

GAT NET.Writer 7000 F/ISO



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Contact address of manufacturer

Gantner Electronic GmbH
Bundesstraße 12
6714 Nüziders, Austria
www.gantner.com/locations

Dear Customer,

Our aim is to ensure that our product operates with safety and to your complete satisfaction. To achieve this aim, please take this opportunity to familiarize yourself with the following guidelines.

- > Pay attention to the safety messages in this manual. The messages are indicated by the signal words "DANGER", "WARNING", or "CAUTION", and inform you about hazardous situations and how to avoid them.
- > Pay attention to messages indicated by the "NOTICE" signal word. These messages include important information for avoiding property damage.
- > Pay attention to the symbols and safety messages on the product.
- > Read all instructions in this manual carefully before installing or operating the product.
- > Where not otherwise specifically documented, the appropriate installation, commissioning, operation, and maintenance of the product is the customer's responsibility.
- > Keep this manual in a safe place for quick reference.

Notation of safety information and safety symbols

This manual includes important safety messages and symbols intended to inform the user about potentially hazardous situations or important information for the safe and proper use of the described product(s). The safety messages also include directives on how to avoid hazardous situations. These safety messages and directives must be read and observed.

The structure of the safety messages and the meaning of the symbols used in this manual are described in this section.

1. Safety messages for personal injury

Personal safety messages contain a signal word, describe the nature of the hazard, and indicate how to avoid the hazard.



The safety alert symbol used without a signal word always precedes important safety information that must be read carefully, and the instructions carefully observed. Not doing so may cause personal injury.

Format of safety messages that apply to an entire section:

These safety messages may be used with or without a symbol.

CAUTION



Electrical shock

Touching current-conducting parts may result in injury due to electrical shock.

- Do not remove safety protection and covers.
- Do not touch the electrical connections while power is being supplied.

Format of safety messages that are embedded in text and apply to a specific point:



CAUTION! Electrical shock. Never remove safety protection and covers. Do not touch the electrical connections while power is being supplied.

2. Property damage messages

Property damage messages are used to describe potentially hazardous situations that may lead to property damage. These messages have the same layout as safety messages but use the signal word "NOTICE" instead of "CAUTION".

Format of property damage messages that apply to an entire section:

NOTICE

Risk of damage to the device and connected devices
Risk of malfunction

- Read the following instructions carefully before installing the device.
- Always adhere to the instructions.

Format of property damage messages that are embedded in text and apply to a specific point:

NOTE! Risk of damage to the device and connected devices. Read the following instructions carefully before installing the device.

3. Definition of the signal words

	Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.
	Indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

4. Definition of the safety symbols

	Caution: General Information This symbol indicates general warnings or cautions that are not related to a particular type of hazard.
	Caution: Electrical Shock This symbol indicates warnings related to electrical hazards (danger due to high voltage).
	Prohibited: Do Not Disassemble This symbol indicates warnings about not disassembling certain components or equipment. Disassembling may lead to damage or malfunction of the device.
	Mandatory Action: General Information This symbol indicates general information that must be read and followed before proceeding with the accompanying instructions.
	Mandatory Action: Read Instructions This symbol indicates information referring to an important description in the manual, or other documentation, which must be read and followed.

Important Safety Information



- The installation, commissioning, and servicing of our products must be performed only by suitably trained personnel. Electrical connections may only be made by correspondingly qualified specialists. Always observe the relevant installation regulations in accordance with the national Electrical Engineers Association.

➔ Unqualified personnel may potentially perform actions that result in injury due to electrical shock.



- Where not otherwise stated, installation and maintenance work on our products must be carried out when disconnected from the power supply. This especially applies to appliances that are normally supplied by low-voltage current.

➔ If the appliance is not disconnected from power, touching terminals or other internal parts of the appliance may lead to injury due to electrical shock.



- It is prohibited to alter the products (devices, cabling, etc.).

➔ Alterations to the products may subsequently result in personal injury, property damage, or damage to the products.

- Do not remove protective shields and covers.

➔ Removing protective shields and covers may result in personal injury or property damage.

- Do not attempt to repair a product after a defect, failure, or damage is detected. In addition, do not put the product back into operation. In such cases, it is essential to contact your Gantner representative or the Gantner support hotline.



- The installation, commissioning, operation, and maintenance of the product must be carried out in accordance with the technical conditions of operation as described in the corresponding documentation. Therefore, it is essential to read the corresponding chapter of this manual and observe the instructions and information therein.

- If there are still some points that are not entirely clear, please do not take a chance. All queries can be clarified by your Gantner representative or by ringing the Gantner support hotline.

- Directly on receipt of the goods, inspect both the packaging and the product itself for any signs of damage. Also check that the delivery is complete and includes all accessories, documentation, auxiliary devices, etc.



- If the packaging or product has been damaged in transport, or should you suspect that it may have a fault, the product must not be put into service. Contact your Gantner representative who will endeavor to resolve the problem as quickly as possible.

- Gantner Electronic GmbH accepts no responsibility for any injuries or damage caused due to improper use.

Although great care is taken and we are continuously aiming for improvement, we cannot completely exclude the possibility of errors appearing in our documentation. Gantner Electronic GmbH therefore accepts no responsibility for the completeness or the accuracy of this manual. The right is reserved to make alterations at any time without prior notice.

Should you discover any fault with the product or in its accompanying documentation, or you have any suggestions for improvement, you may confidently inform your Gantner representative or Gantner Electronic GmbH directly.

We especially look forward to hearing from you if you want to let us know that everything is functioning perfectly.

The GAT NET.Writer 7000 F/ISO was developed and manufactured under the quality management standard ISO 9001 and Gantner Electronic GmbH is also certified according to standard ISO 14001.



This product is in conformity with the following EC directives, including all applicable amendments:
- 2014/53/EU (Radio Equipment Directive)



Gantner is committed to meeting or exceeding the requirements of the RoHS directive (2011/65/EU). The RoHS directive requires that manufacturers eliminate or minimize the use of lead, mercury, hexavalent chromium, cadmium, polybrominated biphenyls and polybrominated diphenyl ethers in electrical and electronic equipment sold in the EU after July 1, 2006.



The WEEE symbol on Gantner products and their packaging indicates that the corresponding material must not be disposed of with normal household waste. Instead such marked waste equipment must be disposed of by handing it over to a designated electronic waste recycling facility. Separating and recycling this waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. Please contact your local authority for further details of your nearest electronic waste recycling facility.



FCC INFORMATION (U.S.A.)

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that of which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Warning Statement

[Any] changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device must not cause harmful interference,
and (2) this device must accept any interference received, including interference that may cause undesired operation.

INDUSTRY CANADA INFORMATION

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. l'appareil ne doit pas produire de brouillage.
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ICES Statement (Canada)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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1 INTRODUCTION

1.1 About this manual

This manual provides information on the functionality and connectivity of the GAT NET.Writer 7000 F/ISO and includes an overview of how to configure the device using GAT Config Manager software. There is a separate manual available for GAT Config Manager, which explains in greater detail all functions associated with the software.

1.2 Target groups

This manual contains information relevant for the different stages in the operating life of the GAT NET.Writer 7000 F/ISO. Information regarding the electrical connections and configuration is separated into corresponding chapters. When a chapter is intended for a specific audience, this is clarified at the beginning of the chapter. Where not explicitly stated, the information in this manual is intended for all target groups in general.

 **CAUTION! Injury and property/equipment damage.** The tasks described in each chapter must only be performed by the specified target group. Unqualified personnel who perform the described tasks risk personal injury or damaging property/equipment.

1.3 Formatting

1.3.1 Safety-critical information

The following formatting (with example text) is used in this manual to display important, safety-critical information that must be read and followed.

NOTE! Following on from this signal word in the manual is a reference text that must be read and followed. The reference text contains important information. Non-observance can lead to damage of the device or associated equipment.

1.3.1 General information

The following formatting (with example text) is used in this manual to display important, but not safety-critical information.



The text accompanying this symbol contains interesting information relevant to the current chapter. It will help you better understand the information in this section or provide tips for the described device or the operation of the software.

1.3.2 Instructions and results

Instructions, which must be completed by the reader, and the results of these instructions are formatted as follows.

- ▶ This symbol represents an action or instruction that that must be followed.
 - This symbol represents the result after completing the previous instruction.

1.4 Terminology

Several key terms that are used often in this manual are defined below.

Computer / PC

These terms refer to all desktop and laptop computers running a Microsoft® Windows® operating system.

Data carrier

An identification medium with electronic memory and an ID number that is used by the employees and visitors of a facility for identification. Data carriers are available in a variety of different forms (e.g., chip cards, wristbands, key tags), and to suit different RFID technologies (LEGIC, MIFARE®, ISO 15693).

Device / Station / Terminal

These general terms are used interchangeably in this manual to refer to the GAT NET.Writer 7000 F/ISO and other GANTNER products used in a facility for identification or to activate a service.

GAT Config Manager

GANTNER developed PC software that is used to configure GANTNER devices such as the GAT NET.Writer 7000 F/ISO. A separate manual is available and integrated into the software. While the software is open, click on the “Help” drop-down menu and select “How Do I”.

FID (Company ID) and Site Key

LEGIC systems use the FID number and in MIFARE® systems the site key is used, which is a combination of the FID and the read and write keys. The FID and site key are unique for every facility. These numbers are encoded in every data carrier and device used in the facility thereby ensuring that data carriers from one installation cannot be used in other installations.

RFID (Radio-Frequency Identification)

Identification over a short distance using radio frequency. An RFID data carrier is used to identify users in Gantner systems.

User / Guest / Visitor

These general terms refer to the people in a facility who use the data carriers and Gantner devices.

1.5 Contact & inquiries

For all inquiries concerning the GAT NET.Writer 7000 F/ISO, please contact your local sales partner or one of the Gantner branch offices directly. The contact details are available via the following link: www.gantner.com/EN/locations

2 GENERAL INFORMATION

2.1 Functional description

The GAT NET.Writer 7000 F/ISO allows users to read and write information (data) from and to data carriers. Data carriers using MIFARE® and ISO 15693 technology are supported by the device. The data carrier reading platform can accommodate data carrier media of all shapes and sizes and there is also a card slot designed to hold RFID cards of standard ISO, i.e., credit card, size.

The compact and robust housing is intended to sit on a desk, or similar workstation, in a central location where the reading / writing of data carriers can be conveniently performed. In most instances the GAT NET.Writer 7000 F/ISO will be integrated with RFID system management software and operated by employees of a facility. Common tasks for employees using the GAT NET.Writer 7000 F/ISO include:

- > Assigning data carriers to customers / members / employees.
- > Modifying and deleting information stored on data carriers.
- > Reading of lost data carrier information to determine the assigned owner.

The GAT NET.Writer 7000 F/ISO connects to a computer through its integrated USB or Ethernet port and the appropriate cabling required for these connections. The device offers the possibility to communicate with a computer via Ethernet (Fig. 2.1) or USB (Fig. 2.2) interface.

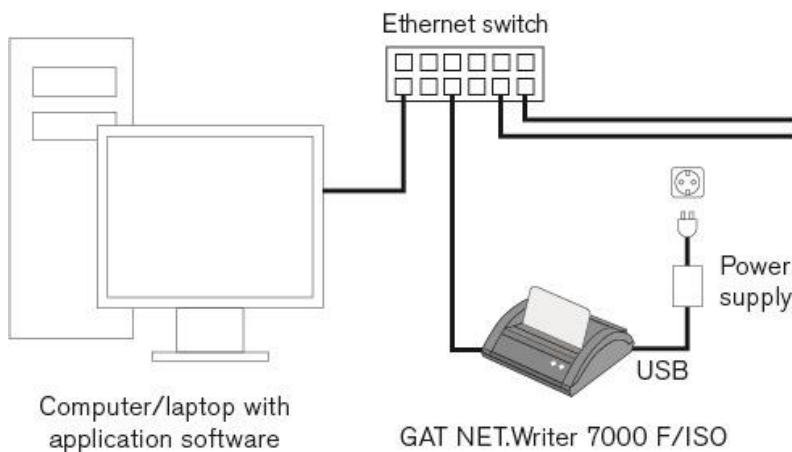


Fig. 2.1 – Communication via Ethernet interface

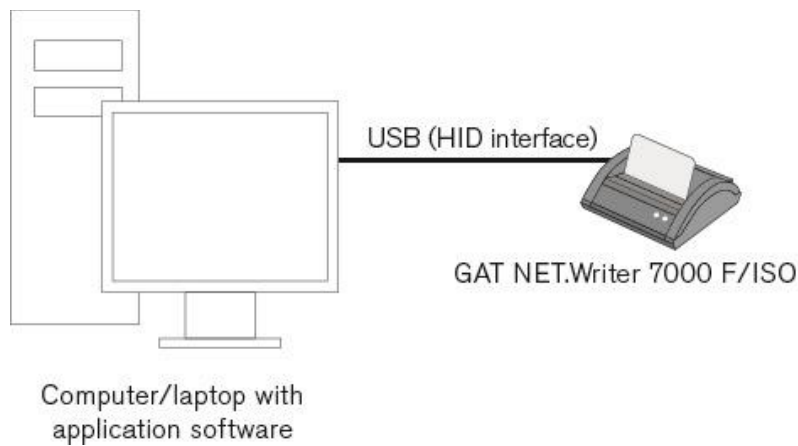


Fig. 2.2 – Communication via USB interface

Power for the GAT NET.Writer 7000 F/ISO is always supplied through the USB port. More information on the Ethernet, USB and power connections is described in “3 ELECTRICAL CONNECTIONS”.

Once physically connected to a computer, the GAT NET.Writer 7000 F/ISO configuration settings can be viewed and changed via the TCP/IP interface using GAT Config Manager software (see section “4. CONFIGURATION AND OPERATION”).

After setup is complete, the device can be used directly with GANTNER developed software or integrated with third-party software via GAT DIRECT.Connect (see “4.11. Software integration”).

2.2 RFID technology

Identification of users by GANTNER devices within a facility is done via RFID (radio-frequency identification) technology using a frequency of 13.56 MHz. There are three different technologies available. Different letter(s) are added to GANTNER model identifiers to notify of the technology that the device supports:

- > "B": LEGIC
- > "F": MIFARE®
- > "ISO": ISO 15693

The GAT NET.Writer 7000 F/ISO can operate with data carriers using MIFARE® and ISO 15693 technologies. It is necessary for all devices and data carriers in a facility to use the same technology. The information in this manual is applicable for the following RFID technologies that are supported by the GAT NET.Writer 7000 F/ISO.

MIFARE® (manufacturer NXP/Infineon)

- > Classic
- > DESFire®
- > Ultralight®

ISO 15693

The GAT NET.Writer 7000 F/ISO can read and write ISO 15693 data carriers.

In addition to the different RFID technologies, data carriers are available in a variety of shapes and sizes. The GAT NET.Writer 7000 F/ISO is designed to accept these different types of data carrier media on its RFID reading platform.

2.3 Features and dimensions

The dimensions and main components of the GAT NET.Writer 7000 F/ISO are shown in Fig. 2.3 below.

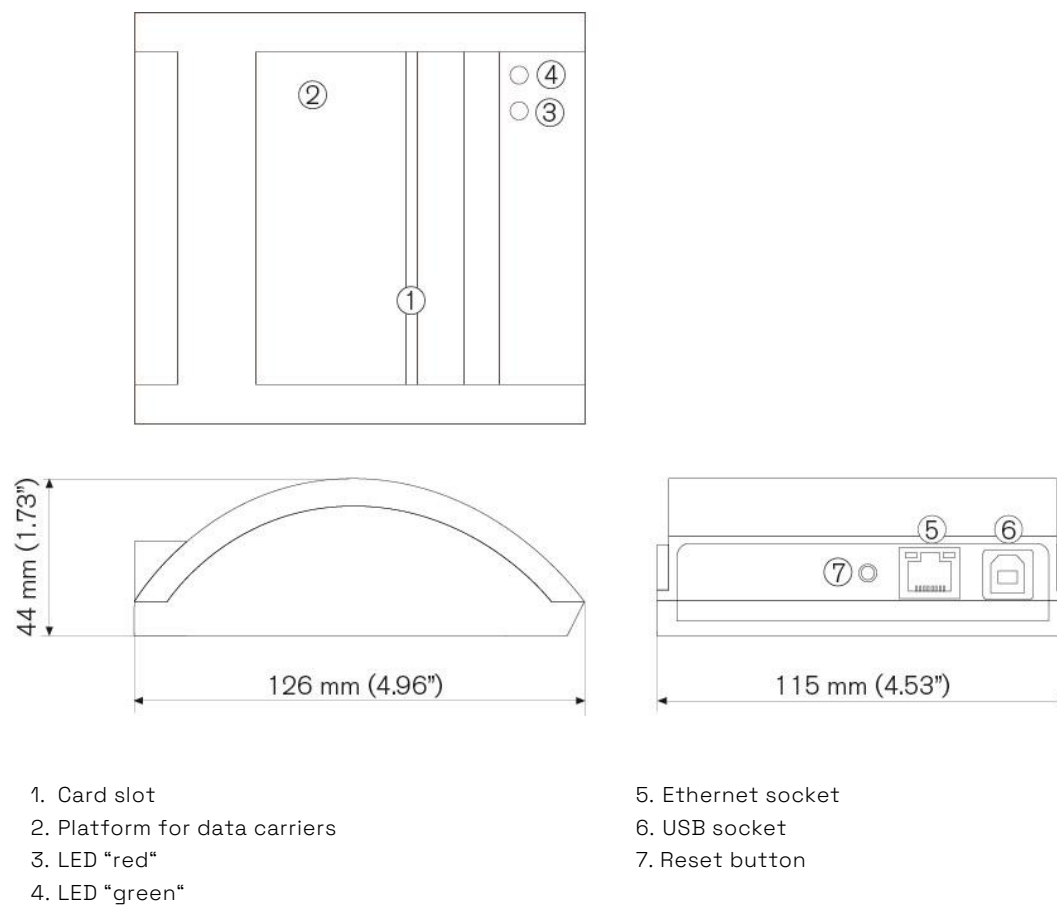


Fig. 2.3 – Dimensions of the GAT NET.Writer 7000 F/ISO (all measurements in mm)

3 ELECTRICAL CONNECTIONS

3.1 USB connection

A USB type 'B' connection is provided at the rear of the GAT NET.Writer 7000 F/ISO (6 in Fig. 2.3). A USB cable is connected from the USB type 'B' port on the device to the USB type 'A' port of a computer as shown in Fig. 3.1 .

NOTE! The maximum USB cable length between the GAT NET.Writer 7000 F/ISO and a computer is 5 m. A 1.8 m USB cable is included with the device.

- ▶ Start the PC and log in to Windows.
- ▶ Connect the GAT NET.Writer 7000 F/ISO to the PC as shown in the following picture.

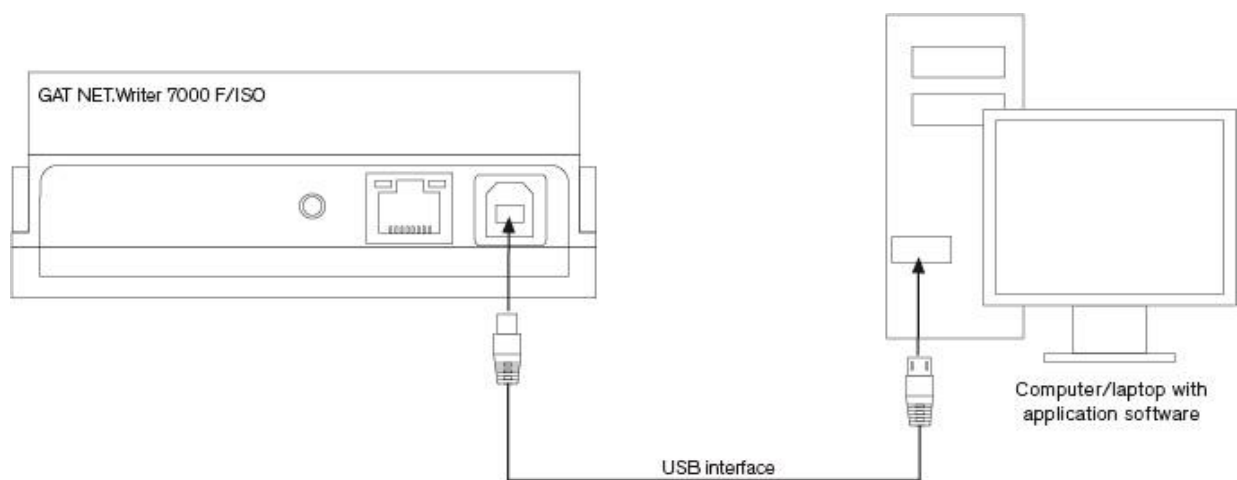


Fig. 3.1 – USB connection

After connecting the GAT NET.Writer 7000 F/ISO to the computer, the device is automatically recognized as an HID (Human Interface Device = input device). HID drivers are included with all major computer operating systems (Windows, Mac OSX, and Linux). The GAT NET.Writer 7000 F/ISO is ready to use once the “Enable Keyboard Mode” setting has been activated in GAT Config Manager (see section “4.6.6. USB communication mode setting”)

See section “4.1. USB communication mode” for more information on communicating via USB.

3.2 Ethernet connection

An Ethernet connection port is provided at the rear of the GAT NET.Writer 7000 F/ISO (5 in Fig. 2.3). An Ethernet patch cable with an RJ45 plug is used to plug into this connection. The patch cable is then connected to the network, and computer(s) respectively, via an Ethernet switch as shown in Fig. 3.2 .

NOTE! CAT.5 cable or a higher standard must be used for all Ethernet connections.

- ▶ Connect the Ethernet patch cable with an RJ45 plug to the GAT NET.Writer 7000 F/ISO.
- ▶ Connect the other end of the Ethernet patch cable to the network switch.
- ▶ Make sure that the PC is also connected to the same network.
- ▶ Connect the power supply to the USB port of the GAT NET.Writer 7000 F/ISO. As shown in the following figure, the power supply can be provided via a separate power supply or via a USB interface on the PC (see Fig. 3.2).

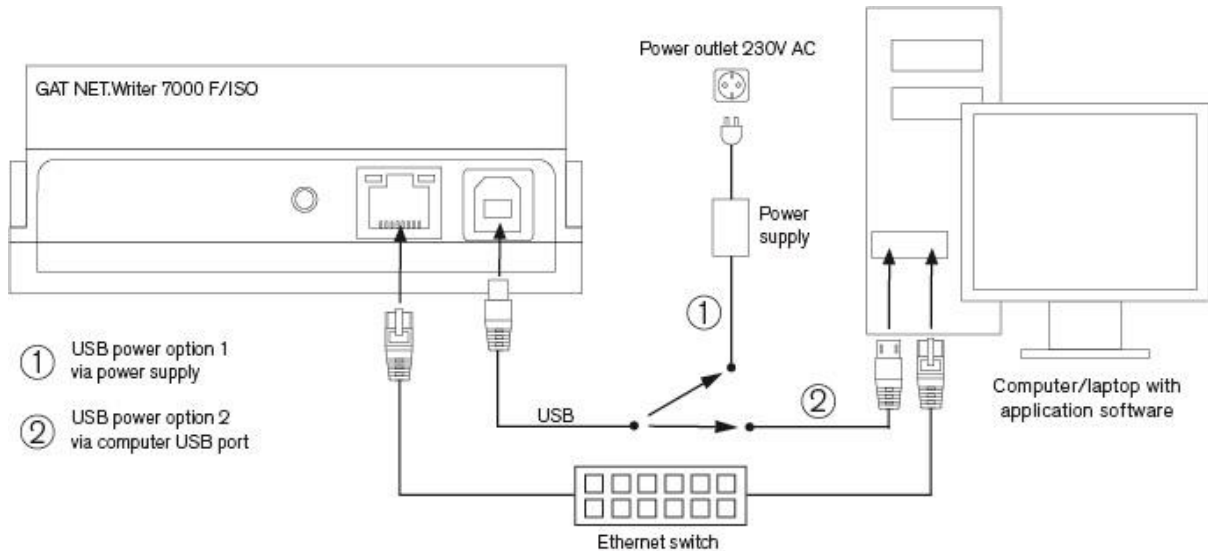


Fig. 3.2 – Ethernet connection

See section “4.2. Ethernet communication mode” for more information on communicating via Ethernet.

3.3 Power connection

Power for the GAT NET.Writer 7000 F/ISO is always supplied through the USB port (6 in Fig. 2.3), regardless of whether the device is using the USB or Ethernet interface for communication.

When the GAT NET.Writer 7000 F/ISO is using the USB interface for communication, power is supplied from the computer to the GAT NET.Writer 7000 F/ISO via the USB cable as shown in Fig. 3.1 An additional power supply is not required in this case.

When the GAT NET.Writer 7000 F/ISO is using the Ethernet interface for communication, an additional power source must be connected to the USB port on the GAT NET.Writer 7000 F/ISO. There are two options for this power source:

1. Connect the USB cable from the GAT NET.Writer 7000 F/ISO to the power supply (option 1 in Fig. 3.2). Connect the power supply to a 230V AC power outlet. A 3m USB cable and power supply are included with the device.
2. Connect the USB cable from the GAT NET.Writer 7000 F/ISO to the USB port of a computer (option 2 in Fig. 3.2).

4 CONFIGURATION AND OPERATION

4.1 USB communication mode

When using the USB interface to communicate with a computer, the GAT NET.Writer 7000 F/ISO functions as an input device (e.g., a keyboard) and one-way communication between the station and the computer is available. The unique number (UID) of a data carrier is read by the GAT NET.Writer 7000 F/ISO and sent to the computer (host) where it is handled in the same way as standard keyboard input data.



The default (factory) setting for the GAT NET.Writer 7000 F/ISO is to operate in Ethernet communication mode. See section “4.6.6. USB communication mode setting” for information on how to change this setting.

When operating in USB mode, the GAT NET.Writer 7000 F/ISO can send prefix or postfix data with the UID of a data carrier. The specified data is added to the front (prefix) or end (postfix) of the UID and sent by the GAT NET.Writer 7000 F/ISO when a data carrier is read. A common use of this function is to send an “ENTER” command as postfix data along with the UID, thereby placing the cursor on the following line after the UID is displayed on the computer screen. See section “4.6.7. Prefix / postfix settings” for more information.

USB communication mode also offers the possibility to send the UID number in decimal or hexadecimal format. See section “4.6.8. UID format” for more information.

See section “3.1. USB connection” for information on how to connect to a computer via USB.

4.1.1 USB port energy saving function

Most computer operating systems include a function that switches the USB port off to save energy after a defined period of inactivity. If this function is enabled for the USB port where the GAT NET.Writer 7000 F/ISO is connected, the GAT NET.Writer 7000 F/ISO will not operate if the USB port is deactivated.

When the USB port is activated again by the computer, the first data carrier read by the GAT NET.Writer 7000 F/ISO may be delayed by approximately 5 seconds as the GAT NET.Writer 7000 F/ISO must initialize the USB connection again. The UID of the next data carrier read by the GAT NET.Writer 7000 F/ISO will be sent instantly to the computer as normal.

The USB port energy saving function can be disabled in Windows operating systems and is found here:



Right-click on the USB port where the GAT NET.Writer 7000 F/ISO is connected and select “Properties” from the drop-down menu as shown in Figure 4.1

In the “Power Management” tab, you can configure the “Allow the computer to turn off this device to save power” option as required.

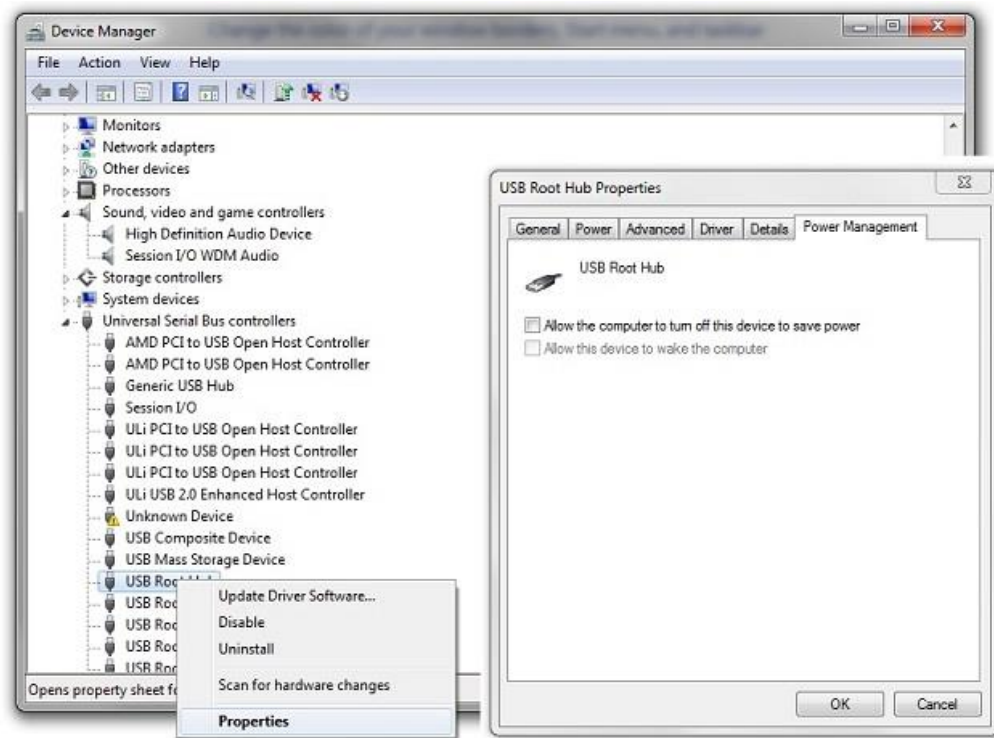


Figure 4.1 – Configuring USB port energy saving function

On the “Power Management” tab, you can configure the “Allow the computer to turn off this device to save power” option as required.

4.2 Ethernet communication mode

When using Ethernet to communicate with a computer, two-way data transmission between the GAT NET.Writer 7000 F/ISO and the computer is possible. As in USB mode, the GAT NET.Writer 7000 F/ISO can read data carrier information and send the data to a computer. Information, such as device configuration settings, can also be sent from the computer to the GAT NET.Writer 7000 F/ISO.

The GAT NET.Writer 7000 F/ISO can be configured so that when a data carrier is placed on the RFID reading platform, the data carrier’s UID is automatically read and sent to the computer. See section “4.6.4. Automatic reading of data carrier UID” for more information on how to configure this function.



The automatic UID reading function is configurable when the GAT NET.Writer 7000 F/ISO is operating in Ethernet communication mode. In USB communication mode this function is permanently activated.

Ethernet communication mode also offers the possibility to automatically send data stored on the data carrier in locker segments 1 and 2. See section “4.6.5. Automatic reading of locker segment data”.

See section “3.2. Ethernet connection” for information on how to connect to a computer via Ethernet.

4.3 Setup for configuration in GAT Config Manager

After the electrical connections for the GAT NET.Writer 7000 F/ISO are complete, configuration settings can be set using GAT Config Manager configuration software.

NOTE! Configuration of the GAT NET.Writer 7000 F/ISO via GAT Config Manager is only possible using the Ethernet (TCP/IP) connection. See section “3.2. Ethernet connection” for more information on the Ethernet connection.

Even if you intend to operate the device using only the USB connection, you must still connect to a computer using the Ethernet connection to change settings relating to how the device functions in USB mode.



There is a separate manual with detailed information on each function available in GAT Config Manager. To access the manual while the software is open, click on the “Help” drop-down menu and select “How Do I”.

Complete the following steps to begin configuring the GAT NET.Writer 7000 F/ISO with GAT Config Manager.

- ▶ After installing the software, open GAT Configuration Manager via “Start” -> “All Programs” -> “GANTNER Electronic GmbH” -> “GAT Config Manager” -> “GAT Config Manager”.
 - The default start window of GAT Config Manager is displayed.
- ▶ Click on the “Open Project” icon (1 in Figure 4.2) to find an existing project.
- ▶ Alternatively, click on the “Create Project” icon (2 in Figure 4.2) to start a new project.



Figure 4.2 – GAT Config Manager - Project setup

- ▶ Once a project is established, click on the “Scan Device” icon (1 in Figure 4.3).
 - The software scans the network and display a list of all connected Gantner devices.
- ▶ Select your GAT NET.Writer 7000 F/ISO from the list. Use device details such as the IP address or MAC address to identify the correct device.
 - The selected device is highlighted in blue as shown in Figure 4.3 .
- ▶ Click on “OK” (2 in Figure 4.3).
 - The selected device is added to the “Devices” list (3 in Figure 4.3).

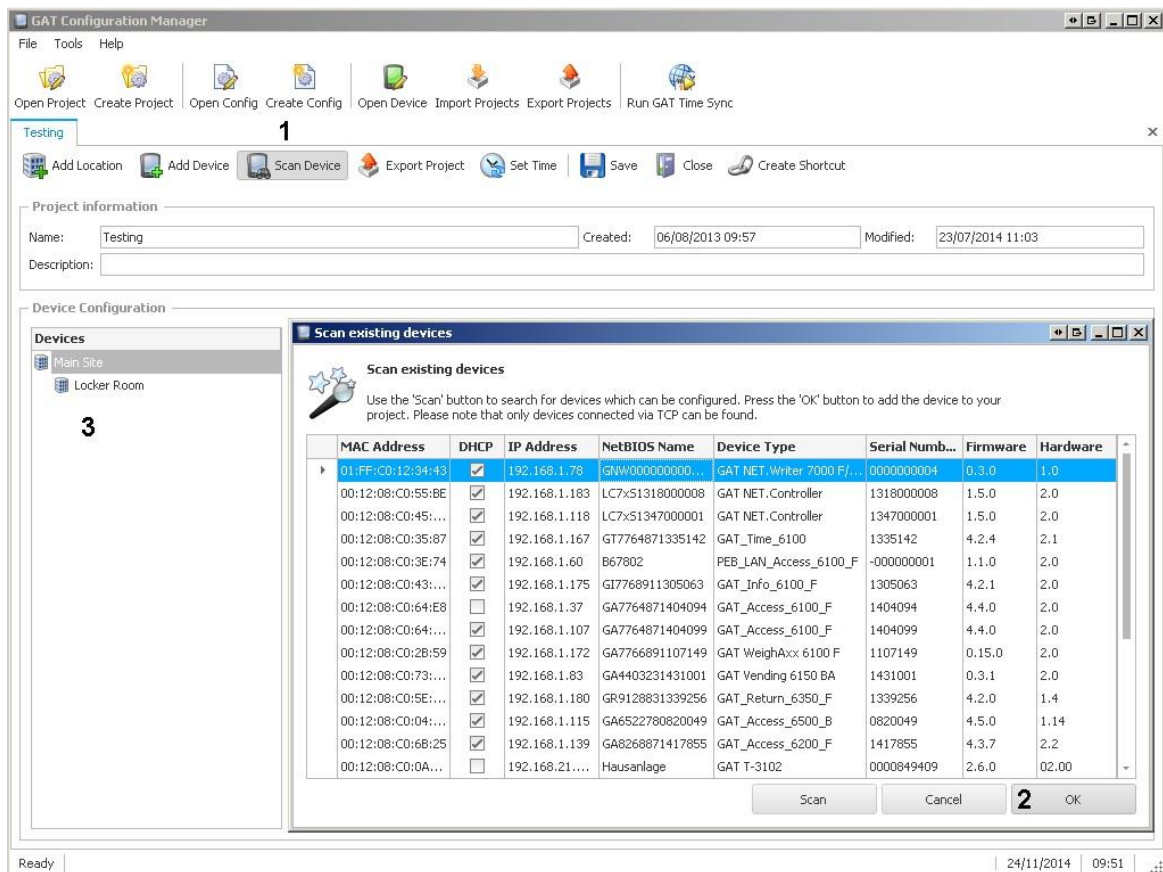


Figure 4.3 – GAT Config Manager - Scan device

4.4 Viewing the GAT NET.Writer 7000 F/ISO configuration settings

Once a project is established in GAT Config Manager and your GAT NET.Writer 7000 F/ISO has been added to the “Devices” list, you can now view and adjust the configuration settings of the device. Complete the following steps to view the configuration settings.

- Select the GAT NET.Writer 7000 F/ISO from the “Devices” tree (1 in Figure 4.4).
 - The GAT NET.Writer 7000 F/ISO is highlighted in blue.

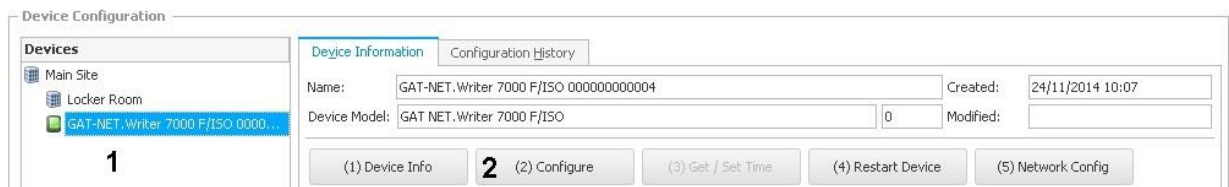


Figure 4.4 – View configuration settings

- Click on the “(2) Configure” button (2 in Figure 4.4).
 - The GAT Configurator window opens (Figure 4.5).

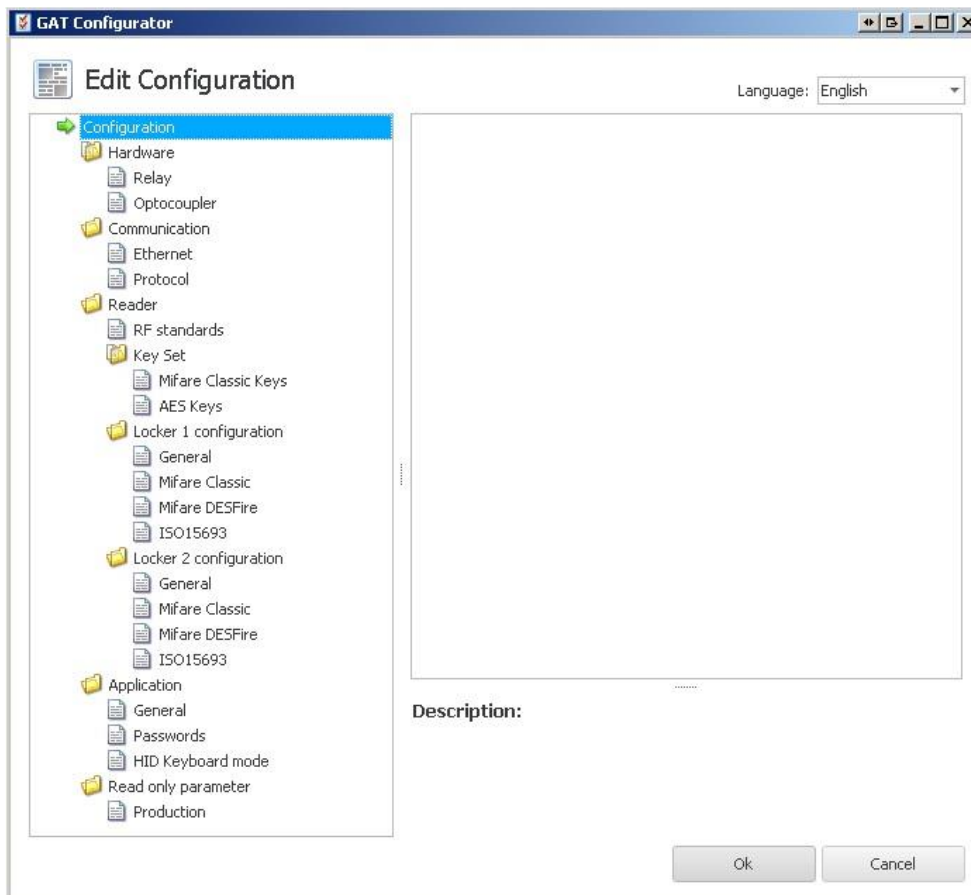


Figure 4.5 – GAT Configurator window

4.5 Uploading the configuration settings to the GAT NET.Writer 7000 F/ISO

When you are finished configuring the GAT NET.Writer 7000 F/ISO settings in GAT Config Manager, it is important to finalize the configuration by uploading the file to the device. Complete the following steps to finalize the configuration.

- Click on “OK” in the GAT Configurator Window (Figure 4.5).
 - The confirm upload window opens (see below).



- Click “Yes” to apply the configuration to the device.
 - The new configuration settings will be uploaded to the GAT NET.Writer 7000.

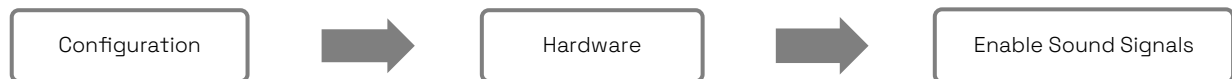
4.6 Configuration settings of the GAT NET.Writer 7000 F/ISO

The configuration settings of the GAT NET.Writer 7000 F/ISO that can be adjusted in GAT Config Manager are explained in this section. For most applications, most configuration settings will not need to be changed from their factory (default) values.

The main configuration settings are explained in detail in the following sections. A list and brief explanation of every configuration setting available for the GAT NET.Writer 7000 F/ISO can be found in section “4.7. Configuration settings table”.

4.6.1 Sound signals

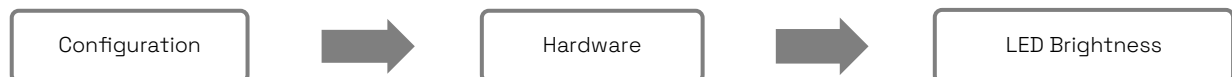
The GAT NET.Writer 7000 F/ISO has an integrated beeper that signals when data carrier read / write activity takes place. This setting can be found here:



Select / deselect the “Enable Sound Signals” option to turn the function on / off.

4.6.2 LED brightness

The brightness level of the two LEDs that signal when device activity occurs can be adjusted. This setting can be found here:



The default setting for this function is 100, which represents full brightness. Enter a value between 0 and 100 in the “LED brightness” field to adjust the LED brightness.

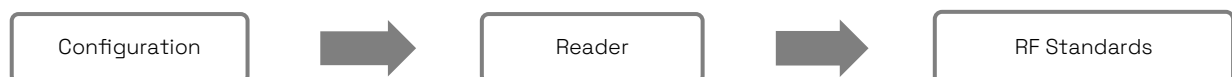
4.6.3 RF standards

The GAT NET.Writer 7000 F/ISO can operate with data carriers that use ISO 15693 and ISO 14443A (MIFARE) technology.



The default setting for the GAT NET.Writer 7000 F/ISO is to operate with both ISO 15693 and ISO 14443A (MIFARE) data carriers.

The setting for the GAT NET.Writer 7000 F/ISO to operate with ISO 14443A (MIFARE) data carriers cannot be changed. The setting for the GAT NET.Writer 7000 F/ISO to operate with ISO 15693 data carriers can be adjusted and is found here:



Select / deselect the “ISO 15693” option to turn the setting on / off.

4.6.4 Automatic reading of data carrier UID

This function allows the UID of a data carrier to be automatically sent to a computer when the data carrier is placed on the GAT NET.Writer 7000 F/ISO.

The setting can be found here:



Select / deselect the “Enable Card Autoread” option to turn the function on / off.

4.6.5 Automatic reading of locker segment data

This function allows data stored on the data carrier in locker segments 1 and 2 to be automatically sent to the computer when the data carrier is placed on the GAT NET.Writer 7000 F/ISO.



This function is only available when the GAT NET.Writer 7000 F/ISO is operating in Ethernet (TCP/IP) communication mode.

This data is usually the number of the locker locked by the data carrier. The setting can be found here:



Select “Locker 1”, “Locker 2”, “Locker 1 + 2”, or “None” from the drop-down menu.

4.6.6 USB communication mode setting

This setting activates or deactivates USB Communication Mode. See “4.1. USB communication mode”.



The default setting for the GAT NET.Writer 7000 F/ISO is to operate in Ethernet Communication Mode.

The setting can be found here:



Select / deselect the “Enable Keyboard Mode” option to turn USB Communication Mode on / off.

4.6.7 Prefix / postfix settings

The prefix and postfix settings allow you to add data to the front (prefix) or end (postfix) of the UID. The specified additional data will be added to the UID and displayed when the data carrier is read.



This setting is only available when the GAT NET.Writer 7000 F/ISO is operating in USB Communication Mode. See “4.1. USB communication mode”.

The setting can be found here:



The prefix/postfix data can be entered in the correct field as scan codes. The format for the scan code is <mod,code>. “Mod” can be one of the following keys:

- 1 ... Left CTRL
- 2 ... Left Shift
- 4 ... Left Alt

“Code” is the HID scan code of the desired key. For example:

<2,34> = % (Left Shift and 5)

<0,40> = % [and ENTER

The following figure shows the settings required to send an “ENTER” command after the UID number.

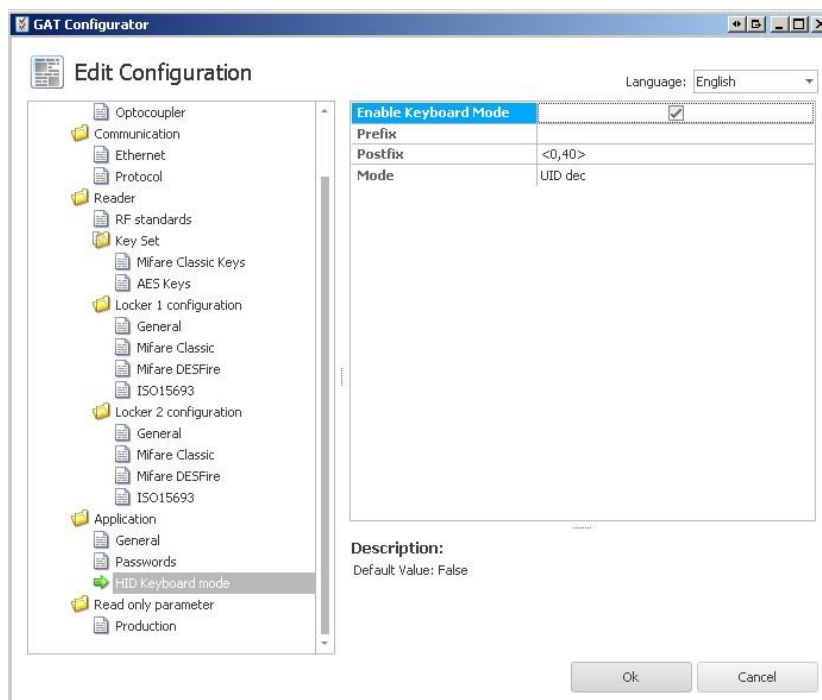


Figure 4.6 – “ENTER” postfix settings

Scan codes depend on the keyboard layout. The examples shown in this document are valid for an English keyboard layout. A complete list of scan codes for an English keyboard layout can be found in section “6.1 Scan code list – English keyboard”.

NOTE! If the GAT NET.Writer is used in HID mode, the transmitted data is not displayed correctly when the shift key is pressed at the same time on the keyboard. A pressed caps-lock key is recognized by the GAT NET.Writer 7000 F/ISO for many country-specific keyboard settings. For German country settings, it is necessary to activate the 'German shift lock' parameter in the GAT NET.Writer 7000 F/ISO configuration.

4.6.8 UID format

The UID of a data carrier can be sent from the GAT NET.Writer 7000 F/ISO in decimal or hexadecimal format. The default setting is to display the UID in decimal format.



This setting is only available when the GAT NET.Writer 7000 F/ISO is operating in USB Communication Mode. See "4.1. USB communication mode".

The setting can be found here:



Select "UID dec" or "UID hex" from the drop-down menu.

4.7 Configuration settings table

The following table lists all the configuration settings available for the GAT NET.Writer 7000 F/ISO in GAT Config Manager.

Options	Description	Format	Default
Hardware			
Enable sound signals	Enable the integrated beeper	Boolean	True
LED brightness	Level (0 – 100) to determine the brightness of the LEDs	Integer	100
Relay	Output for activation of additional hardware		
Function	Transparent – All actions set by the host	List option	Transparent
Pulse	Duration (ms) for how long the relay will be activated	Integer	0
Optocoupler	Status input for feedback		
Function	Transparent – Only report events to host	List option	Transparent
Trigger	An event is triggered if the optocoupler input signal matches the configured setting	Boolean	Disable
Communication			
Ethernet			
Port number	Port used for communication with the device	Integer	8000
MAC address	The MAC address of the device (cannot be changed)	Integer	
DHCP enabled	If set to "True", the device will get its IP settings from a DHCP server	Boolean	True
Static IP address	IP address of the device (if DHCP is disabled)	IPv4 add.	0.0.0.0

Static subnet mask	Subnet mask of the device (if DHCP is disabled)	IPv4 add.	255.255.255.0
Static default gateway	Default gateway of the device (if DHCP is disabled)	IPv4 add.	0.0.0.0
Static DNS 1	Primary DNS address of the device (if DHCP disabled)	IPv4 add.	0.0.0.0
Static DNS 2	Secondary DNS address of the device (if DHCP disabled)	IPv4 add.	0.0.0.0
NetBIOS name	NetBIOS name of the device	Text	GW + Part No. + Serial No.
Mode	Ethernet Communication Mode: "Auto negotiate", "100 MBit full duplex", "100 MBit half duplex", "10 MBit full duplex", "10 MBit half duplex"	List option	Auto negotiate
Protocol			
TCPAck Timeout	Ethernet Detail: Force to send "Acknowledge" packets after this timeout	Integer	1000
Host Command Timeout	Maximum command response time for device requests	Integer	1000
Time Sync IP	If this is set, device will accept time sync packets only from this host	IP add.	0.0.0.0
Reader			
RF Standards			
ISO 15693	Enable device to function with data carriers using ISO 15693 technology	Boolean	False
ISO 14443A	Enable device to function with data carriers using MIFARE (ISO 14443A) technology. Cannot be disabled.	Boolean	True
Key Set			
Site key	Site key of the device. All data carriers must have the same site key to be used with the device.	Hex	9999
Key Set	DESFire AES Keys, encrypted	Hex	
MIFARE Classic Keys			
Mf Key 1 - 6	Data for MIFARE Classic keys 1 to 6	Integer	
AES Keys			
AES Key 1 - 6	Data for AES keys 1 to 6	Integer	
Locker 1 Configuration			
General			
MIFARE Classic	Options for reading MIFARE Classic data carriers		
Sector Num	The segment where UID data is stored	Integer	4
Read Key	Select the Read Key (Key A or Key B)	List option	
Write Key	Select the Write Key (Key A or Key B)	List option	
MIFARE DESFire			
Options for reading MIFARE DESFire data carriers			
Read Key Num	Number of the read key	Integer	
Write Key Num	Number of the write key	Integer	
Application ID	ID of the target DESFire application	Text	
Encryption Mode	Select the type of encryption mode	List option	
File Num	File number to read data from	Integer	
File Comm Mode	File communication mode: "Plain", "Maced", "Enciphered"	List option	
File Type	Type of file: "Standard", "Backup"	List option	
ISO 15693			
Options for reading ISO 15693 data carriers			
General Block Num	The segment where general data is stored	Integer	13
Certificate Block Num	The segment where certificate data is stored	Integer	15
Locker Block Num	The segment where locker data is stored	Integer	19

Locker 2 Configuration			
General			
MIFARE Classic		Options for reading MIFARE Classic data carriers	
Sector Num	The segment where UID data is stored	Integer	4
Read Key	Select the Read Key (Key A or Key B)	List option	
Write Key	Select the Write Key (Key A or Key B)	List option	
MIFARE DESFire		Options for reading MIFARE DESFire data carriers	
Read Key Num	Number of the read key	Integer	
Write Key Num	Number of the write key	Integer	
Application ID	ID of the target DESFire application	Text	
Encryption Mode	Select the type of encryption mode	List option	
File Num	File number to read data from	Integer	
File Comm Mode	File communication mode: "Plain", "Maced", "Enciphered"	List option	
File Type	Type of file: "Standard", "Backup"	List option	
ISO 15693		Options for reading of ISO 15693 data carriers	
General Block Num	The segment where general data is stored	Integer	13
Certificate Block Num	The segment where certificate data is stored	Integer	15
Locker Block Num	The segment where locker data is stored	Integer	23
Application			
General			
Enable Card Autoread	Turn on / off function to automatically read data carrier information	Boolean	False
Autoread Segment	None – Do not send any locker segment data Locker 1 – Send locker 1 segment data Locker 2 – Send locker 2 segment data Locker 1 + 2 – Send locker 1 + 2 segment data	List option	None
Config Card Index	Index of the last used configuration card (For future use)	Integer	0
Passwords			
Enable Login	Turn on / off login function	Boolean	False
Password Login	Password required to login to the device	Text	
HID Keyboard Mode			
Enable Keyboard Mode	Turn on / off keyboard mode function	Boolean	False
Prefix	Field to add prefix data to the start of the UID	Text	
Postfix	Field to add postfix data to the end of the UID	Text	
Mode	UID dec – Display data carrier UID in decimal format UID hex – Display data carrier UID in hexadecimal format	List option	UID dec
Read only parameter			
Production			
Production Data	Production data for the device (set during manufacture)	Text	
Article Num	Article number of the device	Integer	
Serial Num	Serial number of the device	Integer	
Hardware Vers	Hardware version of the device	Integer	
Manufacturer Num	Manufacturer number of the device	Integer	
Production Year	Production year of the device	Integer	
Production Week	Production week of the device	Integer	

Table 4.1 – Configuration settings of the GAT NET.Writer 7000

4.8 Restarting the GAT NET.Writer 7000 F/ISO

In certain situations (e.g., after an error or network problem) it is helpful to restart the GAT NET.Writer 7000 F/ISO. Restarting means that the software application in the device is restarted. All device settings remain as before. Complete the following steps to restart the GAT NET.Writer 7000 F/ISO.

- ▶ Keep the RESET button (1 in Figure 4.7) pressed in for 5 seconds.
 - The GAT NET.Writer 7000 F/ISO restarts.

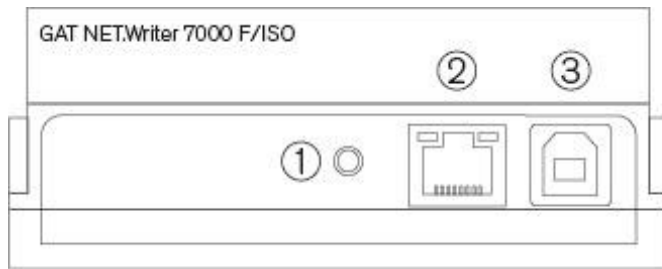


Figure 4.7 – Reset button

4.9 Resetting the GAT NET.Writer 7000 F/ISO to the default configuration

The GAT NET.Writer 7000 F/ISO will operate exactly as at the time of delivery after resetting the device to the default configuration. All existing device settings will be lost. Complete the following steps to reset the GAT NET.Writer 7000 F/ISO.

- ▶ Disconnect the power supply from the GAT NET.Writer 7000 F/ISO.
- ▶ Reconnect the power supply while holding the RESET button (1 in Figure 4.7) pressed in.
- ▶ Keep the RESET button pressed in for approximately 12 seconds.
 - The red LED starts flashing.
- ▶ Release the RESET button.
- ▶ Press the RESET button again and keep it pressed in for 2 seconds.
 - The GAT NET.Writer 7000 F/ISO is reset to the default configuration.

4.10 Uploading firmware to the GAT NET.Writer 7000 F/ISO

4.10.1 Standard procedure

The standard procedure for uploading firmware to the GAT NET.Writer 7000 F/ISO is via GAT Config Manager software. Complete the following steps to upload firmware to the GAT NET.Writer 7000 F/ISO:

- ▶ Start GAT Config Manager.
- ▶ Follow the instructions in section “4.3. Setup for configuration in GAT Config Manager”.
- ▶ Right-click on the GAT NET.Writer 7000 F/ISO and select “Update Firmware” from the drop-down menu.
 - The device update wizard opens.
- ▶ Select a firmware file from the list or locate the firmware file on your computer via the “Select local update package” button.
- ▶ Click on “Next”.
 - The wizard uploads the firmware file to the GAT NET.Writer 7000 F/ISO.

4.10.2 Uploading firmware via bootloader mode

In some instances, the standard procedure for uploading firmware to the GAT NET.Writer 7000 F/ISO may not function as required. In this case, the GAT NET.Writer 7000 F/ISO can be put into bootloader mode and the firmware uploaded while in this mode. Complete the following steps to upload firmware to the GAT NET.Writer 7000 F/ISO via bootloader mode:

- ▶ Disconnect the power supply from the GAT NET.Writer 7000 F/ISO.
- ▶ Reconnect the power supply while holding the RESET button (1 in Figure 4.7) pressed in.
- ▶ Press the RESET button twice.
 - The device enters bootloader mode.
- ▶ Follow the “4.10.1 Standard procedure” instructions to upload firmware to the device.
- ▶ To exit bootloader mode, disconnect the power supply or send a restart command from a software application.

4.11 Software integration

4.11.1 GAT DIRECT.Connect

The GAT NET.Writer 7000 F/ISO can be integrated and used with software applications that manage RFID systems. These applications are typically used to control access terminals, information terminals and the RFID data carriers that operate with these system components.

GANTNER has developed an integration tool called GAT DIRECT.Connect that uses the programming language independent JavaScript Object Notation (JSON) format. By using GAT DIRECT.Connect, software developers can integrate the GAT NET.Writer 7000 F/ISO (and other GANTNER products) into their software, irrespective of the programming language used.

Further information on GAT DIRECT.Connect is available in this document (DK_GAT-DIRECTConnect-Short-Description-EN), or by contacting your GANTNER representative.

5 TECHNICAL DATA

Nominal voltage:	DC 5 V
Power supply:	Via USB interface
Power consumption:	max. 350 mA
Supported RFID technologies:	- MIFARE® Classic - MIFARE DESFire® - MIFARE Ultralight® - ISO 15693
RFID frequency:	13.56 MHz
Transmitting power:	max. 700 mW
Connections:	- USB: Type-B socket - Ethernet: RJ45 socket
Interface type:	- USB interface, Version 1.1 - Ethernet TCP/IP
Communication interface:	- USB: HID interface - TCP/IP: JSON
Signaling elements:	- 2 status LEDs - 1 acoustic signal generator
Housing material:	Plastic ABS
Dimensions:	126 x 115 x 44 mm (4.96 x 4.53 x 1.73 in)
Weight:	Approx. 175 g (6.17 oz.)
Permitted ambient temperature:	0 °C to +50 °C (+32 °F to +122 °F)
Protection type:	IP40
Protection class:	III
Weight:	Approx. 175 g (6.17 oz.)
Environment class based on VdS 2110:	I (conditions in indoor areas)
Compliance:	CE, CB, IC, FCC, ETL

6 APPENDIX

6.1 Scan code list – English keyboard

0x00	Reserved (no event indicated)	0x30	Keyboard] and }
0x01	0x01 Keyboard ErrorRollOver	0x31	Keyboard \ and
0x02	Keyboard POSTFail	0x32	Keyboard Non-US # and ~
0x03	Keyboard ErrorUndefined	0x33	Keyboard ; and :
0x04	Keyboard a and A	0x34	Keyboard ' and "
0x05	Keyboard b and B	0x35	Keyboard Grave Accent and Tilde
0x06	Keyboard c and C	0x36	Keyboard , and <
0x07	Keyboard d and D	0x37	Keyboard . and >
0x08	Keyboard e and E	0x38	Keyboard / and ?
0x09	Keyboard f and F	0x39	Keyboard Caps Lock
0x0A	Keyboard g and G	0x3A	Keyboard F1
0x0B	Keyboard h and H	0x3B	Keyboard F2
0x0C	Keyboard i and I	0x3C	Keyboard F3
0x0D	Keyboard j and J	0x3D	Keyboard F4
0x0E	Keyboard k and K	0x3E	Keyboard F5
0x0F	Keyboard l and L	0x3F	Keyboard F6
0x10	Keyboard m and M	0x40	Keyboard F7
0x11	Keyboard n and N	0x41	Keyboard F8
0x12	Keyboard o and O	0x42	Keyboard F9
0x13	Keyboard p and P	0x43	Keyboard F10
0x14	Keyboard q and Q	0x44	Keyboard F11
0x15	Keyboard r and R	0x45	Keyboard F12
0x16	Keyboard s and S	0x46	Keyboard PrintScreen
0x17	Keyboard t and T	0x47	Keyboard Scroll Lock
0x18	Keyboard u and U	0x48	Keyboard Pause
0x19	Keyboard v and V	0x49	Keyboard Insert
0x1A	Keyboard w and W	0x4A	Keyboard Home
0x1B	Keyboard x and X	0x4B	Keyboard PageUp
0x1C	Keyboard y and Y	0x4C	Keyboard Delete Forward
0x1D	Keyboard z and Z	0x4D	Keyboard End
0x1E	Keyboard 1 and !	0x4E	Keyboard PageDown
0x1F	Keyboard 2 and @	0x4F	Keyboard RightArrow
0x20	Keyboard 3 and #	0x50	Keyboard LeftArrow
0x21	Keyboard 4 and \$	0x51	Keyboard DownArrow
0x22	Keyboard 5 and %	0x52	Keyboard UpArrow
0x23	Keyboard 6 and ^	0x53	Keypad Num Lock and Clear
0x24	Keyboard 7 and &	0x54	Keypad /
0x25	Keyboard 7 and &	0x55	Keypad *
0x26	Keyboard 9 and [	0x56	Keypad -
0x27	Keyboard 0 and]	0x57	Keypad +
0x28	Keyboard Return (ENTER)	0x58	Keypad ENTER
0x29	Keyboard ESCAPE	0x59	Keypad 1 and End
0x2A	Keyboard DELETE (Backspace)	0x5A	Keypad 2 and Down Arrow
0x2B	Keyboard Tab	0x5B	Keypad 3 and PageDn
0x2C	Keyboard Spacebar	0x5C	Keypad 4 and Left Arrow
0x2D	Keyboard - and (underscore)	0x5D	Keypad 5
0x2E	Keyboard = and +	0x5E	Keypad 6 and Right Arrow
0x2F	Keyboard [and {	0x5F	Keypad 7 and Home
0x60	Keypad 8 and Up Arrow	0x7D	Keyboard Paste
0x61	Keypad 9 and PageUp	0x7E	Keyboard Find

0x62	Keypad 0 and Insert	0x7F	Keyboard Mute
0x63	Keypad . and Delete	0x80	Keyboard Volume Up
0x64	Keyboard Non-US \ and	0x81	Keyboard Volume Down
0x65	Keyboard Application	0x82	Keyboard Locking Caps Lock
0x66	Keyboard Power	0x83	Keyboard Locking Num Lock
0x67	Keypad =	0x84	Keyboard Locking Scroll Lock
0x68	Keyboard F13	0x85	Keypad Comma
0x69	Keyboard F14	0x86	Keypad Equal Sign
0x6A	Keyboard F15	0x87	Keyboard International1
0x6B	Keyboard F16	0x88	Keyboard International2
0x6C	Keyboard F17	0x89	Keyboard International3
0x6D	Keyboard F18	0x8A	Keyboard International4
0x6E	Keyboard F19	0x8B	Keyboard International5
0x6F	Keyboard F20	0x8C	Keyboard International6
0x70	Keyboard F21	0x8D	Keyboard International7
0x71	Keyboard F22	0x8E	Keyboard International8
0x72	Keyboard F23	0x8F	Keyboard International9
0x73	Keyboard F24	0x90	Keyboard LANG1
0x74	Keyboard Execute	0x91	Keyboard LANG2
0x75	Keyboard Help	0x92	Keyboard LANG3
0x76	Keyboard Menu	0x93	Keyboard LANG4
0x77	Keyboard Select	0x94	Keyboard LANG5
0x78	Keyboard Stop	0x95	Keyboard LANG6
0x79	Keyboard Again	0x96	Keyboard LANG7
0x7A	Keyboard Undo	0x97	Keyboard LANG8
0x7B	Keyboard Cut	0x98	Keyboard LANG9
0x7C	Keyboard Copy		



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INSPIRED ACCESS

SALTO  **WECOSYSTEM**

SCAN FOR CONTACT

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