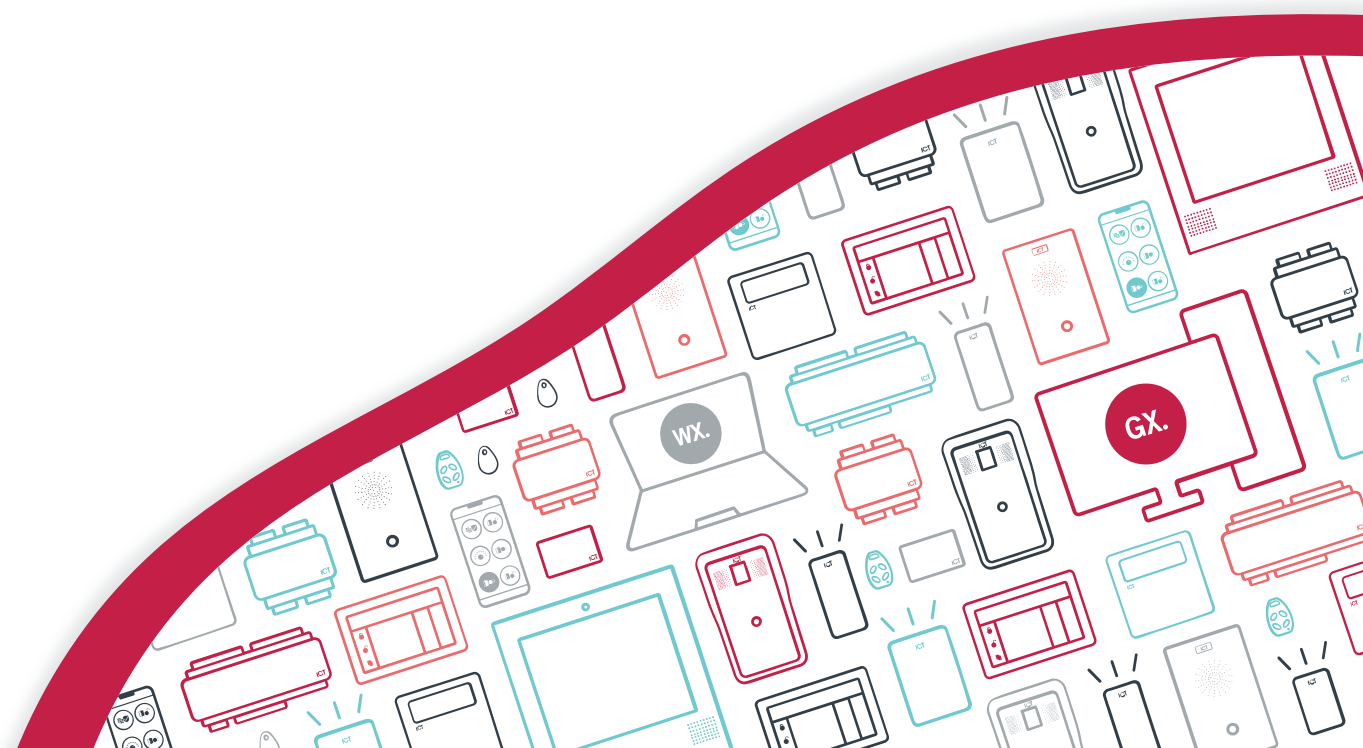
AN-271

Configuring Area Status LED Functions

Application Note



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Configuring Area Status LED Functions

LED functions provide a visual indication of the status of a monitored area through customizable LED displays. Up to four unique LED functions can be programmed for each door type, allowing the same range of functionality to be easily applied to multiple doors. This application note describes how to configure LED functions for operation.

This feature is available in both Protege GX and Protege WX. The programming described in this application note applies to both.

Prerequisites

This feature requires:

Device	Prerequisites
ICT card readers	RGB LEDs Firmware version 1.04.257 or higher RS-485 wiring
Protege GX controllers	Firmware version 2.08.883 or higher
Protege WX controllers	Firmware version 4.00.411 or higher

Identifying Card Reader Hardware

There are two hardware versions of the tSec reader range: an older version which only supports green and blue LED colors, and a newer version which can support any color made up of red, green and blue LEDs.

The hardware version of your tSec reader can be identified by looking at the **reverse side** of the reader, near the **top**. The images below show the older and newer revisions respectively:

Older Hardware with Green and Blue LEDs

Newer Hardware with Red, Green and Blue LEDs

Program the Door Type

LED functions are configured in the **Commands** section of the **General** settings for each door type. The door type can then be assigned to any door that you wish to use this function. Each LED function is created by entering a command in the following format:

`LED_FUNC[#]=1,2,3,4,5,6,7`

- `LED_FUNC` specifies the LED function command.
- `[#]` specifies the **ID** of the LED function. It also indicates the LED Function's **priority** compared to other functions. This value must be from **0 to 3** (inclusive). 0 is the **highest** priority and 3 is the **lowest**.

  If the conditions for multiple functions are met simultaneously, the function with the highest priority will be displayed on the reader.

- Position **1** specifies the **type** of record to be monitored. Currently only **areas (1)** can be monitored.
- Position **2** specifies the **database ID** of the above record **type** to be monitored.
- Position **3** specifies the **condition** that will trigger the LED function:
  - **1** activates the LED function when the area is **disarmed**
  - **2** activates the LED function when the area is **armed**
  - **3** activates the LED function when the area is **in alarm**
- Position **4** specifies the **pulse on color** to be displayed when the LED function is active (see the color codes below)
- Position **5** specifies the **pulse off color** to be displayed when the LED function is active (see the color codes below)
- Position **6** specifies the **time** (in 100ms) to display the **pulse on color** when the LED function is active
- Position **7** specifies the **time** (in 100ms) to display the **pulse off color** when the LED function is active

Color Codes

Color	Numerical Code
Off	0
Red	1
Amber	2
Orange	3
Yellow	4
Lime	5
Green	6
Mint	7
Turquoise	8
Cyan	9
Sky Blue	10
Cobalt	11
Blue	12
Violet	13

Color	Numerical Code
Purple	14
Magenta	15
Crimson	16

This table applies to configuration commands programmed in Protege GX. TLVs programmed directly on the card readers do not include the 'off' index (0), so the color numbers are Red=0 through to Crimson=15.

LED Function Examples

The following example demonstrates how to setup area status LED functions. In this scenario, three LED functions have been applied to a door type, monitoring the state of an area with a database ID of 4.

- **LED Function 0:** `LED_FUNC[0]=1,4,3,3,1,5,5`
  - This LED function will activate whenever the area is **in alarm**.
  - When triggered, the entry and exit reader LEDs of any door using this door type will flash **orange and red**, alternating at a rate of **500ms** each.
- **LED Function 1:** `LED_FUNC[1]=1,4,2,4,0,5,5`
  - This LED function will activate whenever the area is **armed**.
  - When triggered, the associated reader LEDs will alternate flashing **yellow for 500ms** and switching **off for 500ms**.
- **LED Function 2:** `LED_FUNC[2]=1,4,1,14,0,1,0`
  - This LED function will activate whenever the area is **disarmed**.
  - When triggered, the associated LEDs will display **purple at all times**.

    Setting one LED color time to 1 and the other to 0 will ensure that one color will be shown constantly rather than flashing.

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