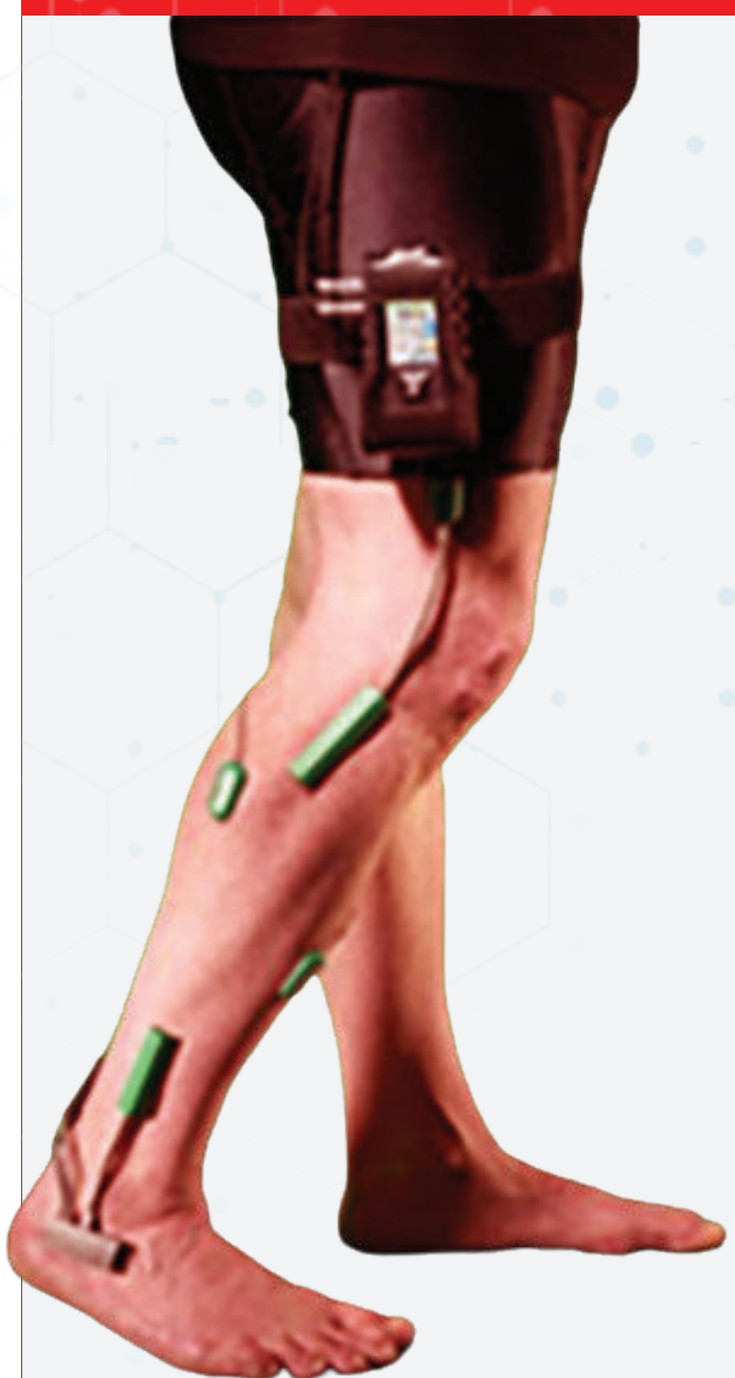
TRIAS

Visual AD conversion system consists of multi sensors and cameras



AD Conversion System and Movie

TRIAS System is a general term for our company's (Analog to Display) AD conversion of multiple sensor input and video comprehensive measurement system. By capturing images in synchronization with AD conversion and presenting them simultaneously, new teaching methods and discoveries can be made. This is complex measurement software that incorporates the image capture unit into the AD conversion system. By integrating specialized and general purpose softwares for various sensors and adopting a new concept of operation and file management methods, we have completed an easy-to-operate AD conversion and video measurement system.

TRIAS program (with measurement)

		Data import function	Image capture and presentation function	General analysis function	Ground reaction force analysis function	Writing motion analysis function
TRIASII data import program	IFS-6K	●				
TRIASII program (data import / image capture and presentation)	CSW-51B	●	●			
TRIASII program (data import / image capture and presentation / ground reaction force analysis)	CSW-52B	●	●	●		
TRIASII program (data import / image capture and presentation / general analysis)	CSW-53B	●	●	●		
TRIASII program (data import / image capture and presentation / writing motion analysis)	PH-2800	●	●			●
TRIASII program (data import / image capture and presentation / general analysis / writing motion analysis)	PH-2801	●	●	●		●
TRIASII program (data import / image capture and presentation / ground reaction force analysis / writing motion analysis)	PH-2802	●	●	●	●	●
TRIASII program (data import / general analysis)	PH-2803	●		●		
TRIASII program (data import / ground reaction force analysis)	PH-2804	●		●	●	
TRIASII program (data import / writing motion analysis)	PH-2805	●				●
TRIASII program (data import / general analysis / writing motion analysis)	PH-2806	●		●		●
TRIASII program (data import / ground reaction force analysis / writing motion analysis)	PH-2806	●		●	●	●

TRIAS program (analysis)

		Data import function	Image capture and presentation function	General analysis function	Ground reaction force analysis function	Writing motion analysis function
TRIASII Image capture and presentation program	IFS-57K					
TRIASII General analysis program	IFS-4K		●	●		
TRIASII Ground reaction force analysis program	IFS-3K					
TRIASII Writing motion analysis	IFS-90K					
TRIASII program (image capture and presentation / general analysis)	PH-2808				●	●
TRIASII program (image capture and presentation / ground reaction force analysis)	PH-2809		●	●		
TRIASII program (image capture and presentation / writing motion analysis)	PH-2810		●			
TRIASII program (image capture and presentation / general analysis / writing motion analysis)	PH-2811		●	●		
TRIASII program (image capture and presentation / ground reaction force analysis / writing motion analysis)	PH-2812		●	●	●	●
TRIASII program (general purpose analysis / writing motion analysis)	PH-2813		●	●		●
TRIASII program (ground reaction force analysis / writing motion analysis)	PH-2814		●	●	●	●
Version upgrade from old TRIAS (per license)						●

※ An image import and presentation program is required to load and display video files and import in conjunction with the camera.

※ The general-purpose analysis program includes a myoelectric analysis function.

※ The ground reaction force analysis program includes the functions of a general-purpose analysis program.

※ It is also possible to purchase only the import program or only the analysis program (measurement is not possible).。

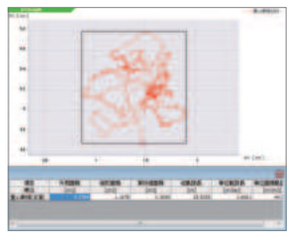
※ The displayed price does not include consumption tax.

※ The production of the pen pressure measurement device has been discontinued.

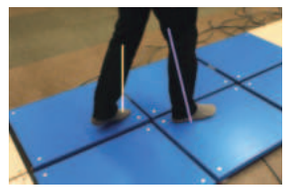
Features of TRIAS

Simplified ground rebound measurement and various analysis functions

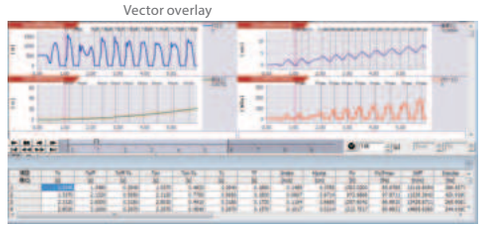
- Easy to measure Kistler Group force plates.
  Sensitivity, plate arrangement, etc. can be registered in TRIAS.
- You can measure 10 plates (up to 16 plates) using a laptop.
  Combinations of multiple plates and other analog equipment are also possible.
- The USB connected charge amplifier controller allows you to control the amplifier from TRIAS.
- Compatible with AMTI Japan Ltd plates.。
- Equipped with the following analysis functions.
  - ★ Vector diagram / 6 components of force/point of action
  - ★ track display
  - ★ Sum up multiple plate combinations as one plate
  - ★ Vector overlay
  - ★ Stabilometry
  - ★ Walking analysis
  - ★ Jump analysis



Vector overlay



Stabilometry



Walking analysis

EMG/goniometer/electrocardiogram, heartbeat analysis

EMG

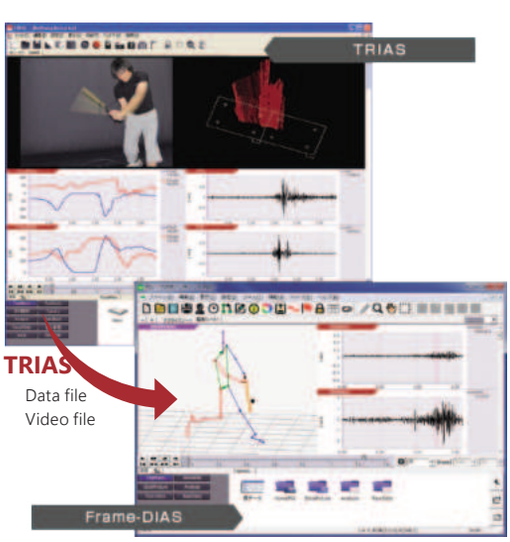
- Baseline noise removal
- MVC conversion
- iEMG、 mEMG、 RMS
- FFT (frequency characteristics/ average power frequency/ center power frequency)
- Full wave rectification
- Smoothing
- Interval average

Goniometer

- Low pass filter
- Angular velocity
- Angular distribution
- Unit conversion (deg<->rad)
- Angular acceleration
- XY graph (plotting 2-axis data and displaying the trajectory)

Electrocardiogram, heartrate monitor

- RR tachogram
- RR interval waveform
- Power spectral density
- Calculation items (maximum/ minimum/ average RR interval, SDRR,CVRR, RR50, TotalPower,



Cooperation with Frame-DIAS

Files measured with Trias can be imported directly into the video motion analysis system Frame-DIAS.If you use Trias to record video in synchronization with AD conversion, you can use that video and signal data with Frame-DIAS. On Frame-DIAS, you can simultaneously view and analyze motion data calculated from image marker coordinates and signal data from various sensors.

Synchronous measurement of wireless devices and wired devices

You can perform real-time reception and monitoring of wireless device on TRIAS.By using a trigger and an LED light emitting device, data and image from wired sensor such as force plates can be captured at the same time as the start of measurement.Even if data is missing during reception due to subject movement, the data will be supplemented on TRIAS after measurement using the logger function of the wireless device. The data can be processed using TRIAS analysis function (Feature 2) and saved as a file, just like conventional AD conversion data.

* The displayed price does not include consumption tax

Video synchronization

High speed camera video recording and AD conversion are fully synchronized

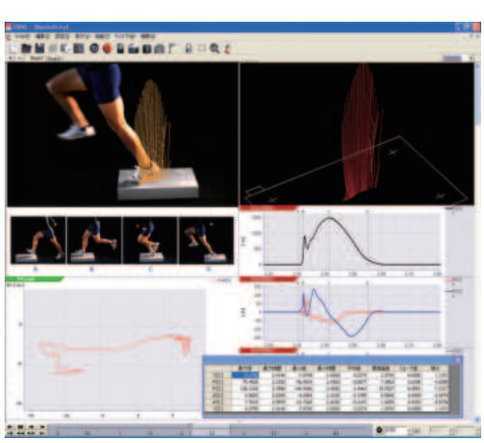
It performs AD conversion in full synchronization with a high speed GigE camera of up to 300fps, and can display images and waveforms immediately after shooting.

Synchronization with web camera video

Video captured with a web camera and waveforms can be displayed in sync.

Synchronized display of video and waveform offline

When using a consumer camera, if you use an LED synchronizer to project light at the trigger start, you can display the image and waveform in sync with an accuracy of within 1/60 seconds after measurement.



Specifications

64bit native compatible

Make full use of the memory installed in your PC

300fps GigE camera compatible

GigE camera that can be synchronized with AD supports up to 300fps

Support videos in mp4 and mov formats

In addition to avi, mpg, and wmv formats, it also supports mp4 and mov format videos.

Added “notch filter function”

Added filter function to cut only power supply noise [50Hz or 60Hz] and specified frequency components

EMG analysis improvement

%MVC conversion reference value acquisition/integral waveform display/interval analysis

TRIAS basic unit

This is the basic part of the TRIAS system, consisting of an AD conversion device that can be connected to a computer with a single USB cable for measurement, and a data import/image presentation program.It is compatible with both laptops and desktop PCs.
Up to 16ch of analog signals output from any of our measuring instruments and images can be captured at the same time, and then the measurement data and images can be displayed simultaneously.It is also possible to import external data (text data) and display it in graph.A data analysis program is provided separately.

USB 16ch AD conversion unit (including case)	PH-670A	1 set
TRIAS II program (data import/image capture and presentation)	CSW-53B	1

It is a simple configuration with only AD conversion.
(PC is optional)

Trias program (with measurement)

This is a program that includes TRIAS measurement functions. Depending on the sensor and equipment you are using, you can select a combination with the optional image capture and presentation function and each analysis function. Please refer to the attached table for combination detail an d price.

General analysis program	IFS-4K	1
Ground reaction force analysis program (including General analysis)	IFS-3K	1

TRIAS comprehensive system

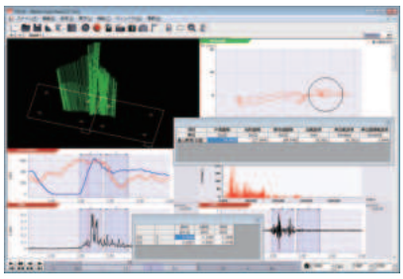
This is a specific example of a measurement system that fully utilizes the basic parts of TRIAS. With this configuration, analog signals such as force plate, goniometer, and EMG can be connected to a total of 16ch, and up to 4 cameras can be connected simultaneously. With this item configuration, AD conversion and camera image can be completely synchronized. In this way, TRIAS allows you to easily capture and display signal and image simultaneously by simply connecting the device and starting the software. The components can be changed freely and be highly flexible. This system consists of two cameras.

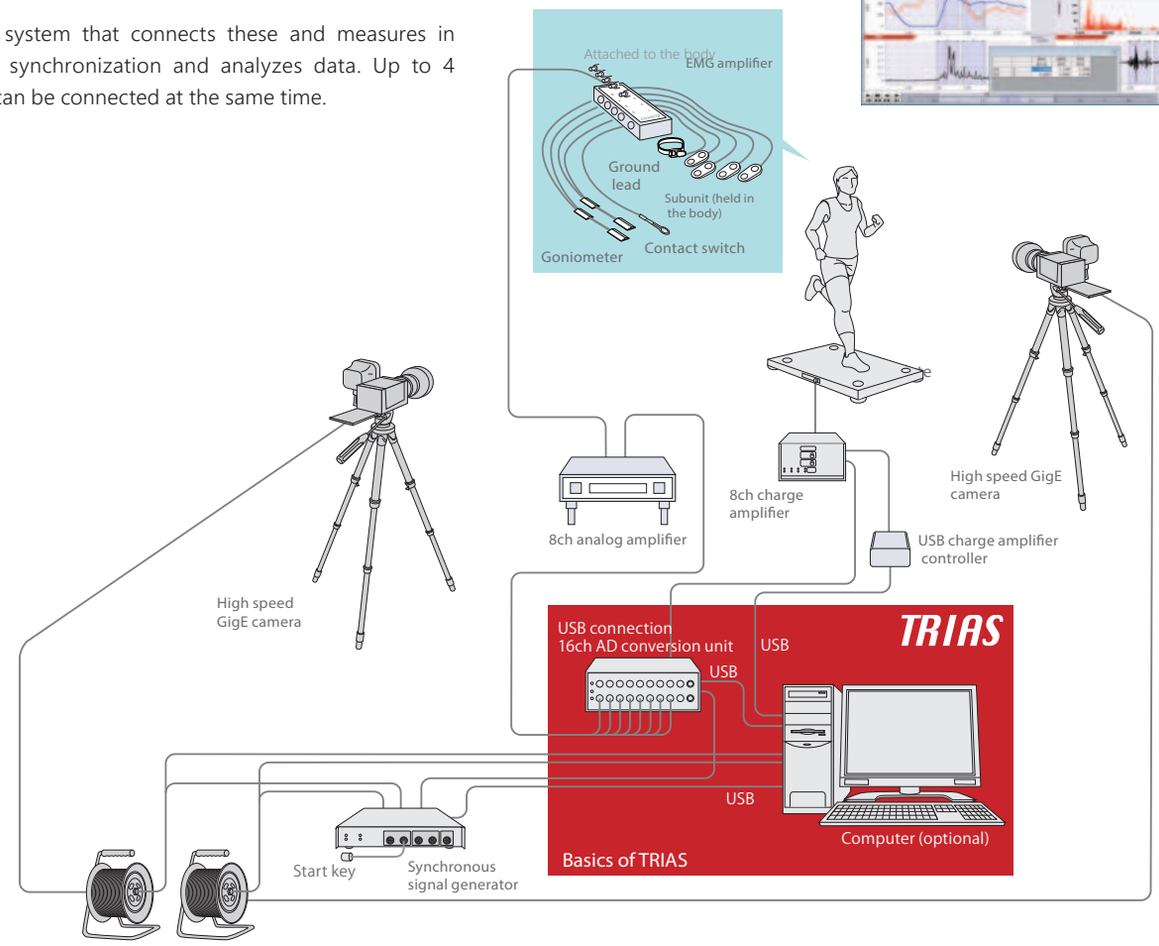
Portable ground reaction force measurement system	See 6-01	1 set
Joint angle/EMG system	See 4-03	1 set
High speed GigE・2 cameras set	PTS-2262A	1 set
Connection cable	KY-500/L0.4	1 set

In the basic part of TRIAS,

Kistler Group force plate	1 set	8ch	Total 16ch
Goniometer + EMG, etc.	1 set	8ch	
High speed GigE camera	2units	2ch	

This is a system that connects these and measures in complete synchronization and analyzes data. Up to 4 cameras can be connected at the same time.

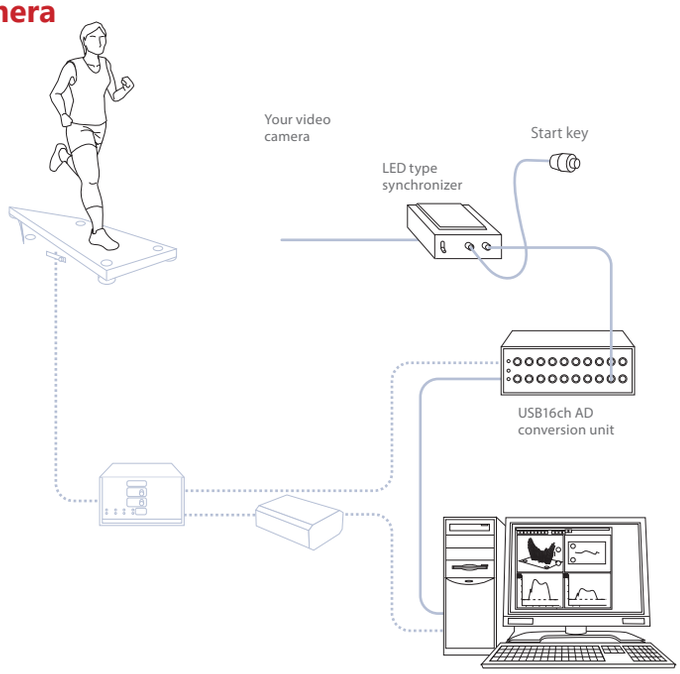




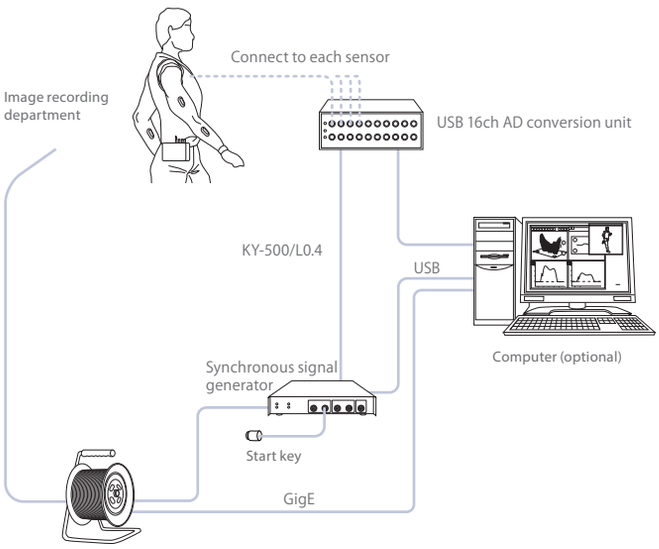
TRIAS synchronized with consumer video camera

Although frame synchronization cannot be applied to consumer video camera, it is possible to use an LED synchronizer to project a light at the start of the action and perform trigger synchronization with the AD conversion unit with an accuracy of within 1/60 seconds. In addition, this program allows you to simultaneously import AD conversion data and DV camera video to your PC, so you can display the waveform and video in sync just by setting a synchronization point after measurement. Here we show examples of connections with force plates made by Kistler Group and AMTI Japan Ltd. (Price of camera, plate related equipment, and ground reaction force analysis program are not included). You can also choose to combine it with other devices such as myoelectric.

LED type synchronizer	PTS-110	1 set
Connection cable	KY-163	1 set
USB 16ch AD conversion unit (including case)	PH-670A	1 set
TRIAS II Program (data import/ image cature and presentation/ general analysis)	CSW-53B	1 set



※ Video camera is not included. Please use your own camera.
※ PC, plate related equipment, ground reaction force analysis program is optional



TRIAS system synchronized with high speed Gigmera

Our high speed GigE camera system generates a reference clock for AD conversion from a synchronization signal generator, and can perform AD conversion completely synchronized with each frame of the image.
Immediately after shooting, image and AD converted waveform such as electromyogram and accelerometer can be displayed synchronously, making it possible to analyze by correlating the subject's movement and waveform.

LED type synchronizer	PTS-2261A	1 set
Connection cable	PH-670A	1 set
USB 16ch AD conversion unit (including case)	CSW-53B	1 set
TRIAS II program (data import/ image capture and presentation/ general analysis)	KY-500/L0.4	1 set

TRIAS system synchronized with web camera

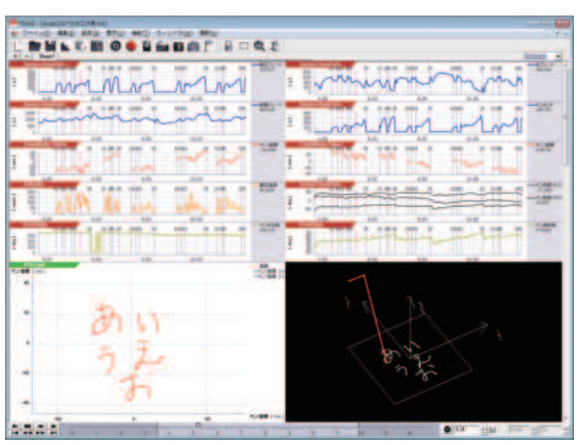
At the same time as measuring AD conversion data, you can record video using a web camera connected to the USB port of your computer. After measurement is complete, the imported video file is displayed on the screen, making it easy to adjust the synchronization point between the video and the waveform. This function is included in the TRIAS II image capture and presentation program. Available in TRIAS II 1.70 and later versions.

TRIAS II program (data import/image capture and presentation)	CSW-51A	1
TRIAS II program (data import/image capture and presentation/ground reaction force analysis)	CSW-51B	1
TRIAS II program (data import/image capture and presentation/general analysis)	CSW-51C	1

Simultaneous recording of AD conversion data and video using a web camera

TRIAS motion analysis

We measure and analyze the changes in force on the writing surface, hand, and forearm that occur and the handwriting during writing motion. Measure with up to 4 types of 1-axis strain gauge sensors and outputs as analog signal. Writing motion which have been evaluated subjectively until now can be evaluated objectively by quantitatively measuring them with this device. It can be used for various research related to writing motion.



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