TAGHeuer by Chronelec Timing Systems

Global Solution for Motor Cycling

FIM

TAGHeuer by Chronelec

APPROVED PRODUCT 2010/2012

EN_0810

TAGHeuer
PROFESSIONAL TIMING

A new and unrivalled Timekeeping Total solution.

Today, TAG Heuer more than ever confirms its status as the reference in the universe of motor racing. From Jo Siffert to Kimi Räikkönen and Lewis Hamilton, from Scuderia Ferrari to Vodafone McLaren Mercedes, from FIA F1 to Le Mans and Indy 500, TAG Heuer's historic partnerships with the greatest, finest and fastest events, teams and drivers in motor racing are unparalleled in the world of timekeeping.

TAG Heuer's involvement is stronger than ever: the reference standard for high-level sports chronographs and timing instruments since 1860 has joined forces with Chronelec, a leader in the transponder market, to push timing technology to a new extreme of precision and offer a "Timing complete products platform and solutions" to the most prestigious sports .

Partnering with Chronelec represents a bold new step in TAG Heuer's relentless pursuit of the ultimate in precision timekeeping. Both brands and expertises are a perfect fit. Chronelec provides cutting-edge transponder technology to prestigious and utterly complex events such as the 24 Hours of Le Mans and the Le Mans Series Championship. Coupled with the TAG Heuer peerless heritage — Official timekeeping instruments for the Olympic Games in the 1920s and again in the 1980's at Moscow and Lake Placid, Official Timekeeper of the Scuderia Ferrari from 1971 to 1979, Team McLaren Official Timekeeper since 1985, the F1 World Championship from 1992 to 2003 at the 1/1000th of a second, the Indy Racing League from 2004 to 2006 and the Race of Champions since 2005 at the 1/10.000th of a second — together, TAG Heuer and Chronelec are going to bring about impressive innovations in the world of timekeeping.

The TAG Heuer–Chronelec partnership agreement is the first collaboration of its kind in the world, and demonstrates the determination of two superlative timekeeping specialists to combine forces and push again the frontier of timing technology .

Thanks to its partnership with Chronelec, TAG Heuer has drawn up all its timing know-how and professionalism to produce unique timing total solutions, combining ultimate precision and unsurpassed reliability. All of them are modular and expandable and will satisfy the most demanding timekeeping requests, confirming TAG Heuer's extensive knowledge and experience in the field of highly precise time measurement for sport.

They are an invitation to the constant quest for ultimate precision.

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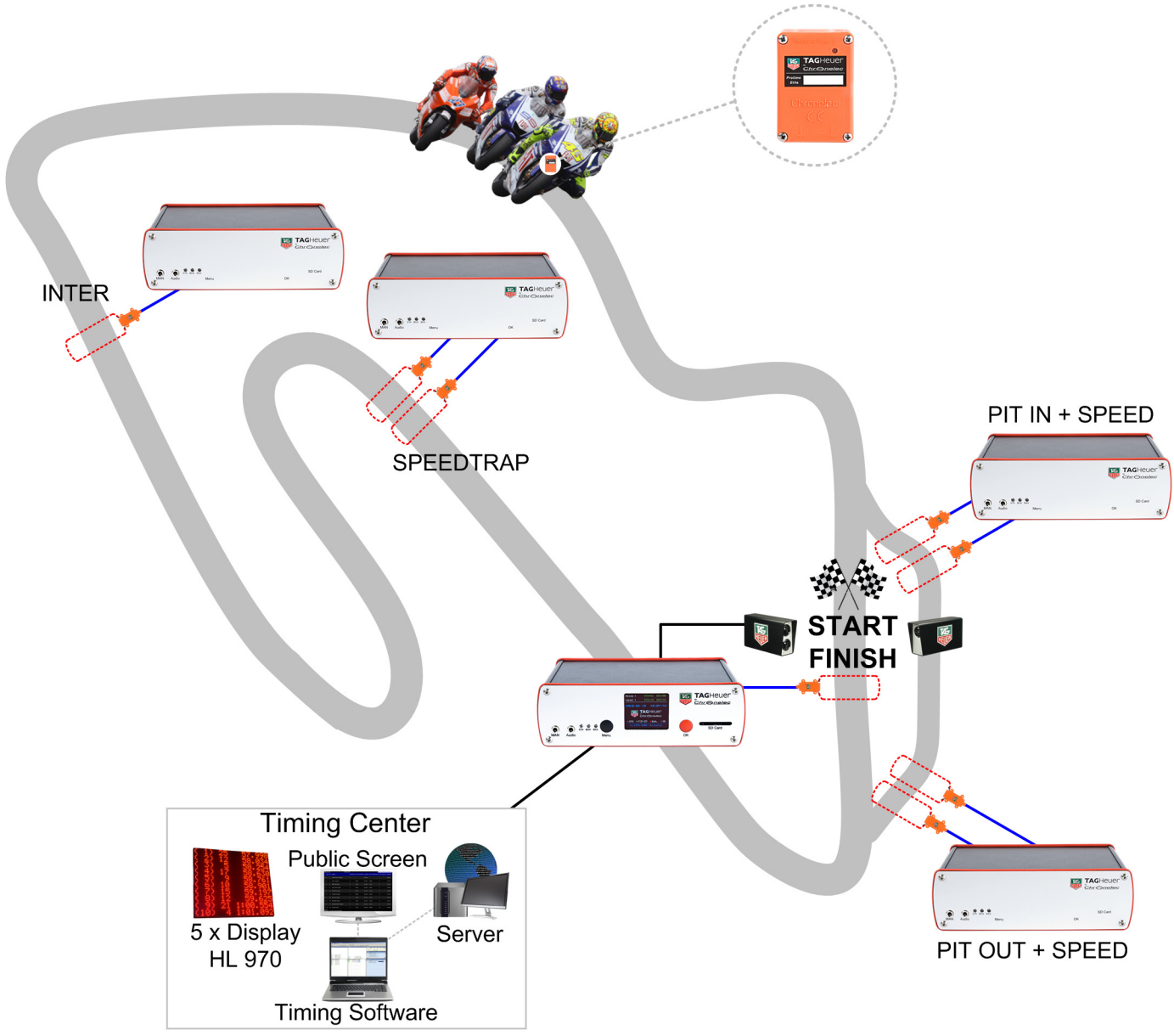
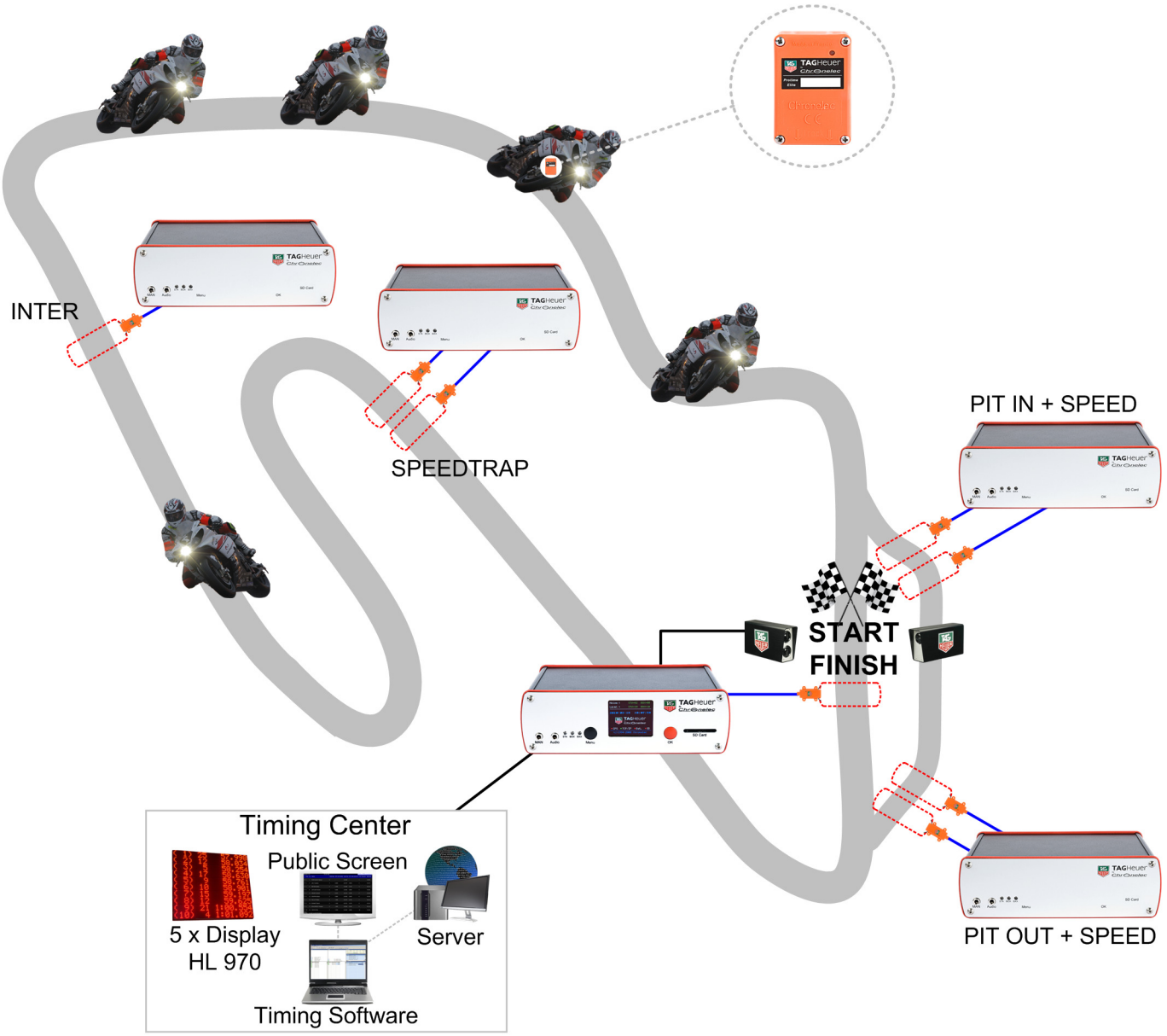
Road Racing Solution

- Decoder Elite
- Decoder Distant
- Tranponder Elite
- Chronoprinter 540
- Photocell HL 2-35
- Full Matrix Display HL 970



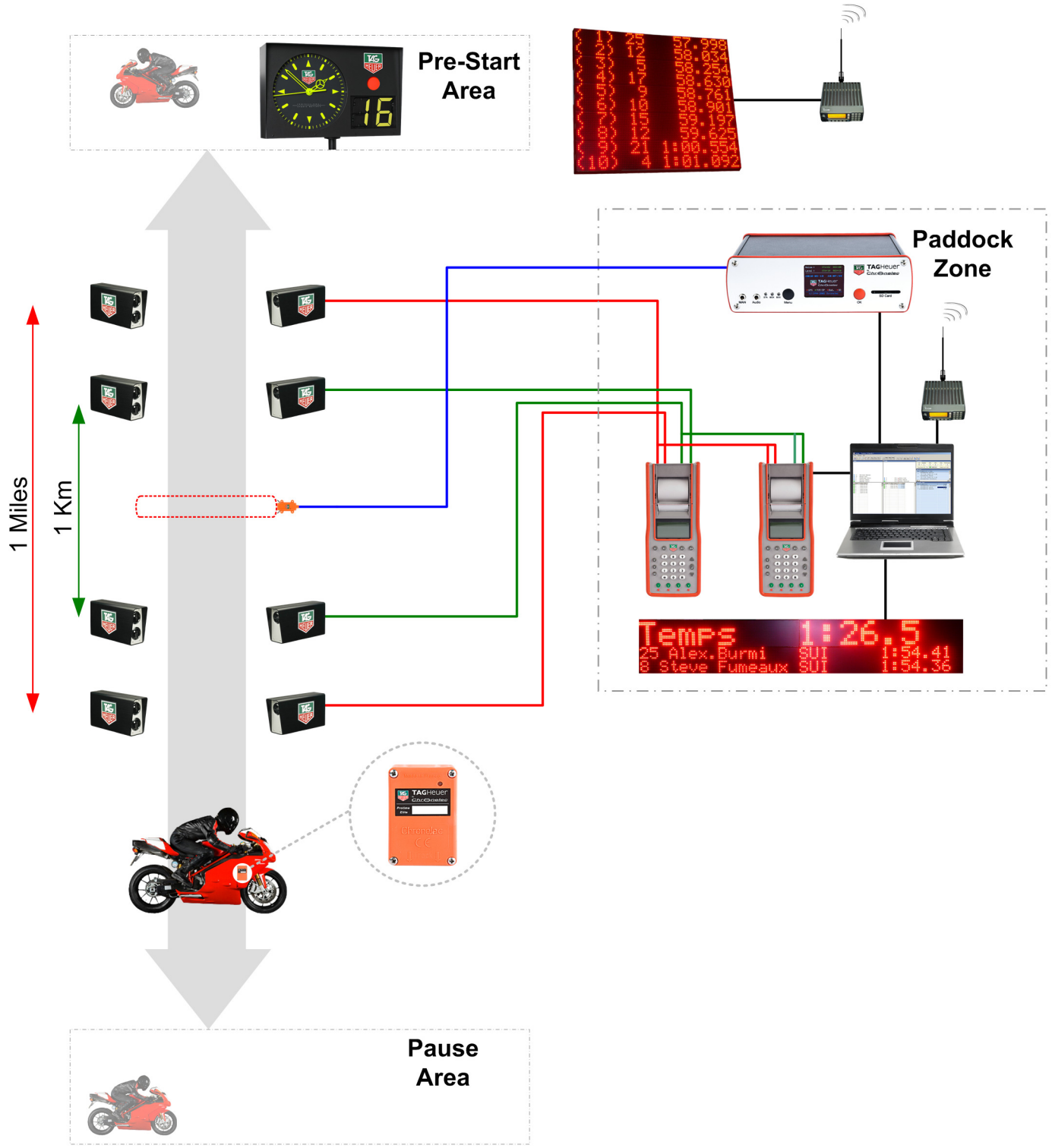
Endurance Solution

- Decoder Elite
- Decoder Distant
- Tranponder Elite
- Chronoprinter 540
- Photocell HL 2-35
- Full Matrix Display HL 970



FIM World Record Solution

- Chronoprinter 540
- Photocells HL 2-35
- Decoder Elite
- Tranponder Elite
- Start Clock HL 930
- Full Matrix Display HL 970



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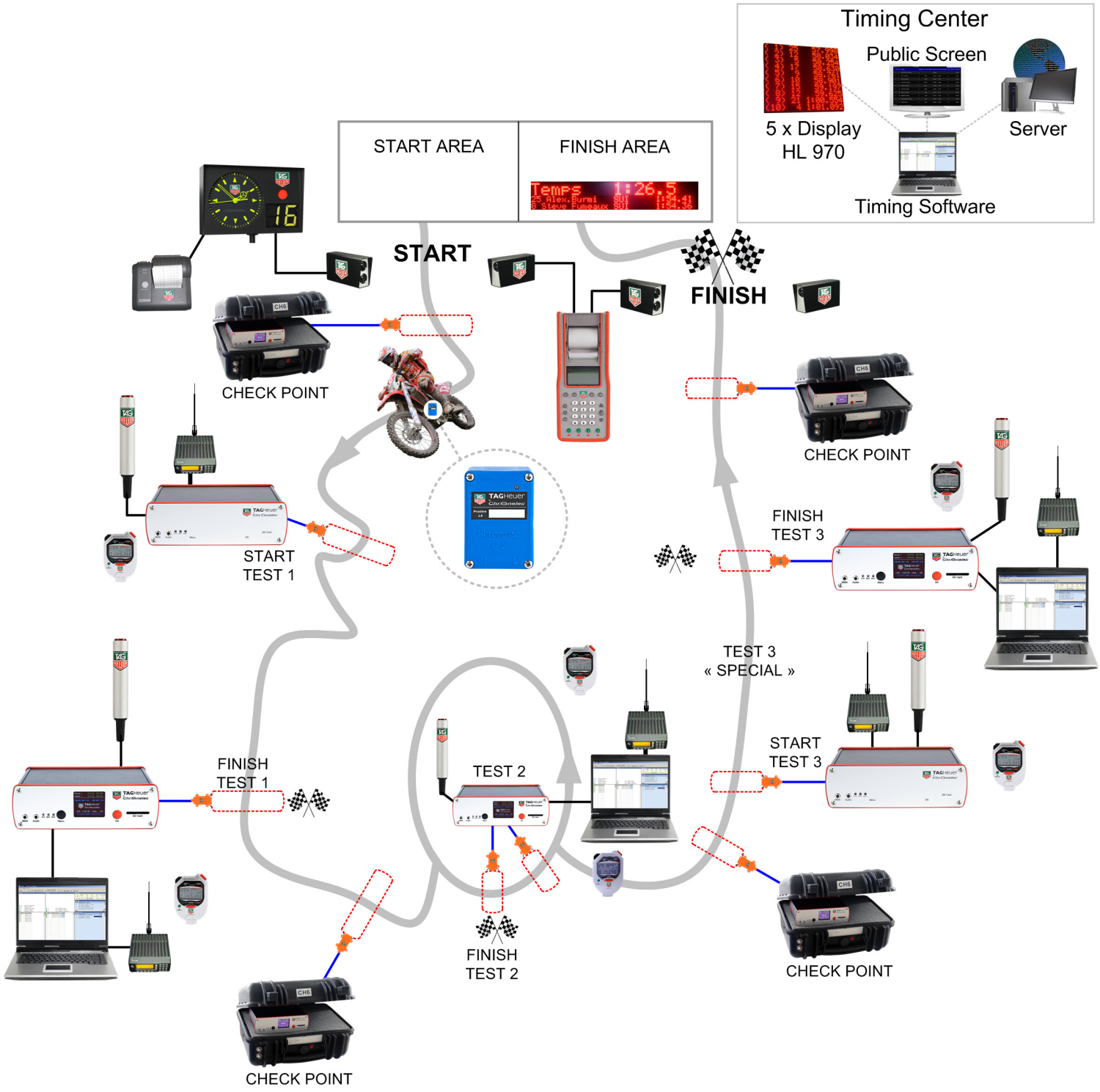
Enduro Solution

- Decoder Elite
- Decoder Distant
- Autonome Case – Check Point
- Transponder LS
- Manual contact HL 18
- Chronoprinter 540
- Start Clock HL 930 + Printer HL 200
- Photocells HL 2-35
- Microsplit MS 200
- Matrix Display HL 970



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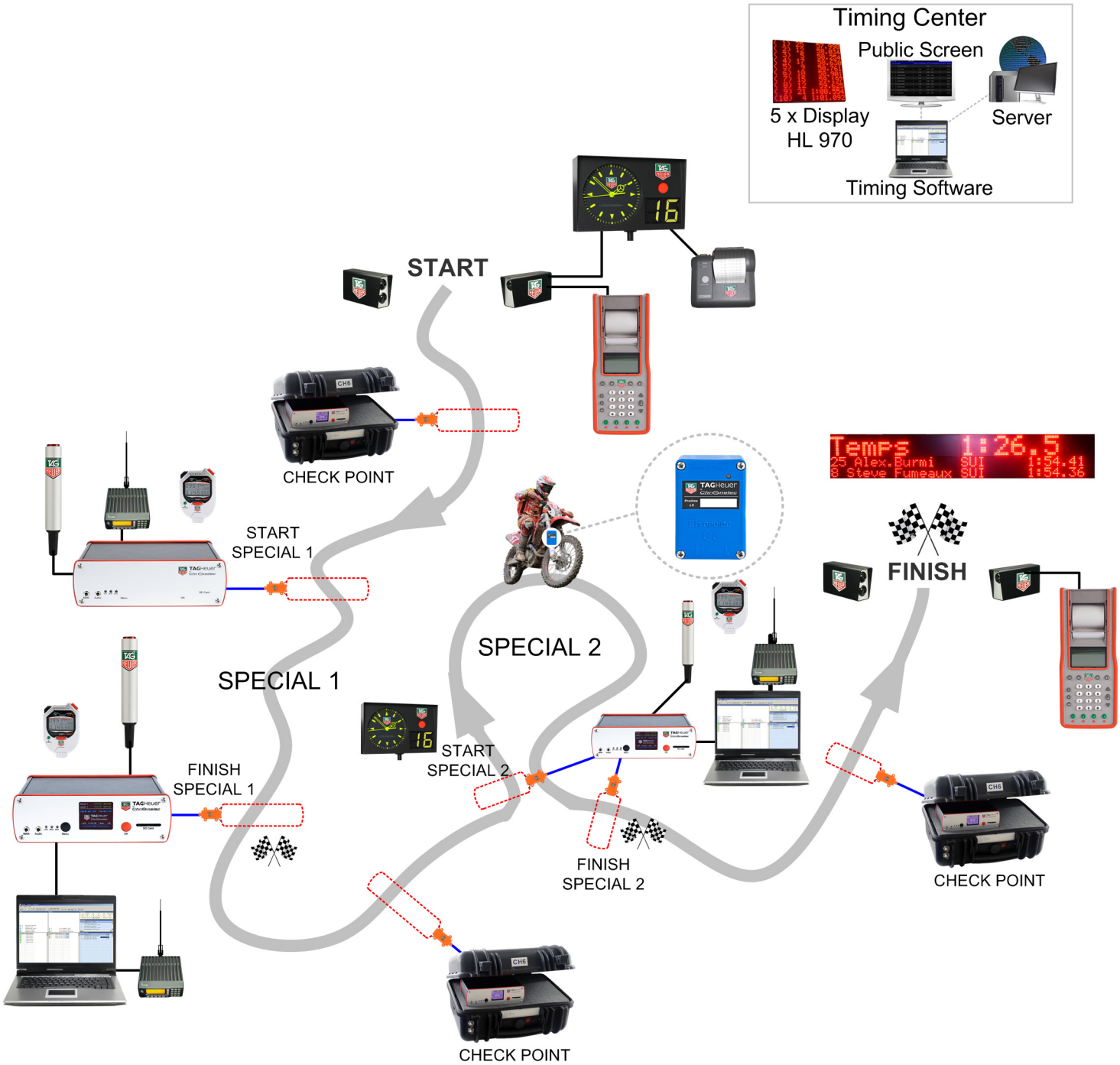
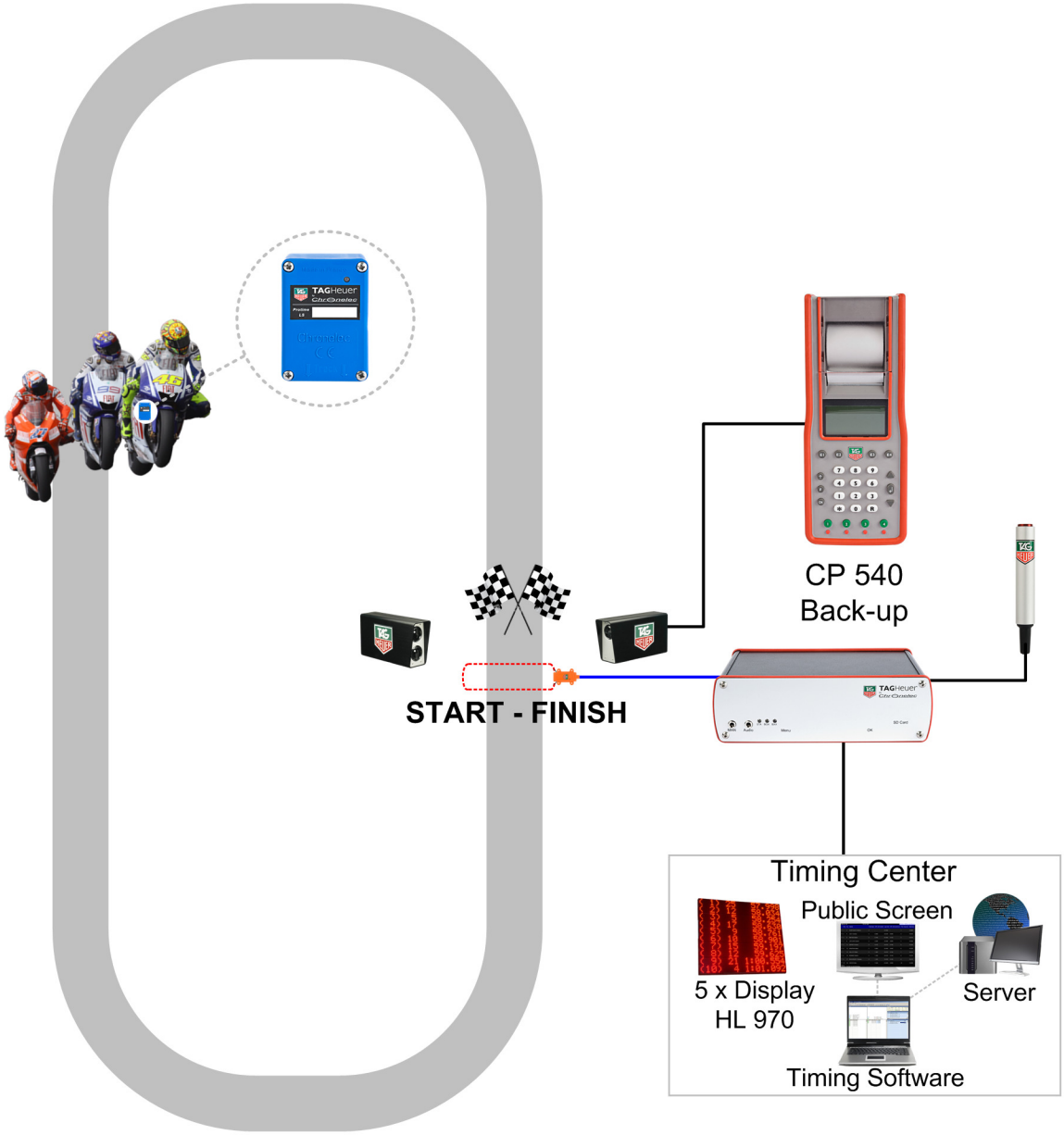
Cross Country Rally Solution

- Decoder Elite
- Decoder Distant
- Autonome case – Check Point
- Tranponder LS
- Chronoprinter 540
- Start Clock HL 930
- Photocells HL 2-35
- Full Matrix Display HL 970
- Microsplit MS 200



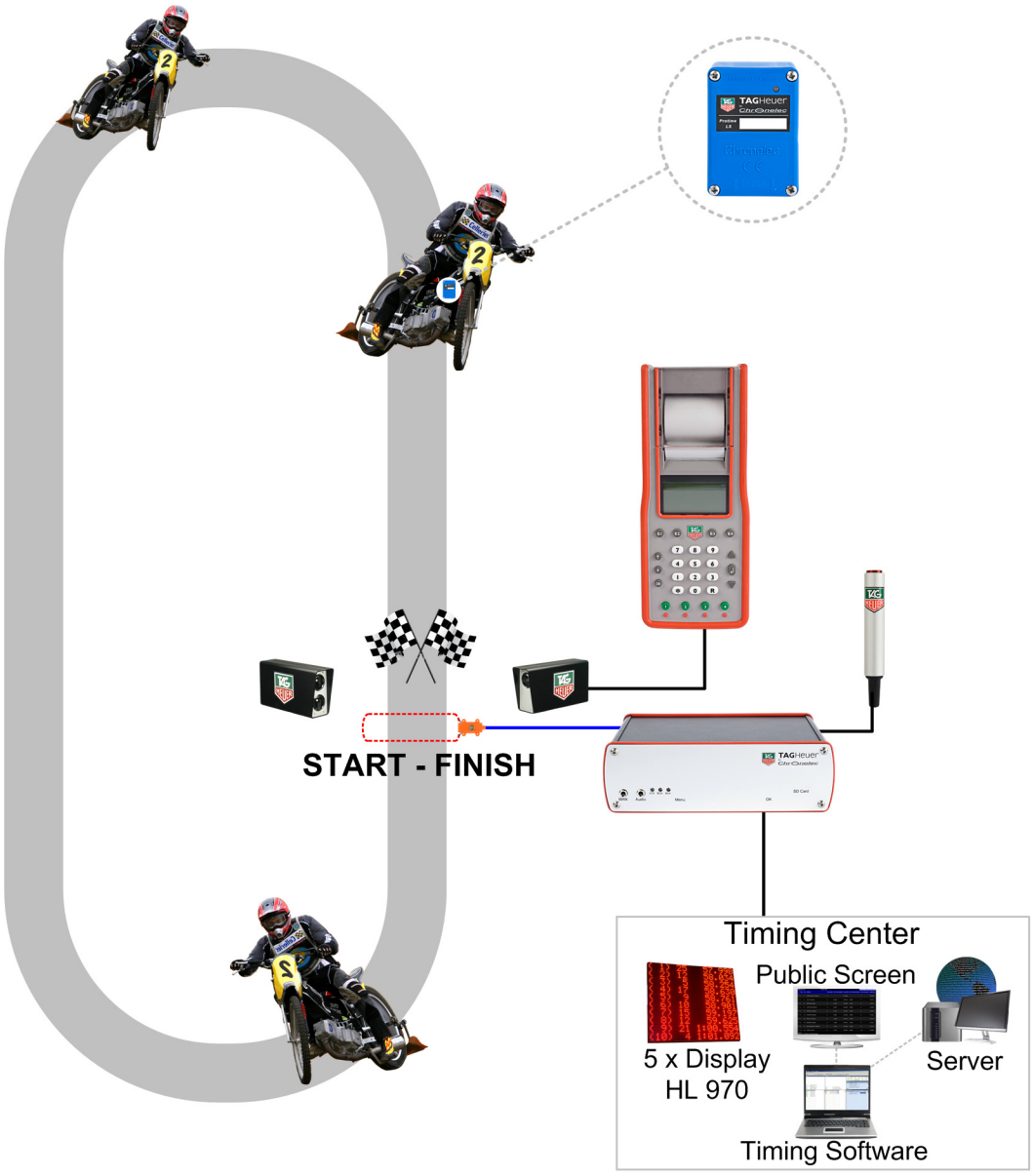
Speedway Solution

- Decoder Protime
- Tranponder LS
- Chronoprinter 540
- Photocells HL 2-35
- Full Matrix Display HL 970



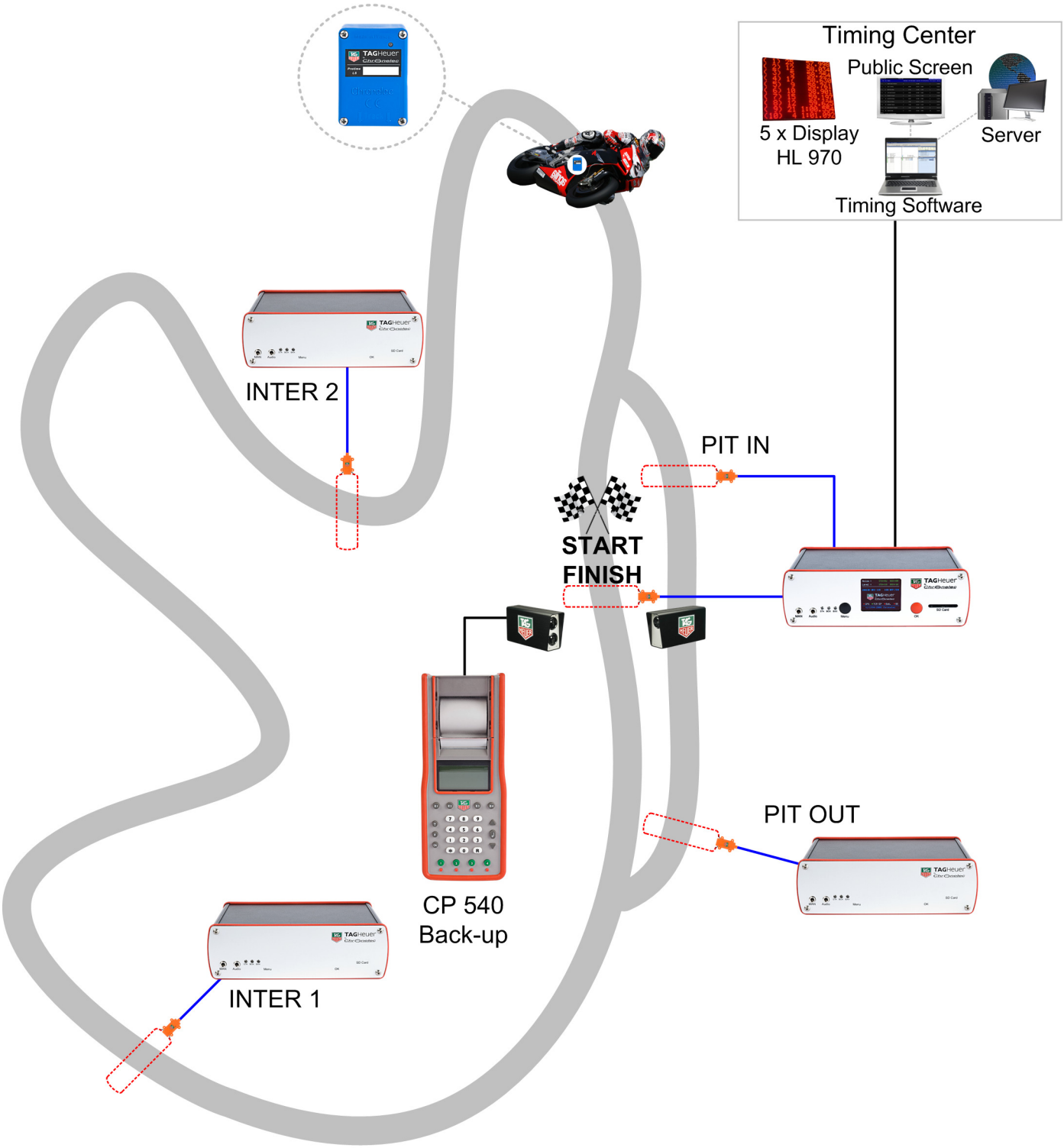
Longtrack Solution

- Decoder Protime
- Tranponder LS
- Chronoprinter 540
- Photocells HL 2-35
- Full Matrix Display HL 970



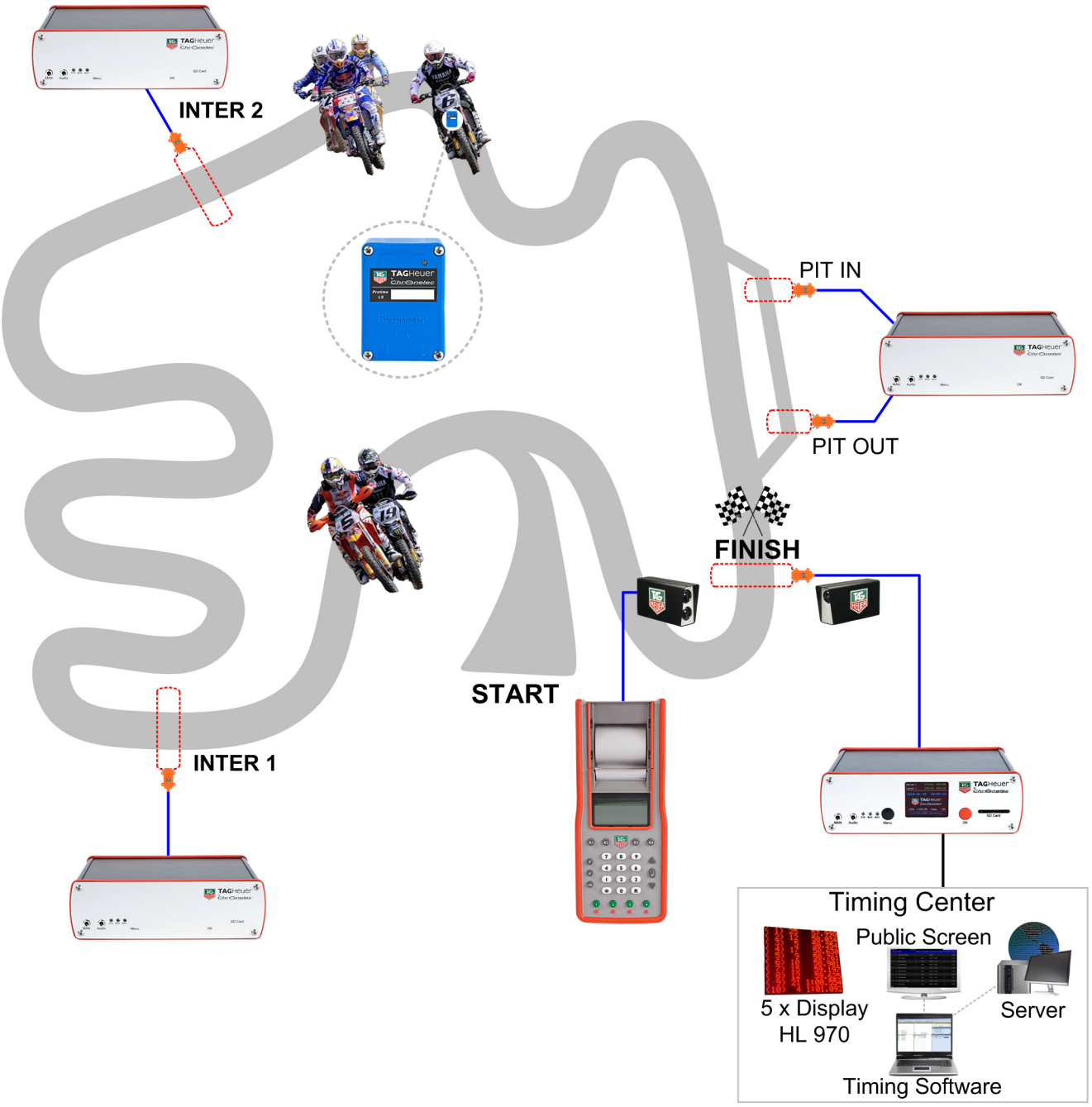
Supermoto Solution

- Decoder Elite
- Decoder Distant
- Transponder LS
- Chronoprinter 540
- Photocells HL 2-35
- Full Matrix Display HL 970



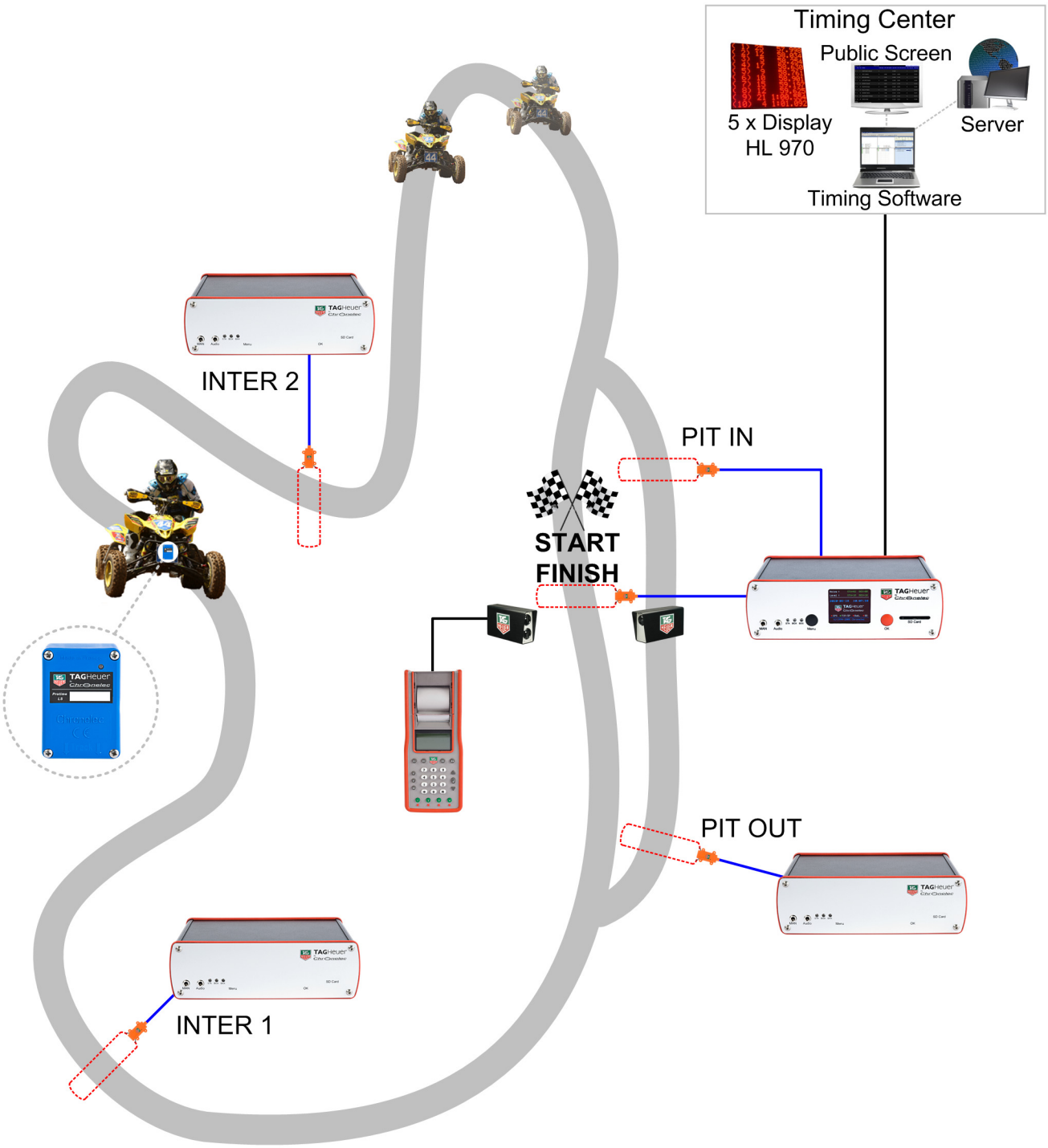
Motocross Solution

- Decoder Elite
- Decoder Distant
- Transponder LS
- Chronoprinter 540
- Photocells HL 2-35
- Full Matrix Display HL 970



Quad Solution

- Decoder Elite
- Decoder Distant
- Transponder LS
- Chronoprinter 540
- Photocells HL 2-35



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PROTIME ELITE DECODER

Protime Elite
Decoder

- Color display
- GPS synchronization
- Resolution : 0.001 sec.
- SD Card removable memory
- Emergency power supply integrated
- Until 32 loops management

Description

The Protime Elite decoder is especially used in races that require an accurate timing to the 1/1'000th of a second.
The decoder stores all competitor's passing's on SD card, allowing a restore in case of problems or missed passing's.
An internal battery ensures the functioning of the decoder during a power failure, while continuing to function for 2 hours.
The graphic OLED display shows useful information such as the noise level, the loop detection level, the last transponder ID. It also displays the race time or day time, which can be synchronized by GPS or by the computer.
The decoder has a TCP/IP and RS232 interface for the communication with the computer.

Connections

2 loops input (track loop and pitlane loop)
1 photocell input
1 manual input (to simulate a transponder passing)
1 audio output (beep for each transponder passing)
1 AUX output (intermediate loops)
1 RS232 output
1 Ethernet output (IP address)

Detection loop

Maximum width of the track (passive loop) : 25 m (82 ft)
Maximum width of the track (active loop) : 10 m (33 ft)
Maximum length of the coaxial cable : 100 m (330 ft)

Compatible products

- Protime ELITE Pro, ELITE, LS, RK, RCS transponders
- Active and Passive loop
- Distant decoder

3 Year Warranty

Specifications

Clock stability
Oscillator TCXO 0.5 ppm

Power
12 VDC via adapter

Temperature range
-20 to 55 °C (-4 to 131 °F)

Dimensions
160 x 100 x 52 mm
6.3 x 3.9 x 2 in

Resolution
0.001 s

GPS Synchronization

SD Card (stores all passings time)

Intermediate loops (1 to 32)

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PROTIME DECODER

Protime
Decoder

- Accuracy
- Saves passing
- 100 % reliability
- TCP/IP interface
- Resolution : 0.001 s

Description

The Protime decoder is used in general by karting tracks or in addition, it can serve as backup with a Protime Elite decoder.

This decoder does not have SD card to store passings but it has a small memory to store up to 2000 passings.

The decoder has a TCP/IP and RS232 interface for the communication with the computer.

Connections
1 loop input (track loop)
1 photocell input
1 manual input (to simulate a transponder passing)
1 audio output (beep for each transponder passing)
1 AUX output
1 RS232 output
1 Ethernet output (IP address)

Option
1 loop input

Detection loop
Maximum width of the track (passive loop) : 25 m (82 ft)
Maximum width of the track (active loop) : 10 m (33 ft)
Maximum length of the coaxial cable : 100 m (330 ft)

Compatible products
- Protime ELITE, LS, RK, RCS transponders
- Active and Passive loop

3 Year Warranty

Specifications

Clock stability
Oscillator TCXO 0.5 ppm

Power
12 VDC via adapter

Temperature range
-20 to 55 °C (-4 to 131 °F)

Dimensions
160 x 100 x 52 mm
6.3 x 3.9 x 2 in

Resolution
0.001 s

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DISTANT DECODER

Distant Decoder

- Time accuracy
- Depending on the Elite decoder
- Saves passings
- Resolution : 0.001 s
- Secure Communications Protocol

Description

This decoder provides **intermediate times** on a circuit. The decoder can be connected with a RS485 network or a radio network.
A secured dialog enables the main decoder to receive every passings recorded by the distant decoder. Up to 32 distant decoders can be used on your circuit.
By using two loops with one distant decoder, you can measure an instantaneous passing speed. The test center of F1 BMW Miramas in France, Madras India, FFSA (French Federation of Auto Sport) has used this configuration for many years.

Connections
1 loop input (finish line)
1 photocell input
1 manual input (to simulate a transponder passing)
1 audio output (beep for each transponder passing)
1 AUX output (red lights, horn)
1 RS485 or RS232 output

Option
2 loops input (Speed Trap)
1 GPS synchronisation
1 SD Card reader

Detection loop
Maximum width of the track (passive loop) : 25 m (82 ft)
Maximum width of the track (active loop) : 10 m (33 ft)
Maximum length of the coaxial cable : 100 m (330 ft)

Compatible products
- ELITE PRO and ELITE decoder

Specifications

Clock stability
Oscillator TCXO 0.5 ppm

Power
12 VDC via adapter

Temperature range
-20 to 55 °C (-4 to 131 °F)

Dimensions
160 x 100 x 52 mm
6.3 x 3.9 x 2 in

Resolution
0.001 s

3 Year Warranty

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Autonomous Decoder

Autonomous Decoder

Description Autonomous Decoder

Since 2004, Chronelec has developed autonomous decoders. These decoders allow managing checkpoints for Rally and Enduro

Each decoder is delivered in a waterproof suitcase with a 12 hours' autonomy battery. A numeric clock panel can be connected to the suitcase in order to display the time of day.

All check time are saved on a SD card. A ticket is printed and given at each competitor's passings. When the checkpoint is closed, reading all passings from SD card allow to compute penalty.

This system is used by the FFM (French Federation of Motorcycling) for enduro and rally championships.

Features Autonomous Decoder

Connections :

- 2 loops input (track loop and pitlane loop)
- 1 cell input
- 1 manual input (to simulate a transponder passing)
- 1 audio output (beep for each transponder passing)
- 1 RS232 output
- 1 TCP/IP output

Specification :

- Clock stability : Oscillator TCXO 0.5 ppm
- Power : 12 VDC via adapter
- Temperature range : -20 à 55 °C (-4 à 131 °F)
- Dimensions : 160 x 100 x 52 mm (6.3 x 3.9 x 2 in)
- Resolution : 0.001 s

Options available :

- GPS synchronization
- SD Card (stores competitors passings)
- Starting time display
- Red / Green lights
- Numeric clock panel

Detection loop :

- Maximum width of the track (passive loop) : 25 m (82 ft)
- Maximum lenght of the coaxial cable : 100 m (330 ft)

3 years warranty

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PROTIME ELITE TRANSPONDER

Protime Elite Transponder

- 4 days autonomy
- 14 – 18 hours charging time (without memory effect)
- Transponder is powered down in its charger
- The detection is done up to 360 km/h
- Identification of the driver (optionnal)

Description

The Protime Elite transponder is recommended for fast vehicles (cars, motorbikes ...).
This transponder is delivered with a NiMH battery or with a direct connection to the vehicle's battery. When the transponder is in the charger, the power down is automatic, which offers an autonomy of several months. Only one charge per year is necessary to maintain the transponder in condition. The information on the level of charge is sent to the decoder when the transponder passes over the loop.
The rechargeable transponder has a 5 days autonomy when it is continuously used. A tricolour LED indicates the level of charge and the autonomy. The autonomy is shown by 1 to 4 flashes every 10 sec.:

- 4 green flashes for a 75 to 100% autonomy
- 3 green flashes for a 50 to 75% autonomy
- 2 green flashes for a 25 to 50% autonomy
- 1 green flash for a 10 to 25% autonomy
- 1 red flash for a 0 to 10% autonomy (< 24 hours)

The LED turns red when the transponder is in charge and turns green when the charge is complete.

Features

NiMH battery

- Autonomy : 5 days
- Charging time : 14 – 18 hours (without memory effect)

Specifications

- Emission : magnetic induction
- Maximum speed : 360 km/h (225 mph)
- Maximum height of detection : 2,80 m (9 ft)
- Temperature range : - 20 °C to + 70 °C (-4 to 158 °F)
- Dimensions (with NiMH battery) : 65 X 44 X 22 mm (2.6 x 1.7 x 0.9 in)
- Dimensions (with 12V Power) : 68 X 27 X 23 mm (2.7 x 1 x 0.9 in)
- Weight : 80 g (2.8 oz)

Related products (only for rechargeable transponder)

- Suitcase charger for 40 transponders and/or individual charger
- Holder and arise

3 Year Warranty

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PROTIME LS TRANSPONDER

Protime LS
Transponder

- 5 days autonomy
- 14 - 18 hours charging time (without memory effect)
- Transponder is powered down in its charger
- The detection is done up to 200 km/h
- 2.80 m in height detection

Description

The Protime LS transponder is recommended for competition Karting, motocross, quad, kart cross...
This transponder is delivered with a NiMH battery or with a direct connection to the vehicle's battery.
When the transponder is in the charger, the power down is automatic, which offers autonomy of several months. Only one charge per year is necessary to maintain the transponder in condition.
The information on the level of charge is sent to the decoder when the transponder passes over the loop.
The rechargeable transponder has 5 days autonomy when it is continuously used. A tricolour LED indicates the level of charge and the autonomy. The autonomy is shown by 1 to 4 flashes every 10 sec.:

- 4 green flashes for a 75 to 100% autonomy (>= 7,5 days)
- 3 green flashes for a 50 to 75% autonomy (>= 5 days)
- 2 green flashes for a 25 to 50% autonomy (>= 2,5 days)
- 1 green flash for a 10 to 25% autonomy (>= 1 day)
- 1 red flash for a 0 to 10% autonomy (< 24 hours)

The LED turns red when the transponder is in charge and turns green when the charge is complete.

Features

NiMH battery

- Autonomy : 5 days
- Charging time : 14 – 18 hours (without memory effect)

Specifications

- Emission : magnetic induction
- Maximum speed : 200 km/h (125 mph)
- Maximum height of detection : 2,80 m (9 ft)
- Temperature range : - 20 °C to + 70 °C (-4 to 158 °F)
- Dimensions (with NiMH battery) : 65 X 44 X 22 mm (2.6 x 1.7 x 0.9 in)
- Dimensions (with 12V Power) : 68 X 27 X 23 mm (2.7 x 1 x 0.9 in)
- Weight : 80 g (2.8 oz)

Related products (only for rechargeable transponder)

- Suitcase charger for 40 transponder and/or individual charger
- Holder and arise

3 Year Warranty

TAG HEUER TAGHeuer by Chronelec

TAGHeuer
PROFESSIONAL TIMING

CHRONOPRINTER
CP 540

Chronoprinter
CP 540

“Innovation and avant-garde give rise to excellence”

TAG Heuer has gathered all its timing know-how and professionalism to produce this new timing device, resolutely dedicated to the future, combining high technology and precision.

The CHRONOPRINTER CP 540 is the culmination of many unique design advantages, confirming TAG Heuer’s extensive knowledge and experience in the field of highly precise time measurement for sport.

FLEXIBILITY

The numerous integrated timing modes sur as NET TIME, PARALLEL SEQUENTIAL or PARALLEL, TRAINING, SPEED, LAP, SPLIT/LAP will satisfy the most demanding timekeeper. The CP 540 is able to accommodate the majority of sports disciplines operating as a stand-alone unit.
When connected to a PC running TAG Heuer’s extensive range of race management software, it is also the ideal time base for all professional sports-timing.

PRECISION

The CP 540’s precision time base and buffered inputs guarantee measurements accurate to 1/100,000 of a second.

SIMPLICITY

The hallmark of TAG Heuer timing philosophy. The operator has only a few essential keystrokes to master. Mistakes are kept to a minimum, and recovery from errors quick and painless.

COMFORT

The large graphic LCD display with backlighting affords very clear vision of the timing information in all situations. The ergonomic, intuitive, snap-action keyboard provides well-spaced and extremely precise keys. The timekeeper will easily navigate the keyboard, even with gloves on.

DESIGN

The originality of the design of the CP 540 is obvious. The choice of the materials with its robust ergonomics have been carefully studied and developed for durability in any environment.

EXPANDABILITY

The CP 540 can be programmed with future and even custom timing modes through its exclusive bi-directional connection with a PC.

DOCKING STATION

Three docking stations are available: « ACCU », « ACCU + GPS » and « ACCU + GPS + GSM »

CP 540 – 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 25'000 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
- Extension port for Docking

Power supply

- Internal: five alkaline 1.5V batteries (AA)
- 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 540 without transport case: 860g. (with batteries and 1 paper roll)
- CP 540 with transport case and power supply : 1'800g.

Display

- Matrix LCD display with backlighting
- Eight information lines with 21 characters
- Adjustable contrast and brightness

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START CLOCK
HL 930

Start Clock
HL 930

There are many new innovative features on this Start Clock that uses a special 3-motor analogue movement developed entirely by TAG Heuer

- The operation of the start clock is based on a microprocessor that checks the exact position and alignment of the clock hands every minute to ensure a total precision and reliability of the Official Time.
- Digital “Count-down” display for every start accompanied with acoustic “beeps” and the colour changes of a rotating disk that indicates valid start periods (red, green and yellow available depending on sport regulations).
- Complete control by the operator for start interval changes during the competition.
- START / STOP function for start processes.
- An Input for timing signals (from start gates or photocells) allows the HL 930 to take and memorize every start time in sequential order.
- An RS 232 serial data port can be used to connect a dedicated printer (such as the PTB Printer) to print in hard copy all recorded start times as they happen.
- The differences between the start times and the ideal times are also printed.
- The RS 232 data port also serves as a way to control the function parameters of the HL 930 start clock.
- A supplementary output provides control signals for signal lights or additional loud speaker.
- Rechargeable batteries assure excellent operational duration down to – 25° C.
- Automated Time Setting is assured by a built-in time management system where the accuracy is controlled by GPS synchronization signals.
- Option: remote Control.

TECHNICAL SPECIFICATIONS

General
- An integrated GPS receiver ensures the exact synchronization to the official time-of-day at your location.
- In addition to the analogue movement, two seven-segment numeric indicators visually countdown the remaining seconds to each start interval.
- Further, another indicator comprised of a rotating red, green and yellow disk provides information on start validity.

Time Base
- 16 MHz Thermo compensated Quartz
- +/– 0,5 ppm at 68° F (20°C)
- +/– 2,5 ppm from –22° F (-30°C) to 167° F (75°C)

Temperature Range
- 77° F (-25° C) to + 167° F (75° C)

Power Supply
- Internal: 12V DC rechargeable battery
- External: 12-18V DC source

Autonomy
- 18 hours at 68° F (20° C)
- 8 hours at –90° F (-20° C)

Dimensions/Weight
- 6 kg alone (11,5 kg with transport case)
- 320 x 500 x 115 mm
- Clock face diameter: 270 mm
- Digits height: 110 mm

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PHOTOCELL 80m
HL 2-35

Photocell 80m
with transmitter and receiver
HL 2-35

« For maximum reliability »

TAG Heuer's extensive experience in the development of infrared photocells has led to the production of highly reliable and precise instruments that are very stable in adverse conditions.

- Timing line width up to 40 meters in "LOW" power position and up to 80 meters in "HIGH" power position.
- An indicator lamp visible through a separate lens in the receiver element allows one person to easily adjust the alignment from the opposite side of the timing line.

Recommended use

- For professional timekeeping applications where timing line width exceeds 20meters.

Technical specifications

General

- Infrared type photocell using a coded modulated frequency of 32.7 kHz. Triggering detection by frequency discrimination

Operating type and Distance limits

- Transmitter / Receiver Type, up to 80 Meters

Output Trigger

- Infra-red photocell with internal or external power supply and 2 functions modes:
- IMPULSE mode with adjustment of duration of the output impulse (standard mode).
- DIRECT mode with timing impulse which correspond to the breaking of the Infra-Red beam. This mode makes possible the control of the good functioning and alignment of the photocells.

Reaction Time

- Less than 0.5 ms

Precision

- +/– 0,02 ms for repetitive impulses

Internal Power

- Three alkaline batteries type 1.5V (AA) for each (Tx / Rx)

External Power

- 6-12 VDC via 4-pole bayonet type jack.

Autonomy at 20° C

- About 100 hours

Operating Temperature

- –20° C to + 70° C

Indicators

- LED diodes for batteries and alignment.

Mounting

- Fitted for standard photographic ¼" tripod or TAG Heuer mounting brackets HL 4 / HL 4-3

Dimensions

- Hot-lacquered black aluminium case 150 x 80 x 40 mm

Weight

- 800 gr. complete set
- All photocell sets are delivered in their own transport case

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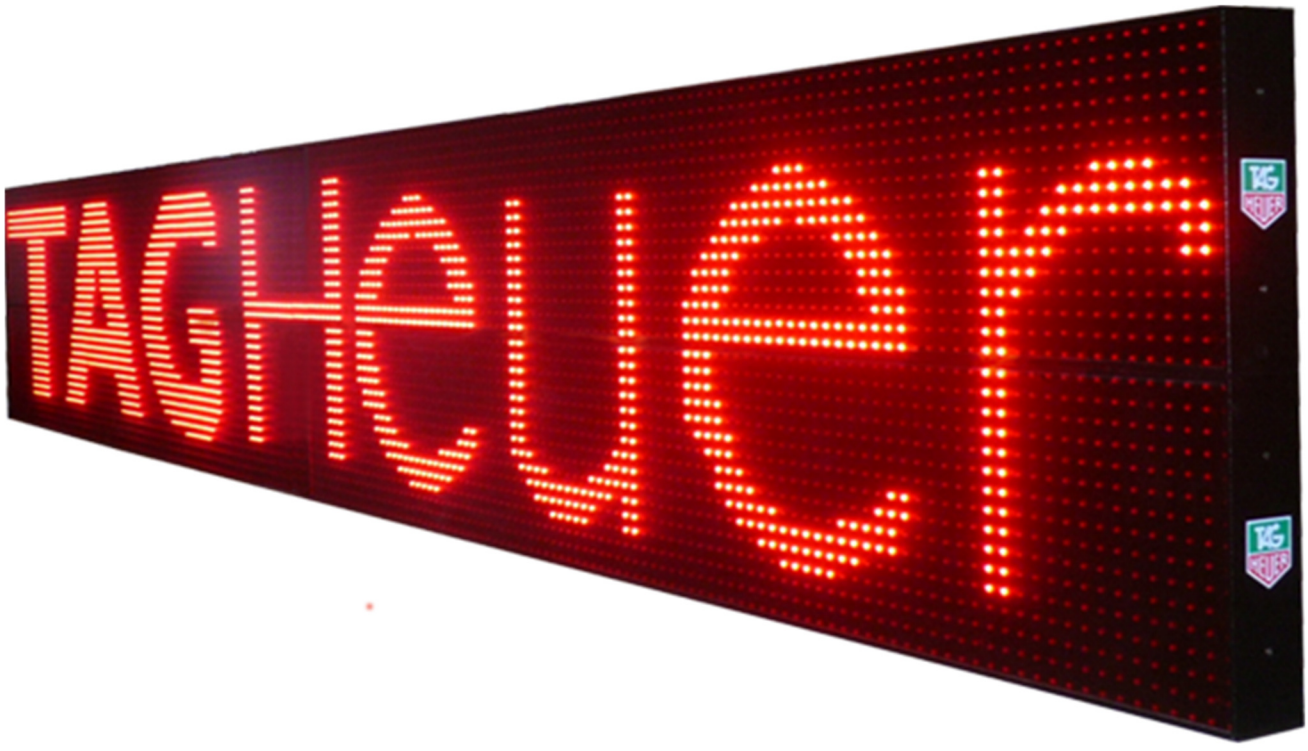
FULL MATRIX DISPLAY HL 970



Full Matrix Display
HL 970

The new TAG Heuer matrix LED display HL 970 will convince anyone considering multi-purpose uses with multiple parameter settings.
The concept proposed by TAG Heuer enables the visual representation of timing information or alternatively advertising and information messages (logo & text).
The unique structural concept and modularity offers the potential to create a large structure scoreboard.
The almost seamless design of each display allows displaying many types of logo without distortion.
The ideal dimensions and weight ensure simple transportation and set up.
A small external unit integrates the main electronics and power supply convertor.
The matrix LED display together with the purpose designed and unique Software « Easy Display » provides a large user definable and flexible array of displays complimented by the ability for advertising – messages (logo & text).

Technical Specifications

Dimension :	1580 x 290 x 80 mm (matrix 96 x 16 pixels) 5.18" x 0.95" x 0.26"
Weight :	11kg
Control Box :	250 x 200 x 100 mm (0.82x0.65x0.32")
Communication :	RS232 – RS485
Integrated power supply :	110 – 220 VAC / 12 VDC
Power consumption max :	50W
Visibility :	50 m – 164" (with characters 110mm high) 80 m – 262" (with characters 220mm high)

Example: 4x HL 970
Dimension: 318 x 53 cm

Timing Configuration
1 Line with 16 characters, high 22 cm (8,66")
2 lines with 32 characters, high 11 cm (4.33")

Timing Configuration
4 lines with 32 characters, high 11 cm (4.33")

TAG Heuer
PROFESSIONAL TIMING

TAGHeuer
by
Chronelec
Timing Systems

Official agent stamp

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