



Scoring & Timing Solution for Taekwondo

Kyorugi



1. Introduction

This is a professional solution for LED scoreboard display in Taekwondo stadiums.

Mainly for large-scale Taekwondo matches which held in professional sports venues.

The system functions conform to CTA rules.

Match arrangement, real-time scoring & timing display, players' & referees' info display, rank statistics export & print, slow motion video record & playback, and advertising display can be realized through the coordination of Match Scoring System, Meet Management System, Video Arbitration System, etc.

It is an ideal choice for most of smart and professional stadiums.



1.1 System Architecture

The whole system is composed of several subsystems, including: Match Scoring System, Meet Management System and Video Arbitration System.

Each subsystem can not only work independently, but also work together to share the data.

It is flexible for customers to configure according to the actual application.

- **Match Scoring System**

Match Scoring System named ULTRA SCORE is composed of Ultra Score Software, Wireless Host, etc.

It is mainly operated by the referees to realize the scoring and timing work and real-time scoreboard display.

The system functions conform to CTA rules.

- **Meet Management System**

It is composed of Meet Management Server, On-Venue Results Workstation, Printer, etc.

Linking with Online Registration System and Match Scoring System, it can realize: participants management, match schedule, result management, technical statistics, court arrangement, rank statistics, etc.

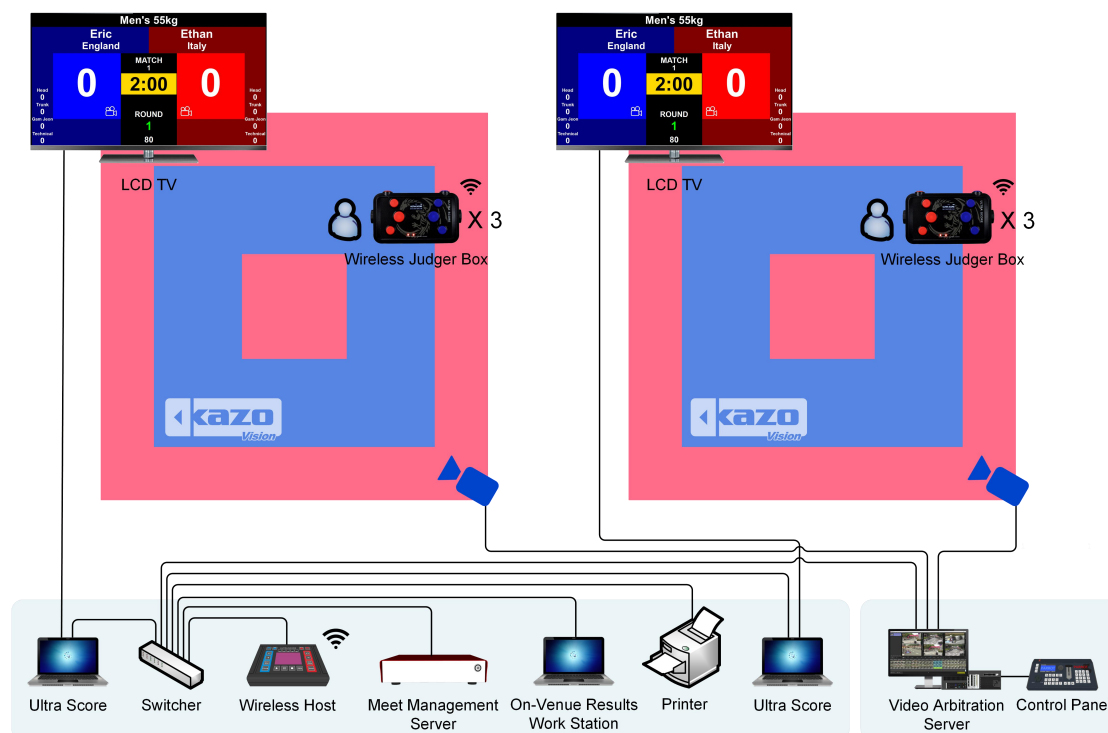
- **Video Arbitration System**

Video Arbitration System named PARROT is composed of video arbitration server, control panel and cameras.

It is operated by the referees during the match. When working with Match Scoring System, referee's score operation will be marked on the frame of video automatically, whilst playback them in slow motion with changes in speed.

It can be used to provide the technical support when dispute happens during the match so as to reduce the misjudging, to ensure fairness and justice of the match.

1.2 System chart



System Structure Description

- 1) Install the Taekwondo Timing and Scoring software on the control computer.
- 2) Connect the Wireless Host (KS-WH-TK) with the control computer via a USB cable.

1.3 Functions

Event arrangement

- Both import and input the players' information are available.
- Auto draw the players' lots.
- Auto generate, export and print the bracket.
- Auto generate, export and print the order form.

Scoring operation

- Professional wireless scoring controller supports adding 1-4 points for the player.
- With vibration alerts when getting a point.
- Display real-time score and device connection state.
- Modify the match time according to match category.
- Support extending multi-displays to show the match.

Results treatment

- Quickly print and export the result form.
- Rank statistics, quickly export and print.
- Quickly export and print the event form of referee operation.

System advantages



Kazo Vision

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- With rich experience of tournament and stable system.
- Wireless scoring devices are easy to use without wiring.
- The information will auto save in case of power out and other emergency situations.
- We provide free upgrade service of software.

1.4 Product Configuration (one court of Kyorugi)

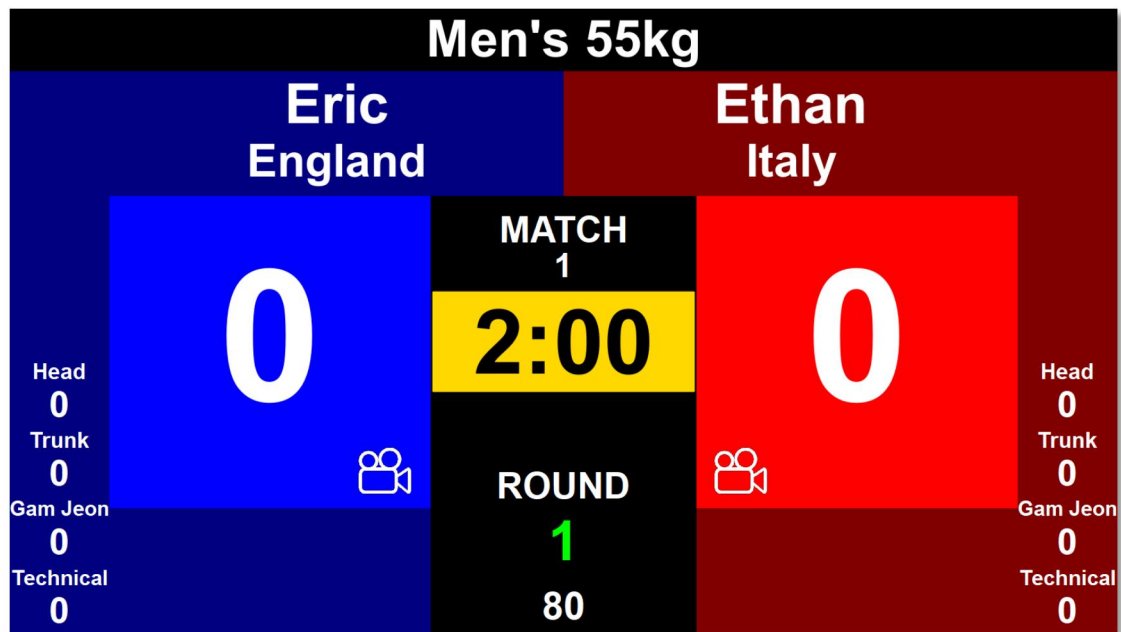
Products	Type	Number
Match Scoring System		
Ultra Score Software	Standalone edition	1
Wireless Host	KS-WH-TK	1
Wireless Scoring Controller	KS-TKEP-C	3
E-Body Protector	KS-TKEP-EP	2
E-Helmet	KS-TKEP-EH	2
E-Foot Protector	KS-TKEP-EF	2
Meet Management Server	KS-MMS-MINI	1
LCD TV	55 inch LCD	1
Computer	Dell	2
Printer	HP	1
Video Arbitration System		
Video Arbitration Server	KS-PARROT-2C	1
Control Panel	KS-PARROT-CP	1
HD Camera	/	2
Tripod for HD Camera	/	2
SDI Cable	15m	2
LCD Display	/	1

2. Specification for products

2.1 Ultra Score Software

Products	Details
Standalone edition	<ul style="list-style-type: none">◆ The referee operates the match on the PC for display directly.◆ Supports: Taekwondo Kyoruki, Taekwondo Poomsae◆ English version◆ Including 1 dongle

LCD display interface:



2.2 Wireless Host

Products	Detail
Wireless Host	<p>Type: KS-WH-TK Size: 200x145x60 (mm) Communication: 433MHz Wireless Function:</p> <ul style="list-style-type: none">◆ Must be used together with Taekwondo Scoring Software.◆ Wireless communication distance up to 20m.◆ Support 5 wireless scoring controller and 2 electronic body protector.● Customize the communication band.◆ Support multi-site match simultaneously.



2.3 Wireless Scoring Controller

Products	Details
Wireless Scoring Controller	<p>Type: KS-TKEP-C Size: 160*95*30mm Communication: 433MHz Wireless Function:</p> <ul style="list-style-type: none">◆ Support: Kyorugi.◆ Scoring: can add 1-4 points for the player.◆ With vibration alerts while scoring.◆ Wireless communication distance up to 20m.◆ With long standby function.



2.4 E-Body Protector

Products	Details
E-Body Protector	<p>Type: KS-TKEP-EP</p> <p>Size: #0 /Height 110-130cm #1/ Height 130-155cm #2/ Height 155-165 cm #3/ Height 165-175 cm #4/ Height 175-185 cm</p> <ul style="list-style-type: none">◆ Sense the electronic shackle.◆ Sense the intensity of different strike.



2.5 E-Helmet

Products	Details
E-Helmet	<p>Type: KS-TKEP-EH</p> <p>Size: S/M/L</p> <p>Color: Blue / Red</p> <p>Material: PU leather</p> <p>Function:</p> <ul style="list-style-type: none">◆ Sense the hit of the E-Foot Protector. Scoring automatically.◆ Use energy-efficient materials to prevent athletes from being injured.◆ Wireless communication.



2.6 E-Foot Protector

Products	Details
E-Foot Protector	<p>Type: KS-TKEP-EF</p> <p>Size: #S/Eur 34-35 #M/Eur 36-38 #L/ Eur 39-41</p> <ul style="list-style-type: none">◆ Must be used together with Taekwondo Electronic Body Protector or Electronic Helmet.◆ Sense the intensity of different strike from foot.



2.7 Meet Management Server

Products	Details
Meet Management Server	<p>Type: KS-MMS-MINI Size: 170x150x35 (mm) Weight: 1.0 KG Features:</p> <ul style="list-style-type: none">● Multi-court arrangement, auto generate the order form.● Multi-project arrangement, make the schedule more smoothly.● Monitor the status of each court in real time, including the current field, rotation and player info.● Court adjustment, can manually modify the match court and session info.● Summary and print integrated report.



2.8 Video Arbitration Server

Products	Details
Video Arbitration Server	<p>Type: KS-PARROT-2C/4C/6C/8C</p> <p>Video Input: 2/4/6/8 channels input synchronously;</p> <p>Input port: SDI;</p> <p>Output port: DP*2;</p> <p>Video Format: 1080P;</p> <p>Recording capacity: ≥ 10 hours;</p> <p>Multi-screen monitoring: supported;</p> <p>Weight: 8kg.</p>



Software interface



Device Specification

Type	KS-PARROT-2C/4C/6C/8C
Size	485x480x90(mm)
Net Weight	8 KG
Color	Black
Cabinet	Iron
Interface	
Input	SDI*2/4/6/8
Output	DP*2
Environmental	
Operating Temp	-5°C~45°C
Storage Temp	-40°C~80°C
Relative Humidity	5%~95%, non-condensing
Input Voltage	AC 100V~240V
Functions	
<ul style="list-style-type: none">● Nonstop video recording in the background: 2/4/6/8 channels of HD video are recorded simultaneously in the background, nonstop for 10 hours. Video retrieval and playback is unaffected.● Synch-playback of multi-channel video: Supports playback mode of single channel video in full screen and multi-angle video in 2/4/6/8 windows.● Speed change in slow motion: support 50 frame/s video playback and capture motion in a grid of 0.02s.● Video event query: video stream can be divided into several video events, storing in the event list, which can be renamed for retrieve easily.● Video segment marker: Important or controversial moments can be marked in video stream which will be replayed quickly when clicking the marked records.● Video signal output: provides 2 video output signals, one of which is for preview, the other of which can be connected to LED/LCD display for live slow motion replay.	

2.9 Control Panel

Products	Details
Control Panel	<p>Type: KS-PARROT-CP</p> <p>Function:</p> <ul style="list-style-type: none">◆ Support one touch replay, deferred replay, in/out replay.◆ Preset speed button.◆ T-Bar for dynamic slow motion.◆ Professional dynamic jog wheel.◆ Key to mark the last 10s/20s of the video content.◆ Flexible select the marked video and playback.



Device Specification

Type	KS-PARROT-CP
Size	365 x 200 x 98 (mm)
Net Weight	1 KG
Cabinet	Iron
Display	Color LCD(4.3Inch)
Sound	None
Communication	
USB	≤5m
RS232	≤10m
Environmental	
Operating Temp	-5~45°C
Relative Humidity	5~95 %, non-condensing
Storage Temp	-40~80°C
Input Voltage	AC 100V-240V
Total Power	15W

2.10 HD Camera

Products	Details
HD Camera	Type: KS-PARROT-CAMERA



Device Specification

Product Type	KS-PARROT-CAMERA
Video output	3G-SDI
Effective pixels	3.0 million
Max Resolution	1920*1080
Max Frame rate	60FPS
Sensor	CMOS
Focal length	4.2MM
Size	62.5*50*50MM