

# Rapid Microbiological Methods Rapid Automated Bacterial Impedance Technique (RABIT 3)



don whitley  
scientific  
excellence in microbiology



The automatic, robust way  
to gain fast results in the  
microbiology laboratory.

Direct and indirect  
impedance measurements  
and modular design provide  
a totally flexible screening  
system with Windows™  
based software.

RABIT measures impedance - the most versatile and least expensive of all rapid bacterial detection methods. It combines ease of use with leading edge electronic technology. Two specific techniques offer the user considerable scope.

In the direct technique, metabolising micro-organisms increase the electrical conductance of the culture medium in the system.

RABIT measures these changes and provides results faster than by the use of traditional methods.

The indirect technique provides a flexible impedance method which monitors the amount of carbon dioxide produced by growing organisms. This technique is particularly suitable for detecting organisms which do not produce highly charged metabolites, for example yeasts and moulds.

## The benefits of RABIT

### Four simple steps



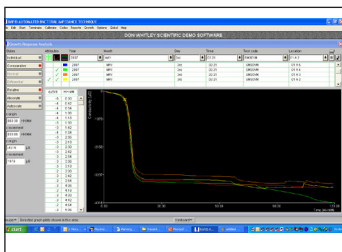
1. Sample preparation



2. One step sample inoculation



3. Place in RABIT



4. Results

RABIT 3 is a compact and versatile system for rapid microbial testing. The modular design enables a laboratory to enter the field of rapid testing with an initial system which comprises a PC, Ethernet switch and a single 32 channel incubator module.

The system can be expanded to provide a total of 512 channels by adding more incubator modules\*. No further expenditure on computer hardware or software is necessary.

The system is designed to allow tests to be carried out over a range of incubation temperatures to provide maximum flexibility for microbiological testing.

The Windows™-based software provides an easy to operate environment for sample entry and analysis of results. The impressive data handling capabilities are further enhanced by a facility to export generated data for use in various spreadsheet/database software programmes.

RABIT combines high technical specifications with low consumable costs – preserving the major financial advantage of rapid microbial detection. The test cells are durable, re-usable and easy to clean and maintain.

Laboratories in the food, pharmaceutical, petrochemical, public health and dairy industries, in addition to many universities, are using RABIT with excellent results. All Don Whitley Scientific customers have access to our team of engineering, electronics, software and microbiology staff. Any special needs are considered by microbiologists working in our own GLP-compliant laboratories.

Should any development work be necessary to match a RABIT system to your requirements this can be carried out quickly to ensure that you benefit from our considerable experience of impedance microbiology.

\* Please note that RABIT 3 incubator modules are not compatible with older RABIT systems.

## RABIT features

- Flexible modular design
- Fast detection times
- Increased test throughput
- Simple to use
- Re-usable test cell
- Low cost per test
- Direct and indirect techniques
- Variable sample volume
- Access to culture during tests
- Optional extras include racks to house incubator modules and bar code readers to speed up sample entry.

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**Methods used in RABIT - Direct**

**Direct Impedance Technique**

- Electrodes in direct contact with the growth medium and sample
- Metabolising micro-organisms increases the electrical conductance of the culture medium in the system


### Direct Impedance Technique

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**Methods used in RABIT - Direct**

**Indirect Impedance Technique**

- The sample is contained in a glass tube, separated from the electrodes
- This method detects carbon dioxide produced by growing bacteria & fungi. This is converted to a conductivity reading
- The indirect method is suitable for detecting organisms such as yeast and moulds, which do not produce highly charged metabolites



Potassium Hydroxide

### Indirect Impedance Technique

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**Who are our potential customers?**

- Quality assurance on
  - Raw materials (high counts)
  - Finished products (low counts)
  - Water testing
- Challenge testing / preserve efficacy (Bioburden)
- Product performance
- Antibacterial studies
- Screening of groups:
 

<ul style="list-style-type: none"> <li>• TVC (Total viable counts)</li> <li>• Coliforms</li> <li>• Enterobacteriaceae</li> <li>• Salmonella sp</li> </ul>	<ul style="list-style-type: none"> <li>• Anaerobes</li> <li>• Gram negatives</li> <li>• Spore formers</li> <li>• Yeast and moulds</li> </ul>
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### Applications

## Standard One Module System

Windows™ 7, 64 bit PC with pre-loaded RABIT 3 software, Ethernet switch and a 32 channel incubator module. All necessary training will be provided by a DWS microbiologist. Each CPU will control between 1 - 16 incubator modules.

## Options

**R03050 32 Channel Incubator Module**  
*Includes 96 x Impedance Cells, 2 x cell racks, 2 x tube baskets, 1000 x borosilicate tubes and 100 x pressure seal caps complete with silicone inserts for indirect method usage.*

## Accessories

**R01140 RABIT Test Cells**  
**R01073 Rack for 36 RABIT Cells**

## Consumables

**R00995 RABIT Impedance Cells (pack of 8)**  
**G50001 Whitley Impedance Broth (500g)**  
**G50003 Whitley Enterobacteriaceae Broth (500g)**  
**G50004 Whitley Gram Negative Broth (500g)**  
**G50006 Whitley Anaerobe Broth (500g)**  
**G50007 Whitley MacConkey Broth (500g)**  
**G50010 Wort Broth (500g)**  
**G50011 Maximum Recovery Diluent (500g)**  
**G50013 Buffered Peptone Water (500g)**  
**R00405 Borosilicate Inner Tubes (Pack of 1000)**  
**R00407 Rubber Bungs (Pack of 10)**  
**R00995 RABIT Impedance Cells (Pack of 8)**  
**R00283 Cell Cleaning Brush (Pack of 10)**  
**R00335 Electrode Complete with 'O' Rings (Pack of 8)**  
**R00338 Spare Electrode 'O' Rings (Pack of 100)**  
**R00336 Pressure Seal Cap with Silicone Insert (Pack of 8)**  
**R00337 Silicone Insert for Cell Cap (Pack of 8)**  
**A01429 Scotchbrite Hand Pad for Cleaning Electrode Pins**

## Specification

**R03000 RABIT 3**  
*Includes RABIT 3 computer, keyboard and mouse, colour monitor, Ethernet switch, one incubator module, 500g Whitley Impedance Broth and a comprehensive range of accessories including sufficient cleaning aids for the first year of use.*

Dimensions of Incubator Module: 400mm x 600mm x 400mm (w x d x h)

Weight of Incubator Module: 35.2kg

Operating Temperature Range: 25°C to 45°C \*

Power supply: 230V~ ± 10% - 50/60Hz \*\*

Test Cell Volume: 2-10ml

\* *Use of the equipment outside the normal operating temperature range is possible. Consult DWS Technical Department.*

\*\* *Other voltages available on request.*

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