GIS | GLOBAL INKJET SYSTEMS

A NANODIMENSION DIVISION

PRODUCT CATALOGUE

DRIVE ELECTRONICS, SOFTWARE & INK AND FLUID DELIVERY SYSTEMS

DRIVE ELECTRONICS, SOFTWARE AND SUB-SYSTEMS FOR INDUSTRIAL PRINT SYSTEMS

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GIS DRIVE ELECTRONICS

GIS, through its cutting-edge electronic design and high-quality components, achieves exceptional waveform generation, precise monitoring, and digital control of printheads. Collaborating with leading printhead manufacturers, GIS delivers production-proven electronics for a wide range of industrial inkjet printers, including label presses, packaging systems, textile printers, and 3D additive manufacturing setups. Across the globe, GIS technology powers thousands of inkjet printheads in single-pass, multi-pass scanning, 3D, and custom-shaped configurations.

GIS Drive Electronics provide versatile, high-performance data path solutions that seamlessly support printheads from major manufacturers such as Epson, Fujifilm Dimatix, Konica Minolta, Kyocera, Ricoh, Riso Technologies, SII Printek and Xaar. Additionally, GIS maintains an ongoing development program to ensure compatibility with new printhead technologies.

At GIS, we foster collaborative partnerships with our customers. This, coupled with our industry-leading expertise, empowers you with the control and performance necessary for faster, smarter, and better printing. For expedited market entry, regardless of your application, choose GIS as your inkjet system partner.

PERFORMANCE

Each printhead within GIS's systems benefits from a dedicated high-speed channel. This channel ensures efficient delivery of print data precisely when needed, even in the most demanding printing applications. On-Board RAM provides robust buffering capability allowing specialized software drivers to seamlessly deliver continuous static and variable data streams to the printheads.

CONNECTIVITY AND SCALABILITY

Printhead Managers can be interconnected to drive large arrays of printheads, with full software configuration and master-slave architecture to simplify setup and maintenance.

DROP PLACEMENT CONTROL

Signal Managers support widely used encoders and handles Product Detect and PrintGo signals. Additionally, it offers per-printhead encoder division and sub-pixel adjustment, ensuring precise drop placement control and consistent results.

ADVANCED APPLICATIONS

The power to simultaneously drive multiple printhead technologies off the same system at different resolutions, opens up a world of possibilities for printer development and manufacturing.

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GIS PRINTHEAD ELECTRONICS PLATFORM

At GIS we provide all the components required to develop an industrial inkjet solution.

The GIS printhead drive electronics platform employs a robust combination of Signal Managers, Printhead Managers, Printhead Card Managers and Printhead Cards. These components work in unison to power a diverse array of industry-leading printheads. The outcome is a dedicated high-speed data path directly to the printhead, facilitating seamless delivery of print data and precise printhead control. This sophisticated system caters to the most demanding requirements of industrial inkjet applications.

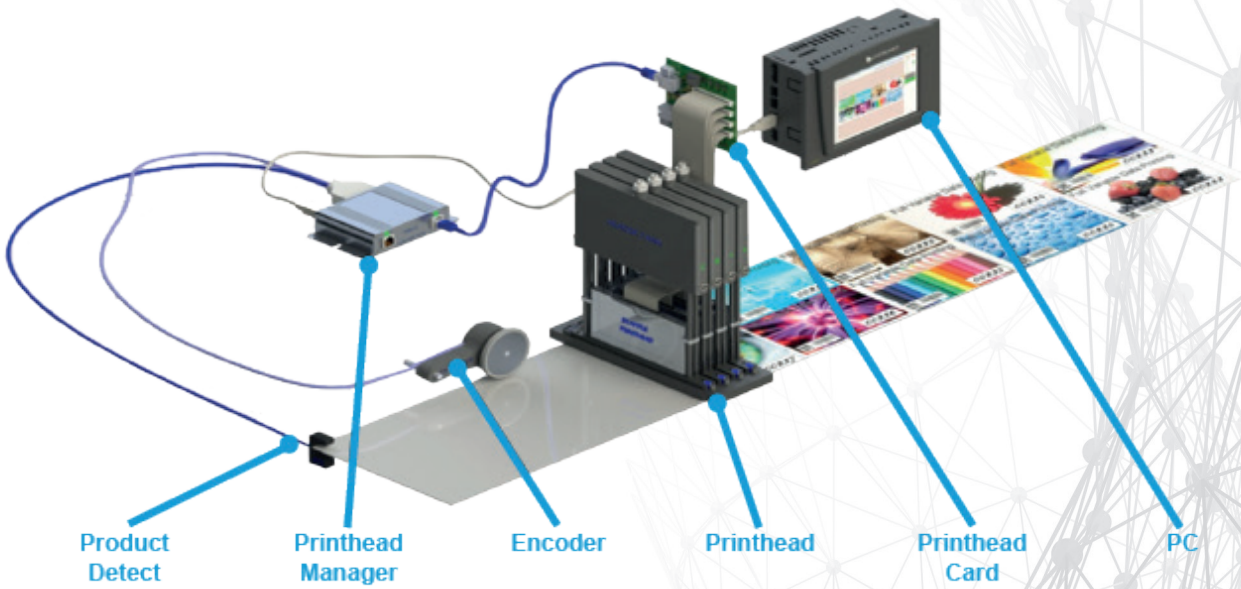
The GIS platform leverages a powerful combination of core technologies:

INTELLIGENT DRIVE ELECTRONICS: These form the backbone of the system, ensuring precise control over printhead operations. They facilitate seamless communication between the PC and the printhead, enabling high-speed data streaming

HIGHLY OPTIMISED RIP SOFTWARE: The RIP (Raster Image Processor) software plays a crucial role in translating complex image data into printable instructions. Our sophisticated RIP software ensures efficient data processing, colour management, and seamless integration with other components

SOPHISTICATED SYSTEM CONFIGURATION AND DIAGNOSTICS: Our platform is meticulously configured to handle diverse industrial inkjet applications. Advanced diagnostic tools allow for real-time monitoring, troubleshooting and optimisation.

The outcome of this synergy is a robust system that streams data from the PC to the printhead, delivering exceptional performance for even the most demanding printing tasks.



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SIGNAL MANAGERS




Feature	Compact System (PHCM-C2)	Large System (PHCM-C8-3)	Ethernet System (PHCM)	Advanced System (SM-200)
PC to PCM Comms (Mb/s)	USB 2.0 (370) Up to 2m length	USB 3.0 (2600) Up to 3m length	Ethernet 1Gb	Ethernet 1Gb
Channels	2 x 200Mb	8 x 400Mb	6, up to 1.3Gbps per channel	N/A
Max memory	64	4096	N/A	N/A
Encoder	RS422, NPN, PNP & TTL, 32 quad	RS422, NPN, PNP & TTL, 32 quad, isolated high speed	RS422, NPN & TTL, 32 quad, isolated high speed	RS422, NPN, PNP & TTL, 32 quad, isolated high speed
Product Detect	RS422 & TTL, 32 deep	RS422 & TTL, 32 deep	RS422 & TTL, up to 512 deep	RS422 & TTL, 512 deep
Maximum system size	No limit	No limit	No limit	No limit
Cable length	15m, RJ45/CAT 6A	15m, RJ45/CAT 6A	100m, RJ45/CAT 6A /Fibre	100m, RJ45/CAT 6A /Fibre
Encoder/ Product Detect Daisy Chain	Yes, RS422	Yes, RS422	Yes, RS422, NPN, TTL (3.3V up to 24V)	Yes, Fibre Optic
Dimensions (LxWxD, Weight)	100 x 80 x 20mm 85g	233 x 160 x 20mm 330g	140 x 100 x 35mm 320g	140 x 120 x 45mm 400g
Power requirements	12V (0.3-1.0A, use dependent on EMS)	24V (0.3-1.0A, use dependent on EMS)	24 to 48V (Up to 20A use dependent on EMS + number of attached PHCs)	24 to 48V (0.3-1.0A use dependent on EMS)

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SUPPORTED PRINTHEADS

Diamtix	Epson	Konica Minolta	Kyocera	Ricoh	Riso	SII	Xaar
S-Class	D3000	KM512	KJ-4A-AA	MH2XXX Gen4/4L	CF1	RC1536	1003
Q-Class Polaris Sapphire Emerald	S800	KM1024i	KJ-4A-TA	MH54XX Gen5	CF1L	RCE2560	Nitrox
Galaxy	S3200*	KM1024i SAE-C	KJ-4A-RH	MH5421F	CF1XL		2002
Nova		KM1800i	KJ-4B-QA	MH5220 Gen5S			Aquinox
StarFire SG600		KM1800i -C-2	KJ-4B-YH	MH53XX Gen6			
StarFire SG1024		KM1800i SHC-C	KJ4A/ B-0300	TH6310F*			
Samba G3L/G5L		KM1280i	KATANA KJ600-EX				
SkyFire SF600		KM1024a					

* Product to be released in 2024

Common features to all manager boards and cards:

- Binary and greyscale printing
- Configuration and PC driver software
- Printhead EEPROM read back
- High precision waveform
- Drive electronics temperature feedback on supported products
- Integrated encoder and product detect management
- Automatic thermal cutout
- Density and missing nozzles compensation
- Wide-range of interhead stitching and screeners
- Single-pass, multi-pass scanning, cylinder print, cones/cups/tubs
- In field firmware upgrade
- Easy mounting

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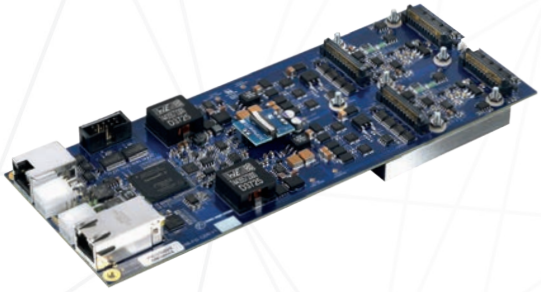
Dimatix FUJIFILM ™



	Printhead Card for Dimatix Samba (U)	Printhead Card for Dimatix SG1024 (U)
Supported printheads	Samba G3L/G5L	StarFire SG1024 (All variants)
Printhead Card Manager	Large (PHCM-C8-3)	Compact/Large (PHCM-C2 / C8-3)
Dimensions (L x W x D, Weight)	218 x 82 x 26mm, 311g	144 x 140 x 37mm, 515g
Power requirements	24V DC, 3A max	24V DC, 6.2A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm
Features	Drives up to 2 printheads Supports drive frequencies up to 100kHz Mezzanine and multi-pulse waveforms No print gap between labels	Drives up to 2 printheads Supports drive frequencies up to 50kHz Printhead heater centralised monitoring (±1ºC) Independent waveform shaping No print gap between labels
Software required	Print Server Atlas Professional for Print Server	Print Server Atlas Professional for Print Server

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Dimatix FUJIFILM ™

	Printhead Manager for Dimatix SG600 & SG1024 excl. Signal Manager (E)	Printhead Card for Dimatix SF600 & Samba (E)
Supported printheads	StarFire SG600 and SG1024 (All variants, exc. 2C models)	Skyfire SF600 & Samba
Printhead Card Manager	Not required	Ethernet (PHCM)
Dimensions (L x W x D, Weight)	300 x 96 x 38mm, 544g	159.2 x 40 x 35.7mm, 129g
Power requirements	24 to 48V DC, 20A max	48V DC, 3A max
Cable length	PC to Printhead Manager: Up to 100m Printhead Manager to Printhead: 400mm	PC to Printhead Card Manager: Up to 100m Printhead Card Manager to Printhead Card: Up to 1m Printhead Card to Printhead: 100mm
Features	Drives up to 4 printheads Supports drive frequencies up to 50kHz Printhead heater centralised monitoring (±1ºC) Compatible with GIS SM-200 Signal Manager for product detect and encoder signal support High-speed data channel No print gap between labels	Drives a single printhead Supports drive frequencies up to 250kHz Printhead heater centralised monitoring (±1ºC) Compatible with GIS SM-200 Signal Manager for product detect and encoder signal support No print gap between labels
Software required	Atlas Server Atlas Professional	Atlas Server Atlas Professional

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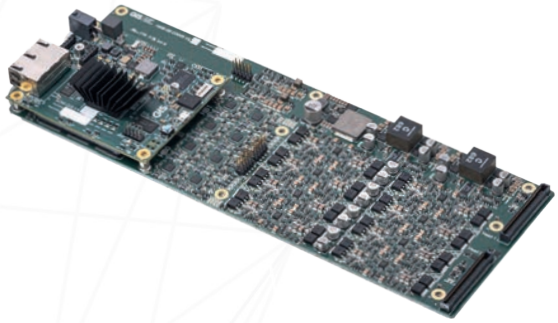
EPSON®



	Printhead Manager for Epson D3000 excl. Signal Manager (E)
Supported printheads	SE-D3000-A1R
Printhead Card Manager	Not required
Dimensions (L x W x D, Weight)	300 x 110 x 31mm, 487g
Power requirements	24 to 48V DC, 20A max
Cable length	PC to Printhead Manager: Up to 100m Printhead Manager to Printhead: Up to 400mm
Features	Drives up to 2 printheads Supports drive frequencies up to 63kHz Compatible with GIS SM-200 Signal Manager for product detect and encoder signal support No print gap between labels
Software required	Atlas Server Atlas Professional

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EPSON®

	Printhead Card for Epson S800 (E)
Supported printheads	S800 Series
Printhead Card Manager	Ethernet (PHCM)
Dimensions (L x W x D, Weight)	100 x 66 x 15mm, 73g
Power requirements	24 to 48V DC, 20A max
Cable length	PC to Printhead Card Manager: Up to 100m Printhead Card Manager to Printhead Card: 1m Printhead Card to Printhead: 100mm
Features	Drives a single printhead Supports drive frequencies up to 48kHz Compatible with GIS SM-200 Signal Manager for product detect and encoder signal support No print gap between labels
Software required	Atlas Server Atlas Professional

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KONICA MINOLTA

	Printhead Card for KM 1800i (U)	Printhead Card for KM 1024i (U)
Supported printheads	KM1800iSHC-C, KM1800i, KM1800i-C-2	KM1024i, KM1024iSAE-C, KM1280i
Printhead Card Manager	Compact/Large (PHCM-C2 / C8-3)	Compact/Large (PHCM-C2 / C8-3)
Dimensions (L x W x D, Weight)	140 x 140 x 15mm, 168g	90 x 137 x 22mm, 92g
Power requirements	24V DC, 5.7A max	24V DC, 5A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm
Features	Drives up to 2 printheads Supports drive frequencies up to 84kHz Printhead heater centralised monitoring (±1ºC) Waveform Manager for defining waveform pulses No print gap between labels	Drives up to 2 printheads Supports drive frequencies up to 62kHz Printhead heater centralised monitoring (±1ºC) Waveform Manager for defining waveform pulses No print gap between labels
Software required	Print Server Atlas Professional for Print Server	Print Server Atlas Professional for Print Server

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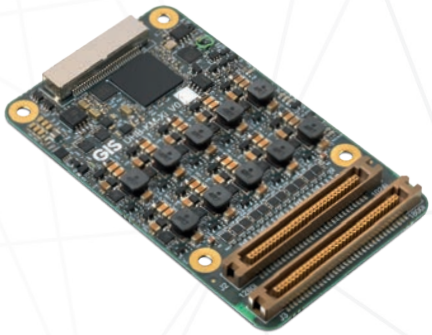
KONICA MINOLTA



	Printhead Card for KM 1024a (E)	Printhead Card for KM 1024i & 1800i (E)
Supported printheads	KM1024aSHE, KM1024aLHG-RC	KM1024i / KM1800i, KM1800i-C-2
Printhead Card Manager	Ethernet (PHCM)	Ethernet (PHCM)
Dimensions (L x W x D, Weight)	130 x 85 x 10mm, 118g	100 x 60 x 9mm, 66g
Power requirements	24 to 48V DC, 20A max	24 to 48V DC, 20A max
Cable length	PC to Printhead Card Manager: Up to 100m Printhead Card Manager to Printhead Card: 1m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 100m Printhead Card Manager to Printhead Card: 1m Printhead Card to Printhead: 300mm
Features	Drives a single printhead Supports drive frequencies up to 40kHz Printhead heater centralised monitoring (±1ºC) Compatible with the SM-200 Signal Manager for product detect and encoder signal support No print gap between labels	Drives a single printhead Supports drive frequencies up to 84kHz Printhead heater centralised monitoring (±1ºC) Compatible with SM-200 Signal Manager for product detect and encoder signal support No print gap between labels
Software required	Atlas Server Atlas Professional	Atlas Server Atlas Professional

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KYOCERA

	Printhead Card for Kyocera KJ4A -TA/RH (U)	Printhead Card for Kyocera KJ4A-0300 & KJ4B-0300 (U)
Supported printheads	KJ4A-TA, KJ4A-RH	KJ4A/B-0300 300dpi 30kHz
Printhead Card Manager	Compact/Large PHCM-C2 / C8-3)	Compact/Large (PHCM-C2 / C8-3)
Dimensions (L x W x D, Weight)	80 x 100 x 20.5mm, 60g	80 x 100 x 20mm, 85g
Power requirements	24V DC, 4A max	24V DC, 4A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm
Features	Drives a single printhead Supports drive frequencies up to 30kHz Clock 2 period settings Voltage trimming Waveform upload and read back Left and right nozzle bank voltage trim (±0.1V steps) Printhead heater centralised monitoring (±1ºC) No print gap between labels	Drives a single printhead Supports drive frequencies up to 30kHz Voltage trimming Waveform upload and read back Left and right nozzle bank voltage trim (±0.1V steps) Printhead heater centralised monitoring (±1ºC) No print gap between labels
Software required	Print Server Atlas Professional for Print Server	Print Server Atlas Professional for Print Server

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KYOCERA

	Printhead Card for Kyocera KJ4A-AA (U)	Printhead Card for Kyocera KJ4B-QA/YH (U)
Supported printheads	KJ4A-AA	KJ4B-QA/YH
Printhead Card Manager	Compact/Large (PHCM-C2 / C8-3)	Compact/Large (PHCM-C2 / C8-3)
Dimensions (L x W x D, Weight)	80 x 100 x 20.5mm, 60g	80 x 100 x 20.5mm, 60g
Power requirements	24V DC, 4A max	24V DC, 4A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm
Features	Drives a single printhead Supports drive frequencies up to 30kHz Clock 2 period settings Voltage trimming Waveform upload and read back Left and right nozzle bank voltage trim (±0.1V steps) Printhead heater centralised monitoring (±1ºC) No print gap between labels	Drives a single printhead Supports drive frequencies up to 30kHz Voltage trimming Waveform upload and read back Left and right nozzle bank voltage trim (±0.1V steps) Printhead heater centralised monitoring (±1ºC) No print gap between labels
Software required	Print Server Atlas Professional for Print Server	Print Server Atlas Professional for Print Server

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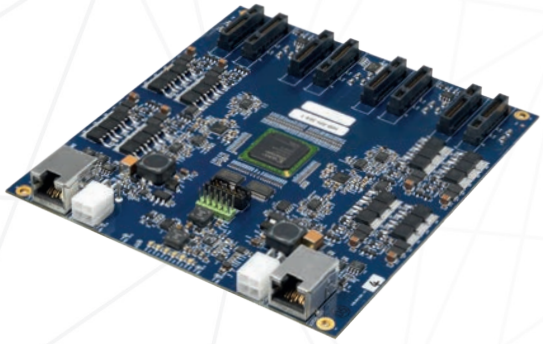
RICOH



	Printhead Card for Ricoh Gen4&4L (U)	Printhead Card for Ricoh Gen5&6 (U)
Supported printheads	Gen4, Gen4L	Gen5, Gen6
Printhead Card Manager	Compact/Large (PHCM-C2 / C8-3)	Compact/Large (PHCM-C2 / C8-3)
Dimensions (L x W x D, Weight)	160 x 144.5 x 23mm, 197g	100 x 120 x 29.2mm, 193g
Power requirements	24V DC, 4A max	24V DC, 3A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm
Features	Drives up to 4 printheads Supports drive frequencies up to 30kHz Printhead heater centralised monitoring (±1ºC) No print gap between labels	Drives a single printhead Supports drive frequencies up to 30kHz Printhead heater centralised monitoring (±1ºC) High quality trapezoidal waveforms 4 x fully independent waveforms Integrated air cooling system No print gap between labels
Software required	Print Server Atlas Professional for Print Server	Print Server Atlas Professional for Print Server

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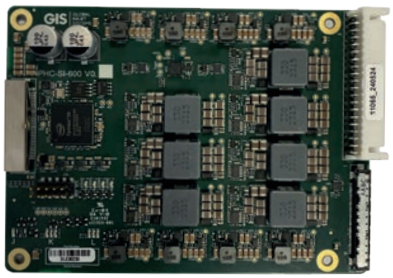
	Printhead Card for Riso Technologies 636M (U)
Supported printheads	CF1, CF1L, CF1XL
Printhead Card Manager	Compact/Large (PHCM-C2 / C8-3)
Dimensions (L x W x D, Weight)	145 x 100 x 15mm, 105g
Power requirements	24V DC, 8A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm
Features	Drives up to 4 printheads Supports drive frequencies up to 30kHz Left and right nozzle bank trim Printhead heater centralised monitoring (±1ºC) No print gap between labels
Software required	Print Server Atlas Professional for Print Server

SII
Seiko Instruments Inc.



	Printhead Manager for Seiko RC1536 excl. Signal Manager (E)	Printhead Card for Seiko RCE2560 (E)
Supported printheads	RC1536 - Ethernet	RCE2560
Printhead Card Manager	Not required	Ethernet (PHCM)
Dimensions (L x W x D, Weight)	210 x 135 x 38mm, 282g	130 x 95 x 15mm, 198g
Power requirements	24 to 48V DC, 20A max	24 to 48V DC, 4A max
Cable length	PC to Printhead Manager: Up to 100m Printhead Manager to Printhead: 300mm	PC to Printhead Card Manager: Up to 100m Printhead Card Manager to Printhead Card: 1m Printhead Card to Printhead: 300mm
Features	Drives up to 4 printheads Supports drive frequencies up to 37kHz Voltage trimming Waveform upload and read back Left and right nozzle bank voltage trim (±0.1V steps) Printhead heater centralised monitoring (±1ºC) No print gap between labels	Drives a single printhead Supports drive frequencies up to 40kHz Printhead heater centralised monitoring (±1ºC) No print gap between labels
Software required	Atlas Server Atlas Professional	Atlas Server Atlas Professional

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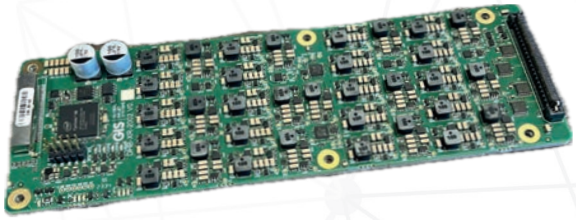
XAAR



	Printhead Card for Xaar 1003 & Nitrox (U)	Printhead Card for Xaar 2002 & Aquinox (E)
Supported printheads	1002, 1003, Nitrox	2002, Aquinox
Printhead Card Manager	Compact/Large PHCM-C2 / C8-3)	Ethernet (PHCM)
Dimensions (L x W x D, Weight)	98 x 100 x 15mm, 90g	200 x 66 x 20mm, 200g
Power requirements	24V DC, 4A max	24 to 48V DC, 20A max
Cable length	PC to Printhead Card Manager: Up to 5m Printhead Card Manager to Printhead Card: Up to 10m Printhead Card to Printhead: 300mm	PC to Printhead Card Manager: Up to 100m Printhead Card Manager to Printhead Card: 1m Printhead Card to Printhead: 300mm
Features	Drives a single printhead Supports drive frequencies up to 48kHz Left and right nozzle bank voltage trim (1/16V steps) Grey level drop count control and palette remap Supports Xaar's High Laydown mode Printhead heater centralised monitoring (±1ºC) No print gap between labels	Drives a single printhead Supports drive frequencies up to 36kHz Left and right nozzle bank voltage trim (1/16V steps) Grey level drop count control and palette remap Supports Xaar's High Laydown mode Printhead heater centralised monitoring (±1ºC) Compatible with GIS SM-200 Signal Manager for product detect and encoder signal support No print gap between labels
Software required	Print Server Atlas Professional for Print Server	Atlas Server Atlas Professional

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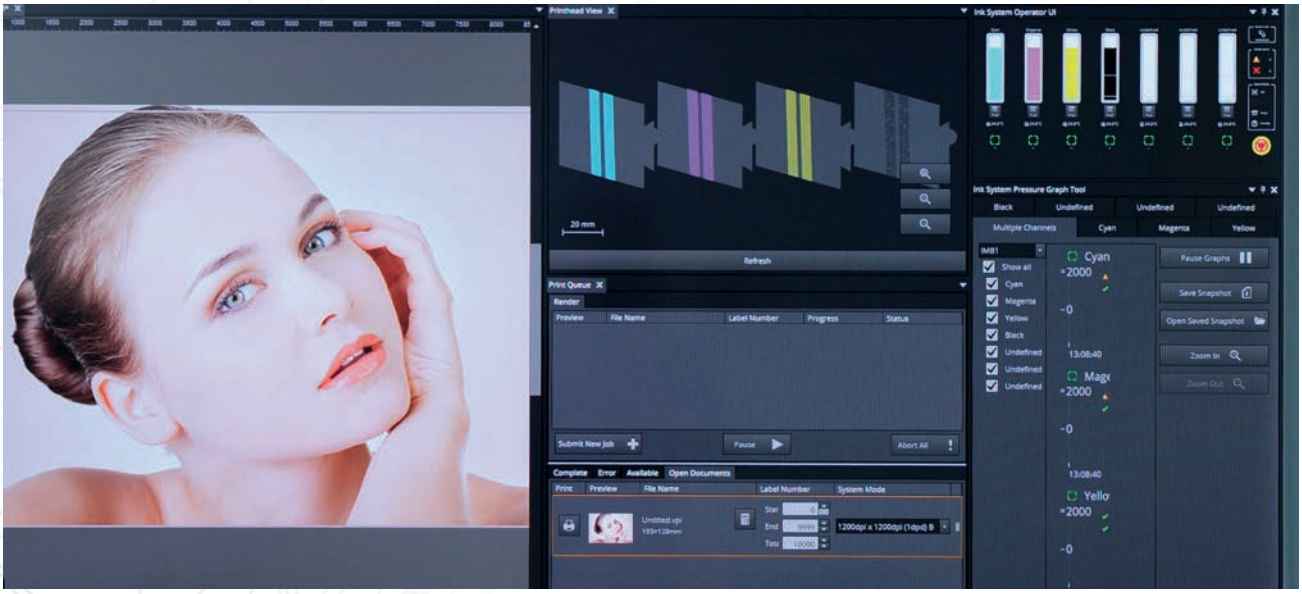
ATLAS SOFTWARE

Atlas is a software platform for the rapid development of industrial inkjet user interface and machine control systems. Atlas can control a complete machine or act as a component in larger systems. Its unique modular and open design allows you to customise, as well as to integrate additional tools to enable a quicker route to market for your product.

Developed by GIS using the latest Microsoft .NET platforms, Atlas comprises a flexible user interface platform (Atlas User Interface), as well as machine control services (Atlas Control Software), a powerful server technology for managing the entire printing and sub-system process.



A sample of the Atlas toolset features

RIP configuration

Provides control over the setup of the Atlas Server and GIS Print Server, including colour management, linearisation and screener settings.

Printhead view

Provides system developers with information about printhead alignment, nozzle bank ink mappings, nozzle enable.

System status

This tool provides live feedback to the user about the status of the Atlas Server and GIS Print Server. It has dimension sensitive rendering to fit into different aspect ratio dockings.

Job queue

Provides the end user with queues from which to set up jobs, start jobs, monitor print progress and abort jobs. Supports drag and drop or single click operation. Multiple queues for completed, available and error.

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Why Choose Atlas

Customisable

- Easy-to-implement language localisation
- Complete GUI control with the ability to create tools
- Integrate with third-party software
- Included supported languages – English, Dutch, French, German, Italian, Poilish, Spanish, Chinese, Korean and Japanese

Print Systems Integration

- Datapath / electronics
- Ink delivery / cleaning systems
- Vision, monitoring, verification
- Automation, motion, transport
- PLCs, heaters, dryers, UV curing
- RIP & Workflow (PDF, PDF/VT, JDF, VPI, TIFF, BMP)

Comprehensive Software Platform

- Software for end users, machine development, commissioning and support
- Single platform to cover many products
- Supports scanning, single pass, direct-to-shape and custom applications

Quick Route to Market

- Rapidly develop user interfaces using production ready components
- Enhance, restrict and customise components for your application
- Compatible with existing software / system platforms

Atlas Windowed UI

Atlas Operator UI

- Image Management
- Print Submission
- Job Manager
- Waveform Editor
- Ink System
- System Configuration
- and more...

Atlas Interface ⟷ Atlas Server

- Image Processing
- Datapath Management
- RIP
- Screening
- Colour Processing
- Print Swathe
- Nozzle Correction
- System Management
- and more...

ESKO fiery ATLAS READY

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SOFTWARE OPTIONS

The Atlas software platform from GIS is a suite of software solutions for industrial digital printing enabling rapid hardware configuration, tailored data management print paths, print quality optimisation, printer monitoring and print job management. Atlas Software Suite seamlessly integrates to deliver user interfaces, printhead drive electronics and ink delivery management systems and includes a range of specialised tools to manage the entire datapath from image to print.

	Product	Description
Digital Front End (DFE)	**Esko DFE**	Esko's DFE provides color management, trapping, and job management services. It's designed to enhance the efficiency of production workflows for digital presses.
	Fiery Impress	Fiery Impress, developed by EFI, offers advanced features such as colour management, image correction, media profiling, preflighting, load balancing, and variable data handling. It ensures fast processing speeds and helps identify and correct mistakes before printing.
User Interface, Configuration & Diagnostic Tools	**Atlas Professional**	This tool is essential for configuring and managing GIS Drive Electronics. It provides a user-friendly interface for setup and diagnostics.
	Atlas Production	Similar to Atlas Professional, Atlas Production assists in configuring and maintaining GIS Drive Electronics for seamless production.
Image Creation Tools	**Atlas Creator**	Atlas Creator is a powerful tool for creating and processing images. It's especially useful when working with variable data printing.
	Atlas Direct-to-Shape Studio	This tool enables direct-to-shape printing, allowing precise image placement on 3D objects.
Image Quality Optimisation	**Atlas IQ Tools**	These tools focus on optimising image quality. They help achieve consistent and high-quality prints.

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	Product	Description
RIP Servers	**Atlas Server**	A critical component for GIS Drive Electronics, Atlas Server handles RIP (raster image processing) tasks. It ensures efficient and accurate printing.
	Atlas PDF Server	This server processes PDF & PDF/VT files, optimising them for printing.
	Atlas Creator Server	Required when using GIS Atlas Creator, this server enhances image creation and processing capabilities.
Printhead Jet Development	**Atlas Drop Watcher**	Used for printhead jet development, the Atlas Drop Watcher monitors inkjet droplets during printing. It aids in fine-tuning print quality.
Additional Add-ons	**Cone and Cylinder Toolkit**	This toolkit likely assists with printing on conical or cylindrical surfaces.
	Camera-Based Image Alignment Toolkit	Helps align images accurately during printing.
	Real-Time Document Transformation Toolkit	Facilitates dynamic document transformations.
	Advanced Barcode Management	Manages barcode printing with precision.

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ATLAS PROFESSIONAL

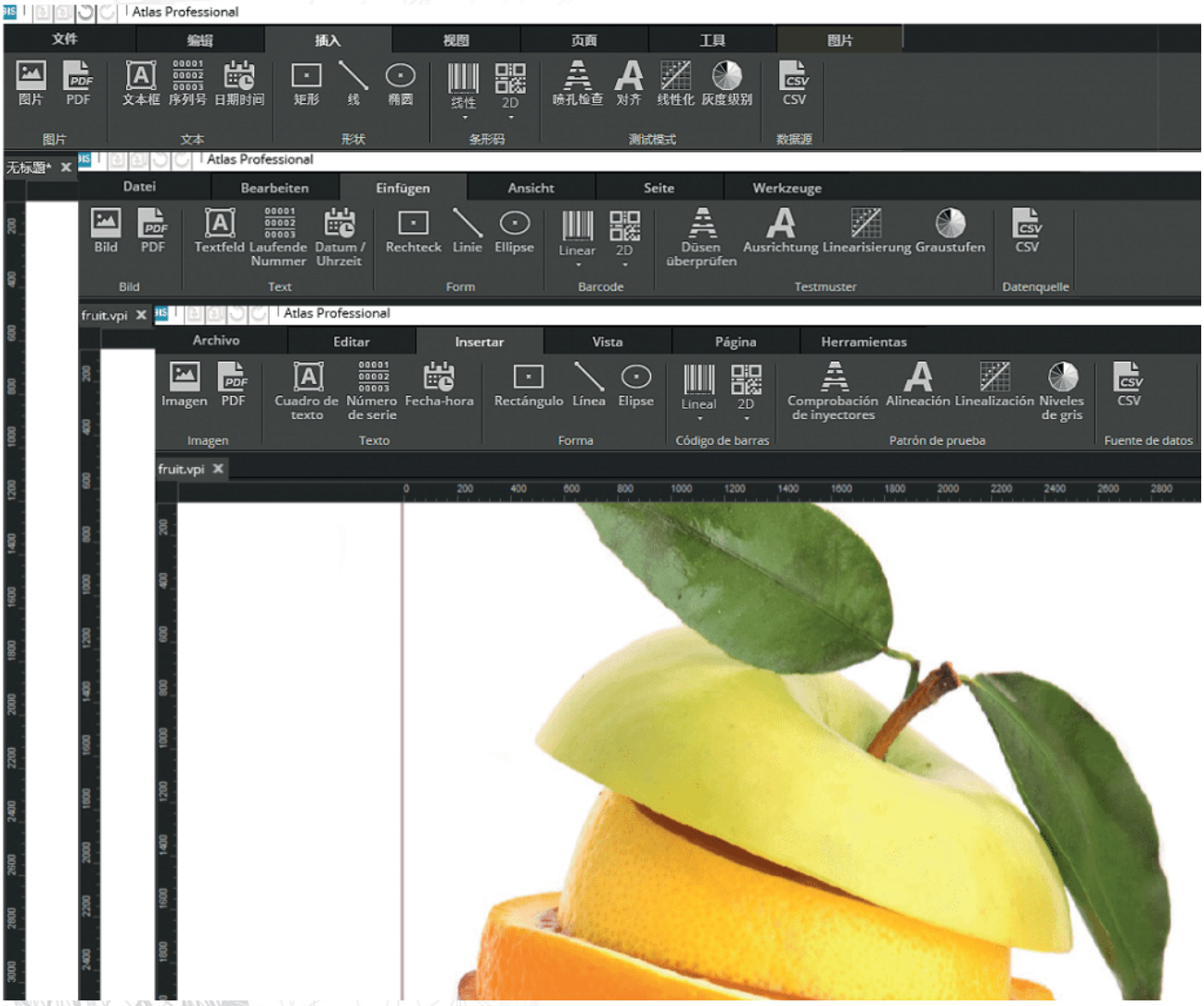
This modular, customisable, graphical User Interface (UI) provides a range of powerful tools, comprising:

Atlas Professional

Atlas Professional includes a powerful graphics design tool, allowing users to lay out and design complex images with variable content, and, via the GIS Software Development Kit (SDK), create their own user interface tools and functions to be incorporated into the Atlas Professional UI. Atlas Professional can be customised for different language and language variations, as well colour schemes to suit customer product branding.

Atlas Production

Atlas Production can be configured to determine which tools are to be included in the user interface, and is ideal for creating bespoke interfaces for machine deployment and shop floor applications.



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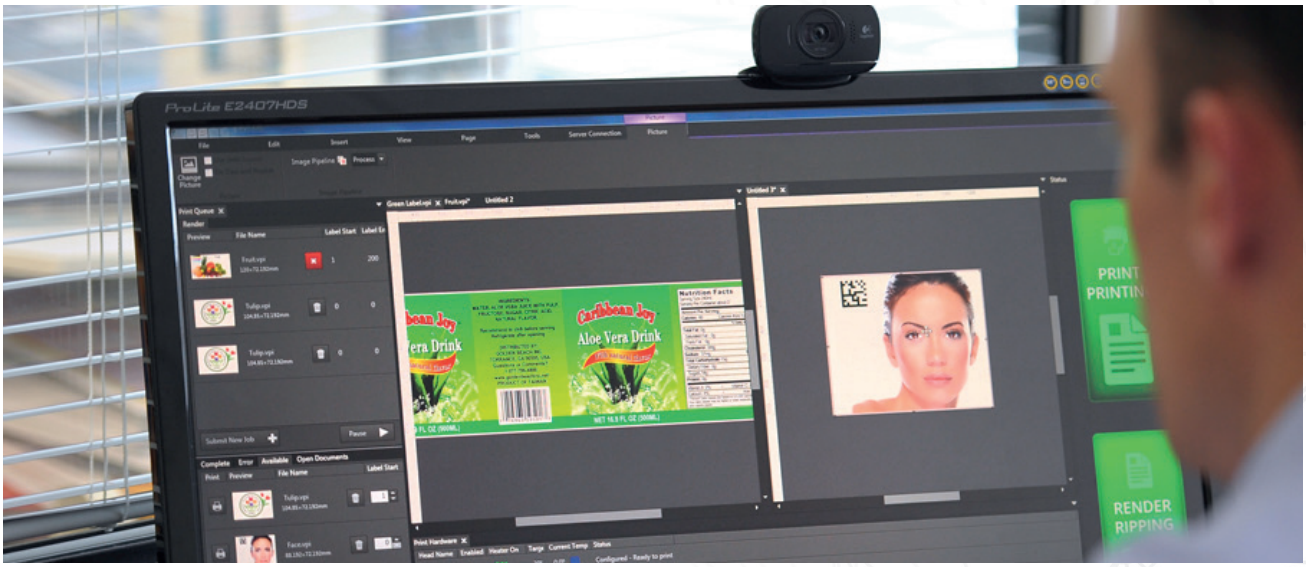
ATLAS SERVER



Atlas Server is a high-performance RIP engine providing image processing and hardware management for the wide range of printhead drive electronics and ink management systems offered by GIS. Built on an open interface standard, it enables images to be processed in numerous ways to achieve:

- Repositioning and sizing
- Back-to-back printing of jobs
- Missing nozzle compensation
- Nozzle density compensation
- Image screening
- Test pattern management
- Dynamic adjustment of image position
- Single pass and multi-pass printing
- Colour control

Users can also extend the functionality of Atlas Server to meet their own requirements using the GIS SDK. This functionality is:

- Supplied with industry-standard HTTP RESTful API
- Accessed using the open source Swagger framework interface on a standard browser
- Provided with client source code and project files for many languages, including C#, C# .NET 2.0, C++, Python and more

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ATLAS READY

What is Atlas Ready?

Atlas Ready is more than just a label; it's a promise. It signifies that a product or solution has successfully integrated with our powerful software platform, **Atlas**. But what does this mean for our partners?

Effortless Integration: By becoming Atlas Ready, your hardware and software seamlessly communicate with our inkjet ecosystem. Say goodbye to compatibility headaches and hello to streamlined workflows.

Enhanced Performance: Atlas Ready products benefit from the full might of our software suite. From user-friendly interfaces to precise machine control, your solution will operate at peak efficiency.

Market Advantage: Display the Atlas Ready badge proudly. It tells the world that your product is part of a global network committed to excellence in inkjet technology.

Why choose Atlas Ready?

Unified Solution: No more piecing together software from one provider, electronics from another, and ink supply components from yet another source. With Atlas Ready, you get a complete package.

Customisation: Atlas's modular and open design allows you to tailor your solution. Add components, enhance features, and create a unique offering for your customers.

Quick Route to Market: Atlas accelerates development. Rapidly build user interfaces, integrate additional tools, and get your product to market faster.

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SOFTWARE DEVELOPER KITS

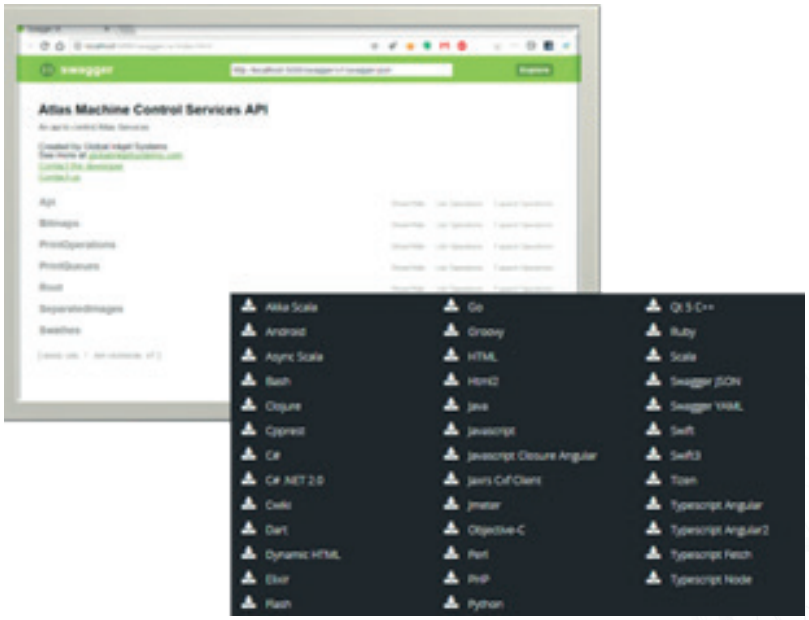
GIS offers a comprehensive range of Software Development Kit (SDK) components for both Atlas Professional and Atlas Server, enabling rapid bespoke print system development through access to the base programme and the ability to design and configure your required system elements. Create bespoke UIs to suit user profiles, machine configuration or application; connect print system components, and optimise your print system.

Developed with Microsoft Visual Studio .NET platform, GIS SDKs provide, for example, C# source code and project files.

Atlas Professional SDK

Design and configure your own UI tools with access to:

- Enhance, modify and change functionality
- Create new UI tools for one complete system
- Integrate with existing Atlas Tools



Atlas Server SDK

Design and configure your own Server components:

- Create drivers for any sub-systems
- Use existing Server platform technology
- Modify and enhance Server components
- Leverage existing Atlas Server functiions

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ATLAS IQ TOOLS

Image optimisation for your digital printing

Atlas Image Quality (IQ) Tools from GIS are a comprehensive software solution to optimise digital print performance. GIS works closely with its customers to optimise digital print performance. Now GIS brings its market-leading expertise to the suite of Atlas IQ software tools for image quality measurement and optimisation.

Minimise Defects

- Missing lines due to nozzle failures
- Nozzle-to-nozzle density variation
- Poor colour reproduction
- Grainy images
- Printhead-to-printhead banding

Tools

- Missing nozzle compensation
- Nozzle density compensation
- Ink channel linearisation and colour correction
- Screener selection and optimisation
- Tonal adjustments

Uses

- As independent tools within your current system
- Fully integrated with the Atlas Professional software platform
- Alongside software tools from GIS partners or third parties

Including Atlas IQ Tools on your digital printing press will enable your customers to optimise print quality and achieve superior print performance

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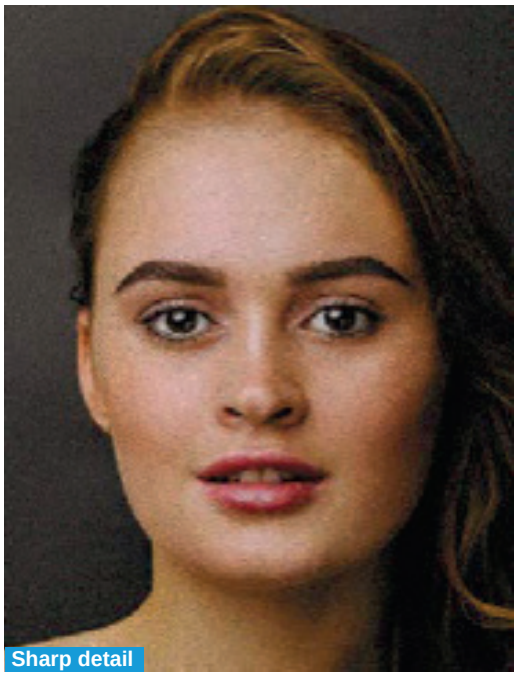
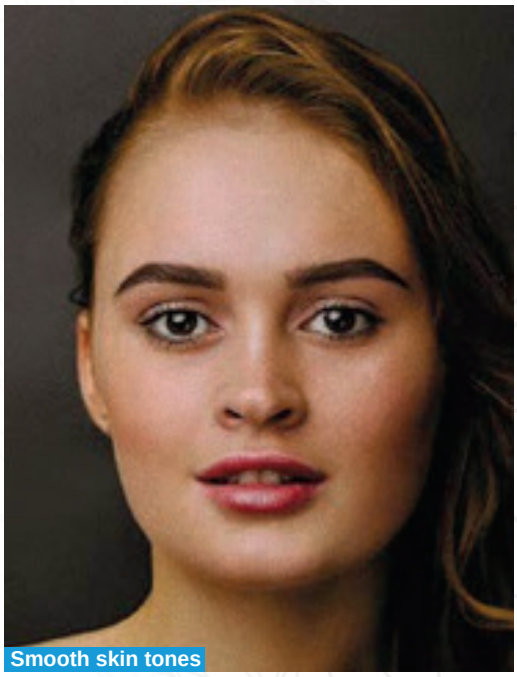
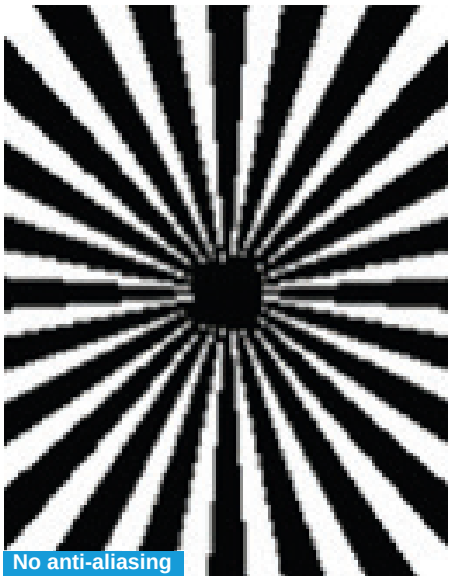
Screener Optimisation

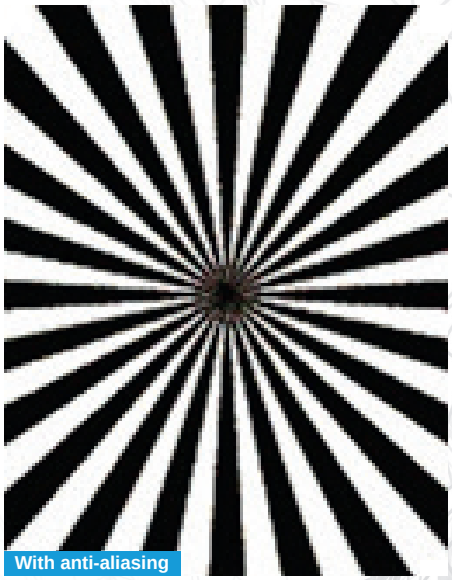
Ultra-fast binary and greyscale screeners are crucial to achieving the best image reproduction for the type of image being printed, allowing the best image quality conversion of contone images to produce smooth grey-level transitions while maintaining sharp line detail when working with a limited number of printhead grey levels.

GIS Screeners are the most optimised screeners on the market, allowing for inline RIP-on-the-fly to maximise press usage and profitability for the press operator. Once the screener type has been selected, the screener is optimised to achieve a smooth contone to grey-level mapping, full greyscale dynamic range and ink limiting.


Sharp detail


Smooth skin tones


No anti-aliasing


With anti-aliasing

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Missing Nozzle Compensation

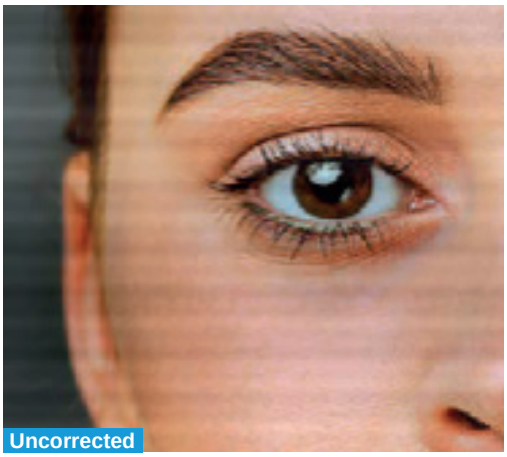
Missing Nozzle Compensation reduces the visibility of missing nozzles. It is tightly integrated with the screeners to maintain optimal performance. In an ideal world all printhead nozzles would be perfect; however, due the size and number within a printhead this is often not the case. Misalignment of or even blocked or damaged nozzles can be masked by software, thereby removing the tell-tale faint lines or missing lines in the final printed image.

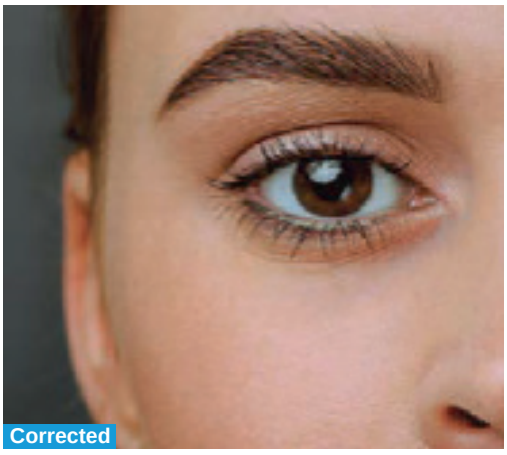
Missing Nozzle Compensation allows for neighbouring nozzles to be adjusted to compensate for those issues, thus significantly reducing the visibility of these artifacts and giving the impression that all nozzles are active.

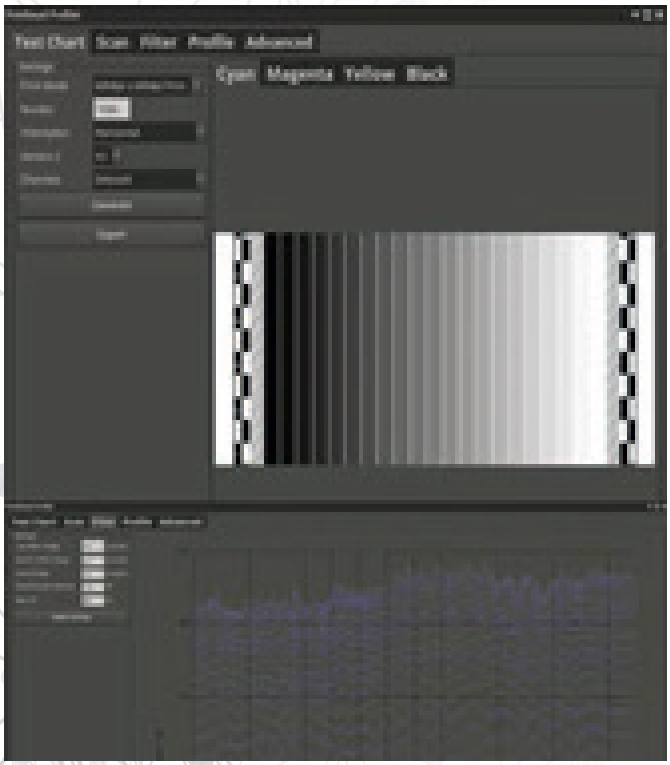
Nozzle Density Compensation

Nozzle Density Compensation adjusts every pixel in the original image with the aim of producing the same output print density for the same input density of the original image for every nozzle.

The application of the GIS Printhead Profiler image correction software can be tightly integrated with the screener software to achieve the fastest correction possible and maintain the highest possible performance of the datapath from original image file to printed output.







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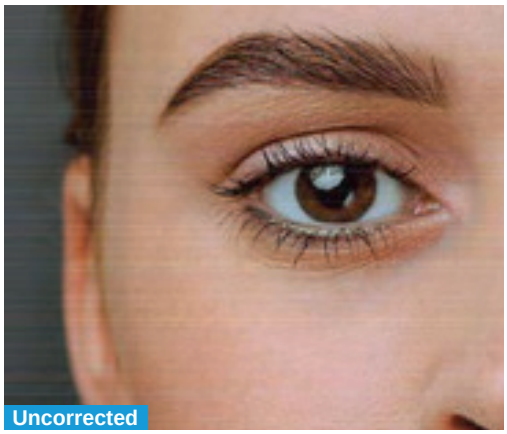


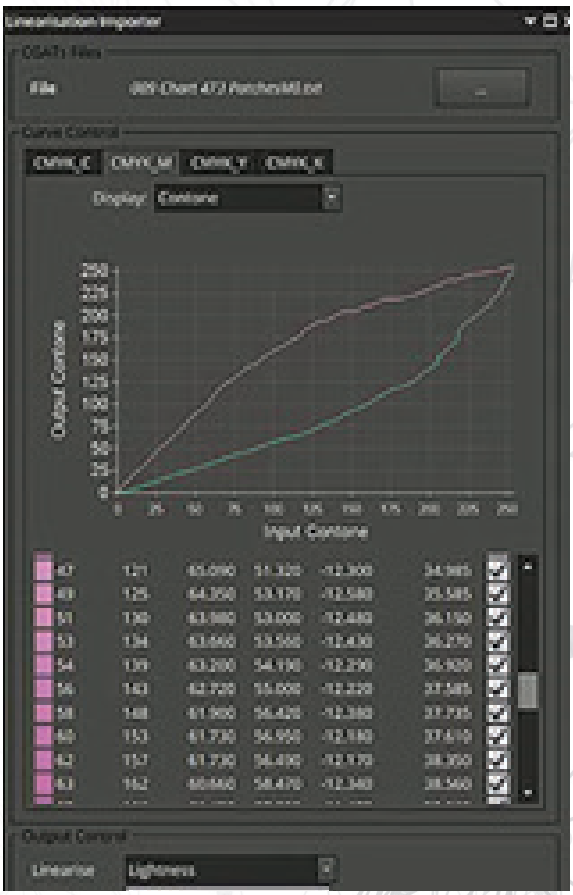
Colour Correction

Colour Correction profiling ensures that when process colour channels are used together, they accurately represent the intended output colour, as the combination of the process colours and laydown order can significantly affect the resulting printed output colour. As with Channel Linearisation, colour test charts are printed, and spectral measurements are made to calculate colour profiles such as the International Colour Consortium (ICC) profiles.

The linearisation and colour profiling processes are typically completed together. Each print mode (resolution, grey level, process colours, screener type, substrate, and print speed) will most likely need unique Channel Linearisation and Colour Correction profiles which are then applied to every printed image.

Channel Linearisation

Channel Linearisation needs to be performed on each process colour channel. This is achieved by printing individual channel linearisation test charts, measuring the printed charts with a densitometer resulting in the linearisation correction such as CGATS.



Colour Registration

Colour Registration is critical to accurate colour and repeatable colour reproduction and general image quality. GIS has a range of tools for printhead alignment that can be implemented during system configuration or dynamically during printing. Applications not only include colour channel registration but also additional varnish registration on pre-printed substrate.

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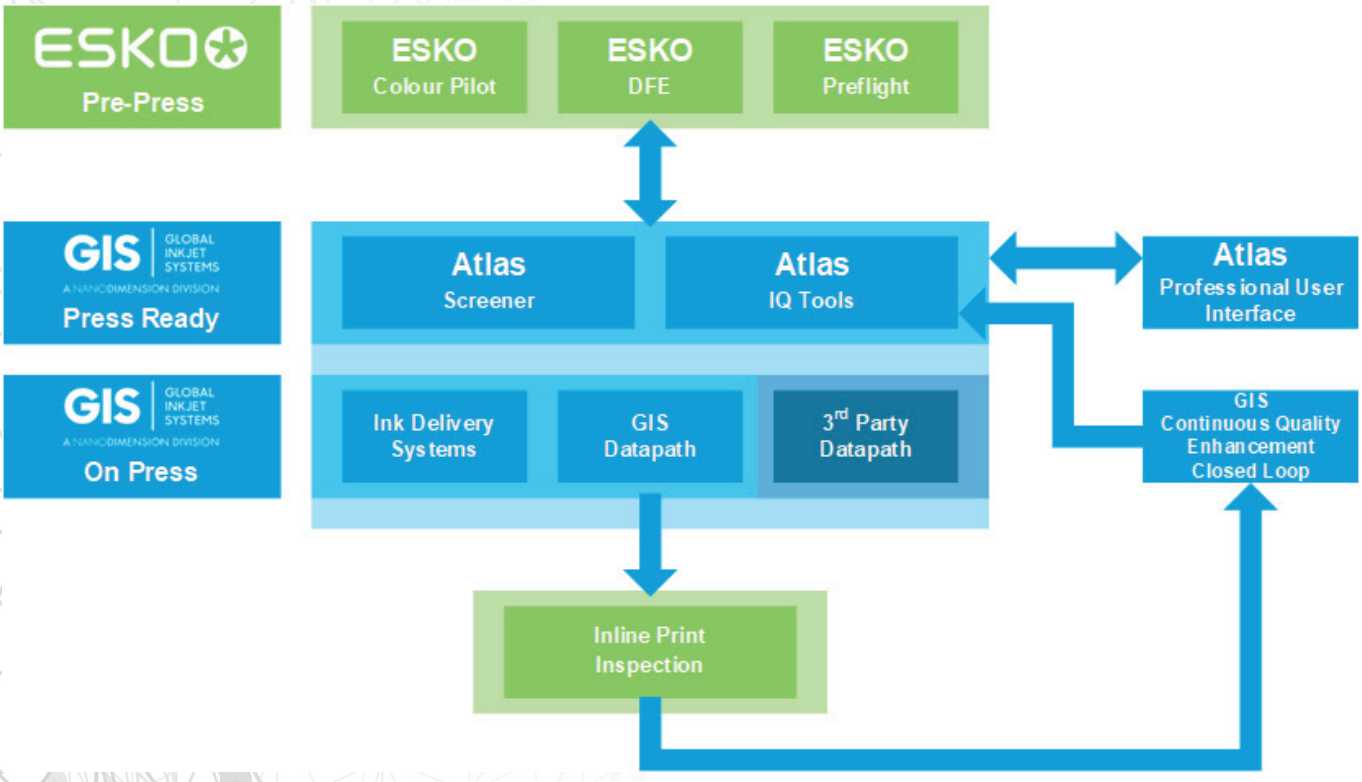
PACKAGING PRINT APPLICATIONS WITH GIS AND ESKO

Digital inkjet for packaging print is a fast-growing sector. The labels segment is the most well-established, but now inkjet is expanding into all packaging sectors: flexible, corrugated, folding cartons and containers (e.g. tubes, bottles).

GIS & Esko Collaboration – From Artwork to Print

The Esko DFE is a market-leading turnkey solution for digital print in packaging, including brand colour management with VDP and Adobe PDF workflow. GIS & Esko have collaborated to bring together the packaging workflow expertise of Esko with the inkjet expertise of GIS. GIS & Esko's complementary products and technologies mean that together we can uniquely offer the complete value chain solution from brand owner to ink drops on substrate.

By working together, GIS & Esko offer fully integrated end-to-end solutions - from print job creation to the optimisation of print quality through precise printhead control. Additional user interface (UI) capability is also available through the integration of both companies' components into a combined UI that meets end user requirements.



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GIS offers the Esko DFE as an integrated component with GIS Atlas software.

GIS supplies a pre-integrated linked Esko solution so that users have a complete, end-to-end workflow with system control to optimise and maintain print quality.

Users can combine all the functionality of the Esko DFE with GIS Atlas, accessing the processing power of GIS Screeners and the GIS Atlas IQ (Image Quality) tools.

The GIS Atlas Screeners and Atlas IQ tools are modular and can be fully integrated or standalone. They are also independent of the datapath underneath.

The modularity of GIS Atlas software means that it can drive any datapath.

This could be:

- GIS datapath
- 3rd party datapath (drivers required)
- Or if the existing driver technology supports Hot Folders, then GIS can print to the folder and no drivers are required

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ESKO SOFTWARE PLATFORM

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The Esko Digital Front End (DFE)

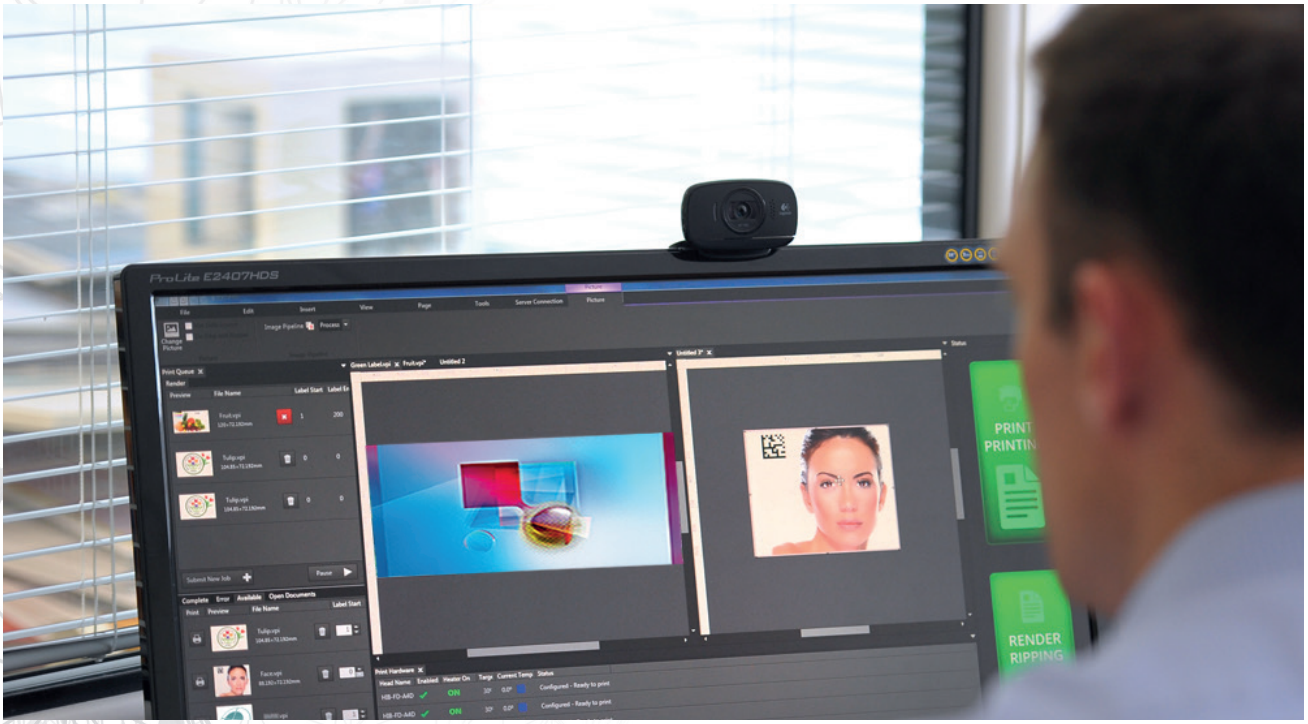
The Esko DFE enhances the performance and usability of a digital printing press, featuring:

- Adobe PDF Print Engine for fast, reliable, industry standard rendering of artwork
- Integrated colour management optimised for labels and packaging
- A simple wizard-driven interface that enables the accurate management of brand colours
- A layout processor that applies packaging step and repeat & print marks
- A VDP expansion processor for packaging variable data
- A controller which directs the flow of jobs through the Esko DFE components and stores parameters configurations, etc.
- A user-facing configuration, job monitoring, status, and control tool that interfaces to the workflow server on the Esko DFE

The GIS Ecosystem

GIS Atlas seamlessly takes the Esko job information to create an optimised final printed image, featuring:

- Multiple screeners to produce the highest print quality
- Highly configurable print modes to control resolution (dpi), greyscale depth, greyscale mapping, colour channels and print queue
- Range of print to file and folder processing options
- Open Server interface for customer DFE integration
- Printer job queue management
- Print system design and configuration tools
- Print quality optimisation tools including nozzle normalisation and density correction
- Full integration with GIS drive electronics supporting industry leading inkjet printheads



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GIS TEAMS UP WITH FIERY

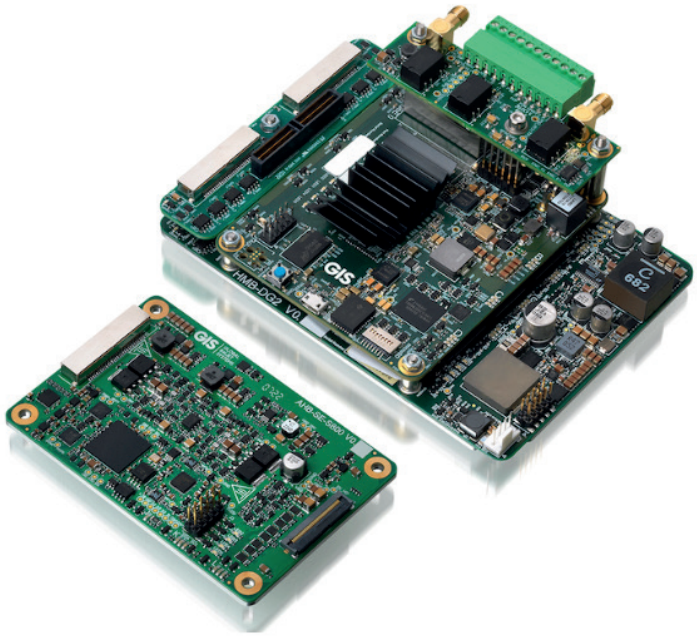
Global Inkjet Systems (GIS) and Fiery offer an existing turnkey integration, that reduces the development effort required to get customers in production, fast.

Essentially the idea is to combine the Fiery Impress DFE and GIS printhead drive electronics together with the GIS Atlas software platform. That would enable the two companies to offer a turnkey Solution to OEM press manufacturers that includes colour and workflow software, hardware, and support that can all be tailored to that OEM's requirements.

Fiery developed the Impress DFE specifically to give vendors building industrial inkjet presses a software option since most of its front ends up to that point were aimed at the graphic arts market.

It's primarily aimed at label and packaging applications, including inline manufacturing lines. It's able to run on a variety of different hardware platforms and this allows it to cope with everything from entry-level up to high volume inkjet by selecting the right server configuration.

In addition, GIS will now offer Fiery Impress, to its customers, alongside its existing range of Atlas software. GIS has developed this combination of the AHB-SE-S800 analogue board with the PHMC-DG2 Ethernet Printhead Management Card to drive Epson's S800 printheads.



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Industry-leading DFE for industrial inkjet presses

Build an even more competitive press with a complete, flexible, and scalable workflow solution that includes an affordable, turnkey DFE for your industrial inkjet press or inline manufacturing lines.

Impressive results

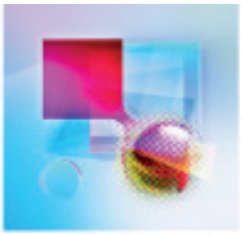
With the Fiery Impress DFE, you can build an even more competitive press with an integrated solution that includes optimised software, hardware, and support to add digital capabilities to your industrial inkjet press, and deliver a faster return on investment.

Whether you're an industrial inkjet equipment vendor or a provider of single manufacturing lines that need to add variable data with a print bar, Fiery Impress will let you quickly and efficiently expand your digital offerings and provide your customers with high quality and accurate output.

Fastest time to market

With Fiery Impress, complex integration projects are a thing of the past. You'll be ready to go to market in weeks instead of months, and Fiery Impress will deliver:

- Print-ready files on day one of integration
- Consistent, predictable results for customers by using a DFE with industry-standard native Adobe PDF Print Engine processing and that's ready for PDF 2.0



Adobe PDF Print Engine

Built for the markets you serve

With Fiery Impress, match the performance and capability your industrial inkjet press or manufacturing line needs with a turnkey solution that includes software, hardware, and support. If your press can print it, we can drive it with unsurpassed excellence – in productivity, quality, and scalability.

- Packaging
- Industrial applications
- Textile
- Commercial printing

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Impress with a complete solution

Each Fiery Impress DFE can be completely customised to your specific workflow needs.

For customers that need to supplement an existing workflow, Fiery Impress offers a wealth of capabilities throughout the print process — from file preparation and submission, colour management, inspection system integration, on-the-fly imaging correction, and workflow automation to cloud analytics, integration with business systems, and more.

Fiery Impress delivers a comprehensive set of integrated products that helps manufacturing facilities produce more from their presses with streamlined and automated workflows.

Solutions sized to fit

Fiery Impress is an integrated, specialized, hardware and software solution that optimises performance, security, and reliability. Three different solution platforms includes a wide range of standard and optional capabilities so you can customise your solution to the exact requirements of your market.

Fiery NX Premium

Fiery NX Pro

Fiery XB

Solution platforms are selected based on:

- Streaming output requirements
- Press speed
- Number of colors
- Resolution
- Media size supported
- Anticipated run lengths
- Need for variable data

Produce rapid, RIP-while-printing streaming output. Proprietary FITS (FieryPath Image Transfer Service) technology sends variable data content directly to the printhead electronics, delivering maximum performance combined with ease of implementation for high-volume, continuous-feed digital presses. Whether you are building an industrial inkjet press, or integrating inkjet print bars into an inline manufacturing solution for application of variable data, Fiery Impress is the ideal approach that will help you meet customer needs, get to market quickly, and offer the ability to scale over time.

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ADVANCED & ADDITIVE MANUFACTURING

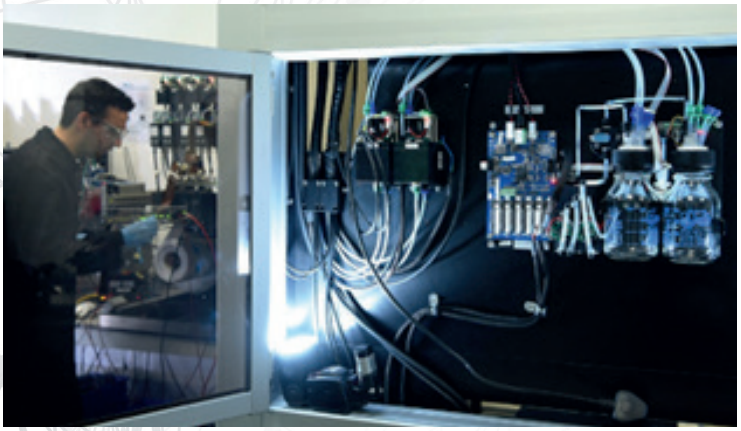
GIS is an established supplier to the Advanced and Additive Manufacturing (AM) market and supports a wide range of printheads from major manufacturers, including Epson, Fujifilm Dimatix, Konica Minolta, Kyocera, Ricoh, Riso Technologies, SII Printek and Xaar, allowing you to choose the printhead most suitable for your application needs.

We have field-proven expertise in AM markets, including 3D, printed electronics, display and other deposition of functional fluids.

Our 3D and AM inkjet enabling technology with precise, stable materials deposition and accurate jetting can help yield a quicker route to market.

GIS supplies scalable components suitable for developing systems from prototype through to production, allowing developers to progress from initial waveform development and system control through to full system design with the same electronics and learned knowledge.

High Quality Printing comes from High Quality Fluid Control



GIS provides a range of fluid delivery components – control electronics, software and peripherals – including header tanks, pressure control modules, degassers, inline heaters and filters. Special attention is paid to managing and maintaining fluid temperature and pressure.

GIS also offers a family of header tanks with scalable design that are specifically designed with the correct offsets for different printheads.

GIS additionally supplies an optional PEEK header tank and stainless-steel header tank for more challenging fluids and for extended materials deposition compatability. All designs are scalable for small and large printhead arrays.

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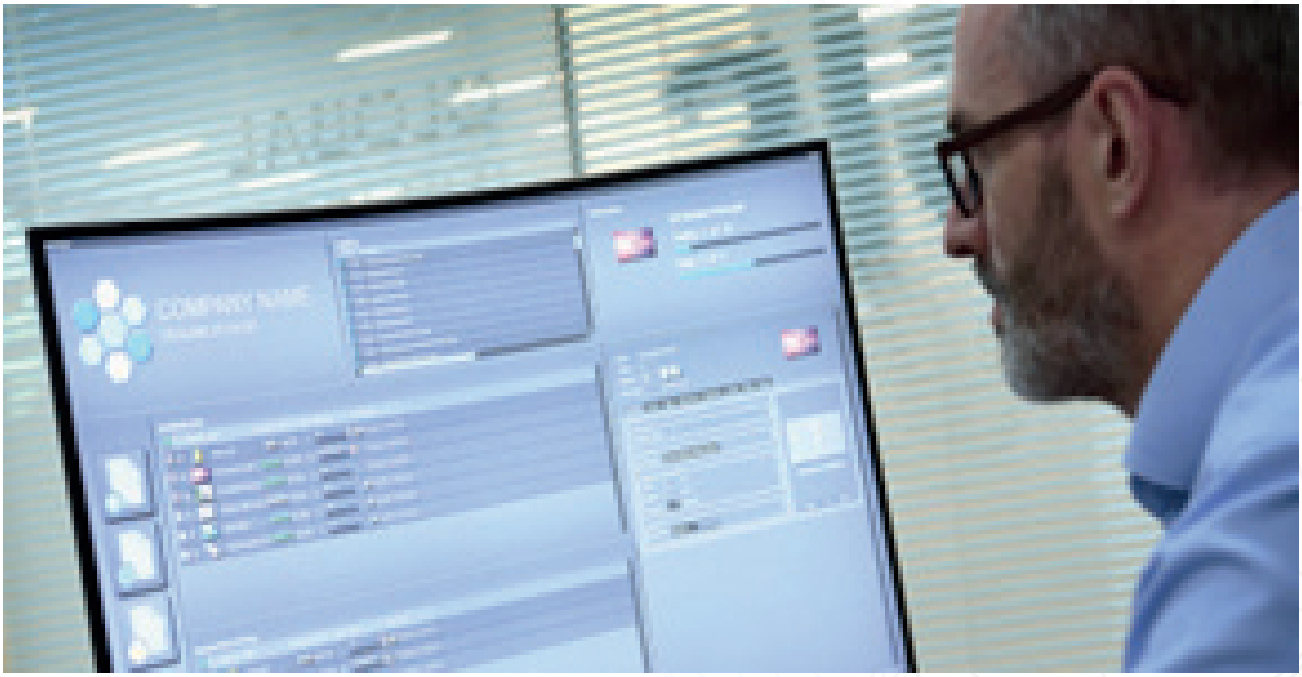

Control and Integration

The GIS Atlas Software Suite offers a range of software solutions designed to deliver performance, stability and flexibility to meet the requirements needed by a wide range of customers and applications for industrial print.

This includes Atlas IQ tools comprising screeners, nozzle density and missing nozzle compensation, along with colour management and print output simulation for more unifiorm coating laydown, providing a seamless digital workflow and user interface.

GIS Atlas software is modular – allowing customers to use as much or as little capability as needed.

Your trusted prototype to production partner

GIS can decrease your time to market and reduce your development costs. With over 15 years of inkjet experience, the company's development teams and technical support engineers can assist in optimising your chosen printhead and system performance.

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AUTOMOTIVE APPLICATIONS

Printing and coating onto complex shapes

Using inkjet technology for directly coating or applying graphics to automotive parts printing can open new markets, simplify production processes and reduce cost.

The precise drop placement of inkjet printing means that processes can be simplified, and material use reduced. Imagine no need for the manual application of masking tape; costly and time-consuming setup can be eliminated.

Inkjet uses drop-on-demand digital control, which means that it can print exactly the areas intended for printing or coating. Customised or even personalised graphics can be economically viable, while hard coat overspray wastage is dramatically reduced.

GIS inkjet technology partner

- Expert in direct-to-shape printing using inkjet technology
- Inkjet subsystem supplier - all essential software, drive electronics and fluid system components with industry-proven performance and reliability
- Software provider - Atlas Direct-to-Shape Studio for optimised coating or decoration of complex shapes
- Development partner - expertise and partnerships to bring your project to fruition

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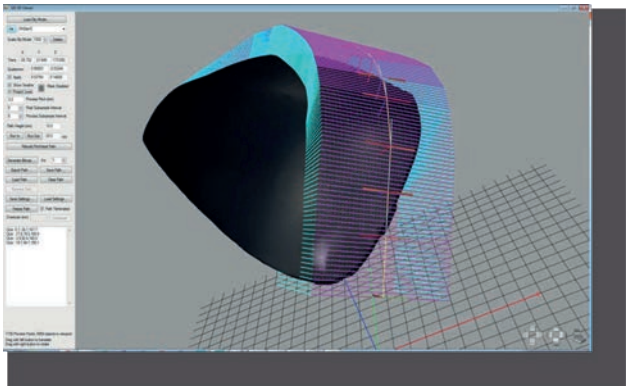
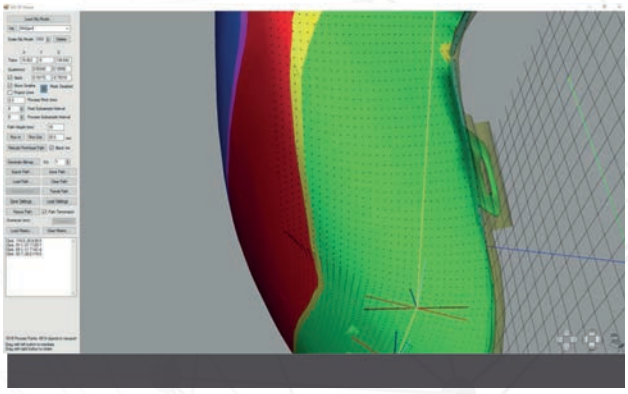
GIS Atlas Direct-to-Shape Studio - complex shape inkjet printing software

To coat or decorate complex parts, GIS has developed the Atlas Direct-to-Shape (DTS) Studio, which enables you to use inkjet efficiently and accurately to apply protective hard coats or graphics to vehicle components. Atlas DTS Studio provides various tools, including Print Path Designer to define how the object will be printed or coated; and Digital Mask Editor to specify masking to specific areas of the shape for selective coverage, while protecting areas that must not be printed. The Atlas DTS Studio software also features drivers to export print and transport data to the inkjet printhead and robotic handling systems. The software can also be used with either the shapes or the printheads mounted onto the robot arm, so component size is not a limiting factor.



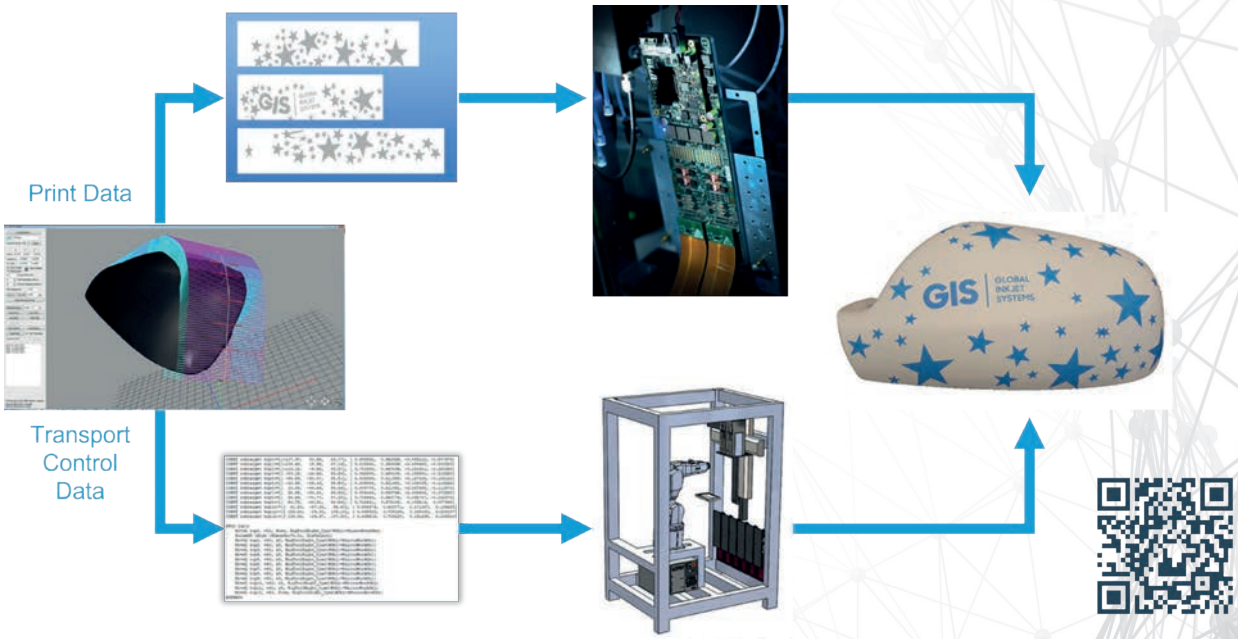
GIS Print Path Designer



GIS Digital Mask Editor

GIS innovation partner

Working with your chosen integrator or by introducing you to a suitable integrator, GIS can enable the integration of inkjet into your production process. With over 15 years of inkjet experience, GIS has assisted manufacturers from a wide range of industries to benefit from the capabilities and flexibility of industrial inkjet printing. With proprietary software, electronics, and fluid systems, GIS is the leading complete solution provider for industrial inkjet sub-systems.



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GIS INK AND FLUID DELIVERY SYSTEMS

GIS delivers production-proven ink delivery systems for a wide range of industrial inkjet printers, including label presses, packaging systems, textile printers, and 3D additive manufacturing setups. Across the globe, GIS technology powers thousands of inkjet printheads in single-pass, multi-pass scanning, 3D, and custom-shaped configurations.

The GIS ink deliver platform leverages a selection of modular sub-assemblies to be able to create a versatile scalable high-performance solution that support printheads from major manufacturers such as Epson, Fujifilm Dimatix, Konica Minolta, Kyocera, Ricoh, Riso Technologies, SII Printek and Xaar. Additionally, GIS maintains an ongoing development program to ensure compatibility with new printhead technologies and novel customer applications.

The GIS ink delivery system comes with a GUI, which can control the ink delivery systems status in terms (Idle/Flow/Standby). It can be used to set the meniscus pressure and the differential pressure in individual ink channels.

More detailed configuration is also supported enable items such as more channels, defining purge parameters and system time outs.

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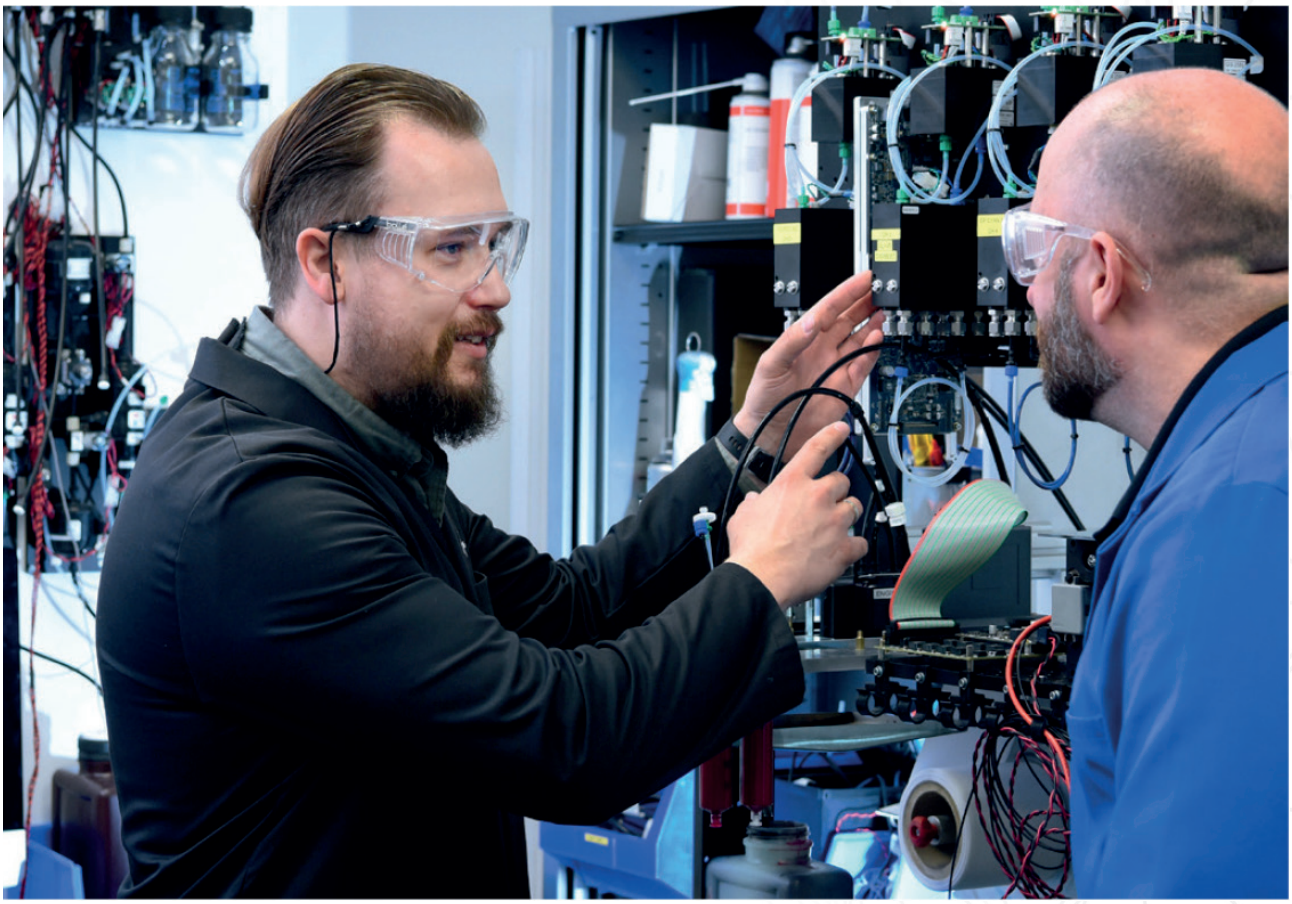

Monitoring and Control

The supply, monitoring and control of inks and fluids is a vital factor in maintaining digital print quality. Ink / fluid pressure, temperature and flow rates need to be kept stable to ensure a consistent quality print from startup to shutdown.

GIS offers key components - including electronics, software, header tanks and pressure control systems - for your ink / fluid delivery system.

Reduced time to market

With many years of product development and proven customer solutions, GIS has the capability to rapidly configure systems to meet customer requirements in a wide range of applications.

GIS can offer design and development of tailored systems for your application, providing you with the flexibility to integrate complementary components into the final design.

By working with GIS, you can draw on this experience and reduce your time to market.

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SUPPORTED PRINTHEADS

GIS can support a wide-range of printhead and fluid combinations, if the specific product of interest isn't shown please contact us to discuss.

Printhead	No Flow	Low Flow	Controlled Flow	High Pressure
Dimatix Samba G3L/G5L	✗	✗	✓	✓
Dimatix StarFire SG1024	✗	✓	✓	✓
Dimatix StarFire SG600	✗	✓	✓	✓
Dimatix Sapphire 256	✓	✓	✗	✗
Dimatix SkyFire SF600	✗	✗	✗	✓
Epson S800 / S3200 / D3000	✗	✗	✗	✓
Konica Minolta 512 / 1024i	✓	✓	✓	✗
Konica Minolta 1280i	✓	✓	✓	✗
Konica Minolta 1024A	✓	✓	✓	✗
Konica Minolta 1800i	✓	✓	✓	✗
Kyocera KJ4A	✓	✓	✓	✗
Kyocera KJ4B	✓	✓	✓	✗
Kyocera Katana KJ600-EX	✓	✓	✓	✗
Ricoh GH2220	✓	✗	✗	✗
Ricoh Gen4/4L	✓	✓	✓	✗
Ricoh Gen5 / Gen5S / Gen6	✓	✓	✓	✓
Ricoh Gen5F	✗	✗	✓	✓
Ricoh TH6310F	✗	✗	✗	✓
Riso CF1/CF3	✗	✓	✓	✗
Seiko RCE2560	✗	✗	✗	✓
Seiko RC1536	✗	✗	✗	✓
Xaar 501 / 502	✗	✗	✓	✓
Xaar 1003 / Nitrox	✗	✗	✓	✓
Xaar 2002 / Aquinox	✗	✗	✓	✓

✓ Optimal ✓ Optional ✗ Not supported

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SYSTEM COMPARISON

Feature	No Flow	Low Flow	Controlled Flow	High Pressure
Recirculation	No	Yes	Yes	Yes
Recirculation control	No	Gravity driven	Pneumatic control of two pressure environments	Pneumatic control of two pressure environments
Asymmetric pressure control	No	No	Yes	Yes
Max inlet pressure	0	0	0	400mb
Max outlet pressure	-200mb	-200mb	-200mb	-400mb
Meniscus stability	±2mb typical	±2mb typical	±2mb typical	±2mb typical
Degassing (optional)	No	Yes	Yes	Yes
Header tank heating (optional)	20W heater mats 50W heater car-tridge	20W heater mats	No (heater mats as active insulation optional)	No (heater mats as active insulation optional)
Fluids supported	UV, Aq, Oil, Functional fluids*	UV, Aq, Oil, Functional fluids*	UV, Aq, Oil, Functional fluids*	UV, Aq, Oil, Functional fluids*
System interface	Atlas GUI, Customer own (CoAP), Telnet	Atlas GUI, Customer own (CoAP), Telnet	Atlas GUI, Customer own (CoAP), Telnet	Atlas GUI, Customer own (CoAP), Telnet
System connection	RJ45	RJ45	RJ45	RJ45
Power supply	24V DC	24V DC	24V DC	24V DC

* Based upon materials compatibility

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SPECIFICATION & FEATURES

System Specification

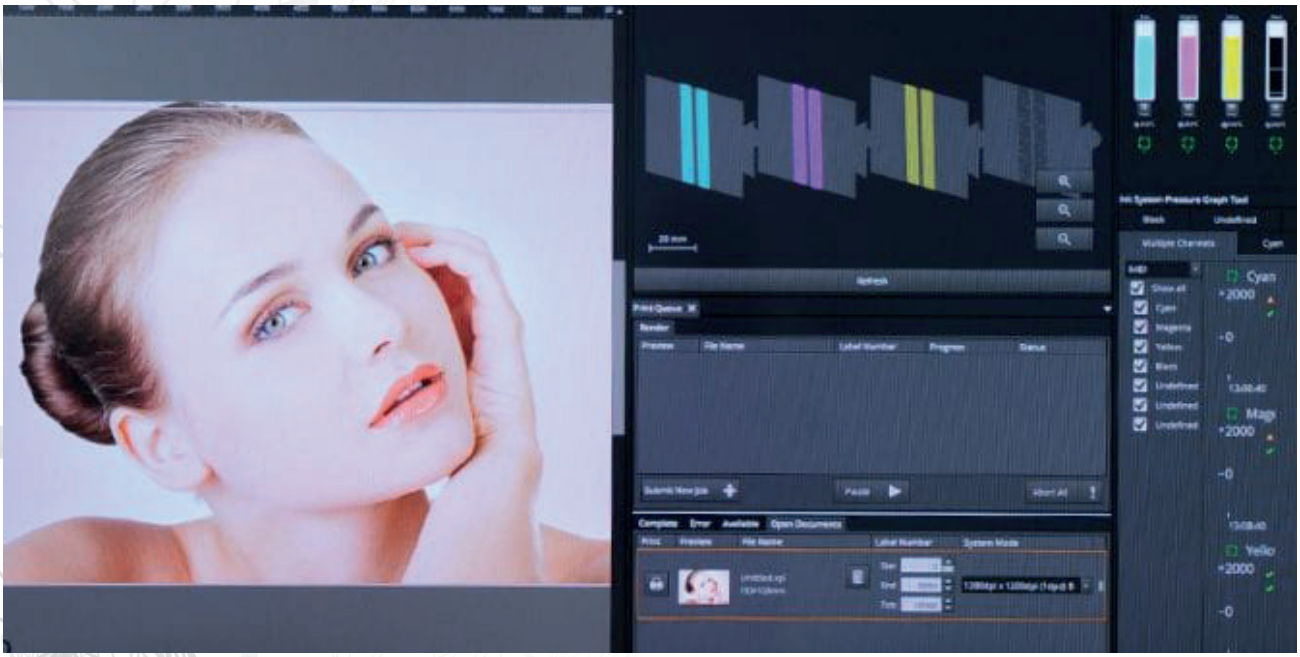
Using an integrated user interface and central control logic, the modular components supplied by GIS can be used as building blocks to develop bespoke systems, enabling complete control for specific system requirements. All parts are scalable, allowing GIS to offer tailored solutions for industrial inkjet systems of any size, from R&D laboratory setups to full-system production.

System optimisation is achieved through the following:

- Each ink control board controls up to 6 x inks / fluids independently, keeping system electronics to a minimum, easily scalable for additional inks / fluids
- Tanks are capable of supporting multiple printheads and can be configured for no flow, low flow, adjustable flow or high pressure printheads
- Ink / fluid temperature control management, without hot spots and thermostatically monitored to ensure ink viscosity is maintained

Atlas Pro UI

GIS ink / fluid delivery systems are fully compatible and integrated with Atlas Pro to give an easy-to-use User Interface (UI). The UI provides the machine operator with complete control, configuration and real time monitoring of the ink / fluid delivery system, allowing for fluid and temperature level warnings to be set and monitored, while outputting warning signals to both screen and beacons for system status or warnings.



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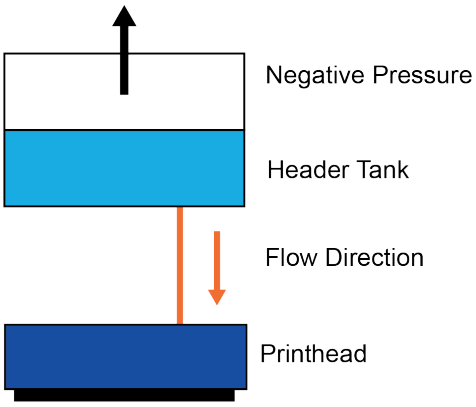
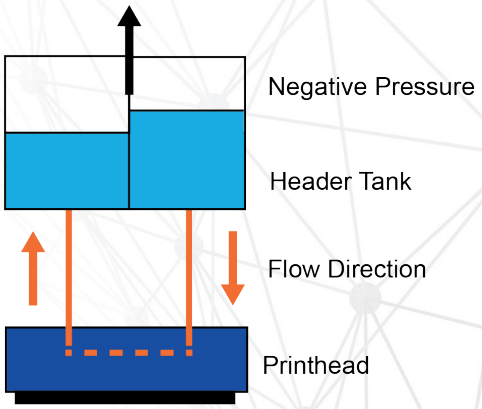
System Features

- Flow Modes
  - > No flow
  - > Low flow
  - > Controlled flow
  - > High pressure flow
- Fault detection
- Individual fluid purge control
- Heater integration
- Standard and customised header tanks
- Single or multicolour / multi-fluid configuration
- Up to 6 fluid channels per control card
- Easy (no drain) printhead change
- Bespoke system design service
- Complete system or individual components
- Stainless steel, PEEK or PET-P header tank options
- Real-time diagnostics, control and fault monitoring

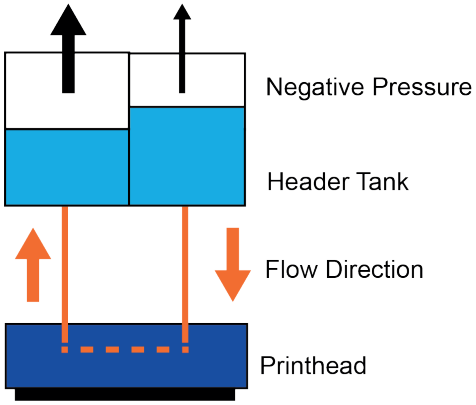
No Flow



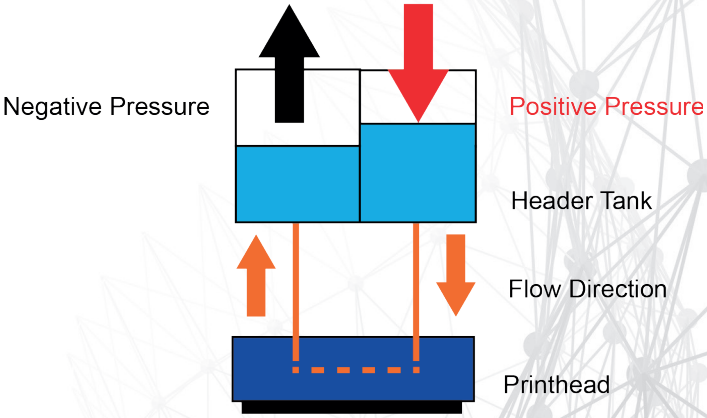
Low Flow



Controlled Flow



High Pressure Flow



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