LCS Sample Diagram

This diagram shows a very elaborate LCS system. But you don't need to start big! The only required components are a Base3, a PDI cable, and a single LCS module, such as a SensorTrack.

Lionel remotes (Cab-1L, Cab2, Cab3 APP) communicate with the Base3. All commands from the remotes are echoed to the LCS bus. The Cab2 and Cab3 APP feature 2-way communication with the Base3 as well as the LCS bus.

Base3 holds your engine roster and status of all locomotives. It sends commands via "TrackLink", BLE, or RF, and receives commands via PDI port to the LCS bus.

Base3

The first PDI cable between the Base3 and a LCS module is the bridge between LCS and "TrackLink" –the Base3 also supplies power to all LCS modules.

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

Command Base to Loco

The Lionel Command Base communicates with locomotives via a 455kHz radio frequency (RF) command control signal (see orange line). This is a one-way communications link.

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.

Each LCS SensorTrack receives information from compatible Legacy locomotives and transmits this info over the LCS bus to the Base3. This in turn updates info on the Cab2 remote, Cab3 or LCS APPs, or 3rd party software.

Up to 4 remotely operated switches from Lionel and other manufacturers can be controlled by one ASC2. Switches can be thrown via Lionel Cab remotes, Cab3 or LCS APPs, or 3rd party software.

LCS ASC2

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

LCS BPC2

Command control switches receive commands via TrackLink. They can be thrown via a Lionel Cab remote, Cab3 or LCS APPs, or 3rd party software.

PC or Laptop with 9-pin Serial

LCS SER2

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 an extra DB-9. This would let you connect a PC to run the Lionel Legacy System Utility program or 3rd party LCS compatible software. Third party developers' code can be fully LEGACY compatible, including the Quilling Whistle and other LEGACY-only features.

LCS SER2

TPC 400 TPC 400 TPC 400

ARC/AMC Gantry Crane

LCS ASC2

Up to eight lights, uncoupling tracks or basic on/off accessories can be controlled by one LCS ASC2. Power for lights and accessories is provided by a separate transformer.

LEGEND

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