ADVANTEST

Evolutionary Value Added Measurement System

EVA100

Powerful Support for Characteristics Evaluation, Functional Evaluation, and Production

Can do what you want, quickly

In recent years the number of smart devices we use has increased significantly. The role of analog / sensor ICs has become critically important. More than ever, higher performance, tighter accuracy and longer reliability are required for these devices. To address these challenges measurement systems need to have many features while maintaining a very low test cost, and engineers tasked with developing test programs require very good coding skills plus in-depth operation knowledge of the test system.

Our new measurement system EVA100 enables easy, rapid characterization, functional evaluation and mass production evaluations of low pin count analog(*1) and mixed signal(*2) devices.
Our newly developed Software GUI is extremely intuitive, requiring only drag & drop operation, enabling engineers to create device focused measurement set ups in a very fast and simple manner. Automatic report functions dramatically improve the efficiency of deskwork, providing clear documentation and data ready for publishing in device data sheets.

(*1): DC-DC Converter or Voltage regulator ICs
(*2): AD Converter DA Converter ICs

Product Features

The EVA100 is a new measurement system combining all necessary features for device evalution, including support for analog voltage and current sources, pattern generation, and waveform capture, in a single compact unit. Users are liberated from the laborious work of setting up cables to connect multiple measurement instruments. The EVA100 offers simultaneous control of all functions with superior timing precision, achieving excellent reproducibility of results without the need for ad hoc fixes.

Small

All necessary functions are integrated into the compact body (363mm x 472mm x 206mm) which has VI sources (AVI, MVI), General Control Module(GCM) and Signal Capture(SCAP).

High Performance

The Event Master Sequencer (EMS) controls the hardware with high timing accuracy and high precision enabling superior repeatability. Analog VI source, General Control Module and Signal Capture instruments provide versatile and comprehensive measurement capability.

Intuitive

“No programming language environment” offers very intuitive operation for users, so that everyone from beginners to experts is able to use the system quickly. Automatic report generation tools reduce the need for additional deskwork, improving the efficiency of evaluation and measurement tasks dramatically.

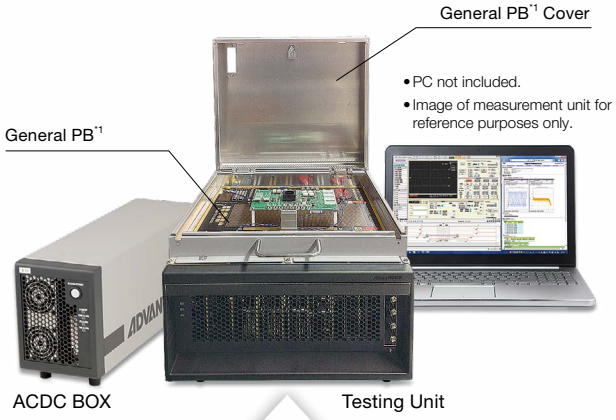
Expandable

Expandable architecture supports many scenarios from design to production for analog and mixed signal devices. Supporting external instruments, customized measurement systems can also be created according to more specific requirements and needs.

Advantage

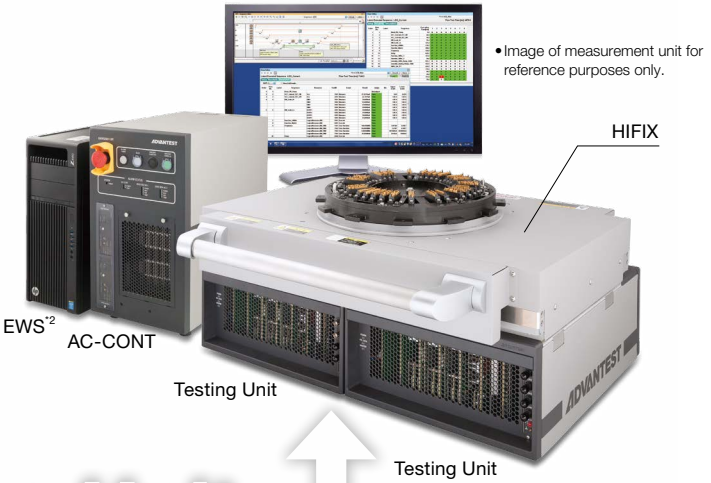
The EVA100’s intuitive GUI offers a seamless test sequence environment that supports diverse product development processes. The test sequence editor eliminates the need for software development skills. This new measurement tool drastically shortens learning curves, and enables users to build a shared measurement environment that can be used from R&D through to production test—all with a single, compact testing unit. This promotes communication and feedback during evaluation and production, and helps to accelerate product development across multiple processes.

Example of Engineering Setup



Example of Production Setup

This picture shows two testing units setup.



Common Unit

*1 General Performance Board

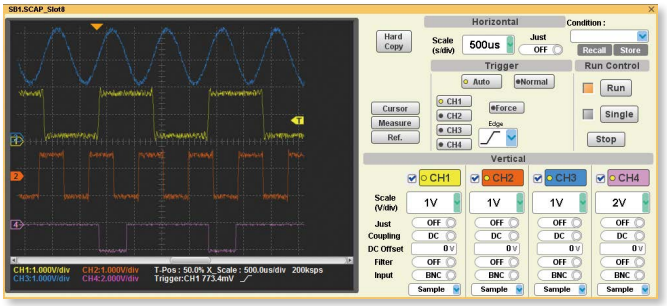
*2 The EWS (Engineering WorkStation) includes a monitor, keyboard, and mouse.

Main Functions

Characteristics Evaluation

4 channels high frequency sampling digitizer to observe and measure transient response waveforms or behavior of device under test(DUT).

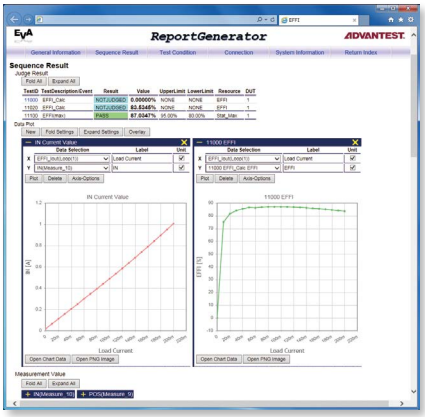
■ Signal Capture module(SCAP)



Productivity Evaluation

The EVA100 automatically creates graphs of DUT characteristics and generates HTML-format reports on measurement conditions and results, freeing users from taking notes on each item to be evaluated. Files can be copied and downloaded in CSV format, making it easier and quicker to create device evaluation reports

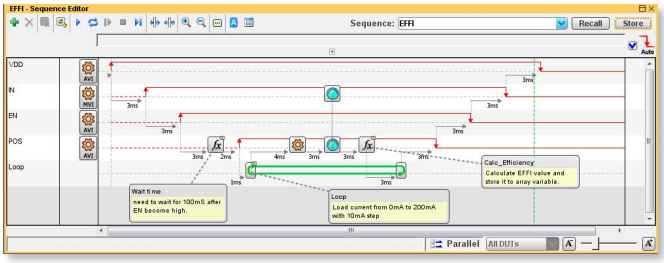
■ Documentation (Report Generator)



Functional Evaluation

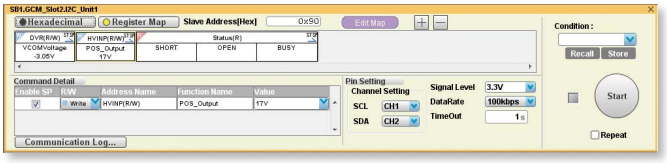
Sequence Editor makes it easy to synchronize multiple hardware channels based on how the user determines when events occur. The Sequence Editor also supports continuous measurement or conditional loop settings enabling greater control of automated measurements. .

■ Synchronized Sequence Control (Sequence Editor)



I2C, SPI, and JTAG I/F are supported by protocol based control. By preparing the Register Map, we can use the register name for digital patterns instead of mnemonics so that Register Map gives you a clear overview for the digital pattern and improve the readability and efficiency of digital pattern debug.

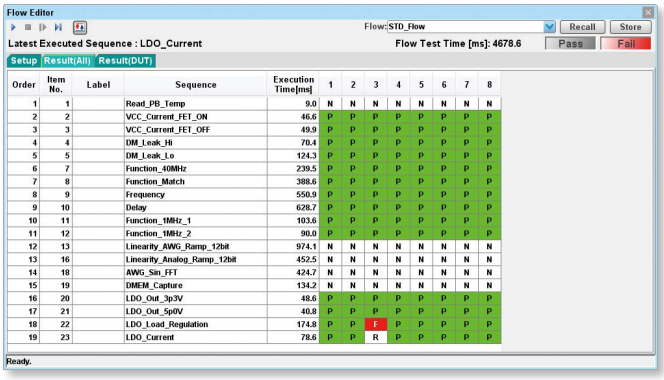
■ Protocol Support (Register Map)



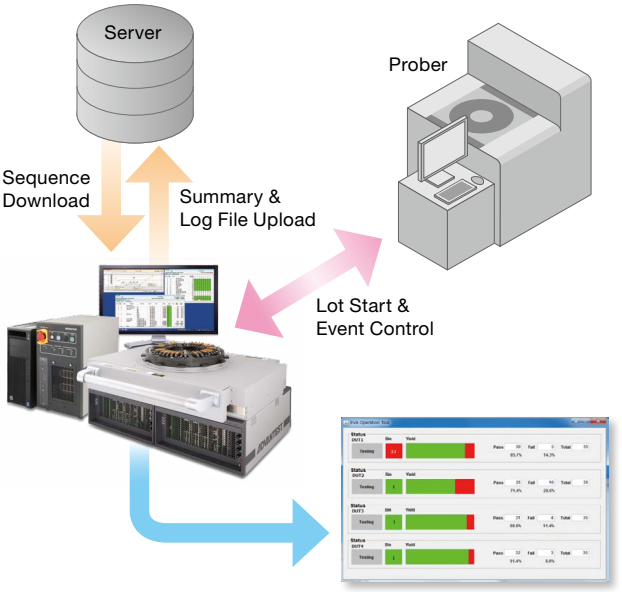
Production Test

The EVA100 supports parallel measurement for production test. Users need only set up connections to the desired number of DUTs to begin testing multiple devices. The ability to use test sequences developed in the design phase also reduces the number of processes required.

■ Production Test Flow (Flow Editor)



Example of Production System



Example of Measurement Results

Specifications

Function	Module name		Description
Core Module			
Synchronization	EMS		System Bus and Synchronization; External Instruments Control and Synchronization (Incl. Thermal Unit) Utility Power Supply: +5V, +12V, +15V, -15V
General Control	GCM	8ch:	I2C, SPI, JTAG and Custom Interface; 100Mbps Pattern Generator; Digital Function Test; 4 Quadrant Per Pin Parametric Measurement Unit Time Measurement Unit (1ch): DC to 100MHz Frequency; TPD Tr / Tf; Period
		64ch:	Relay Control bit 0 to 5V
Measurement Module			
Multi Channel Voltage/Current Source Measurement	AVI	6ch:	Voltage Source: 4.5 digits, +/- 64V or -32V to +96V; Resolution: 62.5µV to 4mV Current Source: +/-500mA at +/-2V to +/-8V Range, +/-200mA at +/-16V Range, +/-80mA at +/-32V to +/-64V Range, +/-30mA at -32V to +96V Range; Resolution: 0.25nA to 25µA Voltage Measurement: Max 5.5 digits Display; Min Resolution: 15.625µV Current Measurement: Max 500mA Display; Min Resolution: 62.5pA Ramp / Program Generation; Parallel / Stack Connection; Digitizer; Arbitrary Waveform Generator
Middle Power Voltage/Current Source Measurement	MVI	2ch:	Voltage Source: 4.5 digits, +/-128V; Min Resolution: 62.5µV Current Source: +/-5 A (Pulse); Min Resolution: 0.25 nA Voltage Measurement: Max 5.5 digits Display; Min Resolution: 15.625µV Current Measurement: Max 5A Display; Min Resolution: 62.5pA Ramp / Program Generation; Parallel Connection; Digitizer; Arbitrary Waveform Generator
Pattern Generator	DM	32ch:	100Mbps Pattern Generator; Digital Function Test; 4 Quadrant Per Pin Parametric Measurement Unit; Time Measurement Unit (4ch): DC to 100MHz Frequency; TPD Tr / Tf; Period Low Jitter Clock (8ch)
Arbitrary Waveform Generator Digitizer	LF	4ch:	Arbitrary Waveform Generator (AWG): 200ksps/24bit, 80kHz Band Width Digitizer (DGT): 625ksps/24bit, 200kHz Band Width 4 Quadrant Per Pin Parametric Measurement Unit
	HF	2ch:	Arbitrary Waveform Generator (AWG): 512Msps/16bit 200MHz Band Width, Low Distortion Mode: <–100dB at 1MHz Sinusoidal wave Generator: 0.1Hz to 200MHz, Max 6Vpp Digitizer (DGT): 250Msps/16bit 200MHz Band Width 4 Quadrant Per Pin Parametric Measurement Unit
Oscilloscope (2Gsps)	SCAP	4ch:	1Gsps 500MHz Band Width (PB Direct Input: 50 ohm), 300MHz Band Width (BNC Input: 1M ohm); 8,000 Point Per Channel, High Speed Sampling Mode (2Gsps/2ch)

System Requirements

PC	2.2GHz, 64bit 4-Core Processor, Memory: 8GB, Display resolution: 1366x768, or better Interface: USB2.0x1, or better; ExpressCard/34 or ExpressCard/54
Operation Software	Microsoft Windows* 7 (64bit) Service Pack 1

* Microsoft Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.

System size

Testing Unit	363 mm (W) x 472 mm (D) x 206 mm (H) weight: Approximately 11kg (minimum configuration)
ACDC BOX	140 mm (W) x 472 mm (D) x 206 mm (H) weight: Approximately 6.4kg
AC-CONT	265 mm (W) x 529 mm (D) x 475 mm (H) weight: Approximately 6.4kg
EWS	432 mm (W) x 169 mm (D) x 445 mm (H) weight: Approximately 17.5kg

Please enquire separately regarding testing unit module configurations and system configurations.

● All specifications and images in this catalog are correct at the time of publication, but may change without notice.
Please contact us to ensure you have the most up-to-date information on our products and services.

ADVANTEST®

http://www.advantest.com

ADVANTEST CORPORATION
Shin-Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan Phone: +81-3-3214-7500

EVA Project E-mail : info_eva@advantest.com