

# RTS

## REAL TIME SCANNING

*modular high-speed harness test system*



# RTS

*Immediate results without complex interface cables*



RTS (Real Time Scanner) is an entirely different type of wire harness test system.

It's a miniaturised, modular set of components which work to bring the test points directly to the unit under test, eliminating up to 90% of interface cables typically required with a traditional system.

It tests wire harnesses in real time using our micro switching technology.

An innovative best-in-class solution for FAL testing, RTS also offers many benefits for wire harness and sub-assembly manufacturers.

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*"RTS is an innovative solution - it allows workload reduction by fast set-up and fast testing."*

Olivier Boizot  
Project Leader, Airbus



# APPLICATIONS & CUSTOMERS

The Real Time Scanning (RTS) system enables you to check wiring integrity on harnesses during installation.

Its diagnostic ability and highly visual format provides instant results, enabling faults such as open circuits, shorts circuits, misswires or inversions to be detected and fixed in real time. And it does it all without long and complex interface cables.

## SUITABLE APPLICATIONS:

- High pin count, high connector count assemblies
- Formboard harness tests
- Installed harness test in the vehicle



## FOR TEST & MEASUREMENT OF:

- Open circuits
- Short circuits
- Misswire analysis
- Build progress feedback

...all in real time

## RTS CUSTOMERS

**AIRBUS**

**ALSTOM**



# SYSTEM SPECIFICATION

<b>MAIN FEATURES</b>	<ul style="list-style-type: none"> <li>• Fast testing up to 1000 test points/second</li> <li>• Active XRef enabled</li> <li>• Low voltage only (5V DC)</li> <li>• Hot (dis)connection to UUT</li> <li>• Satellites reduce interface cabling</li> <li>• RGB LED indicators for pass/fail status</li> <li>• Continuous scanning</li> <li>• Improved operational lifetime</li> <li>• Low profile umbilical</li> <li>• Lightweight, robust and modular design</li> </ul>		
<b>ELECTRICAL</b>	<p> <b>Power supply voltage</b> 90 to 260V AC  <b>Power supply frequency</b> 50/60 Hz  <b>Input current</b> 5.2 A maximum  <b>EMC Emissions (CISPR 11)</b> Class A  <b>EMC Immunity (EN 61326-1)</b> Industrial         </p>		
<b>MEASUREMENT ELECTRICAL PARAMETERS</b>	<p> <b>Current</b>  <b>Voltage limit</b> </p>	<p> <b>Continuity (scanning):</b>            200mA (<math>\pm 1\%</math> +1mA)            5V DC         </p>	<p> <b>Continuity:</b>            2mA to 200mA (<math>\pm 1\%</math> +1mA)            5V DC            Programmable in 1mA increments         </p>
<b>MEASUREMENT</b>	<p> <b>Resistance</b>  <b>LV isolation (short circuit)</b> </p>	<p> <b>Measurement (scanning):</b>            0.5<math>\Omega</math> to 20<math>\Omega</math> (<math>\pm 0.5\Omega</math>)            &gt; 20 <math>\Omega</math> (<math>\pm 0.5\Omega</math>)         </p>	<p> <b>Measurement:</b>            0.5<math>\Omega</math> to 2k<math>\Omega</math> (<math>\pm 1\%</math> reading +0.5<math>\Omega</math>)            &gt;2 k<math>\Omega</math> (<math>\pm 1\%</math> reading +0.5<math>\Omega</math>)         </p>

NOTE: Under the MK Test Systems Continuous Improvement Programme, specifications are subject to change. Regional power input options are available.

## COMPONENTS



Main Control Module (MCM)



Mag Connector



Nano Satellite (nSat)  
Available in 32 and 60 test points



Micro Satellite (uSat)  
Available in 120, 240 & 360 test points



Umbilical cable  
Available in 0.5m, 1m, 2m, 3m 5m, 10m and 15m lengths

# KEY FEATURES

## ADVANCED TECHNOLOGY

RTS uses a low voltage, ultra-fast settling, constant current source and a high speed voltmeter to enable sub-millisecond measurement times.

Combined with the latest technology in high speed solid-state switches RTS can take continuous measurements, scanning over the whole Unit Under Test (UUT) repeatedly and presenting real-time data to MKAT software.

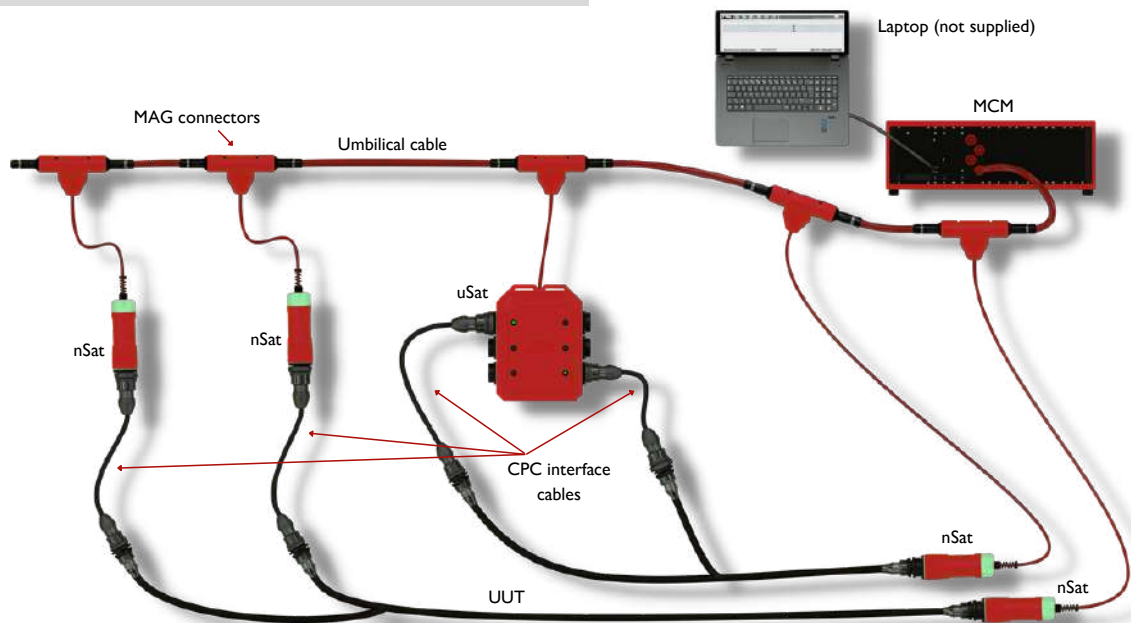
*"This unique combination of super high-speed technologies means our customers are reporting more than 30% reduction in overall testing and time."*

## MINIATURE DESIGN

RTS switching modules are extremely compact and lightweight allowing easy distribution around the UUT.

A combination of modern electronics, low profile components and a robust plastic enclosure allows an industrial solution with minimal interface wiring between RTS and the UUT.

*"A miniaturized test system means reduced footprint, simple storage, reduced handling effort, rapid deployment, and less interruption to other work-packages during the test phase."*



## FULL COLOUR INDICATORS

Each connector is fitted with a full colour RGB indicator.

This adds to the real-time feedback by showing the state of each connection (Pass/Fail/Idle etc.). Operators can identify fault locations and fix them immediately.

All colours and brightness are fully configurable using MKAT software.

*"The configurable LED indicators guide the operator to specific fault locations, faster and clearer fault diagnostics and reduced testing time."*

## MAG CONNECTORS

The satellite modules are linked to the umbilical by the unique magnetic MAG connector. Designed in-house by MK Test, the MAG creates a fast and efficient method of hook-up.

Magnetic polarisation enables the operator can "feel" the correct orientation of the connector; spring pins create contact held by the magnetic force. Quick disconnection protects the UUT from accidental damage if the module or interface wiring is pulled on by mistake.

*"The MAG connector means simple and rapid hookup, rapid disconnect, and a faster overall test phase."*



# BENEFITS

## REDUCE TESTING TIME BY 30%

- Hook up time, test time and disconnect time are all reduced.
- High speed switching means the test is complete by the time you finish connecting the test system
- Visual LED indication means harness faults and location are indicated clearly and instantly
- Detailed reports available in real time to aid in rapid test diagnostics and repair

## REDUCE FOOTPRINT & HANDLING

- Unique miniaturised switching modules means reduced storage footprint and rapid deployment
- Small lightweight and robust, less chance of damage to the product being tested
- Eliminates health and safety concerns related to moving traditional heavy rack systems

## REDUCE INTERFACE CABLES BY UP TO 90%

- Switching modules are small, lightweight and connect directly to each harness connector
- RTS system fits into the smallest spaces, no need for long interface cables from rack based systems outside of the vehicle
- Adaptors are typically 20cm, compared to traditional interface cables of 5m to 10m
- Miniaturized RTS switching available in Avionic LRU format, 100% elimination of interface cabling
- Results in rapid deployment/hookup, and significant reduction in cable maintenance costs

## REDUCE PRODUCTION DISRUPTION

- High speed testing and diagnostics = less time testing
- Miniaturized format and reduced interface cabling means other tasks can be carried out at the same time as testing.

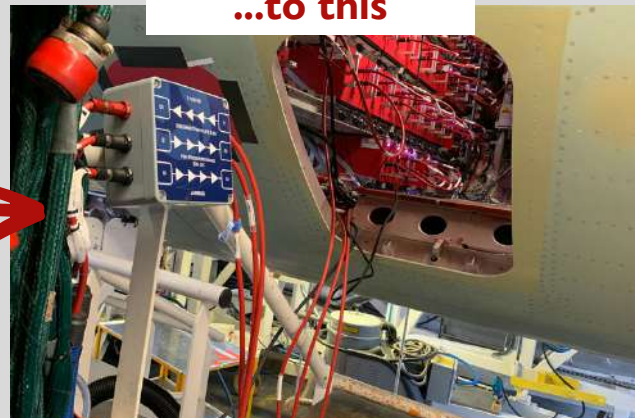
## THE RESULT?

*A vastly faster, easier & neater test system*

from this...



...to this



# MKAT TEST MANAGEMENT SOFTWARE

*"MKAT's RTS tools provide easy to use diagnostic features to help the operator identify and locate faults in the shortest time possible."*

*In our 2022 survey, 87% of our customers said MKAT software was easy to use.*

*From creation of test programs through to fault diagnostics, MKAT supports your business needs whilst giving engineers control over testing.*

**Our Gen3 software is now superboosted for RTS.**

**MKAT, our test management software, combines ease of use with highly advanced technology. It's all driven by our goal of simplifying the test process for our customers.**

**RTS has been integrated into the existing MKAT gen3 software suite, offering users the full range of powerful and intuitive test, diagnostic and reporting features.**

## **REAL TIME USER INTERFACE**

A brand new test type and user interface has been added to the MKAT Runner software to display the real time data to the operator. The UI groups and displays all netlist information with easy searching and filtering for passed/failed connections along with specific connections within the UUT.

## **MULTIPLE OPERATOR VIEWS**

Using MKAT's RTS reporting tools, multiple operators can simultaneously view reports specific to their section of the unit under test in real time, leading to faster & more efficient testing.

## **A SIMPLIFIED TEST PROCESS**

We pride ourselves on the robustness and reliability of our hardware, but it's our software which stands out from our competitors. We've spent years developing and refining MKAT to make it simple to use, yet powerful.

## **CREATING THE TEST PROGRAM**

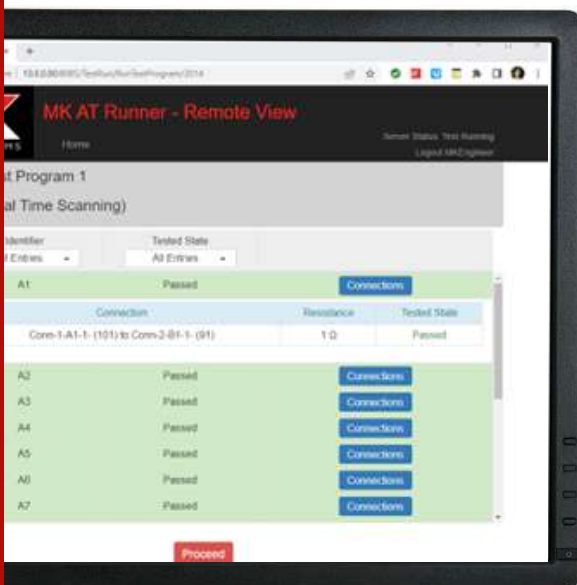
Create a test program without having to learn a programming language. We use standard wiring input of Netlist, connection tables and interface adaptor tables to create test programs. Test parameters can be set by test, group or connection. Tests are enabled or disabled by simple click of a button.

## **APG**

The Automatic Program Generation (APG) toolset is included in the MKAT as standard. APG allows users to re-map fields and use their existing data formats.

## **EASE OF USE**

Creation of the test program is only the start – our software makes the test process simple. Operator instructions and prompts can be easily added to any program, and automatic test reports and fault diagnosis tools inform the operator of the nature of the failure and how to fix or retest the fault.



# SERVICE & SUPPORT

Our service team works face to face with our customers onsite and have an in-depth knowledge of our systems. Beyond this, our senior engineers provide an even greater knowledge, supporting our customers with testing requirements, test program development and engineering bespoke solutions.

If required, we can remotely access your system to solve problems and diagnose issues, helping you to get up and running quickly.

We offer three levels of service agreement, providing peace of mind and help on hand when you need it - visit [mktest.com/support/service-support](https://mktest.com/support/service-support) or speak to our team for more details.

*Essentials Package  
(Level 1)*

*Plus Package  
(Level 2)*

*Premium Package  
(Level 3)*



## TRAINING

We design our products to be easy to use, and pride ourselves on our simple and logical interface.

A half day training session is included in your onsite system installation.

Most of our customers find this training to be suitable, but additional training can also be arranged.

Additional training options include:

- Monthly FREE webinars
- Bespoke training workshops (onsite or remote)
- MK open days



# ABOUT US

We've been designing and manufacturing automatic electrical test equipment for 30 years. In that time, we've provided systems to customers around the world, in the following industries:



- Aerospace
- Automotive
- Defence (US DoD CAGE code 8EGR1)
- Industrial, Power & Control
- Subsea
- Trains

Our range of products enable rapid, automatic testing of engines, wiring harnesses, slip rings and other vital components.

We can work with you wherever testing is undertaken, at any stage of the product lifecycle. This may be at component manufacture stage - providing quality assurance to subcontractors - or at the final assembly stage, ensuring complete confidence in the final product. Beyond this, we also provide testing solutions for MRO and servicing.

# TALK TO US

Our UK head office is supported by satellite locations in the US and Hong Kong. With our large global network of reps and distributors, you can be assured of local support, sales and training.

# FOLLOW US



For your local contact details, please visit our website, [www.mktest.com](http://www.mktest.com).

