



RTBx Data Logger *RTBx1210* and *RTBx1220*

Collect performance data for RapiTime with the RTBx Data Logger

The RTBx data logger is high-performance equipment that connects to output ports on your target hardware and collects timing data as your application runs. As the instrumentation point (Ipoint) identifiers appear on the output port, RTBx timestamps and records them, producing a trace of Ipoint/timestamp pairs. This timing data underpins RapiTime's analysis of on-target timing performance.

Analyse trace data using RapiTime

Use the RapiTime toolset to analyse the performance of industrial-scale, real-time, embedded software and:

- + measure observed execution times
- + locate timing bottlenecks in source code
- + monitor test coverage
- + calculate predicted worst-case execution times.

Cost-effective data logging without using a debugger or logic analyser

You could use a debugger or logic analyser to collect timing data for RapiTime, but the RTBx data logger is a cost-effective and easy to use alternative because:

- + RTBx is a generic solution, so you can re-use it across projects, whereas debuggers are often specific to a single CPU family.
- + RTBx is designed to collect and export timing data, so is easy to use, whereas logic analysers can be complex to set up for both data capture and data transfer.
- + RTBx has a large data storage capacity which debuggers lack. Logic analysers that can store large amounts of data can be prohibitively expensive.

Collect performance data for RapiTime™ with the RTBx™ Data Logger

- + Cost-effective data logging for RapiTime trace capture
- + Run tests for weeks with continuous data collection
- + Minimise on-target instrumentation
- + Quick setup and easy remote management

RTBx1210 Capture data traces using instrumentation point identifiers of up to 16 bits.

RTBx1220 Capture data at higher rates, in larger volumes and using instrumentation point identifiers of up to 32 bits.

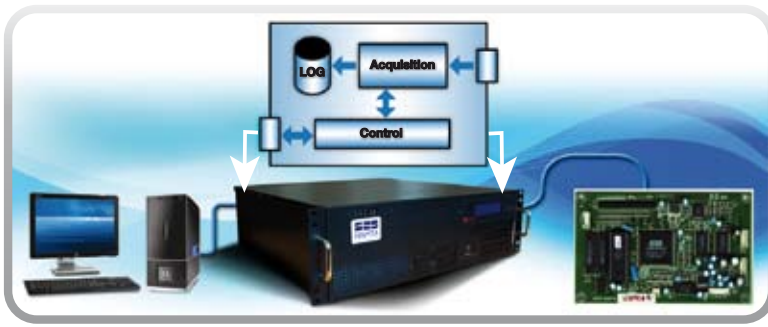
Run tests for weeks with continuous data collection

You can use RTBx to collect and store the data from an entire test programme. Even when connected to sources that generate trace data at the highest rates, RTBx can collect trace data for 19 days or more without interruption.

RTBx maximises its storage capacity and data transfer speed by compressing the trace data on the fly.

Minimise on-target instrumentation

By using RTBx you can minimise the instrumentation overhead in your application. Each instrumentation point will be implemented as one or two assembler instructions, which write a constant to the output port. RTBx does the work of time-stamping the trace data for you.



Using idpack™ to maximise instrumentation

When RapiTime instruments your code, it also constructs a structural model of your application. RapiTime's idpack technology uses this model to maximise re-use of the instrumentation point identifiers. This allows lpoint numbers to be allocated in a smaller output bit range, for example 8 bit rather than 32-bit.

RTBx collects data from your target application and is easy to control via a Windows or Linux GUI

You can further improve the accuracy of your timing data during analysis. RapiTime can subtract a fixed value to correct for the execution overhead of reporting each instrumentation point.

You can connect RTBx to single and multiple output ports. For multiple port connections RTBx merges the data.

Quick setup and easy remote management

You can use RTBx straight out of the box with your target system and you can control it via a GUI running on a Windows or Linux host.

8, 16 and 32 bit output ports

RapiTime inserts instrumentation point identifiers within the source code, typically within a 32-bit or 16-bit range. However, if you have a limited number of output bits, which restrict the number of instrumentation points that you can allocate, you can use RapiTime's idpack™ technology to fully instrument your code within the output limitations.

Interested?

For more information on RTBx, RapiTime or Rapita Systems you can:

- + take a look at www.rapitasystems.com
- + download white papers about timing analysis using RapiTime and trace data capture using RTBx from www.rapitasystems.com/downloads
- + find the contact details of distributors at www.rapitasystems.com/distributors
- + email us at enquiries@rapitasystems.com
- + call us on **+44 (0)1904 567747**

Product Specifications

RTBx Models	RTBx 1210		RTBx 1220		
Mode of Operation	16 bit mode	8 bit mode	32 bit mode	16 bit mode	8 bit mode
Width of data sample	up to 16 bits	up to 8 bits	up to 32 bits	up to 16 bits	up to 8 bits
Maximum sustained trace rate (million lpoints/second)	20	30	20	40	60
Minimum separation between lpoints (typical instrumentation)	33ns	33ns	40ns	33ns	33ns
Minimum separation between lpoints (special instrumentation)	12ns	12ns	12ns	12ns	12ns
Time resolution	10ns	10ns	20ns	10ns	20ns
RTBx capacity (trillions of samples, assuming typical compression)	25	33	33	50	67
Maximum duration of trace at maximum sustained trace rate	374 hours (14 days)	308 hours (12 days)	462 hours (19 days)	462 hours (19 days)	308 hours (12 days)
Maximum duration of trace at typical tracing rate*	66 days	75 days	135 days	133 days	151 days

*Data for ARM9 Running Dhrystone tests at 96MHz

Interfaces

Host Connection	Target Connection
Ethernet (TCP / IP)	8, 16 or 32* bit digital inputs (*RTBx 1220 only) Low: 0.0-0.8v High: 2.0-5.0v Input impedance: 50kΩ or 110Ω Capacitance: 15pF (excluding cabling)

Rapita Systems Ltd.

IT Centre | York Science Park | YORK | YO10 5DG | UK

Tel +44 (0) 1904 567747

Email enquiries@rapitasystems.com



www.rapitasystems.com