



Enabling CC-Link IE communication using general-purpose 100Mbps Ethernet

Cyclic communication achieved with software for further visualization of production facilities through IIoT

The CC-Link Partner Association, working to expand the adoption of the industrial open network CC-Link IE, has announced the launch of CC-Link IE Field Network Basic. This is an open field network using general-purpose 100Mbps Ethernet communication and is a new network mode in the CC-Link IE Ethernet-based integrated network lineup. Specifications enabling communication compatibility with software alone lower the threshold for control device networks and thus make it easier to realize transparent and high-efficiency production facilities.



■ CC-Link IE Field Network Basic Development History

CC-Link IE is an industrial open network using Ethernet technology. A key feature is the wide 1Gbps bandwidth unseen in other industrial networks. This exceptional bandwidth allows the simultaneous handling of normal process operation data (I/O updates, etc.) along with practically unlimited levels of asynchronous communication, such as production and operational performance data. These are known as “cyclic” and “transient” traffic with CC-Link IE and allow systems to maintain performance even under demanding application conditions. CC-Link IE consists of CC-Link IE Control Network as a trunk network for inter-controller communication and CC-Link IE Field Network for connecting controllers to field devices.

These features have led to the adoption of CC-Link IE not only in Asia but all over the world; however, as attention increasingly focuses on the IIoT (Industrial Internet of Things), low-end devices and small-scale equipment, conventionally on the fringe of networks, are now in need of connectivity as never before. Rather than high speed, these production sites demand excellent cost-performance and easily implemented networks.

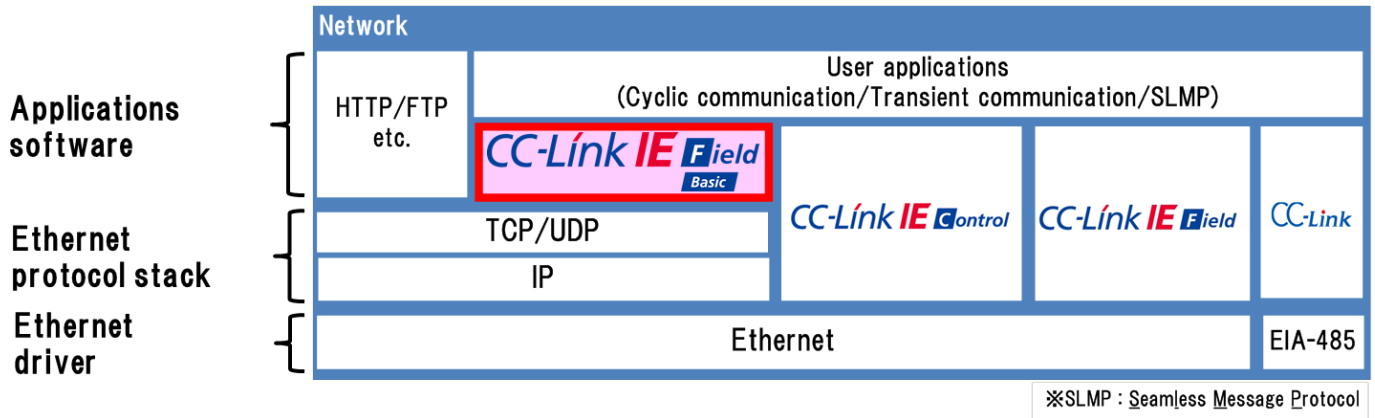
The CC-Link Partner Association has released the CC-Link IE Field Network Basic specification as a solution that offers easier network compatibility while maintaining mutual connectivity with CC-Link IE.

■ CC-Link IE Field Network Basic Features

1) Implementation with general purpose Ethernet devices

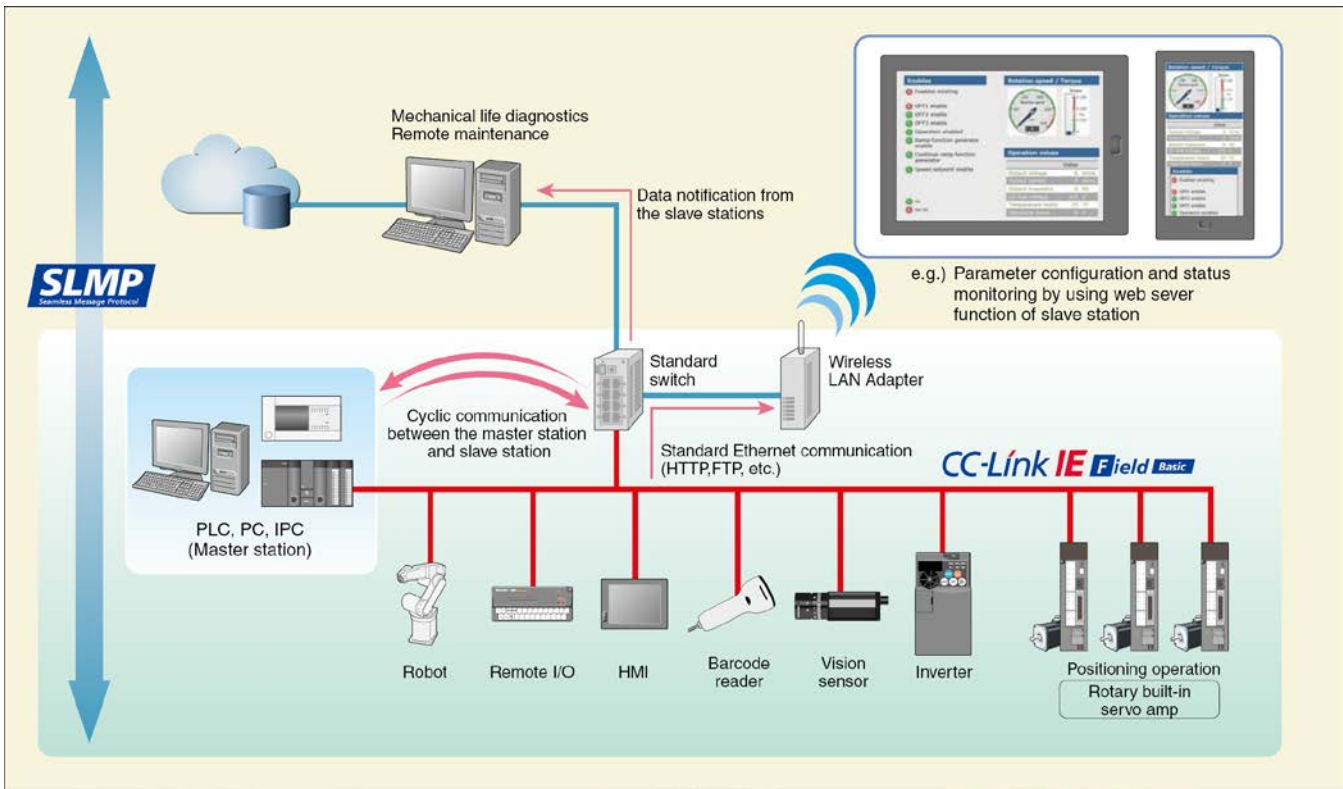
CC-Link IE Field Network Basic achieves the cyclic communication required for device control with software at the network protocol application layer. General purpose Ethernet compatible devices can support CC-Link IE Field Network Basic through software implementation alone. Transient communication leverages the benefits of TCP/IP Ethernet to make the CLPA's Seamless Message Protocol (SLMP) available. Moreover, other Ethernet

applications such as HTTP and FTP can be simultaneously implemented and used together.



2) Inherits CC-Link IE features such as network transparency

Functions provided by CC-Link IE that allow production site visualization, such as linking production site devices and host IT systems, are inherited by CC-Link IE Field Network Basic. Even devices which could not previously be connected to CC-Link IE can now be integrated and managed.



3) CC-Link IE Field Network Basic compatible slave devices can be developed quickly at low cost

Vendor development is quick, as only software implementation is required for CC-Link IE Field Network Basic compatible devices. Devices compatible with other protocols can share hardware, promoting lower costs. Furthermore, not only PLCs but also general-purpose computers can be used as master devices.

■ Upcoming Schedule

CC-Link IE Field Network Basic has already received support to consider product development from Balluff, CKD, Hilscher, IDEC, Mitsubishi Electric, Molex, Phoenix Contact, Renesas Electronics and more.

The CC-Link Partner Association not only provides sample code free of charge, but in order to support vendor development is launching a conformance testing campaign to confirm product connectivity for a period of a year from this August.

■ CC-Link Partner Association

The CC-Link Partner Association is an open network promotion organization established in 2000 to increase the adoption of the CC-Link IE and CC-Link open automation networks. Its main activities include the development of CC-Link IE and CC-Link technical specifications, conducting of conformance tests, development support, and promotion of the technologies. The CLPA, which began with 163 corporate members, has expanded yearly and, as of the end of June 2016, boasts 2,715 members, of whom 2,010 are overseas corporations.

Contact for inquiries

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