

6-Port Fradswitch A/S

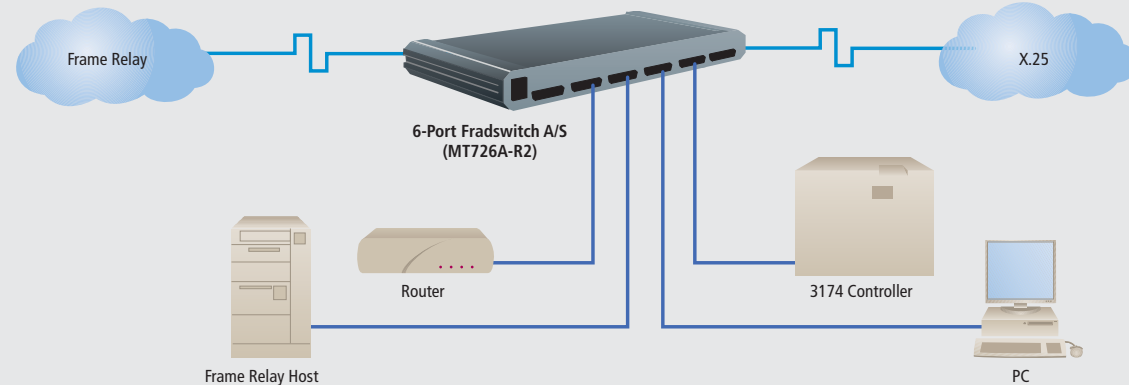


Create a high-performance, low-cost wide-area network with Frame Relay or X.25!

FEATURES

- Connect up to 6 devices to X.25 or Frame Relay.
- Modular ports can be RS-232 or V.35—order as many of each as you need.
- Supports async, X.25, Frame Relay, HDLC, SDLC, STM, and SLIP.
- Aggregate data rates up to 2.15 Mbps for each set of three ports.
- Built-in management agent for configuration, monitoring, diagnostics, statistics, and reports.

The Fradswitch can be the centerpiece of just about any packet-switched network.



OVERVIEW

Do you have X.25 or Frame Relay service? Would you like to be able to attach different kinds of devices, or connect to different service types or access points, and switch between them all?

You need the BLACK BOX® Fradswitch Asynchronous/Synchronous (Fradswitch A/S). It's a high-performance, modular X.25/Frame Relay switch that you can use for routing between X.25 or Frame Relay connections.

Here's how the "modular" part works: When the Fradswitch A/S comes from the factory, it has empty slots where its main link ports will go. Order any combination of RS-232 and V.35 Interface Modules, depending on what types of devices or services you need to attach to the Fradswitch, and install them in these slots.

With its six ports, the Fradswitch A/S can hold (and switch between) as many as six main links. These are usually set up as sync but can be async instead. It also has two hard-wired RS-232 channels (pinned on RJ-45 connectors) that operate in async mode only.

You can set the main link ports to use any of several protocols—in addition to the standard ones for X.25 and Frame Relay, the Fradswitch also supports HDLC and SDLC, the proprietary stat-mux protocol STM (for use with our Stat-4 and Stat-8 muxes), and SLIP/encapsulated IP.

The maximum data rate for each async channel is 38.4 kbps; the maximum async data rate for each main link port is 115.2 kbps. Maximum sync data rates for the main link ports are determined for each set of three ports (1 through 3, 4 through 6, 7 through 9, and 10 through 12) rather than for every individual port. The total of the three ports' data rates, added together, can't exceed 2.15 Mbps.

The Fradswitch A/S has a powerful terminal-based menu system that enables you to configure it for many types of packet-switching applications then operate it with little or no maintenance. The unit supports:

- Permanent virtual circuits (PVCs) and switched virtual circuits (SVCs).
- Call IDs.
- IP routing and routing tables.
- Frame Relay funneling.
- X.32 (XID) tables.
- SNMP management and event reporting.
- X.25 multicasting.
- And much, much more.

Multisession is also provided on each async channel; each channel can access up to four separate sessions simultaneously. This Fradswitch feature makes it easy for you to compare data from different sources.

TECH SPECS

Clock Source — Internal or recovered from receive signal (independently user-selectable for receive and transmit paths)

Command Modes — Async channels only: ITU-T X.28 and proprietary extensions; ITU-T X.29

Compliance — CE (EN 55022, EN 50082-1, EN 60950), FCC Part 15 Subpart B Class A, IC Class/classe A

Data Rate — Each async channel: 75, 110, 150, 300, or 600 bps, or 1.2, 2.4, 4.8, 9.6, 19.2, or 38.4 kbps, user-selectable with (2) RJ-45 ports;
Each main link port set to async: 75, 110, 150, 300, or 600 bps, or 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 57.6, or 115.2 kbps, user-selectable;
Each set of three main link ports (Ports 1 through 3, 4 through 6, 7 through 9, and 10 through 12) set to sync: Any combination of data rates that, when added together, does not exceed 2.15 Mbps (user-selectable)

Flow Control — Async channels only: X-ON/X-OFF

Logon Messages — Async channels only: Herald and bulletin (user-definable)

Maximum Distance — RS-232: 50 ft. (15.2 m);
V.35: 2000 ft. (609.6 m)

Memory — 2 MB RAM

Packet Size — X.25: Up to 4096 bytes (4 KB);
Other protocols: Up to 8192 bytes (8 KB)

Protocols — Async channels (async only) and main link ports set as async: ITU-T X.28 or IP/SLIP, user-selectable; supports IP encapsulation over X.25 (as per RFC 1356) or Frame Relay (as per RFC 1490); also supports dialup links for X.25 with X.32 protocols;

Main link ports set as sync:

Packet switching: ITU-T X.25 or Frame Relay (user-selectable);
X.25: Complies with ITU-T X.25 (1988), LAP-B;
Frame Relay: Complies with ANSI T1.606, T1.617 Annex D, and T1.618, as well as ITU-T Q.922 Annex A; also supports CLLM, LMI, and ANSI PVC management protocols;
Data link (optional): HDLC, SDLC, or STM (proprietary, user-selectable);
STM: Compatible with Stat-8 statistical multiplexor;
Management: SNMP

Terminal Handling — Enhanced, beyond ITU-T X.3 requirements

User Controls — On-screen terminal-based menu system, including SNMP management;

- (1) front-mounted recessed reset push button;
- (1) internal jumper on motherboard for power-up configuration loading;
- (1) jumper bank on each interface module board for DTE versus DCE

Interface — Async channels: EIA/TIA RS-232, DCE, with proprietary pinning on RJ-45;

Main link ports: Depends on which interface modules are installed (all interfaces are DTE or DCE, user-selectable):
MT728C-232: EIA/TIA RS-232/ITU-T V.24;

MT728C-V35: ITU-T V.35 with proprietary pinning on DB25 and patched to M/34

Connectors — MT726A-R2: (6) front-mounted RJ-45 F for async channels; (6) rear-mounted DB25 F for main link ports (how many are active depends on how many interface modules you install);

MT728C-V35 Interface Modules come with a 1-ft. (0.3-m) DB25 male to M/34 female adapter cable

Indicators — (18) Front-mounted LEDs: (1) for unit power; (1) for hardware error; (1) for buffer overflow; (1) for test mode; (1) for async channel 1; (1) for async channel 2; (6) for main link synchronization, (6) for main link activity

Temperature Tolerance — 32 to 122° F (0 to 50° C)

Humidity Tolerance — Up to 90%, noncondensing

Power — From utility-power outlet, through included 6.5-ft. (2-m) power cord and rear-mounted IEC 320 male inlet, to internal transformer:

Input: 90–260 VAC, 47–63 Hz (autosensing);

Fuse: Internal;

Consumption: Up to 30 watts

Size — 1.7"H x 17"W x 11.7"D (4.3 x 43.2 x 29.7 cm)

Weight — 3.9 lb. (1.8 kg)



MT726A-R2

WHAT'S INCLUDED

The Fradswitch A/S:

- ◆ Fradswitch A/S
- ◆ Power cord
- ◆ Control cable
- ◆ Rackmount kit
- ◆ User's manual
- ◆ Packet switching guide

Each Interface Module:

- ◆ Module's daughterboard
- ◆ Interface-identifier tag

The V.35 Interface Module also comes with:

- ◆ DB25 to M/34 adapter cable

YOU MAY ALSO NEED

- A CSU/DSU, sync modem, or other WAN-access device.
- An STM-compatible statistical multiplexor such as our Stat-4 or Stat-8.
- Async shielded twisted-pair cables and modular adapters.
- Depending on which model you have, an RS-232 or a V.35 cable to run from the Fradswitch to your WAN device.
- Power-line and data-line surge protectors.

Item	Code
Fradswitch A/S 6-Port	MT726A-R2
Fradswitch A/S Interface Modules RS-232	MT728C-232
V.35	MT728C-V35
You may also need...	
CSU/DSU MS	MT132V-R2
Modem 3600	MD1000A
Modular Statistical Multiplexor Stat-8	MX866A
Cables (Specify Length)	
RS-232 (Async, Modular): Straight-Pinned RJ-45 Male to RJ-45 Male Shielded Twisted-Pair Cable	EVNSL60
RS-232 (Sync): Straight-Pinned DB25 Male to DB25 Male Shielded RS-232 Cable	EDN25T-MM
V.35: Straight-Pinned M/34 Male to M/34 Male Cable	EYNT450-MM
Surge Protectors	
RS-232 (on RJ-45)	SP250A-R2
RS-232 (on DB25)	SP360A
V.35	SP143A-R2

Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

Recognize any of these situations?

- **You wait more than 30 minutes to get through to a vendor's tech support.**
- **The so-called "tech" can't help you or gives you the wrong answer.**
- **You don't have a purchase order number and the tech refuses to help you.**
- **It's 9 p. m. and you need help, but your vendor's tech support line is closed.**

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.