Chapter 2
Installation

GENERAL

This chapter provides installation information for the FT 100. If changing hardware options to meet system requirements, refer to Chapter 3 before installation.

☞ **Note**

When requesting T1 network service, personnel operating this equipment must complete the affidavit in the front of this manual.

RECEIPT INSPECTION

Inspect the equipment carefully for damage that may have occurred in shipment. If there is damage or material shortage, contact the shipping agent and Motorola authorized distributer for advice and assistance. Retain the shipping container and packing material for possible future shipment.

The FT 100 arrives with the following components:

- Standalone housing containing two main circuit boards
- Two user specified piggyback interface boards/adapters
- Power transformer with cable
- T1 line cables
- V.35 adapter (included with V.35 unit)
- User's Guide

The following components must be supplied by the user:

- RS-449 adapter
- Control port adapter

SITE PREPARATION

The installation area should be clean and free from extremes of temperature, humidity, and appreciable shock and vibration. Allow sufficient space at the rear of the unit for cable clearance and air flow. See Figure 2-1.

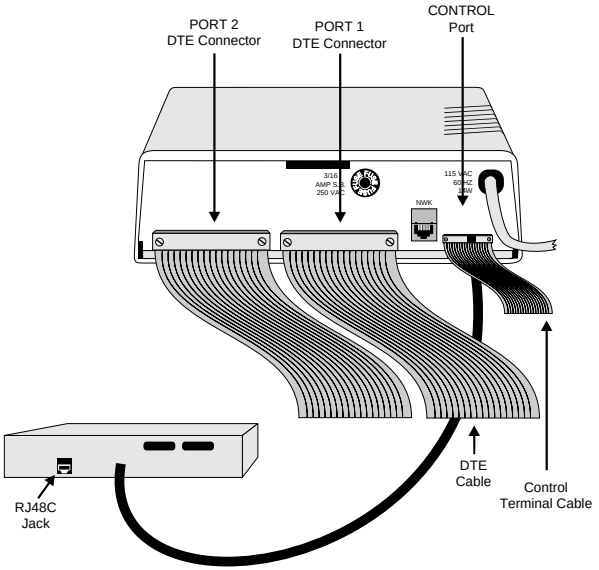

Figure 2-1
Installation

CONNECTIONS

☞ **Note**

Before connecting the unit, connect the unit; to the network to the network or the DTE, determine whether the factory setting for Network Transmit LBO is set as required or must be changed. Refer to Chapter 3.

FT 100 to Network

Network T1 line connections are made through a standard 8-pin RJ48C jack labeled **NWK** on the rear panel. Table 2-1 lists pin connections for the network connector.

Table 2-1. Network Connector Pin Functions

RJ48C Pin	Function
1	Network receive ring (R1)
2	Network receive tip (T1)
3	Not used
4	Network transmit (R)
5	Network transmit (T)
6	Not used
7, 8	Ground

To connect the unit to the network,

1. Insert one end of the supplied cable into the unit's NWK jack.

2. Insert the other end into the RJ48C on the T1 Network interface connector.

FT 100 to Remote Control Device

The 9-pin D-type male connector labeled **CONTROL** on the rear panel connects to the terminal that controls FT 100 operation, or to a modem connected to a remote terminal that controls the unit.

The interface is compatible with EIA RS-232 serial data operation and has pin functions like a Data Circuit-terminating Equipment (DCE) interface.

This is the same type of connector with the same pin connections as found on IBM PC/AT personal computers and compatibles so that standard cables can be used.

Pin connections for this interface are listed in Table 2-2.

Table 2-2. Control Port Connector Pin Functions

DB9 Pin	Function
1	Data carrier detect
2	Receive data
3	Transmit data
4	Data terminal ready
5	Ground
6	Data set ready
7	Request to send
8	Clear to send
9	Not used

To connect the unit to the network,

1. Insert one end of the cable into the unit's **CONTROL** port.

2. Insert the other end into the RS-232 connector on the controlling equipment.

FT 100 to DTE

The 25-pin D-type female connectors on the rear panel connect to the DTE. Table 2-3 through 2-7 show pin connections for the optional DTE connectors available.

To connect the unit to the DTE,

1. Insert the DTE cable into the DTE connector on the unit.

2. Insert the opposite end into the designated DTE.

3. Secure the screws to complete the connection.

.

Table 2-3. RS530 / RS449 Pin Functions

RS-530 (DB25) Pin	RS-449 (DB37) Pin	Function
1	1	Protective ground
2	4	Transmit data A
3	6	Receive data A
4	7	Request to send A
5	9	Clear to send A
6	11	Data set ready A
7	19	Signal ground
8	13	Receive line signal detect A
9	26	Receive clock B
10	31	Receive line signal detect B
11	35	External transmit clock B
12	23	Transmit clock B
13	27	Clear to send B
14	22	Transmit data B
15	5	Transmit clock A
16	24	Receive data B
17	8	Receive clock A
18	10	Local loopback
19	25	Request to send B
20	12	Data terminal ready A
21	14	Remote loopback
22	29	Data set ready B
23	30	Data terminal ready B
24	17	External transmit clock A
25	18	Test mode

Table 2-4. V.35 Functions

V.35 (DB25) Connector Pin	V.35 (34 pin V.35) Adapter Pin	Function
1	A	Protective ground
2	P	Transmit data A
3	R	Receive data A
4	C	Request to send
5	D	Clear to send
6	E	Data set ready
7	B	Signal ground
8	F	Receive line signal detect
9-12	--	Not used
13	AA/a	Transmit clock B
14	S	Transmit data B
15	Y	Transmit clock A
16	T	Receive data B
17	V	Receive clock A
18	J	Local loopback
19	X	Receive clock B
20	H	Data terminal ready
21	BB/b	Remote loopback
22	--	Not used
23	W	External transmit clock B
24	U	External transmit clock A
25	K	Test mode

Table 2-5. DS-1 Connector Pin Functions

Circuit Function	DS-1 Connector Pin	DS-1 Connector Adapter Pin
Transmit to DTE (T1)	4	2
Transmit to DTE (R1)	17	1
Ground (S1)	5	7
Receive from DTE (T)	2	5
Receive from DTE (R)	15	4
Ground (S)	3	8

V.35 / RS-449 Adapter Installation

Optional adapters are available for converting the DTE connector to a 34-pin V.35 type connector or to a 37-pin RS-449 type connector. Contact your sales representative for ordering information. Pin connections for the V.35 and RS-449 adapters are listed in Tables 2-3 and 2-4. Pin connections for the RS-232 and DS-1 are shown in Tables 2-5 and 2-7.

Table 2-6. DS-1 Connector Pin Functions

Circuit Function	DB15 DS-1 Connector Adapter Pin	DB15 DS-1 Connector Pin
Transmit to DTE (T1)	3	4
Transmit to DTE (R1)	11	17
Ground (S1)	4	5
Receive from DTE (T)	1	2
Receive from DTE (R)	9	15
Ground (S)	2	3

Table 2-7. RS232 Connector Pin Functions

RS232 Pin Number	Circuit Function
1	Protective Ground
2	TX data
3	RX data
4	Request to send
5	Clear to send
6	Data set ready
7	Signal ground
8	Receive line signal detect
9-14	Not used
15	TX clock
16	Not used
17	RX clock
18	Local loopback
19	Not used
20	Data terminal ready
21	Remote loopback

Table 2-7. RS232 Connector Pin Functions (Continued)

RS232 Pin Number	Circuit Function
22-23	Not used
24	External TX clock
25	Test mode

Backplane and FT 100EX Installation

FT 100EX expansion cards can be used to expand the number of DTE ports served by a single T1 line up to a maximum of 24. These cards require a special backplane with 2, 4, 8, or 12 slots. Each FT 100EX provides two additional DTE ports. Configuration and operation of these ports are exactly the same as for those on the FT 100. Table 2-8 list the part numbers for each backplane. Figure 2-2 show the installation of the 2 slot backplane and FT 100EXs.

Table 2-8. Backplane Assemblies for FT 100 and FT 100EX

Backplane	Part Number
2 Slot backplane (BP2)	4963861
8 Slot backplane (BP8)	4963865
4 Slot backplane (BP4)	4963863
8 Slot expansion backplane (BP8X	4963913

When the 4 slot and 8 slot expansion backplanes are used together, a total of 12 slots (24 ports) are available (Figure 2-3). The BP8X is used only with the BP4. The BP4 can be used by itself for a 4 slot (8 port) shelf. The two backplanes are connected by a short 26-pin ribbon cable as shown in Figure 2-4.

POWER

Power is supplied through a 6-foot line cord with a grounded 3-wire plug (attached to the unit). If chassis ground is available through the third prong of the plug, a separate ground wire is not required.

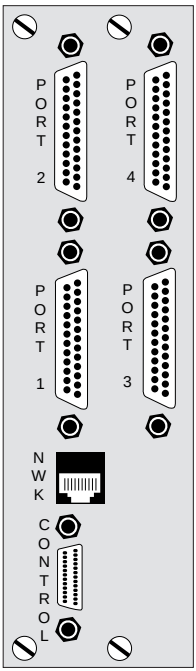

Figure 2-2
Backplane with 2 Slots

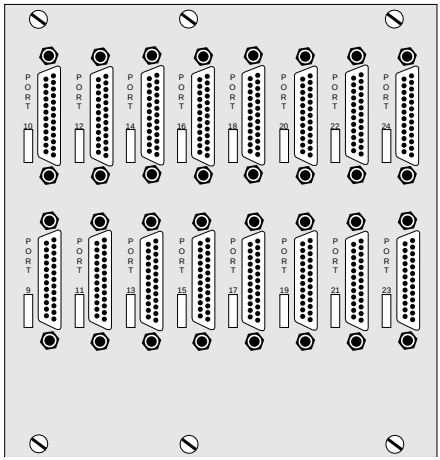

Figure 2-3
Backplane with 12 Slots

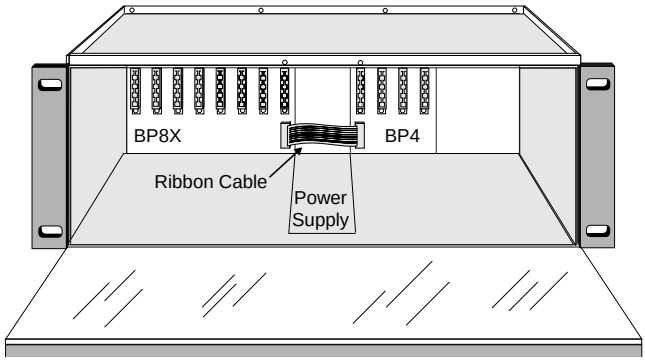

Figure 2-4
Front View