

G7 Time & Attendance

GT7 Terminal with G7 Time & Attendance App for Employee Time Recording



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Contact

The contact information for questions regarding this product or for general enquiries is listed below:

Contact address of manufacturer

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www.gantner.com/locations

Important Information

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 closely 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. In particular, electrical connections must 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 applies in particular 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 as a result of 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 GT7 terminal was developed and fabricated 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)

The complete text of the CE Declaration of Conformity is available on the following internet link:

https://www.gantner.com/en/downloads-gt7-x500_1k3rfp49s2



WARNING!

This is a Class A device. This device can cause radio interference in the home. In this case, the operator may be required to take appropriate measures.



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 A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

Compliance Statement:

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.

IC (Canada)

This device contains license-free transmitters / receivers that comply with Innovation, Science and Economic Development Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (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.

Radiation exposure statement:

This equipment complies with FCC & Canadian radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

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1 INTRODUCTION

1.1 About this manual

This manual contains detailed information on how to configure a GT7 terminal with the G7 Time & Attendance App.

Information on the installation and electrical connection of the GT7 terminal is provided in the GT7 terminal manual.

1.2 Chapter overview

In chapter "2. GENERAL INFORMATION" you will find information on how to use the GT7 terminal with the G7 Time & Attendance App as well as a description of the most important terms used in this manual.

Provided in chapter "3. TERMINAL AND APP INSTALLATION" is additional information on installation and commissioning of the GT7 terminal.

In chapter "4. G7 TIME & ATTENDANCE APP" information about the installation of the time recording app on the GT7, the interfaces, and the themes is available.

In chapter "5. APP CONFIGURATION" you will find details on how to configure the G7 Time & Attendance App to meet customer specific requirements.

In chapter "6. STYLES" you will find information on how to further customize the display and formatting on the device.

In the "7. FTP FILE FORMATS" chapter you will find descriptions of the data exchange between the time recording software and the device via the FTP interface.

1.3 Target group

This manual contains the necessary information for configuring the GT7 to the customer's requirements and to the capabilities of the time recording software used.

Information for the following target groups is available in this manual:

- Installation personnel (installation, commissioning, configuration)
- Service technicians of the system (service)
- Users of the G7 Time & Attendance App (operating instructions)
- Software partners

If the target group is not specifically stated, the information is intended for all target groups.

⚠ CAUTION! Injury and damage to property/equipment. The instructions in this manual that are intended for a specific target group may only be performed by this target group. The completion of activities by unqualified personnel can lead to injuries and/or damage to property/equipment.

1.4 Formatting

1.4.1 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 the device or associated equipment.

1.4.2 Non safety-critical 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. You do not necessarily need to read this text; however, it will help you to understand the information in the section or provide interesting tips for the described device or the operation of the software.*

1.4.3 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.

1.5 Contact & inquiries

If you have any questions concerning the GT7 terminals and the G7 Time & Attendance App, 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/locations

2 GENERAL INFORMATION

2.1 Intended use

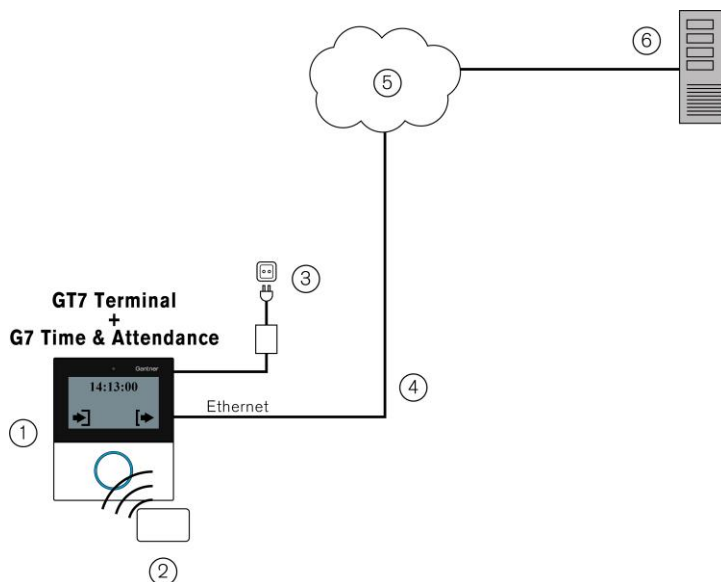
The GT7 terminal with G7 Time & Attendance App is used as a personnel time recording terminal. It enables the recording of working hours and employee absences.

2.2 Functional description

The “time punches” of the employees (coming, leaving, break, etc.) are recorded on the device using RFID data carriers and touchscreen input and transferred immediately or at a later time to time recording software depending on the operating mode used. The calculation of attendance and absence times is completed exclusively in the time recording software. Prebookings are also possible.

CardNET data can be written to the data carriers during a coming booking and deleted again during a leaving booking in order to allow authorizations at CardNET doors only when the users are present on-site. In addition, CardNET authorizations can also be processed without time bookings and the CardNET authorizations of users can be displayed on the GT7 terminal.

Due to the open interfaces and protocols, the device can connect to various time recording software solutions. The exact scope of device functionality is determined by the time recording software.



- 1 GT7 terminal with G7 Time & Attendance App
- 2 User identification via RFID data carrier
- 3 Power supply (not necessary if the GT7 is supplied via PoE)
- 4 Network connection
- 5 Connection to G7 Connect or local network
- 6 Connection to PC/server with time recording software

Figure 2.1 – System overview

2.3 Information on the GT7 terminals

Information on the installation and commissioning as well as the general device settings for the GT7 devices is provided in the manual of the GT7 terminal. The manual you are currently reading only provides information on the configuration settings of the G7 Time & Attendance App.

2.4 Terminology

Some terms are used frequently in this manual and these are defined below.

User / Person

In this manual, these terms refer to the person who identifies themselves at the GT7 terminal in order to create time bookings or to query balances.

Computer / PC

These terms refer to all desktop and laptop computers that use a Microsoft® Windows® operating system to configure the GT7 terminal and the G7 Time & Attendance App.

Terminal

General term for the time recording device (GT7 terminal with G7 Time & Attendance App).

Reader

An RFID reader is integrated in the terminal to read the contactless data carriers of users. Different types of external readers can be connected.

Data carrier

An identification medium (e.g., in the form of a key tag or chip card) with electronic memory and an ID number with which the system users identify themselves at the terminal. The data carriers are available to suit different identification systems (LEGIC®, MIFARE™, ISO 15693).

RFID (Radio-Frequency Identification)

In this manual, this term refers to the identification of a person via radio frequency at close range. An RFID data carrier, e.g., in the form of a key tag or chip card, serves as the identification medium.

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 FID and the read and write keys. The FIDs and the Site Keys are unique for each system. These numbers are encoded in all data carriers and all devices thereby ensuring that a data carrier cannot be used in different installations.

GANTNER Cloud / G7 Connect

This is a web browser-based application that facility operators can access after logging in (<https://gantner.cloud>) in order to manage all their G7 devices. The devices only need to be connected to a network and accessible via the internet. The devices can then be conveniently configured, updated, and managed in the GANTNER Cloud.

CardNET

CardNET means that the user authorizations are stored on the data carriers. This term describes an operating mode for offline controllers and offline locker locks. A programming device must be used to configure the controllers on-site. A distinction must be made here between CardNET G1 and CardNET G2:

- CardNET G1 only supports LEGIC prime and LEGIC advant data carriers and a maximum of 10 doors and 30 door groups can be stored on the data carrier.
- CardNET G2 supports LEGIC advant and MIFARE DESFire and is not limited to the 10 doors and 30 door groups.

SALTO Virtual Network (SVN) or GANTNER SVN

SALTO Virtual Network for GANTNER encoded data carriers. This function is comparable to the CardNET function. The authorization data is written to the data carriers thereby authorizing the data carriers for SALTO products. With the latest GAT Matrix and GAT ACE 7000 software and the latest firmware for the GAT DC 7200 controllers, GANTNER SVN data can also be written and read at GANTNER readers, allowing a data carrier to be used seamlessly in a system with GANTNER and SALTO products.

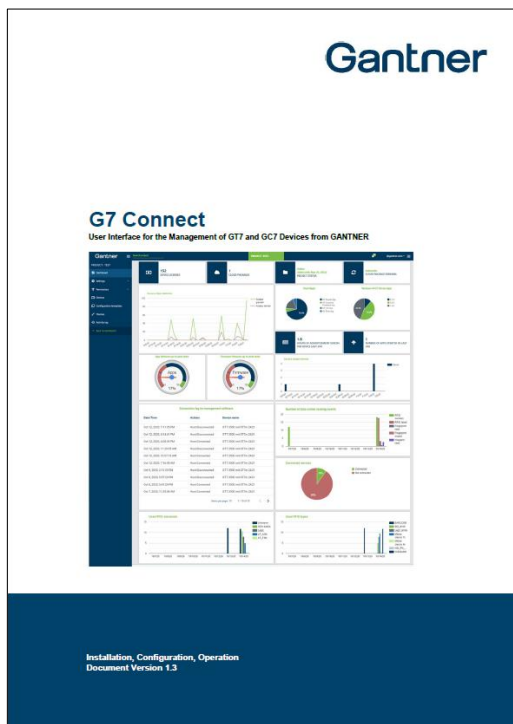
The data carriers can be encoded for SVN at the GT7 terminal with G7 Time & Attendance App from V1.4.

3 TERMINAL AND APP INSTALLATION



The installation, electrical connection, and commissioning of the GT7 terminals are described in a separate device manual. For installation and commissioning, please read and carefully follow the information provided in the GT7 manual.

Figure 3.1 – GT7 terminal manual



G7 Connect (GANTNER Cloud) can be used for the convenient configuration and monitoring of the GT7 terminals. This is especially recommended for larger systems with multiple GT7 terminals. A separate manual with detailed information on all software functions is available for G7 Connect.

Figure 3.2 – G7 Connect manual

3.1 App installation

The GT7 terminals can be used for various functions. For this reason, the G7 Time & Attendance App is not operating yet on the device when it is delivered and must be installed first.

The G7 Time & Attendance App can be installed on the device via the G7 Connect Cloud provided that at least 40 device license points are available on the device. These can be ordered via the article “G7 Device License points Time & Attendance” (Part No. 1105808).

The transferal of device license points to the GT7 terminal and the installation of apps are described in the general GT7 manuals.

After installing the app, the success of the installation process can also be checked via the GT7 web interface (see “5. APP CONFIGURATION”). The G7 Time & Attendance App must be selected to operate as the active app.

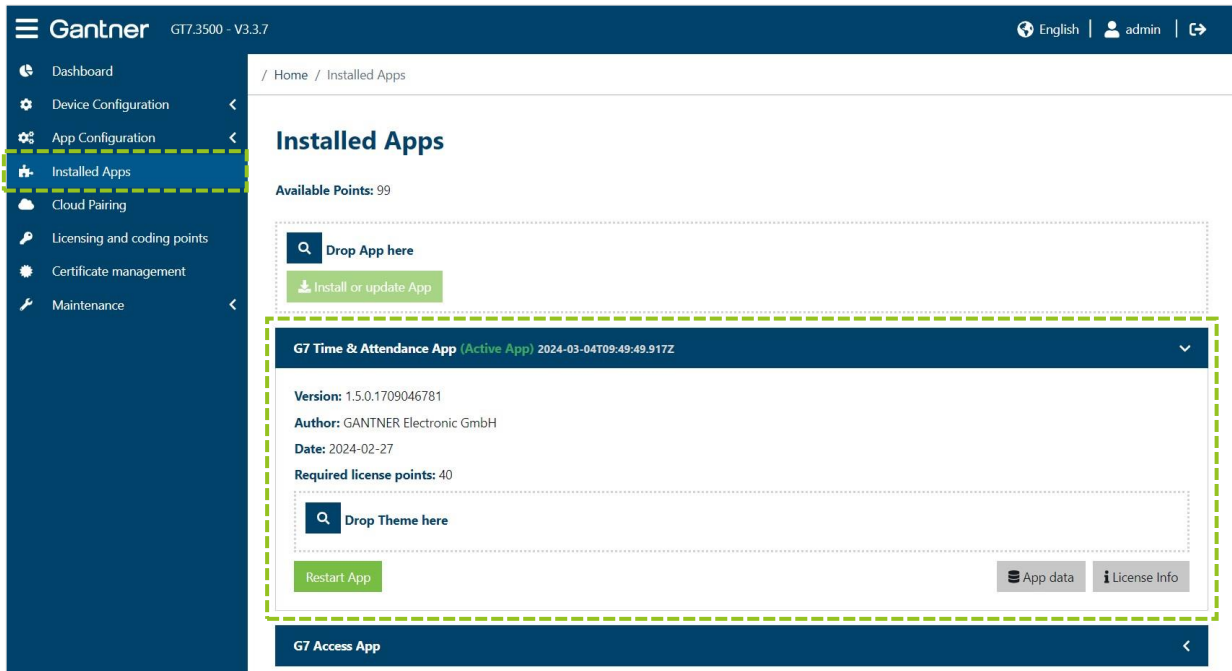


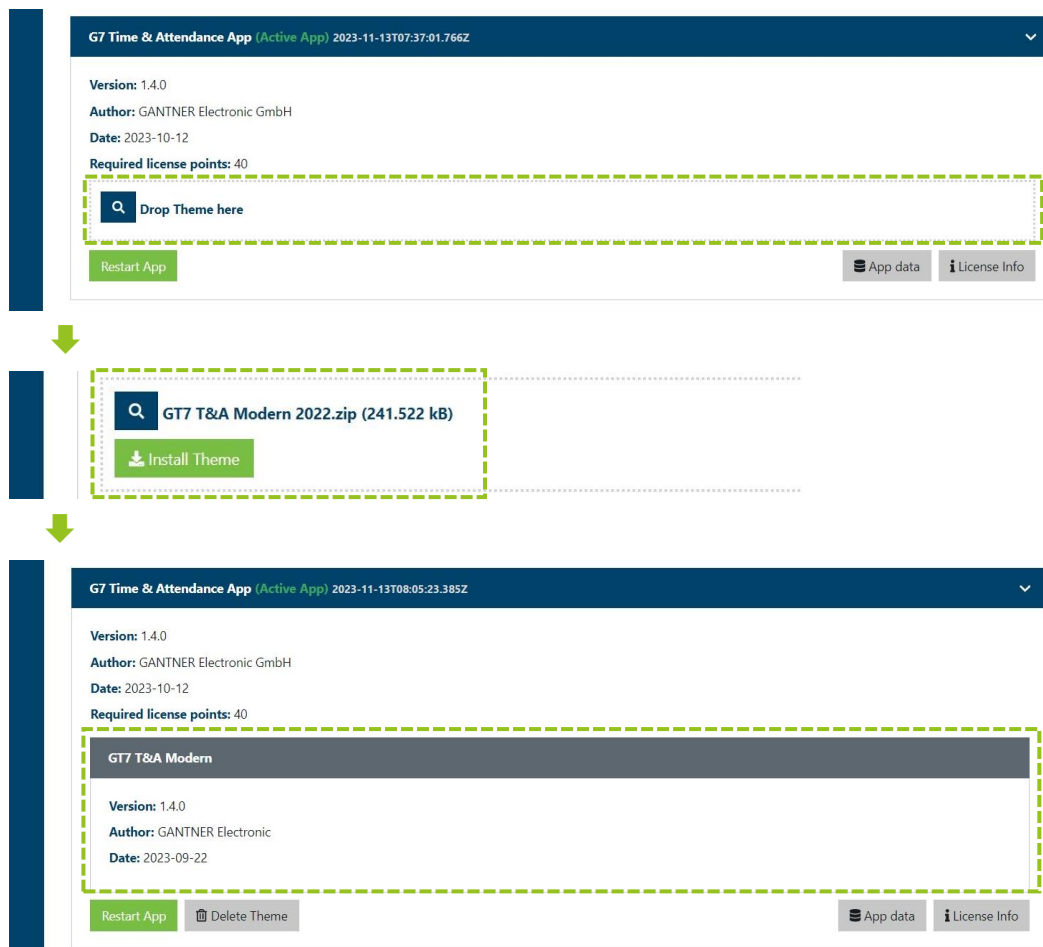
Figure 3.3 – Web interface with app configuration

A suitable theme (design template) to customize the design of the display (background, colors, fonts, etc.) can also be selected here (see next page).

3.2 Themes (design templates)

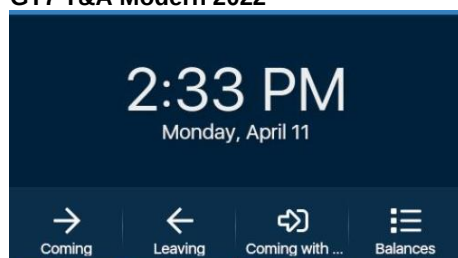
Themes are design templates and provide an easy way to graphically customize the devices. Themes can be installed using G7 Connect (GANTNER Cloud) or locally via the web interface. For an overview of these configuration options, see "5.1 Configuration options".

- Themes provided for the G7 Time & Attendance App can be activated directly in G7 Connect.
- Themes must be uploaded to the web interface as .ZIP files. Activate the .ZIP file by dragging it to the "Drag Theme here" field and then clicking on "Install Theme".

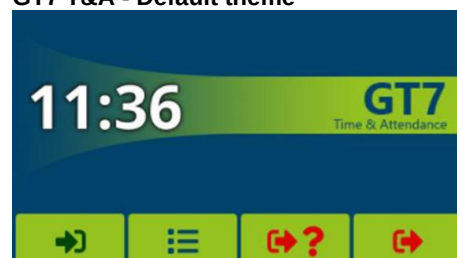


You can easily create your own themes using the Themes Editor in G7 Connect. The following are examples of the themes that are available for the G7 Time & Attendance App and can be used or further customized.

GT7 T&A Modern 2022



GT7 T&A - Default theme



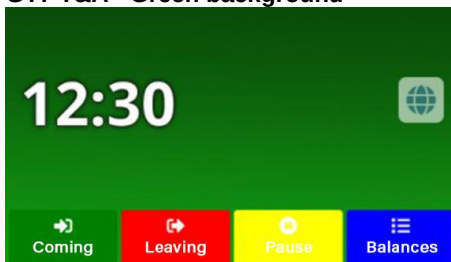
GT7 T&A Skyscraper



GT7 T&A - Blue background



GT7 T&A - Green background



GT7 T&A Minimalism

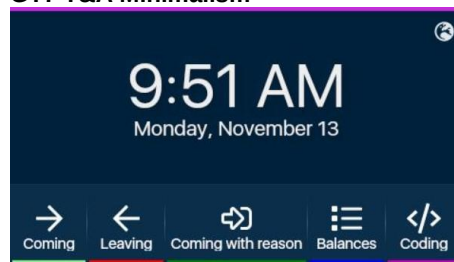


Figure 3.4 – Example displays of the default themes in G7 Connect

The design, coloring, and labeling of the buttons are defined in the configuration.

4 G7 TIME & ATTENDANCE APP

4.1 Interfaces

The functional scope of the GT7 terminal with the G7 Time & Attendance App is essentially determined by the connection to the time recording software. A basic distinction can be made between online and offline connections.

For an offline connection, data between the GT7 terminal and the time & attendance software is only exchanged infrequently (e.g., once a day). In this case, bookings are read from the device, new balances are calculated in the time recording software, and the employee information with the balances is transferred back to the device. Afterwards, the GT7 continues to operate without a connection to the time recording software until a new data exchange takes place.

With an online connection, there is a permanent connection between the GT7 terminal and the time recording software. Bookings are sent to the time recording software at the time of creation and checked there for validity. If the booking is valid (employee is known, employee is allowed to create a booking at this device, booking sequence is correct, etc.), this is reported by the time recording software to the GT7 and the employee receives a message to confirm that the booking is valid.

If the connection is interrupted during an online connection, bookings that could not be sent to the time recording software are temporarily stored in the device and transferred to the time recording software when the connection is restored. During the connection interruption, the device can perform a simplified validity check. In the simplest case, this can be that the booking is valid after an employee ID card has been read. However, it can also be configured that the booking is only valid if employee information is also stored in the GT7 for the employee and the booking sequence is correctly followed on the device.

The following options are available for the connection of the GT7 terminal to the time recording software.

4.1.1 WebSocket interface

The WebSocket interface is the current and most versatile interface that can be used to connect the GT7 terminal. With the WebSocket interface, the connection is established from the time recording software to the time recording device. The interface is therefore suitable for local installations.

It allows online and offline operation and a combination of the two modes can also be implemented. This means that information stored in the GT7 can be accessed in the event of a connection interruption. Extensive checks on the validity of the bookings are thus possible.

This interface enables the fewest restrictions on the functional scope of the GT7 terminal. For new software partners, this interface should be the first choice for integration.

4.1.2 Webservice (REST interface)

The web service interface with REST interface is a connection that establishes communication from the device to the server. This interface is therefore ideally suited for cloud installations, as no local software installation is required, and no special VPN connections are necessary.

The possibilities for on- and offline operation are the same as for the WebSocket connection. The commands are also largely identical.

4.1.3 NTG Online interface

The NTG Online protocol is designed for pure online operation. Employee information cannot be transferred to the GT7 via this protocol and stored for offline operation. It is of course possible to temporarily store bookings in case of a connection interruption.

With the GT7, an extended check of bookings can also be implemented by combining with other interfaces (e.g., FTP) in the event of a connection interruption.

4.1.4 FTPs and FTP interface

The FTP interface is designed for offline operation. Bookings and employee information are exchanged between the GT7 terminal and the time recording software once or several times a day. In between, the GT7 works without permanent communication with the time recording software.

The FTP interface can be used on the GT7 in combination with the NTG Online protocol or the REST interface to realize online operation with extended checks.



The FTP interface as well as the NTG Online protocol are also used for backward compatibility of the GT7 with previous generations of time recording devices.

The FTPs interface allows the time recording software to establish an encrypted TLS connection to the GT7 terminal on demand for increased security.

For more information on the file format for the FTP interface, please refer to chapter "7. FTP FILE FORMATS".

The default login details for the FTPs or FTP interface are:

- User: system
- Password: GAT

NOTE! Change the default values in the web interface via "Device Configuration" -> "Security and user" and note that the "Enable FTP interface" option must be enabled for the user in the G7 Time & Attendance App configuration under "App Configuration" -> "General" to enable access.

4.1.5 List of used ports

The following ports are used for the operation of the GT7 terminal with G7 Time & Attendance App. Some of the ports are mandatory for operation and other ports are optional.

Ensure that the ports used are not blocked in the network, e.g., by a firewall, otherwise the correct operation is not possible.

Type	Port Number	incoming/outgoing	Meaning	Usage
TCP	80 (http) 443 (https)	outgoing	For the connection to G7 Connect	required
TCP	80 (http) 443 (https)	incoming	For the web interface (configuration)	recommended
TCP	80 (ws) 443 (wss)	outgoing	For communication with cloud services of software partners (disabled by default)	optional
TCP	80 (ws) 443 (wss)	incoming	For communication with the host software	optional
TCP	8000	incoming	For communication with host software when the G6 adapter is enabled (disabled by default)	optional
TCP	8226	incoming/outgoing	Port for online mode in GANTNER terminals (Get Person Info online) with NTG protocol	optional
UDP	123	outgoing	For time synchronization (NTP server)	required
UDP	8216	incoming	For GAT Device Finder to search for GANTNER devices in the network (optional)	optional
FTP	20	incoming	E.g., for loading personnel data and balances	optional
FTP	21	incoming	E.g., for loading personnel data and balances	optional
FTPs	989	incoming	E.g., for loading personnel data and balances, encrypted connection	optional
FTPs	990	incoming	E.g., for loading personnel data and balances, encrypted connection	optional

Table 4.1 – Used ports

4.2 GT7 integration in time recording solutions

Before using the GT7 terminals, please determine in each case which interface is best suited for your requirements.

If you are a Time and Attendance partner who would like to integrate the devices into your time recording software, please contact interfaces@gantner.com to find the right interface for your software.

4.3 GT7 integration in access solutions

CardNET

The GT7 terminal with the G7 Time & Attendance App (from V1.3.0) can also be used as a write station for CardNET systems. CardNET G1 and CardNET G2 systems that use LEGIC prime, LEGIC advant, and MIFARE DESFire technologies are supported. MIFARE Classic is not supported by CardNET.

For the GT7 terminal, the functions used for processing the CardNET data on the employee ID cards can be freely defined. For example, you can configure the authorizations to be renewed only for coming bookings or leaving with reason bookings. The authorizations can also be deleted again for absence bookings (e.g., leaving or leaving with reason). This method ensures, e.g., that access to an employee's own office is only possible after the employee has created an attendance booking. The prerequisite for this is that the employee's office door is equipped with a CardNET lock.

In addition to the CardNET authorizations, battery warnings are also managed by the GT7 terminal and transferred to the access control system.

For the access control system, GAT Matrix with GAT ACE 7000 can be used as software components and GAT SyncManager serving as the interface. The direct integration of GT7 devices into GAT ACE 7000 is currently under development, which will then allow time and attendance solutions to use the CardNET functions without GAT SyncManager.

As of V1.4.1 of the G7 Time & Attendance App, an interface to the SALTO ProAccess SPACE software is available that allows the app to query SVN data and to write the authorization data to the data carriers. SVN is similar in functionality to CardNET and allows SALTO access devices to be used in combination with GANTNER products in the access system. See chapter "5.12 SVN configuration" for more information.

4.3.1 Data carrier settings for CardNET systems

In order to use CardNET functions with the GT7 terminal, the applicable CardNET encoding must be defined in the configuration under "Device configuration" -> "Data carrier".

- ▶ Click on "Add data carrier" to insert and define a new data carrier type.
 - Each data carrier type is displayed as a block of configuration settings (e.g., "Mifare DESFire data carrier").
- ▶ Click on the name of the data carrier type to expand and collapse the configuration settings.

The screenshot displays the Gantner GT7-3500 - V3.3.7 web interface. The top navigation bar includes the Gantner logo, version information, and user details (English, admin). The left sidebar contains a menu with options like Dashboard, Device Configuration, Network, G7 Connect, External Webserver, Web Proxy, WLAN, Security and user, SCEP, Time, Display, Data Carrier (selected), Device, Fingerprint, Barcode Interface, Camera, App Configuration, Installed Apps, Cloud Pairing, Licensing and coding points, Certificate management, and Maintenance. The main content area is titled 'Data Carrier' and shows a configuration form for a 'Mifare DESFire data carrier'. The form includes fields for 'Data carrier name' (Mifare DESFire Datenträger), 'Data carrier type' (1), 'Flip unique number' (unchecked), 'Check certificate' (checked), and a 'Time/Access/CardNET G2 Segment' section with fields for 'Site key' (73E081888DFB835DEB9797076C922DDA534D), 'Keyset' (empty), 'Application ID (AID)' (0584DF), 'File number' (4), 'Use number as unique number' (checked), and 'Code segment' (unchecked).

Figure 4.1 – Configuring data carriers

In addition to selecting the appropriate RFID technology (e.g., MIFARE DESFire), attention must be paid to ensure that the correct data structures are defined for a data carrier. The structure for authorizations (e.g., CardNET G2) and the structure for feedback (battery warnings) must be configured for the same data carrier. If these structures are created as two different data carriers, the system cannot operate correctly.

Several different data carriers (e.g., LEGIC prime and LEGIC advant) can be created and a mixture between CardNET G1 (e.g., LEGIC prime) and CardNET G2 (e.g., LEGIC advant or MIFARE DESFire) can also be defined.

NOTE! Please note that the system does not support the CardNET function with combination data carriers that have multiple RFID technologies. Only one configured CardNET encoding is permitted per data carrier!

4.4 Encoding function for MIFARE DESFire data carriers

With a GT7 terminal and the G7 Time & Attendance App, it is possible to encode MIFARE DESFIRE EV2 and EV3 data carriers (EV1 with restrictions). This makes it possible, for example, to encode a GANTNER application with files for customer-specific data carriers so that these data carriers can also be used for GANTNER access solutions.

A coding license and coding points are required for encoding and certain settings in the configuration must be set correctly. This section provides an overview of these requirements and settings.

4.4.1 Coding license and coding points

A coding license and coding points are required to perform the encoding. The coding points and licenses are displayed in the configuration interface of the GT7 on the “Licensing and coding points” page.

i A coding license is only required for files that are directly needed for access control (e.g., Time&Attendance, Access Control, CardNET G2, Battery G2, GANTNER SVN). Locker segments or fingerprint files can also be encoded without a coding license.

Gantner GT7.3500 - V3.0.12

/ Home / Licensing and coding points

License information:

Serial number: 1910000013
 LAN MAC address: 00:12:08:C1:30:26
 License points: 99
 Addon bus devices: 8
 Company ID: 99999999
 Open card: ☒
 eLoxx one: ☐
 License code:
 Apply license Code

Coding points:

Please send the top-up code below to Gantner to receive coding points.

Top-up code: G7.99800518
 Coding points left: 308
 Total coded cards: 30
 Top-up license:
 Redeem top-up license

Figure 4.2 – Licenses for coding

A coding license can be purchased from GANTNER ("G7 Coding Customer License", Part No. 1111361). To activate the license, enter the license code into the "License code" field of the GT7 configuration interface and click on "Apply license code".

To purchase a coding license, the customer must fill out an assumption of liability form. The coding license is linked to a specific GT7 terminal (serial number and MAC address) and a customer (company ID). This ensures that a license issued for one GT7 terminal cannot be used with another GT7. It is possible however to use several coding licenses for different customers (company IDs) with one GT7 terminal simultaneously. Each license must be purchased separately in this case.

One coding point is required to encode each data carrier. The coding points can be ordered in packages of 1000 points and transferred to the devices via G7 Connect (GANTNER Cloud). The coding points are not tied to a specific customer, i.e., they can be used for coding different company IDs (provided the relevant coding license is also available). A coding point is only required if there is no GANTNER coding on the data carrier. The activated and available coding points are displayed on the "Licensing and coding points" page (see Figure 4.2).

4.4.2 Details on MIFARE DESFire encoding

In order to use MIFARE DESFire data carriers as ID cards in an access system, the data carriers can be encoded with the required security-relevant data for a customer system (e.g., GANTNER SVN or card number) using a GT7 terminal and the Time & Attendance App (min. V1.4.0). It is also possible to encode the card number, which is not possible with the encoding function in the G7 Advanced Access App or the G7 Enrollment App.

Encoding can be carried out automatically in the background ("on-the-fly"), i.e., when a function such as "Coming" is executed. This option is enabled in the data carrier settings (see "4.4.3. Data carrier settings for MIFARE DESFire encoding"). A separate coding station mode is also possible if a GT7 terminal is being used primarily for encoding data carriers. A "Coding" view is defined for this purpose (see "5.4.9. Coding").

The coding license "G7 Coding Customer License" (Part No. 1111361) and coding points are required to carry out the encoding as described in the previous chapter.

The settings for encoding are configured in the device configuration of the GT7 (see "5.1 Configuration options"). For the assignment of unique numbers to encode the card numbers, it is either possible to read the card number from an existing data carrier or to use a separate document that contains the assignment of unique numbers for the GANTNER encoding. A log with all encoding processes is saved on the GT7 device.

4.4.3 Data carrier settings for MIFARE DESFire encoding

You can define exactly how MIFARE DESFire data carriers are to be encoded. Such a data carrier can contain one or more applications. By using a separate application for each system, a data carrier can be used for a wide range of functions. An application can also contain several files to enable different use cases in a single system (e.g., one file for the locker locking system and one file for access control).

The settings for encoding are defined in the GT7 web interface on the "Device Configuration" -> "Data carrier" page.

- Click on "Add Data Carrier" to add and define a new data carrier type (here "Mifare DESFire data carrier").
 - Each data carrier type is displayed as a block with different settings ("Mifare DESFire data carrier" shown below).
- Click on the name of the data carrier type to expand and collapse the configuration settings.

Blue:
Settings for a data carrier.
Shown here is the RFID
type "MIFARE DESFire"

Gray:
Listing of the files
(=segments) that are
present on the data carrier
or are to be encoded

Figure 4.3 – Encoding configuration for MIFARE DESFire data carriers

It is important to ensure that the correct data structures (files/segments) are selected for the MIFARE DESFire data carriers in addition to the appropriate RFID technology. It is possible to define the first encoding on "empty" data carriers or to add additional files to data carriers with existing coding.

For each file/segment, you can select whether it should be encoded or not.

Figure 4.4 – Setting for the coding of a segment

When reading and encoding a data carrier, the defined segments are processed in sequence:

- If the “Code segment” option is not enabled, the segment must already exist and is only read.
- If the “Code segment” option is enabled, the segment is encoded if it does not yet exist. If the segment already exists, it is only read and not recoded. The data remains unchanged.

The files are saved in the application. The application ID (AID) identifies the application. To encode a GANTNER application, use the value “0584DF”.

The “Use extended coding configuration” option can be used to affect the encoding if data carriers already have external coding and the rights for applying further applications and files are restricted.

The screenshot shows the Gantner application configuration interface. On the left is a dark blue sidebar with a menu containing: Data Carrier, Device, Fingerprint, Barcode Interface, Camera, App Configuration (selected), Installed Apps, Cloud Pairing, Licensing and coding points, Certificate management, and Maintenance. The main content area is white and contains several sections. At the top, there's a 'Check certificate:' checkbox. Below it is an 'Add Segment' dropdown. A section titled 'Time/Access/CardNET G2 Segment' contains fields for 'Site key:' (73E0818B8DFB835DEB9797076C922DDA534D), 'Keyset:', 'Application ID (AID):' (0584DF), 'File number:' (4), 'Use number as unique number:' (checked), and 'Code segment:' (unchecked). Below this are sections for 'Battery G2 Segment' and 'Locker Segment'. A green dashed box highlights the 'Use extended coding configuration:' checkbox (checked) and the 'Extended coding configuration' section below it. This section contains: 'Application exists:' (unchecked), 'Existing PICC Master key:' (text input with a copy icon), 'Crypto mode:' (dropdown menu showing 'AES'), 'Change PICC Master key (from default):' (checked), and 'Change PICC Master key settings:' (checked).

Figure 4.5 – Extended coding configuration

If the “Use extended coding configuration” option is enabled, the following settings are displayed.

- Application exists: If restrictions have been set for the usage of additional applications on the data carrier, encoding may still be possible if the data carrier issuer provides an empty application. Information on the settings required for this encoding are provided in the document “Empty GANTNER DESFire Application”. Contact GANTNER Support or your sales partner for the required information.
- Existing PICC Master key: If the PICC master key is provided by the data carrier issuer, it can be entered here in order to facilitate additional encoding. A customer-specific PICC master key is set for empty data carriers that are provided with GANTNER coding (the next two options must be enabled).

- Crypto mode: Select the mode of encryption for the PICC master key from the drop-down-menu. AES is the recommended mode due to its stronger encryption capability.
- Change PICC Master key: This option is disabled by default. If enabled, the default PICC master key is changed to a customer-specific key. If this is not desired or not possible, leave this option disabled so that the default key is retained.
- Change PICC Master key settings: By default, the PICC master key settings are changed during coding so that additional applications can be coded, but the existing or newly coded application can no longer be deleted. Disable this option if the addition or removal of applications should still be possible with the default settings.

Retaining the default values of the PICC master key and/or the PICC master key settings reduces the security of the data carrier for empty data carriers. However, it enables the encoding of data carriers that have already been encoded with modified settings (e.g., LEGIC ATC4096-MP313).

5 APP CONFIGURATION

5.1 Configuration options

The settings of the GT7 terminal and the G7 Time & Attendance App can be configured in two ways:

- G7 Connect:

This configuration option is recommended for the convenient configuration of the GT7 terminals with the G7 Time & Attendance App and especially for larger installations with several GT7 terminals. The user logs in to the GANTNER Cloud Platform via web browser at <https://gantner.cloud>. All projects and installations of the organization with their associated GT7 terminals are assigned here and, depending on the activation, the user can clearly manage and edit their GT7 devices.

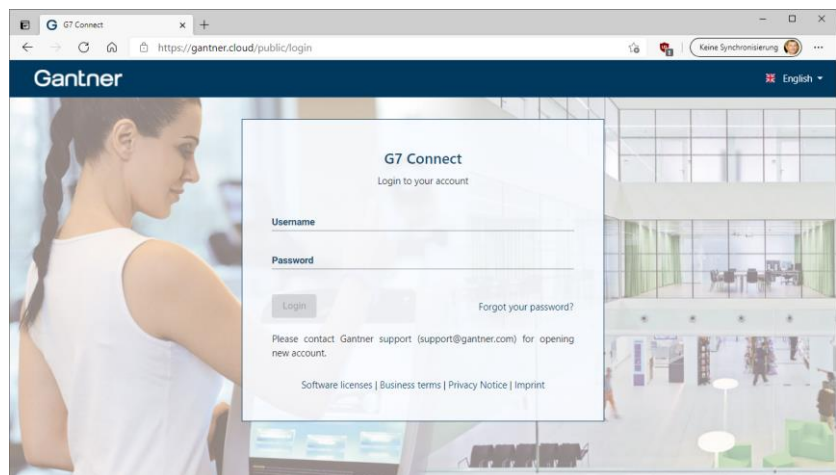


Figure 5.1 - G7 Connect login screen

- Web interface:

If the PC and the GT7 terminal are in the same network, the configuration can also be directly accessed via web browser by entering the IP address of the GT7 terminal. After entering the IP address, the login screen opens in the browser.

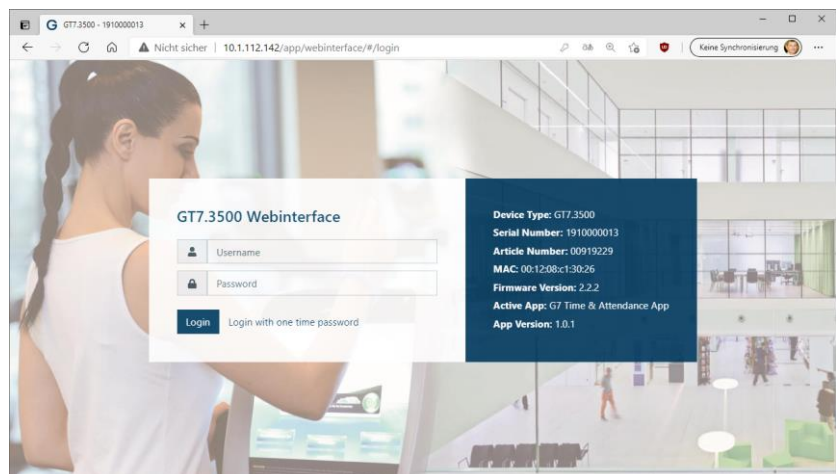
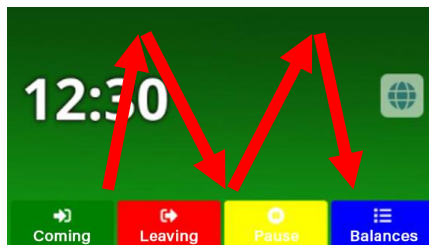


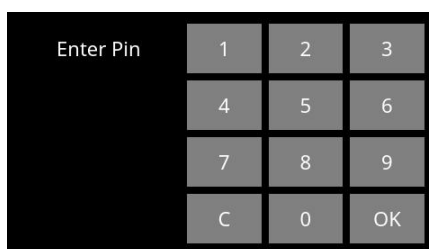
Figure 5.2 - Web interface login screen

The IP address of a GT7 terminal is shown on the display when the device is powered on. It can also be accessed via the configuration menu of the GT7 terminal as follows.

- Write an “M” on the display with your finger (continuously without removing).



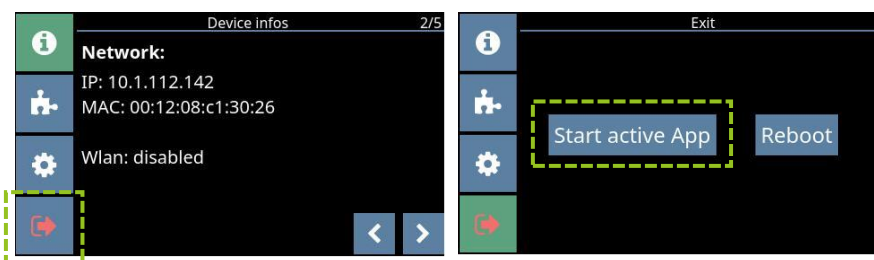
- Enter the PIN code to access the configuration menu (default = 0815, which should be changed in the configuration for security reasons after commissioning the GT7 terminal. See the GT7 terminal manual).



- The IP address can be found in the “Info” menu on page 2.



- Exit the configuration menu by clicking on the “Exit” button and selecting “Start active App”.



The configuration settings and information displays are divided into groups and are shown on different pages. The pages can be displayed via the menu on the left. The time recording-specific settings of the G7 Time & Attendance App can be found under “App Configuration” in the menu.

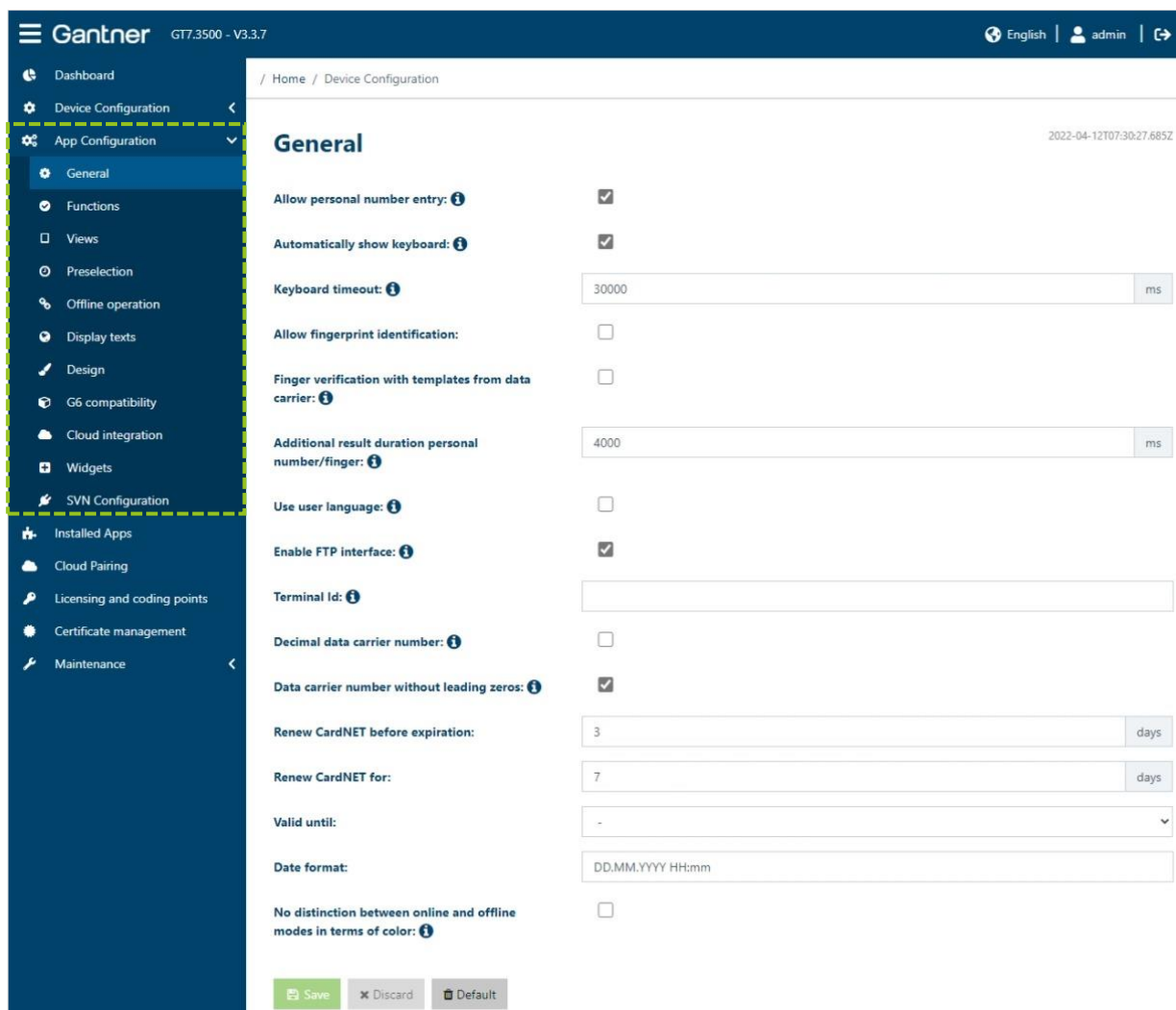


Figure 5.3 – App configuration menu of the G7 Time & Attendance App

i The "Device Configuration" menu is used to configure the functionality of the GT7 that is independent of the app being used. This includes, e.g., the network settings, data carrier configurations, and the settings of external devices such as fingerprint readers, barcode readers, or a camera. Detailed information on these functions is available in the GT7 device manual. In some cases, the settings for an app are also relevant in this menu. For this reason, the relevant settings are referred to as required in this manual.

The most important information about the GT7 terminal is displayed in the “System overview” as shown in the following image.

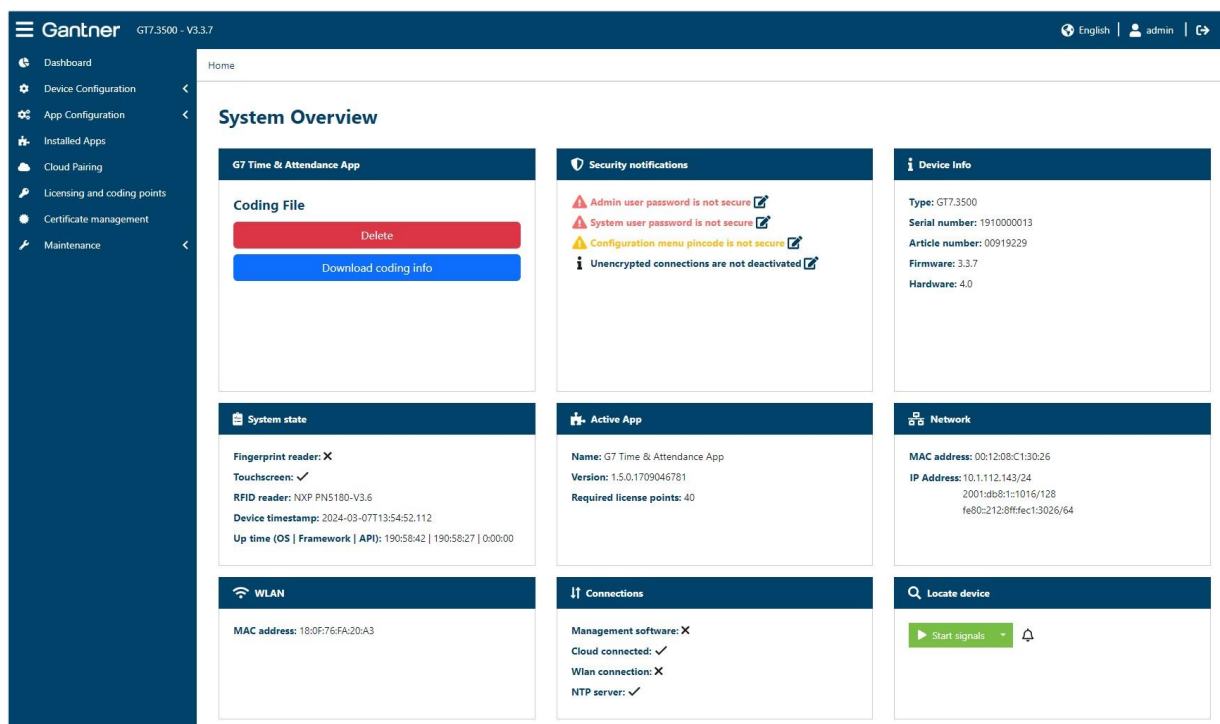


Figure 5.4 – System overview of the GT7 terminal

This information includes:

- Widget for coding file, which is only displayed if it has been activated beforehand (see “5.11. Widget for coding function”).
- Security notifications such as login security warnings.
- Device data such as device type, serial and article numbers, and software versions.
- System status such as device runtime and internal time in the GT7.
- Information about the currently active app.
- Network addresses (LAN, WLAN).
- Connection status to management software, cloud, etc.
- Function for device signaling.

In addition to displaying important information (also refer to the GT7 device manual), a coding file can also be uploaded to the GT7 terminal on the overview page in the “G7 Time & Attendance App” field. This is only possible if the widget has been activated. For more information, see “5.11. Widget for coding function”.

5.2 General settings

Basic functions of the G7 Time & Attendance App can be configured on the configuration page “App Configuration” -> “General”.

The screenshot shows the 'General' configuration page for the Gantner G7 Time & Attendance app. The page has a dark blue sidebar on the left with a menu containing: Dashboard, Device Configuration, App Configuration (selected), General (selected), Functions, Views, Preselection, Offline operation, Display texts, Design, G6 compatibility, Cloud integration, Widgets, SVN Configuration, Installed Apps, Cloud Pairing, Licensing and coding points, Certificate management, and Maintenance. The main content area is titled 'General' and contains various settings:

- Allow personal number entry:** ☒
- Automatically show keyboard:** ☒
- Keyboard timeout:** 30000 ms
- Allow fingerprint identification:** ☐
- Finger verification with templates from data carrier:** ☐
- Additional result duration personal number/finger:** 4000 ms
- Use user language:** ☐
- Enable FTP interface:** ☒
- Terminal Id:** (empty text field)
- Decimal data carrier number:** ☐
- Data carrier number without leading zeros:** ☒
- Renew CardNET before expiration:** 3 days
- Renew CardNET for:** 7 days
- Valid until:** - (dropdown menu)
- Date format:** DD.MM.YYYY HH:mm
- No distinction between online and offline modes in terms of color:** ☐

At the bottom of the configuration area are three buttons: Save, Discard, and Default.

Figure 5.5 – G7 Time & Attendance app - General configuration settings

- Allow personal number entry: If this option is enabled, a person can also identify themselves by entering a number. The number is compared to the “Personnel Number” field during a check against the personnel master.
- Automatically show keyboard: If this option is enabled, the keyboard for entering the personnel number is displayed automatically. This is not possible for all booking types and for functions that are called up by preselection. In these cases, the keyboard must be displayed manually by pressing the keyboard icon ().
- Keyboard timeout: The maximum input time for the personnel number is adjusted via this option. The value is defined in milliseconds. Once this time period expires without a number being entered, the keyboard closes.
- Allow fingerprint identification: If this option is enabled, a person can also identify themselves via biometric identification using the fingerprint reader (optional accessory).

To use this function, a personnel master with fingerprint templates must be saved in the device. If communication with the device is exclusively via the "NTG Online Protocol", this function cannot be used.

The selection of the fingerprint readers must be completed according to the number of persons as all fingerprint templates must be loaded into the fingerprint reader in this operating mode. Up to two templates per person can be stored in the fingerprint reader. Fingerprint readers are available for 500 up to 10,000 persons.

- Finger verification with templates from data carrier:

If this option is enabled, biometric verification of ID cards is required. The fingerprint templates used for this must be stored on the data carrier. Biometrics can thus be used without the time recording software having to support fingerprint verification.

With the GT7 Enrollment app, the GT7 terminal can also be used to enroll fingerprints and store them on the data carriers. An extension of the G7 Time & Attendance app to include the enrollment function is planned for the future.

- Additional result duration personal number/finger:

Display times for booking creation or error messages are configured under "App Configuration" -> "Views". These are usually set so that the display is hidden when the employee data carrier is removed.

For identification via personnel number entry or for biometric identification, this option can be used to define the length of time that messages are displayed, since in these cases it is not possible to react to the removal of an employee data carrier.

- Use user language:

The default language of the device and several other languages for user guidance is defined via "App Configuration" -> "Display texts".

If this option is enabled, the user guidance on the device switches to the language saved for the employee as soon as they identify themselves. For some operating modes, it is also possible to switch the language via the employee data carrier on the home screen provided no booking function has been selected yet.

- Enable FTP interface:

If the GT7 terminal cannot be managed via G7 Connect Cloud or if compatibility with other devices (e.g., GAT ST 380 EVO POE) is required due to the time recording software used, this option can be used to enable the FTP interface in order to exchange data with the device via FTP.

Please note that FTP access is also available under "Device Configuration" -> "Security and user" -> "Management software login (G7 WebSocket API)".



Besides FTP, secure FTPs communication is also possible.

- Terminal ID: A terminal identifier can be entered here, which is saved in each booking. In this way, it is possible to determine in the time recording software on which device a booking was created (if this is used by the software).
 *In previous device generations, the device address was stored for this information.*
- Decimal data carrier number: Usually, ID numbers are managed as decimal numbers in the devices. If, for reasons of compatibility, ID numbers are to be interpreted in hexadecimal format, this option must be disabled.
Please note that after changing this option, the personnel master must be reloaded into the devices and the bookings that have already been created are not subsequently adjusted after the change!
- Data carrier number without leading zeroes: Removes all leading zeros from the data carrier numbers. This can be useful for BCD data carrier numbers.
- Renew CardNET before expiration: This setting is used to specify when (number of days) to renew the CardNET authorizations on a data carrier before the authorizations expire. In addition, the setting “Renew CardNET for” is used to define how often access authorizations are written to a data carrier, even if the authorizations have not been changed.
The authorizations on a data carrier are only renewed when their validity period is less than this duration. Lower values (e.g., 1 day) provide more security in case a data carrier is lost but reduce the convenience for the employee. A renewal of 3 days before expiration is a suitable setting for most systems.
- Renew CardNET for: This setting is used to define the validity period (in days) of the access authorizations written on a data carrier. However, the authorizations are never extended beyond this date if the employee leaves the company on a defined date.
Together with the “Renew CardNET before expiration” option, the system security can be configured in the event that a data carrier is lost. Large values (e.g., 30 days or more) reduce security, small values (e.g., 1 day) reduce convenience for the employee.
An authorization of 7 days is a suitable setting for most systems.
- Valid until: If this value is set to “ – “, the validity of the access authorization is set using the write time (time when the authorization is written) plus the number of days set in the “Renew CardNET for” option. For example, with a setting of 2 days and a write time of 7:01, the authorization will be valid up until the day after tomorrow at 7:01.
If a time (e.g., “20:00”) is entered here and the “Renew CardNET for” option is set for 2 days and an authorization is written, e.g., at 7:01, the authorization will be valid up until the day after tomorrow at 20:00. If 0 days is set for “Renew CardNET for”, the authorization is valid up until 20:00 today.

- Date format: This setting defines the date format used to display the CardNET authorizations. The default format of “DD.MM.YYYY HH:mm” displays the date as “day.month.year hours:minutes”.
- No distinction between online and offline modes in terms of color: An icon (default = ✓) is displayed when a successful booking is made using the G7 Time & Attendance App. By default, this icon is displayed in green in online mode and in yellow in offline mode. If you do not want this distinction, enable this option. The icon will then also be displayed in green in offline mode.

5.3 Functions

On the “App Configuration” -> “Functions” page, the booking functions required for the GT7 terminal can be configured and enabled. In addition, the usage and layout of the booking functions must be configured, which is done under “App Configuration” -> “Views”.

Figure 5.6 – G7 Time & Attendance App - Functional settings

Via the drop-down list marked red in Figure 5.6, the required functions can be enabled. The following functions are available for operation:

- Coming: Creates a coming booking.
- Coming with reason: Creates a coming booking with standard reason.
- Coming with reason (advanced): Creates a coming booking with standard reason. The grouping of attendances and a recording of now/before is possible.
- Coming with account: Creates a coming booking with entry of the respective account.
- Leaving: Creates a leaving booking.
- Leaving with reason: Creates a leaving booking with standard reason.
- Leaving with reason (advanced): Creates a leaving booking with standard reason. The grouping of absences and a recording of now/before is possible.
- Pause: Creates a break booking.
- Balance: Displays the balances with a new possibility to display access authorizations on the data carriers.

- CardNET/SVN: Displays the access authorizations stored on the CardNET compatible data carriers.
- Only write CardNET: Writes the access authorizations onto CardNET compatible data carriers without creating a time recording booking.
- Only delete CardNET: Deletes the access authorizations from CardNET compatible data carriers without creating a time recording booking.
- Coding: This function allows the GT7 to function as a coding station for MIFARE DESFire data carriers. The function provides a suitable interface for coding.
- Function group: Allows several functions to be grouped together and placed on one button to create sub-menus.
- Custom 1, 2, 3
- Custom balance 1

By selecting one of the functions, it is activated and displayed as a function block below the selection menu (marked green in Figure 5.6). If it is no longer required, the function can also be disabled again via the trash can icon in the header of the respective function block.

The function block marked in green in Figure 5.6 affects the display and formatting of the function selection (marked red in Figure 5.7) and the function display (marked green in Figure 5.7) on the device.

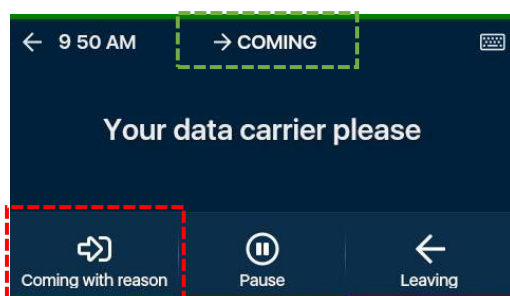


Figure 5.7 – Function display on the GT7 terminal

The following options can be defined for each function:

- Booking code: This value is forwarded to time recording as the booking code when the function is enabled. The value is an alphanumeric string that must be selected so that it can also be processed by the time recording software.
- Presence state: This can be used to define how the presence status of a person is affected after successful booking creation. This function is only relevant for operating modes in which the persons are stored in the device and the booking sequence is checked by the device itself. In online mode, the check must be performed by the time recording software.

The following values can be set:
 - Unused
 - Present
 - Paused
 - Absent

For “unused”, the current status is not changed. For “paused”, the person must be “present” before the booking and the next booking cannot be a booking with “absent” status.

- Color: The background color of the function selection and the function display can be freely selected. It is recommended that this color selection is clearly different from the color of the selected background image.
- Text color: The font color for the labeling of the function selection and function display can be freely selected. It is recommended to choose a font color that is easily readable on the selected background color.
- Icon: Instead of a textual description of the function, the labeling can also be indicated via an icon only or via an icon and text. The text description is entered under “App Configuration” -> “Display texts” and can thus also be used in different languages. If no display text is entered for a button, the icon alone is displayed.

The icons can also be used for the function description in the title bar.



Coming with icon

With icon & text

Text only

After selecting “Custom” in the “Icon” field, you can use one of numerous icons from the Font Awesome 5 gallery by entering the code into the “Icon code” field. The icons can be found at:

<https://fontawesome.com/v5.15/icons?d=gallery&p=2&s=duotone,light,regular,slolid&m=free>

NOTE: The “Brand” icons are not supported.

- Additional icon: For functions such as “Coming with reason”, two icons can be combined. For example, the “Incoming” icon and an additional “Question mark” icon can be used.
- Consider at preselection: If this option is enabled, this booking function is considered for a time-based preselection of the “Last user selection”. This makes it possible, e.g., to continue using “Coming”, “Leaving”, and “Pause” after selection by a user for other users without having to press a button.
Functions where this option is not enabled are used for a user when selected via a button and the device then returns to the last function where this setting has been enabled.
See chapter “5.5 Preselection” for more information.
- Relay ID: Booking success: If a value other than 0 is set for this option, the defined relay is activated when a booking is made. Ensure that the set relay ID is also available on the device.
The relay can be used, e.g., to unlock a door or a turnstile, or alternatively, an acoustic or optical signal can be generated when a booking is made.

- Relay duration: Booking success: The relay is energized for the time defined by this setting when the booking is made. The time continues counting even if the person removes their data carrier from the reader and the booking disappears from the display.

If another booking is created while the relay is energized, the relay remains energized, and the relay energization time restarts from the moment of the new booking. Even if an invalid booking is recorded, a still active relay control is not interrupted; however, another relay can be additionally controlled if configured.
- Relay ID: Booking failure: If a value other than 0 is set for this option, the defined relay is activated in the event of an invalid booking attempt. Ensure that the set relay ID is also available on the device.

The relay can be used, e.g., to generate an acoustic or optical signal in the event of an invalid identification.
- Relay duration: Booking failure: The relay is energized for the time set here in the event of an invalid booking attempt. The time continues counting even if the person removes their data carrier and the error message disappears from the display.

If another booking is created while the relay is energized, the relay remains energized, and the relay energization time restarts from the moment of the new booking. Even if an invalid booking is recorded, a still active relay control is not interrupted; however, another relay can be additionally controlled if configured.
- Enabled: This function is used to define whether the function can always be used or only be used after a digital input has assumed a certain state. This means that, e.g., a booking will only be permitted after a required check (e.g., ESD check or hygiene lock) has been successfully completed.
- CardNET/SVN: This option is used to specify whether CardNET data and/or SVN data should be processed when the currently active function is executed.

By default, CardNET and SVN access data are not processed (no handling). However, you can select to write or delete the CardNET and/or SVN data thereby granting or removing access authorizations. If CardNET and/or SVN data are written or deleted, confirmations from the CardNET compatible data carriers are also read and forwarded to the access control system.

The processing of CardNET and/or SVN data is always the first step after the identification of a data carrier. In this way, e.g., users who cannot create time bookings at the time recording devices can also receive their access authorizations.
- Show result screen: This option is only displayed if the processing of CardNET and/or SVN data ("Write data" or "Delete data") is selected for the previous option.

If this option is enabled, an additional screen with the result of the processing is displayed after the CardNET / SVN data are processed.

This can assist in the operation of the device when decisions about a time booking are made by the server, resulting in long waiting times. When decisions about time bookings are made by the device or by a fast server, this option can be left disabled.

For functions that process CardNET and/or SVN data, the result of the processing is always displayed as a separate icon during booking creation.

CardNET / SVN (Access authorizations successfully processed)	Time recording (time recording booking successfully created)
--	--



- Show CardNET button:

Only applicable for the “Balances” function. If this option is enabled, a sub-function for displaying access authorizations on the data carriers is available when displaying balances. This is helpful for system analysis and can be easily enabled if required.

When this sub-function is called, the data carrier must be read at the reader in order to transfer the authorizations from the data carrier and display them on the screen.

- Code data carrier segments:

If this option is enabled for a function, a so-called “on-the-fly” encoding is completed if this function is active. This means that the encoding of data carriers is carried out automatically in the background. For example, the data carrier can be encoded automatically when a coming booking is made. By enabling and disabling this option, you can define for each function whether the background encoding should be carried out or not. Encoding is only carried out once, i.e., for a data carrier that is already coded, only the booking for the function is created.

- Function group:

Function groups allow you to group up to eight functions together to create a sub-menu for operation. Several functions can be combined in the sub-menu, which can then be easily accessed via the main menu.

An example of this application could be an “Absences” function group, which then displays the functions “Lunch break”, “Coming with reason”, and “Leaving with reason” as three buttons for selection.

A function group also needs the view of the applicable function(s) (see chapter “5.4 Views”) to be configured. For more information about function groups, see the following page.

5.3.1 Function groups

The configuration of function groups differs greatly from other functions such as “Coming” or “Leaving with reason”.

The screenshot displays the 'Function group' configuration screen. On the left is a sidebar with navigation options: SVN Configuration, Installed Apps, Cloud Pairing, Licensing and coding points, Certificate management, and Maintenance. The main area is titled 'Function group' and contains a list of four function groups. Each group has a 'Function type' dropdown and an 'Index' field. The groups are: 1. Coming (Index 1), 2. Pause (Index 2), 3. Leaving (Index 3), and 4. Balances (Index 4). Below the list is a detailed configuration panel for the selected group (Index 5). This panel includes fields for 'Id', 'Name', 'Show button text' (checkbox), 'Color' (color picker), 'Title' (dropdown), 'Text color' (color picker), 'Icon' (dropdown), 'Additional icon' (dropdown), and 'Consider at preselection' (checkbox). At the bottom are 'Save', 'Discard', and 'Default' buttons.

Figure 5.8 – G7 Time & Attendance app, Function groups

Up to 8 buttons can be assigned to a function group. These each require a function type and an index (1 - 8). Furthermore, the background color and text color for the function group button and a label for the button via icons can be defined. The ID number is used to distinguish between the individual function groups when using several function groups in one view (different IDs).

- Functions: The functions that are combined in a function group are defined using the “Function type” and “Index” settings. This is similar to the process for defining views. To add a function, click on the “Functions” field and select the required “Function” from the menu.

The screenshot shows the 'Function group' configuration interface. At the top, there's a dark blue header with the text 'Function group' and icons for up, down, and delete. Below the header, there's a 'Functions' dropdown menu. The main area contains two function entries. Each entry has a 'Function type' dropdown and an 'Index' input field. The first entry has 'Coming' as the function type and '1' as the index. The second entry has 'Pause' as the function type and '2' as the index. Each entry also has up, down, and delete icons.

- Id: The function group "ID" must be unique and is used to address the function group in the configuration of the views.
- Name: The name is used as a heading when the function group is called. The name can be specified in multiple languages by defining the language code, e.g., "[de]Name German[en]Name English".
- Show button text: This setting is used to display the "Name" on the button used to call the function group.
- Color: The "Color" setting defines the background color of the button and the heading for the function group.
- Title: The title can be used to specify whether only the "Name" is displayed as text in the heading, or only the defined icon, or both.
- Text color: Here you can define the font color of the info text.
- Icon: Here you can specify which icon to use for the function group. By selecting "Custom" and entering the "Icon code", you can enter a Font Awesome icon that will be used for the display.
- Additional icon: A second icon can also be defined here.
- Consider at preselection: This option is used to define whether the function group should be called on a time-controlled basis or that it should remain active after selection by a user until they select another function or function group.

5.4 Views

The configuration page for setting the various displays (views) of the app is accessed via “App Configuration” -> “Views”. Here you can define the type and layout of each view.

On the “Views” page, you can select the available views. All previously selected views are displayed with gray text in this menu and are each listed as a separate block below each other on this configuration page. The views displayed with black text can still be selected and added.

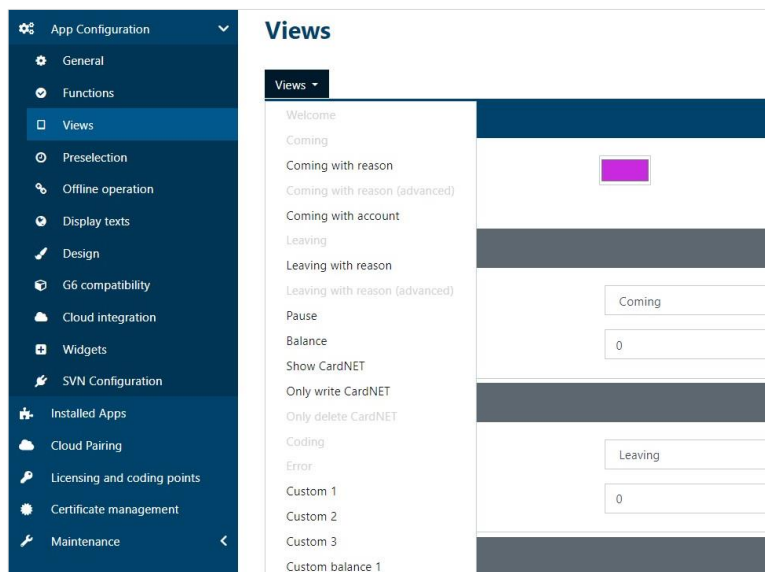


Figure 5.9 – “Views” selection menu

- The blocks with the configuration settings of the respective displays can be expanded and collapsed by clicking on the header.
- The blocks can be deleted by clicking on the trash can icon. The settings are then reset to the default values.

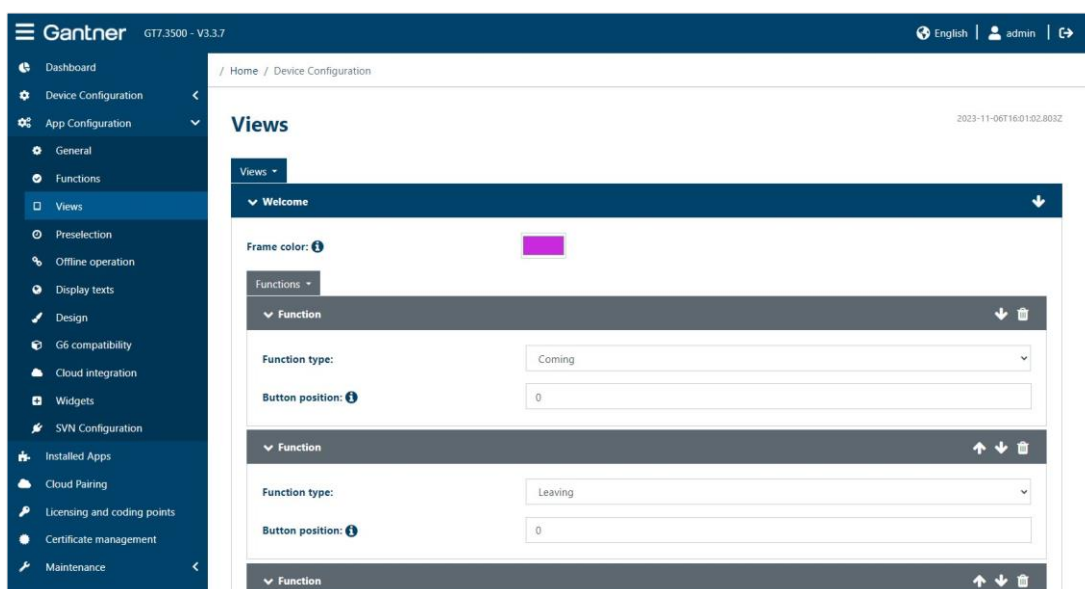


Figure 5.10 – Blocks for configuring the views

5.4.1 “Welcome” view

The “Welcome” view is mandatory and cannot be deleted.

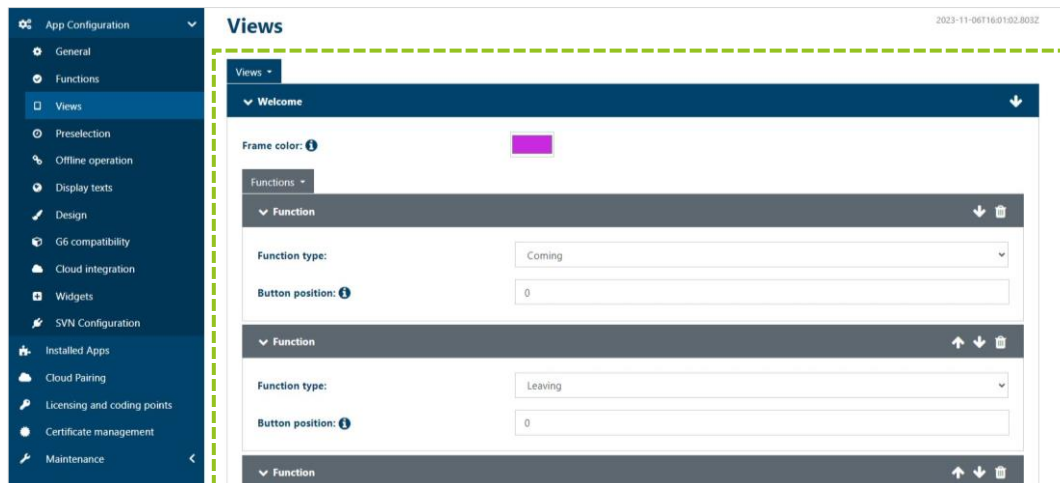


Figure 5.11 – Settings for the “Welcome” view

In the settings for the “Welcome” view, up to eight function buttons can be assigned on the touchscreen. The setting under “App Configuration -> Design -> Fixed Number of Buttons” can be used to determine whether the width of the buttons is scaled based on the number actually defined or whether the number and width of the buttons should represent a fixed value.

- ▶ To insert a function, select the desired “Function” from the “Functions” selection menu.
- ▶ The entry can be deleted again via the trash can icon.
- ▶ If a value of 0 is used, the keys are arranged automatically. If values 1 to 8 are used, the function is used on the corresponding key position.

The function rows represent the buttons on the display from left to right. The desired function of each button can be determined by selecting one of the available “function types” (e.g., “Coming” and “Leaving”). For a function to actually be used, a view must also be defined that determines the labeling of the buttons while the function is being used.

- ▶ In the “Frame color” field, you can define the color of the title bar in the welcome view for the “Minimalism” theme (see “3.2 Themes (design templates)”).

The configuration shown above (frame color = purple) would result in the following layout on the touchscreen.

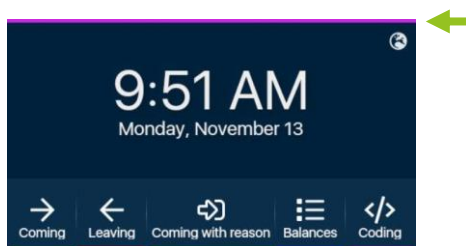


Figure 5.12 – Welcome display on the GT7 terminal screen

However, because only the buttons have been defined, no bookings can be created as yet. For this, two further views for “Coming” and “Leaving” are required.

5.4.2 “Coming” and “Leaving” views

If the “Coming” and “Leaving” views are added as shown in the following figure, the two booking types can be booked.

The image shows two configuration panels for the 'Coming' and 'Leaving' views. Each panel has a title bar with a dropdown arrow, an up arrow, a down arrow, and a delete icon. The 'Coming' panel is active, showing the following settings:

- Timeout:** 10000 ms
- Result timeout:** 1 ms
- Title:** Icon & Text
- Functions:** A dropdown menu.

The 'Leaving' panel below it has identical settings.

Figure 5.13 – Settings for the “Coming” and “Leaving” views

After selecting the coming and leaving functions on the GT7, the display changes:

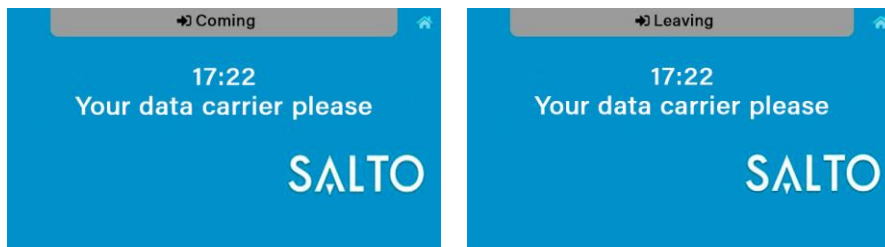


Figure 5.14 – Example GT7 display for “Coming” and “Leaving”

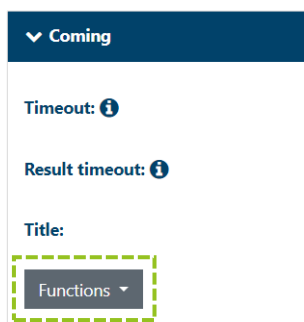
Via the “Home” icon  in the upper-right corner, you can switch from any display to the “Welcome” view. The following settings can be configured here for the coming and leaving display.

- Timeout: The device waits the defined timeout time for an identification (e.g., with data carrier). If no identification is received, the device switches back to the “Welcome” view.

If the user identifies themselves, the booking is displayed.

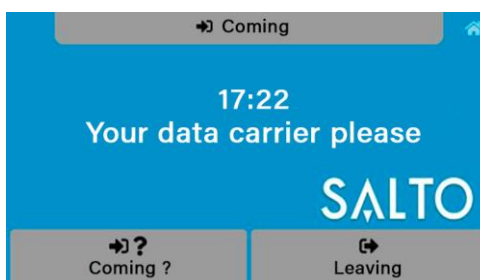


- Result timeout: With a setting here of 1 ms, the information remains visible in the display as long as the data carrier remains in front of the reader. If the data carrier is removed from the reader, the display closes and the GT7 switches to the “Welcome” view. If a longer value is set (e.g., 2000 ms), the information remains visible for this time after the data carrier has been removed. For identification via personnel number or with biometric identification, the time set under “App Configuration” -> “General” can be used in addition to the “Result timeout” setting to display the information.
- Title: Here you can define whether only the icon (“Icon”), only the name of the display (“Text”), or both (“Icon & Text”) is shown in the title bar of the display. Note that, e.g., to display an icon, it must also be defined for the function or button (see “5.3 Functions”).
- Functions: To improve the useability, function buttons can also be displayed in the “Coming” and “Leaving” views. This is done in the same way as for the “Welcome” view (see “5.4.1 “Welcome” view”).



This means that the function can be changed even while waiting for an identification without having to switch to the “Welcome” view and select another function. It is thus possible to switch directly between coming and leaving.

It is also possible via such a function selection to make another function (e.g., coming with reason) available instead of the already selected function (e.g., coming).



5.4.3 “Coming with Reason” and “Leaving with Reason” views

The “Coming with Reason” and “Leaving with Reason” views include the option to define a button color for the reasons via the “Button color” setting. This setting is in addition to the “Timeout”, “Result timeout”, and “Title” settings that function as described in chapter “5.4.2 “Coming” and “Leaving” views.

Figure 5.15 – Settings for the “Coming with reason” view

If the “Coming with reason” or “Leaving with reason” function is displayed on the GT7 screen, a number of possible reasons are displayed for selection.



Figure 5.16 – Example GT7 display for “Coming with reason”

The selection options are defined in the “Coming with reason” view under “Reasons”. Thereby, the reason code for the booking as well as a display text and an icon can be defined per button.

Reasons ▾

Reason

Code: ⓘ 10

Text: ⓘ [en]Doctor[de]Arzt

Icon: ⓘ notes-medical

Figure 5.17 – Reasons setting

Under "Icon", the title of one of the numerous icons from the Font Awesome 5 gallery can be entered. The icons can be found at: <https://fontawesome.com/v5.15/icons?d=gallery&p=2&s=duotone,light,regular,solid&m=free>

NOTE! The "Brand" icons are not supported.

Up to seven reasons can be displayed for selection per page. If more reasons are available, a second page is displayed.



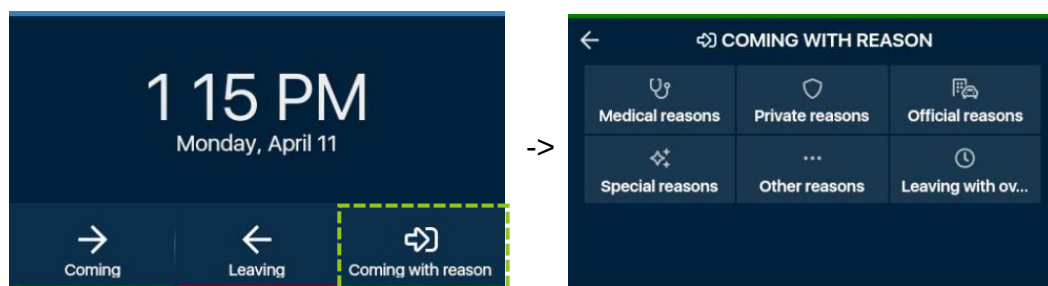
The reasons for coming and leaving can be defined as required in the configuration. This concerns both the selection and the reason codes for the bookings.

5.4.4 "Coming with Reason (Advanced)" and "Leaving with Reason (Advanced)" views

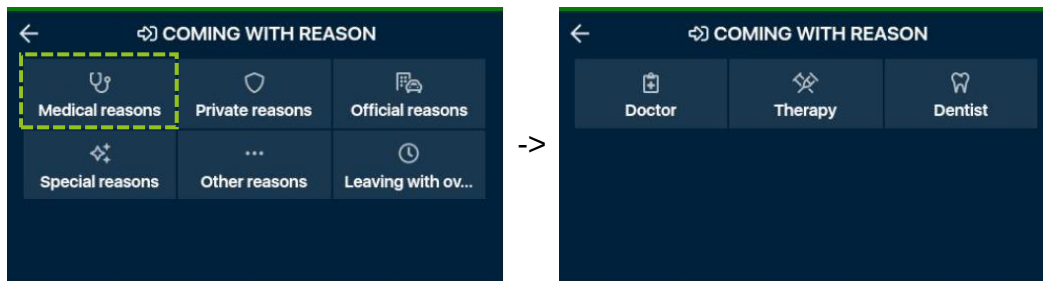
For the "advanced" absence views, it is possible to group absence reasons together in one easily-locatable area with the possibility of further defining the absence reason after selecting it (e.g., Leaving Doctor - Now or Leaving Doctor - Note).

The options are displayed over multiple screens:

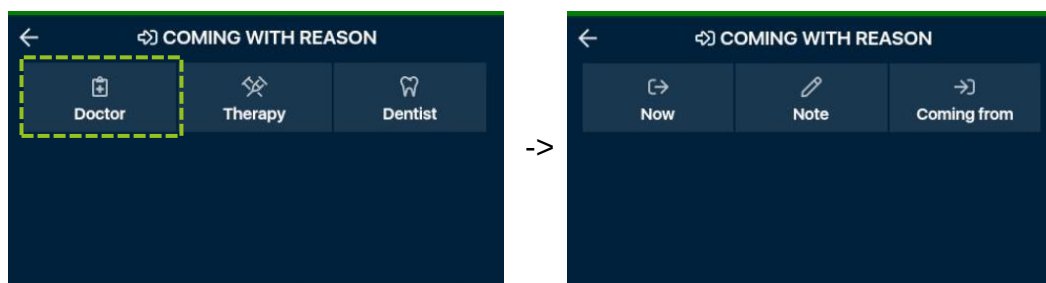
- When the "Coming with reason (advanced)" button is selected on the GT7 terminal display, the defined groups are displayed (one button per group).



- When a group is selected, the reasons assigned to the group by ID number are displayed.



- When selecting a reason without any subsequent options, the booking is created (after identification of the user). When selecting a reason with subsequent options, the defined options are displayed.



- To configure the “Coming with reason (advanced)” or “Leaving with reason (advanced)” views, add the respective view by clicking on the “Views” menu.

Figure 5.18 – Settings for the “Coming with reason (advanced)” view - General settings and groups

The reasons can be grouped together using groups as desired. Each group has its own ID number ("Group ID", see Figure 5.18), a multilingual text, and an icon. The color of each group button can also be individually defined via the "Button color" setting:



Below the groups, several absence reasons (one settings block per reason) can be added using the "Reasons" field. For each reason, in addition to the default absence reasons from the previous chapter (see "5.4.3. "Coming with Reason" and "Leaving with Reason" views"), the group ID of the reason to be displayed can be entered.

Figure 5.19 – Settings for the "Coming with reason (advanced)" view - Reason

If the "Enable prebooking" option is selected for a reason (see figure above), another selection level can be defined for this reason by defining prebookings.

- The prebookings are defined below the reasons by clicking on "Prebookings" and inserting a block for each option.

Figure 5.20 – Settings for the "Coming with reason (advanced)" view - Prebooking

- Enter the code to be used for the prebooking, a text (multilingual), an icon with Font Awesome icon code, and the presence state to be used after the prebooking is created.

Note: The selection of prebookings is the same for all reasons where the use of prebookings is enabled. If different prebookings are to be used, this can be implemented by using the “Coming/leaving with reason (advanced)” functions.

5.4.5 “Coming with Account” view

Similar to the absence reasons, account bookings can also be defined. Instead of a reason for absence, the user can select an account to which their hours will be booked. The setting is analogous to the reasons views (see “5.4.3. “Coming with Reason” and “Leaving with Reason” views”).

5.4.6 “Pause” view

Interruptions to working time can be recorded as breaks or as leaving bookings. The function available on the device depends on the functionality of the time recording software.

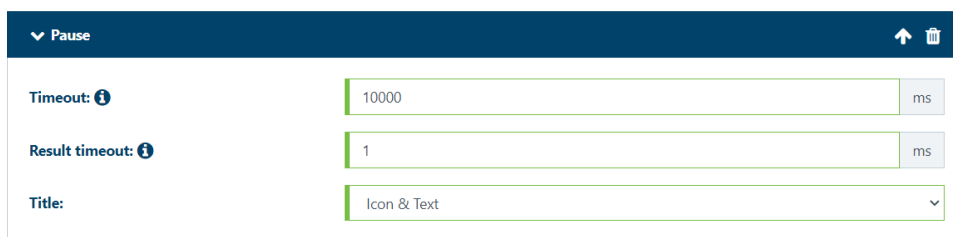


Figure 5.21 – Settings for the “Pause” view

5.4.7 “Balance” view

Balance values can be displayed on the device as information for the employee.

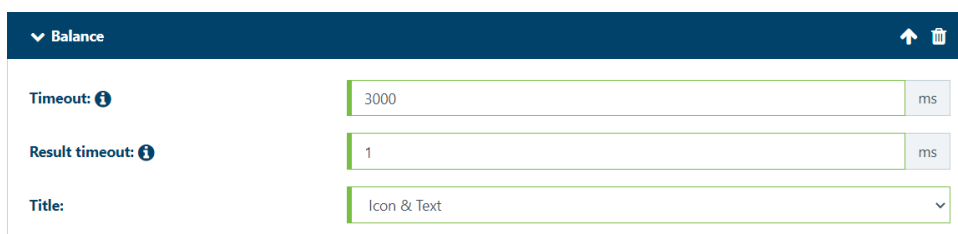


Figure 5.22 – Settings for the “Balance” view

The information that can be displayed to the employee depends mainly on the time recording software used.

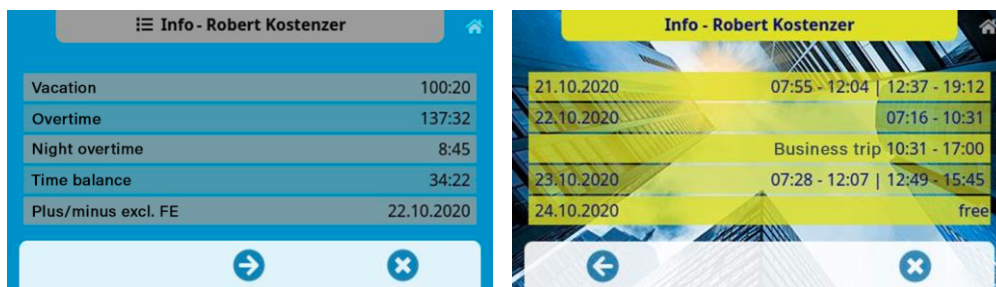


Figure 5.23 – Example GT7 display for balances

The formatting of the balances and the labeling of the balance values can be defined in the time recording software. If only balance values are provided by the time recording software, the labeling of the balances can be defined via display texts.

For the NTG Online interface and the FTP interface, a maximum of 10 balances per person can be used. This limitation does not exist for the REST interface.

5.4.8 “Show CardNET”, “Only write CardNET”, “Only delete CardNET” views

These views are used to implement the corresponding functions for processing access authorizations in CardNET systems without creating any time recording bookings.

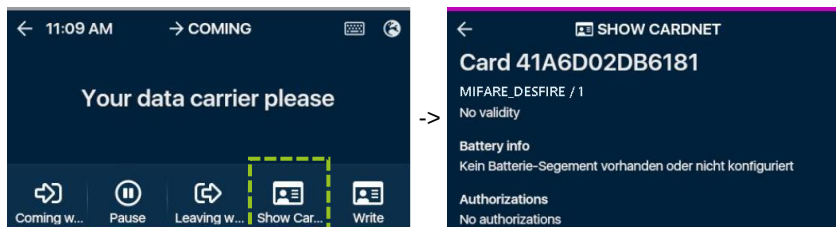
This can be used when the devices are being used solely as CardNET update stations and not as time recording devices or if the functions are required in addition to the default functions when creating time bookings.

Figure 5.24 – Settings for the “CardNET...” views

- "Show CardNET":

This view reads the access authorizations from the data carrier and displays them on the GT7 terminal screen. Additional functions cannot be defined for this view. The view is closed by pressing the "Back" button (<).

Due to the large amount of data being displayed, the display does not have its own timeout.



- "Only write CardNET" / "Only delete CardNET":

As with time bookings, additional functions can be defined for these views so that they can also be used for preselections. This means that, e.g., the access authorizations can be written to the data carrier automatically when the data carrier is read by the GT7 terminal.

5.4.9 "Coding" view

This view can be used when the GT7 terminal is operating as a coding station for data carriers. To activate the view, a "Coding" function must be defined in the functions (see "5.3 Functions"). No time bookings are generated while operating in this mode.

Figure 5.25 – Settings for the "Coding" view

- "Timeout": This time (in milliseconds) determines how long the coding view remains on the screen if there is no operation at the terminal. If there is no activity, the welcome view is displayed again after this time has elapsed.
- "Title": Here you can choose whether only the coding symbol ("Icon"), only the name of the display ("Text"), or both ("Icon & Text") should be shown in the title bar of the display. Please note that to display, e.g., an icon, it must also be defined for the function or button (see "5.3 Functions").



In conjunction with the preselection, the GT7 terminal can also be permanently set to the coding station view.

5.4.10 "Error" view

The "Error" view is compulsory and cannot be deleted.



The screenshot shows a dark blue header bar with a 'v Error' label and an upward arrow icon. Below the header, there is a 'Timeout: i' label, a text input field containing '3000', and a unit dropdown menu currently set to 'ms'.

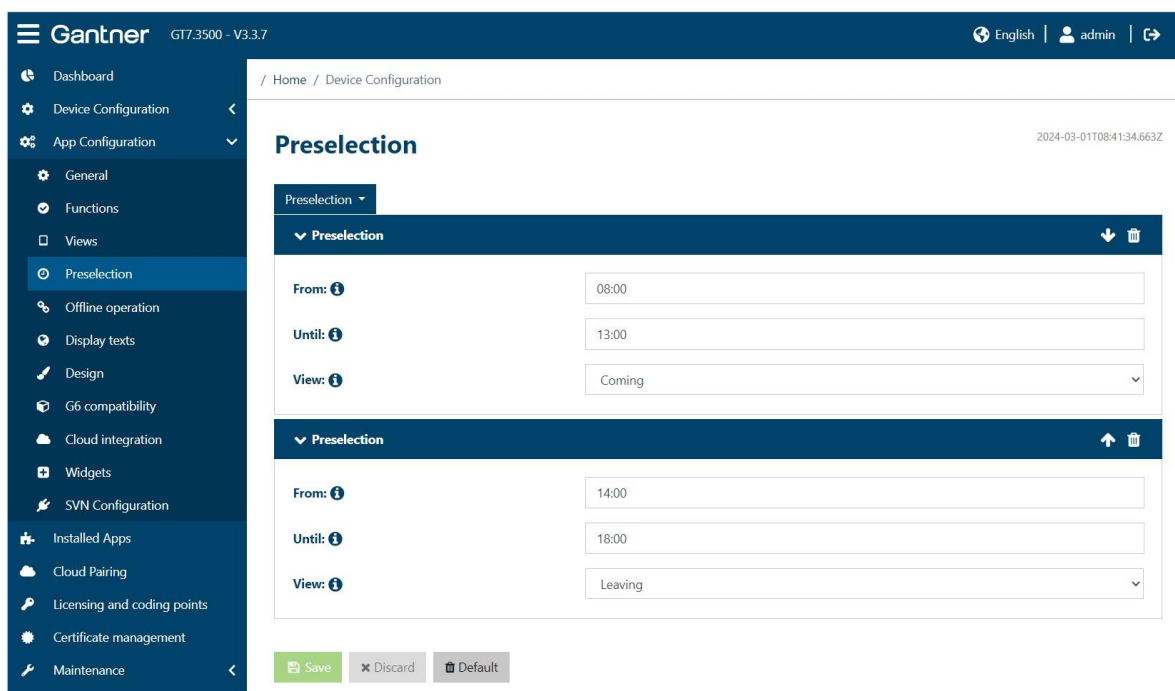
Figure 5.26 – Settings for the "Error" view

You can enter a time in milliseconds here that determines how long an error message is displayed on the screen.

5.5 Preselection

The "Preselection" page in the "App Configuration" menu allows the GT7 terminal to be configured so that certain types of bookings are active at certain times (e.g., coming) and users only need to identify themselves to create such a booking.

Bookings other than the preset one can be booked at any time during this period by selecting them via a button. Afterwards, the preset booking type is automatically activated again.



The screenshot shows the 'Gantner' app configuration interface. The left sidebar lists various configuration options, with 'Preselection' selected. The main content area is titled 'Preselection' and shows two entries. Each entry has a 'From' time, an 'Until' time, and a 'View' dropdown. The first entry is for 'Coming' from 08:00 to 13:00. The second entry is for 'Leaving' from 14:00 to 18:00. At the bottom, there are buttons for 'Save', 'Discard', and 'Default'.

Figure 5.27 – Configuration of the preselection

A time period can be defined during which the preselection will be active ("From" and "To"). Multiple time periods can be defined, but they must not overlap each other.

- To add a new time period, click on "Preselection" from the "Preselection" menu.

- Another time period is added.

In the “View” field, the view to be used for the desired period (e.g., coming) can be selected.

In addition to the defined views, the “Last user selection” setting can also be selected. In this case, the last function that a user has booked and that is set in the configuration under “App configuration” -> “Functions” with the setting “Include in preselection” is reactivated. For example, it is possible that this preselection is active from 00:00 - 23:59 and the GT7 always continues to use the last function that is intended for reuse.

5.6 Offline operation

The GT7 with G7 Time & Attendance App can operate as an exclusively online device for which a connection to the server is required. However, the device can also operate either partially or completely without a permanent server connection, or offline so to speak. In “offline mode”, bookings or personnel data are exchanged between the server and the device only periodically (e.g., once a day, after the calculation of new balances).

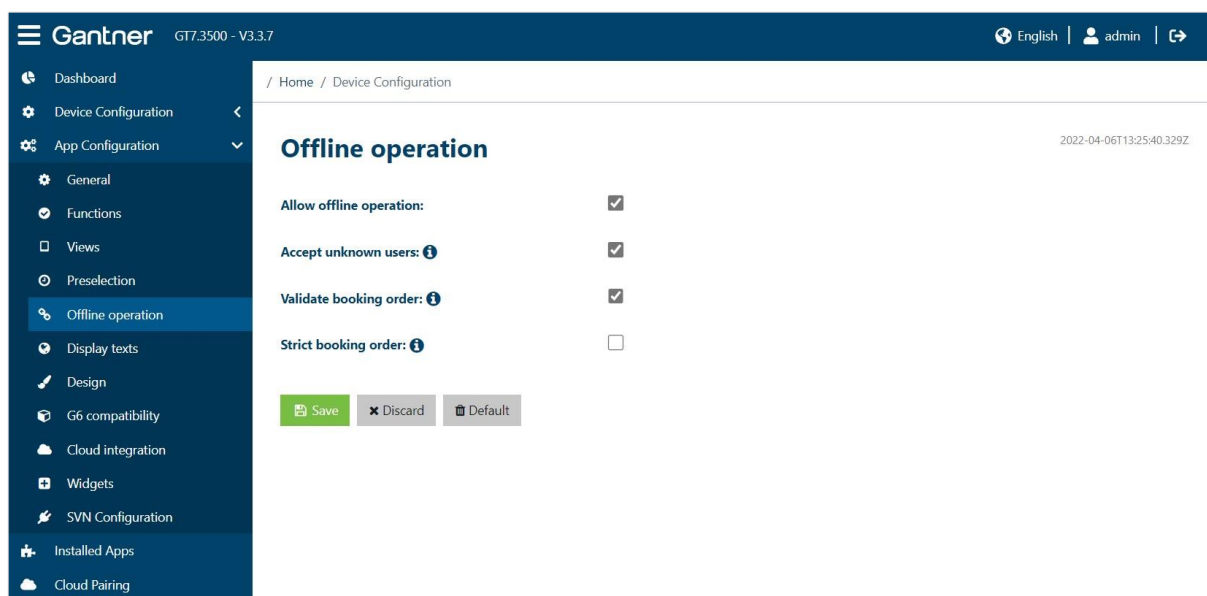
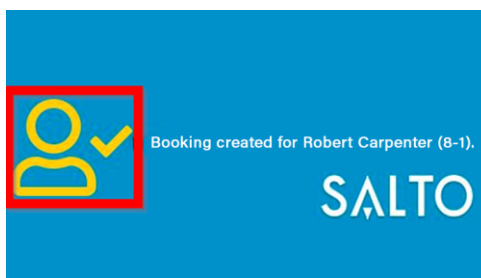


Figure 5.28 – Offline operation configuration

The following settings can be defined here:

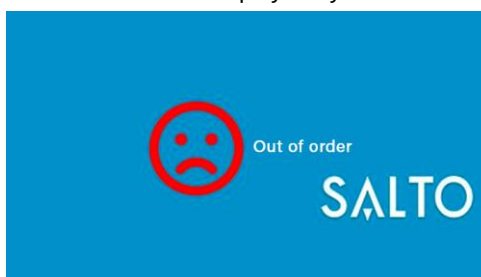
- Allow offline operation: If this option is enabled, bookings are allowed from the device even if there is no connection to a server.
After the creation of a first booking, an attempt is made to transfer it to a server. If this is not accepted by the server within the defined timeout period, the booking is saved in the device. In this case, the icon before the booking text is displayed in yellow.



When the booking is processed online by the server, the icon is displayed in green. The text message that is displayed is determined by the server.

If the booking is processed by the server but rejected, the icon is displayed in red.

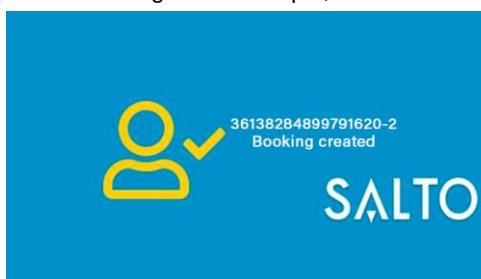
If offline operation is not enabled and the host connection is interrupted, the “Out of order” screen is displayed by default and further operation is not possible.



NOTE! As of V1.5.0, the “Out of order” screen is also displayed if the time set in the device is invalid (see “7.3 Booking data (bookings.exp)” for more information).

- Accept unknown users:

If this option is enabled and the GT7 is offline (no communication to the server), all available identification options for the selected configuration can be used to create bookings. For example, unknown identifications are also accepted.



In this case, instead of the name or other information provided by the server, the data carrier number is displayed as information. The icon is displayed in yellow to indicate that the information has not yet been confirmed by the server. If the bookings are transferred to the time recording software at a later point in time, it is possible that the booking cannot be used, e.g., if the data carrier number has not been assigned to a person.

If the “Accept unknown users” function is not enabled, the time recording software must confirm the identification online or personnel information must be loaded into the device. This can be done via FTP interface or REST interface.

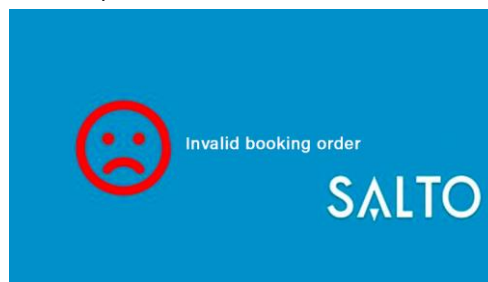
- Validate booking order:

If this option is enabled, the device checks independently in offline mode whether the bookings are being created in a valid sequence. For example, one user cannot create several coming or several leaving bookings in succession. The setting for defining the status of a booking is set under "App Configuration" -> "Functions" -> "Presence state".

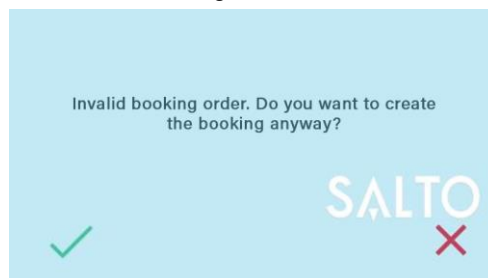
For each offline device, the booking sequence is checked independently of the other devices. Bookings created on other devices are not considered.

- Strict booking order:

This option is only available after the "Validate booking order" option has been enabled. When "Strict booking order" is enabled, booking order violations are not accepted.



If the option is not enabled, a message is displayed to indicate that the booking sequence is invalid if the booking sequence is violated. The user can decide whether the booking should still be created or not.



5.7 Display texts

The device can be operated in several languages. The languages German and English are provided by default for ease-of-use. Other user-specific languages can be easily extended.

If several languages have been defined, an icon for language selection is displayed on the “Welcome” screen of the GT7 terminal. The desired language can be selected via this icon before operating the device.

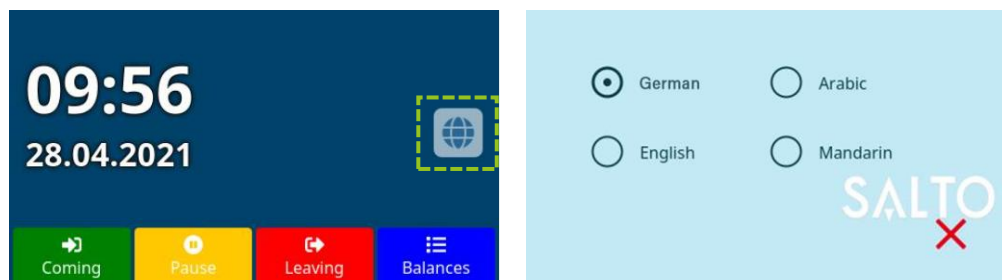


Figure 5.29 – Language selection on the GT7

If the “Use user language” option is enabled in the configuration under “App Configuration” -> “General”, the preferred language stored for the known user is automatically displayed after identification. After the booking display has been completed, the language switches back to the default language of the device.

- To define the display languages, select “App configuration” -> “Display texts” in the configuration menu.

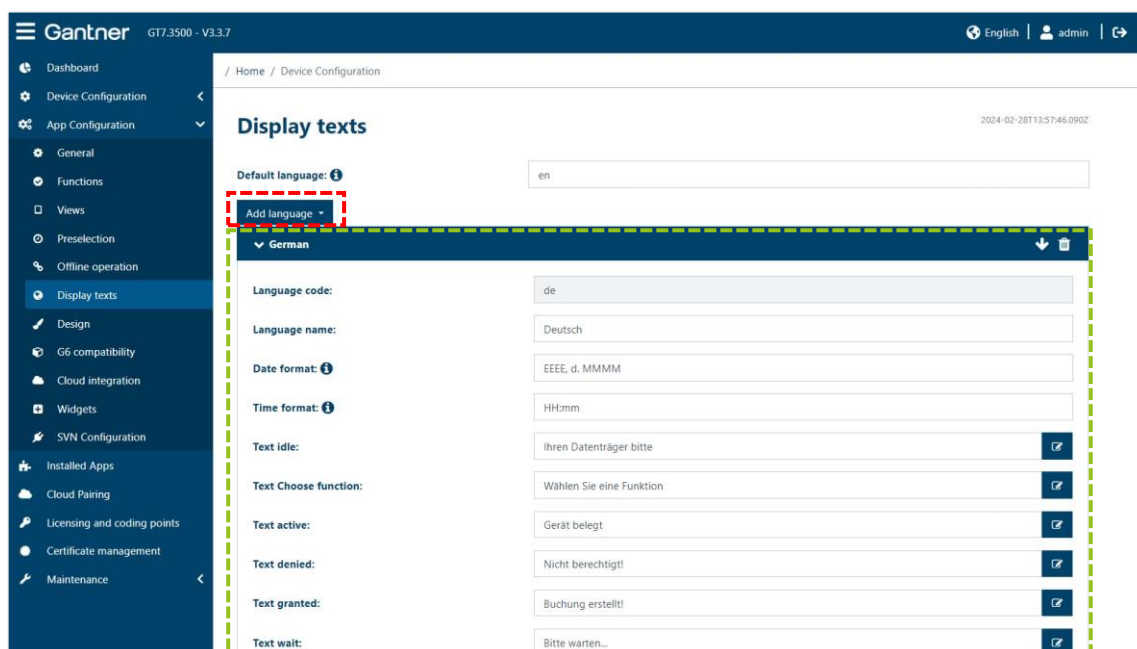


Figure 5.30 – Defining languages for the display texts

The following settings are available:

- Default language: Enter a language code known on the device according to ISO 693-1 ("en", "de" or one of the user-defined languages) as the abbreviation for the default language. This language is automatically reactivated after a booking in another language is created.

If a user-defined language is to be used as the default language, you must also enter the same language code in the "Language code" field for the user-defined language (see next item).
- Add language: Via the "Add language" menu (marked red in Figure 5.30), additional languages can be added. After selecting "User defined", another language block (marked green in Figure 5.30) is added. Here, the text for the predefined display texts can be defined.

CardNET

The display texts for the CardNET functions are summarized in the "CardNET" section. These texts are used to define the user guidance for processing the access authorizations and to control the display of the existing access authorizations.

@@@firstname@@, @@lastname@@, @@personalnumber@@, @@bookingtype@@, @@lastidentification@@, @ValidFrom, @ValidUntil (not all texts support placeholders)	
CardNET:	
Unknown error:	Unknown error
Data carrier not found:	Card not found or removed too early Please try again
Write error:	Failed to write on card Please try again
Read error:	Failed to read from card Please try again
Authorization error:	Authorization Error
Parameter error:	Parameter Error
Update successful:	Update successful
Deletion successful:	Deletion successful
Card:	Card
Card invalid:	No validity
Validity:	Valid from @ValidFrom to @ValidUntil
Authorizations:	Authorizations
No authorizations:	No authorizations
Timeplans:	Tp.
Doors:	Doors
Groups:	Groups
Battery info:	Battery info
No battery warnings:	No battery warnings
Lock:	Lock
State:	State
Updating data carrier:	Updating data carrier

Figure 5.31 – Defining the display texts for CardNET

5.7.1 Editing language and texts

A language can be deleted by deleting the corresponding block (marked green in Figure 5.30) by clicking on the trash icon.

Entries or the editing of texts are possible by entering the text in the corresponding fields. The field turns green. This indicates that this text has been changed but has not been saved yet.

Text id#: 

The edit icon (marked green above) next to a text field is used to open the formatting options (font sizes, bold, italics, colors, etc.) for the text. An editor is displayed in which you can mark text passages and then define specific formatting. Text formatting is not possible for all texts.

Text id#: 

B *I* U ~~S~~ x^2 x_2 **T!** 
   

Your data carrier please

Confirm the formatting by clicking on . The formatting is displayed graphically in the editor (bold font, color, etc.). In the text line, the formatting is displayed as HTML tags (e.g., `<font size='7'>`).

NOTE! The texts cannot be edited directly as the formatting must always be defined using the editor.

With the texts, the labels of the function buttons and the descriptions of the functions can also be edited (see also “App Configuration” -> “Functions”).

Button coming:	Coming
Button coming with reason:	Coming with reason
Button coming with account:	Coming with account
Button leaving:	Leaving
Button leaving with reason:	Leaving with reason
Button pause:	Pause
Button balance:	Balances
Header coming:	Coming
Header coming with reason:	Coming with reason
Header coming with account:	Coming with account

Figure 5.32 – Defining the display texts

The text for the button can also be different from the description of the associated function (see example in Figure 5.32).

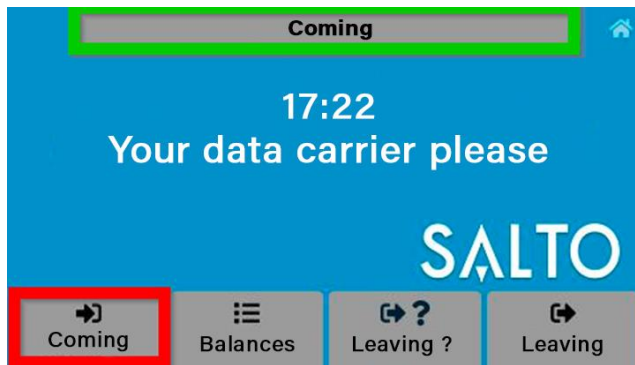


Figure 5.33 – Display texts for “Title” and “Button”

If the text for the button is left blank, only the icon is displayed on the button (depending on the setting under “App Configuration” -> “Functions”).

The multilingual labeling of absence reasons or balances is created under “App Configuration” -> “Views”.

Placeholders can also be used in the texts, which are used for text output. These are:

- @@firstname@@ First name of the person
- @@lastname@@ Last name of the person
- @@personalnumber@@ Personnel number of the person
- @@bookingtype@@ Booking function
- @@lastidentification@@ Name if person known or ID number if person is not known

Example:



Figure 5.34 – Example of a display text with placeholders

The meaning of the individual balance values is defined via the display texts "Title balance 0" to "Title balance 9". The texts set here are used for labeling the balances, whereby the user is only shown those balances for which there is also a balance value recorded in their personal data. Balances with no balance value recorded are not displayed to the user.

When using the GT7 with the G7 Time & Attendance App, it is possible for the time recording software to send "Text=Value" (e.g., "Time balance=10:23") as the balance value. If such a combination of text and number is transmitted to the device as a balance, the respective balance title from the display texts is not displayed. In this case, the text before the "=" character is used as the name for the balance and the text after the "=" character is displayed as the value.

5.8 Design

In the area “App Configuration” -> “Design”, basic settings for the appearance and layout of the GT7 display can be configured.

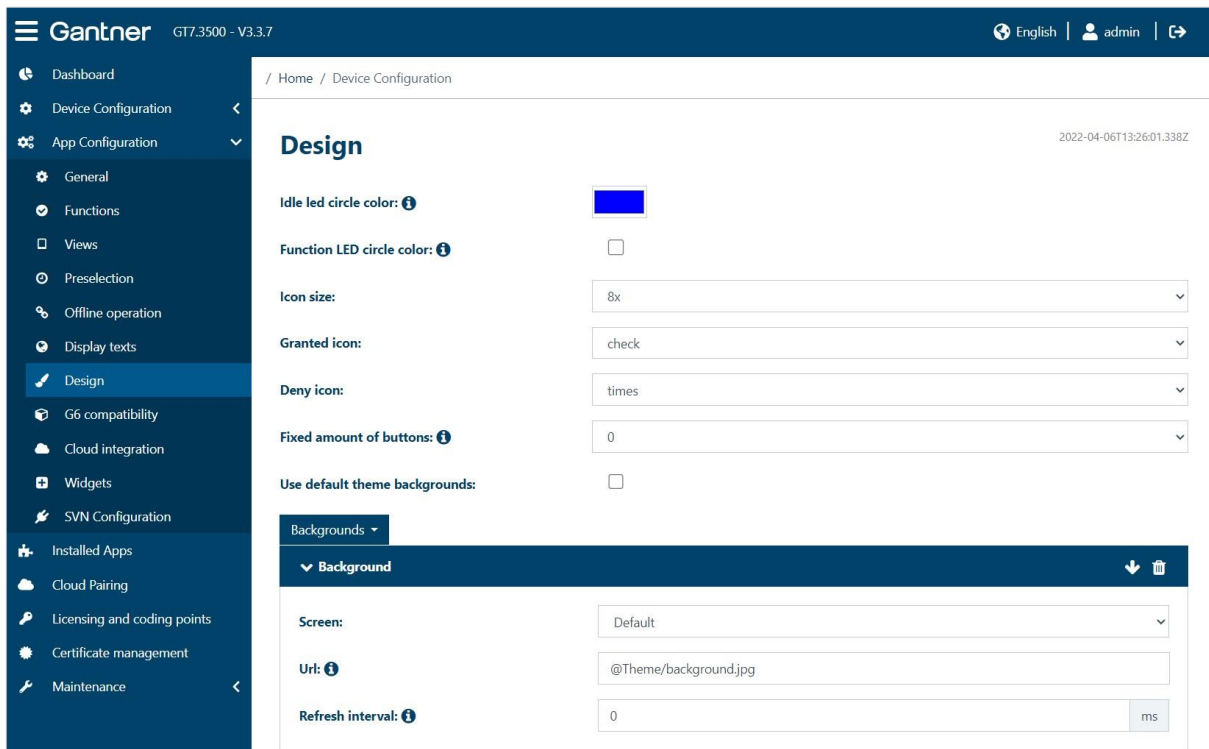


Figure 5.35 – “Design” configuration settings

- Idle led circle color: The color of the LED ring near the RFID reader on the GT7, which is displayed in the basic state, can be changed via the color selection. This is blue by default but can be changed via this setting to a different color, e.g., to match the company's color scheme.
- Function LED circle color: If this option is enabled, the color of the LED ring changes according to the selected function (e.g., coming = green, pause = yellow, going = red). The color settings, as defined in the “App Configuration” -> “Functions” -> “Color” area, are used for this.

i Please note that there may be significant differences in the display of colors on the screen compared to the LED ring. Very bright or very dark colors on the LED ring can hardly be distinguished in terms of color.
- Icon size: This setting is used to define the size of the icon displayed after a booking has been created.



Note: If the processing of CardNET data (see “5.3.1 Function groups”) is enabled, the icon for CardNET (“Access authorizations processed successfully”) is also shown in addition to the icon for the creation of the time booking.

CardNET
(access authorizations
processed successfully)

Time recording
(time recording booking
successfully created)



- Granted icon:

This setting is used to define the type of icon displayed after a booking has been created. There are different icons to choose from.



- Deny icon:

The icon for a rejected booking creation is defined via this setting. There are different icons to choose from.



- Fixed amount of buttons:

Up to 8 function keys can be displayed simultaneously. If this parameter is 0, the width of the keys is scaled depending on the number actually used. If the value is not 0, the width can be fixed for the defined number. When configuring the views, the desired button position can be defined via the Index parameter.

- Use default theme backgrounds: If this option is selected (default setting), the background images from the design template (theme) are used (see also “Installed apps” -> “Theme”). An individual background image can be defined for each screen. For example, a logo can be displayed on most screens but not on other screens due to the limited readability.



If individual images are to be used for devices, these can be defined in the app configuration. The “Use default theme backgrounds” option must be disabled in this case. Next, you can insert a configuration block for each defined screen by clicking on “Backgrounds” and configuring the following settings:

- In the “Screen” field, select the screen for which the configured image is to be used. All available screens of the G7 Time & Attendance App as well as result displays are available for selection.
- Specify the source of the display in the “Url” field. Images that are available in the theme or that have been uploaded to the device via FTP can be used as the source.

i The resolution of the GT7 display is 480 x 272 pixels. The images or logos must be compatible with this resolution to ensure they are displayed correctly.

Alternatively, images that are provided online by a server can also be displayed. The syntax for the different sources is:

Images from the theme:

@Theme/filename.jpg

Example: @Theme/background.jpg

Images uploaded to the device via FTP:

/ftp/filename.jpg

Example: /ftp/mybackground.jpg

Images provided on an FTP server:

ftp://username:password@ip-address/filename.jpg

Example: ftp://admin:admin@10.1.1.100/test.jpg

Images provided, e.g., from a webcam:

http://username:password@ip-address/api/scene//live?t=@Random

Example:

http://admin:admin@10.1.1.100/api/scene/live?t=@Random

To use images provided online, please contact GANTNER Support for further information.

- By specifying a time in the “Refresh interval” field, it is also possible to continuously update an image provided by the server. In this way, information from webcams for example can also be displayed on the screen.

5.9 G6 compatibility

If the GT7 terminal is connected to a time recording software or a communication software (e.g., GAT OnlineSync or GAT Direct.Connect) via the NTG Online protocol, this protocol must be enabled on the “App Configuration” -> “G6 Compatibility Mode” settings page.

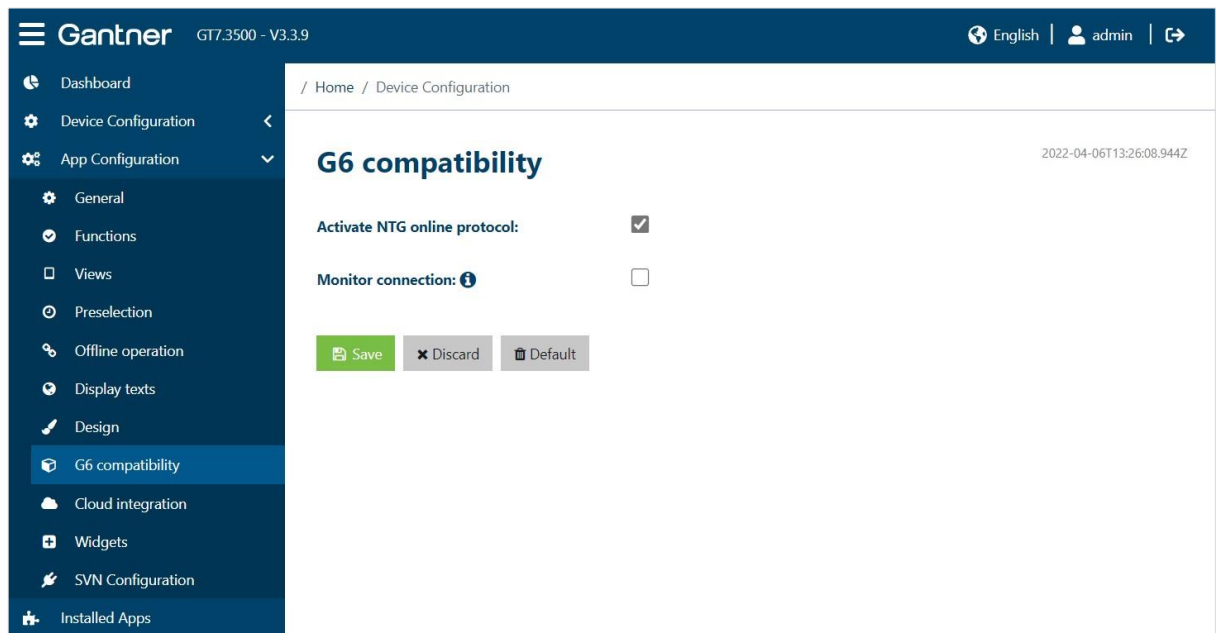


Figure 5.36 – “G6 Compatibility” configuration settings

- Activate NTG online protocol: Enable this option to use the NTG Online protocol.
- Monitor connection: Select this option to monitor the network connection. If enabled, connection interruptions in online mode can be detected more quickly and communication can be re-established more quickly at the end of the connection interruption. This function requires host software that supports this functionality (e.g. GAT SyncManager from V3.3.0). If the connection is disrupted and offline operation is disabled, the “Out of order” screen is displayed.

5.10 Cloud integration

Via cloud integration, the device can be configured so that when a booking is created, it independently contacts a server to have the booking confirmed by the server.

Using this method, the devices can be operated without local software installation and a cloud software solution. Of course, this method can also be used to work with local software where the communication setup is done by the devices.

The integration is done via a web service with REST interface, which you can configure via the “Integration” configuration.

Figure 5.37 – “Cloud Integration” configuration settings

Username, password, and app key are three values for authenticating the device to the server and depend on the implementation of the interface on the server. Contact your software provider to find out the correct settings for your installation.

- Base URL: The address and the port of the server under which the devices can log in.
- Username: Enter the username that the GT7 will use to log in to the server.
- Password: Define the password that the GT7 will use to log in to the server.
- API key: Enter the API key that the GT7 will use for authentication with the server.

5.11 Widget for coding function

This menu can be used to add a widget to the dashboard. This widget allows you to upload a .csv coding file with coding information to the terminal. The file contains the assignment of unique data carrier numbers to the respective data carrier numbers.

The widget can also be used to download a log file from the device that contains information about the completed encodings.

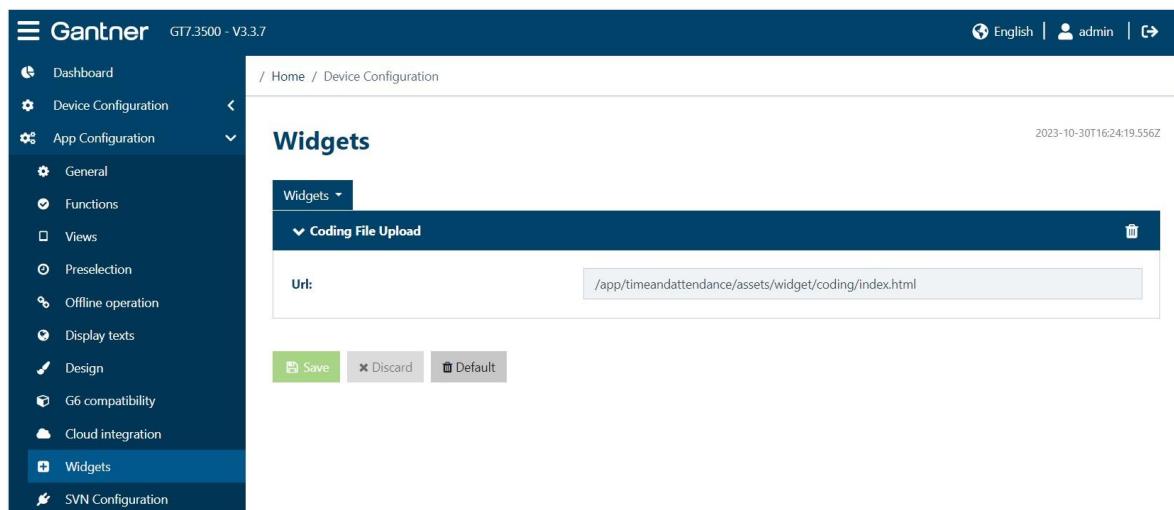


Figure 5.38 - "Widgets" settings

- To use the widget, click on "Widgets" and select "Coding File Upload".
 - The setting for the coding file is displayed (see image above).
 - The URL field is for information only.

Once the widget is enabled, it is displayed on the "System Overview" page as shown below.

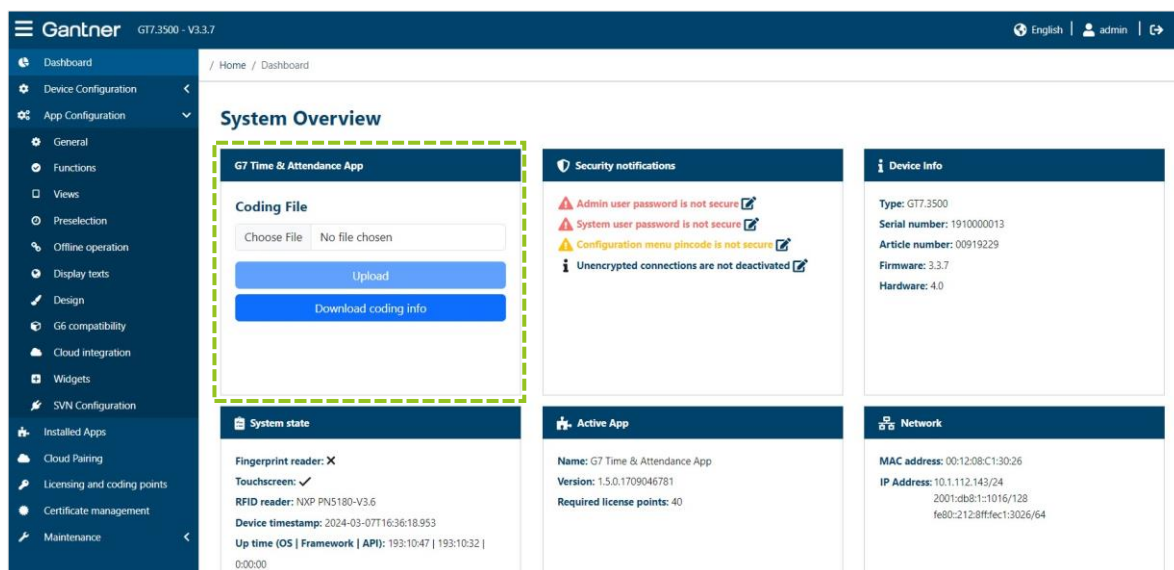


Figure 5.39 - Display of the coding file widget

5.11.1 Uploading an encoding file to the GT7 terminal

Using the widget in the overview, a coding file containing the assignment of unique numbers (UID) to data carrier numbers (or card numbers) can be uploaded to the terminal as follows.

- Click on “Choose file” to select the .csv file with the coding information.

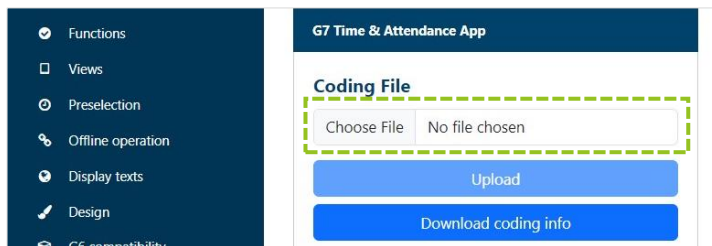


Figure 5.40 – Select a coding file

Required format of the .csv file

	A	B
1	04391662DE5E80	10
2	044A1D62DE5E80	11
3	04240662DE5E80	1102820
4	040F1962DE5E80	13
5	044F1262DE5E80	14
6	040E4D62AD5F80	20
7	043B09423C8080	21
8	04225662AD5F80	22
9	046F0D5A9E7180	1102820
10	047B8C5A9E7180	1102792

Figure 5.41 - Example of a coding file (column A = unique number, column B = card number)

- The file must be in UTF-8 format.
- The file must contain the unique identification number (UID) of the data carrier in HEX format* in the first column and the card number to be encoded in decimal format in the second column. Other columns may be present but are not considered.

* To display the UID number of a data carrier in HEX format, you can read the data carrier at the GT7 terminal. The number is then shown on the device state page (“Maintenance” -> “Device State”). The UID number is the displayed value without the leading “0x”.

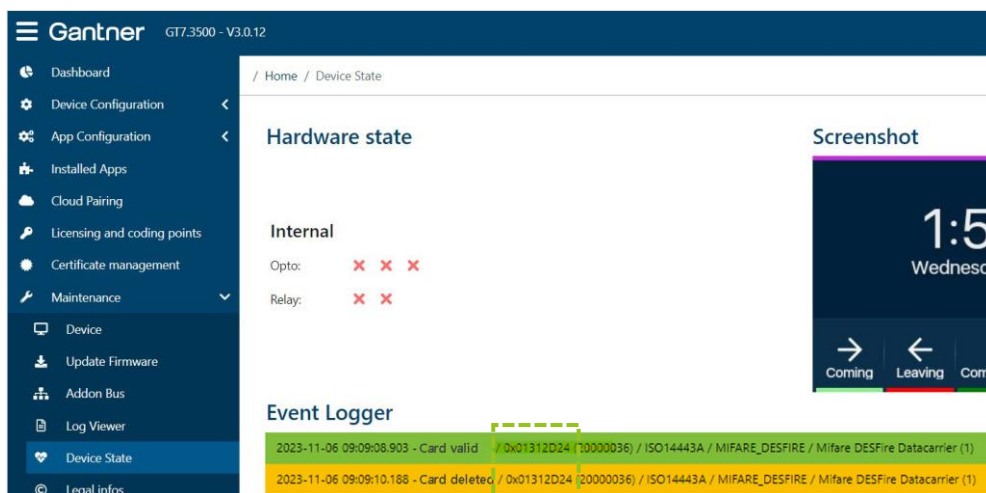


Figure 5.42 – Card number in HEX format

- After selecting the encoding file (.csv), click on “Upload”.
 - The file is uploaded to the GT7 terminal and will now be used for encoding the data carriers, i.e., the unique number of a read data carrier is searched for in the encoding file and the assigned card number is encoded.
 - If a coding file is uploaded, data carriers with UID numbers that are not in the list are not encoded.
 - After a coding file is uploaded to the GT7 terminal, “Delete” is displayed in the widget.

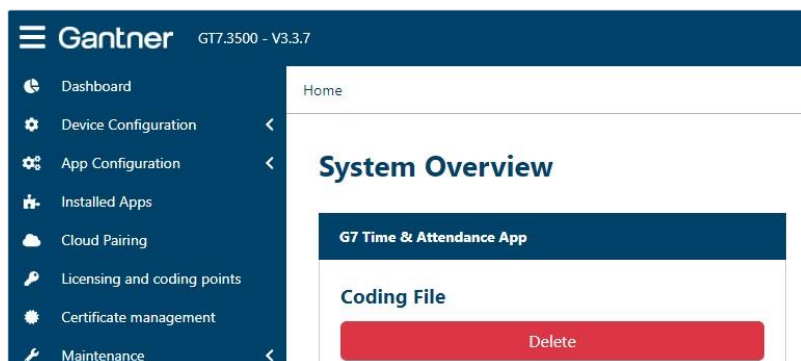


Figure 5.43 - Coding widget with uploaded coding file

- Click on “Delete” to remove the file from the GT7 terminal.

NOTE: If no coding file is uploaded to the terminal, the unique number of the data carrier is encoded as the data carrier number.

5.11.2 Downloading the coding log file from the GT7 to the PC

If data carriers have been encoded, a log file can be downloaded from the terminal. This contains the time of encoding, the encoded data carrier number, and status messages.

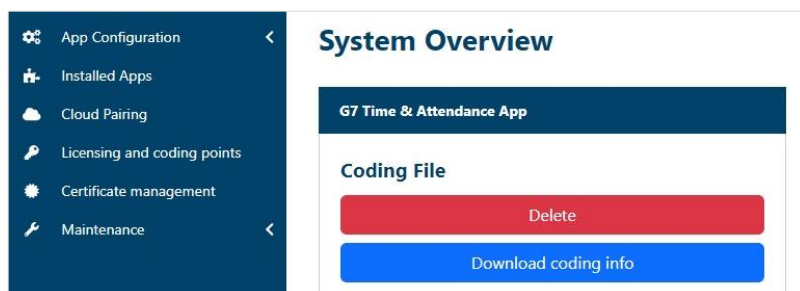


Figure 5.44 - Saving the coding log file via the coding widget on the PC

- Click on “Download Coding Info”.
 - A file window opens in which you can save the log file on the PC. Notes:
 - In “Coding station” mode, data carriers that have already been encoded and are read again by the GT7 are also logged.
 - In “On-the-fly” mode, data carriers that have already been encoded are not logged again.

5.12 SVN configuration

SVN (Salto Virtual Network) is a mode to manage and store authorizations (SVN data) on the users' data carriers for use with offline access readers from SALTO. The functionality is comparable to the CardNET system from GANTNER.

On this setting page, the interface to the ProAccess SPACE software from SALTO can be enabled and configured. This interface is used by the G7 Time & Attendance App to query SVN data and to write the authorization data to the data carriers when they are read at the GT7 terminal. This allows SALTO access devices to be used in combination with GANTNER products in the access system.

i Min. SALTO ProAccess SPACE 6.8 and the G7 Time & Attendance App V1.4.1 with firmware V3.2.1 are required for compatibility.

Figure 5.45 – “SVN Configuration” settings

- Enable Space Interface: Select this option to enable the interface to SALTO ProAccess Space.
- Server address: Enter the computer name or IP address of the computer on which the SALTO ProAccess SPACE software is installed.
- Port: Port number for communication with ProAccess SPACE Synchronizer (default = 8100).
- Transfer protocol: Select the type of communication protocol here (default = http).
- Authentication type: Select the method for logging in to SALTO ProAccess SPACE (default = Basic). After selecting the login method, enter the required authentication data. If “Basic” is selected, the user name and password must be entered. For “Custom”, the so-called “Ship Key” is used.
NOTE! If GAT Matrix / GAT ACE 7000 are also being used, these settings must match the settings defined there.

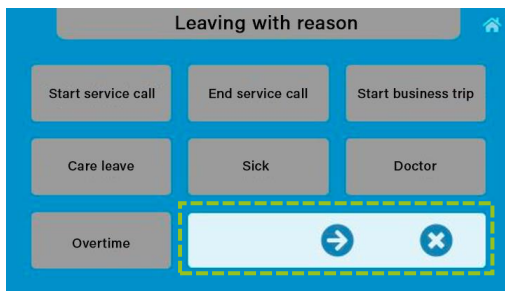
6 STYLES

Via the CSS file “style.css”, which is located in the themes file, numerous designs can be affected thereby allowing far greater control beyond what is possible in the configuration of the web interface. The following are some examples that have already been implemented by customers.

6.1 Button bar for basic selection

The area where buttons are used to scroll between several pages can be defined using the following settings.

- . g7-choice-buttonbar-nav Changes the appearance of the area where the buttons are displayed.
- . g7-choice-button-nav Changes the appearance of the buttons.



Example:

By adding the following code to the style.css file of the theme, the area can be made completely transparent, for example:

```
.g7-choice-buttonbar-nav{  
    background: transparent;  
    opacity: 1.0;  
}
```

6.2 Text format for host feedback

The styles in the style.css file can be used to output host feedback in different font sizes. The attributes of “. g7-taa-content-text” can be used to define the appearance of feedback from the host computer. For example, the text size can be changed as follows.

Example:

```
.g7-taa-content-text{  
    font-size: xx-large;  
    //font-size: 30pt;  
    //font-size: 2.5em;
```

Classes can be defined in the style.css file that is embedded in the design template.

Example:

```
.g7-taa-content-text .displaytext-subtitle
```

This class name can then be specified in the text in order to format the text.

Example:

```
<span class='displaytext-title'>  
John Smith  
</span><br/>  
<span class='displaytext-subtitle'>  
Happy birthday!  
</span>
```

This method allows you to format a feedback text accordingly and works for all interfaces, i.e., also via FTP or NTG as well as for the new interfaces.

6.3 Other available styles

The following additional styles are available to define the design of the G7 Time & Attendance App.

Style	Use
.g7-deny-icon	Applies to the "Deny" icon
.g7-error-icon	Applies to the "Error" icon
.g7-success-icon	Applies to the "Success" icon
.g7-success-offline-icon	Applies to the "Success" icon for offline bookings
.g7-button	Basic button style
.g7-taa-screen-header-inner-icon	Applies to icon of the screen header
.g7-taa-screen-header-inner-text	Applies to text of the screen header
.g7-taa-screen-content	Defines the content area of a screen defined with a view
.g7-taa-content-text	Defines the content text of a screen defined with a view
.g7-taa-button	Defines the basic layout of a button in the lower button bar
.g7-taa-button-icon	Applies to the icon of a button in the lower button bar
.g7-taa-button-icon-large	Expands "g7-taa-button-icon" for button icons in the lower button bar when only the icon is shown (no text)
.g7-taa-button-text	Applies to the text of a button in the lower button bar
.g7-taa-button-coming	Basic style of a 'Coming' button in the lower button bar
.g7-taa-button-comingwithreason	Basic style of a 'Coming with reason' button in the lower button bar
.g7-taa-button-comingwithaccount	Basic style of a 'Coming with account' button in the lower button bar
.g7-taa-button-leaving	Basic style of a 'Leaving' button in the lower button bar
.g7-taa-button-leavingwithreason	Basic style of a 'Leaving with reason' button in the lower button bar
.g7-taa-button-pause	Basic style of a 'Pause' button in the lower button bar
.g7-taa-button-balance	Basic style of a 'Balance' button in the lower button bar
.g7-taa-button-custom1	Basic style of a 'Custom 1' button in the lower button bar
.g7-taa-button-custom2	Basic style of a 'Custom 2' button in the lower button bar
.g7-taa-button-custom3	Basic style of a 'Custom 3' button in the lower button bar
.g7-taa-button-custombalance1	Basic style of a 'Custom balances 1' button in the lower button bar
.g7-choice-button	Basic style of a button in the selection field of a screen
.g7-choice-button-icon	Basic style of an icon on a selection button
.g7-choice-button-text	Basic style of text on a selection button
.g7-choice-button-nav	Basic style of a navigation button on the selection panel of a screen
.g7-balance-button-nav	Basic style of a navigation button on the balances panel of a screen
.g7-action-cancel	Basic style of a 'Cancel' action button
.g7-action-pin	Basic style of a 'PIN entry' button
.g7-action-language	Basic style of a 'Language selection' action button

.g7-action-home	Basic style of a 'Home' action button
.g7-action-switchlanguage	Basic style of a 'Change language' action button
.g7-time	Applies to the appearance of the time on the "Welcome" screen
.g7-date	Applies to the appearance of the date on the "Welcome" screen
.g7-time-small	Applies to the appearance of the time displayed on other screens
.g7-number-key	Basic style of a key on the pin entry screen
.g7-number-bg	Applies to the appearance of the background on the pin entry screen
.text-red	Used for various red texts
.text-green	Used for various green texts

Table 6.1 – Other available styles

7 FTP FILE FORMATS

7.1 Master data (down.dat)

The file "down.dat" contains commands for loading a GT7 terminal with master data. The master data consists of persons, data carriers, balances, and much more.

The file is imported by the GT7 terminal as soon as it is sent to the terminal via FTP. To avoid an access conflict, the file is renamed as "down.dat~" by the terminal itself and then imported. This import may take some time, depending on the amount of data.

It is possible that only one or a few commands are written to the "down.dat" file and these are taken over by the terminal without a complete loading. In this case, the new data will be added to the terminal or already existing data will be updated.

The order of the commands within the "down.dat" file is not decisive for the function. All commands are read in consecutively and stored in the database. However, if a command is read in that already requires data from another command (e.g., assignment of ID cards to a person) but these have not yet been read in, an error will occur during the import.

After the import, the "down.dat~" file is deleted by the terminal and the "down.info" file is created. This file shows the result of the import and any errors that may have occurred (see the following chapter).

Each command is represented in the file as one line. The individual commands consist of a command number with additional data fields dependent on the command. The command number and the data fields are separated by a semicolon ";".

When extending the functionality, care is taken to ensure that the existing data structure can continue to be used and that new functions are defined by additional parameters. These parameters are added at the end of the respective data structure.

Lines beginning with a "*" are interpreted as comments and are not evaluated. Blank lines are allowed.

Master data that has been configured in a terminal is retained until it is deliberately deleted. For deleting master data there are commands for individual commands. If data is deleted to which other data is referenced, the referenced data is also deleted.

7.1.1 Command overview master data

Overview of the available commands in the "down.dat" master data file arranged by command number:

Command	Description
1010	Load persons
1011	Delete persons
1012	Delete all persons
1015	Load person special authorizations
1020	Load person data carrier
1021	Delete data carrier
1030	Person load balances
1040	Person load finger templates

Table 7.1 - Overview of commands in the "down.dat" master data file

7.1.2 Load person (command 1010)

This command is used to load user data into the GT7 terminal. The unique identifier of the person is the employee ID (PersonallId). Other commands can be used to add additional information for the person (e.g., data carriers, special authorizations, etc.).

Data	Description	Available from SW version
1010	Load person command	
PersonallId	Employee ID number for unique identification of the person in the terminal. Depending on the time recording software used, this can be the data carrier number or the personnel number. Additional data of a person (e.g., fingerprints, ID cards, etc.) are referenced to this PersonallId. Length: max. 4-byte Integer in decimal	
PersonalNo	Personnel number This value can be alphanumeric. However, it is only possible to record a person by entering the personnel number for numeric values. Length: max. 30 characters	
DisplayName	Name of the person as it should be shown on the display. Length: max. 255 characters	
Language	Display language used to display information to the employee. The language abbreviations according to ISO must be used (de, en, etc.).	
FiuUse	Use of the fingerprint reader for verification. This field has no function for terminals without a fingerprint reader and has no function for terminals where identification with fingerprint is enabled.	
AttendanceStatus	Presence status of the person 0 ... not defined (default) 1 ... present 2 ... absent	
Balance0	Balance 0, personal text information Length: max. 30 characters	
Balance1	Balance 1, personal text information	

	Length: max. 30 characters If a value is sent for Balance 1 with the formatting =±mmmmmm, where mmmmm is the value for Balance 1 in minutes, then the sum of Balance 0 and Balance 1 is displayed in ±hh:mm when Balance 1 is displayed.	Calculation as of V1.0.1
Balance2	Balance 2, personal text information Length: max. 30 characters	
Balance3	Balance 3, personal text information Length: max. 30 characters	
Balance4	Balance 4, personal text information Length: max. 30 characters	
Balance5	Balance 5, personal text information Length: max. 30 characters	
Balance6	Balance 6, personal text information Length: max. 30 characters	
Balance7	Balance 7, personal text information Length: max. 30 characters	
Balance8	Balance 8, personal text information Length: max. 30 characters	
Balance9	Balance 9, personal text information Length: max. 30 characters	

Table 7.2 – Command 1010 "Load person" - Field description

Example:

```
1010;101;A101;Frank May;de;0;0;16:25;;;8:34;7:00;-2:12;;;9:07;10:15;
1010;102;2;Mark Musterman;de;0;0; 2 Days;10:47;2:23;
1010;103;F103;Sabine Musterman;de;0;0;;;;;;;;;
1010;104;F104;Claudia Miller;de;0;0;
```

7.1.3 Delete person (command 1011)

This command is used to delete a person. All referenced data of this person will also be deleted.

Data	Description	Available from SW version
1011	Delete person command	
Personalld	Employee ID number for unique identification of the person in the terminal. Length: max. 8 characters	

Table 7.3 – Command 1011 "Delete Person" - Field description

Example:

```
1011;101;
```

Attention:

The command 1011 is available only in the offline mode of the device (FTP communication).

When using GAT SyncManager and operating the devices in online mode, the entire personnel master must be deleted (command 1012) and the authorized master data must be reloaded so that the online database contains the correct personnel master.

7.1.4 Delete all persons (command 1012)

This command deletes all persons and the referenced data of all persons.

Data	Description	Available from SW version
1012	Delete all persons command	

Table 7.4 – Command 1012 “Delete all persons” - Field description

Example:

```
1012;
```

If the command 1012 is used in the “down.dat” file, the “batch mode” of the loading is activated. In this case, all persons in the device memory are deleted and a complete loading with all persons in the “down.dat” file is expected. In this case, the device no longer checks whether information is available more than once and no data additions are made (e.g., 1010 load person without balances and the addition of balances with 1030 is not possible in batch mode). Only limited commands are available in batch mode (1010, 1020, 1040).

If command 1012 at the beginning of the “down.dat” file is not used, the “Line by Line” mode is used for loading. This mode is much slower than the batch mode but allows specific changes to the personnel data. For example, balances for individual persons can be updated or persons can be added or deleted.

The mode that was used for the data transfer can be found in the “down.info” file under “Type”.

7.1.5 Loading special authorizations for a person (command 1015)

This command is used to load special authorizations for a person.

Data	Description	Available from SW version
1015	Load person special authorizations command	V 1.1
Personalld	Employee ID Number for unique identification of the person in the terminal. Length: max. 8 characters	
EnrollmentMaster	Authorization for fingerprint enrollment 0 ... no authorization (default) 1 ... authorization	
Reserved	0 ... no authorization	
Reserved	0 ... no authorization	
Reserved	0 ... no authorization	

Table 7.5 – Command 1015 “Load person special authorization” - Field description

Example:

```
1015;101;1;0;1;1;
```

7.1.6 Load person data carrier (command 1020)

This command is used to load data carriers for a person.

Data	Description	Available from SW version
1020	Load person data carrier command	
PersonalId	Employee ID Number for unique identification of the person in the terminal. Length: max. 8 characters	
CardNo	Number of the data carrier. Depending on the card reader settings.	
CardType	With this parameter it is possible to manage different data carrier codes (e.g., different system numbers) without problems occurring with the same data carrier numbers. For data carriers that are sent to the terminals via FLEX command, this parameter must be set to "01". Multiple data carrier types are not possible in this case. See the card reader settings.	

Table 7.6 – Command 1020 "Load person data carrier" - Field description

Example:

1020;101;4711;01;

7.1.7 Delete data carrier (command 1021)

This command is used to delete data carriers in the terminal. They are no longer assigned to the person after deletion.

Data	Description	Available from SW version
1021	Delete person data carrier command	
CardNo	Data carrier number to be deleted	
CardType	Data carrier type that is to be deleted. If no CardType is specified, all data carriers with this number will be deleted	

Table 7.7 – Command 1021 "Delete data carrier" - Field description

Example:

1021;4711;01;

7.1.8 Load person balances (command 1030)

This command is used to load or change the balances.

Data	Description	Available from SW version
1030	Load person balances command	
PersonalId	Employee ID number to uniquely identify the person in the terminal	
Balance0	Balance 0, personal text information Length: max. 30 characters	
Balance1	Balance 1, personal text information Length: max. 30 characters	

	If a value is sent for Balance1 with the formatting =±mmmmmm, where mmmmm is the value for Balance1 in minutes, then the sum of Balance0 and Balance1 is displayed in ±hh:mm when Balance1 is displayed.	Calculation as of V1.0.1
Balance2	Balance 2, personal text information Length: max. 30 characters	
Balance3	Balance 3, personal text information Length: max. 30 characters	
Balance4	Balance 4, personal text information Length: max. 30 characters	
Balance5	Balance 5, personal text information Length: max. 30 characters	
Balance6	Balance 6, personal text information Length: max. 30 characters	
Balance7	Balance 7, personal text information Length: max. 30 characters	
Balance8	Balance 8, personal text information Length: max. 30 characters	
Balance9	Balance 9, personal text information Length: max. 30 characters	

Table 7.8 – Command 1030 “Load person balances” - Field description

Example:

```
1030;101;2 Days;10:47;2:23;
1030;102;16:25;;;8:34;7:00;-2:12;;;9:07;10:15;
```

7.1.9 Load person finger template (command 1040)

The command can be used to load or modify fingerprint data of a person.

Data	Description	Available from SW version
1040	Load person finger template command	
PersonallId	Employee ID number for unique identification of the person in the terminal	
TemplateNo	Template or finger number 1 to 10 for verification, for identification only 2 fingers are possible	
TemplateData	Template data as provided by the fingerprint sensor Max. length: 1024 bytes (typically approx. 128 bytes)	

Table 7.9 – Command 1040 “Load person finger template” - Field description

Example:

```
1040;101;1;0258000FC128764.....8978;
1040;101;2;029864309924535.....845555334;
```

7.2 Master data import result (down.info)

The import of master data is completed using the “down.dat” file. The control of whether the import has been carried out correctly can be completed using the “down.info” file. The start and end time of the import, as well as the number of successfully imported commands, are written to this file.

Example content for “down.info” after successful import:

```
Import Data
Import Start at:2021.01.07.14.08.21
Lines: 8
Type: Batch (only 1012, 1010, 1020 and 1040 commands are processed)
Import End at: 2021.01.07.14.08.22
```

If the import could not take place without errors, the errors that occurred are also written to this file.

Example content for “down.info” after unsuccessful import:

```
Import Data
Import Start at:2021.01.07.14.12.55
Lines: 8
Type: Line by line
Unknown Command in Personal Data; Line: 8;
Import End at: 2021.01.07.14.12.56
```

The mode used for loading is specified under “Type”. Additional information about the mode can be found in the command 1012 in the “down.dat” file.

7.3 Booking data (bookings.exp)

All bookings created on a GT7 terminal are stored internally in the terminal. Reading out the bookings from a PC is done via the booking file "Bookings.exp", which is generated by the terminal.

To read out bookings, the "Bookings.exp" file is first downloaded from the terminal and evaluated/saved on the PC. This file must then be deleted on the terminal. If bookings have already been read at an earlier time, this booking file will still be empty and 0 bytes in size when it is read for the first time. After deleting the file on the terminal (by the PC), a new booking file is created by the terminal and the terminal writes the internally stored bookings to this file until the max. file size is reached. If the PC detects the presence of a "Bookings.exp" file, this booking file can be downloaded again, evaluated/saved on the PC, and then deleted from the terminal. This process is repeated until no more bookings are stored in the terminal. In this case, the terminal generates the booking file again, but it remains empty (0 bytes).

If bookings are read out again at a later time, this empty file is first downloaded to the PC and deleted in the terminal. After that, the readout of the bookings starts as previously described.

NOTE! The size of the booking file is limited, and the file can therefore only contain a certain number of bookings. However, all the entered bookings are saved in the terminal. Multiple readings of the booking file and subsequent deletion of the file on the terminal is necessary in order to accept all bookings.

NOTE! As of V1.5.0 of the G7 Time & Attendance App, bookings are prevented if the time set in the GT7 is invalid. This can happen, e.g., if the network connection has been interrupted or a time server is not available and the device has lost the time, e.g., due to a prolonged power failure. This function was implemented to prevent the creation of invalid/incorrect bookings with an incorrect date and time. Unless the time is set manually or obtained via an NTP server, the G7 Time & Attendance App cannot function. This state is indicated by an "Out of order" screen with the text "System time is invalid - Please contact a technician".

7.3.1 Bookings format

In the "bookings.exp" file, one booking is stored in each line. The data fields of a booking are separated by a semicolon ";". It is not required that every field contains a value and not all fields must be present.

Data	Description	Available from SW version
Identity	Address of the terminal that is also used in the FLEX protocol (can be set under Config - Application)	
ID	Unique ID for this booking	
DateTime	Date and time of the booking in the format: YYYY.MM.DD.HH.MM.SS The time is always recorded and saved at the end of all entries.	
BookingType	Booking type 1 ... Time booking	
PersonalID	Unique employee ID of the person who made the booking. This ID is filled both for bookings with ID cards, fingers, or personnel number entries.	
CardType	Card type used to create the booking (can also be empty!)	

CardNo	Card number that was used to create the booking (can also be empty!). If the number is available, the CardType must also be used to get a unique number.	
PersonalNo	Personnel number, which was used to create the booking (can also be empty!)	
BookingCode	Booking code of the created booking. The code is only unique considering the ReasonCode and the Prebooking Code.	
ReasonCode	Absence reason or reason for the PDC booking (e.g., project start).	
FiulInfo	Information about the fingerprint reader (if the terminal has one) 0 ... NO_VERIFICATION (no identification with fingerprint) 1 ... HIT (fingerprint correctly recognized) 2 ... NO_HIT (fingerprint not recognized) 3 ... TIMEOUT (no finger recognized in the scheduled time) 4 ... NO_TEMPLATE 4 (no templates available for the person) 9 ... COM_ERROR (communication error with fingerprint reader)	
FiuMatchingScore	Quality of identification in case of a hit (FiulInfo = 1) 0 ... very good 1 ... good 2 ... poor	
Prebooking	Prebooking code Code created for the prebooking entries	
Reserved		

Table 7.10 – Booking format - Field description

Example:

```
255;23;2007.08.06.16.29.11;1;0;3;3199;0;255;;0;0;;
255;24;2007.08.06.16.29.26;1;107;0;;105;255;;1;0;
255;27;2007.08.07.08.19.48;1;107;1;1;105;255;;1;0;;4711;23;;;;;;45,01;;123;
255;28;2007.08.07.08.24.13;1;107;1;1;105;100;30;1;0;;
```

7.4 Fingerprint enrollment data (fingertemplates.exp)

All fingerprints enrolled at a terminal are stored internally in the terminal. For data backup and distribution to other terminals, the data must be read out from a PC via the “fingertemplates.exp” file generated by the terminal.

To read out fingerprint enrollment data, the “fingertemplates.exp” file is first downloaded from the terminal and evaluated/saved on the PC. Afterwards, this file must be deleted on the terminal. If templates have already been read at an earlier time, this file is still empty and 0 bytes in size when it is read. After deleting the file on the terminal (by the PC), a new file is created by the terminal and the terminal writes the scanned and saved templates to this file until the max. file size is reached. If the PC detects the presence of a “fingertemplates.exp”, this file can be downloaded again, evaluated/saved on the PC, and then deleted in the terminal. This process is repeated until no more new templates are stored in the terminal. In this case, the terminal creates a new file, but it remains empty (0 bytes).

If fingerprint enrollment data is read out again at a later time, this empty file is first downloaded to the PC and deleted in the terminal. Then the data readout begins as previously described.

NOTE! The size of the file is limited and can therefore only contain a certain number of fingerprint templates. However, all the recorded data is stored in the terminal. Multiple readings of the file and its subsequent deletion at the terminal are necessary to transfer all fingerprint templates.

7.4.1 Format of the “fingertemplates.exp” File

One fingerprint template read at the terminal is stored per line in the “fingertemplates.exp” file. The data fields of a line are separated by semicolons “;”.

Data	Description	Available from SW version
PersonalID	Unique employee ID of the person whose fingerprint was read.	V1.1
TemplateNo	Template or finger number 1 to 10 whereby with <dlg_FiuEnroll> only 2 or 4 fingers are recorded per person.	V1.1
TemplateData	Template data as provided by the fingerprint sensor Max. length: 1024 bytes (typically approx. 128 bytes)	V1.1

Table 7.11 - Format of the “fingertemplates.exp” file

Example:

```
100;1;026a007.....4943ff;
100;2;0263008.....ffefd2;
```

7.5 Terminal configuration (config.exp)

The current device configuration with the device and app-specific configuration settings is saved by the GT7 terminal in the "config.exp" file. It is irrelevant whether the configuration was created or changed on the device, in the web interface, or in the cloud (GANTNER Connect).

The "config.dat" file contains commands for the configuration of a terminal. The meaning of the buttons, the function of the soft buttons, the languages that can be used, and many other operational settings are defined via this file. Settings for the used data carriers and other hardware related configuration parameters are transferred to this file.

A backup of the device configuration can be completed via this file if G7 Connect Cloud is not being used.

The "config.dat" file is a readable file in JSON format in which all categories of configuration parameters are stored. The complete file or only a part thereof can be saved as "config.dat" and uploaded to the device via FTP.

The "config.dat" file is evaluated by the terminal as soon as it is sent to the terminal via FTP. So that an access conflict does not occur, the file is independently renamed by the terminal as "config.dat~" and then imported.

After the "config.dat" file is imported, a "config.exp" file with the new configuration is created by the terminal. This allows you to see which configuration was sent to the terminal last.

NOTE! "config.dat" configuration files from other devices (e.g., GAT ST 380 EVO POE) are not compatible with the GT7 devices and cannot be used!

NOTE!

This manual is valid as of March 13, 2024. It is subject to change.

Amendments can be made without prior notice at any time!

Information in this manual refers to version 1.5.0 of the G7 Time & Attendance App.



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