

# MivaTek

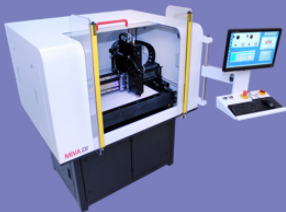
## Global

## TekFlex Service Plans

Version 1.2

July 1, 2021

### 2000L Series



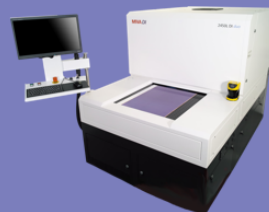
- Up to 24" x 30" panel
- All applications
- All resolutions
- 12 $\mu$  registration
- Low cost entry point
- Small Footprint
- Manual Loading
- Dual resolution capable
- Quad-wave and single wave LE Options

### 3000L Series



- 30" x 60" panel size
- All applications
- Resolutions to 10 $\mu$
- 25 $\mu$  registration
- Manual Loading
- Quad-wave LE

### 2400DT Series

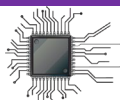


- Up to 24" x 24" panels
- All applications
- All resolutions
- 12-micron registration
- High speed dual tray
- Automation ready
- Quad-wave LE

### 12000HD Series



- Up to 12" x 16" panels
- All applications
- Resolutions to 1.5 $\mu$
- Zone registration to 2 $\mu$
- Small footprint
- Low cost entry point
- Dual resolution capable
- Quad-wave and single wave options



**MivaTek**

Global

**MivaTek Global, LLC**

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## Miva Direct Imaging: Technical Support Overview

### Miva Direct Imaging:

Miva Technologies has produced projected image film plotters and direct imaging technologies for over 20 years. Miva revolutionized the direct imaging approach by developing and patenting the first method of deploying quad-wave LED light sources coupled with DLP projection technologies which are now the core of most direct imaging systems. The result is a system that has high performance and many operational cost savings:

- **Light source longevity:** LED light sources have lower replacement costs and longer utilization times than competing laser and other LED technologies.
- **DLP Technology:** DLP devices are widely proven as robust and reliable. DLP units are deployed in millions of global applications such as rear projection displays and presentation projection systems.
- **Linear motor and control systems:** Well proven Sieb and Meyer motion control technologies and linear motor systems provide years of stable motion control.
- **Power consumption:** The machine consumes less than 5% of the electrical power as compared to prior imaging technologies.

### Technical Support:

**Miva machines are very reliable *when properly maintained*.** Where competing systems require expensive service contracts and hyper-clean environments for operation, the Miva systems are more flexible. Most systems are deployed in traditional flood exposure level clean rooms with good temperature and humidity control.

Mivatek Global, LLC (MivaTek) provides local technical support services for systems installed in North and South America. MivaTek maintains a staff of highly trained technicians spread out within the North American market prepared to resolve technical support, applications, software, CAM and other issues a customer may develop.

#### Primary Contact:

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### Technical Support Guide:

This guide is designed to provide the Miva system end user with a path toward higher performance, reliability and return on investment for its direct imaging technology. MivaTek's goals are to provide a system of training, preventative maintenance, and rapid technical support. With the development of a flexible care package MivaTek offers a full range of services that allow the customer to develop a customized level of service and budget to suit its own requirements.



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### Core Elements of Technical Support:

Direct imaging systems are complex equipment and processes that require a strategic view of operations to achieve the highest performance, reliability, and yield. As such the core elements of technical support must include:

#### Training:

Mivatek offers a range of live and web training sessions to help the customer become equipped to operate, adjust and maintain the direct imaging system on demand. Training is an essential part of obtaining the highest performance from the system.

#### Preventative Maintenance (PM):

MivaTek strongly recommends an aggressive PM program. MivaTek offers training of customer maintenance staff to allow the majority to be completed without external support. PM programs are designed to optimize system performance at a low cost. It is essential that the customer commit to PM processes to avoid high cost technical support intervention as the machine ages.

#### Applications Support:

Miva machines are very flexible in terms of applications and controls. Mivatek has extensive experience in developing new approaches to solve today's difficult conditions. As an imaging company, MivaTek supports PCB and microelectronics applications development and has access to best practices in many differing industries.

#### Remote Support:

Miva machines allow for remote control. Often technicians can conduct testing and settings changes using the remote software (as permitted by customer). This tool saves the end user travel and labor costs as well as increases in up time as the system is often functional within the hour. Additionally, should an issue require on site support, the technician can diagnose issues and often resolve the problem faster when he arrives.

#### On Site Repair:

MivaTek Global is staffed with regional technicians that are trained in the industry as well as by the factory. With pre-positioned parts and extensive capabilities MivaTek Global remains committed to minimizing any down time and operating efficiently on behalf of the customer.

### Miva Technologies: Support Philosophy:

Modern factories rely on technology to produce products at high yield, high throughput with little intervention. This technology is expensive and vital. Miva Technologies technical support philosophy recognized that it is essential for the product to be flexible, reliable and that the customer must become self-reliant to the greatest degree to be able to reduce support costs and increase uptime.

To achieve self-reliance, we recommend the customer invest in preventative maintenance and engineering and operator training. Miva Technology does not require a service contract but will caution the customer that a lack of active preventative maintenance and system calibrations will result in less-than-ideal performance and could lead to very costly repairs in the future.

## MivaTek Global: TekFlex Technical Support Program

MivaTek Global offers several constructive voluntary programs that allow the end user of the equipment to determine its own level of support and associated expenditures.

### TekFlex Service Planning:

MivaTek has designed the service plan model to be what the customer needs it to be. MivaTek will never require a service contract but needed to provide an innovative approach to allow customers that want full-service models to have access.

**Banked Hours:** MivaTek does not believe in a 'use or it lose it' model. All plans below allow the customer to estimate the plan usage and 'bank' labor hours. Unused hours after 1 year are credited to the following year if the customer re-purchases a plan of equal or greater value. If no plan is purchased for the following year 50% of the hours remained 'banked' for the following 12 months.

### Service Labor Plans: (See Appendix A for typical time budgeting)

- **Gold/Silver/Bronze Plan:** MivaTek offers three plan levels. Each with a significant discount to parts including PM and light source components.
- **PM Subscription / Blanket PO:** Customers preferring not to participate in a plan can receive a parts discount by placing a 1-year Blanket PO and the purchase of a PM Subscription with MivaTek for service. The Blanket PO/PM will need to identify who is authorized to commit expenditures but is intended to speed MivaTek's ability to provide service.
- **Time and Materials:** MivaTek is committed to giving the customer the freedom to decide its own level of service and therefore offers the option to have no service plan at all. Customers choosing this path will receive the same high-quality response and rapid action as all customers.

Service Plan	Gold	Silver	Bronze	PM Subscription** Blanket PO	Time and Materials
Banked Hours	135	100	75	-	-
Effective Labor Rate	\$ 175	\$ 195	\$ 205	\$ 225	\$ 225
Parts Discount	20%	15%	10%	5%	0%
Service Plan	\$ 23,625	\$ 19,500	\$ 15,375	\$ 6,550	-
- Down Payment (40%)	\$ 9,450	\$ 7,800	\$ 6,150	\$ 6,550	-
- Q1, Q2, Q3 Payment (20%)	\$ 4,725	\$ 3,900	\$ 3,075	\$ -	-

\*\* LE PM Kits will be added based upon customer machine configuration

### Notes:

1. Mivatek Terms and Conditions Agreement required.
2. LE PM Kits are required once per year and include fil
3. Travel expenses: Not included in any plan but participants will benefit from shared regional expenses for PM and other activities whenever possible.



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## Recommended Periodic Maintenance

MivaTek believes that a regularly scheduled periodic maintenance program is vital to system performance and reduction of down time. The following chart reflects the standard PM program recommended for all Miva Technologies equipment:

Task	Routine PM KIT		Major PM Kit		Staff Level (after training)
	Weekly	3 Month	6 Month	12 month	
<b>Routine Maintenance</b>					
System Cleaning: Remove dust and residues from granite table, encoders, all surfaces	X	X	X	X	Operator
Filter Check: HEPA, compressed air filter checks for clogs or debris	X	X	X	X	Operator
Chiller Operation: Check coolant level, filter operation	X	X	X	X	Operator
Optical System Cleaning - Level 1		X	X	X	Customer Maintenance
Optical System Cleaning - Level 2			X	X	MivaTek Technician
<b>Filteration System Maintenance:</b>					
Replace: Course Air Filtration		X	X	X	Customer Maintenance
Replace: HEPA Filter Systems			X	X	Customer Maintenance
Replace: Compressed Air Filtration			X	X	Customer Maintenance
Replace: Chiller Filter			X	X	MivaTek Technician
Lubrication			X	X	MivaTek Technician
<b>Motion System Maintenance:</b>					
Chiller Flush				X	MivaTek Technician
Squareness Calibration				X	MivaTek Technician
Polar positional Analysis			X	X	MivaTek Technician
<b>System Calibrations</b>					
Calibration: Camera		X	X	X	Customer Maintenance
Calibration: LE to LE		X	X	X	MivaTek Technician
Calibration: LED Power			X	X	MivaTek Technician
Calibration: AB Registration		X	X	X	MivaTek Technician
Stress Test: Evaluate Total LED output			X	X	MivaTek Technician
<b>Software Updating</b>					
Update to latest software revisions, add software upgrades.			X	X	MivaTek Technician
Firmware Update			X	X	MivaTek Technician
Motion Control Firmware Update			X	X	MivaTek Technician

### PM Kits Available:

Periodic maintenance is a vital element of machine performance. As such, Mivatek can train the customer maintenance staff to conduct most PM operations to avoid the cost of labor and travel. The following PM Kits are available for pre-scheduled PM shipments including a subscription annual service that will ship automatically every three months.

PM Kits Available:	Cost Ea
Routine Maintenance Kit: Approved wipes, course filter, calibration films (3 month)	\$ 350
6 Month PM Kit: HEPA, Compressed Air, and Chiller System Filters	\$ 2,200
12 Month PM Kit: 6 Month PM Kit plus chiller flushing kit	\$ 2,950
12 month PM KIT (per LE): Internal LE filter, Network Cable	\$ 550
Annual Subscription: All kits required auto-shipped on 3 month intervals (does not include LE PM Kits)	\$ 6,550

## Existing Machine Upgrades Available

### **Vision Flex System: \$9,500**

Miva Technologies has introduced a new vision system to support its DART Technology software offerings (see below). The Vision Flex System provides a significant overall improvement in the use and function of existing machine Vision. First time pick up of fiducials, operator use, and overall precision are greatly enhanced through this hardware and software upgrade. Vision Flex is required to deploy DART First Article Tools and future CMM functionality.

### **DART: First Article Tool: \$29,000**

Miva has developed a new approach to permit the customer to control linewidth and feature size accuracy. This first-generation tool will allow the user to place a coupon on the border of any panel and then check linewidth and feature sizes of the coupon after image, develop and/or etch. The measurements are then automatically presented as adjustments through Miva's proprietary linewidth compensation system. This allows the customer to incorporate variations in develop or etch into the linewidth calibration on a regular basis – at the operator level. *[Note: Required Vision Flex Upgrade if machine is not already using Vision Flex].*

### **DART: Process Control Tool: \$7,500**

DART Process Control tool utilizes the CMM capabilities of the Vision Flex camera system to provide the process engineer with power tools to improve develop, etch, and plating uniformity. The software automatically measures features of pre-determined size and plots the variance on a topographical map. Adjust spray patterns, even out AB etch rates becomes easy with this Process Control Tools.

### **Windows 10 Upgrade: \$950 (per light engine)**

ITAR compliant Windows 10 upgrade for each light engine. Windows 7 will no longer be supported by Microsoft with security updates.

### **Vacuum Table Upgrade: \$4,500**

Miva granite table design includes a standard level of vacuum suitable for most applications. The vacuum table upgrade enhances and directs the vacuum to provide improved panel hold down for some warpage reduction as well provides a polished surface to reduce panel stickage.

### **Vacuum Quick-Invert: \$750**

The addition of a reversing solenoid in the vacuum system to reverse the vacuum to compressed air. This reverse ease the operator's ability to quickly pick up the panel after vacuum.

## Appendix A: Typical TekFlex Time Budgets

The table below reflects a potential time budget for usage of the plan levels in a single year. It is important to note that Banked Hours may be carried over to the following year. This allows the customer to budget for worst case with the confidence that the expenditure will eventually be used.

Service Event Type	Typical Event Hours Required				Typical Gold Plan		Typical Silver Plan		Typical Bronze Plan	
	On site	Remote	Travel	Total Applied	Qty	Total	Qty	Total	Qty	Total
PM 6 month	12		4	<b>16</b>	2	32.0	2	32.0	2	32.0
PM 3 Months	4		4	<b>8</b>	2	16.0	0	0.0	0	0.0
Repair - Typical on site	8	3	4	<b>14.25</b>	1	14.3	1	14.3	1	14.3
Repair - Applications	8	2	4	<b>13.5</b>	2	27.0	1	13.5	1	13.5
Repair - Typical remote	0	4	0	<b>3</b>	2	6.0	2	6.0	2	6.0
Training - Operator	4	0	4	<b>8</b>	1	8.0	1	8.0	1	8.0
Training - Maintenance	6	2	3	<b>10.5</b>	1	10.5	1	10.5	0	0.0
Training - CAM	6	2	3	<b>10.5</b>	1	10.5	1	10.5	0	0.0
Training - Team Leader	6	2	3	<b>10.5</b>	1	10.5	0	0.0	0	0.0
					<b>Total</b>	<b>134.75</b>	<b>Total</b>	<b>94.8</b>	<b>Total</b>	<b>73.8</b>

