Global Solution for Athletics
Global Timing Solution

TAG Heuer, the leader in prestigious sports watches and chronographs since 1860, is one of the largest and fastest growing luxury Swiss brands. The Swiss brand draws upon its active engagement in the world of sports to create the most accurate timekeeping instruments in the world. From the Olympic Games in the 1920s to its role as official timekeeper to within 1/10,000th of a second for the legendary Indy 500 from 2004 to 2006, TAG Heuer, in a constant quest for innovation and precision continues to aim ever higher, as reflected by its recent partnership with Chronelc, the well-known transponder company.

Thanks to this expertise and know-how, TAG Heuer pioneered one of the first certifications for Timing devices in the sport industry with the FIS (International Ski Federation) followed by the FEI (Fédération Internationale d’Equitation) and the FIM (Fédération Internationale de Motocyclisme). Today, complemented by the "TAG Heuer by Chronelc" products and the brand new TAG Heuer by Lynx photo-finish camera, the range of timing devices available to the timekeeping world is unique, modular, and expandable to provide "Global Timekeeping Solutions" for the most demanding sports events.

Transponder’s Technology

Originally developed for the timekeeping of radio-controlled car races during the mid-80s by pioneers sure as Pierre Rousseau from Chronelc, automatic timing with transponders is today the precise and faster measurement of time of all racing competitions at the same time.

The system is composed of detection loops installed in the ground. Each competitor is mapped to a unique transponder, and every time this transponder passes one of the loops, their identity is mapped to a time. This system can identify, at precisely the same time on the loop, many cars or motorbikes passing the finish line in the same thousandth of a second.

Photocells’ Technology

The infra-red photocell is the older electronic timing technology. Unveiled in the mid-end of the 60s by pioneers, sure as Jack Heuer who introduced a prototype of the Slalom Timer at the Basel Watch Fair 1952. It was the company’s first quartz chronograph accurate to 1/100th of a second. In 1966, the TAG Heuer’s CEO advanced further with the introduction of the Microtimer, the world’s first miniaturized electronic timing instrument accurate to an extraordinary 1/1,000th of a second.

The Photocell’s technology is used for single-channel usages, and as back-up system to the transponders technology.

Photo-Finish’s technology

The digital timing photo finish camera provides camera provides images, with a time precision up to 1/10,000th of a second. Developed in America in 2003, by Lynx Systems Developers, and first used by TAG Heuer for the Indy Racing league IRL championship in 2004, this technology complements and counter-verifies data from existing transponder systems.

In very close finishes, the margin of error in the times recorded by the transponder technology can exceed the margin of victory. In those situations, the ability of the TAG Heuer by Lynx cameras to take 10,000 images a second is invaluable to ensure fair and accurate results.

There are also occasions when due to damage caused by accidents or collisions, transponders cease to function or become physically detached from the vehicle. In sure situations, since it provides images and times for each competitor on every lap, the camera system can act as a back-up lap timing system.
Track & Field Training Solution

- MiniDisplay HL975-S
- Wireless Photocell HL 3-131
- Noise detector HL 556
- Radio Impulse HL 615 – 100mW
Track & Field Basic Training Solution

- Minitimer HL 440
- Wireless Photocell HL 3-131
- Noise detector HL 556
- Radio Impulse Receiver HL 615-Rx
Track & Field Advanced Training Solution

- Chronoprinter 545
- Wireless Photocells HL 3-131
- Radio Impulse Receiver HL 615-Rx
Track & Field Advanced Wireless Training Solution

In a bag pack HL 310
- MiniTimer HL 440
- Wireless Photocells HL 3-131
- Radio Impulse Receiver HL 615-Rx
Track and Field Personal Training Solution

- Pocket Pro Athletics HL 400-A / HL 400-4
- Wireless Photocells HL 3-131
- Radio Impulse Reciever HL 615-Rx
Chronoprinter
CP 545

Launched in 2008, the Chronoprinter 540 has revolutionized timing of events where photocell technology solutions are used. Multiple timekeeping modes, and a high-accuracy time base ensures reliable measurements of up to 1/100’000 second. This concentration of technology and innovation provides an intuitive solution to meet and exceed all timekeepers’ needs, from local and National events right up to and including World Championship events.

Today, capitalizing on this symbolic product of the TAG Heuer Professional Timing range, TAG Heuer have once again pushed the limits and boundaries of timing technology and launched the new Chronoprinter 545.

Building on the success of the previous CP 540 and combining all the features already present on the CP 540, TAG Heuer have concentrated timekeeping knowledge and feedback from timekeepers all over the world from many sporting disciplines to bring you additional benefits and features including:

- 3 new timing modes to complement the 10 existing modes on the Chronoprinter. They allow its use without constraints in Show Jumping race timing (single phase, immediate Jump-off, and 2 phase competition)
- Internal memory has been increased to 30'000 times: past race data all retained in memory
- Multi-language function has been integrated
- Connectivity has been expanded with the addition of a USB port
- Now accepts rechargeable batteries: the economic and ecological benefit is undeniable
- This stand-alone, multi-sport timing device is supplemented by a free version of the Elite V3 timing software

With the exception of the slight color alteration to the aesthetics, the design of the new Chronoprinter 545 retains the same cosmetic and physical characteristics as the CP540.

This new timing device remains compatible with the standard existing protocols and Docking Station accessories.

CP 545 – TECHNICAL SPECIFICATIONS

General
- Stand-alone multi-sport timing system
- Timing calculation (Speed) to the 1/1'600'000 sec.
- Timing resolution (Printer – PC) from 1 sec. to 1/100’000 sec.
- Memory of 30'000 times and 99 timing sessions
- Sequential Nr / Competitors Nr from 1 to 9.999

Time base
- Thermo-compensated quartz 12.8 MHz
- Precision: +/- 0.5 ppm at 25° C
- Precision: +/- 1.5 ppm between -30°C and +65°C

Inputs / Outputs
- Four Inputs with banana jack for Timing impulses
- COMPUTER / Bidirectional RS232 or to drive external display
- ETHERNET and USB
- Extension port for Docking

Power supply
- Internal: five NiMH Sanyo 1.2V / 2Ah
- External: 12 V DC by adaptor (HL540-1) or 12 V battery

Autonomy
- 6'000 printed times with one battery set

Dimensions / Weight
- 270 x 100 x 65 mm
- CP 545 without transport case: 860g. (with batteries and 1 paper roll)
- CP 545 with transport case and power supply: 1'800g.

Display
- Matrix LCD display with backlighting
- Eight information lines with 21 characters
- Adjustable contrast and brightness
Minitimer
HL 440

The Minitimer HL 440 is a professional timing system with 4 inputs using the same « high technology » as our Chronoprinter 540. It is an essential general-purpose timer for many applications.
The HL 440 is a very high precision “time base”, ideal to communicate bi-directionally with a computer.

With the integrated matrix LCD display the user is able to view all datas and informations.

The Minitimer can be connected to our Martel HL 200 printer to enable the printing of all sequential timing informations.

Thanks to the integrated keyboard, the HL 440 can be used at the start line of a race (Ski) as a numerical-keyboard to identify the competitor’s number, which will be transmitted to the timekeeper with the complete timing information (PC or Printer).

It is also useful for events which do not necessarily require log printing of times (such as Jumping) and is also useful as a backup timer.

The Minitimer can be connected to a second system or to a Chronoprinter 540 to provide up to 8 input channels.

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**Technical specifications**

- **Timing resolution (printer – PC)**
  user selectable from 1 sec to 1/100’000 sec
- **Memory**
  30’000 times and 99 timing sessions
- **Sequential N°/ competitor N°**
  from 1 to 9’999
- **Inputs**
  Four banana jack inputs
- **Outputs**
  RS232 to PC
  Printer
- **Display**
  Matrix LCD display
- **Time Base**
  Thermo-compensated quartz 12.8 MHz
- **Precision:**
  +/- 0.5 ppm at 25°C
  +/- 1.5 ppm between -30°C and +75°C
- **Internal power supply**
  Accumulator Li-ion
- **External power supply**
  12 VDC by adaptor (HL540-1) or 12 VDC Battery
- **Operating time**
  38 hours (1 Impulse every 5 seconds)
POCKET PRO
ATHLETICS
HL 400-A

The Pocket Pro Athletics App, Pocket Pro HL400-A, gives users access to timekeeping functions dedicated to the timing of motor sports / race tracks.

The innovative and bespoke application, get the three specifics modes provide the user the ability to time and monitor activities including the Beep/Bleep test, Interval Training and Sprint Training

All times are memorised and can be recalled and visualised for each competitor.

The Pocket Pro electronic stopwatch is the latest in TAG Heuer's Professional Timing development regime. In addition to the three exclusive timing modes dedicated to Athletics, this 1/100th second handheld timepiece also encompasses standard stopwatch modes, including Split / Lap time measurement, countdown, and memorising of the time of the day.

Together with its integrated USB connector; free POCKET MANAGER application and Pocket-Pro 800 measurements internal memory, the device makes the downloading, analysis, printing and archiving of results extremely simple.

• Timing Mode

• Time Of Day (Time)
• Count Down
• Split / LAP
• Sprint Training with up to 4 split times
• Interval Test
• Beep / Bleep Test (Shuttle Run)

Technical specification

• Power 5 VCD
• Internal battery 600mAh / 3.7V
• Autonomy 35 days (in function)
• Shell Aluminium – PVD surface treatment
• Weight 160 g
• Precision +/- 2 sec / month
• Calibration available
• Display LCD 3 lines of 6 characters
• Battery level / Timing Mode
• Size of characters 7mm height
• Accuracy 1/100 seconds
• Memory 800 stored times
• Temperature range -20°C to +60°C
100mW Wireless Photocell HL3-1x

Ultra High Precision and quality electronics, high-performance lenses, lightweight and durable aluminium housing: TAG Heuer Timing’s new 100mW Wireless photocell has the best of in-house technology and heritage with over 20 years of continuous development.

Above all, the latest generation of photocells has an integrated 100mW Wireless module with a range of over 1000m, thus removing any need for cabling external devices such as the ChronoPrinter.

All the above being technical feat in itself, TAG Heuer Timing have further enhanced the photocell portfolio by integrating the Infra-red transmitter with the wireless feature to offer a complete wireless solution with a wide ranging Infra-red range operation to cater for wide finish lines up to a distance of up to 80 meters.

The HL3-1x solution is ideal for sports including motor sport, active sports, winter sports and equestrianism all demanding reliable, high accuracy, simple set up and low maintenance.

Synonymous with use for various world record attempts the TAG Heuer photocells equally find themselves at home in local competition.

Kit HL3-131
- 100mW Wireless photocells with Reflector : up to 20 m (65 ft.)
Kit HL3-135
- 100mW Wireless photocells with Infra-red Transmitter : 40 to 80 m (130 to 260 ft.)
Kit HL3-132
- 100mW Wireless double photocells with Infra-red Transmitter : 40 to 80 m (130 to 260 ft.)

Technical specifications

General  High frequency infra-red (32.768kHz)
Principle  Detection of signal by frequency discrimination
Distance for use  up to 20 meter (65 fts) with reflector (HL3-131)
  up to 40 meter (130 fts) in LOW Position
  up to 80 meter (260 fts) in HIGH Position Output Impulse
  By optocouplers and working contact / open collector
Working temperature - 20°C to + 50°C
Interne battery  Li-Pol 3.7V 3800mAh (+ power supply 7.5V 650mA – HL3-1)
Autonomy Wireless Photocell  Approximately 330 hours at 20°C
Autonomy Infra-Red Transmitter  LOW Position: 210 hours
  HIGH Position: 100 hours
Precision  Fixed delay 200ms, +/- 0.5/10’000 sec (+/- 0.02 ms)
Output Lock Time:  Wireless ON : 200ms / Wireless OFF : 10ms
Dimensions  150x80x40 mm
Weight  800 gr
Type of emission : ISM Band– 868 MHz
Power : 100 mW
Rang  1 km under optimal conditions, direct view
100mW WIRELESS PHOTOCCELL HL3-1x family
100mW Impulses
Transmission System
HL 615

TAG Heuer presents a revolutionary wireless transmission system at a very affordable price.

This new radio impulse transmission system offers decisive advantages for all timekeepers involved with training, testing or parallel (dual) events.

This innovative system HL 615 allows up to 4 simultaneous transmissions of timing impulses with only one receiver connected to the timer!

Main features

- Low power transmission (100mW) for use without license (868MHz).
- Range of up to 1km in direct view. Depending of the topography, the range can be reduced.
- Up to 4 Teams are able to work in the same area without disturbing each other. Each Receiver can be programmed and receive the impulses of 4 Transmitters.
- Due to its low power (100mW), this system may be disturbed by other transmission systems

Technical Specifications

HL615-1 Transmitter:
- Battery CR123A-1400mA/3V
- 1 input for timing impulses (banana plug)
- 4 programmable channels (1 to 4) for identification of the transmitters
- Programmable Team codes (1 to 4)
- Acoustic signal for each transmitted timing impulse
- «BATT» key to check the status of the battery
- «TEST» key for transmission test
- Water-resistant aluminium case
- Dimensions: 132x57x32 mm
- Weight: 175gr

HL615-2 Receiver:
- Rechargeable batteries (autonomy of 24h at 20°C)
- 4 opto-isolated outputs (banana plugs)
- Programmable Team codes (1 to 4)
- 4 LEDs to indicate the relative radio signal strength
- 4 LEDs to identify channel and team programming
- Acoustic signal for each received timing impulse
- Fixed repetitive delay of 100ms to the timer, with accuracy better than 0.13 ms.
- ON/OFF power button
- Water-resistant aluminium case
- Dimensions: 182x82x32 mm
- Weight: 380gr
100mW IMPULSES
TRANSMISSION SYSTEM
HL 615
Microphone Sensor
HL 556

- The HL 556 sensor detects and converts a sound signal into impulses. This device has an adjustable sensitivity threshold.

- This impulse generator is designed for to integrate with all TAG Heuer timing systems and adapt its application in each sport, sciences or industry.

- Connected to our Chronoprinter CP 540 or the Minitimer HL 440, this device is ideal to measure a reaction delay: the gap between a start signal (Start lamp etc..) and a pistol shot for example.

Technical Datas:

- Sound detector with dynamic microphone.
- Adjustable detection threshold
- Power supply: 9V type 6LR61
- PVC casing IP54 with Screw-thread fixation: ¼ inch (fits on our HL5 and HL4 series)
- Bandwidth: 100 to 10000 Hz
- Max sensitivity at 1metre (3.3 feet) 55 dB
- Min sensibility at 1metre (3.3 feet) 105 dB
- Mounts on tripod
Microphone Sensor
HL 556