



## INSTALLATION AND OPERATION MANUAL

code 80544B / Edition 03 - 02-2013

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### Graphic symbols used

To distinguish between the type and importance of the information provided in these instructions for use, graphic symbols have been used as a reference to make interpreting the information clearer.



Indicates the contents of the various manual sections, the general warnings, notes, and other points to which the reader's attention should be drawn.



Information of a general and applicative nature



Indicates a particularly delicate situation that could affect the safety and correct working operation of the controller, or a rule that must be strictly observed to avoid dangerous situations



Important notes for the safety and reliability of the product.



Indicates a condition of risk for the safety of the user, due to the presence of dangerous voltages at the points shown



Indicates a reference to Detailed Technical Documents available on the GEFRAN web site [www.gefran.com](http://www.gefran.com)



Indicates a suggestion based on the experience of the GEFRAN Technical Staff, which could prove especially useful under given circumstances

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## **PREFACE**

The objective of this document is to provide a detailed description of the main technical characteristics of the hardware and firmware of the Gefran product called DIGISTAR II and GF-BOX.

Information necessary for a correct use of the products to which the manual refers follows. Such information is related to the pinout of connectors with relative signals, setup of bridges and connections with external devices. The majority of the hardware options can be configured by software through the set up data stored in the Eeprom, therefore there are very few pure hardware options, which simplifies remarkably the configuration of the module itself.

### **Package contents**

GEFRAN provides the following standard products with DIGISTAR II, DIGISTAR II Control and GF-BOX:

- E.M.I. suppressor with ferrite core
- Power supply connector
- Panel fastening kit
- Instruction manual

## 1 • INTRODUCTION

### DIGISTAR II and DIGISTAR II Control = Industrial PC panel with 10.4", 12.1" and 15" display

DIGISTAR II and DIGISTAR II Control are industrial PCs with highly scalable functions and resources. They are suitable for many industrial applications, from data centralization systems to plant supervisor, as well as traditional HMI. The Control version can also be used as a machine control unit.

This version combines typical functions of a PC architecture with functions expressly created for control applications, such as use of the VxWorks operating system with Seven programming environments, all in a compact frame.

Equipped with TFT display (10.4" with 800x600 pixel resolution, 12.1" with 800x600 pixel resolution, and 15" with 1024x768 pixel resolution), they can be completed with a resistive touch screen to facilitate selection and input procedures.

DIGISTAR II and DIGISTAR II Control are equipped with an Intel™ processor; choices include Pentium Celeron™ 600 MHz, Celeron Mobile™ 1500 MHz.

The special system architecture, based on ETX standard, keeps the product constantly in step with technological advances. All of the processors are low voltage and do not need cooling fans.

DIGISTAR II and DIGISTAR II Control can be equipped with DOM solid state mass memory (or 2.5" HD in the Control version) for better configuration based on the application and operating system used.

Thanks to a complete series of ports, such as Ethernet, USB, serial, parallel, PS/2 etc., DIGISTAR II and DIGISTAR II Control can connect to the many different peripherals used by industry.

An extremely high level of connectivity is obtained by adding optional custom interfaces and standard PCI (not available on the Control version) and PC104 expansion slots.

Available interfaces include those for CAN and the expansion for RS422/485 serial lines for Modbus.

Some functions on the DIGISTAR II Control, such as keyboard matrix management, LEDs, and timed autostart logic output, are typical of machine or industrial line control.

Careful construction and mechanical design ensure easy installation, correct access to DIGISTAR II and DIGISTAR II Control expansions, and correct maintenance to guarantee long life and reliability.

DIGISTAR II is available with Microsoft™ Windows™ XP Professional™ Multilanguage (MUI Pack) or Microsoft™ Windows™ XP Embedded™ (English) on solid state disk.

DIGISTAR II Control is available with the VxWorks operating system on solid state disk.

GF-BOX is a highly scalable industrial PC in terms of functions and resources.

In particular the typical functions of a PC architecture have been integrated together with some functions specifically created for control applications, in a compact case.

The characteristics of GF-BOX allow for it to be used in numerous industrial applications, from the machine control unit, to the data centralization system. GF-BOX can also be fitted with a remote display up to 25 m. GF-BOX is equipped with an Intel™ processor; choices include Pentium Celeron™ 600 MHz, Celeron Mobile™ 1500 MHz or Pentium Mobile™ 1800 MHz.

The special architecture of the system, based on the ETX standard allows for constant adaptation of the product to technological development.

All of the processors are of a low voltage and low consumption and do not require specific cooling fans and allow for GF-BOX to be used even in heavy duty environments.

GF-BOX can be fitted with a solid state mass memory of a DOM type or a 2.5" HD for better configuration according to the application and the operative system used.

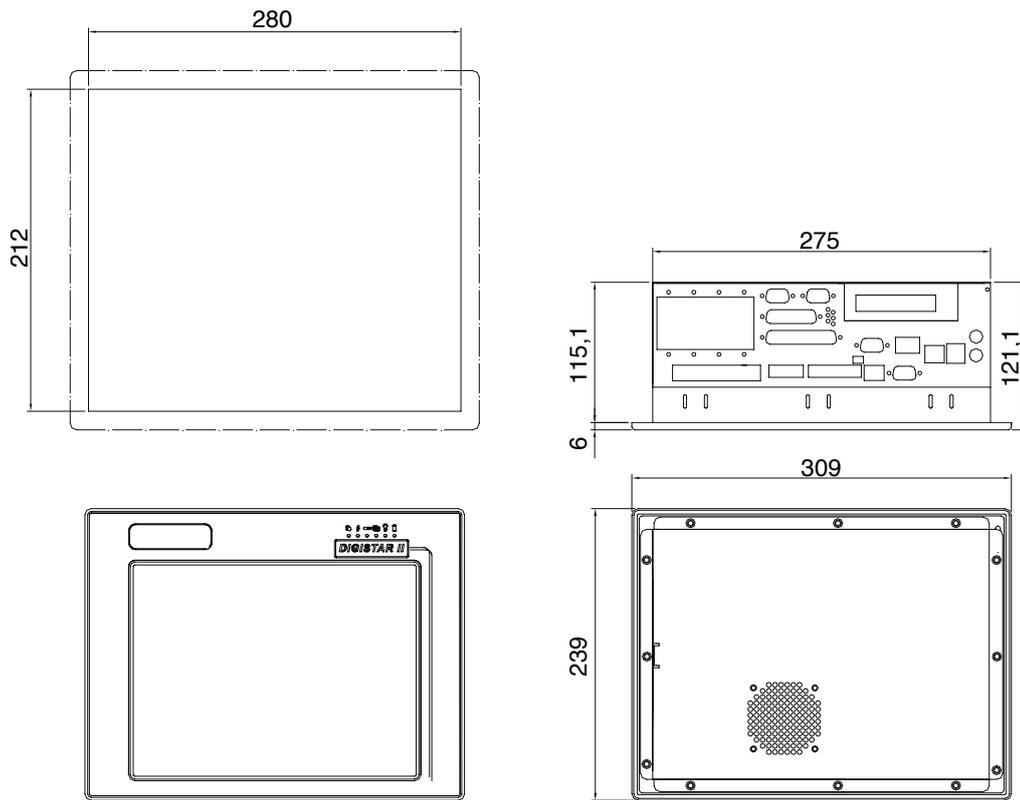
Thanks to the complete range of ports available such as Ethernet, USB, serial, parallel, PS/2 etc, GF-BOX can be located in different peripherals that can now also be found in an industrial field. If optional personalized interfaces and standard expansion slots PC1, PC104 are added to them, an extremely large level of connectivity is achieved.

The interfaces available include CAN and expansions for serial lines RS422/485 for Modbus.

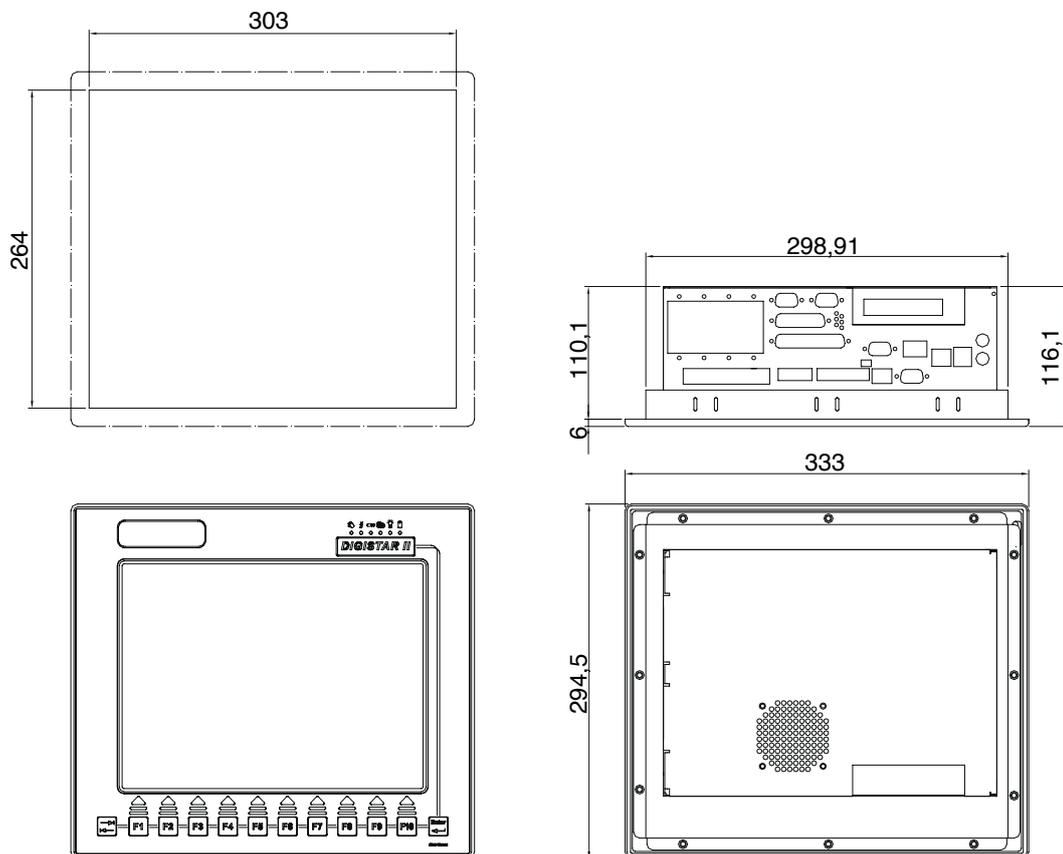
Some functional characters such as handling of the keyboard matrix, leds and logical output of the automatic timed switch are typical of the machine control or of industrial lines.

The attention given to construction and mechanics allow the user to carry out easy installation, correct access to the GF-BOX expansions and correct maintenance of the product itself in order to guarantee duration and reliability along time.

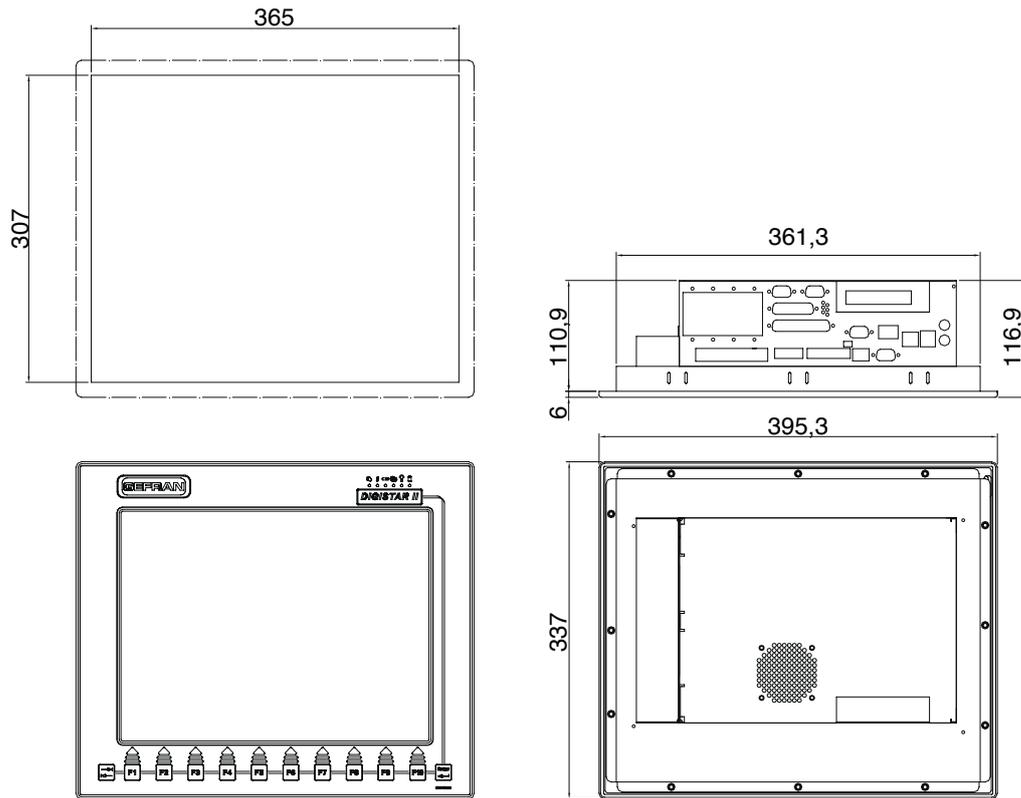
DIGISTAR II 10,4”



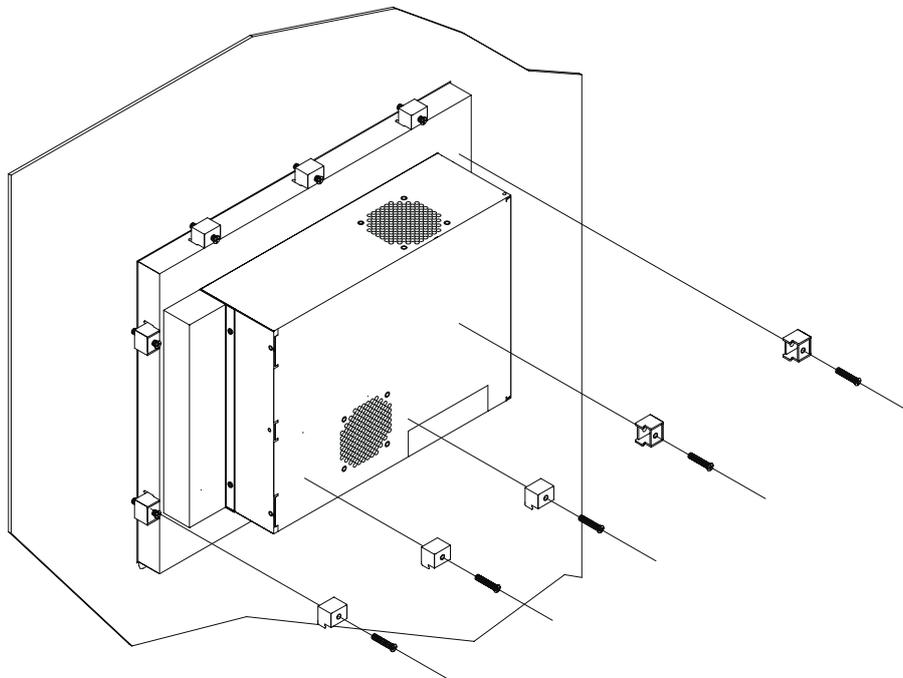
DIGISTAR II 12,1”



**DIGISTAR II 15"**



**DIGISTAR II : INSTALLATION AND FIXING SYSTEM**



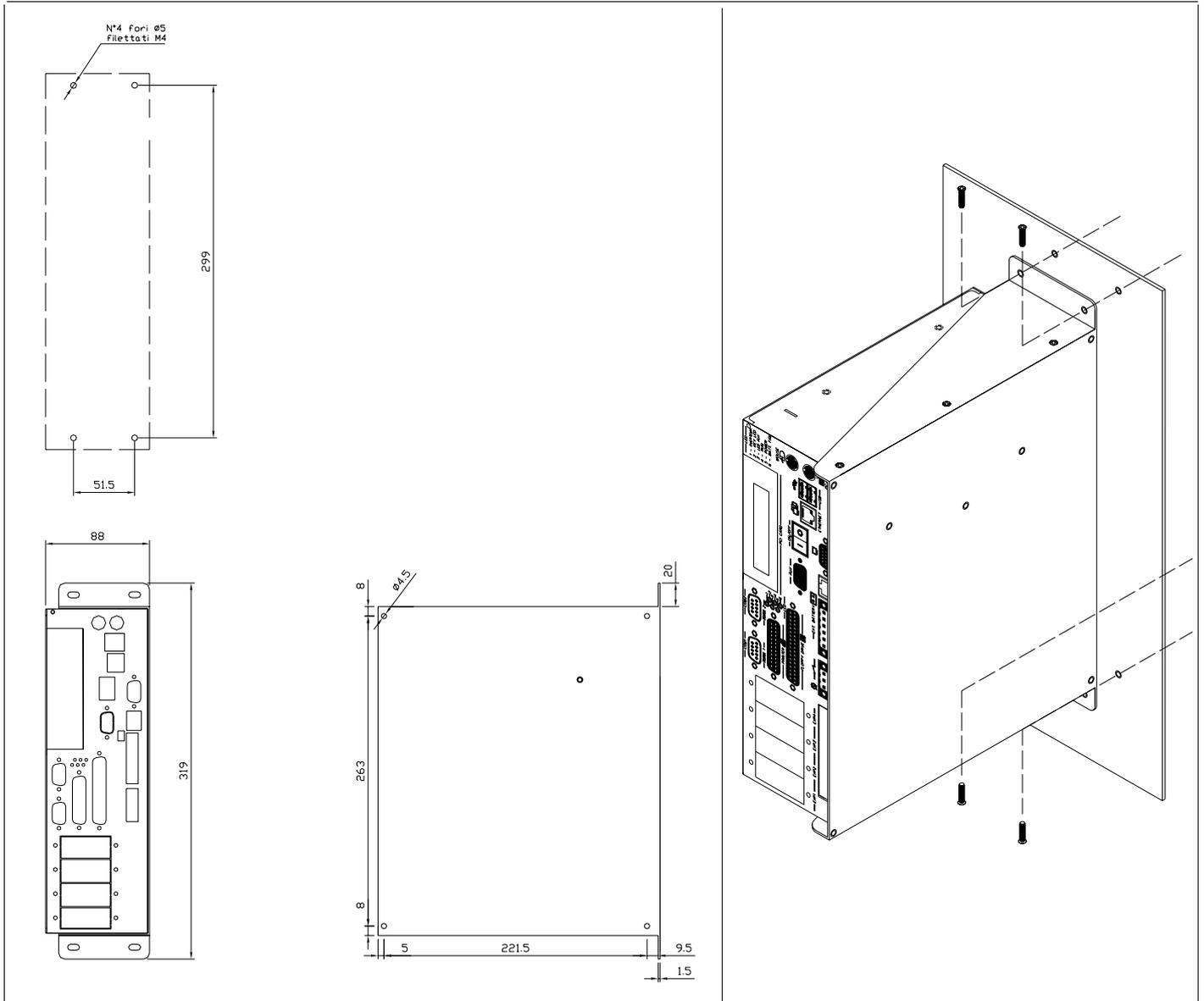
The installation system is the same for both 10,4", 12,1", 15" DIGISTAR II and DIGISTAR II Control with display versions.

After having carried out the housing according to the template indicated in the drawing, insert the DIGISTAR II from the front, prepare the relative fixing blocks into the respective housings and screw down.

# GF-BOX

## MECHANICAL CHARACTERISTICS AND DIMENSIONS

## INSTALLATION AND FIXING SYSTEM



After having carried out the cuts on the plate as indicated in the template drawing, screw GF-BOX using the screws provided.



**Carry out installation of the system by putting the air outlet at the top as shown in the drawing.**

The connections of external resources are available at the bottom and through standard connectors.



The resources available are the same for the DIGISTAR II and GF-BOX.

## INSTALLATION



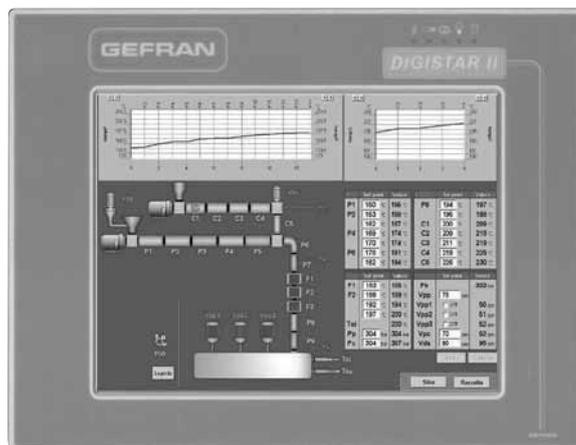
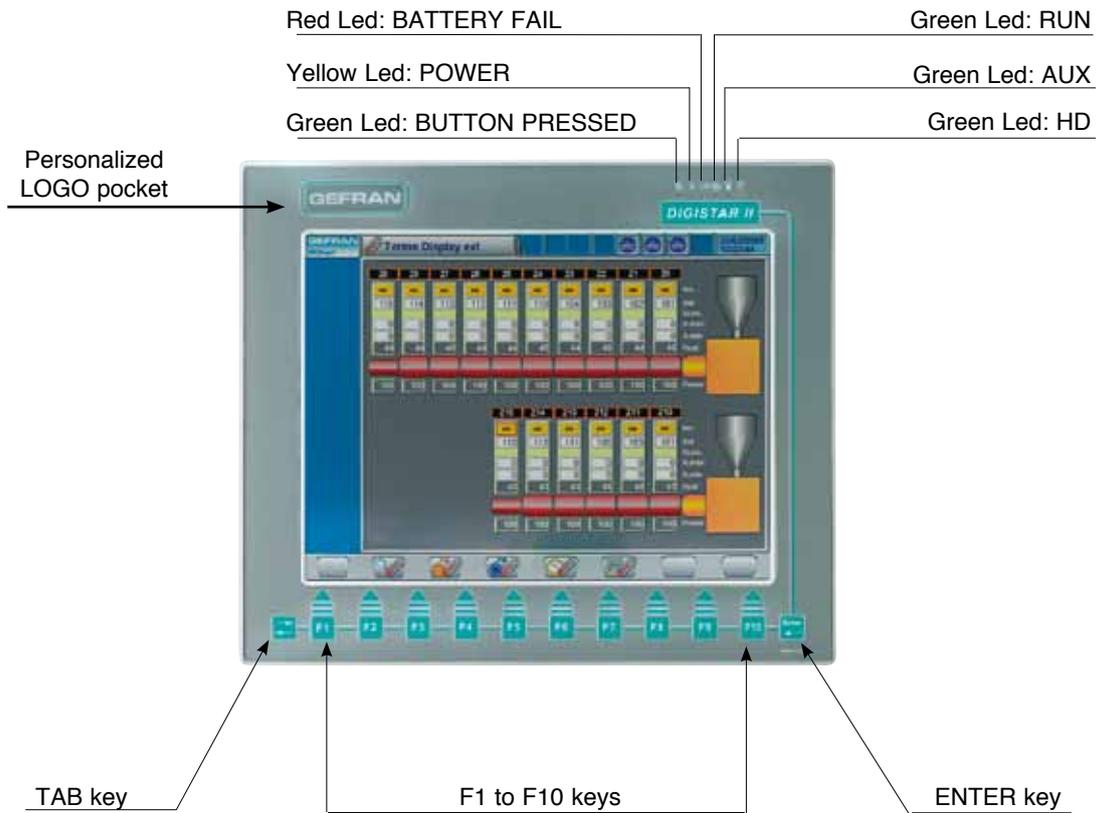
Do not install the product within equipment or boxes that do not have suitable air circulation or a thermal exchange that can maintain the temperature below the maximum temperature of the various models. Check to make sure that the air passage ways are not obstructed: keep the inward and outward air filters clean at all times



When installing the product pay special attention to the position of the same in order to avoid any possible accidental knocks.

### 3 • FRONT PANEL: DIGISTAR II

The functions of the DIGISTAR II and DIGISTAR II Control front panel are the same for the 12.1" and 15" models.

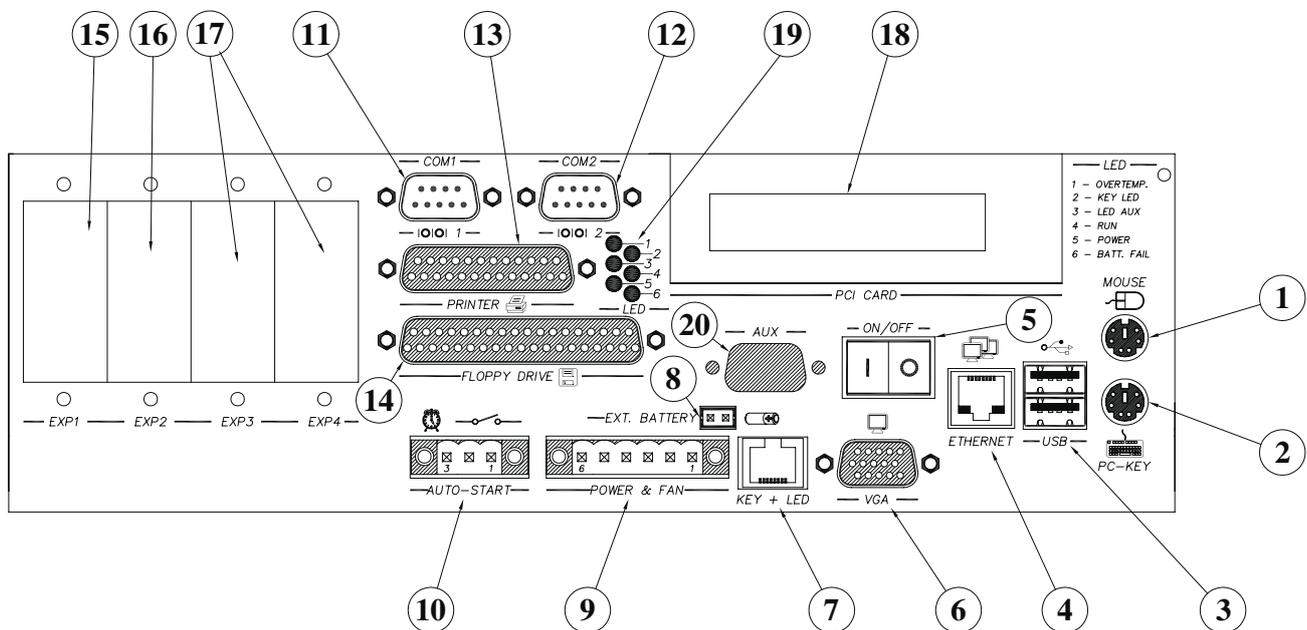


It is also possible to have the front panels with 5 wire resistive Touch Screen.

## 4• CONNECTIONS

### EXTERNAL USER CONNECTIONS

- (1) Standard mouse plug PS2
- (2) AT keyboard plug
- (3) 2 USB connectors (type A)
- (4) ethernet output 10/100 bsp, standard RJ45
- (5) ON/OFF power switch
- (6) Standard VGA switch
- (7) Matrix keyboard and Led connection, connection (GT-TAST interface)
- (8) External battery connection 3.6V
- (9) Power connection and external fan plug
- (10) Automatic switch connector
- (11) COM 1 standard serial
- (12) COM 2 standard serial
- (13) Centronics parallel connection
- (14) External floppy disk connection with integrated supply
- (15) GT-ETH board expansion slot
- (16) GT-SER 2 board expansion slot
- (17) GT-CAN board expansion slot
- (18) PCI expansion slot
- (19) Monitoring led
- (20) AUX slot, auxiliary connection



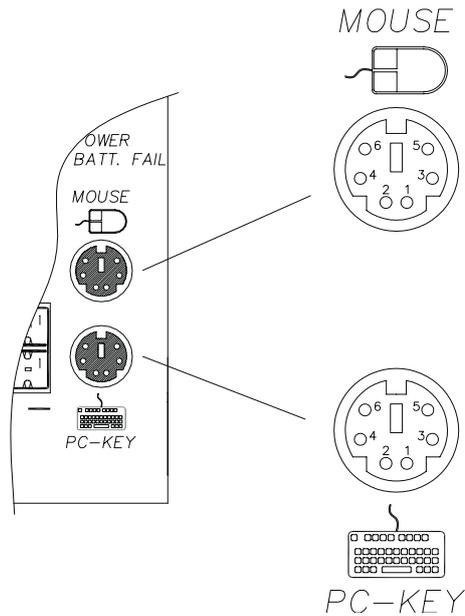
(details of user connection)

By opening the cover of DIGISTAR II you can access the control electronics and some internal resources. For installation and the use of internal resources refer to the technical manual.

## DESCRIPTION OF THE CONNECTIONS OF USER RESOURCES

### PS/2 mouse and keyboard (1) and (2)

2 connectors and 6 minidin poles are provided for external keyboard and mouse



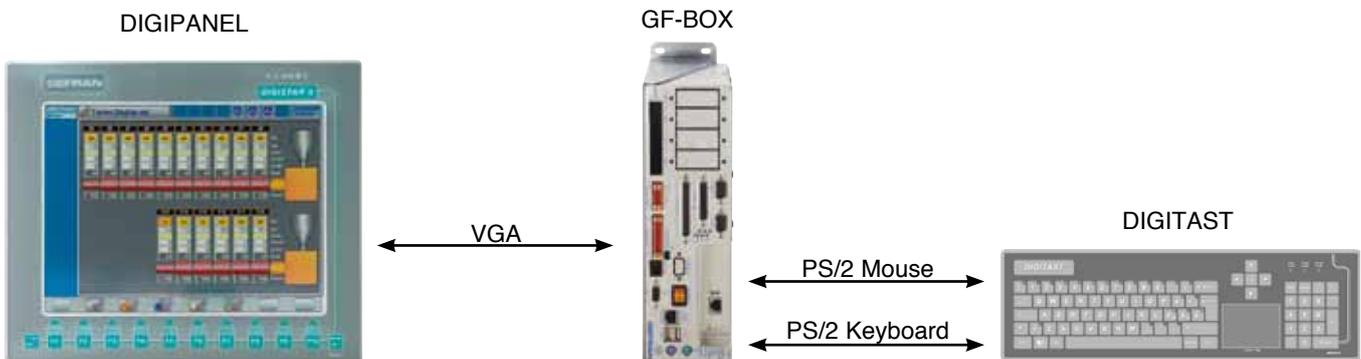
Pin number	KEYBOARD		MOUSE	
	Signal	Function	Signal	Function
1	KBD DATA	Keyboard Data	MS DATA	Mouse Data
2	N.C.	N.C.	N.C.	N.C.
3	GND	GND Power	GND	GND Power
4	5 Vdc	+ 5 Volts	5 Vdc	+ 5 Volts
5	KBD CLK	Keyboard Clock	MS CLK	Mouse Clock
6	N.C.	N.C.	N.C.	N.C.

### Connection with DIGITAST and DIGIPANEL

Accessories and expansions such as keyboards (DIGITAST) and remote displays (DIGIPANEL) are available to complete the DIGISTAR II, DIGISTAR II Control and GF-BOX products.

The DIGITAST + Touch-Pad keyboard can be connected to the DIGISTAR II via two PS/2 interfaces (Keyboard and Mouse).

The DIGIPANEL+Touch-Screen remote display can be connected to the DIGISTAR II via a VGA interface.

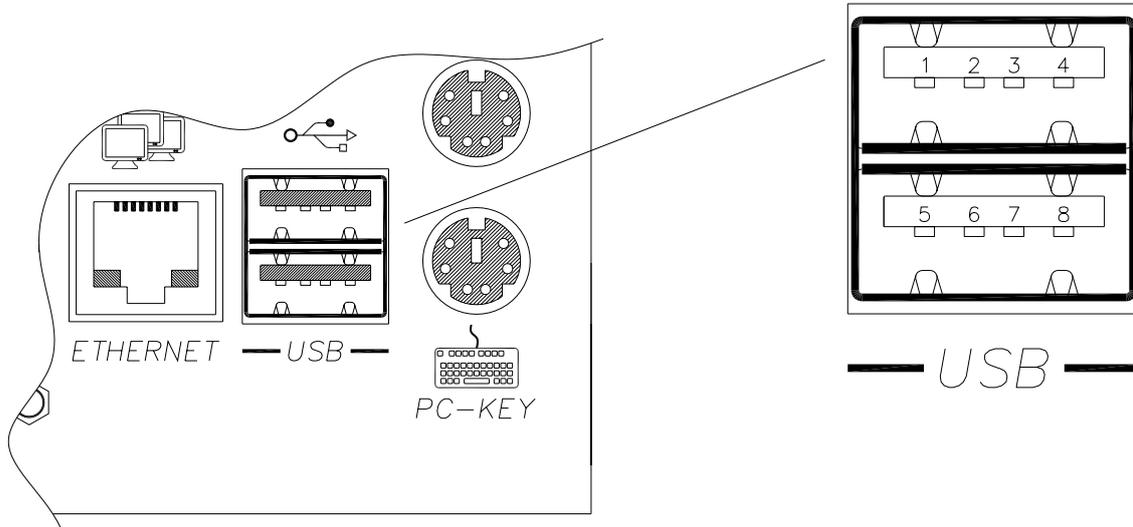


### USB (3)

The USB connection includes 2 slot masters, a type A connector with 4 poles.

It is also possible to connect two users at the same time.

USB	
Pin number	Signal
1	VCC_USB
2	USB1-
3	USB1+
4	GND_USB
5	VCC_USB
6	USB2-
7	USB2+
8	GND_USB

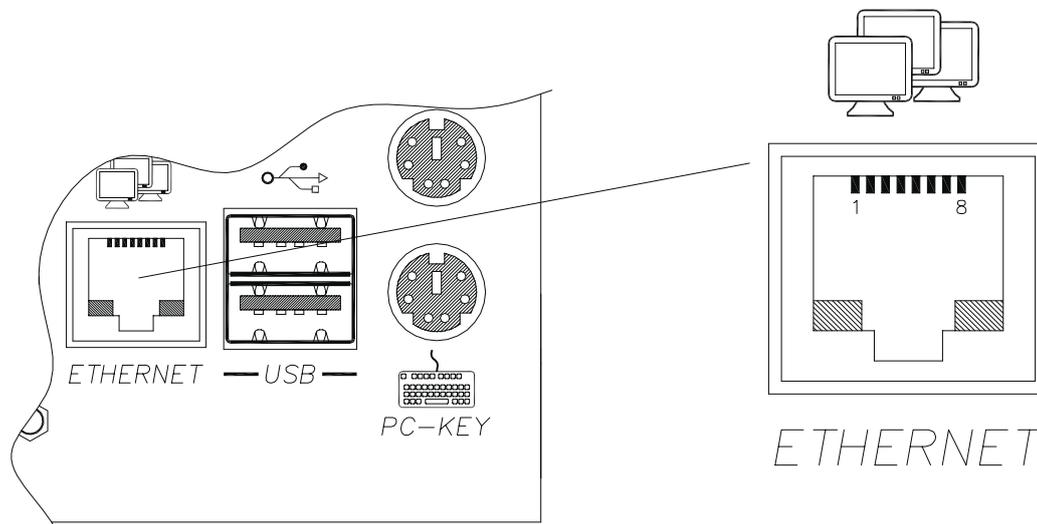


### ETHERNET (4)

The RJ45 ethernet connection complies with standards TIA/EIA-568-A with a transmission speed of 10/100 Mbps.

 For connections, use a cable of adequate category to the application. In an industrial environment the category 6 cable is recommended.

ETHERNET 10/100 BASET	
Pin number	Signal
1	TX+
2	TX-
3	RX+
4	N.C.
5	N.C.
6	RX-
7	N.C.
8	N.C.
Green led on the left	data
Yellow led on the right	link

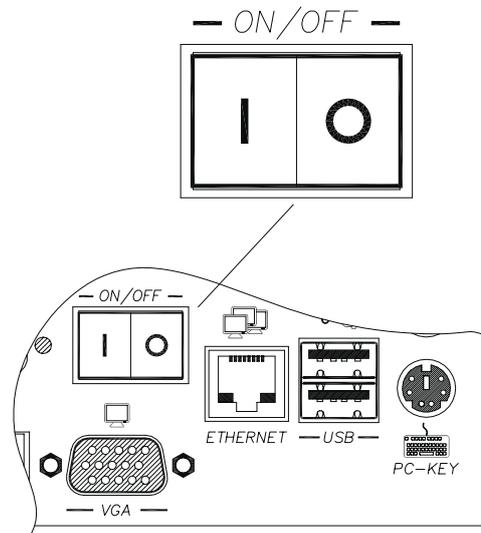


## Power switch (5)

In order to start the system turn the switch to the ON position.



The presence of power to the system is indicated by the relative power led (see leds for identification).

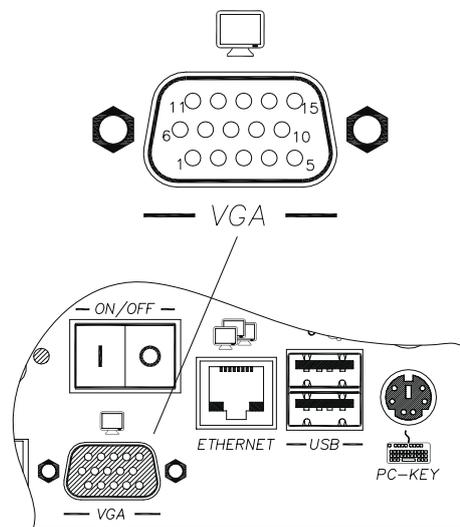


## Video (6)

Analogue output for SVGA standard video. Connection by DB15 high density connector.



Use a video cable of a standard kind not longer than 5 metres.



CRT VGA	
Pin number	Signal
1	RED
2	GREEN
3	BLUE
4	N.C.
5	GND
6	AGND
7	AGND
8	AGND
9	N.C.
10	GND
11	N.C.
12	N.C.
13	HSYNC
14	VSYNC
15	N.C.

### Keyboard and led matrix (7)

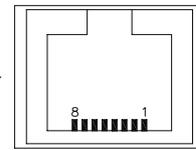
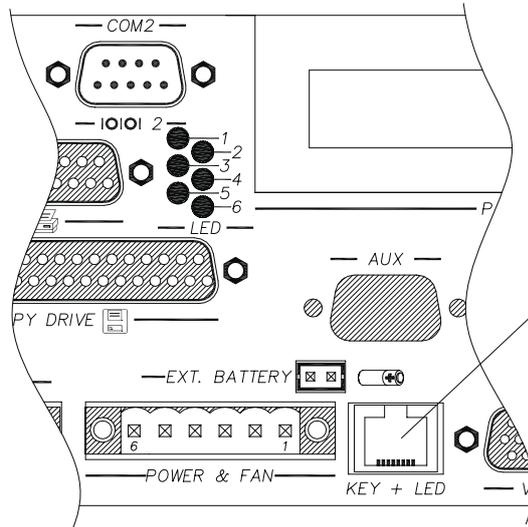
Connection for keyboard interface.

Synchronous serial with communication protocol GT-Tast, Gefran property.

It has 128 keys and 64 leds. Maximum length of connection 100 cm.

Connector type RJ45 8 poles.

KEY & LED	
Pin number	Signal
1	Key_CLK
2	Key_OUT
3	Key_IN
4	n.c
5	+5V
6	GND
7	GND
8	+12V



KEY + LED

**Note: nc. = do not connect !!!**

Do not use supply input for external equipment excluding the keyboards provided by Gefran



### External battery (8)

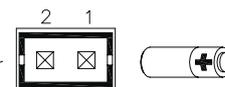
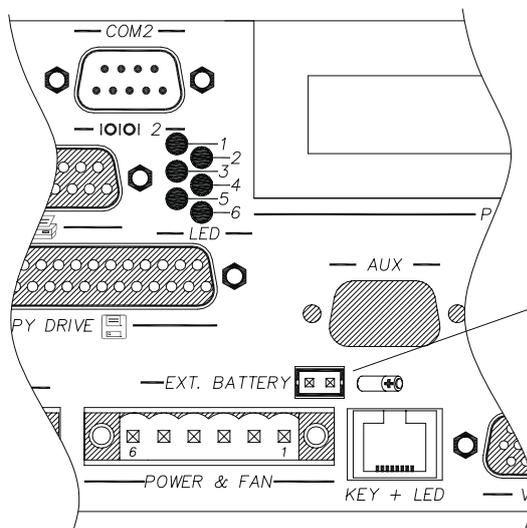
Modu II 2 pole AMP connector, for connection to an external battery in order to maintain the BIOS data and the data stored in the static ram on the Motherboard.

EXTERNAL BATTERY	
Pin number	Signal
1	+ battery
2	- battery



The battery must be maximum 3 to 3.6V.

The external battery must not be recharged. When the external battery is used the internal one is not used.



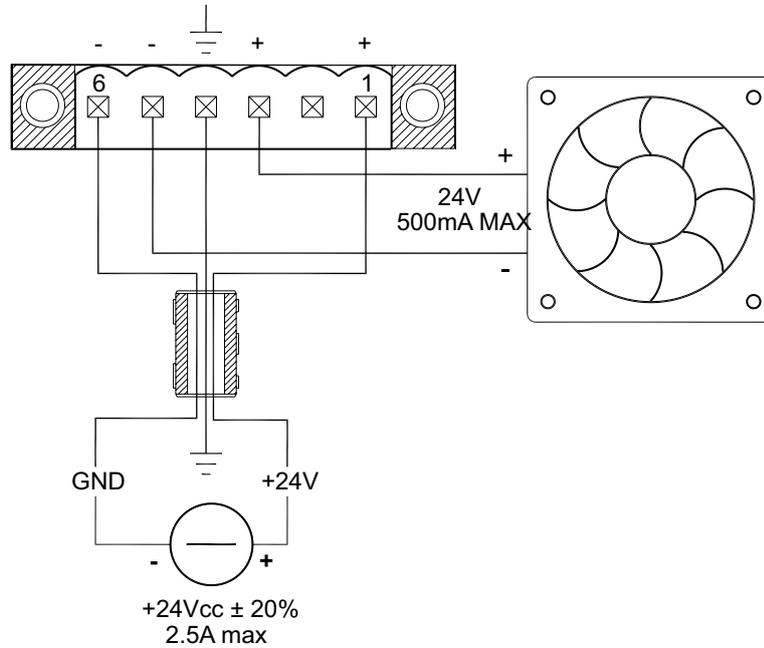
### Power supply (9)

To limit susceptibility to interference, an electromagnetic emission suppresser core has to be installed as shown in the Figure.

This component (supplied with the product), is a ferrite core contained in plastic for round section wires. 24Vcc 2.5A max (18-36Vcc) power supply, the internal power supply is insulated by galvanisation and protected from polarity inversions and short circuits with a re-settable fuse. Output for 24Vcc 200mA max fan.



The fan control is regulated by a thermostat, therefore the fan starts when the internal temperature exceeds 35°C.



### Self-start output (10)

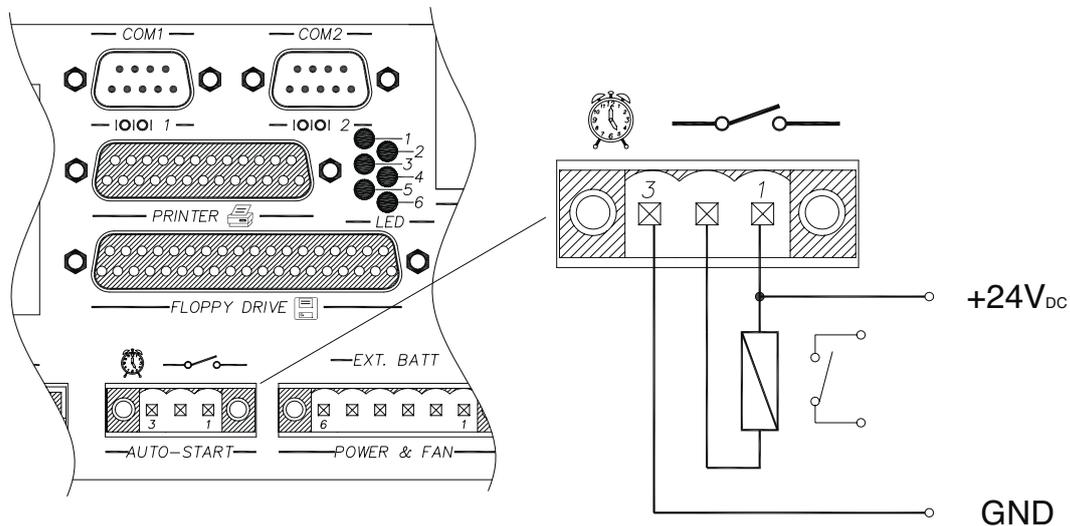
Connection for activation of an external relay according to an internal programmable timer.



In order to activate the relay it is sufficient to provide power to it. Use the free contact of the relay to activate external equipment. The timed relay will stay on for approximately 10 seconds.



Use a 24 Vcc relay with 100mA maximum rating.

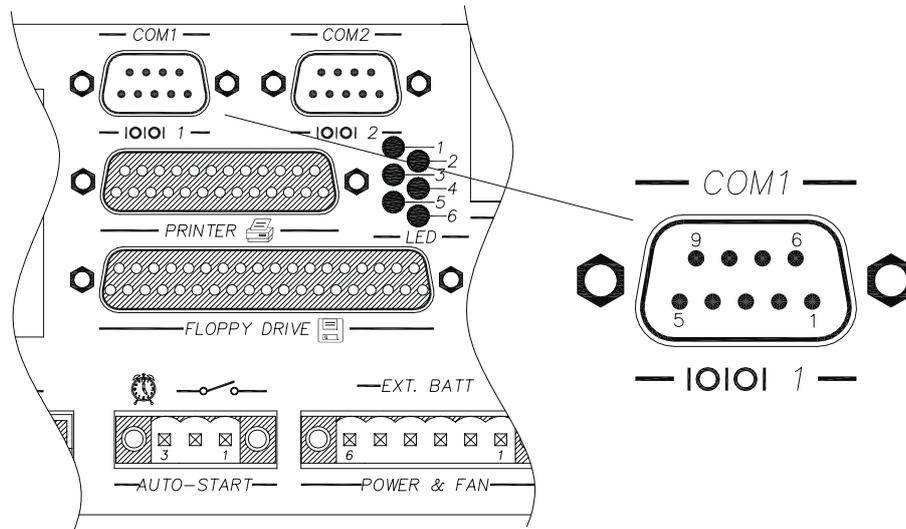


### Serial port COM1 (11)

Male DB9 connector. The serial line on COM1 can be configured in RS232, RS422, RS485 mode. Configuration is carried out by moving the relevant dip switches according to the table provided below.



In order to access the dip switch, open the rear cover on DIGISTAR II or on GF-BOX, see specific paragraph.



**TABLE MODE COM1:**

Nr. Pin	RS232		RS422		RS485	
	Signal	Function	Signal	Function	Signal	Function
1	DCD	Data Carrier Detect	RX-	Receive Data -		
2	RX	Receive Data	RX+	Receive Data +	TX+/RX+	DATA+
3	TX	Trasmit Data	TX+	Transmit Data +		
4	DTR	Data Terminal Ready	TX-	Transmit Data -	TX-/RX-	DATA-
5	GND	Signal Ground	GND	Ground n.c.	GND	Ground n.c.
6	DSR	Data Set Ready		n.c.		
7	RTS	Request To Send		n.c.		
8	CTS	Clear To Send		n.c.		
9	RI	Ring		n.c.		

The serial configured in RS422 is opto-insulated.

The serial configured in RS485 is opto-insulated.

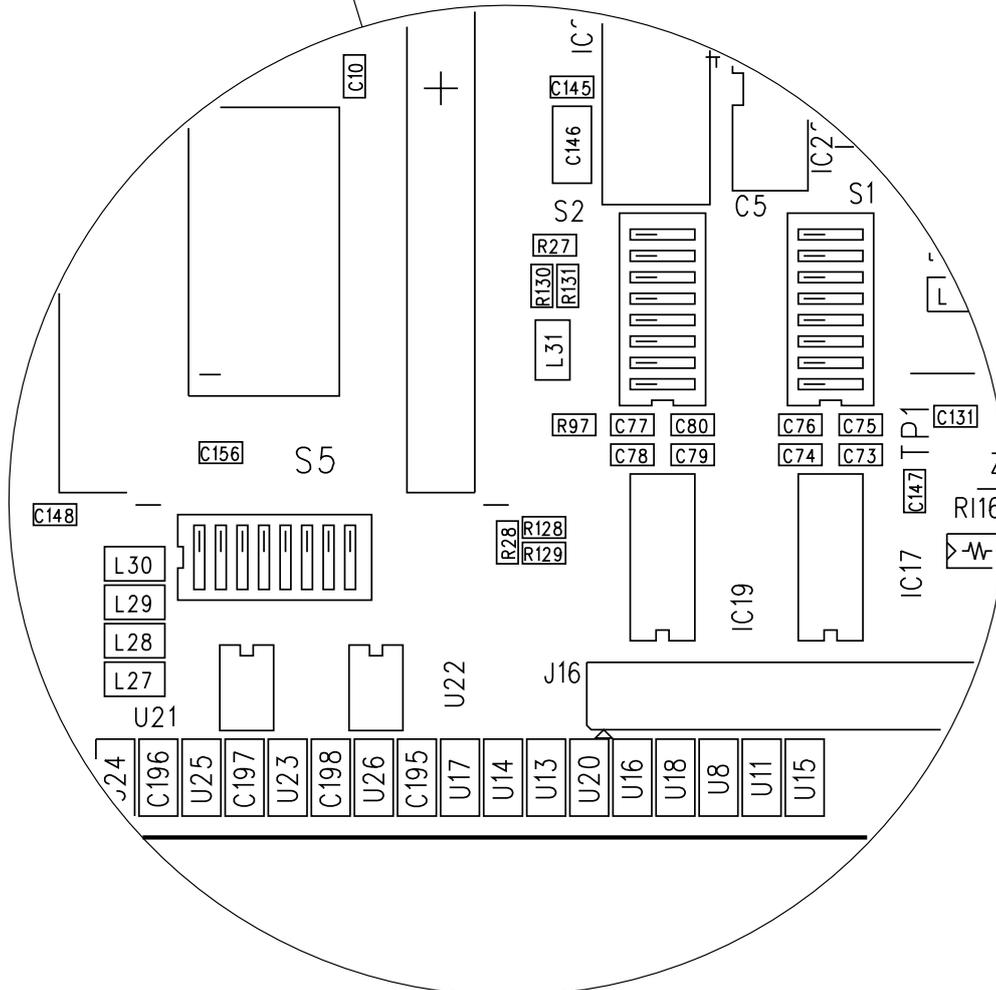
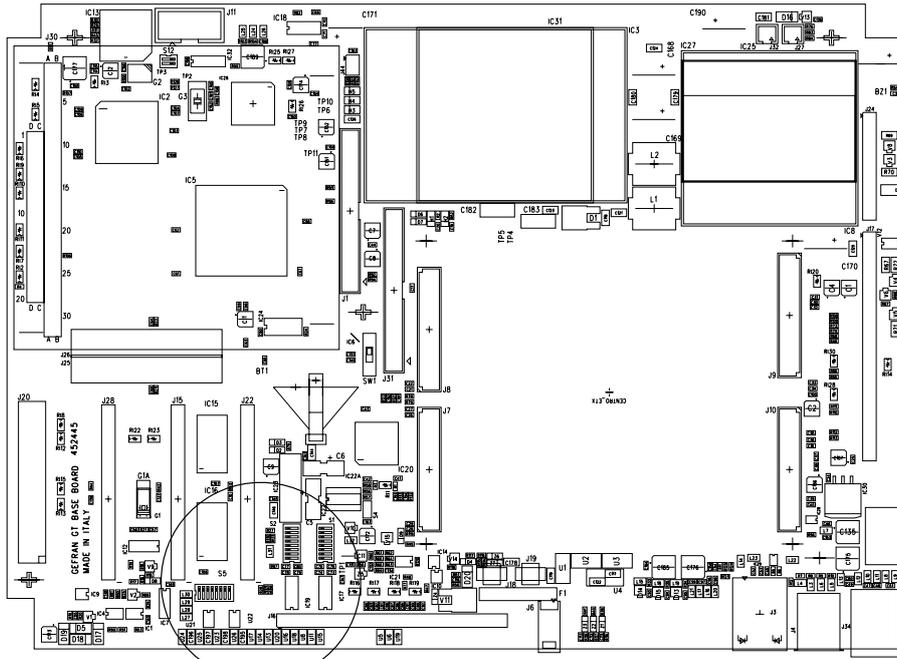
**n.c. = do not connect**



Reception can be configured as **always enabled** or **controlled by the software through the signal**.  
 Transmission can always be controlled by software through the RTS signal, that activates or prevents the transmitter to control a multi point line with more than one competitor.

<b>TABLE CONFIGURATION COM 1 SERIAL</b>			
	<b>RS232</b>	<b>RS422</b>	<b>RS485</b>
Dip S1-1	ON	OFF	OFF
Dip S1-2	ON	OFF	OFF
Dip S1-3	ON	OFF	OFF
Dip S1-4	ON	OFF	OFF
Dip S1-5	ON	OFF	OFF
Dip S1-6	-	-	-
Dip S1-7	ON	OFF	OFF
Dip S1-8	-	-	-
Dip S2-1	OFF	ON	ON
Dip S2-2	OFF	ON	ON
Dip S2-3	OFF	ON	ON
Dip S2-4	OFF	ON	ON
Dip S2-5	OFF	ON	ON
Dip S2-6	OFF	ON	ON
Dip S2-7	OFF	See polarization table	See polarization table
Dip S2-8	OFF	See polarization table	See polarization table
Dip S5-1	OFF	OFF	ON
Dip S5-2	OFF	OFF	ON
<b>Polarization and Termination</b>			
Dip S2-7	Polarization and termination TX + active		
Dip S2-8	Polarization and termination TX - active		
Dip S5-7	Polarization and termination RX + active		
Dip S5-8	Polarization and termination RX - active		
<b>Managed through RTS</b>			
Dip S5-3	Software managed through RTS		
Dip S5-4	RTS managed through TX		
Dip S5-5	Reception managed like RTS		
Dip S5-6	Always qualified reception		

# CONFIGURATION FOR SERIAL COM1

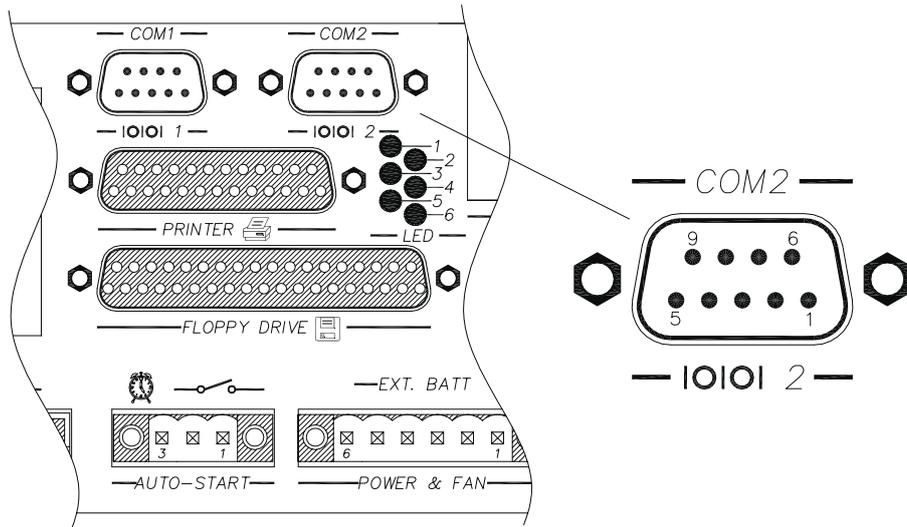


### Serial Port COM2 (12)

9 pole male connector standard serial COM2.

The serial is provided in RS232 standard.

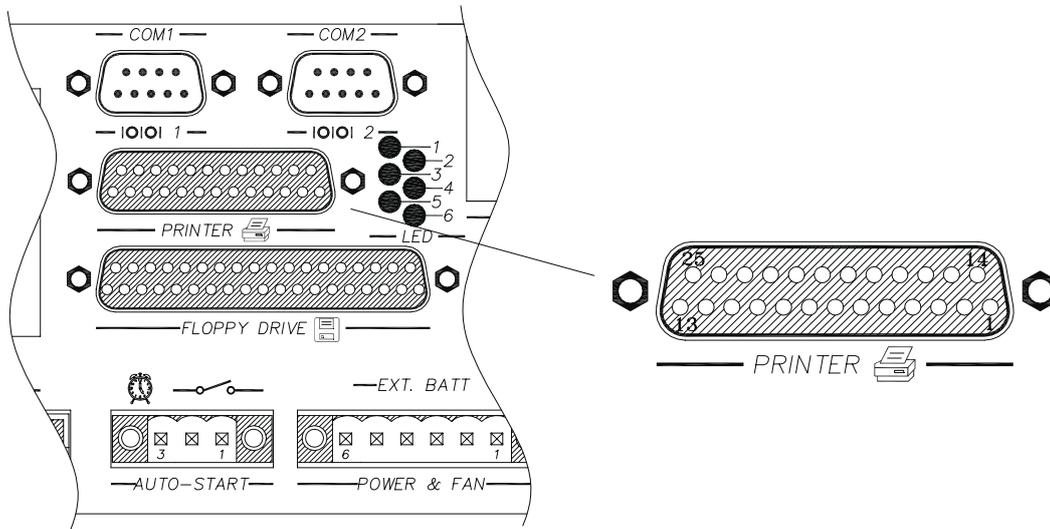
COM 2 RS232		
Nr Pin	Signal	Function
1	DCD	Data carrier detect
2	RX	Receive Data
3	TX	Trasmit Data
4	DTR	Data terminal ready
5	GND	Signal Ground
6	DSR	Data set ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring



### Parallel Port LPT1 (13)

The parallel port is available with the standard connector DB25 female. The data lines are bi-directional, while the control lines are simplex (input or output, according to the type of signal).

The table indicates the pinouts:



**PARALLEL PORT LPT1**

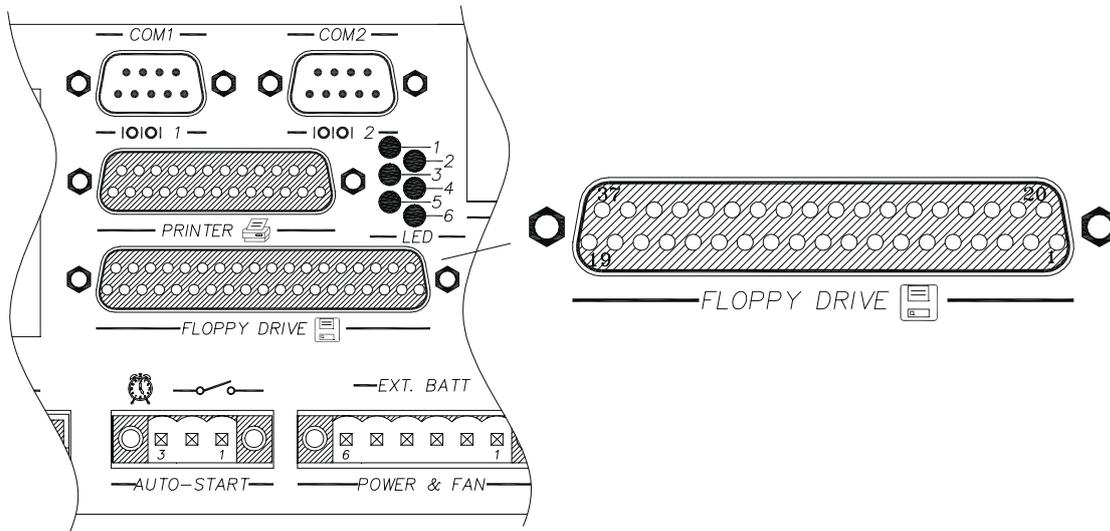
Pin number	Signal	Function	Dir
1	STB	Output data strobe	O
2	PD0	Data	I/O
3	PD1	Data	I/O
4	PD2	Data	I/O
5	PD3	Data	I/O
6	PD4	Data	I/O
7	PD5	Data	I/O
8	PD6	Data	I/O
9	PD7	Data	I/O
10	ACK	Character accepted	I
11	BUSY	Printer busy	I
12	PE	Paper error	I
13	SLCT	Printer selected	I
14	AFD	Autofeed	O
15	ERR	Printer error	I
16	INIT	Initialize printer	O
17	SLIN	Select printer	O
18	GND	Signal Ground	
19	GND	Signal Ground	
20	GND	Signal Ground	
21	GND	Signal Ground	
22	GND	Signal Ground	
23	GND	Signal Ground	
24	GND	Signal Ground	
25	GND	Signal Ground	

## Floppy Disk Interface (14)

Connection to an FDD is available through a DB37 female connector according to the layout defined in the following table.



The connector provides power supply of 5V for the FDD.

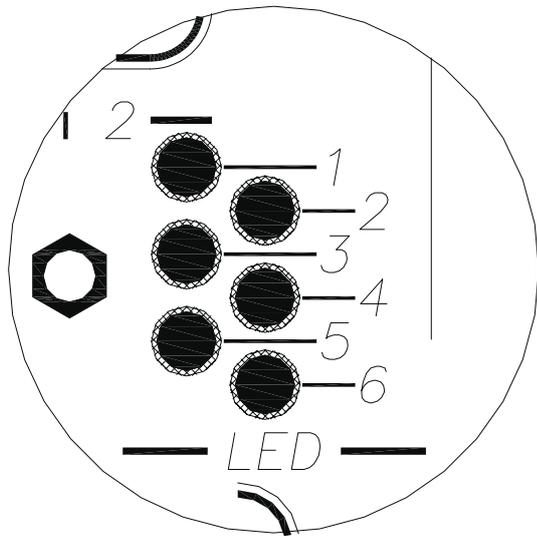


### CONNECTOR

Pin number	Signal	Pin number	Signal
1	GND	20	DENSEL
2	N.C.	21	N.C.
3	GND	22	N.C.
4	GND	23	INDEX
5	GND	24	MTR0
6	GND	25	DRV1
7	GND	26	DRV0
8	GND	27	MTR1
9	GND	28	DIR
10	GND	29	STEP
11	GND	30	WDATA
12	GND	31	WGATE
13	GND	32	TRKO
14	GND	33	WRPRT
15	GND	34	RDDATA
16	GND	35	HDSEL
17	GND	36	DSKCHG
18	GND	37	VCC (+5V)
19	N.C.		

## Led Diodes (19)

On the back of the module, the leds indicate the machine status.



Led		
UBI	Colour	Function
1	Red	Over-temperature
2	Green	Connection to keyboard and led matrix
3	Green	Auxiliary
4	Green	RUN
5	Yellow	POWER
6	Red	BATTERY FAIL

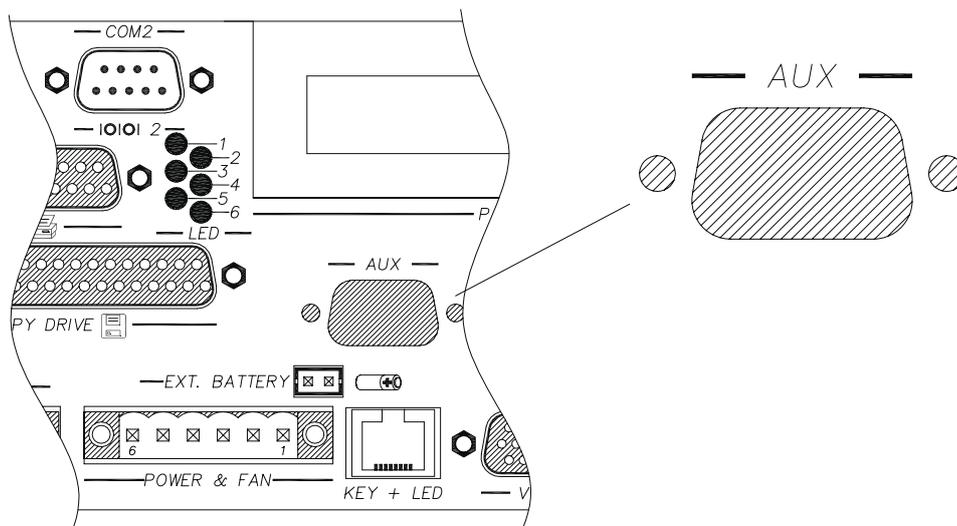
## REMOTE VIDEO output (GF-BOX ONLY)

GF-BOX can be fitted with optional video and keyboard remoting.

The remoting system allows the DIGIPANEL and GT\_O display to be connected up to a distance of 25 m.



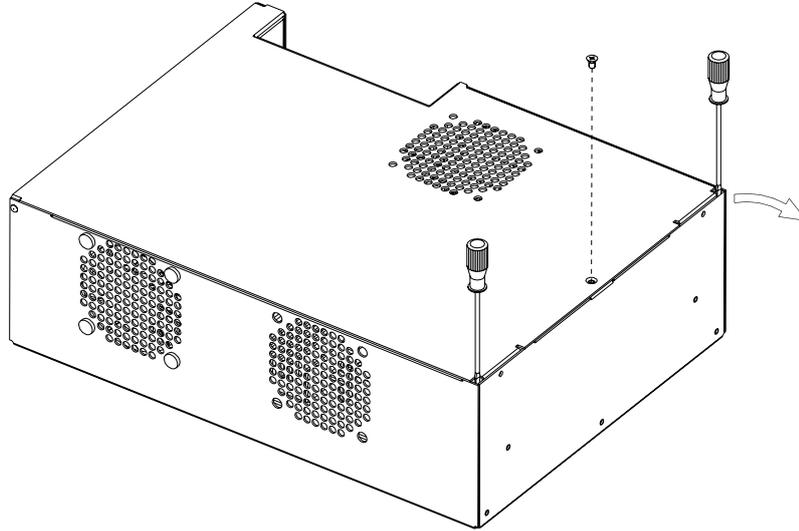
The electrical connection must be made using the Gefran prewired cable (see specific document) or by following the constructive specifications of the cable.





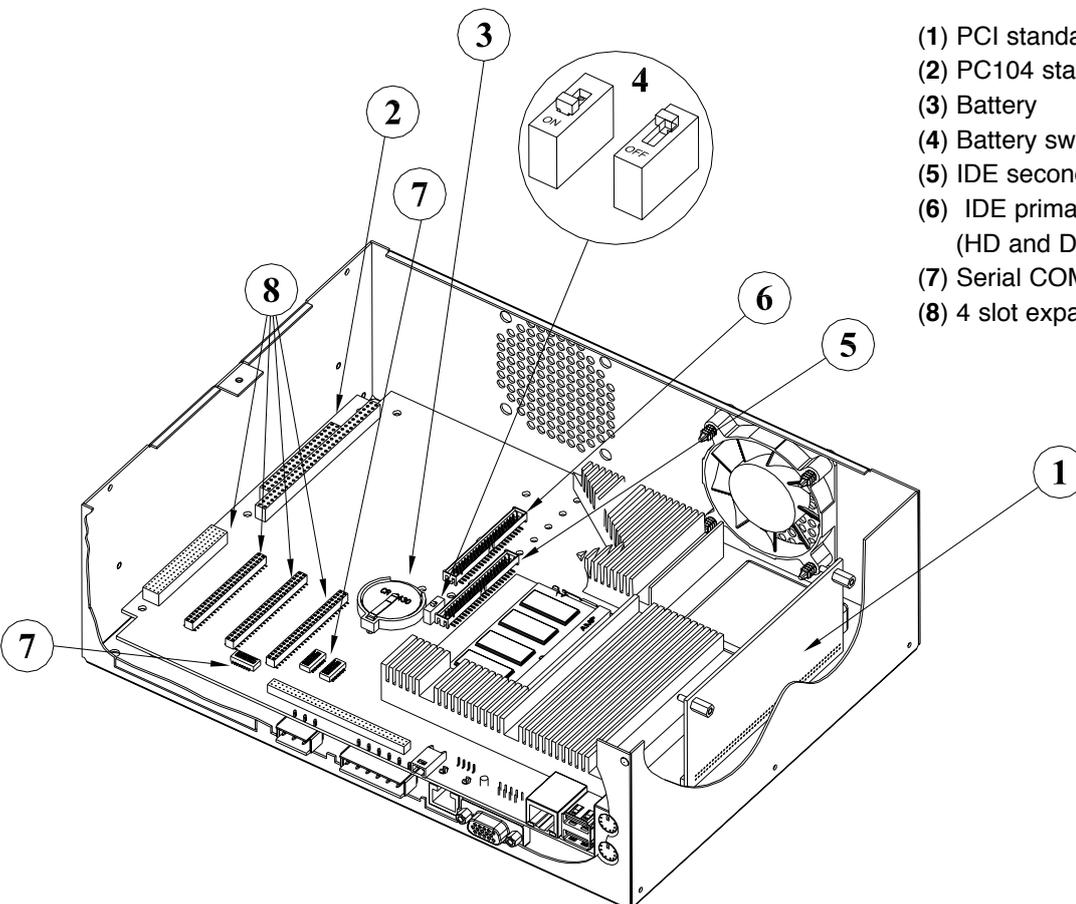
Before opening the system we recommend that you switch off Digistar II, DIGISTAR II Control or GF-BOX using the ON/OFF switch provided.

In order to access the internal resources of the system, a flat blade screwdriver is required.



In order to open the rear cover insert the screwdriver into the slots A and B, apply some pressure in the direction indicated by the arrow.

**Expansions and internal resources**



- (1) PCI standard slot
- (2) PC104 standard slot
- (3) Battery
- (4) Battery switch
- (5) IDE secondary 40 pin connector
- (6) IDE primary 44 pin connector (HD and DOM installation)
- (7) Serial COM1 configuration
- (8) 4 slot expansion custom gefran

## Mass memory

The motherboard contains a 44 pole 2mm pitch connector and a 40 pole 2.54mm pitch connector upon which signals are provided for a 2.5" hard disk and/or a solid disk with an IDE AT interface compatible type Disk On Module (DOM).

It is possible to install hard disks of any capacity, in compliance with these standards.

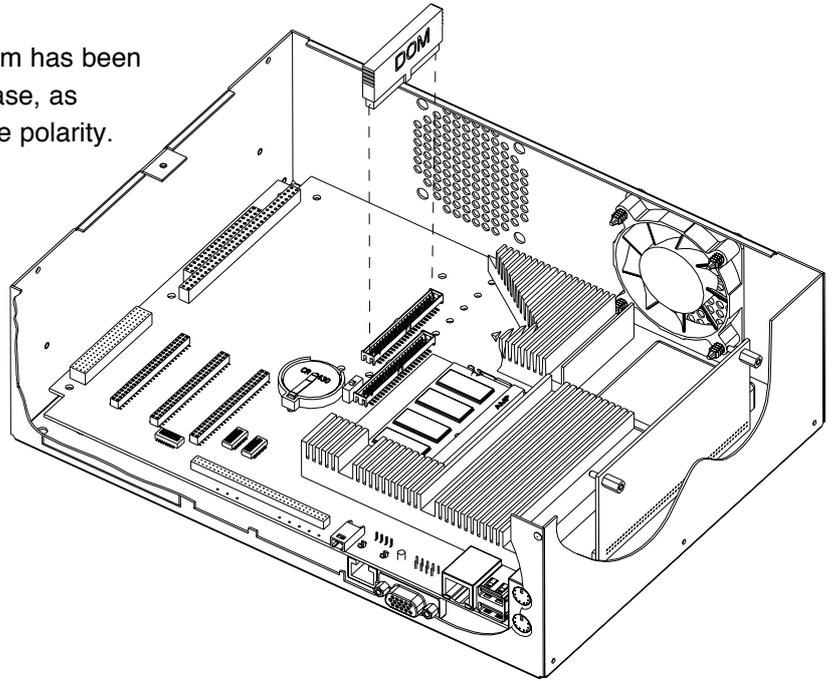
The 44 pin connector is mapped as an IDE PRIMARY interface, use this to install the hard disk or the DOMs.

The 40 pin connector is mapped as an IDE SECONDARY interface, use this for expansion chains, such as CDs for example.

The product is normally provided complete with DOM or HD in compliance with order code.

## Installation of the DOM

To install or replace the DOM once the system has been opened, insert the module into the relative case, as indicated in the drawing below, respecting the polarity.



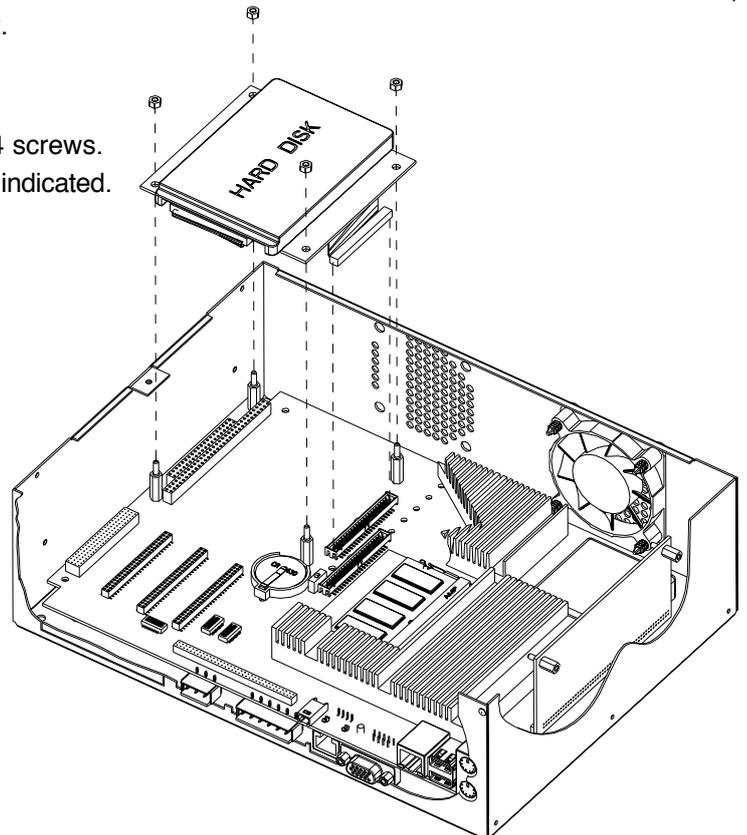
## INSTALLATION OF A HD

Gefran provides a kit complete with HD and mechanical support with a connection cable for complete installation of the same.



The HD is installed onto the towers provided for the PC104 module. When PC104 modules are installed, the HD block is always installed as the last.

For installation, insert the HD, correctly mounted onto its support, into the 4 towers and block using 4 screws. Connect the cable provided, respecting the polarities indicated.

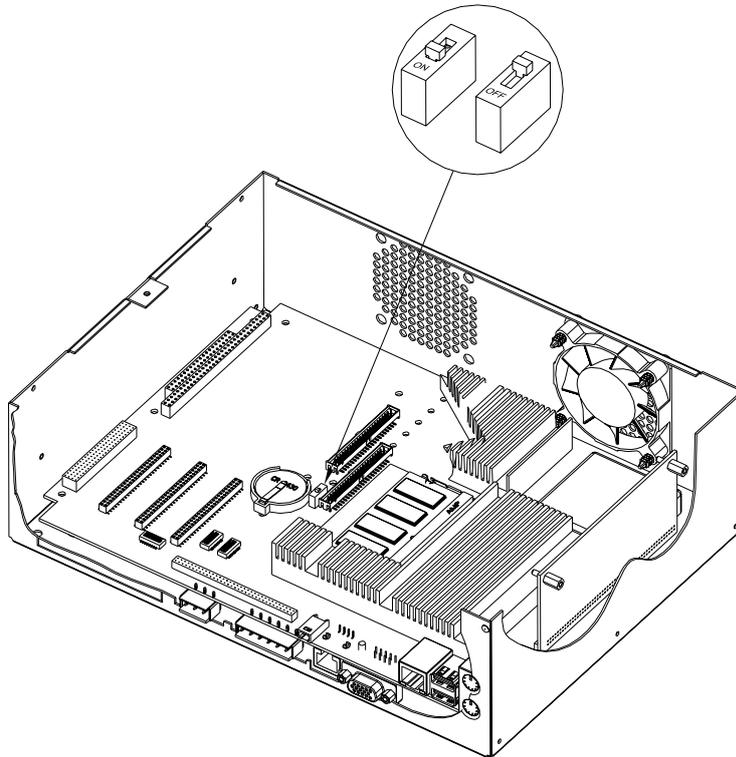


## Battery switch

The system is fitted with an internal battery in order to store the BIOS data and the data in the static RAM memory.



The battery must be activated through the switch indicated in the drawing below.



To replace the battery, if necessary, proceed in the following way:

- get hold of a new battery, a button battery diam. 24mm, 3V lithium (CR2430)
- switch off the system using the correct switch
- position the battery switch to the OFF position
- remove the battery and insert the new one
- move the battery switch to the ON position
- turn the system on.



You have five minutes to change the battery before losing all data.

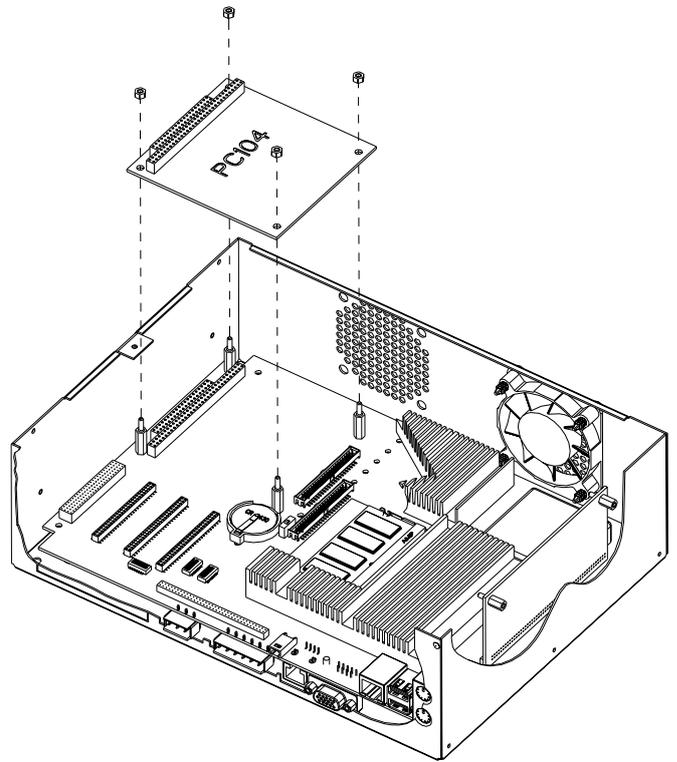
### Installation of the PC104 boards

The motherboard has one slot for PC104 boards with the support towers already installed. To install the card, insert it into the relative electrical and mechanical housings. Fix the card using 4 towers, or if necessary 4 3ma nuts.



Any input/output must be installed using the spaces provided for the customs slots.

Turn on the system and install any drivers or software provided by the manufacturer of the card.

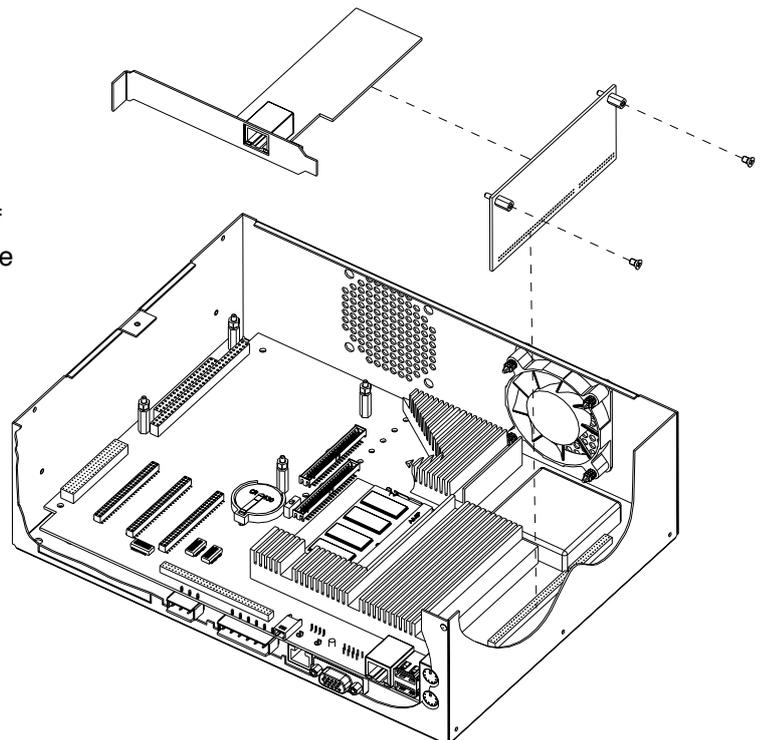


### Installation of PCI boards

The basic card has one slot for PCI boards  
The system supports PCI boards with a maximum length of 150mm  
For PCI installation:



- Remove the neutral cover.
- Install the card by inserting it into the relative electrical and mechanical housings.
- Fix the card using the screw provided.
- Power the system, when you start Access the CMOS system SETUP (as described in the following paragraphs) and, in the menu "PNP/PCI Configuration", enable the "Reset Configuration Data"
- Turn on the system and install any drivers of software provided by the manufacturer of the card

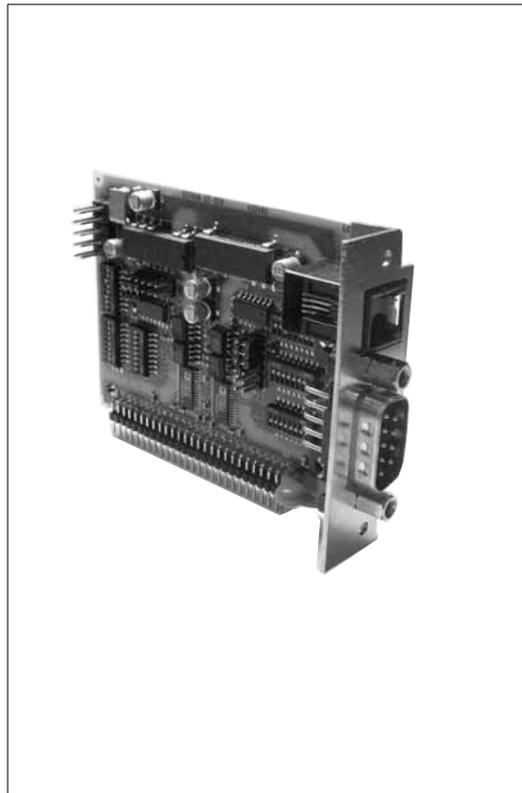


### **Installation of Gefran CUSTOM boards**

The motherboard has 4 custom slots for the installation of further resources.

To install the custom boards:

- Remove the neutral cover
- Install the card by inserting it into the relative electric and mechanical housings
- For installation of specific cards; consult the appropriate pages in the relevant handbook
- Fix the card using the screws in the holes provided.



### Main applications

- Connection of Gefran industrial PCs to RS-232, RS-485, RS-422 network

### Main characteristics

- Configurable optically-isolated serial ports
- Selectable interfaces: RS-232, RS-485, RS-422
- COM3 connector: D-Sub 9 pin male
- COM4 connectors: RJ10
- High communication speed: from 9.6 kBaud to 115 kBaud

### PROFILE

GT-SER 2 is a serial bus expansion module for industrial PCs and for Digistar II and GT-C control terminals.

It provides 2 optically isolated serial channels protected against overvoltages.

It performs control and interfaces the communication network with RS-232, RS-485, RS-422 standards, selectable with DIP-Switches.

The serial connection uses a D-Sub 9 pin male connector for COM3 and an RJ10 4 pin connector for COM4.

In the Digistar II, GT-C and GFBOX terminals, the expansion module inserts in the expansion 2 custom slot (EXP 2).

### TECHNICAL DATA

- 2 configurable optically-isolated serial ports
- DIP-Switches to configure RS-232, RS-485, RS-422 and to enable automatic transmission/reception and from software via dip-switch
- Connectors: COM3 D-Sub 9 pin male, COM4 RJ10 4 pin
- High communication speed: from 9.6 kBaud to 115 kBaud
- Configurable terminations and polarisations

### MECHANICAL CHARACTERISTICS

- Dimensions: 60x20x80 mm
- Weight (\*): 51g (including anti-static bag supplied as standard)
- Fastening: screw
- Connector for connection to Gefran industrial PCs

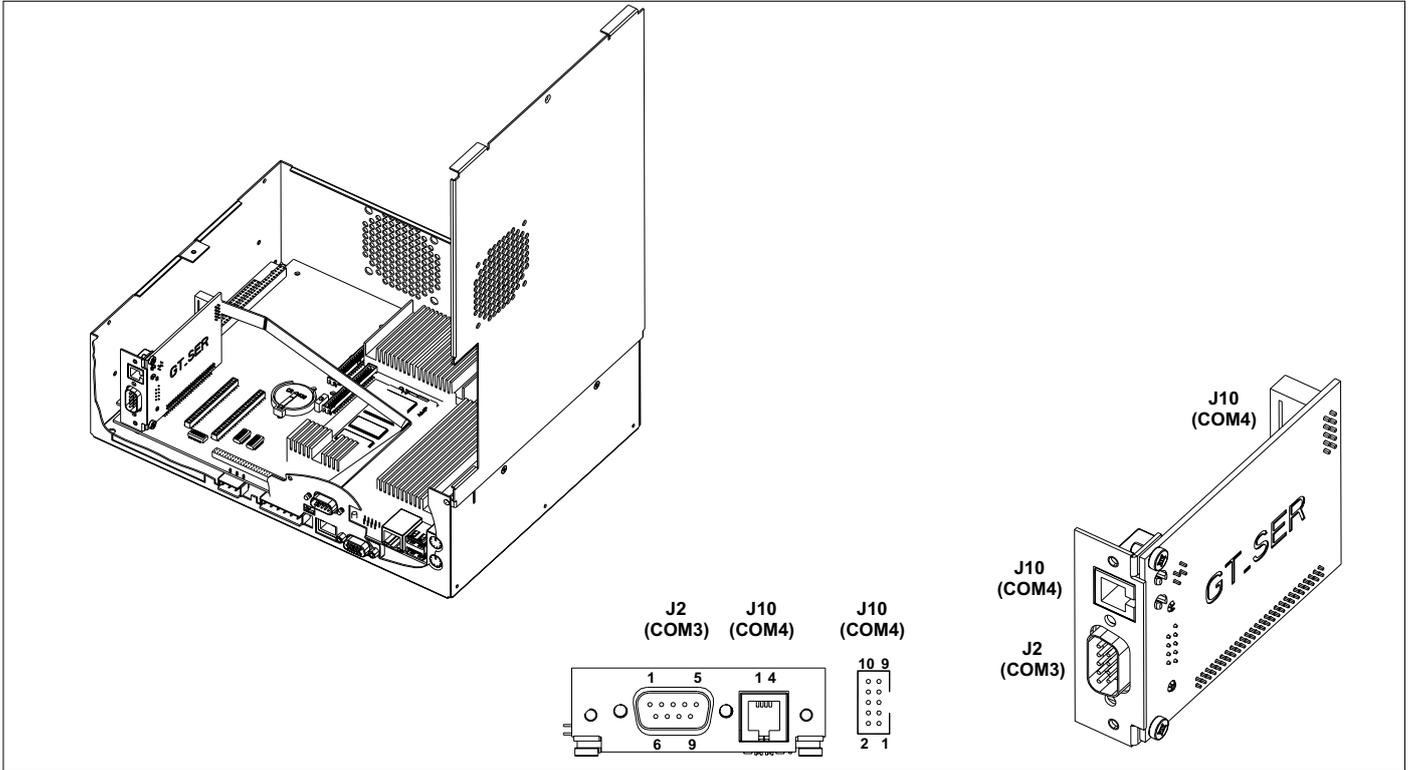
### AMBIENT CONDITIONS

- Working temperature: 0...50°C
- Storage temperature: -20...70°C
- Humidity: 90% RH max., non-condensing

### INSTALLATION and CONNECTIONS

The GT-SER 2 expansion module installs in Gefran Digistar II, GT-C and GF-BOX industrial PCs in slot EXP 2.

## INSTALLATION and CONNECTIONS



**DB-9 connector: Serial COM3**

PIN	RS-232	RS-422	RS-485
1	DCD	RX-	RX- / TX-
2	RXD	RX+	RX+ / TX+
3	TXD	TX+	RX+ / TX+
4	DTR	TX-	RX- / TX-
5	GND	GND	GND
6	DSR		
7	RTS		
8	CTS		
9	RI		

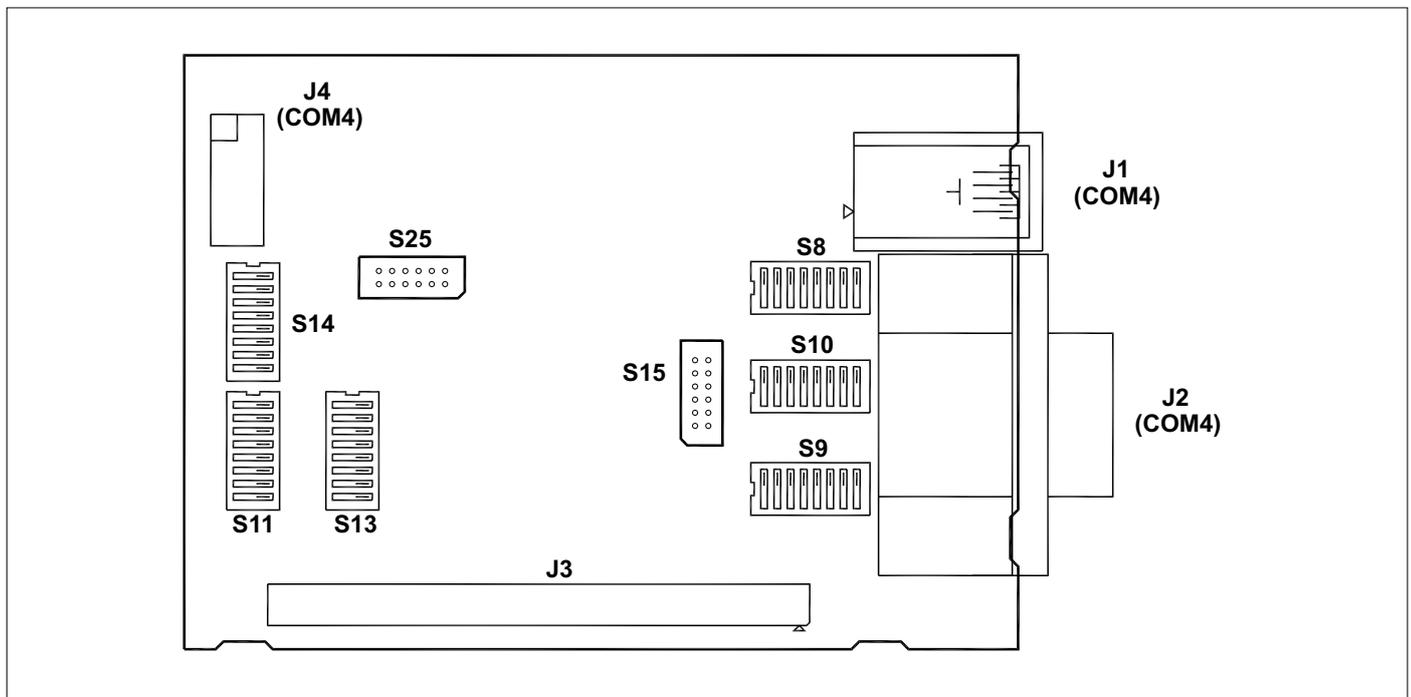
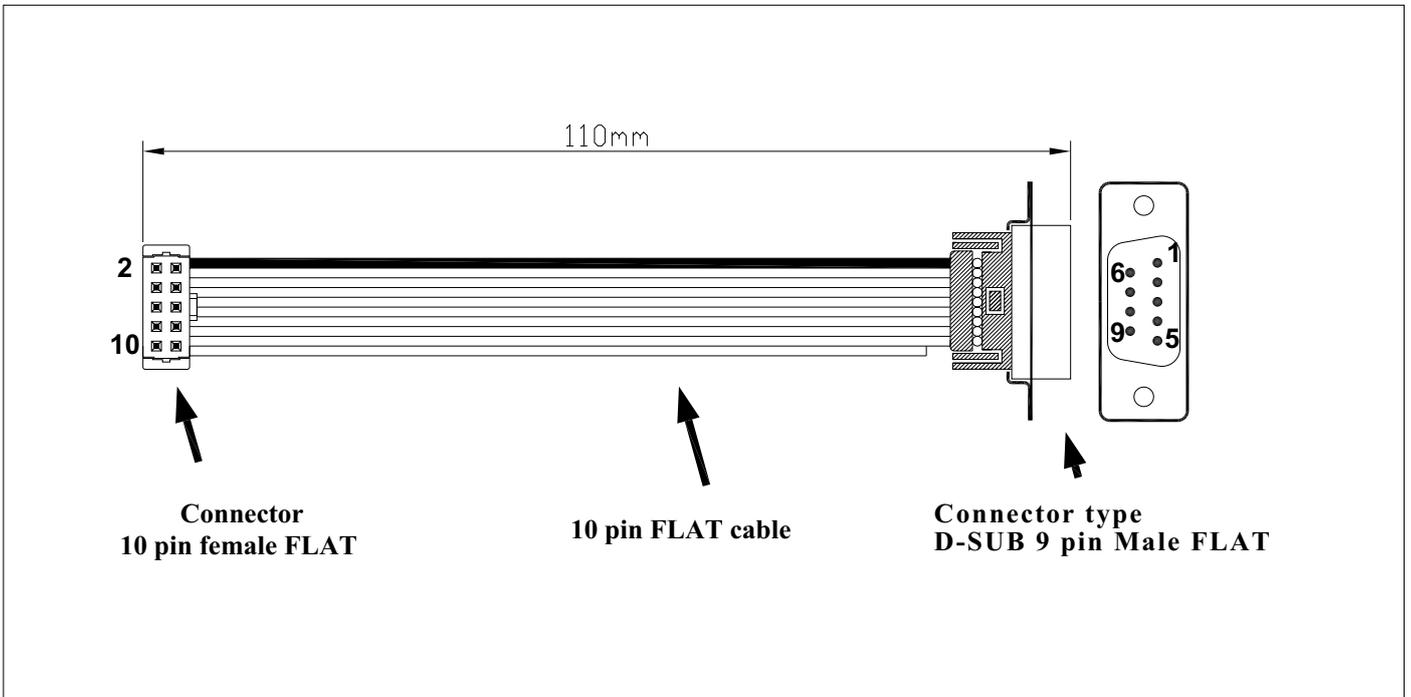
**2x5 connector: Serial COM4**

PIN	RS-232	RS-422	RS-485
1	DCD	RX-	RX- / TX-
2	DSR		
3	RXD	RX+	RX+ / TX+
4	RTS		
5	TXD	TX+	RX+ / TX+
6	CTS		
7	DTR	TX-	RX- / TX-
8	RI		
9	GND	GND	GND
10	GND	GND	GND

**RJ-10 connector: Serial COM4**

PIN	RS-232	RS-422	RS-485
1	GND	NOT USED	GND
2	RXD		RX+ / TX+
3	TXD		RX- / TX-
4	RTS		VCC

COM4 on the RJ10 connector is limited to signals TX and RX. Full functionality of COM4 can be restored via the adapter cable.



S15 (COM3)			
	Pin	Value	Description
Transmission	1	ON	Polarisation + Present
		OFF	Polarisation + Absent
	2	ON	Termination Present
		OFF	Termination Absent
	3	ON	Polarisation + Present
		OFF	Polarisation + Absent
Reception	4	ON	Polarisation + Present
		OFF	Polarisation + Absent
	5	ON	Termination Present
		OFF	Termination Absent
	6	ON	Polarisation + Present
		OFF	Polarisation + Absent

S25 (COM4)			
	Pin	Value	Description
Transmission	1	ON	Polarisation + Present
		OFF	Polarisation + Absent
	2	ON	Termination Present
		OFF	Termination Absent
	3	ON	Polarisation + Present
		OFF	Polarisation + Absent
Reception	4	ON	Polarisation + Present
		OFF	Polarisation + Absent
	5	ON	Termination Present
		OFF	Termination Absent
	6	ON	Polarisation + Present
		OFF	Polarisation + Absent

Note: Terminations and polarisations must be installed only at the heads of the line.

Selection COM3				
SWITCH	PIN	RS-232	RS-485	RS-422
9	All	ON	OFF	OFF
10	All	OFF	ON	ON
8	1 and 2	X	ON	OFF

Selection COM4				
SWITCH	PIN	RS-232	RS-485	RS-422
13	All	ON	OFF	OFF
11	All	OFF	ON	ON
14	1 and 2	X	ON	OFF

Methods to enable Transmission/Reception in RS232/RS485/RS422

Configurations S8 (COM3)		
Pin	Value	Description
3	OFF	Auto-enable Transmission and Reception
4	ON	
5	ON	Reception enabled from RTS
6	OFF	

Configurations S14 (COM4)		
Pin	Value	Description
3	OFF	Auto-enable Transmission and Reception
4	ON	
5	ON	Reception enabled from RTS
6	OFF	
8	ON	COM4 disabled
8	OFF	COM4 enabled

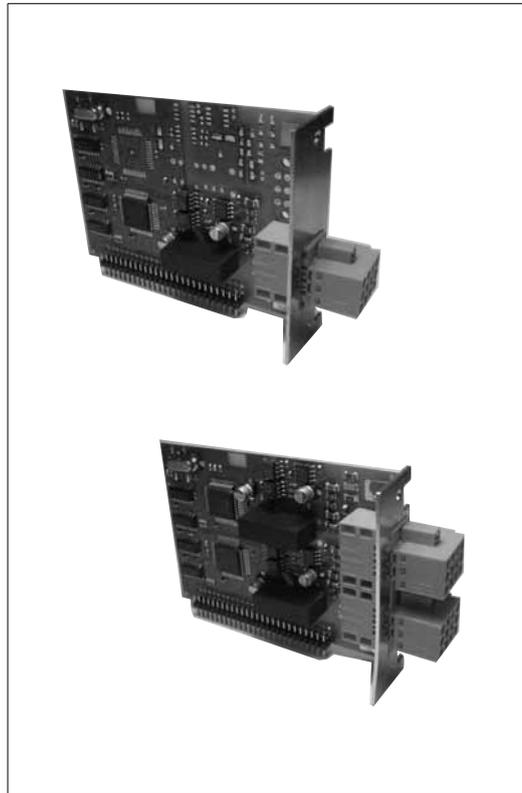
**Attention:**

the electronic base uses COM4 for the touch controller. If installed, do not enable the corresponding serial on GT-SER 2.

**ORDER CODE**

2 SERIAL channels	Code module	<b>GT-SER2</b>	<b>F029908</b>	Code
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GEFRAN reserves the right to make any kind of design or functional modification at any moment without prior notice



### Main applications

- Connection of Gefran DIGISTAR II, GT-C and GF-BOX industrial PCs to a CAN-bus network

### Main characteristics

- Optically-isolated CAN channels
- Removable 3x2 pin female connector with spring clamp (no screws)
- Conforms to standard CAN 2.0 (b)

### PROFILE

GT-CAN 1 and GT-CAN 2 are expansion modules to CAN field buses dedicated to Gefran DIGISTAR II, GT-C and GF-BOX industrial PCs. They supply 1 and 2 optically-isolated CAN channels, respectively, and interface the field bus in conformity to 2.0 (b) specifications. The field bus connection uses a removable 3x2 pin female connector with spring clamp (no screws). The expansion module inserts in Gefran DIGISTAR II, GT-C and GF\_BOX terminals in expansion slots 3 and 4 for a maximum of 4 CAN channels.

### TECHNICAL DATA

- GT-CAN 1: 1 Optically-isolated CAN channel
- GT-CAN 2: 2 Optically-isolated CAN channels
- Channels protected against overcurrents
- Removable 3x2 pin female connector with spring clamp (no screws)
- CAN controller CAN: INTEL 82527 (communication speed: up to 1 Mbaud, CAN 2.0 (b) specifications)
- High immunity to electromagnetic interference

### MECHANICAL CHARACTERISTICS

- Dimensions: 60x20x80 mm
- Weight -CAN 1: 45g (including anti-static bag supplied as standard)
- Weight GT-CAN 2: 49g (including anti-static bag supplied as standard)
- Fastening: screw
- Connector for connection to Gefran industrial PCs

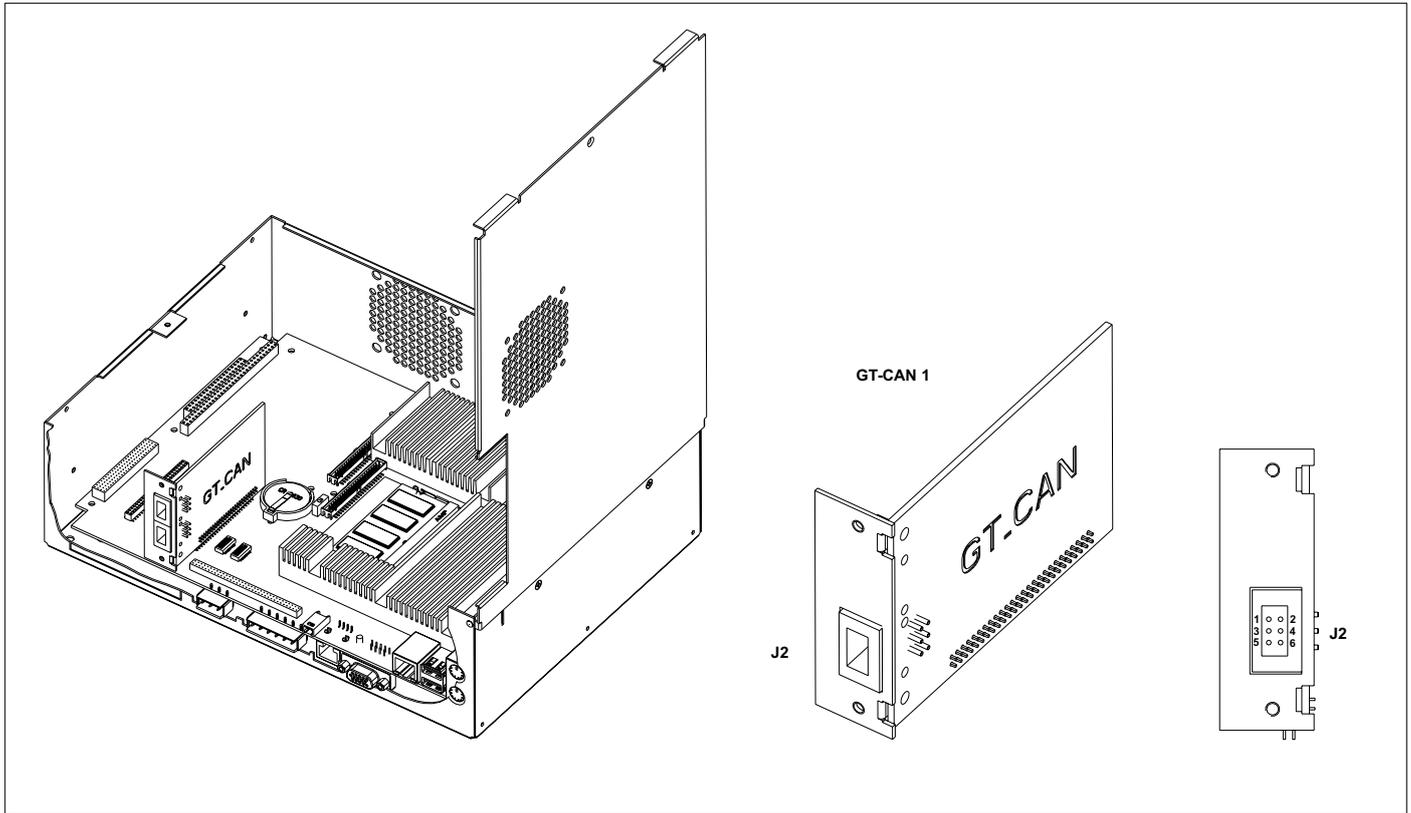
### AMBIENT CONDITIONS

- Working temperature: 0...50°C
- Storage temperature: -20...70°C
- Humidity: 90% RH max., non-condensing

### INSTALLATION and CONNECTIONS

The GT-CAN 1 and GT-CAN 2 expansion modules install in Gefran Digistar II, GT-C and GF-BOX control terminals in custom expansion slots 3 and 4 for a maximum of 4 CAN channels.

## INSTALLATION and CONNECTIONS



Description		
PIN	CAN1 (J2) Channel	CAN2 (J3**) Channel
1	TERMINATION (*)	TERMINATION (*)
2	TERMINATION (*)	TERMINATION (*)
3	CANH1	CANH2
4	CANL1	CANL2
5	SHIELD	SHIELD
6	CANGND1	CANGND2

(\*) To insert the termination, short circuit pins 1-2: the termination inserts only in the ends of the CAN line.

(\*\*) J3 not present in version GT-CAN 1

### Connection cables

Use an approved CAN cable for the connection

### ORDER CODE

2 CAN channels	Code module	<b>GT-CAN 2</b>	F029826	Code
1 CAN channel	Code module	<b>GT-CAN 1</b>	F029825	Code

GEFRAN reserves the right to make any kind of design or functional modification at any moment without prior notice



### Main applications

- Connection of Gefran industrial PCs to Ethernet

### Main characteristics

- Standard Ethernet channels
- RJ45 connector with LEDs
- Communication speed: 10/100 Mbps
- Conforms to standard IEEE 802.3

### PROFILE

GT-ETH 1 and GT-ETH 2 expansion modules to Ethernet networks dedicated to Gefran industrial PCs.

They supply 1 and 2 Ethernet channels, respectively, in conformity to standard IEEE 802.3.

The Ethernet connection uses RJ45 connectors.

The expansion module inserts in Gefran DIGISTAR II, GT-C and GF\_BOX industrial PCs in custom expansion slot 1 (EXP 1).

### TECHNICAL DATA

- GT-ETH 1: 1 Ethernet channel, not optically isolated
- GT-ETH 2: 2 Ethernet channels, not optically isolated
- Ethernet controller: INTEL 82551 (Communication speed: 10/100 Mbps auto-configurable)
- 8 pin RJ45 connector with Data and Link LEDs

### MECHANICAL CHARACTERISTICS

- Dimensions: 60x20x80 mm
- Weight GT-ETH 1: 46g (including anti-static bag supplied as standard)
- Weight GT-ETH 2: 53g (including anti-static bag supplied as standard)
- Fastening: screw
- Connector for connection to Gefran industrial PCs

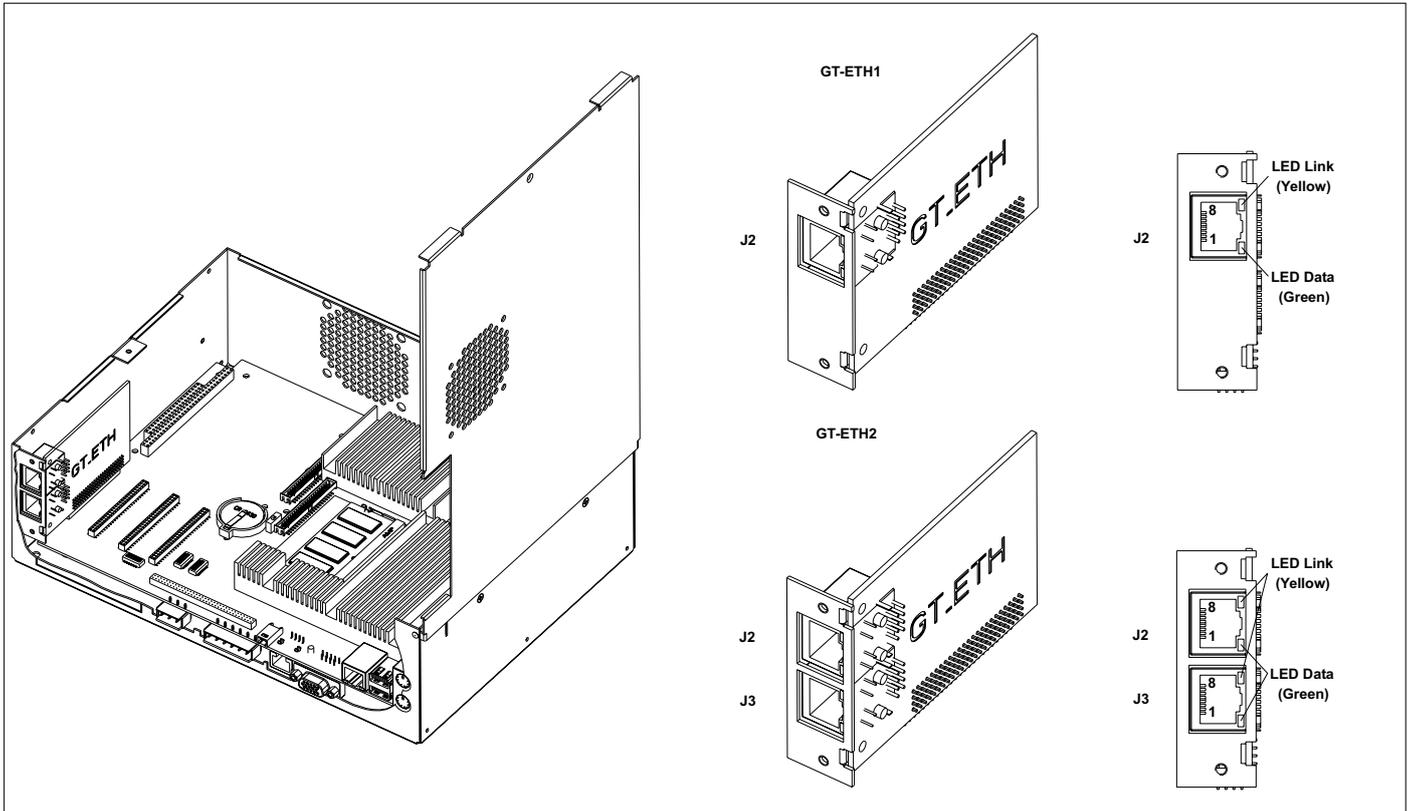
### AMBIENT CONDITIONS

- Working temperature: 0...50°C
- Storage temperature: -20...70°C
- Humidity: 90% RH max., non-condensing

### INSTALLATION and CONNECTIONS

The GT-ETH 1 and GT-ETH 2 expansion modules insert in Gefran DIGISTAR II, GT-C and GF\_BOX terminals in custom expansion slot 1 (EXP 1).

## INSTALLATION and CONNECTIONS



Channel ETH 1 (J2)/ ETH 2 (J3*)		
Pin	Name	Description
1	TX_D+	Transmit data +
2	TX_D-	Transmit data -
3	RX_D+	Receive data +
4	N.C.	Not connected
5	N.C.	Not connected
6	RX_D-	Receive data -
7	N.C.	Not connected
8	N.C.	Not connected
LED green left		Data
LED yellow right		Link

\*J3 not present in version GT-ETH 1

### Connection cable

Use an Ethernet Base-T (CAT. 6) cable for the connection. The wiring scheme must conform to standard TIA/EIA-T568-A

### ORDER CODE

2 ETHERNET Channels	Code module	<b>GT-ETH 2</b>	F029910	Code
1 ETHERNET Channel	Code module	<b>GT-ETH 1</b>	F029909	Code

GEFRAN reserves the right to make any kind of design or functional modification at any moment without prior notice

## 5. CMOS SYSTEM SETUP

The BIOS setup is used to set the system resources.

*Gefran supplies the system with the BIOS settings defined for the type of hardware used. Any change to these settings must be done very carefully and by an expert, because incorrect settings may cause the system to malfunction.*

### Default Settings

- Standard CMOS Features/Halt On: [No Errors]
- Advanced Chipset Feature/System Reset Times: [2]
- Chipset Features Setup/On-Chip VGA/On-Chip Frame Buffer Size: [8MB]
- Chipset Features Setup/On-Chip VGA/Boot Display: [CRT+LCD]
- Chipset Features Setup/On-Chip VGA/Panel Number: [800x600 18-bit]
- Integrated Peripherals/On-Chip IDE Device: [Disable]
- Integrated Peripherals/Onboard Device/AC97 Audio: [Disable]
- Integrated Peripherals/Onboard Device/Init Display First: [Onboard/AGP]
- Integrated Peripherals/Onboard Device/External FDD Controller: [Disabled]
- Integrated Peripherals/Onboard Device/Onboard Parallel Port: [Disabled]
- Integrated Peripherals/Onboard Device/Onboard FDD Controller: [Disabled]
- Integrated Peripherals/Onboard Device/Onboard Serial Port 3: [3E8]
- Integrated Peripherals/Onboard Device/Serial Port 3 Use IRQ: [IRQ10]
- Integrated Peripherals/Onboard Device/Onboard Serial Port 4: [2E8]
- Integrated Peripherals/Onboard Device/Serial Port 4 Use IRQ: [IRQ11]
- PnP/PCI Configurations/Resources Controlled By: [Manual]
- PnP/PCI Configurations/IRQ Resources/IRQ-5 Assigned to:
  - [Legacy ISA] (with VxWorks)
  - [PCI/ISA PnP] (with Microsoft™ Windows™)
- PnP/PCI Configurations/IRQ Resources/IRQ-9 Assigned to:
  - [Legacy ISA] (with VxWorks)
  - [PCI/ISA PnP] (with Microsoft™ Windows™)

### PHOENIX – AwardBIOS CMOS Setup Utility

Setup is accessed by pressing the DEL key at power-on.

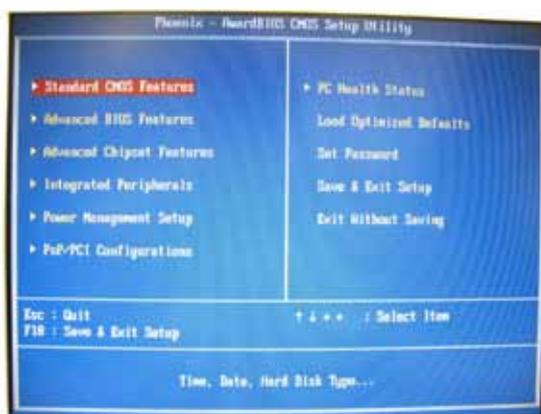
After this, access the MAIN menu.

Methods for setting and selecting parameters are described at the foot of the menus.

Once the required item is selected with the ENTER key, the selection of settings is enabled.

The BIOS is divided into various menus to optimize configuration of the board.

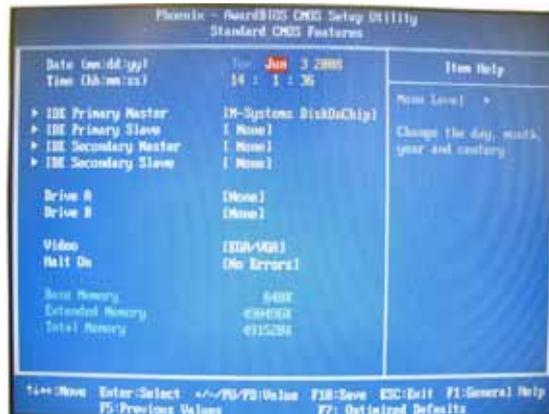
The main menu is divided into the following categories:



- Standard CMOS Features: Basic system configurations.
- Advanced BIOS Features: Advanced system features.
- Advanced Chipset Features: Access to chipset registers to optimize system performance.
- Integrated Peripherals: Settings for peripherals integrated in system CPU.
- Power Management Setup: Settings to manage system power.
- PnP / PCI Configuration: Present only if the system supports PnP / PCI.
- PC Health Status: Monitors system status.
- Load Optimized Defaults: Use this menu to load the BIOS default values set in the factory to optimize system performance.

- Set Password: Sets user and supervisor passwords.
- Save & Exit Setup: Saves BIOS settings and exits Setup.
- Exit Without Save: Exits Setup without saving BIOS settings.

## Standard CMOS Setup



- **Date:** system date setting (the field for the day of the week cannot be changed by the user: it is defined by the BIOS based on the other date information).
- **Time:** system clock setting.
- **IDE Primary Master/Slave, IDE Secondary Master/Slave:** hard disk parameter settings

A sub-menu is displayed.

### - Hard Disk sub-menu

The AUTO setting seeks and automatically sets the HD parameters installed during the boot phase.

You can set the HD parameters manually by activating the USER setting. Parameters are normally available on the product label.

After the hard disk is installed, you have to run the partitioning procedures and install the selected operating system.

- **Drive A, B:** selection of drivers of disks installed in system.
- **Video:** selection of type of video system in system
- **Halt On:** setting of hardware error conditions (detected during self-test at system start-up) that cause the system to stop.

## BIOS Features Setup



- **Virus Warning:** VIRUS Warning settings to protect sections of IDE hard disk.
- **CPU L1 & L2 Cache:** enables level 1 and 2 cache.
- **CPU L3 Cache:** enables level 3 cache.
- **Quick Power On Self Test:** quickens self-test procedure at power-on.
- **First/Second/Third Boot Device:** sequence of devices from which BIOS tries to load the operating system (Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled).
- **Swap Floppy Drive:** swaps the association between driver and logic name (if the system has two floppy drives)
- **Boot Up Floppy Seek:** seeks disks during system boot
- **Boot Up NumLock Status:** NumLock status at system boot.

- **Gate A20 Option:** selects GateA20 controller from among chipset and keyboard controllers
- **Typematic Rate Setting:** controls the speed and delay with which the system repeats a key kept pressed.
- **Security Option:** : password request at every system boot or only at access to system setup
- **APIC Mode:** selects APIC mode.
- **OS Select for DRAM > 64MB:** selects operating system with more than 64MB of dynamic RAM.
- **Video BIOS Shadow:** enables copy of BIOS video from ROM to RAM.
- **C8000-CBFFF Shadow:** : enables copy of system components firmware in memory segments from C8000 to CBFFF.
- **Small Logo(EPA) Show:** enables display of logo on screen.
- **EEPROM Write Protect:** protects EEPROM memory containing system configuration.

## Chipset Features Setup



- **DRAM Timing Selectable:** timing of dynamic RAM selectable from SPD or manually.
- **CAS Latency Time:** selects number of CAS latency cycles (with synchronous DRAM)
- **Active to Precharge Delay:** delay in addressing to different lines of a memory chip.
- **DRAM RAS-to-CAS Delay:** delay between CAS and RAS strobe signals.
- **DRAM RAS Precharge:** DRAM RAS precharge time.
- **DRAM Data Integrity Mode:** checks ECC characteristics of memory controller.
- **MGM Core Frequency:** MGM core frequency setting ( 400/266/133/200 MHz).
- **System BIOS Cacheable:** enables caching of BIOS in memory zone from F0000h to FFFFFh.
- **Video BIOS Cacheable:** enables caching of Video BIOS.
- **Memory Hole At 15M-16M:** reserves memory area for ROM of ISA adapter.
- **Delayed Transaction:** enables delayed transactions (conformity to standard PCI version 2.1)
- **Delay Prior to Thermal:** selects 4, 8, 16, 32 minutes.
- **AGP Aperture Size:** real size of graphic aperture for a particular GMCH configuration.
- **On-Chip VGA:** enables VGA controller.
- **On-Chip Frame Buffer Size:** selects size of On-Chip Frame Buffer (1MB or 8MB).
- **Boot Display:** selects display device.
- **Panel Number:** selects display resolution



## Integrated Peripherals



- **OnChip IDE Device:** separate activation of two IDE channels.
- **Onboard Device:** setting of system devices.



- **Super I/O Device Onboard LAN Boot ROM:** reduces system boot time.



## Super I/O Device

- **External FDC Controller:** “Enabled” activates on-board FDD, “Disabled” activates add-on FDD
- **Onboard Serial Port 1 & 2:** selects address and interrupt of first /second serial port.
- **UART Mode Select:** selects UART mode among IrDA, ASKIR and Normal.
- **RxD, TxD Active:** activates polarity of IR transmission/reception
- **IR Transmission Delay:** enables delay of IR transmission.
- **IR2 Duplex Mode:** enables half/full duplex function in IR transmission
- **Use IR Pins:** selects IR transmission pins among IR-Rx2Tx2, RxD2 and TxD2.
- **Onboard Parallel Port:** selects parallel port interrupt.
- **Onboard Parallel Mode:** selects parallel port function mode among 3BC/IRQ7, 378/IRQ7, 278/IRQ5, Disabled.
- **EPP Mode Select:** selects EPP version.
- **ECP Mode Use DMA:** selects DMA channel
- **Secondary I/O Controller:** enables secondary I/O controller.

## Power Management Setu

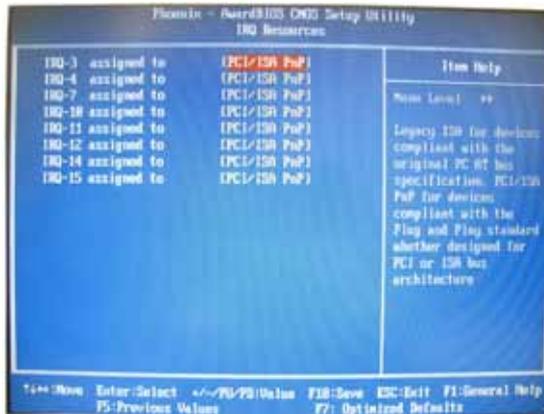


- **Power Supply Type:** selects power supply type.
- **Power Management:** selects power supply mode
- **Video Off Method:** selects display off conditions.
- **Video Off In Suspend:** selects system inactivity time after which display switches off.
- **Modem Use IRQ:** selects IRQ assigned to system modem.
- **Suspend Mode:** selects system inactivity time after which the system switches off.
- **CPU THRM-Throttling:** selects processor clock frequency when in STR mode

# PNP/PCI Configuration



- Reset Configuration Data: enable to reset extended system configuration data (ESCD) at exit from setup.
- Resource Controlled By: selects control device.
- PCI/VGA Palette Snoop: normally disabled.
- PCI IRQ Activated by: [Level]



## PC Health Status

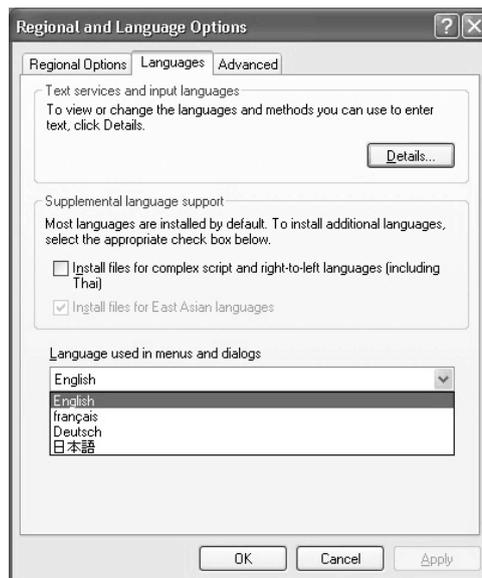


- Shutdown Temperature: selects the CPU temperature at which the system switches off.

## Language selection in Microsoft™ Windows™ XPPro™ MUI Pack

The MUI (Multilanguage User Interfaces) pack lets you set the language with which the operator interfaces with the operating system. To check that the active language is English: open the Control Panel on the Start menu and select "Date, Time, Language and Regional Options," then select "Add to other languages," which will display the following window.

Check on the pull-down menu that all installed or required languages are present.



If English is not the active language, activate it on the menu and reboot the system.

If English is the active language, close the window and shut down the system using the standard Windows™ procedure.

## XP Embedded Write Filter

The system is equipped with a write filter manager that redirects all writing done on disk C: to a RAM buffer.

This lets you use XP with a Flash disk, without risk of breaking after too many writes.

The system starts clean after every reboot, ignoring any change made during the previous run.

As a result, you can switch off the system without having to run a shutdown.

If you have to save files (reports, recipes, etc.), you can use disk D:, not protected by the write filter. Be careful not to save too frequently (this is a Flash disk too).

Any application programmes and data files should be loaded on disk D:.

```
ewfmgr c: -commitanddisable -live
```

and then proceed to installation. When done, remember to enable the filter:

```
ewfmgr c: -enable
```

and reboot to activate the change.

## 6 • TECHNICAL CHARACTERISTICS

<b>PROCESSORS</b>	<ul style="list-style-type: none"> <li>• INTEL PENTIUM CELERON™ 600 MHz (2Mb CACHE L2)</li> <li>• INTEL CELERON MOBILE™ 1500 MHz (2Mb CACHE L2)</li> </ul>	
<b>CHIPSET</b>	<ul style="list-style-type: none"> <li>• Intel 852GM, 400 MHz FSB</li> </ul>	
<b>VIDEO CONTROLLER</b>	<ul style="list-style-type: none"> <li>• INTEL EXTREME GRAPHICS 2 CONTROLLER (FINO A 64MB DRAM VIDEO)</li> </ul>	
<b>DISPLAY</b>	<p>(Only for <b>DIGISTAR II</b> and <b>DIGISTAR II Control</b>)</p> <ul style="list-style-type: none"> <li>• 10,4" colors TFT res. 800x600 pixel, 262K col.; view corner 120° / 100° H/V, contrast 500:1, Luminosity 230 cd/m2</li> <li>• 12,1" colors TFT res. 800x600 pixel, 262K col.; view corner 140° / 110° H/V, contrast 500:1, Luminosity 600 cd/m2</li> <li>• 15" colors TFT res. 1024x768 pixel, 262K col.; view corner 130° / 120° H/V, contrast 500:1, Luminosity 350 cd/m2</li> </ul>	
<b>DYNAMIC RAM</b>	<ul style="list-style-type: none"> <li>• DDR 256 MB</li> <li>• DDR 512 MB</li> <li>• DDR 1024 MB</li> </ul>	
<b>STATIC RAM</b>	<ul style="list-style-type: none"> <li>• 256Kb with battery backup (lithium)</li> </ul>	
<b>MASS MEMORY</b>	<p><b>SSD</b></p> <ul style="list-style-type: none"> <li>• DOM 128 Mb (Only for DIGISTAR II Control and GF-BOX)</li> <li>• DOM 1 Gb (Only for GF-BOX and DIGISTAR II)</li> <li>• DOM 2 Gb (Only for GF-BOX and DIGISTAR II)</li> <li>• DOM 4 Gb (Only for GF-BOX and DIGISTAR II)</li> </ul> <p><b>HD</b></p> <ul style="list-style-type: none"> <li>• HD 2.5" IDE optional. (Only for DIGISTAR II and GF-BOX)</li> </ul>	
<b>WATCH DOG</b>	<ul style="list-style-type: none"> <li>• Timer with generation of hardware reset.</li> </ul>	
<b>PORT I/O CUSTOM</b>	<ul style="list-style-type: none"> <li>• Serial synchronous port for management of matrixes max 128 keys and 64 leds</li> <li>• Logical output 24Vdc open collector max 100mA opto-insulated for programmable timed switch, can be activated also when the system is switched off.</li> </ul>	
<b>KEYBOARD</b>	<p>(Only for <b>DIGISTAR II</b> and <b>DIGISTAR II Control</b>)</p> <ul style="list-style-type: none"> <li>• 10 function keys</li> <li>• 2 operative keys TAB, ENTER</li> <li>• Expandable through use of the DIGITAST keyboard</li> </ul>	
<b>EXPANSIONS</b>	<ul style="list-style-type: none"> <li>• 1 Slot PCI (Only for GF-BOX and DIGISTAR II)</li> <li>• 1 Slot PC104 16 Bit (max 3 cards)</li> <li>• 4 Slot custom GEFran</li> </ul>	
<b>GEFRAN EXPANSION CARDS</b>	<ul style="list-style-type: none"> <li>• Module GT-SER2: 2 serial ports RS232/RS422/RS485 opto-insulated</li> <li>• Module GT-CAN1: 1 channel CAN L2 opto-insulated (Escluso DIGISTAR II)</li> <li>• Module GT-CAN2: 2 channels CAN L2 opto-insulated</li> <li>• Module GT-ETH1: 1 channel Ethernet</li> <li>• Module GT-ETH2: 2 channels Ethernet</li> </ul>	
<b>POWER SUPPLY</b>	<ul style="list-style-type: none"> <li>• 18.36 Vdc 2.5A max. with protection of polarity</li> <li>• Short circuit protection with re-settable PTC</li> <li>• On-off switch</li> </ul>	
<b>OPERATING SYSTEM</b>	<ul style="list-style-type: none"> <li>• VxWorks (Only for GF-BOX and DIGISTAR II Control)</li> <li>• Microsoft™ Windows™ XP Pro™ MUI Pack (Only for DIGISTAR II and GF-BOX)</li> <li>• Microsoft™ Windows™ XP Embedded™ (english) (Only for DIGISTAR II and GF-BOX)</li> </ul>	
<b>ENVIRONMENTAL AMBIENTAL CONDITION</b>	<ul style="list-style-type: none"> <li>• Protection IP 65 front panel</li> <li>• Operating temperature: Model PCE 600MHz: 0°C..+50°C Model PCS 1500MHz: 0°C..+45°C</li> <li>• Storage temperature -10°C..+70°C</li> <li>• 90% Max. humidity non condensing</li> </ul>	
<b>DIMENSIONS AND WEIGHT</b>	<p><b>DIGISTAR II and DIGISTAR II CONTROL</b></p> <ul style="list-style-type: none"> <li>• With display 10,4": 309x239x117 mm - 4Kg max</li> <li>• With display 12,1": 335x295x117 mm - 5Kg max</li> <li>• With display 15": 395x340x117 mm - 7Kg max</li> </ul>	<p><b>GF-BOX</b></p> <ul style="list-style-type: none"> <li>• 300x205x90 mm - 2,5 Kg max</li> </ul>
<b>CONFORMITY</b>	<p> In conformity to ECC 2004/108/CE (EMC) and 2006/95/CE (LVD) with reference to: <b>EN 61131-2</b> (product) <b>EN 61010-1</b> (safety).</p>	

## 7 • TECHNICAL/COMMERCIAL INFORMATION DIGISTAR II



This section contains information regarding the Product order codes and the main accessories available.

### DIGISTAR II CONTROL: ORDER CODE

DGS II C		MOD	SO	μP	RAM	DOM	EXP1	EXP2	EXP3	EXP4
		-	-	-	-	-	-	-	-	-

MODEL		CUSTOM SLOT 4 EXPANSION	
10.4" color TFT 800x600	10	00	none
10.4" color TFT 800x600 + touch screen	10T	C1	GT-CAN1: 1 channel CAN
12.1" color TFT 800x600	12	C2	GT-CAN2: 2 channels CAN
12.1" color TFT 800x600 + touch screen	12T		
15" color TFT 1024x768	15		
15" color TFT 800x600 + touch screen	15T		

OPERATING SYSTEM		CUSTOM SLOT 4 EXPANSION	
Rom-dos	00	00	none
VxWorks™	VW	C1	GT-CAN1: 1 channel CAN
		C2	GT-CAN2: 2 channels CAN

PROCESSOR		CUSTOM SLOT 2 EXPANSION	
Intel Pentium Celeron™ 600 MHz	PCE	00	none
Intel Celeron Mobile™ 1500 MHz	PCS	SR	GT-SER2: 2 serial channels (1)

DRAM		CUSTOM SLOT 1 EXPANSION	
DDR 256 MB	R256	00	none
DDR 512 MB	R512	E1	GT-ETH1: 1 Ethernet channel
DDR 1024 MB	R1G0	E2	GT-ETH2: 2 Ethernet channels

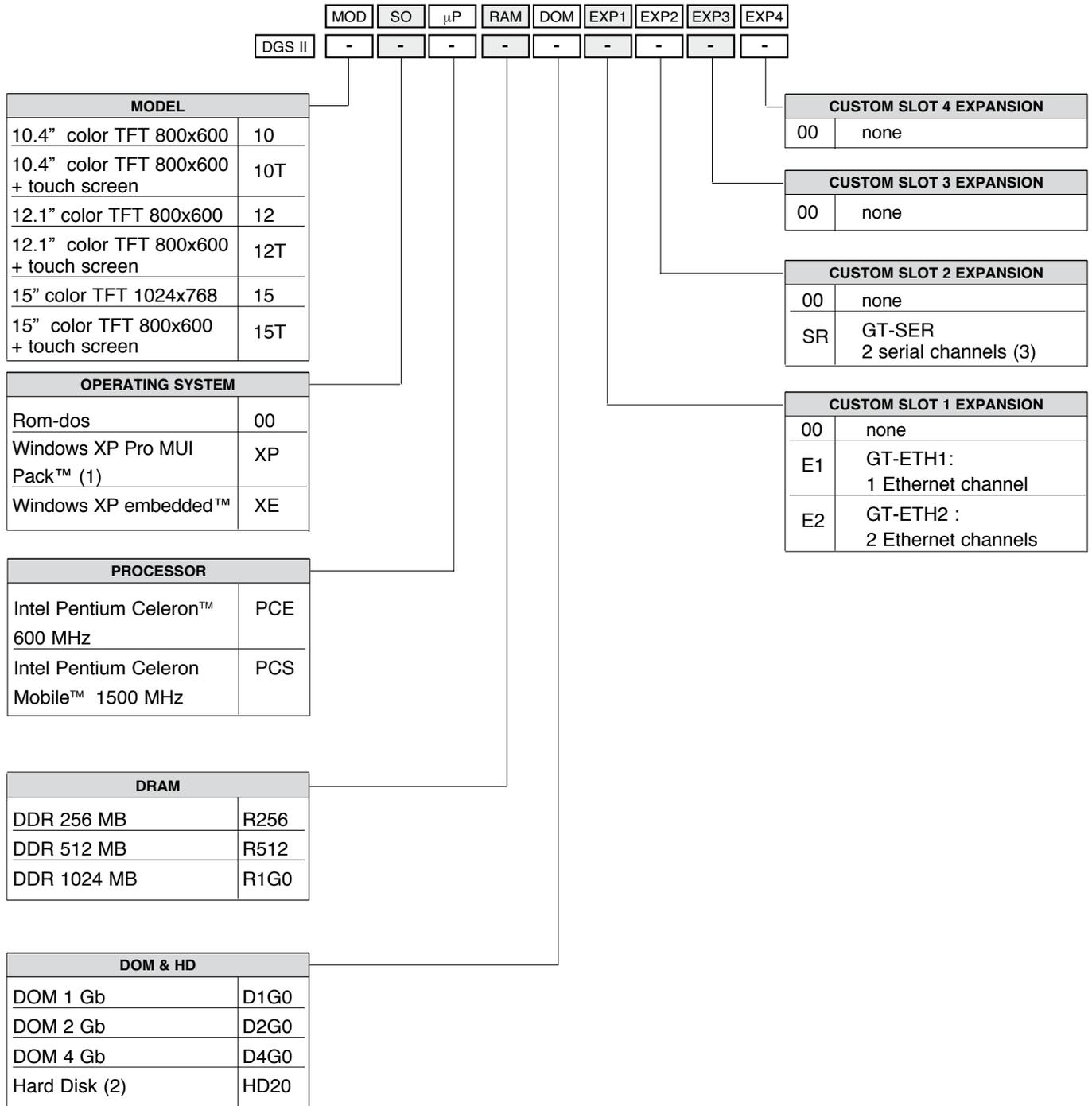
  

DOM & HD	
DOM 128 Mb	D128
DOM 1 Gb	D1G0
DOM 2 Gb	D2G0
DOM 4 Gb	D4G0

(1) Only 1 channel with touch screen

Kindly contact GEFRAN for information on available codes.

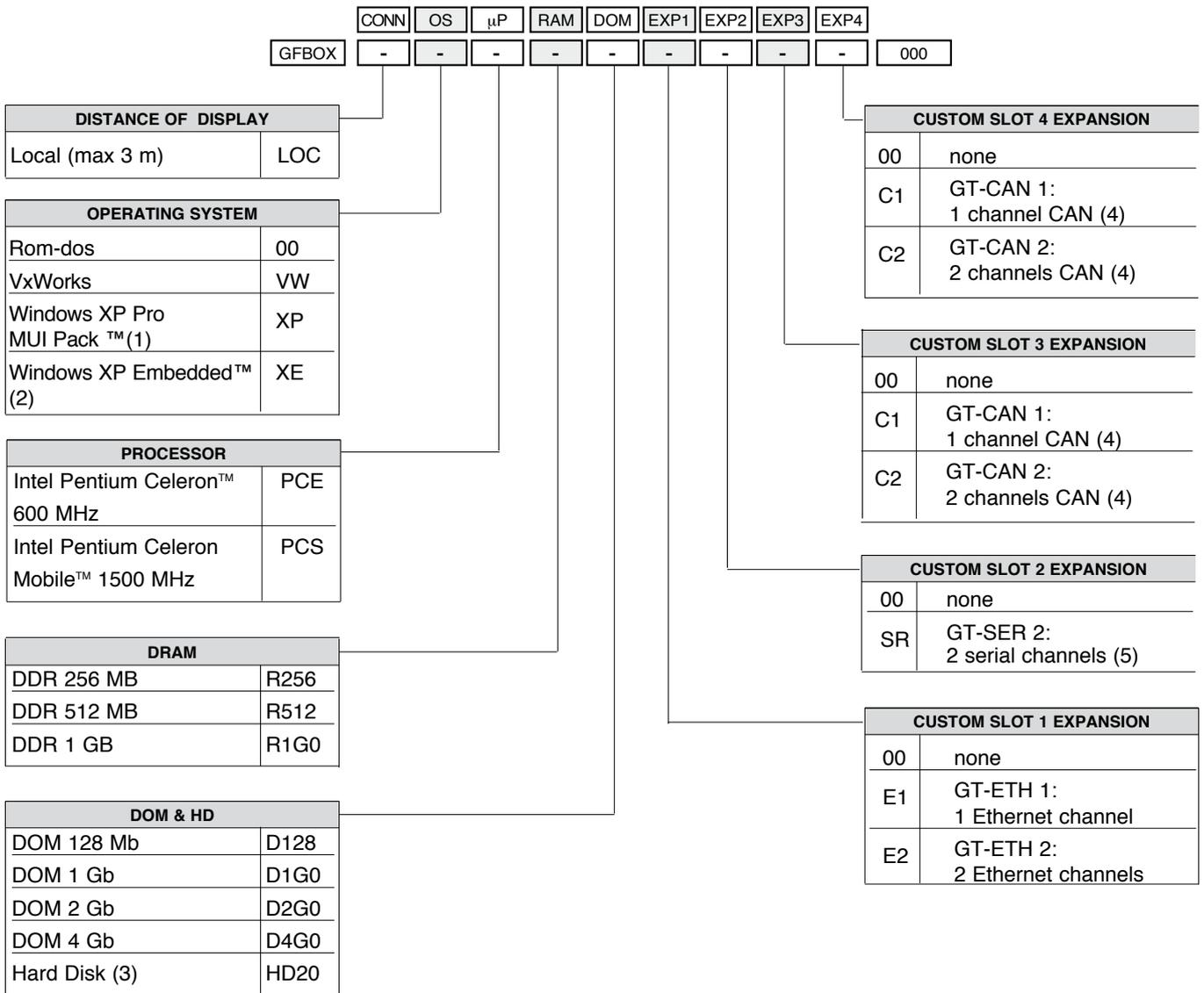
## DIGISTAR II: ORDER CODE



- (1) Requires HD20 option
- (2) Minimum hard disk capacity depends on market conditions
- (3) Only 1 channel with touch screen

Kindly contact GEFTRAN for information on available codes.

## GF-BOX: ORDER CODE



- (1) Requires options R256 and HD20
- (2) Requires options R256 and D1G0
- (3) Minimum hard disk capacity depends on availability
- (4) Not available with XP and XE option
- (5) Only for 1 channel with touch screen

Kindly contact GEFTRAN for information on available codes.