



## USER GUIDE

This User's Guide explains everything about TK-Strike. From Hardware and Software, it includes a problem-solving guide for professional users.

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# The Basics of PSS

## Introduction

Daedo TK-STRIKE is a World Taekwondo Federation Recognized electronic protector system for Taekwondo training and competition, a combination of sports and technology that was brought to the world to contribute to the evolution and development of Taekwondo as a global sport.



Daedo TK-STRIKE is a Protector & Scoring System designed to adapt to the current WTF competition rules and Taekwondo techniques, allowing the best performance in Taekwondo training and competition. It evaluates technique, speed and power, and delivers a clear and precise scoring, altogether encouraging a more dynamic and real Taekwondo.



- See more at:

<http://www.daedopss.com/>

## Equipment

The Protector Scoring System, approved by the World Taekwondo Federation, consists of the following.

- **1. Electronic Protector** – Has the function of protecting the athlete, as well as scoring the match. It looks and feel like the original chest protector, also known as “HOGU”. This can come with the transmitter or without it, depending on how you purchase it.

Ref.: EPRO2901 / EPRO2910



- **2. Body Transmitter** – Sends signal of kicks from the electronic protector to computer. There is one ID for each and every transmitter.

Two must be connected to the system in order to be used. Once disconnected from the electronic protector, the system will fail to function.

Ref.: EPRO2909



- **3. Receiver** – Receives the signal from the transmitter. It is connected by USB, and the connection protocol is ZigBee 2.4Hz.

Ref.: EPRO2906



- **4. Charger** – it is used to charge the transmitters and Judge Scoring Box. These are specially made for TK-Strike, and no other charger should be used other than the original. Receivers do not require charging.

Ref.: EPRO 2905

- **5. Software** – Runs the system for scoring, including scoreboards and TA interface. Ref.: EPRO2907

- **6. Electronic Foot Protector** – also referred as the E-Foot Protector, has different sensors located in scoring of valid kicks. It can be washed and re-used,

and has a durability of 2 years, depending on how they are used. For head Kicks, Technical Kicks, and Punches...

**Ref.: EPRO2903 (Electronic Foot Protector) + EPRO29032 (E-Foot (Heel))**

**Ref.: EPRO29035 (Complete E-Foot Protector)**

• **7. Judge Scoring Box** – has a total of 6 buttons (3 blue, 3 red) that can be pressed by the referee during a match to give additional points not given by The TK-Strike Electronic Protector System, such as Head Kicks or Turning Kicks.



• **8. Electronic Head Gear** – It scores points in all valid areas of the head.



• **9. PSS Bag** – in sizes small and large. Made with an ultra-resistant fabric, will make transportation easier and comfortable.

Electronic protectors are gaining ground as “stable” and “fair” way of judging. Where once all competitors had direct complains about the electronic protector, claiming the instability and unfairness, now, TK-Strike is vastly recognized as an electronic protector that will give the competitors a fair match.

Electronic protectors can be used in two different scenarios

**Training** – it can be used during the training of elite taekwondo athletes. The durability of the TK-Strike Electronic Protectors allow athletes to train without having to connect the gear to the system, so that they get used to the weight and feel of the electronic protector.

- Olympic and “World Taekwondo Federation” style Taekwondo matches and championships.

Although they seem reliable, there are many factors that can affect the sensibility of the electronic protector. In order to have a fair game, you should keep in mind a few helpful tips

**Size** – both competitors **MUST** wear the same size protectors. Larger means more surface area to kick, and vice-versa.

**Category** – the weight category of the competitors **MUST** be the same. Otherwise, the match can be considered unfair.

**Fit** – how the electronic trunk protectors and electronic foot protectors fit onto a competitor can vary the results of a match. The higher and tighter the trunk protector, the harder for the opponent to kick. The foot protector must not be too big or too small. If too big, it may fall off, and if too small, it may tear off on tension points.

### Maintenance

It is very important for one to take good care of his equipment. Sweat and other factors may deteriorate the electronic protector and affect performance. Follow the next steps to keep your body protectors always in optimal state.

Keep in dry and well ventilated space

Dry sweat from the electronic protectors after using them

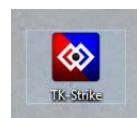
Do not wash the electronic trunk protectors in the washing machine

Do not open the electronic protectors at any point

Always wash the electronic foot protectors in cold water with the washing machine after use

Keep your electronics always charged and in dry and well ventilated Space.

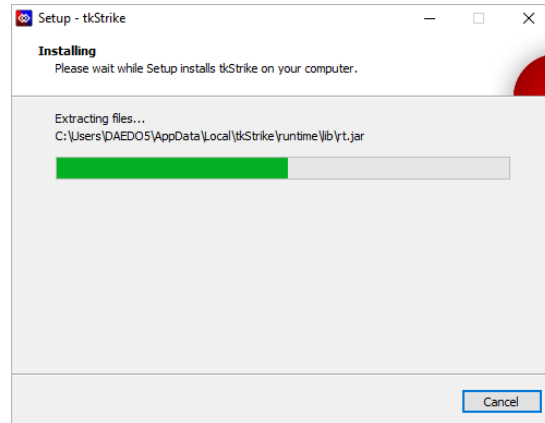
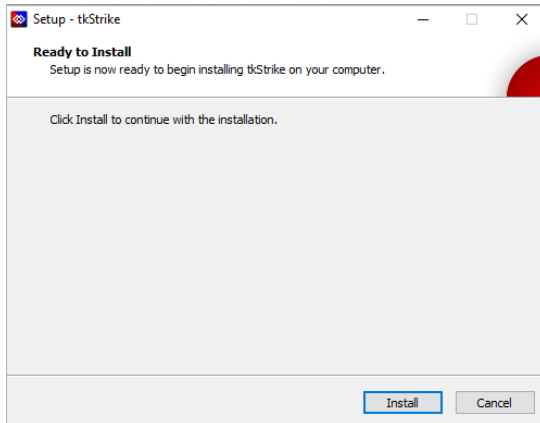
### How to Install the Software



Double click on the Tk-Strike Installation icon, follow installation wizard.

TK-Strike Software is available in

- Windows 10 (32 & 64 bits)
- Mac OSX



If installation fails go to Control Panel and uninstall the software and try again.

## System Requirments Windows

## System Requirments Mac OSX

## Uninstalling

You can uninstall the software using the standart Microsoft Windows Control Panel.

- Select the “Add or Remove Programs” icon. This will launch the TrueScore uninstall program and will proceed with the uninstalling of the software automatically.
- In addition you can erase the following subfolders, you most activate (show hide subfolders) and look for the following address.  
C:\Users\”your User”\AppData\Local\tkStrike

## What This Software Helps You Accomplish

The new Truescore Software helps you accomplish a number of important tasks regarding Olympic and “WTF” style Taekwondo competitions and matches.

Set up, start, pause, stop, and finalize Taekwondo matches according to the World Taekwondo Federation rules. These can always be changed within the software.

Connect Judge Scoring Boxes, Electronic Protectors, and Electronic Head Gear, all at the same time, and get values from them. All of them are optional to connect or not.

Connect the interface with other Venue Management systems such as TaekoPlan, Video Replay systems such as Dartfish, and even TV broadcasters

Extract match information in the format of log files for further inspection of different events

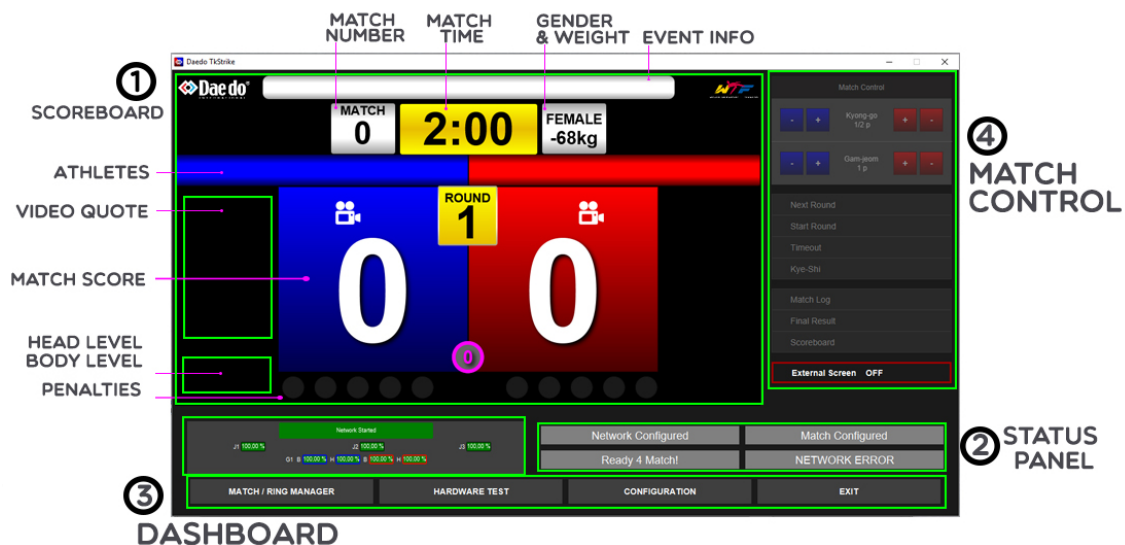
- Always Test the hardware previous to the start of a match

## How It's Organized

To make competition or training as smooth as possible, Truescore is built around different functions.

The software is built in 4 functional areas.

1. SCOREBOARD – Where all the match information is shown, in the external monitors.
2. STATUS PANEL – This panel is where you can quickly see if there everything is connected. (Gray=nothing set , Green= Connected, Red = Disconnected)
3. DASHBOARD – This is where you can setup a new match, hardware test, configuration of the PSS elements, and exit.
4. MATCH CONTROL – During a match you can control the time, points, penalties, and turn on /off the external screens.

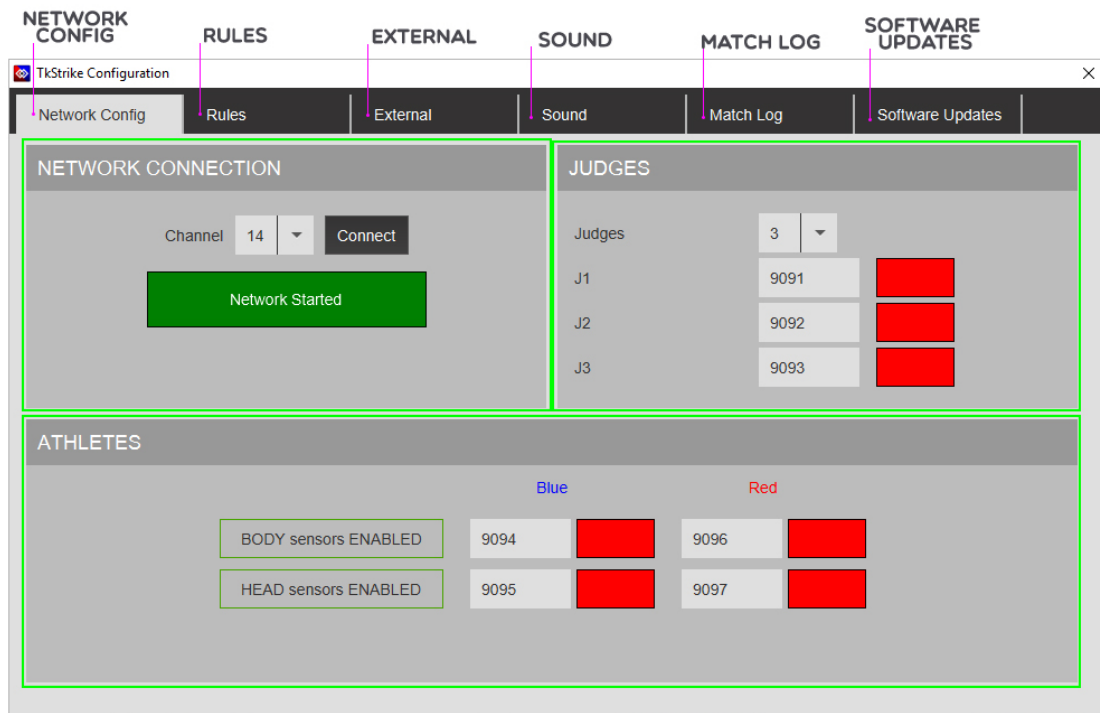




On the Dashboard go to (Configuration)



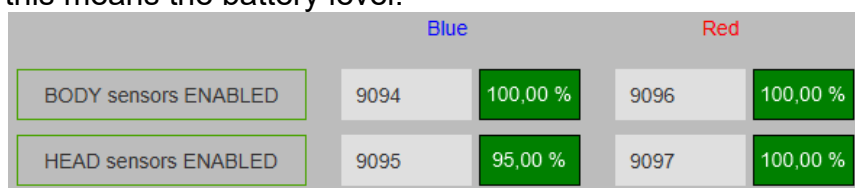
A new window will open and then you have 6 tabs with different options.



1. **Network config** – there are 3 areas (Network Connection, Judges, Athletes) First step is to set the number of judges from 0 to 3 the red squares shows that joysticks or any other electronic element is NOT connected. Then you have the Athletes area where you can activate the body and head sensors, or as you may need (Head or Body)

As a general rule we recommend to keep the communication channel in 14, when you have all the serial numbers from the electronic equipment, you can press the CONNECT button and then turning the electronic equipment in a proper order, starting from Judge 1 to judge 3 and then Body blue and finishing with head red.

Then all the red square will change to green with a number and a %, this means the battery level.

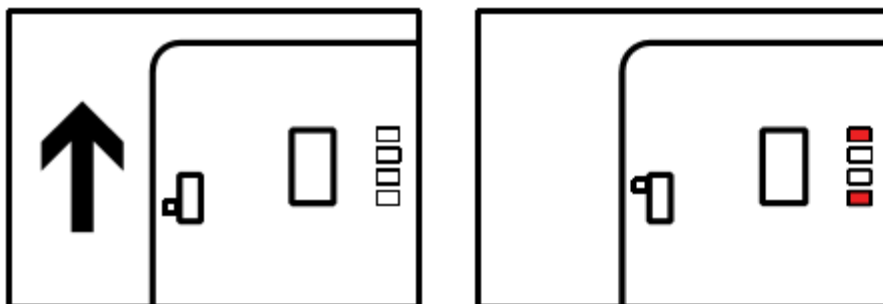


To confirm the changes close the window.



Type in all the handset and sensor IDs that you are willing to use with the TrueScore software.

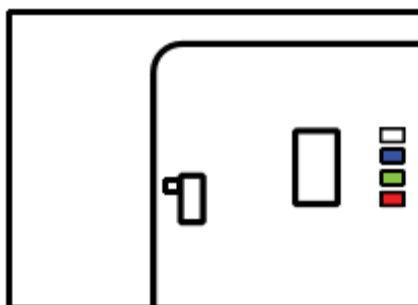
Deactivate all other sensors that you will not use. (eg. Only activate 2 judges if you only have 2 Judge Scoring Boxes. Deactivate head sensors if you are not using electronic head gear.)



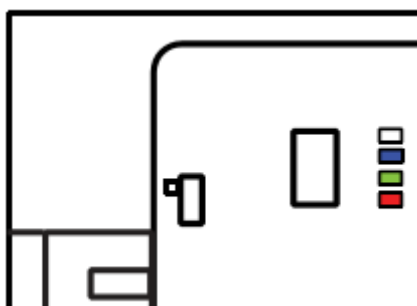
Make sure all devices are turned ON. To turn ON the transmitters, move the switch gently in the direction indicated. When you do this, you must get two red LEDs: one of them blinking and one of them constant.

**IMPORTANT! The switch must be handled with care. Warranty void if broken.**

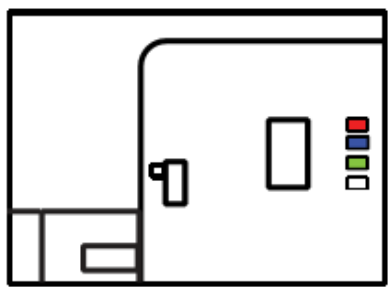
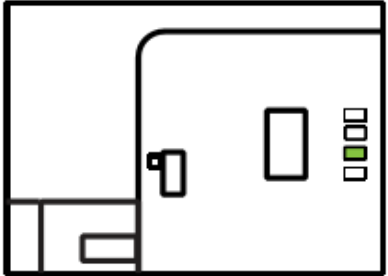
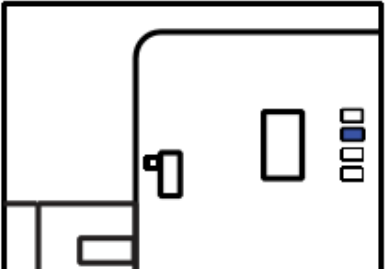
Click on “Connect” and wait until all “comm.” lights turn green. You will see on the transmitter that the green and blue LED start flashing, while the red LED stays blinking as before.



If you can still see the red LED light blinking, it could mean the hogu is faulty or the transmitter is broken. In that ca h other equipment.

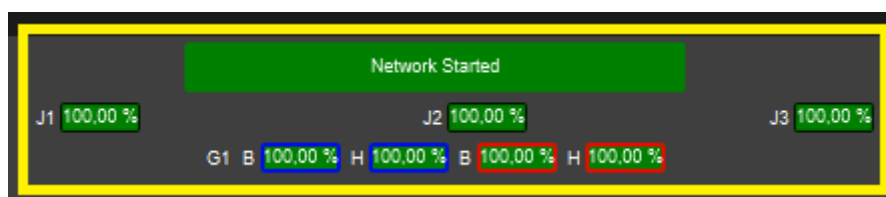


Restart the power of the devices that have a red light at the “comm” indicators. Also restart the power of the devices if you see a constant blue, green, or red light in them.

	<p>IF you might find the top red LED light up with the green and blue still flashing, there is no problem in using the transmitter like this but it is recommended to turn the transmitter OFF and back ON.</p>
	<p>If during the match, there is a constant green light, it means connection is lost. In this case, you must turn the transmitter OFF and back ON.</p>
	<p>Sometimes you might find that the light of the blue LED is on constantly. Disconnecting the transmitter from the hogu and reconnecting can solve this. Turning the transmitter OFF and ON can also solve it.</p>

### Status Check

After these steps, you will be able to see the of the transmitters on the dashboard area. The pilots will show you



- Judges connection status and Battery levels.
  - Body and Head connection status and Battery levels.
  - Network Status Communication.
2. **Rules** – You can set all the general rules (points, ceiling score, differential score) and the Match (Rounds, Rest time, golden point)
  3. **External** – To configure the external screen resolution.
  4. **Venue Management communication and RT Broadcast.**

5. **Sound** – You can change all the external sounds to your needs.
6. **Match log** – This is where you can export and backup the match, we recommend to keep the settings as they are set.
7. **Software updates**- You can check for new updates.

When you configure the PSS electronic elements, you will see the Status panel with a green square, and from there you can continue preparing the software for the following match.



## Setting a New Match MATCH / RING MANAGER

You have 2 rows:

**Upper row** with 4 tabs (Previous match, Next Match, New Match Wizard, Existent match)

Note that some options are only available when the Venue Management is online.

To load a New Match go to **NEW MATCH WIZARD** –

1. **Match Number** The match number of the current fight
2. **Phase** (Make a selection)  
This is the phase in which the Tournament is happening.
  - 1/64 Final
  - 1/32 Final
  - 1/16 Final
  - 1/8 Final
  - ¼ Final
  - ½ Final
  - Bronze Medal Match
  - Final
  - Preliminary
  - Round Robin
  - Repechage
  - Other
3. **Contest** (Type of Contest) This is the type of contest that is running, according with the selection the following option may change.
  - Default
  - Kid9 Kids 8-9 Years Old
  - WCAD WTF Cadet Championship
  - WPAR WTF ParaTkd Championship
  - KIDS12 Kids 10-12 Years Old
  - OLYG Olympic Games

- WJUN WTF Junior Championships
- WSEN WTF Senior Championships

4. **Gender** – Selection for the athlete's gender
5. **Weight Division** - Selection for the athletes Weight according to the previous selection
6. **Athletes** : names of the athletes, their WTF IDs, Video quota and their NOC codes.
7. **Match** : – Selection of options for round, round time, kye-shi time, golden point time, and rest time.
8. **Finish**

**Next Match** – calls the next match, only when there is a connection between Truescore and Venue Management. Once this is clicked, all the information will be received and will show on the different information fields.

*When you have all the elements set the status panle will show all the sqaures in green, if there is a Network error the square will turn red and the match will stop.*



*You can continue and on the dashboard go to Hardware Test and a new window will open.*

**Lower Row** with 4 Tabs (Athelets, Flags, Phases, Weight Division, Close)

This row control the general database of the software only for the main PC, when you add an athlete for the first time the next time you need to call this athele for a next match all the information is on the software.

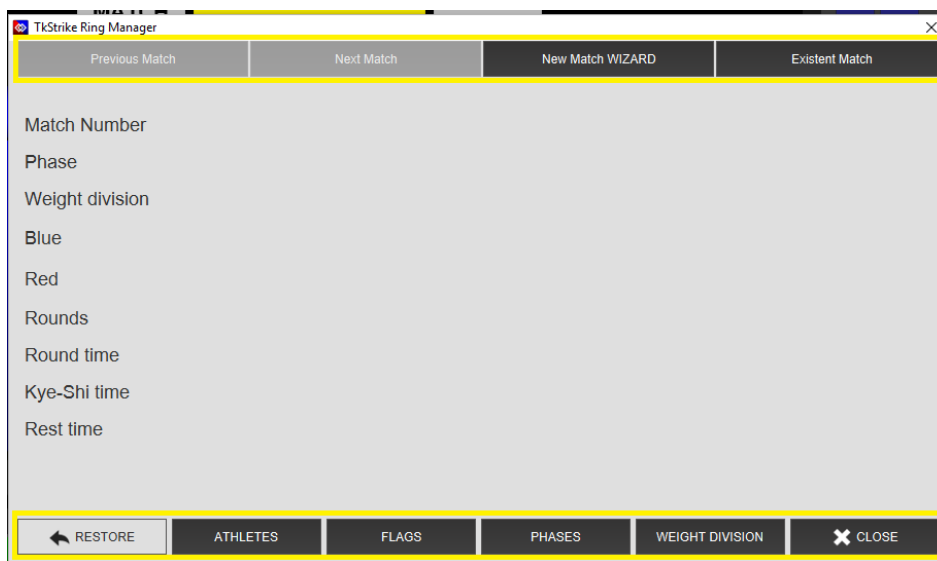
Athletes: all the athletes information on previous match.

Flags: You can create or edit any flag.

Phases: You can create, edit a phases for your sport event.

Weight Division: You can create, edit the weights.

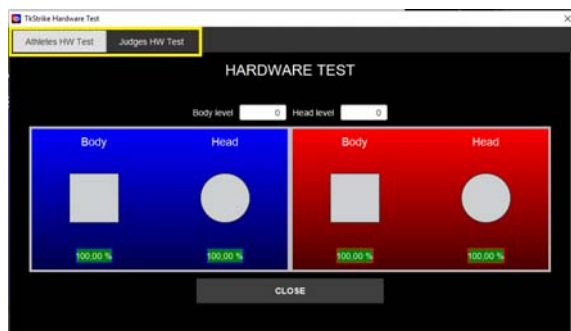
Close: When you finish close the window to save.



## Hardware TEST

You have two tabs (Athletes and Judges) You have body and Head for athletes in gray, when they test the hardware the gray will turn into green.

### Athletes Hardware Test

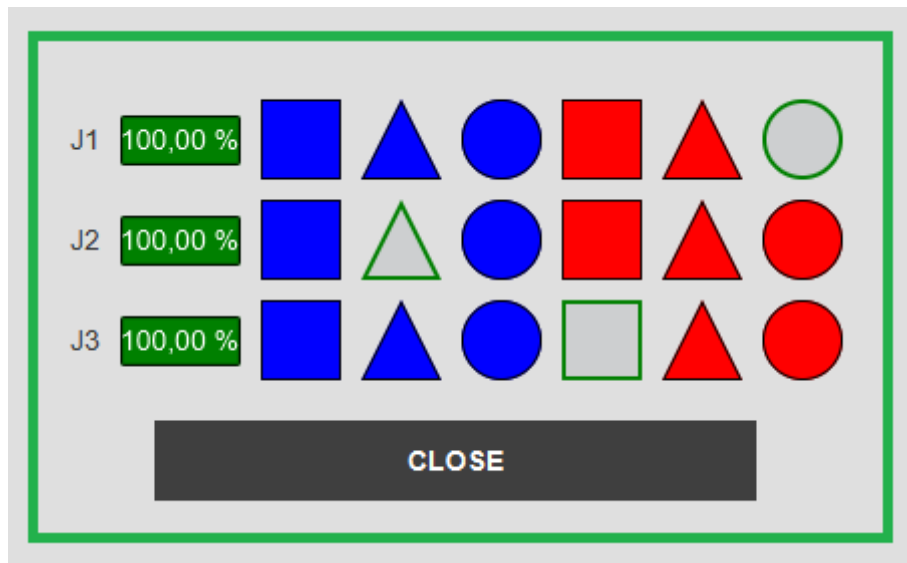


### Judges Hardware Test

This is the same for Judges; you can see the battery level and the different buttons with their side color.

- Triangle= Technical Button
- Square= Body Button
- Circle= Head Button

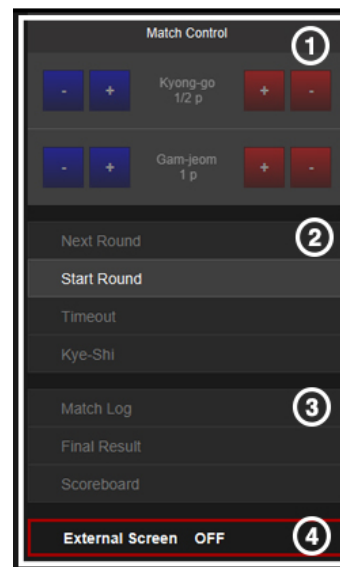
The Joystick screen starts with the main side colors (Blue / Red) and as you test the joysticks the figures will turn to gray to show that the hardware is working.



## New Match Control

The new redesign dashboard is faster and logic, to help reduce time and stops during the match. Is divided in 4 spaces.

1. **Quick Kyong-go & Gam-jeom** – You can apply a Kyong-go with out stoping the match time.
2. **Round Management** – You can start, stop call for a timeout or Kye-Shi.
3. **Match management** – Divided in 3 parts when applying a change the operator have to confirm any change.
  - **Match log** - You call the Match log file to see all the events from the current match.
  - **Final Result** – You can end a match from here,
  - **Scoreboard** – From here you can control the match score.
4. **External Screen** – You can activate the external screen if necessary.



## Running a Match

Once everything is connected and set up, the status of the system will appear as “ready”. Remember that at this point, all transmitters should be connected to the protectors and turned on. At this point, you can open the “Hardware Test” window and test all your hardware or you can start the match by clicking on the “Start” button or the “ENTER” key on your keyboard.

To pause the time on the scoreboard, you can click on “timeout” or press the “SPACEBAR” on your keyboard.

Kyong-go’s and Gam-jeom’s are given from the TA screen, clicking on the buttons at the right of the screen.

End a Match The match will end automatically in the following scenarios:

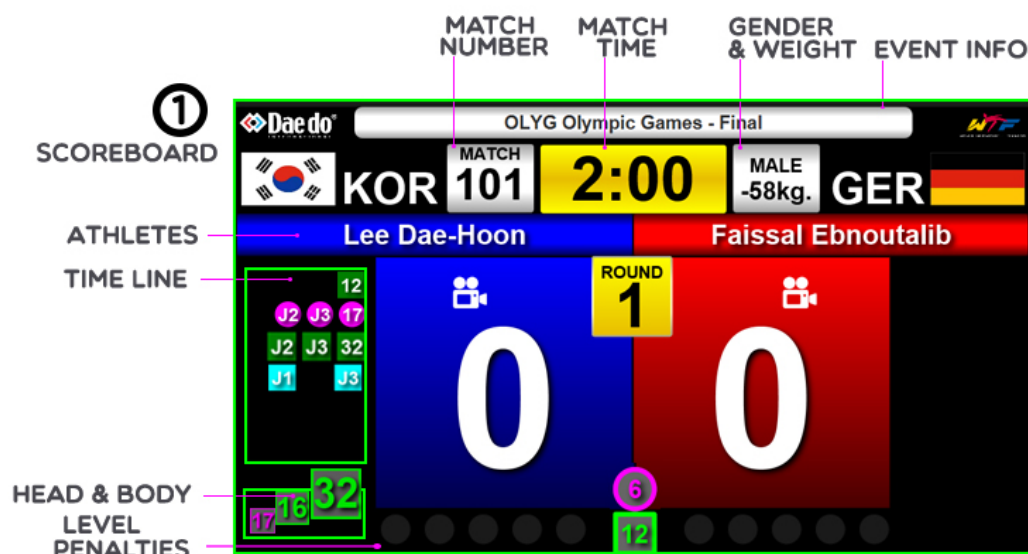
- At the end of the 3rd round, when there is a winner (PTF)
- At the end of the 2nd round, when there is a 12 point gap (PTG)
- During the 3rd round, when a 12 point gap is created (PTG)
- At the end of the 4th round when there is no winner (SUP)
- During the 4th round, when there is a winner (SDP)

When there is a knockout (KO), the referee stops contest (RSC), one of the athletes is disqualified (DSQ) or withdraws (WRD), or it ends by referee punitive decision (PUN), the match should be stopped manually. To do so, click on “Final Result”. Once opened the window, select the winner and the reason of victory, and press OK once the center referee declares a winner.

## ScoreBoard

The Scoreboard is where all the scoring is shown to the external displays and where the operator made all the changes, it includes different information zones.

- Match Number
- Match Time
- Round
- Gender & Weight
- Event Information
- Country
- Athletes
- Timeline
- Head & Body Levels
- Penalties





## Timeline

The timeline is the space where everyone can see the current decisions from judges, automatic scoring by the electronic body protector.

The time line goes from up to down and if a hit on the head or body happens it will reflect on the timeline with different icons.

If a Turn kick or a technical hit is register by the minimun two judges, this will be display in the time line.

Also if any judge press the button this will be shown in the time line, but if there is no change in the scoring the icon will be erase.

Any press of judges buttons, hits by the PSS will be kept on the Match log file, if necesarly for any report of the match.

The followings are the different convinations that can be seen in the time line and how they change the scoring in the scoreboard.

- **Body point** – When a kick is detected by the PSS the level of the kick if valid will be shown in the timeline with the hit level, in this example you can see three kicks of 32, 36 and 42 level, this also will be shown in the head & body active level as shown.



This will be 3 valid body points if the level is above 31.

- Head Point –
- Judges Technical point “Body”
- Judges Technical point “Head”
- Turn kick “Body”
- Turn kick “head”

## Changing the Scoreboard

When there is a change in time, score, or penalty, due to a referee decision or a human error, modifications can be done. On the left you have all the changes in time, rounds, and points. On the right you see to current scoreboard and as you

add changes this are going to be applied on the right, when you apply new score all changes are going to be change in the live scoreboard in the external screen.

The screenshot displays two side-by-side panels from the TK-Strike software interface.

**Current Score Panel:**

- Round Selector:** Three buttons labeled 1, 2, and 3. Button 2 is highlighted in green. To the right is a 'Golden Point' button.
- Round time:** Two input fields showing '1' and '57'.
- Blue Team Section:** A list of point types (Body, Body Tech, Head, Head Tech, Punch, Kyong-go, Gam-jeom) each with a blue button containing a '+' and a '-' sign.
- Red Team Section:** A list of point types (Body, Body Tech, Head, Head Tech, Punch, Kyong-go, Gam-jeom) each with a red button containing a '-' and a '+' sign.

**Score Changes Panel:**

- Round 2:** A label indicating the current round.
- Round time 1:57:** A label indicating the current round time.
- Blue Score:** A large blue square with the number '0' in the center.
- Red Score:** A large red square with the number '0' in the center.
- Progress Indicators:** Two rows of five black circles each, positioned below the score squares.
- Action Buttons:** At the bottom, there is a 'CANCEL' button with an 'X' icon and an 'Apply New Score' button with a checkmark icon.

- **Round Selector** – Click on the round you want to change.
- **New Time Fields** – Round time can be change and applied to the match.
- **Point modification** – award, remove points from blue/red
  - Click on type of point (Head, Body, Head Tech, Body Tech, punch, Kyong-go, Gam-jeam).
  - Switch to “Award” or “Remove”, accordingly to the
  - Switch to “Blue” or “Red”, accordingly to the situation “Apply” the score change to see changes on the scoreboard.
- **Penalty Point Modification** – award, remove penalty points from
  - Click on type of penalty (Kyong-go or Gam-jeom)
  - Switch to “Award” or “Remove”, accordingly to the situation
  - Switch to “Blue” or “Red”, accordingly to the situation.
- “Apply” the penalties change to see changes on the scoreboard.

# Hit Levels

## Senior Male

Category	-54	-58	-63	-68	-74	-80	-87	+87
Size PSS	#2	#3	#3	#3	#3	#4	#4	#4
Hit Level	26	30	31	32	33	34	36	38

## Senior Female

Category	-46	-49	-53	-57	-62	-67	-73	+73
Size PSS	#1	#2	#2	#3	#3	#3	#3	#4
Hit Level	22	25	26	27	28	30	31	32

## Junior Male

Category	-45	-48	-51	-55	-59	-63	-68	-73	-78	+78
Size PSS	#1	#2	#2	#2	#3	#3	#3	#3	#4	#4
Hit Level	20	22	23	25	27	28	30	32	33	34

## Junior Female

Category	-42	-44	-46	-49	-52	-55	-59	-63	-68	+68
Size PSS	#1	#1	#1	#2	#2	#2	#3	#3	#3	#4
Hit Level	18	19	20	21	22	23	25	26	28	30

## Cadet Male

Category	-33	-37	-41	-45	-49	-53	-57	-61	-65	+65
Size PSS	#0	#0	#1	#1	#2	#2	#2	#3	#3	#3
Hit Level	17	18	19	21	22	24	25	27	28	30

## Cadet Female

Category	-42	-44	-46	-49	-52	-55	-59	-63	-68	+68
Size PSS	#1	#1	#1	#2	#2	#2	#3	#3	#3	#4
Hit Level	18	19	20	21	22	23	25	26	28	30

## Kids (8-10 years)

Category	-26	-28	-30	-32	-34	-36	-39	-41	+41
Size PSS	#00	#00	#0	#0	#0	#1	#1	#1	#2
Hit Level	14	15	15	16	17	18	19	19	20

## Kids (11-12 years)

Category	-42	-44	-46	-49	-52	-55	-59	-63	-68	+68
Size PSS	#1	#1	#1	#2	#2	#2	#3	#3	#3	#4
Hit Level	18	19	20	21	22	23	25	26	28	30

## **Legal Stuff**

Copyright TrueScore 2013 © 2012-2016 Daedo International  
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