MELSS NEWS

VOLUME 18, ISSUE 1 | June 2022

Dear Friends,

Greetings from MELSS.

Since our last communication, the world has seen many events that have had profound impacts on our business. The Russo-Ukraine war has overshadowed even the Covid Pandemic in affecting the Global Economy and since the war is still ongoing, the uncertainties still persist. The effects of Fuel prices, Rupee exchange rates, high edible oil prices, etc have had inflationary effects on our economy resulting in the interest rates going up.

On the other hand, the domestic market seems to sustain and we see buoyant tax collections and healthy balance sheets. Hence, we can still be optimistic and find ways to grow our businesses. The opportunities in the areas of Aerospace and Defence, Electronics Manufacturing, EV, Food Processing, E Commerce, Logistics, Automation etc, are immense and we have a role in many of these segments. We are ready to serve you in EV Testing, ATEs for many applications, Robotics and Automation, Digital Factories and Industry 4.0, etc. We are pleased to inform you that during the last few months, we have made considerable progress in our development of IIoT devices to help you pick up and process data from your factories. These can be transferred to your Servers or the Cloud and we can help analyse the data and take appropriate actions. We call these a part of our Sixdime series.

We are pleased to inform you that during the last few months, we have made considerable progress in our development of IIOT devices to help you pick up and process data from your factories. These can be transferred to your Servers or the Cloud and we can help analyse the data and take appropriate actions. We call these a part of our Sixdime series.

We aim to be your partners in areas of Digitisation, Automatic Inspection and Testing, Automation, Robotics, Industry 4.0, SPMs, Capex for Electronics Development, Manufacturing and QA, in newer areas like Photonics, etc. Our trained engineers are ready to interact with your team to study your requirements and propose relevant solutions. We will be delighted to hear from you.

Wishing you all a wonderful second half of the calendar year as well as the Festive season starting soon.

Warm regards,

N. Ramachandran

Managing Director

MEL Systems and Services Ltd

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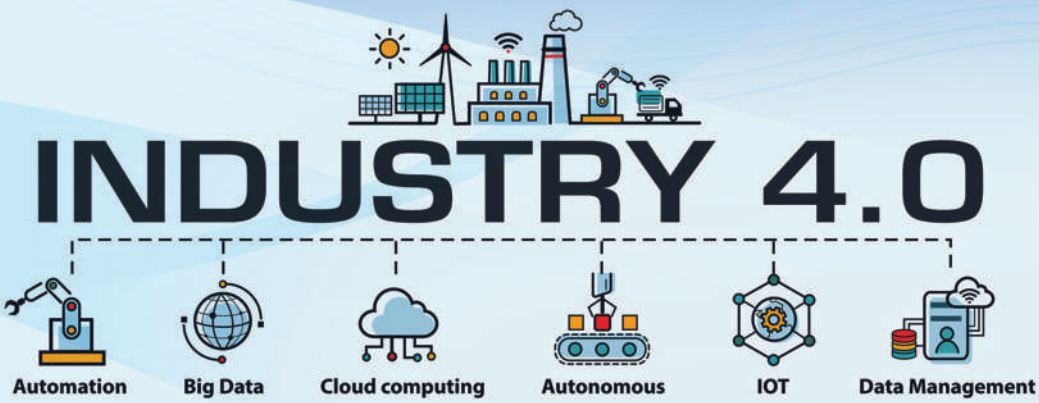

INTERNET OF THINGS (IoT)

MELSS offers design and development of Internet of Things (IoT) solutions for customers. These include hardware, firmware and software design.

Our team is experienced in working with latest architecture designs meeting and complying to Industrial Standards. We deliver solutions for on-premise and cloud-based implementation.

sixdime ATOM IOT DATA LOGGER

Data loggers are electronic devices which automatically monitor and record environmental parameters over time, allowing conditions to be measured, documented, analysed and validated.

MELSS presents the Sixdime Atom IoT Data Logger for true real-time and data-driven monitoring and control of devices and equipment such as PLC, HMI, Motors, Valves, Energy Meters, Actuators and Relays. Compatible with networking protocols such as 4G/LTE, Wi-Fi, MODBUS and NB IoT, it helps in traceability, improvement of OEE and employee resource mapping.

Sixdime Data loggers perform the unique role of data acquisition from different sources such as sensors and PLCs to generate information in real time which helps decision-making.

sixdime NFC READER

Digital transformation is the need of the hour for all industries. The Sixdime NFC reader helps organisations with Industry 4.0 implementation by providing identification, validation and data capture solutions, on shop floors and assembly lines. The small and powerful device which can read Mifare and NTAG, can be easily set up to detect tags and to IoT-enable shop floors. The Wi-Fi and Ethernet-enabled device can communicate with most software applications, PLCs and Industrial Controllers through the industry standard Modbus TCP protocol, giving quick and fast response.

Event management within industries is more controlled now with the application of our NFC solutions.

Many of our solutions in Robotics use NFC technology. Material Management and Asset Tracking have improved with better communication between the trolley and the NFC Reader.

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sixdime EDGE BOX

MELSS presents the sixdime Edge Box which is a flexible IoT end point node enabling easy machine monitoring and signal exchange. Ideal to implement interlocks for Mistake Proofing, Traceability, Single Piece Flow and Overall Equipment Efficiency, its integrated LCD display allows operators to instantly see status, error codes, operating information and get feedback on scanned identification tags.

This device features excellent front of screen performance for use with PLCs, Windows and Linux based PCs.

The Edge Box can be installed by connecting a Type-C Cable.

sixdime HEX IOT

The Sixdime Hex IoT is a modern Industrial HMI offering IoT capabilities to integrate equipment and plant information with the Enterprise IT. Running a full fledged operating system, the device enables Rich Media delivery alongside mission-critical, industrial, native and web applications.

OnRobot GRIPPERS

OnRobot brings you a wide range of magnetic and electric End Effectors and grippers for a variety of applications. Pick-and-place applications are catered to by a range of 2-finger, 3-finger and food grade soft grippers.

Specialised End Effectors such as the Eyes from OnRobot use the 2.5D vision technology for precise depth sensing. The Sander is accompanied by a set of sanding and polishing discs. The Screwdriver is accompanied by the screw feeder for a wide range of screw sizes. Gecko grippers using tactile technology, often used in Space, are also commercially available.

The Lift100 Robot Elevator, Dual Quick Changer and other tools and accessories make OnRobot a one-stop solution provider.

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CASE STUDY
Machine Tending Cobot

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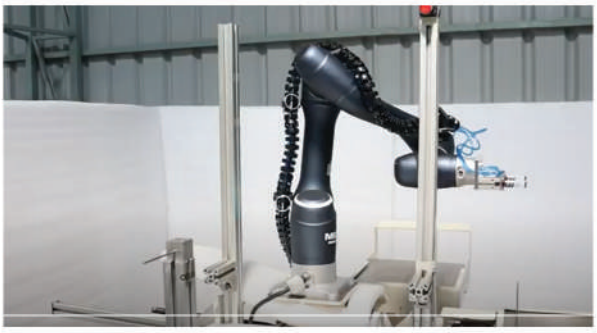
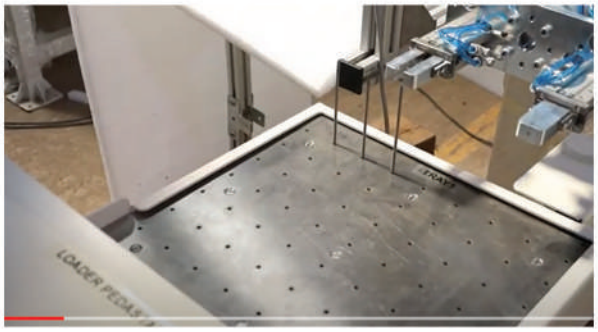
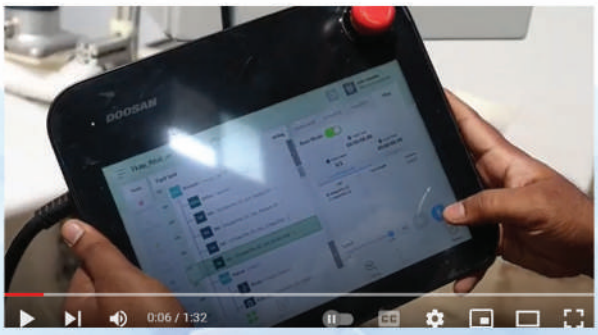


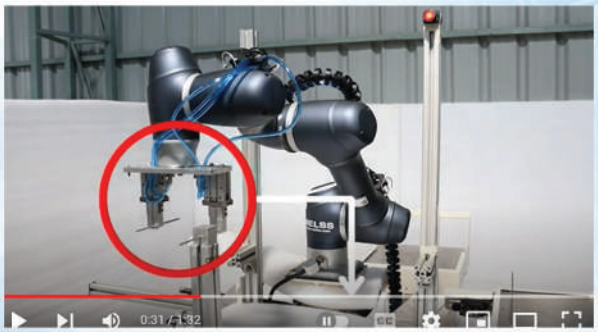


Pick up from loading tray

Click here to view the Video



The interface for handling the operation



Simulation of Grinding Machine with 150 Micron Clearance

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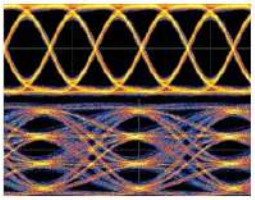
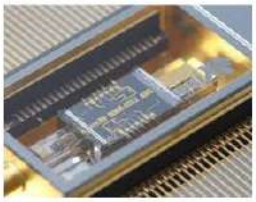


High bandwidth O/E BERT



Photonic Integrated Circuits

Telecom & Photonics

Biophotonics
Biomedical Imaging
SPECTROSCOPY

Optical Sensing

Quantum Photonics

Ultrafast Optoelectronics

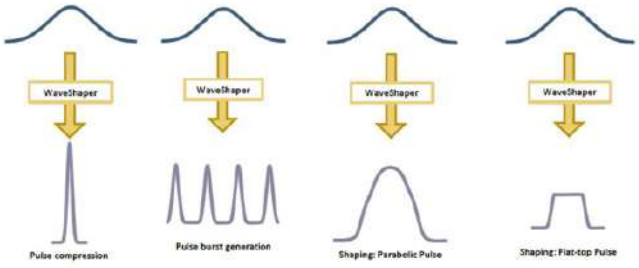
Finisar WaveShapers 1000B/X and 4000B/X

The WaveShaper 1000B Programmable Optical Filter and the 4000B Programmable Optical Processor from Finisar (a II-VI company) are broadly used in Research, Development and Manufacturing applications.

This WaveShaper allows arbitrary optical filtering of attenuation and phase across the entire C+L band Telecom wavelength bands. The 4000B allows wavelength selective optical switching using the 1x4 optical port configuration and in addition provides a high-resolution mode of operation in which the optical signal passes twice through the grating-based monochromator. This high-resolution mode ensures narrow channel shapes in combination with steep filter slopes of more than 700 dB/nm.

Applications

DWDM System Test
Network Simulation
Transceiver Test
Pulse Shaping
Optical Comb Generation
Quantum Optics



Obtain further application and technical information about the Optical Instrumentation portfolio by visiting: https://ii-vi.com/waveshaper-and-waveanalyzer-knowledgebase

Product Demonstration Videos: https://www.youtube.com/user/iiviincorporated

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Soldering Solutions from MELSS

Electronics is omnipresent in all industries today, be it pure electronic goods such as smartphones and laptops or electronics embedded in other equipment such as automobiles and spaceships.

The electronic circuits need to endure for long times, sustaining extreme environmental conditions and mechanical stress – this is achieved by high-quality soldering.

Soldering standards have improved by leaps and bounds and today's soldering is equipped with a wide range of solders suiting various circuit types, tools and accessories.

MELSS supports the electronics industry by partnering with many brands which have excelled in providing the necessary requirements for soldering. While Metcal has excelled in soldering stations using advanced technology, Techcon provides adhesive and fluid dispensing solutions. Indium Corporation provides an exhaustive range of solders for different applications. Kyzen is synonymous with cleaning technology to clean off the fluxes and excess solders in each application. Xeltek is a developer and manufacturer of universal IC chip programmers for microcontroller, PIC, EPROM, EEPROM, Flash, ICSP and ISP programming. At MELSS, we understand your needs in electronics and create solutions which withstand time.

METCAL™ TECHCON™ INDIUM CORPORATION®

KYZEN Where Science and Care Converge. XELTEK

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Impulse Noise Simulator

Current immunity testing for transient phenomena defined by international standards describes a test method that applies a waveform simulating typical electromagnetic noise that occurs in nature, such as ESD, EFT/B and lightning surge.

However, in the actual field, we can be affected by various noises beyond those phenomena described in the standard.

In case of the EFT/B test, it provides only limited power line noise test and sometimes it is difficult to reproduce design failures.

NoiseKen's Impulse Noise Simulator provides a unique test method that covers the noise phenomena which cannot be reproduced by the EFT/B test defined by the international standard IEC 61000-4-4.

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MELSS 9100 Functional Tester

The 9100 Indigenous Functional Tester from MELSS integrates many features for conducting functional tests for industry-wide usability, and is the standard for Defence and Aerospace. Its availability in various configurations, from single to 6 bays, single to 3-tier interfaces and 10kVA to 60kVA input power ranges makes it the testing system-of-choice.

Using technology from Teradyne, USA, it combines advanced functionality with switching, software, self-test and calibration capabilities, providing digital, analog, mixed-signal and bus test capabilities for a wide product range. It also supports multiple Application Development Environments (ADEs) and many TPS development processes. Windows OS-based, it uses standard test system protocols such as LXI, PXI and VXI. For more: https://go.melss.com/9100

Features

- Highest performance functional tester for analog, digital, mixed-signal and serial bus testing
- Performance and flexibility to test products all the way from board level to completed assembly level
- Future ready, open standards-compliant platform, adaptable to changing requirements
- Proven compatibility maintains TPS investment
- Proven highly effective in replacing Legacy ATEs
- Multiple parallel digital functional solutions supporting speeds up to 50 MHz (100 MHz interleaved)
- Concurrent serial bus test supports MIL-STD-1553, RS-232, RS-422, RS-485, ARINC 429 and many more
- Cost-effective, reliable system accommodates modular expansion
- Supports a multitude of adapters, software products and TPS development tools in the TestStudio™-based ATE operating environment

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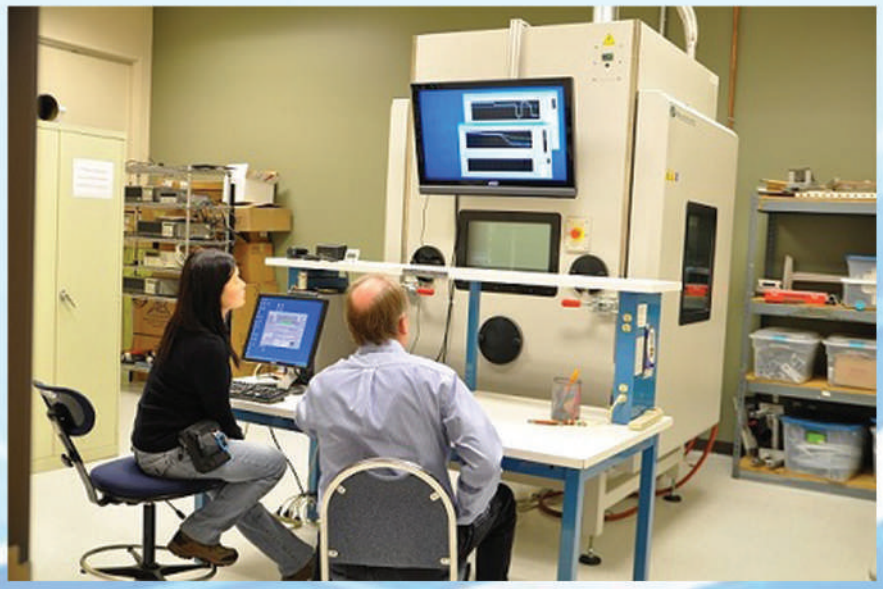
Espec/Qualmark – Hass Halt Chambers

Electronic devices and industrial products that we rely on every day are impacted by our environment in a number of ways, including temperature, humidity, pressure, light, electromagnetic waves, and vibration. Environmental testing analyses and evaluates the impact that these environmental factors have on products in order to ascertain their durability and reliability.

While ESPEC provides environmental test chambers, Qualmark's HALT testing (Highly Accelerated Life Test) and HASS testing (Highly Accelerated Stress Screen) chamber systems are designed and manufactured by Qualmark specifically to provide the industry with accelerated reliability testing capability. The technology has matured from a thermal chamber with a vibration table and independent controls to an integrated HALT/HASS system.

HALT and HASS, collectively referred to as Accelerated Stress Testing (AST), subject a product to a series of overstresses, effectively forcing product weak links to emerge by accelerating fatigue. An AST program requires specialised HALT/HASS equipment to render the required stresses – random six-degree-of-freedom vibration and rapid thermal change rates – in the combined environment necessary to drive out latent failure modes. Stresses are applied in a controlled, incremental fashion while the unit under test is continuously monitored for failures. Once the weaknesses of the product are uncovered and corrective actions taken, the limits of the product are clearly understood and the operating margins have been extended as far as possible. The product can now be released into the market with higher reliability.

Qualmark has leveraged on Espec's worlwide network for its AST chambers.



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Glimpses from the INTEC Expo

MELSS participated in the 19th INTEC – An International Machine Tools and Industrial Trade Fair from June 2 to June 6, 2022 at CODISSIA Trade Fair Complex, Coimbatore. Some of the images from the expo: