AIM & THURLBY THANDAR INSTRUMENTS

Precision Measurement & RF Test Equipment

PRODUCT SUMMARY

- Digital Multimeters • Component Meters •
- Current Measurement • Power Source Testing •
- Frequency Measurement • RF Spectrum Analysis •
- RF Signal Generation • Power & EMC Harmonics Analysis •

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Aim-TTi
Issue 6 - 2014

Product Range

Precision measurement instruments

Aim-TTi has been designing and manufacturing precision measurement instruments for nearly thirty years.

Expertise in precision analog 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 new I-prober positional current probe from Aim instruments will enable the measurement of current in situations where it was previously not possible.

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 dcV 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 1kHz. All Aim-TTi bench-top DMMs provide excellent accuracy on all ranges throughout the audio band (40Hz to 20kHz) with a 3dB bandwidth extending well above this.

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.

Digital Multimeters - Comparison Table			
	1604	**1705 & 1705-GP**	
Display Type	LED	Dual LCD	
Scale Length (Counts)	40,000	12,000	
Dual Measurement	No	Yes	
DC Voltage: Ranges	(5) 400mV to 1000V	(5) 120mV to 1000V	
Best Resolution	10µV	10µV	
Basic Accuracy	0.08%	0.04%	
AC Voltage: Ranges	(5) 400mV to 750V	(5) 120mV to 750V	
True RMS conversion	Yes	Yes	
Frequency Response	0.08%	0.04%	
DC/AC Current: Ranges	(3) 4mA to 10A	(3) 1.2mA to 10A	
Best Resolution	100nA	100nA	
Resistance: Ranges	(6) 400Ω - 40MΩ	(7) 120Ω - 20MΩ	
Best Resolution	10µΩ	10µΩ	
Frequency	Yes	Yes	
Capacitance	No	Yes	
Smart Functions	3	12	
Interfaces: RS-232	Yes *	Yes	
GPIB (IEEE-488)	No	Yes (GP version)	
Power Source	AC Line	AC Line or Battery	

PC and System connectivity

At some point most engineers are going to want to connect their DMM to their personal 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 a fully isolated RS-232 interface.

For full system applications, the 1705-GP also has a GPIB (IEEE-488) interface.

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 which are of real use and not just "gimmicks". Features such as dual Measurement & display, precision frequency measurement, dBm, data logging, power and VA, to mention just a few.

** RS232 interface on 1604 is only for use with the PC-1604 control and data logging software (included).*

Full technical details for multimeters is available on the web site.

1604 DMM

- 4¾ digit bench-top multimeter
- 0.08% basic dc-v accuracy
- True RMS ac functions
- Isolated RS-232 interface*

Function	Ranges	Best Resolution	Best Accuracy
DC V	(5) 400mV - 1000V	10µV	0.08% ± 4 digits
AC V	(5) 400mV - 750V	100µV	0.5% ± 4 digits
Resistance	(6) 400Ω - 40MΩ	10mΩ	0.1% ± 4 digits
DC I	(3) 4mA - 10A	0.1µA	0.1% ± 4 digits
AC I	(3) 4mA - 10A	1µA	0.5% ± 4 digits
Frequency	(2) 4kHz to 40kHz	0.1Hz	0.01% ± 1 digit

Further measurement functions: Continuity. Diode Test.
Smart functions: Null (Relative), Hold, T-Hold, Min/Max.
Interface: opto-isolated bi-directional RS-232 interface. 9600 baud.
Power: 230V or 115V AC nominal 50/60Hz, adjustable internally.
Size & weight: 260 x 88 x 235 mm (WxHxD). 2.0 kg (4.4 lb)

The 1604 is a high quality 40,000 count bench-top multimeter with a wide range of features.

It offers automatic or manual ranging, high resolution (10µV, 10mΩ) together with current measurement up to 10A.

- 40,000 counts, auto or manual ranging
- Accuracy and resolution, 0.08%, 10µV, 10mΩ
- Large and bright LED display (14mm/0.56")
- True RMS ac functions, wide ac bandwidth
- Relative, T-Hold and Min-Max functions included
- Optional PC control and logging software

1705 DMM

- Dual measurement multimeter
- 0.04% basic dc-v accuracy
- Built-in data logger
- Isolated RS-232 or GPIB
- AC line or battery operation

Function	Ranges	Best Resolution	Best Accuracy
DC V	(5) 120mV - 1000V	10µV	0.04% ± 2 digits
AC V	(5) 120mV - 750V	100µV	0.2% ± 20 digits
Resistance	(6) 120Ω - 20MΩ	10mΩ	0.08% ± 2 digits
DC I	(3) 1.2mA - 10A	0.1µA	0.1% ± 3 digits
AC I	(3) 1.2mA - 10A	0.1µA	0.35% ± 20 digits
Capacitance	(5) 12nF to 120µF	10pF	2% ± 5 digit

Further measurement functions: Continuity. Diode Test. Frequency
Smart functions: Null (Relative), Hold, T-Hold, Min/Max, dB, Ax+B, % deviation, VA.
Logger: 100 readings. Interfaces: RS-232 standard. GPIB (IEEE-488) optional.
Power: 230V or 115V AC 50/60Hz, or 6 x C cells disposable or rechargeable.
Size & weight: 260 x 88 x 235 mm (WxHxD). 2.0 kg (4.4 lb)

The 1705 is a precision 4¼ 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).

- Dual 12,000 count LCD, auto/manual ranging
- Accuracy and resolution: 0.04%, 10µV, 10mΩ
- Dual displays & 'dual measurement' technology
- True RMS ac functions, Frequency, Capacitance
- Wide range of computing functions e.g. Ax + B
- Model with GPIB (IEEE-488) interface available
- Mains and battery operation as standard

LCR400 LCR bridge

- 0.1% basic accuracy
- Built-in component fixture
- Built-in limits comparator
- RS-232 interface

Note: Full technical details are available on the web site.

- 0.1% basic measurement accuracy
- Three test frequencies of 100Hz, 1kHz and 10kHz
- Automatic component recognition
- Built-in 4 terminal component fixture
- Dual 5 digit high brightness displays
- Limits comparator with multiple pass and fail bins
- RS-232 interface for PC connectivity
- Optional SMD tweezers, Kelvin Clip leads, Windows logging software

Note: accessories not to same scale as LCR400

The LCR400 is a high performance LCR meter that offers an alternative to low-cost handheld units or expensive system units.

Dual displays, automatic component recognition and auto-ranging make it easy to use, while its built-in test fixture and limits comparator make it suitable for applications within the laboratory, production or inspection areas.

Range and resolution limits:

Resistance: 0.1mΩ to 990MΩ
Inductance: 0.001µH to 9900H
Capacitance: 0.001pF to 99000µF

BS407 low Ohmmeter

- 0.1% basic accuracy
- 1µΩ to 20kΩ range
- Kelvin clip connection leads
- Rechargeable battery operation

Note: Full technical details are available on the web site.

- High basic accuracy of 0.1%
- Wide measurement range of 1µΩ to 20kΩ
- Current reversal switch for detecting thermal emf
- Current diversion switch for easy zero setting
- Four terminal measurement using Kelvin clip leads
- Battery operation with built-in charger
- Switchable 20mV clamp for 'dry circuit' testing

The BS407 is fully optimised for the task of accurate measurement of low resistances with a best resolution of 1µΩ.

It uses a Direct Current technique to measure true resistance, rather than the resistive component of impedance which is shown by AC excited LCR bridges. The test current for each range has been chosen to minimise heating of the sample under test while being sufficient to minimise the effects of thermal emf and noise.

This gives much greater accuracy at low resistances than can be obtained from the very low test currents used by general purpose high resolution multimeters.

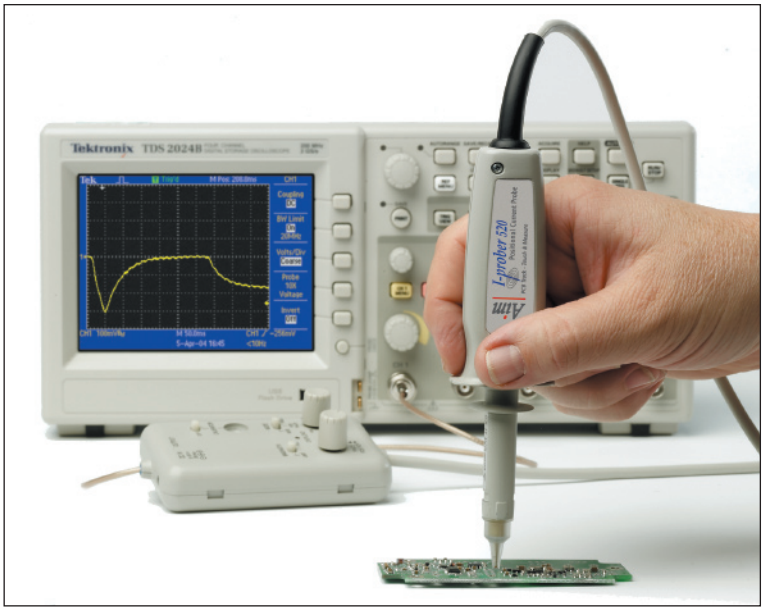
Aim instruments

I-prober 520

Positional Current Probe

PCB Track - Touch & Measure

Note: Full technical details are available on the web site.



- 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 10mA to 20A peak to peak
- Wide bandwidth of DC to 5MHz
- Low noise equivalent to <6mA rms
- Safety rated to 300V Cat II (600V Cat I)
- Suitable for connection to any oscilloscope
- High accuracy general purpose H-field probe
- Convertible into standard 'closed magnetic circuit' current probe

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.

I-prober 520

- Current measurement by simple non-contact probing of PCB track
- DC to 5MHz bandwidth
- 10mA to 20A 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.

for more complete information:
www.aimtti.com/go/iprober

LD300 dc load

- 300 watt dc electronic load
- Up to 80 volts or 80 amps
- CI, CR, CV and CP modes
- Built-in transient generator

Note: Full technical details are available on the web site.

The LD300 is an inexpensive electronic load which is suitable for testing and characterising a wide variety of dc power sources.

It can be used to investigate the behaviour of many different types of power source such as batteries, solar cells, fuel cells or wind generators, as well as electronic power supply units.

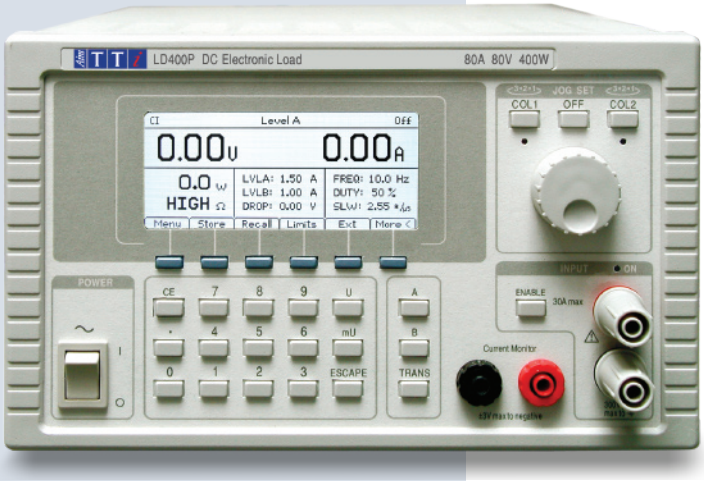
Its wide voltage/current range, multiple operating modes and built-in transient generator give it the versatility to offer test solutions from the design laboratory through to the component test area.

- Versatile solution for testing dc power sources
- Constant current, constant resistance, constant conductance, constant voltage and constant power modes
- Wide voltage and current range, 0 to 80 volts and 0 to 80 amps.
- 300 watts continuous dissipation at 40ºC (320W at 28ºC)
- Low minimum operating voltage of <1V at 40A
- Ten turn controls for level setting
- Built-in transient generator with variable slew
- Current monitor output for waveform viewing
- Variable drop-out voltage for battery testing
- Analog remote control capability

LD400 & LD400P

- 360 watt dc electronic load
- Up to 80 volts or 80 amps
- CI, CR, CV and CP modes
- Built-in transient generator
- USB, RS232, LAN and GPIB

NEW



- Digitally controlled dc electronic load
- Constant current, constant resistance, constant conductance, constant voltage and constant power modes
- Wide voltage and current range, 0 to 80 volts and 0 to 80 amps.
- 360 watts continuous dissipation at 40ºC (400W at 28ºC)
- Up to 600 watts intermittent dissipation
- Low minimum operating voltage of <1V at 40A
- Built-in transient generator with variable slew
- Current monitor output for waveform viewing
- Variable drop-out voltage for battery testing
- USB, RS232, LAN (LXI) and GPIB interfaces (LD400P)

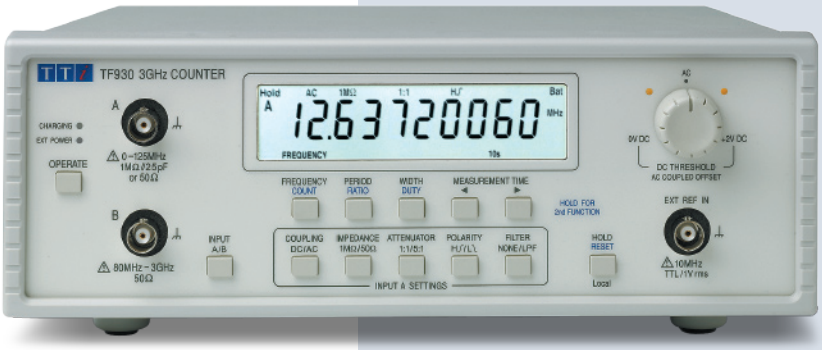
The LD400 has been developed from the LD300 and offers higher power and fully digital control. The LD400P includes a wide range of digital remote control interfaces.

TF930 & TF960

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

- 0.001Hz to 3000MHz or 6000MHz frequency range
- TCXO timebase with better than 1ppm stability
- Frequency, period, pulse width and totalise modes
- Reciprocal counting measurements
- High impedance measurement up to 125 MHz
- Low pass filter, attenuator and trigger level control
- AC or DC coupling, 1M/50Ω 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

Note: Full technical details are available on the web site.



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

They use an advanced reciprocal frequency counting technique to achieve high resolution at all frequencies. A dc coupled input enables VLF measurements to be made (down to 1mHz). The timebase uses a high quality TCXO crystal with a very low ageing 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 the input impedance is switchable between 1MΩ and 50Ω.

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.

NEW Model

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

Signal connection is via a standard N connector and high sensitivity is maintained across the frequency range.

PFM3000

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

- 3Hz to 3000MHz frequency range
- Frequency and period measurement
- High sensitivity at all frequencies
- Switchable low pass filter
- Continuous reciprocal counting measurement
- 0.001mHz low frequency resolution
- Push-to-measure function with auto power-down
- Large 8.5 digit display with full range of annunciators

Note: Full technical details are available on the web site.

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

It provides high impedance measurement up to 125MHz and 50Ω measurement up to 3000MHz, 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.

Product Range

Spectrum Analyzers - page 28
PSA series low-cost handheld spectrum analyzers, 1.3GHz to 6.0GHz.

Signal Generators - page 30
Synthesised RF signal sources offering exceptional value for money, 1GHz to 6GHz.

RF Power Meters - page 31
TTi-Satori ST series USB linked RF and microwave power meters up to 26.5GHz.

Harmonics & Flicker Measurement - page 32
Compliance quality power and harmonics analyzer and source for measurements to EN61000-3-2 and EN61000-3-3.

Frequency Measurement
See Precision Measurement section (page 27).

RF and EMC 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.

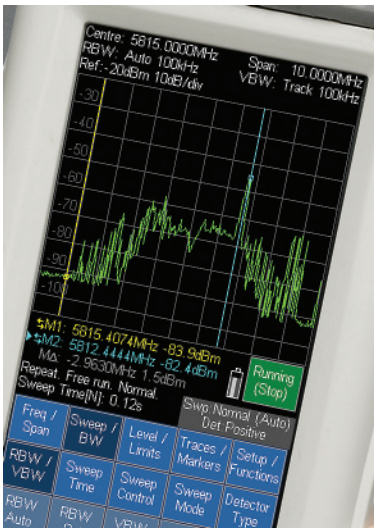
The high cost of products from the major producers in this area has led Aim-TTi to develop lower cost alternatives for the essential RF tools such as signal generators and spectrum analyzers.

RF products from Aim-TTi are designed to offer the essential elements required by engineers at significantly lower costs.

EMC Test

Most countries have now implemented legislation requiring products to comply with standards for radiated and conducted emissions.

Aim-TTi has produced equipment capable of compliance quality measurements, enabling users to self-certify for current harmonics and flicker.



PSA Series 2

- True handheld spectrum analyzers
- 1.3 GHz and 2.7 GHz models
- 4.3" colour touch-screen
- More than 8hrs per charge

to see a full product information tour:
www.aimtti.com/go/psa

Model	Frequency Range
PSA1302	1 MHz to 1300 MHz
PSA2702	1 MHz to 2700 MHz
Size and weight: 190mm high x 92mm wide x 49mm deep 560 gramsl	

The PSA1302 and PSA2702 are low-cost, highly portable RF spectrum analyzers.

They incorporate the features most needed in a portable spectrum analyzer without the size, weight and complexity of more expensive products.

- 1MHz to 1300MHz or 2700MHz frequency range
- Resolution bandwidths of 1MHz, 280kHz or 15kHz
- Typical noise floor of -138dBm/Hz
- Measurement in dBm or dBµV, mV or µW
- 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 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 8 hours continuous operation from a charge
- Smaller and lighter than other spectrum analyzers (weight only 0.56 kg)

further features with option U01 installed:

- 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

The small size, low weight and long battery life of the PSA Series II make it the ideal tool for RF field measurements.

However, its surprisingly low cost provides every engineer with the potential to own a spectrum analyzer, whether they work in the RF field or not.

The PSA Series 2 will find applications within development, servicing and production as well as field use.

PSA Series 5

- True handheld spectrum analyzers
- 3.6 GHz and 6.0 GHz models
- Advanced digital processing
- 4.3" colour touch-screen

Model	Frequency Range
PSA3605	10 MHz to 3600 MHz
PSA6005	10 MHz to 6000 MHz
Size and weight: 190mm high x 92mm wide x 49mm deep 560 grams	

The PSA3605 and PSA6005 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.

- 10MHz to 3600MHz or 6000MHz frequency range
- Resolution bandwidths from 300Hz to 10MHz (1:3:10) with fully adjustable video filtering
- Typical noise floor of -160dBm/Hz
- 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 10Hz 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 operation from a charge
- Smaller and lighter than other spectrum analyzers (weight only 0.56 kg)

further features with option U02 installed:

- Automatic measurement of channel power, adjacent channel ratio and occupied B/W
- 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

NEW

to see a full product information tour:
www.aimtti.com/go/psa

The PSA Series 5 retains the same compact and lightweight design of the Series 2 but adds some important features as well as extending the frequency range.

Advanced digital processing is used to achieve outstanding performance whilst maintaining low power consumption.

PSA Comparison

PSA series comparison table (excludes specifications and features that are common to all models)

	PSA1302	PSA2702	PSA3605	PSA6005
Maximum Frequency	1300 MHz	2700 MHz	3600 MHz	6000 MHz
Minimum Frequency	1 MHz	1 MHz	10 MHz	10 MHz
Maximum Reference Level	0dBm		+20dBm	
Minimum Reference Level	-20dBm		-40dBm	
Noise Floor / DANL	-96dBm (Ref = -20dBm, 15kHz RBW); -138dBm/Hz		-120dBm (Ref = -40dBm, 10kHz RBW); -160dBm/Hz	
Resolution Bandwidth (RBW)	15kHz, 280kHz, 1MHz or Auto		300Hz to 10MHz (1:3:10 sequence) or Auto	
Video Bandwidth (VBW)	On/Off (Tracking)		1kHz to 30MHz or Tracking	
Detector Modes	Peak (+ve)		Peak (+ve, -ve or alternate), Sample, RMS, Avg.	
Sweep Time Control	Automatically set by Span and RBW		Automatic with manual override	
Demodulation	Audio only, AM or FM		Audio and Waveform, AM or FM	
Frequency Counter	No		Yes (resolution down to 10Hz)	
Automatic Measurements	No		CP, ACPR, OBW (requires option U02)	
RF Input Connector	SMA		N type	
Battery Life per charge	> 8 hours		> 3.5 hours	

TGR1040

- 1 GHz signal generator
- -127dBm to +7dBm
- RS-232, optional GPIB
- Low cost

Note: Full technical details are available on the web site.

- 10MHz to 1000MHz frequency range
- Accuracy better than 1ppm over 15ºC to 30ºC
- Ageing better than 1 ppm over one year
- Low phase noise and low leakage
- -127dBm to +7dBm amplitude, 0.1dB steps
- Amplitude entry in dBm or µV / mV
- FM modulation, internal or external
- Four line back-lit dot matrix LCD display
- Keyboard and rotary encoder control
- Non-volatile storage for 9 generator set-ups
- Full remote control through RS232 or optional GPIB
- Significantly lower cost than other synthesized RF generators

The TGR1040 is the low cost solution for RF engineers who require a basic RF generator of high stability and wide amplitude range.

It has good phase noise and low leakage and offers FM modulation, internal or external.

TGR2050

- 2 GHz signal generator
- -127dBm to +7dBm
- AM, FM & phase modulation
- RS-232 and GPIB standard

Note: Full technical details are available on the web site.

- 150kHz to 2000MHz frequency range
- 10Hz frequency setability
- Locking to external frequency standard
- Accuracy better than 1ppm over 15ºC to 30ºC
- Ageing better than 1 ppm over one year
- Low phase noise and low leakage
- -127dBm to +7dBm amplitude, 0.1dB steps
- Amplitude entry in dBm or µV / mV
- FM, Phase and AM modulation, internal or external
- Keyboard and rotary encoder control
- Non-volatile storage for 9 generator set-ups
- Full remote control through RS232 and GPIB
- Exceptional price/performance ratio

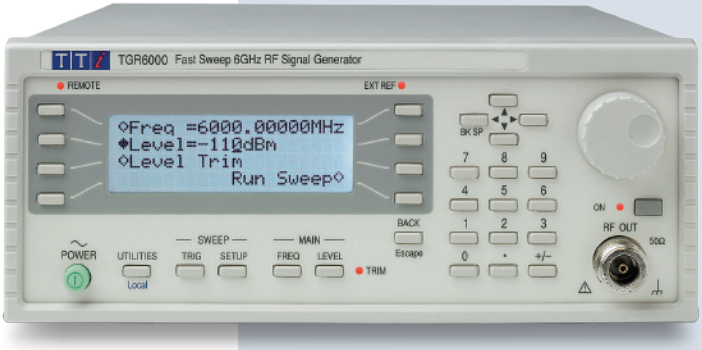
The TGR2050 offers a wide frequency range with a setability of 10Hz. It has 1ppm internal stability and can be locked to an external standard.

Modulation facilities of FM, Phase and AM are included.

TGR6000

- 6 GHz signal generator
- -110dBm to +7dBm
- High speed sweep
- USB, RS-232, GPIB & LAN

Note: Full technical details are available on the web site.



- 10MHz to 6000MHz frequency range
- Accuracy better than 1ppm over 15ºC to 30ºC
- Ageing better than 1 ppm over one year
- Low phase noise and low leakage
- -110dBm to +7dBm amplitude, 0.1dB steps
- Amplitude entry in dBm, µV / mV, or dBµV
- User compensation tables for specific test set-ups
- Fast stepping sweep with dwell times down to 10ms
- 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 RS232, USB, GPIB and LAN
- Significantly lower cost than other 6GHz generators

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

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 specfic test set-ups.

List sweep enables up to 1000 points of amplitude versus frequency to be defined.

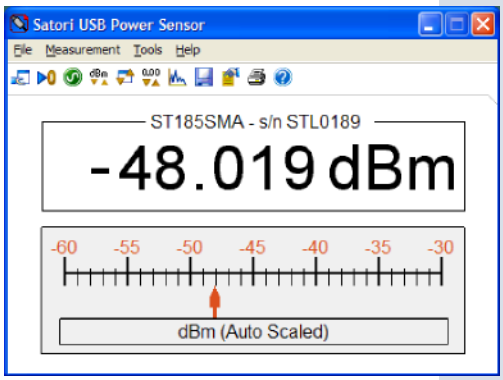
Satori ST Series

- USB linked power meters
- 12.4GHz, 18.5GHz or 26.5GHz
- –50 dBm to +20 dBm range
- Very low power consumption

The power meter is controlled by the TTi- Satori software loaded on a Windows PC. This is a virtual power meter with basic measurement functions for the PC workstation.

A software toolkit is supplied to control the power sensors via the PC. It includes a DLL (dynamic link library) for individualized use of the entire sensor functionality with Windows and the user interface.

Note: Full technical details are available on the web site.



Model	Frequency Range
ST124SMA	10MHz to 12.4GHz
ST185SMA	10MHz to 18.5GHz
ST265SMA	10MHz to 26.5GHz
Size and weight: 34mm high x 43mm wide x 125mm long; 83 grams	

The TTi-Satori ST series power sensors are complete miniature RF & Microwave power meters. They contains a CPU which controls the sensor, processes the measurement results and operates the interface.

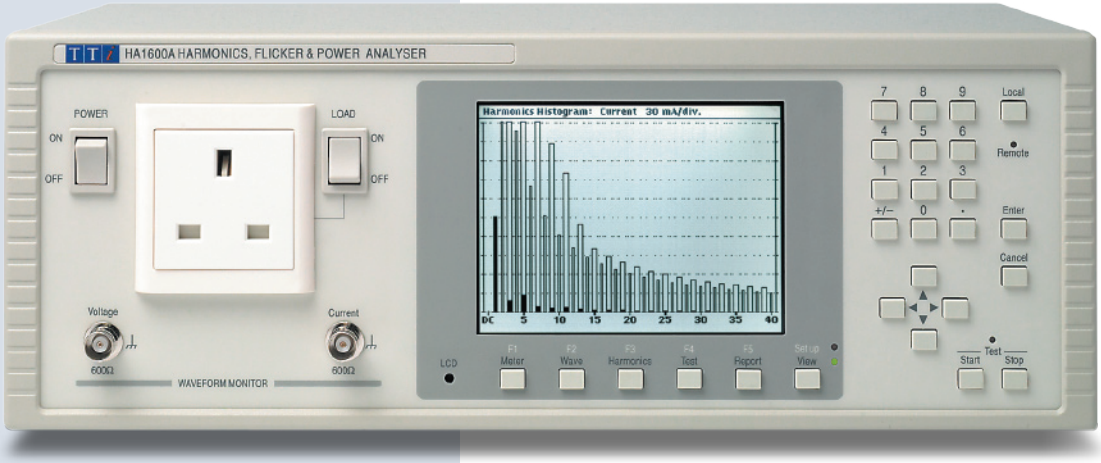
All measurement data and settings are transmitted via a USB interface to and from a PC. The supplied virtual power meter software for Windows creates a classic microwave power meter.

- Three models 12.4GHz, 18.5GHz or 26.5GHz
- Measurement down to 10MHz
- Measurement range from –50 dBm to +20 dBm
- Replacement solution for conventional power meter and sensor combination
- Simple USB connection to laptop or PC
- Use multiple sensors on one computer
- Very low power consumption (50mA)
- No reference calibrator required
- Lightweight and easy to use
- Robust construction with excellent reliability
- Convenient for production test and field service

HA1600A

- Compliance measurements to EN61000-3-2 & EN61000-3-3
- Tabular and histogram display of harmonics
- Continuous analysis with real-time graphical update
- Full power analyzer features
- PC software supplied

- Compliance quality current harmonics measurements to EN61000-3-2 when using compliant source (such as AC1000A)
- Tabular and histogram display of harmonics
- Continuous analysis with real-time graphical update
- Compliance quality fluctuations and flicker measurements to EN61000-3-3
- Full power analyzer measuring Watts, VA, Vrms, Vpk, Arms, Apk, A-inrush, CF, THD, PF, Hz
- Real-time voltage and current waveform displays
- Wide range of national power connectors available
- Parallel printer port plus RS232 and USB interfaces
- Windows PC control and documentation software supplied



Note: Full technical details are available on the web site.

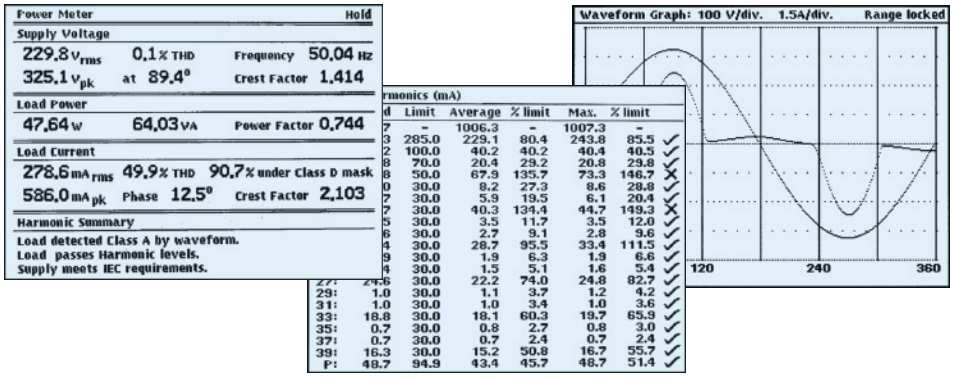
The HA1600A is a fast, easy to use power and harmonics analyzer with a large and high resolution graphical display, capable of continuous real-time analysis.

The HA1600A is intended primarily as a dedicated harmonics and flicker analyzer for compliance quality measurements, but it can also be used as a general purpose power analyzer.

The unit is available with range of power connectors to suit different national standards.

A printer interface is included along with RS-232 and USB interfaces for PC connectivity.

It is suitable for both the product development environment, and for production line test verification.



AC1000A

- 1 kW low-distortion source
- Suitable for EN61000-3-2

Note: Full technical details are available on the web site.

The AC1000A is an innovative, low cost, pure power source designed specifically for use with a harmonics analyser such as the TTi HA1600A.

It permits compliance quality measurements to EN61000–3–2 in situations where the quality of the AC supply is poor or variable.

The AC1000A has a power rating of 1000 watts at 230 volts. Maximum continuous rms current is 4.4A with a peak current capability of 10A.

AIM & THURLBY THANDAR INSTRUMENTS

Thurlby Thandar Instruments Ltd. (TTi) is one of Europe's leading manufacturers of test and measurement instruments.

Products have been sold under two brand names - TTi and Aim.

In the future, however, the full product range will be branded Aim-TTi.

Further Products

The preceding pages are an extract from the 36 page general Aim-TTi Product Summary brochure which also includes laboratory power supplies, precision test instruments, and RF & EMC test equipment..

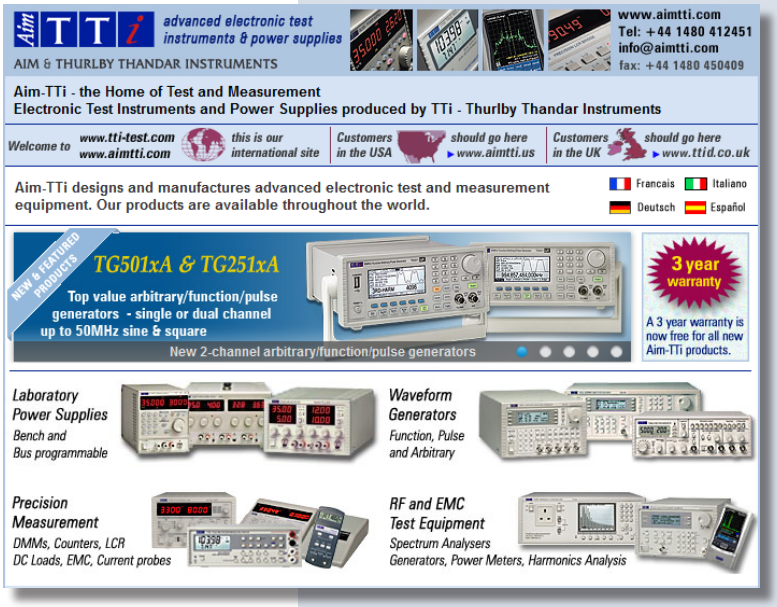
The Aim-TTi Web Site

This catalogue provides only limited information on each product.

The Aim-TTi Web sites

Detailed product information is provided on the Aim-TTi web site, together with support information and price lists.

There are three web sites relating to your geographic location: international, UK and USA (see below):



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Note that not all products are available in the USA.

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