

TRAPEZIUM SATELLITE



TRAPEZIUM SATELLITE

Paves the Way to a New Normal

Putting the Testing Machine Laboratory in the Palm of your Hand



Let **TRAPEZIUM SATELLITE** Take Care of Your Problems!

I would like to check testing status and results,
but that requires visiting the laboratory each time.

NEW Normal 01

Check the Status of Tests from a Remote Location



The remote monitoring function
enables instruments at separate
locations to be assessed.



The notification function informs users
by email of any status changes during
a test.

NEW Normal 02

Automatically Save and Download Test Results



The test results and time-lapse videos
can be automatically saved and
downloaded.



Considerable modifications are required to network
everything, including the older instruments.

NEW Normal 03

Camera-Based AI Monitoring Function Digitizes the Information



Using a camera, older instruments can be monitored without modifying
them.

The AI monitoring function efficiently digitizes the information, and can
manage ancillary equipment as well.

It is a nuisance to assess the operating status of
a number of instruments.

NEW Normal 04

Check the Operating Status of Multiple Instruments at a Glance



The dashboard lets you monitor the status of
multiple instruments at a time.

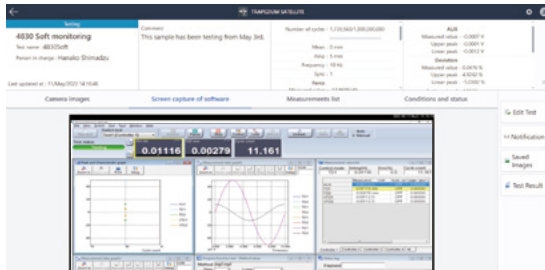
NEW Normal

Check the Status of Tests from a Remote Location

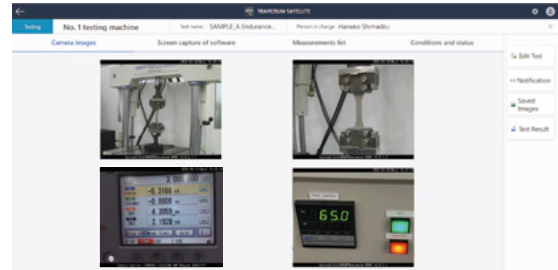


Remote Monitoring Function

In addition to real-time numerical values, detailed information, including peak value fluctuations and waveforms, can be assessed via image transfer by connecting to Windows® software for 4830. Attaching a USB camera enables checks using camera images.



Windows® Software for 4830 Browsing Window

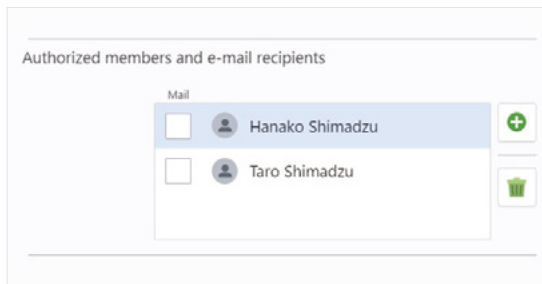


USB Camera Image Browsing Window

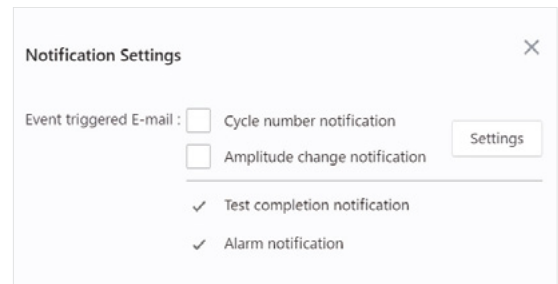


Notification Function

Changes in test status can be received by email. This frees users to focus on other work rather than worrying about the status of the testing machine. There are multiple notification settings which can be set according to user preferences.



Notification Destination Setting Window



Types of Email Notifications
Cycle notification/Amplitude fluctuations/End of test/Alarms

Automatically Save and Download Test Results



Automatic Saving Function

The latest test results during testing are saved automatically to a Network Attached Storage (NAS).

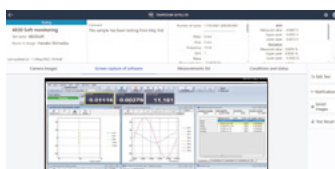
When there is a change in status, time-lapse videos are automatically saved, which lets users review the status of tests using the videos.



Download Function

The latest test result files and time-lapse videos can be obtained using an office or home* PC during tests at a separate testing laboratory.

*To download test results to a home PC, it must be possible to access the NAS, on which the test results are stored, from home.



TRAPEZIUM SATELLITE



Test Results



Time-Lapse Video

*We do not guarantee the accuracy, integrity, availability, or confidentiality of the data used by the service.

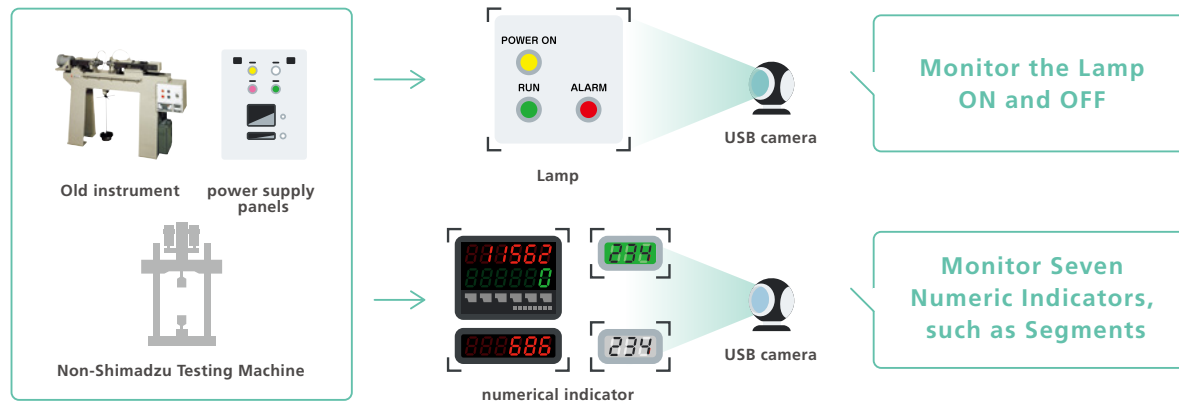
Camera-Based AI Monitoring Function Digitizes the Information



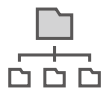
Simple Camera-Based Instrumentalization

The status of older instruments and ancillary equipment to testing machines can be assessed easily using a camera. (The AI can recognize whether lights are ON or OFF and read numerical values.) Through these cameras, the instruments can be connected to the network without any instrument modification.*

*This depends on the conditions and the instrument being monitored.

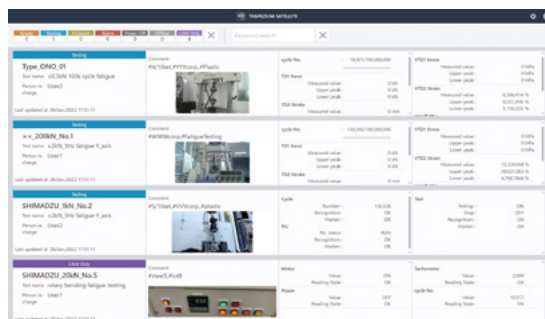


Check the Operating Status of Multiple Instruments at a Glance

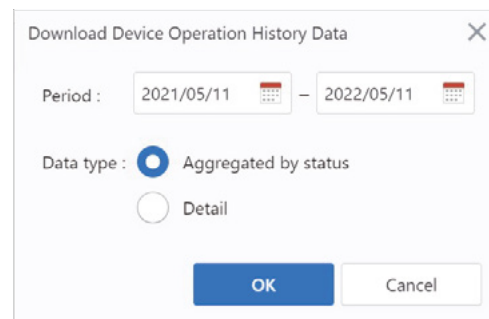


Simultaneous Browsing Function

The test status for each instrument is arranged vertically, so the status of multiple instruments can be assessed at a glance. In addition, users can specify an interval and easily download operating logs for all the instruments, availability factors and other calculations can be easily performed and tallied separately by instrument status.



List Window



Batch Output Window of Operating History

Monitoring Window

The Microsoft Edge® or Google Chrome™ compatible browsing window puts the testing machine laboratory at hand, whenever and wherever.

Browsing Window Enables Consolidated Management of a Variety of Instruments

The entire laboratory can be controlled through consolidated management of both current Shimadzu testing machines as well as old models and ancillary equipment. In addition, the monitoring information obtained from the testing machines is displayed in a card format with a landscape orientation.

Testing Machine Status

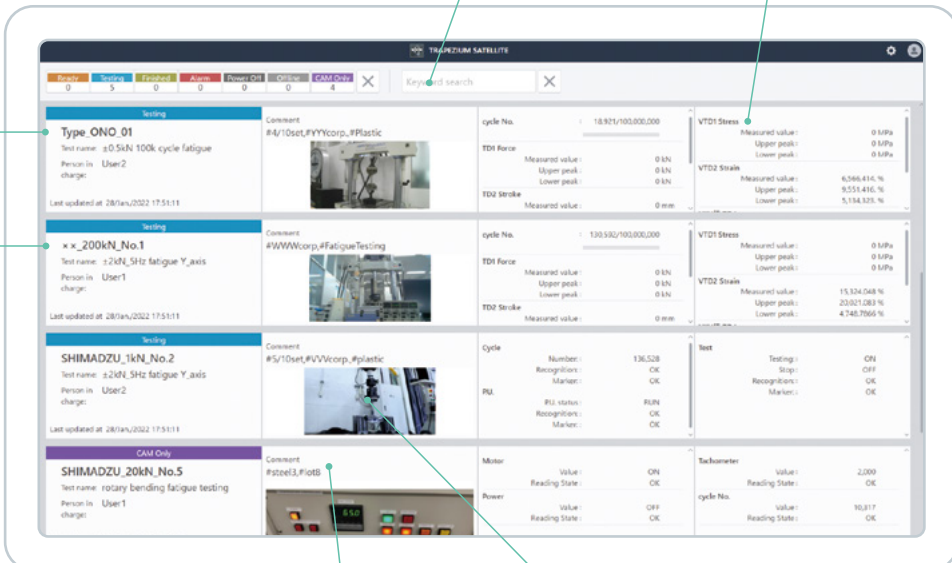
The current testing machine operating status such as “Testing” or “Alarm activated” is displayed as the monitoring status.

Search Function

The system is capable of keyword searches.

Data Browsing

The data obtained is displayed separately.



Testing Machine Status Search Filter Function

Testing machines are displayed according to the selected testing machine status, enabling filtered searches.

Commenting Function

Memos can be freely added in the comments field.

Camera Monitor

Thumbnail images from the connected camera are displayed. The system as a whole can monitor up to 180 connected cameras.

Other Functions

Saves Data when the Status Changes

Data and images (videos) are saved to NAS when triggered by a change in the status.

Batch Output of Operating Status

Batch output in CSV format of test names, operating status, and testing machine names.

User Management/Login Function

Registration of user information by entering an ID and Password can limit the information that can be browsed for each logged-in user.

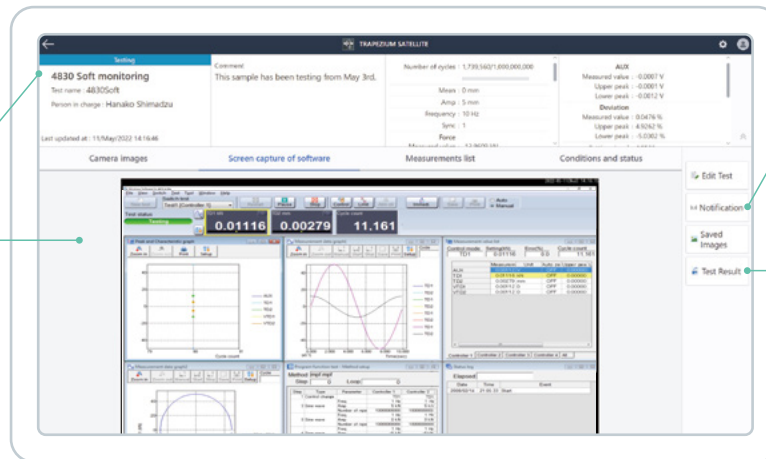
Details Window for Accessing the Respective Instrument Information

In the browsing window, double-click the display area for each testing machine to display a details window. This shows the status of the testing machine in more detail.

Hybrid Monitoring of Shimadzu Software Windows and Data

With testing machines that use Shimadzu's Windows® software for 4830, software windows can be monitored remotely.

Display of Browsing Window Information



Email Notification Settings

Users who have configured the email notification settings are notified in real time of the status whenever it changes.

Control Software Window

Monitoring the control PC's software window. PC image transfer can be configured for any window.

Downloading the Test Results

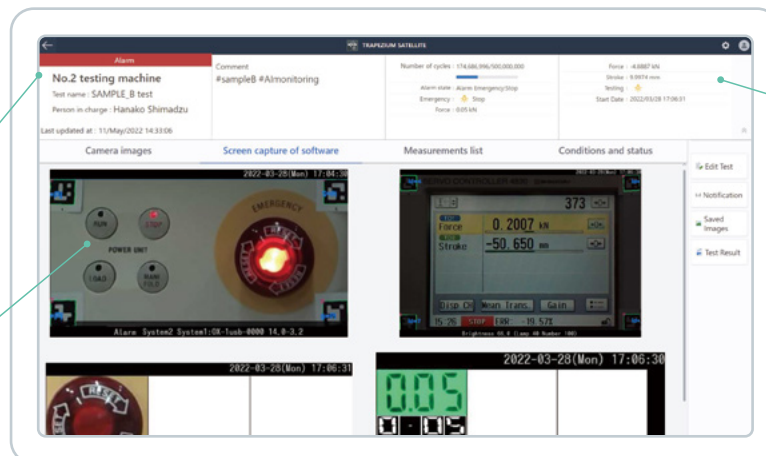
The results files for testing status up to present are downloaded through the browser.

*The results files that can be acquired depend on the connection format.

Simple Monitor, Capable of Assessing Status from AI Image Analysis, Supports a Variety of Testing Machines

The results of an AI assessment based on the camera image can be browsed. AI image analysis can check if indicator lights are ON or OFF, and read in numerical values.

Display of Browsing Window Information



List of AI Assessment Results

The AI assessment of the status from the image is displayed.

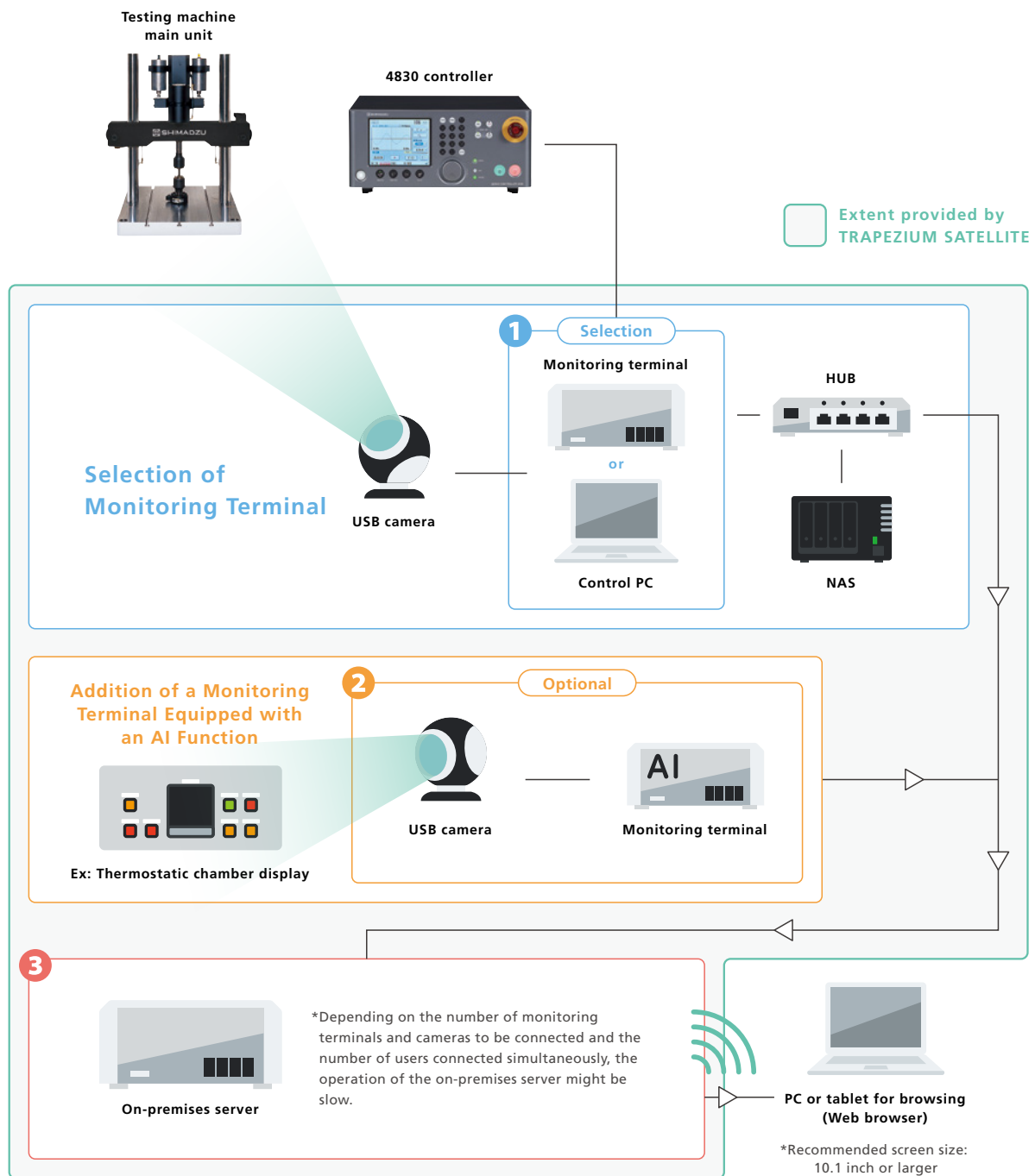
Camera Information List

The camera name as well as the date and time are displayed.

Basic System Configuration

The following are the basic configurations of **TRAPEZIUM SATELLITE**.
The combinations differ depending on the instruments to monitor.

The System Consists of a Monitoring Terminal, Server, and Networking Equipment

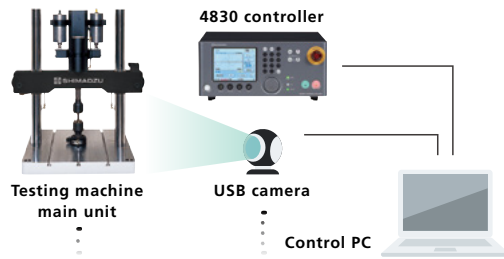


*The maximum number of monitoring terminals is 15.

*The maximum number of cameras that can be connected is 180.

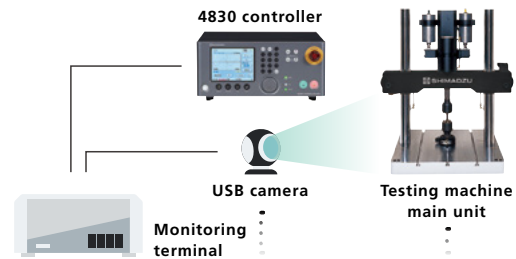
① 4830 Controller Monitoring

Using Windows® for 4830 Software



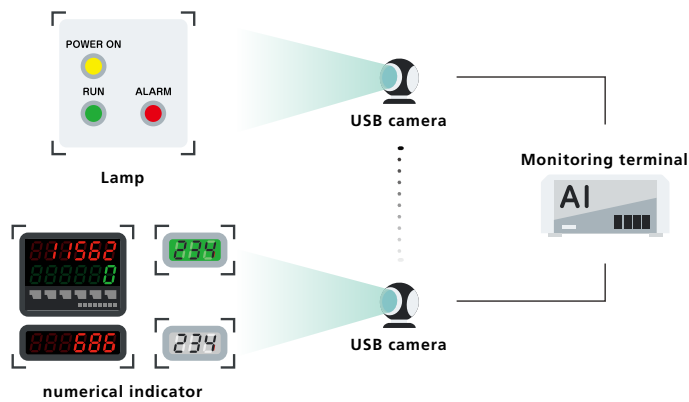
*Up to four 4830 controllers and four USB cameras can be connected to one control PC.

Stand-Alone



*Total number of control devices and USB cameras that can be connected to a single monitoring terminal is 12.

② AI Image Monitoring



By using camera images of indicator lights and other indicators and 7-segment LED displays, AI image analysis can digitize and monitor indicator ON/OFF status and the numerical values from displays.

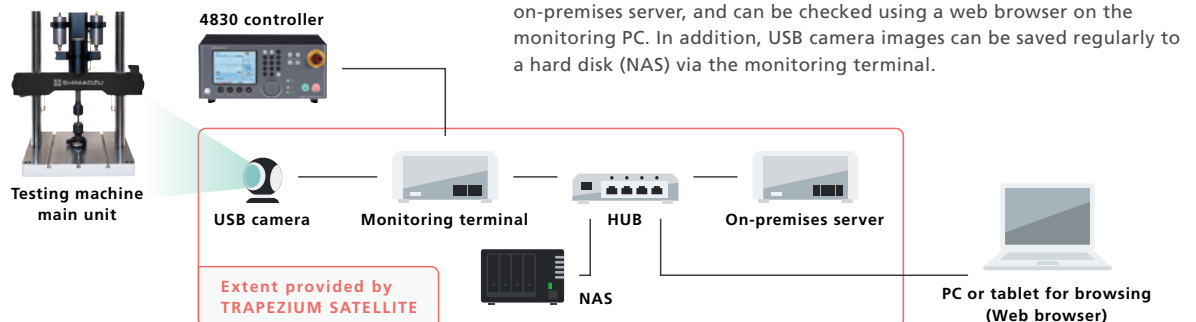
*Up to 12 cameras can be connected to one monitoring terminal.

*A total of 12 selections can be subject to AI processing.

*Use the recommended camera when using AI image analysis.

③ Server

On-Premises



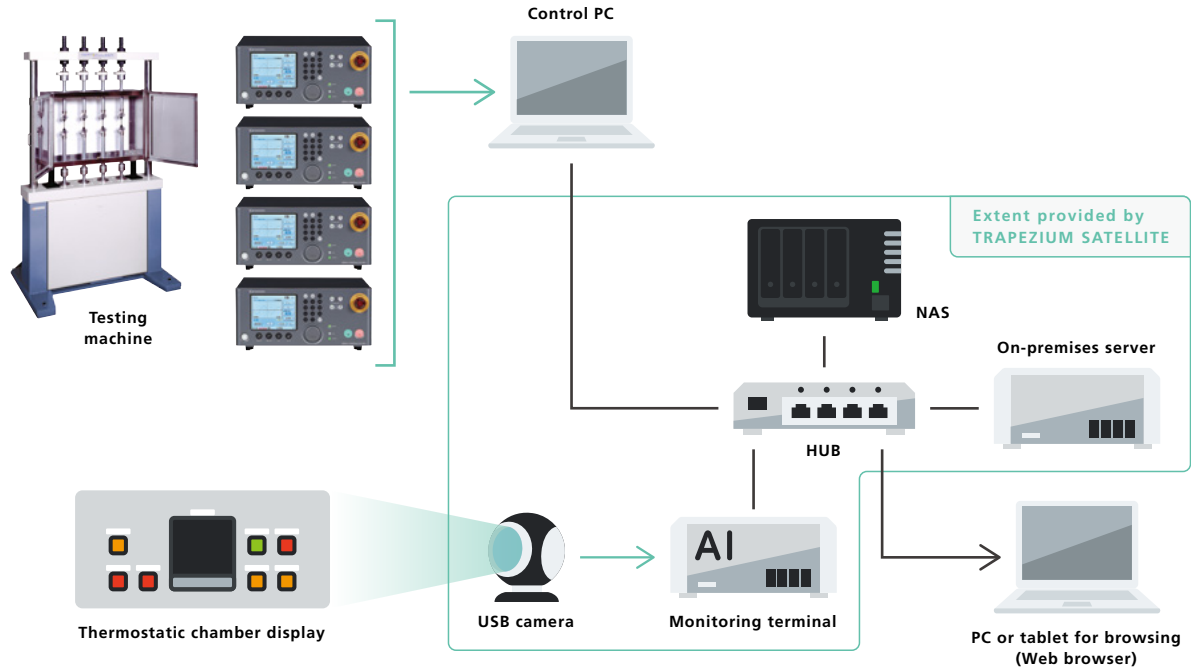
In this system, a local network is constructed in-house for remote monitoring. The operating status of testing machines is transferred to the on-premises server, and can be checked using a web browser on the monitoring PC. In addition, USB camera images can be saved regularly to a hard disk (NAS) via the monitoring terminal.

Examples of System Configurations

The following are the applied configurations of **TRAPEZIUM SATELLITE**. Remote monitoring is possible even if there are multiple or different types of units to monitor.

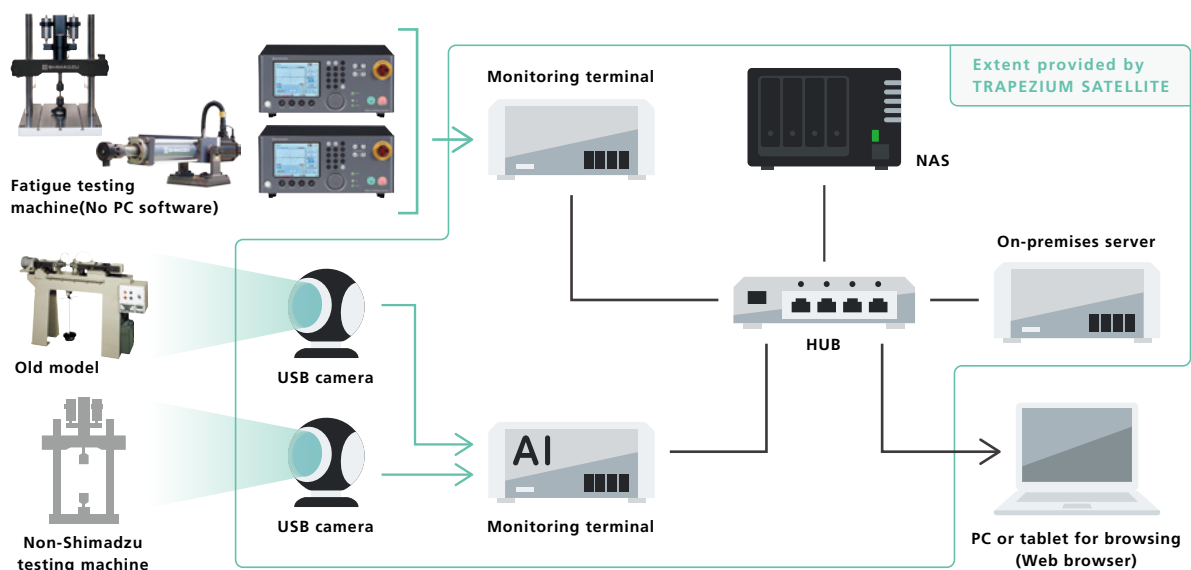
On-Premises

Example when Using the 4830 Controller Software



On-Premises

Example when Using Stand-Alone 4830 Controllers



Specifications

	4830 Software Model	4830 Stand-alone Model
Connecting devices	4830 or USB camera x 12	4830 x 4 USB camera x 4
Maximum connecting devices (expansion)	180 (Monitoring terminal x 15)	176 (PC x 1, Monitoring terminal x 14)
Displayed status type	"Ready", "Testing", "Finished", "Alarm", "Power off", "Offline", "Camera Only"	
Displayed 4830 data	Measurement values, Test frequency, Number of cycles, Amplitude, Mean, AGC status, Alarm status, Power unit Status, Manifold status, Synchronous status	
Web camera view	○	○
Software view	×	○
Time-lapse video	○ (USB camera only)	○ (USB camera and software screen)
AI Image processing *1	○	○
E-mail notification *2	Cycle number interval, Amplitude changes, End of test, Alarm occurred	
Data download	Device operation history	Device operation history Test result data of software

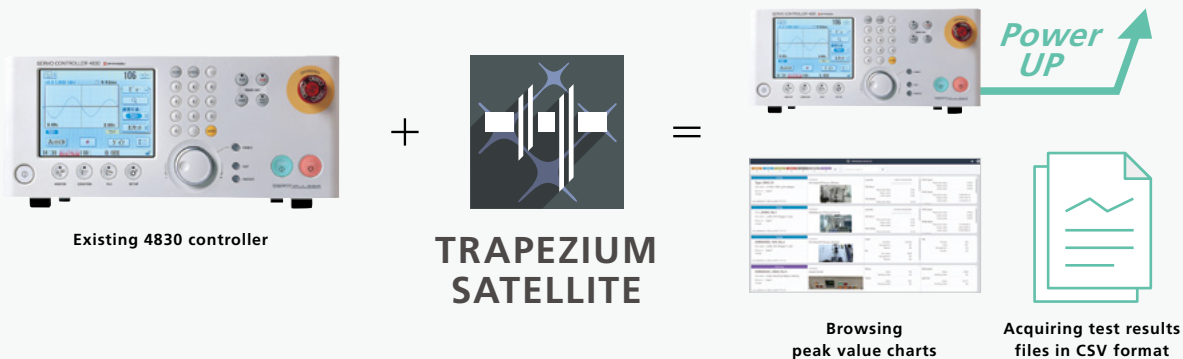
*1 Optional Monitoring terminal FOR AI and Webcam FOR AI are required.

*2 Optional Gateway and SIM contract are required.

Actually, data from a stand-alone 4830 controller can be acquired by installing TRAPEZIUM SATELLITE.

To date, stand-alone units left no data. However, with TRAPEZIUM SATELLITE, peak value charts can be browsed using Windows® software for 4830 viewer, so the testing progress can be assessed at a glance. Output in CSV format is also available, simplifying the work of compiling the test results.

Furthermore, the test results are automatically left on the networked hard drive, creating an effortless data storage environment.



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