

	PRODUCT MARKETING MATERIAL	Doc Number PMM13050616	Rev E.2
	EDI 500 Series Marketing Material	Doc Date 14-Oct-2013	Author G. Stoeckli
Sales & Marketing		Doc Classification Confidential	Doc Status RELEASED

Product Name : EIE Direct Imager – Ref # : EDI 500 – Options : OE124

Product Description:

First of its class, First EIE Direct Imaging system, is a simple to use direct exposure machine using the latest DMD technology while being cost affordable and addressing most of existing PCB manufacturer needs.

In short, The EDI is :


Affordable and Reliable Direct Imager with Robust Data Processing



Catch Phrase :

Just Picture it !

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Unique Selling Proposition (USP)

Maintaining our high level of investment in Research and Development over the past years, it has enabled us to anticipate the ever-increasing PCB market requirements. First EIE is now an established leading supplier of Photoplotting and Ink Jet Printing equipment with over 30+ years of experience.

Based on our outstanding experiences in optical engineering with our Very-High resolution RP Series Photoplotters and the longstanding knowledge of the PCB manufacturing industry, we are now able to offer, after several years of development, our own version of a Direct Imager system with a product that will effectively address most requirements of production shops that provides Quick-Turn PCB at an affordable price.

With our EDI500, we bring to the market a compact and simple to use direct exposure equipment that is equipped with a state-of-the-art **DMD** technology. Thanks to its High-Energy and broad UV spectrum (365nm to 450nm) light source, this new imager is able to expose most commonly used etch resists as well as a wide range of existing solder masks. With a process time of less than a minute for a panel of 20"x16" (500x400mm) using industry standard Etch Resist like the Riston[®] MM500 from DuPont[®] or the LAMINAR E9200 38/50u and the capability to image features as small as 50 microns, we can address most of the current and future customer needs.

This new equipment has been designed for simple operation and maintenance with a high level of reliability and in line with our established policy, the ED500 will always be upgradable to the next level.

The EDI500 includes:

- Improved and cost efficient DMD Exposure Head with advanced optics
- Optimized Light Source Unit for Large light Spectrum and designed for easy lamp replacement
- Enhanced thermal management embedded in the machine, no need of external cooling unit
- A-B side registration with pins or with fiducials recognition using image pattern.
- X/Y auto-scaling
- Dynamic data generation for serialization, date code in text or 1D and 2D barcodes

Also proven and unique First EIE features are:

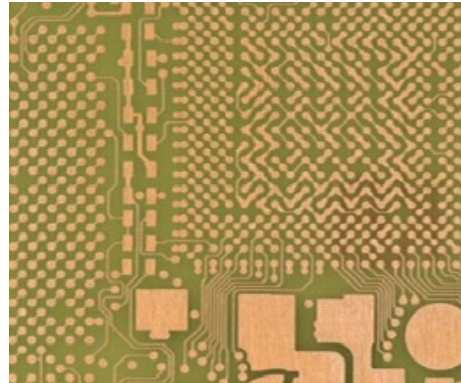
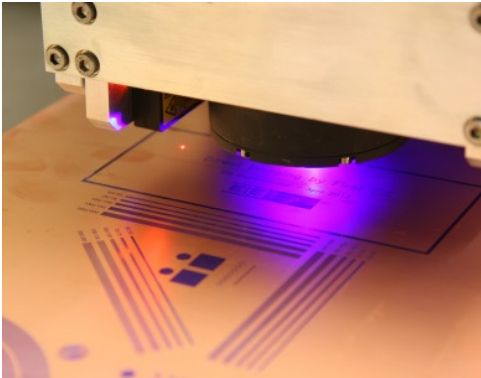
- User friendly software for data management based on 30+ years of experience in imaging technology
- Software Wizards for self-re-calibrations and adjustments for optimal alignment and registration.

An Improved Workflow

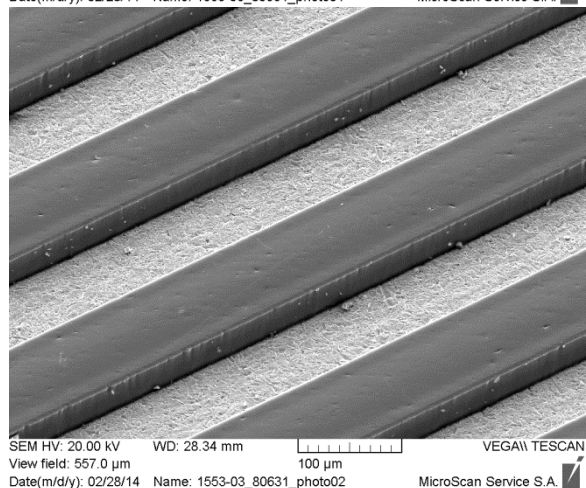
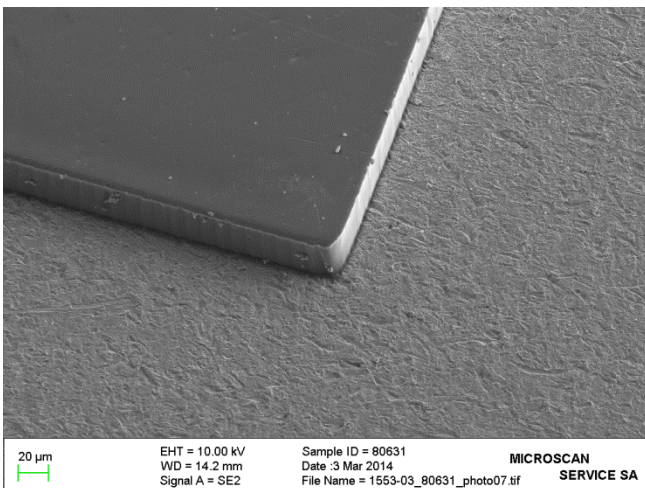
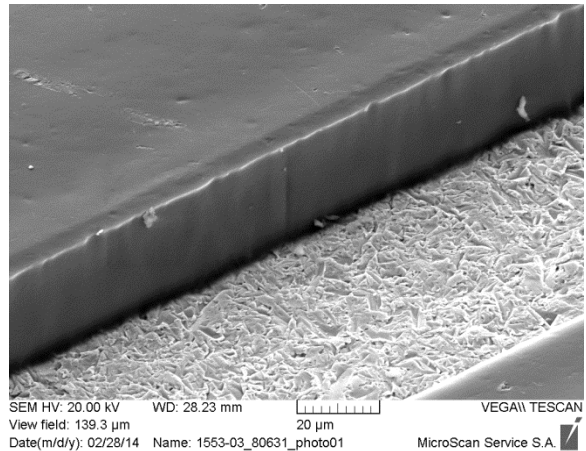
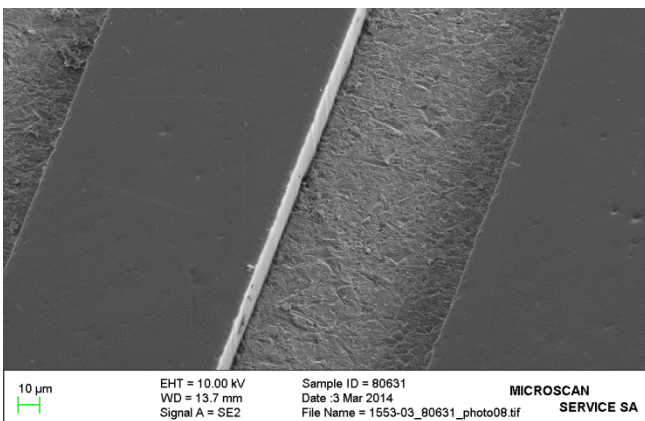
From CAM file directly to the panel


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The selection of the production data can directly be chosen from the touch panel user interface. Data processing is based on our well proven and recognized MPS software enhanced with a specific user interface specially developed for the EDI500.



With First EIE Direct Imaging System, we strongly believe that we will help to improve your PCB manufacturing cycle time thanks to an ease of use concept and robust design.



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Key Competitive Advantages


- **Affordable** Direct Imager giving access to the latest state-of-the-art DMD technology
- Simplicity of operation, with user friendly **Files-to-Exposure** software management
- Operator proof machine interface with multiple inputs, including **touch screen**
- Fully **automated registration** process with high-definition camera
- State of the art **DMD head**, with advanced optical element designed in partnership
- Broad Spectrum UV source, to expose **most of industry standard resists**
- High Density Energy, to allow exposure of **Etch Resist and Solder Mask**
- Real Time **auto-focus** adjustment to follow board profile and adjust to board thickness,
- Adapted vacuum table for any board sizes
- Side registration either with pin or fiducials recognition using latent pattern
- Dedicated thermal management for improved DMD lifetime
- Very compact optical head => easier maintenance process and minimal adjustment
- Fully automated calibration, keeping the machine always ready for a fast exposure
- Established electronics architecture and data management
- Robust and flexible EIE software environment
- Simplified preventive maintenance, can be done by trained customer technician
- Competitive Exposure time : 60 sec for a 400mm x 500mm board with DuPont® Riston® MM500

=> Optimize your investment costs, and benefit from a faster ROI
Straightforward design with Single head operation

=> Optimize your operational cost
Low power consumption, Small foot print and minimal maintenance requirements

Key Specifications

- **Technology** XGA 0.7" DMD with TI-DLP® technology
- **Line size** 75um (3mil)
- **Light Source** Very High Pressure Mercury Arc Lamp
- **Energy** 10 to 300 mJ/cm²
- **UV Spectrum** 365nm to 450nm (UV-A)
- **Panel Size** 660x610(26"x24") by 0.1 to 5mm thickness
- **Supported Media** Most Industry standard resist
- **Registration** Automatic with Camera
- **Exposure Time** ~60 seconds @40mJ/cm²
- **SW and Interface** EIE MPS package with Touch Screen

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Product Positioning

First EIE Direct Imager is meant to be:

A Cost Efficient Product using latest State-of-the-Art technology

- ✓ One Single Digital Micro-Mirror-Device Head

Offering most required Feature size and performance

- ✓ Able to go down to 50 µm line

Designed for Fast Prototyping and Quick-Turn series

- ✓ Very easy to use ➔ “Just Picture It”

Compatible with most existing photoresist

- ✓ High energy & wide UV Spectrum ➔ Use cost efficient and High-Pressure Mercury Arc Lamp

From Dry Film to Solder Mask => We can expose them

First EIE Direct Imager is meant to be a cost efficient product that responds to most usual needs

State-of-the-Art Optical Engine

Developed in close collaboration with our partners, our new EDI500 Direct Imager integrates an industry proven DMD Optical Head, which is based on a 0.7” DLP chip with a dedicated thermal management to improve DMD life time. Also the specifically designed optical lens was optimized to offer the highest image accuracy.

Main features:

- Smart design for simple head adjustment
- Modular design for easy maintenance
- Laser Auto-Focus system
- Integrated registration camera

MPS Software and User Interface

The EDI500 software offers a very user-friendly interface and superior flexibility. It brings to the system the vast experience of First EIE in file management and data processing.

A number of software wizards are available to safely and quickly perform re-calibrations and adjustments if necessary.


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Serialization - Dynamic legend

The EDI500 is able to add static and dynamic markings

The markings are easily programmed by D-code mapping or by use of SERIMARK2, a dedicated application software.

Supported markings: Date, Time, Scale factor, Serial Numbers, Key boards inputs, Text, 1D, 2D barcodes

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EDI500 – OE124 General Specifications

Exposure Unit	Max. image size	610 x 660 mm (24" x 26")	
	Compatible panel sizes	Any size up to: 610 X 660 mm (24" X 26")	
	Panel Thickness	0.1 to 5 mm (0.004" to 0.2")	
	Substrate type	Most common Etch Resists	
	Panel holding	First EIE vacuum table	
	Line Size	50 um (2mil)	
Optical Engine 124	Technology	DMD XGA 0.7" with advanced UV Lens	
	Light Source Type	Very High Pressure Mercury Arc Lamp	
	Light Spectrum	365nm to 450nm (UV-A)	
	Exposed Energy	10 to 300 mJ/cm2	
Etch Resist	Type	See compatibility list and technical data sheets	
Built in Raster image processor	Data input formats	RS274D, RS274X, DPF and EIE RPL	
	Optional input formats	ODB++, PostScript, TIFF-PACKBITS,	
	Via third party software	DXF, DWG, other upon request	
	Network compatibility	TCP-IP	
User interface	Touch Panel including First EIE MPS and Remote Queue Manager Software		
Wizards	For quick and easy calibration and adjustment		
Panel alignment and Registration	Automatic registration and side alignment with on-board CCD camera Or Manual with locating pins		
Serialization - Dynamic legend	Serial numbers, time-code, 1D barcodes or 2D QR-Code, DataMatrix, etc... by D-code mapping or with First EIE Serimark 2 Optional Software		
Exposure modes	Easy single button energy selection		
Print time (20"x 16")	~55 sec @ 40mJ/cm2	Varies on resist sensitivity and exposure energy	
Overall accuracy	±20 um		
Repeatability	± 5 um		
Operating conditions	Temperature	21 ±2° C	
	Relative humidity	50% ±10% (non-condensing)	
	Power requirements	Single phase : 230 VAC ± 10% ; 2000 Watts	
	Compressed air	6 bars	
	Power consumption	900 VA while exposing	
Size and weight	Width x Depth x Height	1560 x 1890 x 1470 mm	
	Weight	850 kg	

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