



**2024 SHORT FORM** 

Oscilloscopes

**RF Test Equipment** 

**Function Generators & Counters** 

**EMC Pre-Compliance Testing** 

PC-Based & Data Acquisition

Multimeters

**Power Supplies** 

Other Benchtop Instruments

**Instrument & Process Calibrators** 

Harness & Cable Testers

**HiPot & Production Testers** 

3D Printers & Additive Manufacturing

Multilayer PCB 3D Printers



#### Welcome

#### Dear Customer,

Welcome to Emona's 2024 Electronic Test & Measurement shortform.

The 2024 shortform matches the product categories in our <a href="www.emona.com.au">www.emona.com.au</a> website. You can also refer to our website for:

- product specifications and detailed brochures
- product demonstration and training videos
- software and firmware updates under the SUPPORT tab
- calibration information and booking form under the CALIBRATION tab

#### **Ordering**

You can place orders on-line via our website at www.emona.com.au, or order via email, telephone or fax to your local Emona office. Payment by Mastercard, Visa and American Express is accepted. Account terms are available and subject to approval. Emona's Standard Terms & Conditions apply.

#### **Technical Support**

Emona's technical support and sales staff are ready to help you with your measurement needs and solutions. Our sales engineers are technically trained to support our wide range of instruments and equipment. For more information contact your Emona office or call toll free 1 800 632 953.

#### **About Emona**

Established in 1979, Emona Instruments has grown to become a leading supplier of electrical and electronic test and measuring instruments. With offices around Australia, AS/NZS ISO 9001-2008 Quality Management Requirements accreditaion, NATA traceable calibration facilities and technically qualified sales staff, you can rely on Emona for your instrumentation requirements.

SECTION	PRODUCT GROUP	PAGE
i	Product Index	i
1	Oscilloscopes	1
2	RF Test Equipment	2
3	Function Generators & Counters	3
4	EMC Pre-Compliance Testing	4
5	PC-Based & Data Acquisition	5
6	Other Benchtop Instruments	6
7	Instrument & Process Calibrators	7
8	Multimeters	8
9	Power Supplies	9
10	Harness & Cable Testers	10
11	HiPot & Production Testers	11
12	3D Printers	12
13	Multilayer PCB 3D Printer	13



#### **Product Demonstration & Training Videos**

Look for the VIDEO icon for products that have demonstration and training videos available. Just go to **www.emona.com.au**, click the VIDEOS tab at the top of the page and browse our selection of videos.

## Oscilloscopes







We offer a wide range of over 120 oscilloscopes to suit every budget and application, covering handheld, benchtop and PC-based models.

Our Rigol benchtop range covers from Australia's most popular DS1000E series with thousands of units in use in education, industry and hobbyists, through to the high technology DS70000 series offering up to 20GS/s and 5GHz bandwidth.

All our oscilloscopes are backed up by Emona's calibration and repair facility in Camperdown NSW. Contact us for an on-site demonstration by one of our qualified application sales engineers located around Australia.

#### **Tablet Oscilloscopes**

	BRAND	RANGE	FUNCTION	FREQUENCY	CHANNELS
POST DE SEE	MICSIG	TO-Series	Tablet	70MHz, 100MHz & 500MHz	2/4

#### **Benchtop & Rackmount Oscilloscopes**

	BRAND	RANGE	FUNCTION	FREQUENCY	CHANNELS
RIGOL		DS1000E/Z	Digital Storage, Mixed Signal & Sig Gen	50MHz to 200MHz	2/4 16 Digital
		DS2000/A	Digital Storage, Mixed Signal & Sig Gen	100MHz, 200MHz & 300MHz	2 16 Digital
	MSO5000	Digital Storage, Mixed Signal & Sig Gen	70MHz, 100MHz, 200MHz, & 350MHz	2/4 16 Digital	
	RIGOL	DHO Series	Digital Storage, High Resolution 12 Bit	70MHz to 800MHz	2/4
		MSO8000/7000	Digital Storage, Mixed Signal & Sig Gen	100MHz, 200MHz, 350MHz, 600MHz, 1GHz & 2GHz	4
		DS70000	Digital Storage Mixed Signal & Sig Gen	3GHz & 5GHz	4
		DS8000-R	Rack Mount Digital Storage	1GHz & 2GHz	4

#### **Oscilloscope Probes**

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	BRAND	RANGE	TYPE	FREQUENCY
	GW INSTEK	GDP Series	High Voltage Differential	25MHz, 50MHz, 100MHz
	RIGOL	PVA Series	Active Probes	2.5GHz, 3.5GHz & 7GHz
	AIM TTI	iProber 520	Non-Invasive Current Probe	5MHz

## RF Test Equipment





Rigol RSA5000 Real-Time Spectrum Analysers

We offer a range of affordably priced RF test equipment that proves that you don't need to spend a lot of money on the big brands to get perfromance that will meet your testing requirements.

With a combination of Rigol, Aim-TTi, Tekbox, Pico and GSI products, we can provide you with a range of handheld, benchtop and PC-based solutions.

#### **Spectrum Analysers**

BRAND	RANGE	TYPE	FREQUENCY
RIGOL	DSA-Series	Benchtop	500MHz to 7.5GHz
AIM-TTI	PSA Series	Handheld	1.3GHz, 2.7GHz, 3.6GHz & 6.0GHz

#### **RF Signal Generators**

	BRAND	RANGE	FREQUENCY	MODULATION
	RIGOL	DSG Series	1.5GHz to 20GHz, 8 CH Max	AM/FM/Phase/Pulse/IQ
an aid	AIM-TTI	TGR Series	1GHz, 2GHz & 6GHz	AM/FM/Phase

#### **Vector Network Analysers**

	BRAND	RANGE	TYPE	FREQUENCY
DISCO National Artists  Disco September Artist	PICO	VNA-106/108	PC-Based	6GHz/8.5GHz
	RIGOL	RSA N Series	Benchtop	1.5GHz to 6.5GHz

#### **Real-Time Spectrum Analysers**

BRAND	RANGE	TYPE	FREQUENCY
RIGOL	RSA Series	Benchtop	1.5GHz, 3GHz, 4.5GHz & 6.5GHz

#### **EMC Pre-Compliance Test**

	BRAND	RANGE	FUNCTION
***************************************	TEKBOX	TB Series	EMC Near Field Probes, LISN, TEM Cell & Shielded Tents

## Function Generators & Counters



Rigol DG5000 Series 350MHz, 1GS/s Arbitrary Generator

Our range of generators and counters offers a wide number of options in pricing and specifications from Rigol, Aim-TTi and GW Instek.

From a basic 3MHz or 5MHz function generator for an educational laboratory, through to multi-channel arbitrary generators for research applications, Emona has the unit for your application and budget.

#### **Arbitrary/Function Generators**

	BRAND	RANGE	FREQUENCY	CHANNELS	MEMORY	SAMPLING
5 3		DG-1022	20MHz	2	4Kpts	100MS/s
D \$1000000000 Bx		DG-1000Z	25MHz, 30MHz & 60MHz	2	16Mpts	200MS/s
	RIGOL	DG-4000	60MHz, 100MHz & 160MHz	2	16Kpts	500MS/s
		DG-5000	70MHz, 100MHz, 250MHz & 350MHz	1/2	120Mpts	1GS/s
		DG-800/900/PRO	10MHz to 200MHz	1/2	2Mpts to 32Mpts	Up To 1.25GS/s

#### **Function Generators**

	BRAND	RANGE	FREQUENCY	TYPE
34444 6 6 6 9 S	GW INSTEK	GFG Series	2MHz to 15MHz	ANALOG
	GW INSTER	SFG Series	3MHz	DDS
	AIM-TTI	TGP Series	3MHz to 160MHz	ANALOG & DDS

#### **Pulse Generators**

	BRAND	RANGE	FREQUENCY	TYPE
1	AIM-TTI	TGP110	10MHz	ANALOG
T THE THE GROWN	Anvi-111	TG Series	25MHz & 50MHz	DDS

#### **Frequency Counters**

	BRAND	RANGE	FREQUENCY	TYPE
AIM-TTI	AIM-TTI	PFM3000	3GHz	HANDHELD
	Alwill	TF Series	3GHz & 6GHz	BENCHTOP

# EMC Pre-Compliance Testing



Rigol NFP-3-P1 Near Field Probe

We offer a wide range of EMC precompliance test solutions that will allow you to quickly and easily review your designs and make changes as required.

Solutions can easily be integrated with Rigol's spectrum analysers, probes and software solutions through to TekBox accessories that are affordably priced and easy to use for any design engineer or technician. Emona also has many years of experience in EMC test so we can help you at each step of the process.

#### **Spectrum Analysers**

	BRAND	RANGE	TYPE	FREQUENCY
THE REPORT OF THE PARTY OF THE	RIGOL	DSA-Series	Benchtop	500MHz to 7.5GHz
	RIGOL	RSA Series	Benchtop	3.2GHz & 6.5GHz

#### **Near Field Probes**

	BRAND	RANGE	FUNCTION
*	RIGOL	NFP-3	Set of 4 Near Field Probes
	ТЕКВОХ	TBPS01	Set of 4 Near Field Probes

#### **LISN**

	BRAND	RANGE	TYPE	FUNCTION
Z O	ТЕКВОХ	TB0H01	DC	CISPER25
	TERBOX	TBOLC08	AC	CISPER16

#### **Antennas**

BRAND	TYPE	FREQUENCY
TEKBOX	Biconical, Double Ridged Horn & Log Periodic	From 30MHz up to 8GHz

#### **TEM Cells & Shielded Tents**

	BRAND	RANGE	TYPE	SIZE
ТЕКВОХ	TEKROY	TBTC Series	TEM Cells	Up to 1038 x 501 x 305mm
	TERBOX	TBST Series	Shielded Tents	120 x 60 x 60 cm

# PC-Based & Data Acquisition



PicoScope 4824A 8 Channel High Resolution PC Based Oscilloscope

Our range of data acquisition products are supported by Pico Technology and Rigol.

The Rigol DS8000-R series supports up to 512 synchronous acquisition channels, at up to 10GS/s and 2GHz bandwidth.

The PicoScope range of PC-based oscilloscopes offer up to 16bits resolution and up to 25GHz bandwidth.

Pico data loggers require no power supply and simply plug into a USB port on your PC, or an Ethernet port on your PC or network. Every logger is supplied with PicoLog data acquisition software so you can measure, record and analyze your data.

#### **High Speed Digitisers - Standalone & PC-Based**

	BRAND	RANGE	FUNCTION
0000	RIGOL	DS8000-R	<ul> <li>Up to 512 synchronous channels</li> <li>Up to 2GHz bandwidth</li> <li>Up to 10GS/s sampling &amp; 500Mpts memory</li> <li>Built for rack mount, high density applications</li> </ul>
	PICO TECHNOLOGY	PicoScope	<ul> <li>PC-based digital and mixed signal oscilloscopes</li> <li>8bits, 12bits and 16bits resolution</li> <li>Deep memory up to 512Mpts</li> <li>Differential input models available</li> </ul>

#### **Multi-Input - Standalone**

	BRAND	RANGE	FUNCTION
300,000V	RIGOL	M300	<ul> <li>Up to 320 switch channels per mainframe</li> <li>Integrated DMM scanning of up to 256 channels at up to 250 channels/sec</li> <li>Interval scanning with storage of up to 100,000 time-stamped readings</li> <li>10 different available modules</li> <li>Connect via USB, GPIB, LAN (LXI-C), or RS-232</li> </ul>

#### **Voltage Input - PC Based**

	BRAND	RANGE	CHANNELS	RESOLUTION	INTERFACE
product PICO	ADC Series	8 & 16	20Bit & 24 Bit	USB	
a	TECHNOLOGY	PicoLog Series	12 & 16	10 Bit & 12 Bit	USB

#### **Temperature Input - PC Based**

BRAND	RANGE	CHANNELS	FUNCTION	INTERFACE
PICO	TC-08	From 8 up to 80	Thermocouples	USB
TECHNOLOGY	PT-104	From 4 up to 80	PT-100 & PT1000	USB/Ethernet

### Multimeters



Rigol DM-3054 Digital Multimeter

We offer a range of benchtop and handheld multimeters to suit education, industrial and calibration applications.

The Rigol DM-3000 series have grown in popularity in educational instutions as a practical and cost effective laboratory instrument.

Metrel's range of DMMs cover from general meters through to CAT IV/1000V applications requiring safety and reliability.

#### **Benchtop Multimeters**

	BRAND	RANGE	RESOLUTION	FUNCTIONS
007.812	TIME	5075	7.5 Digits	AC/DC V, AC/DC A, Resistance, Capacitance, Frequency, Temperature
	RIGOL	DM Series	6.5 & 5.5 Digits	AC/DC V, AC/DC A, Resistance, Capacitance, Frequency, Temperature, Diode, Continuity
	GW INSTEK	GDM-8000 Series	6.5, 5.5, 4.75, 4.5 & 3.5 Digits	TRMS AC/DC V, AC/DC A, Resistance, Capacitance, Frequency, Diode, Continuity
	AIM TTi	1000 Series	4.25 & 4.75 Digits	AC/DC V, AC/DC A, Resistance Capacitance & Frequency,

#### **Handheld Multimeters**

	BRAND	RANGE	CAT RATING	FUNCTIONS
	METREL	MD-9060	CAT IV/1000V	TRMS AC & AC+DC V & A, Resistance, Conductance, Frequency, Capacitance, Temp
		MD-9050	CAT IV/1000V	TRMS AC & AC+DC V & A, Resistance, Conductance, Frequency, Capacitance, Temp
		MD-9040	CAT IV/1000V	TRMS AC V & A, DC V & A Resistance, Conductance, Frequency, Capacitance
		MD-9030	CAT IV/300V	TRMS AC V & A, DC V & A, Resistance, Conductance, Frequency, Capacitance
	MD-9020	CAT IV/300V	AC/DC V, AC/DC A, Resistance, Frequency, Capacitance	
		MD-1150	CAT IV/1000V	Voltage, Continuity Tester, with Phase Sequence, RCD Test & Diode

## **Power Supplies**



Kikusui PCR-LE AC Output Power Supplies

We offer the broadest range of DC power supplies available in Australia.

Established in 1951, Kikusui DC and AC power supplies are built to high standards guaranteeing high quality and high reliability.

Magna-Power, founded in 1981, are specialist US made power supplies offering a market leading range from 1.25kW through to 2,000kW+ and can be found in applications including simulating solar arrays, powering radar systems and particle accelerators.

#### **DC Output - General Purpose**

	BRAND	RANGE	OUTPUTS	VOLTAGE RANGE	CURRENT RANGE
	RIGOL	DP-800/900 Series	Single to Triple		
	GW INSTEK	GPS/GPC/GPR Series	Single to Quad	0 - 110V	0-30A
	AIM-TTI	EL/PL/TSX Series	Single to Quad		

#### **DC Output - Professional Series**

	BRAND	RANGE	TYPE	VOLTAGE RANGE	CURRENT RANGE
MINISHI	PAS Series	Single	0 - 500V	0 - 6A	
	KIKUSUI	PWR Series	Single	0 - 650V	0 - 160A

#### **DC Output - High Power**

	BRAND	RANGE	POWER	VOLTAGE RANGE	CURRENT RANGE
[100 B]	MAGNA-POWER	SL & XR Series	1.5kW to 10kW	0 - 10,000V	0 - 600A
		TS Series	5kW to 45kW	0 - 4,000V	0 - 2,700A
		MS Series	30kW to 75kW	0 - 4,000V	0 - 4,500A
5 5 4		MT Series	100kW to 2000kW+	0 - 4,000V	0 - 24,000A

#### **AC Output**

	BRAND	RANGE	TYPE	kVA	FREQUENCY
KIKUSUI	KIKIISIII	PCR-M Series	Single Phase	500VA - 4kVA	50 - 400Hz
	KIKOSOI	PCR-LE Series	Single/Three Phase	500VA - 81kVA	50 - 999.9Hz

## Other Benchtop Instruments



We offer a wide range of benchtop test instruments for all your testing and R & D applications.

For example, Kikusui's PLZ-4W series electronic loads have been designed to offer the highest levels of reliability and safety. The units operate in constant voltage, constant current, constant power and constant resistance modes. Control is via GPIB, RS232C and USB..

#### **DC Loads**

BRAND	RANGE	POWER RATING	MAX V & A
RIGOL	DL Series	200W - 300W	150V/60A
KIKUSUI	PLZ Series	75W - 9KW	650V/18000A

#### **LCR Meters**

	BRAND	RANGE	TYPE	TEST FREQUENCY
e = -3	LUTRON	LCR-9183	Handheld	100Hz - 100kHz
AMARY D. 11-	GW INSTEK	LCR-6000 Series	Benchtop	2kHz - 300kHz
- 6000		LCR-8100 Series	Benchtop	20Hz - 1MHz

#### **Micro-Ohm Meters**

	BRAND	RANGE	FUNCTION
ENSON ORGANICAL SERVICES	AIM TTi	BS-407	1999µohm - 19.99kohm
	GW INSTEK	GOM-802	30mohm - 3Mohm

#### **Waveform Amplifier**

	BRAND	MODEL	FUNCTION
0-5-	AIM TTi	WA-301	<ul> <li>Extends output range of function generators</li> <li>30 Volts peak to peak output swing</li> <li>DC to 1MHz bandwidth</li> </ul>

# Instrument & Process Calibrators



Time Electronics 5025 Multi-Function Calibrator

Our range of professional instrument calibrators is supplied by Time Electronics.

Established in 1967, Time Electronics Ltd designs and manufactures calibration and metrology instrumentation.

Products include multifunction calibrators, decade boxes, DMMs, and custom-made test benches. Time also manufactures electrical test calibrators for RCD, loop, insulation, earth testers and multifunction installation testers.

BRAND	MODEL	FUNCTION
TIME ELECTRONICS	5045 & 5025 Series	<ul> <li>Calibrate oscilloscopes, timer/counters, frequency meters and DMMs up to 6.5 digits</li> <li>11 standard functions</li> <li>0 - 1050V and 0 - 22A (AC/DC)</li> <li>Resistance and capacitance</li> <li>Thermocouple/PT100 simulation</li> <li>Power options</li> <li>Automation &amp; Reporting with EasyCal Software</li> </ul>

#### **Electrical Test Equipment Calibrator**

	BRAND	MODEL	FUNCTION
101	TIME ELECTRONICS	5030	• RCD 3 - 2500mA, 10 - 2000ms • Loop $50m\Omega$ to $1.8k\Omega$ • Insulation up to $2G\Omega$ / $1kV$ • Continuity $0.1\Omega$ to $10k\Omega$ • Automation & Reporting with EasyCal Software

#### **Portable Voltage, Current, Temperature & Process Calibrators**

BRAND	MODEL	FUNCTION
TIME ELECTRONICS	1000 & 7000 Series	RTD/PT100 calibrators and simulators     Loop instruments for testing transmitters, transducers and sensors     Voltage and current simulators and sources

#### **Decade Boxes**

	BRAND	MODEL	FUNCTION
* ************************************	TIME ELECTRONICS	1000 Series	Capacitance     Inductance     Resistance

# Harness & Cable Testers





Our range of cable testers and harness testers from CAMI Research allow you to instantly find defective or miswired cables before they damage equipment or waste valuable technician time.

CableEye cable testers and harness testers have a unique, patented graphic wiring display to visually pinpoint problems when wiring errors are detected, and offer one-second pass/fail testing for production environments. Quickly locate intermittent connections and identify their position in the cable.

#### **Low Voltage Cable & Harness Testers**

BRAND	MODEL	FUNCTION
CAMI RESEARCH	CableEye M2U/M3U/M3Z/M4	<ul> <li>CableEye series check for opens, shorts, miswires, intermittent connections, continuity checks, as well as checks for contact and isolation resistance using two settable resistance thresholds, measures embedded resistors and diodes.</li> <li>Check discrete capacitors, identify twisted pair and distance to fault.</li> </ul>

#### **High Voltage Cable & Harness Testers**

BRAND	MODEL	FUNCTION
CAMI RESEARCH	CableEye HVX	<ul> <li>Combines the M3U tester with a high voltage module to provide insulation resistance and dielectric breakdown testing</li> <li>Testing at up to 1500V DC and 1000V AC</li> <li>Adjustable in 1V increments from 10V to the maximum voltage permitted</li> <li>Programmable Ramp Up, Ramp Down, Dwell Time, Trip Current, and Trip Delay</li> </ul>

#### **CableEye Custom Interfaces**

BRAND	MODEL	FUNCTION
CAMI RESEARCH	Custom Interfaces	<ul> <li>CableEye Systems also allow users to mount special connectors and pigtails on blank boards to build custom interfaces or CAMI can build custom interfaces as per user requirements</li> <li>Central to CAMI's custom solutions is the PinMap™ software. PinMAP allows you to link any custom test fixtures or adapter cables to CableEye's connector library and database</li> </ul>

# HiPot & Production Testers



GW Instek GPT-9084 5kV AC/DC Tester with 30A Earth Bond

GW's GPT-9800 series offer high performance safety testing at an affordable price. Units are equipped with a simple and clear panel layout, a high resolution dot matrix LCD display, and color LED indicators, allowing operators to interpret measurement results easily and quickly

The Clare HAL series provides a solution for any production line testing requirement from low volume manual testing through to high volume automated test programmes.

#### **Manual/PC Interface Models**

	BRAND	RANGE	OUTPUT VOLTAGE	VA	FUNCTIONS
- ō		GPT-9900	5kV	500VA	AC/DC, IR & Ground Bond
ō • • • • •	GW INSTEK	GPT-9800	5kV	200VA	AC/DC, IR & Ground Bond
		GPT-9600	5kV	100VA	AC/DC, IR
• • • • • • • • • • • • • • • • • • •	KIKUSUI	TOS-5101	10kV	500VA	AC/DC

#### **Automated/Programmable Models**

	BRAND	RANGE	OUTPUT VOLTAGE	FUNCTIONS
CLA		HAL-101	5kV	AC/DC, Insulation Resistance
		HAL-102	5kV	AC/DC, Insulation Resistance & Internal Scanner
	CLARE	HAL-103	5kV	AC/DC, Insulation Resistance & Ground Bond
		HAL-104	5kV	AC/DC, Insulation Resistance, Ground Bond & Leakage Current

#### **Leakage Current Tester**

BRAND	RANGE	FUNCTION
GW INSTEK	GLC-9000	8 leakage current settings for medical & general electrical equipment     Leakage current measuring modes     DC/AC/AC+DC/AC Peak

### **3D Printers**







Our range of 3D printers and additive manufacturing solutions offer a range of printing technologies and printing materials.

Printing technologies cover Continuous Filament Fabrication, Fused Filament Fabrication, Atomic Diffusion Additive Manufacturing, SLA, LENS and Aerosol Jet.

From thermoplastics and SLS nylons, through to high strength carbon fibre composite parts and metal printing, Emona's 3D printing range offers solutions for anything from education and university maker labs, through to materials research and manufacturing environments.

**High Strength Composite Materials** 

	BRAND	RANGE	LAYER RESOLUTION	MATERIALS	BUILD SIZE
		DESKTOP Series	100 microns	Continuous Fibres, Carbon Fiber, Kevlar, Fiberglass, Onyx, Nylon	320 x 132 x 154 mm
The state of the s		X7	50 microns	Continuous Fibres, Carbon Fiber, Onyx FR, Onyx ESD	330 x 250 x 200 mm
MARKFORGE	MARKFORGED	FX10	125 microns	Onyx, Carbon Fiber	375 x 300 x 300 mm
		FX20	50 microns	Onyx, Carbon Fiber, ULTEM ™, Vega ™, Onyx FR	525 x 400 x 400 mm

#### **Stereolithography (SLA)**

BRAND	RANGE	LAYER RESOLUTION	MATERIALS	BUILD SIZE
FORMLABS	FORM 3/FORM 3L	25 microns	Engineering Resins	Up to 300 x 335 x 200 mm

#### **Selective Laser Sintering (SLS)**

BRAND	RANGE	LAYER RESOLUTION	MATERIALS	BUILD SIZE
FORMLABS	FUSE 1+	110 microns	PA12, PA12GF, PA11, PA11CF TPU, PP	165 x 165 x 300 mm

**Metal 3D Printing** 

	BRAND	RANGE	LAYER RESOLUTION	MATERIALS	BUILD SIZE
MARKFORGED	METAL X	50 microns	17-4/303 Stainless Steel, A-2/D-2 Tool Steel, 6061/7075	250 x 220 x 200 mm	
	WARRFORGED	PX100	1 micron	17-4PH, 316l, 14140, H13, D2, Copper, TiA14V, Alloys 247/625	250 x 217 x 186 mm

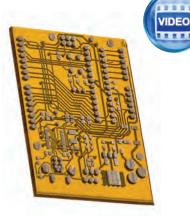
#### **Optomec LENS and Aerosol Jet**

	BRAND	RANGE	RESOLUTION	MATERIALS
ОРТОМЕС	OPTOMEC	LENS	250 microns	Titanium, Nickel, Tool Steel, Stainless Steel, Aluminium, Cobalt, Carbide, Ceramics, Copper
	3. ISWILL	AEROSOL JET	10 microns	Metal Inks, Resistor Inks, Non-Metallic Conductors, Dielectrics & Adhesive, Semiconductors, Biologics

## Multilayer PCB 3D Printers



Nano Dimension DragonFly IV Multilayer PCB 3D printer



The DragonFly IV system brings together an extremely precise inkjet deposition printer, high performance silver nanoparticle conductive and dielectric inks as well as dedicated software, in order to bring the benefits of 3D printing to electronics professionals.

#### **PCB 3D Printers**

BRAND	MODEL	FUNCTION
VOLTERA	V-One	<ul> <li>Print double sided circuit boards on your desktop</li> <li>Print conductive ink to create electrical traces</li> <li>Substrates: FR4, glass, ceramics, Kapton or silicone</li> <li>Quickly drill holes for vias and through hole components</li> <li>Dispense solder paste on any circuit board</li> <li>Place your components and watch them reflow</li> <li>Maximum PCB size135mm x 113.5mm</li> <li>File compatibility Gerber files</li> </ul>
NANO DIMENSION	DragonFly IV	<ul> <li>Simultaneous 3D printing of conductive silver nanoparticle ink (metals) and insulating inks (dielectric polymers).</li> <li>Full range of PCB features can be 100% printed - including interconnections such as vias and through-holes - with no post processing required</li> <li>Build Volume: 160 x 160 x 3mm</li> <li>All major ECAD and MCAD Software, ODB++, Gerber &amp; Excellon, STLs</li> <li>Enables companies to bring designs to the market more quickly, while keeping sensitive design information in-house</li> </ul>



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Testing & Tagging: www.protag.com.au
Installation Testing: www.instaltest.com.au
TIMS Telecoms Trainer: www.tims.com.au

