Ideal Starter Package

The SYSTEM 8 Diagnostic Solution Plus is the solution to board fault-finding problems. Equally at home with analogue or digital PCBs, the system's 64 digital and 24 analogue test channels provide a variety of fault-finding techniques to track down the most elusive faults. The in-circuit IC test is the heart of the digital fault-finding system - look into an IC, and check that it functions correctly, look outside, and confirm that it is correctly wired. Analogue functional testing allows for the detection of faults on components wired in-circuit. Use the analogue V-I tester, with selectable test frequencies and voltages, to check discrete analogue components. Compare the results with a known good board, automate fault-finding procedures with the test sequence generator, and fault diagnosis becomes truly effortless!

The Variable Power Supply provided makes power on tests easy to achieve.

The Diagnostic Solution Plus comprise of a Board Fault Locator module and an Analogue IC Tester module as well as a Variable Power Supply. The unit is shipped with PCI interface cards and includes the SYSTEM 8 Premier software.

Analogue

Digital

In circuit

PC included

- Short Locator
- IC Tester
- Digital V-I Test
- Graphical Test Generator
- IC and EPROM Verifier
- Analogue Functional Test
- Discrete Devices
- Test Flow Manager
- Variable Power Supply
- Automated fault-finding sequences
- Windows included

SYSTEM 8 Diagnostic Solution Plus

The SYSTEM 8 Diagnostic Solution Plus offers the best in analogue and digital fault-finding. Together with Windows, it becomes the ultimate test station.

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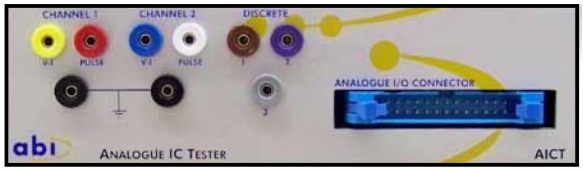


Analogue IC Tester

Analogue Functional Test

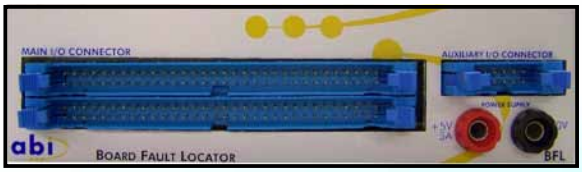
The 24 test channels available on the Analogue IC Test Solution have the facility to drive analogue voltage onto the PCB and measure analogue responses (in both voltage and current) from the device under test. The same channels can also be set to restrict the output of the device under test to a specified voltage in order to protect connected circuitry and facilitate a more comprehensive test of the device.
The inclusion of these features in the SYSTEM 8 Analogue IC Tester means that analogue ICs can be verified by a functional in-circuit test by simply attaching a clip.

Discrete Devices

Testing discrete devices is easy using three dedicated channels. A wide range of programmable voltage and current stimulus/measurement features are offered. This allows many different devices to be tested ranging from power transistors to high-gain Darlington transistors.

The SYSTEM 8 Analogue IC Tester can be used to efficiently diagnose faults on analogue PCBs down to component level, or for functionally testing ICs. No other product offers such comprehensive test and fault diagnosis facilities at such a low price.

- In-circuit functional analogue test
- In and out-of-circuit functional test for discrete components
- Board comparison fault diagnosis
- Clear pass or fail results
- Circuit diagrams not required
- 24 analogue channels
- Auto comparison with stored results
- Unique 'as wired' testing
- Auto clip positioning
- Fault finding to component level
- Incorporates power-on/power-off tests
- Diagnose faults even on 'dead' boards using industry standard V-I technique



Board Fault Locator

Short Locator

3 resistance ranges. Audible indication of proximity to short. Automatic probe calibration. Visual indication of proximity to short. Audible continuity checker.

IC Test

64 test channels (expandable to 256). 4 bus disable outputs. Truth table, voltage, connections, thermal and V-I tests. In-circuit and out-of-circuit (with adapter) testing. TTL, CMOS, Memory, Interface, LSI, CPU, PAL, Linear and package libraries.
Programmable logic thresholds. Loop modes for intermittent faults. User library manager for adding new or custom ICs. Logic trace mode to display test waveforms.

Power Supply

5V DC at 5A for PCB under examination. Overvoltage and overcurrent protection. Electronically controlled from IC Tester. Programmable switching delay.

Digital V-I Test

Optimised for digital components. 64 test channels (expandable to 256). Voltage 2.5 to 20V. Waveform zoom facility. Current limited for IC protection.

Graphical Test Generator

64 channels (expandable to 256). Graphically programmable for custom test vectors. Vectors can be saved and loaded, or auto-learned.

IC Identifier

Identify unknown, illegible or house coded ICs.

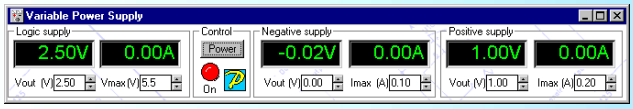
EPROM Verifier

Read, view, save and verify EPROM's from 2k x 8 to 256k x 8. In- or out-of-circuit (with adapter).

The SYSTEM 8 Board Fault Locator is a powerful IC Test system capable of testing most digital ICs. A variety of IC test methods provide comprehensive fault diagnosis capability, including in-circuit IC testing, IC connections and voltage testing together with V-I testing which allows testing of components with no need to power the board.

- In-circuit and out-of-circuit
- Through hole or SMT
- NAND gates to CPUs
- DIL or PLCC or SOIC
- Standard or custom logic
- TTL or CMOS

Variable Power Supply



The Variable Power Supply unit provides a programmable logic supply (2.5 to 6 Volts) as well as 0 to -24V (programmable) and 0 to +24V (programmable) outputs.

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24 channel Analogue IC Tester Module

V-I test capability

Number of test channels:	24 + 2 probes and references
Test voltage:	2 V to 50 V peak to peak
Voltage resolution:	8 to 12 bits
Test frequency:	37.5 Hz to 12 kHz
Test current:	1 µA to 150 mA
Source impedance:	100 Ohm to 1 M
Test waveforms:	Sine, square, triangle, ramp, pulse
Waveform modes:	V-I, V-T, I-T
Waveform display:	Multi-plot with single waveform zoom
Waveform comparison:	Automatic comparison algorithm for good and bad boards using live probes or disk
V-I comparison tolerance:	50 mV to 500 mV with 50 mV resolution
Package support:	DIL, SOIC, PLCC, QFP and variants with MultiProbes
Pulse output:	Positive, negative or bipolar for thyristors/ triacs
Pulse amplitude:	Adjustable to +/-10 V
Calibration:	Can be calibrated by user

Analogue functional test capability

Number of I/O channels:	24 independent + 3 special discrete channels
Driver voltage:	-12 V to +12 V
Driver voltage resolution:	10 bit
Driver output current:	200 mA max sink or source
Driver states:	Voltage source, current source, off
Discrete source current:	10 µA - 150 mA. (driving a load returned to 0 V)
Driver source impedance:	34 Ohm (34 Ohm, 1 k or 10 k on discrete channels)
Sensor input voltage:	+/- 24 V
Sensor voltage protection:	+/- 50 V
Sensor input impedance:	2 M
Sensor voltage resolution:	12 bit
Restrict voltage:	-10 V to +10 V
Restrict voltage resolution:	8 bit
Sensor current measurement:	1 mA to 150 mA (10 nA to 150 mA on discrete channels)
Sensor current resolution:	12 bit
Sensor current input impedance:	50 Ohm (50 Ohm, 1 k, 10 k or 1 M on discrete channels)
Short detection threshold:	<4 Ohm
Link detection threshold:	<10 Ohm
Test modes:	Single, unconditional loop, pass loop, fail loop
Test clip positioning:	Automatically adjusts for clip orientation
Circuit compensation:	Automatically modifies test for IC/PCB connections
Test trace:	Test waveforms and voltages displayed
Test analysis:	Displays test parameters such as gain, hfe, feedback
IC test capability:	Op-amps, comparators, DACs, ADCs, switches and special function analogue ICs in-circuit.
Discrete test capability:	Transistors, FETs, thyristors, triacs in- or out-of-circuit
IC test libraries:	Analogue, discrete, package, user
Result comparison:	Results can be saved for good/bad board comparison
Package support:	DIL, SOIC, PLCC and variants with MultiProbe kits
SLIM test programming:	Structured programming language for library additions

Other specifications

Electrical input:	(typical) +12 V, 1 A (max) (typical) -5 V, 750 mA (typical) -12 V, 100 mA
Dimensions:	147 x 202 x 42 mm
Weight:	1 kg

Accessories

Standard	1 x SMD test tweezer set and adapters 1 x 24 way test clip and cable assembly 1 x Blue V-I probes and adapter 1 x Yellow V-I probes and adapter 2 x Pulse leads 2 x Ground leads 3 x Discrete leads

Options

Internal fitting	PCI interface
External fitting	MultiLink case (cost option) with serial or parallel connection External case (cost option) which can hold up to 4 SYSTEM 8 modules.

The ABI development team strive continually to improve their products for the benefit of the customer. The specification of current products may therefore vary from that described in this brochure.

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64 channel Board Fault Locator Module

Digital IC test capability

Number of I/O channels:	64-256
Number of guard outputs:	4 or 8
Live comparison:	64 x 2, 128 x 2 with additional modules
Drive output voltage:	TTL/CMOS compatible
Drive output current:	Device dependent Typical H-L 80mA @ 0.6V Typical L-H 200mA @ 2V Max. 400mA
Drive slew rate:	>100V/µs
Receive input:	+/-10V
Input impedance:	10k
Termination:	Programmable for tri-state/open collector
Drive states:	Low, high, tri-state
Over voltage protection:	<0.5V, >5.5V
Test time:	Dependent on device
Circuit modes:	In-circuit. Out-of-circuit (with adapter)

Power supply for board under test

Automatic power supply:	1 x 5V @ 5A fixed (2 x 5V @ 5A fixed for 128 channels)
Over voltage protection:	7V
Short circuit current:	7A

Test modes

Single:	Single test
Loop:	Unconditional, loop while good, loop while bad
Auto:	Find tightest valid thresholds

Test thresholds

Resolution:	100mV
Low levels:	TTL 0.1V to 1.1V CMOS 0.1V to 1.5V
Switching levels:	TTL 1.0V to 2.3V CMOS 1.0V to 3.0V
High levels:	TTL 1.9V to 4.9V CMOS 1.9V to 4.9V
Swept low levels:	TTL 0.1V to 1.1V CMOS 0.1V to 1.5V
Swept switching levels:	TTL 1.2V CMOS 2.5V
Swept high levels:	TTL 1.9V to 4.9V CMOS 1.9V to 4.9V

Test types

Truth table (functional):	Library based functional test
Connections (MDA):	Short circuit detection Floating input detection Open circuit detection Linked pin detection
Voltage:	Resolution 10mV Range +/-10V Logic state detection
VI:	Number of channels 64 - 256 Sweep ranges -10V to +10V (programmable) Maximum test current 1mA Multi-plot with single waveform zoom
Thermal:	Indication of pin temperature

Test libraries

Library classes:	TTL 54/74 logic, CMOS, Memory, Interface, LSI, Microprocessor, PAL/EPLD, Linear, Package, Special and user defined
Package types:	DIL, SOIC, PLCC, QFP

Accessories

Standard	Automatic out-of-circuit adapter 1 x 64 way test cable 1 x 64 way split test cable 1 x V-I probe assembly 1 x BDO cable 1 x Short locator cable 1 x Ground clip 1 x PSU lead set

Options

Internal fitting	PCI interface
External fitting	MultiLink case (cost option) with serial or parallel connection External case (cost option) which can hold up to 4 SYSTEM 8 modules.

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Variable Power Supply Module

Logic Supply

Low voltage output for digital circuits

Voltage	*2.5V to 6V programmable*
Resolution	*0.01V*
Over voltage	*3V to 7V programmable threshold*
Resolution	*0.1V*
Current	*5A*
Short circuit current	*7A*
Short circuit duration	*indefinite (auto recovery)*
Load regulation	*0.5% (20% to 80% load change)*
Ripple voltage	*80mV pk-pk max*

Variable Positive Supply

Positive voltage output for analogue circuits

Voltage	*0 to +24V programmable*
Resolution	*0.01V*
Current	*1.5A max*
Over current limit	*50mA to 1.5A programmable threshold*
Short circuit current	*1.5A*
Short circuit duration	*indefinite (auto recovery)*
Load regulation	*0.1% (20% to 80% load change)*
Ripple voltage	*50mV pk-pk max*

Variable Negative Supply

Negative voltage output for analogue circuits

Voltage	*0 to -24V programmable*
Resolution	*0.01V*
Current	*1.5A max*
Over current limit	*50mA to 1.5A programmable threshold*
Short circuit current	*1.5A*
Short circuit duration	*indefinite (auto recovery)*
Load regulation	*0.1% (20% to 80% load change)*
Ripple voltage	*50mV pk-pk max*

Physical data

Weight	*5kg*
Size	*295 x 247 x 65mm*
Power rating	*150W max*
Connectors and cables	*power cable, parallel interface cable, logic and ground cables, +V and -V cables*
PC requirements	*(Minimum) System capable of running Windows 95/98 with at least 32MB of RAM and 20MB of free hard disk space ECP/EPP capable parallel port or 16550 serial port*

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