Ziath

Innovative solutions for
sample tracking and management
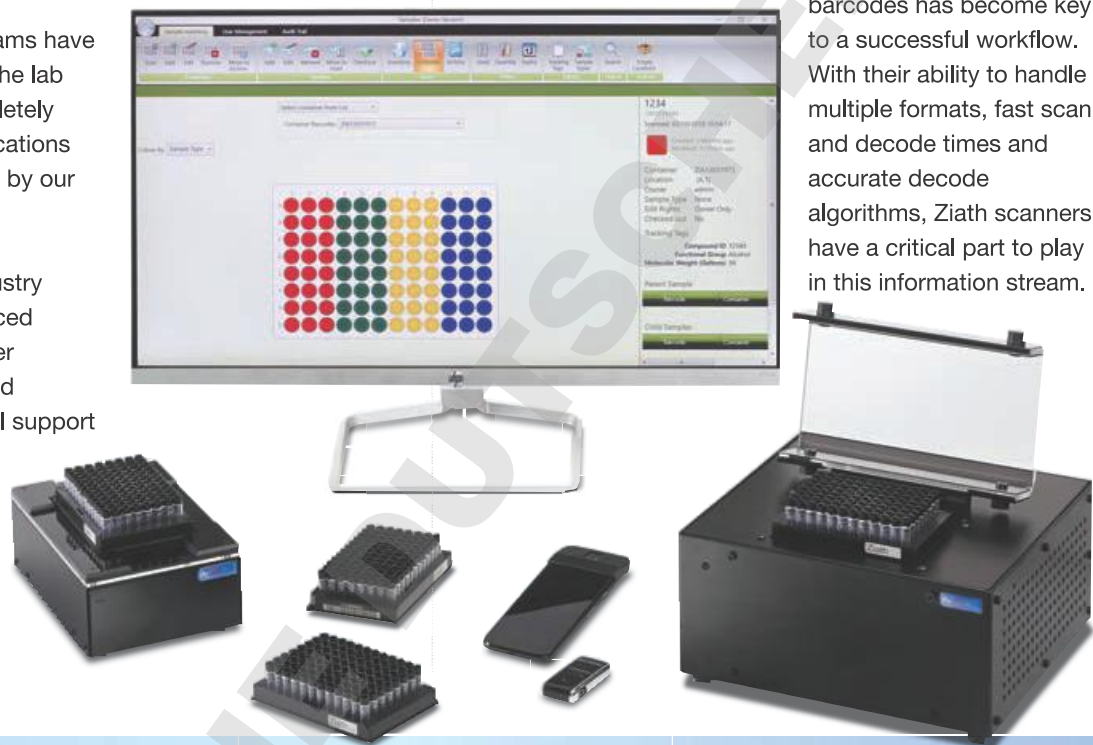in academia, biotech and pharma

INTRODUCTION

For over 15 years, Ziath has offered bespoke sample management solutions and comprehensive technical guidance to academic institutions, small & large biotechs and the pharma drug discovery sector. Ziath's robust and flexible sample tracking solutions are fully customisable, reliable and scalable.

Our high-quality instruments offer efficient sample tracking for busy pipelines and are designed to easily integrate into existing systems and workflows. Ziath's teams have direct experience at the lab bench, so they completely understand the applications and challenges faced by our users.

We combine this industry expertise with advanced technologies to deliver bespoke solutions and unparalleled technical support to ensure our customers can spend more time on their research and less worrying about the location of their samples.

The key to efficient sample management is the ability to quickly and easily identify any individual sample in a workflow. The widespread availability of 2D Datamatrix barcodes on individual sample tubes has revolutionised this discipline in recent years. With individually barcoded tubes and high-speed readers such as those from Ziath, sample tracking and inventory management has become easier and more secure. In the modern laboratory, the efficiency, speed and accuracy of decoding these barcodes has become key to a successful workflow. With their ability to handle multiple formats, fast scan and decode times and accurate decode algorithms, Ziath scanners have a critical part to play in this information stream.

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CAMERA-BASED SCANNERS

Cube – versatile scanner for SBS and Cryo boxes

The Cube is a fast camera scanner with a unique cuboid design that can scan and decode all rack types currently available on the market, including those which are larger than the SBS format, such as cryoboxes designed to hold 81, 100 and 196 cryotubes. The format is user-selectable through a quick and simple exchange of the screen bezel. This high-speed scanner uses a dual camera system to decode 384,- 96-, 48- and 24-tube racks in 1-2 seconds on a normal computer. A robust build and minimal cabling make it great for both benchtop and integrated applications.
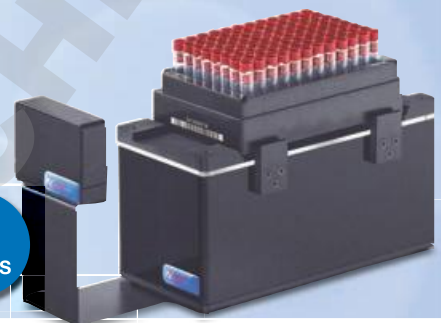
ALL SBS RACKS AND CRYOBOXES – 81, 100, 196

Express – integration-ready SBS camera scanner

The Express is a compact camera scanner that reads all SBS formatted 2D barcoded racks and tubes, with a very fast image capture time. The Express is the smallest scanner on the market and since it is only slightly larger than the SBS rack itself, it is ideal for on-deck robotic integration. With four CMOS cameras, the Express can decode even the smallest 2D barcodes found on 384-tube racks and conical bottom PCR plates. It is recommended by many larger liquid-handling robot suppliers.
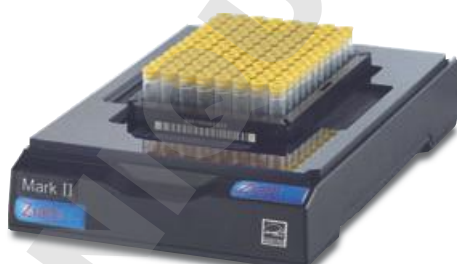
ALL SBS RACKS

Mirage – low cost and low profile SBS camera scanner

Ziath's latest 2D barcode rack scanner, the Mirage, was designed around two main criteria – low profile and low cost of ownership. With both achieved, the Mirage can be used for both desktop and automation applications and comes at a price normally associated with older flatbed scanners. It can scan all commonly used SBS format racks at the speed you would expect from a camera-based instrument. An optional upgrade is available for Mirage to read Brooks™ Acoustix® tubes.

SBS RACKS 24/48/96 INCLUDING ACOUSTIX™ RACKS

Something different?

For certain very specific applications, such as extra-large format scanning and integration with limited height robotics, we can also offer legacy flat-bed scanner-based readers – please consult **www.ziath.com** for details of these.

Code	Description	Quantity
ZTS-CUBE	DataPaq™ Cube Rack Reader	1
ZTS-CUBE-80	DataPaq™ Cube Rack Reader with Cryoprotection™	1
ZTS-EXP	DataPaq™ Express Rack Reader	1
ZTS-EXP-80	DataPaq™ Express Rack Reader with Cryoprotection™	1
ZTS-MRG	DataPaq™ Mirage Single Rack Scanner	1
ZTS-MRG-80	DataPaq™ Mirage Single Rack Scanner with Cryoprotection™	1

For linear rack barcode readers to fit these units, please refer to page 7.

DP5 – the novel technology at the heart of Ziath scanners

Ziath's DP5 control environment for our scanners uses fast and reliable cutting-edge communications protocols to simplify the operation of our camera-based scanners, while simultaneously offering greater networking ability and enhanced security features for more demanding applications in two add-on packages.

Using high-speed, web-based, communications protocols allows DP5 to run just one scanner in your lab, or multiple scanners connected over a local area network. In the advanced DP5 Network application, scanners can be controlled directly from Wi-Fi connected smart phones, tablets or laptops. The new DP5 Secure application offers data encryption and multi-level user authority management as part of the package. Also included along with a full audit trail is the revolutionary ScanStore feature in which every scan is stored with both image and tabular data for later review or audit.

DP5 represents the very latest technology applied to laboratory sample tracking and identification in an easy to use and scalable format that can adjust to the needs of your laboratory. Combined with the unrivalled accuracy and speed of Ziath Datapaq camera-based scanners, tube identification and sample tracking has never been easier or more convenient.

DP5 Network unchains you from the bench, allowing a scanner to operate anywhere on your LAN from your own tablet or phone, even right alongside your freezers. For those working with human tissue, forensics or other ethically-sensitive samples, DP5 Secure adds unrivalled levels of data protection and security to protect your valuable data, while DP5 Standard simplifies day-to-day scanner operation through an intuitive and uncluttered user interface that is ready to go in just minutes, straight out of the box.

CAMERA-BASED SCANNERS

DP5 comes in three versions according to your requirements:

DP5 Standard
- *Runs like any other desktop application from a connected PC or laptop*
- *Autoscaling allows DP5 Standard to work with the latest 4K displays*
- *Runs all Ziath Datapaq camera based scanners: Mirage, Cube & Express*
- *Export data directly to a database, text, PDF, XML, JSON, Excel or e-mail*
- *Remote control function allows direct integration with popular liquid handling robots, compound stores and other external compatible devices*
- *Scanner and export settings can be assigned individually for each type of rack in use*
- *Automatic rack type detection and rack template creation as standard*

DP5 Network
- *Advanced operation via a LAN allows scanners to be controlled directly from a Wi-Fi connected phone, tablet, desktop PC or laptop*
- *Control multiple scanners on one server from one hand-held device, laptop, tablet or desktop computer*
- *Scripting feature allows a high level of post-run data processing automation – send data to LIMS, e-mail, Excel or any other compatible program*
- *Take a scanner anywhere on site, run a scan on a hand-held device and send that file back to any computer in a variety of formats*

DP5 Secure
For total peace-of-mind when handling sensitive or ethically stored samples, DP5 Secure offers complete control over scanner operation and access to data.

- *End-to-end encrypted communications using public/private key technology*
- *Individually assigned user accounts with multiple levels of authority*
- *Full audit trail linked to each user*
- *Audit trail may be fully encrypted*
- *Revolutionary ScanStore function adds every scanned image, scanner settings and resulting bar code table to each Operator's audit trail*

Version	Code	Description	Quantity
DP5 Standard with instrument	ZTS-MRG-DP5	Mirage running DP5	1
	ZTS-CUBE-DP5	Cube running DP5	1
	ZTS-EXP-DP5	Express running DP5	1
	ZTS-MRG-DP5-80	Mirage running DP5 with Cryo	1
	ZTS-CUBE-DP5-80	Cube running DP5 with Cryo	1
	ZTS-EXP-DP5-80	Express running DP5 with Cryo	1
DP5 Network	ZTS-DP5-NET-1	Upto 3 licences	1
	ZTS-DP5-NET-4	more than 4	1
DP5 Secure	ZTS-DP5-SCR	Per licence	1
DP5 Server	ZTS-DP5-SERV	Dedicated server Core I7 with 4GB RAM	1

SINGLE TUBE SCANNERS

Single tube scanner
Designed with ease-of-use in mind, this scanner rapidly reads single tubes in less than one second per tube. The single tube scanner is very easy to configure, and the 'keyboard wedge' functionality enables users to enter barcode data directly into their application software. This scanner is very robust, and the mineral glass scanning window is scratch-resistant.

Handheld scanner
The first truly portable scanner on the market that allows sample management on the move. The Handheld incorporates a lightweight build and intuitive interface that's easy to use. It has five standard operating modes; simple tube scanning, scan and display data, picklist operations, edit data/add new sample and wired keyboard wedge function. Purchasing the wireless server option unlocks wireless keyboard wedge, link to Excel, link to Samples™ software and link to a database. Users can also define unique applications for the Handheld and Ziath's programmers will convert these into reality.
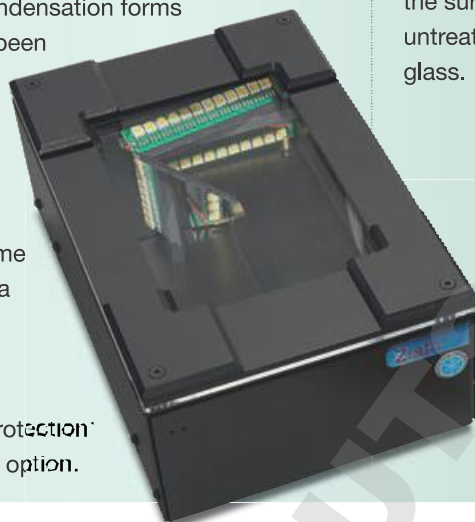
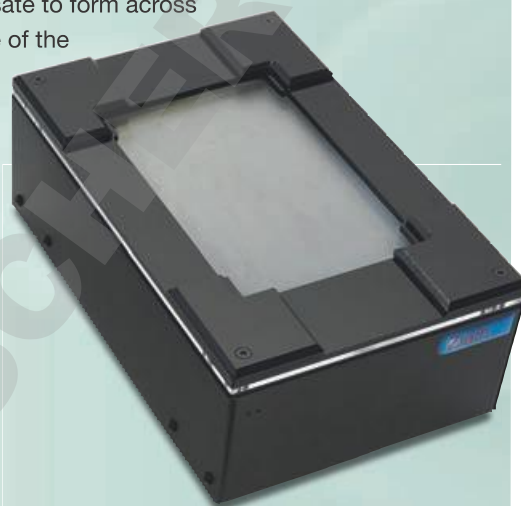| Code	Description	Quantity
ZTS-HND	Intelligent Hand-Held Single Tube 2D Barcode Reader	1
ZTS-HND-1D	1D Option for Handheld	1
ZTS-HND-1DLC	Low Cost 1D Option for Handheld	1
ZTS-HND-CLIENT	Software only option for Ziath Handheld	1
ZTS-HND-SRVR	Wireless software server interface option for Handheld	1
ZTS-HND-S-DBXML	WiFi Connection to remote database – requires ZTS-HND-SRVR	1
ZTS-HND-S-WEDGE	WiFi keyboard wedge capability – requires ZTS-HND-SRVR	1
ZTS-HND-S-SPLS	WiFi connection to Samples™ software – requires ZTS-HND-SRVR	1
ZTS-HND-S-EXL	WiFi connection to Excel spreadsheet – requires ZTS-HND-SRVR	1

SCANNER OPTIONS

Cryoprotection

When samples are removed from a minus 80 °C freezer, there is often a high level of ice build-up on the racks. This can often obstruct the 2D barcode and prevent it from scanning properly. A simple solution is to blot the rack onto a sponge soaked in alcohol. The rack temperature can still cause problems with 'fogging' of the scanner glass as condensation forms on the glass which has been cooled by the application of the cold racks straight from the freezer.

The best way to overcome this is to use glass with a proprietary coating that stops helps prevent the fogging from occurring. Ziath offers such 'cryoprotection' on all its scanners as an option.

The advantage of a coating is that unlike physical methods, such as blowing air over the surface, it will not heat up and potentially damage, delicate thermally-sensitive samples. In the image below, the scanner on the left has cryoprotection, whereas that on the right uses standard glass. The cold rack has caused a layer of condensate to form across the surface of the untreated glass.
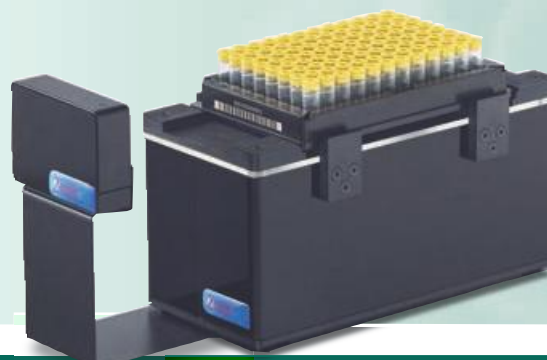
1D rack barcode reader

All Ziath's rack scanners can be fitted with a 1D scanner to read the linear barcode on the side of the rack. This is then recorded with the 2D codes from the tubes that it contains to ensure accurate sample tracking.

Auto-scan

Datapaq software includes the capability to automatically start a scan whenever a rack is placed onto the scanning window. This optional feature is available on all Ziath instruments if a linear rack reader is used, as shown opposite.

Code	Description	Quantity
ZTS-1DR2-EXP	Express 1D Rack Code Scanner	1
ZTS-1DR2-CUBE	Cube 1D Rack Code Scanner	1
ZTS-1DR2-MRG	Mirage 1D Rack Code Scanner	1

Mohawk

The Mohawk Semi-Automatic Tube Selector enables you to pick individual or groups of tubes directly from 96 well racks with ease. Trying to extract a single tube from a rack can be difficult and doing so manually can lead to positional errors. By using software to control 96 individual solenoids, the Mohawk can lift one, two or up to sixteen individual tubes at a time, making it easy to remove them from the rack and place in a subsidiary rack or other tube device.

The pins to be selected can be set in a 'pick list' which can be generated manually from the on-screen graphical representation of the Mohawk deck or from an Excel spreadsheet. The Excel file can also be created manually or imported from Ziath's Samples™ inventory management system or from your LIMS or another sample tracking programme that can export Excel format files. The picklist can even include tubes that are contained in multiple racks. When a rack contained in the picklist is placed onto the Mohawk, the integrated 1D barcode reader identifies which tubes are to be selected. The lid can be moved to the downward position and the solenoids will instantly fire to present the required tubes. This reduces the risks of the wrong tubes being selected during picking.

The Mohawk works out of the box and needs no set up or calibration. In Automatic mode, the Mohawk allows for operation with minimal interaction of the control PC, while in Worklist mode, a file that describes the tubes that are to be selected is used to control the pins. It can be in Excel, csv, text, xml or json format. The Mohawk works with both frozen and thawed tubes. It can work in combination with a Ziath Mirage, Express or Cube scanner to automatically create pick lists and then verify the contents of the subsidiary (or Daughter) racks and re-upload their new positions to Samples™ or to your LIMS via an Excel file. When combined with a Ziath rack scanner, the Mohawk will produce a report showing the tube's original position in a rack and its new position in a daughter rack.

Code	Description	Quantity
ZTS-MHK	Semi-automatic Tube Selector	1
ZTS-MHK-LOW	Low Profile Tube Rack Adaptor for Mohawk	1
ZTS-ATRP	Brooks AcoustiX™ Tube Release Plate	1

TUBES AND TUBE PICKERS

Tube pickers

Ziath's manual pickers are available for both cryotubes and SBS tubes and allow easy one-handed removal of tubes from racks, minimising heat transfer and reducing the risk of cross contamination.

CryzoTraq tubes

Cryo-tubes and boxes are available in 2 mL and 5 mL volumes. The advanced cap design provides excellent leak resistance without the use of 'o' rings and is available in both internal and external threads. The CryzoTraq range can be stored at temperatures as low as -196ºC. The tubes are sterilised by e-beam and are guaranteed DNA/RNA, DNA/RNA-ase and pyrogen free from the point of manufacture. The cryogenic boxes are available in 48 (SBS format), 81 or 100 tube format and the larger sizes are compatible with the racks used in liquid nitrogen-based storage systems.

Code	Description	Quantity
ZPIK-01	SBS Tube Picker	1
ZMPK-01	Cryotube Picker	1
ZTS-2ECT	CryzoTraq 2D tube, 2ml external thread, screwcap, sterile, box of 500*	1
ZTS-2ICT	CryzoTraq 2D tube, 2ml internal thread, screwcap, sterile, box of 500*	1
ZTS-5ECT	CryzoTraq 2D tube, 5ml external thread, screwcap, sterile, box of 500*	1
ZTS-5ICT	CryzoTraq 2D tube, 5ml internal thread, screwcap, sterile, box of 500*	1
ZTS-81LB5CTX	CryzoTraq box 81 places for 2ml tubes, 2D, low - 5 boxes Substitute X with the required box band colour: B=Blue, R=Red, G=Green, Y=Yellow	1
ZTS-81HB4CTX	CryzoTraq box 81 places (9x9) for 5ml 2D coded tubes with 2D base code, pack of 4 Substitute X with the required box band colour: B=Blue, R=Red, G=Green, Y=Yellow	1
ZTS-100LB5CT	CryzoTraq box 100 places for 2ml tubes, 2D, low - 5 boxes	1
ZTS-100HB4CT	CryzoTraq box 100 places (10x10) for 5ml 2D coded tubes, 2D base code, pack of 4	1

* Different coloured caps are available; please ask on request.

The new *impressiOn* from Ziath has been designed to take the strain out of applying friction sealing mats or septum sealing caps to SBS format tube racks. Simply place your rack or plate with its attendant friction mat or septum cap web in the drawer and push it firmly shut. Initiate sealing with the large, glove-friendly start button and the sophisticated electronics take over, applying reproducible and even pressure every time to force the septum seals down into each tube. Time after time, *impressiOn* does the hard work for you. It's more reproducible, quicker and less likely to cause a strain injury than trying to do this manually.
The compact unit requires only a 110v or 220v power supply to operate and is small enough to sit on most lab benches.

impressiOn will work with most commercially available septum cap mats and different manufacturers 2D-coded and uncoded tubes in SBS-format racks. Both friction and septum seals for 96-, 48- and 24-tube plates have been shown to work well in *impressiOn*.

As standard, the unit is supplied with two rack adaptors for shallow and deep racks. Alternative rack adaptors for specific manufacturers' racks are available to order.

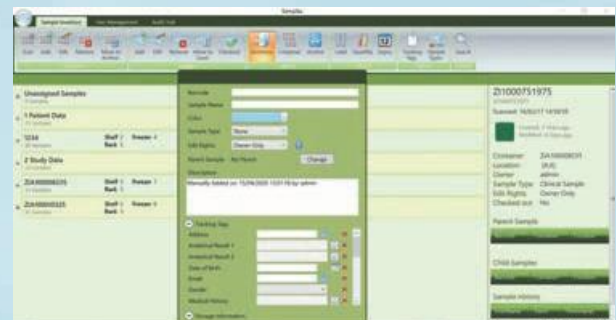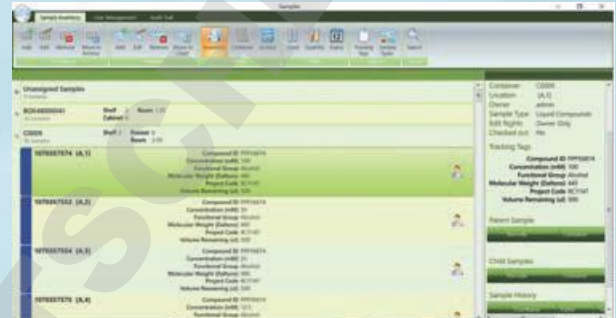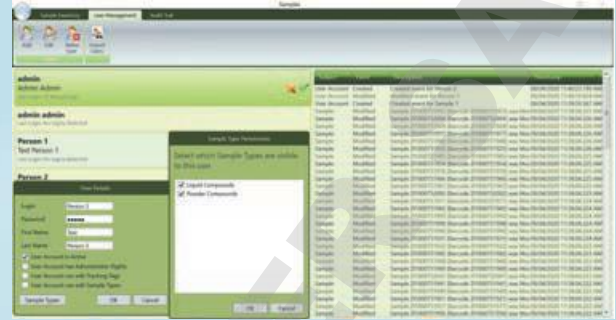| Code	Description	Quantity
ZTS-IMPRES	*impressiOn* semi-automatic septa seal/cap mat applicator, complete with 4.5mm and 14mm high rack adaptors, power supply and mains lead	1
ZTS-IMPRES-HI	Alternative height adaptor - high racks	1
ZTS-IMPRES-LO	Alternative height adaptor - low racks	1

Samples™ – innovative software solution for sample tracking

Ziath's goal is to ensure you always know the whereabouts of your samples. Our software solution, Samples, enables us to do this by seamlessly integrating with all Ziath 2D data matrix barcode scanners, allowing you to quickly locate your samples.

Samples effortlessly fits into your workflow and can be customised to meet your requirements. Simply install the software and either import or enter in the required information about your samples. We understand that each lab is different and that's why Samples allows you to add custom tracking tags in a variety of different formats to ensure the information is stored in a way that's meaningful for you. Samples is fully scalable and can be operated by a single user or be used on multiple computers across a network, allowing for easy data collaboration. Samples is fully compatible with both Ziath Mohawk tube picker and Ziath Handheld tube reader. Detailed Pick lists and sample information can be up- and down-loaded to and from both devices seamlessly with a simple 'plug-in' program.

Finding your individual samples is made easy by the multi-parameter search feature. Specify the sample characteristics that you are looking for and Samples will locate and report any that match and, if needed, the results can then be exported in a format suitable for downstream processing.

If Samples does not include a specific feature that you need, we have the capability of adding this functionality. We have several installations that have been customised to ensure that end users can do exactly what they want with the software, rather than make a compromise with a package that cannot be changed.

Code	Description	Quantity
ZTD-SPLS	Samples™ Software Fixed Licence	1
ZTD-SPLS-FLT1	Samples™ Software First Floating Licence	1
ZTD-SPLS-FLT	Samples™ Software Additional Floating Licence	1

Take the stress out of managing your samples. Leave it to us

Ziath's robust and reliable products are designed to integrate into existing workflows and are primed for automation. We pride ourselves on providing high-level technical support to ensure that our customers' sample tracking processes run smoothly and efficiently. Our commitment to the development of innovative products allows us to provide a truly bespoke experience for each customer. We can provide scanners to read every available rack and box format on the market with speed and accuracy.

Detailed information and technical specifications on all of our products are contained within our product data sheets and our e-Books provide useful hints and tips relating to sample tracking and information mangagement for life science. Please visit our website at **www.ziath.com** to download your copies.

DATAPAQ™ CUBE
2D barcode scanner for all racks and boxes

DATAPAQ™ SINGLE TUBE
Small, cost-effective 2D barcode scanner

DATAPAQ™ EXPRESS
Small, automation-friendly 2D barcode scanner

DATAPAQ™ HIGH SPEED
Legacy flat-bed scanner for very low-profile applications

DATAPAQ™ MIRAGE
Economical 2D barcode camera rack scanner

MOHAWK
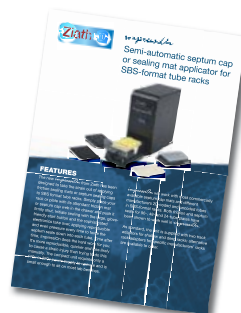Semi-automated tube picker

SAMPLES™
Sample management software
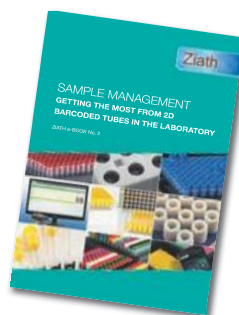
DP5
Novel 2D barcode scanner control system

ZIATH HANDHELD
Handheld 2D barcode scanner

impressiOn
Semi-automatic septum cap and sealing mat applicator

e-Book 1
Sample management tips and tricks

e-Book 2
Getting the most from 2d barcoded tubes

Be sure to check out our **YouTube** channel for informative video tutorials at **http://bit.ly/ziathchannel**

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