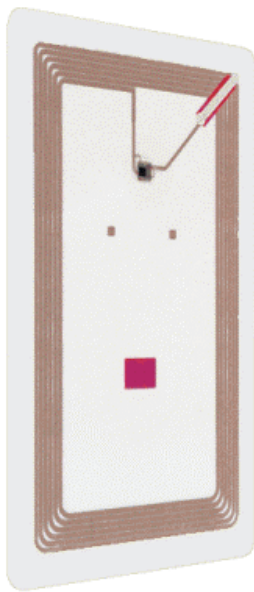


13.56MHz



 **BARman**

*t.BARman BTS / BTL
User manual*

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1. Introduction

1.-1 t.BARman BTS / BTL

The t.BARman BTS / BTL Pocket Terminal by AXIOME SA is a programmable handheld terminal whose main function is the acquisition, processing and transmission of data to a peripheral processing unit (PC, host computer, cash register, etc.).

Data acquisition is by reading of RFID transponders (TAGs) and/or keyboard entry (only t.BARman BTS).

Data storage and processing modes conform to specific user customized programs downloaded to the terminal.

Data transmission to the interface unit is by serial line through the built-in optocoupler.

t.BARman BTS is a minicomputer which features an RFID reading head, multifunctional keyboard and optocoupler interface, an 8 bit C-MOS microprocessor, 64 KB program-storage Flash-memory, data storage RAM memory, high contrast LCD back light, RTC calendar-clock, programmable multitone buzzer, programmable red/green led and high capacity rechargeable Nickel-Cadmium battery pack for considerable autonomous walkabout use.

t.BARman BTL is a minicomputer which features an RFID reading head, 4 keys keyboard and optocoupler interface, an 8 bit C-MOS microprocessor, 64 KB program-storage Flash-memory, data storage RAM memory, RTC calendar-clock, programmable multitone buzzer, programmable red/green led and high capacity rechargeable Nickel-Cadmium battery pack for considerable autonomous walkabout use.

1.-2 Model description

Two models of t.BARman BTS and two models of t.BARman BTL are available, with different RAM storage capacities.

1.-2.1 BTS 512

The t.BARman BTS 512 has a display of 64 characters on 4 lines, a multifunctional 25 keys keyboard, a series of icons, an EEPROM memory to save the parameters during the re-initialisation and 512 KB data storage RAM memory.

1.-2.2 BTS 1024

The t.BARman BTS 1024 has a display of 64 characters on 4 lines, a multifunctional 25 keys keyboard, a series of icons, an EEPROM memory to save the parameters during the re-initialisation and 1024 KB data storage RAM memory.

1.-2.3 BTL 512

The t.BARman BTL 512 has a display of 64 characters on 4 lines, a 4 keys keyboard, a series of icons, an EEPROM memory to save the parameters during the re-initialisation and 512 KB data storage RAM memory.

1.-2.4 BTL 1024

The t.BARman BTL 1024 has a display of 64 characters on 4 lines, a 4 keys keyboard, a series of icons, an EEPROM memory to save the parameters during the re-initialisation and 1024 KB data storage RAM memory.

1.-3 t.BARman BTS / BTL programming

The t.BARman BTS / BTL terminals can be programmed to better satisfy the requirements of its intended specific application.

Use of the AXEL32 Extended language (the same as for BARman, t.BARman TAG/TBC and BARman Laser) which requires AXEL32 Extended compiler and BTS_OS / BTL_OS firmware. BTS_OS / BTL_OS must be installed in the terminal before downloading the program. These components are available in the software package SDP350 with illustrative demo programs. (Volume 5).

2. Unpacking and getting started

Unpack all the components and check them for any physical damage. Check that they tally with the contents listed in the freight documents (make sure that the serial number on the terminal is the same as the one indicated in the documents).



Keep the packaging: you may need it to ship the terminal for servicing. Any damage caused by inadequate packing is not covered by warranty.

Contents of the t.BARman BTS / BTL Pocket Terminal packing:

The packaging must contain:

- This manual;
- The t.BARman BTS / BTL Pocket Terminal
- The wrist strap if ordered.

2-1 t.BARman BTS / BTL interfaces

The interface unit allows the t.BARman BTS / BTL to communicate with a computer. The available interfaces are either single (ILSxxx) or multiple (ILMxxx).

The exclusive magnetic system secures an optimal fastening of the terminal.

The interfaces allow communication with the computer (through optocoupler), as well as charging of battery (through charging contacts).

The different interfaces, cables and the installation procedure are described in the second volume : INTERFACE OPERATING MANUAL

2-2 Operating manual

The operating manual is made up of seven volumes:

Volume 1: **BARman and t.BARman TAG/TBC operating manual.**

Describes the BARman (pen), the t.BARman TAG/TBC and their firmware.

Volume 2: **Interface operating manual.**

Describes the single and multiple interfaces (ILS and ILM), installation and networking. This manual is delivered with each interface.

Volume 3: **AXS communication software.**

Describes the communication software AXS for MS-DOS.

Volume 4: **BARmanager user manual.**

Describes the communication software BARmanager for Windows.

Volume 5: **AXEL32 Extended programming manual.**

The programming manual describes how to program BARman, BARman Laser and t.BARman using the AXEL32 Extended language. This manual is delivered with the software package SDP350.

Volume 7: **BARman Laser user manual.**

Describes the BARman Laser TLL / LGA and their firmware AXEL_OS xx

Volume 8: **C programming manual.**

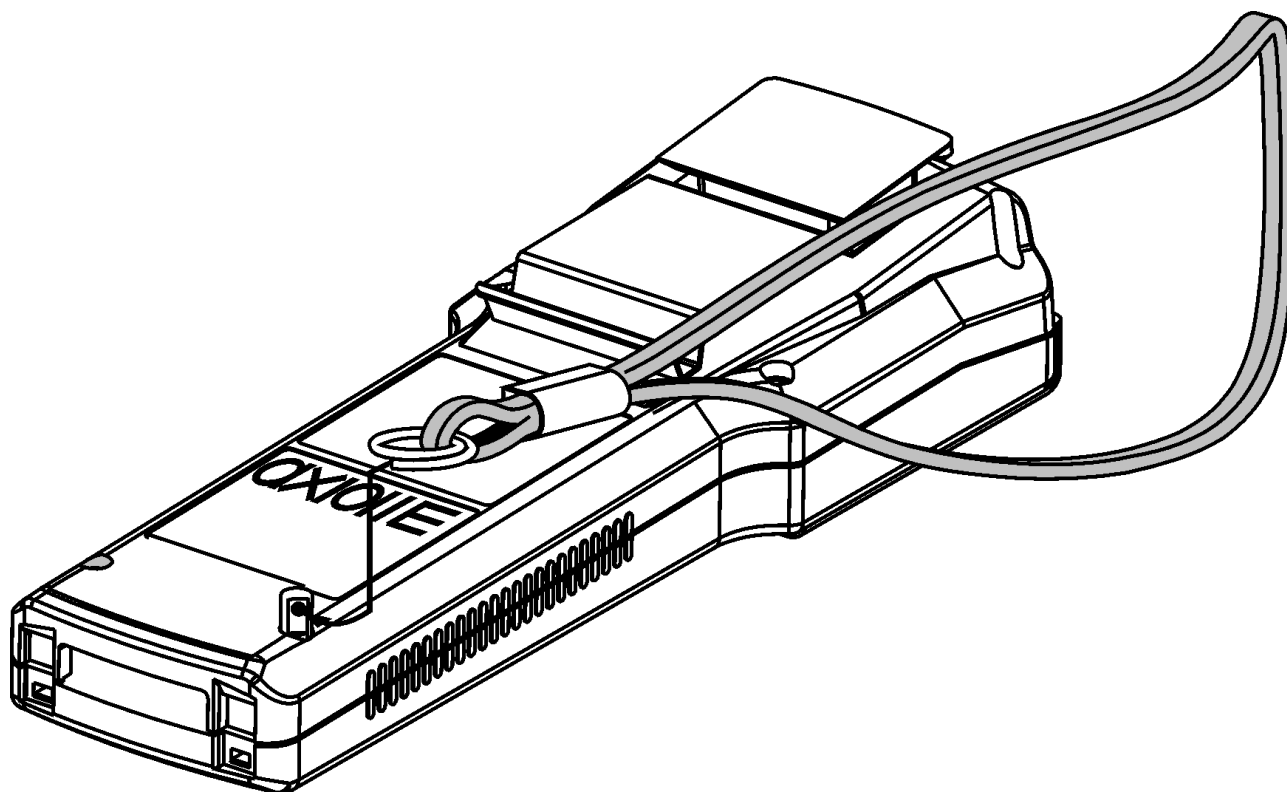
The programming manual describes how to program BARman Laser using the C language. This manual is delivered with the software package SDP300.

Volume 9: **t.BARman BTS / BTL user manual.**

Describes the t.BARman BTS 512 / BTS 1024 / BTL 512 / BTL 1024 and their firmware BTS_OS xx / BTL_OS xx

2.-3 Wrist strap

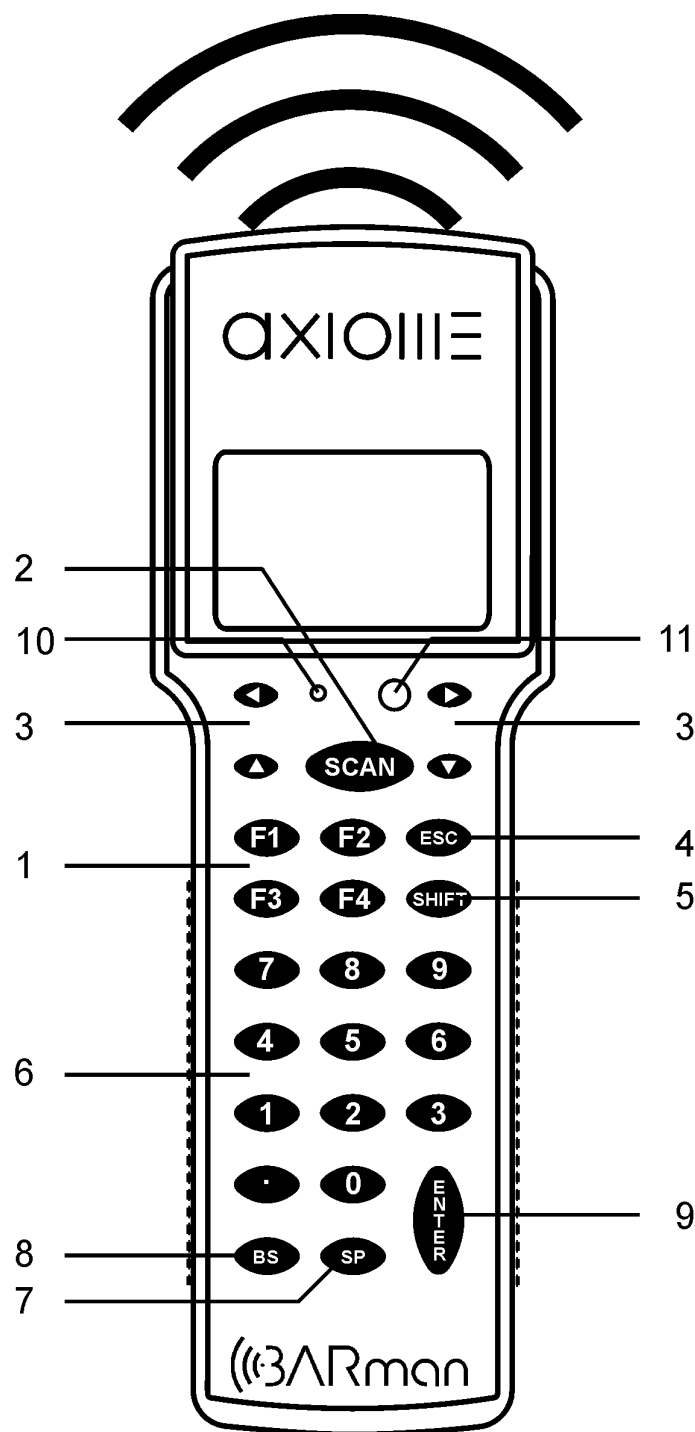
To avoid dropping the t.BARman BTS / BTL, we advise that you fit it with a wrist strap. Mounting is very easy : just remove the metric screw, fix the special screw (delivered with the wrist strap) and insert the extremity of the split ring into the hole of the special screw (see diagram below).



2.-4 t.BARman BTS keyboard

t.BARman BTS has a keypad with 25 alphanumeric and function keys.

In the following figure you may distinguish the following groups of keys:

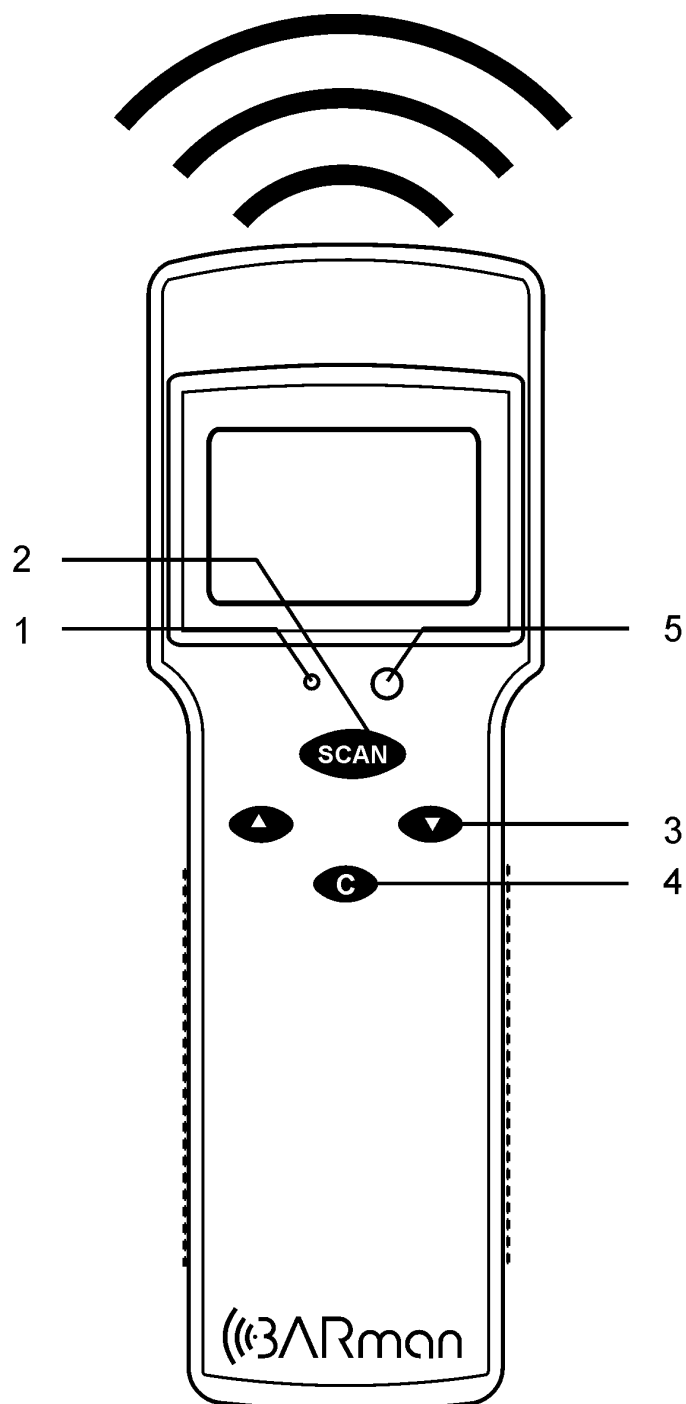


Group	Key	Function
1	F1	Access to the first letter of the alphanumeric keys (see 6)
1	F2	Access to the second letter of the alphanumeric keys (see 6)
1	F3	Access to the third letter of the alphanumeric keys (see 6)
1	F4	Switch display light ON-OFF
2	SCAN	Short pressure: menu Long pressure: activates terminal
3	ARROW keys	<ul style="list-style-type: none"> ◀ scroll message ▶ scroll message ▲ Menu function: next step Program function: "+" key ▼ Menu function: previous step Program function: "-" key
4	ESC	Turn the terminal OFF
5	SHIFT	Switch displaying of icon ON / OFF
6	Alpha-numerical Keys	Normal pressure of one of these keys will enter (and display) the numeric character. It will enter (and display) the first letter if you press the key after F1, the second if you press it after F2... as explained in point 1
7	SP key	Introduces a space if pressed alone, or « + » if pressed after F1... as for the alphanumeric keys
8	BS key	Deletes the last character entered (unless you had afterwards pressed ENTER).
9	ENTER key	Used to enter definitively (in other words validate) what you have just keyed in.
10	RESET key	<p>Keep the activation key (2) depressed together with the protected reset key (10) to activate the reset function. This will reset the contents of the data RAM and, optionally, the program from the Flash-memory. The terminal is now ready for the downloading of a new BTS_OS xx firmware version.</p> <p>To activate the protected key (10) use a propelling pencil, paper-clip (or similar) which you should gently push inside the blind hole on the terminal. Do not use sharpened objects. To prevent damage occurring to the button, do not press with force.</p> <p>This key will destroy all the contents stored in data-storage RAM and optionally, in the program-storage Flash-memory (see chapter 4.-2).</p>
11	LED	Programmable LED in green, red or orange.

2-5 t.BARman BTL keyboard

t.BARman BTL has a keypad with 4 keys.

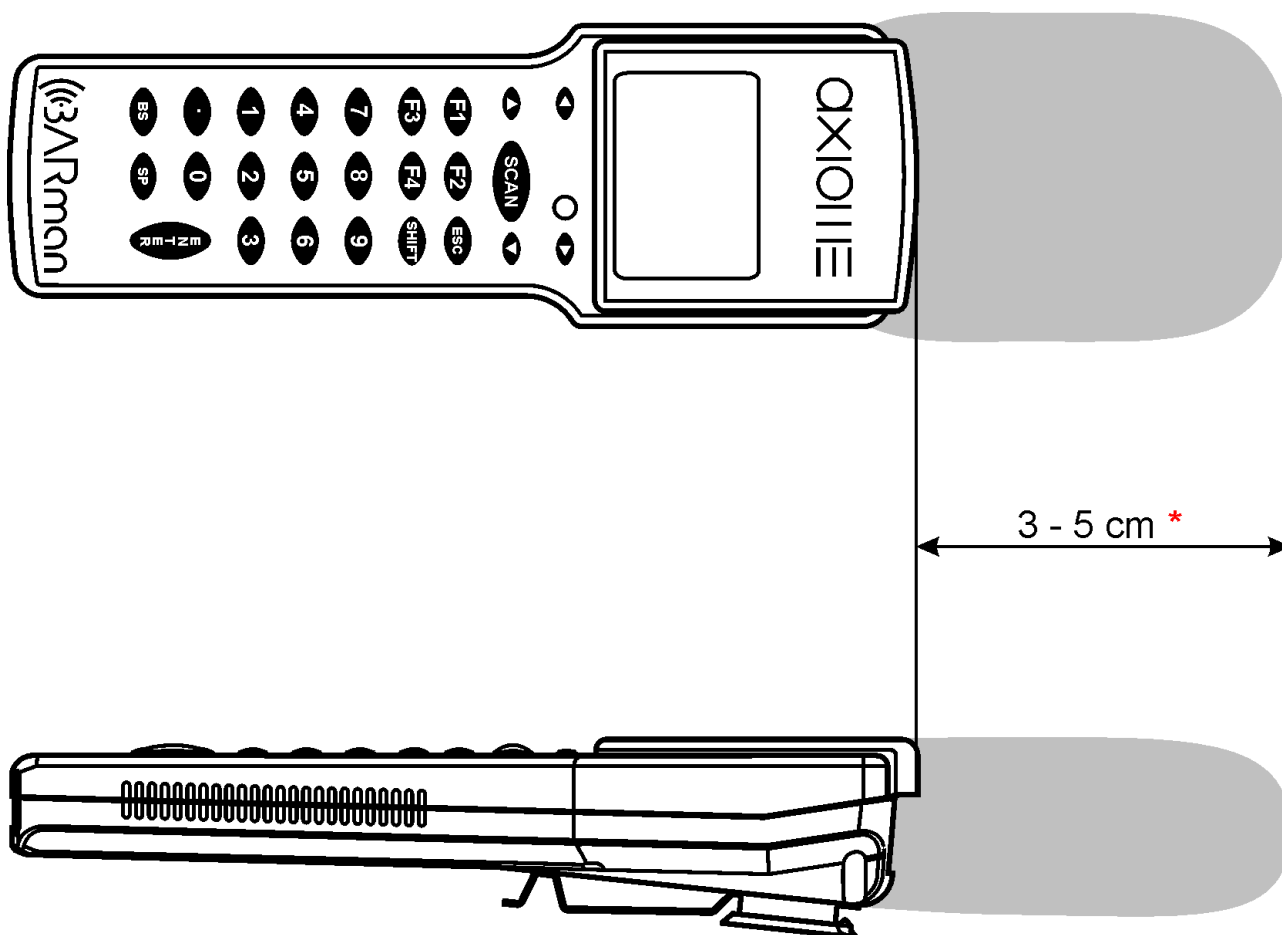
In the following figure you may distinguish the following groups of keys:



Group	Key	Function
1	RESET key	<p>Press the reset key (1) to activate the reset function. This will reset the contents of the data RAM and, optionally, the program from the Flash-memory. The terminal is now ready for the downloading of a new BTL_OS xx firmware version.</p> <p>To activate the protected key (1) use a propelling pencil, paper-clip (or similar) which you should gently push inside the blind hole on the terminal. Do not use sharpened objects. To prevent damage occurring to the button, do not press with force.</p> <p>This key will destroy all the contents stored in data-storage RAM and optionally, in the program-storage Flash-memory (see chapter 4.-2).</p>
2	SCAN	<p>Short pressure: menu</p> <p>Long pressure: activates terminal</p>
3	ARROW keys	<ul style="list-style-type: none">▲ Menu function: next stepProgram function: "+" key▼ Menu function: previous stepProgram function: "-" key
4	C	Program function: "DEL" key.
5	LED	Programmable LED in green, red or orange.

2-6 TAG reading

A tag is read successfully only if it's approached in the reading zone illustrated bellow. The reading distance could change, depending of the tag construction (*).



2-7 Manual activation of the terminal

Activation of the terminal using the Scan key.

The t.BARman BTS / BTL Pocket Terminal is provided with one activation push button *SCAN* (2); a quick pressure on the *SCAN* key activates the menu functions and a long pressure activates the program.

The terminal will turn OFF automatically after a *TIMEOUT* delay or by pressing the *ESC* key (only t.BARman BTS). (see page 7)

2-8 Operation autonomy

Battery life depends on many variables, namely:

The number of reads made, temperature of the environment in which it operates, programmed autoswitch-off, battery age, etc.

Under normal conditions, operation autonomy is really more than enough to ensure a day's work.

When you finish your shift or in the evening, simply leave the t.BARman BTS / BTL Pocket Terminal on its ILS or ILM interface and you will find it completely recharged the morning after (make sure that mains voltage serving the outlet to which the t.BARman BTS / BTL ILS/ILM is plugged is not cut off during the night for safety reasons). If the terminal remains inactive for a prolonged period such as two or three weeks, it is advisable to download all the stored data and recharge the battery.

2-8.1 Battery Storage

A battery left completely discharged for a long time may suffer irreparable damage and may hence become unreliable!

We therefore recommend recharging the terminal periodically (every 3-4 months), also when it is left unused.

2-8.2 Recommendations for recharging

The time needed to fully recharge the batteries varies according to how much residual charge they have left. We recommend a minimum uninterrupted **recharging time of eight hours**.

Recharging should be done after using the terminal until the batteries are nearly flat. The LED on the ILS / ILM interface will give you following indications:

ILS / ILM LED status	t.Barman status
Off	No. t.BARman or not powered
Green blinking	Charging in process
Green	Maintain charge.
Red blinking	Battery problem (if the problem persists, replace the battery)
Red	ILS / ILM problem (too low or high power supply voltage temperature too high for charging)

When batteries are new or have a very low charge (after the terminal has been left inactive for a very long time without being recharged) it is necessary to perform two or three charge and discharge cycles (with complete use) before the battery can reach its maximum capacity.

2.-9 Battery low

If the battery charge level drops to below the minimum set level during use, the message "Battery low" will be displayed and the terminal turns off; download the data by placing the t.BARman BTS / BTL in the ILS/ILM interface.

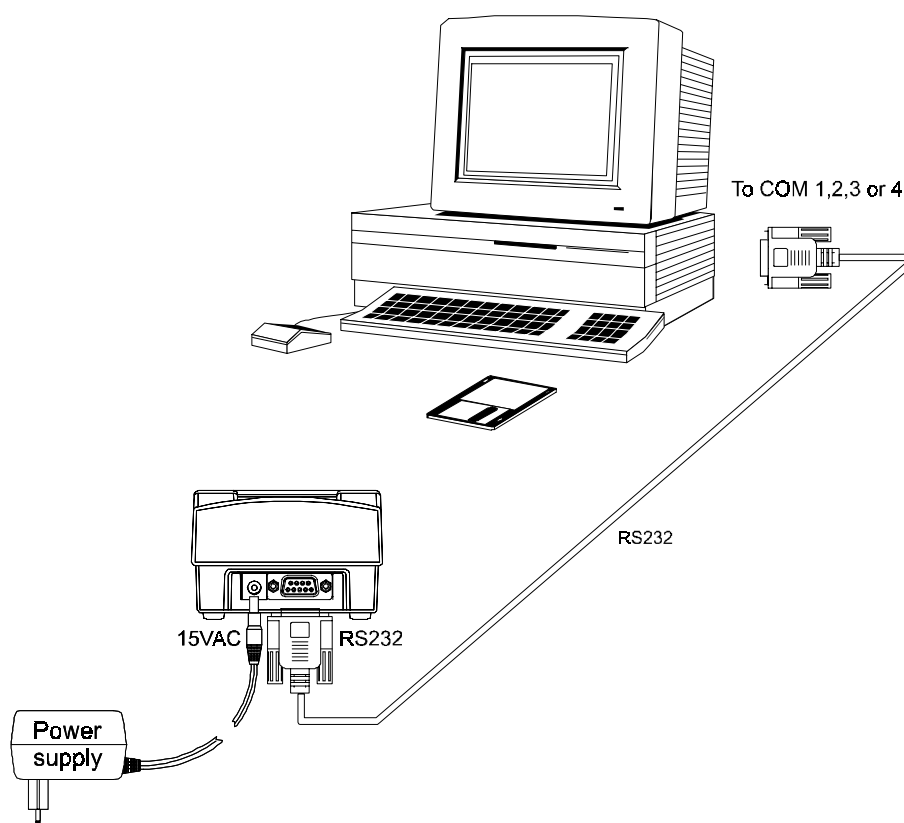
Let the t.BARman BTS / BTL charge up for at least eight hours (80% of the charge is obtained after four hours).

It could be that the previous work session had been completed normally, and that the voltage dropped while the RFID head was inactive; in this case when you press the activation key no message will appear and the terminal will not start up. Don't worry, your data is intact! Lodge your t.BARman BTS / BTL on its ILS or ILM interface: you will see that once an adequate charge is reached this will enable the RFID head to work at its full potential and you will be able to download all the data to the PC (as required by the specific application program).

3. Installation

Before you can use the t.BARman BTS / BTL Pocket Terminal you will first have to prepare the system and carry out the necessary connections; to do this proceed as follows:

- A. Be sure you have all the necessary material, namely:
 - 1 t.BARman BTS / BTL Pocket Terminal
 - 2 Interface ILS232, ILS422 or ILM complete with power supply
 - 3 ILS/ILM - PC connection cable
 - 4 Personal Computer with a free serial port
 - 5 Disk with communication program + Application
 - 6 A number of TAGs for test reading.
- B. Turn off the PC and any peripherals connected to it.
- C. Plug the DB connector of the cable to the PC serial port, and insert the RJ11 for RS422 or DB9 for RS232 to the ILS interface — for more detailed information refer to the interface manual (volume 2).
- D. Connect the t.BARman BTS / BTL interface ILS / ILM to the power supply (check that mains voltage is the same as the rated voltage supported by the power supply); plug the power supply into a wall socket or floor-type multi-outlet receptacle (triple plugs are unsuitable as they do not ensure reliable contact).
- E. Power up the other peripherals and switch on the PC.



- F1. If the battery is sufficiently charged the terminal will switch on when you press the activation push-button (if the t.BARman BTS / BTL remains on the ILS / ILM interface, the LED is **green**).
- F2. If the battery is low, then you will be given the message (if the t.BARman BTS / BTL remains on the ILS / ILM interface, the LED is **flashing green**):

BATTERY LOW

- F3. If the battery is discharged the terminal will not activate, so no message will be displayed. Conditions F2 and F3 require that you recharge the battery by placing the terminal on its interface.
- G. During the t.BARman BTS / BTL battery recharging session, it's possible to install the necessary program for the t.BARman BTS / BTL on your PC.

4. OS for t.BARman BTS

4.-1 Firmware BTS_OS 2.1

Firmware BTS_OS 2.1 is the t.BARman BTS operating system. Without BTS_OS 2.1, it is not possible to run a t.BARman BTS. As the performance of t.BARman BTS is modified from time to time to satisfy the needs of the market, a version number indicates the BTS_OS xx in use.



Any t.BARman BTS (new or repaired) leaving Axiome always contains the latest BTS_OS version.

BTS_OS 2.1 can be downloaded to the terminal after a hard reset by using:

- The download command under DOS (see chapter 4.-3)
- BARcom under WINDOWS 95 (see chapter 4.-4)

BTS_OS 2.1 also includes the small demo program, so the t.BARman BTS is immediately ready for TAG (Tag-it, I.CODE) reading.

4.-2 Hard reset

To activate the hard reset press the SCAN and RESET keys simultaneously (see page 9). The activation of reset interrupts the application program. Running then resumes from the Bootstrap-Loader which prompts you to erase the application program:

```
PROGRAM
ERASE?
↑=NO      ↓=YES
```

By pressing the "▼" key, you will erase the flash memory (BTS_OS 2.1) and the RAM memory (user program, tables, data).

The LCD displays the message:

```
BOOTSTRAP-  
  LOADER      v3r0  
ErasPrgFlash
```

During Flash-memory deletion the LED emits red light.

By pressing the "▲" key or leaving inactive for approximately 25 seconds, you will erase the RAM memory (user program, tables, data).

Remark: The activation of reset always deletes data.

Now, if you haven't yet placed the terminal on it's interface, it will switch off to limit energy consumption. But once you do place the terminal on the device, it will automatically configure itself to receive the firmware BTS_OS, displaying the message:

```
BOOTSTRAP-  
  LOADER      v3r0  
WaitDownLoad
```

The complete test cycle takes about 2 seconds. Now your t.BARman BTS is ready to receive the firmware BTS_OS 2.1.

4.-3 Downloading of BTS_OS 2.1 in DOS mode

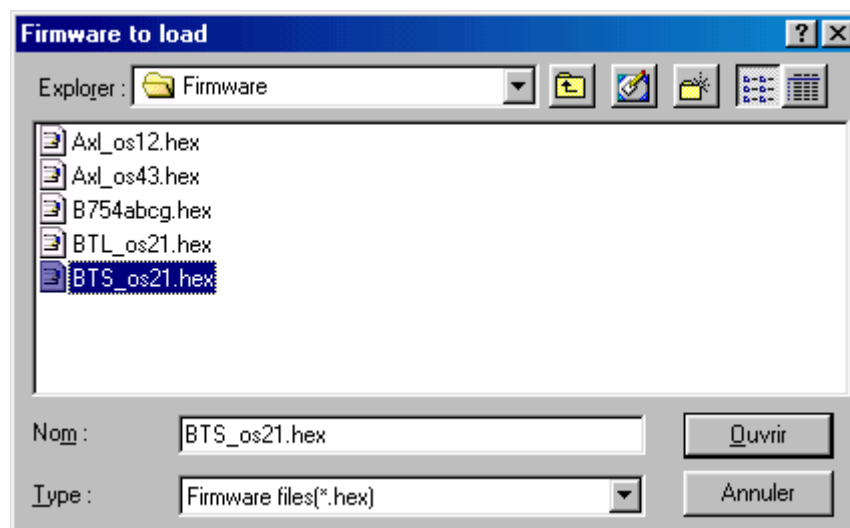
To download the firmware BTS_OS 2.1, run the appropriate batch file:

BTSO21_1.BAT (use COM1 port)

or

BTSO21_2.BAT (use COM2 port)

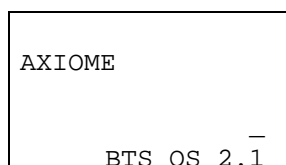
You will see the program download process evolution on your monitor screen together with the above mentioned information as shown below.



You will see the program download process evolution on your monitor screen.

In case of abort, shut off and power on the t.BARman BTS again, before retrying the downloading of BTS_OS 2.1.

When the download procedure is finished, the t.BARman BTS will initialise its RAM memory and execute different procedures. The t.BARman BTS is ready to use when it displays:



4-5 BTS_OS 2.1 special functions

Regardless of the user's program, BTS_OS 2.1 integrates a menu which allows consulting of different status.

To consult the menu, t.BARman BTS must be OFF. Pressing quickly on the SCAN key runs the menu, the keys ▲ and ▼ allow access to the different functions of the menu.

When consulting the menu, the only active keys are:

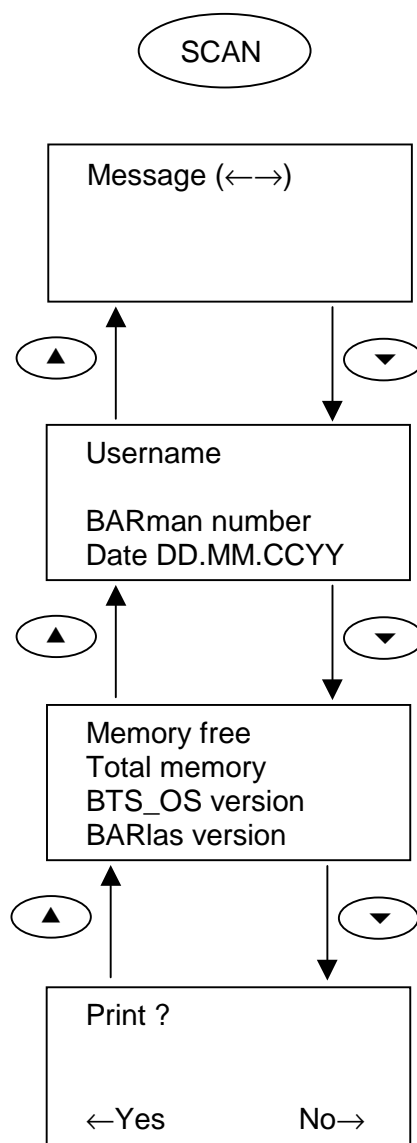
- ◀ and ▶ : scroll the message or select YES / NO
- ▲ and ▼ : access the different menu functions
- F4 : backlight ON-OFF
- ESC : switch the terminal OFF
- SCAN : start the AXEL menu or the user program
- SHIFT : switch ON / OFF the displaying of the icons

You may press these keys at any time within the menu

NOTE: Without any action on a key for 10 seconds (default value), t.BARman BTS will automatically turn OFF.

4-6 BTS_OS 2.1 menu

Main menu



4.-6.1 Message

Message (←→)

For consulting a message, use the keys ◀ and ▶. To change the message, refer to the software communication manual. This display appears only when a message was sent.

4.-6.2 Username, t.BARman number and Date

Username
t.BARman number
Date DD.MM.CCYY

Displays the user name defined with AXEL's setup command. To change it, refer to the software communication manual.

4.-6.3 Memory and version

Memory free
Total memory
BTS_OS version
BARlas version

Indicates in Kbytes the space left free in t.BARman BTL, as well as the total memory of the unit

Note that BTS_OS 2.1, the program and the tables take up space in the memory. A normal application will leave about 478 Kbytes free for data for a BTS 512 (512 Kbytes RAM memory) and about 990 Kbytes free for data for a BTS 1024 (1024 Kbytes RAM memory).

Indicates the version number of BTS_OS and of BARlas (internal library).

4.-6.4 Print

Print ?

←Yes No→

After selection of this item and if the first function of the user's program is « IF PRINTER = 1 GOTO label » t.BARman BTS will jump to « label » to start a print procedure on the serial port of the interface. Otherwise the t.BARman BTS will turn OFF.

4-7 Icon function

In BTS_OS 2.1, the t.BARman BTS displays different icons depending on the action.

4.-7.1 Message icon



The message icon will be displayed when the t.BARman BTS has stored a new message or as long as the message hasn't been acknowledged.

4.-7.2 Battery icon

The battery icon displays to battery capacity status. The t.BARman BTS has four different level.



Battery full.



Battery $\frac{2}{3}$ full.

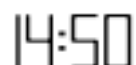


Battery $\frac{1}{3}$ full.



Battery empty. (For further information check chapter 2.-8)

4.-7.3 Time icon



Indicates the t.BARman BTS time. To change it, refer to the BARman communication manual (Volume 3 or 4) or to the online help of BARcom.

4.-8 Programming software

AXEL32 EXTENDED is the programming language for t.BARman BTS with BTS_OS. With it you can write a program for data collection according to your needs.

The AXEL32 EXTENDED programming tool for BARman, t.BARman TAG / TBC / BTS / BTL and BARman Laser is described in detail in volume 5.

5. OS for t.BARman BTL

5.1 Firmware BTL_OS 2.1

Firmware BTL_OS 2.1 is the t.BARman BTL operating system. Without BTL_OS 2.1, it is not possible to run a t.BARman BTL. As the performance of t.BARman BTL is modified from time to time to satisfy the needs of the market, a version number indicates the BTL_OS xx in use.



Any t.BARman BTL (new or repaired) leaving Axiome always contains the latest BTL_OS version.

BTL_OS 2.1 can be downloaded to the terminal after a hard reset by using:

- The download command under DOS (see chapter 5.-3)
- BARcom under WINDOWS 9x or NT (see chapter 5.-4)

BTL_OS 2.1 also includes the small demo program, so the t.BARman BTL is immediately ready for TAG (Tag-it, I.CODE) reading.

5.2 Hard reset

To activate the hard reset press the RESET keys (see page 11). The activation of reset interrupts the application program. Running then resumes from the Bootstrap-Loader which prompts you to erase the application program:

```
PROGRAM  
ERASE?
```

By pressing the "C" key, you will erase the flash memory (BTL_OS 2.1) and the RAM memory (user program, tables, data).

The LCD displays the message:

```
BOOTSTRAP-  
  LOADER      v3r0  
ErasPrgFlash
```

During Flash-memory deletion the LED emits red light.

By pressing the "**SCAN**" key or leaving inactive for approximately 25 seconds, you will erase the RAM memory (user program, tables, data).

Remark: The activation of reset always deletes data.

Now, if you haven't yet placed the terminal on it's interface, it will switch off to limit energy consumption. But once you do place the terminal on the device, it will automatically configure itself to receive the firmware BTL_OS, displaying the message:

```
BOOTSTRAP-  
  LOADER      v3r0  
WaitDownLoad
```

The complete test cycle takes about 2 seconds. Now your t.BARman BTL is ready to receive the firmware BTL_OS 2.1.

5.-3 Downloading of BTL_OS 2.1 in DOS mode

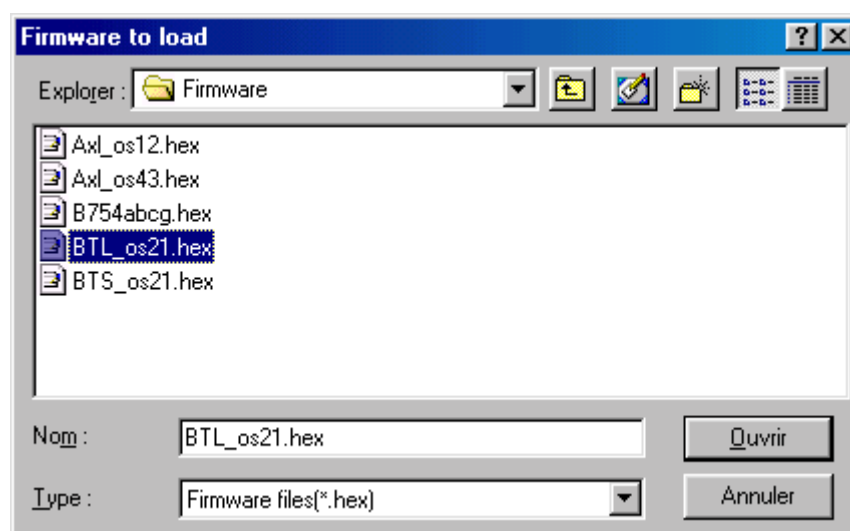
To download the firmware BTL_OS 2.1, run the appropriate batch file:

BTLO21_1.BAT (use COM1 port)

or

BTLO21_2.BAT (use COM2 port)

You will see the program download process evolution on your monitor screen together with the above mentioned information as shown below.



You will see the program download process evolution on your monitor screen.

In case of abort, shut off and power on the t.BARman BTL again, before retrying the downloading of BTL_OS 2.1.

When the download procedure is finished, the t.BARman BTL will initialise its RAM memory and execute different procedures. The t.BARman BTL is ready to use when it displays:

```

AXIOME
_____
BTL OS 2.1
  
```

5-5 BTL_OS 2.1 special functions

Regardless of the user's program, BTL_OS 2.1 integrates a menu which allows consulting of different status.

To consult the menu, t.BARman BTL must be OFF. Pressing quickly on the SCAN key runs the menu, the keys ▲ and ▼ allow access to the different functions of the menu.

When consulting the menu, the only active keys are:

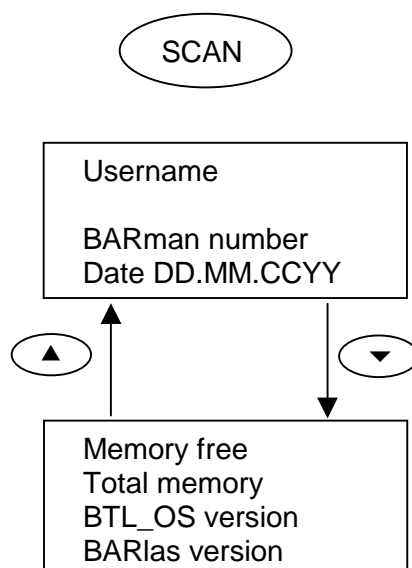
- ▲ and ▼ : access the different menu functions
- C : switch the terminal OFF
- SCAN : start the AXEL menu or the user program

You may press these keys at any time within the menu

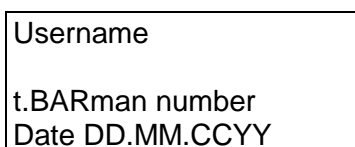
NOTE: Without any action on a key for 10 seconds (default value), t.BARman BTL will automatically turn OFF.

5-6 BTL_OS 2.1 menu

Main menu

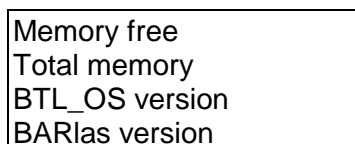


5-6.1 Username, t.BARman number and Date



Displays the user name defined with AXEL's setup command. To change it, refer to the software communication manual.

5-6.2 Memory and version



Indicates in Kbytes the space left free in t.BARman BTL, as well as the total memory of the unit

Note that BTL_OS 2.1, the program and the tables take up space in the memory. A normal application will leave about 478 Kbytes free for data for a BTL 512 (512 Kbytes RAM memory) and about 990 Kbytes free for data for a BTL 1024 (1024 Kbytes RAM memory).

Indicates the version number of BTL_OS and of BARlas (internal library).

5-7 Icon function

In BTL_OS 2.1, the t.BARman BTL displays different icons depending on the action.

5-7.1 Message icon



The message icon will be displayed when the t.BARman BTL has stored a new message or as long as the message hasn't been acknowledged.

5-7.2 Battery icon

The battery icon displays to battery capacity status. The t.BARman BTL has four different level.



Battery full.



Battery $\frac{2}{3}$ full.

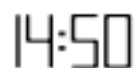


Battery $\frac{1}{3}$ full.



Battery empty. (For further information check chapter 2.-8)

5-7.3 Time icon



Indicates the t.BARman BTL time. To change it, refer to the BARman communication manual (Volume 3 or 4) or to the online help of BARcom.

5-8 Programming software

AXEL32 EXTENDED is the programming language t. BARman BTL with BTL_OS. With it you can write a program for data collection according to your needs.

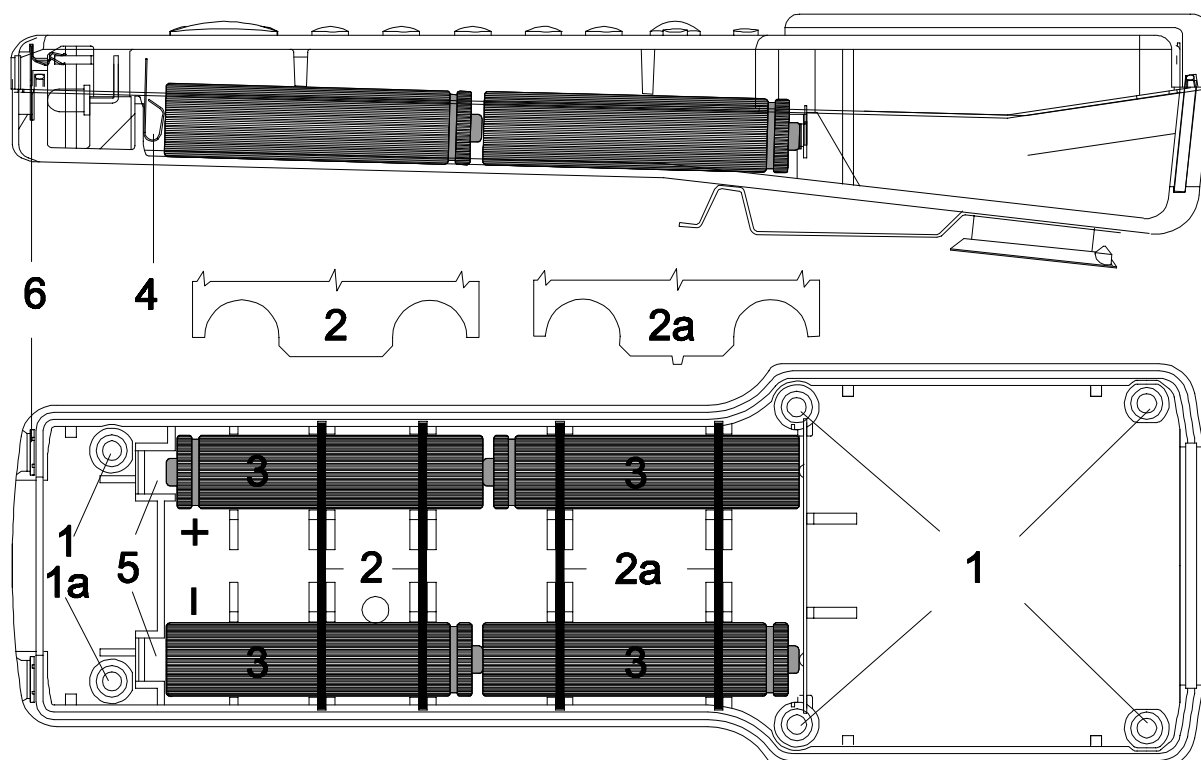
The AXEL32 EXTENDED programming tool for BARman, t.BARman TAG / TBC / BTS / BTL and BARman Laser is described in detail in volume 5.

6. Maintenance

6.1 Replacing the battery

To replace the battery with a new one proceed as follows:

- A. Place the terminal with the keypad facing downwards on a soft, flat surface (sponge, tweed cloth or similar).
- B. Remove the six screws (1 and 1a) that secure the two half-shells together, turn the terminal with the keypad upwards and open it.
- C. Remove the four plastic bridges (2 and 2a), remove faulty battery (3). Fit the new battery making sure that its polarity complies with the indications on the shell. Insert the four plastic bridges (2 and 2a).
- D. Reunite the two half-shells and make sure that the contacts (4) fit in their recesses (5) without forcing and that the recharging contacts (6) fit snugly into their seat in the cradle;
- E. The two half-shells have to fit together without forcing (at this stage the pen tip should light up and a set of messages be displayed).
- F. Tighten the six screws (1 and 1a) without forcing. Please note that the screw (1a) for the wrist strap is special don't put another screw in this hole.



A supercap **keeps data in memory for three minutes**. This allows you to take your time to replace the battery without running the risk of losing any data. It is always advisable to transfer, if possible, all residual data before opening the terminal.

It is essential, however, that you open the terminal only when it is off.

Note: Replace battery only with originals; use of non-original battery may cause malfunctioning.

After you finish replacing the battery pack you can proceed to download the data (if you weren't able to do so before) and insert the terminal in the ILS/ILM interface. **Let the terminal charge up for at least 8 hours.**



As in all Nickel-Cadmium batteries, do not short-circuit the battery contacts or put the batteries in fire as they may explode. It is recommended that worn or damaged batteries be deposited in eco-friendly battery disposal bins.



The IP65 protection degree cannot be guaranteed after opening of the unit

6.-2 Spare parts

Use only original spare parts to avoid any technical trouble or warranty problems.

Your terminal must be repaired by an authorized AXIOME dealer. AXIOME declines warranty in case of misuse or repair by a non authorized service point.

6.-2.1 Spare parts available for t.BARman BTS

Description	Part number
Battery pack	F.BLACU000
Keyboard	F.BLKBD000
Complete box	F.BLBOILGA
4 lines display	F.BLAF4000
Main board 512 KB	F.BLBLGA12
Main board 1024KB	F.BLBLGA24

6.-2.2 Spare parts available for t.BARman BTL

Description	Part number
Battery pack	F.BLACU000
Keyboard	F.BLKBDLCS
Complete box	F.BLBOILCS
4 lines display	F.BLAF4000
Main board 512 KB	F.BLBBTL12
Main board 1024KB	F.BLBBTL24

7. Technical specifications for t.BARman BTS

RFID Head

Integrated RFID head 13.56 MHz

Supports industry standard 13.56 MHz read/write tags and smart labels

Based on Multi Standard Reader architecture which provides simultaneous and transparent support for tags and smart labels by different vendors

Proximity reader (up to 55 mm read range)

Supports high frequency tags and smart labels by Philips Semiconductors (I.CODE)

Supports high frequency tags and smart labels by Texas Instruments (Tag-It)

Electrical

Micro-controller	8 bit CMOS 8 KB bootstrap-loader EPROM
Program memory	64 KB flash memory
Data RAM	512 KB / 1MB SRAM
Power supply	4 Nickel/Cadmium 250 mA/h battery
Battery charger	ILSxxx – ILMxxx
Programming	AXEL Compiler (BASIC like)

Physical

Technology	SMT (Surface Mounting Technology)
Dimensions LxWxH	165 x 56 x 32 mm (6.57 x 2.2 x 1.5 in.)
Weight	190 g (6.7 oz.) including batteries
Buzzer	piezoelectric, programmable in frequency, and duration
LED	programmable red/green
Display	high contrast LCD 4 x 16 characters plus icons, back light
Calendar/clock	quartz RTC, date and time
Keyboard	25 silicone rubber keys

Environmental

Temperature	Operating -20 to +50°C (-4 to 122°F) Storage -20 to +50°C (-4 to 122°F)
Relative humidity	95% non-condensing
Degree of Protection	IP 65
Electrostatic charges	IEC 801-2 (up to 15KV)
Tumble resistance	from 1 m (3.3 feet) on to concrete

8. Technical specifications for t.BARman BTL

RFID Head

Integrated RFID head 13.56 MHz

Supports industry standard 13.56 MHz read/write tags and smart labels

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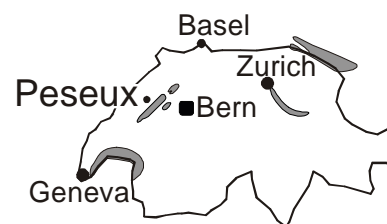


Identification et saisie de données
Identification and data capture

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