XK-5 Hammond Organ from Suzuki Musical Instrument MGF Co., Ltd. Adopts eSOL's TRON-Based Software Platform for Multi-Core Processors

eSOL's TRON-Based Software Platform for Multi-Core Processors Contributes to

Newly Developed Virtual Multi-Contact Keyboard Featuring Subtle and Complex Sound Generation

XK-5 Hammond Organ

Tokyo, Japan. April 5, 2017 –eSOL, a leading developer of real-time embedded software solutions, today announced that its software platform based around the eT-Kernel Multi-Core Edition, a real-time operating system (RTOS) for multi-core processors, has been adopted for use in the XK-5 Hammond Organ from Suzuki Musical Instrument MGF Co., Ltd. Use of the platform has contributed to the development of the organ's Virtual Multi-Contact Keyboard that is capable of subtle and complex sound generation based on three-stage sensing of how the player presses each of the 61 keys. In addition to utilizing the ability of eT-Kernel Multi-Core Edition to get the best performance out of multi-core processors to perform real-time processing of this large quantity of sensing data, the software platform also handles parallel execution of the XK-5's numerous other functions.

With a compact design, the XK-5 is a high-quality model that has been made to resemble the well-known B-3 Hammond organ in terms of its tone, how it feels to play, and even its appearance. The newly developed Virtual Multi-Contact Keyboard replicates the busbar and leaf contacts. This provides the delicate response that is important for organ playing and is made possible by multi-stage contacts. The organ can save user-generated data on USB memory or its internal mass storage. It also has a USB-B port that can be used for audio recording or as a MIDI interface to a PC.

On the XK-5, eT-Kernel Multi-Core Edition uses eSOL's Blended Scheduling® technology to combine the benefits of both SMP, which provides high throughput on a single system and OS, and AMP, which enables the reuse of existing software developed for single-core processors and provides guaranteed real-time capability. It enables the optimal scheduling mode to be selected to suit a variety of different functions, such as USB streaming or real-time sound generation using the multi-stage contacts provided by the Virtual Multi-Contact Keyboard. In addition to eT-Kernel Multi-Core Edition, the organ also uses the FAT file system and USB device/host stacks. Software development, meanwhile, uses the eBinder IDE, which is tightly integrated with eT-Kernel Multi-Core Edition and provides powerful tools for the debugging and analysis of complex multi-core systems.

▽ For more information about the XK-5 Hammond organ: https://www.suzuki-music.co.jp/products/65891/

▽ Suzuki Musical Instrument MGF Co., Ltd. web site: https://www.suzuki-music.co.jp/

"Having chosen the i.MX 6 Quad from NXP Semiconductors as the best CPU to satisfy the requirements of the XK-5, we collected and compared information about RTOSs for multi-core processors that supported the i.MX 6 Quad. In addition to conveying an impression of reliability, having already been used extensively elsewhere, what led us to select eT-Kernel Multi-Core Edition from eSOL was that it was reasonably priced compared to what overseas OS vendors had to offer, and that things like support and documentation were available in Japanese. The ability to select the appropriate scheduling mode from among four options meant we were able to achieve subtle and complex sound generation, with excellent real-time capability and high throughput," said Masato Tomie, Chief Engineer, Development Division, Suzuki Musical Instruments MGF Co., Ltd.

"Following on from the selection of our FAT file system for the previous XK-3c model, I am honored that our RTOS-based platform with eT-Kernel Multi-Core Edition as a key feature was chosen for the XK-5. The efficient and effective use they were able to make of the multi-core processor was, I believe, due to the flexible scheduling capabilities of eT-Kernel Multi-Core Edition. eSOL intends to continue providing strong support for the efficient development of high-quality software for high-performance multi-core systems like the XK-5," said Nobuyuki Ueyama, Executive Vice President of eSOL.