



TAG Heuer

PROFESSIONAL TIMING

HL 675 Data / Impulse Transmitter set

User Manual

Version 02/2015



1. Global

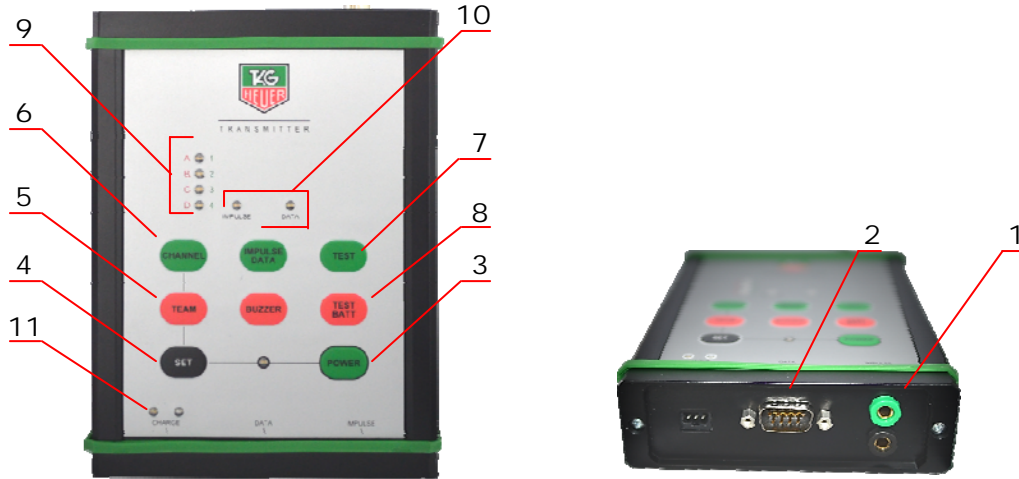
The Set HL 675 is ideal for transferring Timing Data and Impulses.

Its 500mW emitting power and its licence free frequency range (869 Mhz) makes this device a powerful and simple to use system.

- Data / Impulse transmission system (500 Mw) which does not require a licence (free of use) in Europe (ISM Band 869 MHz – **REC 70-03**).
- Each **Receiver** can receive Impulses (simultaneously or not) from 4 **Transmitters** identified by the function "**CHANNEL**" (1 to 4).
- Up to 4 Teams can work (train) in the same area without disturbing each other thanks to the function "**TEAM**" which offers the possibility to code each system (A, B, C, D).
- It is also possible to use up to 16 **transmitters** with 4 **receivers**.
- When the **receiver** is switched on, it is possible that one or more green LED's are on before that the **transmitter(s)** start to transmit. This detection system allows visualization of the quality of the received signal, but also the possible interferences coming from other radio transmission systems. If it is not possible to stop these interferences by moving the **receiver**, the transmission of Impulse cannot be guaranteed.

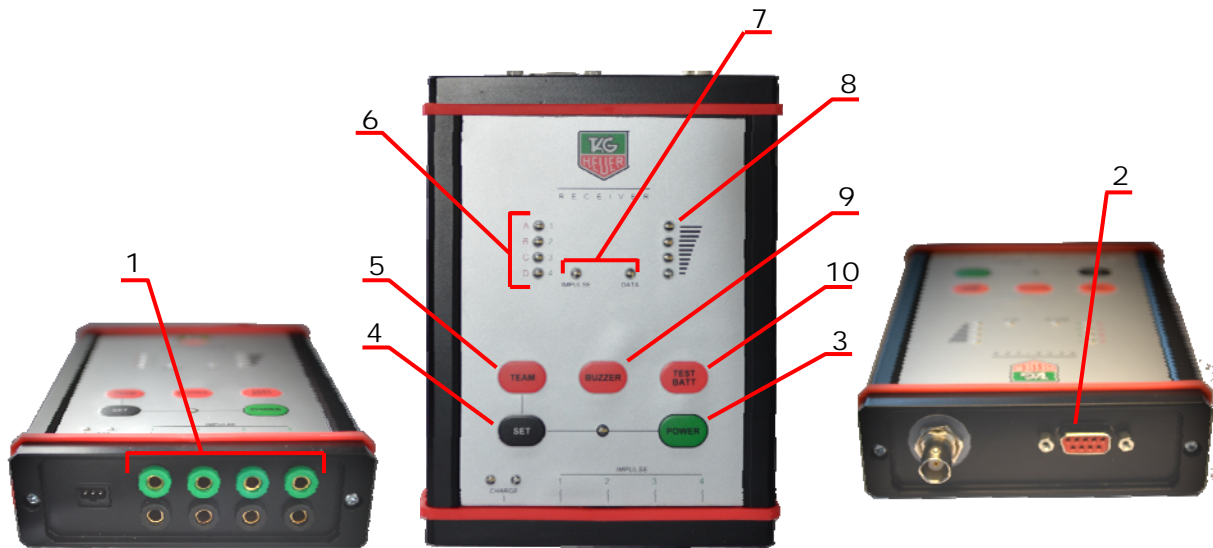
1. Functions

1.1. The Transmitter :



- 1. IMPULSE** Input for timing Impulse (Start gate, photocell – working / closing contact). Respect the polarities.
- 2. DATA** Male Sub-D 9: RS232 input for DATA transfer
- 2. POWER** To switch on the **receiver** (press for 3 seconds on **POWER**). The green LED is on.
To switch off the **receiver**, hold down SET and press **POWER**.
- 4. SET** To program the **TEAM (A, B, C, D)** and to switch off the **receiver**. Hold down **SET** during the changes.
- 5. TEAM** To check the programmed **TEAM**.
To change the code, hold down **SET** and press **TEAM**.
- 6. CHANNEL** To check the programmed **CHANNEL**.
To change the **CHANNEL**, hold down **SET** and press **CHANNEL**
- 7. TEST** For testing the Impulse transmission only. The reception level will be displayed for 0.2 seconds on the receiver. You'll also get an Impulse on the programmed output.
- 8. TEST BATT** To check the state of the battery. Press **TEST BATT** : The Battery level will be displayed with the 4 LED's for 2 seconds.
- 9. LED** LED control panel which shows the programmed **TEAM** or **CHANNEL**. Also shows the transmitted Impulse.
- 10. LED** Shows the transmission mode : **IMPULSE** or **DATA**
- 11. CHARGE** Charging status Leds.
The red led indicates that the battery is charging.
The charge is completed as soon as the green LED in on

1.2. The Receiver



1. **IMPULSE** Output for timing Impulse (Start gate, photocell – working / closing contact). Respect the polarities.
2. **DATA** Female Sub-D 9 : RS232 Output
3. **POWER** To switch on the receiver (press for 3 seconds on **POWER**). The green LED is on. To switch off the receiver, hold down **SET** and press **POWER**.
4. **SET** To program the **TEAM (A, B, C, D)** and to switch off the receiver. Hold down **SET** during the changes.
5. **TEAM** To check the programmed **TEAM**. The green LED corresponding to the code **A, B, C** or **D** is on. To change the code, hold down **SET** and press **TEAM**.
6. **LED** LED control panel which shows the programmed **TEAM** or **CHANNEL**. Also shows the Received Impulse.
7. **LED** Shows the transmission mode : **IMPULSE** or **DATA**
8. **LED** LED control panel which shows the Receiving Level and/or possible interferences created by other radio signals.
9. **BUZZER** To enable or disable the Buzzer
10. **TEST BATT** To check the Battery status. The Level will be displayed with the 4 LED's for 4 seconds:
 - 4 LED's on = 80-100%
 - 3 LED's on = 60-80%
 - 2 LED's on = 40-60%
 - 1 LED on = 20-40%
 - 1 LED on = 0-20% power remaining

2. Battery Charging

Each device has a Lithium-Polymer battery with supply 2100 mAh. Those batteries may be charged with our charger HL540-10 or other 12V charger with a minimum of 800 mA.

For charging the battery we advise you to use our OEM TAG Heuer charger

Using another model may cause some trouble or harm the device.

- For charging, turn off the system.
- Connect the charger on the mains
- Plug the charger into the device
- The red LED will be on during the charge

IMPORTANT :

Always charge the devices by temperature above 32°F (0°C) and below 86°F (30°C)

The red LED lights during the charging process, when fully charged, the red LED shuts down and the green LED will light on.

For a fully charged Battery it may take approx. 5 hours (for a completely discharged battery)

WARNING

Never connect the terminals of the battery in short-circuit.

To avoid keeping the battery pack fully loaded or completely discharged for a long period, which reduces the lifespan of the battery. In the case of prolonged non-utilization of the battery pack, it is necessary keep the system in a dry room, after a normal discharge.

In case of a reduced capacity of the battery pack, even after the load, leave the system ON a whole night to obtain a complete discharge, then recharge the battery pack completely. Renew the battery pack if the problem continues.

3. Software Update

With the Firmware (already used with the Chronoprinter 545 and the Minitimer HL440) able you to change the transmission mode and Update your device.

New firware for the HL 675 are available free of charge on our website: www.tagheuer-timing.com

For this application you need :

- The RS232 cable (HL605-10)
- A computer fitted with a D-Sub9 RS232 Output
- The software « FirmwareManager.exe »

How to proceed

1. With the radio switched « OFF » connect the external power Connect the RS232 between your computer and the HL 675
2. Run «FirmwareManager.exe »

3. Select the correct COM Port
4. Browse and select the correct file (Rx/Tx)
5. Push START on the screen
6. Turn on the HL 675 (hold down for 5 seconds « ON »
The HL 675 will enter in a special setup mode
7. Until the file downloaded then, validate with « OK »

Hands on: Reinitialize your devices

If the systems are in a unknown mode, you can Initialise your system in the OEM configuration (**Channel 1, Team A, Buzzer On, Baud Speed 9600bps, Mode Impulse**). Push simultaneously **SET** and **TEST BATT** for 3 seconds.

All LED's will flash and the system will beep until it is reinitialized.

4. Technical Specification

General

- Impulse response precision: +/- 1/10'000 sec
- Transmitting delay: 200ms
- Frequency : 869 MHz **REC 70-03**
- Power 500 mW
- Autonomy (at +68°F / 20°C) 24 hours (1 Impulse per min.)
8 hours (THbC data transm.)
1 data string each 4 sec.
- Impedance : 50 Ohms
- Antenna 1/4 Wavelength 2.5dBi
- Impulse Input Short-Circuit / Working contact
Respect the polarity
- Impulse Output 4 separated outputs
Isolated by an opto-coupler
Manages up to 4 simultaneous inputs
- Channel : 4 different channels (1,2,3,4)
- TEAM function : 4 different codings (A,B,C,D)
- Normal use temperature between - 4°F (-20°C) and +131°F (+55°C)
- Charging temperature between +32°F (0°C) and +86°F (+30°C)
- Size (without antenna) 152 x 108 x 34 mm
- Weight : 470g / radio
- Power supply : 12 V DC / 800 mA min

Lithium-Polymer Battery

- Type 12V Li-Pol 2000mAh
- Charging current 800mA minimum (~ 5 hours)

Charger HL540-10

- Primary 230V - 50Hz - 125mA
- Secondary 12V – 1250 mA

Warranty :



One year after delivery of your purchase

The warranty is null and void under the following conditions:

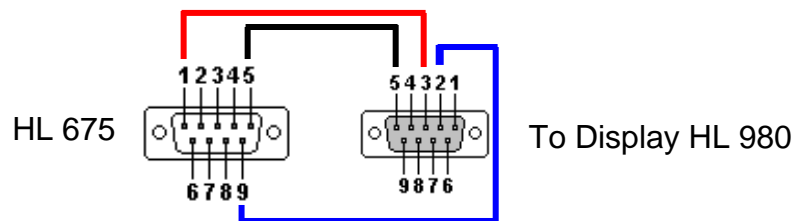
- if the battery is out of order

- Poor maintenance and obvious physical damage
- Input or Outputs damaged by poor connection
- If the device was opened without factory authorization

THE INSTALLATION INCLUDES:

- 1 Plastic case which can store up to 5 Devices
- 1 to 4 **Transmitters**
- 1 **Receiver**
- 2 to 5 antennas
- 1 Charger 100-240 VAC / 9VDC
- 1 User manual
- 1 Velcro strap per transmitter

5. Special pinout for Displays HL980 and HL960 / 990

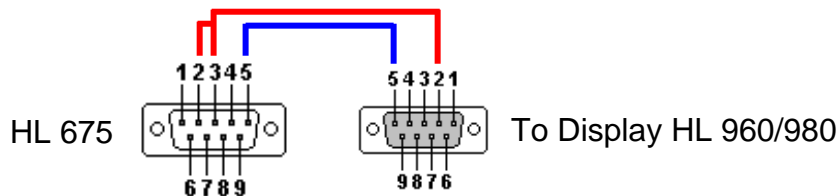


6. Special Pinout for TX activating

Our radios are equipped with a PNP Transistor on their output.

This is an IT Standard which also allows us to ensure good autonomy.

Some devices only work with an RX pin and Ground. In order to activate this transistor and initiate the external data from the radio you need to energise the Transistor with an external power supply or a charged condenser.



7. Pinout

Transmitter (male socket)

- 1 NC
- 2 Radio RxD (RS232)
- 3 Radio TxD (RS232)
- 4 RS485 Signal B
- 5 GND
- 6 NC
- 7 RS485 Signal A
- 8 NC
- 9 NC

Receiver (female socket)

- 1 RS485 Signal A
- 2 Radio TxD (RS232)
- 3 Radio RxD (RS232)
- 4 NC
- 5 GND
- 6 NC
- 7 NC
- 8 NC
- 9 RS485 SIGNAL B



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