

# FT100/FT100EX/FT100S/FT100M/ T1-ESF-CSU

## General

The FT100, FT100EX, FT100S, FT100M and T1-ESF-CSU are members of the growing family of T1 products from Motorola. Supporting T1 or fractional T1 point-to-point or multipoint connections, these DSU/CSUs provide high-speed interfaces from your voice or data equipment to a 1.544 Mbps T1 transmission facility and support all fractional T1 channel configurations.

The integral T1 ESF CSU allows the units to convert framed serial data from the user terminal equipment to a SF (D4) or ESF framed DS1 signal. In ESF applications the units can store and report line performance parameters for the local and remote units. All are also compatible with B8ZS and AMI formats.

## Supervisory Port

All the T1/FT1 units are equipped with a supervisory port that allows access to the unit either locally by an ASCII terminal or remotely by modem. The supervisory port gives you complete control of the unit for tasks such as configuration, diagnostics, retrieval of statistical information on T1 line performance, or taking control of a remote unit.

## Interface Options

A number of DTE interface options are available and should be specified when ordering. These include CCITT V.35, DSX-1, RS-530/449 and RS-232.

## FT100S

The FT100S is ideal for any application (LAN interconnection, video conferencing, high-speed CAD/CAM workstations, PBX, host computer communications) that has outgrown the DDS bandwidth and requires a single CCITT V.35 or RS-530/449 connection to the terminal equipment. A menu-driven LCD front panel allows easy configuration.

## FT100, FT100EX

A single standalone unit provides two DTE ports. The number of DTE ports can be expanded in two ways – cascading or by expander card (FT100EX). With the DSX-1 interface, the FT100 can perform drop-and-insert functions for each port, allowing multiple units to be cascaded to provide expansion. The FT100EX two-port expander card interfaces to the FT100 through a common backplane when both are installed in a Motorola Universal Data Shelf. Up to eleven FT100EXs can be connected to a single FT100 for a total of 24 DTE ports.



## FT100M

The FT100M includes network management capability via SNMP or Telnet and is MIB II compliant. The FT100M provides alarms for hardware reset, loss of signal, out-of-frame, AIS and yellow alarms. It also provides ESF performance history. Download capability allows easy software upgrades. The two data ports can be configured as either CCITT V.35 or DSX-1. The DSX-1 interface provides a cascade port to a PBX or T1 mux. Front panel monitor jacks give monitor-only access to the network signal.

## T1-ESF-CSU

The T1-ESF-CSU is compatible with both SF (D4) and ESF T1 framing modes and is capable of framing mode conversion. This feature allows your older, non-ESF capable equipment to operate on ESF T1 lines with the T1-ESF-CSU performing the transcoding.

## Features

	<i>FT100S</i>	<i>FT100</i>	<i>FT100EX</i>	<i>FT100M</i>	<i>T1-ESF-CSU</i>
All standard data rates — n x 56 kbps, n x 64 kbps, 1.544 Mbps (n = 1 to 24)	✓	✓	✓	✓	✓
Number of DTE ports	1	2	2–24	2	1
DTE interface options	CCITT V.35, RS530/449	CCITT V.35, DSX-1 RS530/449, RS232	CCITT V.35, DSX-1 RS530/449, RS232	CCITT V.35, DSX-1	N/A
Flexible DS0 assignment	Alternating Contiguous	Alternating Contiguous	Alternating Contiguous	Alternating Contiguous, Random	N/A
Network management				✓	
Supervisory port	✓	✓	✓	✓	✓
Uniform synthesized DTE transmit and receive clocks	✓	✓	✓	✓	✓
B8ZS clear channel capability	✓	✓	✓	✓	✓
AMI to B8ZS transcoding	✓	✓	✓	✓	✓
ESF or SF (D4) framing modes	✓	✓	✓	✓	✓
SF to ESF transcoding		With DSX-1 card		With DSX-1 card	✓
Easy configuration LCD front panel	✓	✓			
Front panel LED display	TD, RD, CS, LOS, ALM, TM	Port 1 and 2 - TD, RD, TM	Port 1 and 2 - TD, RD, TM	PWR, SYN, LOS, AIS, YEL, (2) TXD, RXD	NTW/DTE - LBK, SYN, LOS, AIS, D, Y
Performance history log	✓	✓	✓	✓	✓
Diagnostics	✓	✓	✓	✓	✓
Alarms	✓	✓	✓	✓	✓
Front panel jacks				2 Monitor only	6 Monitor and test
Power options	115Vac 230Vac	115Vac 230Vac	115Vac 230Vac	115Vac	115Vac, -48Vdc, span line power

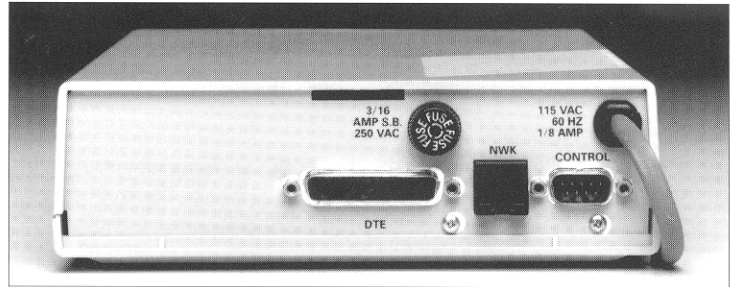
# Back Panel Connectors

## FT100S

Single DTE port—V.35, RS530/449, RS232

Control port—RS232, 9-pin D-type male

Network interface—8-pin RJ48

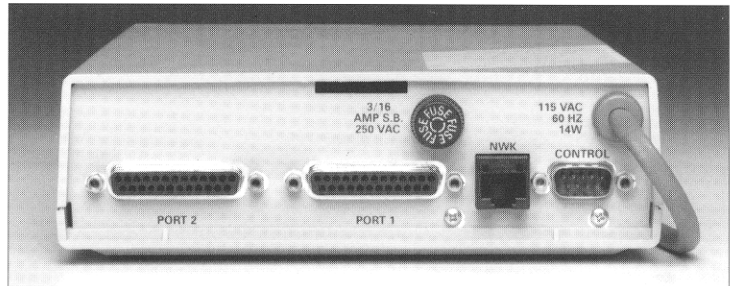


## FT100

Two DTE ports—V.35, RS530/449, DSX-1, RS232

Control port—RS232, 9-pin D-type male

Network interface—8-pin RJ48



## FT100M

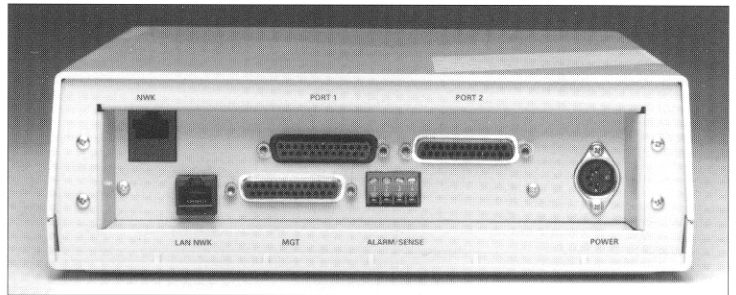
Two DTE ports—V.35, DS1

Management port—RS232, DB-25, female

LAN network interface IEEE Std. 802.3 10BaseT

Network interface—8-pin RJ48

4-position terminal strip—connections for monitoring alarms



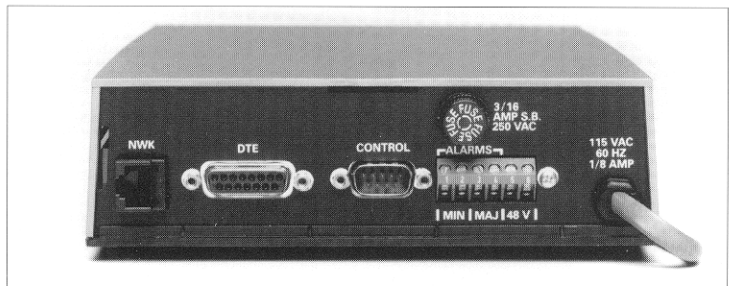
## T1-ESF-CSU

Single DTE port—15-pin D-type

Control port—RS232, 9-pin D-type male

Network interface—8-pin RJ48

6-position terminal strip—external power input; major and minor alarm outputs



# Specifications

## Network Interface

Line Rate: 1.544 Mbps  $\pm$  75 bps  
Line Code: AMI, or B8ZS  
Input Signal: +3.5 dBDSX to -34 dBDSX  
Output Signal: DSX-1 w/LBO  
Receive LBO: Automatic  
Transmit LBO: Selectable 0, 7.5, 15 dB  
Impedance: 100 ohms nominal  
Framing: SF or ESF  
Jitter Tolerance: Per AT&T Pub 62411  
Connector: RJ48C 8-pin modular jack

## Network Loopback Codes (inband)

Set Code: '10000' per AT&T Pub 54016  
Reset Code: '100' per AT&T Pub 54016  
Detection Time: 4 seconds

## DTE Port Diagnostics

Local terminal loopback  
Remote terminal loopback  
Remote loopback  
511 test pattern

## DTE Interface

Data Port Configuration: V.35, EIA-530/449,  
DSX-1, RS232 (as available)  
Data Rates: n x 56 kbps, n x 64 kbps  
(n=1 to 24) from 56 kbps to 1.536 Mbps  
(1.544 Mbps DS1)  
Electrical: V.35, EIA-530/449, RS232, or  
DSX-1  
Connector: 25-pin D-type female connector

## Control Port

Electrical: EIA-232  
Data Rate: 300 to 19,200 bps, asynchronous  
Connector: 9-pin D-type male connector  
**FT100M:** 25-pin D-type female connector

## Power Supply

Power Source: 115 Vac or 230 Vac  
**FT100M:** 115 Vac only  
**T1-ESF-CSU:** 115 Vac, -48Vdc, span line  
power  
Power Consumption: 6 watts typical

## Mechanical Dimensions

FT100S, FT100: 10.25 in. x 7.0 in. x 2.25 in.  
FT100EX: 9.5 in. x 6.3 in. x 0.9 in.  
FT100M: 10.8 in. x 9.7 in. x 2.9 in.  
T1-ESF-CSU: 10.0 in. x 7.0 in. x 2.0 in.

## Environmental

Operating Temperature: 0° to 50° C  
(32° to 122° F)  
Relative Humidity: 0 to 95% noncondensing

# Service and Ordering

Motorola ISG offers a full range of Network Maintenance, Systems Integration and Network Operations Services. For further information on service, warranty and ordering, please contact your Motorola Sales Representative or Authorized Distributor at the telephone number listed below.

Specify the interface required when ordering. Two different interfaces can be ordered for units with two ports.

<i>Description</i>	<i>Part Number</i>
FT100S standalone	64955046xxxxx
FT100S rack mount	64965047xxxxx
FT100 standalone	64965048xxxxx
FT100 rack mount	64965049xxxxx
FT100EX rack mount	64965050xxxxx
FT100M standalone	61045061xxxxx
T1-ESF-CSU	64965036xxxxx