COM Port controlled by AT commands. The COM Port API is particularly suitable for applications developed in Visual Basic and similar languages or for those not familiar with X.25. Full documentation and a Visual Basic sample application is provided.

NCB API - X.25 and ISO Transport

A very flexible and powerful API, allowing access to the low level features of X.25. The API is particularly suitable where close control over the X.25 layer is required. The comprehensive manual documents the function call definitions and provides helpful advice on the best way to utilise the API. As well as example applications in C the interface structures are also provided in Pascal to permit easy interfacing for applications developed in Delphi.

ISO transport is also available through the NCB interface to allow easy porting of legacy application previously developed for the X.PORT range of X.25 cards

HDLC API - LAPB

Easy to use API to access the Lapb layer 2 (HDLC). This interface allows X.25 layer 3 to be completely bypassed. An example application in C is provided.

Developers Toolkit

The developers toolkit is included with the FarSync X25 products and features:

- Documented working C, Java, Visual Basic and Delphi source sample programs. Source code from these samples can be used to fast-track your development process
- Comprehensive set of API manuals with function call definitions and helpful advice on the best way to utilise the various interfaces
- Free email and telephone assistance to application developers

Packaging

The X.25 software, Utilities, IP over X.25 support and the Development Toolkit are all included on the CD-ROM supplied with the FarSync communications adapter. Cables are ordered separately.

New releases of X.25 software for FarSync cards are made available for downloading from the Support section of www.farsite.co.uk

Cables

Cables are available for the adapter with X.21 (RS422, V.11 -15 pin male D type), RS232C (V.24 – 25 pin male D type) and V.35 (MRAC-34 male 'brick' type) connectors. For details of the types of cables supported, their names and product codes see the Cable Type and Card Compatibility Matrix on the last page.

Technical Specifications - Software Features	
Product Name	FarSync X25 M1P
Number of X.25 ports	1 port
Windows Operating Systems support	Windows XP, Windows 2000, Windows Server 2003
Line Monitor	Included, multi port, decodes and displays frame, packet and data levels. Traces can be logged to file and reviewed. Insert text comment facility.
X.25 Features	
Data Packets per Second throughput	> 500 pps
X.25 CCITT Compliance	1980, 84 & 88
DTE/DCE Operation	Both & Auto Select
Maximum SVCs and PVCs	Up to 254 SVCs, any mix of bothway, incoming & outgoing, 254 PVCs
Logical Channel Numbers (LCN)	From 1 to all 4096 LCNs. Allows incoming calls to be accepted on any channel
Data Packet size range	16 to 4096 bytes
Reverse Charging option	Yes
Closed User Group (CUG) option	Yes
Network User Identifier (NUI)	Yes
Fast Select	Yes
Packet & Window size negotiation	Yes
Throughput class negotiation	Yes
Extended sequence numbering (128)	Yes
IP over X.25	Yes, RFCs 1356, 1598 & 1662 are supported
Accessible via API	Yes, 4 APIs available (Sockets, Java, COM port, NCB)
ISO Transport Features	
Standard supported	ISO 8073 (connection oriented), Classes 0, 1, 2 and 3
Negotiation between classes	Yes
Transport connections	Up to 254
Accessible via API	Yes, Sockets API
HDLC Features	
Accessible via API	Yes, LAPB accessible and configurable via an API, sample application provided
Applications	
FTAM	Yes using <i>openFT/FTAM</i> , supplied by FarSite
X.400	X.400 using Microsoft Exchange - available on request
TCP to X.25 Gateways	Yes, see the separate datasheets for FarSync TCP-X25 Gateway, FarSync TCP-X25 POS Gateway and FarSync TCP-X25 SMS Router

Technical Specifications - Developers Toolkit	
X.25 API	<p>Sockets API (Winsock2), easy to use, provides access to the majority of X.25 features, recommended for most developments. Accessible from .NET applications.</p> <p>Java API, specially developed for Java applications (J2SE, J2EE), quick and easy to use.</p> <p>Powerful NCB based API providing low level access to all the features of X.25.</p> <p>Quick and simple to use COM Port API suitable for many applications particularly those based on Visual Basic and similar languages.</p>
HDLC API	The HDLC API allows applications to use layer 2 LAP-B (HDLC), X.25 layer 3 is bypassed.
ISO Transport API	Sockets API (Winsock2) , easy to use, provides access to the majority of ISO Transport features, accessible from .NET applications. NCB API available for porting legacy applications from X.PORT X.25 products
API Manuals	5 manuals included, one for each API plus an API selector guide
Sample programs	Included, large number of example applications are available for driving all the various APIs. Includes samples using SVC and PVC operation

Technical Specifications - Hardware Features	
Product name	FarSync X25 M1P
Product code	FS6130
Warranty	5 years
Port count	1 port
Hardware Features	
Card type and Specification	PCMCIA type II PC Card FCI rocard cable connector
Network connectors	X.21 (V.11, RS422) - 15 pin male D type, V.35 - MRAC-34 male 'brick' type , RS232C (V.24, X.21bis) - 25 pin male D type, G.703 and G.704 BNC / RJ45 with I/F converters
Link speed range	RS232C: 150 baud to 128 Kbits/s X21, V35: 48 Kbits/s to 512 Kbits/s
ESD Line Protection	Yes, Littelfuse high speed ESD and over-voltage protection
Multiple cards	Yes, 2 or more
Approvals	EN55022 class B, CE
Power requirements	< 150 mA @ +5v < 0.75 watts
MTBF	468,787 hours. Bellcore Method 1 Case 3, 40 deg.C ambient, 15 deg.C case temperature rise above ambient
Line clocking (internal / external)	Both, internal clock range 9,600 baud to 2 Mbits/s on RS232C and X.21 connections. No special cables are required to use internal clocks
Cables	Cables are ordered separately, see the Cable Table for details

Cable Type and Card Compatibility Matrix		
Name	Cable types available for the FarSync X25 M1P	Product Code
PCR1	Single RS232C (V.24, X.21bis) cable with male 25 pin D type connector, 1.5 metres	FS6081
PCX1	Single X.21 (V.11, RS422) cable with male 15 pin D type connector, 1.5 metres	FS6082
PCV1	Single V.35 cable with standard MRAC-34 (brick) male connector, 1.5 metres	FS6083
Crossover (Null Modem) cables - Suitable for all FarSync M-Series and T-Series cards		
Null-MX	X.21 (V.11, RS422) double shielded crossover cable, 15 pin D type female connectors, 0.5 metres	FS6090
Null-MR3	RS232C (V.24) double shielded crossover cable, 25 pin D type female connectors, 0.5 metres	FS6092