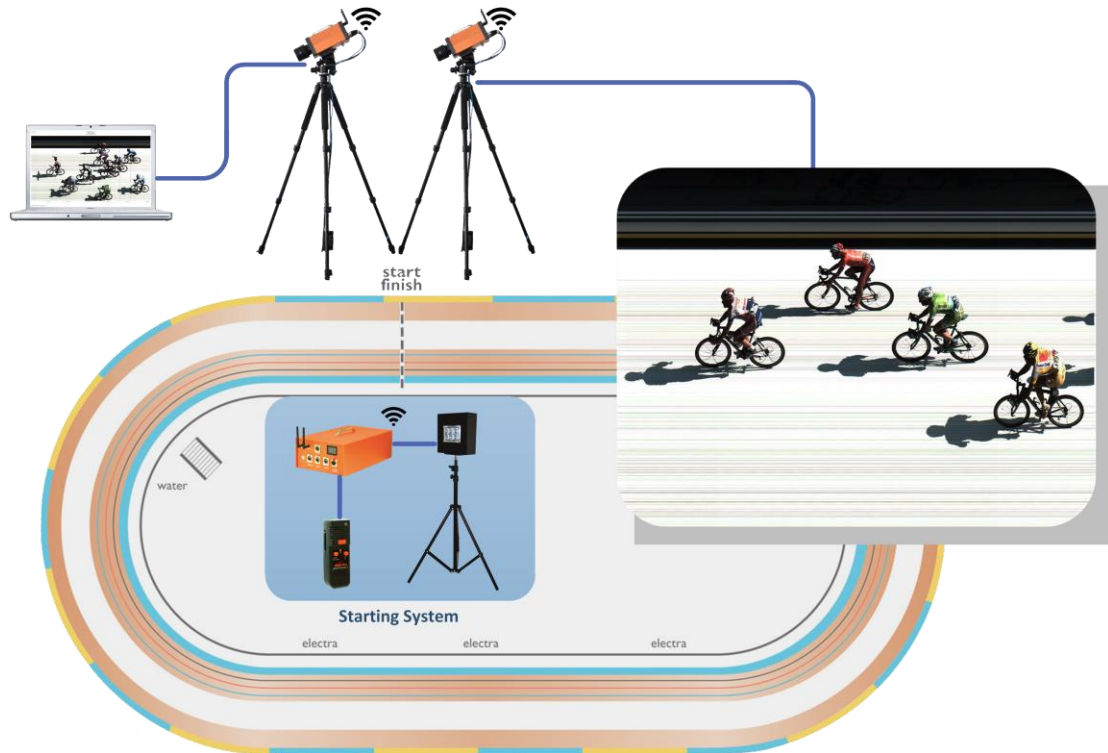


Timing & Scoring System for Cycling

Cycling Timing System is an automatic timing system, which combines the software and hardware and uses high-speed color CCD digital camera. It can realize the automation of the measurement process, so as to ensure the fairness of the process and outcome of the match.

1. System Chart



1.1 System Structure Description

Cycling timing and scoring system consists of auto starting system, terminal timing system and cycling timing software.

- 1) Starting system: the starting host installed in the starting position and communicate with terminal timer through wireless signals.
- 2) Terminal timing system: terminal timer set up on the extension line of the finish line. It will collect the moment images when the athletes sprint to the end.
- 3) Cycling timing software: installed in the PC for match scheduling, acquisition of result data, storage of the image, auto ranking and result printing.

1.2 Products Features

Safe and reliable

- Starting system provides synchronous flash start signal and clear shots without special starting gun.
- Equipped with Internal battery, it can work without external power.

Easy installation

- Starting system is compatible with wired and wireless trigger. And no wiring in the field is available.
- Attractive appearance and easy to carry.

Precise timing

- Terminal timer using CCD wide-angle viewfinder and fully extending the lens angle.
- With independent time system, unaffected by temporary power.
- Disk image interpretation and data processing can be any time in working state.
- Results output accuracy: 0.0001s ~ 1s.

1.3 Main Functions

Starting system

- 1) High precision startup device: auto start the terminal timer when the gun goes off via the wireless startup device.
- 2) Provide synchronous starting signal, clear shots simulation and analog voice, such as on your mark, get set.
- 3) Wireless communication distance up to 500m.
- 4) Support multiple starting and storing trigger records.

Terminal timing system

- 1) Timing accuracy: 0.25ms; results release unit: 0.01s/0.001s
- 2) Shooting speed: 2000 frame/s
- 3) Terminal timer using CCD wide-angle viewfinder and the resolution can up to 2048P.
- 4) 100m high speed Ethernet connection.
- 5) Terminal timer comes with full color LCD display which can directly see the working state and equipment information.
- 6) Wide angle shooting adapts to various width of venue without changing the lens.
- 7) Pitch angle, brightness and contrast of images on terminal timer are adjustable via programs.
- 8) Quickly and accurately judge the results and ranks.

Cycling timing software

- 1) Support parallel operation on shooting, memory interpretation and file interpretation.
- 2) Preview images and quickly locate the target image for results interpretation.
- 3) Restart the software can recovery timing from the computer crashes

- 4) Results output accuracy: 0.0001s ~ 1s
- 5) With simple choreography function for adjusting the match grouping table.
- 6) Open communication protocol interface for easy integration with the third-party management system.
- 7) Print transcripts on-site and generate result documents in multiple formats.
- 8) Support cloud service and wide area network performance.

1.4 Product Configuration

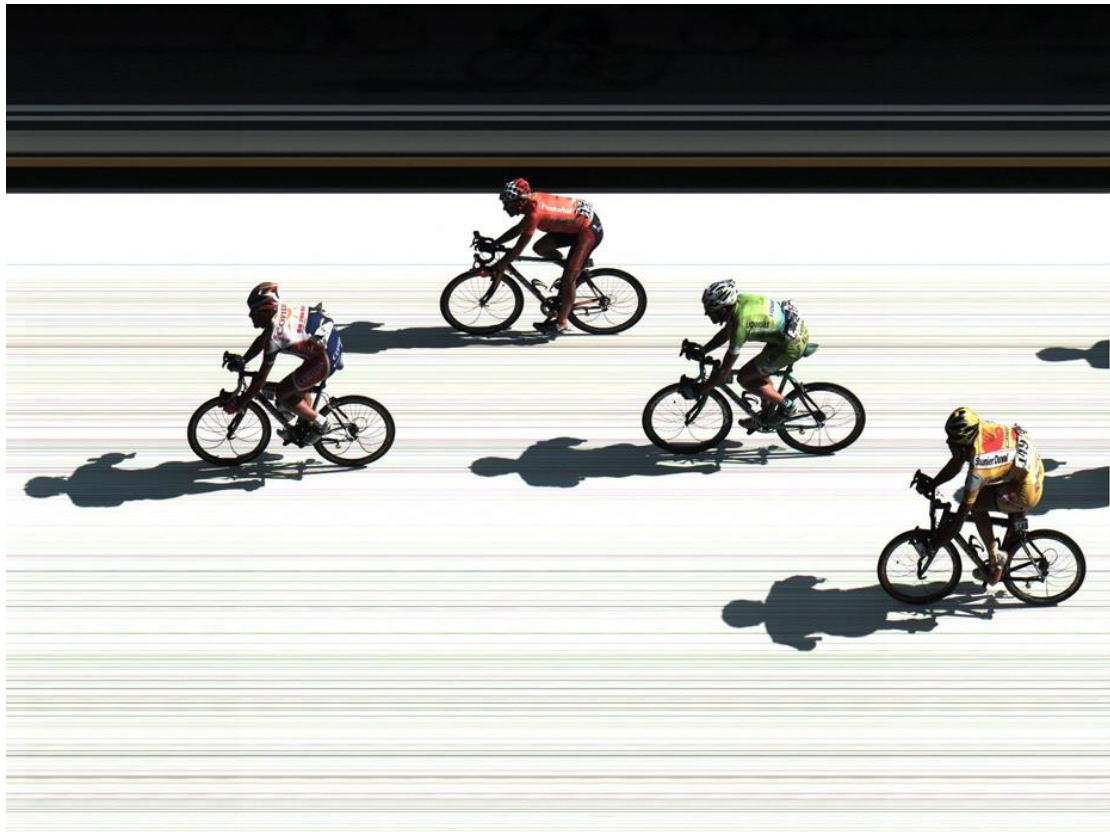
| No. | Products | Type | Qt. | Notes |
|----------------------------|-------------------------|-------------|-----|---------------------------|
| 1 | Starting host | KS-ST100 | 1 | |
| 2 | Starting handle | KS-ST100/A | 1 | |
| 3 | Flash indicator | KS-ST100/S | 1 | |
| 4 | Terminal timer | KS-PT100C1K | 1 | |
| 5 | Lens | Nikon | 1 | |
| 6 | Shooting button | KS-PT100/A | 1 | |
| 7 | 3D head | KS-PT100/S | 1 | |
| 8 | Cycling timing software | Standalone | 1 | |
| 9 | Circle-counting System | KS-C100 | 1 | |
| Auxiliary equipment | | | | |
| 10 | PC | / | 1 | 500G hard disk, 2G memory |
| 11 | Laser printer | / | 1 | |

2. Specification for products

2.1 Cycling Timing Software

| Products | Details |
|--------------------------------|---|
| Cycling Timing Software | Type: Standalone ◆ Referee operations on the control computer. ◆ Support: Cycling ◆ Support simultaneous operation of shooting and score interpretation. ◆ Restart the software can recovery timing from the computer crashes. ◆ Results output accuracy: 0.0001s ~ 1s ◆ Print transcripts on-site and generate result documents in multiple formats. |

Software interface:



2.2 Starting Host

| Products | Details |
|---------------|--|
| Starting Host | <p>Type: KS-ST100</p> <p>Communication: Wireless</p> <ul style="list-style-type: none">◆ Wireless communication distance up to 500m.◆ Provide synchronous and clear shots starting simulation.◆ Provide analog voice, such as on your mark, get set. |



2.3 Starting Handle

| Products | Details |
|-----------------|--|
| Starting Handle | Type: KS-ST100/A ◆ Communication: Wired ◆ Support multiple starting. |



2.4 Flash Indicator

| Products | Details |
|-----------------|--|
| Flash Indicator | Type: KS-ST100/S ◆ Communication: Wired ◆ Provide synchronous starting signal. |



2.5 Terminal Timer

| Products | Details |
|-----------------------|---|
| Terminal Timer | <p>Type: KS-PT100C1K</p> <p>Size: 230x125x110(mm)</p> <p>Weight: 2.25KG</p> <p>Power: 12V ($\pm 10\%$) DC</p> <p>Display: 320x240 LCD</p> <p>Communication Interface: 100M Ethernet</p> <ul style="list-style-type: none">● Connected to the software and camera independently.● Shooting speed: 2000 frame/s● Timing accuracy: 0.25ms● Resolution: 2048P● Sensor: CCD● Color: 8 bit black and white picture / full color picture |

