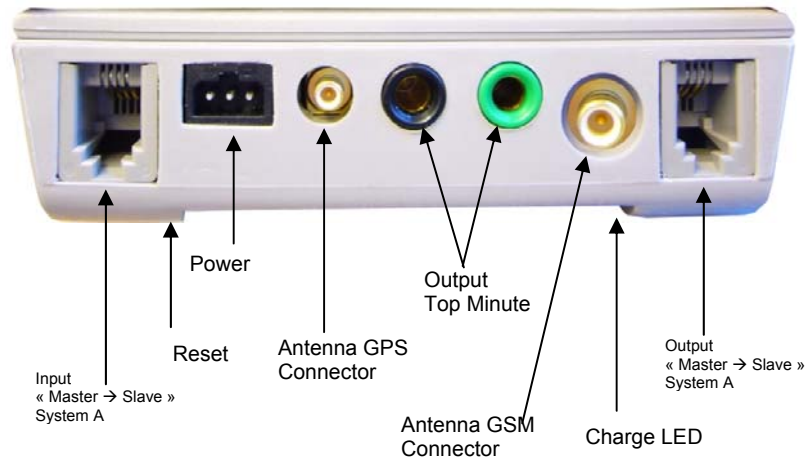# DOCKING GPS – GSM

User Manual
Version 07/2012

1. General

- The GPS Docking is equipped with a Li-Ion accumulator ensuring exceptional autonomy for the Chronoprinter 540, even at very low temperatures (-20°C / -4° F).
- A satellite detection module « GPS » ensures the automatic Time of Day synchronization and precision control.
- A GSM communication modem allows wireless connection between two CP540's through the mobile telephone network.

Power

Output
Top Minute

Reset

Antenna GPS
Connector

Output
« Master → Slave »
System A

Input
« Master → Slave »
System A

Antenna GSM
Connector

Charge LED

- **RESET button -** in case of a problem with the Docking. To **RESET**, press the mini contact located under the identification plate of the Docking.
Use a small blunt instrument to gently depress.

2. Important recommendation

- To guarantee the security of your timekeeping, it is necessary to use your CP 540 with the internal batteries in a charged state
- Do not forget to charge the Docking before its use (see « How to charge the Docking »)
- If the system is not used for several days, we recommend that you disconnect the Docking from the Chronoprinter, and remove the batteries from the CP 540.
- Do not forget to replace the « red blanking plug into the DOCKING » on the CP 540 to protect its connector.
- Protect the Docking with its original packing.
- We recommend you to use the synchronization by GPS between two CP 540, which are communicating Modem to Modem. The precision is thus guaranteed for your timing.
- If you do not wish to use the Synchronization by GPS, please be sure to input the same date and time on both systems before synchronizing them.

> **IMPORTANT**
> It is essential to update the software inside the CP 540 + Docking before initial use.
> You will find the software version on our internet site (www.tagheuer-timing.com).

3. Docking connection

- Remove the « DOCKING red blanking plug » from the CP 540 which gives access to the docking connector.
- Place the « DOCKING red blanking plug » on the Docking at the reserved position under the female connector.
- Place the CP 540 on the DOCKING and press firmly to ensure a good connection.

4. How to Use GPS

- Carefully connect the GPS antenna cable in the socket (21).
  The GPS antenna must be installed in a clear open place (outdoor) with an unobstructed view of the sky in order to correctly receive the satellite signals generated by the GPS system.

- Menu **GPS (ON/OFF)**
    - Select **GPS ON** and confirm
    - Select the time difference between GMT time and your time zone (ex GMT – 2, in the west of GMT or GMT + 2 in the east of GMT).
    - Validate your choice (this information is stored in memory).
    - The display shows initially **GPS Searching**, then **GPS Active** as soon as it locates several satellites.
    - **GPS Searching** is also printed with the indication **GPS UTC Delta = 16 sec**. Then **GPS ready for Synchro**.
    - Validate **2** times under GSP to make the Synchro (mode Synchro)
  The synchronization of Time of the Day with the correct date is automatically made.

REMARK

    UTC TIME
The time provided by the satellites is GPS (terrestrial hours) of a certain number of seconds (16 seconds since July 2012).
This information is transmitted by satellites every 12,5 mins.
It remains in the GPS almanac, this allows fast synchronization.

WARNING

    When you remove the GPS antenna connector, hold the connector firmly. **Never remove or hold by the cable**.

---

5. Remarks on GPS

► **If GPS signal is Lost** (poor positioning of the antenna), the printer indicates:
- Synchro GPS lost
- The time of day

The display time of day will flicker along with **GPS LOST**.

If the GPS signal is synchronized again, the printer indicates (repositioning of the antenna)
- GPS Active
- Synchro GPS found
- Time of the day
- DEV 3.0 µsec (for example)

Remark:
Automatic resynchronization of the time base of the CP 540 (temporary loss of GPS signal) is acceptable in conditions where the drift of the time does not exceed 100 µsec (1/10'000 of a second).
In case of resynchronization, the drift (DEV) is always printed.
If the drift value is over 100 µsec, the base time of the CP 540 is the reference for the rest of the time keeping. The GPS can be switched OFF.

► **If the Docking is disconnected** the printers indicates:
- Docking disconnected
- Synchro GPS lost
- Time of the day

When the Docking is reconnected the printer indicates
- Docking Connected with its serial number and Software version
- GPS Searching with GPS UTC Delta = 16sec
- GPS Active
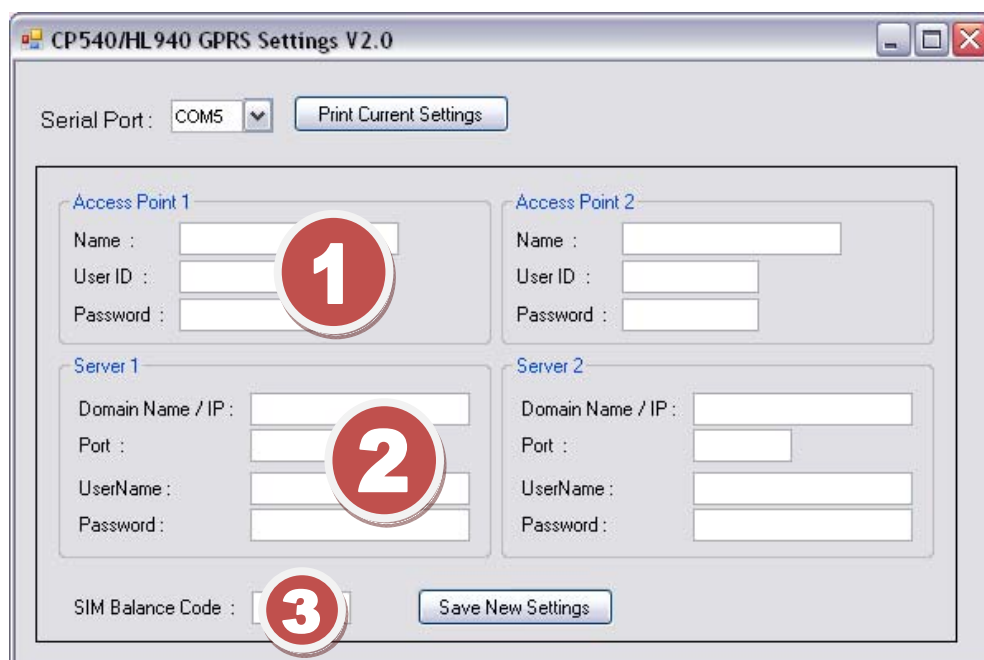- Synchro GPS founded
- Time of the Day
- DEV 2.4 µsec (for example)

6. How to use the GPRS transmission

> **ATTENTION**
> The SIM Card **should not have PIN number. Please disable any SIM PINs via your SIM provider instructions.**

6.1. Software Setup

In order to set all connection information into your device. Connect your Chronoprinter 540 on your laptop and fire up the software: GPRS_settings.exe
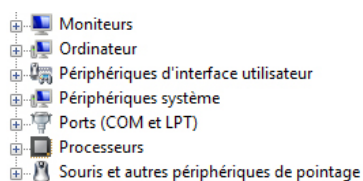

Select the COM Port attribuated by your computer.
Open up Device Manager. Right click on "My Computer"
and select properties (at the bottom of the list that pops up).
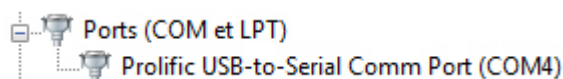Click on the "Hardware" tab.
Click on the "Device Manager" button and a something similiar to this picture should appear.

Click on the '+' sign on the left of the "Ports (COM & LPT) to expand it.
The list of printer and Serial ports available will be shown.
Make a note of those.

- 1) The Acces Point:

    This information is provided by your mobile broadband supplier.
    Here are some example below (note that they can change anytime).
    Please refer to your SIM Card supplier or phone dealer.

Country	Operator	Acces Point Name	Username / ID	Password
France	Bouygues Telecom	mmsbouygtel.com	[blank]	[blank]
Italy	Vodafone Omnitel	web.omnitel.it	[blank]	[blank]
UK	Orange UK	orangeinternet	[blank]	[blank]
Switzerland	Swisscom	gprs.swisscom.ch	[blank]	[blank]
Poland	ERA Tak Tak	erainternet	[blank]	[blank]
Germany	D1 T-Mobile	internet.t-d1.de	td1	gprs

- 2) The Server:

    If you use the GPRS Server provided by TAG Heuer Professional Timing, the following settings
    won't change:

    Please contact use on info tagheuer-timing.com if you need a new account.
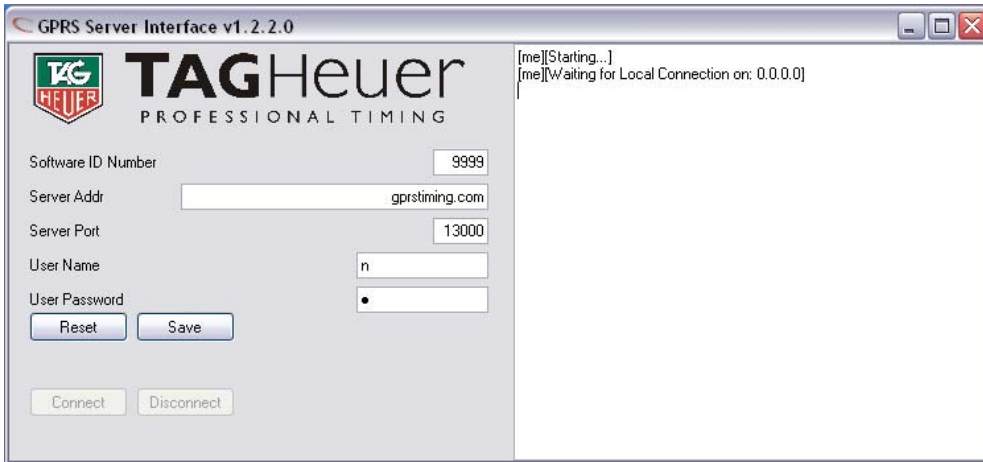
- 3) SIM Balance code:

    It's the Prepaid internet Data sim balance check.
    This call number (or code) is provided by your mobile broadband provider.

ATTENTION

    Ensure that you saved all settings inside your device.
    Wait until the printed information comes on the Chronoprinter 540

6.2. GPRS Computer interface
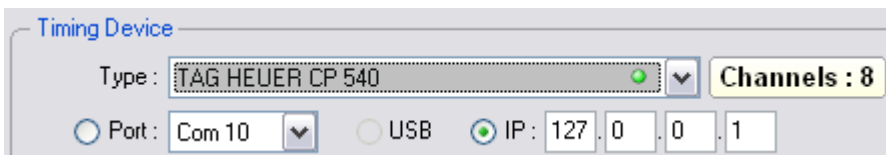
Fire up "GPRS Interface_vx.x.x.exe"

This Software should run on the background (local machine) as the Timing Software.

Software ID Number: Computer ID set on the server
Server Address: gprstiming.com
Server Port: 13000
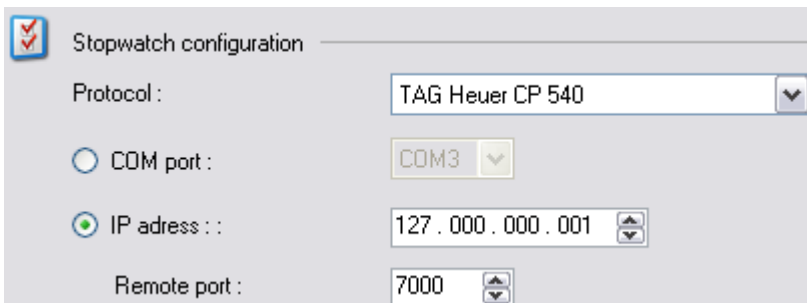User name and Password: Your personal account ID

6.3. Timing Software Setup

On your Timekeeping software: Set the Timing Device to CP540 with the IP Address 127.0.0.1 if the Software is running on the Computer were the CP540 Server is launched.

Setup in MSport Pro

Setup in Elite V3

The IP address **127.0.0.1** is a special purpose address reserved for use on each computer. 127.0.0.1 is conventionally a computer's *loopback* address. Network software and utilities can use **127.0.0.1** to access a local computer's TCP/IP network resources.

You are now ready to receive your Timing data with the GPRS linkage.

How to insert the SIM Card in the Docking

Use a Standard SIM Card (annual subscription) or with pre-payment.

To guarantee a bidirectional communication between CP 540's, it is necessary to have two GSM Docking stations, with SIM cards with a different telephone number.
Proceed to the following steps:
- Unscrew the 5 screws on the back of the Docking with a Phillips screwdriver N° 1.
- Carefully, remove the upper cover.
- Place the SIM Card from the top into the support, with the 45° angle at Top Left. Push the card gently downwards.

- Replace the upper cover, return the Docking and secure gently the 5 screws while checking that the two parts are well positioned. Press on the top of the Docking when you tighten the screws.

WARNING
Tighten all the screw slightly then, while being conscious that you screw in plastic, tighten a little more, without over tightening (risk of damage to the plastic).

We advise against the repeated opening and the closing of the Docking.
For the Pre-paid SIM Card, it is generally possible to top-up the SIM Card via the internet.

Choose a telecom company with wider broadcast coverage.

It is also possible to have a SIM Card with an annual subscription.

Do not forget to write your phone number on the back of the Docking (for top up prepaid cards)

7. Information

⇒ The GSM – GPS Docking has « banana » output connector to provide a signal TOP-MINUTE which is useful to synchronize other timing systems.
⇒ If the GPS is used only for the CP 540, it is recommended to wait 4 – 5 mins before to switching it OFF (« memorize » the GPS precision)
⇒ The GSM – GPS Docking has an Input / output « Master / Slave ». This mode of synchronization between several CP 540's is very useful for the timekeeper, to guarantee absolute precision between different systems.
For example: System A (Master) and the back-up system B (Slave).
Connect the CP 540 A « Master » to CP 540 B « Slave » with the special cable HL540-11.
The CP 540 A is synchronized with the Time of Day, manually or with GPS.
The CP 540 B is automatically synchronized by the CP 540 A by choosing Master/Slave in the Synchro Menu.
If the Main system A is disconnected or communication fails, the back-up system B will operate with its own time of base.

The Drift (DEV) described later « Synchronization by GPS » is also into the mode. Thus, if the Main System A is again operational, it will take its main function as Master if the Drift is lower that 100 µsec. All information is of course printed.

8. How to charge the Docking accumulator

- The Docking can be charged seperately or connected to a CP 540.
- Charge the docking with the power supply HL 540-1 from the CP 540
- Connect the power supply to the POWER connector of the Docking (connector 3 poles).
- The LED located at the bottom of the Docking allows you to see the charging status.
    - LED is red during the charge (6 hours for a complete charge)
    - LED is green when the docking is fully charged
- When the CP 540 is used with the Docking, the external power supply should be connected to the CP 540.

WARNING
The Docking should be not charged in temperatures lower than 0°C / 32°F.

Remarks:
The charging status of the Docking is displayed on the CP540 LCD if charged together.
If the Docking is too discharged, the batteries of the CP 540 will power the system. If the power is too low, the Time on the LCD will flicker and the printer will print « Low battery » before to switching OFF automatically.

When the charge indicator of the Docking shows 50% on the LCD (Docking Menu), you still have at least 4 hours of autonomy.

9. Technical specification

General
- o Operating condition   -20°C to +60°C
- o External power supply   12Vdc
- o Top minute output   (optocoupler)
- o Connector IN / OUT   for Master / Slave (2 x RJ13)

Accumulator
- o Type   7.4V Li-Po 2700mAh
- o Charging condition   0° to +40°C
- o Charging current   500mA (~5.5 hours)

GPS
- o Precision   +/- 50 n seconds (+/- 50 x 10-9 sec)
- o Current consumption when activated   30 mA (when GPS is actived)
- o 12 channels, continuous tracking receiver.
- o Connector for external antenna

GSM
- o Quad-band   EGSM 850 / 900 / 1800 / 1900 MHz
- o Output Power
  - Class 4 (2W) from 850 / 900 MHz
  - Class 1 (1W) from 1800 / 1900 MHz
- o Data transmission
  - CDS, 9600 Bds, V.92, V.110 (Modem)
  - GPRS Class 10
- o Standby consumption : 63 mA
- o Average consumption in Modem Mode: 197 mA
- o Connector for external antenna

TAG Heuer
PROFESSIONAL TIMING
6A Louis-Joseph Chevrolet
2300 la Chaux-de-Fonds
Switzerland
Tel : 032 919 8000
Fax : 032 919 9026

E-mail: info@tagheuer-timing.com
http: //www.tagheuer-timing.com