Easy-Loading Thermal Printer

Elektronik und Feinwerktechnik GmbH

Module und Geräte zum Eingeben, Auswerten, Anzeigen und Ausdrucken analoger und digitaler Daten.

GPT-4352(-60)

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Operating Manual

Activities at GeBE

Printer: GeBE Elektronik und Feinwerktechnik GmbH • E-Mail: sales.ef@gebe.net • www.oem-printer.com
Key boards: GeBE Computer & Peripherie GmbH • E-Mail: sales@tastaturen.com • www.tastaturen.com
Internet applications: www.GeBE.net

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1 Content

2 Safety Instructions

Read operating manual before operation!
During installation: Always disconnect the power.
Safe operation of this device is only warranteed, if the instructions in this operating manual have been complied with. Usage in accordance with the operating manual is required for product warranty.
If the user attempts to repair the product, all factory warranties will be null and void.
Only use manufacturer's parts and accessories! Make sure that the printer is saved against overvoltage after EN/IEC 60950.

- The device may only be opened or repaired by authorized personal. Never open the device or carry out repairs yourself. Always contact an authorized technical servicer.
You can find all necessary service information in the chapter "Service and Maintenance".
- Before the device is turned on, make sure that the system voltage of your installation matches the supply voltage of the device. The device characteristics are printed on the name plate and in the technical data.
  - The name plate is located on the underside of the device.
  - For the technical data of the device, refer to the chapter "Technical Data".
- The peripheral devices that are connected to the interfaces and the DC circuits of this device have to meet the requirements for safety extra-low voltage (SELV) in accordance with EN/IEC 60950.
- Switching off the device does not completely disconnect it from the power supply. Your device is only disconnected completely, when the power plug is unplugged.
- Please make sure that the power supply cable is run in a way that nobody trips over it, and it cannot be damaged by other devices.

- During operation, surfaces in the surrounding area of the print head may heat up. Therefore, direct contact with the print head must be avoided to prevent burning accidents.
Do not put heat sensitive objects close to this heat source.
- Avoid constant high humidity and condensation. Protect the device from being splashed and from getting in contact with chemicals.
- Only use spare parts and accessories supplied or authorized by GeBE. The use of unauthorized parts or accessories may affect the function and safety of the device. All parts included are listed in the chapter "Packing List", while the original accessories are listed in the chapter "Parts and Accessories ".

- It is no longer possible to safely operate the device, if:
  - the housing has been damaged.
  - moisture reached the inside of the device
  - smoke is coming from the inside of the device
  - the power supply cord is damaged
  - the device stopped working properly.

Turn off the device immediately, when a failure occurs, as mentioned above, and contact GeBE customer service. See chapter "Service and Maintenance".
- We explicitly state that all product liability and guaratee claims are null and void, if the device has not been used in accordance with the instructions in this operating manual or on the device itself!

- Risk of explosion in case of incorrect battery exchange.
- Please read how to safely exchange batteries in the chapter "Exchanging Batteries".

- The printer versions with an infrared interface contain a light emitting diode of laser category I. This infrared transmitter does not pose a threat for the human eye or skin, even with long periods of exposure.
- The device complies with laser category I in accordance with EN60825-1/A2:2001
- It is prohibited to operate the device, if the housing is damaged. Please contact GeBE Service. You can find the information under "Service and Maintenance". For the description of the infrared interface, please refer to page 10.

3 Packing List

All printer sets GPT-4352(-60) contain:

- tansparent LEVER (exchangeable)
- 5 paper rolls: GPR-T01-058-031-007-060A resp. GPR-T01-058-060-007-060A for GPT-4352-60
- operating manual: SMAN-E-413

In addition the different sets contain:

GPT-4352

SET1 GPT-4352-LV-82-24-LC-at

- GKA-406: RS232 interface cabel, 500 mm
- GKA-410: Power cable, one side open, 250 mm

GPT-4352-60

SET1 GPT-4352-60-LV-82-24-LC-at

- GKA-406: RS232 interface cabel, 500 mm
- GKA-410: Power cable, one side open, 250 mm

SET2 GPT-4352-LV-82-24-V.24-EVAL-at

- GKA-406: RS-232 interface cable 500 mm
- GKA-416: Connecting cable for charger, 190 mm
- GNA-4,8V-1,6Ah-NiMH: Battery, 4x Mignon (AA)
- GNG-6V-0,8A-U: Charger

SET2 GPT-4352-60-LV-82-24-V.24-EVAL-at

- GKA-406: RS-232 interface cable 500 mm
- GKA-416: Connecting cable for charger, 190 mm
- GNA-4,8V-1,6Ah-NiMH: Battery, 4x Mignon (AA)
- GNG-6V-0,8A-U: Charger

SET3 GPT-4352-LV-82-24-SPI(4,5V)-EVAL-at

- GKA-407: Connecting cable 12pol. to Centronics Adapter
- GPT-4382-10: Centronics Adapter 25 pol Sub-D Stift
- GKA-410: Power cable, one side open, 250 mm

SET3 GPT-4352-60-LV-82-24-SPI(4,5V)-EVAL-at

- GKA-407: Connecting cable 12pol. to Centronics Adapter
- GPT-4382-10: Centronics Adapter 25 pol Sub-D Stift
- GKA-410: Power cable, one side open, 250 mm

SET4 GPT-4352-LV-82-24-IR2-EVAL-at

- GCT-4382-20: external IR- adapter
- GKA-408: connecting cable to external IR
- GKA-416: connecting cable for charger, 190 mm
- GNA-4,8V-1,6Ah-NiMH: battery, 4x Mignon (AA)
- GNG-6V-0,8A-U: Charger

SET4 GPT-4352-60-LV-82-24-IR2-EVAL-at

- GCT-4382-20: external IR- adapter
- GKA-408: connecting cable to external IR
- GKA-416: connecting cable for charger, 190 mm
- GNA-4,8V-1,6Ah-NiMH: battery, 4x Mignon (AA)
- GNG-6V-0,8A-U: Charger

Article No.	Nomenclature	Interface						Batteries		Features			
		RS232, V.24	TTL	Infraredon board and connector	**SPI (for Centronics adapter)**	SPI (for external modules)	8 KByte EEPROM*	LiIon	NiMH charging circuit	Sleep Mode	Rewinder control	Z/Zeile: 24, (32, 42, 54)	Farbe Anthrazit RAL7016
12165	GPT-4352-LV-82-24-V.24-at	X								X		X	X
12186	GPT-4352-LV-82-24-V.24-EVAL-at	X				X	X		X	X	X	X	X
11336	GPT-4352-LV-82-24-IR2-EVAL-at	X		X		X	X		X	X	X	X	X
12178	GPT-4352-LV-82-24-TTL(4,5V)-EVAL-at		X		X	X	X		X	X	X	X	X

While unpacking, check if all parts on the packing list are present and undamaged. Make sure that all parts delivered are removed from the packaging. Claims for compensation that are based on damage that occured during shipment can only be asserted, if the delivery service is notified immediately.

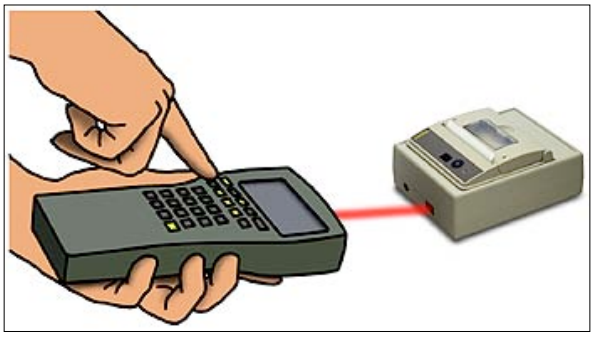
Please write a damage report and send it back to the supplier together with the defective part(s).

4 Installation

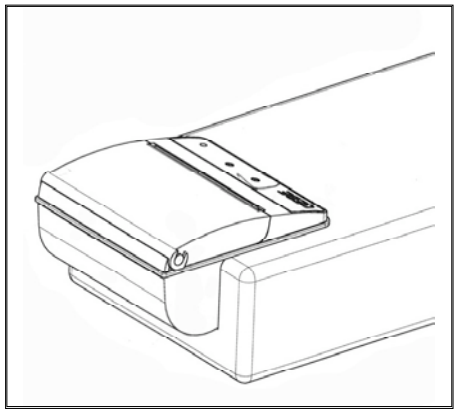
4.1 Installation in a front panel

The plastic housing of the GPT-4352 printer can be installed with two screws in an easily done cut-out of a front panel with up to 4 mm thickness. The contact surface is flat. The edge of the housing juts out by 1 mm, covering the space between the panel and the housing.

The housing is pushed into the cut-out from the outside, and then easily screwed on.
The two holes of 2.8 mm diameter allow the use of M 2.5 screws.



Application in a pocket printer with infrared interface.



4.2 Partial installation in plastic casing

As shown in the picture, the printer housing can also be installed at the edge of a casing. This installation variant has the part of the printer housing that contains the paper roll extending beyond the unit casing. This saves room in the device casing for the installation of other components.
To facilitate installation in different casing shapes, the outer wall of the paper storage was left smooth below the bearing collar. The housing can project about 19 mm from the casing edge, since about half of the paper storage can be used, right up to the slanting slot for inserting the mounting plate.

4.3 Example for installation and application

As the pictures show, the installation types are almost unlimited. The advantage of the complete thermal printer Mini Mulde in its plastic housing consists above all of the fact that it becomes possible to use the practical Easyloading technology of the printer mechanisms also in applications withsmaller numbers of items.
For this small GeBE-printer a paper rewinder is available, so that also a printer with presentation stage, like shown above, can be used e.g. in a control panel housing. The Mini MULDE is used also in the Desktop Printer Series POCKET and is suitable for Handheld computers with printing station.

5 Connecting the Printer

During installation:
Always disconnect the power !!

5.1 Connecting the power supply (1)

The printer can be supplied with fixed voltage from a power supply or a battery. Battery or power supply are plugged into the same connector. Through the voltage supply connection, the printer can be supplied with voltages between 3.5 V (for printers with Centronics adapters with 4.5V) and 7.2 V. The supply for the logic chip is produced on the board. The power cable GKA-410, included in sets 1 and 3, is connected to the connector J4 (3 red wires for + 3.5 -7.2 VDC , 3 black grounding wires, and one white cable for an NTC 6.8 KOhm of a Ni-MH battery). For simple power connections, the white wire remains unconnected. We recommend keeping the length of the line as short as possible. The longer the line, the higher the line resistance, causing bad print quality or even printer failure.

Attention: Avoid confusing the connection poles, because it can cause immediate damage to the printer. Carefully check the power supply connection before you turn on the printer.

5.2 Power Down (2)

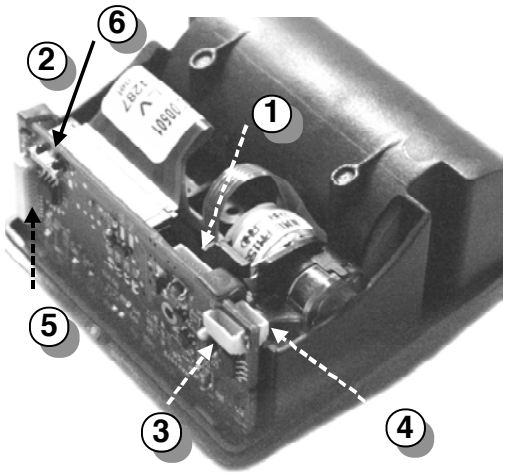
Starting with hardware version V1.4c the standard version does not support the power-off mode.
The controller comes with different levels of power saving modes (power down modes):

- idle mode (8 mA typical)
- sleep mode (20 µA typical)
- power-off mode (0.1 µA typical), optional configuration required

During the receiving of data and during printing the controller is in an active status.
With the parallel interface, the ballast resistor R35 is not part of the standard configuration.
Connect jumper J3 for idle mode.
Remove jumper J3 for sleep mode.
Power-off logic ist not in the standard configuration (replaced by R37).

5.3 Connecting the Charger (3)

EVAL printers have a standard charging circuit for 4 Ni-MH cells. An operation with 3 or 5 cells is also possible. The charging is performed by the uncontrolled plug-in power supply GNG-6V-0,5A-U that has a special internal resistance. It is connected through the cable GKA-416 to the connector J1. The charging time for a 1500 mA/h battery will be about 5 hours. During the charging process, the LED on the control panel will display different pulses that show, whether the fast or trickle charging mode is active.



ATTENTION !

Never use a fixed-voltage power supply for charging the batteries. The charging circuit is a "simple - switch control", meaning that the current limitation is not done in the charge control of the printer, but in the plug-in power supply.
Please use the suitable GeBE power supply GNG-6.0V-0,5A-U.

6 Printer Configuration

6.1 Configuration over Initialisation-TextPreserve "TINIT " (Software Switch)

All commands for initializing the controller are filed in the text file "TINIT ". TINIT is available in the flash memory of the printer and in the EEPROM (Note: Low-priced controllers with minimal functionality may not have an EEPROM). An entry in the EEPROM cancels entries in the Flash. For example, if a printer is to print double height and inverse in data mode, the relevant commands are entered in the text file "TINIT". After a RESET, the controller will first carry out its basic initialization, read the solder bridge settings, and then process the commands in the "TINIT". Therefore, the commands in the "TINIT" have final authority regarding the valid settings. Custom settings can also be achieved through entries in the text file "TINIT". If an EEPROM is available, "TINIT" can also be altered through an interface.
The basic initialization of the controller corresponds with the following instructions that are initially not entered in the "TINIT: <ESC> "A"; <ESC> "D" "0"; <ESC> "H" "0"; <ESC> "I" "0";
<ESC> "L" "0"; <ESC> "M" "0"; <ESC> "N" 0 0; <ESC> "P" 1; <ESC> "S"0; <ESC> "W" "0".

6.2 Entries into the "TINIT", which are primarily used

Comm. (ASCII)	Comm. (hex)	Function
<ESC>"Y"n	1B 59 1E	Set blackening of the paper to a medium value of 25
<ESC> "[" $40$18	1B 5B 40 18	Power consumption to 64 pixels, medium print dynamics and print quality
<ESC> "e" $05	1B 45 05	Power-down after 5 seconds regardless of the buffer status, if enabled
<ESC> "r" "1"	charging circuit configurated for NIMH cells	
<ESC> "]" $0 $0	1B 5D 00 00	Activate the transmitter of the serial interface

6.3 Solder Bridges Sleep Mode, Baud Rate, Text/Data Mode, Adapter SELECT

There are four 0-Ohm bridges and two jumpers on the controller board (optional) .
These bridges will each be inquired once during RESET.

	Name	Meaning	Comment
Br9	enable Power Down	Without Br9, the controller after a Power Up in sleep modus	Default: connected (disable)
BR204	text/data mode	Data mode: printing rotated by 180°, first line at the bottom page margin	Default: open (text mode)
BR203	RS232/Centr	Choice, if the RS232 or the Centronics through SPI (GCT-4382-10) is active.	only connected on version SPI/Centronics
BR201/ BR202	Baud rate	Baud 9600 19200 115200 57600 BR201 OFF ON ON OFF BR202 OFF OFF ON ON Br201, Br202, Br203 closed and Br204 open Br202, Br203 closed and Br201,Br204 open: activate the OPD-Menue®	Default: open (OFF) Other baud rates on request. Always inquired during RESET.
RN1	Signal- and Handhake lines	Equipped with TTL levels for the serial interface	only connected on version TTL/serial and SPI/ Centronics
R9 Br206 Br205	V ADAPTER Select	Pin 4 of the serial interface can either be connected with RTS (Handshake input of the controller) orwith Vcc or Vp (power supply for external interface adapter)	Standard: nur R9 bestückt - Handshakeeingang wird zum Aufwecken benutzt. Option:only Br206 connected - Vp an J2 / Pin 4 Option:only Br205 connected- Vcc an J2 / Pin 4
Br221	/DTR_Blue	Over this line the controller sends the signal for Sleep modus oft the Blutooth Modul GSW-Blue1.	Default: open - Option: onlyr Br221 connected - /DTR_Blue at J2 / Pin 4

Jumper J3 zur Auswahl des Power Down Modus

	Name	Meaning	Comment
J3	Power Down Mode	Determines together with Br9, if idle mode, sleep mode, or power-off mode is going to be used.	Standard: plugged in = Idle Mode in combination with bestückter Br9. open = Sleep Mode

7 Interfaces

7.1 Serial Interface

RS232
The interface cable that comes with the set connects plug-in connector with the RS232 connection (COM interface of a PC) on the other end. An open-ended cable with 5 single wires is available as an option.

TTL
For OEM, a special version with 3.3V TTL levels is available.

GeBE COM
In this setting, the printer uses the GeBE - Ir protocol for communicating. The protocol can be used through the RS232 as well as the TTL.
Through the CRC protected transmission blocks, a secure data connection can be realized.

Also see: Infrared Interfaces
GeBE-Doc.No. MAN-E-395

7.1.1 Serial interface RS232 (V.24) at connector J2

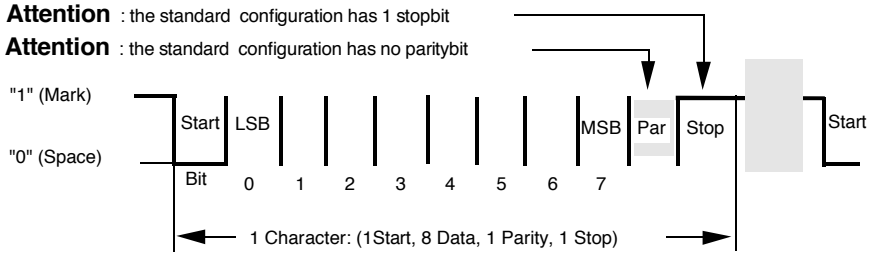
Connector at printer: JST-SH (5pin). >>> Cable: GKA-406: The other end has a 9 pin SUB-D socket. The assignment is 1:1, matching the serial interface of the PC.
Please note that the DSR and the DCD are terminated on some interfaces.

PIN-seizure

Pin	Signal	Input/ Output	Comment	Assignment Cable GKA-406 D-SUB 9Pin
1	GND signal	GND		5
2	TXD	I	Print data	3
3	RXD	O	Error reports and Xon/Xoff messages	2
4 Selectionl throgh BR5	RTS	I	Handshake input of the controller (Standard: Reactivation Function)	7
	+3.0V digital	O	Supply for external adapter	
	+3.0V -7.2V power	O	Supply for external adapter	
5	CTS	O	If the level is logic-true, the controller can receive data.	8
				1,4,6,9 = NC

7.1.2 Timing der seriellen RS232 /TTL Schnittstelle

The standard Timingis shown in the picture below.
The Data format can be set via Menue (only printers with EEPROM).



Signal	Level on TTL interface	Level on RS-232 interface
"1" (Mark)	+5V (TTL-level)	-3V ... -12V
"0" (Space)	0V (TTL-level)	+3V ... +12V

Serial Data Format

Standard:

- 9600 Baud
- 8 Datenbit
- No Paritybit
- 1 Stopbit

Selectable Data Formats

- 1,200, 2,400, 4,800, 9,600, 19,200, 38,400, 57,600 and 115,200 baud
- 7/8 data bits
- odd, even, non parity bit
- 1, 2 stop bit
- TX line turned ON/OFF

7.2 Parallel Interface

	Name	Meaning	Comment
BR1 or J3		Feedback of the AUTO_LF output of the host on SELECT: Allows a Windows system to report printer - SELECT back to itself.	BR1 : default: open J3 : default: 2-3 open, auto LF not fed back to Select.
BR2 or J3		SELECT interrupt	BR2 : default: open J3 : default: 1-2 closed, select active

7.2.1 Centronics Adapter with SUB-D 25 pin Connector

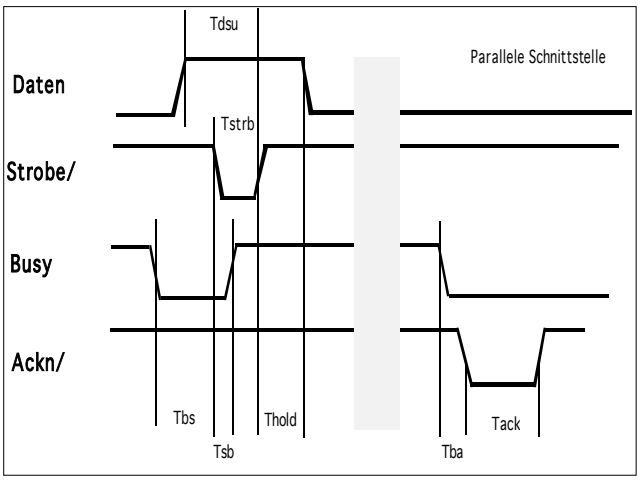
The cable GKA-407 connects the adapter with the printer (at J5).
The cable GKA-302 produces a 1:1 connection of the adapter and the parallel port of a PC.

7.2.2 PIN-seizure at the SUB-D 25 of the adapter

Pin	Signal	Input/Output	Comments
1	Strobe/	I	Accepting data DB0 ..7 with rising edge
2	DB0	I	
3	DB1	I	
4	DB2	I	
5	DB3	I	
6	DB4	I	
7	DB5	I	
8	DB6	I	
9	DB7	I	
10	/Acknowledge	O	
11	BUSY	O	Becomes high with the falling edge of /Strobe
12	Paper End	O	See error messages
13	Select	O	See error messages
14	Auto Line Feed	I	Can be connected with select (Windows operation)
15	/Fault	O	See error messages
16	/Input-Prime	I	used for initiating Reset
17	Select in	I	used for initiating the wake up sequence
18-25	GND digital		

7.2.3 Timing of the Parallel Interface

Time	Name	min (μs)	typ (μs)	max (μs)	Comments
Tack	Ackn.pulse width		17		
T_{ba}	Delay busy ackn.			5,5	
T_{bs}	Busy Setup	0,5			Time before the next strobe
T_{dsu}	Data Setup	0,5			
T_{hold}	Data hold	0,5			With open-collector triggering, the minimum time is 3.5 μs. This value can be changed by integratingdifferent RC filters.
T_{sb}	delay Strobe-Busy	0,5			
T_{strb}	Strobe pulse width	0,5			



Adapter GCT-4382-10 with Centronics Interface

7.3 Infrared Interfaces

The following protocols can be used:

- **IrDA:** IR LPT (printer service)
  IR COMM 9 wire (optional)
  Also see: **www.irda.org**
- **GeBE-IR:** Simple, error-proof, bidirectional, dot to dot IR-protocol.
  GeBE-Doc.No. MAN-D-394
- **HP-IR:** Unidirectional IR transmission
  GeBE-Doc.No. MAN-D-416

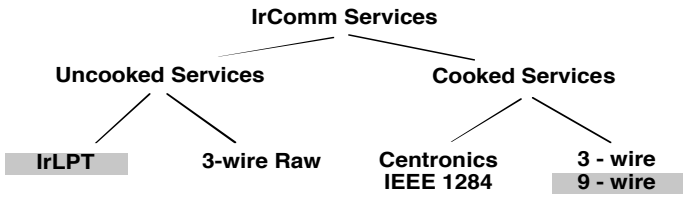
All standard versions of the printer have the hardware for an IR transmitter/receiver installed, so the protocols GeBE-IR and IrDA are available for all standard printers of the series GPT-4352.
The internal IR tranceiver is installed directly below the red foil window (10). The GPT-4352 has an LED next to the transceiver that signals any IR communication. It is important to consider that infrared transmissions only work "at sight". The radiation angle is about +/-15 degrees. The transfer distance, which also strongly depends on the efficiency of the opposite side, is about 1.0 meter. It can be expanded to < 3 meters by installing a booster-IR LED.

Use of the Sleep Mode
In the setting "IrDA "or "GeBE IR", the IR receiver will even be active in the sleep mode, so the device will not have to be switched on explicitly for printing. The power consumption of the printer is only about 25µA in this mode. However, the printer should still be turned off during long periods of inactivity.

GeBE -IR Protocol
The GeBE-Ir protocol is a simple, error protected infrared protocol. The data transmission is processed in CRC protected blocks.
With each transmission confirmation, the printer status is sent back to the host.
The implementation is easy to realize. The protocol is disclosed.

IrDA Protocol
The printer works with the protocol service IrLPT. Here the printer doesn't send back.

A bidirectional Service "IrCOMM 9 wire" ist available on request.



In the menu setting, the selected baud rate represents the maximum baud rate. If 57,600 baud is selected, for example, the printer will start to communicate with 9,600 baud and then switch up to 57,600 or 38,400 baud, depending on the transmitter.
The maximum baud rate of 115,200 should only be reduced, if transmission problems occur.
When an infrared transmission is interrupted, the printer will look for the transmitting master device for about 20 seconds in order to complete the transmission. After that, the stack is reset, and new inquiries are answered.

Driver for IrDA

Windows 98 / ME / NT / 2000 / XP
Driver for Windows are available on our Websites.

WIN CE , PALM OS , SYMBIAN Serie 60
Driver for these systems are available at:

www.Bachmannsoftware.com or
www.fieldsoftware.com

For pocket PCs Bachmann offers an application (Printboy) for printing p.e. out of Pocket Word.

IrDA Data Specification	Complies: IrDA V1.0 Standard Power SIR			
	min	max		
Radiation output	40	100	mW/sr	On-axis
Min. input radiation intensity		4	W/cm2	v<(±15°)
Max. input radiation intensity		500	mW/cm2	v<(±15°)
Peak wave length		870	nm	
Peak wave length booster LED		880	nm	optional
Safety	Complies with IEC 825-1 class 1 (EN 60825) eye safety specifications			
IrDA Interface parameters	IrDA: automatic setting in accordance with IrDA ; 9,600, 38,400, 57,600, or 115,200 Baud			
GeBE-IR Interface parameters	GeBE IR-Protocol: 9,600; 38,400; 57,600; or 115,200 baud, 8 data bits, non parity, 1 stop bit			

7.4 USB

The GPT-4352 with USB meets the USB specification V1.1 for full-speed devices. The printer is compatible to USB V2.0 bus systems. The USB device class is equivalent to a "Vendor Specific Device". Therefore, transmission can be done with virtual COM port drivers. The printer will operate like a serial printer. The virtual COM port drivers are available for the operating systems Windows 98/98SE/ME/2000, and XP, and possibly WinCE from the third quarter of 2004. For Linux V2.40 and up, there is a direct Kernel support. Therefore, a driver is not required. Standard GeBE printer drivers can be used.

Operation

If a sleep mode has been selected for the printer, it will switch to sleep mode after the preset time period has passed. The USB interface, however, remains active, being directly fed from the USB bus. A new print job with the standard driver reactivates the printer without any loss of data. The USB suspend mode also has the printer internal USB interface turned off. In this mode, the printer will "go to sleep" after the preset sleep time.

USB Driver

Windows 98 / ME / NT / 2000 / XP

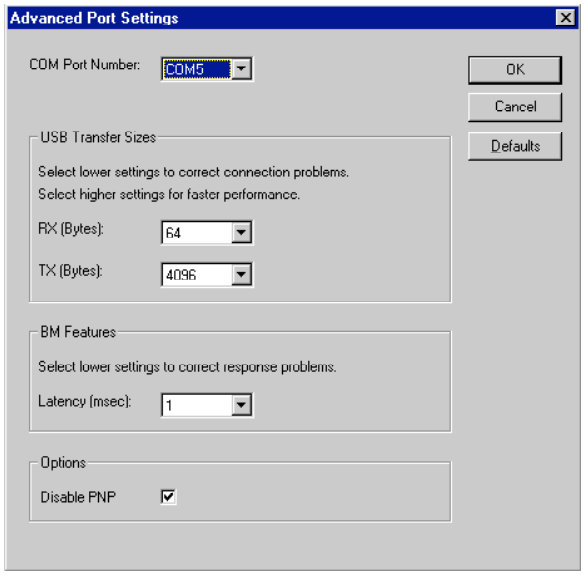
Windows and USB drivers can be found on the GeBE website. Please read the included installation instructions. Before the initial operation, the matching virtual COM port driver (VCP driver) and the printter driver have to be installed.

Setting the VCP Driver

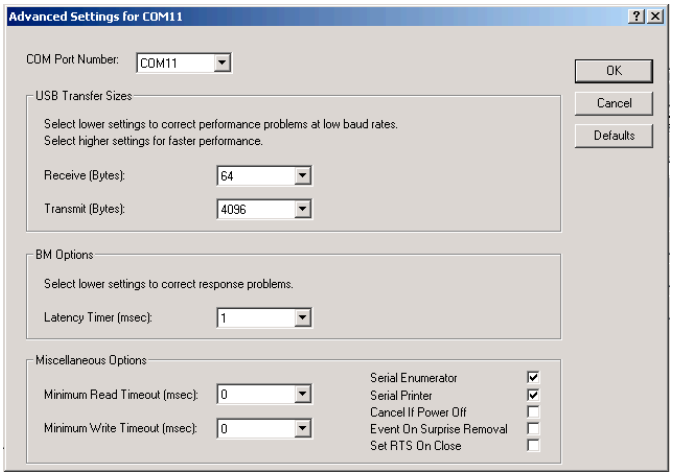
The example shows the setting with Windows 2000. The procedure is very similar with XP or Windows 98. Starting with the Windows "START" menu, select "Control Panel" -> and click on the "System" folder. Select the "Hardware" tab), and click on "Device Manager". There, activate the "+" symbol under "Connections (COMand LPT)", and look for the entry "USB Serial Port (COMx)". Open it and click on "Port Settings", in order to have the settings of the virtual COM port displayed.

It is recommended to use the settings of the virtual COM port according to the settings of the printer:: 115,200, n, 8, 1, XON/XOFF. If the printer is not operated in step mode, "Hardware Flow Control" is recommended. Click on "Advanced" to see the extended settings. Please make sure that the settings shown below have been carried out.

For Windows 2000 and XP



For Windows 98 and ME



Never activate an action in the printer driver at the end of a job. This can cause a loss of data.

USB Specification	V1.1 (V2.0 compatible)			
Device type	Vendor specific device			
Speed	Full speed			
Power consumption printer	no printing	min.	Typ.	max.
	USB active /printer active		30 mA	
	USB active /printer sleep		25 mA	
	USB suspend / printer sleep		300 µA	

7.5 Bluetooth® Wireless Technology

The GPT-4352 with BT meets the BT specification V1.1 class 2, attaining a transmission range of about 10 -15 m. If you require a longer transimission range, please contact us. The printer can be operated with a customary BT dongle that comes with a virtual COM port driver.
A RS232 remote receiver is available on request.

Operation

The printer responds to an inquiry scan with its name "GPT-4352" and its BT address. However, it can also be addressed directly, without a scan, with its BT address. A "BT connect" activates the printer. The printer will maintain a connection until it goes into sleep mode. The online power consumption of the printer with an active BT link is about 35mA. The sleep mode disconnects an active connection and activates the BT sniff mode. In this mode, the printer scans its environment for possible calls every 1.25 seconds. During these inquiry scans, it remains visible and responsive. It will then take about 2-3 seconds to establish a connection.
The power consumption in this mode is about 1.5mA. When the printer is reactivated through the feed button, the BT tranceiver will remain in sniff mode. After the set time period, the printer will go back into sleep mode.

If you are not planning to operate the printer for several days, switch it off with the OFF/NEXT key. After the power is turned on, it will take a minimum of 10 seconds for the printer to become ready to recieve data.

The printer does not ask the master for any authentication.
Should your transmitter require a PIN number, type in "0000".

Please always set your printer to 115,200, n, 8,1.

We recommend to set the sleep time to "1 minute".

Drivers

Windows 98 / ME / NT / 2000 / XP
Windows drivers can be found on our website.

WIN CE, PALM OS, SYMBIAN Serie 60
For WIN CE, PALM OS, and Symbian series 60 devices, you can find a driver support at:

www.fieldsoftware.com

www.Bachmannsoftware.com

This printer contains a 2.4 GHz radio transmitter. For health reasons, a distance of at least 1.0 cm must be kept between the printer surface and the body of the user, except hands, fists, feet, and joints. As a precaution, any body contact during operation should be kept to a minimum.

Bluetooth Spezifikation	V1.1			
Funk Sende-Level	4 dBm (class 2)			
Reichweite	app. 10 -15 m			
Profile	SPP serial port profile			
Drucker Stromaufnahme	no printing	min.	Typ.	max.
	Active link/data traffic at 115 kbps	50 mA	62 mA	95 mA
	Active link	25mA	35 mA	55 mA
	Idle	18mA	25 mA	40 mA
	Printer activ/ BT sniff mode	5 mA	7 mA	15 mA
	Sniff mode (1.25 sec. scan)	1 mA	1,3 mA	2,5 mA
	Power off	0,3 µA	0,7µA	2,0 µA

CE statement:
The BlueRS+I complies with the European safety regulations IEC 60950, and EMV regulations ETS 300 328-2 and ETS 301 489 -1 und -17.

FCC statement:
The printer contains a BlueRS+I OEM serial adapter with the FCCID: RFR-BRSI / IC: 4957A-BRSI .
The BlueRS+I complies with part 15 of the FCC rules and with RSS-210 of Industry Canada.

The BlueRS+I has been qualified as a product in accordance with the Bluetooth® Qualification Program (BQP).

A class 1 version (up to 100 m range) is under way.

8 Operation

8.1 Which thermal paper is suitable ?

The printer is specified for a paper width of 57.5 ± 0.5 mm, with a weight of 60 g/sqm. GeBE is offering suitable paper rolls (GPR-T01-058-031-007-060A resp. GPR-T01-058-060-007-060A for GPT-4352-60) as part of the standard program. Other papers may not be suitable for use.
Thermal papers that are resistant against water, grease, or alcohol are available for special applications. We will gladly assist you in your selection of the suitable thermal paper.

Which side of the thermal paper can be printed on?

On the paper roll, the side to print on is, in almost all cases, the outside. If you should have any doubts, just do the fingernail test: Quickly drive the edge of a fingernail with slight pressure over the paper. The thermosensitive side will turn black as a result of the frictional heat.

How do I insert the paper?

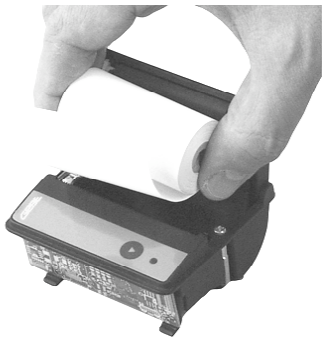
Use paper rolls that are coated on the outside with a width of 57.5 mm ± 0,5mm and a winding diameter of 31 mm and 60 mm for GPT-4352-60.
Standard GPT-4352: GPR-T01-058-031-007-060A
Standard GPT-4352-60: GPR-T01-058-060-007-060A

1. Unwind about10 cm (4 ") of paper from the roll. Keep the layers wound tightly.
2. Open the printer cover by slightly pressing the LEVER in the cover upwards. The print roll is lifted from the mechanism together with the cover. The cover is now easy to open.
3. Insert the paper roll in the paper storage, so the outside shows toward the printer mechanism. Only this outside can be printed on.
4. Close the cover by applying strong pressure. You can hear it snap shut. Now you can rip off paper at the tear bar without the cover opening up or the paper sliding through the print head.

1.

2.

3.



4.

8.2 Maintenance, Cleaning

After larger print efforts, depending on the paper quality and adverse environmental conditions, it may be necessary to clean the print head, sensor, and the platen roll, especially, if some areas are no longer printed properly.

- Open paper supply lid and remove paper roll.
- Loosen dirt particles at the paper sensor and the tear-off bar with a small brush.
- Blow forcefully into the paper supply compartment in order to remove the coarse dust.
- Soak Q-tip in isopropanol (IPA) and clean the print head, or use print head cleaning pin/cleaning card.
- Other stubborn debris can also be removed with a Q-tip (IPA).

Never use sharp objects for cleaning. This might cause damage to the print head.

9 Key Functions

Description of the Key Functions

The keys can have different functions depending on the status – normal operation or print settings menu. The time for which the button is held down is also an issue.

FEED / ENTER (1)

Through this key, the printer can be reactivated from sleep mode, and the paper can be transported forward. When the feed key is pressed, the printer will first feed one line of the set font. If the key is held down for more than 2 seconds, it will feed continously.

Self Test

With this, the printer functions can be tested through a printout. To start the self test the FEED Button {FEED} (1) has to be held down for more than 3 seconds when waking up the printer out of the Power OFF mode . The interfaces won't be tested in this case. Software version and character set will be printed out. For OEM special printouts can be activated during this operation self test.

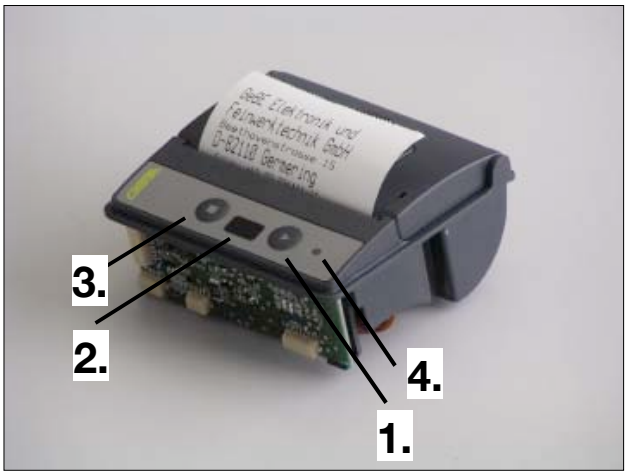
OFF / NEXT Taste (3)

By holding down the OFF/NEXT key for more than 3 seconds during operation, the processing of batch file T2 is initiated. In µ-P flash, the command for power-off (after 1 second) is filed in batch file T2. This way, this key is programmed as an OFF button for the printer (controller with power-off mode).

IR Fenster (2); Status LED (4) s. Kap. Satusmeldungen

SET Key

rently without function.



Key FEED/ENTER	Key OFF/NEXT	Action
pressed	not pressed	paper feed by one line
held down > 2s	not pressed	continous paper feed
pressed during power-on < 1s	not pressed	reactivation, no paper feed
held down during power-on paper inserted > 2s	not pressed	call T0 (self test)
held down during power-on no paper > 2s	not pressed	call hexdump mode
pressed in hexdunp mode no paper	not pressed	hexdump mode end
not pressed	key released after < 1s in normal paper mode	call T1 (default = form feed 1 line)
not pressed	key held down > 3s	call T2 (default = power-off after one second)
pressed	pressed	call print settings menu

10 OPD-Menue®

The most important settings of the printer can be changed with a few key strokes using the OPD-Menue® (OnPaperDisplay).
They can be called at any time, and can be quickly understood with the menu printout.
The inconvenient accessing of DIP switches and the programming through a terminal program are a thing of the past.
The OPD-Menue® is operated with only two keys (OFF/NEXT and FEED/ENTER)
The OPD-Menue® is an editor of an initialization batch file "TMENUE" that is called before the "TINIT".
See chapter on batch files.

Key FEED/ENTER	Key OFF/NEXT	Action
pressed	not pressed	increasing the parameter
not pressed	pressed	moving to the next menu item
pressed	pressed	leaving menu and saving settings

Menu Guide - Example:

Bold : printout of the menu
Normal: possible settings
Italic: comment

Welcome to the OPD menu 1.0 5
Setup timeout after 10 minutes
Actual printer settings:
Ubat: 52V
Tbat: 24°C *(displayed only with battery)*
Firmware: **GE-xxxx**

Density 25
Speed: **med (64)/low**
Interface: **RS232/USB/Blue**
COM: **9600,n,8,Tx+**
Sleep time: **5 sec**
Font #: **1**
Char. format: **D0,W0,H0,S0,48**
? Change actual settings
Press ENTER to change
Press NEXT to skip
Press NEXT+ENTER to save and exit

PRINTER SETUP:
Press ENTER to modify
Press NEXT to store and continue
Press NEXT+ENTER to save and exit

Density: **25** 20, 25, 30, 35, 40, 45, 50, 90(2ply)

Speed/Quality: **med 64/ low** **(Depending on the Printer typ)**low (32)/med, med (64)/med, med (64)/low, high (96)/low

Interface: **RS232/USB/Blue** RS232/USB/Blue, IrDA, GeBE-IR, GeBE-COM

Baudrate: **9600** 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

COM parameter: **n,8,Tx+** n, 7, Tx+ / o, 7, Tx+ / e, 7, Tx+ / n, 8, Tx+ / o, 8, Tx+ / e, 8, Tx+ / n, 7, Tx- / o, 7, Tx- / e, 7, Tx- / n, 8, Tx- / o, 8, Tx- / e, 8, Tx-

Sleep Time: **5 se**c
OFF, 5 sec, 30 sec, 1 min, 10 min, 1 h, 12 h, 32 h

Font #: **1** 1, 2, 3, 4
Text orientat: **Textmode (D0)** Textmode (D0), Datamode (D1)

Char. size : **W0/H0**
W0/H0, W0/H1, W0/H2, W0/H3, W1/H0, W1/H1, W1/H2, W1/H3

Char. spacing : **0** 0,1,2,3,4,5,6,7
Print width : **48 mm** **(Dependiong on type of printer)**
48 mm, ... 32 mm

? Return to default settings

Press ENTER to change
Press NEXT to skip
Press NEXT+ENTER to save and exit

ONLY with clock option / clock connected

17.03.03 17:33
? Change date / time
Press ENTER to change
Press NEXT to skip
Press NEXT + ENTER to save and exit

RTC SETUP:
Press ENTER to modify
Press NEXT to store and continue
Press NEXT+ENTER to save and exit

00 .. 49 **Year:** **03**

01 .. 12 **Month:** **11**

01 .. 31 **Date :** **14**

01 .. 07 **Day :** **7**

00 .. 23 **Hour :** **13**

00 .. 59 **Minute :** **33**

1 00 : 00 ON
? Change alarm
Press ENTER to change
Press NEXT to skip
Press NEXT + ENTER to save and exit

ALARM SETUP:
Press ENTER to modify
Press NEXT to store and continue
Press NEXT+ENTER to save and exit

01 .. 07, * **Day :** **7** *** :** means periodic enterprise, e.g. if "day" is adjusted to *, each day to the adjusted time an alarm is called

00 .. 23, * **Hour :** **13**

00 .. 59, * **Minute :** **33**

ON, OFF **Mode:** **OFF**

11 Status Messages

LED "STATUS" (green/red) (4)
The STATUS LED will flash green slowly, when everything is in order. It will flash red in regular intervals in case of a failure. During fast charging, the STATUS LED will flash green in regular intervals, while it permanently glows green during trickle charge.

Status Messages of the Printer through the Interfaces

Besides the optical status messages displayed by the three LEDs on the control panel of the printer, messages are also transmitted through the serial interface. Most of the time, they are sent as single ASCII characters that can be analyzed by the host.
The following table shows all status messages.

Status Messages	**Serial Interface**				Comments
	Feedback through the serial interface		on:off /flash frequency fast: "S" app. 0.66Hz medium: "M" app. 0.33Hz slow: "L" app. 0.16Hz		
			Status LED		
Faultless operation:			1:31 / M	green	
After reset	"R"				Level on the status lines only short-term during phase of initialization. Message: <XON> "R" "X" (or error)>
After watch-dog reset	"R"				Crashing program
Error end	"X"				also after hardware, software, and watchdog resets
Buffer empty	X ON				Buffer emptied by 32 characters <DC1> = $11
Buffer full	X OFF				Space for 22 more characters in buffer <DC3> = $13
Synchronous feedback	all characters				Processing of synchronizing commands; each transmitted character
Battery charging:					
Formatting		"L"	off		L := charge start l := end of charge
Fast charge	"l"	"L"	LED permenently on		L := charge start l := end of charge
Trickle charge	"f"	"F"	LED flashes (1:3)		F := charge start f := end of charge
Errors:	start	error end			
Paper end	"P"	"p"	1:1 / S	red	After paper has been inserted, the printer waits for about 2s before printing in order to allow for enough time for the mechanism to be closed.
Temp. low	"K"	"k"			print head temperature too low
Temp. high	"T"	"t"			print head temperature too high
Vp too high	"M"	"m"			
Parity error	"?"		1:31 / M	green	Parity or framing error / no interruption of printing
EE-OK	"E0"				EEPROM command completed without errors
EE-invalid	"E1"				Invalid text file no.
EE-Password	"E2"				Wrong password for EEPRROM access
EE-Overflow	"E3"				Text file memory overflow
EE-Time-out	"E4"				Programming time for EEPROM byte exceeded.
EE-KO	"E5"				EEPROM not found
			IR communication		
IR Reception			LED on	red	
			Reading magnetic cards		
Successful read			LED on 2sec.	yellow	
Unsuccessful read			3x short LED on		
			Charging voltage (line)		
Chaging Voltage			LED on	yellow	LED is on if voltage is higher than 9 - 10 V in order to signal a valid charging voltage.

12 Batch Files

Almost all commands that the printer can receive through the interfaces and then perform can be put into the batch files. When a batch file is processed, the commands it contains are added to the data stream of the print program sequentially, as if they were coming through the interface from outside. This way, all settings that can be done by command can be processed via batch file. Besides settings commands, batch files can also contain text and graphics.
The file structure consists of one TINIT, which is processed with each system boot-up, as well as 10 files that can be used freely, which are retrieved by command. Some of these files can be addressed through additional events. If the controller has an EEPROM, it contains a file structure that is identical to that of the program memory (Flash).
When a filed is retrieved, the printer will check, if it contains data in the EEPROM. If it does not, the file will be processed in the Flash. This allows Flash files to be over-written.
The following batch files are accessable:

Allocated in the Flash Memory, Factory Settings:

- "TINIT" ...settings after hardware RESET

- "T0 " .....self test through FEED key after reset
- "T1 " .....form feed through NEXT key <1 sec.
- "T2 " .....power-off through OFF key >3 sec.

- "T3 - T9" : unused

Text or Graphics, Batch Files in the EEPROM

By using these files in the EEPROM you are changing the standard factory settings.

For the printing of text and graphics, the GPT-4352 has an 8 KB EEPROM (app. 6 KB can be used for logos), and the GPT-4352 has a 32 KB EEPROM (app. 30 KB can be used for logos).

It is recommended to store logos PCL compressed.

By using the Windows driver, compression rates of app. 3 - 4:1 can be achieved.

For comparison: Uncompressed full graphics of 5 cm length take up 20 KB, while they only require app. 5,7KB when compressed.

Configuration of the Printer with TMenu and TINIT

After a hardware RESET (connecting the power supply), the printer will check for a prescribed TMenu and/or TINIT in the EEPROM. If it finds one or both, it will process the batch file commands and will then be ready for operation. If not, it will process the TMenu and/or the TINIT containing the factory settings in the Flash.

Creating and Saving Logos:
A special printer driver is available for creating logos.

TMenu:

The OPD-Menue® is a printer function that allows the user to edit the TMenu in the EEPROM. The TMenu can only be changed through the OPD Menu.

Structure of the TMenu:

<ESC>Y<18h>	{density}
<ESC>[<DEZ64><DEZ48>	{power consumption}
<ESC>]<DEZ115><DEZ40	{baud rate, settings}
<ESC>e<DEZ5><DEZ2>	{power-down time}
<ESC>P1	{font}
<ESC>D0	{text orientation}
<ESC>W0<ESC>H0	{text size}
<ESC>S0	{text spacing}
<ESC>h48	{print width}

TINIT:

The TINIT is always processed subsequent to the TMenu. In the TINIT, other presets that were not incorporated in the menu can be executed. It also allows settings to be blocked in the menu by repeating them here.

If a command of the TMenu is repeated in the TINIT, this value can no longer be changed through the menu.

The following TINIT file is an example of a file that can be modified by the user.
It is available for downloading from the Internet at the URL: www.oem-printer.com/flash .
The file will erase the TINIT, while printing out all actions in italic at the same time.
Any commands can be entered in the TINIT.

Erase Tinit ...
<ESC>uUERAS
Special number S-xxx / Status 24nov03
Program tinit with GE-xxxx...

{Comments}

<ESC>s@PROG<00h><11h>
<ESC>r1<28h><3Ch><01h><12h> {charging parameters}
<A9h><01h><3Ch><01h><40h>
<19h><01h><85h><0Ah><8Ch>

All programmed!

13 Option Magnetic Card Reader

The magnetic card reader of the GPT-4352 can be used for magnetic cards of the type ISO 3554. It reads up to 3 tracks simultaneously. The permissible swiping speed is 10 - 100 cm/s.
The recording density and the number of bits per character differ from one track to the next according to ISO 3554. They determine the maximum number of characters including start and stop characters that can be recorded on each track:

Track	bpi	bit	Characters
1	210	7	79
2	75	5	40
3	210	5	107

In accordance with the norm, track 1 and 2 are just read during operation.
Track 3 is the only one that is also used for recording.

Operation

After the swiping of the card, the LED lights up for about 2 seconds, if the card was read correctly. If an error occured, the LED will flash rapidly 6 times.
While the LED is on, another reading process is not possible. After the LED has gone out, the internal buffers are getting ready for the next reading process, waiting for a new card to be swiped.

The printer puts out the card data for each track with a header. The data set is concluded with a check sum.

The card data per track contain:
- the number of data on this track
- status byte (type of error, if occured)
- data

A detailed description can be found in the software manual.

Applications
Track 1 and 2 for credit cards.
Track 2 and 3 for Eurocheque
Track 2 for access control
Track 3 for time recording

The Magnetic Carsd Reader can be combinated with:

USB, Bluetooth, RS232/TTl, und IrDA-9 wire
Not with HP-Ir, GeBE-Ir and IrDA IrLPT

EC Card		
Track	**Place**	**Content**
2	1-3	identification 672
2	9-18	account number
2	21-22	year of expiration
2	23-24	month of expiration
3	1-4	identification (0159, EC card)
3	5-12	bank identification code
3	14-23	account number
3	37-40	remaining amount that can be withdrawn
3	41	final digit of the year of the last withdrawal
3	61-62	year of expiration
3	63-64	month of expiration
S-Card		
Track	**Place**	**Content**
2	x	like EC card
3	1-4	identification (0059, S-card)
3	9-24	like EC card
Credit Card		
Track	**Place**	**Content**
1	2-17	credit card number
1	19-44	last name of the card holder
1	46-47	year of expiration
1	48-49	month of expiration
2	1-16	credit card number
2	18-19	year of expiration
2	20-21	month of expiration

Numeric Character Track 2 and 3

P 3210	**equals**	**Meaning**
1 0000	0	
0 0001	1	
0 0010	2	
1 0011	3	
0 0100	4	
1 0101	5	
1 0110	6	
0 0111	7	
0 1000	8	
1 1001	9	
1 1010	:	control
0 1011	;	start sentinel
1 1100	<	control
0 1101	=	field seperator
0 1110		control
1 1111	?	end sentinel

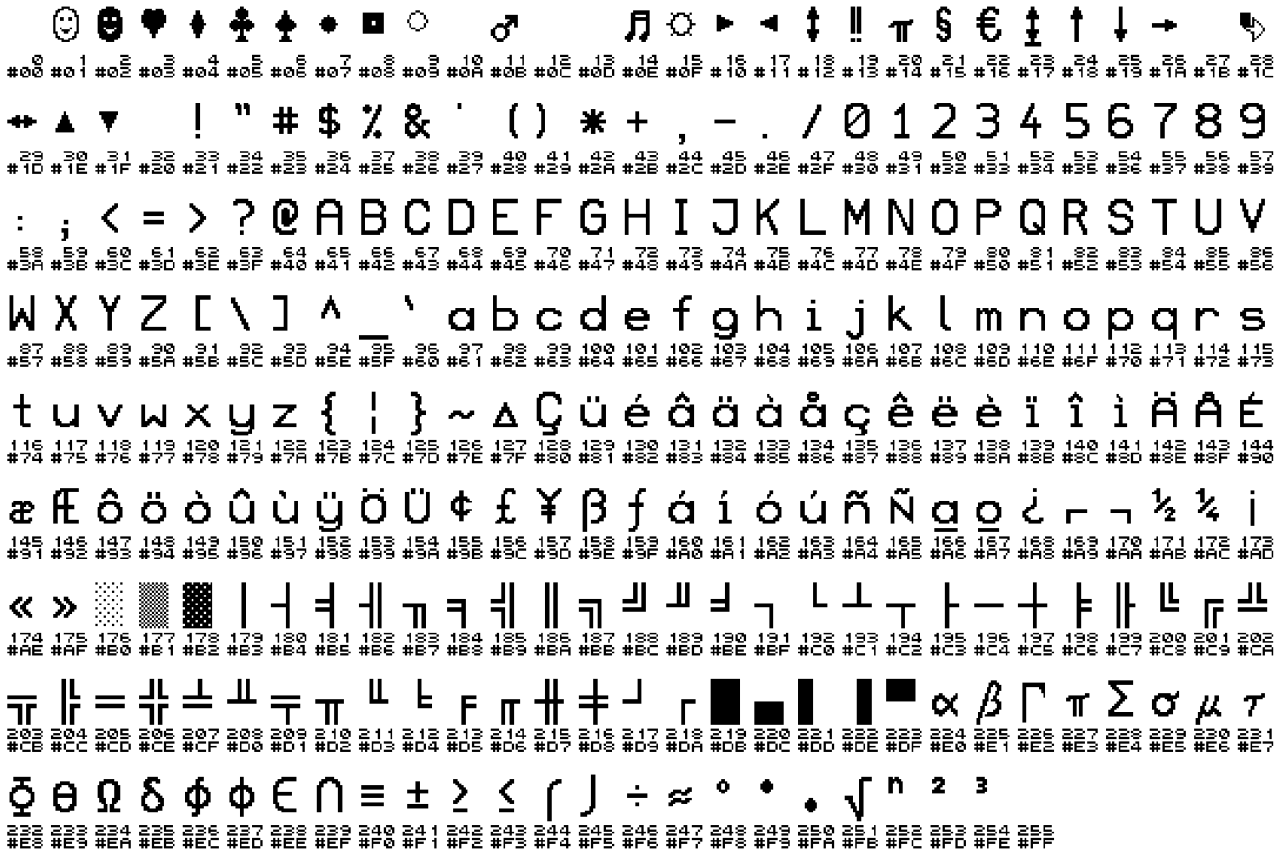
ALPHA Character Track 1

P 543210	hex			hex	
1 000000	00	space	0 100000	20	@
0 000001	01	!	1 100001	21	A
0 000010	02	,,	1 100010	22	B
1 000011	03	#	0 100011	23	C
0 000100	04	$	1 100100	24	D
1 000101	05	%(start)	0 100101	25	E
1 000110	06	&	0 100110	26	F
0 000111	07	'	1 100111	27	G
0 001000	08	(	0 101010	28	H
1 001001	09	)	1 101011	29	I
1 001010	0A	*	1 101000	2A	J
0 001011	0B	+	0 101001	2B	K
1 001100	0C	,	0 101100	2C	L
0 001101	0D	-	1 101101	2D	M
0 001110	0E	.	1 101110	2E	N
1 001111	0F	/	0 101111	2F	O
0 010000	10	0	1 110000	30	P
1 010001	11	1	0 110001	31	Q
1 010010	12	2	0 110010	32	R
0 010011	13	3	1 110011	33	S
1 010100	14	4	0 110100	34	T
0 010101	15	5	1 110101	35	U
0 010110	16	6	1 110110	36	V
1 010111	17	7	0 110111	37	W
1 011000	18	8	1 111010	38	X
0 011001	19	9	0 111011	39	Y
0 011010	1A	:	0 111000	3A	Z
1 011011	1B	;	1 111001	3B	[
0 011100	1C	<	1 111100	3C	\
1 011101	1D	=	0 111101	3D	]
0 011110	1E	>	0 111110	3E	^(field)
0 011111	1F	? (end)	1 111111	3F	_

14 Character Sets

The four character sets in the flash memory of a standard controller can be selected by command. Other character sets on request. The Euro character is located at 16 hex.

14.1 GeBE Standard Character Set: Resembles IBM II Code Table 850



Font No.	Dots (horiz./vert.) characters / line
1	16 / 24 24
2	9 / 22 42
3	7 / 16 54
4	12 / 24 32

Optional character set: cyrillic
Based on: IBM code table 850

14.2 Optional Character Sets

The following character sets are available at this time and can be programmed into the FLASH memory of the µ-processor in exchange for other character sets. Please send us you inquiry.
GeBE will gladly create other character sets on request.

	Dots (horiz. x vert.) characters / line
IBM II	16 x 24 24
IBM II	14 x 22 27
IBM II	11 x 22 34
IBM II	9 x 22 42
IBM II	7 x 16 54
IBM II 90°	16 x 11 "24"
Kyr	16 x 24 24
Kyr	14 x 22 27
Kyr	11 x 22 34

15 Error Detection

Not every error means that there is a printer error that cannot be cleared by the user.
Users will save time and money by recognizing and clearing simple errors on their own.
The following tips are meant to help with this:
Hardware RESET: Triggered by holding down the OFF/NEXT key for more than 3 seconds.
This causes the printer to be set to the parameters in the batch file TINIT-F or TINIT-E. Test printout: Is triggered by holding down the FEED feed key for more than 3 seconds after reactivation from power OFF (switching off with the OFF/NEXT key).
Hexdump mode: Is triggered by holding down the FEED key for more than 3 seconds after reactivation from power OFF, if no paper is inserted. After the paper has been inserted, the printer prints the data it recieves as hex numbers with the appropriate ASCII code without interpreting the data. This shows, which information the printer "reads" from the recieving data. In order to leave the HEXdump mode, the FEED key has to be held down for at least 3 seconds, while there is no paper inserted. After it leaves the HEXdump mode, the printer will process TINIT for a reinitialization.

Symptom	Possible Cause	Remedy
Power Supply		
The printer seems to be printing. Paper is transported, but is not blackened.	Paper: Wrong side toward print head. Only one side of the paper can be printed on.	Insert paper correctly. The thermosensitive side should be turned to the outside of the roll (most of the time). Try the finger nail test: Drag the tip of a finger nail across the paper, pressing down. The friction heat causes the thermosensitive side to blacken.
Printer can not be reactivated by pressing the FEED key.	No power. **Rechargeable battery:** not charged. **Batteries:** not inserted orare empty	Check power supply. Recharge battery. The green LED should light up no later than after 1 minute.
At the beginning of printing, the LED goes out just briefly	The power supply is not optimal. **Rechargeable battery:** not charged. **Batteries:** empty, bad quality, no batteries inserted. **External power supply:** Cross-section of power feeding lines to small, Current output of the power supply too low.	**Batteries**: Different qualities are available. Only use batteries that are able to supply high currents, and that have a high energy capacity. **External power supply:** Use power supply with sufficient dimension and short feed lines. Check all connections for possible transfer resistances. Since high peak currents occur with thermal printers, even the smallest transfer resistances can result in intolerable voltage drops. In this case, no power supply would be strong enough.
The printer only prints a few dots in one line.		
The paper feed works, but the self test does not.		
The printer only prints a few characters in one line. If more is entered, it stops printing completely.		
The printer loaded over night however it prints only few or not	The rechargeable battery is used up or was not correctly loaded. Each over-discharging damages the battery strongly and leads to a loss of capacity.	Fully discharged batteries can disturb the charging in such a way that it breakes in at less than 30 minutes and switches to preservation charge. In this case please start to charge again by reputting. Please always switch off the printers if they lengthen are not used and please load them every 3 months.
Serial Interface		
After a few characters, the printout starts to be incomplete.	The printer buffer is "over-run" (256 bytes), causing a loss of data. The print data transmitter shows no reaction to handshake.	Use or check handshake. (software: Xon/Xoff or hardware: CTS). If necessary: slow down transmission speed, e.g. down to 1,200 baud.
The printer prints the wrong characters.	Interface problem. The transmission is faulty. (Characters of the upper area are printed.).	Use correct interface level (RS232, TTL). Is the transmission cable too long?
	Wrong data format was set. ("?" is printed repeatedly.)	Select the correct baud rate through the menu. Check data format.
	External power supply: Bad ground connection that causes a part of the printing current to flow through the interface cable. This leads to an increase in potential there, which causes data corruption.	Check and improve ground connection. Feed current through short, thick lines.
	Host sends a break signal after print job (only "?" are printed).	Turn off "framing error ".
IrDA		
The print speed is extremely slow with high baud rate settings.	The host ignores the "turn-around time" set by the printer.	Host sends a break signal after print job (only "?" are printed).
Bluetooth®		
The printer cannot be found in the BT network.	Possible undervoltage at the BT transmitter or the printer	Restart transmitter. Turn off printer and wait for app. 5 seconds. Switch printer on and wait for app. 10 seconds. Then search again.
USB		
The printout stops after a short time or is constantly repeated.	Wrong COM port settings	Set virtual COM port according to installation instructions.

16 Options • Accessories

16.1 Options

Serial EEPROM for stored print files

- 32 KByte EEPROM for LOGO download

Interface adapter

- Centronics (for GPT-4352-LV-82-24-SPI-EVAL-at): GCT-4382-10 (Art. 11340)
- Infrared (for GPT-4352-LV-82-24-IR-EVAL-at): GCT-4382-20 (Art. 11339)
- Clock and 2nd RS-232 (for GPT-4352-LV-82-24-EVAL): GCT-4382-30 (Art. 11473)

16.2 Accessories

16.2.1 Mounting frames

- 3HU front for 19" racks ,18DU width: GMS-4352-3HE-18TE (Art. 11415)
- 96x96 front for DIN housings: GMS-4352-96x96 (Art. 11414)

16.2.2 Paper

GeBE offers standard paper rolls with outside coating (60 g/sq m)

- Thermal paper for GPT-4352, standard 5 years: GPR-T01-058-031-007-060A, ex stock (Art.11347)
- Thermal paper for GPT-4352-60, standard 5 years: GPR-T01-058-060-007-060A, ex stock (Art.12410)

16.2.3 Power supplies and charging devices

- Desk power supply (5V, 2.5A): (for printers w/o battery): GNG-5V-2.5A-T (Art.11445)
- Plug-in power supply: (for printers with 4 Ni-MH battery cells): GNG-6.0V-0,5A-U (Art.11360)

16.2.4 Batteries

- 4 cells Ni-MH 1500 mAh: GNA-4,8V-1,2Ah-NiMH (Art.11361)
- 1 cell Li-Ion 800 mAh: GNA-3,6-0,8-Li-Ion (on request)

16.2.5 Cables

- power supply: ST(7pins) 250 mm, open end: GKA-410 (Art.11353)
- RS232 ST(5 pins) 1000 mm to PC ST(SUB-D, 9 pin socket): GKA-406 (Art.11352)
- TTL: ST(5pins), 500 mm, open end: GKA-414 (Art.11387)
- charging supply, ST(6pins) 190 mm to charging socket: GKA-416 (Art.11433)
- SPI-bus: ST(12pins) 250 mm to Centronics adapter ST(12pins): GKA-407 (Art.11406)
- Cable ST(4pins), rewinder, external power down active/inactive : GKA-446 (Art.11564)
- USB-Kabel GKA-480-2-1800,MiniB auf Typ A,1,8m GKA-480 (Art.11919)

17 Service

Documents for the System GPT-4352

All further documents can be found on the Internet at www.oem-printer.com/flash. The software manual SoMAN-E-485 in English bzw. 484 in German is available from GeBE via Email (sales.ef@gebe.net).

Service (GeBE Technical Support)

For service or questions, please contact:
GeBE Elektronik und Feinwerktechnik GmbH, Beethovenstr. 15 • 82110 Germering • Germany • www.oem-printer.com Phone: 0049 (0) 89/894141-0 • Fax: 0049 (0) 89/8402168 • Email: sales.ef@gebe.net

Further Information

Further information on the GPT-4352 series is available at www.oem-printer.com/flash.
At this address, you can also find a personal consultant who you can turn to with your questions.
Or simply send an **Email** to the GeBE **sales team**: **sales.ef@gebe.net**
For orders, you can use the **fax number : 0049 (0) 89/894141-33** , which is located in the sales department.

18 CE Certification

The failure-free operation of the printer (assessment criterion A) is achieved, when all printed information remains recognizable in case of a short-time failure, and the printer, on the other hand, returns to its normal functional status afterwards.

DECLARATION OF COMFORMITY
in compliance with EN45014

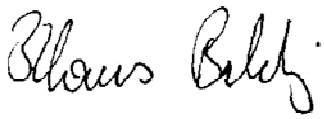
KONFORMITÄTSERKLÄRUNG
in Übereinstimmung mit EN45014

Supplier: Anbieter:	**GeBE Elektronik und Feinwerktechnik GmbH**
Address: Anschrift:	**Beethovenstr.15** **82110 Germering** **Germany**
Products: Produkte:	begining with Serial Number: **0704xxxx** beginnend mit Seriennummer: **0704xxxx** **GPT-4352-LV-82-24-V.24-LC** **GPT-4352-LV-82-24-V.24-EVAL** **GPT-4352-60-LV-82-24-V.24-LC** **GPT-4352-60-LV-82-24-V.24-EVAL** **GPT-4333-Pocket-82-24-V.24** **GPT-4333-Pocket-82-24-BT**

The Products described above are in conformity with:
Die oben beschriebenen Produkte ist konform mit:

EMC Directive / EMV Richtlinie 89/336/EWG
Information technology equipment
Einrichtungen der Informationstechnik
Radio disturbance characteristics .....EN 55022 1998
Funkstöreigenschaften
Immunity characteristics.....EN 55024 2003
Störfestigkeitseigenschaften

Germering, the 02/08/2007, den 08.02.2007



Klaus Baldig
Head of R&D/ Leiter der Entwicklung

GeBE Elektronik und Feinwerktechnik GmbH GKV 027-1

Component	CE	in particular
Printer	CE	see declaration of conformity
GNG-6V-0,5A-U	CE	EN 55024; 50082-1; 60335-1; 60742; 60950/A1 and A2
GNG-12V-1,2A-AC	CE	EN 55024 / 55022 61000 60950 50081-1-2
Bluetooth® transmitter (RS+I)	CE	IEC 60950 / ETS 300 328-2 / ETS 301 489 -1 and -17 FCC Rules Part 15 / RSS-210
IrDA receiver		Complies with EN 60825 (IEC 825-1 Class 1 eye safety specifications)

19 Technical Data

	GPT-4352-...-V.24 / IR	GPT-4352-...-TTL / SPI
Print technique	Fixed thermal print line	
Paper - / printing width	57,5 ± 0,5 mm / 48 mm	
Resolution	8 dots / mm , 384 dots / line	
Print speed	up to 50 mm/s	
Voltage supply	(3,0) 3,3 - 7,2 V	4,5 - 7,2 V
Batteries	4 (3 or 5 on request) NiMH cells. Optional: charging circuit for 1 Li-Ion cell (3.6V)	
Power cons. standard	Online: typ. 5mA; Sleep: typ. 25 µA; Power Off: < ca. 1 µA	
Max. current during printing	Adjustable by command to max. 0.7 A - 6 A, depending on operating voltage	
Seral Interfaces	RS232 up to 57.6 kbps Optional infrared on board or with external adapter	Serial through TTL, opto isolated RS232, TTY, RS422, and RS485 through TTL adapter ; parallel through SPI/Centronics adapter, USB, and RS232 through adapter
Interfaces	Baudrates:1200, 2400, 4800, 9600, 19200, 38400 and 57600, **115200** Mode: adjustable: 7, 8 data bits, 1,2 stop bits , none, odd, even parity Handshake: hardware handshake and XON / XOFF	
Data compression	Factor app. 3 :1 (for graphic commands); PC compatible; Windows driver	
Character sets, cpl	24 (32, 42, or 54) selectable by control command	
Bar code	Code39, 2 out of 5 int, EAN13, EAN 8	
Environment	0 °C to 50 °C (-10 °C to +60 °C with GeBE HQ paper) 10% to 80% rel. humidity, no moisture condensation	
MTBF	50 km printed paper (using specified thermal paper)	
Dimensions in mm	GPT-4352: 76,8 x 77,4x 39,3 mm, mounting depthET: 27 mm / GPT-4352-60: 76,8 x 111,4 x 72,0 mm, mounting depth: 58,2 mm	
Roll diameter	GPT-4352: max. 31 mm/ approx. 11m bei 60 g/m2 GPT-4352-60: max. 60 mm/ approx. 40 m bei 60 g/m2	
Weight	with paper roll: GPT-4352: approx. 150 g / GPT-4352-60: approx. 260 g	
Housing Material	GPT-4352: ABS (several coulors available) GPT-4352-60: PA66 - GF15	
Norm	**CE :** seeDeclaration of Conformity	

20 Mechanical Dimensions