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## Contents

### Front Page at a glance

**MasTec:** Recent Projects and Integration Work  
**Measurement Computing:** High Spec Low cost DAQ  
**Computers:-** Laptops, Desktop, Thin Clients and ISA Slots  
**Z World:** New Pricing, New hardware and Software

### Page 2 Highlights

**MOXA:** Power Commander: -IT Room Power Control  
**MasTec's Mission Policy**  
**Power Kinetics:** UPS Specials continue

### Page 3 New Technology Window

**OPTO 22 and Nokia:** Infrastructure Monitoring & Control  
**MasTecTraining Sept - 8 LabVIEW Programmers**

## Discussion on some of MasTec's recent Projects and Integration work

### LabVIEW, ZWorld, OPTO 22, Zumbach

#### 3D Magnetic Field Mapping:

A local NZ company manufactures electromagnets for semiconductor wafers preparation for IC chip making. MasTec's project is writing a LabVIEW application that would map the complete 3D magnetic field. This is achieved by interfacing a National Instrument's Servo-Stepper Controller board, to an X-Y motorised stage that moves a Tesla probe inside the field. ( It should be noted the Tesla Probe and amp supplied by Group 3 of Avondale is unique with a bandwidth of 100KHZ allowing high speed sampling and movements which will we estimate reduce the 3D mapping times by a factor of 20-100 over the previous system.

#### Truck Scale:

A NZ based multi-national company and MasTec have developed and commissioned an intelligent and sophisticated 35 meter long bidirectional truck scale system using two Z World OP6800 Controllers with LCD display, feeding data to a Modbus Scada Server.

#### IT Room Monitoring:

MasTec has just installed and commissioned an Ethernet based IT Room monitoring and alarm system for one of the Government Depts in Wellington, using OPTO22's Snap Ultimate Ethernet I/O products. Messaging and alarming use SNMP protocols.

#### Diameter and Roundness Gauge:

MasTec and QIC of Melbourne has commissioned at a Stainless manufacturer, a Real Time Continuous Optical Roundness and Diameter gauge for measuring small diameter stainless steel tube during manufacturing.

**Do you have a project you need to have quoted or built?**

## Measurement Computing High Spec - Low Cost DAQ

**Are you fed up with the high cost of some DAQ products, then look at Measurement Computing**

Measurement Computing provide great software to link their cards to standard languages like VB, C++, Delphi and Graphical LabVIEW, HP VEE, Test Point and their own Graphical Software that generates VB from the diagrams.

Also MC make it easy to write software, they have a Universal DAQ Library, just go to the Chooser called InstaCal and choose your board and your software will now work with any of DAQ boards installed in your PC.

They also make superb boards at very reasonable prices, with good substitute boards from other higher priced companies. Some examples:

PCI-6023 8/16 Ch 12 bit 200KHZ ADC, 8 DI/O, 2 Timers \$1100  
The cable is \$205 and connector blocks are \$155 each, the cable is two 50 conductor ribbons meaning low cost.

PCI-DAS4020/12 Ultra High-Speed PCI-bus Compatible, 4-Channel, 12-Bit Analog Input Board with Two DACs & 24 Digital I/O Channels, how much?? No not \$8K but \$3.8K.

PCI-6070 8/16 Ch 12 bit 1.25MHZ ADC, 2 DACS, 8 DI/O, 2 Timers \$3695 Same cable as the 6023

Have a look at [www.measurementcomputing.com](http://www.measurementcomputing.com) it is an easy site to use, you will find a great deal of good product.

## Laptops, Desktops, Thin Clients and High Spec ATX with ISA slots

**We get our Desktop PC for our Instrumentation Projects built right here in Auckland.** We are now able to supply direct to you. Starter System:-1.3-1.4 GHZ AMD, 256MRAM, 30G HDD, all the trimmings mouse, keyboard, modem, USB, ethernet, and a good 17" monitor for \$1299 +GST.

### We use ASUS Laptops for our portable projects

We have been supplying ASUS laptops for projects for two years and we thought it time to offer them generally. Prices start at around \$3000 for the entry level 1GHZ.

### If you use Thin Clients, we have some pretty powerful little boxes from Zupera Technologies

733MHZ 192M RAM or a 500MHZ with same RAM.

High end version starts at \$1750 +GST.

### Do you need high spec ATX motherboard with a nice and fast > 1GHZ CPU with lots of ISA slots

This is a difficult ATX board to find now, so this is special product for people who need ISA slots and can't get them any more. We can build a complete PC for you also.

## Z World has just revamped their entire Embedded Micro Family

**Recently Z World hardware and software pricing has crossed the price barrier for small to medium runs.**

In NZ there are several developers and companies moving to Rabbits to lower costs, reduce design responsibility and of course for rapid time to market. Other reasons to move:- Great C Compiler and libraries, TCP/IP, multi serial, ADC, DAC, LCD, lots of DIO. **Email MasTec and ask for a catalog.**

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## Your One Stop for Technology

### MOXA :- IT Room Power Control The Power Commander

Do you need the ability to power down PCs, hubs, switches or any AC powered device in you Factory, IT Room or around your Business, *with access across the network or dial in?*

*Reboot servers, clear faults, re-establish networks ?*

The MOXA Power Commander can do all of this and is in a nice easy mount 19" rack mount 1U high box.

*(The Specs for this product is the additional PDF attached)*

MOXA NPower Commander is an intelligent device that gives you remote OnOff control of your unattended equipment. Whether your equipment crashes unexpectedly or you would simply like to set up a regular OnOff schedule, you can control the power supply over a TCP/IP Ethernet, making it a cinch to power on and power off your equipment as needed

MOXA NPower Commander can be controlled over a TCP/IP Ethernet, through an RS-232 PPP connection, or from a regular telephone line when the network is down. The safe-shutdown ports are particularly useful when working with Windows NT/2000 workstations. MOXA also provides several useful API functions that allow you to power on and power off your equipment for easy programming of your automation system.

Downtime caused by unexpected OS crashes or power outages has the potential to cost your company a lot of money. With NPower Commander, you can reduce downtime by being able to power up your computers and other electrical equipment from a remote location. You can also shut down equipment when it's not being used, helping reduce your power bills. And by cascading up to 16 NPower Commanders together, you can easily and conveniently control as many as 128 pieces of equipment through the same TCP/IP Ethernet connection.

### MasTec's Mission:- Supplying a broad mix of Products

You probably have noticed MasTec represents a very broad group of manufacturers.

The reason for this, is in our mission statement, and as it has said on our website for 5 years, "**Your One Stop for Instrumentation, Automation, AC-DC Power and Life Science Products**" and recently we added "Quality Control".

We also of course want to supply to you the best products for your application, based on a compromise of the technical specification, budget, software used and experience etc. In fact we pride ourselves on being the only company in NZ and Australia, maybe the world, that can do this successfully, with a good mix of product to choose from.

MasTec started business in 1989 and sold the first DAQ systems into NZ in early 1990, these being National Instruments, We then added where required, Data Translation, ADAC, Eagle, Advantech, Adlink etc as suppliers. To complete the list we now sell the leading DAQ manufacturers Measurement Computing and also Sheldon Instruments.

We will continue to supply all our listed DAQ companies even though at times these companies change their supply policies to us. We will assure a constant supply to you, our customers, of your favourite products.

Recently, you may have seen or read, we have added several new companies to our suppliers list, the super powerful, low cost Sheldon DSP/DAQ combo boards, Precision Transducers, Texmates complete range of Programmable Meters, TIC's 2D Imaging Profiler, Quatech, a very significant Comms manufacturer (USB and low profile PCI), and also several new PXI vendors, PXIT, Chroma, Adlink and Sheldon all make parts of the PXI jigsaw.

MasTec will continue to hunt down the world's best manufacturers so we can meet your supply requirements.

### MasTec UPS Sale Continues Power Kinetics build SUPERB UPSs.



We have special prices on all UPSs from PK at present. These include the BlackOut Buster BOB 10E 600VA, the BOB 12E 1200VA *and the US9003 and US9001 scaleable - redundant UPS.*

#### Example of Sale Pricing

*BOB 10E sells at most computer outlets for \$465, we have them on special at present for \$339 +GST*

The BOB 12E, is a line interactive 1200 VA UPS and is suitable for a server or two computer backups or large control systems or similar.



There are thousands of PK UPSs running in NZ and they have an excellent service record.

For those wanting even more exacting protection, the US 9003 and US 9001 Redundant Units are perfect, as they truly are redundant and scaleable, hotswappable etc.



The 9001 is pure sine and on-line and grows in 1000VA module steps, the 9003 grows in 400VA module steps. These systems grow to 12KVA or more.

Buy modules as your power needs grow. If a module fails it doesn't take the UPS down, the UPS continues with the modules working until a new module replaces the failed one.

To be feel real safe add one more module than you require and you now have what is called in UPS speak, Y+1 redundancy.

For very large UPS systems, PK make the PR3 that expand in 3KA step, to allow UPSs to scale to 100KVA and larger.

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## MasTec's New Technology Window

### Opto 22 and Nokia Team up:- To Deliver Wireless Communication to Enterprise Assets— Offering Simplifies, Improves, And Reduces the Cost of Remote Business Operations

TEMECULA, Calif. and IRVING, Texas, Sep 20, 2002 / PRNewswire-FirstCall via COMTEX/ — Opto 22, a manufacturer of hardware and software products for remote monitoring and enterprise data acquisition, has teamed up with Nokia (NYSE: NOK), the expert in mobility, to create, promote and market the first complete offering for providing wireless connectivity to external physical business assets.

Opto 22's SNAP-IT connects to, remotely monitors, and captures operational data from new or legacy line-of-business systems, devices and equipment. Nokia's M2M platform, which includes the Nokia 31 connectivity terminal and the Nokia M2M Gateway, provides the wireless hardware and software necessary to communicate with Opto 22's SNAP-IT. The resulting combination creates a complete package for wirelessly delivering real world data using GSM/GPRS networks to enterprise applications and databases over standard, Internet- based architectures.

Devices and equipment such as manufacturing machinery, telecommunications gear, storage tanks, generators, and other remote systems are examples of key business assets to which wireless connectivity can be added to provide a communications link even where a dedicated line is unavailable. Once connected, organizations can capture real-time data from these assets, deliver operational data to databases and business applications, manage building facility systems, provide access control and security, and perform remote equipment control, diagnostics, and other extended enterprise activities.

The SNAP-IT and M2M products set facilitates such enterprise initiatives such as supply chain execution, energy management, and regulatory compliance in manufacturing, utility, energy, retail, telecom, service, and government markets and industries.

"The Nokia M2M platform has brought a new level of flexibility to enterprises needing to connect and communicate with remote equipment. By combining Nokia's expertise in mobility with Opto 22's experience in re-

mote monitoring, we can together offer a simple solution for what had been a complex problem," said Sarah Van Siclen, director of mobile enhancements for Nokia Americas. "This is a good example of the kind of opportunity made possible by today's new generation of wireless networks."

"In meeting our customers' remote monitoring and data acquisition requirements, establishing the communication to a remote asset has always presented a challenge," says Opto 22 vice president, Bob Sheffres. "Now, through our collaboration, Opto 22 and Nokia have revolutionized the way organizations can remotely monitor and manage their external business assets by making it quicker, simpler, and less expensive than ever before."

Accordingly, system integrators and solution providers can expect significant improvements in system rollouts and implementations for these types of projects. One such firm, ManagetheWorld, LLC, a division of Professional Consulting Services (PCS) of Chicago, Illinois, has already installed several pilot Opto 22/Nokia systems. "By offering VARs and solution providers a one-stop, all-inclusive package, Opto 22 and Nokia step to the forefront of the movement to integrate information from remote business assets and devices with the enterprise," states Steve Pazol, president of ManagetheWorld. "This has allowed us to focus on our IT core competencies and decrease our implementation times by not having to install or specify a communications infrastructure."

To promote their joint solution, Opto 22 and Nokia will be offering demonstrations at major IT and networking events including the upcoming Comdex trade show in Las Vegas, Nevada, November 18th through 22nd. The two companies are also collaborating on a new, soon to be announced Website illustrating the benefits of the offering and providing information on how to get started monitoring and managing the entire extended enterprise.

## More Important announcements by OPTO22

**Opto 22 partners with PacketPointe Technologies™**  
**Opto 22 offers SNAP-IT in 1U configuration**  
**Opto 22 offers Free SNAP Ultimate I/O- Training**  
**Opto 22 offers SNAP-IT in 1U Configuration**  
**Opto 22 and Axeda Systems Partner for remote asset monitoring and management of devices and equipment**  
**Turbocraft announces New PID support for Opto 22 FactoryFloor and ioControl Users.**