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### Recommendations for connections.

- Mains cables.

Check that the FTX 417 terminal and all its peripherals (printer, screen, etc) are connected via their mains cable to the same protective earth. Use the standard mains cables (2p + E) supplied with the products.

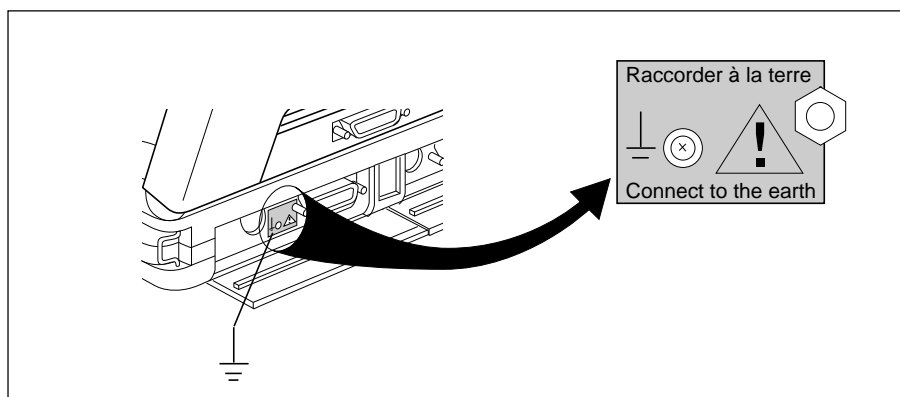
- Connection cables.

Any connections between the FTX 417 terminal and its peripherals must be made using good quality cables (screened cables, metal connectors) to provide earth protection to the various units.

- When connecting the FTX 417 terminal to any of its peripherals, ensure that all the units are switched off.



**Warning : the enclosure of this device must be connected to protective earth before connection to any external equipment.**



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## 1.1 Introduction

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The FTX 417-40 notebook is an IBM PC compatible personal computer, based on the 80486DXLP 32-bit microprocessor operating at 33 MHz. Its small size, A4 page format, and light weight of 3.4 kg, make it a truly portable terminal.

Due to the technology employed : magnesium case and elastomere keys, it can be used equally well in the design office or on the factory floor.

It can be powered by any type of 100 to 240 VAC, 50 to 60Hz, industrial supply. It operates independently using an internal battery.

The automatic resume mode (SUSPEND) enables data and context to be stored for up to 50 hours. On power-up, the notebook resumes operation with the same screen as was displayed when the last save was performed.

The FTX 417-40 has undergone a series of rigorous tests to ensure that it is compatible with the DOS and Windows operating systems.

The tests were carried out by the National Software Testing Laboratories (NSTL) in Pennsylvania, USA, an independent body for microcomputer testing.

This organization tested 25 applications on the FTX 417 40 notebook. **The FTX 417-40 notebook passed the DOS/Windows certification tests and was granted the NSTL DOS/Windows compatibility seal.**



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### 1.1-1 FCC regulations

The FTX 417-40 notebook has been tested and meets the required values for class B digital units, conforming to the FCC regulations paragraph 15. These regulations are designed to provide reasonable protection against any interference in a residential environment. This equipment generates, uses and may emit high frequency power and if it is not installed and used in accordance with the user's manual, it may cause interference to radio communication. Any installation may be faced with this problem. If this equipment causes interference to radio and television reception (which can be determined by switching the equipment on and off), the user should take the necessary measures to eliminate such interference :

- Reorientate or relocate the receiving antenna :
- Increase the distance between the equipment and the receiver :
- Connect the equipment to a circuit other than the one to which the receiver is connected :
- Consult the retailer or an experienced radio/television technician.

### Cables

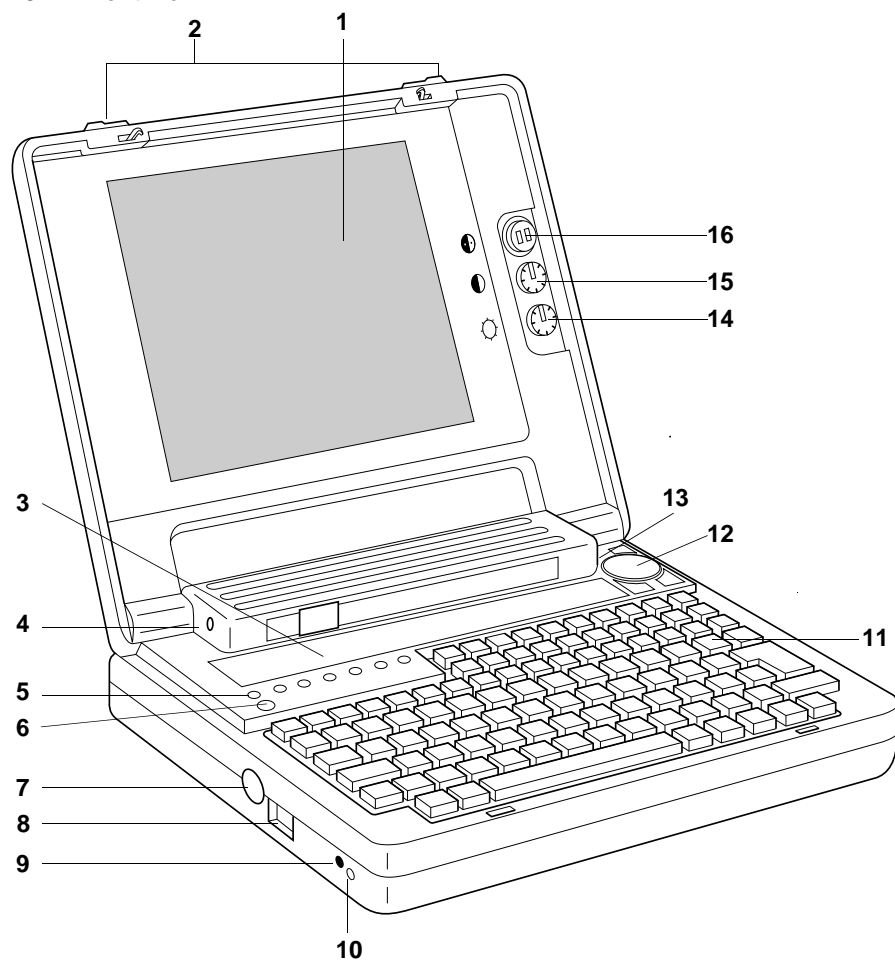
Peripherals must be connected to this PC using screened cables protected by a metal covering.

## 1.2 Operating characteristics

<b>Terminal</b>	<b>FTX 417-40</b>			
<b>Processor</b>	80486DXLP 33 MHz			
<b>Hard disk</b>	capacity	Depending on configuration		
<b>RAM memory</b>	standard	Depending on configuration		
	can be ext. to	32 Mb		
<b>Disk drive</b>	3" 1/2 IBM standard format (1.44 Mb and 720 Kb) and Telemecanique (TSX T607) format			
<b>PCMCIA card slots</b>	3 of Type II			
<b>Screen</b>	8"1/2 LCD, 256 colors, back-lit passive STN matrix (640 x 480 pixels).			
<b>Keyboard</b>	IBM compatible standard keyboard, 101/102 keys. Available in 6 basic versions (set of labels for other countries).			
<b>Standard output ports</b>	parallel	2 RS 232C ports (DB9)		
	serial	1 bidirectional parallel port (DB25)		
	mouse	IBM PS/2 standard		
	keyboard	IBM PS/2 compatible (PC AT with adaptor)		
	remote video	for VGA and SVGA color monitor.		
<b>PLC interface unit</b>	Extension connector for PLC connection and software protection keys			
	TSX	RS 485/20 mA current loop serial connection		
<b>Power supply</b>	basic	100 to 240 VAC industrial supply, 47 to 63 Hz with AC/DC adaptor (included)		
		6V internal NiMH battery, independent operation for 1 hour minimum, usually 1 hour 45 min		
<b>Operating systems</b>	<b>DOS and/or OS/2 and/or WINDOWS</b>			
<b>Security</b>	<ul style="list-style-type: none"> <li>• Access via unbreakable password</li> <li>• Serial number</li> <li>• Anti-theft ring</li> </ul>			
<b>Dimensions</b>	size	H=55mm	W=297mm	D=225mm
	weight	3.4 kg		
<b>Operating conditions</b>	See section 7.2			

## 1.3 Physical presentation

### 1.3-1 Front view

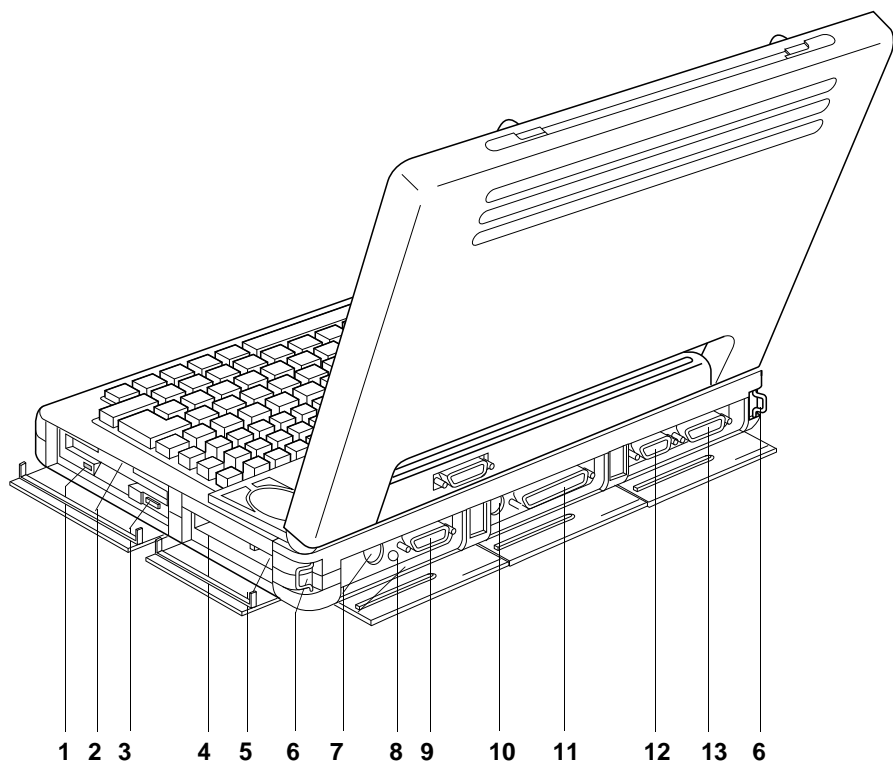


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**Front view (cont)**

- 1 Back-lit 8"1/2 VGA LCD screen with 256 colors.
- 2 Locks for the notebook cover.
- 3 Operating mode indicator lamps (see section 1.3-3).
- 4 PLC interface unit.
- 5 SUSPEND lamp, indicating the terminal operating mode.
- 6 SUSPEND pushbutton fore notebook stanby mode/restart.
- 7 DC socket for connecting the AC/DC adaptor when running from the AC supply.
- 8 Power-up switch.
- 9 Push RESET with a pencil point to reinitialize the FTX 417 notebook.
- 10 Battery lamp :
  - green, when the notebook is powered-up,
  - red, when the notebook battery is charging,
  - orange, when the notebook battery is charged.
- 11 Keyboard (see section 1.3-3).
- 12 Pointing device built into the keyboard.
- 13 Micro-contact to switch LCD screen off when the notebook cover is closed.
- 14 Screen brightness adjustment.
- 15 Screen contrast adjustment.
- 16 Reverse video control (slide the button to the right or the left).

---

**1.3-2 Rear view**

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**Rear view (cont.)**

- 1 Indicator lamp, lights when the disk drive is operating.
- 2 Disk drive for IBM standard 3" 1/2 diskettes (1.44 Mb or 720 Kb).
- 3 Pushbutton for ejecting diskettes.
- 4 PCMCIA memory card slots.
- 5 Pushbuttons for ejecting PCMCIA memory cards.
- 6 Anti-theft rings.
- 7 Micro-DIN socket for connecting mouse or roller ball (IBM PS/2 standard).
- 8 Earthing screw.
- 9 15-pin female connector for connecting a color VGA or SVGA monitor.
- 10 Micro-DIN connector for external keyboard.
- 11 25-pin female connector for bidirectional parallel link (CENTRONICS standard).
- 12 9-pin male connector for RS 232C serial link (IBM PS/2 standard).
- 13 9-pin male connector for RS 232C serial link (IBM PS/2 standard).

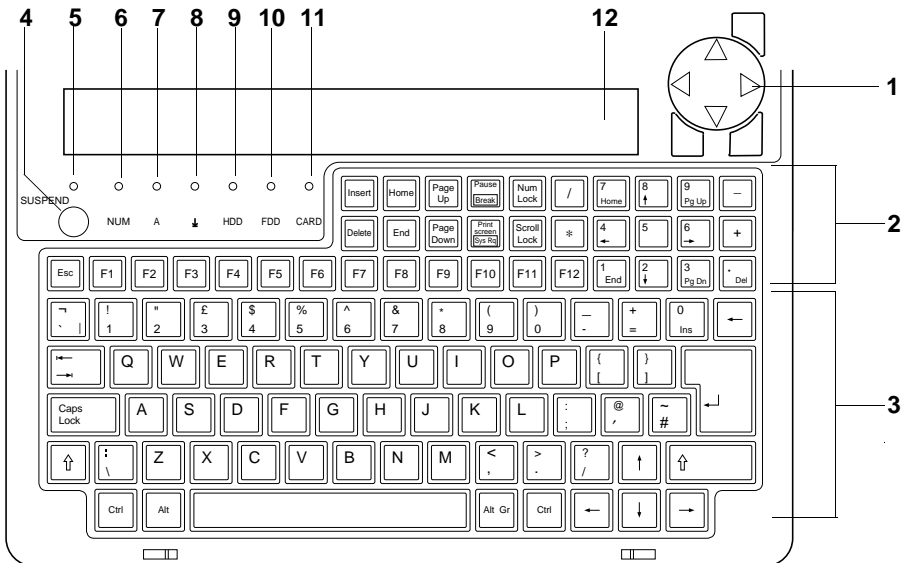
**Note**

All the connectors, and the PCMCIA memory card and disk slots are protected by covers.

### 1.3-3 Keyboard

The FTX 417-40 notebook keyboards are complete (numeric keyboard, cursor keys, etc), compatible with 101/102 key standard IBM keyboards. They are available in 6 basic versions, other versions being obtained by attaching self-adhesive labels to the keyboard (see Appendices section 12).

- QWERTY keyboard



---

**Keyboard (cont.)**

- 1 Pointing device.
- 2 Function keys and numeric keys.
- 3 Alphabetic keys and cursor keys.
- 4 SUSPEND pushbutton for notebook standby mode / restart.
- 5 SUSPEND indicator lamp.
- 6 "NUM" indicator lamp (green), indicating number lock on.
- 7 "A" indicator lamp (green), indicating caps lock on.
- 8 "↓" indicator lamp (green), indicating scrolling function locked.
- 9 HDD indicator lamp (green), lit when hard disk drive operating.
- 10 FDD indicator lamp (green), lit when floppy disk drive operating.
- 11 CARD indicator lamp (green), lit when the notebook accesses a PCMCIA memory card.
- 12 Slot for quick reference guide.

A trap, opened with a coin, is located under the notebook. This allows access to the battery.



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## 1.4 FTX 417-40 special features

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### 1.4-1 Resident Multilingual SETUP

The FTX 417-40 notebook include a multilingual SETUP program (English, French, German, Italian and Spanish).

This program is used to adjust and display the operating parameters of the notebook (operating mode, hardware configuration, power supply management, I/O port assignment, etc) in the chosen language by simply using tables.

---

### 1.4-2 Resident I/O system (BIOS)

The notebook has a Flash type EEPROM memory which enables easy integration of new functions by Official Maintenance Centers.

---

### 1.4-3 Energy saving features

The FTX 417-40 notebook has 3 energy saving features, intended principally to extend the period of time the notebook may operate from the internal batteries.

- **LCD screen saver** : This feature switches off the screen if the notebook is not used for a period of time set by the user (1). Operation is restarted automatically by pressing a key.
- **Hard disk saver** : This feature stops operation of the hard disk if the notebook is not used for a period of time set by the user (1). Operation is restarted automatically by pressing a key.
- **Management of processor speed** : This feature controls the processor speed in relation to the actual use of the notebook (1).

(1) All these are selected in SETUP (see section 5.2-4).

---

### 1.4-4 Operating safety feature

#### Password

Each terminal is equipped with access control, limiting access to the terminal to authorized personnel by means of a password. The password is defined in SETUP (see section 5.2-4).

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### 1.4-5 PLC interface unit

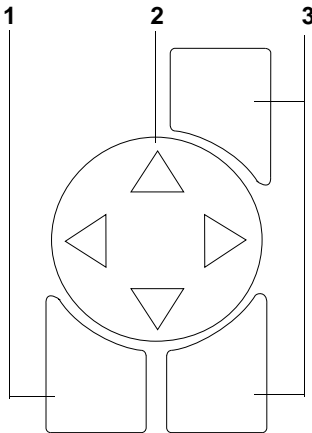
The interface unit is fitted to the notebook without any modification to the appearance of the notebook or to its dimensions.

This unit connects the notebook to PLCs and reads Telemecanique software protection keys.

---

### 1.4-6 Pointing device

The terminal is fitted with a pointing device, built into the keyboard as standard. This gives quick access to the various command menus.



- 1 - Left hand button
- 2 - Moves the pointer through 360°
- 3 - Right hand buttons

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## 1.5 Operating systems and utility software

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### 1.5-1 Operating systems

The FTX 417-40 notebook is supplied with **DOS** and/or **OS/2** and/or **WINDOWS** operating systems pre-installed. The FTX 417-40 terminal functions are provided by the software supplied by Telemecanique.

The operating systems are supplied on 3" 1/2 diskettes, each with their own documentation.

---

### 1.5-2 Telemecanique utility software

Telemecanique utility software is divided into 2 groups :

- A SETUP program installed in the BIOS Flash EEPROM memory.
- DOS/WINDOWS and OS/2 utilities supplied on 3"1/2 diskettes.

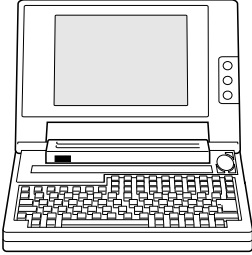
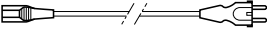
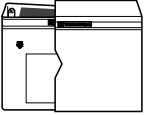
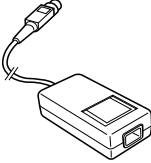


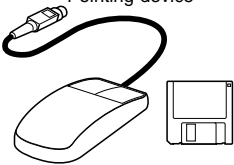

The functions and installation of these programs are described in section 5.

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## 2.1 Checking the hardware

<b>Terminal</b>	<b>Accessories</b>	<b>Documentation and utilities</b>
	T FTX CA52 power cable 	T FTX DM 417 40E FTX 417-40 user's manual 
	T FTX ADC40 AC/DC adaptor 	DOS utility software 3 1/2 diskettes 
	<b>Options</b>	OS/2 utility software 3 1/2 diskettes 
	Pointing device  T FTX MM2 M	<b>According to software configuration</b> Operating system <ul style="list-style-type: none"><li>• DOS</li><li>• OS/2</li><li>• WINDOWS</li></ul> 

---

## 2.2 Preparation for use

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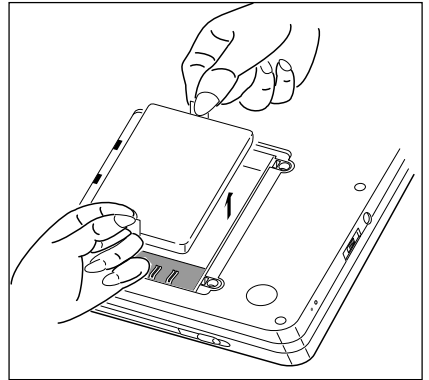
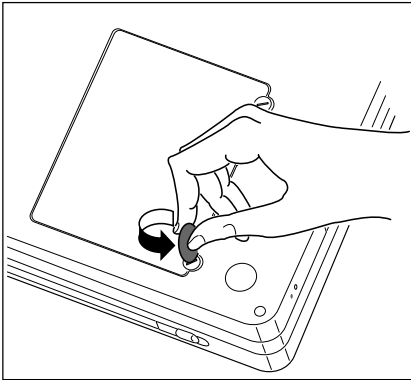
When the FTX 417-40 notebook is used for the first time, the following operations must be performed in the order in which sub-sections appear.

### 2.2-1 Setting up the battery

The notebook is supplied with the battery disconnected. It must be in service before any other operation can be performed.

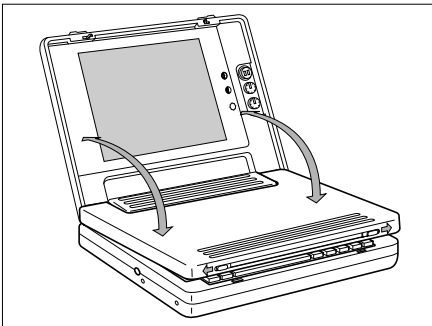
To do this, open the trap underneath the notebook using a coin.

- Unscrew the 2 catches and open the trap.
- Lift up the battery.
- Remove the plastic protective film.
- Close the trap and tighten the catches.



---

### 2.2-2 Preparing the notebook



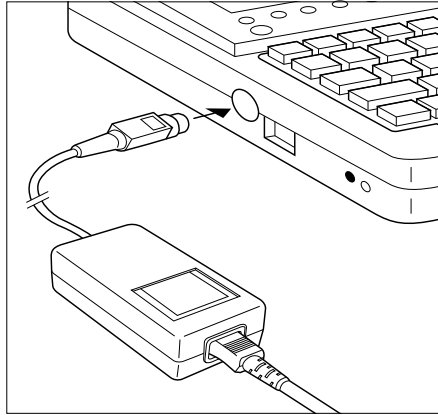
Two sliding locks prevent the notebook from opening. To open the notebook, slide the locks and raise the lid as shown.

Remove the plastic protective film from the screen.

---

### 2.2-3 Power connection

The FTX 417-40 notebook connects to a 100 - 240 VAC, 50 - 60 Hz supply, using only the certified power supply adaptor T FTX ADC 40 and a standard power cable plugged in as shown.



---

### 2.2-4 Using the internal battery

The internal battery must be charged before it can be used for the first time to power the notebook.

The battery is charged by connecting the notebook to the AC/DC adaptor (see above) and connecting this to the AC supply.

---

### 2.2-5 Switching on the first time

Press the power-up switch, then during the self-tests **press the F2 key to access the main SETUP screen**, and perform the following operations from that screen :

- 1- Using the up and down arrow keys, select "Language selection" and confirm with <Enter>.
- 2- Using the up and down arrow keys, select "Operating parameters" and confirm with <Enter> :
  - set the date using the <+> and <-> keys,
  - set the time using the <+> and <-> keys,
  - enter a password if required.All these operations are described in section 5.2-4.  
Press <Escape> to return to the main menu.
- 3- Press <Escape>, select "Validate the changes and REBOOT" in the menu using the up and down arrow keys and confirm with <Enter>.

## 2.3 Operating modes

The FTX 417-40 notebook can operate on the mains power supply using the T FTX ADC 40 adaptor or on the battery. The power supply lamp (see 1.3-1) and the lamp above the SUSPEND button, depending on their state (steady, blinking) and their color, inform the user about :

- the notebook operating mode,
- the charging status of the battery,
- the frequency of the processor

The table below summarizes the different states :

Battery status	ON/OFF switch	AC/DC adaptor	Power supply lamp	SUSPEND lamp	Operating mode
<b>CHARGE</b>					
	OFF	Present	Red steady Orangesteady	Off Off	Fast charge Slow charge
	ON	Present	Green steady	Green steady(1) Orange steady (2)	Slow charge
Press SUSPEND					
	ON	Present	Red steady	Orange intermittent flash(3)	Fast charge
			Orange steady	Orange intermittent flash (3)	Slow charge
<b>DISCHARGE</b>					
	ON	Missing	Green steady	Green blinking slowly(1)	Start of discharge
			Green blinking slowly	Green blinking quickly	<b>5 short beeps</b> approx. 15 min left
			Green blinking slowly	Orange regular flash(3)	Terminal on low consumption
	OFF	Present	Red blinking quickly	Off	Battery discharged

- (1) Processor frequency = 33 MHz,  
 (2) Processor frequency < 33 MHz,  
 (3) a flash every 2 seconds.



---

In addition to the indicator lamps, audible beeps warn the user :

- 3 short beeps : indicate that the notebook is changing to battery operation.
- 1 long beep : indicates that the notebook is returning to the AC power supply.
- 5 short beeps indicate that there is approximately 15 minutes of independent operation left.

Note :

Completely discharge and then recharge the battery at least once every two months to maintain its performance.

---

### **2.3-1 Managing usage time**

The FTX 417-40 notebook has a number of features which increase the time during which the notebook can operate independently :

- Standby modes. These enable the operation of an element of the notebook to be temporarily shut down when not being used, after a period of time set by the user in SETUP, see section 5.2-4.
- Using a PCMCIA memory card rather than diskettes.

---

## 2.4 Energy management modes

---

The notebook has a "SUSPEND" button, at the top left hand side of the keyboard. This button places the notebook in standby mode. Pressing the button again restarts the task at the point where it was interrupted.

The lamp, associated with the "SUSPEND" button, changes color according to the SETUP parameters. By its color, it shows the execution speed of the microprocessor as well as the energy management mode :

<b>Energy management mode</b>	<b>AC power SUSPEND lamp</b>	<b>Battery SUSPEND lamp</b>
Maximum	Green	Green blinking
Slow	Orange	Orange blinking
Waiting	Orange	Orange blinking
Standby	Orange intermittent flash	Orange intermittent flash

---

## 2.5 Switching on

---

### 2.5-1 Introduction

The notebook is switched on by pressing the switch on the left hand side of the terminal, regardless which power supply source has been chosen. On power-up, the FTX 417-40 notebook executes a series of self-tests. The following screen appears while the self-tests are running.

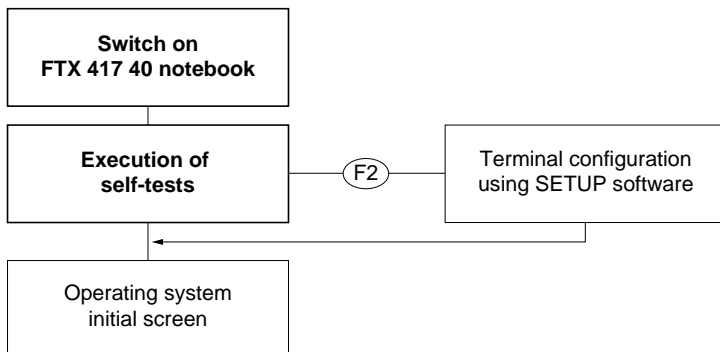
```
CL-GD62x5 VGA BIOS Version 1.22B
Copyright 1991-1994 Cirrus Logic, Inc. All Rights Reserved
Copyright 1991-1990 Quaddel Corp. All Rights Reserved
62x5 05/17/94

PhoenixBIOS(TM) A486 Version 1.03
Copyright (C) 1985-1992 Phoenix Technologies Ltd
All Rights Reserved
PhoenixBIOS for PicoPower PT86C368 (Pine)
Copyright (C) 1994 Telemecanique

486 DX processor detected operating at 33 Mhz
Press F2 to run the setup utility
```

After confirming SETUP or at the end of the self-tests, the notebook displays :

- The initial screen of the operating system.
- An error message if no operating system has been installed.



---

### 2.5-2 Self-tests

On power-up, after initializing (by pressing the button with a pencil point, item 8, page 12) or after a restart (by pressing <Control>, <Alt> and <Del>), the FTX 417 notebook performs the various self-tests listed below in succession :

- ROM memory
- battery-backed CMOS RAM
- keyboard
- LCD screen (or external video screen)
- extended RAM
- serial ports
- parallel port
- pointing device
- disk drive
- hard disk
- processor speed
- bootable unit.

### 2.5-3 Error messages

If an error is detected during the self-tests, the following messages may appear :

Message	Probable cause	Solution
Diskette read failure - press F1 to retry boot, F2 for SETUP utility	The diskette is either not formatted or is defective	Replace the diskette with a bootable diskette and retry
Gate A20 failure	The keyboard controller is not accepting commands, specifically the enable and disable A20 commands	Turn the power off, then back on again. If the problem persists, contact your technical support centre
Fixed disk configuration error	The configuration is not supported by the hardware installed	Correct the fixed disk configuration
Fixed disk controller failure	The controller card has failed	Replace the fixed disk
Fixed disk failure	The fixed disk may be defective	Try rebooting. If that does not work, replace the fixed disk
Hard disk failure - press F1 to retry boot, F2 for SETUP utility	The fixed disk may be configured incorrectly or is defective	Check the drive type selected in SETUP. Try rebooting. If the problem persists, replace the fixed disk
Pointer device failure	The pointing device has failed	Try rebooting. If the problem persists, contact your technical support centre
No boot device available - press F1 to retry boot, F2 for SETUP utility	Either diskette drive A:, the PCMCIA card assigned as A: or the fixed disk is defective	Try rebooting. If the problem persists, replace the diskette, the PCMCIA card or the hard disk

No boot sector on hard disk - press F1 to retry boot, F2 for SETUP utility	The <b>C:</b> drive is not formatted or is not bootable	Format the <b>C:</b> drive and make it bootable
Not a boot diskette - press F1 to retry boot, F2 for SETUP utility	The diskette or the PCMCIA card in drive <b>A:</b> is not formatted as a bootable diskette	Replace the diskette or the card with a bootable diskette and try rebooting
No timer tick interrupt	The timer chip has failed	Turn the power off, then back on again. If the problem persists, contact your technical support centre
Shutdown failure	RESET command has failed	Turn the power off, then back on again. If the problem persists, contact your technical support centre
Time of day not set - run SETUP program	Clock not set	Run SETUP utility
Timer 2 failure	The timer chip has failed	Turn the power off, then back on again. If the problem persists, contact your technical support centre
Invalid configuration information - please run SETUP	Configuration error	Run SETUP utility and check configuration settings
Keyboard data line failure	The keyboard controller firmware has failed	Turn the power off, then back on again. If the problem persists, contact your technical support centre

Keyboard stuck key failure	A key is jammed	Locate the jammed key and fix it. Turn the power off, then back on again. If the problem persists, contact your technical support centre
Memory failure at hex-value, read hex-value, expecting hex-value	Memory chip has failed	Turn the power off, then back on again. If the problem persists, contact your technical support centre
Real time clock failure	The RTC or battery has failed	Run the SETUP utility and turn the power off and on. If the problem persists, replace the battery. If the problem remains, contact your technical support centre
Memory parity interrupt at address. Type (S)hut off NMI, (R)eboot, other keys to continue	Memory chip has failed	Contact your technical support centre
Unexpected HW interrupt interrupt at address. Type (R)eboot, other keys to continue	Hardware problem	Contact your technical support centre
Unexpected SW interrupt interrupt at address. Type (R)eboot, other keys to continue	Errors in the software program	Turn the power off, then back on again. If the problem persists, check the program
Unexpected type 02 interrupt at xxxxxh. Type (S)hut off NMI, (R)eboot, other keys to continue	A parity error occurred, but the source cannot be determined	Turn the power off, then back on again

---

## 2.6 Initializing the notebook

---

The FTX 417-40 notebook can be initialized in 3 ways (has 3 bootable drives) :

- Diskettes
- Hard disk
- PCMCIA cards.

When a diskette is in the drive, it has priority, except when drive A has been assigned to a PCMCIA slot in SETUP.

The terminal cannot start up in the following situations :

- There is either a non formatted or non-system disk in drive **A**:
- Drive **A**: is assigned to a PCMCIA slot which contains either a non formatted or non-system memory card.
- The hard disk is not formatted or the operating system is not installed (no diskette in the drive).







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<b>This section ends at page</b>	<b>40</b>

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## 3.1 Mouse

---

### 3.1-1 General

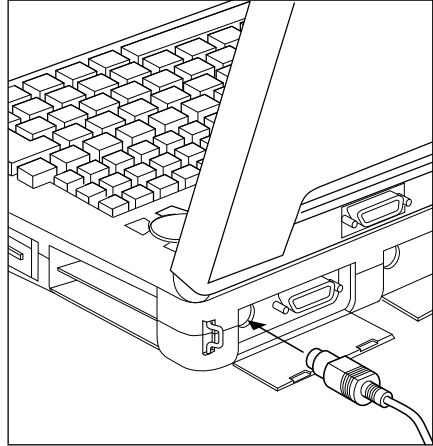
Telemecanique supplies a mouse (ref. T FTX MM 2 M) in addition to the pointing device on the keyboard.

This mouse is connected via the dedicated mouse port : micro DIN serial link IBM PS/2 standard connector.

#### Caution

Do not connect or disconnect the mouse when the notebook is switched on.

The mouse driver must be installed for the mouse to be operational (see documentation supplied with the mouse).



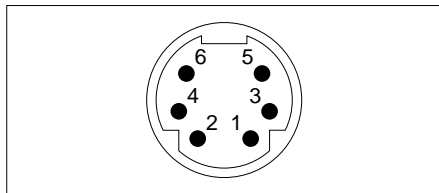
#### Important

Once the external mouse has been installed, the pointing device on the keyboard is disabled.

---

### 3.1-2 Mouse pin connections

Micro-Din 6-pin female connector (front view)



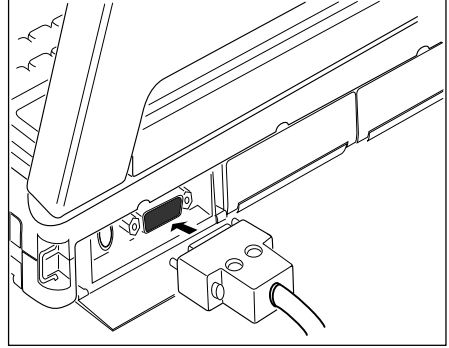
Pin N°	Signal	I/O	Description
1	MDATA	I/O	Data
2	NC	-	Not connected
3	0V	-	Ground (Earth)
4	5V	-	5 VDC
5	MCLK	O	Clock
6	NC	-	Not connected

## 3.2 Monitors

### 3.2-1 General

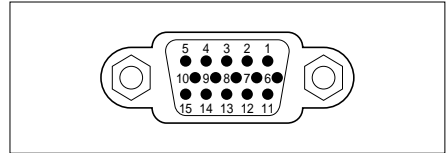
The FTX 417-40 notebook has an IBM PS/2 standard 15-pin video connector. It will accept any color or monochrome monitor. It supports VGA and SVGA graphic resolutions and enables up to 256 colors to be displayed.

The notebook must be powered down when connecting an external monitor. This monitor then has priority over the LCD screen which is inhibited.



### 3.2-2 VIDEO pin connections

Front view of female connector



Pin N°	Signal	I/O	Description
1	RED	O	Red
2	GREEN	O	Green
3	BLUE	O	Blue
4	Reserved	-	Reserved
5	Self-test	O	Self-test output
6/7/8	0V	-	Ground red/green/blue
9	PLUG	-	Locating
10	0V	-	Ground
11/12	Reserved	-	Reserved
13	HSYNC	O	Horizontal synchro
14	VSYN	O	Vertical synchro
15	NC	-	Not connected

---

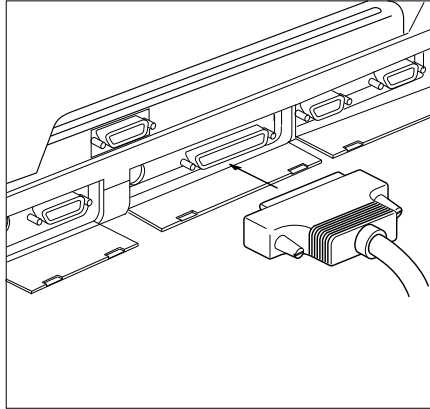
## 3.3 Printers

---

### 3.3-1 General

The FTX 417-40 notebook will accept various types of serial printer via the RS232C interface, or parallel printers via the Centronics interface. The corresponding printer driver must be installed. Lists of printer drivers are provided by the operating systems.

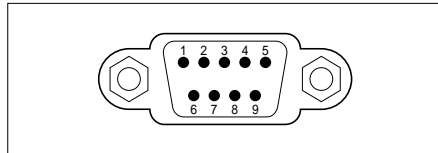
The drivers can be selected either during installation, or later (see operating system installation manual).



---

### 3.3-2 RS 232 “RS232C(COM1)” and “RS232C(COM2)” serial port pin connections

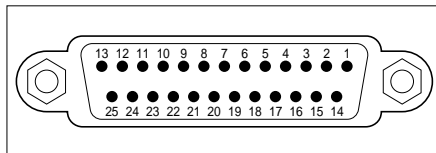
Male connector (front view)



Pin N°	Signal	I/O	Description
1	DCD	O	Data Carrier Detect
2	RXD	O	Data received
3	TXD	O	Data transmitted
4	DTR	O	Data Terminal Ready
5	0V	-	Signal ground
6	DSR	I	Data Set Ready
7	RTS	O	Request to Send
8	CTS	I	Clear to Send
9	RI	I	Audible signal

### 3.3-3 CENTRONICS “//↔ (LPT1)” parallel port pin connections

Female connector (front view)



Pin N°	Signal	I/O	Description
1	-STROBE	O	Strobe
2	D0	I/O	Data bit 0
3	D1	I/O	Data bit 1
4	D2	I/O	Data bit 2
5	D3	I/O	Data bit 3
6	D4	I/O	Data bit 4
7	D5	I/O	Data bit 5
8	D6	I/O	Data bit 6
9	D7	I/O	Data bit 7
10	-ACK	I	Acknowledge
11	BUSY	I	Busy
12	PE	I	End of paper
13	SLCT	I	Select
14	-AUTOFEED	O	Automatic linefeed
15	-ERROR	I	Error
16	-INIT	O	Printer initialization
17	-SLCTIN	O	Input selection
18/19/20	0V	-	Signal ground
21/22/23	0V	-	Signal ground
24/25	0V	-	Signal ground

---

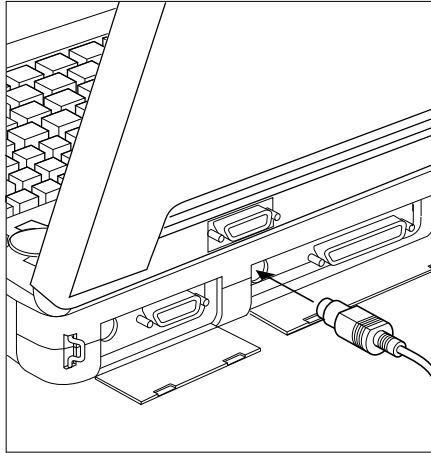
## 3.4 Keyboards

---

### 3.4-1 General

The FTX 417-40 notebook has a 6-pin Micro-DIN female connector. It will accept any IBM/PS2 compatible keyboard.

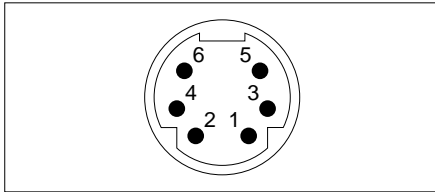
An external IBM AT type keyboard can also be connected via a DIN/MICRODIN adaptor, reference : T FTX KBA 5.



---

### 3.4-2 KEYBOARD pin connections

Micro-Din 6-pin female connector (front view)



Pin N°	Signal	I/O	Description
1	KDATA	I/O	Data
2	NC	-	Not connected
3	0V	-	Ground
4	5V	-	5 VDC
5	KCLOCK	O	Clock
6	NC	-	Not connected



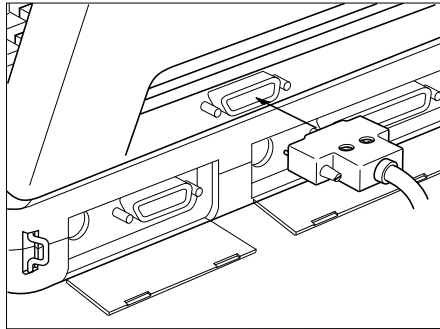
<b>Sub-section</b>	<b>Page</b>
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<b>4.2 Connecting to TSX range of PLCs</b>	<b>43</b>
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<b>4.3 Connecting via a modem</b>	<b>46</b>
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## 4.1 PLC interface unit

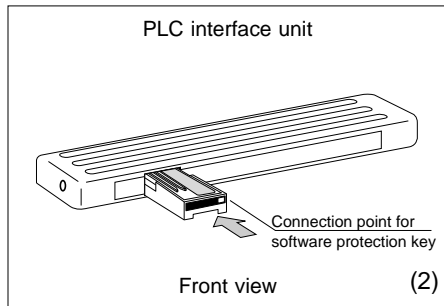
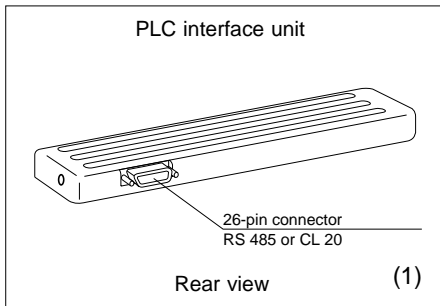
The FTX 417-40 notebook has a multifunction port which enables it to be connected directly to Telemecanique products. This port is **located** in the **PLC interface unit**. This port offers 2 standards :

- CL20(20mA current loop) for connecting to TSX 47/67/87 version V3 or later or TSX/PMX 47/67/87/107 model 40 PLCs.
- RS 485 for connecting to TSX 07 and TSX 17 PLCs.



Using Telemecanique software automatically selects the port according to the PLC connected. However, to speed up the logical connection, this choice can be configured in the SETUP software (see section 5.2-4).

### Connector



(1) PLCs are connected to the notebook via the rear of the connector.

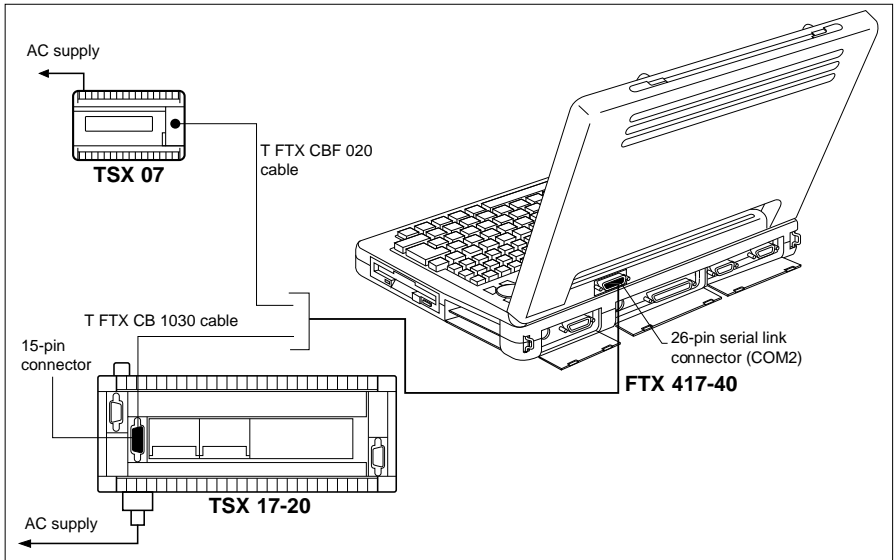
(2) The Telemecanique software protection key is connected at the front of the connector.

The PLC interface unit contains an integral key for checking the rights required for using the Telemecanique software installed on the hard disk.

(For the use of Key-manager refer to Telemecanique software documentation).

## 4.2 Connecting to TSX range of PLCs

### 4.2-1 Connecting to TSX 07 and TSX 17 PLCs



Connecting to PLCs requires a T FTX CBF 020 cable (length 2.5m) for the TSX 07 and a T FTX CB 1 030 cable (length 3m) for the TSX 17.

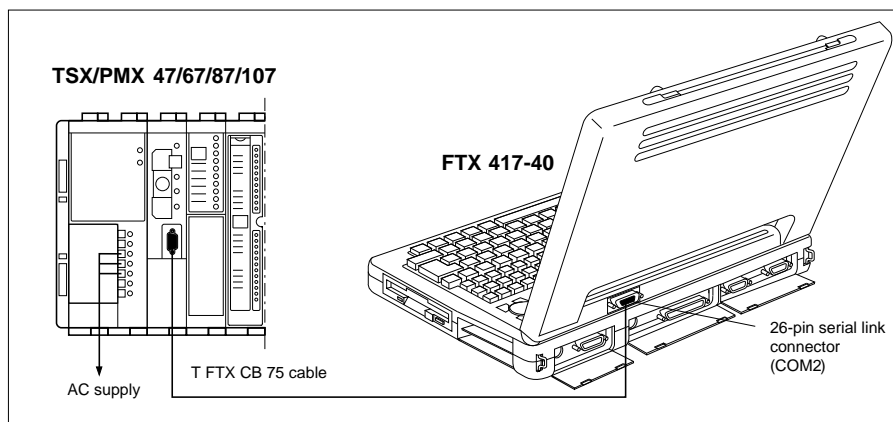
These cables have :

- for the TSX 07 :
  - on the FTX 417 side; a 26-pin SUB-D male connector,
  - on the TSX 07 side; an 8-pin mini-DIN female connector.
- for the TSX 17 :
  - on the FTX 417 side; a 26-pin SUB-D male connector,
  - on the TSX 17 side; a 15-pin SUB-D male connector.

#### Note

The cables for connecting to PLCs must be ordered separately.

## 4.2-2 Connecting to TSX/PMX 47/67/87/107 PLCs



Connecting to TSX/PMX PLCs requires a T FTX CB 75 cable (to be ordered separately).

This 2m cable has :

- on the FTX 417 side; a 26-pin SUB-D male connector,
- on the TSX/PMX side; a 9-pin SUB-D male connector.

### 4.2-3 Connecting to UNI-TELWAY bus

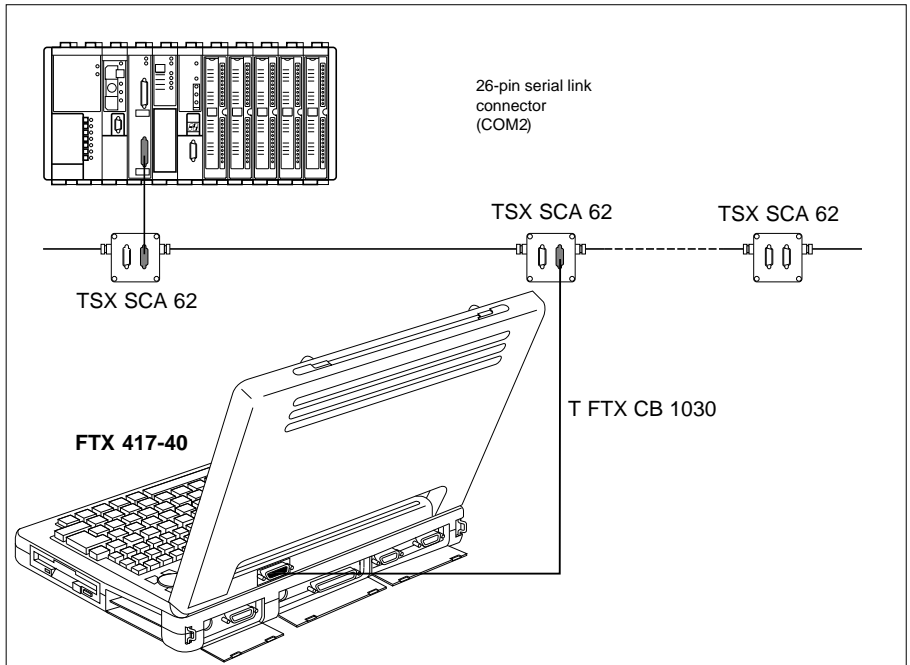
Connecting the notebook to UNI-TELWAY simplifies local maintenance of an application which includes a UNI-TELWAY bus.

Connecting to the UNI-TELWAY bus is only possible if the UNI-TELWAY driver is installed. This driver is supplied with X-TEL and MINI X-TEL software (for further information, see the X-TEL or MINI X-TEL reference manual).

Connection is made via a TSX SCA 62 subscriber socket and the T FTX CB 1 030 cable (to be ordered separately).

This 3m cable has :

- on the FTX 417 side; a 26-pin D male connector,
- on the TSX SCA62 side; a 15-pin D male connector.



The notebook can also be connected to the integral UNI-TELWAY port on the processor using a T FTX CB2 030 cable.

---

### 4.3 Connecting via a modem

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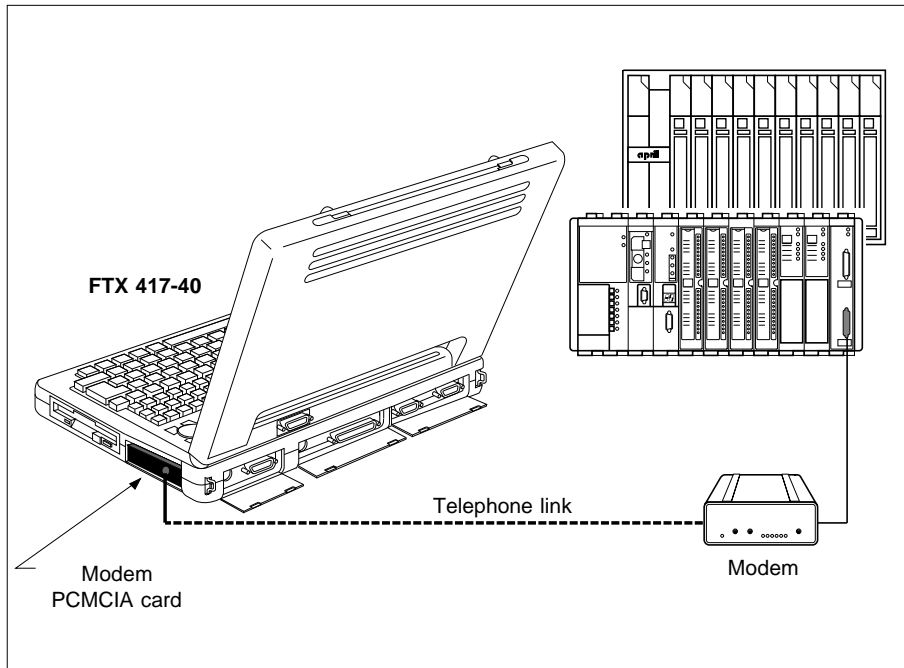
The notebook can be connected via a modem to a PLC for the purpose of remote maintenance.

- **TSX range**

The modem can only be connected if the UNI-TELWAY driver is installed. This driver is supplied with :

- X-TEL and MINI X-TEL software
- SYSDIAG under PL7-DOS user interface.

For further information, refer to the relevant manuals.



The modem is connected to the notebook using a Fax Modem type 2 PCMCIA card.



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<b>5.4 Utility under DOS (T FTX LF TDS 40)</b>	62
<b>5.5 Utility under OS/2 (T FTX LF TS2 52)</b>	64
<b>5.6 Other utilities</b>	64

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## 5.1 Introduction to the utilities

---

The FTX 417 notebook has 2 types of utilities :

- A SETUP utility which is integrated into the BIOS Flash EEPROM memory.
- A set of DOS and OS/2 utilities supplied on 3"1/2 diskettes.

---

## 5.2 Integrated utility (SETUP)

---

### 5.2-1 Accessing the SETUP software

The SETUP program is accessed during the self-tests when the terminal is switched on or restarted (press the <Control>, <Alt> and <Del> keys), by holding down the <F2> key.

Note

If a password has previously been defined, it must be entered in order to access the SETUP program (only when switching on).

This method launches SETUP in the language previously defined. To obtain SETUP software in another language, launch SETUP and choose language selection in the menu.

## 5.2-2 Introduction to the main menu

TELEMECANIQUE FTX 417 CONFIGURATION Version 1.0		
<table border="1"> <tr> <td style="text-align: center;">MAIN MENU</td> </tr> <tr> <td style="text-align: center;"> <p>Operating Parameters</p> <p>Communication Ports</p> <p>Power Management</p> <p>Language Selection</p> <p>Initialize Operating Parameters (Load default values, except password)</p> </td> </tr> </table>	MAIN MENU	<p>Operating Parameters</p> <p>Communication Ports</p> <p>Power Management</p> <p>Language Selection</p> <p>Initialize Operating Parameters (Load default values, except password)</p>
MAIN MENU		
<p>Operating Parameters</p> <p>Communication Ports</p> <p>Power Management</p> <p>Language Selection</p> <p>Initialize Operating Parameters (Load default values, except password)</p>		
Select : Enter    Exit : Esc    Help : F1    Abort : End		

This screen provides access to the FTX 417 notebook configuration parameters :

- Operating parameters (date, time, password, self-tests, etc).
- Assignment of the communication ports.
- Power management, processor speed, standby mode configuration.
- Language selection. This selection determines in which language the SETUP program is displayed.
- Initialization of all the parameters to their default values.

### Purpose of the main keys

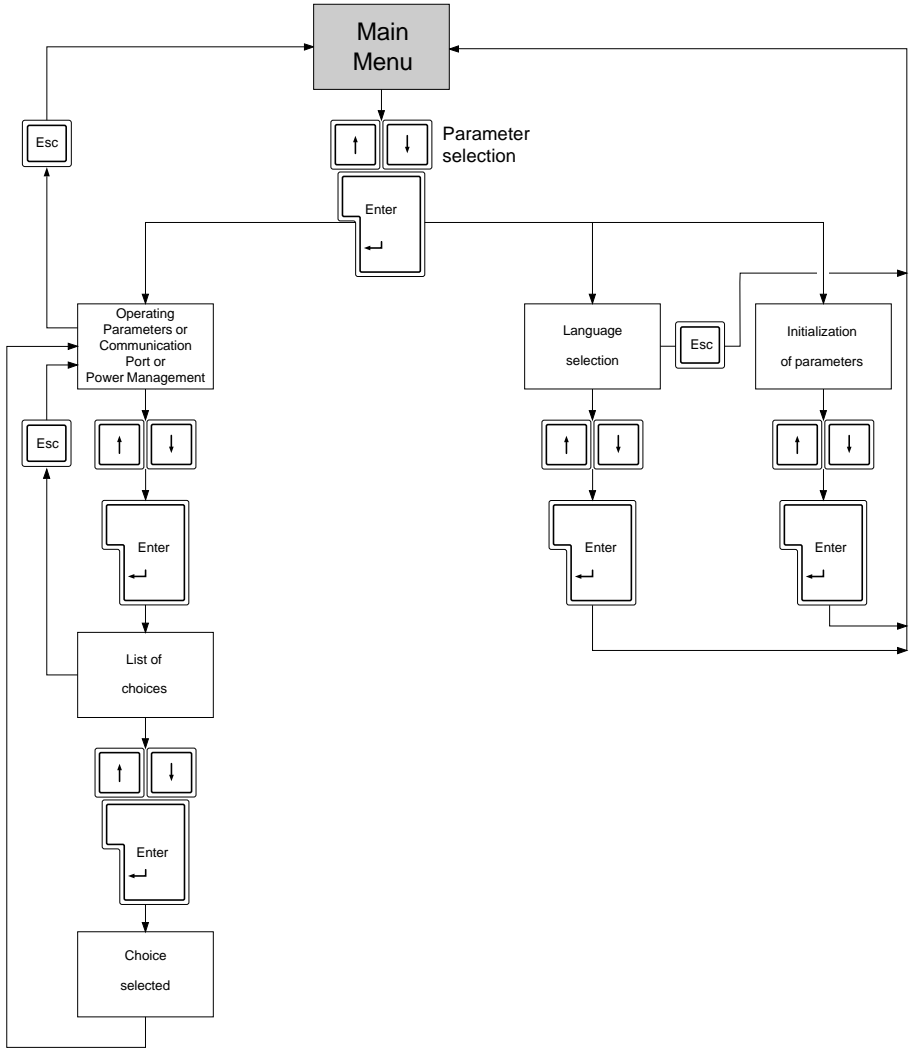
The vertical move keys are used to select parameters on the screen.

The <Esc> key quits either the current function, or the SETUP program.

A help file corresponding to the screen displayed and the subject selected, can be accessed at any time by pressing F1.



### 5.2-3 Operational flow chart



### Operating parameters

The operating parameters are divided into three screens. Move from one screen to another by pressing the PgUp and PgDown keys.

The operating parameters contain all parameters, including the communication ports, selection of power management and of the language which can also be accessed directly from the main menu.

Some values, given by the system, cannot be accessed by the user for modification. (these values are displayed in white).

### Modifying digital values

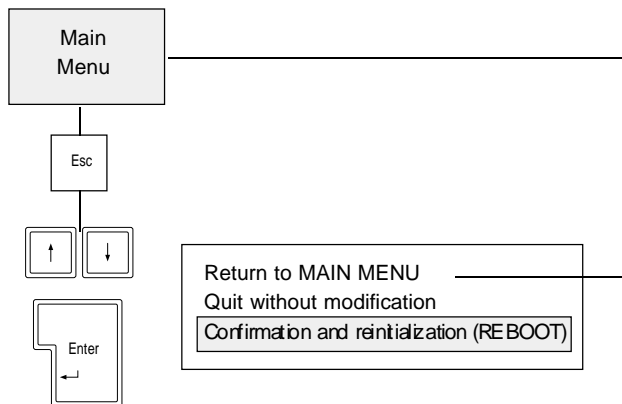
Digital values such as date and time can be modified by the <+> and <-> keys.

### Important

The modified parameters are only taken into account when quitting the SETUP program after confirmation. Data concerning the date, time and password take effect immediately.

When selecting a parameter, an entry window gives the various choices available or indicates any syntax which must be followed.

### Confirming and quitting SETUP



## 5.2-4 Operating parameters

Selecting "Operating parameters" in the main menu accesses in succession the 3 screens which contain all the notebook parameters. The PgUp and PgDown key are used to move from one screen to another.

**Description of the first screen**, which contains :

- Date and time
- Definition of password
- Execution of self-tests on power up
- Status of the battery-backed CMOS RAM memory
- Selecting a PS/2 type mouse
- Total RAM size
- Disk drive assignment
- Hard disk capacity
- BIOS version
- Update time
- Serial number

CONFIGURATION TELEMECANIQUE FTX 417 Version 1.0

### OPERATING PARAMETERS

Date (DD/MM/YYYY) . . . . .	20/12/94
Time (HH:MM:SS) . . . . .	19:41:04
Password . . . . .	Absent
Self-tests . . . . .	Complete
CMOS RAM status . . . . .	Checksum OK
PS/2 Mouse . . . . .	Enabled
Total main DRAM size . . . .	12 Mb
Floppy drive assignment . . .	A: FDD B: Disabled
HDD C: . . . . .	125 Mb
BIOS Version . . . . .	V 1.0.
Update (DD/MM/YY) . . . . .	01/12/94
Serial number . . . . .	90000012

1/3 Next Page : PgDn

Select : Enter    Exit : Esc    Help : F1    Abort : End

---

**Date**

Enables the date to be updated in the format indicated, the <+> and <-> keys are used to increment or decrement the digital values.

**Time**

Enables the time to be updated in the format indicated, the <+> and <-> keys are used to increment or decrement the digital values.

**Password**

This function allows a password of 3 to 8 alphanumeric characters to be defined or cancelled. When declared, the password is required each time the terminal is switched on. After three unsuccessful attempts, the terminal must be switched on again.

- Creating a password : When the terminal has no password, enter the chosen password twice in succession.
- Modifying a password : Enter the old password then enter the new one twice in succession.
- Deleting a password : Enter the old password then press <Enter> twice in succession.

If the user has lost the password, he should contact the Telemecanique Regional Sales Office giving :

- His details : name and address of the company, telephone and fax numbers.
- The serial number on the product.
- The system reference : ... (displayed on the screen after 3 attempts).
- The user access code "UAC" : .... (displayed on the screen after 3 attempts).

The Telemecanique Regional Sales Office will provide a special code which will enable the FTX 417 notebook to be reinitialized and a new password defined. This unique code will have no effect if used a second time if the password is lost again.

**Important**

The password system relies on the position of the keys used and not on their markings. It is therefore strongly recommended that the type of keyboard is not changed after the password has been entered. For example, the password "WQA" on a QWERTY keyboard corresponds to the password "ZAZ" on an AZERTY keyboard).

---

### **Self-tests**

This parameter is used to select how the self-tests are executed when the FTX 417 notebook is switched on :

- Complete :  
Tests the entire RAM memory
- Quick :  
Tests only basic memory (640 Kb) and the system memory (384 Kb). This choice significantly reduces time taken for tests on a terminal with a large RAM memory.

### **CMOS RAM status**

This function initializes the contents of the CMOS RAM, after confirmation, if the checksum is incorrect. An incorrect checksum indicates that at least one of the configuration elements is damaged or that the lithium back-up battery is not in service.

### **PS/2 Mouse**

This activates or deactivates the pointing device on the keyboard.

### **Total DRAM size**

Set parameter which determines the total RAM size.

### **Disk drive**

Assigns the disk drives and PCMCIA card reader to drive <A:> or <B:>.

The next information indicates the size of the hard disk, the BIOS version and its update as well as the notebook serial number.

**Description of the second screen**, containing :

- Assignment of the communication ports.
- Definition of TE key interface.

CONFIGURATION TELEMECANIQUE FTX 417 Version 1.0	
<b>OPERATING PARAMETERS</b>	
<b>COMMUNICATION PORTS :</b>	
- COM1 assignment . .	COM1 (default)
- COM2 assignment . .	COM2 (default)
- COM2 communication mode .	CL20
- LPT1 assignment . .	LPT1 (default)
- LPT1 mode . . . .	Bidirectional
- TE dongle key interface .	Enabled
2/3 Page change : PgDown / PgUp	
Select : Enter Exit : Esc Help : F1 Abort : End	

### COM1 assignment

Configures serial port 1 to COM1 or COM3 or disables this port.

### COM2 assignment

Configures serial port 2 to COM2 or COM4 or disables this port.

### COM2 communication mode

Choice between current loop (CL20), multidrop power connection (RS485), power connection (RS232C). If the connection unit is missing, the RS 232 C connection is implicit.

### LPT1 assignment

Configuration of parallel port (printer link and TE 90 key support) to LPT1 (default) or LPT2 or port disabled.

### LPT1 mode

Declared as the printer port or bidirectional : network connection, mass memory.

---

## TE dongle key interface

Activates or deactivates the Telemecanique software protection key interface and PLC connections (CL20/RS 485).

### Important

The modified parameters are only taken into account after quitting SETUP. Selecting a higher communication port index implies that the lower indices must be used (for example, if COM3 is declared, COM1 and COM2 must be used).

The connection unit has a port assigned to COM2 (when it is not disabled), which is dedicated to interfacing with Telemecanique TSX PLCs. This port can be programmed in two communication formats :

- RS 485 for connecting to the UNI-TELWAY bus, to TSX 07 and TSX 17 micro-PLCs.
- Current loop (CL 20) for communicating with Telemecanique Series 7 PLC terminal ports.

### Note

The LPT1 port must be declared in order to use the X-TEL or MINI X-TEL software workshop.

Description of the third screen, containing :

CONFIGURATION TELEMECANIQUE FTX 417 Version 1.0					
OPERATING PARAMETERS					
LCD shutdown after	Disabled				
HDD shutdown after	Disabled				
Power management style	Average				
Power management conditions	Enabled				
Suspend style	Suspend/Resume				
	Avr	Eco	Perf	User1	User2
<b>SPEED</b>					
Full	33 MHz	33 MHz	33 MHz	33 MHz	33MHz
Idle	8 MHz	8 MHz	1 MHz	1 MHz	OFF
Standby	8 MHz	2 MHz	1 MHz	1 MHz	OFF
<b>TIMEOUT</b>					
Idle	8 sec	1 sec	OFF	OFF	OFF
Standby	6 min	1 min	OFF	1mm	OFF
Suspend	20 min	5 min	OFF	5mm	OFF
3/3 Prev Page : PgUp					
Select : Enter    Exit : Esc    Help : F1    Abort : End					

### LCD shutdown after

Activates and deactivates the screen saver after a period of 1 to 15 minutes, which can be configured in units of a minute. Pressing any key will reactivate the screen.

This screen saver reduces the notebook's electrical consumption when it is powered from its own battery.

### HDD shutdown after

Places or removes the hard disk to/from standby mode after a period of 1 to 12 minutes. The notebook restarts automatically as soon as access is requested.

This operating mode reduces the battery consumption. When the disk is placed in standby mode, the read/write heads are parked and locked, which enables the notebook to be transported without being damaged.



---

## Power management style

Power management of the notebook makes it possible to select the battery performance level and minimize consumption. Each style can be modified by the notebook user according to how the notebook is being used.

These 5 operating styles are :

- Average (Avr),
- Economical ( Eco),
- Performance (Perf),
- User 1 (User1),
- User 2 (User2).

Each of the management styles defines the processor speed according to the frequency characteristics of the clock and time before change to standby mode.

## Power management conditions

This menu activates or deactivates power management which has been previously defined. The "Disabled" setting deactivates management mode as soon as the notebook is connected to the AC supply via the adaptor.

## Suspend style

The electrical consumption is minimal when the notebook is in Suspend/Resume mode. The memory continues to be updated quickly. Data can be obtained as long as the battery is sufficiently charged.

The "Save to disk" setting saves data to disk, thereby increasing the operation time, however ensuring that the data is definitely saved. Disk space is assigned for this function (see PHDISK utility program).

## Full speed

The processor speed maintains the defined value (33, 16.5 , 8 or 4 MHz) as long as the notebook is in ON mode. The higher the processor clock frequency, the higher the battery performance and consumption.

## Idle mode

The processor clock speed is set to idle mode. Frequency values can be set to : 8, 4, 2, 1 or 0.5 MHz or OFF.

## Standby mode

This mode characterizes the processor clock frequency when the notebook is in "standby". Frequencies vary from 8, 4, 2, 1 to 0.5 MHz.

## Idle timeout

This is the time taken to change to idle mode at the frequency defined in the "idle FREQ" setting or switching the processor off. It is possible to disable this operating mode or select times from 1, 4, 8 or 16 seconds.

## Standby timeout

Time taken to change the processor to standby mode. Values which can be configured : 1, 2, 4 , 6, 8, 12 or 16 minutes. This setting can be disabled.

---

**Suspend time**

Length of time the notebook is in standby mode. This can be configured with times ranging from 5, 10, 15, 20, 30, 40 to 60 minutes. This setting can be disabled.

The notebook restarts as soon as the SUSPEND key is pressed.

Pressing the SUSPEND key will place the notebook in standby mode at any time.

**Important**

When the battery charge becomes critically low, the notebook is automatically placed in standby mode; the data is saved to the RAM memory.  
It is not possible to save to a disk.

---

**5.2-5 Language selection**

“Language selection” in the main menu allows the user to select the language in which the configuration utility (SETUP) is to run. Languages available are English, French, German, Italian and Spanish.

LANGUAGE SELECTION
English : Select the country
Fran ais : S lectionner la nationalit
Deutsch : Wahlen Sie die Nationalitat
Italiano : Selezionare la nazionalit
Espanol : Seleccionar el idioma

Changing the language takes effect immediately.

---

### 5.2-6 Initializing all parameters

Selecting "Initialize operating parameters" in the main menu enables all the parameters to be reset to the default values (except the password, the date and the time).

- **Initialization** : starts initialization of all parameters,
- **Quit** : returns to the main menu without initializing.

The default parameters are as follows :

<b>Self-tests</b>	<b>Complete</b>
<b>PS/2 Mouse</b>	<b>Enabled</b>
<b>Floppy drive assignment</b>	<b>A: FDD B: Disabled</b>
<b>Communication ports</b>	
• <b>COM1 (RS232 C)</b>	<b>COM1</b>
• <b>COM2 (RS 232 C, RS 485, CL20)</b>	<b>COM2</b>
• <b>COM2 port status</b>	<b>CL20</b>
• <b>Parallel port</b>	<b>LPT1 Bidirectional</b>
<b>TE dongle key interface</b>	<b>Enabled</b>
<b>LCD shutdown after</b>	<b>Disabled</b>
<b>HDD shutdown after</b>	<b>Disabled</b>
<b>Power management style</b>	<b>Enabled</b>
<b>Power management conditions</b>	<b>Average</b>
<b>Suspend style</b>	<b>Suspend/Resume</b>
<b>Language selection</b>	<b>English</b>

---

### 5.2-7 Saving modifications

Once all the modifications have been entered they must be saved.

This is done from the main menu of the SETUP program by pressing the following key :

**<Esc>** : displays the following screen :

<b>Are the modifications correct ?</b>
<b>Return to main menu</b>
<b>Quit without modification</b>
<b>Confirmation &amp; reinitialization (REBOOT)</b>

Select "Confirmation and reinitialization (REBOOT)" using the up and down arrows, and confirm the choice by pressing <Enter>

Selecting "Return to main menu" allows you return to the main menu.

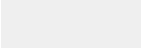
Selecting "Quit without modification" cancels all the modifications.

### 5.3 Utilities on diskette

A set of DOS and OS/2 utilities are supplied with the FTX 417 40 notebook on 3"1/2 diskettes.

The table below gives a list and their function according to the operating systems installed : DOS, WINDOWS and OS/2.

	DOS	WINDOWS	OS/2
List of utilities			
<b>T FTX LF TDS 40</b> DOS software utility diskette for FTX 417-40	X		
<b>T FTX LF DS PCM</b> PCMCIA software utility diskette under DOS for FTX 417-40	X	X	
<b>T FTX LF TS2 52</b> OS/2 software utility diskette for FTX 417-40			X
<b>T FTX LF SVGA 40</b> SVGA software utility diskettes under DOS and OS/2 for FTX 417-40	X	X	X
<b>T FTX LF FFS</b> Flash file system software utility diskette for FTX 417-40	X	X	

 Function not available

#### Note

The utilities are pre-installed.

---

## 5.4 Utility under DOS (T FTX LF TDS 40)

---

The T FTX LF TDS 40 diskette contains the following utilities :

- MOUSE.COM : controls the pointing device which is built into the notebook
- PHDISK.COM : save to disk utility (see section 8)
- T607TOPC.EXE : file conversion utility

### Installation procedure

At the DOS prompt, type :

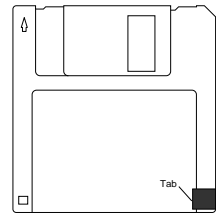
A:\>Install then press <Enter>, and follow the instructions displayed.

### T607TOPC

The following commands are used to convert files created on a T607 terminal for use on the FTX 417-40 notebook.

#### Note

To import an application stored on a "HD" diskette, the write protect tab must be covered with a label as shown in the diagram.



### T607TOPC

Lists the set of commands described below.

#### T607TOPC DIR <source drive>

Displays the list of files contained in the T607 diskette.

- Insert the T607 diskette in the drive.
- Enter the command T607TOPC DIR <source drive>.

example : C:\TE\_TOOLS>T607TOPC DIR a:

```
FURNACE          151324
FURNACE.CAB      196
FURNACE.TIT      100
FURNACE.NET      158
```

. . . . .

The screen displays the name of the files with their extensions and the size in number of bytes.

The \*.BIN files (containing the application programs created on TSX T607 terminals) are read without their extensions by the FTX 417 workstation.

**T607TOPC <source drive>:\\*.\* <destination>**

Copies the entire contents of the T607 diskette to the selected DOS directory.

- Create a directory under DOS,  
example : C:\>MKDIR APV3
- Insert the T607 diskette in the drive.
- Enter the command T607TOPC <source drive>:\\*.\* <destination>.  
example : C:\TE\_TOOLS>T607TOPC a:\\*.\* c:\APV3

All the T607 files on the diskette are then copied to the directory.

**T607TOPC <source drive>:\<T607 name> <destination>**

Copies the file selected on the T607 diskette to the selected DOS directory.

- Create a directory under DOS.  
example : C:\>MKDIR APV3
- Insert the T607 diskette in the drive.
- Enter the command T607TOPC <source drive>:\<T607 name> <destination>.  
example : C:\TE\_TOOLS>T607TOPC a:\FURNACE c:\APV3

**Note**

To use the original files after transfer (from the TSX T607 terminal), they must have an extension. If there is no extension, the .BIN extension must be added using the DOS command "RENAME" :

Example : RENAME <PATH> FILE FILE.BIN

---

## 5.5 Utility under OS/2 (T FTX LF TS2 52)

---

The T FTX LF TS2 52 diskette contains a utility, which automatically installs the PLC terminal port communication driver on the dedicated PLC assigned port.

### **Installation procedure**

Open an OS/2 window, type A:\install then <Enter> and follow the instructions displayed on the screen.

---

## 5.6 Other utilities

---

Other utilities are supplied with the FTX 417-40 notebook. Their operation is described in detail in other sections.

- T FTX LF SVGA 40 : Cirrus Logic SVGA utilities (see section 9)
- T FTX LF DS PCM : PCMCIA utilities (see section 10)
- T FTX LF FFS : Microsoft Flash file system utilities (see section 11).



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---

## 6.1 General

---

Each time the terminal is switched on or initialized, a series of self-tests are run automatically (see section 2.5-3). If a fault is detected by one of these tests, an error message appears on the screen (see section 2.5-4).

Depending on the type of message, the user should :

- either make the appropriate correction (incorrect configuration, faulty battery, etc).
- or contact his local technical support centre.

The only FTX 417-40 parts which can be replaced by the user are the following :

- Internal parts
  - internal battery
  - protective covers for the connectors and for the PCMCIA card reader.
- External parts
  - AC/DC adaptor
  - power cable
  - mouse
  - notebook/PLC connection cables.

## 6.2 Replacing the T FTX RBAT 400 internal battery

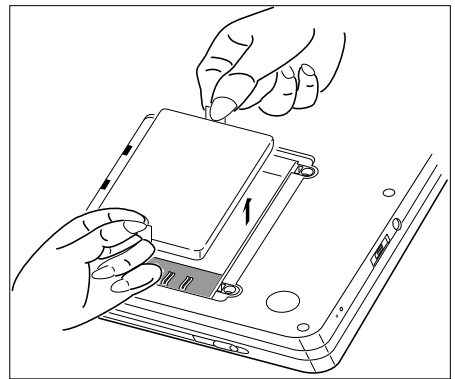
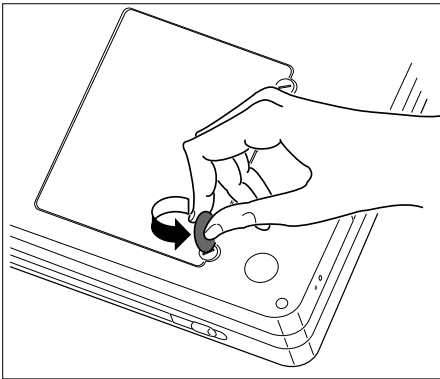
If the battery no longer functions :

- although the charge time is correct, the period for which the battery is able to power the terminal becomes shorter and shorter,
- the lamp on the left hand side of the notebook blinks red when attempting to charge the battery.

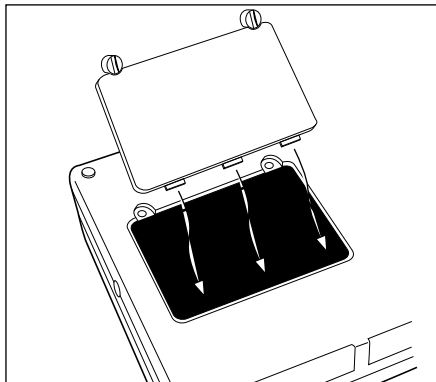
### Caution

For safety of personnel, the internal battery must only be replaced when the notebook is switched off.

Open the trap under the notebook using a coin.



- Unscrew the 2 catches then open the trap.



- Remove the faulty battery using the side tags,
- Replace with a new battery and ensure that the contacts are positioned correctly

- Close the trap and tighten the catches





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---

## 7.1 General

---

The FTX 417-40 notebook has been developed to conform with the main national and international standards for electronic equipment for industrial control systems.

- Special PLC requirements : functional characteristics, immunity, robustness, safety, ... NFC 63-850/IEC 1131/CSA 22.2 n°142/UL 508.
- Immunity to electrostatic discharges : IEC 801.2 level 4 (minimum 3).
- Insulation coordination : air distances and leakage lines : UL 508, NFC 20-040, IEC 664, VDE 110 b, etc.
- Dielectric qualities and self extinguishing of insulating materials : UL 746C, UL 94, etc.

---

## 7.2 Operating conditions

---

### 7.2-1 Temperature

---

#### Normal temperature conditions

---

Operating temperature	5°C to +40°C
Storage temperature	-25°C to +60°C
Surrounding air temperature	

---



---

### 7.2-2 Relative humidity

---

#### Normal conditions

---

Relative humidity (without condensation)	30% to 90%
Altitude	0 to 2000 m

---



---

### 7.2-3 Power supply

Nominal voltage	12 VDC	110/220 VAC
Operating range	10 to 30 V	100 to 240 V
Frequency limits	-	47 to 63 Hz
Micro-breaks	duration	20 ms
(typical value)	repetition	1 s
Total harmonic distortion	-	10%
Residual ripple	5 % of Un	-

---





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**Features not  
available in the  
present version**



---

## 8.1 PHDISK utility

---

### 8.1-1 Introduction

The PHDISK utility is used to partition the notebook hard disk in order to use the "Save to Disk" function (see SETUP, section 5.2-4).

#### Caution

This function must be installed before formatting disks using the DOS utility FDISK. Otherwise, the contents of the hard disk will be completely destroyed.

The amount of disk storage required for this partition is as follows :

**Size of dynamic RAM memory + size of video RAM memory (512 Kb) + 1 Kb**

---

### 8.1-2 Syntax

After inserting the T FTX LF TDS 40 diskette, proceed as follows :

type A: <Enter>

cd A:\TE\_TOOLS

then PHDISK <Enter>

The following screen appears :

```
Usage :      PHDISK [options]
Options :    /CREATE [size] -- Create and format a STD partition
             /REFORMAT  -- Reformat the existing STD partition
             /DELETE    -- Delete the existing STD partition
             /INFO      -- Show detailed STD partition information
             [/VRAM size] -- Override default video RAM size of 512K
```

This utility configures a hard disk to utilize the PhoenixMISER<sup>™</sup> Save to Disk feature. Please refer to your user manual for information regarding Save to Disk.

#### Note

If there is already a partition on the disk, the amount of disk storage taken by this is displayed along with the minimum amount required.

---

The various command options are shown on screen, ie. :

- PHDISK/CREATE [Size] / VRAM [video RAM size]
- PHDISK/REFORMAT
- PHDISK/DELETE
- PHDISK/INFO

OPTION	DESCRIPTION
PHDISK/CREATE	Creates a "save to disk" partition with the minimum amount of disk storage required (see page 76). /CREATE [size] enables a partition to be specified on the hard disk. If this size is less than the minimum required, it is ignored. /VRAM [size] enables the size of the video RAM to be adjusted if required.
PHDISK/REFORMAT	Reformats an existing partition without changing its size.
PHDISK/DELETE	Deletes the "save to disk" partition and reclaims the space.
PHDISK/INFO	Displays information about the "save to disk" partition.

---

### 8.1-3 Error messages

The following messages explain the errors detected :

**Error: (User option) is an unrecognized command line option. For a command line summary, invoke PHDISK without any parameters.**

An unrecognized option on the command line

**Error: A fatal hard disk error has occurred. Check your hardware configuration and re-execute PHDISK.**

A hard disk error occurred. Restart PHDISK.

**Error: Not enough free disk space exists to create the suspend to disk partition. Refer to the user manual for possible suggestions on increasing the amount of free disk space for the suspend to disk partition.**

The amount of free disk space to create the Save to Disk partition is insufficient.

**Error: Specified partition size is too small to use the suspend to disk feature. Specify a larger partition size or invoke PHDISK/CREATE without a size parameter to use the default size.**

Specified size for Save to Disk partition is too small.

**Error: PhoenixMISER(tm) suspend to disk partition already exists. To resize the partition, delete the existing partition with PHDISK/DELETE and create the partition with PHDISK/CREATE.**

Partition already exists on this hard disk.

**Error: Too many errors exist in the PhoenixMISER(tm) suspend to disk partition. Check your hardware configuration and rerun PHDISK.**

Too many bad sectors in the partition.

**Error: The first two sectors in the suspend to disk partition are both unusable. This disk is unsuitable for the PhoenixMISER(tm) suspend to disk feature.**

The first two sectors in the Save to Disk partition are bad.

**Error: The PhoenixMISER(tm) suspend to disk partition doesn't exist or the hard disk partition table on head 0, cylinder 0, sector 1 is corrupted. Invoke PHDISK/CREATE to create the suspend to disk partition.**

The Save to Disk partition was not created, or the partition is corrupted.

**Error: The "good sector map" (GSM) in the PhoenixMISER(tm) partition is bad. Invoke PHDISK/REFORMAT to rebuild this table.**

The partition exists but the table of valid sectors is corrupted.

**Error: Couldn't allocate additional memory required to execute PHDISK.**

Not enough memory available execute PHDISK.

**Error: This VRAM size is invalid. The override values are (256/512/1024) in kilobytes.**

The specified size is limited to 256.512 or 1024 Kbytes.



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---

## 9.1 General

---

### 9.1-1 Introduction

The Cirrus logic graphics system is 100% VGA compatible. The associated utilities and drivers provide higher graphics resolution and more available colors.

These utilities are supplied with the FTX 417-40 notebook as a set of diskettes, reference T FTX LF SVGA 40.

---

### 9.1-2 T FTX LF SVGA 40 diskette set

The set of diskettes consists of :

- diskette n°1 for the DOS utilities,
- diskette n°2 for the Windows utilities,
- diskette n°3 for the OS/2 utilities.

---

### 9.1-3 Warning

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---

## 9.2 DOS utilities

---

### 9.2-1 Installation

After switching the notebook on, insert the "T FTX LF SVGA 40" n° 1/3 diskette and proceed as follows :

- type A: <Enter>,
- then Install <Enter>,

follow the instructions on the screens which then appear :

- Screen 1 : Warning.
- Screen 2 : Select the drive where the drivers and the utilities are installed (C: by default).
- Screen 3 : Select the drivers and the utilities. The default selection offers the flashing line "Cirrus Logic 6D62x5 Utilities No"  
Press the space bar to display "Yes" in the right hand column. Then confirm the installation with <Enter>.
- Screen 4 : Select the directory in which the drivers and the utilities will be stored (\CLUTIL, by default), and after confirming, the installation starts.

When installation has finished, a message indicates that pressing any key returns the user to the root directory.

The CLMode, CRT, Panel and Simul, CIVesa, Switcher, Bold\_Drv utilities have been installed in the directory defined during installation (CLUTIL by default).

Add the C:\CLUTIL path to the AUTOEXEC.BAT file, at the end of the line PATH=C:\DOS.

Example: PATH=C:\DOS;C:\CLUTIL

---

### 9.2-2 CLMode utility

#### INSTRUCTIONS

This function enables the user to configure various options :

- Type of monitor.
- Video mode.

It is an interface with a pull-down menu executed directly under DOS. To start this function :

- Type the CLMode command and press <Enter>.
- Use the mouse or make selections in the pull-down menu using the "hot keys" corresponding to the underlined letters in the various menus.

Operating mode :

- Select the [Monitor Type] option. The Monitor Type menu will be displayed. The current monitor type will be **highlighted**. Use the cursor keys or the mouse to make the selections.

- 
- To choose the screen scrolling frequency, select the <Advanced> button :
    - select the graphics resolution.

After entering the parameters, confirm the selections by selecting the <Ok> button.

To check whether the parameters are correct, select VERIFY. The various modes will be performed. Pressing <Enter> or the left mouse button, displays the options. Pressing <Esc> cancels the test.

If there is a problem, try a slower setting for the resolution and restart the test.

The settings are saved by selecting the <OK> button.

**Note :**

A help button offers the scrolling rates for the various types of video monitor.

**Configuration**

The options available depend on the configuration of the display modes : CRT, SimulSCAN and flat screens. The table below shows their availability according to the display mode.

---

OPTIONS	Display modes		
	CRT (external screen)	SimulSCAN	Flat screens
Reverse Video	no	yes	yes
Bold Font	no	no	yes
Full Height Cursor	no	no	yes
Expand	no	yes	yes
Font Load	yes	yes	yes
PanelPower	no	no	yes
Contrast	no	no	yes
Vertical Position	no	yes	yes
Display	yes	yes	yes

F

---

## OPTIONS

The various configuration options are as follows :

- Reverse Video : reverse video text and graphics.
- Bold : text characters are displayed in a bold font. Bold font characters must be available in the VGA BIOS or loaded by a program for this option to take effect.
- Contrast : this option is used to finely adjust contrast in text mode, including the following characteristics :
  - Black & White : this option should only be used on monochrome flat screens.
  - Grayscale/Color : this option is used to adjust the gray scale on monochrome flat screens.
  - Foregnd/Backgnd Enhancement : this option compares foreground and background attributes and applies optimum gray shades.
- Expand Mode : this function controls the vertical expansion of text and graphics to fill as much of the screen as possible.
- Panel Power : this option selects between standard and low-power screen usage for displaying on a flat screen.
- Vertical Position : this function controls vertical placement of the video modes : center or top alignment.
- Display : this function controls the current output device : flat screen, CRT or SimulSCAN (flat screen and CRT). In SimulSCAN mode, the CRT is optimized.
- Font Load In Disp Switch : this is used to load a font to enhance text display quality.
- Full Height Cursor : this option creates a full character sized block cursor making it easier to see on the screen.

## VIDEO MODES

Select the button (Video Modes) to identify the various types of video modes available depending on the type of monitor. This displays all the modes which are available with WINDOWS, OS/2 or DOS drivers.

The <Preview> button displays the selected video modes. To change from one mode to another, press <Enter> or the left mouse button. To exit the mode, press <Esc> or the right mouse button.

## Miscellaneous

- VGA controller status : this zone indicates the BIOS version number and the amount of memory available.
- Help : CLMode provides on-line help for the following items (Configuration, Monitor Type, Video Modes, Mouse, Keyboard and About CLMode).



---

## Exiting CLMode

To exit CLMode, press the <Alt> and <F4> keys simultaneously or select the <EXIT> button in the main menu.

If a dialog box appears with the option to update the AUTOEXEC.BAT file, select <YES>.

## CLMode command line parameters

CLMode can be run directly from the DOS prompt. The command line must be configured as follows :

• CLMODE {modenum} /{m{montype}} / {s n} <Enter>

where :

- {modenum} : mode number
- {montype} : type of video monitor :
  - 0 VGA,
  - 1 8514,
  - 2 Super VGA
  - 3 Extended Super VGA,
  - 4 Multifrequency
  - 5 Extended Multifrequency
  - 6 Super Multifrequency
  - 7 Extended Super Multifrequency.
- s : status information,
- n : disable power management,

## Note

The CLMode/? command displays a help screen.

## LIST OF COMPATIBLE MONITORS

Monitor Type	Reference	Resolution
0	IBM 8512, 8513, 8503	640x480
1	IBM 8514, 8515	640x480 1024x768
2	NEC 2A	640x480,800x600
3	NEC II	640x480, 800x600, 1024x768
4	NEC 3D	640x480, 800x600, 1024x768
5	Sony CPD 1304 NEC 3FGx, Nanao 9065S, 9070U	640x480, 800x600, 1024x768 1280x1024
6	NEC 4D, 4FG, Nanao T240i	640x480, 800x600, 1024x768 1280x1024
7	NEC 5D, 5FG, 6FG, Nanao T550i, T560i, T660i, F550i, F750i	640x480, 800x600, 1024x768 1280x1024

### 9.2-3 Switcher utility

The Switcher utility allows rapid configuration of the VGA screen. This function remains in memory and can be invoked by keystrokes from the keyboard.

To run the utility, type :

- Switcher <Enter>.

After returning to the DOS prompt, the notebook can respond to the various Switcher commands.

List of functions with the corresponding keyboard commands

<b>Functions</b>	<b>Keystroke</b>
Black & White Enhancement ON/OFF	Ctrl-Shift-A
Bold ON/OFF	Ctrl-Shift-B
Switch between Vertical Positioning options (Top and Center)	Ctrl-Shift-C
Switch between flat screen, CRT and SimulSCAN	Ctrl-Shift-D
Expand mode ON/OFF	Ctrl-Shift-E
Inhibit font load ON/OFF	Ctrl-Shift-L
Panel power usage (Low/Normal)	Ctrl-Shift-P
Reverse video ON/OFF	Ctrl-Shift-R

The operating mode of these combinations can be reversed.

All Switcher commands operate in toggle mode. Most of these functions have a two state switch (Active/inactive).

Some of these options are only available in certain configurations (see CLUTIL).

### 9.2-4 CRT, Panel and Simul utilities

These utilities are provided to make switching between video modes easier. Under Windows, they are installed at the same time as SetRES and WinPanel. They can be executed from a command line under DOS or as Windows applications.

Under DOS, the commands are :

- CRT <Enter>,
- or Panel <Enter>,
- or Simul <Enter>.

These utilities are run under Windows by double-clicking on the function icon.

The CRT utility changes the display so that it is running on the monitor.

The Panel utility sets the display to run on the flat screen (panel) if the resolution is 640x480.

The Simul utility sets the display to run on the flat screen and on the CRT at the same time if the resolution is 640x480.

---

### 9.2-5 VESA BIOS extensions

The CLVESA display driver supports VESA BIOS extensions version 1.1.

The VESA compatible video modes are shown in the following table :

VESA mode	Resolution	Colors	Type
101	640x480	256	Graphics
102	800x600	16	Graphics
103	800x600	256	Graphics
104	1024x768	16	Graphics
109	132x25	16	Text
10A	132x43	16	Text

#### Installation

From the DOS prompt, type :

- CLVESA <Enter>.

The driver can also be loaded from the AUTOEXEC.BAT file as follows :

- C:\CLUTIL\CLVESA, after installing beforehand.

The AUTOEXEC.BAT file will automatically load the driver each time the notebook is powered up.

---

### 9.2-6 Bold font utility

This utility allows a higher contrast level in some video modes on flat screens. The contrast is increased by using a bolder font. This feature is especially useful with some display options. This driver is compatible with most software ; however, some applications will reprogram the type of display.

The syntax is :

- Bold\_drv <Enter>.

To run the utility automatically, place the command line in the Autoexec.bat file.

### **9.2-7 Other DOS drivers**

The drivers enable the super VGA modes of the following software to be run :

- AutoDesk - ADI 4.2 (AutoCAD, 3D Studio, etc),
- Lotus 123 V2.x and V3.x
- Microsoft Word
- WordPerfect 5.1
- WordStar.

The installation of these drivers is described in the Cirrus Logic manual.

---

## 9.3 Windows utilities

---

### 9.3-1 Installation

Installation procedure :

- Start Windows.
- In the program manager, select **File**, then the **Run** command.
- Insert the T FTX LF SVGA 40 2/3 diskette in the drive.
- In the "Command line" field, type a:\Install and select <Ok>.

A screen then appears specifying the Windows subdirectory to which the drivers and utilities will be copied. Select <Ok> to start the installation.

A dialog box confirms that installation has finished, click on <Ok>. A window displays the VGA utilities.

---

### 9.3-2 SetRES utility

SetRES can now be used to define the required screen resolution. When running for the first time, ignore the options displayed and continue configuring.

Refer to the section on CLMode for information on resolution.

This utility is executed under Windows. It selects the screen, the number of colors and the fonts. After selecting the new operating options, the function can be directly accessed by restarting Windows.

This function has the same role as the Windows Setup.

---

### 9.3-3 WinPanel utility

This utility enables the user to define the display from within Windows. The operating mode and functions are identical to those described in CLMode. WinPanel is executed by simply double clicking on the icon in the Program manager window or selecting **Run** from the **File** menu in the program manager.

The configuration section informs the user of the available options. These options concern the following modes :

- CRT
- SimulSCAN
- or flat screen.

Various adjustments are available depending on the monitor being used.

- The display options are as follows :

OPTIONS	CRT	SimulSCAN	Flat screen
Reverse Video		yes	yes
Bold Font			yes
Expand			yes
Font Load	yes	yes	yes
PanelPower			yes
Black&White Enhancement			yes
640x480 CRT Refresh	yes		yes
Display	yes	yes	yes
Graphics Shading		yes	yes
Text Shading		yes	yes
Vertical Position			yes
Power Management			yes

These options perform the following functions :

- **Reverse video** : sets to monochrome reverse video, with text and graphics modes selected independently.
- **Panel bold mode** : displays text with a bold font and only applies to flat screens. The font must be loaded beforehand under DOS.
- **Panel expanded mode** : controls the vertical expansion of text and graphics screens.
- **Font load** : enhances display quality when switching from CRT mode to SimulSCAN mode. This option is only used for text and may interfere with some programs which use their own fonts.
- **Panel Power** : used only for power management of flat screens. This option offers 2 operating modes : standard and low-power. Standard mode provides a sharper image.
- **Black&White Enhancement** : produces a range of greys which can be varied from black to white for displaying text. When this option is disabled, Text Shading performs this function.
- **640x480 CRT refresh** : controls the vertical refresh rate of 72 Hz.
- **Display** : checks whether the screen, CRT or both are the current output device.
- **Graphics shading** : converts color data to a monochrome screen in graphics modes. This option has no effect on color screens.
- **Text shading** : converts color data to a monochrome screen in text modes. This option has no effect on color screens.

- 
- **Vertical position** : controls the vertical placement of video modes which do not use the full flat screen display. This option has no effect if "Expand" is turned on.
  - **Power management** : provides power saving features on flat screens. Set the standby time delay for the screen. "Mem" indicates that the screen will be put on standby when application programs are not accessing the display memory. "Keybd" indicates that the screen will be put on standby when the keyboard is not used.

---

## 9.4 OS/2 utilities

---

### 9.4-1 Installation

This procedure uses the graphics resolution and the colors selected by the user in the OS/2 desktop, ie. a resolution of 640x480 in 16 colors as the default for a WIN/OS2 full screen session.

#### Description

The operating mode is as follows :

- 1- Install OS/2 (if not already installed), select "VGA" as the display adaptor and perform the installation as demanded by the system.
- 2- Insert the T FTX LF SVGA 40 n° 3/3 diskette into the drive.
- 3- Open an OS/2 full-screen session.
- 4- Change the prompt to the drive which contains the diskette.
- 5- Invoke the OS/2 batch file "Clinst.cmd", giving the "CLINST21 C" drive as the parameter.
- 6- Select the primary display type and "Cirrus Logic 62X5 Panel/CRT Driver".
- 7- The "Configuration/Selection Utility" dialog box will appear. Click on <Ok> to confirm the default parameters or select "Display adapter Utility Program" to select the corresponding type of monitor. For example :
  - C:\CLUTIL\CLMODE.EXE M5. The "Clmode.exe" file is on the T FTX LF SVGA 40 n°2/3 diskette.
- 8- For a SimulSCAN or Panel display, select 640x480 resolution.
- 9- Follow the directions for the type of display selected as they appear on screen.

---

### 9.4-2 Configuring the utilities

#### Changing the resolution and colors in OS/2 desktop

- To change the resolution and colors in OS/2 desktop, follow instructions 3 to 9 (see above).
- To run a WIN/OS2 session with OS/2 desktop, the configuration must be set (see OS/2 desktop driver limitations above).
- Procedure when running OS/2 :
  - 1 - Install the Cirrus Logic 640x480, 16 color OS/2 driver,
  - 2 - Add "Sdisplay.driv=SWINVGA.DRV in the boot section in the \OS2\MDOS\WINOS2\SYSTEM.INI file.
- Procedure when running OS/2 for Windows :
  - 1 - Install the Cirrus Logic 640x480, 16 color OS/2 driver,
  - 2 - Add "Sdisplay.driv=SWINVGA.DRV in the boot section in the \WINDOWS\SYSTEM.INI file.



---

## Changing the resolution and colors in WIN-OS2 full-screen session

- Procedure when running OS/2 :
  - 1 - Open a WIN-OS/2 full-screen session.
  - 2 - Select "File" from the Program manager menu.
  - 3 - Insert the GD62X5 OS/2 driver disk into <A:> or <B:> and run Install.exe.
  - 4 - The "VGAUTIL" group will be created. Click on the SetRES icon to change the resolution and colors. Run CRT, PAN or SimulSCAN to switch display.
  
- Procedure when running OS/2 for Windows :
  - 1 - If the SetRES utility has already been installed, use SetRES to change resolution and colors. Otherwise go to the next step.
  - 2 - Open Windows.
  - 3 - Select "File" from the Program manager menu.
  - 4 - Insert the V1.30 driver diskette into <A:> or <B:> and run Install.exe.
  - 5 - The "VGAUTIL" group will be created. Click on the SetRES icon to change the resolution and colors. Run CRT, PAN or SimulSCAN to switch display.

### 9.4-3 Switching between CRT screen and FTX 417-40 screen

There is no option for switching between CRT/Panel and SimulSCAN display in the OS/2 desktop.

"Win-OS/2" sessions are not supported in the following configurations :

OS/2 desktop	Colors	Win-OS/2	Colors	Supported
640x480	16	640x480	16	Yes
"	"	640x480	256	No
"	"	800x600	16	No
"	"	800x600	256	No
"	"	1024x768	16	No
640x480	256	640x480	256	No
"	"	640x480	16	No
"	"	800x600	256	No
"	"	800x600	16	No
"	"	1024x768	16	No
800x600	256	640x480	256	No
"	"	640x480	16	No
"	"	800x600	16	No
"	"	800x600	256	No
"	"	1024x768	16	No

#### Important

When the current configuration of the OS/2 desktop is 800x600, and the notebook is rebooted without a CRT connected, the screen resolution is not changed to 640x480. When the CRT is reconnected, the display comes up on the CRT.

#### Resolutions and colors

The resolutions and colors supported in the OS/2 PM desktop are :

- 640x480, 16 and 256 colors for CRT, Panel, SimulSCAN displays.
- 800x600, 256 colors for CRT display only.

The resolutions and colors supported in WIN/OS2 Window session are :

- 640x480, 16 colors in OS/2 desktop.
- 640x480, 16 colors in WIN/OS2.





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---

## 10.1 Introduction

---

The FTX 417-40 notebook has 3 slots which conform to the PCMCIA 2.0 standard. The PCMCIA association (Personal Computer Memory Card International Association) defines the characteristics of cards offering various peripheral functions in a compact size format, especially suitable for notebook type computers.

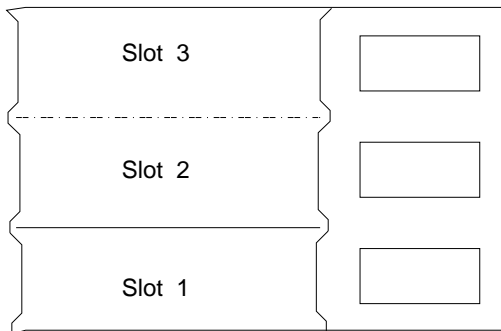
Three formats are currently recognized :

- Type I (thickness 3.3 mm)
- Type II (thickness 5 mm)
- Type III (thickness 10.5 mm)

The most commonly used functions provided by PCMCIA cards are as follows :

- **Memory.** Cards, usually type I format, can be used as removable disk drives. Two types of technology are currently used :
  - static RAM (**SRAM**), which can be both read and written to with high performance in a format similar to MS-DOS.
  - Flash EEPROM (**FLASH**), which, for diskette type use, must be driven by a system of special files : Microsoft Flash File System II (**FFS II**)
- **Network** (Ethernet, Token Ring, etc), usually type II format
- **Modem/fax**, usually type II format
- **Hard disk**, usually type III format

The three slots on the FTX 417-40 notebook can each accept either a type I or type II card. Slot 2 can also accept a type III card, which then masks slot 3.



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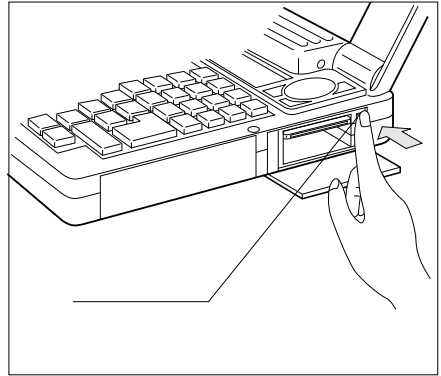
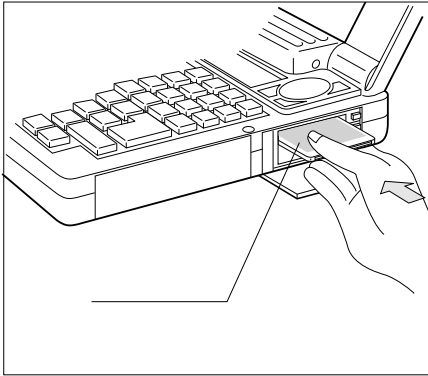
## 10.2 Handling PCMCIA cards

---

### Inserting or removing a PCMCIA card

Open the PCMCIA card drive cover, on the right hand side of the notebook and insert the card (facing upwards).

To remove the card, press the "Eject" button.



### Advice on handling PCMCIA cards

- Do not insert a PCMCIA card if the access indicator lamp (card) is on, as data may be lost.
- Do not dismantle a PCMCIA card.
- Keep the cards dry.
- Do not use force to insert a card, as this would damage the locating device.

The PCMCIA hardware and software enable cards to be inserted and removed while the notebook is powered-up, provided that the general operating context allows it. For example, it is possible to insert a Modem card, use its communication software, then disconnect and replace it with a memory card in order to store data.

### Important

It is not possible to insert or remove a PCMCIA card in **slot 3** when the notebook is powered-up.

---

## 10.3 Installation

---

The V3.0 Phoenix PCMCIA utilities for DOS and Windows come in the form of a 3"1/2 diskette reference T FTX LF DS PCM.

### Warning

Before installing, check that :

- The Flash File System utilities (Ref. T FTX LF FFS) required for using Flash-EEPROM memory cards have been correctly installed on the FTX 417-40 notebook, (See section 11)
- The Config.sys file includes the following lines :
  - DOS= HIGH, UMB
  - Device=C:\DOS\Emm386.exe noems
  - Device=C:\DOS\Power.exe ADV: Max

Procedure :

- Insert the diskette in the drive, and at the DOS prompt, type :
  - A:\install <Enter>
- Follow the screen instructions until requested to select the type of installation :
  - Quick mode (highlighted) or
  - Advanced mode
- Select "Advanced mode" with the <↓ > key and press <Enter>.
- Change and confirm, if necessary, the values displayed according to the values given in the table below for maximum configuration. Then load the necessary drivers by changing the Config.sys file using the MS-DOS "Edit" utility.

### Note

The values to be changed are in bold in the table below.

---

Questions asked by the installation software	Recommended response	Comment
Press any key to continue	<Enter>	Start text
The following controller has been detected in your system : RF5C266, RF 5C366. Press any key to continue	<Enter>	Detection of the two FTX 417-40 PCMCIA controllers
Path to install	C:\PCM3	Installation directory
Files have been copied. Press any key to continue	<Enter>	Several times, in order to view the configuration software screens
Quick or Advanced Install?	<b>Advanced</b>	Enables the user to define the load addresses and other parameters
Number of sockets	3	Number of PCMCIA slots in the notebook
Do you plan to use Windows?	Yes	For using the PCMCIA interface under Windows

---

Table (continued) :

Questions asked by the installation software	Recommended response	Comment
IRQ	<b>10</b>	The default value must be changed for FTX 417-40
CIS Window Address	DF00	Card work window Operation size = 4Kbytes
Card Settle Time	660 ms	Time allocated to the card to perform the initializations before Card Services indicates its presence to clients. Expressed in multiples of 55 ms
Optional Flash File System	Yes	Activates installation of the Flash card driver support
Full path of FFS files	<b>C:\DOS</b>	Flash File System file directory
Memory window address	<b>DB00</b>	Flash driver work window
Memory window size	<b>16</b>	Window size in kilobytes
Number of partitions	1	Number of partitions which can be accessed by the PCMCIA slot
Number of erase queues	1	Number of erase queues for the Flash cards
Use PCMCIA Modem/Fax?	Yes	Designate a port for a fax/modem
Select the port	<b>COM 3</b>	First port available on the notebook
Use ATA cards ?	Yes	For using ATA hard disk cards
ATA window address ?	<b>D700</b>	Window for use of memory cards by this driver. Not normally used
ATA drive spin down time	5 min	Period of inactivity after which the ATA disk is automatically powered off
ATA support for drive #0 ?	<b>No</b>	PCMCIA hard disk cannot be placed in slot 0
ATA support for drive #1 ?	Yes	PCMCIA hard disk can be placed in slot 1
Number of partitions ?	1	One partition is usually sufficient
ATA support for drive #2 ?	<b>No</b>	PCMCIA hard disk cannot be placed in slot 2
Tag Ethernet cards : IBM Token Ring, Ibm Corp. Ethernet	<Space> Twice	Selecting these two cards constructs examples of the cards to be recognized by the drivers.
Congratulations!	<Yes>	



---

## 10.4 Configuration

---

### 10.4-1 Introduction

The PCM Plus utility enables the majority of the PCMCIA cards inserted in the drive to be recognized.

However, there may be instances when PCM Plus does not recognize cards inserted and has trouble assigning configuration values which do not conflict with other programs in the notebook.

To solve this problem, PCM Plus includes a configuration program, PCM, which provides fast and easy configuration for any I/O card (network, modem, etc).

The program can be run under either DOS or Windows.

#### **Note :**

The PCMPPlus configuration program can only install and configure I/O cards. However, it can display information about all card types.

Warning : do not try to configure other types of card (ATA disk, Flash memory card, SRAM), as the utility cannot do this.

---

### 10.4-2 DOS configuration

The procedure is as follows :

- At the DOS prompt, type the PCM command then <Enter>. A screen displays general information about the PCMCIA card inserted in the designated drive (for example, Socket number : 1). To display information on cards inserted in the other drives, use the PgUp/PgDn keys. To access an additional information screen, press Alt-V at the main menu and select "Advanced" then <Enter>. To exit, press Alt-V and select "Exit" then <Enter>.
- To configure or reconfigure a PCMCIA card, use the following procedure :  
At the main menu, press Alt-C
  - "Add card to list" enables a new card to be configured,
  - "Edit Config Parameters" displays the configuration of the card in the designated drive.

**"Add Card to List" command**

- 1 - Select "Add Card to List".
- 2 - Press the <↑> or <↓> keys to display the card parameters.
- 3 - Select the configuration and press <Enter>.
- 4 - Test the new configuration values by selecting **"Yes"**. Any conflict is displayed on-screen, which enables the user to correct them. If everything is correct, a message appears.

Select **"No"** to bypass the test. The following message is displayed :

- "Do you wish to save it ?"

**"No"**

**"Yes"**

- 5 - Select **"No"** to return to the main menu without saving the new values. Select **"Yes"** to save the new parameters, which take effect immediately.

---

## "Edit Config Parameters" command

- 1 - Select "Edit Config Parameters"

A screen displays the various configuration settings. The table below defines the various fields.

---

<b>Characteristic</b>	<b>Description</b>
<b>Read only</b>	
Socket Number	Current card slot. If the notebook possesses more than one PCMCIA slot and currently has more than one card inserted, use the <Pg Dn> and <PgUp> keys to display data on cards in the previous and/or next slot.
Configuration Number	Number of configurations assigned to the list of parameters and the total number of configurations resident in the program.
Manufacturer	The manufacturer's name.
Model	Type of function or number of functions. If it is a network card, the utility identifies whether it is an Ethernet or Token Ring card. This function displays the serial number.
Type	Defines the type of card : Network, Flash Memory, Modem/Fax, etc.
Compliance	Compliance level.
Configuration Loaded	The configuration listed was successfully loaded by PCM.
Configuration Registers	The start addresses in the memory where the configuration information is stored (in hex).
<b>Editable fields</b>	
Memory Window	Storage address which the window uses for this card (some have 2 memory windows).
I/O Window	Storage address of the I/O window for this card (some cards require 2 windows).
IRQ	The interrupt request level for this card.

---

- 2 - Press the <↓> and <↑> keys to display the configuration settings defined for the card.
- 3 - Press the <Tab> key to access the editable fields. Use the <Tab> key or the arrow keys to move from field to field.  
Press the <↓> key or the <Shift> + <Tab> keys to move backwards.

- 
- 4 - Change a field by typing in a new value. At any time, press <Esc> to return to "Config. Number" to change the configuration settings by using the <↓> and <↑> keys. Press the <Tab> key again to return to the editable fields section.
  - 5 - When the values required for card configuration have been changed, press <Enter>. The following message appears :
    - "Do you wish to validate the configuration ?"  
"No"  
"Yes"
  - 6 - Select "Yes" to test the values entered. If it finds any conflicts, this is displayed and enables the conflicting value to be changed. If there are no conflicting values, the program reports that configuration was successful. Select "No" to bypass the validation and testing process. This message is displayed :
    - "Do you wish to save it ?"  
"No"  
"Yes"
  - 7 - Select "No" to return to the main configuration menu without saving the new values. Select "Yes" to save the new parameters, which take effect immediately.

Other information can be accessed from the main menu.

The Alt-I (Information) command enables the user to select :

- "Card List" : list of the configured cards
- "Client Info" : list of the installed card drivers.

The Alt-O (Option) command enables the user to select :

- "Message On Card Events" activates or disables the appearance of a message when a PCMCIA card is inserted or removed.

---

### 10.4-3 Windows configuration

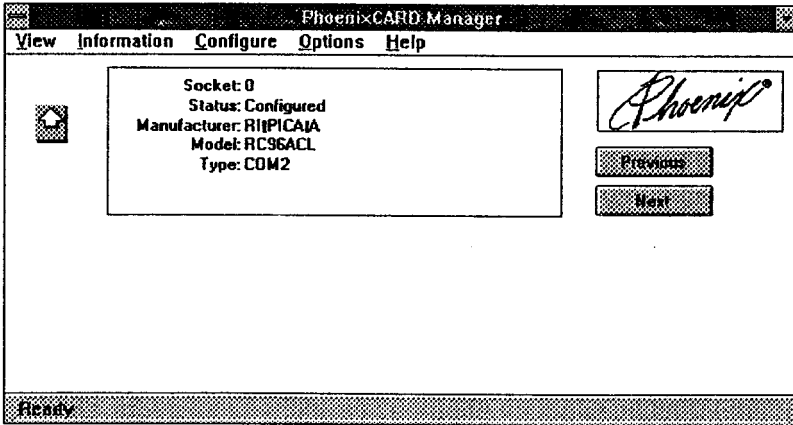
When installing utilities, a "Phoenix Manager" program group is created with the PCMWin icon.

**Note :**

PCMWin does not work in Windows standard mode. To run PCWin, use only 386 enhanced mode.

The procedure is as follows :

- 1 - Start Windows
- 2 - Open the "PhoenixCard Manager" group
- 3 - Double-click on the PCMWin icon, and the following screen appears :



**F** Configuring cards using PCMWin is then very similar to configuration under DOS.

---

Under Windows, the Options menu offers two additional options :

- "Run Minimized" reduces the "PhoenixCard manager" group to an icon at the bottom left of the screen. This makes it easier to start up when a large number of windows is open on-screen.
- "Associations" enables the user to start an associated program when the card is inserted in the drive.

The procedure is as follows :

- 1 - Press the <Alt> + <O> keys or click on the "Options" menu.
- 2 - Select "Associations", and a menu appears :  
The card number, manufacturer name, and the model for the card are displayed in the first three lines of the window. This information can help to identify the type of card needed to associate with the program.
- 3 - To enable the start-up of the associated program, click in the enable check box. An "X" appears to indicate that the association is enabled.
- 4 - Use the <Tab> key or the mouse to move to the File field. Type in the pathname and executable file to start the associated program. If the user does not know the path or name of the program, use the <Select-File> button to find the necessary file (the executable files have an .EXE extension).
- 5 - Use the <Previous> or <Next> buttons to edit or create other associated programs.
- 6 - When selection is complete, confirm using the <OK> button.

## 10.5 Selecting the drivers

PCMCIA drivers do not usually all have to be enabled simultaneously. It is therefore possible to reduce memory usage.

The table below enables the user to select the necessary drivers :

<b>PCMPius File name</b>	<b>SRAM memory</b>	<b>Flash memory</b>	<b>LAN</b>	<b>ATA IDE</b>	<b>Fax/Modem</b>
<b>PCMSS.EXE</b> Socket Services	yes	yes	yes	yes	yes
<b>PCMCS.EXE</b> Card Services	yes	yes	yes	yes	yes
<b>PCMRMAN.EXE</b> Configuration driver	yes	yes	yes	yes	yes
<b>PCMSCD.EXE</b> Network or FAX /Modem			yes		yes
<b>PCMATA.SYS</b> Hard disk Emulation	yes			yes	
<b>PCMFFCS.EXE</b> Flash card support	yes	yes			

The following CONFIG.SYS file is typically used for the installation above. It represents maximum configuration.

During operation, the lines corresponding to the drivers not being used can be placed in REM mode using the system editor. The excluded zones corresponding to the extended memory driver can be recovered.

**CONFIG.SYS:**

```

SHELL=C:\DOS\COMMAND.COM C:\DOS /E:1024 /P
DEVICE=C:\DOS\SETVER.EXE
DEVICE=C:\DOS\HIMEM.SYS /TSTMEM:OFF
DOS=HIGH, UMB
DEVICE=C:\DOS\EMM386.EXE noems X=C000-C1FF X=DF00-DFFF X=DB00-DEFF
REM by PCM+ V3.0 X=DF00-DFFF X=DB00-DEFF
DEVICE=C:\DOS\POWER.EXE ADV:MAX
COUNTRY=044,,C:\DOS\COUNTRY.SYS
FILES=30
REM DEVICE=C:\WINDOWS\IFSHLP.SYS
STACKS=9,256
rem --- Microsoft's Flash File System II area -----
rem device=c:\dos\flashcmp.exe
rem -----
DEVICE=C:\PCM3\CNFIGNAM.EXE /DEFAULT
DEVICE=C:\PCM3\PCMSS.EXE
DEVICE=C:\PCM3\PCMCS.EXE
DEVICE=C:\PCM3\PCMRMAN.SYS
DEVICE=C:\PCM3\PCMSCD.EXE
DEVICE=C:\PCM3\PCMATA.SYS
DEVICE=C:\PCM3\PCMFFCS.EXE
DEVICE=C:\DOS\MS-FLASH.SYS

```

**10.5-1 PCMSS.EXE : Socket Services 2.0**

During installation, the PCMSS.EXE driver is loaded in the CONFIG.SYS file and the options selected in the PCM.INI file.

These options can be changed using PCMSETUP "Advanced Mode" or by editing the PCM.INI file.

**Syntax**

```
PCMSS /RS=n /RW=n /Lock
```

OPTIONS	Description
/RS= n.	Reserves slot n
/RW=n	Reserves window
/Lock	Locks slots

When entering an option it must be preceded by /. The following paragraphs describe each option in more detail.



---

## Reserving a slot

The Reserve Socket option prevents collisions between Socket Services and other direct access software. This option can also be used to limit access to a type of card which may not be accessible in the system. The parameters specify the slot number : 0 to 2.

Eg : PCMSS.EXE /RS=0 reserve socket 0

## Reserving a window

Windows can be reserved for each slot. This prevents conflicts with other software which are not allocating resources from Card Services. n specifies the slot numbers.

Eg : PCMSS.EXE /RW=1, 2 Reservation for windows 1 and 2

## Locking slots

The PCMCIA ATA support is managed by Socket Services 2.0 and determines whether the system has been configured to start from an IDE PCMCIA-ATA hard disk. In this case, Socket Services considers the slot as reserved.

---

## 10.5-2 PCMCS.EXE. Card Services 2.0

During installation, the PCMSS.EXE driver is loaded in the CONFIG.SYS file and the options selected in the PCM.INI file.

These options can be changed by editing the PCM.INI file.

### Syntax

PCMCS.EXE /ADDR=nn/CLIENTS=nn/MCA/NOBEEP/NOPM/PMOFF/POLL/  
REGIONS=n/WAIT=nXIRQ=xxxx

### OPTIONS

### Description

/ADDR=nn	Card configuration address
/CLIENTS=n	Maximum number of Client drivers
/IRQ =	Card Services IRQ interrupt number
/MCA	Micro channel compatibility
/PMOFF	Disabling of power management
/POLL	Management of card events by sampling
/REGIONS=n	Memory regions
/WAIT=n	Time delay before configuring card
/NOPM	Power management
/XIRQ=xxxx	Masking of unavailable interrupts

---

When entering an option, it must be preceded by /. The following paragraphs describe each option in more detail.

**Flash file system compatibility : /FLASH**

This option makes the Phoenix Flash File System drivers compatible (PCMFSC.EXE).

**Card configuration address : /ADDR=nn**

This option defines the start address for Card Services for PC card configuration. This segment must be located (Start Address) within the first 1Mb address space, the minimum address modularity is 4Kb.

Values for /ADDR = C0 to F0.

Default values : /ADDR=C8 (4Kb Card Services window at the first free memory section after C800:0).

**Maximum number of Client drivers : /CLIENTS=n**

This option controls the maximum number of drivers recognized by Card Services.

Default value : /CLIENTS=10

**Card Services IRQ interrupt number : /IRQ=n**

This option defines the IRQ interrupt number that Card Services uses for PC card events.

Range : 8 to 15.

Default value : /IRQ=10

**Micro channel compatibility : /MCA**

This option ensures maximum compatibility with machines using Micro channel Bus Architecture™ (IBM PS/2).

**Disabling of power management : /PMOFF**

This option disables Card Services power management.

**Management of card events by sampling : /POLL**

This option enables sense-driven rather than interrupt-driven card events. This option is useful for noisy hardware environments or when an IRQ is not available. This mode is automatically enabled when the /MCA option is used.

---

## Memory regions : /REGIONS

This option enables up to n different memory regions to be used simultaneously (8).

## Time delay before configuring card : /WAIT=n

The wait parameter is the value specified in system timer ticks (18.2 ms per second) which determines the time delay between connection and card recognition (Card Information Structure - CIS).

Values for /WAIT = 1 to 100.

Default value : /WAIT=12

## Power management : /NOPM

This option controls power management provided with Card Services. If this option is specified, the PC cards are :

- powered off when a SUSPEND message appears
- powered on and reconfigured when a RESUME message appears.

## Masking of unavailable interrupts

The "Card Services" driver can only use IRQ10, IRQ11, IRQ12 or IRQ15. Certain systems can only use some of these interrupts.

Use /XIRQ to prevent conflicts.

The values are :

/XIRQ=0400      IRQ10 cannot be used

/XIRQ=0800      IRQ11 cannot be used

/XIRQ=8A00      IRQ10, IRQ11 and IRQ15 cannot be used, only IRQ12 can be used.

---

## 10.5-3 PCMFCS.EXE. SRAM and Flash Intel series I and II cards

During installation, the PCM FFCS.EXE driver is loaded in the CONFIG.SYS file and the options selected in the PCM.INI file.

These options can be changed using PCMSETUP "Advanced Mode" or by editing the PCM.INI file.

### Syntax

PCMFCS /BASE=n /SIZE=n /PART=n /QUEUE=n

### Options :

/BASE=n            defines the base address of the memory window

/SIZE=n            defines the size of the memory window in kilobytes (4, 8, 16, 32 or 64)

/PART=n            defines the maximum number of partitions per memory card

/QUEUE=n           defines the number of simultaneous erasures (1 to 9)

### Default values

PCMFCS /BASE=D7 /SIZE=32 /PART=1 /QUEUE=1

---

### 10.5-4 PCMATA.SYS : ATA hard disk card driver

During installation, the PCMSS.EXE driver is loaded in the CONFIG.SYS file and the options selected in the PCM.INI file.

These options can be changed using PCMSETUP "Advanced Mode" or by editing the PCM.INI file.

#### Syntax

PCMATA.SYS /Sn=x /SRAM /ADDR=nn /SD=nn

#### OPTIONS Description

/Sn=x n defines the PCMCIA card slot and x defines the number of partitions  
 /SRAM enables the SRAM cards to be accessed  
 /ADDR=nn defines the base address of the 16 k memory window required to configure the SRAM cards  
 /SD=nn defines the non-operational time in minutes after which the ATA hard disk is powered off.

#### Default values

PCMATA= /SD=5 /S1=1

When used with with other drivers loaded in the CONFIG.SYS file, SRAM, Flash-EEProm and ATA hard disk memory cards can be accessed.

The table below summarizes the various possibilities.

ATA cards	Flash cards	SRAM cards	Drivers
YES	YES	YES	PCMATA (without/SRAM), PCMFFCS and MS-FLASH(1)
YES	NO	YES	PCMATA /SRAM
NO	YES	YES	PCM FFCS, MS-FLASH
NO	NO	YES	PCM FFCS

(1) See section 11 for installing Microsoft Flash File System users.

---

### 10.5-5 PCMFDISK utility for ATA hard disk card

PCMFDISK, like the DOS FDISK utility, enables the ATA hard disk cards to be partitioned.

**Warning :**

PCMFDISK will destroy all data if new partitions are set.

To run PCMFDISK, type under DOS the command :

- PCMFDISK <Enter>

The screen displays information on the current partition and the card organization.

The pull-down menu options - Save, Modify and Help -, are accessed by pressing the <Alt> key and the highlighted letter.

To change the ATA card partition or the organization, proceed as follows :

- 1 - Create a new partition :  
First, delete existing partitions using the "Delete Partition" command, then create the new partition using "Create Partitions".
- 2 - Add a partition to existing partitions :  
Use "Create Partitions" to define a new space. This new partition is limited in size. If "100%" appears, there is no room on the disk to add a new partition.
- 3 - Use the "Geometry" option to change the default organization, to optimize access speed and other performance levels.

**Note :**

Any changes made to the partition table using the Modify option are not saved to disk. Use the Write Partition option under "Save".

### Create partition

Use this option to create multiple logical drives on the ATA card. The number of partitions PCMFDISK can create is determined by PCMSETUP. The number of partitions which can be accessed by PCMATA depends on how it has been configured from PCMSETUP. If "Quick" mode has been selected for installation, only one partition is allowed. "Advanced" mode enables several partitions to be allocated to the ATA card. To increase the number of partitions, if the installation mode was "Quick", return to PC SETUP and run "Advanced" mode to make the change.

### Organization

It is not usually worth changing disk organization. The default configuration calculates the fastest access speed.

### Save

The modifications to the ATA hard disk partition table are saved using the "Write Partition" option.

Exit to DOS and format the drive using the DOS FORMAT command. Type :  
FORMAT d:/u                      where d is the drive letter.

---

**10.5-6 PCMSCD.EXE I/O card driver (Fax/Modem)**

During installation, the PCMSCD.EXE driver is loaded in the CONFIG;SYS file and the options selected in the PCM.INI file.

These options can be changed using PCMSETUP "Advanced Mode" or by editing the PCM.INI file.

**Syntax**

PCMSCD /NOBEEP /NOMS /NODB /NW /LEVEL

<b>OPTIONS</b>	<b>Description</b>
/NOBEEP	No beep when a network or fax/modem card is inserted or removed
/NOMS	Do not save modem state
/NODB	Disable internal card information database
/NOMODEM	Disable automatic recognition of modem cards
/NW	Disable wait for error/warning message.

---

## 10.6 Emulating a diskette

---

Diskette emulation does not require a driver and can be used to start the system on a PCMCIA card.

Either of the drives A or B (one at a time) can be assigned to any PCMCIA slot. SETUP must be used to do this.

NOTE : If drive A is assigned to a PCMCIA slot, this slot replaces the start-up disk. The card must therefore be removed in order to start the machine from the hard disk.

### Formatting an SRAM card as a diskette

PCFORMAT is a utility for formatting an SRAM PCMCIA card with a DOS FAT file system. The DOS SYS command can be used after running PCFORMAT in order to start the SRAM card.

#### Syntax

PCFORMAT      Drive : /S:nnnnx

#### OPTIONS

Drive : A or B  
S:nnnnx

#### Description

Drive assigned to the PCMCIA slot where the SRAM card is inserted  
Card size in kilobytes (x=K) or megabytes (x=M)

#### Example :

PCFORMAT a:/S:4M  
Formatting a 4Mb SRAM card in drive A.

#### Note :

1 -All the PCFORMAT parameters are optional except the drive letter. The default values are the same as when formatting a 1Mb card.

When PCFORMAT is typed without a parameter, a help message is displayed.

2 - This utility must not be used with FFSII. Use MEMCARD.EXE to format cards with an FFSII connector. (See section 11).



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---

The «Microsoft Flash File System» utility, on the T FTX LF FFS diskette, are required when using PCMCIA format Flash Eprom memory cards. There are three utilities :

- MEMCARD.EXE : configuration and maintenance utilities for Flash Eeprom memory cards,
- MS-FLASH.SYS : device driver to be used with Flash Eprom memory cards,
- FLASHCMP.EXE : compression utility for files saved on Flash Eprom memory cards.

---

## 11.1 Installation

Insert the T FTX LF FFS diskette in the drive and at the DOS prompt, type A:\install then <Enter>.

Follow the instructions displayed on the screen.

The files are saved in the C:\DOS subdirectory.

---

## 11.2 MS-FLASH.SYS utility

MS-FLASH.SYS is a «Microsoft Flash File System» device driver required when using PCMCIA format Flash EEPROM memory cards.

### Syntax

```
device=[drive:][path]ms-flash.sys [/nocomp]
[/cleanup=n] [/erase=n] [/cache=e|x|n]
```

### Parameters

[drive:][path]

Specifies the location of the MS-FLASH.SYS file.

### Switches

#### **/nocomp**

Specifies that files to be saved to a Flash memory card will not be compressed. Use this switch if the FLASHCMP.EXE device driver has already been installed in the CONFIG.SYS file. Only those files saved after the first use of the /nocomp switch will be uncompressed.

#### **/cleanup=n**

Specifies how frequently deleted space will be reclaimed. When deleting files from the Flash memory card, the space that becomes free is not immediately available for use. Periodically, the Flash File System searches the Flash memory card to identify these areas and makes the space available. Valid values for n range from 1 (least frequently) to 10 (most frequently).

---

The default value is 5. Full memory cards tend to work more efficiently with a higher number, and empty memory cards tend to work more efficiently with a lower number.

**/erase=n**

Specifies the maximum difference of erase counts between two adjacent blocks on a Flash memory card. Valid values for n range from 250 to 2000. The default value of 500 is recommended.

**/cache=e|x|n]**

Specifies whether the Flash File System cache should be created in expanded memory (e), extended memory (x), or not at all (n). The default value is e. If there is no expanded memory, the default value is x.

**Example**

The MS-FLASH.SYS device driver is located on drive C in a directory named DOS. To install MS-FLASH.SYS using the default values, add the following line to your CONFIG.SYS file : **device=c:\dos\ms-flash.sys**

To create the Flash File System cache in extended memory, add the following line to your CONFIG.SYS file : **device=c:\dos\ms-flash.sys /cache=x**

---

### 11.3 FLASHCMP.EXE utility

FLASHCMP.EXE compresses the files saved to a Flash memory card.

Only the files saved after the FLASHCMP.EXE device driver has been installed will be compressed. If the FLASHCMP.EXE device driver is not installed, or if the /nocomp switch is used when installing the MS-FLASH.SYS device driver, the files which are saved will remain uncompressed.

**Syntax**

device=[drive:][path]flashcmp.exe

**Parameters**

[drive:][path]

Specifies the location of the FLASHCMP.EXE file.

**Note**

Install FLASHCMP.EXE before installing MS-FLASH.SYS.

**device=c:\dos\flashcmp.exe**

device= c:\dos\ms-flash.sys /cache=x

---

## 11.4 MEMCARD.EXE utility

Memcard is a utility program which configures and maintains Flash memory cards. The Memcard command can be used two ways. If Memcard only is typed at the DOS prompt, a series of menus can be used to partition, format, erase, and check a memory card. If switches are used with the memcard command directly from the DOS prompt, Flash memory cards can be formatted and checked for errors.

---

### 11.4-1 Using the MEMCARD command only

Enter the MEMCARD command at the DOS prompt.

The following menu appears :

```
PC Memory Card Setup Program Version 2.00
(C) 1991-1992 Microsoft Corporation
Current memory card slot: 1 of 3 slots
Choose one of the following:
    1. Create and format a new partition
    2. Format an existing partition
    3. Delete a partition
    4. Display partition information
    5. Erase entire memory card
    6. Check memory card and fix errors
    7. Select next memory card slot

Enter your choice. [4]

To quit Memcard, press ESC.
```

**F** To choose a menu option, type its number, and then press <Enter>. When menu options 1 to 6 are selected, another menu appears on the screen. To return to the main menu, press <ESC>. To quit Memcard, return to the main menu, and then press <ESC>

Each menu displays a «Current memory card slot» message, followed by a slot number. The number indicates which slot Memcard is currently using. You can select the next available slot by choosing option 7 from the main menu.

### Viewing partition data

To view information about the status, type, and size of the partitions of the memory card, carry out the following procedure.

From the main menu, choose 4, and then press <Enter>.

The «Display Partition Information» screen appears :

```

Display Partition Information
Current memory card slot: 1

Device Information:
Memory Type   Size
Flash         4096K

Partition Information:
Letter   Start Addr.  End Addr.   Type       Status      Size
D        0            4194303    MS-Flash   Formatted   4096K

To return to the main menu, press ESC.

```

The information on the Display Partition Information screen varies, depending on the number, size, and type of partitions on the memory card.

**Memory Type** : Indicates the type of device or memory card in the slot.

**Size (Device)** : Shows the size (in kilobytes) of each device type.

**Letter** : Shows the drive letter associated with each partition.

**Start Address** : Shows the starting address of each partition.

**End Address** : Shows the ending address of each partition.

**Type** : Indicates the type of partition.

**Status** : Shows whether the partition is formatted or unformatted. If the partition was created by the card manufacturer, «Unrecognized» appears in this column.

**Size (Partition)** : Shows the size (in kilobytes) of each partition. If there are more partitions than Memcard can display on one screen, press any key to view the next screen of information.

### Creating and formatting a new partition

Memcard can be used to create and format only MS-DOS and MS-Flash partitions. To change the size of a partition, delete the existing partition and then create and format a new one.

To create and format a new partition which fills the whole memory card.

---

From the main menu, choose [1], and then press <Enter>. The following screen appears :

Flash memory card :

Current memory card slot: 1			
Letter	Type	Status	Size
D	MS-Flash	Formatted	4096K

SRAM memory card :

Current memory card slot: 1			
Letter	Type	Status	Size
D	MS-DOS	Formatted	1024K

If the card is unformatted or has one large partition, the following message appears :

Do you want to use the entire card for MS-Flash? (Y/N) [Y]  
or  
Do you want to use the entire card for MS-DOS? (Y/N) [Y]

Press Y, and then press <Enter>.

### Important

If this message does not appear, press ESC to return to the main menu. Before the entire card can be created and formatted as one large partition, all existing partitions must be deleted. See «Deleting a partition» later in this section.

Flash memory card :

Specify the number of spare blocks that MS-Flash should reserve for cleaning deleted files from the memory card, and then press <Enter>. Valid numbers range from 1 to one less than the total number of blocks on the memory card. For example, if the total number of blocks on the memory card is 4, the range of spare blocks is 1 to 3. The default value is 1 (recommended value).

SRAM memory card :

Specify the maximum number of files and subdirectories (values range from 16 to 512) required in the root directory, and press <Enter>. The default number which appears on screen varies, depending on the size of the partition created. The default is recommended.

In both cases, specify a volume label for the partition or leave the field blank, and then press <Enter>.

To create and format a partition which only fills part of the memory card, press N and then <Enter> after the following message :

Do you want to use the entire card for MS-Flash? (Y/N) [Y]

or

Do you want to use the entire card for MS-DOS? (Y/N) [Y]

Flash memory card :

Specify the size of the partition to be created, and then press <Enter>. The minimum size depends on the type of memory card, the maximum size depends on the amount of free space available on the card. The number which appears on the screen is the largest amount of available space. Memcard will adjust the partition size based on the internal block size of the card.

Specify the number of memory blocks which MS-Flash must reserve for cleaning deleted files from the memory card, and then press <Enter>. Valid numbers range from 1 to one less than the total number of blocks on the memory card. For example, if the total number of blocks on the card is 4, the range of spare blocks is 1 to 3. The default value is 1 (recommended value).

SRAM memory card :

Specify the size of the partition to be created, and then press <Enter>. The minimum size is 16K, the maximum size depends on the amount of free space available on the memory card. The number that appears on the screen is the largest amount of available space. Memcard will adjust the partition size based on the internal block size of the card.

Specify the maximum number of files and subdirectories (values range from 16 and 512) required in the root directory, and press <Enter>. The default value displayed on the screen varies, depending on the size of the partition created. The default is recommended.

In both cases, specify a volume label for the partition or leave the field blank, and then press <Enter>.

### Formatting an existing partition

From the main menu, choose 2, and then press <Enter>.

A «Format an Existing Partition» screen such as the following appears :

Format an Existing Partition

Current memory card slot: 1

Letter	Type	Status	Size
D	MS-Flash	Formatted	4096K

Which partition do you want to format? [ ]

---

Specify the letter of the partition to be formatted, and then press <Enter>. If the partition is already formatted, the following message will appear :

The partition is already formatted. Reformatting the partition will destroy all the data on it.  
Do you want to format partition D? (Y/N) [N]

To format the partition, press Y and then <Enter>.  
To return to the main menu without formatting the partition, press N then <Enter>.

Flash memory card :

Specify the number of memory blocks that MS-Flash must reserve for cleaning deleted files from the memory card, and then press <Enter>. Valid numbers range from 1 to one less than the total number of blocks on the memory card. For example, if the total number of blocks on the memory card is 4, the range of spare blocks is 1 to 3. The default value is 1 (recommended value).

SRAM memory card :

Specify the maximum number of files and subdirectories (values range from 16 to 512) required in the root directory, and press <Enter>. The default number which appears on screen varies, depending on the size of the partition created. The default is recommended.

In both cases, specify a volume label for the partition or leave the field blank, and then press <Enter>.

### Erasing a memory card

From the main menu, choose 5, and then press <Enter>. An “Erase Entire Memory Card” screen such as the following appears :

Erase Entire Memory Card  
Current memory card slot: 1

Letter	Type	Status	Size
D	MS-Flash	Formatted	512K
E	MS-Flash	Formatted	3072K

Erasing a card destroys all the partition information and data on the card. Erase a card only if you do not want to save the information on it.

Do you want to continue? [Y/N] [N]

To erase all the data on the memory card, press Y then <Enter>. The following message appears :

This operation may take some time.  
Do not remove the card from the slot while this message is displayed.

To return to the main menu without erasing the memory card, press N then <Enter>.

**Deleting a partition**

From the main menu, choose 3, and then press <Enter>. A “Delete a Partition” screen such as the following appears.

```

Delete a Partition
Current Memory Card Slot: 1
Letter      Type      Status      Size
D           MS-Flash  Formatted   512K
E           MS-Flash  Formatted   3072K

```

Which partition do you want to delete? [D]

To return to the main menu, press ESC.

Specify the letter of the partition to be deleted, and then press <Enter>. A message such as the following appears :

```

Deleting the partition will destroy all the data on it.
Delete a partition only if you do not want to save the information on it.
Do you want to delete partition D? (Y/N) [N]

```

To delete the partition, press Y, and then <Enter>.

To return to the main menu without deleting the partition, press N, and then <Enter>.

If the partition to be deleted is followed (in alphabetical order) by partitions with other drive letters, those drive letters will change. For example, if you have a memory card with partitions D, E and F, and you delete partition D, partitions E and F are renamed D and E.

**Checking the memory card and fixing any errors**

This option enables the user to check the Flash-Eprom memory card and fix any errors. If the card is not a Flash-Eprom memory card, use the MS-DOS CHKDSK command.

From the main menu, choose [6], and then press <Enter>. A «Check an MS-Flash Partition» screen such as the following appears :

```

Check an MS-Flash Partition
Current memory card slot: 1
Letter      Type      Status      Size
D           MS-Flash  Formatted   512K
E           MS-Flash  Formatted   3072K

```

Which partition do you want to check? [D]

To return to the main menu, press ESC.



---

Specify the letter of the partition you want to check, and then press <Enter>. The following message appears :

“Do you want to correct any errors that are found? (Y/N) [N]“

To recover any lost allocation units and make the space available on the memory card, press Y then <Enter>. To check the memory card without fixing any errors, press N then <Enter>.

#### Caution

If you try to fix errors while programs are running, you might lose data. Quit all programs before using Memcard to check for and fix errors. If you use memory-resident programs, disable the command lines in your CONFIG.SYS and AUTOEXEC.BAT files that load them, and restart the notebook.

#### **Choosing a different memory card slot**

To select the next memory card slot, choose 7 from the main menu, and then press <Enter>. The current memory card slot is displayed at the top of the main menu screen. Example : “Current memory card slot : 3 of 3 slots“.

---

### 11.4.2 Using the MEMCARD command with switches

At the DOS prompt enter the MEMCARD command with one of the following switches (see list below).

#### Syntax

```
memcard /fmt=drive: [/v=label]
```

```
memcard /chk=drive: [/f]
```

#### Parameters

**Drive** : specifies the drive to be formatted.

**Label** : specifies the volume label

Switch	Function
--------	----------

<b>/fmt=</b> :	formats the memory card partition associated with the specified drive.
----------------	--

<b>/v=</b> :	specifies a volume name for the newly formatted memory card.
--------------	--

<b>/chk=</b> :	checks the specified Flash memory card partition for errors and displays a report. If no drive is specified, memcard will check the current drive.
----------------	--

<b>/f</b> :	fixes errors found on a Flash memory card. If this switch is not specified, the errors are displayed, but not fixed.
-------------	--

#### Note

These commands are only valid for Flash memory cards.

Examples :

Format a memory card assigned to drive D and specify the volume label CARD1 by typing the following :

```
memcard /fmt=d: /v=card1
```

To check partition E for errors, fix any errors that are found, and display the status of the partition, type the following command :

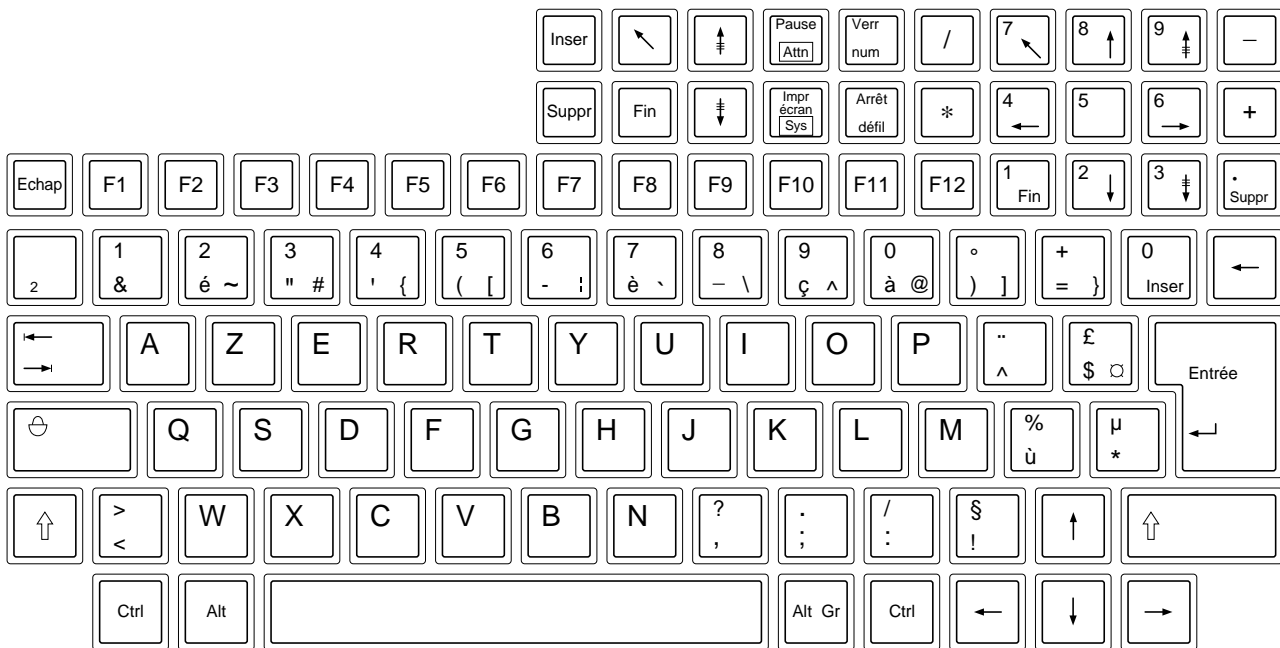
```
memcard /chk=e: /f
```

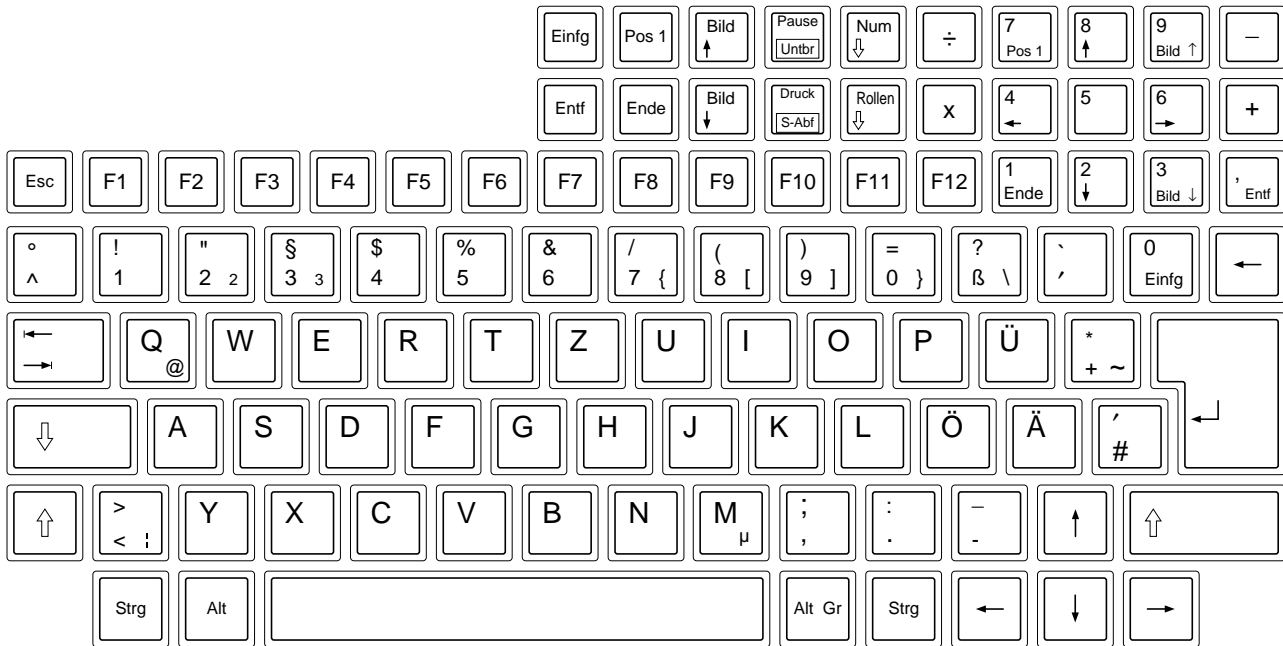


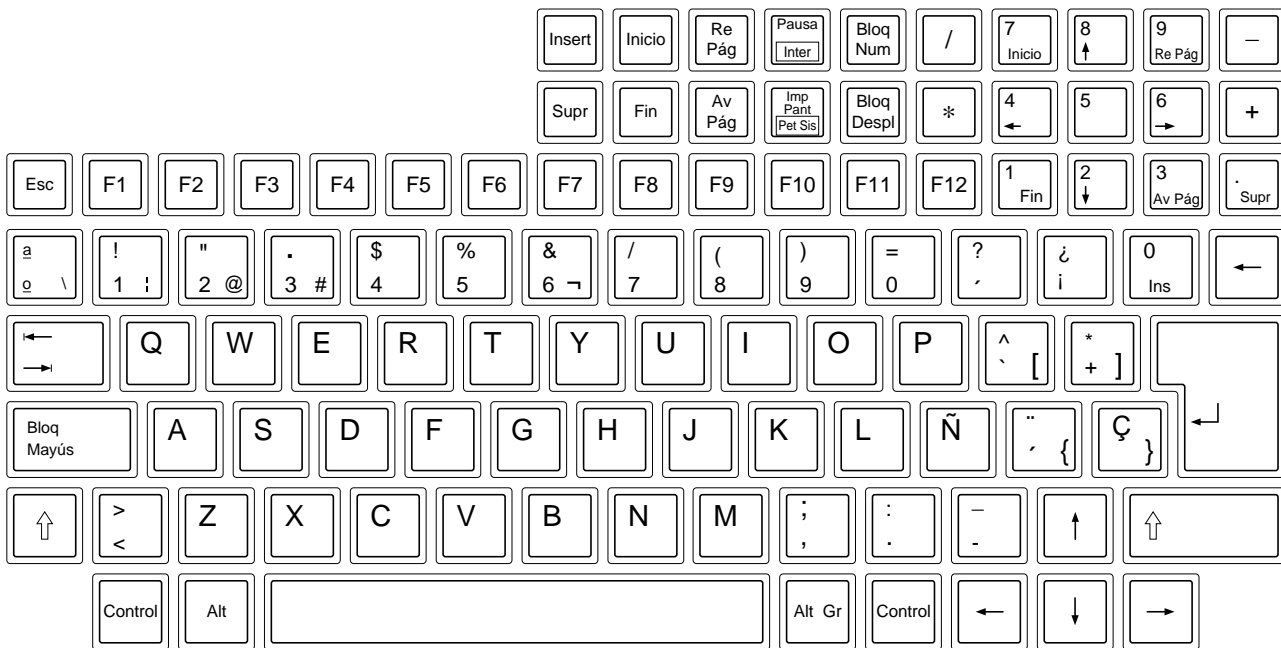


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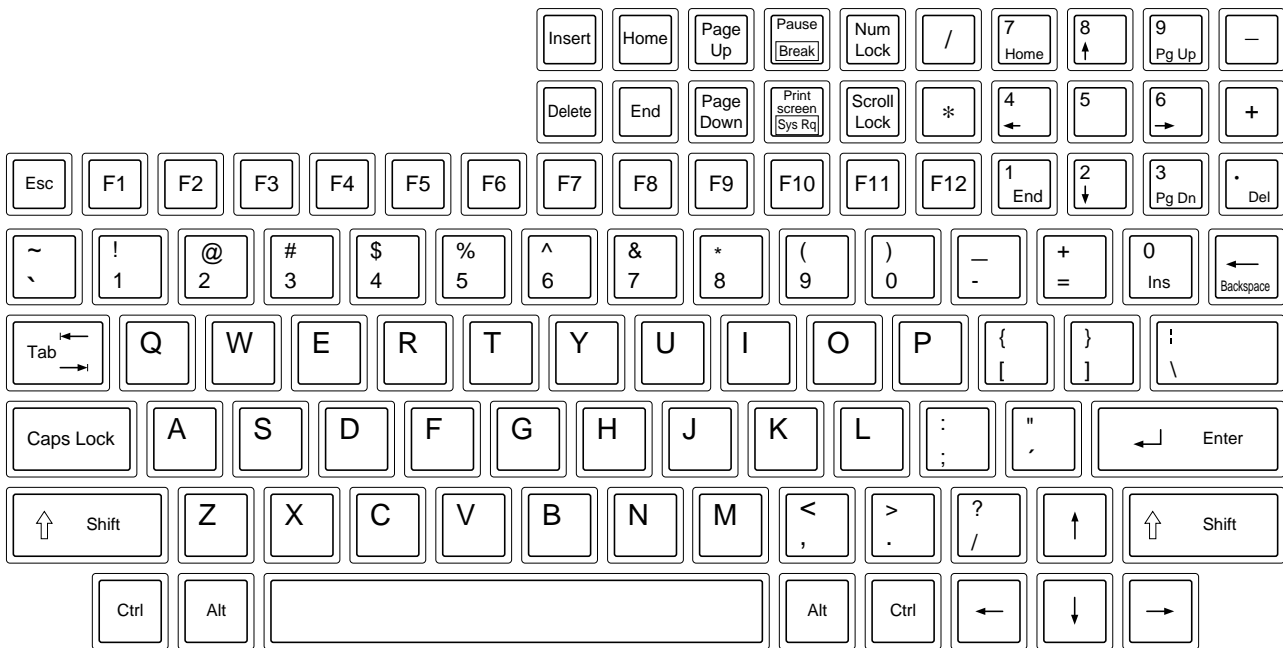


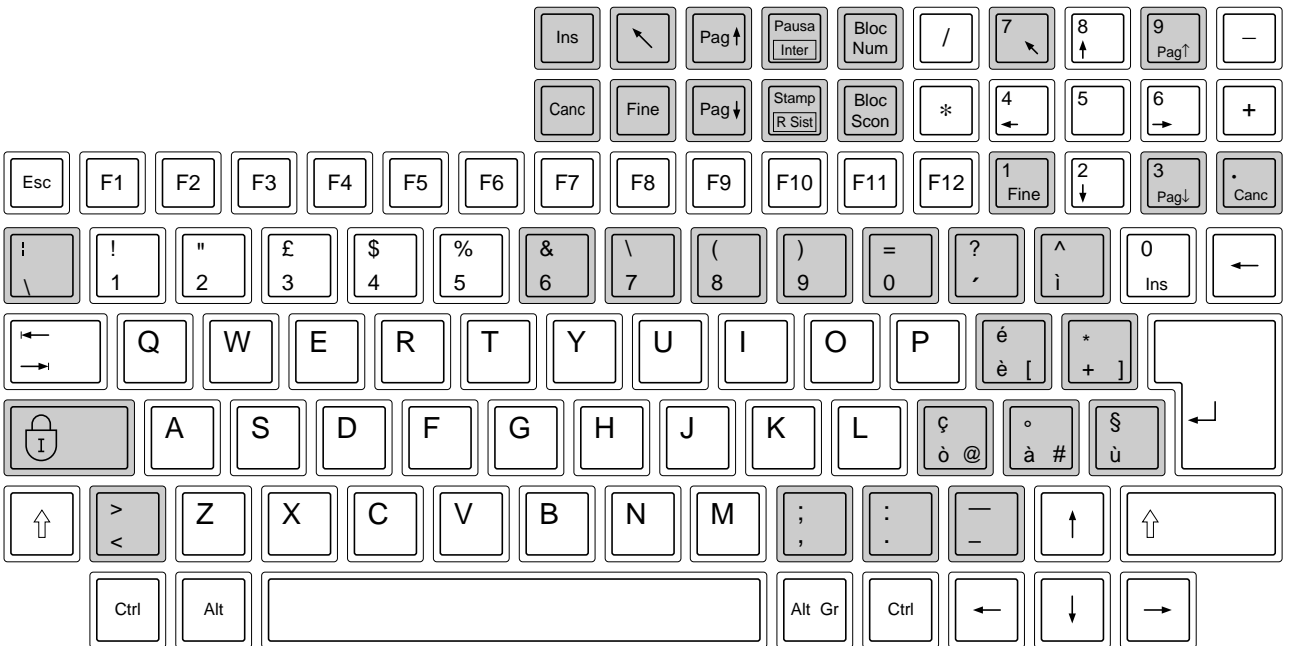








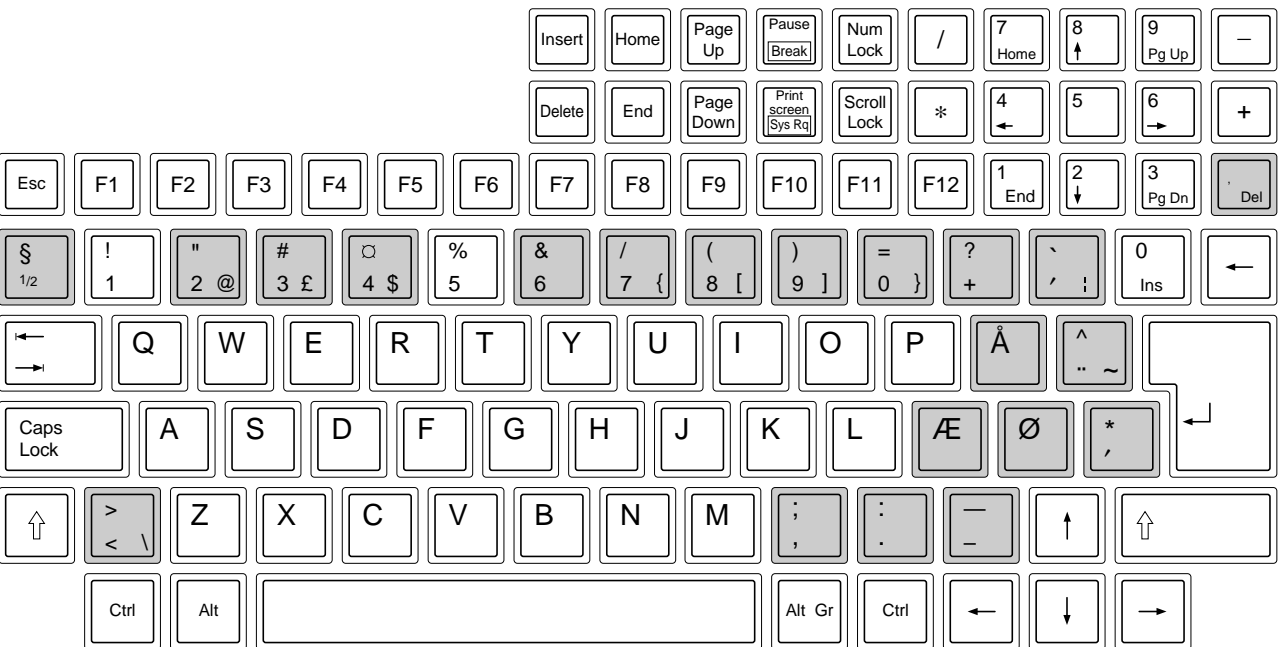


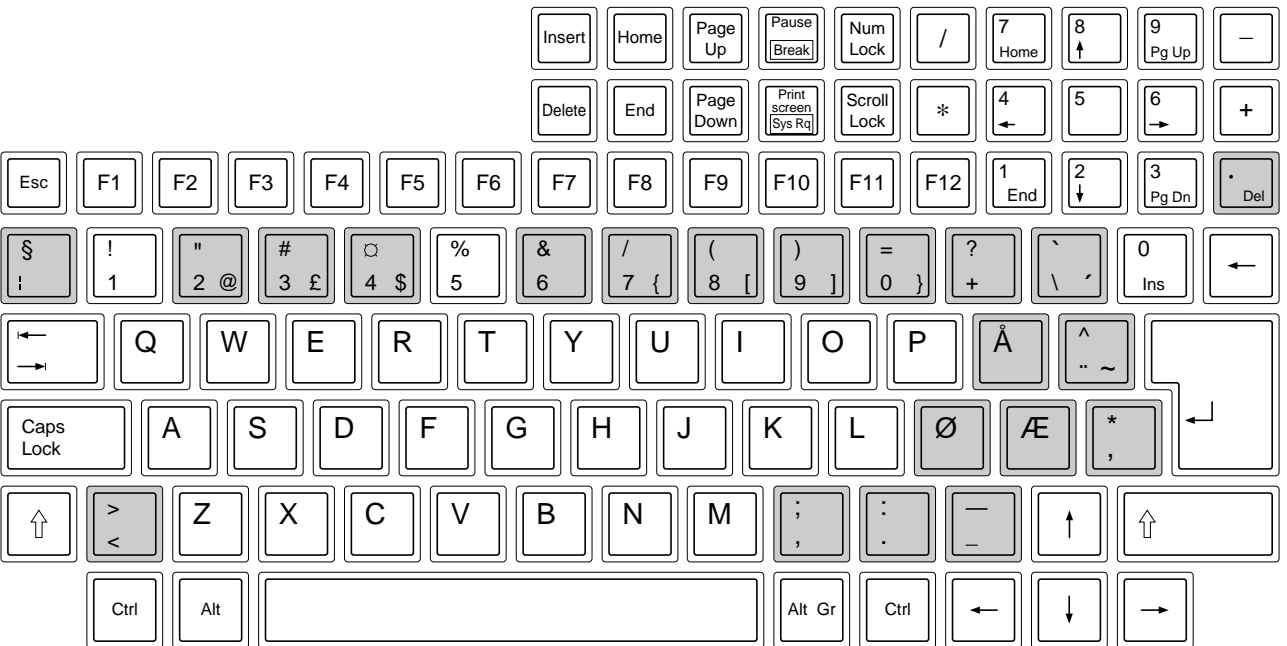


The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.

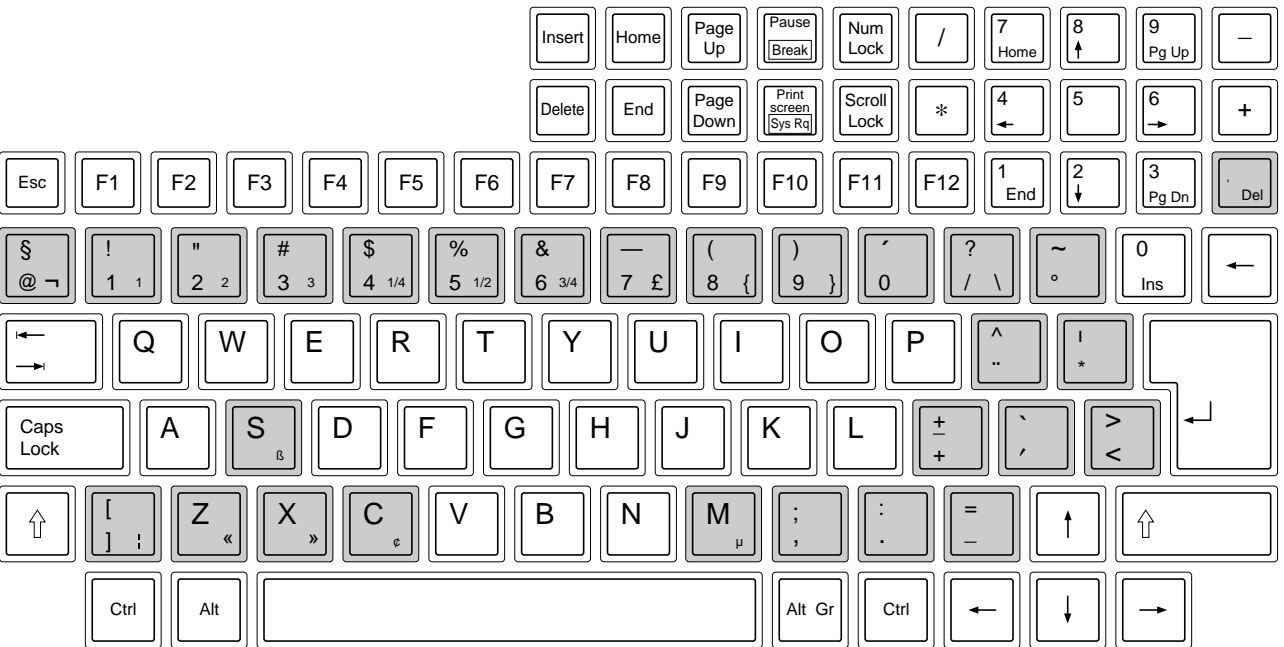
## 12.7 Danish keyboard

The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.





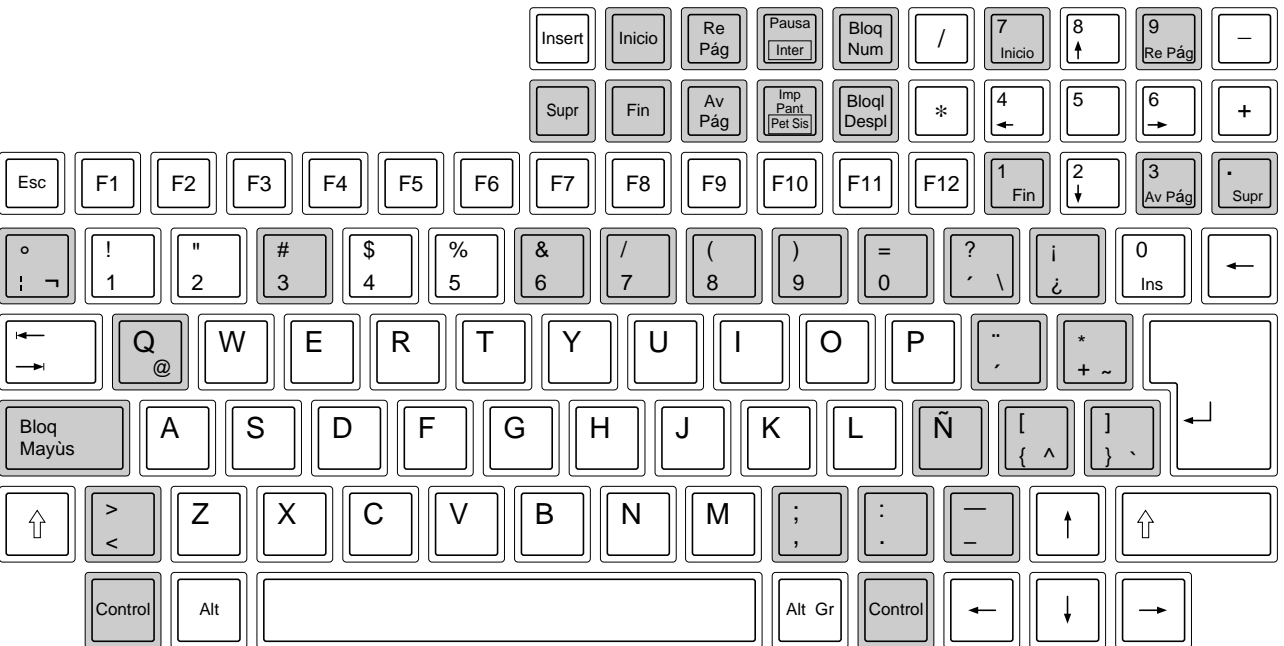
The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.



The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.

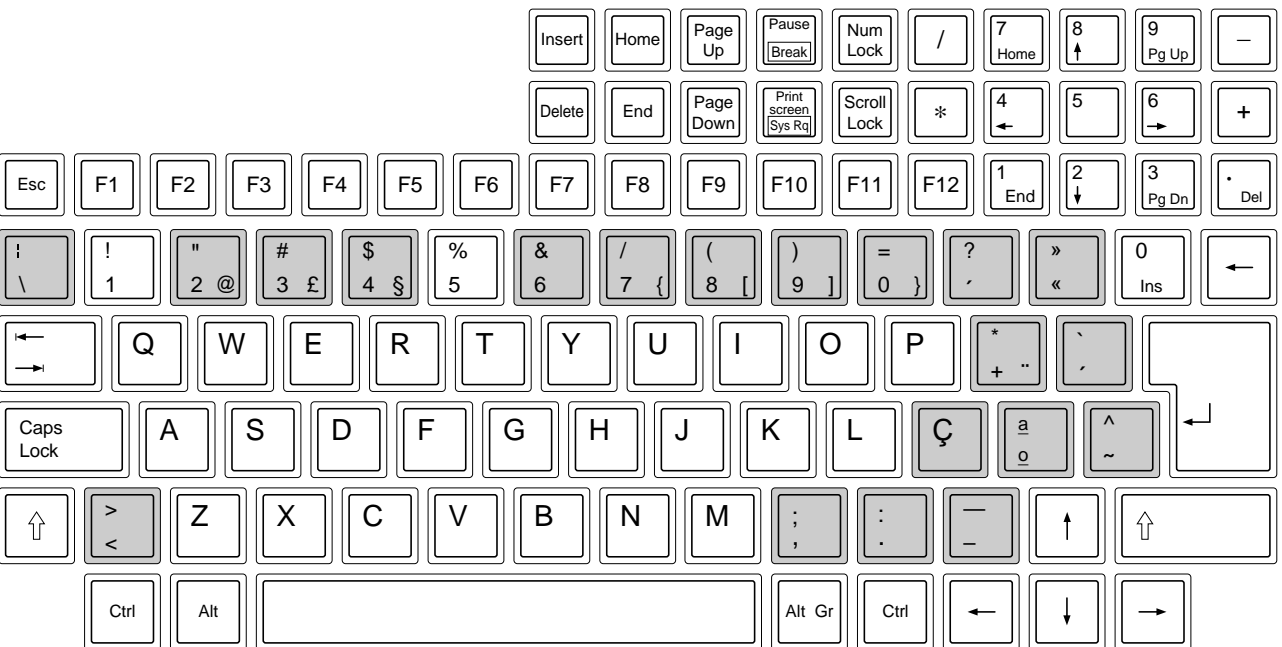
## 12.10 Latin American keyboard

The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.



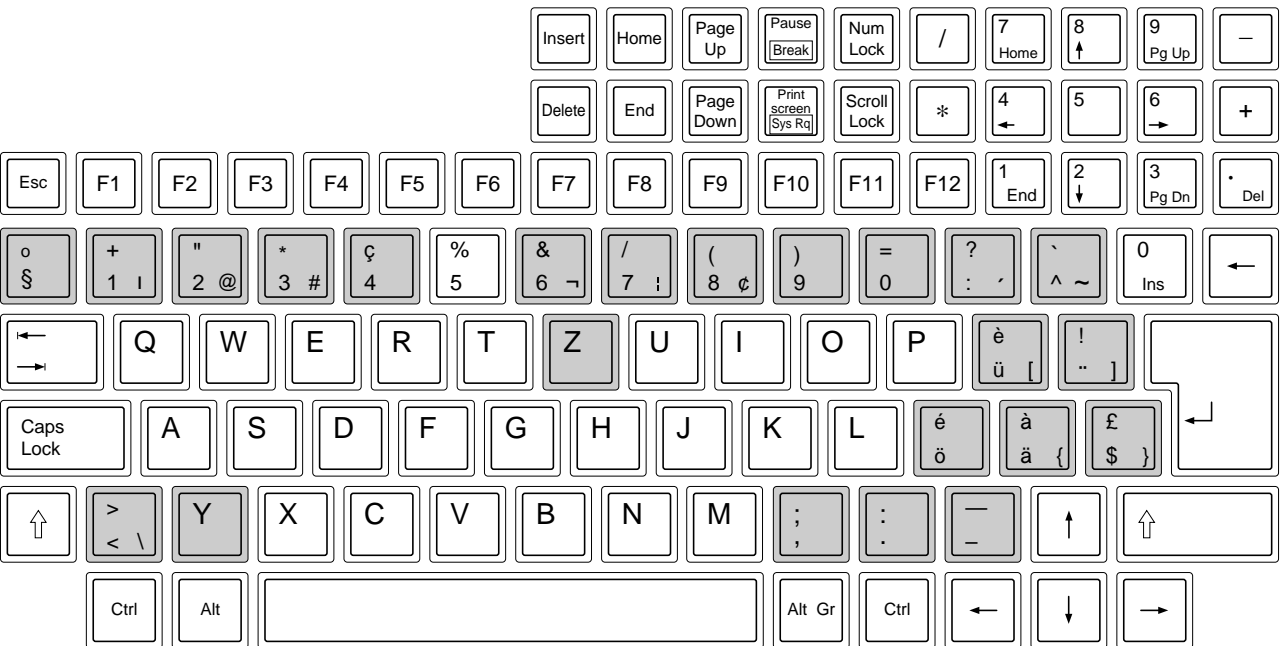
## 12.11 Portuguese keyboard

The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.



## 12.12 Swiss keyboard

The keys to which a label must be attached are shown shaded on the keyboard opposite. These labels are provided on a sheet supplied with the product.







**FTX 517**  
**Poste de travail**  
**Poste de travail**

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**FTX 417-40**  
**Note book industriel**  
**Industrial Note book**

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Recommandations d'emploi  
Recommandations d'emploi



***GROUPE SCHNEIDER***

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■ Modicon ■ Square D ■ Telemecanique

### Utilisation du logiciel X-TEL sur FTX 417-40 et FTX 517

L'exploitation du logiciel X-TEL nécessite l'emploi d'une clé logicielle.

Lorsqu'une imprimante est connectée sur le port parallèle LPT1, celle-ci doit nécessairement rester sous tension afin que le logiciel puisse lire les droits logiciels contenus dans la clé.

### Vous venez d'acquérir un note-book FTX 417-40.

De par sa technologie avancée, il convient de respecter et suivre au mieux l'instruction suivante pour un meilleur service de l'appareil.

### Procédure de charge batterie note-book industriel FTX 417-40

- **Première mise sous tension**

La batterie doit être préalablement chargée pendant **10 heures**, interrupteur OFF/ON sur OFF.

- **Mode de marche courant**

La charge lente est obtenue :

Interrupteur sur ON - voyant Power Orange fixe - et Mode Suspend - voyant Suspend Orange intermittent.

- **Décharge complète**

Tous les 2 mois, décharger complètement la batterie puis recharger à l'identique de la première mise sous tension.

Référence documentation : TFTX DM 417 40F, chapitre mode de marche page 24/25.

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### Using X-TEL software on FTX 417-40 and FTX 517

Using X-TEL software requires the use of a software key.

When a printer is connected to the LPT1 parallel port, it must always be powered up so that the software can read the software rights contained in the key.

### You have just acquired an FTX 417-40 notebook.

Due to its advanced technology, it is advisable to respect and follow the instructions below as closely as possible in order to ensure optimum operation of the device.

### Procedure for charging the battery of an FTX 417-40 industrial notebook

- **Initial power up**

The battery should first be charged for **10 hours**, with the OFF/ON switch set to OFF.

- **Normal operating mode**

Slow charge is obtained in the following way :

Switch set to ON - orange Power indicator on steady - and in Suspend Mode - orange Suspend indicator flashing.

- **Total discharge**

Every 2 months, discharge the battery totally then recharge it in the same way as for the initial power up.

Documentation reference : TFTX DM 417 40E, operating modes section, page 24/25.

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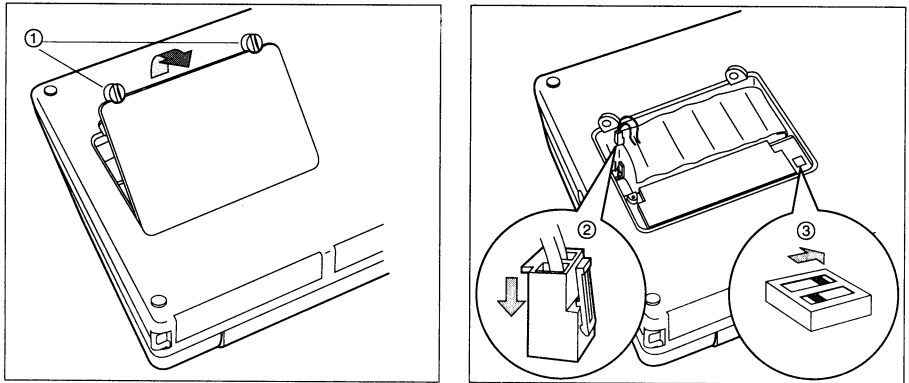
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## Using the FTX 417 for the first time

- 1** Before use, the battery must be connected as shown in the diagram below. This procedure (①, ② and ③) is described in detail in the manual "FTX 417 Industrial Notebook, User guide", section 2.2-1.



- 2** Connect the FTX 417 to the power supply using only the certified power supply adaptor T FTX ADC 4 (12 Volt DC socket situated on the left-hand side).
- 3** Perform the following operations in quick succession:
- start the machine by pressing (1 second) the PWR button on the left of keyboard, then immediately:
  - initiate SETUP by holding down the F2 key until you hear a beep.
- 4** Choose the language:
- select "Language Selection" using the up and down arrow keys, then press "Enter",
  - select "English" for example, then "Enter".
- 5** Set the date and time:
- select "Operating Parameters", then press "Enter".
  - set the date using the + or - keys, then press "Enter".
  - select the time, and set it using the + or - keys, then press "Enter"
  - other parameters can be modified at a later date if you wish.
- 6** Saving your changes:
- press the "Esc" key twice,
  - select "REBOOT" and press "Enter".
- For more information, see the manual "FTX 417 Industrial Notebook, User Guide", section 7.2.
- 7** If your FTX 417 has been delivered with an operating system already installed, the machine is now ready for use. If not, you should now install the operating system(s) (TE/DRDOS 5.0, TE/MS-OS/2 1.3). See the manual "Operating systems, Installation Guide" reference: T FTX DG SYS TE F.