NMRA LCC
January 2026

Layout Command Control

What is LCC?

LCC stands for "**L**ayout **C**ommand **C**ontrol". It is a protocol for controlling all the functions on your layout – things like detection, turnouts, signals, lights, as well as the traditional control functions, including throttles.

Will LCC work with my DCC layout?

Yes, DCC and **LCC** compliment, not replace, one another. **LCC** does not make DCC obsolete. The **LCC** bus takes accessory traffic off of the DCC bus. Even locomotive control can now be wireless over WiFi.

Will LCC work on my DC layout?

Yes, and also with any other train control method.

Is LCC bi-directional?

Yes, **LCC**, unlike most DCC decoders, can both send and receive data over the same **LCC** bus. This allows detectors, turnout feedback, local fascia controls, etc., to each talk to one another. Additional features such as status reporting, intelligent configuration, initialization, and easy upgrades of the products are now normal.

DCC (Digital Command Control), the existing NMRA standard for train control, is essentially a one way bus that allows only a single master command station to control mobile and stationary decoders over the rails.

Is the LCC High Speed?

The currently available **LCC** products operate an order of magnitude faster than DCC by using the automotive CAN bus. There is plenty of room for extra traffic. **LCC** may also be operated over other, fast networks, such as Ethernet or WiFi.

Do I need an LCC Master unit?

No! **LCC** is a peer-peer network. This means that any **LCC** device may communicate directly with any other **LCC** device without the need for going through a central command station, such as DCC or many other legacy control systems require.

A computer does make **LCC** easier to configure, but it is not a requirement for its operation.

The NMRA and LCC?

Just as the NMRA set the standards for DCC over 30 years ago, they set the standards for **LCC** over a decade ago. A group of independent volunteers, both modelers and experts in electronics, together developed the concepts, protocols, interface standards, and documents, for **LCC**. This OpenLCB group established the standards which the NMRA has then approved as **LCC**.

The NMRA has no vested interest in any particular manufacturer or products. They simply set the standards that all manufactures may use license free.

Why is LCC so special?

Like people, each **LCC** product is unique. No more need for the user to assign and keep track of device addresses to prevent conflicts between devices. New nodes may be added to an existing system with no data collisions… ever! The protocol is also expandable to allow for adding new functions.

Is LCC inter-operable?

Yes, that is why having standards is so important. Any manufacturer's **LCC** products will inter operate seamlessly with the **LCC** products from any other manufacturer.

Are any manufacturers supporting LCC?

JMRI (JMRI has supported LCC since before 2015)
https://www.jmri.org

LCC Signals (Signal Control)
https://www.lccsignals.com

Logic Rail Technologies (Fast Clock, Light Control)
https://www.logicrailtech.com

MRC NEXXT (Announced) (Command Stations, Throttles, Gateway to Prodigy)
https://www.modelrectifier.com

RR-CirKits (See reverse)
https://www.rr-cirkits.com

Snowball Creek Electronics (Various I/O nodes)
LCC Signalshttps://www.snowballcreek.com/

Sprog DCC (Various I/O nodes)
https://www.sprog-dcc.co.uk

TCS (Train Control Systems) (Command Stations, Throttles)
http://www.tcsdcc.com

Deepwoods Software (MRS) (Country Robot)
https://www.deepsoft.com/home/products/modelrailroadsystem/

Plus Other manufacturers & products not yet announced.

These products are available from RR-CirKits, Inc.*

More info and photos at: www.rr-cirkits.com

LCC-Buffer-USB

NMRA CAN bus LCC® to USB interface. 2,500 Volt Digital isolation between CAN bus LCC® and USB port.Type B USB connector for PC connection. Compatible with JMRI.

LCC-PowerPoint

LCC Power-Point ties together 2 LCC jacks, a Traffic Monitor, and a power supply. Create a powered LCC bus for simple wiring by powering your LCC Nodes over the cable.

LCC-Terminator Pair

NMRA CAN bus LCC® Termination Pair. Used to provide the required termination at each end of the CAN bus LCC®

LCC – LocoNet® Gateway

LCC – LocoNet® interface. Includes built in LCC® – USB interface and stand alone LocoNet® option. This unit translates LocoNet® messages into LCC® messages, beta firmware version now supports using LocoNet® throttles to create train nodes on LCC® command stations.

LCC Repeater

LCC Repeater. Bit level repeater connects two LCC® CAN bus segments.

Tower-LCC+Q

16 Line Input/Output node for NMRA CAN bus LCC® With Logic. Logic level interface compatible with other standard RR-CirKits I/O modules, plus Structured Text Logic.

Signal-LCC-S/P

16 Led drivers plus 8 line Input/Output node for NMRA CAN bus LCC®. Logic level I/O port compatible with other standard RR-CirKits I/O modules. Miniature Screw Terminals or 10pin headers for LED connections.

Signal-LCC-32H

32 head addressable signal controller plus 8 line Input/Output node for NMRA CAN bus LCC®. 3 wire servo extension cables used for daisy chain signal head driver connections.

*Subject to parts availability