



Measurably Better Value

Laboratory DC Power Supplies and Loads Function, Arbitrary & Pulse Generators Precision Measurement Instruments RF Test Equipment



Aim-TTi TEST & MEASUREMENT INSTRUMENTS

General Catalogue

Anritsu

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About this Product Summary Catalogue

Products included

All of the main products that were available for sale at the time of printing have been included within this catalogue.
Options and accessories are not necessarily included.
A full listing of current products, options and accessories are available on the website.

New product introductions and changes

Aim-TTi regularly introduces new products and some may have been added since this catalogue was created. For the latest information please visit our website.
Products are subject to continuous development and changes to some detailed specifications or to cosmetic appearance may have taken place since the catalogue was printed.

Detailed product information

This catalogue contains only limited product information. Fully detailed information for each product is available from the website. Alternatively contact Aim-TTi or the local distributor in your country to request detailed information.



Measurably better value

Excellence through experience

Aim-TTi is the trading name of Thurlby Thandar Instruments Ltd. (TTi), one of Europe’s leading manufacturers of test and measurement instruments.
The company has wide experience in the design and manufacture of advanced test instruments and power supplies built up over more than forty years.
The company is based in the United Kingdom, and all products are built at the main facility in Huntingdon, close to the famous university city of Cambridge.

Traceable quality systems



TTi is an ISO9001 registered company operating fully traceable quality systems for all processes from design through to final calibration.

ISO9001:2015
Certificate number FM 20695

Where to buy Aim-TTi products

Aim-TTi products are distributed by Anritsu Corporation as the authorized distributor.
For product purchases, please contact Anritsu Corporation.
<https://www.anritsu.com/en-au/test-measurement>

The Aim-TTi Websites

Detailed product information is provided on the Aim-TTi website, together with support information and price lists.
The website for Aim-TTi products is_
www.aimtti.com



www.aimtti.com

Laboratory DC Power Supplies

A technology leader

Aim-TTI is one of the world's major producers of laboratory power supplies (PSUs).

It has been a major technology innovator in PSUs since 1979 and offers products ranging from 30 watts up to 1200 watts.

Hundreds of thousands of Aim-TTI power supplies are in everyday use around the world.

Power technologies

Aim-TTI laboratory power supplies use both linear and switch-mode technologies in order to optimize performance and value for money.

Linear regulation

Pure linear regulation still provides the lowest output noise and best transient response. The disadvantage is greater physical size and weight for a given power, together with higher heat output.

Mixed-mode regulation

For higher power levels, Aim-TTI have developed a technology that uses switch-mode pre-regulation and linear final regulation. This technique combines exceptional efficiency with noise levels that are close to that of pure linears.

PowerFlex & PowerFlex+ regulation

The Aim-TTI PowerFlex system uses a modified form of mixed-mode regulation to provide higher levels of current when the voltage is set to lower values. PowerFlex+ uses a multi-phase conversion technique to eliminate the need for a linear final stage and offers an even wider range of voltage/current combinations.

Measurement and control

Digital Metering

All Aim-TTI power supplies incorporate separate digital meters for voltage and current.

On most models these are 5 digit scale length with fixed resolution (e.g. 0.00 V to 56.00 V). Fixed resolution avoids the misinterpretation of readings that can occur with autoranging 3 or 3½ digit meters where the decimal point position moves as the reading changes.

QL, QPX, MX and FX models provide 5 digit meters for voltages to give higher precision and resolution.

QL and PL models also include a low current range which provides 0.1 mA resolution (0.01 mA on PL-H).

Remote Sense

Aim-TTI power supplies incorporate remote sense terminals that can be enabled/disabled at the flick of a switch.

Remote sensing is essential to maintaining precise regulation at the load and true metering of the load voltage. Many other power supplies omit remote sense, but quote regulation figures that could never be achieved in practice.

N.B. A 2 meter length of a 24/0.2 wire pair has a resistance of around 0.1Ω. For a 5 V load drawing 3 A the metering error would be 0.3 V and the effective full current load regulation would be around 6%, against a quoted figure of perhaps 0.01% for the power supply itself.

Output On/Off Switches

All Aim-TTI power supplies incorporate output on/off switches for the main outputs. This enables voltage and current settings to be viewed before the load is connected and allows multiple outputs to be controlled individually.

Many other power supplies omit this essential feature.

Analogue or Digital Controls

Aim-TTI power supplies offer a choice of true analogue controls or digital controls (numeric keyboard and/or spin-wheel).

The PL and CPX Series combines true analogue controls with advanced digital features such as S-Lock and V-Span.

The QL, QPX, MX and FX series offer digital control and five digit metering with a resolution of 1 mV.



Programmable models

Aim-TTI offers many programmable units incorporating varying combination of GPIB, RS-232, USB and LAN interfaces, as well as models with analogue remote control.

LabVIEW, LabWindows and IVI drivers are available for most power supplies.

Silent Cooling

Many Aim-TTI power supplies use convection cooling thus removing the need for a fan and providing silent operation.

Other models incorporate a fan to assist cooling, but use smart control techniques to minimise noise.

Rack mounting

Many Aim-TTI PSU series, both bus programmable and manual, have a rack-modular casing size.

Rack mounts are available for the PL, QL, TSX, MX, CPX and QPX series.

Safety binding-post terminals

The terminals accept a 4mm safety plug with rigid insulating sleeve; a requirement specified by an increasing number of laboratories for safety reasons.

Unlike the usual 4mm safety sockets, the new Aim-TTI terminals can also accept fork connectors or bare wires, giving maximum flexibility.



Model Ranges

EL-R series

Compact linear regulated power supply series with analogue controls. Single, dual and triple outputs. 30 to 130 watts.

USB or RS-232 controlled models (EL302P).

EX-R series

Compact mixed-mode regulated power supply series with analogue controls. Single, dual and triple outputs. 175 to 420 watts

USB or RS-232 controlled models (EX355P).

FX series

PowerFlex. dual and triple outputs, 210 to 246 watts. USB.

MX series

Compact power supplies with multiple full-performance outputs. Triple or Quad outputs. Models offering up to 20 A or 120 V. 315 to 420 watts.

Models with LAN, USB, RS-232 and optional GPIB (MX-P).

PL series

Advanced linear regulated power supply series with analogue controls combined with digital functions. Ultra compact. Single, dual and triple outputs. 48 to 228 watts.

Models with LAN, USB, RS-232 and optional GPIB (PL-P(G)).

PLH series

Higher voltage versions of the PL and PL-P series offering output voltages up to 250 V. Single output, 90 watts.

Models with LAN, USB, RS-232 and optional GPIB (PLH-P).

QL series

High precision digitally controlled linear regulated power supply series with advanced features. Single and triple outputs. 105 to 242 watts.

Models with LAN, USB, RS-232 and optional GPIB (QL-P(G)).

TSX series

High performance mixed-mode regulated single output power supply series with analogue or digital controls. 360 watts.

Models with LAN, USB, RS-232 and optional GPIB (TSX-P).

CPX series

Compact 'PowerFlex' regulated series, single and dual output with analogue controls. 360 to 840 watts.

Models with LAN, USB, RS-232 and optional GPIB (CPX-P).

QPX series

High power PowerFlex and PowerFlex+ regulated units, digital controls. Single and dual outputs, 750 to 1200 watts.

Models with Analogue, LAN, USB, RS-232 and optional GPIB (QPX-P).

PSU Software

Multi instrument control and logging.

EL-R Series

- ▶ Linear bench power supplies
- ▶ Single, dual or triple outputs
- ▶ 30 W to 130 W power range
- ▶ Switched remote sense terminals

The EL-R series is the ideal solution for users requiring a good quality manual control, linear regulated bench power supply of low to medium power. The series offers dual displays, high resolution control and metering, remote sensing, DC output switches and silent fan-free operation.

For those requiring an entry level programmable power supply, versions with an RS-232 interface (EL302P) or a USB interface (EL302P-USB) are available.



Model	Outputs	Voltage/Current	Power	Interfaces
EL301R	One	0 to 30 V/0 to 1 A	30 W	-
EL183R	One	0 to 18 V/0 to 3.3A	60 W	-
EL302R	One	0 to 30 V/0 to 2 A	60 W	-
EL302P	One	0 to 30 V/0 to 2 A	60 W	RS-232
EL302P-USB	One	0 to 30 V/0 to 2 A	60 W	USB
EL561R	One	0 to 56 V/0 to 1.1A	60 W	-
EL155R	One	0 to 15V/0 to 5 A	75 W	-
EL303R	One	0 to 30 V/0 to 3 A	90 W	-
EL302RD	Two	2 × (0 to 30 V/0 to 2 A)	120 W	-
EL302RT	Three	2 × (0 to 30 V/0 to 2 A) plus 1.5 to 5 V @ 2 A	130 W	-

Brief specifications for main outputs:

Line & load regulation: <0.01%. Output noise: <1 mV rms. Meter accuracies: voltage - 0.3% ±3 digits, current - 0.5% ±3 digits. Sizes (W × H × D): singles - 140 × 160 × 295 mm; dual/triple - 260 × 160 × 295 mm

- ▶ Linear regulation provides low noise
- ▶ 4 digit voltage and current meters on each output*1
- ▶ Constant voltage or constant current operation
- ▶ Variable auxiliary output (1.5-5 V@2 A) on triple model
- ▶ Silent fan-free cooling
- ▶ DC output switches
- ▶ Low cost

EL302RT

The EL302RT triple has a variable voltage auxiliary output which can be set using the digital displays.

*1: 3 digit current meters are used on the EL302P & EL302P-USB, and that these models do not have remote sense terminals.



EX-R Series

- ▶ Compact bench power supplies
- ▶ Single, dual or triple outputs
- ▶ Mixed-mode regulation
- ▶ Power from 175 W to 420 W
- ▶ Switched remote sense terminals

The EX series is the value-for-money PSU for users who require higher power levels. Mixed-mode regulation gives excellent performance combined with compact size and low weight.

For those requiring an entry level programmable power supply, versions with an RS-232 interface (EX355P) or a USB interface (EX355P-USB) are available.

The EX354RT triple has a variable voltage auxiliary output which can be set using the digital displays.



Model	Outputs	Voltage/Current	Power	Interfaces
EX355R	One	0 to 35 V/0 to 5 A	175 W	-
EX355P	One	0 to 35 V/0 to 5 A	175 W	RS-232
EX355P-USB	One	0 to 35 V/0 to 5 A	175 W	USB
EX1810R	One	0 to 18 V/0 to 10 A	180 W	-
EX2020R	One	0 to 20 V/0 to 20 A	400 W	-
EX4210R	One	0 to 42V/0 to 10 A	420 W	-
EX354RD	Two	2 × (0 to 35 V/0 to 4 A)	280 W	-
EX354RT	Three	2 × (0 to 35 V/0 to 4 A) plus 1.5 to 5.0 V @ 5 A	305 W	-
EX752M	Two	2 × (0 to 75 V/0 to 2 A) or 0 to 75 V/0 to 4 A or 0 to 150 V/0 to 2 A	300 W	-

Brief specifications for main outputs:

Line & load regulation: <0.01%. Output noise: <2 mV rms. Meter accuracies: voltage - 0.3% ±3 digits, current - 0.5% ±3 digits. Sizes (W × H × D): singles - 140 × 160 × 320 mm; dual/triple - 260 × 160 × 320 mm

- ▶ Mixed-mode regulation with linear output stage
- ▶ 4 digit voltage and current meters on each output*2
- ▶ Constant voltage or constant current operation
- ▶ Variable auxiliary output (1.5-5 V@5 A) on triple model
- ▶ Switched remote sensing (not EX355P or EX752M)
- ▶ Silent fan-free cooling*3
- ▶ DC output switches

EX752M

The EX752M is a dual output 300 watt PSU with Multi-Mode capability. This enables it to operate as a dual power supply with two independent and isolated outputs, or as a single power supply of double the power.

As a dual, each output provides 0 to 75 V at 0 to 2 A (mode A). As a single, the output can be selected as either 0 to 75 V at 0 to 4 A (mode B) or 0 to 150 V at 0 to 2 A (mode C). In single modes, the unused half of the unit becomes completely inoperative and its displays are blanked.



*2: 3 digit current meters are used on the EX355P EX752M and the voltmeter resolution on the EX752M is 0.1 V. *3: EX2020R and EX4210R use fan assisted cooling.

Model	Outputs	Voltage/Current	Power	Interfaces
FX100DP	Two	2 × 0 to 42 V/0 to 6 A*	210 W	USB
FX100TP	Three	2 × (0 to 42 V/0 to 6 A*) plus 1 × (0 to 6 V/0 to 6 A)	246 W	USB

Brief specifications:
Line & load regulation: <0.01% ±5 mV. Output noise: <2 mV rms.
Setting accuracies: voltage - 0.1% ±5 mV, current - 0.1% ±5 mA.
Size (W × H × D): 214 × 140 × 300 mm (half rack × 3U)

*: Max. current is not available with max. voltage, see PowerFlex curve.

- ▶ Two or three outputs
- ▶ Up to 105 W per output (Outputs 1 & 2)
- ▶ Control by rotary, touch or remote USB
- ▶ Simultaneous live control of voltage and current
- ▶ Instant access to voltage/current setting per output
- ▶ Voltage tracking V2 = V1
- ▶ Individual output on/off control plus Multi-on/off
- ▶ Low output ripple and noise, typically <5 mV
- ▶ High setting resolution of 1 mV and 1 mA
- ▶ Variable OVP and OCP trips on all outputs
- ▶ 25 setting memories
- ▶ Voltage tracking (isolated tracking)
- ▶ Selectable current meter averaging
- ▶ Switchable remote sense capability
- ▶ Intelligent fan, low noise
- ▶ Compact footprint (W × H × D): 214 × 140 × 300 mm
- ▶ USB remote interface, SCPI compatible
- ▶ Free Test Bridge logging and control software

PowerFlex

Today's engineers often need a wide voltage range capability and a high current capability. Normally, however, the maximum voltage and maximum current are not required simultaneously.

A conventional PSU has a fixed current limit giving a power capability that reduces directly with the output voltage.

The Aim-TTi PowerFlex design of the FX series enables higher currents to be generated at lower voltages within an overall power limit envelope.

Versatile control

The FX Series redefines user interaction with its intuitive 4.3-inch colour touch screen, enabling precise adjustments with a simple tap. For those who prefer a tactile experience, the series also features live adjustment via rotary controls for a hands-on feel.

The FX series of power supplies seamlessly combines versatility, and safety within a compact design. SELV compliant with the efficiency of PowerFlex, it's the ultimate choice for test and laboratory use.

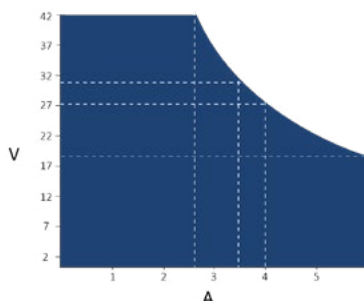


FX Series

- ▶ PowerFlex up to 42 V/6 A/105 W
- ▶ Two or three outputs
- ▶ 4.3" screen with simultaneous display of outputs
- ▶ Control by touch, dual rotary or remote USB



NEW



DIRECT & LIVE Numeric entry & Adjustment



MX Series

- ▶ 3 or 4 full-performance outputs
- ▶ Up to 420 watts total power
- ▶ Multiple voltage/current ranges
- ▶ High resolution graphic LCD

The MX series are compact multi-output power supplies using mixed-mode regulation with the added flexibility of range switching.



Model	Outputs	Voltage/Current	Power	Interfaces
MX100T	Three	See Range Combinations	315 W	—
MX100Q	Four	See Range Combinations	420 W	—
MX103Q	Four	See Range Combinations	420 W	—
MX180T	Three	See Range Combinations	378 W	—
MX100TP	Three	See Range Combinations	315 W	RS-232, USB LAN, GPIB*1
MX100QP	Four	See Range Combinations	420 W	RS-232, USB LAN, GPIB*1
MX103QP	Four	See Range Combinations	420 W	RS-232, USB LAN, GPIB*1
MX180TP	Three	See Range Combinations	378 W	RS-232, USB LAN, GPIB*1

Brief specifications:
Line and load regulation: <0.01% ±5 mV. Output noise: <3 mV rms.
Setting accuracy: voltage - 0.05% ±3 mV, current - 0.3% ±3 mA.
Size (W × H × D): 211/317 × 130 × 380 mm

- ▶ Three or four outputs each with full functionality
- ▶ Range switching gives variable voltage/current combinations
- ▶ Shared power mode - double power from a single output
- ▶ Up to 70 V and 6 A (MX100T/MX100Q), or up to 120 V and 20 A (MX180T)
- ▶ Low output noise and ripple via linear final regulation
- ▶ High setting resolution of up to 1 mV and 0.1 mA
- ▶ Variable OVP and OCP trips on all outputs
- ▶ 50 setting memories per output plus 50 linked memories
- ▶ Selectable voltage tracking (isolated tracking)
- ▶ Selectable current meter averaging
- ▶ Switchable remote sense capability
- ▶ Graphic LCD provides simultaneous output metering
- ▶ Numeric or spin-wheel control of all parameters
- ▶ Individual or combined output on/off control with programmable delay sequencing.
- ▶ 3U case for bench or rack mounting (½ rack on triples)
- ▶ GPIB*1, RS-232, USB and LAN (LXI) interfaces (MX-P models)
- ▶ Duplicate power & sense terminals at rear (MX-P models)

*1: Requires GPIB-1A option.

Range Combinations				
Range	Output 1	Output 2	Output 3	Output 4
MX100T				
Range 1	35 V/3 A	35 V/3 A	35 V/3 A	N/A
Range 2	16 V/6 A	16 V/6 A	70 V/1.5 A	N/A
Range 3	—	35 V/6 A*3	70 V/3 A*2	N/A
MX180T				
Range 1	30 V/6 A	30 V/6 A	5.5 V/3 A	N/A
Range 2	15 V/10 A	15 V/10 A	12 V/1.5 A	N/A
Range 3	60 V/3 A	60 V/3 A	—	N/A
Range 4	30 V/12 A*2	—	—	N/A
Range 5	15 V/20 A*2	—	—	N/A
Range 6	60 V/6 A*2	—	—	N/A
Range 7	120 V/3 A*2	—	—	N/A
MX100Q S2 - Power share				
Range 1	35 V/3 A	35 V/3 A	35 V/3 A	35 V/3 A
Range 2	16 V/6 A	16 V/6 A	70 V/1.5 A	70 V/1.5 A
Range 3	35 V/6 A	35 V/6 A	70 V/3 A	70 V/3 A
MX103Q S2- Power share				
Range 1	35 V/3 A	35 V/3 A	35 V/3 A	35 V/3 A
Range 2	16 V/6 A	16 V/6 A	16 V/6 A	—
Range 3	35 V/6 A	35 V/6 A	35 V/6 A	—

*2: output 2 disabled
*3: output 3 disabled

The MX series differs from most other multi-output power supplies in having three or four full function outputs with fully variable voltage and current along with OVP and OCP trips.

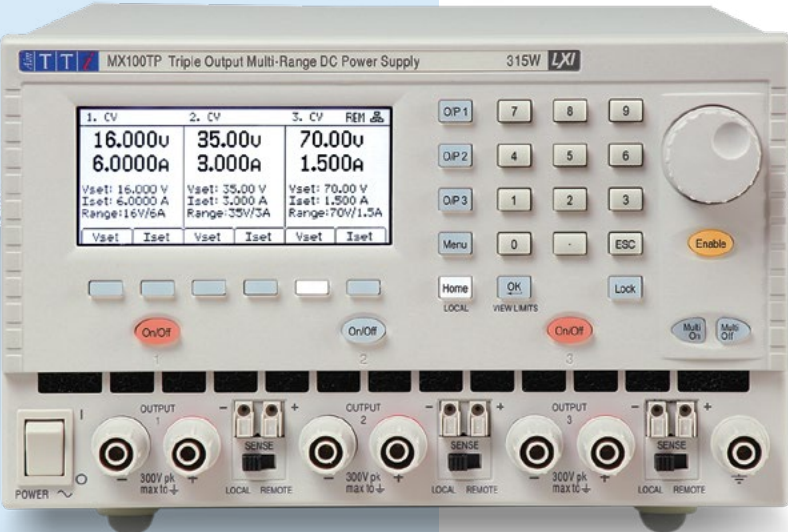
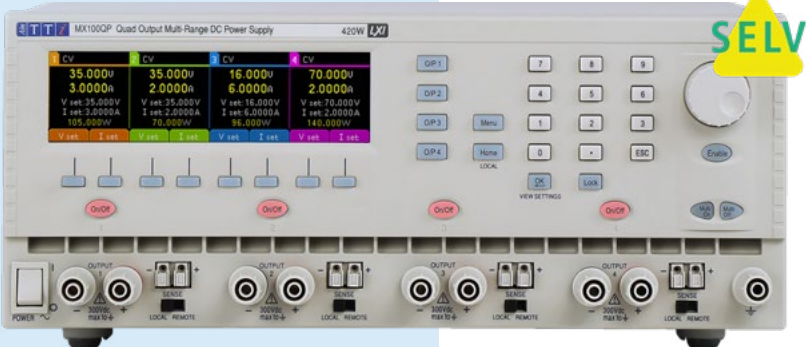
Range switching and power control (MX-T models)

To increase its ability to match the widest range of applications, each output has more than one range giving the choice of higher voltage or higher current.

When higher power is required, two outputs can be combined internally to provide twice the power from a single output - up to 210 watts for the MX100T and up to 360 watts for the MX180T.

Power share (MX-Q models)

The MX Quad output models can provide up to 210 W of power per output, up to 420 W total unit power, at any time without the need to disable another output.



Model	Outputs	Voltage/Current	Power	Interfaces
PL068	One	0 to 6V/0 to 8 A	48 W	
PL155	One	0 to 15V/0 to 5 A	75 W	—
PL303	One	0 to 30 V/0 to 3 A	90 W	—
PL601	One	0 to 60 V/0 to 1.5 A	90 W	—
PL303QMD	Two	2 × (0 to 30 V/0 to 3 A)	180 W	—
PL303QMT	Three	2 × (0 to 30 V/0 to 3 A) + 0 to 6 V/0 to 8 A	228 W	
PL068P	One	0 to 6 V/0 to 8 A	48 W	RS-232/USB/ LAN
PL155P	One	0 to 15 V/0 to 5 A	75 W	RS-232/USB/ LAN
PL303P	One	0 to 30 V/0 to 3 A	90 W	RS-232/USB/ LAN
PL601P	One	0 to 60 V/0 to 1.5 A	90 W	RS-232/USB/ LAN
PL303QMDP	Two	2 × (0 to 30 V/0 to 3 A)	180 W	RS-232/USB/ LAN
PL303QMTP	Three	2 × (0 to 30 V/0 to 3 A) + 0 to 6 V/0 to 8 A	228 W	RS-232/USB/ LAN

Brief specifications for main outputs:

Line & load regulation: <0.01% ±2 mV. Output noise: <0.4 mV rms. Meter accuracies: voltage - 0.1% ±1 digit, current - 0.3% ±3 digits. Sizes (W × H × D): singles - 105 × 130 × 290 mm; single (P versions) - 105 × 130 × 343 mm, dual - 210 × 130 × 290 mm, triple - 315 × 130 × 290 mm

- ▶ Linear regulation provides ultra-low noise
- ▶ Compact (1/4 rack 3U) with small bench footprint
- ▶ True analogue controls with advanced digital features
- ▶ Settings can be locked at the touch of a button
- ▶ 4 digit voltage and current meters on each output
- ▶ Low current range with 0.1 mA resolution
- ▶ Constant voltage or constant current operation
- ▶ Independent, tracking or true parallel modes (QMD & QMT)
- ▶ High current (8A), high precision (1mV resolution) output on PL303QMT and PL068
- ▶ Front and rear power and sense terminals (PL-P models)
- ▶ Analogue remote control (PL-P single output models)
- ▶ RS-232, USB and LXI compliant LAN interfaces (PL-P models) GPIB optional

PL-H Series

The PLH series retains all of the advanced features of the PL series at output voltages of 120 V or 250 V. 90 watts of power. A low current range provides 0.01 mA resolution.

Model	Outputs	Voltage/Current	Power	Interfaces
PLH120	One	0 to 120 V/0 to 0.75 A	90 W	—
PLH250	One	0 to 250 V/0 to 0.375 A	94 W	—
PLH120-P	One	0 to 120 V/0 to 0.75 A	90 W	RS-232/USB/ LAN
PLH250-P	One	0 to 250 V/0 to 0.375 A	94 W	RS-232/USB/ LAN

Brief specifications for main outputs:

Line & load regulation: <0.01% ±10 mV. Output noise: <2 mV rms. Meter accuracies: voltage - 0.1% ±1 digit, current - 0.3% ±3 digits. Size (W × H × D): PLH - 105 × 130 × 290 mm; PLH-P - 105 × 130 × 343 mm

PL Series

The PL series is the solution for users requiring an advanced linear regulated precision bench power supply that retains conventional analogue controls. with important digital features.

It's ultra-compact design uses minimal space on the bench or in the rack.



PL-P and PLH-P models have LAN, USB, RS-232 and optional GPIB (PL-P(G) and PLH-P(G)), with electrical isolation of the analogue inputs.



When working with any piece of equipment, engineers tend to require a voltage source variable over only a narrow range.

That's where the V-Span function comes in. It allows the user to redefine the end-stop values of the voltage control to create a specific voltage range.

For example - An engineer is working on a circuit that will operate from four NiMH cells.

They use V-Span to set a Vmax of 5.8 volts (to prevent over-voltage damage) and a Vmin of 3.6 volts (to ensure that the circuit doesn't reset).

They now have a power supply which provides high-resolution analogue control over the exact voltage range they need.

S-Lock



One press of the Lock button transfers control of voltage and current from the analogue controls to internal digital circuitry. This offers not just complete security, but exceptional stability as well with each setting controlled by a high resolution instrumentation quality DAC.

PL & PL-H Series

- ▶ High performance power supplies
- ▶ Single, dual and triple outputs
- ▶ Linear regulation, 48 W to 228 W
- ▶ High voltage versions with 90 W power at 120 V or 250 V



QL Series II

- ▶ High precision power supplies
- ▶ Single or triple outputs
- ▶ Linear regulation, 105 W to 242 W

The QL series II represents the state-of-the-art in a linear regulated laboratory PSU. Very high precision is matched by very low output noise. The digital user interface combines speed with safety. Despite the compact dimensions, power is in excess of 100 watts per output, and multiple ranges provide higher current at lower voltages.



Model	Outputs	Voltage/Current	Power	Interfaces
QL355	One	0 to 35 V/0 to 3 A or 0 to 15 V/0 to 5 A	105 W	—
QL564	One	0 to 56 V/0 to 2 A or 0 to 25 V/0 to 4 A	112 W	—
QL355T	Three	2 × (0 to 35 V/0 to 3 A or 0 to 15 V/0 to 5 A) plus 1 to 6 V @ 3 A	228 W	—
QL564T	Three	2 × (0 to 56 V/0 to 2 A or 0 to 25 V/0 to 4 A) plus 1 to 6 V @ 3 A	242 W	—
QL355P	One	0 to 35 V/0 to 3 A or 0 to 15 V/0 to 5 A	105 W	RS-232/USB/ LAN
QL564P	One	0 to 56 V/0 to 2 A or 0 to 25 V/0 to 4 A	112 W	RS-232/USB/ LAN
QL355TP	Three	2 × (0 to 35 V/0 to 3 A or 0 to 15 V/0 to 5 A) plus 2.7/3.3/5.0 @ 1 A	215 W	RS-232/USB/ LAN
QL564TP	Three	2 × (0 to 56 V/0 to 2 A or 0 to 25 V/0 to 4 A) plus 1 to 6 V @ 3 A	242 W	RS-232/USB/ LAN

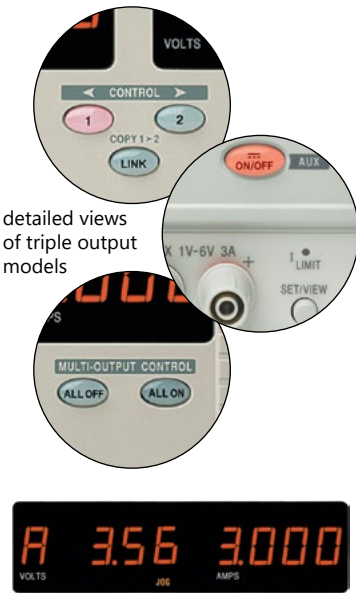
Brief specifications for main outputs:
Line & load regulation: <0.01% ±2 mV. Output noise: <0.35 mV rms.
Setting accuracies: voltage - 0.03% ±5 mV, current - 0.2% ±5 mA.
Sizes (W × H × D): singles - 141 × 172 × 300 mm; triples - 282 × 172 × 300 mm

- ▶ Linear regulation with noise below 0.35 mV rms
- ▶ 1 mV setting resolution at all output voltages
- ▶ Setting by direct numeric entry or by spin wheel
- ▶ Multiple ranges for higher currents at lower voltages
- ▶ Multiple non-volatile setting memories with preview
- ▶ OVP and OCP trips with isolated alarm output
- ▶ Selectable remote sense for perfect regulation
- ▶ Linked-mode operation of main outputs (T models)
- ▶ Auxiliary output of 1 V to 6 V at 3 A with voltage setting to 0.01 V and current metering (T models)
- ▶ Compact modular width for bench or rack mounting
- ▶ USB, LAN (LXI) and RS-232 interfaces (P versions) GPIB* (P(G) versions)
- ▶ Front and rear mounted output terminals (P versions)

*: Requires GPIB-1A option.

QL-P models are fitted with rear power and sense terminals together with LAN, USB, RS-232 and optional GPIB (QL-P(G)).

The triple output models incorporate two single output units plus an auxiliary low voltage output. The two main outputs can be put into a linked mode for simultaneous or tracking control. A master on/off system enables all three outputs to be switched synchronously.



The auxiliary output can be set and monitored at the touch of a button. Voltage can be set to 0.01 V resolution and current can be monitored. QL-P versions, remote setting and readback of the auxiliary output is provided.



Model	Outputs	Voltage/Current	Power	Interfaces
TSX1820	One	0 to 18 V/0 to 20 A	360 W	-
TSX3510	One	0 to 35 V/0 to 10 A	350 W	-
TSX1820P	One	0 to 18 V/0 to 20 A	360 W	RS-232, USB LAN, GPIB*1
TSX3510P	One	0 to 35 V/0 to 10 A	350 W	RS-232, USB LAN, GPIB*1

Brief specifications:

Line & load regulation: <0.01% $\pm$ 5 mV. Output noise: <1 mV rms.
Meter accuracies: voltage - 0.2% $\pm$ 1 digit, current - 0.5% $\pm$ 1 digit.
Size (W x H x D): 210 x 130 x 385 mm

*1: GPIB Optional

- ▶ Choice of 35 V/10 A and 18 V/20 A models
- ▶ Very low noise, excellent transient response
- ▶ Constant voltage or constant current operation
- ▶ Comprehensive protection including OVP trip
- ▶ High setting resolution, remote sense terminals
- ▶ Bench or rack mounting, front and rear terminals
- ▶ Compact half-rack 3U case size
- ▶ Digital control with keyboard/spin-wheel (TSX-P)
- ▶ Rotary and delta control of voltage/current (TSX-P)
- ▶ Third display for parameter indication (TSX-P)
- ▶ Storage of up to twenty five settings (TSX-P)
- ▶ USB, RS-232, GPIB*2 and LXI compliant LAN (TSX-P)

*2: Requires GPIB-1A option.

The TSX series offers exceptionally good noise and transient performance.

The switch-mode pre-regulation uses ultra low capacitance components to minimise common mode noise, while the linear final regulator minimises differential output noise.

Local operation convenience features of the TSX-P series include an auxiliary display for displaying other data such as increment values, OVP level, or watts.

The display is also used to preview entry from the keyboard in order to prevent errors.

Twenty five non-volatile memories are provided for storing frequently used settings. Each store holds a voltage, current and OVP setting.

The TSX series is housed in a 3U half-rack size case suitable for bench use or rack mounting.

It uses silent convection cooling for the quietest possible working environment.



TSX Series II

- ▶ Mixed-mode regulation
- ▶ Very high performance
- ▶ Single output, 350 W/360 W
- ▶ Front and rear terminals



TSX3510P



TSX1810

**Requires GPIB-1A option

CPX Series

- ▶ PowerFlex regulation
- ▶ Higher current at lower voltage
- ▶ Single or dual outputs
- ▶ Up to 840 watts total power

The CPX series is a different type of laboratory power supply designed to meet the need for flexibility in the choice of voltage and current.



Model	Outputs	Voltage/Current	Power	Interfaces
CPX200D	Two	2 × (0 to 60 V/0 to 10 A ^{*1})	360 W	—
CPX200DP	Two	2 × (0 to 60 V/0 to 10 A ^{*1})	360 W	RS-232, USB LAN, GPIB ^{*2}
CPX400S	One	0 to 60 V/0 to 20 A ^{*1}	420 W	—
CPX400SA	One	0 to 60 V/0 to 20 A ^{*1}	420 W	Isolated Analogue
CPX400SP	One	0 to 60 V/0 to 20 A ^{*1}	420 W	RS-232, USB LAN, GPIB ^{*2}
CPX400D	Two	2 × (0 to 60 V/0 to 20 A ^{*1})	840 W	—
CPX400DP	Two	2 × (0 to 60 V/0 to 20 A ^{*1})	840 W	RS-232, USB LAN, GPIB ^{*2}

Brief specifications:

Line & load regulation: <0.01%. Load regulation: <0.01%.

Output noise: <2 mV rms.

Meter accuracies: voltage - 0.1% ±2 digits, current - 0.3% ±2 digits.

Size (W × H × D): Single- 107 × 130 × 400 mm, Dual- 210 × 130 × 375 mm

*1: Max. current is not available with max. voltage, see PowerFlex curve.

*2: GPIB Optional.

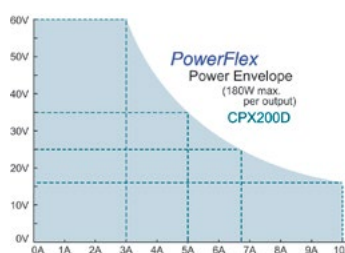
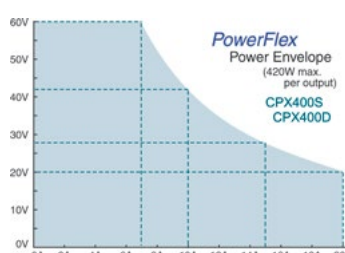
- ▶ PowerFlex design gives variable voltage and current combinations within a maximum power range
- ▶ Isolated outputs can be wired in series or parallel
- ▶ Constant voltage or constant current operation
- ▶ SettingS-Locking (S-Lock)
- ▶ PowerFlex or fixed-range operation
- ▶ Variable OVP trips
- ▶ Selectable remote sense terminals
- ▶ Compact quarter or half rack 3U case size
- ▶ Isolated analogue remote control (CPX400SA only)
- ▶ RS-232, USB, GPIB^{*3} & LXI compliant LAN (P models only)

PowerFlex

Today's engineers often need a wide voltage range capability and a high current capability. Normally, however, the maximum voltage and maximum current are not required simultaneously.

A conventional PSU has a fixed current limit giving a power capability that reduces directly with the output voltage.

The Aim-TTi PowerFlex design of the CPX series enables higher currents to be generated at lower voltages within an overall power limit envelope.



CPX400S

The CPX400S is a single output version of the best-selling CPX400D with a full 420W of power from a 1/4 rack width casing.

The CPX400SP adds USB, LAN, RS-232 and GPIB^{*3} interfaces.

A version with isolated analogue remote control is also available.

CPX-P models are fitted with rear power and sense terminals together with LAN, USB, RS-232 and optional GPIB (QL-P(G)).

*3: Requires GPIB-1A option.



S-Lock

One press of the Lock button transfers control of voltage and current from the analogue controls to internal digital circuitry. This offers not just complete security, but exceptional stability as well with each setting controlled by a high resolution instrumentation quality DAC.



Model	Outputs	Voltage/Current	Power	Interfaces
QPX1200S	One	0 to 60 V/0 to 50 A*1	1200 W	Analogue only
QPX1200SP	One	0 to 60 V/0 to 50 A*1	1200 W	RS-232/USB/ LAN/GPIB*2

Brief specifications:
Line & load regulation: <0.01% $\pm$ 5 mV. Output noise: <3 mV rms.
Setting accuracies: voltage - 0.1% $\pm$ 2 mV, current - 0.3% $\pm$ 20 mA.
Size (W x H x D): 356 x 130 x 415 mm

*1: Max. current is not available with max. voltage, see PowerFlex curve.

*2: GPIB Optional.

- ▶ PowerFlex design gives variable voltage/current combinations within a power envelope
- ▶ Up to 60 volts and up to 50 amps
- ▶ Setting by direct numeric entry or by spin wheel
- ▶ High setting resolution of 1mV up to 60 volts
- ▶ Very low noise of <3mV rms at full power
- ▶ Bench or rack mounting, front and rear terminals
- ▶ Analogue, RS-232, USB, GPIB*3 & LAN interfaces (SP)

With a current capability of 20 amps at the maximum output of 60 volts, the PowerFlex design offers increasing output current with reducing output voltage. These power supplies are suited to both bench-top and system applications with front and rear terminals and a wide range of interfaces.

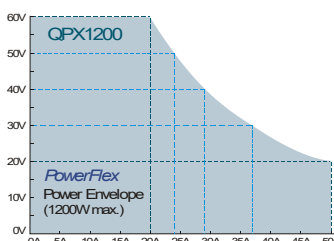
Example voltage/current combinations include 60 V/20 A, 48 V/25 A, 37.5 V/30 A, 26 V/40 A, and 20 V/50 A.

The QPX1200S has only an analogue remote control interface.

The QPX1200SP has analogue, RS-232 USB, GPIB*3 and LAN interfaces. The latter conforms with the LXI standard

*3: Requires GPIB-1A option.

The QPX1200S & SP PowerFlex offers users a level of flexibility that cannot be achieved with conventional laboratory power supplies. They can therefore perform the task of many different power supplies.



Model	Outputs	Voltage/Current	Power	Interfaces
QPX600D	Two	0 to 80 V/0 to 50 A*1	2 x 600 W	Analogue only
QPX600DP	Two	0 to 80 V/0 to 50 A*1	2 x 600 W	RS-232/USB/ LAN/GPIB*2

Brief specifications:
Line & load regulation: <0.01% $\pm$ 5 mV. Output noise: <3 mV rms.
Setting accuracies: voltage (60 V range) - 0.1% $\pm$ 2 mV, current - 0.3% $\pm$ 20 mA.
Size (W x H x D): 356 x 130 x 415 mm

*1: Max. current is not available with max. voltage, see PowerFlex curve.

*2: GPIB Optional.

- ▶ Dual independent or tracking 600 watt outputs
- ▶ PowerFlex+ gives ultra wide range variable voltage/current combinations
- ▶ Up to 80 volts and up to 50 amps within each power envelope
- ▶ Isolated tracking of voltage and current
- ▶ Low output noise and ripple
- ▶ High setting resolution of 1 mV
- ▶ Analogue, RS-232, USB, GPIB*3 & LAN interfaces (DP)

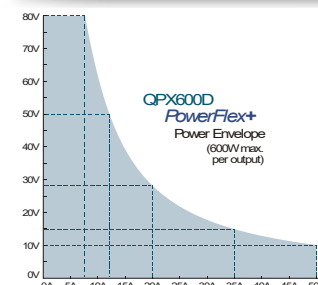
*3: Requires GPIB-1A option.

The QPX600 can be operated as two entirely independent power supplies, each with its own display. Alternatively multiple tracking modes are available including ones intended for series and parallel operation which provide metering of total voltage or total current respectively.

These power supplies are suited to both bench-top and system applications and have a wide range of remote control interfaces.

The QPX600D & DP offer 1200 watts of maximum power, arranged as two isolated outputs of 600 watts each.

It uses the latest TTI regulation system, PowerFlex+, which offers a much wider flexing range.



QPX600D

- ▶ 1200 watts PowerFlex+
- ▶ Dual 600 watt outputs
- ▶ Higher currents at lower voltages
- ▶ Up to 80 volts and up to 50 amps
- ▶ Smart tracking modes

QPX750SP

- ▶ 750 watts PowerFlex+
- ▶ Higher currents at lower voltages
- ▶ Up to 80 volts and up to 50 amps
- ▶ Touch screen, full colour display

The QPX750SP offers unrivalled flexibility in voltage/current combinations.

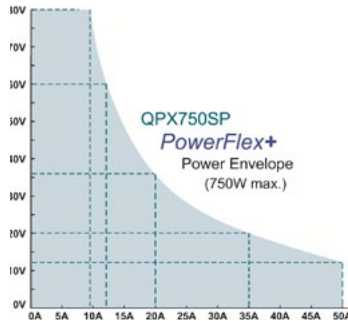
The compact half rack design is suitable for bench or rack with full current terminals front and rear.

Model	Outputs	Voltage/Current	Power	Interfaces
QPX750SP	One	0 to 80 V/0 to 50 A*1	750 W	USB/LAN/GPIB*2

Brief specifications:
Line & load regulation: <0.01% ±5 mV. Output noise: <3 mV rms.
Setting accuracies: voltage (60 V range)- 0.1% ±2 mV, current - 0.3% ±20 mA.
Size (W x H x D): 215 x 130 x 460 mm (half rack x 3U)

*1: Max. current is not available with max. voltage, see PowerFlex curve.
*2: GPIB Optional.

- ▶ PowerFlex+ gives ultra wide range of voltage/current combinations
 - ▶ Up to 80 volts and up to 50 amps (750W max.)
 - ▶ Low output noise and ripple
 - ▶ High setting resolution of 1mV
 - ▶ Colour screen, touch display
 - ▶ Analogue, USB, LAN & GPIB*3 interfaces
- *3: Requires GPIB-1A option.



Power Supply Selector

Model No.	Interfaces	Regulation	O/Ps	Main Output(s)	Aux. Output	Power	Local Cntrl	Meters
EL301R	—	Linear	Single	0 - 30 V/0 - 1 A		30 W	Analogue	4-digit LED
EL183R	—	Linear	Single	0 - 18 V/0 - 3.3 A		60 W	Analogue	4-digit LED
EL302R	—	Linear	Single	0 - 30 V/0 - 2 A		60 W	Analogue	4-digit LED
EL561R	—	Linear	Single	0 - 56 V/0 - 1.1 A		60 W	Analogue	4-digit LED
EL155R	—	Linear	Single	0 - 15 V/0 - 5 A		75 W	Analogue	4-digit LED
EL303R	—	Linear	Single	0 - 30 V/0 - 3 A		90 W	Analogue	4-digit LED
EL302RD	—	Linear	Dual	0 - 30 V/0 - 2 A		120 W	Analogue	4-digit LED
EL302RT	—	Linear	Triple	0 - 30 V/0 - 2 A	1.5 - 5 V @ 2 A	130 W	Analogue	4-digit LED
EL302P	RS-232	Linear	Single	0 - 30 V/0 - 2 A		60 W	Digital	4-digit LED
EL302P-USB	USB	Linear	Single	0 - 30 V/0 - 2 A		60 W	Digital	4-digit LED
EX1810R	—	Mixed Mode	Single	0 - 18 V/0 - 10 A		180 W	Analogue	4-digit LED
EX355R	—	Mixed Mode	Single	0 - 35 V/0 - 5 A		175 W	Analogue	4-digit LED
EX2020R	—	Mixed Mode	Single	0 - 20 V/0 - 20 A		400 W	Analogue	4-digit LED
EX4210R	—	Mixed Mode	Single	0 - 42 V/0 - 10 A		420 W	Analogue	4-digit LED
EX354RD	—	Mixed Mode	Dual	0 - 35 V/0 - 4 A		280 W	Analogue	4-digit LED
EX354RT	—	Mixed Mode	Triple	0 - 35 V/0 - 4 A	1.5 - 5 V @ 5 A	305 W	Analogue	4-digit LED
EX752M	—	Mixed Mode	Dual	0 - 75 V/0 - 2 A		300 W	Analogue	3-digit LED*1
EX355P	RS-232	Mixed Mode	Single	0 - 35 V/0 - 5 A		175 W	Digital	4-digit LED
EX355P-USB	USB	Mixed Mode	Single	0 - 35 V/0 - 5 A		175 W	Digital	4-digit LED
FX100DP	USB	PowerFlex	Dual	0 - 42 V/0 - 6 A*4		210 W	Touch	Graphic LCD
FX100TP	USB	PowerFlex	Triple	0 - 42 V/0 - 6 A*4	0 - 6 V/0 - 6 A	246 W	Touch	Graphic LCD
MX100T	—	Mixed Mode	Triple	0 - 35 V/0 - 6 A*3		315 W	Digital	Graphic LCD
MX180T	—	Mixed Mode	Triple	0 - 60 V/0 - 6 A*3	0 - 12 V/0 - 3 A#	378W	Digital	Graphic LCD
MX100Q	—	Mixed Mode	Quad	0 - 70 V/0 - 6 A*3		420 W	Digital	Graphic LCD
MX103Q	—	Mixed Mode	Quad	0 - 35 V/0 - 6 A (OP4 = 0-3 A)*3		420 W	Digital	Graphic LCD
MX100TP	RS-232/USB/LAN/GPIB*1	Mixed Mode	Triple	0 - 35 V/0 - 6 A*3		315 W	Digital	Graphic LCD
MX180TP	RS-232/USB/LAN/GPIB*1	Mixed Mode	Triple	0 - 60 V/0 - 6 A*3	0 - 12 V/0 - 3 A#	378W	Digital	Graphic LCD
MX100QP	RS-232/USB/LAN/GPIB*1	Mixed Mode	Quad	0 - 70 V/0 - 6 A*3		420 W	Digital	Graphic LCD
MX103QP	RS-232/USB/LAN/GPIB*1	Mixed Mode	Quad	0 - 35 V/0 - 6 A (OP4 = 0-3 A)*3		420 W	Digital	Graphic LCD
PL068	—	Linear	Single	0 - 6 V/0 - 8 A		48 W	Smart Analogue	4-digit LED
PL155	—	Linear	Single	0 - 15 V/0 - 5 A		75 W	Smart Analogue	4-digit LED
PL303	—	Linear	Single	0 - 30 V/0 - 3 A		90 W	Smart Analogue	4-digit LED
PL601	—	Linear	Single	0 - 60 V/0 - 1.5 A		90 W	Smart Analogue	4-digit LED
PL303QMD	—	Linear	Dual	0 - 30 V/0 - 3 A		180 W	Smart Analogue	4-digit LED
PL303QMT	—	Linear	Triple	0 - 30 V/0 - 3 A	0 - 6 V/0 - 8 A	228 W	Smart Analogue	4-digit LED
PL068-P*2	RS-232/USB/LAN	Linear	Single	0 - 6 V/0 - 8 A		48 W	Smart Analogue	4-digit LED
PL155-P*2	RS-232/USB/LAN	Linear	Single	0 - 15 V/0 - 5 A		75 W	Smart Analogue	4-digit LED
PL303-P*2	RS-232/USB/LAN	Linear	Single	0 - 30 V/0 - 3 A		90 W	Smart Analogue	4-digit LED
PL601-P*2	RS-232/USB/LAN	Linear	Single	0 - 60 V/0 - 1.5 A		90 W	Smart Analogue	4-digit LED
PL303QMD-P*2	RS-232/USB/LAN	Linear	Dual	0 - 30 V/0 - 3 A		180 W	Smart Analogue	4-digit LED
PL303QMT-P*2	RS-232/USB/LAN	Linear	Triple	0 - 30 V/0 - 3 A	0 - 6 V/0 - 8 A	228 W	Smart Analogue	4-digit LED
PLH120	—	Linear	Single	0 - 120 V/0 - 0.75 A		90 W	Smart Analogue	4-digit LED
PLH250	—	Linear	Single	0 - 250 V/0 - 0.375 A		94 W	Smart Analogue	4-digit LED
PLH120-P*2	RS-232/USB/LAN	Linear	Single	0 - 120 V/0 - 0.75 A		90 W	Smart Analogue	4-digit LED
PLH250-P*2	RS-232/USB/LAN	Linear	Single	0 - 250 V/0 - 0.375 A		94 W	Smart Analogue	4-digit LED
QL355	—	Linear	Single	0 - 35 V/0 - 5 A*3		105 W	Digital	5-digit LED
QL564	—	Linear	Single	0 - 56 V/0 - 4 A*3		112 W	Digital	5-digit LED
QL355T	—	Linear	Triple	0 - 35 V/0 - 5 A*3	1 V - 6 V @ 3 A	228 W	Digital	5-digit LED
QL564T	—	Linear	Triple	0 - 56 V/0 - 4 A*3	1 V - 6 V @ 3 A	242 W	Digital	5-digit LED
QL355P*2	RS-232/USB/LAN	Linear	Single	0 - 35 V/0 - 5 A*3		105 W	Digital	5-digit LED
QL564P*2	RS-232/USB/LAN	Linear	Single	0 - 56 V/0 - 4 A*3		112 W	Digital	5-digit LED
QL355TP*2	RS-232/USB/LAN	Linear	Triple	0 - 35 V/0 - 5 A*3	1 V - 6 V @ 3 A	228 W	Digital	5-digit LED
QL564TP*2	RS-232/USB/LAN	Linear	Triple	0 - 56 V/0 - 4 A*3	1 V - 6 V @ 3 A	242 W	Digital	5-digit LED
TSX1820	—	Mixed Mode	Single	0 - 18 V/0 - 20 A		360 W	Analogue	4-digit LED
TSX3510	—	Mixed Mode	Single	0 - 35 V/0 - 10 A		350 W	Analogue	4-digit LED
TSX1820P	RS-232 & GPIB*1	Mixed Mode	Single	0 - 18 V/0 - 20 A		360 W	Digital	4-digit LED
TSX3510P	RS-232 & GPIB*1	Mixed Mode	Single	0 - 35 V/0 - 10 A		350 W	Digital	4-digit LED
CPX200D	—	PowerFlex	Dual	0 - 60 V/0 - 10 A*4		360 W	Smart Analogue	4-digit LED
CPX400S	—	PowerFlex	Single	0 - 60 V/0 - 20 A*4		420 W	Smart Analogue	4-digit LED
CPX400D	—	PowerFlex	Dual	0 - 60 V/0 - 20 A*4		840 W	Smart Analogue	4-digit LED
CPX200DP	RS-232/USB/LAN/GPIB*1	PowerFlex	Dual	0 - 60 V/0 - 10 A*4		360 W	Smart Analogue	4-digit LED
CPX400SA	Isolated Analogue	PowerFlex	Single	0 - 60 V/0 - 20 A*4		420 W	Smart Analogue	4-digit LED
CPX400SP	RS-232/USB/LAN/GPIB*1	PowerFlex	Single	0 - 60 V/0 - 20 A*4		420 W	Smart Analogue	4-digit LED
CPX400DP	RS-232/USB/LAN/GPIB*1	PowerFlex	Dual	0 - 60 V/0 - 20 A*4		840 W	Smart Analogue	4-digit LED
QPX1200S	—	PowerFlex	Single	0 - 60 V/0 - 50 A*4		1200 W	Digital	Graphic LCD
QPX600D	—	PowerFlex+	Dual	0 - 80 V/0 - 50 A*4		1200 W	Digital	Graphic LCD
QPX750SP	RS-232/USB/LAN/GPIB*1	PowerFlex+	Single	0 - 80 V/0 - 50 A*4		750 W	Touch	Graphic LCD
QPX1200SP	RS-232/USB/LAN/GPIB*1	PowerFlex	Single	0 - 60 V/0 - 50 A*4		1200 W	Digital	Graphic LCD
QPX600DP	RS-232/USB/LAN/GPIB*1	PowerFlex+	Dual	0 - 80 V/0 - 50 A*4		1200 W	Digital	Graphic LCD

*1: GPIB Optional.

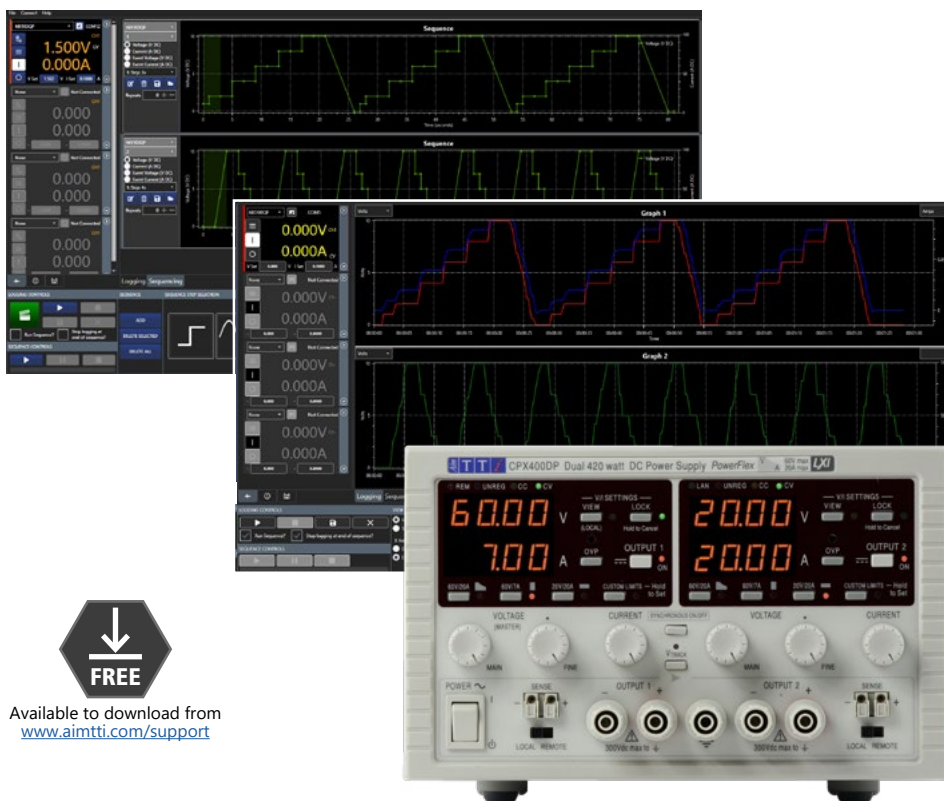
*2: Optionally available with a GPIB interface fitted in addition to RS-232, USB and LAN, factory fit.

*3: Indicates a multi-range model - maximum voltage and current are not available simultaneously.

*4: Indicates a PowerFlex model - maximum voltage and current are not available simultaneously.

Test Bridge PC Software

- ▶ Multi instrument control
- ▶ Logging to table, graph and histogram format
- ▶ Single point logging with pass/fail limits
- ▶ Timed sequence control across all instruments and channels
- ▶ Interactive remote commands with descriptions



Available to download from
www.aimtti.com/support

Multi Instrument control

Up to four instruments can be connected at one time, each one can be controlled by the instrument panel; settings and limits can be viewed and amended in the settings menu. Live and set data can be displayed for all channels on a multiple channel instrument, each one colour coded for ease of identification.

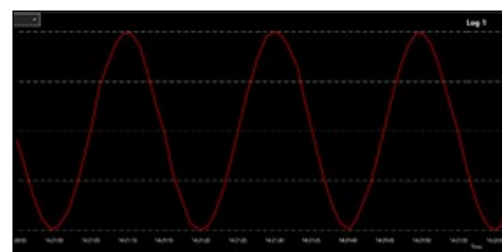
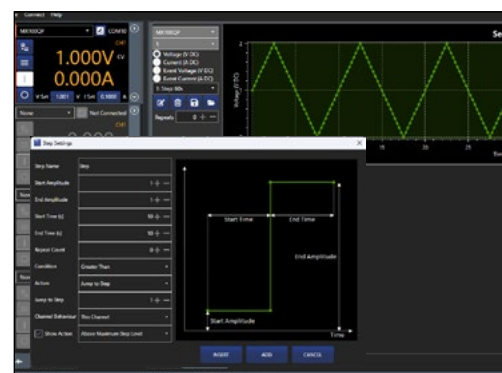
Compatible with most Aim-TTi test and measurement instruments, see www.aimtti.com for more details.

Logging to table and graph

Logging channels capture live data, they can be set to record values from any input/output on an active instrument at specified time intervals. Varying measurement intervals can be set alongside units and plot line colour. User defined limits can be added to pass or fail the recorded data. Data can be displayed as time, point or histogram graphs. Logging on demand can be used to log single points as required. The results are plotted on one of the two available graphs and can also be viewed in a table. The graph provides advanced zooming and panning functions, allowing efficient data analysis. The data can be exported to a file.

Timed sequence control

Each sequence is allocated to a specified channel on an instrument. Two different instruments can be added to each sequence, along with two events. Events can be set to: jump to another step in a sequence, stop the sequence, turn off individual channels, turn off all channels in an instrument, or turn off all channels for all instruments. A range of built in step options are available including: step, sine, ramp, triangle and square.





Available to download from
www.aimtti.com/support

Test Bridge SMU - PC Software for the SMU4000 Series

Test Bridge SMU is free downloadable software that provides full programmable control of multiple SMUs alongside additional enhanced features.

The graphical interface allows advanced setups, lists and sequences to be created and directly applied to the SMU. Quick and efficient data download means results can be saved and exported for further analysis as a .CSV file then further viewed in a tabular or graphical format from within the Test Bridge SMU software.

The advanced graphing feature provides an array of options to view the results in multiple formats such as: Assign result sets to graphs with customised axis definitions, compare different sets of results on a single graph, split by step and repeat for sequenced data, alongside viewing in a linear or logarithmic format.



Test Bridge SMU

- ▶ Full instrument control of multiple SMUs
- ▶ Build complex sequences with full access to configuration settings
- ▶ Arbitrary waveform creation with built in preset options
- ▶ Linear and logarithmic, X/Y, Y/T graphing functions
- ▶ Advanced zooming and panning functions
- ▶ Split view option for steps and repeats on sequenced data
- ▶ Full access to remote commands with documentation for each command

Test Bridge PSA

- ▶ Print or export trace files to other applications.
- ▶ Full analysis of logging files*
- ▶ Create limit patterns, channel markers & compensation tables*
- ▶ Display live PSA view*

*: Available with option U01 fitted



Available to download from
www.aimtti.com/support

Test Bridge PSA- PC Software for the handheld Spectrum Analyzer range

Test Bridge PSA is a free application operating under Windows that provides useful file display and creation facilities.

Test Bridge PSA can display trace files which can be printed or exported to other applications.

For instruments with option U01 fitted, Test Bridge PSA provides full display and analysis of logging files, creation of limit pattern files, channel marker lists, and compensation tables and display of live PSA screen updates.

Product Range

Pulse Generators

Analogue 10 MHz pulse generator. Digital 25 MHz & 50 MHz pulse generators, single/dual channel.

Digital Function Generators

DDS based function generators, with and without arbitrary capability at frequencies up to 240 MHz.

Waveform Software

PC based software for creation and editing of arbitrary waveforms and pulses.

Waveform Amplifiers

Wide-band amplifier with 30 V pk-pk output.

RF Signal Generators

See RF section.

Function, Arbitrary & Pulse generators

Aim-TTi is a world leader in waveform generation with products ranging from basic analogue function generators through to advanced multi-channel generators.

Waveform quality

The success of Aim-TTi function generators has always been based around waveform quality.

Aim-TTi generators offer waveform quality not just at high output levels, but at low levels as well - a much more difficult task.

Careful analogue design yields excellent waveform purity at all frequencies and levels, unlike many competitive products.

Digital architectures

Aim-TTi has been at the forefront of digital generator design with products that combine both DDS (direct digital synthesis) and variable-clock architectures in order to offer optimum performance for specific applications.

Most recently an innovative architecture for pulse generation has been developed which eliminates the jitter created by other digital techniques.

PurePulse Technology

Aim-TTi's PurePulse technology adapts Direct Digital Synthesis (DDS) for digital pulse generation, utilising digital signal processing, allowing for ultra-low jitter pulse edges.

The Key benefits of this technology are:

- Independently adjustable rise and fall times
- Minimal jitter on pulse edges
- Sub nano-second pulse parameter resolution
- Pulse Period, Width and Delay modulation
- Triggerable Pulse generation with burst options
- Up to 60 ps trigger uncertainty



ATG1005

- ▶ 1 mHz to 5 MHz function generator
- ▶ Dedicated sync output
- ▶ Linear/logarithmic sweep with single or dual slope.
- ▶ FSK and PSK modes.



NEW



The ATG1005 function generators are designed for education and laboratory use. It uses direct digital synthesis to provide high performance and extensive facilities at a breakthrough price. It can generate a variety of waveforms between 1 mHz and 5 MHz with a resolution of 6 digits and an accuracy better than 10 ppm.

High quality sine, square and pulse waveforms can be generated over the full frequency range of 1 mHz to 5 MHz. Variable symmetry/duty-cycle is available for square and pulse waveforms.

All waveforms can be swept from 0.1 Hz to their maximum frequency in a single sweep at a rate variable between 100 milliseconds and 999 seconds. The sweep is fully phase continuous. Sweep can be linear or logarithmic, single or continuous. Single sweeps can be triggered from the front panel or the digital interfaces.

Frequency Shift Keying (FSK) and Phase Shift Keying (PSK) provide phase coherent switching between two selected values at a user defined rate.

The generator has a USB interface which can be used for remote control of all of the instrument functions. This instrument is supported by the Aim-TTi Test Bridge PC software (available as free download from the Aim-TTi website), which can be used to control up to 4 instruments simultaneously.

All these features are housed in a compact design, making it an ideal tool for engineers who need a reliable and portable solution for their testing needs.

High performance DDS arbitrary/function generators offering high quality sine and square waveforms at up to 50 MHz.

The full graphics display is capable of showing representative waveform information simultaneously with a comprehensive status readout.

The wide range of standard waveforms is supplemented by full arbitrary waveform capability using a 125 MS/s sampling rate and up to 128K word record length. Waveforms can be downloaded via the digital interfaces or loaded and saved via the front mounted USB flash drive interface.

Pulse waveforms are generated by a dedicated pulse generator system with independent setting of period, width and delay. Rise and fall times are independently variable over a wide range.

A comprehensive digital modulation system is incorporated covering AM, FM, PM, PWM, FSK and Noise. Modulations can be internal or external at frequencies from DC up to 20 kHz external or 1 MHz internal.

- ▶ 1 μ H to 50 MHz or 25 MHz range; 14 digits or 1 μ H resolution
- ▶ Standard waveforms include sine, square, ramp, pulse, PRBS, sin(x)/x, noise, exponential and logarithmic rise
- ▶ True pulse generator with variable delay and variable rise/fall
- ▶ Arbitrary waveforms of up to 128K points at up to 125 MS/s
- ▶ Waveform storage using USB flash drives
- ▶ Large graphic LCD with simultaneous text and waveform display
- ▶ Comprehensive internal and external digital modulations including AM, FM, PM, PWM, SUM, FSK and BPSK
- ▶ 20 mV to 20 V pk-pk output from 50 Ω plus multi function aux. out
- ▶ Storage for multiple instrument set-ups in non-volatile memory
- ▶ Waveform Manager Plus for Windows software included
- ▶ Programmable via USB and LAN (LXI) interfaces; GPIB optional*

*: Requires GPIB-1A option.

Dual Models

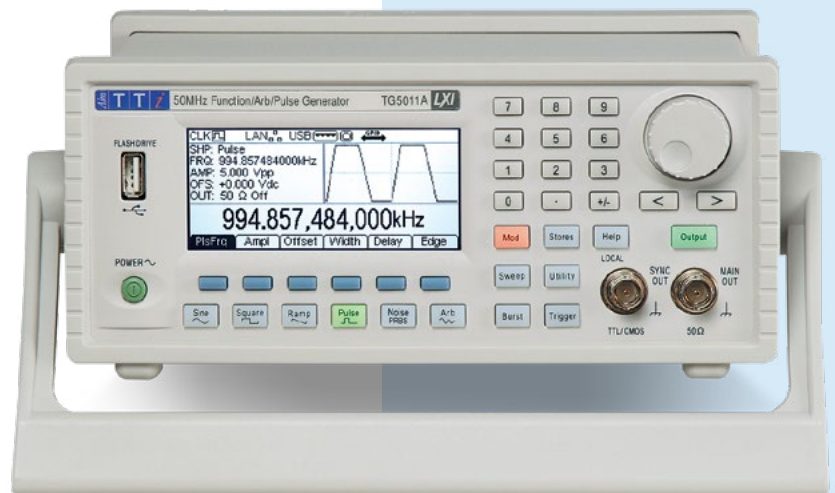
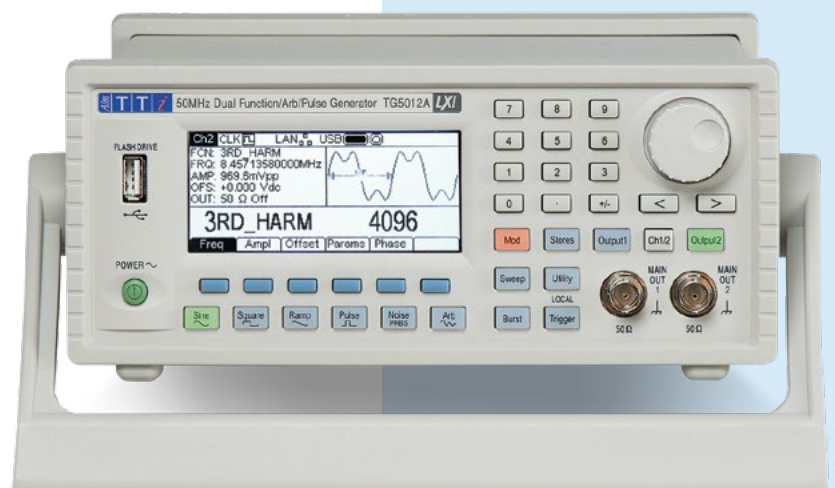
- ▶ Two channels - independent or linked with coupled/tracking modes
- ▶ Selectable coupling of frequency (equal or offset), amplitude/DC offset
- ▶ Inter-channel phase offset of -360° to $+360^\circ$ with 0.1 $^\circ$ resolution
- ▶ Individual channel features as TG5011A/TG2511A

The TG5012A and TG2512A are two channel versions of the TG5011A/2511A, and have identical features enhanced by multi-channel capabilities including coupling for frequency and/or level, full tracking, and defined phase offset.

A comprehensive set of interfaces includes USB and LAN (conforming with LXI) as standard plus GPIB as an option.

TG251XA/TG501XA

- ▶ 50 MHz/25 MHz function generator
- ▶ High speed arbitrary waveforms
- ▶ Pulse generator mode with variable rise/fall times

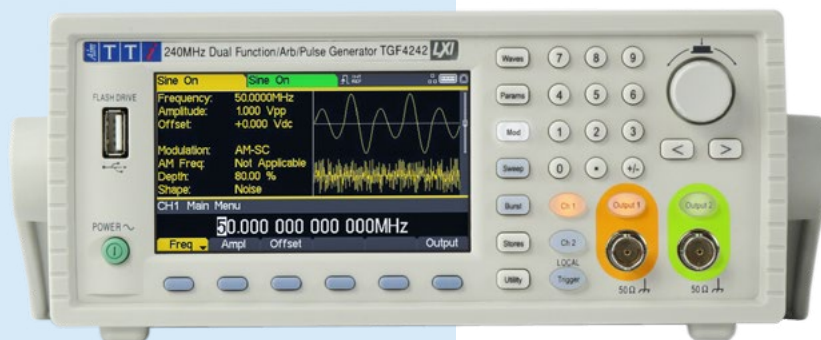


TGF4000 Series

- ▶ 40 MHz/80 MHz/160 MHz/240 MHz
- ▶ Two identical channels
- ▶ High speed arbitrary waveforms
- ▶ Pulse, noise and harmonics generator modes
- ▶ Built-in frequency counter

With two channels and very high frequency capability, the TGF4000 series offers exceptional value for money.

Signal generation capability up to 240 MHz on two identical full performance channels that can operate independently or in coupled or tracking modes. Precise channel to channel phase control with a resolution of 0.001° is provided.



A wide range of built-in waveforms are included. Custom arbitrary waveforms can be used at sample speeds up to 800 MS/s and replay rates up to 80 MHz. PC based arbitrary waveform generation and editing software is provided.

High resolution, low jitter pulses can be generated up to 100 MHz as can wide bandwidth white noise. A extensive array of modulations is provided using internal and external sources. Gated, burst and sweep modes can use internal or external trigger sources.

Model Comparison	TGF4042	TGF4082	TGF4162	TGF4242
Max frequency (sine)	40 MHz	80 MHz	160 MHz	240 MHz
Max frequency (square/ pulse)	25 MHz		100 MHz	
Vertical bits/ Sample rate	14 bits/400 MS/s		16 bits/800 MS/s	
Noise bandwidth	50 MHz		100 MHz	

- ▶ 0.001 mHz to 240 MHz (TGF4242), 160 MHz (TGF4162) 80 MHz (TGF4082) or 40 MHz (TGF4042) sine frequency range
- ▶ High sine wave purity with low phase noise and jitter, audio band THD down to 0.05%
- ▶ Square waves up to 100 MHz with variable duty cycle, edge speeds down to 3 ns
- ▶ Resolution of up to 15 digits or 1 µHz, high stability TCXO timebase
- ▶ Two identical channels - independent or linked with coupled and tracking modes
- ▶ Inter-channel phase offset of -360° to +360° with 0.001° resolution
- ▶ 1 mHz to up to 100 MHz Pulse generation with 100 ps width resolution, <30 ps jitter, and independently variable rise/fall times
- ▶ Wideband noise generator with up to 100 MHz noise bandwidth
- ▶ PRBS (pseudo-random bit sequence) generation with 8 sequence lengths*¹
- ▶ Harmonics generation using up to 16 harmonics*¹
- ▶ Wide range of standard and arbitrary waveforms built-in
- ▶ Arbitrary waveforms of 14-bits/400 MS/s (TGF4042 & TGF4082) or 16-bits/800 MS/s (TGF4162 & TGF4242)
- ▶ Waveform Manager Plus for Windows editing software included
- ▶ Front USB host socket for waveform storage and file transfers using Flash drives
- ▶ Comprehensive internal/external digital and analogue modulation set including Sum*¹ modulation
- ▶ Modulation frequencies up to 10 MHz internal and 5 MHz external
- ▶ Gate and Burst modes with internal and external triggering
- ▶ Bi-directional linear and logarithmic sweep using internal or external triggering
- ▶ 125 MHz frequency counter/timer with five measurement modes
- ▶ Compact half-rack 2U casing with protective buffers and handle
- ▶ Programmable via USB and LAN (LXI) interfaces; GPIB*² optional

*1: TGF4162 and TGF4242 models only.

*2: Requires GPIB-1A option.

TGF4000 Series V2 Update*

The V2 update includes improved Phase Noise and ARB Waveform length, V2 also adds comprehensive Waveform Sequencing Pulse Delay Modulation and List Sweep capabilities.

It is possible to update from V1 to V2. Please contact us for details.

- ▶ Improved Phase Noise
- ▶ Flexible Pulse Edge shaping
- ▶ Arb Waveform Memory increased
- ▶ Waveform Sequencing
- ▶ Pulse Delay Modulation
- ▶ List Sweep

NEW

Model	Max Freq.	Channels
TGP3121	25 MHz	One
TGP3151	50 MHz	One
TGP3122	25 MHz	Two
TGP3152	50 MHz	Two

- ▶ Pulse waveforms from 1 mHz to 50 MHz, minimum rise time 5 ns
- ▶ Very low jitter synchronous and asynchronous operation
- ▶ Pulse, double pulse, pulse pattern and PRBS waveforms
- ▶ Pulse period, width and delay resolutions of 100 ps or 11 digits
- ▶ Independently variable rise and fall times from 5 ns to 800 s
- ▶ True low jitter asynchronous operation, externally triggered pulses or pulse reconstruction
- ▶ High drive capability output can provide 20 V pk-pk into 50Ω
- ▶ Wide range of pulse modulations including AM, FM, PM, FSK, BPSK, SUM, PWM & PDM using internal or external modulation sources.
- ▶ Triggered (burst count) or gated operation using internal or external trigger sources
- ▶ Full Noise generator to 25 MHz with selectable crest factor and user defined distribution
- ▶ Full Arbitrary/Function generator with 16 waveform types - sine waves up to 50 MHz
- ▶ Arbitrary waveforms at 800 MS/s sampling rate and 16-bit vertical resolution
- ▶ Internal channel coupling, tracking and modulations (2 channel models)
- ▶ Extensive internal/external modulation of all waveform types
- ▶ Linear and logarithmic sweeps of all waveform types
- ▶ Front panel mounted USB Flash drive interface
- ▶ GPIB*, USB and LXI compliant LAN interfaces

*: Requires GPIB-1A option.

PurePulse Generators with Universal Waveform capabilities

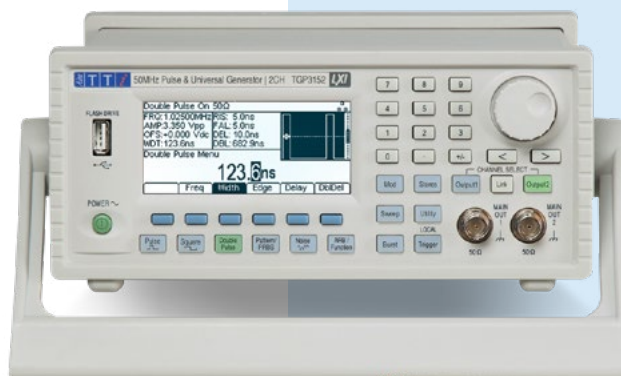
The TGP3100 Series are pulse generators using Aim- TTI PurePulse techniques.

Aim-TTI's PurePulse technology adapts Direct Digital Synthesis (DDS) for digital pulse generation, utilising digital signal processing, allowing for ultra-low jitter pulse edges.

They can replicate the capabilities of traditional pulse generators whilst adding many additional facilities such as pulse modulations.

TGP3100 Series

- ▶ Purepulse generators with universal waveform capabilities
- ▶ 50 MHz or 25 MHz, 1 or 2 channels
- ▶ Very high pulse resolution and very low jitter
- ▶ True asynchronous operation



Unlike DDS based function generators the TGP3100 Series can generate pulses up to 50 MHz with very low jitter and high resolution of width and delay (100 ps). They can also operate in an asynchronously triggered mode with low jitter.

A high drive capability output stage enables up to 20 volts pk-pk to be driven into a 50Ω load.

Noise Generator

As a noise generator, the TGP3100 series offers fully variable noise bandwidth from 1 mHz up to 25 MHz. Noise amplitude distribution can be Gaussian (with variable crest factor) or fully user defined.

Function Generator

The TGP3100 Series can operate as a high performance function generator at up to 50MHz. Sixteen standard waveforms include sine, square, triangle, ramps, sinc, cardiac, plus logarithmic, exponential and gaussian shapes.

Arbitrary Generator

With an 800 MS/s sample clock, the TGP3100 series can perform as high speed arbitrary generators with 16-bit vertical resolution and up to 4096 waveform points.

The TGP110 is an analogue pulse generator that offers a very wide control range.

Its dedicated architecture enables it to generate fast rise time flat top pulses over a very large duty cycle range.

The unit offers selectable delay between trigger and pulse, or between two pulses in double pulse mode. A sync output signal provides a pulse in synchronism with the trigger.

A low impedance output of fully variable level is provided together with a TTL/CMOS output and a level inversion switch.

- ▶ 0.1 Hz to 10 MHz frequency range
- ▶ Independent control of pulse frequency, width and delay
- ▶ 50 ns minimum pulse width
- ▶ Squarewave, double pulse and delayed pulse modes
- ▶ Free-run, gated and triggered modes
- ▶ 50Ω output: 0.1 V to 10 V amplitude
- ▶ TTL/CMOS and Sync outputs

TGP110 Pulse Generator

- ▶ 0.1 Hz to 10 MHz pulse generator
- ▶ Very wide pulse control range



Waveform Manager Plus software

- ▶ Waveform creation, editing, import and management
- ▶ Full waveform building tools
- ▶ Pattern generation tools
- ▶ Interface via RS-232, USB, LAN or GPIB

Waveform Manager Plus is supplied with all Aim-TTI generators that have arbitrary waveform capability. Full details of the software capabilities are available on the website.

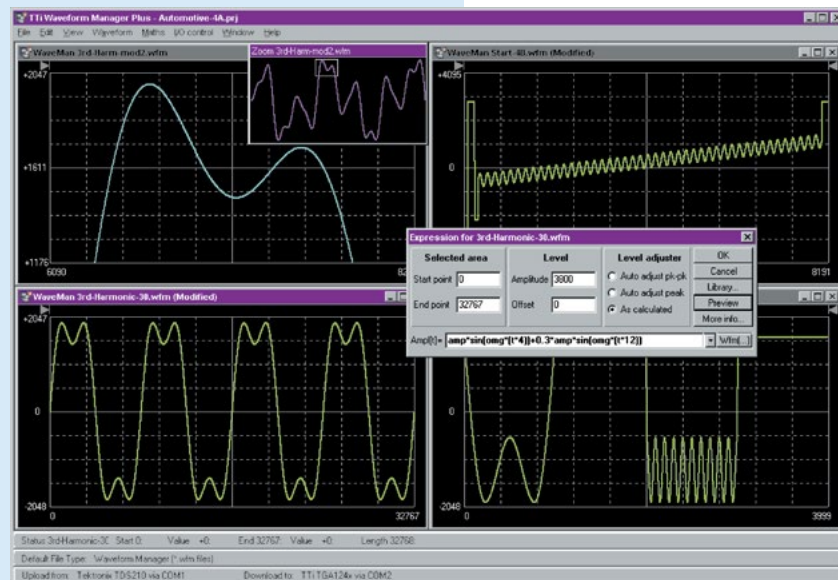
Aim-TTI arbitrary generators include a built-in waveform creation/editing facility that includes point-by-point value insertion, straight line interpolation between points and standard waveform insertion between points.

However, complex arbitrary waveforms will need to be generated using sophisticated software tools outside of the instrument and transferred using a digital interface.

Waveform Manager Plus is a Windows program that offers the most comprehensive range of waveform creation and editing tools available including a full mathematical expression generator and freehand drawing tools.

Waveform Manager Plus is supplied as standard with all TGA series generators, TG1010A, TGP3100 series, TG251xA and TG501xA generators and TGF series generators.

Waveform Manager Plus can also be used to import waveforms from other software programs or other hardware devices and to scale and crop these waveforms for compatibility with the target arbitrary generator.



- ▶ Full waveform building tools including standard waveforms, mathematical expressions, clipboard functions and freehand drawing
- ▶ Compatible with Windows
- ▶ Vertical resolutions up to 16 bits (65536 points)
- ▶ Horizontal resolutions to over one million points
- ▶ Pattern generation tools for use with TGP series
- ▶ Waveform import/export via clipboard functions
- ▶ Direct import from CSV files
- ▶ Download and upload via RS-232, USB, GPIB, LAN

WA301 Waveform Amplifier

- ▶ Up to 30 volts pk-pk output
- ▶ DC to 1 MHz bandwidth

The WA301 wide-band waveform amplifier is intended for extending the maximum output voltage swing of function and arbitrary generators for applications where an EMF of 20 volts pk-pk is insufficient.

- ▶ 30 V pk to pk output (15 V into terminating impedance)
- ▶ 50Ω and 600Ω outputs; full output protection
- ▶ Switchable 20 dB output attenuator
- ▶ DC to 1 MHz bandwidth
- ▶ High impedance input; 0 to +20 dB gain



Precision measurement instruments

Aim-TTI has been designing and manufacturing precision measurement instruments for over forty years.

Expertise in precision analogue design has enabled the company to offer high performance products with advanced features at attractive prices.

Aim-TTI offers instruments for the precision measurement of all of the fundamental electronic parameters including voltage, current, resistance, capacitance, inductance, power and frequency.

The I-prober positional current probe from Aim instruments enables the measurement of current in situations where it was previously not possible.



Product Range

Digital Multimeters

Bench-top digital multimeters with true rms AC and digital control interfaces.

Source Measurement Unit

High performance SMU offering exceptional value for money.

I-prober Current Probe

Innovative probe for applications that include non-contact measurement of currents in PCB tracks and magnetic fields.

Electronic DC Loads

Electronic DC Loads for power supply and battery testing.

Frequency Measurement

Bench-top universal counters and handheld frequency meters up to 6 GHz.

Digital Multimeters		1908 & 1908P	ADM1055
Display Type		Dual LCD	Color, touch display
Scale Length (Counts)		120,000	120,000
Dual Measurement		Yes	No
DC Voltage	Ranges	(5) 100 mV to 1000 V	(5) 100 mV to 600 V
	Best Resolution	1 μ V	1 μ V
	Basic Accuracy	0.02%	0.02%
AC Voltage	Ranges	(5) 100 mV to 750 V	(5) 100 mV to 450 V
	True RMS conversion	Yes	Yes
	Frequency Response	45 Hz to 50 kHz	45 Hz to 50 kHz
DC/AC Current	Ranges	(4) 10 mA to 10 A	(5) 1 mA to 10 A
	Best Resolution	100 nA	10 nA
Resistance	Ranges	(6) 100 Ω - 10M Ω	(6) 100 Ω - 10M Ω
	Best Resolution	1m Ω	1m Ω
Frequency		Yes	Yes
Capacitance		Yes	Yes
Temperature		Yes	No
Smart Functions		12	10
Interfaces	RS-232	Yes	No
	USB	Yes	Yes
	GPIO, RS-232, LAN	Yes (1908P only)	No
Power Source		AC Line or Rechargeable Battery	AC Line

PC and System connectivity

At some point most engineers are going to want to connect their DMM to their computer to provide automatic measurement control or importing of data into a computer programme. Unlike a hand-held DMM, Aim-TTI bench-top DMMs include isolated control interfaces.

Unlike a hand-held DMM, Aim-TTI bench-top DMMs include isolated PC control interfaces to provide automatic measurement control or importing of data into a computer.

The 1908 and ADM1055 provide a USB interfaces standard.

For system applications, the 1908P includes USB, RS-232, and LAN interfaces and optional GPIO.

Functions & features of real value

Hand-held DMMs may offer a few "smart" features but these are rarely well enough implemented to be of real use.

Aim-TTI bench-top DMMs offer features such as dual measurement & display, precision frequency measurement, dBm, data logging, power and VA.

Digital Multimeters

Bench-top DMMs versus hand-held

Low cost hand-held DMMs have replaced bench-top DMMs in many applications. Although the performance of these meters may be sufficient for some tasks, it is likely that most engineers will regularly encounter measurement problems that are beyond the capability of a hand-held unit.

An instrument intended for serious use

An Aim-TTI bench-top DMM is a substantial instrument. It stays where you put it even with heavy test leads connected. The tilt stand ensures that the large display is always readable. The functions buttons are large and the front panel is clearly marked.

Sensitivity, Resolution and Accuracy

Compare the performance of any Aim-TTI bench-top DMM with a good quality 4000 count hand-held DMM of 0.3% basic Vdc accuracy.

Longer scale length, greater sensitivity and higher accuracy ensure that measurement uncertainty is a full order of magnitude better.

Aim-TTI bench-top DMMs maintain good accuracy on all functions including AC voltage, resistance and current. For most hand-helds, the accuracies for functions other than DC voltage are dramatically poorer.

Wideband AC measurement and true RMS

Most hand-held DMMs have an AC frequency response specified to below 1 kHz. All Aim-TTI bench-top DMMs provide excellent accuracy on all ranges throughout the audio band and beyond.

Most AC signals are not sinusoidal. However, most hand-held DMMs incorporate a mean sensing AC converter which only gives useful results on sinusoids. Those that do have a True RMS converter often have insufficient bandwidth to cope with complex waveshapes. All Aim-TTI bench-top DMMs combine True RMS AC with sufficient bandwidth to ensure accurate results.

1908 DMM

- Precision 5½ digit multimeter
- Dual display, dual measurement
- 0.02% basic Vdc accuracy
- AC line or battery operation

The 1908 is a precision 5½ digit bench multimeter incorporating dual displays and dual measurement technology.

The dual displays can be used either to display one measurement in two units (e.g. mV and dB) or to measure two parameters simultaneously (e.g. dc-V and ac-V).



Function	Ranges	Best Resolution	Best Accuracy
DC V	(5) 100 mV - 1000 V	1 μ V	0.02% $\pm$ 3 digits
AC V	(5) 100 mV - 750 V	1 μ V	0.2% $\pm$ 100 digits
Resistance	(6) 100 Ω - 10M Ω	1m Ω	0.03% $\pm$ 2 digits
DC I	(3) 10 mA - 10 A	0.1 μ A	0.05% $\pm$ 5 digits
AC I	(3) 10 mA - 10 A	0.1 μ A	0.35% $\pm$ 20 digits

Further measurement functions: Frequency, Capacitance, Temperature, Continuity, Diode Test. Smart functions: Null (Relative), Hold, T-Hold, Min/Max, dB, Ax+B, % deviation, VA. Logger: 500 readings. Interfaces: USB (both models). GPIB*, RS-232, LAN (1908P). Power: 230 V or 115 V AC 50/60 Hz, or built-in NiMH rechargeable cells. Size (W x H x D) and weight: 250 x 87 x 269 mm. 3.2 kg (7 lb)

- Dual 120,000 count LCD, auto/manual ranging
- Accuracy and resolution: 0.02%, 1 μ V, 1m Ω
- Dual displays & 'dual measurement' technology
- Frequency, Capacitance and Temperature
- Wide range of computing functions e.g. Ax + B
- 500 reading data logger
- Mains and rechargeable battery operation
- 2U half-rack sizing with protective buffers
- USB interface on both models
- GPIB*, RS-232 & LXI compliant LAN interfaces (1908P)

*: Requires GPIB-1A option.

ADM1055

- 5½ digit multimeter
- 0.02% Basic accuracy
- 600 V rated
- Touch screen operation

The ADM1055 is a 5½ digit bench multimeter designed for education and laboratory use. With an impressive basic accuracy of 0.02%, this multimeter ensures accurate measurements for your critical tasks at a breakthrough price. Rated for up to 600 V, it is suitable for a wide range of applications. The touch screen operation enhances the user experience, providing intuitive and efficient control.

The ADM1055 offers a range of advanced features designed to enhance your measurement capabilities. It includes functions such as Ax+B, limits, percentage deviation, and power measurements, providing comprehensive data analysis. The illuminated terminal selection ensures ease of connection by highlighting the active terminals for each measurement mode.

- Ax+B, Limits, % Deviation, Power
- Illuminated terminal selection for ease of connection
- Current measurement resettable trip
- Alternative display modes include Analogue style bar chart, histogram and statistics
- Statistics display shows- Min/Max, Average and Span

The device also supports alternative display modes, including an analogue-style bar chart, histogram, and detailed statistics. The statistics display provides critical insights with min/max, average, and span values, allowing for thorough data evaluation. All these features are housed in a compact design, making it an ideal tool for engineers who need a reliable and portable solution for their testing needs.

The multimeter has a USB interface which can be used for remote control of all of the instrument functions. This instrument is supported by the Aim-TTI Test Bridge PC software (available as free download from the Aim-TTI website), which can be used to control up to 4 instruments simultaneously.



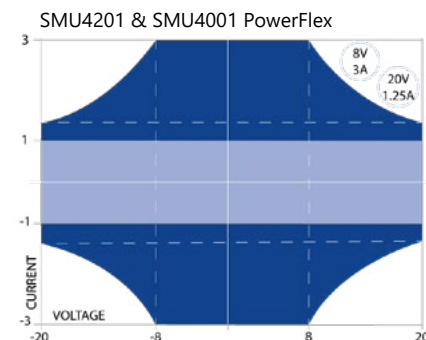
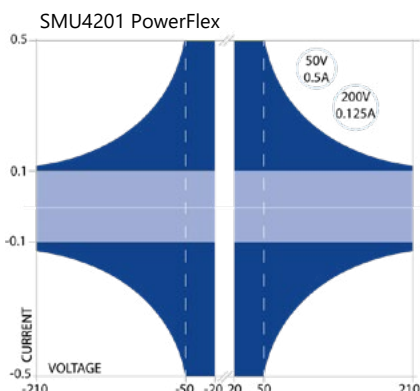
SMU4000 Series

- ▶ 4-quadrant Source, Sink & Measure
- ▶ Powerflex technology
- ▶ ± 210 V and ± 21 V models, ± 3 A, 25 W
- ▶ $6\frac{1}{2}$ digit, $0.1 \mu\text{V}$ & 100 fA resolution
- ▶ Fast measurement speeds up to $200 \mu\text{s}$ (5 kS/s)

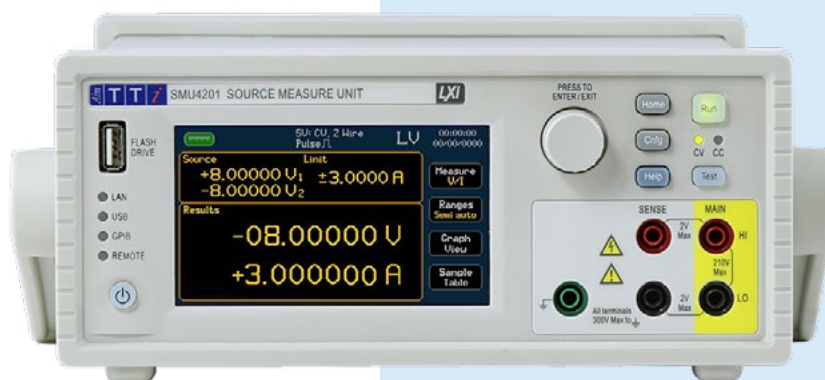
Advanced Source Measure Units

The SMU4000 provides class leading performance at a new and affordable price point for a four quadrant SMU. Combining touch screen technology with an intuitive graphical user interface provides a clear and natural flow through the test and measurement process.

Integrating a fast and agile, high power four quadrant Voltage/ Current source and advanced precise Voltage/ Current meters in a compact half rack 2U casing, capable of precisely supplying positive and negative voltages and sourcing or sinking power, while simultaneously measuring both current and voltage for I-V characterisation.



- ▶ Four quadrant source, sink and measure unit.
- ▶ SMU4201 model ± 210 V, ± 3 A, 25 W
- ▶ SMU4001 model ± 21 V, ± 3 A, 25 W
- ▶ Powerflex technology
- ▶ $0.1 \mu\text{V}$ & 100 fA , $6\frac{1}{2}$ digit resolution
- ▶ Fast measurement speeds up to $200 \mu\text{s}$ (5 kS/s)
- ▶ Compact size
- ▶ Continuous or pulsed high speed outputs with linear, log or arbitrary list sweeps
- ▶ High speed, low glitch auto ranging capability.
- ▶ Sense terminals for 4 wire operation and guard capabilities
- ▶ User friendly front panel GUI with on screen numeric or graphical results
- ▶ Advanced sequencing mode
- ▶ Internally calculated resistance and power measurements
- ▶ User settable bipolar compliance limits
- ▶ Variable slew rate control
- ▶ Advanced math features for data handling
- ▶ Tolerance band result sorting
- ▶ Advanced load modes [LC, LR & LP] with integral voltage dropout setting
- ▶ High voltage safety interlock, user interface password protected, rear panel interlock control
- ▶ Internal memory, up to 100k measurements, up to 100k steps
- ▶ 'SMU Link' allows two SMUs to be linked together and controlled simultaneously
- ▶ Advanced global triggering available via external DIO and remote commands
- ▶ SCPI compliant digital remote interfaces



With high current and power combined with fast measurements and low glitch auto ranging speed, it is the ideal solution for industrial development as well as educational environments, identifying the SMU4001 as the all-in-one solution for simplifying test applications such as battery charging/discharging, I-V characterising, semiconductor testing and much more.



SMU Link connecting two SMUs for simultaneous control of both instruments.

I-prober 520

- ▶ The most non-intrusive current measurement
- ▶ Current measurement by simple non-contact probing of PCB track
- ▶ DC to 5 MHz bandwidth
- ▶ 10 mA to 20 A dynamic range
- ▶ Low noise figure



The I-prober 520 positional current probe is unlike any other current measurement device available.

Calibrated measurement of current normally requires the current to be passed through a closed magnetic loop. Typically this is done using some form of split clamp device.

Whereas this is suitable for individual wires, it is of no use for measuring current in PCB tracks.

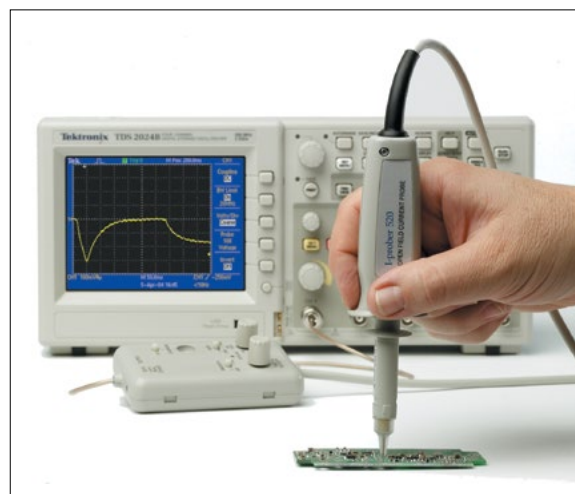
The I-prober 520 is a compact hand-held probe which is used with an oscilloscope. By placing the insulated tip of the probe onto a PCB track, the current flowing in the track can be observed and measured.

I-prober 520

Positional Current Probe

PCB Track - Touch & Measure

- ▶ Non-intrusive current measurement from non-contact probing of conductor
- ▶ Suitable for observation and measurement of current in PCB tracks, component leads and ground planes
- ▶ Wide dynamic range of 10 mA to 20 A peak to peak
- ▶ Wide bandwidth of DC to 5 MHz
- ▶ Low noise equivalent to <6 mA rms
- ▶ Safety rated to 300 V Cat II (600 V Cat I)
- ▶ Suitable for connection to any oscilloscope
- ▶ High accuracy general purpose H-field probe
- ▶ Convertible into standard 'closed magnetic circuit' current probe



For more complete information:

www.aimtti.com/go/iprober

The I-prober 520 is supplied with a clip-on toroid assembly which converts it into a closed magnetic circuit probe for measuring current in a wire.

The toroid is open until the probe is attached, allowing insertion of the wire without disconnection.

The wide bandwidth, dynamic range and low noise of the probe are retained.

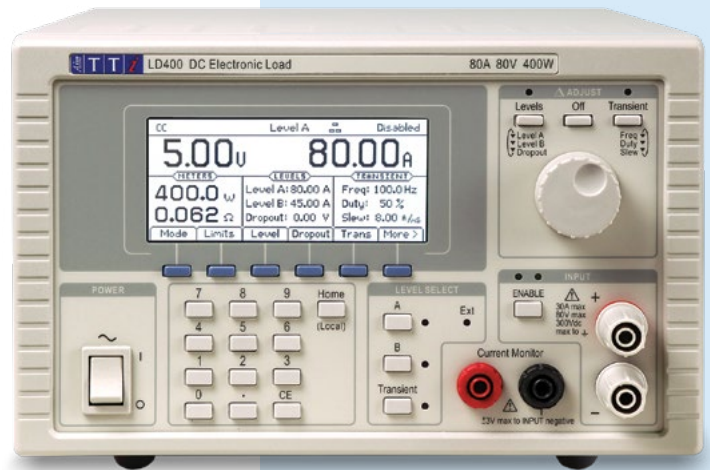


- ▶ Digitally controlled DC electronic load
- ▶ Constant current, constant resistance, constant conductance, constant voltage and constant power modes
- ▶ Battery test feature
- ▶ Wide voltage and current range, 0 to 80 volts and 0 to 80 amps.
- ▶ 400 watts continuous dissipation at 28°C (360 W at 40°C)
- ▶ Up to 600 watts intermittent dissipation
- ▶ Low minimum operating voltage of <1 V at 40 A
- ▶ Built-in transient generator with variable slew
- ▶ Current monitor output for waveform viewing
- ▶ Variable drop-out voltage for battery testing
- ▶ USB, RS-232, LAN (LXI) and GPIB* interfaces (LD400P)

*: Requires GPIB-1A option.

LD400

- ▶ 400 watt DC electronic load
- ▶ Up to 80 volts or 80 amps
- ▶ CI, CR, CV, CP and CG modes
- ▶ Built-in transient generator

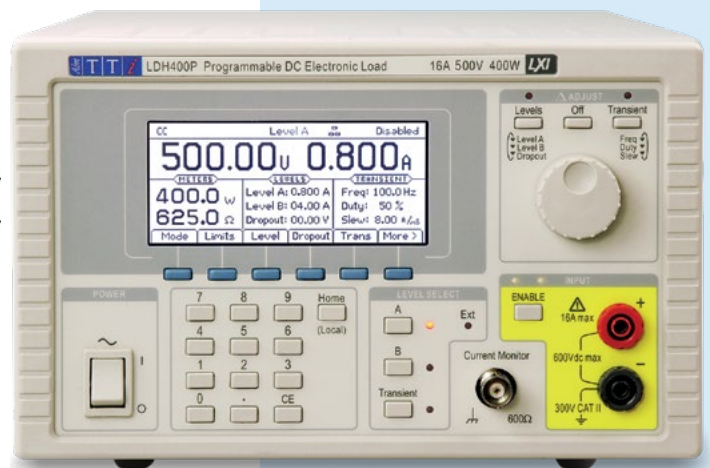
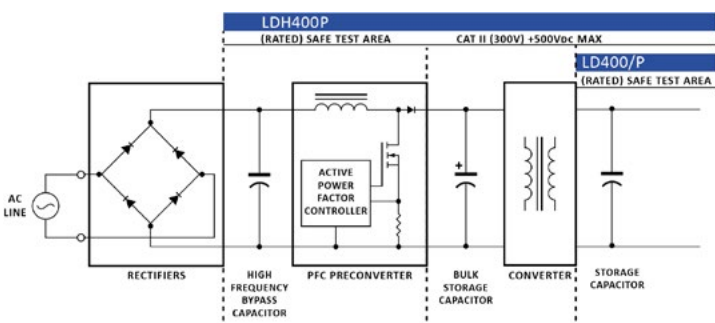


- ▶ Digitally controlled DC electronic load designed for testing of higher voltage sources such as PFCs, without an isolating transformer
- ▶ Load inputs rated to CAT II (300 V)
- ▶ Wide voltage and current range, up to 500 volts and 0 to 16 amps
- ▶ 400 watts continuous dissipation at 28°C (360 W at 40°C)
- ▶ Constant current, constant resistance, constant conductance and constant power modes
- ▶ Built-in transient generator with variable slew
- ▶ Variable drop-out voltage for battery testing
- ▶ Current monitor output for waveform viewing
- ▶ Analogue remote control of levels plus logic level switching
- ▶ USB, RS-232, LAN (LXI) and GPIB* interfaces

*: Requires GPIB-1A option.

LDH400P

- ▶ 400 watt DC electronic load
- ▶ Up to 500 volts or 16 amps
- ▶ CI, CR, CP and CG modes
- ▶ CAT II (300 V) rated



ALD1120

- ▶ 120 W DC electronic load
- ▶ Up to 120 V or 24 A
- ▶ CI, CR, CV, CP and CP modes



NEW



The ALD1120 is a DC electronic load designed for education and laboratory use. The versatile 120 W load, designed to handle up to 120 V or 24 A at a breakthrough price.

The ALD1120 provides multiple operating modes, including CI (Constant Current), CV (Constant Voltage), CR (Constant Resistance) and CP (Constant Power), providing flexibility for various testing scenarios. It features high and low pulse capabilities with variable width for precise control, and a sweep function that offers both linear and logarithmic options with single or dual slope.

For battery testing, the electronic load includes a battery discharge feature with cut-off voltage and time settings, as well as battery capacity measurement. Additionally, it supports variable slew rate adjustments to meet specific testing requirements. All these features are housed in a compact design, making it an ideal tool for engineers who need a reliable and portable solution for their testing needs.

The Load has a USB interface which can be used for remote control of all of the instrument functions. This instrument is supported by the Aim-TTi Test Bridge PC software (available as free download from the Aim-TTi website), which can be used to control up to 4 instruments simultaneously.

- ▶ Pulse - high and low pulse with variable width
- ▶ Sweep - linear/logarithmic with single or dual slope
- ▶ Battery discharge - cut off voltage/time
- ▶ Battery capacity measurement
- ▶ Variable slew rate
- ▶ Compact design

- ▶ 0.001 Hz to 3 GHz or 6 GHz frequency range
- ▶ TCXO timebase with better than 1 ppm stability
- ▶ Frequency, period, pulse width and totalize modes
- ▶ Reciprocal counting measurements
- ▶ High impedance measurement up to 125 MHz
- ▶ Low pass filter, attenuator and trigger level control
- ▶ AC or DC coupling, 1M Ω /50 Ω selection, polarity invert
- ▶ Large 10 digit LCD display with annunciators
- ▶ Operation from built-in rechargeable batteries
- ▶ Low power consumption
- ▶ Remote control and readback via USB

An advanced reciprocal frequency counting technique is used to achieve high resolution at all frequencies. A DC coupled input enables VLF measurements to be made below 1 mHz. The timebase uses a high quality TCXO crystal with a very low aging rate. An external reference can also be used.

The large 10 digit LCD has a full set of annunciators. Measurement times can be set between 0.3 seconds and 100 seconds.

Pulse width measurements can be made from rising to falling or falling to rising edge with adjustable thresholds. A variable attenuator is incorporated and the input impedance is switchable between 1M Ω and 50 Ω .

The instruments operate from internal rechargeable NiMH batteries which give typically 24 hours operating life. The universal AC charger supplied will recharge the batteries in less than 4 hours and can be used for continuous AC operation.

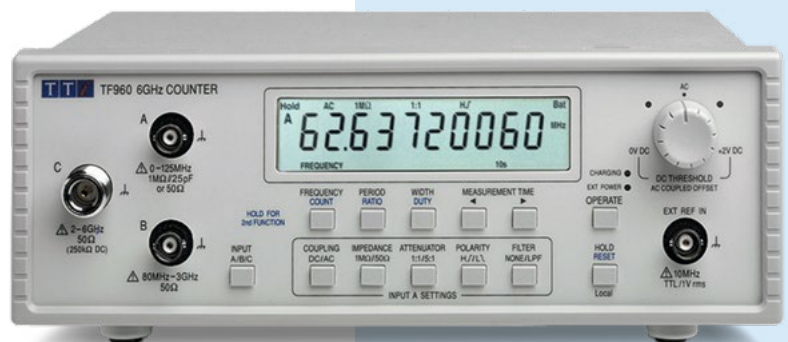
Full remote control and read-back is provided via a USB interface.

The TF930 and TF960 are a high quality bench/portable universal frequency counters which offers period measurement, frequency ratio, pulse width and event counting.

The TF960 is an extended version of the TF930 with an additional N connector input covering <2 GHz up to >6 GHz.

TF930 & TF960

- ▶ DC to 3 GHz/6 GHz frequency range
- ▶ Frequency, period, pulse width, ratio and event counter modes
- ▶ Rechargeable batteries



- ▶ 3 Hz to 3 GHz frequency range
- ▶ Frequency and period measurement
- ▶ High sensitivity at all frequencies
- ▶ Switchable low pass filter
- ▶ Continuous reciprocal counting measurement
- ▶ 0.001 mHz low frequency resolution
- ▶ Push-to-measure function with auto power-down
- ▶ Large 8.5 digit display with full range of annunciators

The PFM3000 is the latest handheld frequency counter from Aim-TTi offering measurement up to 3 GHz.

It provides high impedance measurement up to 125 MHz and 50 Ω measurement up to 3000 MHz, with excellent sensitivity across all frequencies.

It can measure both frequency and period and uses a continuous reciprocal frequency counting technique which gives high resolution and accuracy at all frequencies.

Despite its wide frequency range the PFM3000 has a low power consumption enabling it to operate for many hours from a disposable battery.

A push-to-measure capability is provided to extend battery life when continuous signal monitoring is not required.

PFM3000

- ▶ 3 Hz to 3 GHz frequency range
- ▶ Frequency or period display
- ▶ Continuous reciprocal measurement
- ▶ Handheld format
- ▶ Long battery life



Product Range

Spectrum Analyzers

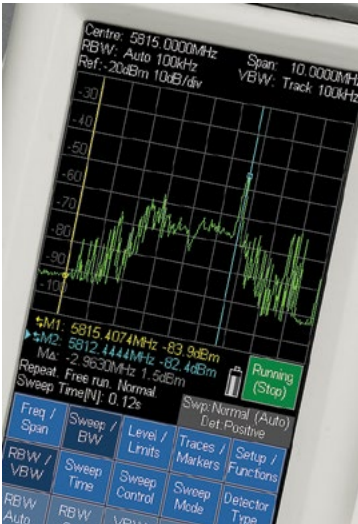
PSA series low-cost handheld spectrum analyzers, 1.3 GHz to 6.0 GHz.

Signal Generators

Synthesized RF signal sources offering exceptional value for money, 1 GHz to 6 GHz.

Frequency Measurement

See Precision Measurement section



RF Test Equipment

RF Test

The rapid growth in the use of wireless communications and the inclusion of RF elements into many electronic designs has increased the need for RF test equipment. The high cost of products from the major producers in this area has led Aim-TTi to develop lower cost alternatives for the essential RF tools such as signal generators and spectrum analyzers. RF products from Aim-TTi are designed to offer the essential elements required by engineers at significantly lower costs.

PSA Comparison

PSA series comparison table	Series 3		Series 5	
	PSA1303	PSA2703	PSA3605	PSA6005
Maximum Frequency	1300 MHz	2700MHz	3600 MHz	6000 MHz
Minimum Frequency	1 MHz	1MHz	10 MHz	10 MHz
Maximum Reference Level	+10 dBm		+20 dBm	
Minimum Reference Level	-40 dBm		-40 dBm	
Noise Floor/DANL	-115 dBm (Ref = -40 dBm, 10 kHz RBW) (11 MHz to 2.7 GHz); -155 dBm/Hz		-120 dBm (Ref = -40 dBm, 10 kHz RBW); -160 dBm/Hz	
Resolution Bandwidth (RBW)	300 Hz to 10 MHz (1:3:10 sequence) or Auto		300 Hz to 10 MHz (1:3:10 sequence) or Auto	
Video Bandwidth (VBW)	300 Hz to 10 MHz (1:3:10 sequence) or tracking		1 kHz to 30 MHz or Tracking	
Detector Modes	Peak (+ve, -ve or alternate), Sample, RMS, Avg.		Peak (+ve, -ve or alternate), Sample, RMS, Avg.	
Sweep Time Control	Automatic with manual override		Automatic with manual override	
Demodulation	Audio only, AM or FM		Audio and Waveform, AM or FM	
Frequency Counter	Yes (resolution down to 10 Hz)		Yes (resolution down to 10 Hz)	
Automatic Measurements	No		CP, ACPR, OBW (requires option U02)	
RF Input Connector	N type		N type	
Battery Life per charge	> 6 hours		> 3.5 hours	
Option U01 (PSA Series 3) U02 (PSA Series 5) Adds:	Limit lines and limit patterns with limits comparator Data logging of peak values, complete traces or screen images from timer, external trigger or limits comparator Sweep triggering from external trigger or limits comparator Compensation tables, fixed offsets and 75Ω compensation High Resolution Scan Mode - up to 210,000 points with pan and zoom (PSA-S5 U02 only)			

Test Bridge PSA

Test Bridge PSA is a free application operating under Windows that provides useful file display and creation facilities. Test Bridge can display trace files which can be printed or exported to other applications. For instruments with option U01 or U02 fitted, Test Bridge provides full display and analysis of logging files, create limit pattern files, channel marker lists, and compensation tables, display live PSA screen updates.



PSA Series 3 & 5

Model	Frequency Range
PSA1303	1 MHz to 1300 MHz
PSA2703	1 MHz to 2700 MHz
PSA3605	10 MHz to 3600 MHz
PSA6005	10 MHz to 6000 MHz

Size (W x H x D) and weight: 92 x 190 x 49 mm, 560 g

The PSA Series 3 and Series 5 are high performance, highly portable RF spectrum analyzers.

They use the latest digital techniques to provide performance comparable to instruments of much greater size, weight and cost.

- ▶ 10 MHz to 3600 MHz or 6000 MHz frequency range (Series 5)
- ▶ 1 MHz to 1300 MHz or 2700 MHz frequency range (Series 3)
- ▶ Resolution bandwidths from 300 Hz to 10 MHz (1:3:10) with fully adjustable video filtering
- ▶ Typical noise floor of -160 dBm/Hz (-155 dBm/Hz Series 3)
- ▶ Measurement in dBm or dBμV, mV or μW
- ▶ Multiple detector modes including Peak, Average, RMS, Sample
- ▶ Zero span mode with AM and FM audio demodulation
- ▶ Trace modes of normal, peak hold and trace average
- ▶ Live, View and Reference traces in contrasting colours
- ▶ Twin markers with readout of absolute & difference values
- ▶ Smart marker movement with selectable peak tracking
- ▶ Frequency counter at marker position with 10 Hz resolution
- ▶ Frequency presets and independent state storage
- ▶ Auto-find automatically sets sweep parameters for the highest signal found
- ▶ Unlimited storage for waveforms, set-ups and screens
- ▶ User assignable file names, file stamping from real-time clock
- ▶ USB interfaces for Flash drives and PC connection
- ▶ Comprehensive status and context sensitive help screens
- ▶ More than 3½ hours continuous battery operation from a charge
- ▶ Smaller and lighter than other spectrum analyzers (weight only 0.56 kg)

Further features with option U01 (Series 3)/U02 (Series 5) installed:

- ▶ Automatic measurement of channel power, adjacent channel ratio and occupied B/W*
- ▶ Audio and waveform* demodulation for AM and FM signals
- ▶ Limit lines and limit patterns with limits comparator
- ▶ Data logging of peak values, complete traces or screen images from timer, external trigger or limits comparator
- ▶ Sweep triggering from external trigger or limits comparator
- ▶ Compensation tables, fixed offsets and 75Ω compensation
- ▶ Custom presets - fast change for repetitive setups
- ▶ Capability to show screen contents on a PC

*: PSA-S5 U02 only

- ▶ True handheld spectrum analyzers
- ▶ 1.3 GHz, 2.7 GHz, 3.6 GHz & 6.0 GHz models
- ▶ Advanced digital processing
- ▶ 4.3" colour touch-screen



PSA Series 4

- ▶ Real Time Spectrum Analyzers
- ▶ 1.3 GHz & 2.7 GHz models
- ▶ Waterfall and Heatmap displays
- ▶ Real Time*, FFT Swept, Swept and Zero Span modes



The PSA Series 4 is the latest member of the popular PSA family, delivering a comprehensive upgrade in performance, useability and display modes. It preserves the lightweight, handheld form factor that field engineers value, while adding a Real Time analysis mode* that captures transient events as they occur.

Real Time capability makes the PSA Series 4 a powerful tool for modern RF challenges, giving users a continuous, gap-free view of the spectrum for rapid detection of intermittent or fast-changing signals.

- ▶ 1 MHz to 1300 MHz or 2700 MHz frequency range
- ▶ -131 dBm DANL
- ▶ 1.4:1 VSWR (typ.)
- ▶ Improved dynamic range -120 to +17 dBm
- ▶ Fast display update
- ▶ Smart markers
- ▶ Truly portable, only 0.58 kg
- ▶ Up to 4 hours continuous battery use

	PSA S4	PSA S4 plus U03	PSA S4 RT
Better than ±1 dB amplitude flatness	*	*	*
Resolution and video bandwidth filters, selectable in 1:2:3:5 sequence, or auto, and variable detectors	*	*	*
Harmonics <-50 dBc (typ.)	*	*	*
Spurs <-60 dBc, residual spurs <-70 dB below ref. level	*	*	*
IP3 <65 dBc (typ.)	*	*	*
Advanced digital processing	*	*	*
Instant start up and ready for the first sweep in less than 3 seconds	*	*	*
Frequency Counter	*	*	*
FFT sweep with frequency bin resolutions selectable in 1:2:4:5:8 sequence, variable detectors and window functions	*	*	*
Data Logging		*	*
Automatic measurements: CP, ACR & OBW		*	*
Modulation waveform display		*	*
Triggering		*	*
Limits, offsets & tables		*	*
Custom presets		*	*
Remote control and analysis tools with Test Bridge PSA software		*	*
Triggering including Frequency Mask trigger		*	*
10.8 MHz Real Time bandwidth			*
37.5 µs min. duration for 100% POI			*
Realtime acquisition with variable FFT length, count, overlap, and window functions			*
62.5 ns min. detectable signal duration			*

*: PSA2704RT only



- ▶ 100 kHz to 1.5 GHz or 3GHz frequency range with 10 Hz setability
- ▶ -127 to +13 dBm amplitude, 0.1 dB steps
- ▶ High accuracy/stability internal timebase or locking to external frequency standard
- ▶ Low phase noise and low leakage
- ▶ Amplitude entry in dBm or $\mu\text{V}/\text{mV}$
- ▶ FM, Phase and AM modulation, internal or external
- ▶ Extensive modulation set*¹ including AM, OOK, ASK, FM, FSK, GFSK, MSK, GMSK, PM, PSK, GFSK
- ▶ Advanced user interface with touch-screen offering numeric or rotary adjustments
- ▶ Step sweep and List sweep with level compensation tables
- ▶ USB, GPIB*² and LXI compliant LAN interfaces

*1: Requires U01 option

*2: Requires GPIB-1A option

TGR205X V2 Update*

The V2 update improves amplitude flatness and accuracy, harmonic and spurious signal performance and VSWR. V2 also adds triggered and swept analogue and digital* modulation. It is possible to update from V1 to V2 but it requires a return to the factory. Please contact us for details.

- ▶ Simultaneous Modulation and Sweep
- ▶ Amplitude flatness to ± 0.15 dB
- ▶ Amplitude accuracy to ± 0.3 dB

NEW

TGR205X

- ▶ 1.5 GHz/3 GHz signal generators
- ▶ -127 to +13 dBm
- ▶ Extensive modulations set



TGR6000

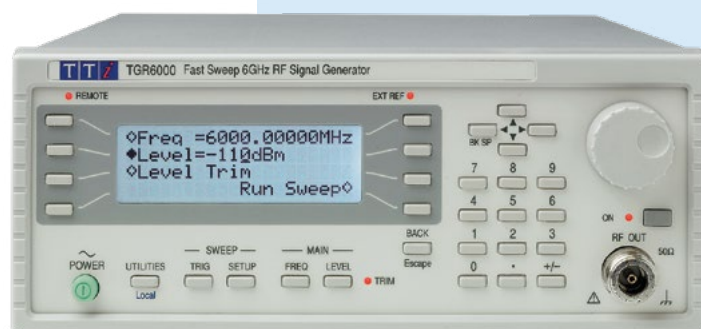
- ▶ 10 MHz to 6000 MHz frequency range
- ▶ Accuracy better than 1ppm over 15°C to 30°C
- ▶ Ageing better than 1ppm over one year
- ▶ Low phase noise and low leakage
- ▶ -110 to +7 dBm amplitude, 0.1 dB steps
- ▶ Amplitude entry in dBm, $\mu\text{V}/\text{mV}$, or dB μV
- ▶ User compensation tables for specific test set-ups
- ▶ Fast stepping sweep with dwell times down to 10 ms
- ▶ Internal or externally triggered sweep, lin or log, up or down
- ▶ List sweep of up to 1000 points of amplitude versus frequency
- ▶ Non-volatile storage for 12 generator set-ups and 16 sweep lists
- ▶ Compact half-rack 2U casing uses minimum bench space
- ▶ Full remote control through RS-232, USB, GPIB and LAN
- ▶ Significantly lower cost than other 6 GHz generators

The TGR6000 is a highly cost effective solution for engineers requiring a high quality generator operating up to 6 GHz.

No modulations are incorporated, but rapid settling times enables a fast stepped sweep.

Level trim allows amplitude to be adjusted at various frequencies to match the requirements of specific test set-ups. List sweep enables up to 1000 points of amplitude versus frequency to be defined.

- ▶ 6 GHz signal generator
- ▶ -110 to +7 dBm
- ▶ High speed sweep



EXCELLENCE THROUGH EXPERIENCE

Aim-TTi is the trading name of Thurlby Thandar Instruments Ltd. (TTi), one of Europe's leading manufacturers of test and measurement instruments. The company has wide experience in the design and manufacture of advanced test instruments and power supplies built up over more than forty years. The company is based in the United Kingdom, and all products are built at the main facility in Huntingdon, close to the famous university city of Cambridge.

TRACEABLE QUALITY SYSTEMS

TTi is an ISO9001 registered company operating fully traceable quality systems for all processes from design through to final calibration.



ISO9001:2015
Certificate number FM 20695

WHERE TO BUY AIM-TTI PRODUCTS

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