CONTRONICS®

# GUARDUS® G7

Guard Tour Systems

## User's Manual


English

# Guardus™ G7

**User's Manual - English**

# Guardus™ G7

## User's Manual

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This manual and the contents of our CD ROM may be downloaded from the Contronics website.

# Contents

## Introduction

The Guardus G7™ manufactured by Contronics is an electronic device used as an aid in control of mobile and/or external activities such as surveillance, security supervision, organization and cleaning processes, vehicles, bags, among others. It is a programmable data recorder and an integral part of the Contronics product line in tour verification, which consists of various equipment and software. It can be applied in virtually any field of activity, while still allowing automation of existing processes. It is widely applicable in the following industrial, commercial, service and agriculture areas:

- Electronic surveillance (guard tours);
- Control of parcel and document delivery;
- Maintenance and inspection at remote locations;
- Classification, delivery and collection of agricultural products;
- Supervision and control of construction sites (personal, leased equipment, etc.);
- Process Control.

The Guardus™ G7 was created and developed by Contronics, manufactured in Brazil and available in over 50 countries. It is easy to use, reliable and accurately stores data.

The device reads the identification number of a RFTag and stores this number in its non-volatile memory, along with the date and time of reading. It can be programmed to warn the user of upcoming tours, rounds and inspections, indicate that the correct locations are being inspected and controls the completion time of tours and activities.

The RFTag is a silicon chip encapsulated in stainless steel with a diameter of 1.5 cm and is either 3 mm or 5 mm thick. It is highly resistant to various weather conditions and they are used in many production sectors to identify items for authentication, temperature sensors, data labels, custody of property, etc.

The RFTags systems use Radio Frequency Identification, comprising an antenna and electronic chip called a transponder. The big difference is the use of RFTag to dispense of physical contact and allow you to read it without it being visable. This allows it to be read through objects and barriers such as masonry, wood, plastic and paper, for example. This preserves the integrity of the component, increasing its life expectancy.

Contronics, following its mission of continuous innovation, uses these technologies in our products and allows customers to enjoy the benefits of cutting edge equipment for surveillance and control.

Contronics Guardus G7 ™ operates with complete autonomy, accurately and according to programmable parameters. A PC is only needed to use the PROGuard software, allowing you to view and print activity reports enabling more sophisticated features and changes to the original equipment programming.

***Note:***
*The descriptions in this manual are standard terms commonly used in the application of electronic surveillance, "checkpoints" (place to be visited and inspected by the guard, where the RFTag is installed), "tour round" (complete reading of all RFTags specified), "Officer", etc.. These terms may be changed according to the area of application. The procedure described in this manual is for the PROGuard software*

## Components in the Kit Guardus™ G7

The Guardus™ G7 can be provided in a kit that contains:

- Guardus™ G7 (1 unit)
- RFTag checkpoints (6 units)
- USB interface cable (1 unit)
- RFTag master (1 unit)
- RFTag officer ID tags (2 units)
- CD ROM with PROGuard software (1 unit)
- Nylon Guardus™ holster (1 unit)

## Components in the Kit Guardus™ G7

**Guardus™ G7**

Identifies the checkpoint and downloads the data to the PC through the interface used with the **PROGuard** software.

**RFTag Checkpoints**

RFTags have their own unique serial numbers. The shape and size of an RFTag depends on the manufacturer and model. Contact Contronics for more information on selecting and purchasing appropriate RFTags.

**USB Communication Cable**

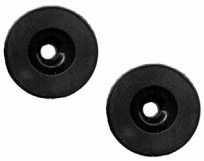
Allows for the information recorded in the **Guardus™ G7** to be downloaded to the **PROGuard** software

**Master RFTag**

This is used to check, without the aid of a PC, whether the guard is carrying out his rounds according to the **Guardus™ G7** program.

**Guard RFTag**

Tags with an individualized serial number, to be affixed on staff or guard badges.



**CD ROM with PROGuard Software**

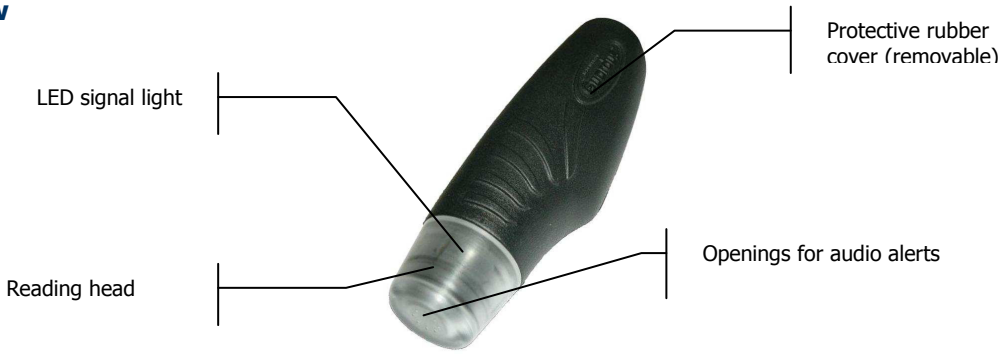
This CD has, apart from the **PROGuard** software, many other files, including the management software for the whole system, USB installation drivers, user's guides and others.


**Polyamide Holster**

Provides protection and support for the **Guardus™ G7**.

**NOTE:** The items contained in the Guardus™ G7 Kit are available for purchase separately also.

## External view




## Internal View




## Signaling

**Guardus™ G7** communicates with the user through two forms of signaling:

- Light signaling (LED)
- Sound signaling

If you would like to learn the various audio and visual alerts, these are available on the included CD ROM or see the Contronics website. You will need a sound card and speakers to be installed on your computer.

The alerts are used to indicate situations that may occur when using the **Guardus™ G7**, these alerts can be turned on or off via the **PROGuard** software on the included CD ROM or from the Contronics website.

The adopted conventions for each sound signal and corresponding light signals are as follows:

## Sound Signal Features

| Sound | Description |
|---|---|
| **Beep** | Short, high pitched sound, during which the light signal remains off. |
| **Bop** | Sound which is slightly more prolonged than the **Beep**, and also of a lower pitch. The light signal lights up during the **Bop**. |
| **Whew** | Sound composed of various tones, similar to a whistle. During this sound signal the light signal lights up. |
| **Battery** | Sound very similar to that emitted by cell phones when they indicate that it is necessary to recharge the battery. |

## Sound Signal Interpretation

| Sound Signals | Indication | Situation |
|---|---|---|
| **Whew** | Success | Valid RFTag recording. |
| **Bop** | Rejection | Invalid attempt to record RFTag. |
| **"Happy Birthday" tune** | Rounds carried out | Positive verification of round result (Rounds carried out successfully). |
| **Three consecutive Bops** | Round failure | Negative verification of round results (Rounds not carried out correctly). |
| **Three consecutive Whews or lights flashing** | Round Start | Start of a round schedule, or re-warning that a round was not started, or start of the **Guardus™ G7** learning mode. |
| **Start of the "Happy Birthday" tune or lights flashing** | Round completed | All checkpoints were recorded; or end of the **Guardus™ G7** learning mode. |
| **Three consecutive Beeps** | Restart | Battery connection or end of computer communication. |
| **Beep** | Communication | Start of computer communication. |
| **Several Beeps with gaps in between** | Short circuit | Reading head in short-circuit. |
| **A Bop followed by one or more Beeps, in groups of three.** | Error | **Guardus™ G7** internal error. Reset with PROGuard software. |
| **Battery** | Battery low | After contact with Master RFTag, or every 2 minutes. |

## Replacing the Guardus™ G7 Battery

1. Check whether **Guardus™ G7** has a small ring, similar to that used in key rings, fixed on the rear pin, and if so, remove it.

2. Place **Guardus™ G7** on a firm surface and push the rubber cover downward, releasing it.

3. Pull the cover with one hand and, with the other pull the **Guardus™ G7** body while making light twist movements.

4. Unscrew the lid of the **Guardus™ G7** in an anti-clockwise direction until it is completely removed.

5. Open the battery compartment.

6. Replace the old battery with a new one, ensuring it is the same voltage.

## Battery Use

**Guardus™ G7** operates with one C type 1.5V battery.

You can increase the life of the battery and of **Guardus™ G7** by following these recommendations:

- Use preferably alkaline battery.
- Acquire battery of reliable brands, recognized by the market and sold through legal outlets.

**NOTE**: The battery life depends on the type of programming and frequency of use of the electronic data collector.

- Replace the battery immediately when the charge is low, avoiding irregular behavior of your **Guardus™ G7**.
- Remove the battery from **Guardus™ G7** if it is not in operation for a long period of time.

The 'battery low' signal is emitted after contact with the Master RFTag, or automatically every 2 minutes. However, even if the battery is flat and the equipment stops working, the data stored will not be lost.

In the same way, if the battery is low during the use of **PROGuard**, on communicating with the **Guardus™ G7**, your computer will display a warning indicating that the batteries need to be replaced.

Even when not powered by one 1.5V battery, the **Guardus™ G7** memory will still retain all of the data stored in it. Even so, it is advisable to download all of the **Guardus™ G7** data before replacing the battery.

When the **Guardus™ G7** battery is removed, the **Round Failure** sound signal will be emitted.

**Important:**

**Contronics** does not recommend the use of batteries of unknown origin sold at very low prices. Such batteries behave normally when new, however, when the charge begins to weaken, they no longer manage to maintain a constant voltage, leading to unpredictable **Guardus™ G7** behavior.



**Guardus™ G7** works as a checkpoint identifier, remembering the time and date of the reading, therefore, the registration of the checkpoints is a prerequisite for **Guardus™ G7** to recognize them.

## Affixing RFTag Checkpoints

The affixing of a RFTag can be carried out in several ways, depending on the model, type of surface and degree of inviolability required.

RFTags can be affixed through screws or placed on a flat surface. They can be placed behind glazed surfaces or inserted into wood, concrete, mortar, etc.

| Model | Affixation |
|---|---|
| **World Tag and ABS** | Screw with central hole of 3mm diameter. |
| **Clear Disk** | Adhesive on its back. |

**NOTE:** RFTags accept a Guardus™ G7 reading at a distance of around 2.5 cm.

Avoid direct contact with metal surfaces so that the reading performance is not adversely affected.

## Checkpoint Identification

In order for a round to be carried out and properly recorded, the checkpoints must be registered.

You must respect the sequence when affixing RFTags at the checkpoints. This procedure will allow you to know which sequential number corresponds to an equivalent checkpoint.

When you download the **Guardus™ G7** data onto **PROGuard**, the checkpoints will be identified by sequential numbers ("Checkpoint 1", "Checkpoint 2", "Checkpoint 3", etc.).

You can alter the description of each checkpoint, using the **PROGuard** software.

## Schedule Programming

In order to carry out rounds, **Guardus™ G7** must be programmed with the following information:

- ☑ Days of the week on which the rounds must be carried out.
- ☑ Time intervals at which they should be carried out.
- ☑ Maximum duration of each round.
- ☑ Checkpoints which must be visited and inspected.

The **PROGuard** management software allows you to program these configurations, according to the surveillance routine of your work place.

When **Guardus™ G7** is supplied in a kit, checkpoints have already been registered, corresponding to the Checkpoint RFTags supplied with your equipment.

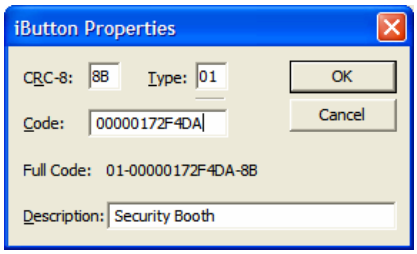
According to the programming defined, **Guardus™ G7** can identify and record checkpoints within the scheduled round or not.

**IMPORTANT:** Consult the **PROGuard** User's Manual contained on the CD-ROM which comes with the kit, or on the Contronics website, in order to obtain details on the configurations.

## Defining Checkpoints

Each RFTag has an internal electronic serial number, which is unique and identifies it. Registering a RFTag consists in associating its use with its number. The possible uses of a RFTag are: checkpoints, master buttons, patrol officers, additional buttons and employees.

View the **PROGuard** software (available on **Contronics**® website) the window which requests a RFTag number is shown to the right:




The fields in the window may be filled in automatically, to do this simply make contact with the RFTag reader on the Download-iRF (optional).

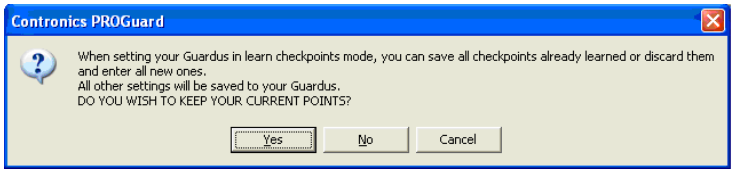
If you are not using this interface, register the RFTag through the **Learn mode**, in the **PROGuard** management software.

**NOTE:** Through **PROGuard** it is possible to include or to redefine checkpoints RFTags, register new or exclude existing RFTags. Consult the **PROGuard** User's Manual for additional information.

## Using the Learn Button

The Learn button is available in the checkpoints programming window, in the **PROGuard** management software.

1. Open the **checkpoints** programming window on **PROGuard**.
2. Click the **Learn** button.
3. Click **Yes** if you want to preserve the registered checkpoints or **No** if you want to reject and register new checkpoints only, see the window to the right:




4. Place the **Guardus™ G7** in contact with the communication interface and wait for the audio signal of three **Whew** sounds, this indicates learning mode. **PROGuard** will then automatically go to your home screen.
5. Register the tags in a sequence so that you can name them correctly afterwards in the checkpoint screen.
6. Click **Guardus Download** on **PROGuard**, and download **Guardus™ G7** via the interface

7. Click **Programming > Reprogram > Checkpoints** to view the checkpoints registered with learn mode and change the description if required.

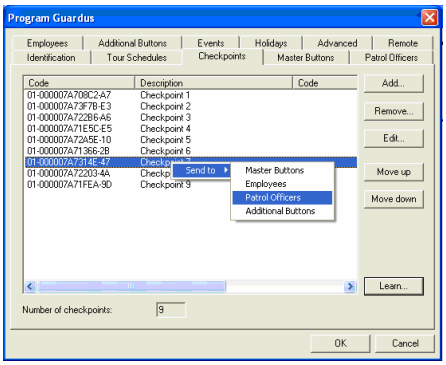
The Guardus G7 ™ is now ready for normal operation with the new checkpoints configured.

## Registering other RFTags

The Learn button isn't available in the programming screen for the other RFTags functions like (guards, master button, staff, supervisor, etc.) because this Guardus™ option refers exclusively to checkpoints.

To register another type RFTag, continue as follows:

1. Register a RFTag like a Patrol Office, e.g. using the appropriate interface.
2. Right click on specific checkpoint RFTag.
3. Choose the place to transfer the checkpoint RFTag.
4. Check if the transferring of the RFTag was successfully completed.




## Reading Checkpoints

1. Check that the **Guardus™ G7** batteries are correctly placed.
2. Listen out for the **Round Start** signal in order to start the reading of checkpoints.
3. Make the corresponding checkpoint reading: bring the GuardusTM G7 head close to the checkpoint, at a maximum distance of two and a half centimeters.
4. Repeat the operation at the other checkpoints, in order to complete the round. Carry out one of the following procedures:
   - Record the checkpoints following the order specified by the programming. Listen out for the **Success** sound signal, after the reading of each checkpoint.
   - Record the checkpoints without being required to follow the specified order, if the programming allows this procedure. Listen out for the **Success** sound signal, after the reading of each checkpoint.
5. Respect the programmed maximum duration for carrying out the complete round.
6. Listen out for the **Rounds Carried Out** sound signal, after the reading of the last checkpoint. If all of the checkpoints have been recorded (read and accepted), the round will be considered a success.

**WARNING: PROGuard** software, allows you to enable **Guardus™ G7** to read points outside the round schedules. If this function is disabled, the reading and recording of these points can only be carried out within each round interval, otherwise the **Rejection** sound signal will be emitted.

## Round Supervision

You can check the results of rounds carried out at any time by reading the Master RFTag on **Guardus™ G7** once (a single read).

This procedure is normally carried out by the supervisor, since the guards should not have access to the Master RFTag.

**Guardus™ G7** will respond three seconds after reading the Master RFTag, through the **Rounds Carried Out** sound signal, characteristic of a completed round, or through the sound signal **Round Failure**, three consecutive **Bops**.

The round results can be checked at any time and as many times as you wish. The **Guardus™ G7** will signal **Round Failure** at least once after a round is not completely carried out.

If, after signaling **Round Failure** on reading the Master RFTag, all of the rounds carried out were completed, the **Guardus™ G7** will return to signaling **Rounds Carried Out.**

**IMPORTANT:** If at least one point has not been recorded when the maximum duration of the round expires, it will be considered as a round not carried out or as a round failure.

It is possible to carry out as many checks as you wish and find out whether, since the last check, there has been any failed round. The **Guardus™ G7** will return to signaling **Rounds Carried Out** whenever, after reading a Master RFTag and indicating **Round Failure**, it records a checkpoint correctly. After this, it will continue to indicate **Rounds Carried Out** until a new problem with the rounds occurs.

Should the batteries be low, after signaling the round status, the equipment will signal **Battery Low**.

## Using the Master RFTag

Using a Master RFTag it is possible to completely define the checkpoints which will be controlled by **Guardus™ G7**, or include new ones:

**IMPORTANT:** This operation must be carried out with extreme care, since it causes the restarting of **Guardus G7**, deleting all of the previously registered data.

1. Carry out consecutive reads of the Master RFTag with the **Guardus™ G7**, according to your requirements:

| Requirement | Result | Action |
|---|---|---|
| **Redefine the checkpoints** | Erases previous checkpoints (in this case, it is necessary for the scheduling option to be set to all Checkpoints) | **Seven** reads |
| **Add new checkpoints** | Keeps previous checkpoints | **Five** reads |

**WARNING:** on every read carried out, the **Guardus™ G7** must emit a **Success** sound signal. This indicates that the reading of each touch is actually being accepted.

2. Wait for three seconds after the sequence of reads carried out and listen out for the **Guardus™ G7** to emit the sound signal **Round Start,** indicating that it is ready to register new Checkpoint RFTags.
3. Make the **Guardus™ G7** read all Checkpoint RFTags which are already or will be installed at the checkpoints, in the same sequence that the round will be carried out.
4. Make contact again with the Master RFTag in order to disable the **Guardus™ G7** learning mode.
5. Listen out for the **Rounds Carried Out** sound signal, indicating that the **Guardus™ G7** has concluded the learning procedure and is able to carry out the round control immediately according to the new definition of points.

The description of the points registered by the **Guardus™ G7**, in **PROGuard**, will be "Checkpoint 1", "Checkpoint 2", etc., according to the order in which they were read.

On redefining or including Checkpoint RFTags, all of the data accumulated in the **Guardus™ G7** memory is discarded, making it impossible to recover any information previous to such an operation.

**Guardus™ G7** will not allow the inclusion of checkpoints already registered as staff RFTags, guard RFTags, etc.

**IMPORTANT:**

Be careful not to redefine or include Checkpoint accidentally. On reading a Master RFTag to check the round result, wait until the result is signaled before making contact again.

## Equipment and Optional Accessories

### Numeric Event Wallet

The Event Wallet allows you to generate reporting information with the **PROGuard** software. It allows you to record events identified by numerical code; this can be single number or multiple number codes (tens, hundreds or thousands).

### Download-iRF


Download-iRF downloads information collected by **Guardus™** devices directly to a computer through its USB port. It also reads RFTags for registration in the **PROGuard** software.

### Collector


This enables the supervisor to collect data from **Guardus™** devices in the field and download all of them into **PROGuard** once it is back at the computer running **PROGuard** via USB port.

## Technical Specifications

| | |
|---|---|
| **Capacity** | From 2,500 to 4,500 readings, according to the equipment programming. |
| **Communication** | Download rate 115.200 bits per second.<br>The complete memory download takes around 45 seconds to complete. |
| **Dimensions** | 5.5 in x 1.6 in (140 mm x 42 mm) |
| **Level of protection against dust and water** | Above 95 % if there is no condensation. |
| **Life expectancy** | Minimum of 10 years if not submitted to abuse or misuse. |
| **Maximum Distance of RFTag reading** | Average distance is 0.79 inch (20 mm), but this varies according to the manufacturer and model.<br>This maximum distance can also vary according to the place and local conditions where it is installed. |
| **Memory** | 32 KB, non-volatile. |
| **Operation temperature** | Guaranteed from 32°F to 158°F (0ºC to 70ºC).<br>Extended from -4°F to 167°F (-20ºC to 75ºC) upon request. |
| **Physical Characteristics** | The body is made of Duralinium T6 with surface treatment.<br>The head in polycarbonate.<br>The cover is synthetic rubber. |
| **Power** | One C size 1.5V battery (alkaline recommended). |
| **Signaling** | Sound signals and LED (Light Emitting Diode) light signals. |
| **Weight** | 9.17 oz (260 g). |

## Declaration of conformity CE (only for European markets):

This equipment is in accordance with the electromagnetic compatibility norms necessary for the commercialization of this product in European market (CE Norm). The declaration of conformity is showed below.

CE **DECLARATION OF CONFORMITY**

**Manufacturer:** Contronics Automação Ltda.
**Address:** Rua Lauro Linhares, 589, 1º andar, CEP 88036-002,
Florianópolis, SC, Brazil.

**Product Description:** Data Collector Wand
**Product Name:** Guardus G7
**Model:** 500.00021+

**Directives applied:**
Directive 2004/108/EC of the European Parliament and of the Council of 15 December
2004 on the approximation of the laws of the Member States relating to electromagnetic
compatibility and repealing Directive 89/336/EEC Text with EEA relevance.

**Referenced EMC Standards:**
EN 61000-4-2:1995 + A1:1998 + A2:2001
EN 61000-4-3:2002 + A1:2002
EN 55022:1998 + C1:2000 + A1:2000 Class B

I, the undersigned, hereby declare that the equipment specified above conforms to the
above Directive(s) and Standard(S).

**Signature:**_____
Vitor Miranda Teixeira
Electronics Engineer
Hardware Development Dept.

## Directive 2002/96/EC (WEEE) - only for European markets

This equipment is marked with the recycling symbol shown above. This means that, at the end of equipments life, it must be delivered to a collection center for recycling, and must not be disposed in regular domestic trash. Doing this, you will be contributing to a better and cleaner environment.

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