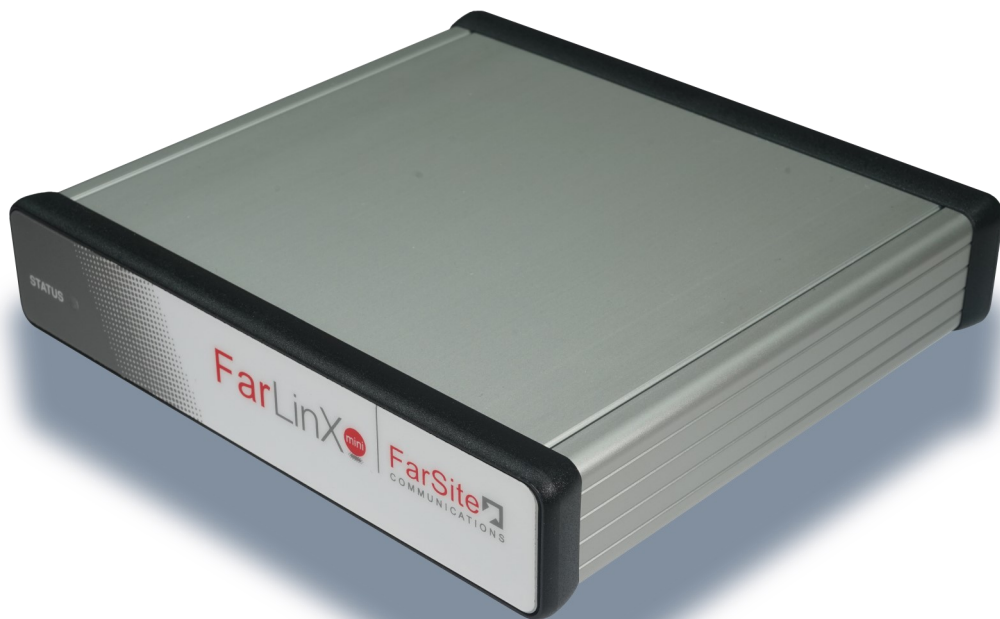# FarSite
COMMUNICATIONS

FarLinX® Mini Gateway

Highly flexible X.25 Gateway

Datasheet Version 2.10

The FarLinX® Mini Gateway

Highly flexible X.25 Gateway supporting XOT (X.25 over TCP/IP) and TCP/IP to X.25 or XOT data format translation and connection routing.

Key Features

- **TCP to X.25 data translation with a very wide variety of modes including: character streaming, RFC1006, Cisco RBP, APACS, ISO 8583, header stripping and parity conversion and many more**
- **TCP ↔ X.25 and TCP ↔ XOT routing including: fixed routes, dynamic routing and PAD routing**
- **Call routing between XOT (X.25 over TCP/IP) and the X.25 line**
- **X.28 PAD option supporting Telnet and an async connection**
- **X.25 Host PAD emulation support**
- **LAN accessible X.25 line as a sharable remotely manageable resource**
- **Choice of X.25 network interface connections: RS232 (V.24), V.35, RS422, RS530, X.21**
- **400 messages per second and up to 255 simultaneous connections (PVC, SVC)**
- **Line Monitor (local or remote) to view X.25 traffic for easy network problem diagnosis**
- **Browser graphical configuration, SNMP alerts for critical events and activity logging**
- **Real time data of current connections, line performance, errors, connections and much more**
- **Small rugged low profile all metal case, low power consumption**

Overview

The FarLinX Mini Gateway offers most of the same features as in the larger FarLinX X25 Gateway range but at a lower price and in a more compact enclosure.

The Gateway supports XOT to X.25 switching, X.25 to TCP data translation and connection routing, TCP to XOT, a X.28 PAD, and a Host PAD. All this is easily managed from a browser.

There are also daily activity logs with a selectable level of detail, automatically archived on a daily basis.

The SNMP support provides alerts for a numerous different conditions including critical events such as line down and line up.

Typical Applications

- **Reduce line costs by replacing an expensive X.25 line with a TCP/IP connection and conversion to X.25 at each terminating node**
- **Converting Billing System connections from Nortel, Ericsson telephone exchanges from X.25 to TCP/IP**
- **Conversion of legacy X.25 connections and data for transfer over a TCP/IP network**
- **POS Gateway to allow TCP/IP and X.25 based Point of Sale systems to interoperate**
- **Replacing an X.28 PAD over X.25 with an X.28 PAD over XOT**
- **Connection to radar systems to control them over TCP**
- **FTAM or X.400 operation between TCP/IP and X.25**
- **Conversation from TCP to XOT eliminating the need for X.25 at that location**
- **LAN accessible and sharable X.25 port resource**

Functional Overview - XOT and X.25 Switching

The FarLinX Mini Gateway provides a reliable means of routing connections between X.25 and XOT (X.25 over TCP/IP). Connections can be routed between the X.25 line and X.28 PAD line to XOT which is treated as another connection path. The connection routing module supports default routes, hunt groups, X.25 address translation, and routing commands with NUA wildcards for maximum flexibility.


Example configuration showing an X.25 lines at each end with the network running XOT (X.25 over TCP/IP)

Up to 255 SVC or PVC sessions can be handled simultaneously over XOT and the X.25 line.

Functional Overview - data packetization and routing between TCP and X.25 or XOT

The Gateway provides connection establishment and data packetization services for general protocols to allow applications sending data over TCP/IP to interface to X.25 or XOT connected hosts. The Gateway provides routing facilities to select the appropriate Host from those available and maintains X.25 or XOT sessions to the Host as required.

Up to 255 SVC or PVC sessions can be handled simultaneously between TCP/IP and X.25 or XOT.
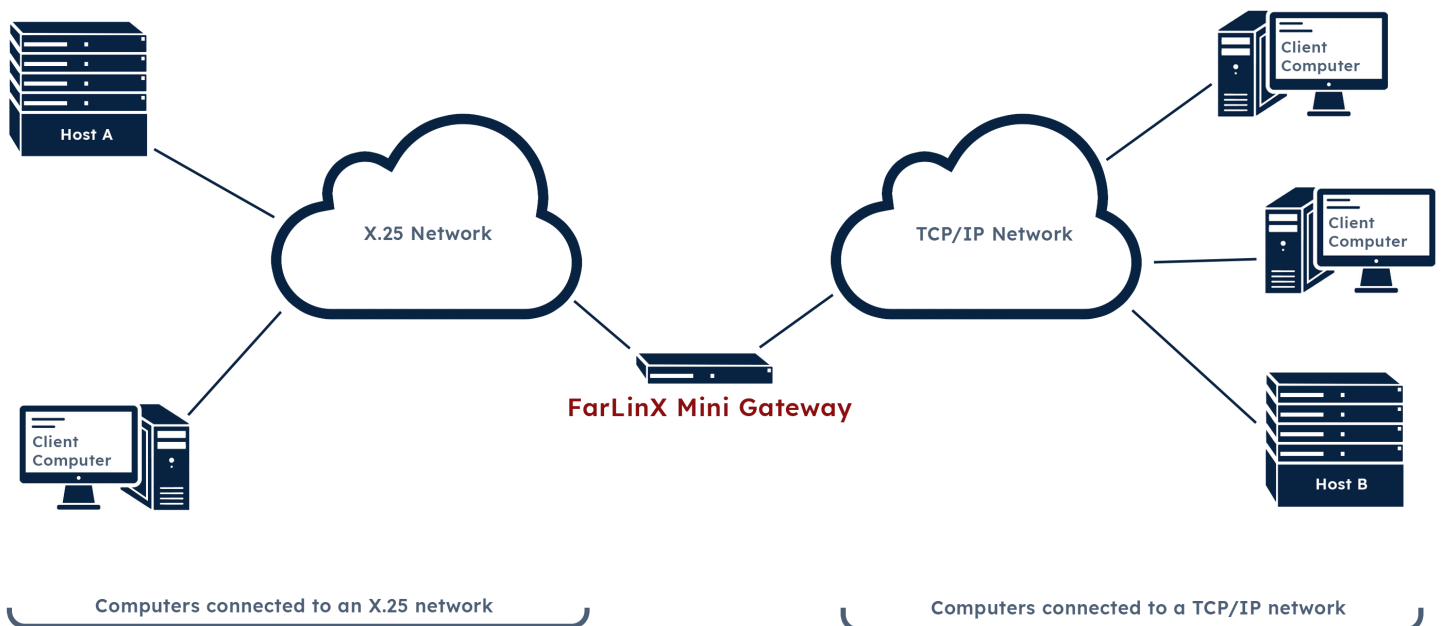
Example network configuration using the FarLinX Mini Gateway to interconnect a TCP/IP network with an X.25 network

Functional Overview - data packetization and routing between TCP and X.25 or XOT continued

TCP to X.25 or XOT data translation functions

The Gateway supports a wide range of TCP to X.25 or XOT data translation and connection functions, these include:

- Character stream
- ETX terminated messages
- Special character terminated messages (customisable)
- Message header conversion - types available 2 or 4 byte ASCII or Binary length representation
- Custom message header conversion
- RFC1006 - ISO Transport Class 0 protocol data units, using the RFC-1006 encapsulation on the TCP connection
- Cisco RBP - Record Boundary Preservation
- X.25 Parity conversion - the Gateway performs any required parity adjustments and removal on the X.25 / XOT connection
- POS protocols APACS, ISO 8583, HGEPOS plus CTL (Card Tech Ltd) - Requires the POS Firmware Option

Connection Routing and Address Mapping

The FarLinX Mini Gateway can support routes to hundreds of different X.25 / XOT hosts. Similarly, when using the called X.25 address as the routing key, incoming X.25 / XOT calls can be routed to hundreds of different TCP/IP hosts.

When making connections to the X.25 network or XOT, the Gateway has the capability of mapping the source IP address to a calling X.25 address, thus allowing the destination X.25 / XOT host to identify the connection source uniquely.

The Dynamic routing options allow the X.25 address (NUA) and call parameters to be set by the remote application at the time each X.25 / XOT connection is established. These modes allow X.25 packetisation information to be passed to the application. Linux and Windows sample applications provided.

The main modes supported include:

- Statically defined routing
- XDRPD (eXtended Dynamic Routing Packetized Data) and DRPD - these formats allow TCP connected applications to dynamically setup and control the X.25 or XOT connection
- X.25 Data Switching - allows X.25 devices to be interconnected via an IP network without the overheads associated with XOT
- PAD Routing - PAD or Dynamic routing may be employed to allow the TCP client application to specify the X.25 call parameters

X.28 Host Pad

The FarLinX Mini Gateway can be configured to act as an X.28 host PAD for remote terminals or applications connecting over X.25 or XOT and expecting a host that supports X.28. The host PAD sends X.28 PAD configuration commands over X.25 to the connecting terminals. The host PAD profile is configurable.
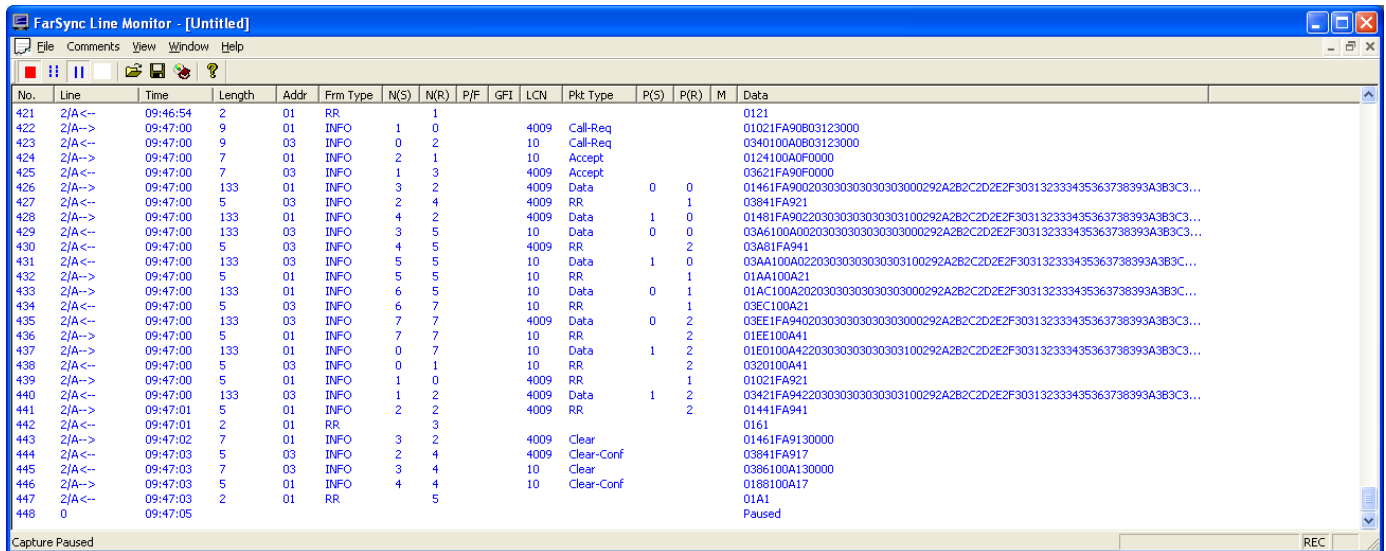
X.28 Triple-X PAD

Triple-X PAD (X.28, X.3 and X.29) support is included with the Gateway, accessible over TCP/IP via Telnet or using the single permanent async port. The connecting terminal is presented with a Triple-X PAD service and can be used to make X.25 connections over the physical X.25 line or via XOT connections to remote hosts. The initial PAD profile for the async port and for the Telnet access are fully configurable.

Built in X.25 Line Monitor

The Gateway includes Line Monitor software which is installable from a CD onto a Windows PC. This allows the X.25 traffic to be recorded and displayed in real time. Multiple Gateways can be monitored simultaneously. Support to allow the popular Wireshark line monitor to record and display the X.25, TCP/IP and XOT line traffic is also included.

This very useful feature allows Network Managers and System Installers to locally or remotely analyse and rapidly diagnose problems that may occur on the X.25 line without the need for expensive external line monitors.

The line traces can be saved and viewed later, for example in a customer support situation. See the sample screen for a typical display.

SNMP

The Gateway supports SNMP alerts with 3 configurable levels. Alerts can be sent for SVCs connecting and disconnecting, PVC errors, connection routing errors, line up and line down events and many others.

Statistics and Event Logging

The Gateway maintains a comprehensive set of statistics and activity counts. This information can be used to indicate the total loads on the Gateway and also to give early warning of line performance problems even misconfigured systems elsewhere in the network.

All connections setup through the Gateway can be logged. The logs are automatically saved on a daily basis. Old logs can be displayed as required. Log events can also be routed to syslog to allow logging centrally.

The connection status of active connection / most recent connections / disconnections are displayed in a browser window.

System Upgrades

Upgrades to the firmware can be remotely and securely uploaded to the device to allow the latest revision firmware to be used. Rollback to a previous version is supported.

Secure Browser Configuration

The Gateway is configured from the IE 11 web browser. Access to the configuration is secured through a user name and password.

Maintenance Contract

FarSite recognises that this product is frequently used as a key component in networked systems and as such a guaranteed response to unexpected problems is required. Maintenance contracts are available for the FarLinX Mini Gateway for fast hardware swap out, priority service and rapid problem resolution.

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The Configuration Application allows all the features of the Gateway to be managed. The majority of configuration changes to the Gateway are made dynamically so continuous operation of the Gateway can be maintained. Configurations can be saved for later use.
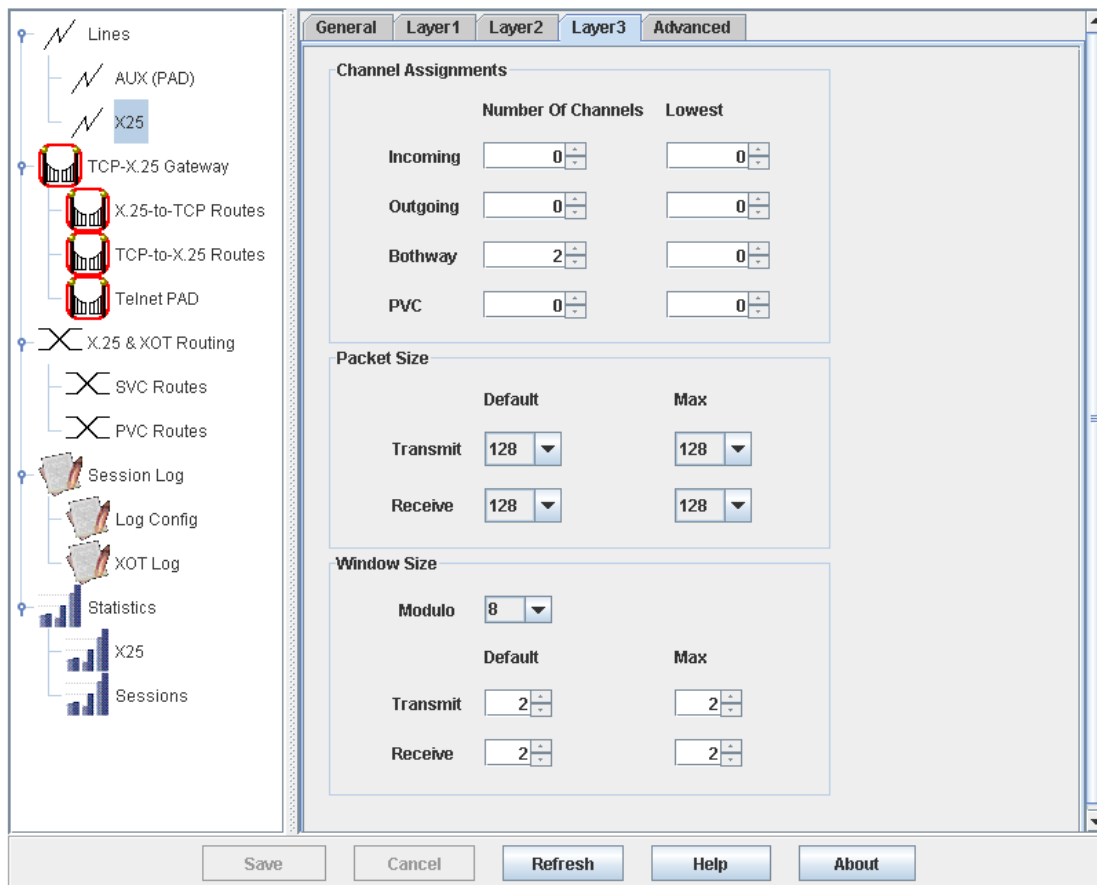
Order Information		
Name	**Description**	**Product Code**
FarLinX Mini Gateway	1 X.25 line Gateway supporting X.25 to XOT and X.25 to TCP/IP up to 255 sessions. Compact solid state appliance. Includes 1 async PAD port. Clock generation.	FL2701N
POS Gateway upgrade	POS Software upgrade to the FarLinX Mini Gateway. Enhances the Gateway with Point Of Sale protocol handling including ISO 8583, APACS, HGEPOS and CTL	FL2612
Compatible Cables		
GCR1-DTE	RS232/RS530 DTE (V.24, X.21bis/ EIA530, RS422) cable with DB25M connector, suitable for Gateway generated or external clock generation, 1.5 metres.	FS6006
GCX1-DTE	X.21 DTE (V.11) cable with DB15M connector, suitable for Gateway generated or external clock generation, 1.5 metres.	FS6007
GCV1-DTE	V.35 DTE cable with V.35M connector, suitable for Gateway generated or external clock generation, 1.5 metres.	FS6008
GCR1-DCE	RS232/RS530 DCE (V.24, X.21bis/ EIA530, RS422) cable with DB25F connector, suitable for Gateway generated or external clock generation, 1.5 metres.	FS6001
GCX1-DCE	X.21 DCE (V.11) cable with DB15F connector, suitable for Gateway generated or external clock generation, 1.5 metres.	FS6002
GCV1-DCE	V.35 DCE cable with V.35F connector, suitable for Gateway generated or external clock generation, 1.5 metres.	FS6003

Product Feature Summary

XOT ↔ X.25 routing	PVCs and SVCs; SVC routing is flexible with support for wild-cards and address translation.
TCP/IP ↔ XOT routing	SVCs; SVC routing is flexible with support for wild-cards and address translation.
TCP/IP ↔ X.25 / XOT call routing	Modes: Statically defined routing, Dynamically defined routing, PAD Routing, X.25 data switching.
Data packetization	Includes Customisable Message Header Conversion, Cisco RBP, RFC-1006 and packetisation of messages terminated by specific characters (ETX, Carriage Return etc), X.25 parity conversion.
X.28 PAD	X.28 Host PAD and X.28 PAD terminal support. PAD support is available through Telnet and the built in async port.
POS Protocols	Optional software upgrade for Point of Sale protocols APACS, ISO8583 and CTL (Card Tech Ltd).
TCP/IP	IP and IPv6 support
Packets per second	Up to 400 messages per second.
Maximum connections	Up to 255 simultaneous connections, can be any mix of SVCs and PVCs.
Logging key events	Events log maintained for events such as the connections and disconnections, X.25 call failures, X.25 line down, and X.25 line up. Log auto archived daily. The most recent events are displayed in real time on a scrolling display in the Browser.
Line monitor	Line monitor included for display of frames and packets on X.25 connections, Wireshark supported.
Configuration	Securely configured by a Browser and Java applets using XML, login required.
SNMP alerts	Configurable, generated for events such as X.25 line down, X.25 line up, disconnections.
Statistics	Resettable statistics provided for line activity, line errors, protocol problem and Gateway activity.
X.25 network connections	Connections for RS232 (V.24), X.21, V.35 and RS530 (RS422) available, see Order Information. X.25 Line speeds up to 64Kbits/s; Gateway generated and external line clocks. X.25 network cables are ordered separately, see Order Information.
X.25 connection types	X.25 networks, Leased (fixed) Lines
X.25 feature summary	Data packet size up to 4096 bytes SVC and PVC logical connections X.25 CCITT Compliance 1980, 84 and 88, X.28, X.3 and X.29 CCITT Compliance DCE and DTE operation Reverse charging, Closed User Groups (CUG), Network User Identification (NUI), Fast Select, Throughput Class Negotiation, Hunt groups, Backup lines Compatible with all known public and private X.25 networks.
XOT specification	Complies with RFC 1613 - X.25 over TCP (XOT)
LAN	10/100 BaseT LAN port, RJ45
Approvals	CE: EN55022:2006+A1:2007 Class B, EN55024:1998+A1:2001+A2:2003, EN61000-3-2:2006, EN61000-3-3:1995+A1:2001:A2:2005. FCC part 15 Class B. UL. Safety: EN 60950-1: 2006. RoHS compliant.
Physical and Power requirements	Solid state design, all metal case, software selectable power down. Reset to factory defaults switch. Input voltage 100vac to 240vac, 50/60Hz Power: 6 watts. Dimensions: metric - 170(W) x 158(D) x 34(H) mm, imperial - 6.7"(W) x 6.2"(D) x 1.4"(H) Weight: 0.57 kg (1.25 lbs). Operating Temperature range: 5 to 40°C (41 to 104°F), Humidity: 20% to 95% RH (non-condensing) Storage Temperature range: 0 to 70°C (32 to 158°F), Humidity: 5% to 95% RH (non-condensing)
Warranty period	2 years

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