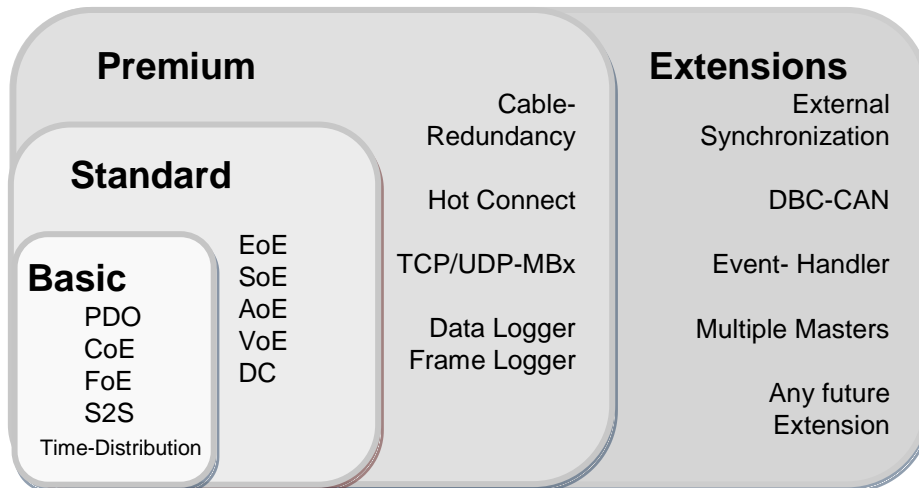


1. Master Classes

Each package contains a specific set of functions and features divided into classes. According ETG 1500, are defined two classes Standard (Class A) and Basic (Class B). In Class B are fewer resources available on CPU side and memory.

2. Master functionality



Cable Redundancy - in case of cable or device failure the function ensures the network segments go on with operation except those behind the failure.

Hot Connect for pluggin in/out of hot-connect devices in Operational mode. Mandatory are to be available all the time.

TCP/UDP-Mailbox feature allows configuring a device by using a device configuring tool through the KPA EtherCAT Master without extra Ethernet connection using UDP or TCP protocol.

Data Logger collects one or more variables starting from trigger condition in realtime on the Master side. The Studio retrieves the stored data and enables building of charts and saving in MDF (Mess Data File).

Frame Logger viewer shows all types of frames received and sent by Master over time for timing analysis.

External Synchronization One or more EtherCAT networks can be synchronized with a global and precise clock, called "Grandmaster Clock", by inserting its time into the EtherCAT network(s) using EL 6688.

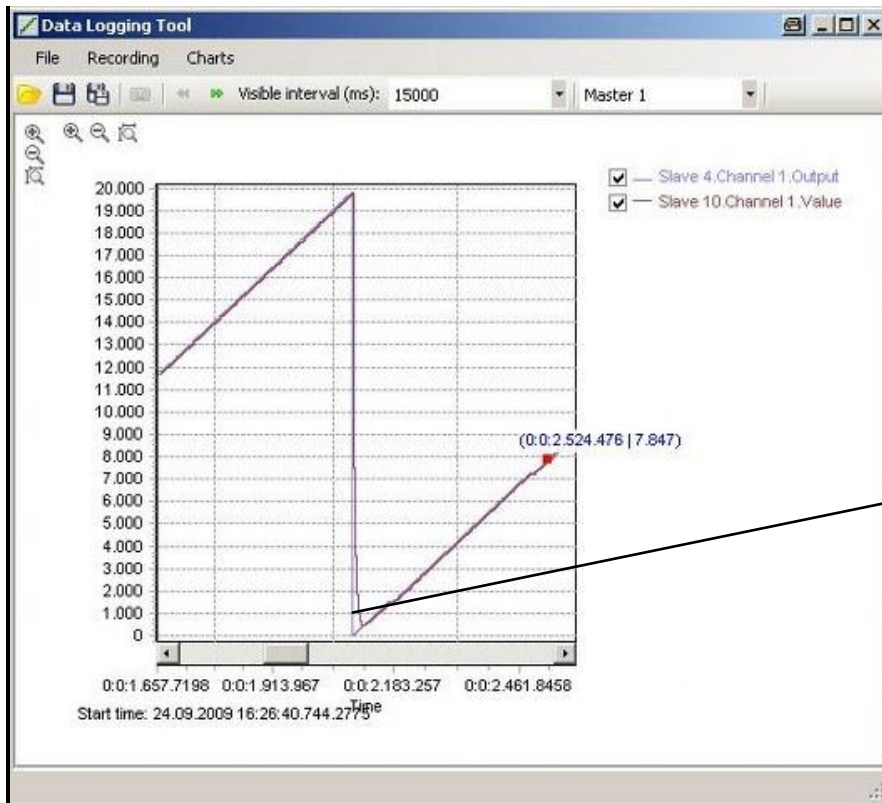
DBC-CAN-extension of KPA EtherCAT Master calculates the physical value automatically using the raw analogue sensor value from CAN bus and offset and gain from DBC-file.

Event-Handler A message queue filled with events from all EtherCAT Slaves and Master is avoiding polling of each device inside application individually.

Multiple Masters On one target hardware several instances of KPA EtherCAT Master can run. These masters can use one or different cores

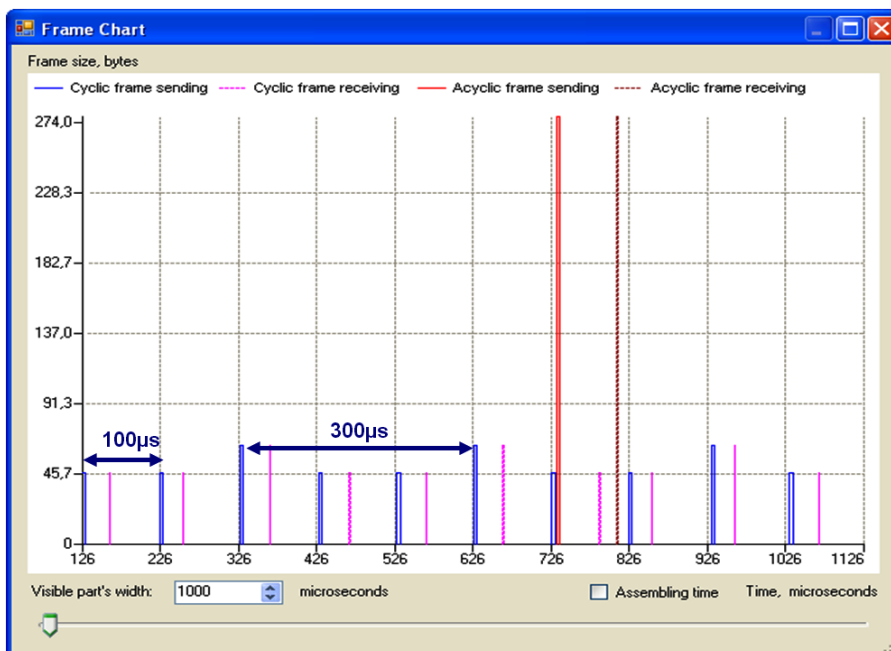
Mailbox protocols: CoE: CAN application protocol • FoE: File Access • EoE: Ethernet • SoE: Servo device profile • AoE: ADS • VoE: Vendor Specific Protocol **over EtherCAT** DC Distributed Clock • PDO Process Data Object

Data Logger:



→ Analog output wired to an analog input with two pass filter

Frame Logger:



PDO
100µs in parallel to 300µs
- Cyclic frame sending
- Cyclic frame receiving

SDO
- Acyclic frame sending
- Acyclic frame receiving

3. KPA EtherCAT Studio for master developers

The KPA EtherCAT Studio configuring and diagnostic tool is connected to Master via Remote Procedure Call server (RPC).

Configuring

Projects Comparator allows comparison of Project active in the Studio against another Project from a file. Differences are highlighted with customizable colors, properties values are displayed.

Process Image Viewer shows allocation of inputs/outputs in memory (also showing fixed and free data areas).

Slave to Slave (S2S) Communication Editor allows logical communication of slaves in input-output rows of the Process Image.

Sample Rate Editor allows especially for FSoE devices distributing of I/O data to different frames.

Profibus, CAN Bus Configuration

Diagnostics

Diagnostic Scanner allows scanning EtherCAT network and executing diagnostics commands to isolate possible slave and connection problems.

Topology Viewer displays structure and state of EtherCAT slaves and connection.

Diagnostic Traces categorized messages with sorting possibilities for classes like errors, warnings and messages and possible show causes and remedies.

Data- and Frame-Logger

4. Real-time Operating Systems and versions

The Master is available for ARM-, ppc-, x86-, Zynq- or Cyclon- hardware platforms and is adapted to the following realtime operating systems (RTOS) by the Operating System Abstraction Layer (OSAL).



4.01, 4.02, 5.x, Distributed RTOS
x86



OSADL RT-preempt User Space, 2.6.33, 3.x
x86, ARM, ppc



6.5.x
x86, ARM, ppc



RTX2011, RTX2012, RTX2013
x86



2.4.7, 2.6.2
x86



6.8.2, 6.9 (SMP)
x86, ARM

Notes: Other operating systems and versions up on request, please ask sales@koenig-pa.de
64 Bit various are in preparation, please ask sales@koenig-pa.de

