

EtherCAT® **RSW-ECAT-Master** EtherCAT Master for Windows

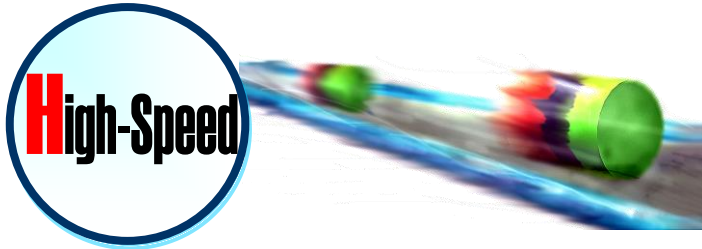
R e a l t i m e - E t h e r C A T f o r W i n d o w s

RSW-ECAT Master is a middleware for Windows program developers.

The purpose is that you can enjoy EtherCAT® world with ease by your Windows PC in hand.

You can handle high-speed sampling data in Windows program using APIs (Application Programming Interface) for EtherCAT Master Software. We've provided for not only above APIs but also various sample programs so that beginner on EtherCAT® can use it at ease.

◆ Main Features



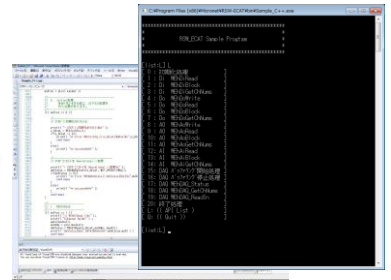
▶ High-Speed Data Sampling

You can achieve high-speed data sampling by EtherCAT communication with Ethernet port which your PC in hand implements. Sampling data can be used by Windows programs easily using associated API libraries.

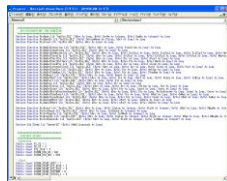
▶ Samples with practical Source

Sample programs such as digital I/O, Analog I/O, Buffering have been provided by C / C++ languages.

You can utilize those source codes in creating your actual control programs.

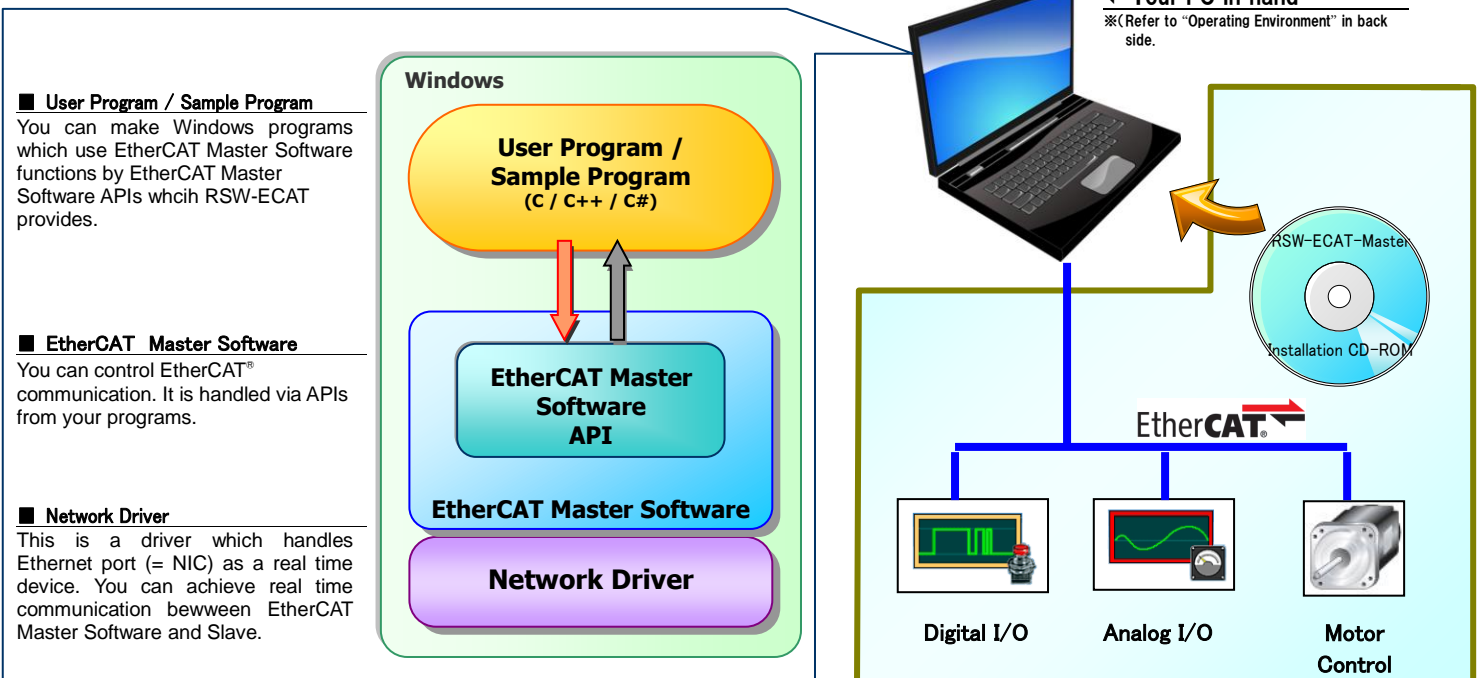


▶ Abundant API Libraries



APIs to use high-speed sampling data by Windows programs are provided. You can control abundant slaves such as Digital I/O, Analog I/O. You can also create programs which meet your needs by combining these APIs.

◆ System Configuration for RSW-ECAT Master



⊕ API List (Excerpt)

Initialization	WEhOpen()	Start EtherCAT communication
	WEhClose()	End EtherCAT communication
Master Control	WEhRqState()	Change Master state
	WEhGetState()	Get Master state
	WEhWaitForCyclic()	Wait for Master Cyclic Process
Search / Manage Slave	WEhFindSlave()	Search Slave
	WEhGetSlaveStatus()	Get Slave status
	WEhGetOnlineSlaveCount()	Get connected Slave Count
ProcessData Access	WEhReadByte()	Read 8 bit Data from VIOS IN area
	WEhWriteByte()	Write 8 bit Data to VIOS OUT area
	WEhReadWord()	Read 16 bit Data from VIOS IN area
	WEhWriteWord()	Write 16 bit Data to VIOS OUT area
	WEhReadDWord()	Read 32 bit Data from VIOS IN area
	WEhWriteDWord()	Write 32 bit Data to VIOS OUT area

⊕ Development Environment

Visual Studio	Support Version : 2005, 2008, 2010, 2012 Support Development Language : C, C++, C#
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※ Please prepare for development language environment by yourselves

⊕ Control Programming of RSW-ECAT

RSW-ECAT is created so that you can control multi EtherCAT slave instruments as if they were devices directly connected to I/O ports. For example, Initialization steps which originally needs complicated EtherCAT master procedures are completed just by calling some API which are user-friendly.

In addition, I/O functions themselves are designed simply. So even if you don't have expert knowledge about EtherCAT, but if you have only experiences about I/O devices, you can focus on your control programming. This is the feature of RSW-ECAT-Master.

Basic Control Steps on RSW-ECAT

Basically RSW-ECAT controls slave instruments by the following steps.

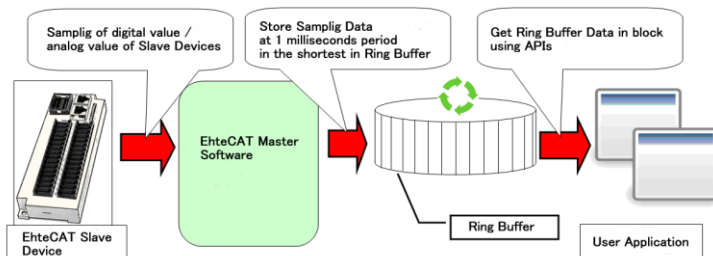
- ① **Initialize Master**
Application firstly initializes connection with RSW-ECAT-Master.
- ② **Change Master state to OPERATIONAL**
Start EtherCAT cyclic communication
- ③ **Search Target Slave**
Involatile IDs (= VendorID and ProductCode) are written in EtherCAT Slave. Existence and Position of Target Slave are searched and obtained by these IDs.
- ④ **Wait for Master Cycle**
Wait for Master Cycle coming
- ⑤ **Control I/O**
EtherCAT Slave instruments are relocated in successive virtual address space (=VIOS) by RSW-ECAT. You can control EtherCAT Slave instruments such as I/O Slaves, Motion Slave controlling I/O to EtherCAT Slave instruments as if you handled I/O address spaces.

⊕ DAQ Function

RSW-ECAT includes Kernel function which can hold fast to real time performance running in parallel with Windows.

This real time kernel function enables you to achieve 1 millisecond data sampling period in the shortest.

Sampling data is stored in ring buffer. User applications can get them in block using APIs.



⊕ Materials contained in RSW-ECAT-Master

Installation CD-ROM for RSW-ECAT-Master	■ EtherCAT Master software
	■ API Libraries
	■ Instruction Manual
USB Dongle	■ Sample Programs These are sample codes which show how to use EtherCAT® functions by API call. (For Microsoft Visual Studio 2008)
	Dongle Key for License Certification

⊕ Operating Environment

OS	Windows 7 (32bit/64bit) Windows 8 (32bit/64bit)
CPU	Intel x86/x64 CPU (More than Intel Core 2 Duo)
Memory	More than 2GB (Use 64MB in it)
HDD Capacity	More than 100 MB free space
Supported onboard network・PCI/PCIe network cards	Intel Pro/100, Intel Pro/1000 Realtek 100M, Realtek1G (In Above, Ethernet controllers corresponding to HPE2)

⊕ Option Products

EtherCAT Configuration Tool "RSI-ECAT-Studio"	This is a configuration tool which automatically detect / cognize the configuration information of EtherCAT Slave. You can do adjustment works visually. You must purchase one license so that you can make the configuration information for RSW-ECAT-Master use.
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※The specifications in this catalog might change without any previous notice.