Rapita Systems uses Spectrum I/O cards to create new real time, high-speed digital data logger for embedded systems

Grosshansdorf, Germany - 23 October 2014. Rapita Systems Ltd. has selected Spectrum I/O cards to create the new RTBx real time, high-speed digital data logger. The Spectrum M2i.7000 cards were chosen because they have a very high data acquisition speed of up to 125MHz and a choice of 8/16 bit and 32 bit I/O. This makes the data logger ideal for Test and Measurement applications particularly in the avionics and automotive electronics industries. It provides an efficient way to collect and time-stamp real-time data from a wide variety of embedded targets, over many weeks if necessary.

"The Spectrum cards provide us with a quick time to market as well as a very flexible solution so that we can provide exactly what our customers require," said Dr. Guillem Bernat, CEO of Rapita Systems. "The cards are a standard PCI-X form factor so we can easily integrate them into our product for the data acquisition part, enabling us to concentrate on adding our expertise of turning that data into useful information for the customer."
CPU embedded systems communicate their commands and data along digital bus networks most commonly 8, 16 and 32 bits wide. Successful execution of code and timing performance are critical factors. Being able to track down run-time problems across different CPU based systems using an easy-to-use single generic device clearly provides a superior solution to many traditional data loggers and logic analysers, which can be CPU specific as well as complicated to configure. An essential part of the task is collection and storage of time-stamped trace data and where collection extends too many days, even weeks, so a deep storage facility within the device is important. The Rapita Verification Suite (RVS) analyses code execution trace data collected from the target by the RTBx. This provides a complete timing and coverage analysis solution, which is essentially a thorough testing of embedded systems source code program behaviour.

The Rapita RTBx Data Logger

The RTBx Data Logger can be configured to a whole range of automotive and avionic embedded CPU-based systems with varying data bus configurations. Also the Spectrum M2i card's adjustable sampling rates and extended data streaming functionality (FIFO mode) allows digital trace capture over several weeks or more. The RTBx Data Logger utilises the M2i card within a special industrial 19-inch rack computing platform and integral deep data storage facility. Connection to the RTBx Data Logger is easily performed from its rear panel via a ribbon cable to the dedicated output port on the embedded system, which is the source of data (instrumentation points) every few CPU machine code cycles. An alternative connection can also be made to the address bus of the system under test, where the user can write a small instrumentation point routine to provide the data at a specific address. The front panel provides a neat LCD display showing logging status, logging data, estimated recording time, network (IP) address and software version. The RTBx Data Logger can be used straight out of the box with the target system, with the further facility of control via an Ethernet connection using a Windows or Linux Host running the Rapita Systems graphical user interface. RTBx is designed to work hand-in hand with RVS.
"This combined solution provides the basis for products that can evolve to keep pace with the future challenges of more advanced CPU embedded system design, minimising the time and effort in their development, implementation and optimization," concluded Gisela Hassler, Spectrum's CEO.

Rapita Systems Ltd. is a UK-based company developing innovative software verification solutions for customers in the high-criticality avionics and automotive electronics industries. Tools contained within Rapita Verification Suite (RVS) help to reduce the cost and increase the effectiveness of verification activities in a number of areas including timing performance and structural coverage analysis.  www.rapitasystems.com

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