



CTFC 

 CTFC
LOGCAVE

USER GUIDE

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The LOGCAVE CTFC recorder is a device with low consumption and wide autonomy, which allows us to record light, temperature and humidity data, with a timestamp, in caves. In this way we can monitor, for example, the human presence inside

Key features.-

- ✓ Data recording in microSD and access to them with a mobile app, via Bluetooth. Quick consultation of events produced by overflow of the preset light threshold
- ✓ Top and bottom light detection thresholds, configurable in a 600M:1 range, from 18 uLux
- ✓ Periodic readings of temperature, humidity and voltage, at configurable intervals
- ✓ Routine for error detection, with visual codes and file recording (ERRFILE. CSV)
 - 2 LED Flash: SD Start Failed
 - 3 LED flash: Battery baixa error
 - 4 LED flash: Error opening SD file
 - 5 LED flash: Sensor error
- ✓ Push button for test data recording
- ✓ Power supply with lipo interchangeable rechargeable batteries. Recording of battery voltage in the LOGFILE file. CSV. Extensive autonomy

- ✓ List of manual instructions,
 - "c": entered Command Line mode for 5'
 - "ls": list files (LUXFILE. CSV, LOGFILE. CSV or ERRFILE. CSV)
 - "RM": delete file
 - "fread": read files
 - "test": Current Illumination and Upper Threshold
 - "setthh": Fix upper llindar (MAX 0.02 - MIN 0.00002)
 - "bat": Current battery voltage



- ✓ Relation of instructions to macros,
 - CMD : Two-way communication for 5'
 - Test: Reading to see current lux and established threshold
 - Bat: Read to see current battery voltage
 - Max threshold: Set the threshold at the maximum level (0.03 lux)
 - Minimum threshold: Set the threshold at the minimum level (0.00002 lux)
 - LUXFILE: Read the LUXFILE file. CSV
 - LOGFILE: Read the LOGFILE file. CSV
 - ERRFILE: Read the ERRFILE file. CSV



Instructions for use:

- Install the "Serial Bluetooth Terminal" app on our android mobile phone



Fig. 1

- Import configuration for the LOGCAVE, previously downloaded

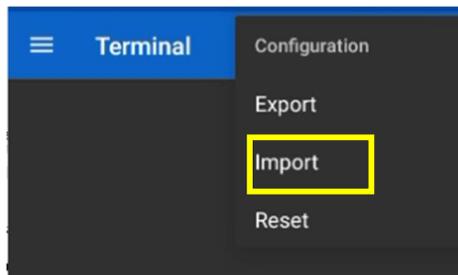


Fig. 2



- Prepare the LOGCAVE with charged batteries and clean SD card, formatted in FAT32. Once prepared, it can be left closed, turned off and ready to go to the field
- Once in the field, place the LOGCAVE inside the cave, in the default location for data logging
- It is time to make the initial calibration, according to the lighting conditions of the chosen location, for which we must follow the following steps

1. *Link between the LOGCAVE and our mobile*

- Set the LOGCAVE to the "BLE" option (the "BLE" LED flash)
- Turn on your mobile's Bluetooth and open the "Serial Bluetooth Terminal" app
- In the app menu, go to "Devices" and click on the "SCAN" option
- There will be a scan of the Bluetooth devices present at that time, and they will be presented on the screen

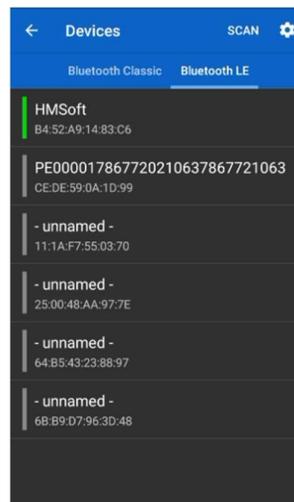


Fig. 3

- Click on the "HMSoft" device where the last four characters of the MAC match the reference of the LOGCAVE to calibrate

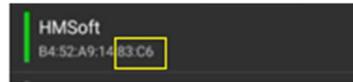


Fig. 4



Fig. 5

- If everything is correct, the connection will occur and the message "Connected" will appear (the led "BLE" is permanently on). Retry if it does not occur on the first attempt



Fig. 6

- We'll have the link ready

2. Keeping the serial port open for calibration

- Once we have the link ready, we can turn off the LOGCAVE again, and after a few seconds the disconnection will occur,



Figure 7

- Next, to keep the serial port open, and perform the initial calibration, a few steps must be followed in a limited time,
 1. Connect the app
 2. Setting the LOGCAVE to "BLE"
 3. When "Connected" appears, click on the "CMD" option



Figure 8

- If this sequence has been successful, the following screen will be presented,

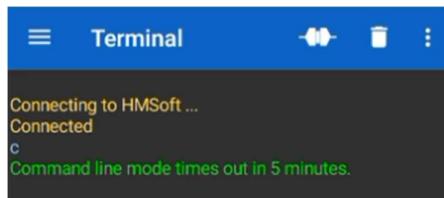


Figure 9

The communication will be open, and we will have 5 minutes to calibration, download files, etc

- Otherwise the device will not connect, or enter low-power mode, and the following screens may be presented,



Figure 10

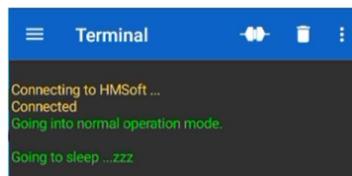


Figure 11

- In these cases we must start the process again, until we get the screen in figure 9
- Now we will have the serial port open for 5 minutes, with a bidirectional communication that will allow us to calibrate, and / or perform different actions through the instructions related in the section of main characteristics

3. *Ad-hoc calibration*

- Perform a "Test" to see current Lighting and Threshold (With the BLE connection you can do, if desired, remotely, without interfering with the working conditions of the device)
- Adjusting the upper threshold above the recorded Illumination in the natural working conditions with the instruction "setthh". The buttons "Max threshold" and "Minimum threshold" will automatically adjust us to the maximum range (0.03 lux), or the minimum (0.00002 lux)
- Once the threshold has been modified, do a "Test" again to see that the new configuration has loaded correctly
- If you want to carry out a test, you can light it with the light of your mobile phone or a batch from afar, and check that the lighting log appears in the terminal
- Once configured correctly, turn the switch from the BLE position to the ON position, and the LOGCAVE will be correctly calibrated to record light variations exceeding the threshold configured!!
- Note the threshold with which it has been configured

NOTE: Every time a reading occurs and is recorded on the SD card, the SD LED flickers

Subsequent review of the recorded data:

- Follow the instructions to link the LOGCAVE with your mobile, and keep the serial port open
- Once the serial port is opened, consult the data of interest with the corresponding instructions, or download any of the LUXFILE files. CSV, LOGFILE. CSV or ERRFILE. CSV, and send them by mail for further analysis, with the "Share" option in the "Data" menu of the Terminal
- Check battery voltage (The LOGCAVE is automatically disconnected when the voltage is less than 3.2V)
- Continue with the data record by returning to the "ON" position

