RANDOX

RABTA

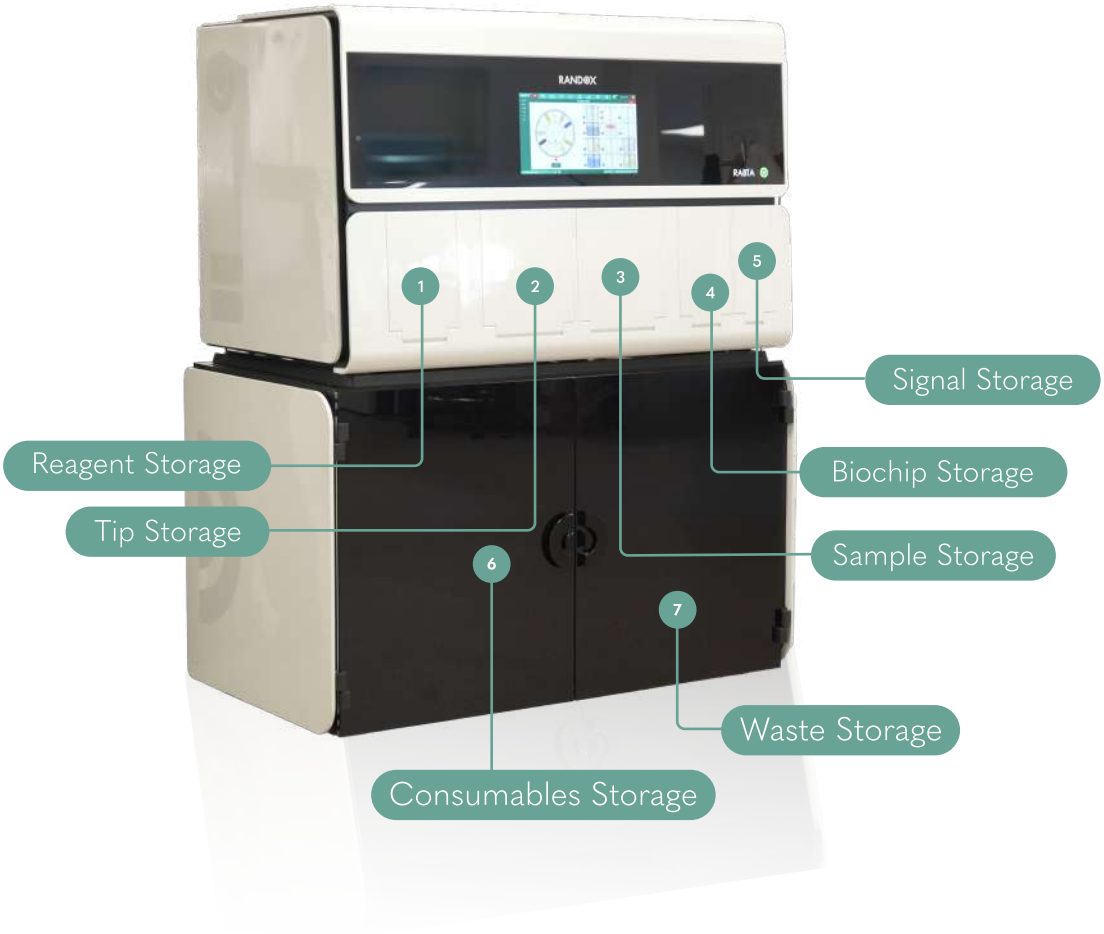
Random Access Biochip
Technology Analyser

INNOVATION MEETS PRECISION

CONTENTS

RABTA

The new **RABTA (Random Access Biochip Technology Analyser)** sets a high standard in laboratory diagnostics by combining advanced biochip technology with exceptional efficiency. Designed for seamless operation, the RABTA platform allows uninterrupted workflows and increased productivity. With rapid random-access capabilities, the analyser provides precise and reliable results across a wide range of assays.

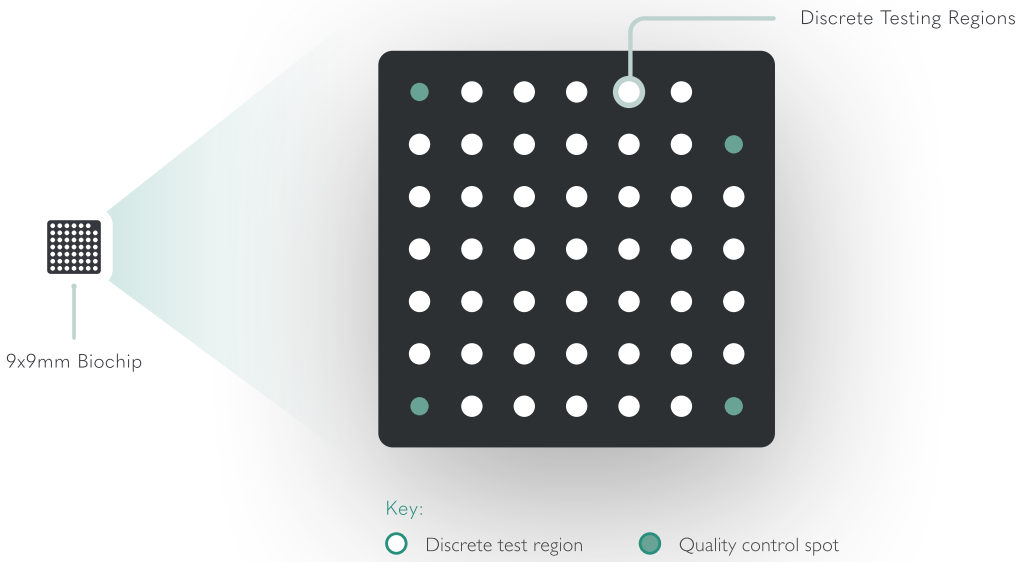


Featuring five intuitive modules, this innovative analyser simplifies high-throughput biological analysis, enabling clinicians to conduct complex assays quickly and accurately. Each module is tailored for specific functions, ensuring easy integration and adaptability for various applications, from diagnostics to advanced research. Its random-access capability allows simultaneous processing of multiple samples, making it an essential tool for modern laboratories.

The Power of Biochip Technology

Randox Biochip Array Technology is an innovative multiplex testing platform that allows for the simultaneous detection of multiple analytes from a single sample. This technology is based on a remarkable 9x9mm biochip, which functions as a solid-phase reaction vessel. Each biochip is pre-coated with an array of discrete test regions (DTRs), enabling the detection of up to 48 different tests from one sample.

Using competitive chemiluminescent immunoassays when a sample is applied to the biochip, specific reactions occur at each DTR, producing light signals. These signals are detected and analysed using sophisticated digital imaging technology revealing the concentration of each analyte with pinpoint accuracy.



By consolidating multiple assays onto one biochip, the Biochip Array reduces the time and resources needed for diagnostics, making it an indispensable tool for modern diagnostics. This efficiency has transformed how laboratories are analysing samples, processing a higher volume without compromising speed or accuracy.

Applications

Research Laboratories

Diagnostics Laboratories

Public & Private Hospitals

University Laboratories

Private Laboratories

Commercial Laboratories

Forensic/Criminal Laboratories

Clinical Laboratories

WHY RABTA?

High Throughput

A maximum throughput of up to **60 samples can be loaded per hour**, providing up to **2,640 test results per hour** / 19,580 test results per day.

2.5 Hour Walk Away

A fully automated platform with an operator **walkaway time of up to 2.5 hours.** A single operator is all that's required to run the RABTA.

Priority Sampling

Software allows users to assign samples as a priority over others so that **priority samples** can be run and results reported rapidly, **eliminating the constraints of batch testing.**

Zero Carry-Over Risk

With aspiration abilities from 1.5µl upward, the RABTA **does not need pre-dilution.** The system utilises single-use tips for aspiration and dispense, meaning there is **no carry-over risk at all**, ensuring high accuracy with every result.

Workflow Consolidation

The RABTA consolidates the workflow of **multiple laboratories into a single analyser.** The workload of laboratory staff is minimised, as only consumables and samples need to be loaded, and tests are selected via onscreen software.

Module Access

Continuous access to samples. Software-controlled access to reagents, biochips, signal and waste. The system **can hold up to 60 samples with continuous access**, and 120 biochips with software-controlled access.

Multiplex Testing

Simultaneous detection of up to 44 targets from a single patient sample through our **patented Biochip Array Technology.**

Rapid Results

Software intuitively analyses what tests are being run and assigns the order of samples in the most time-efficient way for analysing and reporting results. **The time to first sample results is just 36 minutes**, with up to 44 results per sample. Results for remaining samples are released 1 sample per minute onward.

Rapid Start Up

The system will be ready for use in under 15 minutes when started from a standby state.

RABTA MODULES

Reagent Storage

KEEPS REAGENTS FRESH AND READY

Onboard storage chills reagents at a perfect 2-8°C, ensuring they stay stable and effective for up to 7 days. No more worries about reagent degradation.

Biochip Storage

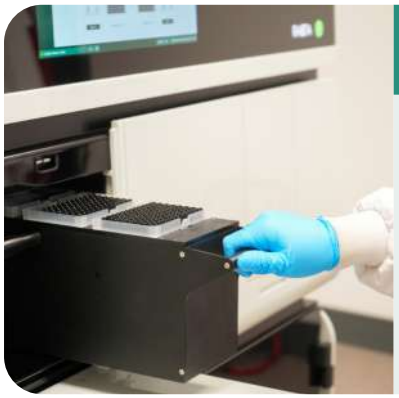
MAXIMISE EFFICIENCY

Holding up to 120 biochips through software-controlled access, the RABTA ensures uninterrupted workflows and improves everyday efficiency.

Signal Storage

POWER UP ASSAYS

Peroxide and luminol are securely stored in this module, ready to deliver the signals needed for clear, reliable results. Assays are analysed with seamless precision and consistency.



Tip Storage

NO CROSS-CONTAMINATION

The RABTA platform can store up to 768 single-use tips, each one dedicated to precise aspiration and dispensing of assay diluent, samples and conjugates onto biochips. This means every result is accurate, every time.

Sample Storage

FLEXIBILITY AT YOUR FINGERTIPS

With rapid loading and access, samples can be added for quick and easy analysis. Load up to 60 samples and let the platform handle the rest, ensuring seamless operation and timely reporting.

Optimised Waste Management

Custom Bench

The RABTA platform includes a specially designed Custom Bench. This not only provides ample storage space for all your consumables but also ensures smooth and efficient disposal of both solid and liquid waste.

Optimised Waste Management

Featuring advanced sensors within the custom bench the waste bins alert the user when it's time to empty. With a generous waste storage capacity of up to 20 litres, there are longer intervals between emptying, significantly reducing hands-on time and streamlining the user's workflow.

ANALYSER WORKFLOW

System auto primes in under 10 mins.

1. 
Consumables loaded, e.g. tips, biochips, signal and reagents

2. 
Samples loaded

3. 
User loads tests in the software

4. 
Press start

5. 
Biochip peeled and placed into dispense seat

6. 
ADP aspirates and dispenses assay diluent and sample into a well

7. 
Biochip is placed into the incubator

8. 
Conjugate dispensed into the well whilst inside the incubator

KEY

User Step

Analyser Step

Incubated for set time

Moved to wash station and washed followed by spin dry

Moved to signal seat and 500µl signal dispensed

Moved to image station

System takes and processes images

Biochip moved to waste

Results generated on screen and exported to LIMS

TEST MENU

Male & Female Hormones

Lifestyle & Nutrition

Toxicology

Oncology & Immunology

Haematology & Cardiology


RABTA

Male & Female Hormones

Fertility Biochip

Sample Type:	Sample Volume:	Time to Result:	Result Type:
Serum	125 µl	36 minutes (first sample result)	Quantitative

Biomarkers

Prolactin
Luteinizing Hormone (LH)
Follicle Stimulating Hormone (FSH)
Estradiol
Progesterone

SHBG Biochip

Sample Type:	Sample Volume:	Time to Result:	Result Type:
Serum	10 µl	36 minutes (first sample result)	Quantitative

Biomarkers

SHBG (Sex Hormone-Binding Globulin)

Testosterone Biochip

Sample Type:	Sample Volume:	Time to Result:	Result Type:
Serum	125 µl	36 minutes (first sample result)	Quantitative

Biomarkers

Total Testosterone

Lifestyle & Nutrition

Vitamin D Biochip

Sample Type:	Sample Volume:	Time to Result:	Result Type:
Serum	90 µl	36 minutes (first sample result)	Quantitative

Biomarkers

25-hydroxy vitamin D (total)

Toxicology

ToxPlex Urine

Sample Type:
Urine

Sample Volume:
25 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Semi-Quantitative

Biomarkers

- Methamphetamine
- MDMA
- Amphetamine
- Tricyclic Antidepressants (TCA)
- Oxycodone
- Opiate
- 6-Monoacetylmorphine (6-MAM)
- Benzodiazepines 1
- Benzodiazepines 2
- Barbiturates
- Cannabinoids (THC)
- Dextromethorphan
- Methadone
- Benzoylecgonine (BZG) / Cocaine
- Meprobamate
- Tramadol
- Fentanyl
- Buprenorphine
- Propoxyphene
- Phencyclidine (PCP)
- Zolpidem
- Ketamine
- Haloperidol
- Methaqualone
- Pregabalin
- Creatinine
- Ethyl Glucuronide (EtG)
- Acetaminophen
- Salicylates

Drugs of Abuse VII Urine

Sample Type:
Urine

Sample Volume:
25 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Semi-Quantitative

Biomarkers

- Amphetamine
- Barbiturates
- Benzoylecgonine (BZG) / Cocaine
- Benzodiazepines
- Opiate
- Cannabinoids (THC)
- Methamphetamine
- Tramadol
- Creatinine

Drugs of Abuse VI Urine

Sample Type:
Urine

Sample Volume:
25 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Semi-Quantitative

Biomarkers

- AB-PINACA
- Amphetamine
- Barbiturates
- Benzodiazepines
- Buprenorphine
- Creatinine
- Benzoylecgonine (BZG) / Cocaine
- Cannabinoids (THC)
- Ethyl Glucuronide (EtG)
- JWH018
- MDMA
- Methamphetamine
- Opiates
- UR144
- 6-Monoacetylmorphine (6-MAM)

Oncology & Immunology

Carcinoembryonic Antigen (CEA) Biochip

Sample Type:
Serum

Sample Volume:
100 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Quantitative

Biomarkers
Carcinoembryonic Antigen (CEA)

PD-1 Biochip

Sample Type:
Serum

Sample Volume:
100 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Quantitative

Biomarkers
Programmed Cell Death Protein 1

Mesothelin Biochip

Sample Type:
Serum

Sample Volume:
100 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Quantitative

Biomarkers
Mesothelin

Alpha-fetoprotein (AFP) Biochip

Sample Type:
Serum

Sample Volume:
50 µl

Time to Result:
36 minutes
(first sample result)

Result Type:
Quantitative

Biomarkers
Alpha-fetoprotein (AFP)

Haematology & Cardiology

Galectin-3 Biochip

Sample Type:
Serum

Sample Volume:
20 µl

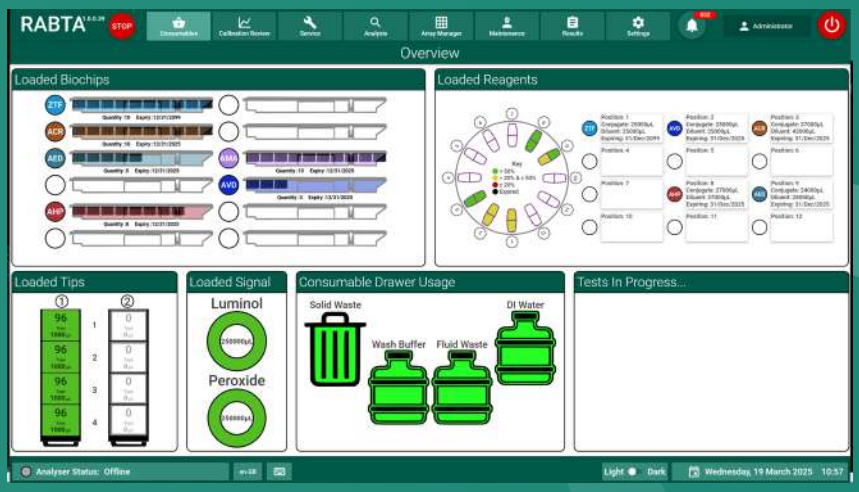
Time to Result:
36 minutes
(first sample result)

Result Type:
Quantitative

Biomarkers
Galectin-3

SOFTWARE OVERVIEW

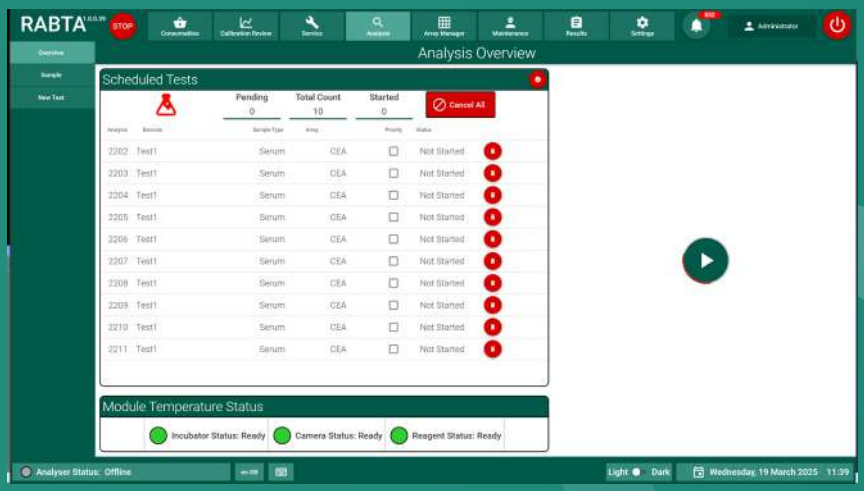
1



Consumable Overview Data

Cutting-edge software offers a comprehensive view of all consumables onboard, ensuring users always know the sample status at a glance. Each section provides detailed insights for continuous monitoring that helps streamline workflows and boost laboratory efficiency. The system smartly prevents test processing if consumables are insufficient, prompting users to reload as needed. Plus, it halts tests if any consumables have expired, ensuring only the freshest materials are used.

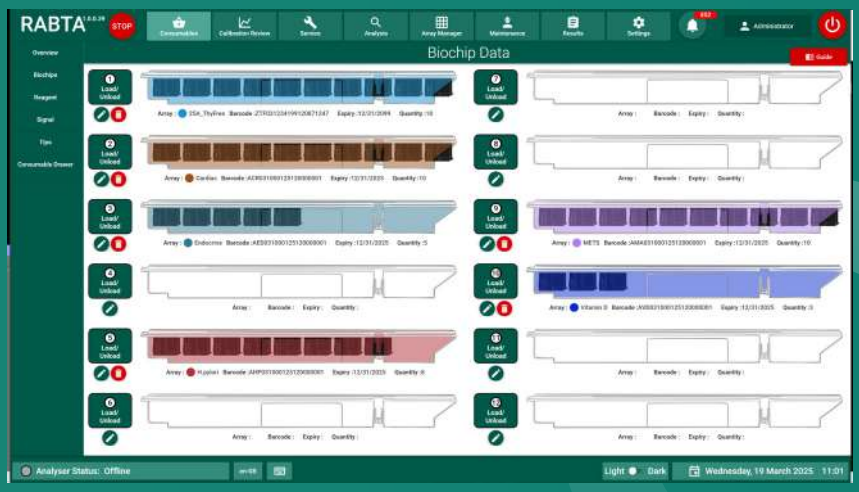
2



Analysis Overview

The RABTA advanced software offers a comprehensive analysis overview, displaying all scheduled and running tests. Track progress effortlessly on the right-hand side, where users can see exactly how much time is left for each test. The software intelligently analyses ongoing tests and optimises the order of samples for maximum efficiency in analysis and reporting. The system allows you to assign priority to STAT samples, ensuring rapid processing and reporting of critical results.

3



Loaded Biochips Data

The dynamic onscreen cartridge overview displays all loaded biochips in real time, showing live biochip counts. Users can easily load, unload, and manually enter cartridge details with the intuitive interface. Cartridges are colour-coded and marked with their positions for effortless identification, making lab operations smoother and more efficient than ever before.

Technical Snapshot

CAT Number	EV4508
Dimensions	1300 x 800 x 1800mm (W x D x H)
Weight	450kg
Analyser Type	Fully Automated Immunoassay platform
Biochips per Cartridge	10
Maximum Sample Throughput	60 samples per hour
Maximum Test Result Throughput	2,640 test results per hour
Data Storage Capacity	A minimum of 1 year's worth of data can be stored
Walk Away Time	2.5 hours
Maximum Sample/Biochip Capacity	The system can hold up to 60 samples (6x10) with continuous access, and 120 biochips (12x10) with software-controlled access.
Sample Types	Serum, Urine
Time to First Result	36 minutes, 1 sample per minute onwards
Sample Clot Detection	Yes
Priority Samples	Yes, software controlled
Maximum Reagent/Assay Capacity on Board	The system can hold up to 12 reagent types to match biochips
Continuous Access	To Samples
Random Access	Yes
Software-Controlled Access	To Reagents, Biochips, Signal and Waste
QC	Master Curve adjuster calibration along with control runs
Calibration Time	2 sample adjusters. 38 minutes plus processing time.
Calibration Frequency	Required every 28 days
LIMS Compatible	Uni-directional LIMs
Operational Modes	Windows 10
Operating Temperature	Room temp +18°C - +32°C
Operator Maintenance	Daily – 5 mins Weekly – 15mins Monthly – 1 hour
Onboard Maintenance Records	Yes
Remote Diagnostics	Yes
Emergency Stop Feature	Yes
Automatic Shutdown Feature	Yes
Alerts	Yes, alerts are shown onscreen

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