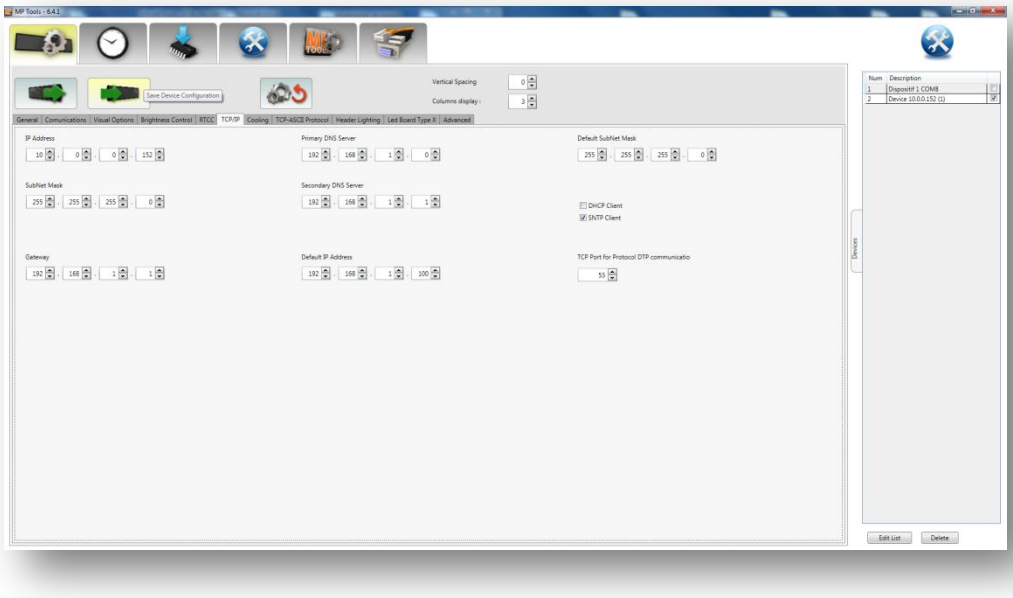
Software Guide

MP Tools

Software for product configuration



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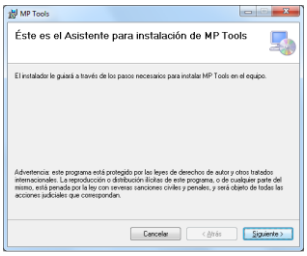
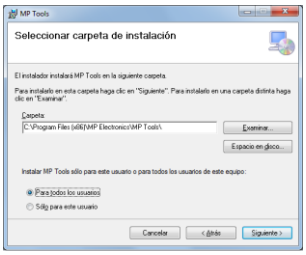
1. INSTALLATION

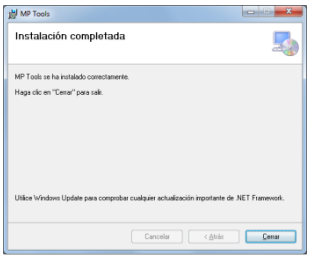
1. Run *Setup.exe* and click Next.



2. Set the folder where the files are installed.



3. Finish the installation:

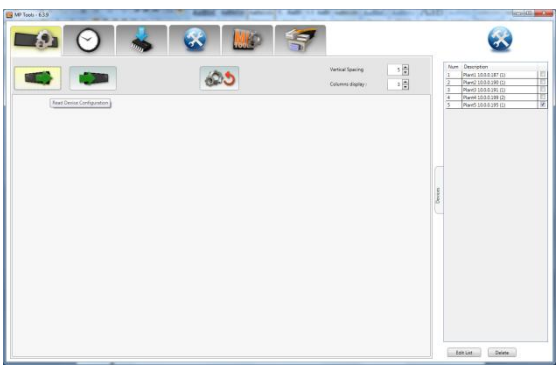


2. MP Tools SOFTWARE

The software's main menu consists of:

Six horizontal tabs:

- **Device Conf.**: Here you can configure the internal settings of device, such as brightness, or parameters related to communications.
- **Device RTCC**: In this tab we can send the date and time of our PC to the device, obtain the device time or introduce a time and date manually.
- **Device Firmware Update** [1].



[1] Only available for Advanced Users

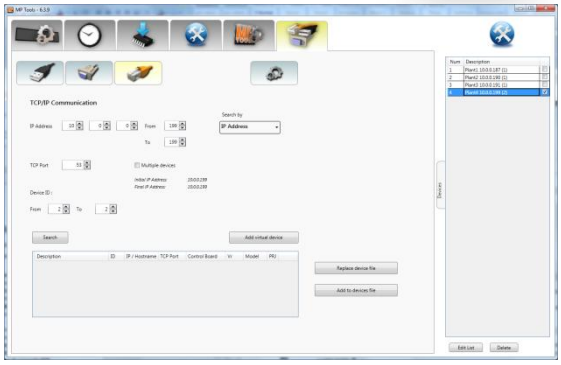
- **Advanced Options**[2].
- **Applicacion Settings**: Here you can choose the language, unlock the advanced options or update XML files.
- **Communication and Devices Search**: In this tab we can choose how we want to connect the device to your computer. It may be via USB, RS232 / RS485 or TCP / IP (Ethernet).

A vertical tab:

- **Devices**: In this section all connected devices are displayed into a list.

3. COMMUNICATIONS – DEVICE CONNECTION

The first step is to connect with the device. In the "Communications" tab, choose the connection type.



3.1 USB Connection

To know which is the port of PC that is used, see in the Windows Device Manager in the "Ports (COM and LPT)" section.

3.2 RS232/RS485 Connection

Enter the port used you see in the Windows Device Manager in the "Ports (COM and LPT)" section.
Baud rate, data bits, parity and stop bits are by default 9600, 8, N and 1 respectively.

3.3 (ETHERNET and Wi-Fi) Connection

To connect via Ethernet we must enter the IP address of our device.

The default **IP** address is **192.168.1.100** and the **TCP** port **53.**

For example, if we set a range from 50 to 100 it will search from the IP **192.168.1.50** to **192.168.1.100**.

3.4 Devices Search

[2] Only available for Advanced Users

Once communication parameters have been correctly selected, you have to press the "Search" button. By searching it appears one device (or more, depending the installation) into the list below.

To add the device found to our devices list press "*Add to devices File"* while if we want to replace, press "*Replace device files".*

The device list is saved in a file on our PC so that when we return to open the software on another occasion the device is immediately reachable and is not necessary to do again the previous steps.

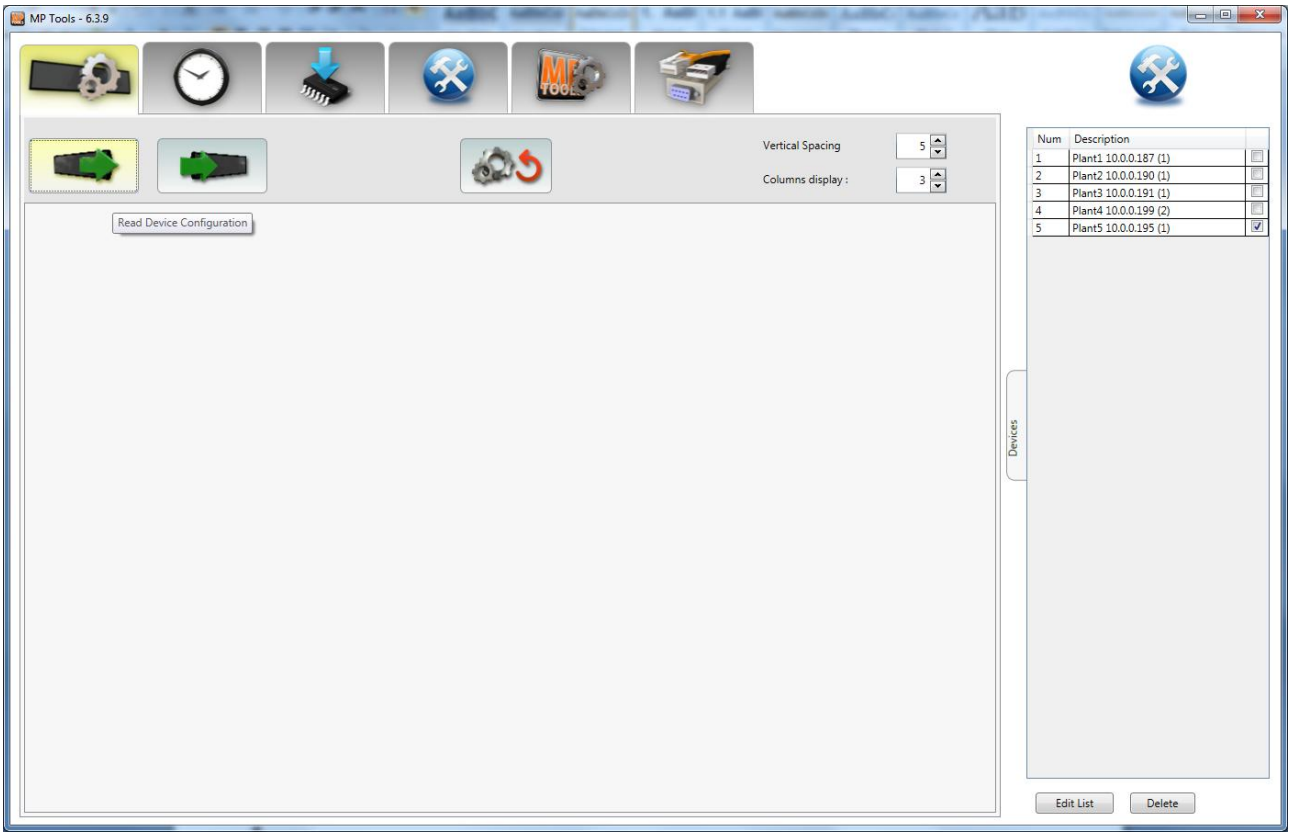
3.5 Advanced Configuration of Communications

On error in communication, we can increase values in advanced settings such as detailed below:
Display response Timeout and *displays Search Timeout*: + 1.00.
TCP Socket Timeout and *TCP Socket Delay*: + 0.05.

4. DEVICE CONFIGURATION

On the top there are 3 buttons:

- **Read Device Configuration**: Obtains and saves the configuration of the device in the PC.
- **Save Device Configuration**: all fields of the different tabs are saved on the device.
- **Restore Factory Settings**: Restores factory settings.



When we read the configuration different tabs appear depending on the device in question. In this manual the fields for all devices are not detailled; for more information for a particular device, consult the specific manual.

For most of the devices, there are two tabs that always appear (General and Advanced) plus another for communications (which vary according to communications device).

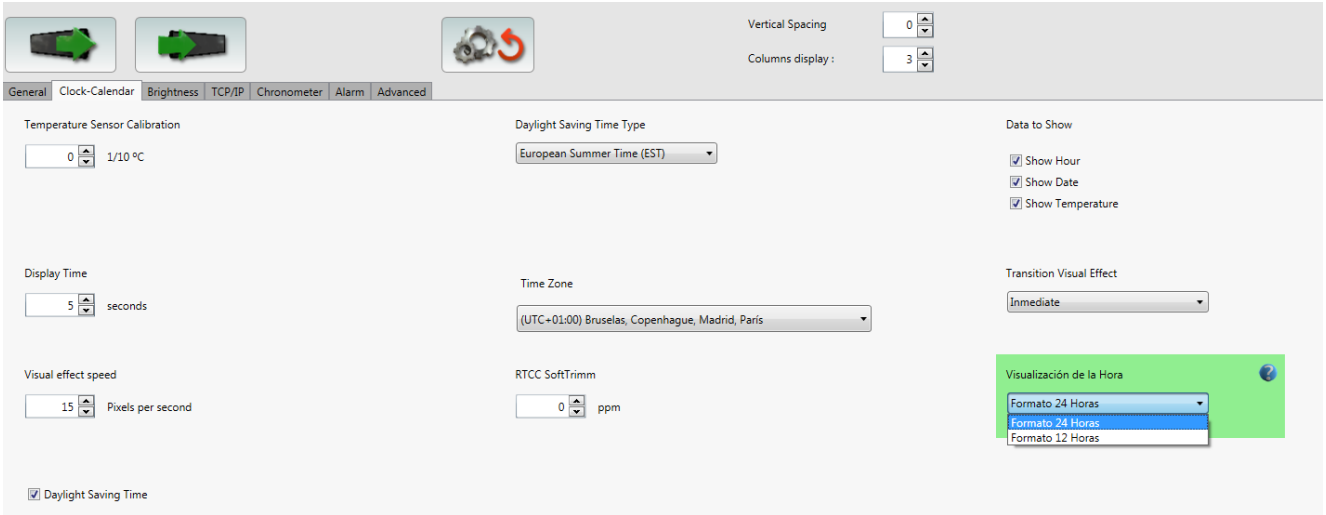
4.1 “Général”Tab

Devise Adress: ID Adress. Configurable from 1 to 99, by default 1. Must be unique for each device.

LocalCast Adress: Address used to create groups. All the devices of a group must have the same address.

Low battery warning: If the battery level is low, the message “BATTERY” is showing few seconds when the display is powers on.

4.2 ”Clock-Calendar”Tab



Temperature Sensor Calibration: Offset in 1/10ºC for temperature value. For example to decrease 1ºC the displayed temperature you must enter -10. Note than another offset is available by IR remote control. Care that the two do not add.

Delay Time: Displaying time of data when more than one are selected.

Visual effect speed: Only for no immediate effect and Led matrix devices.

Daylight Saving Time and Type: Enable the summer time.

Time Zone: UTC Time Offsets.

RTCC SoftTrimm: The units without synchronization system (Server, GPS, SNTP) have a maximum deviation from factory of 2 minutes by year. The SoftTrim function compensates the deviation due to clock component tolerances and the operating temperature. The value to be entered is calculated with the following expression:

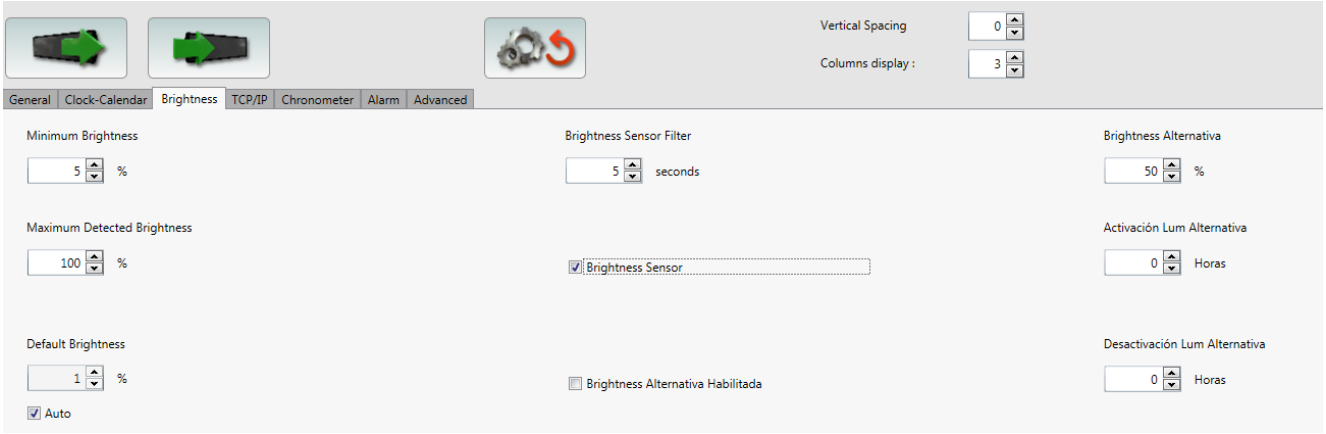
SoftTrim (ppm) = (1.10^6 x deviation) / measurement time.
The value to be introduced will be a negative integer if the clock is moved forward, or positive if the clock loses. Example: If the clock is ahead 50 seconds in a year is necessary to introduce a negative value (1 · 106 x 50s) / 31536000s = 1.58 => -2

Data to show: In case of selecting more than one data they are shown sequentially according to the delay time value.

Transition Visual Effect: Apparition modes when more than one data is shown. Ascend, descend and Odometer modes are only available for Led matrix devices.

Hour Format: 12 or 24-hour clock.

4.3 "Brightness" Tab



Minimum Brightness: The minimum percentage of intensity of LEDs when brightness is set to Automatic.

Maximum Detected Brightness: The maximum percentage of detected luminosity by sensor. From here the led intensity is maximum.

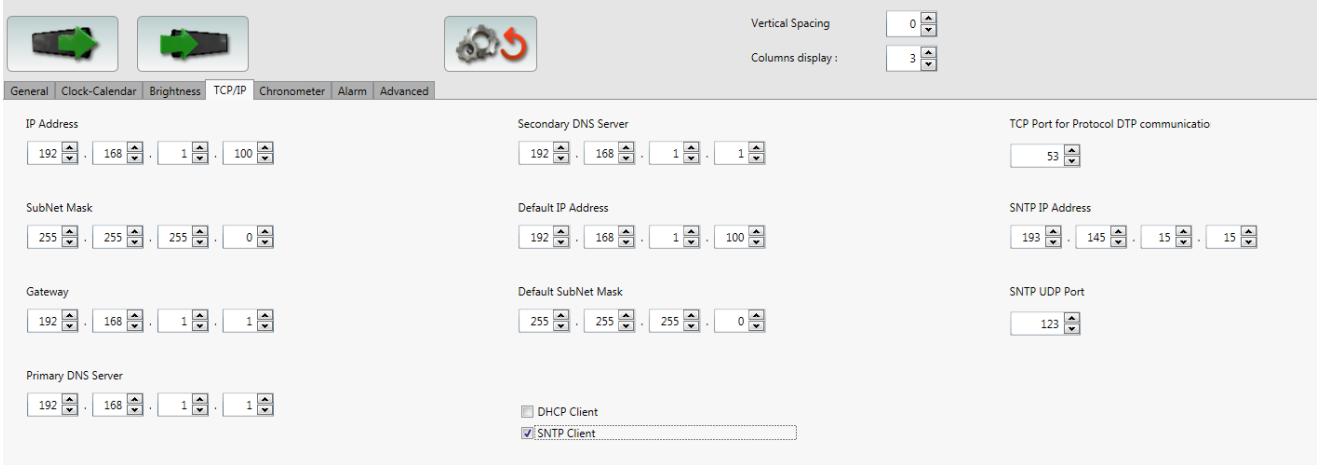
Default Brightness (%): the percentage of the intensity of LEDs is set here. We also can set the brightness to Automatic, so that the above percentage is disabled.

Brightness Filter Sensor: The speed with which we want to vary the brightness when set to Automatic. Doesn´t change the sensibility of Brightness sensor.

Brightness Sensor: Enable the Brightness sensor.

Alternative Brightness: Enable a fix brightness level in a defined range of time.

4.4 “TCP/IP”Tab



IP Address: IPv4 of unit. The displays are delivered with the default address 192.168.1.100* To connect to the display from a PC on a LAN both devices must have the same network address. In this case only the IP address and subnet mask are needed to establish communication.

Gateway: Set it if the internet access is necessary.

SubNet Mask: The displays come with the default subnet mask 255.255.255.0*

Primary DNS server: For SNTP Synchronization with a public server use a public DNS like 8.8.8.8.

Secondary DNS server: For SNTP Synchronization with a public server use a public DNS like 8.8.4.4.

DHCP Client: The displays are shipped with DHCP disabled to work with a fixed address. To work with automatic address check this box.

SNTP Synchronization: Automatic synchronizing each 5 minutes of the internal clock of the display to a public or local NTP server.

In case of using a public NTP server, the Internet access should be available and Gateway address (Gateway) and the DNS server must be set correctly.

In case of local NTP server SNTP IP Adress and SNTP UDP Port must be set correctly.

TCP Port for Protocol DTP communication: The TCP port that will be used by the native protocol called DTP. Default TCP port is 53*. MPTools uses the DTP protocol, so If you change the TCP port don´t forget to change it too in “communication and device search” of the main menu.

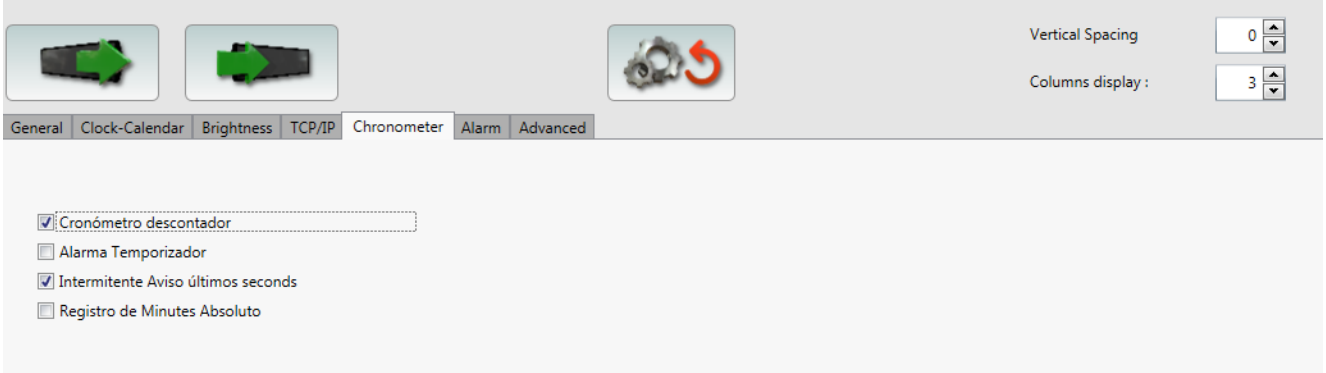
SNTP IP Adress: IP address of NTP server. By default pool.ntp.org (IP 193.145.15.15) but can set any depending the region.

SNTP UDP Port: UDP Port of time sever. Must be always 123. Change only if necessary.

CAUTION: To use SNTP Synchronization with the Wi-FI communication the TCP port must be set to 2000 in place of 53.

*Default parameters. The most important defaults parameters appear on display when powered on.

4.5 “Chronometer”Tab



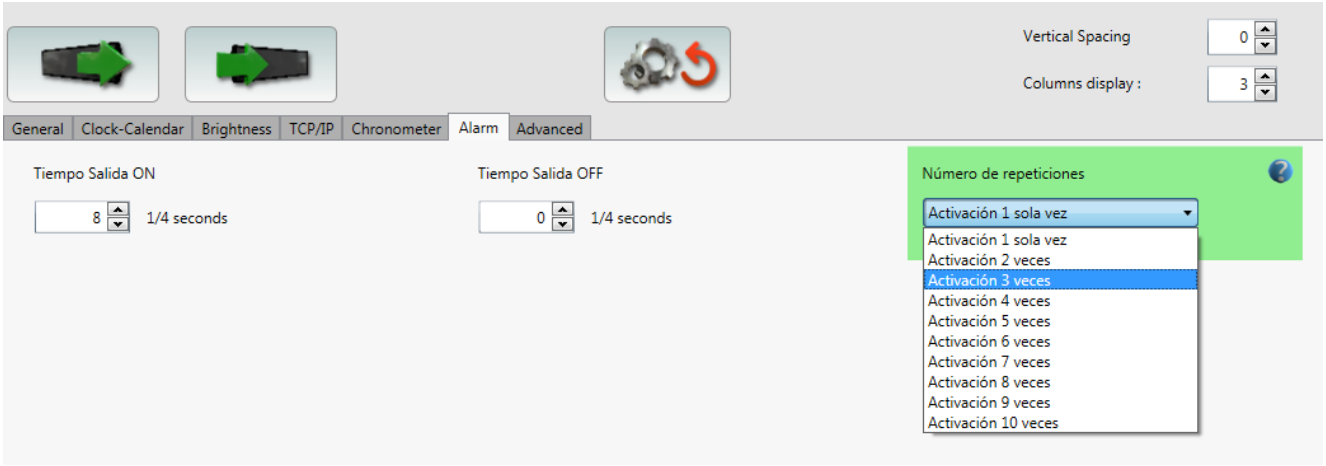
Countdown chronometer: Chronometer mode. If checked the chronometer works as countdown chronometer with the preselected Time 1, 2 or 3, If not as chronometer with final time (only with Time1).

Alarm: Enable alarm for output 2 of device. The output 2 is activated when the chronometer reaches the preselecting time 1 in chronometer mode or time 1, 2 or 3 in countdown chronometer mode.

Intermittent last seconds: In countdown mode the digits flash the last 5 seconds.

Absolutes Minutes: In this mode the chronometer shows more than 59 minutes, until 99 minutes.

4.6 “Alarm”Tab



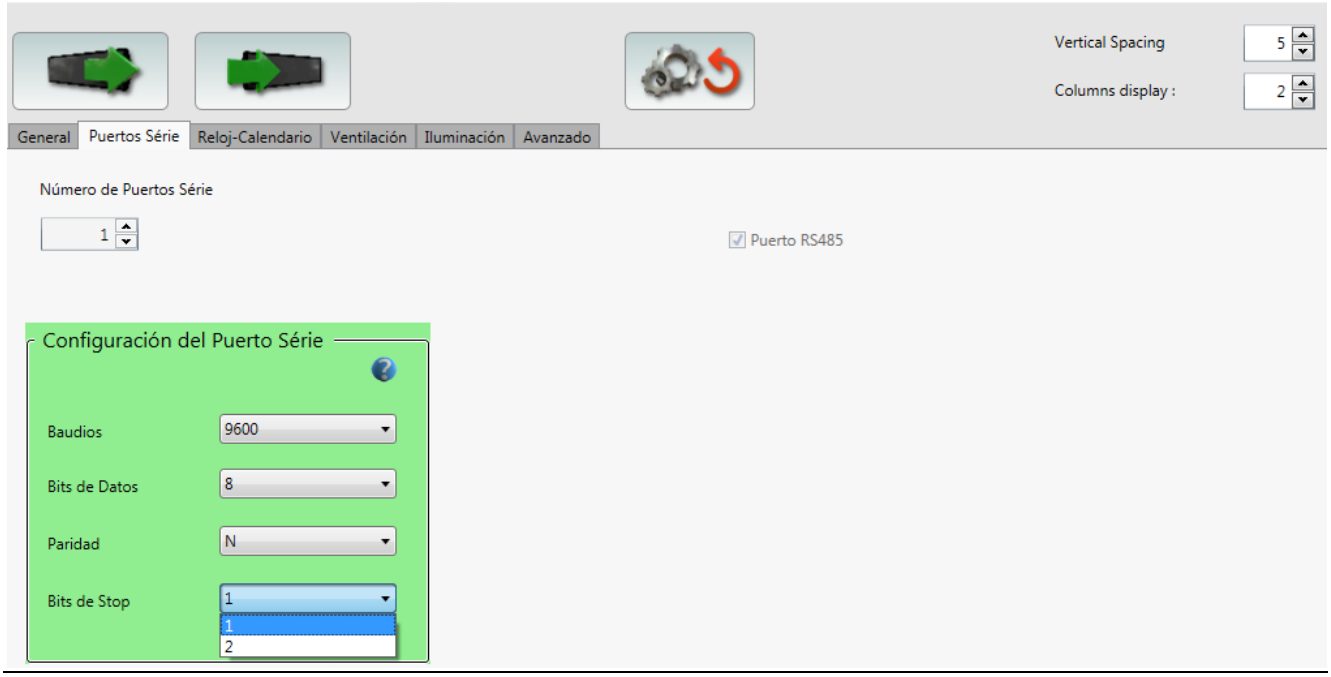
ON Time: Time in ¼ seconds the output alarm stays ON.

OFF Time: Time in ¼ seconds the output alarm stays OFF.

Repeat: Number of repetition of ON/OFF cycle. Maximum by 10 times.

NOTE: Theses times are use by the OUTPUT1 (Clock Alarm) and the OUTPUT2.(Chronometer Alarm) of device.

4.7 "Serial Ports"Tab



Bauds: RS232/RS485 bauds. Can choose between 1200/2400/4800/9600 * / 19200/38400/57600/76800/96000/115200.

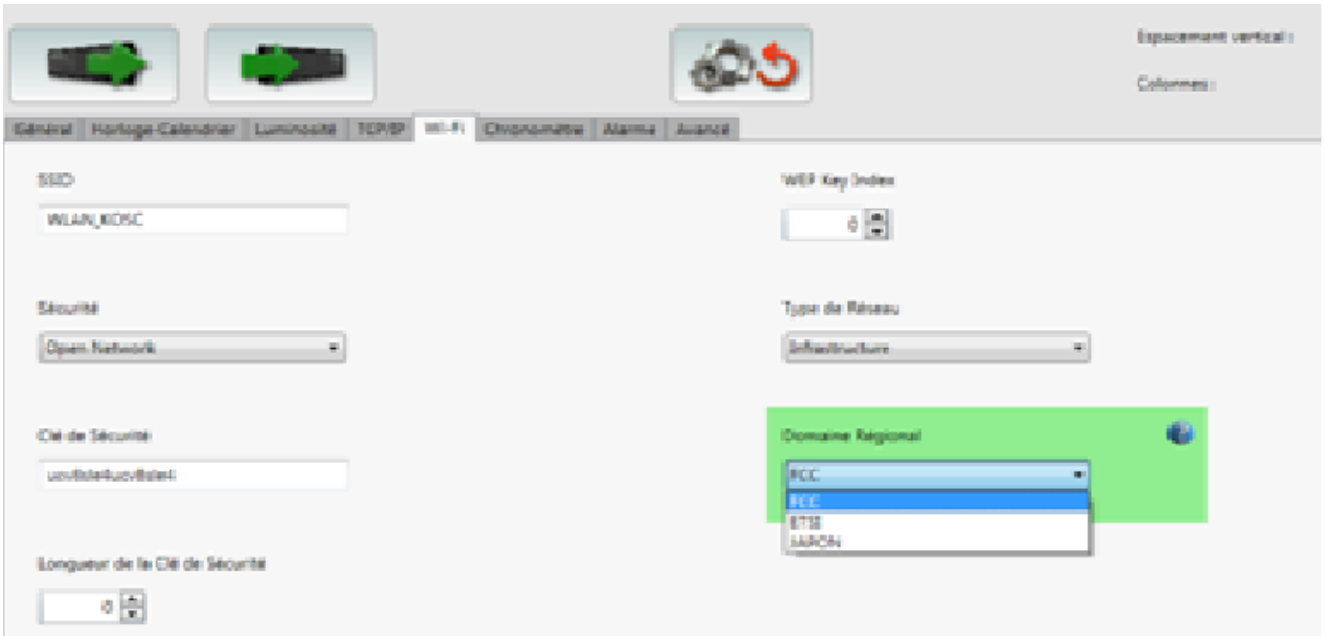
Data Bits: RS232/RS485 data bits. Fix value, always 8.

Parity: RS232/RS485 stop bits. N* (None) O (odd) or E (even)

Stop Bits: RS232/RS485 stop bits. Can choose 1* or 2.

*Default parameters. The most important defaults parameters appear on display when powered on.

4.8 "Wi-Fi "Tab



SSID: Wireless Network Name (Maximum 32 characters).

Security: Open Network* or key type of wireless network security.

Security key: Security key if not open network.

Security Key length: Number of bytes (character) of the security key.

WEP key index: Only applicable in case of type 40 or WEP 104 WEP Security.

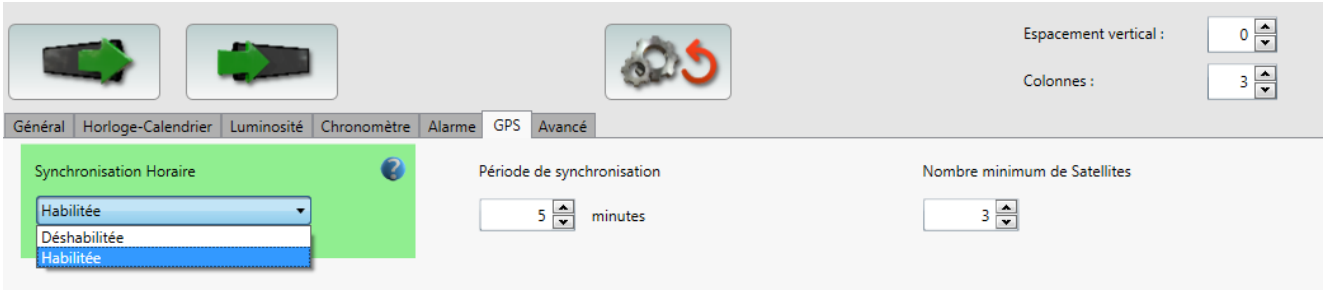
Network Type: type of Wi-Fi network to which we connect (Infrastructure* or AD-HOC).

Regional Domain: Wi-Fi channels depending geographical area. ETSI: Europe*, FCC: USA or Japan.

NOTE: Wi-Fi communication needs also the “TCP/IP” tab parameters. To connect from MPTools use the same way than Ethernet in “Communication and Devices Search”of the main menu.

*Default parameters.

4.9 "GPS"Tab



Time Synchronisation : Enabling or disabling time synchronization via GPS.

Synchronisation Period: Interval of time in minutes between each synchronization.

Minimum number of satellites: It is recommended to select a minimum of 3 satellites.

CAUTION: For indoor installations the GPS antenna (cable of ± 5m) must be located outside or near an window or very thin wall or roof to ensure the reception of the GPS signal. In case this is not possible it will be necessary to choose another type of time synchronization as the SNTP via Ethernet. The reception quality of the GPS signal at the location of the device can be checked from the MPTools Advanced Options menu. See chapter 7 and 8.

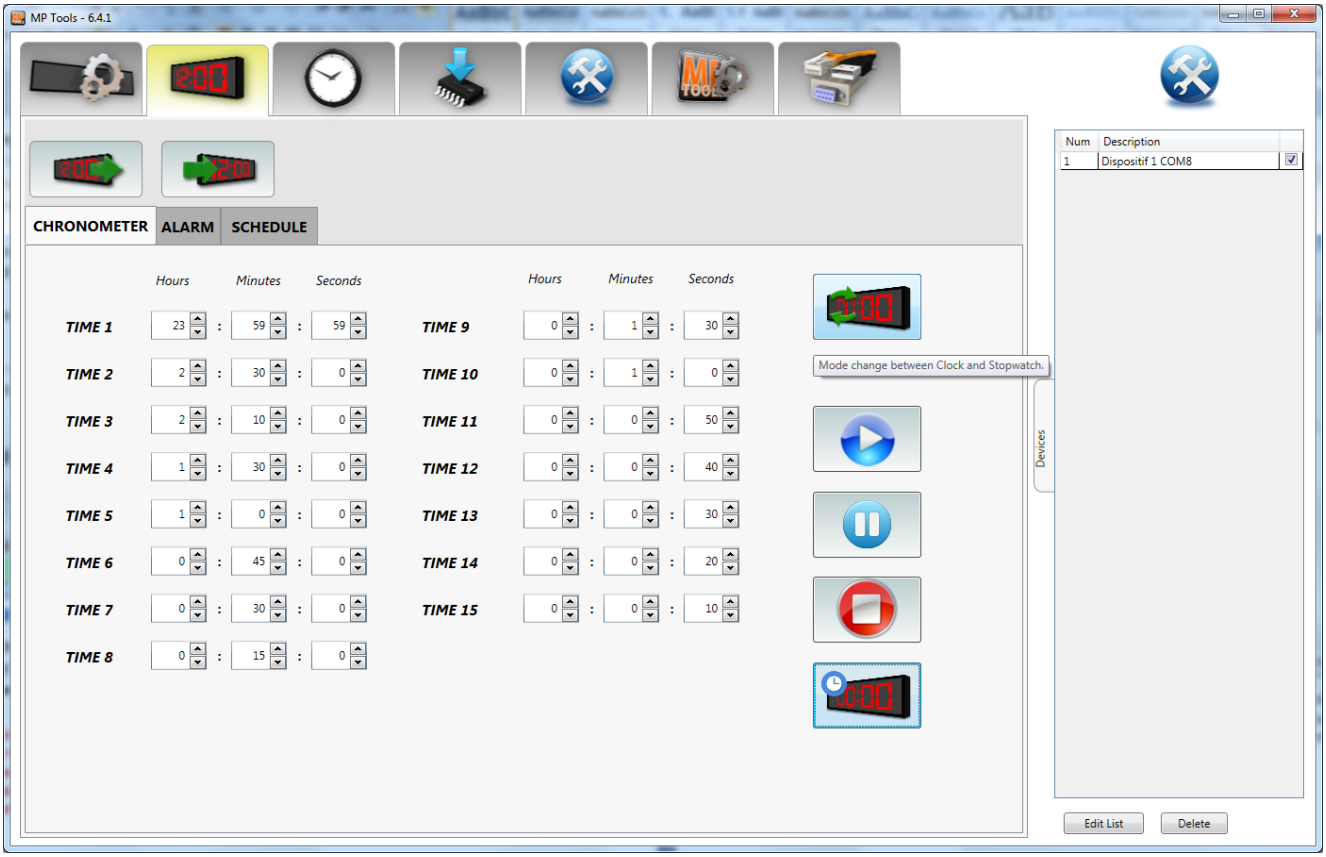
4.9.1 "Avanced"Tab

Some tabs as “Advanced” are protected by a password and concern Factory settings.

CAUTION: The settings on these pages should only be changed by qualified personnel at risk to alter the proper functioning of the device.

5. CLOCK/CHRONOMETER OPTIONS

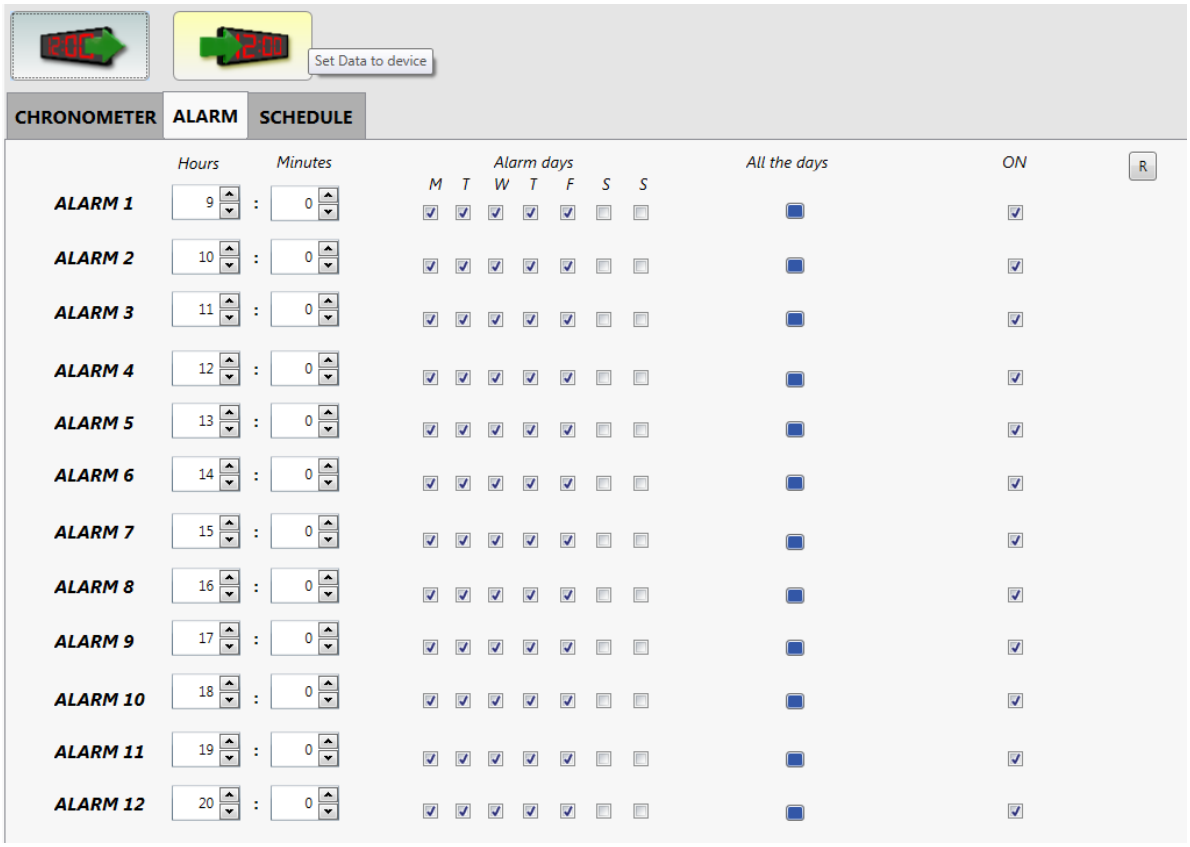
This menu only appears when a Clock / Chronometer is connected to the software.



Chronometer : Up to 15 presets available in Down mode.

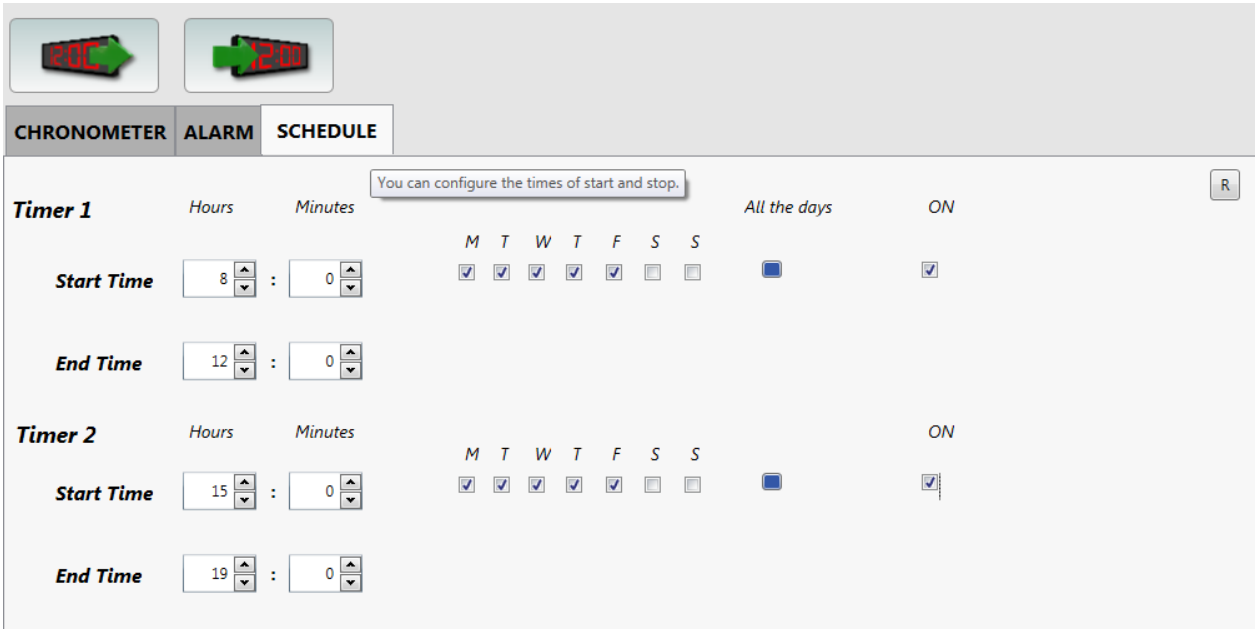
From the software it is possible to switch between Clock and chronometer mode, select a preset time, start and stop the chronometer and make a reset to the initial time.

In Up mode with final time only Time 1 is available.



Alarme : Up to 12 Alarms are configurable over a weekly period.

CAUTION: In order for an Alarm to be effective, the ON box must be checked.



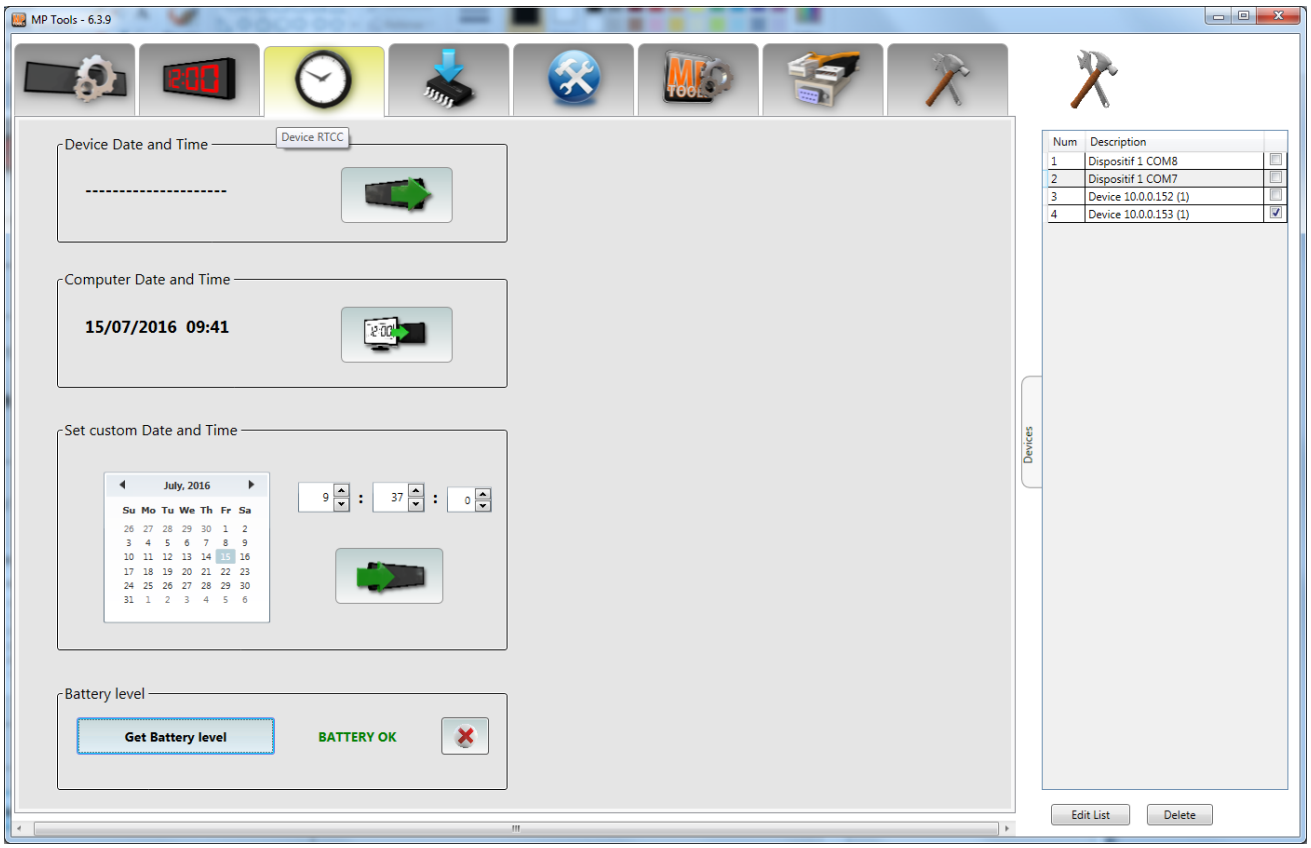
Schedule: It is possible to set 2 daily Timer range where display turn on. Outside of these times the unit will be in standby mode with the display turn off. This configuration is configurable over a weekly period.

CAUTION: In order for a Timer to be effective, the ON box must be checked. Alarms that are programmed outside the Timer will not be activated.

6. DEVICE RTCC

In this tab, we can perform four tasks:

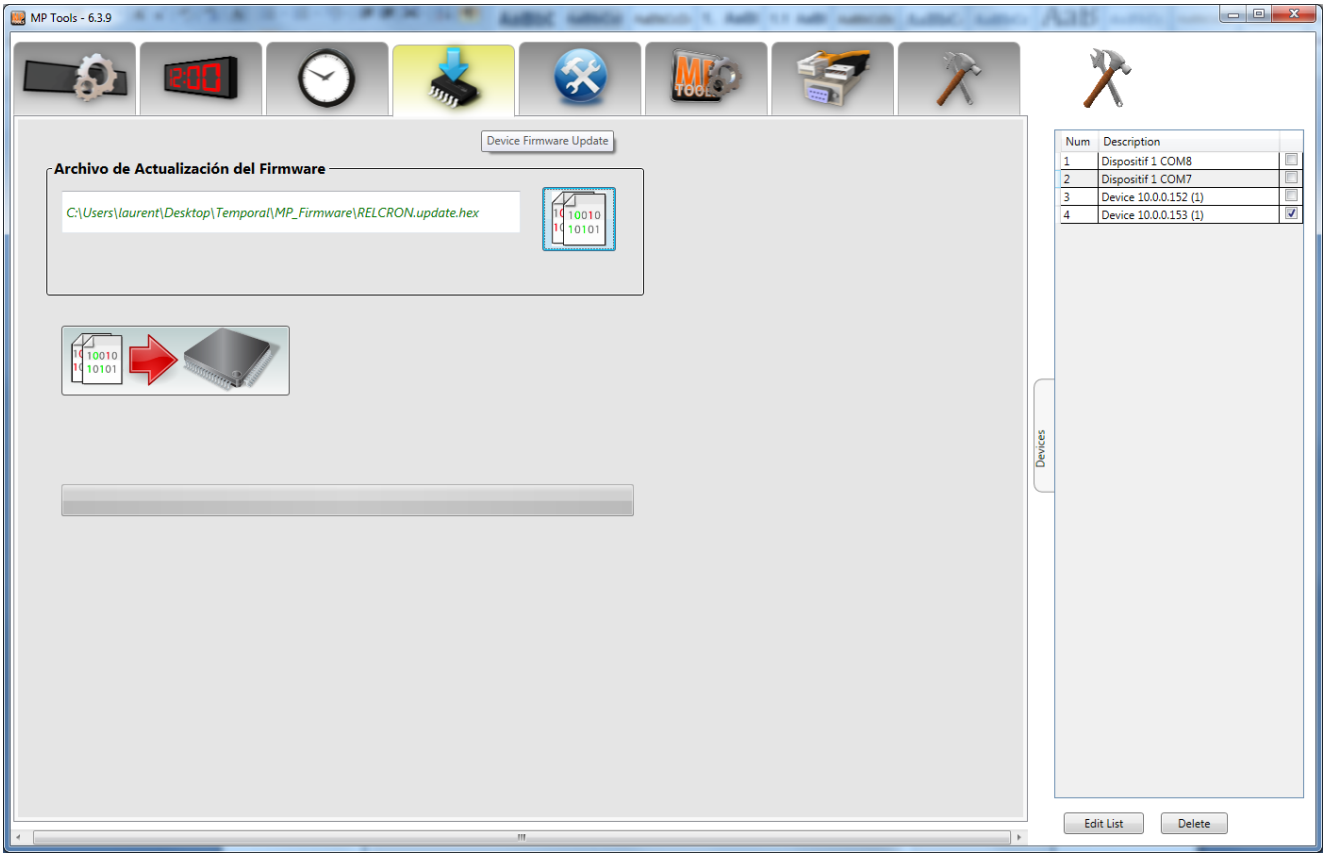
1. Read the current time of the internal clock of the device.
2. Synchronize the device with PC time
3. Set the time manually and send it to the device.
4. Check the battery level (only on unit equipped).



7. DEVICE FIRMWARE UPDATE

This tab will only be shown if we are connected to a device that allows firmware upgrade option. To use this feature you must unlock the advanced software options (see Application Settings).

CAUTION: Do not perform this process unless all steps in the same are well understood. Improper conduct can cause erasing non-volatile memory of the CPU of the device, which would leave it unusable. If in doubt, consult your authorized dealer DITEL.



The procedure for this task is as follows:

1. We can only carry out the process in one device. If you have several, make the process one by one. During the process, the device must remain powered and connected via the corresponding channel of communication with the PC.

2. Select the file with the firmware update. (This file has the extension *.hex). If the update is compatible with our device, a button under the File box appears.

3. If you press the button to update the device firmware update process will begin.

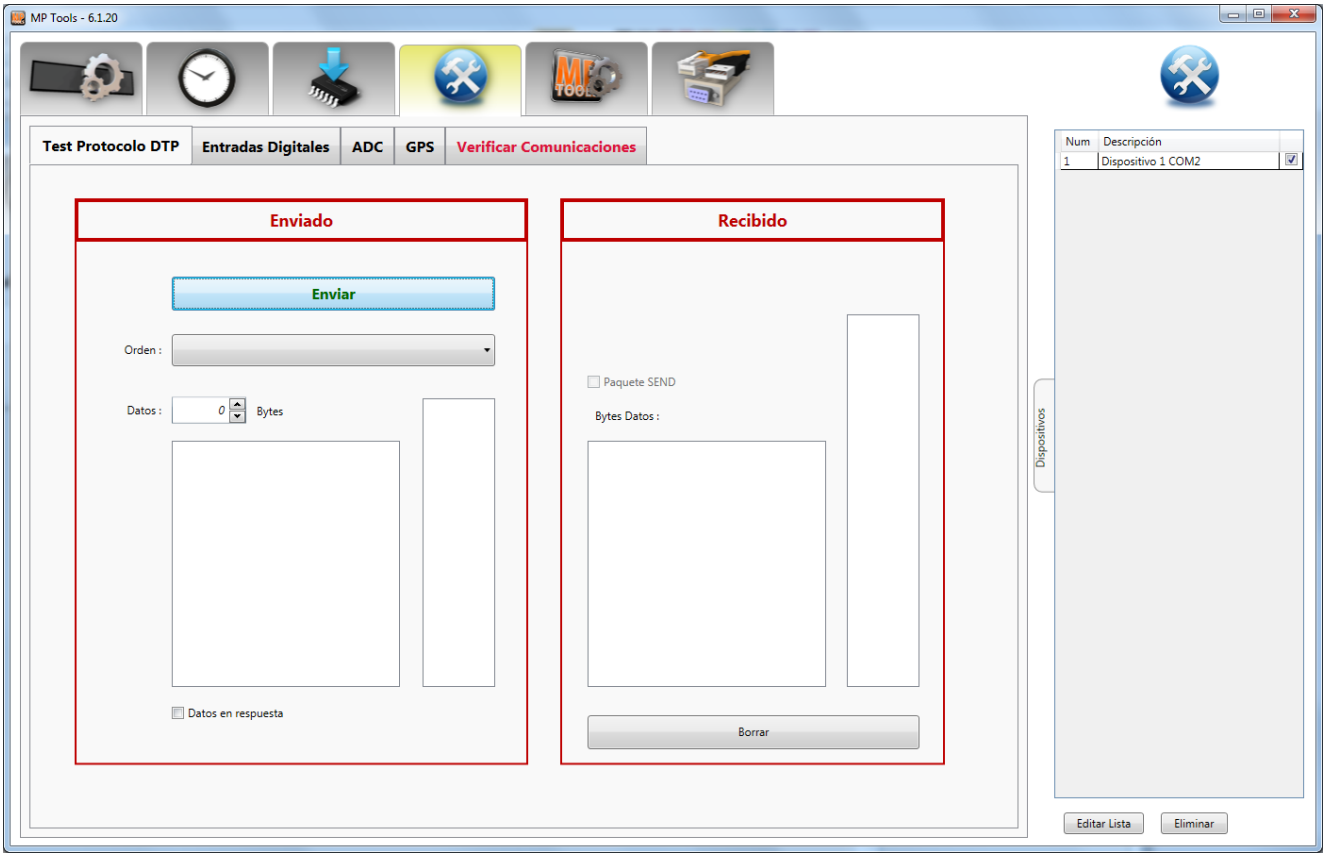
4. The status bar shows the evolution of the process.

5. At the end an information window appears to indicate that the process has completed successfully.

6. If there is an error during the process we will have to repeat the steps from 3.

8. ADVANCED OPTIONS

This tab has several sub-tabs from where we can realize different operations for diagnostics use. New tabs can be added in next version. To use this feature you must unlock the advanced software options (see Application Settings).



Test Protocol DTPM: Send orders in DTPM protocol which is the native protocol and read the response of the device. NOTE: Some orders can change or delete the device configuration. Only use with knowledge of the effects.

Digital Inputs: Read the status of the digital inputs of the device.

ADC: Get reading of the analog inputs of the device.

GPS: Perform a test of the GPS receiver and get the position, UTC time and the number of detected satellites.

Check Communications: In this sub-tab you can perform a test of communication with the device to verify proper operation and to detect faults in the installation.

9. APPLICATION SETTINGS

Application Language: Sets the language of software.

Advanced Options: To unlock the advanced program options enter code **INT8932** in the Advanced Options Password field and then confirm by pressing the key.

Updating XML files: XML files configuration for new features or models. Can be done automatically from server if internet connection is available or manually.