



POSITION & SYNCHRONISER

CONFIGURATION

MFGPS SYN-LOC





USER MANUAL

REF: LOCATER MFGPS SYN-LOC ENG

REV **DATE REVISION REV 04** 01 13/05/13 Initial revision 02 Revision 4.0.4 15/05/14 **Revision 2014** 03 04 Format change and 16/03/2021 revision.



POSITION & SYNCHRONISER CONFIGURATION

MFGPS SYN-LOC

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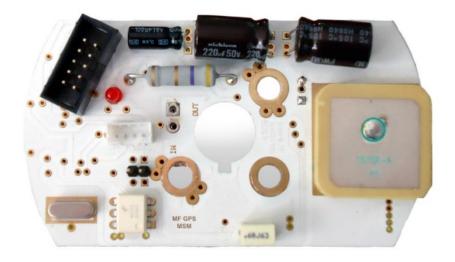
ANNEX 1. DRAWINGS.



The MFGPS SYNLOC position and synchronization module is a device with dual functionality. On the one hand, it is used to determine the positioning of a buoy and, on the other hand, to establish the synchronization between beacons using a 12-channel GPS receiver.

Even if it is especially designed to be connected to a MF flasher, it allows to establish a synchronization with lanterns from other manufacturers; since the synchronising delay can be adjusted with the programming software.

The MFGPS SYNLOC second function is to watch the aid to navigation positioning, in such a way that, if it is placed on a buoy, the maximum allowed swinging radius can be programmed, causing an alarm if the buoy exceeds the established limit.



MFGPS SYNLOC Module.





Module MFGPS SYNLOC Features

WGS84 real-time buoy position information, including swinging radius in meters.

The detection of the anchoring position is carried out automatically.

Configurable swinging radius.

It allows the flash synchronization between MSM beacons and those of other manufacturers, with the possibility of sequential lights through programmable offsets.

Time and date according to the GPS satellite signal, with automatic correction according to the

Buoy chain break alarm detection through GPS positioning.

Initial auto-detection of the coordinates of the position of the buoy at the time of installation.

12-channel GPS satellite reception module and high sensibility, with integrated antenna.

Free communication protocols, which allows the user to use their own control center or use them for any application they require.

It has a programmable "Sleep" mode to save energy consumption.

Technical Features						
Voltage:	From 4 to 32V c.c.					
Average consumption:	5 mA.					
Programming:	PC (hyperterminal). Remotely via GSM, radio or email, depending on communication.					
Working modes:	Synchronization or location plus synchronization.					
GPS receiver:	12 channels, with integrated antenna.					
Position format:	WGS 84.					
Precision synchronization:	2 ms.					

2.1. MFGPS-SYNLOC HARDWARE

The MFGPS-SYNLOC module has the next ports and terminals:



Synchornization terminals (1)



Configuration port 2







3. MFGPS SYNLOC Configuration

To read the MFGPS SYNLOC, the use of the C.PROG. MF12 programming cable is required in the TX position.

PROGRAMMING KIT

Cable + Usb + CD



Open the Hyperterminal and connect the programming cable to the MFGPS SYNLOC and to the PC serial port. Connect the beacon to the Power Supply, so that when the beacon is ON, the GPS starting can be observed from the beginning while the data are displayed.

3.1. HYPERTERMINAL CONFIGURATION

Open the HyperTerminal and click on the tab File-Property and the following screen will be shown where the used COM has to be configured.

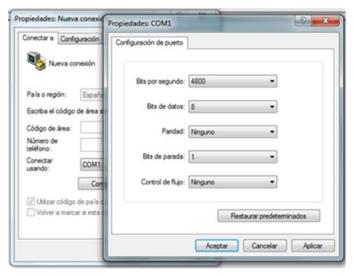


Hyperterminal main screen.

Once selected the COM to be used, click on the "Configuration" option, where some parameters shall be configured for the GPS Reading.
Configurable parameters:

- Bits per second: 4800.
- Data Bits: 8.
- Parity: N.
- Stop Bits: 1.



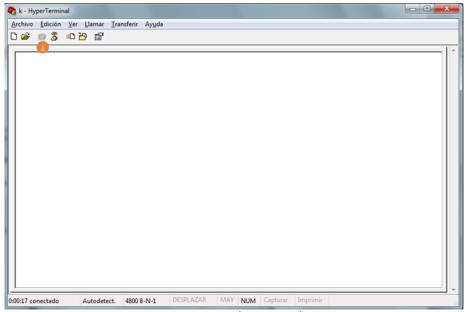


Hyperterminal Configuration.

Click on "Apply" and then on "Accept".

This is the configuration used for the Reading of the MFGPS SYNLOC.

The following screen will be shown, where you have to click on the telephone icon 1 to start the data reading.



Hyperterminal. Data reading.

3.2. DEVICE STARTING

When starting the MFGPS SYNLOC a header is first shown indicating the GPS type used and its FW and HW:

- Synchronizer-Tracker.
- Firmware: 08_1.
- Hardware: 03.

There are three options to configure our MFGPS SYNLOC:

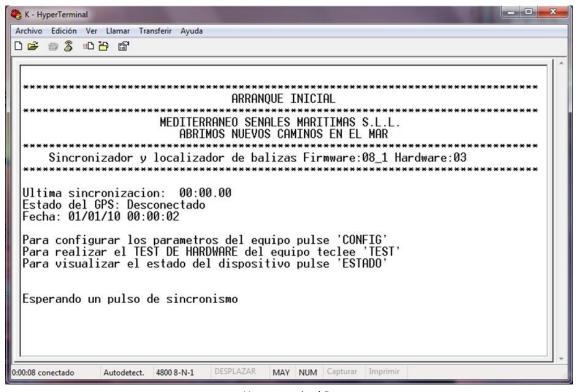
- CONFIG
- TEST
- STATUS



IMPORTANT

To configure the parameters of the device press -> 'CONFIG'
To carry out THE HARDWARE TEST of the device type in -> 'TEST'
To display the status of the device press -> 'ESTADO'

The software is just available in Spanish.

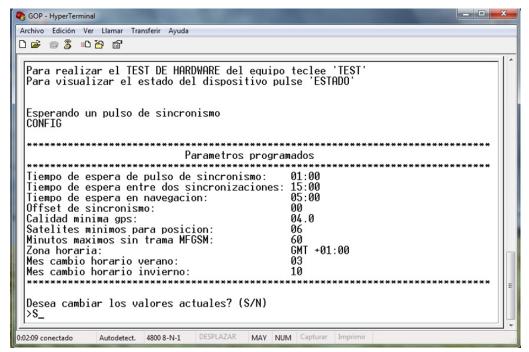


Hyperterminal Root.



3.1.1. Option: CONFIG

To modify parameters the word **CONFIG** has to be written and a menu appears where the parameters that can be modified are shown.



Hyperterminal Parameters modification.



IMPORTANT

For the configuration of the device, it is reminded that:

S → Means **YES**

N → Means NO

To modify the values configured from Factory, write the letter "S" to be allowed to make modifications.

Each data with the option to introduce parameters will be shown:

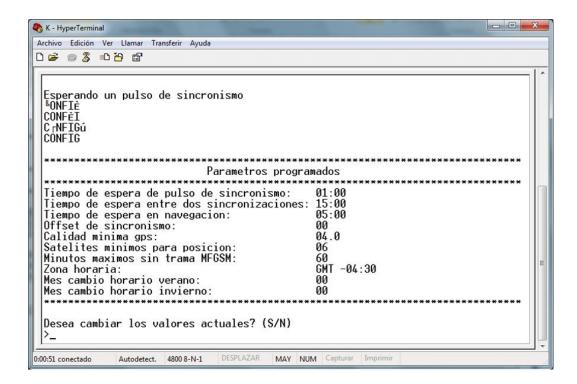
- Tiempo de espera de pulso de sincronismo -> Sync pulse waiting time.
- Tiempo de espera entre dos sincronizaciones -> Waiting time between two synchronisations.
- Tiempo de espera en navegación -> Navegation waiting time.
- Offset de sincronismo -> Sync offset.
- Calidad mínima gps -> Minimum gps quality: Value of the GPS signal quality. The lower the value, the higher the signal quality obtained. (00.0 -> Optimal signal, 09.9 -> Low signal quality).
- Satélites mínimos para posición -> Minimum satellites for position: Minimum number of satellites so that the position obtained from the beacon is taken as good and is not discarded.
- Minutos máximos sin trama MFGSM -> Maximum minutes without MFGSM frame.
- **Zona horaria ->** Time zone.
- **Mes cambio horario verano** -> Summertime changeover month: Month of the year when a changeover to summertime occurs.
- Mes cambio horario invierno -> Wintertime changeover month: Month of the year when there is a change to wintertime.



To make any parameters change we must advance to the parameter we want to change by pressing the space bar.

Once we are on the parameter we want to change (it will blink) we write the value, in the same format as the old one, and then press the space bar.

Each data with the option to introduce parameters are shown, as in this case the hour.



Hyperterminal Parameters modification.

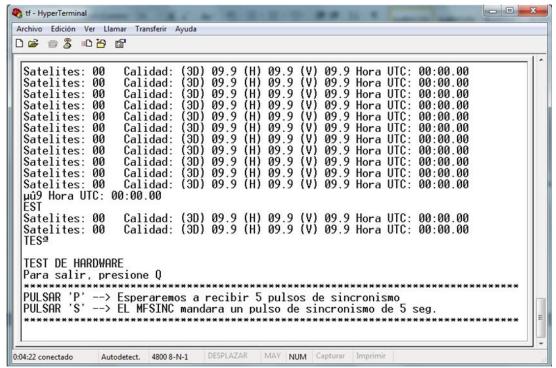
Once the modifications are made you are asked to "establish the values by defect" where the user has to reply "N" (NO), so that the modifications will be saved.

3.1.2. Option: TEST

Then, we start with the **TEST**, for that just write this word and the following option will be shown. To trigger a TEST the flasher has to be connected to the GPS, if not it won't work.

Here, we will check that the beacon makes the flashes indicated in the picture, what means:

- **P:** The night is staring and the Hyperterminal shows five pulses of synchronism during which the MFGPS SYNLOC makes a measurament to determine the set rhythm.
- **S:** The beacon will switch ON five times if the power-ON cycle is less than 1 second. If the beacon has an ON time of more than 1 second then it will remain ON for 5 seconds.
- **Q**: To end the test, press the letter 'Q' to end the application.

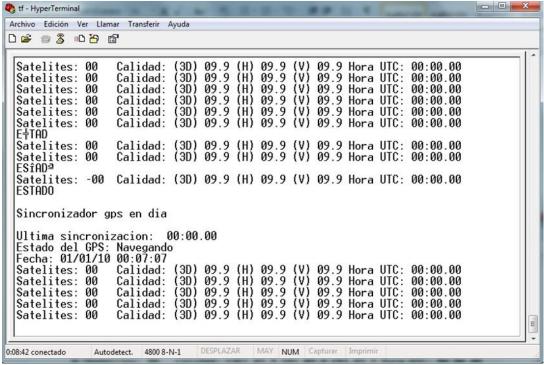


Hyperterminal Test.



3.1.3. Option: STATUS

The STATUS option (ESTADO) will show the MFGPS SYNLOC current operation.



Hyperterminal Status.





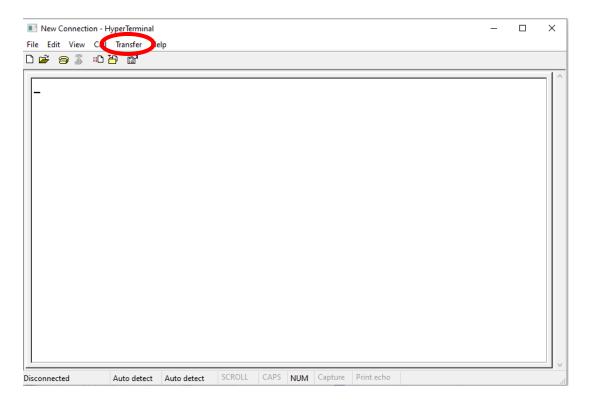
4. Procedure in case of incorrect operation

Under suspicion of a malfunction of the beacon or of a failure it is advisable to extract the information from the beacon in order to have it solved by an MSM technician (Datalogging).

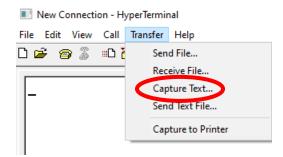
To carry out the data extraction from the Hyperterminal, we must be connected to the beacon as explained at the beginning of point 3.

The steps to follow are:

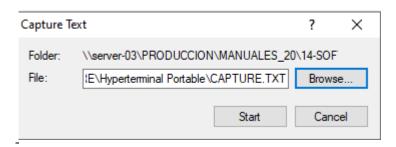
• <u>Step 1:</u> Once we are connected to the beacon and we have the Hyperterminal software open, we must go to the "Transfer" tab.



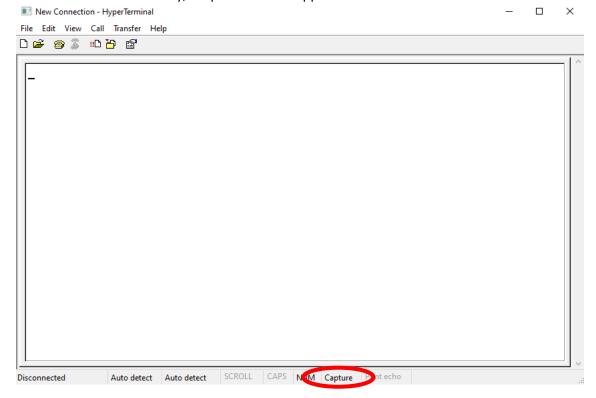
• <u>Step 2:</u> Clicking on the "Transfer" tab opens a drop-down menu in which we must select the "Capture text" option.



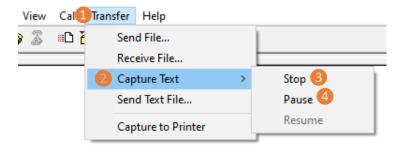
• <u>Step 3:</u> To start capturing text we must first indicate in which folder we want to save the information by clicking on the "Browse..." button. Then, click on "Start" to start capturing.



If it has been done correctly, "Capture" should appear at the bottom in black.



• Step 4: When we want to pause or end the text capture we have to click on: "Transfer" 1 -> "Capture text" 2 -> "Stop" 3 If we want to end the capture. -> "Pause" 4 If we want to pause.



• Step 5: Finally, we pass the file to MSM for troubleshooting.













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1. DRAWINGS

ENG

GENERAL WIRING SYNCRO

MODULE MFGPS

REF MFGPS-M1-ENG REV. 01





























