

## WHAT IS MRCS?

MRCS is your home for Open Source electronics for Model Railroad Operations. We offer Open Source hardware and software to help you operate your Railroad as prototypically as you like.

Our cpNode system is an updated, completely open, layout control system based on the popular and proven CMRI system (introduced by Dr. Bruce Chubb in 1985).

We offer signaling and telephone systems for dispatching, Order Board Systems for TT&TO operation, RFID systems for train tracking and car forwarding and many useful accessories!

*We also welcome designs from community contributors*

## Telephone Parts

We also resell parts such as hook switches, handsets, speech networks from which you can assemble custom telephones that fit in your layout's fascia.

We can often match the equipment seen in photos of vintage dispatch and train order offices. If you'd like us to help you secure the equipment to match your prototype, please contact us at [sales@modelrailroadcontrolsystems.com](mailto:sales@modelrailroadcontrolsystems.com) and include a photo of the installation you'd like to model!

## Consulting, Design and Implementation

DIY (Do it Yourself) boards and scrounging for antique parts is fine for those with a telephone hobby within the hobby, but what about those modelers who want a phone system but don't want to take the time to learn a new sub-hobby?

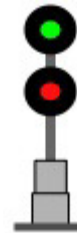
Many of the products offered on our web site were developed in response to requirements of our clients for telephone, signaling, and train order board systems. MRCS principals Seth Neumann and Chuck Catania bring deep expertise in developing and implementing solutions on model railroads of all sizes and eras.

- Communications System Design
- Remote Access/Dispatching
- Train Order Boards and station signaling
- System Integration
- Custom product design
- System Set up and Programming
- Installation

MODEL RAILROAD  
CONTROL SYSTEMS

Phone: 415-602-1510  
E-mail: [sales@modelrailroadcontrolsystems.com](mailto:sales@modelrailroadcontrolsystems.com)  
[modelrailroadcontrolsystems.com](http://modelrailroadcontrolsystems.com)

# Model Railroad Control Systems



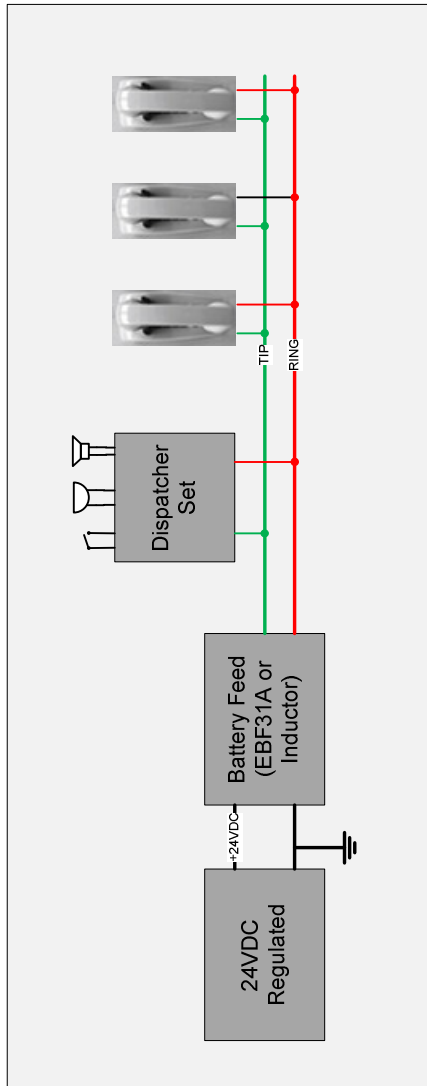
OPEN SOURCE  
ELECTRONICS FOR MODEL  
RAILROAD OPERATIONS

Telephone Product & Service  
Information



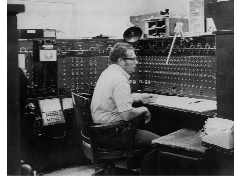
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## System Diagram



## Dispatchers' Phone (available 4Q15)

This board supports Dispatcher and Operator telephone requirements:



WP Dispatchers' office in Sacramento, CA, circa 1982

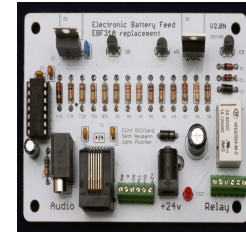
- Mic/Speaker/Stomper operation with dynamic. The user supplies a dynamic mic, footswitch and powered speaker.
- Compatible with (user supplied)

inexpensive electret computer headsets. This configuration is ideal for operator positions located around the layout.

### - Features:

- Separate volume adjustments for outbound mic, speaker and for the amount "break-in" traffic is muted when the DS is talking. This allows use on large systems with many sets where volume may become an issue
- Operates from filtered 24V, includes a 2.5mm barrel jack for a (user supplied) 24V wall wart as well as screw terminals
- Mic in and line level out to speaker/headset output on 3.5mm jacks
- Screw terminal connection for (user supplied) footswitch
- RJ11 Modular and screw connections for telephone line
- Output phase switch to help control feedback from external speaker
- Multiple boards may be used on one system
- Transmission direction is controlled by the footswitch: "Push to Talk" operation

## Electronic Battery Feed



EBF31A card provides balanced battery feed, 2 contacts and isolated audio out

The Electronic Battery Feed 31A provides power and off hook detection for a telephone talk circuit suitable for a Model Railroad dispatchers' line.

- Operates on 24 volts regulated DC, draws about 100 mA

- Supports at least 4 phones off hook at once, suitable for reading and copying orders on a TT&TO railroad
- Has a double-pole, double throw relay rated at 2A, with screw terminals for control of auxiliary circuits
- LED "off hook" indicator
- RJ11 jack and screw terminals for the phone line
- 2.5mm center positive jack and screw terminals for 24V power
- Line level isolated monitor output on a stereo 3.5 mm audio jack
- Fits the same 2.75" DIN rail that MRCS cpNodes use

