LCS Sample Diagram

This diagram shows a very elaborate LCS system. But you don't need to start big! The only required component is the LCS Power Supply and DB9 cable, just one per layout. Your system could start out as simple as a Legacy base, the LCS Power Supply and DB9 cable and a single LCS module, such as a SensorTrack.

Lionel hand-held remotes (Cab-1L and Cab-2) communicate with the command base. All commands from the remotes are echoed to the LCS bus. CAB-2 remotes require Legacy Base and offer two-way communication to base as well as the LCS bus.

LEGACY Base holds your engine roster and status of all locomotives. It send commands via "TrackLink" and sends and receives commands via a 9-pin serial port to the LCS bus.

The LCS Power Supply and DB9 cable is the bridge between LCS and "TrackLink." It also supplies power to all LCS modules.

The LCS WiFi is optional. Use it to allow up to 15 WiFi devices, such as the Apple iPad, to send commands over the LCS bus and TrackLink.

LCS App is Lionel's free iPad application (requires LCS WiFi). Create custom control panels, view and edit your locomotive roster and received real-time updates when compatible locomotives cross over LCS SensorTracks. LCS APP can run TMCC and LEGACY locomotives, command-controlled switches and accessories.

TrackLink

Lionel Command Bases have always transmitted via "Track Link" (orange line). This 455kHz radio frequency (RF) command control signal is the communication link to locomotives and wireless command-controlled accessories. TrackLink is a one-directional system.

LCS PDI BUS

The Layout Control System bus (blue line) is a bidirectional system. A single LCS PDI Cable links LCS modules, carrying commands and status info in both directions. The LCS PDI cable also carries operating power for each module.

An LCS BPC2 switches up to 8 AC track power blocks (connections and transformer not shown)

TMCC switches get their commands via RF TrackLink. They can be thrown via Lionel remote, LCS App or 3rd party products.

Each LCS SensorTrack(tm) receives information from compatible LEGACY locomotives and transmits this info back over the LCS Bus to LEGACY base. This in turn updates info on CAB-2 remote, LCS App and 3rd Party software.

Up to four remotely operated switches from Lionel and other manufacturers can be controlled by one ASC2. Switches can be thrown via Lionel hand-held remotes, LCS App or 3rd party products.

PC or Laptop with 9-pin Serial

The LCS SER2 connects the LCS bus to older Lionel serial devices like the TPC or ASC (right). It also boosts the available serial data drive current, so you can connect all your existing 9-pin devices without problems.

You can connect multiple SER2 modules if desired to add to add an extra DB9.

ARC/AMC Gantry Crane

TPC 400   TPC 400   TPC 400

Up to eight lights, uncoupling tracks or basic on/off accessories can be controlled by one LCS ASC2.

LEGACY Base

LCS WiFi

LCS ASC2

LCS BPC2

LCS SER2

LCS SER2

LCS ASC2

LEGEND

RF TrackLink
LCS Bus
Standard WiFi
Old 9-pin Serial
Remote/Base Radio
Hook-up wire