

KPA EtherCAT Master

EtherCAT network control

KPA EtherCAT Master is a software stack, which corresponds to all EtherCAT Technology Group standards and has numerous features, which can be used for developing of cost-optimized and powerful PLC on almost any platform (such as arm/arm64 or x86/x64) to control EtherCAT I/O produced by any vendor.

Benefits and key features

■ Meets EtherCAT Technology Group (ETG) standards

KPA EtherCAT Master can be delivered as standard or customized feature packages. Two standard packages are available according ETG.1500 standard: Class A (Standard package) and Class B (Basic package). Moreover, koenig-pa GmbH introduces Premium package, which integrates various additional features for creating innovative applications.

■ Available for numerous operating systems, as well as OS-less systems

KPA EtherCAT Master is available for numerous operating systems, including Windows, Intime, RTX64, Linux, Xenomai, QNX, VxWorks, FreeRTOS, ITRON, Intewell as well as OS-less systems. Upon request, koenig-pa GmbH experts can adjust support for any operating system.

■ Hardware extensions for Xilinx/Intel FPGA (Altera) and Texas Instruments PRUSS Sitara CPU

Availability of IP Cores for Xilinx and for Intel FPGA (Altera) FPGAs, PRUSS co-program for Texas Instrument Sitara CPUs (AM47x and AM57x) increases productivity and data processing efficiency. Implementation for AM6x is available upon request.

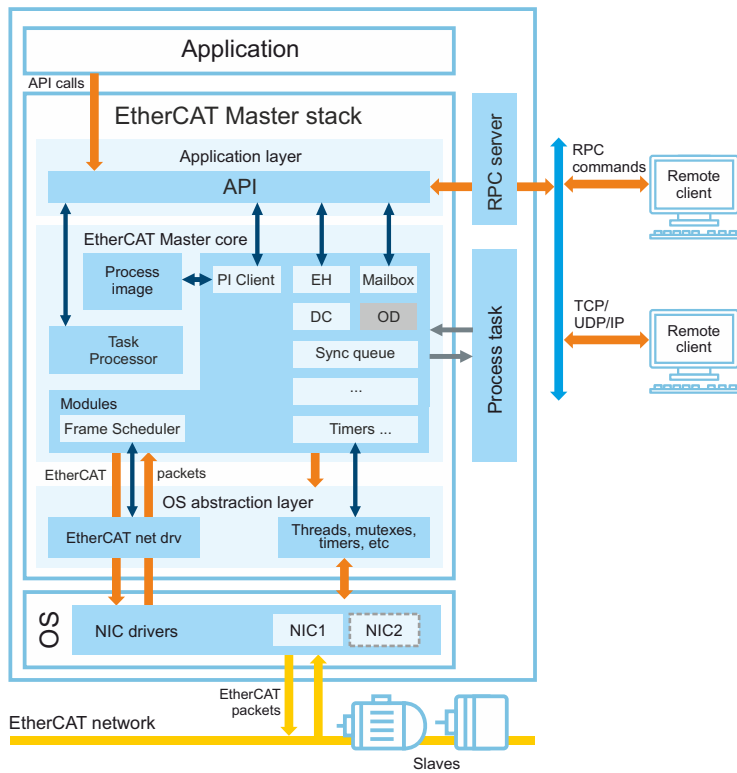
■ Online configuration

KPA EtherCAT Master can configure bus on the fly without EtherCAT configuration tools. The Online Configurator module allows a user application to select slave's configuration and to switch between different configurations of the slave, for example, between position control of a drive and velocity control, or between bus configurations with a different number of slaves.

■ Process image logging for data transferring into analytic tools

Process image (PI) logger allows to collect real-time data for transferring to other levels without influence on real-time behavior of the control system. Data can be transferred to MATLAB, LabView (TDMS format), and any other analytic tools. LabView full integration is provided by the partner of koenig-pa GmbH – Ackermann Automation GmbH. Moreover, koenig-pa GmbH has designed a special Python extension, which allows to aggregate data into a file of any format, for example a CSV-file, for its further processing.

KPA EtherCAT Master Stack Architecture



Feature packages

Features	Basic	Standard	Premium
Process Data Exchange	●	●	●
Network Configuration	●	●	●
Mailbox support	●	●	●
CoE	●	●	●
FoE	●	●	●
Synchronization with Distributed Clock (DC)	○	●	●
DC support	●	●	●
Time distribution (Slaves synchronization)	●	●	●
Slave-to-Slave Communication	●	●	●
Explicit Device Identification	—	●	●
EoE	—	●	●
SoE	—	●	●
AoE	—	●	●
VoE	—	●	●
Continuous Propagation Delay compensation	—	●	●
Sync window monitoring	—	●	●
Synchronization of Master with Slaves	—	●	●

Feature Packs	Basic	Standard	Premium
FP External Synchronization	—	○	○
FP Cable redundancy	○	○	●
FP Hot Connect	○	○	●
FP Mailbox Gateway	○	○	●
KPA Extensions			
Data logger	○	○	●
Frame logger	○	○	●
PI Snapshot	○	○	●
Events handler	○	●	●
PI logger	○	○	○
CAN DBC driver	○	○	○
VCOM driver	○	○	○
Autoconfigurator	○	○	○
KPA Master redundancy	○	○	○
Optimized drivers and HW Extensions	○	○	○
Hardware timed send	●	●	●

- Included in the delivery set
- Not included in the delivery set
- May be included in the delivery set

Custom Development

koenig-pa GmbH offers specific software development for customers who require additional support for integrating EtherCAT capabilities into their applications or solutions.



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