

CC-Link News



Vol.5
May. 2002

The total accumulated number of shipped CC-Link compatible products has exceeded one million nodes!!

The number of nodes shipped last year reached one hundred and sixty thousand!

CLPA partners recorded one hundred and sixty thousand nodes of shipped CC-link compatible products in fiscal year 2001(as of Mar. 31 2002.)

We appreciate our partners' support and cooperation at various exhibitions, seminars, and development of CC-Link compatible products since the establishment of the CLPA in Nov. 2000.

Also we appreciate the support of global users in purchasing and applying CC-Link compatible products. The combination of: "support by uses", "development and supply of CC-Link compatible products by each partner" and "CLPA promotion activities including the Board of Directors and the Taskforces" has lead to this significant achievement.

The CC-Link Partner Association estimates that soon 2 million nodes will be in operation. We thank you for your continued support.

The number of partners is now 247 and compatible products is 374!

The number of partner members reached to 247 companies in fiscal year 2001(as of Mar. 31 2002), this is an increase of 84 companies over 163 companies the previous year.

The total number of compatible products reached to 374 products in fiscal year 2001, an increase of 52 over the previous year.

Partner members continue to develop new products to serve the needs of industrial users. The CLPA will also establish new global CC-Link conformance test

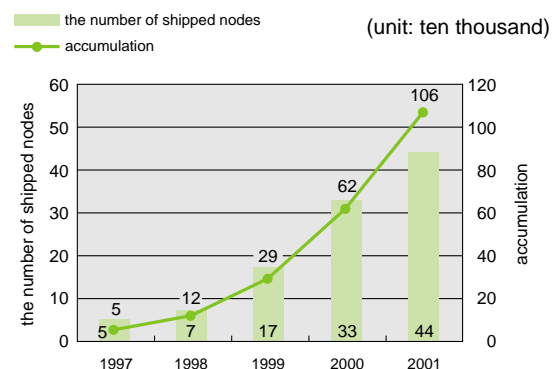
facilities to better serve our members in bringing new CC-Link compatible products to market.

New product direction in 2002!

Responding to the needs of the market and its members, CLPA has added the new specification for CC-Link/LT. This specification was published at the end of April and will be a highlight of our activity in the year.

The benefit of this new specification and technology is reduced wiring to field devices and within control panels. Small-and medium-seized machinery and equipment, will particularly benefit from this advancement.

We expect that Semiconductor equipment manufacturers and conveyor systems, builders, will be quite interested in what CC-Link/LT can do for them. We are going to make great efforts to deliver products that meet the needs of the automation market.



The change of the number of CC-Link shipped nodes

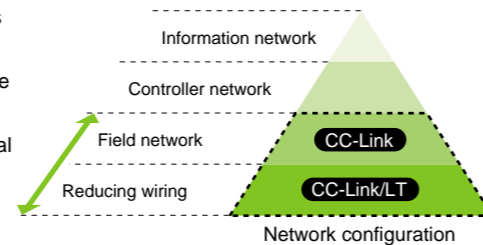
New specification "CC-Link/LT" has higher performance and reducing wiring

The Goal - Further reduce wiring costs

It has been 5 years since CC-Link was originally released. The establishment of CC-Link Partner Association (CLPA) in Nov. 2000 promoted the global use of CC-Link technology. As a result CC-Link has been approved as an international standard by SEMI in May. 2001 CC-Link has been adopted in numerous industries such as automobiles, semiconductors, material handling and food processing, where a large volume of data must be communicated.

Because of the need to further reduce wiring costs by making it economical to connect fewer number of I/O points to the network, the CLPA Technical Taskforce established a Working Group to develop a solution. The result was the CC-Link/LT specification. It achieved the difficult task of providing for reduced wiring and maintaining the high communication performance for which CC-Link is known.

CC-Link/LT is optimized for bit data communication and it functions well as a branch line of a CC-Link network. It integrates seamlessly with CC-Link and provides high performance communication from the system controller down to the field sensors and actuators. Therefore it is particularly suited for use in small to medium size machinery and equipment having limited I/O requirements. CC-Link/LT offers distinct advantages in wire reduction and costs and increased user convenience. Industries that can benefit from its use include semiconductor manufacturing equipment, material handling and conveyor systems and many others.



CC-Link/LT benefits

(1) Easy and efficient network connection

Using the popular CC-Link "one-touch" connector, no wire-stripping is required and loose connections are eliminated. Highly reliable network connections result with a minimum of labor.

(2) Minimize the number of unused I/O addresses

CC-Link/LT allows network I/O addresses to be assigned in minimum groupings. This reduces the number of unused addresses. Small groups of I/O points can be widely dispersed throughout the network.

(3) Combined benefits of reducing wiring and high-speed response

In addition to reduced wiring costs, CC-Link/LT can quickly update all I/O points as fast as 1.2 ms at a network speed of 2.5Mbps.

(4) Large I/O capacity

Using CC-Link/LT up to 1024 I/O points can be controlled (when the 16 point mode is used)

(5) High reliability

Excellent noise immunity and highly reliable communication result from the same technology used in the field-tested, well-known CC-Link field network.

(6) Compatibility with the high-performance CC-Link network

CC-Link/LT can seamlessly communicate with CC-Link through a bridge. It is possible to control the I/O of a slave station connected to CC-Link/LT from a CC-Link master station.

Open network support

CC-Link/LT is an "open" network with specifications freely available to all registered members of the CC-Link Partner Association. Technical support in the use of CC-Link/LT is available to members of the CLPA.

Major communication specification

Specification				
Communication speed(bps)	2.5M/625k/156k			
Communication method	BITR method (Broadcastpolling + Interval Timed Response)			
Transmission path format	T-Branch method			
Electric properties	EIA RS485 conformance			
Transmission format	HDLC conformance			
Error control system	CRC			
Maximum number of link points	Point mode	4point modes	8point modes	16point modes
	The number of controllable points	256 (512)*	512 (1024)*	1024 (2348)*
Number of link points per station	Point mode	4point modes	8point modes	16point modes
	The number of controllable points	4 (8)*	8 (18)*	16 (32)*
Number of connected modules	64			
Slave station number	1 to 64			
RAS functions	Network diagnosis, Self loop-back check, Slave station detach function, Automatic return function			
Connection cable	CC-Link dedicated flat cable (0.75mm ² X 4)			

*This is the address numbers of link points in case of using the same address numbers for input and output (RX0-, RY0-)

100 participants at CC-Link seminar!

CLPA held "CC-Link basic seminar" for companies, who are considering adopting, CC-Link in Tokyo and Osaka on Mar. 1(Fri.) and Apr. 23(Tue.). These seminars were conducted as a result of 7500 questionnaires completed by visitors to the CLPA booth at the last SCF and SEMICON Japan.

Over 100 seminar participants showed great interest in the CC-Link.

CLPA Marketing Taskforce is planning to hold additional seminars during 2002. We hope that you will attend.

* Please refer to CLPA home page for details. URL: <http://www.cc-link.org>

Seminar schedule in fiscal year 2002

Apr. 2002	Basic
May. 2002	For developer
Jul. 2002	Basic
Sep. 2002	For businessman
Nov. 2002	Basic
Dec. 2002	For developer
Feb. 2003	Basic
Mar. 2003	For businessman

CC-Link application story

Discribed at the CC-Link seminar

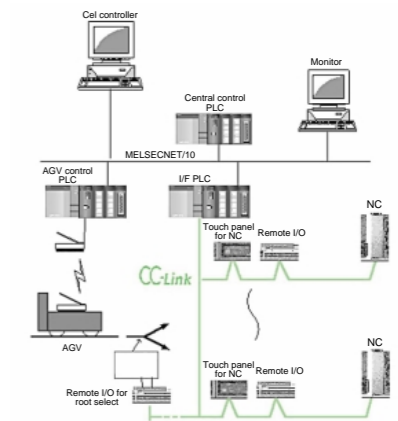
Application story No.1: AGV (automated guided vehicle) equipment for automobile body mold

System configuration

This system automatically conveys metal molds according to instructions received from an upper level cell controller. It controls AGV route switching and interfaces with an NC machine through the CC-Link.

Benefit of the CC-Link introduction

- (1) This case was an upgrade to an existing system, The need was to accomplish the upgrade quickly and to reduce wirings as much as possible. The CC-Link network drastically reduced wiring and the work was completed as scheduled.
- (2) A significant part of the wiring reduction was due to the high noise immunity of CC-Link, which imposed very few constraints on the routing of wires.



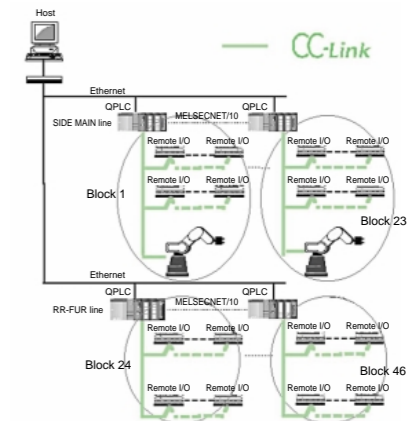
Application story No.2: Automobile production weld line

System configuration

46 PLCs control automatic body spot-welding and arc-welding robots. 7 to 8 CC-Link master units are installed in each PLC. The total number of remote I/O is over 2000 points.

Benefit of the CC-Link introduction

- (1) Costs were reduced due to reduced wiring. Also the time needed to do field installation work and wiring was drastically shortened because the easy connection of CC-Link to each piece of equipment.
- (2) The efficiency and speed of the conveyor system was increased due to the high speed communication to the remote I/O made possible by CC-Link.



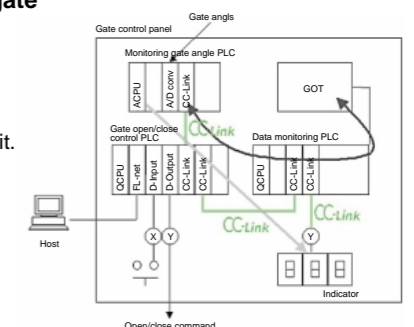
Application story No.3: Control system for water utilization discharge gate

System configuration

The system controls 6 water utilization discharge gates of a dam. A PLC controls the opening and closing of each gate along with a monitoring PLC. CC-Link handles the communication between all PLCs and to the system display unit.

Benefit of the CC-Link introduction

- (1) System scan was shortened and control was dispersed due to the speed of CC-Link.
- (2) The display unit was able to present information in real-time because of the high-speed operation of CC-Link.
- (3) System monitoring and troubleshooting of the gates was improved with the high-speed data link.
- (4) The CC-Link data exchange between the monitoring PLC for gate opening and the management PLC reduced the amount of wiring and work required.



Overseas news

■ CC-Link seminar report from ASEAN area

CC-Link seminars were held at Indonesia, Singapore, Malaysia and Thailand from Mar. 5th 2002 to 8th. The total number of visitors at our booth was about 300. ASEAN companies are definitely interested in CC-Link.

Seminar contents

- CC-Link Partner Association
- CC-Link technology
- PR with CC-Link demonstration kit
- CC-Link application story

The 4 sessions (refer to the left) were held each morning and afternoon at each area.

Visitors showed a high level of technology and interest in the CC-Link.

After the seminar, some users decided to immediately adopt CC-Link .

Others were able to take back to their companies needed information on CC-Link.



Date	Area	No. of Visitors
5th March	Jakarta (Indonesia)	68
6th March	Singapore (Singapore)	57
7th March	Kuala Lumpur (Malaysia)	66
8th March	Bangkok (Thailand)	87
Total		278



■ KOFA 2002 <Mar. 6th to 9th 2002>

CLPA-Korean exhibited at KOFA2002 from Mar. 6th, 2002 to 9th. We attracted 500 visitors, including prospective CLPA members. We will continue this approach to attract new CLPA members.

■ 2002 TAIPEI INTERNATIONAL AUTOMATION & PRECISION MACHINERY SHOW <Mar. 19th to 23rd 2002 >

The exhibition, whose aim was to diffuse CC-Link technology and to increase the familiarity of the CC-Link, attracted 1000 visitors for the 5 days. (Total visitors at the exhibition: 13,306)

Some companies considered joining the CLPA and many visitors attended our seminar, showing a high level of interest in CC-Link. CLPA-Taiwan will continue to diffuse CC-link throughout the Asian area.



■ CC-Link seminars in the USA

A series of CC-Link seminars were conducted in March for semiconductor equipment manufacturers in San Jose, California. Participating in these seminars were several well-known experts in the area of sensor/actuator networks used in the semiconductor industry. Additional seminars will be held to meet the need for detailed CC-Link information.

CLPA Schedule

May

- 15th
Marketing Taskforce
- 21th
CC-Link seminar for developers
- 21 to 23th
International Fieldbus shanghai

June

- 20th
The 8th Technical Taskforce
- 26th
The 10th Board of Directors

July

- 10th
The 8th Marketing Taskforce
- 12th
CC-Link basic seminar

CLPA Information

CC-Link partners: 247 companies (as of Mar. 2002)

CC-Link compatible products: 374 products (as of Mar. 2002)

In 2001 fiscal year, 87 companies joined the CLPA and 51 new CC-Link compatible products were introduced to the marketplace. CLPA members made significant efforts to increase CC-Link familiarity throughout the globe and we appreciate their great efforts.

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