

Web site User's Manual

www.e-gleek.com



Flying insect connected trap

Reference Document	ADV_UM_9026
Revision	1.0
Date	21/6/2017

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1 INTRODUCTION

This document provides instruction how to use the e-gleek™ connected trap web site. They are principally associated to the consultation and the archive of results gathered by the e-gleek™ connected traps.

As a reminder, the e-gleek™ aims at providing automatic counting of insects and alerts to an operator when large numbers of flies are detected.



Figure 1: general view of the vertical e-gleek™

2 DESCRIPTION OF THE E-GLEEK™ TRAP

2.1 Description and Product usage

The e-gleek™ device aims at trapping flying insects and at providing regular counts of collected insects. Insects are classed by their size (3 categories). Results are sent to a remote server up to 5 times a day. Once one of the categories has reached its maximum limit or has exceeded the differential quantity defined by the user, an alarm is sent to the operator via TEXT or email.

One alarm can also be sent to the user when the density of flies captured on the sticky sheet is too important. It's a sign that the sheet must be changed. This limit is set as a percentage of the occupation of the foil.

Two options are available. One is using the 3G network to communicate both counters and images. The other one is based on long range radio communication (LORA, SIGFOX) to provide only alarms when a threshold has been exceeded.

NOTE: all information relative to services available through the 3G network are valid only for e-gleek traps equipped with the appropriate 3G SIM card.

2.2 General description

e-gleek™ is composed of an aluminum structure combined with one hermetic plastic box which contains the electronic of the trap and the counting system. It also includes the modem to communicate with the remote server. One slot is reserved to place the SIM card.

One second box (green) is connected to the aluminum tube. It contains and protects the image sensor and the optic.

The whole unit is waterproof and can operate in various environments, indoor or outdoor. The device has been designed to operate from -10°C up to +40°C.

2.3 General view

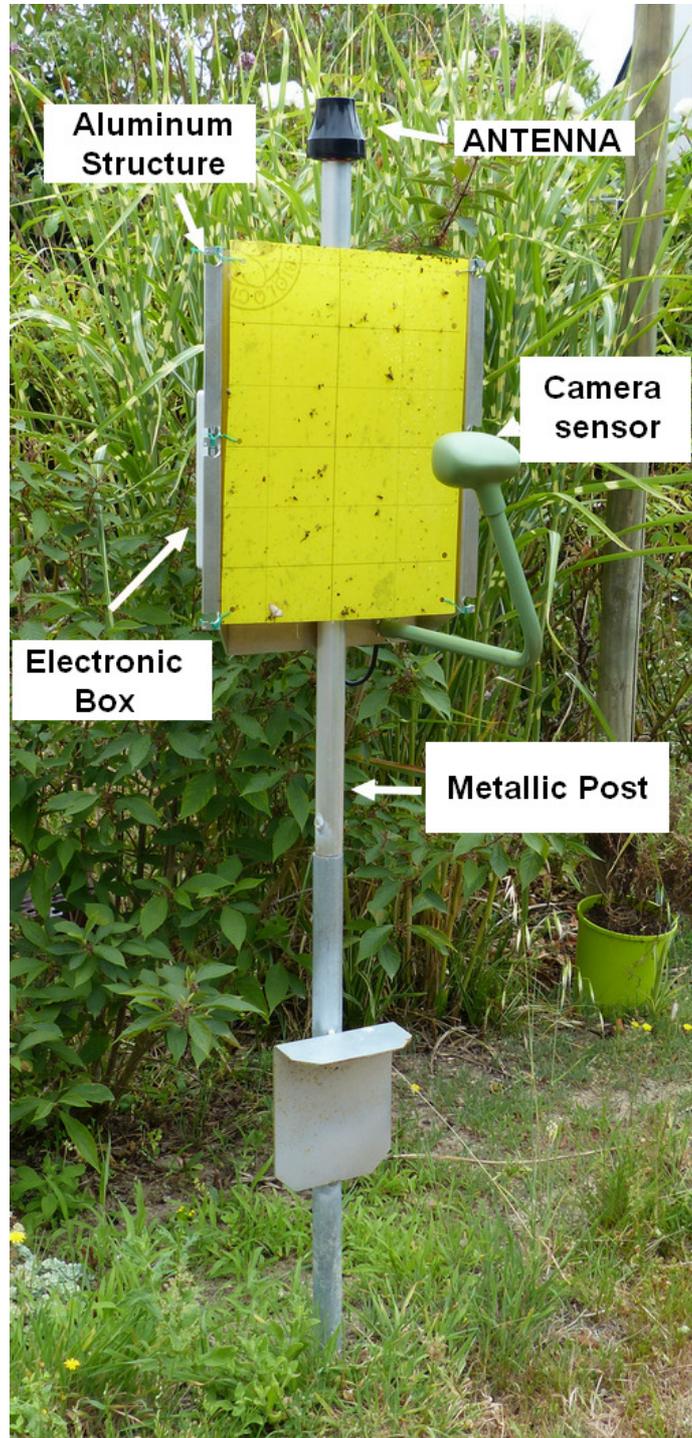


Figure 2: e-gleek™ general view

- a) Metallic structure (aluminum) to support both the electronic box and the sticky sheet
- b) Electronic box (including the SIM card slot)

- c) The Antenna to communicate with the 3G network
- d) The optic box centered and at approx. 17cm from the stick sheet
- e) The metallic post (the height of the trap can be adjusted by using the two U-bolts)

Mechanical characteristics

- Integrated system with embedded counting system and lead battery (gel)
- Indoor and outdoor operation
- Aluminum (metallic structure) and ABS (electronic and image sensor boxes)
- Up to 5 daily images/counting
- Communication of results via the 3G network

3 COLLECTION OF THE DATA

3.1 Goal

The e-gleek device has been designed to provide regular counts of flying insects trapped on sticky sheets or at the surface of a liquid, with almost no limitation in the variety of situation and crops, indoor or outdoor.

The electronic system captures images and runs intelligent image processing algorithms to count insects. The detected bodies are classed over 3 different counters assigned by their size (small, medium and large). These counters serve to send alerts to the operator when a large number of flies is detected.

All data are processed within the trap's electronics and results as well as images are transferred to a distant server so people can access to data remotely and use them for further analysis. To ease the readings of the data, a series of various web pages have been designed.

3.2 Available data

The e-gleek trap can generate up to 5 counts a day. The process of quantifying the insects is to process one image which has been shot by a camera situated in front of a trapping system (sticky chromatic sheet, yellow bowl, pheromone caps, etc...). Three counters are generated, small medium and large insects. Thus, two major information are available:

1. Insect counters
2. Images captured by the trap and transmitted to the remote server

Both types are recorded and archived. As explained further, their access will be different.

4 USER ACCOUNT

4.1 Web User account

The owner of one e-gleek trap will be assigned one secured account so people can connect to the system and access their traps' information.

The name of the account sounds like an email address:

Ex: firstname.name@firm.com

This account allows to connect to all traps associated with this user.

4.2 Password

Every account has one unique password.

4.3 Access to your web account

You must connect to the www.e-gleek.com website and select the “my_account” tab to access to the account login page.

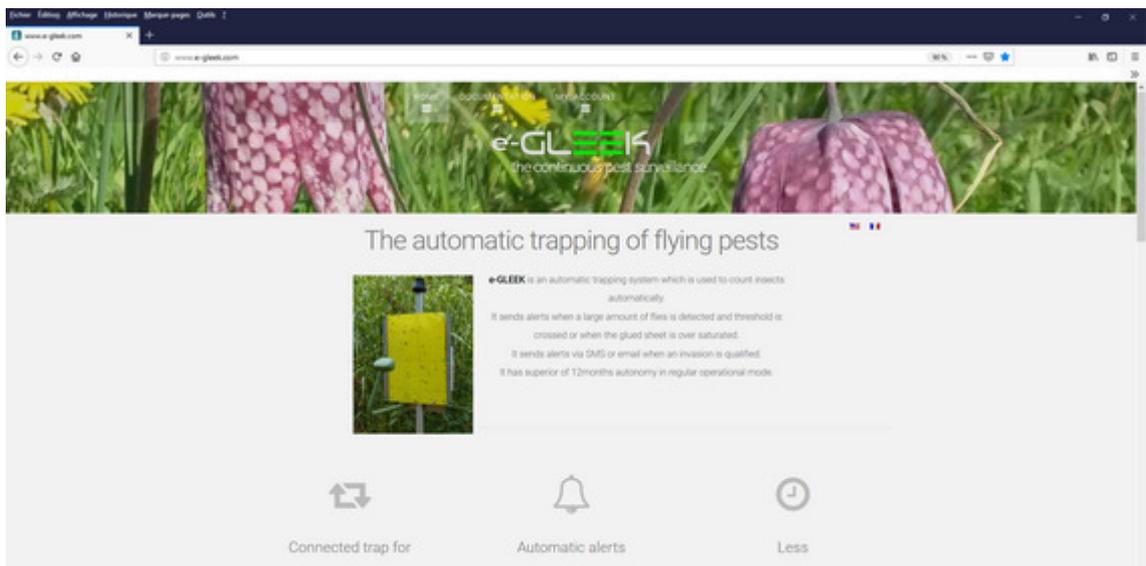


Figure 3: www.e-gleek.com front page

4.4 The login page

The **login page** will be as follow. Enter your account and password and validate your input.



Figure 4: Enter your account id. and password and validate

4.5 Your trap list

Once you are connected, the next page will present all the traps associated to your account. They are listed by “group”. If you click on one of these traps, the system will display the detail information of this trap.



Figure 5: list of traps associated to your account (example)

4.6 The short summary

Once you have selected the trap you want to get information on, a new page will be displayed. The first group displayed is a general summary the trap history. Here you can get trap name and group to which it is associated.

Device

Device: e-gleek000080

Period: Current sheet Last 2 sheets last 4 sheets

Trap description: Piège test

Belongs to group: Active_Mode(all options)

Figure 6: a short summary of the trap history

Should you pass your mouse pointer over the various icons, you'd get the status with regards to alert and whether the alerts are ON or OFF. You can select the number of sheets you want to display in this page (Period).

4.7 Graph of the three counters evolution

The graph of evolution gives a general illustration of the daily evolution of the three counters (small, medium and large insects). Only the maximum per day, for each of the counters, is plotted.



Figure 7: daily evolution of the three counters

4.8 Uploading the raw data

All the data received from the trap is available for download by clicking the *e-gleek000xxx.csv* . This file contains all data for the current year.

The correspondence of the columns is:

- time:** date and time of the count (trap internal time)
- status:** if not 0, the image is not usable for image processing.
- sheet_idx:** the number of the sticky sheet
- sat:** the saturation factor received from the trap
- small, medium, large:** the number of insect by size category
- vbat:** the battery voltage
- df:** reserved
- rss:** reserved

5 TRAP CONFIGURATION

To enter the trap configuration, you can either click “edit the device configuration” at the bottom of

the current page or go to the menu (top right of the page).
 One new page is displayed. Let select trap No 80.

5.1 The events

New sheet: a new sheet has been installed. Counter are set to 0.

Send the alert: select Yes or No

Hibernation: select Yes or No



Figure 8: set the trap configuration - The events

5.2 The limits to generate alerts

In the chapter, the user must identify the thresholds to be used for the generation of various alerts. These thresholds correspond to changes between the current count and the previously available ones.

Variation alert for small insects: differential threshold for small insect counter

Variation alert for medium insects: differential threshold for medium insect counter

Variation alert for large insects: differential threshold for large insect counter

Sheet saturation threshold for alert trigger: saturation coefficient (in %)

6 THE GROUP CONFIGURATION

Trap are associated to groups. There can be only one group to manage but it can be group for geographical purposes, for people, for crops species, etc... This helps maintain the same configuration data for series of traps. For instance, it is in the group that you will configure the email address or the mobile phone where the alert will be sent.

Group parameters

The parameters below are common for all the devices belonging to the group.
To modify them, click the button **Edit the group configuration**

Group name
Active_Mode

Group description
all options

Email for sending alerts
demo@advansee.com

Phone number for sending alerts via SMS
0680457375

Maximum number of sending
3

Send alerts on small insects counting
 OFF

Send alerts on medium insects counting
 OFF

Send alerts on large insects counting
 ON

Send alerts on sheet saturation detection
 ON

Edit the group configuration

Figure 9: The data associated to Group

In this new window, user must define the mail address and phone number where the alert will be sent to. It is also there that he will select whether the alert will be sent or not, depending on the category of insect (small, medium, large) or the saturation of the current sheet.

7 THE IMAGES

All images received from the trap can be displayed on the screen. At first, a series of thumbs (small images) are listed and, when clicked, the raw image in full resolution is displayed. Once the transfer

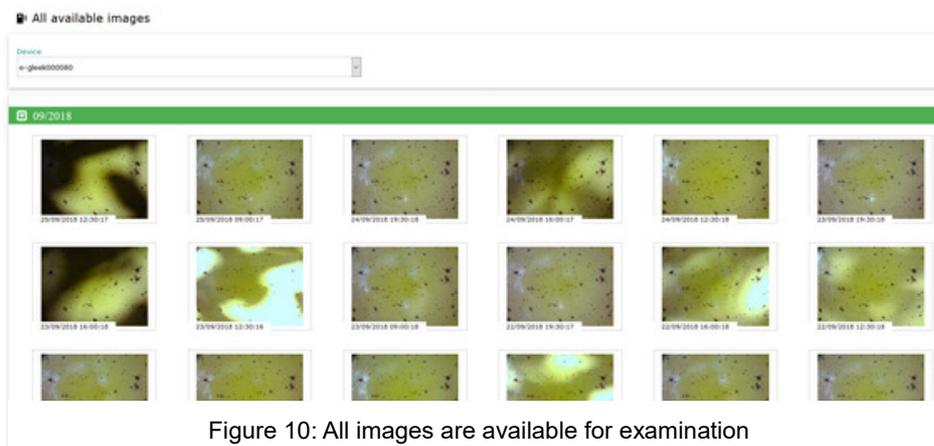


Figure 10: All images are available for examination

is finished, you can right-click on the image and download it to your local disk for further examination.

NOTE: the generation and display of thumbs can be long. Be patient and wait for the transfer to be finished before asking for data download.

One archive file (.zip) is available per month for download. Go to the end of the image list and click on the "Download the images" button.