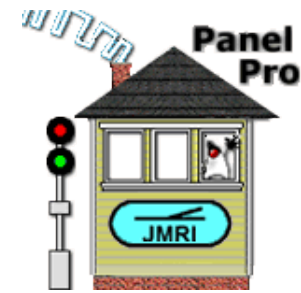


Using JMRI with C/MRI Hardware

Dave Duchamp

and

Bob Jacobsen

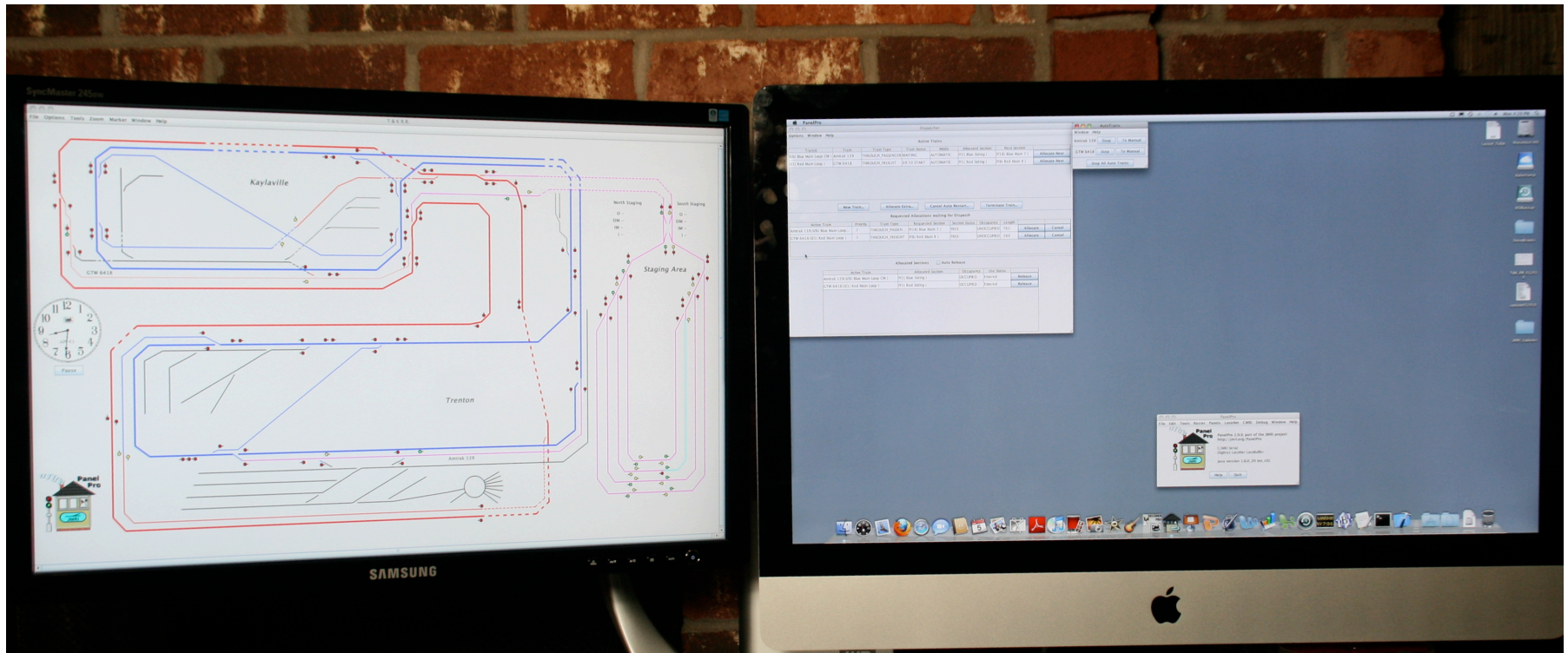
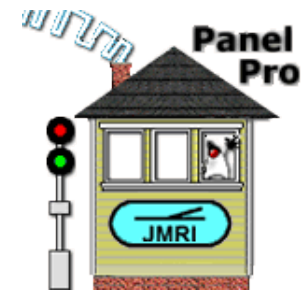


Advantages to using JMRI with C/MRI

- **Computer programming not needed**
- **Easy setup and configuration of C/MRI nodes**
- **Easily mix and match with non-C/MRI hardware**
- **Extensive support for signals and signal logic**
- **Easily draw layout diagrams on computer**
- **Support of special logic for unique situations – Logix**
- **Many other useful features**



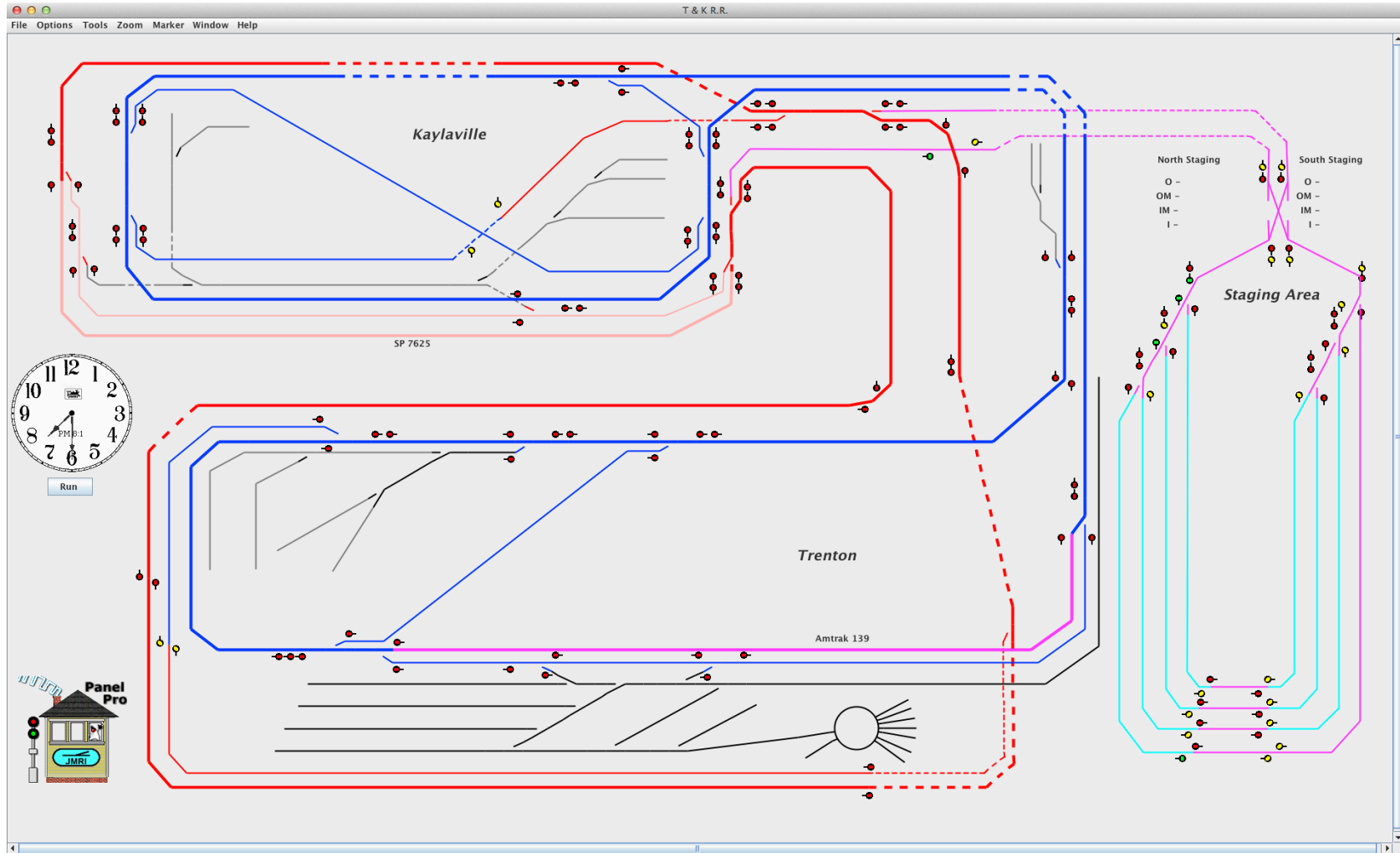
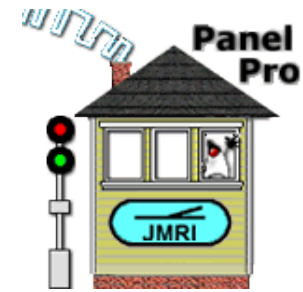
Example Layout





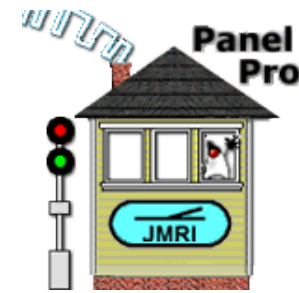
Example Layout

(Made with Layout Editor)





Example Layout: T&K Railroad



C/MRI Hardware:

SMINI Digital Input / Digital Output (5)

DCCOD Block Occupancy Detectors

PGCC Crossing Gate Controller

RS422 to RS232 Converter

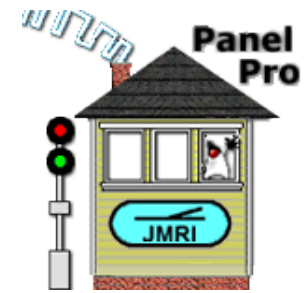
Other Hardware (Partial List)

Digitrax Super Chief Command Station

Digitrax BD168 Block Occupancy Detectors

Digitrax DS54 Turnout Controllers (12) (47 turnouts)

RRCirKits TC64's Digital Input / Digital Output (4)



C/MRI support in JMRI for a long time

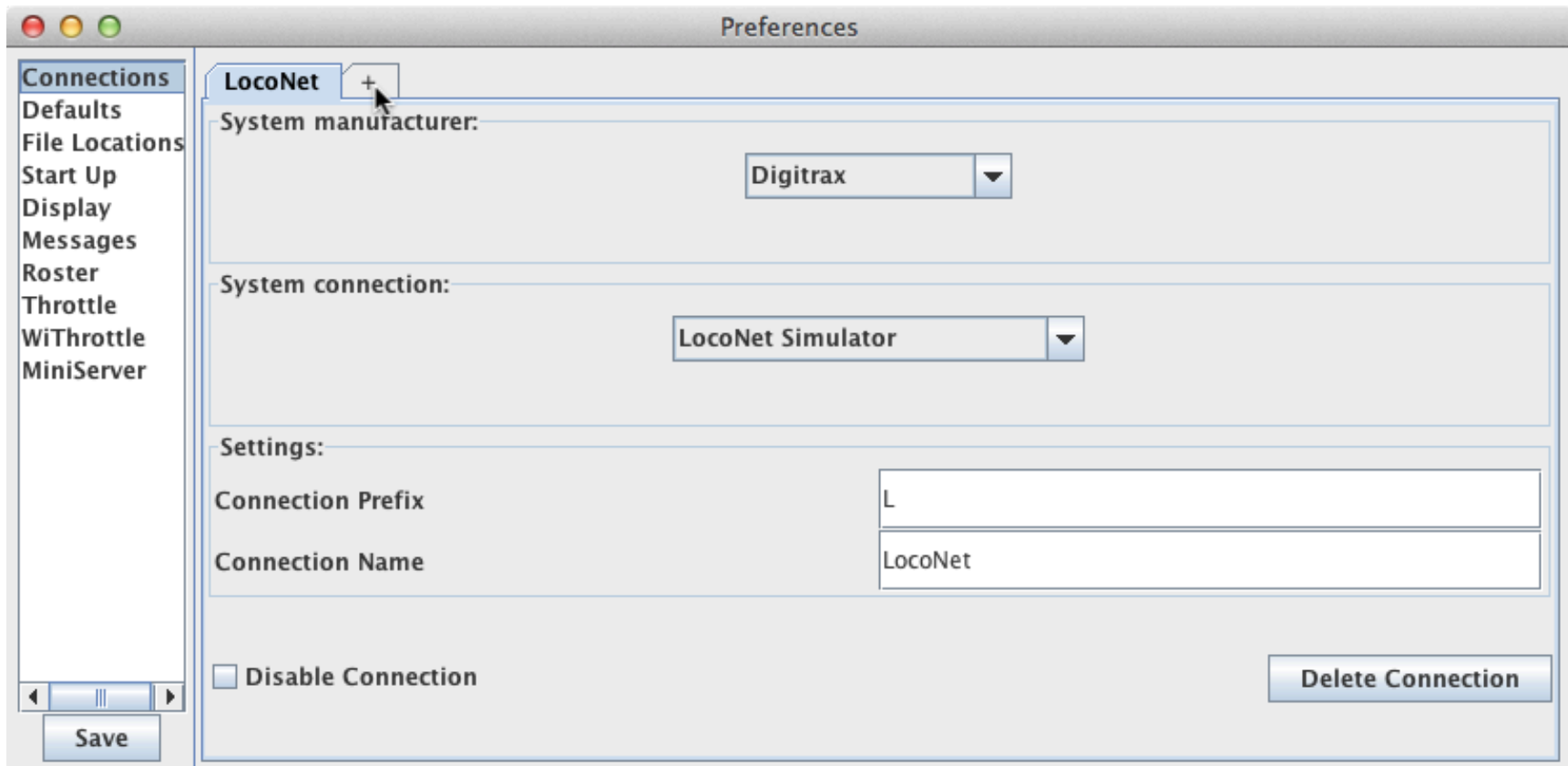
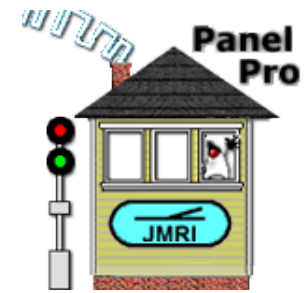
- Initial single node C/MRI support by Bob Jacobsen
- SMINI and SUSIC support added by Dave Duchamp (with Bob's help)
- Assignment Lists and Diagnostic
- C/MRI Simulator

In use on many layouts



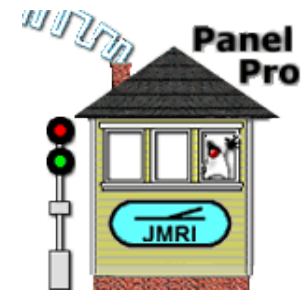
Configuring a C/MRI Connection

Select “Preferences” in the “Edit” menu

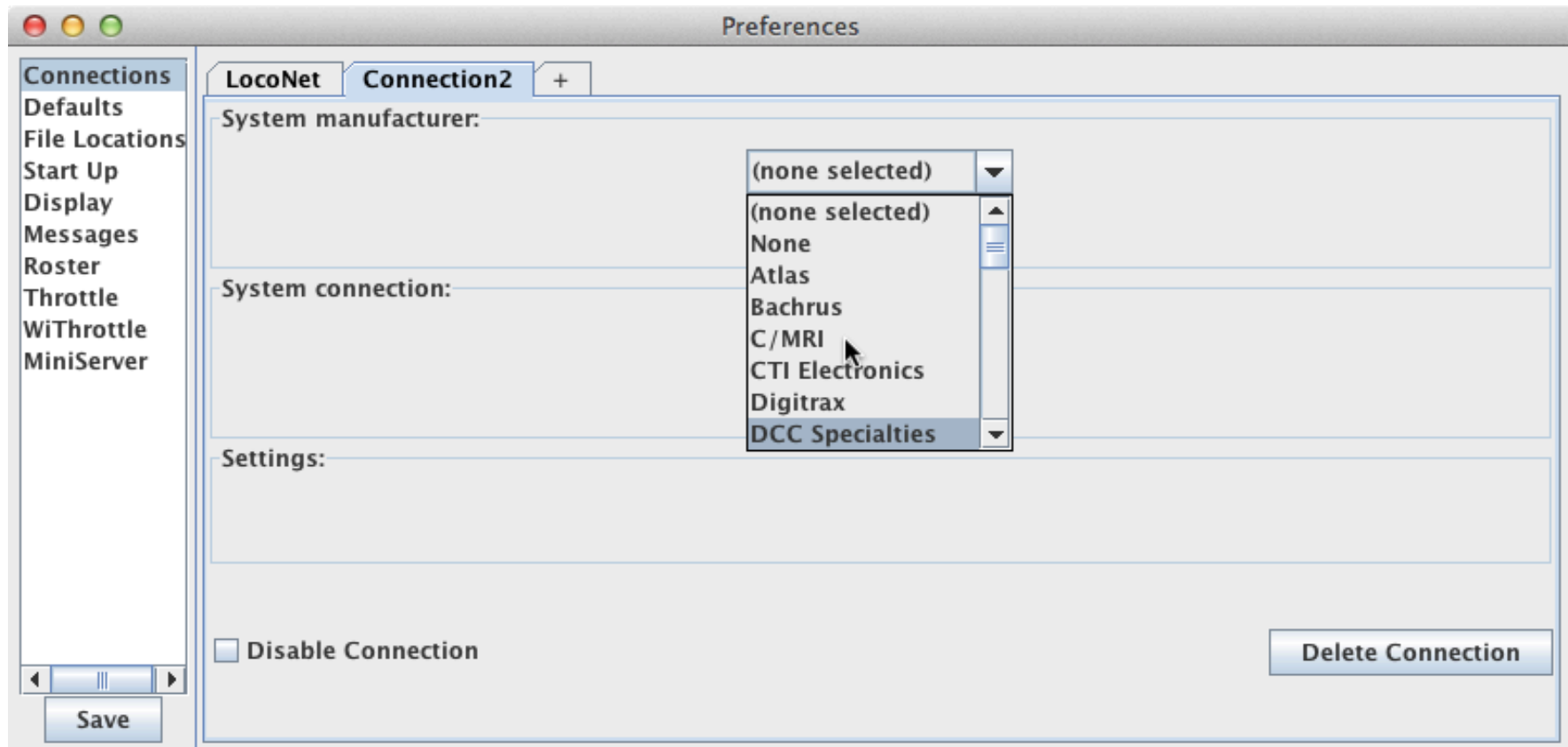




Configuring a C/MRI Connection

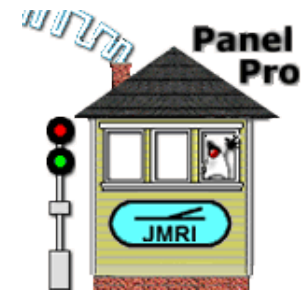


Select C/MRI

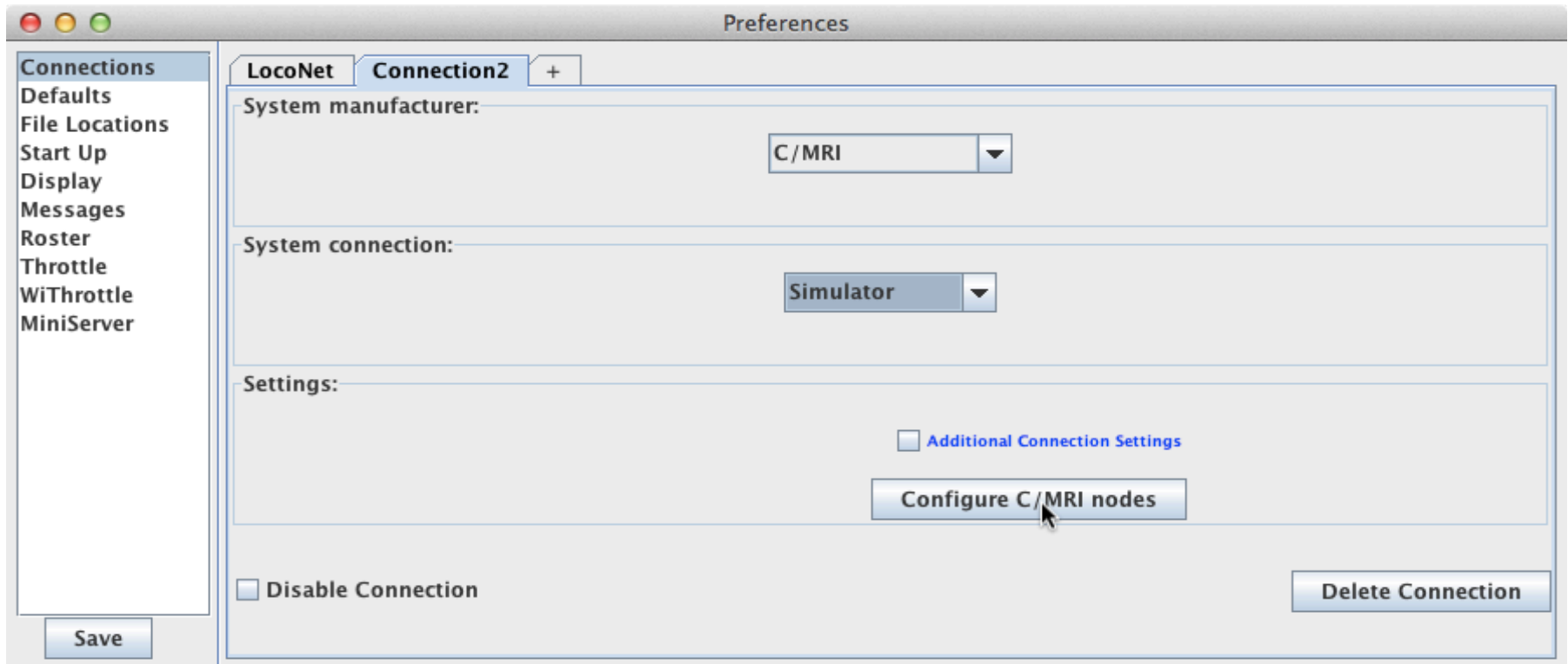




Configuring a C/MRI Connection



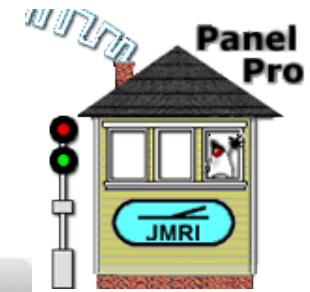
Select Connection then click
“Configure C/MRI nodes”





Configuring a C/MRI Connection

Configuring an SMINI



Configure C/MRI Nodes

Window Help

Node Address (UA) : Node Type: **SMINI**

Receive Delay (DL) :

Pulse Width: (milliseconds)

Click on first bit of each 2-lead oscillating searchlight signal.

No entry needed if no 2-lead oscillating searchlight signals.

Port	Bit -	0	1	2	3	4	5	6	7
Card 0	Port A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 0	Port B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 0	Port C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 1	Port A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 1	Port B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 1	Port C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

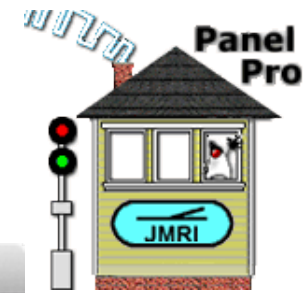
Notes

To Add a new node, enter information and select 'Add Node'.
To Edit a node, enter node address, then select 'Edit Node'.
To Delete a node, enter node address, then select 'Delete Node'.



Configuring a C/MRI Connection

Configuring a USIC/SUSIC



Configure C/MRI Nodes

Window Help

Node Address (UA): Node Type:

Receive Delay (DL): Card Size:

Pulse Width: (milliseconds)

Please select card type for each occupied card address (no gaps).
Select 'No Card' in the remaining unused card addresses.

Card Address	Card Type
0	Input Card
1	Output Card
2	No Card
3	No Card
4	No Card
5	No Card

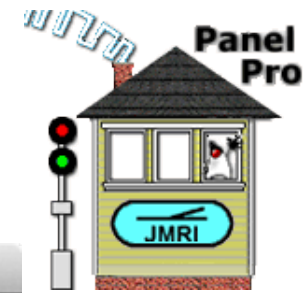
Notes

To Add a new node, enter information and select 'Add Node'.
To Edit a node, enter node address, then select 'Edit Node'.
To Delete a node, enter node address, then select 'Delete Node'.



Configuring a C/MRI Connection

Click “Done” when all Nodes added.



Configure C/MRI Nodes

Window Help

Node Address (UA): Node Type:

Receive Delay (DL):

Pulse Width: (milliseconds)

Click on first bit of each 2-lead oscillating searchlight signal.

No entry needed if no 2-lead oscillating searchlight signals.

Port	Bit -	0	1	2	3	4	5	6	7
Card 0	Port A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 0	Port B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 0	Port C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 1	Port A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 1	Port B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Card 1	Port C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes

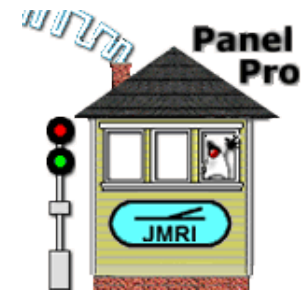
C/MRI Node added. Node Address = 4

To Edit a node, enter node address, then select 'Edit Node'.

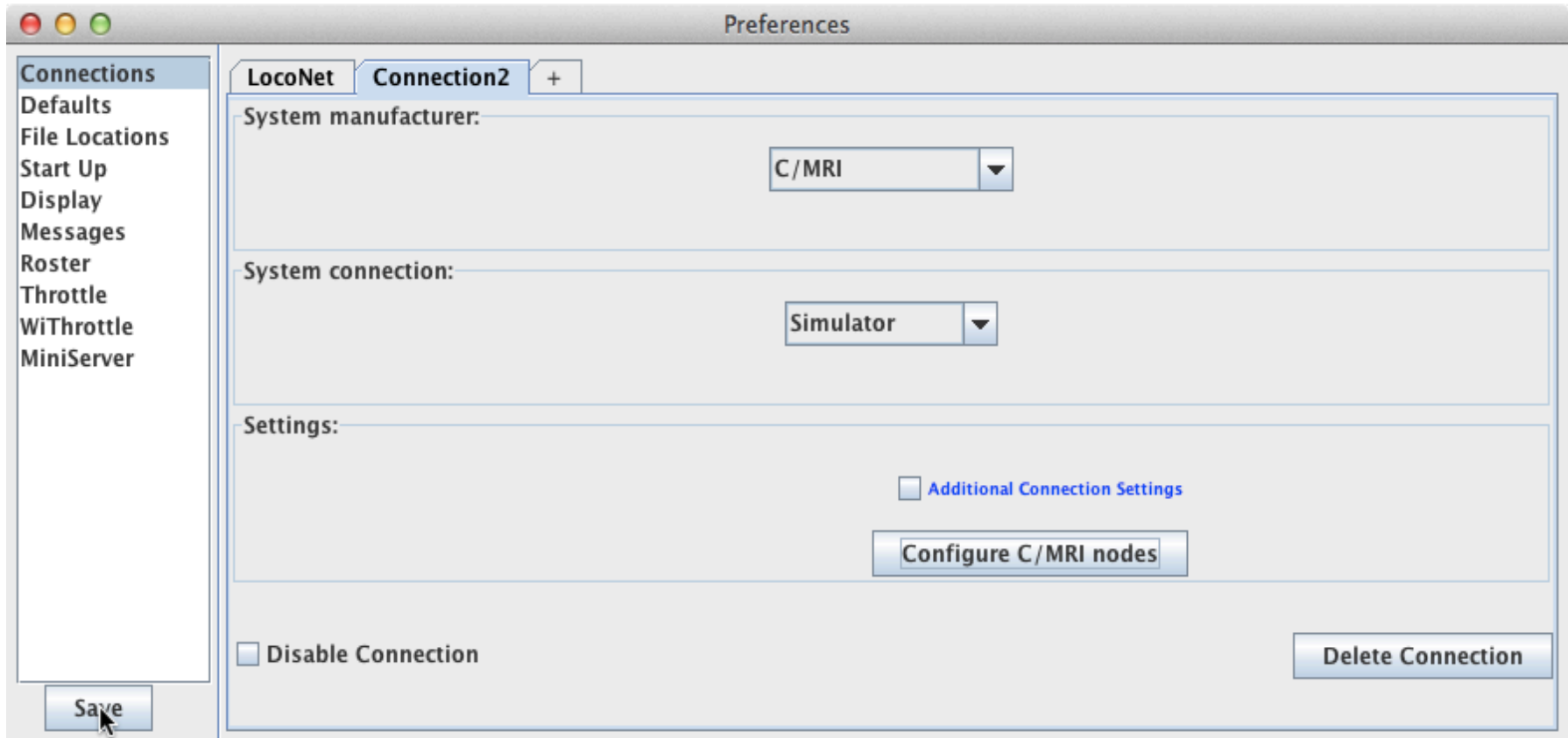
To Delete a node, enter node address, then select 'Delete Node'.



Configuring a C/MRI Connection



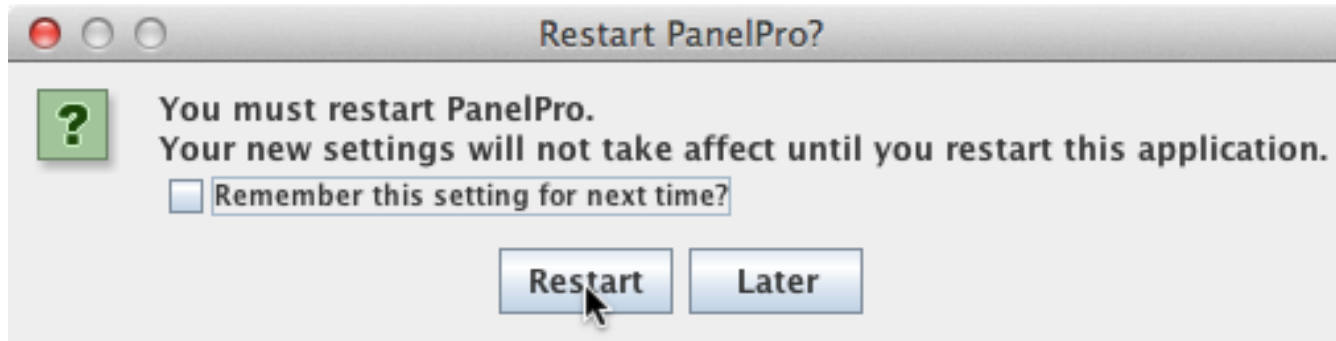
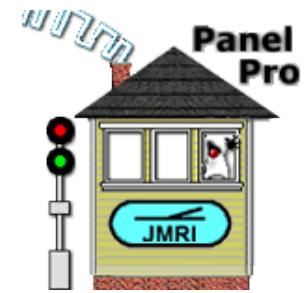
Save Preferences





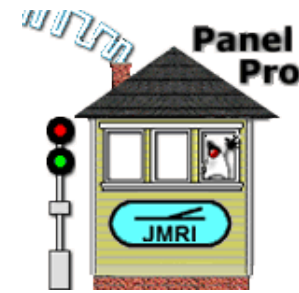
Configuring a C/MRI Connection

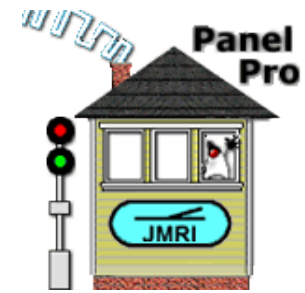
Need to restart to connect





After restarting - C/MRI connection.
Can return to Preferences anytime.





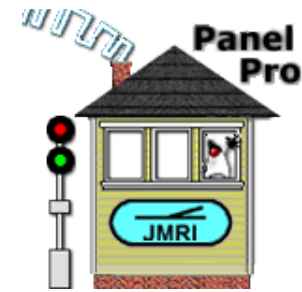
C/MRI Digital Input Bits ↔ JMRI Sensors

C/MRI Digital Output Bits ↔

JMRI Turnouts
or
JMRI Lights



JMRI Naming Conventions



Each input/output bit has a **System Name** and a **User Name**.

Example **System Names**:

CL22 (C – C/MRI, L – Light, 22 – Hardware address)

JMRI Light – C/MRI Output Bit 22 on Node 0.

CS1011 (C – C/MRI, S – Sensor, 1011 – Hardware address)

JMRI Sensor – C/MRI Input Bit 11 on Node 1.

CT2038 (C – C/MRI, T – Turnout, 2038 – Hardware address)

JMRI Turnout – C/MRI Output Bit 38 on Node 2.

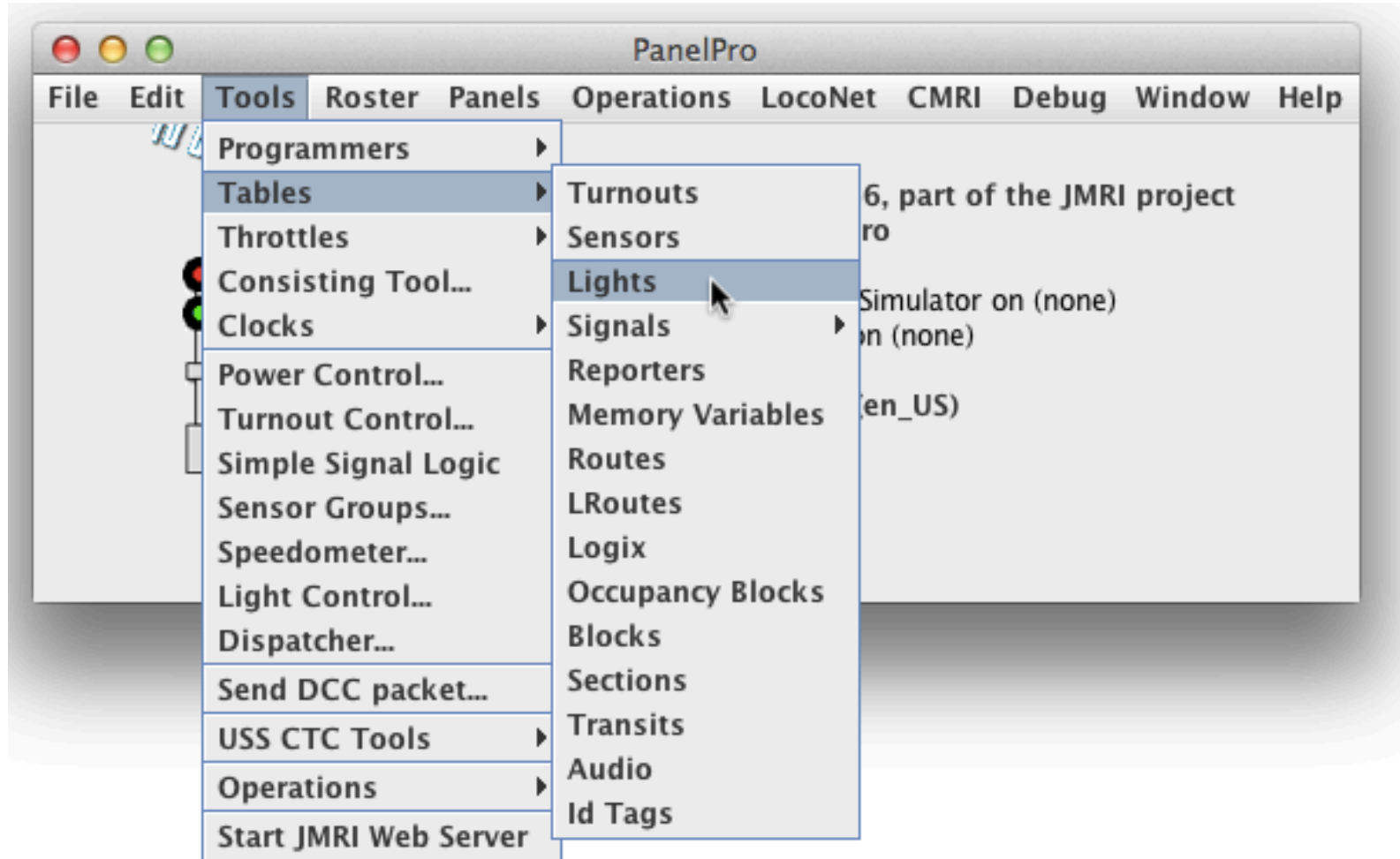
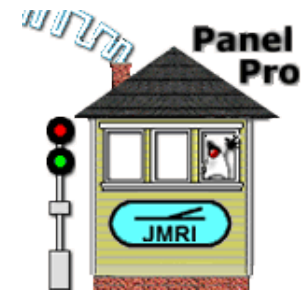
Example **User Names**: (Any text you find useful to identify bit)

Turnout 12 – Status LED

Occupancy - Block 6



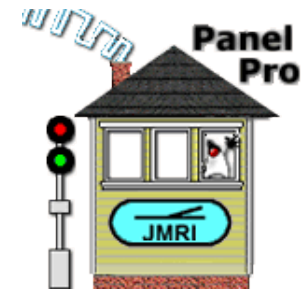
Tables





Sensor Table

Tell JMRI about C/MRI Input Bits
by adding Sensors



Sensors

File View Debounce Window Help

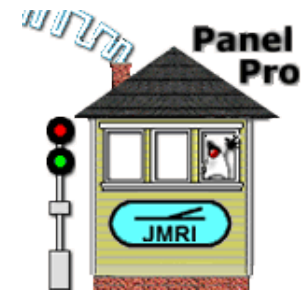
Turnouts
Sensors
Lights
Signal Heads
Signal Masts
Signal Mast Lo
Reporters
Memory Variab
Routes
LRoutes
Logix
Blocks
Sections
Transits
Audio
Id Tags

All	C/MRI	LocoNet	Powerline	Internal
System Name	User Name	State	Comment	Inverted
CS11	Turnout 12 Feedback	Inactive		Delete <input type="checkbox"/>
CS12	Turnout 21 Feedback	Inactive		Delete <input type="checkbox"/>
CS13	Turnout 22 Feedback	Inactive		Delete <input type="checkbox"/>
CS14	Turnout 23 Feedback	Inactive		Delete <input type="checkbox"/>
CS15	Turnout 24 Feedback	Inactive		Delete <input type="checkbox"/>
CS16	Turnout 25 Feedback	Inactive		Delete <input type="checkbox"/>
CS17	Button Route 101	Inactive		Delete <input type="checkbox"/>
CS18	Button Route 102	Inactive		Delete <input type="checkbox"/>
CS19	Button Route 103	Inactive		Delete <input type="checkbox"/>
CS20	Button Turnout 13 Toggle	Inactive		Delete <input type="checkbox"/>
CS21	Button Emergency STOP Red	Inactive		Delete <input type="checkbox"/>
CS22	Block - Blue Mainline 9	Inactive		Delete <input type="checkbox"/>
CS23	Block - Blue Mainline 10	Inactive		Delete <input type="checkbox"/>
CS24	Block - Blue Mainline 11	Inactive		Delete <input type="checkbox"/>
CS1001	Turnout 2 Feedback	Inactive		Delete <input type="checkbox"/>
CS1002	Turnout 14 Feedback	Active		Delete <input type="checkbox"/>
CS1003	Turnout 26 Feedback	Inactive		Delete <input type="checkbox"/>
CS1004	Turnout 27 Feedback	Active		Delete <input type="checkbox"/>
CS1005	Block - Red Mainline 9	Inactive		Delete <input type="checkbox"/>
CS1006	Block - Red Mainline 10	Inactive		Delete <input type="checkbox"/>

Add ... Show Sensor Debounce Information



Adding a Sensor to the Sensor Table



Add New Sensor

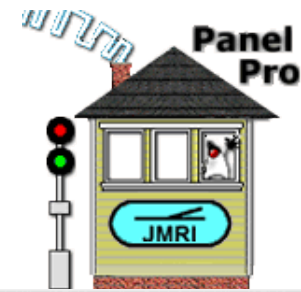
System	C/MRI	<input type="checkbox"/> Add a range
Hardware Address	1007	Number to Add <input type="text"/>
User Name:	Description	

OK



Light Table

A C/MRI Output Bit can be *either* a Light *or* a Turnout (not both)



Lights

File View Window Help

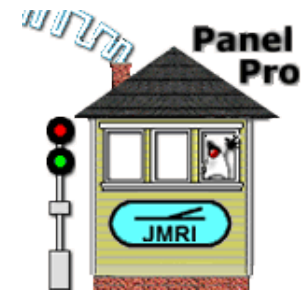
Turnouts
Sensors
Lights
Signal Heads
Signal Masts
Signal Groups
Signal Mast Lo
Reporters
Memory Variat
Routes
LRoutes
Logix
Blocks
Sections
Transits
Audio
Id Tags

System Name	User Name	State	Comment	Enabled	Intensity	Edit
CL1	LED Turnout 1 closed	Off		<input checked="" type="checkbox"/>	0	Edit
CL2	LED Turnout 1 thrown	On		<input checked="" type="checkbox"/>	1	Edit
CL3	LED Turnout 2 closed	On		<input checked="" type="checkbox"/>	1	Edit
CL4	LED Turnout 2 thrown	Off		<input checked="" type="checkbox"/>	0	Edit
CL5	LED Turnout 3 closed	On		<input checked="" type="checkbox"/>	1	Edit
CL6	LED Turnout 3 thrown	Off		<input checked="" type="checkbox"/>	0	Edit
CL7	LED Turnout 4 closed	Off		<input checked="" type="checkbox"/>	0	Edit
CL8	LED Turnout 4 thrown	On		<input checked="" type="checkbox"/>	1	Edit
CL9	LED Turnout 5 closed	On		<input checked="" type="checkbox"/>	1	Edit
CL10	LED Turnout 5 thrown	Off		<input checked="" type="checkbox"/>	0	Edit
CL11	LED Turnout 6 closed	On		<input checked="" type="checkbox"/>	1	Edit
CL12	LED Turnout 6 thrown	Off		<input checked="" type="checkbox"/>	0	Edit
CL13	LED Turnout 7 closed	On		<input checked="" type="checkbox"/>	1	Edit
CL14	LED Turnout 7 thrown	Off		<input checked="" type="checkbox"/>	0	Edit
CL15	LED Turnout 8 closed	Off		<input checked="" type="checkbox"/>	0	Edit
CL16	LED Turnout 8 thrown	On		<input checked="" type="checkbox"/>	1	Edit
CL17	LED Turnout 9 closed	On		<input checked="" type="checkbox"/>	1	Edit
CL18	LED Turnout 9 thrown	Off		<input checked="" type="checkbox"/>	0	Edit

Add ...



Adding a Light to the Light Table



Add/Edit Light

Window Help

System:

Hardware Address:

User Name:

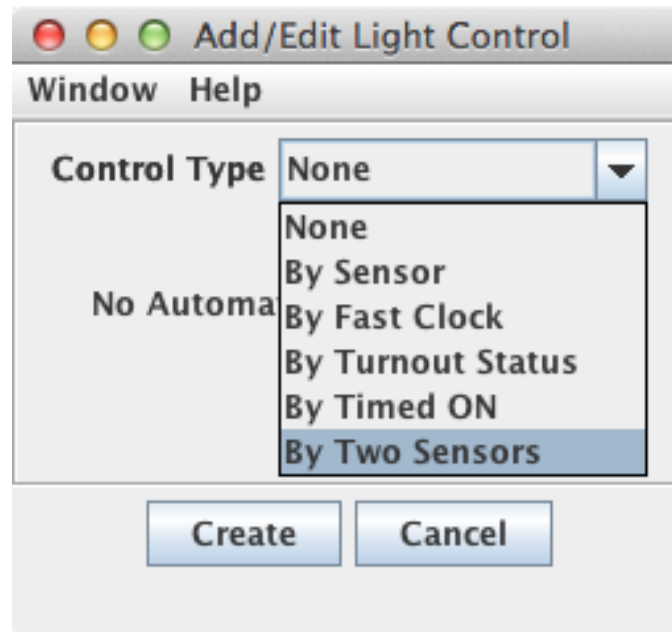
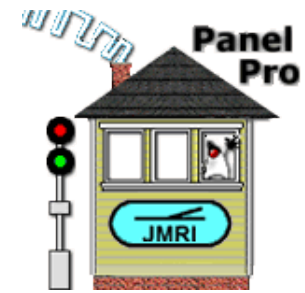
Light Control

Control Type	Description		

Select or enter data, then press Create for a new Light, or press Cancel.

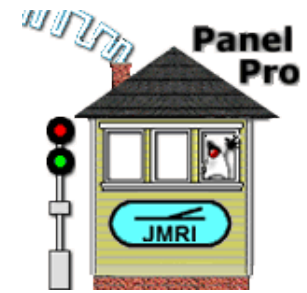


Adding a Control to a Light





Turnout Table



Turnouts

File View Automation Speeds Window Help

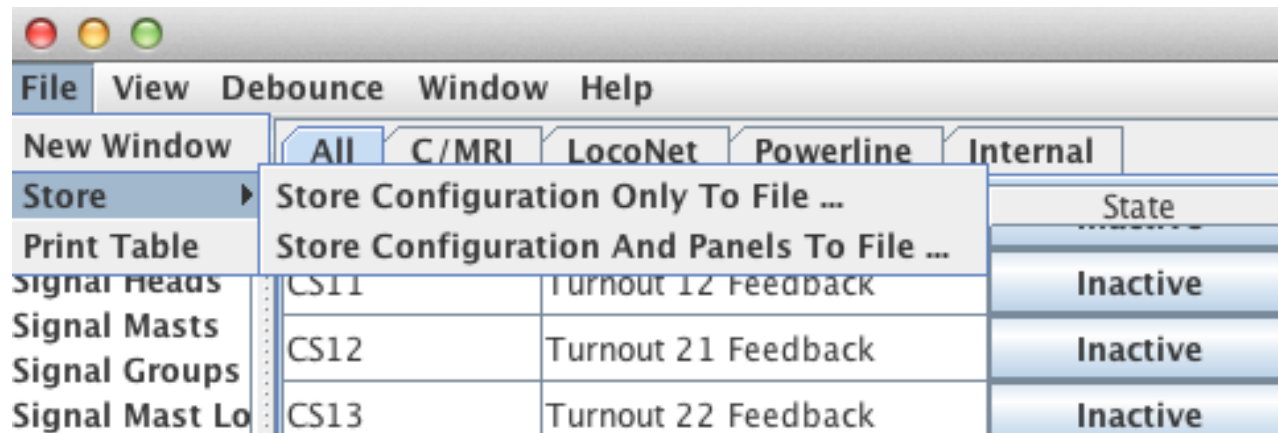
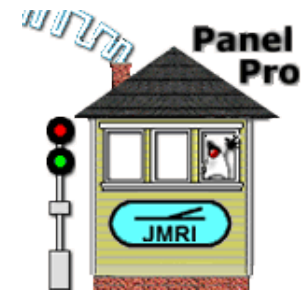
Turnouts: All C/MRI LocoNet Powerline Internal

System Na...	User Name	Cmd	Comment	Inverted	Locked	Feedback	Mode	Sensor 1	Sensor 2	Automate	
LT3	RedMainli...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS2		Off	Edit
LT4	RedMainli...	Thrown	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Thrown	ONES...	CS3		Off	Edit
LT5	Red Sidin...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS4		Off	Edit
LT6	Red Indus...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS5		Off	Edit
LT7	Red Indus...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS6		Off	Edit
LT8	Red Indus...	Thrown	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Thrown	ONES...	CS7		Off	Edit
LT9	Red Indus...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS8		Off	Edit
LT10	Red Sidin...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS9		Off	Edit
LT11	RedMainli...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS10		Off	Edit
LT12	Red Indus...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS11		Off	Edit
LT13	RedMainli...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS3001		Off	Edit
LT14	Staging Li...	Thrown	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Thrown	ONES...	CS1002		Off	Edit
LT15	Staging So...	Thrown	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Thrown	ONES...	CS3002		Off	Edit
LT16	Staging So...	Thrown	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Thrown	ONES...	CS3003		Off	Edit
LT17	Staging So...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS3004		Off	Edit
LT18	Staging N...	Thrown	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Thrown	ONES...	CS3005		Off	Edit
LT19	Staging N...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS3006		Off	Edit
LT20	Staging N...	Closed	Delete	<input type="checkbox"/>	<input type="checkbox"/>	Closed	ONES...	CS3007		Off	Edit

Show feedback information
 Show lock information
 Automatic retry
 Show Turnout Speed Details



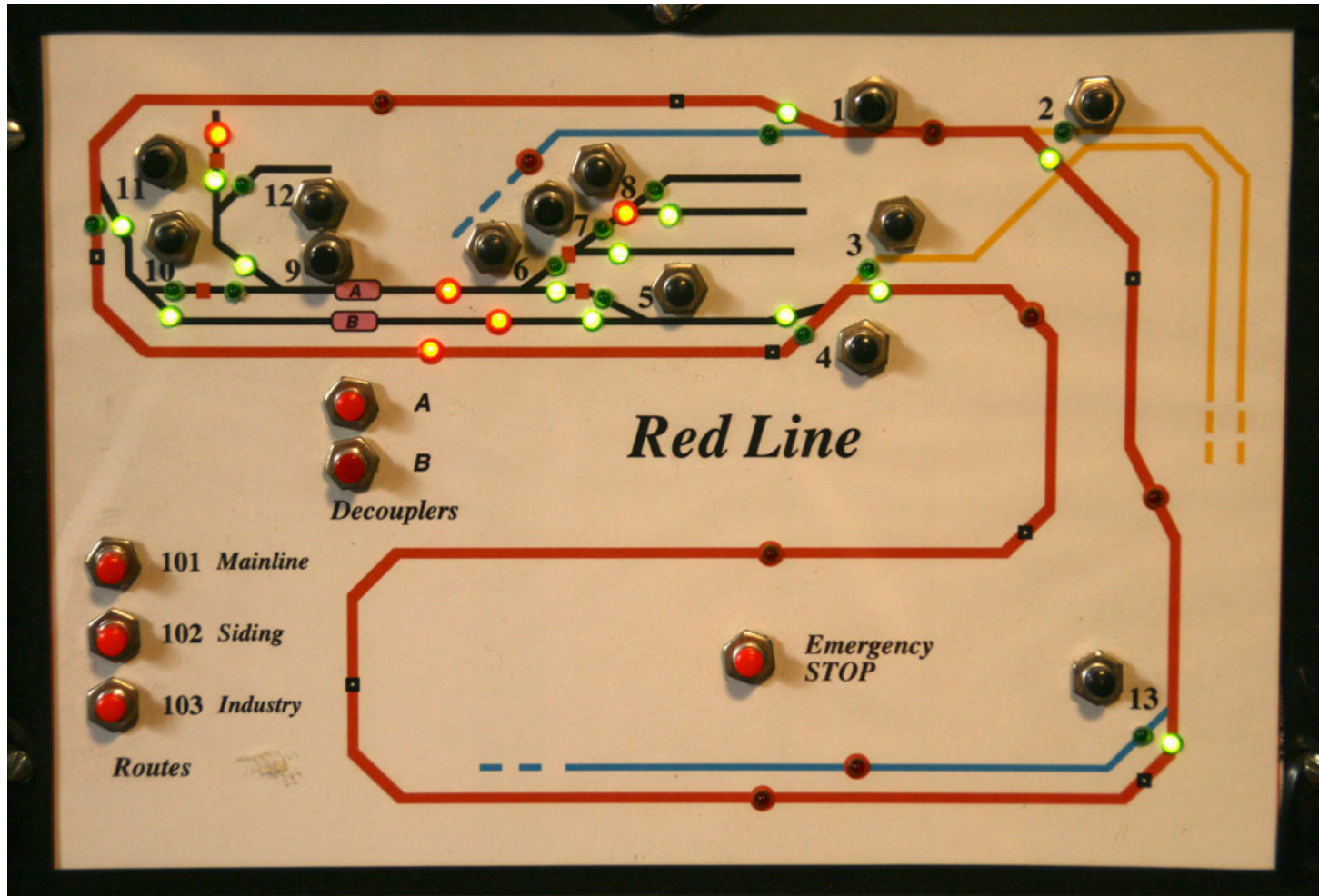
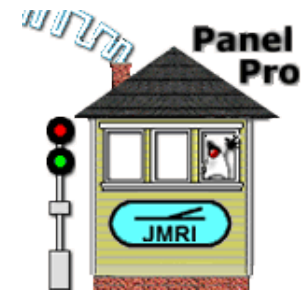
Always remember to
Save Configuration



Select “**Store/Store Configuration and Panels To File**”

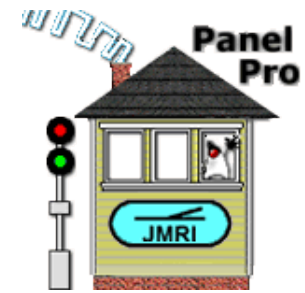


Fascia Panel Example





Set up of Fascia Panel Block Occupancy LED Light



Add/Edit Light

Window Help

System Name: CL2019

User Name:

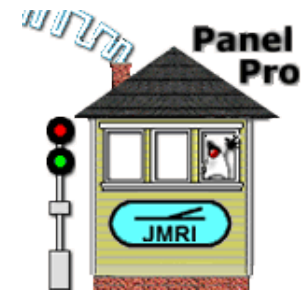
Light Control

Control Type	Description	Edit	Delete
By Sensor	ON when LS2126 is Active.	Edit	Delete

Change data and press Update, or press Cancel.



Set up of Fascia Panel Block Occupancy LED Light Control



Add/Edit Light Control

Window Help

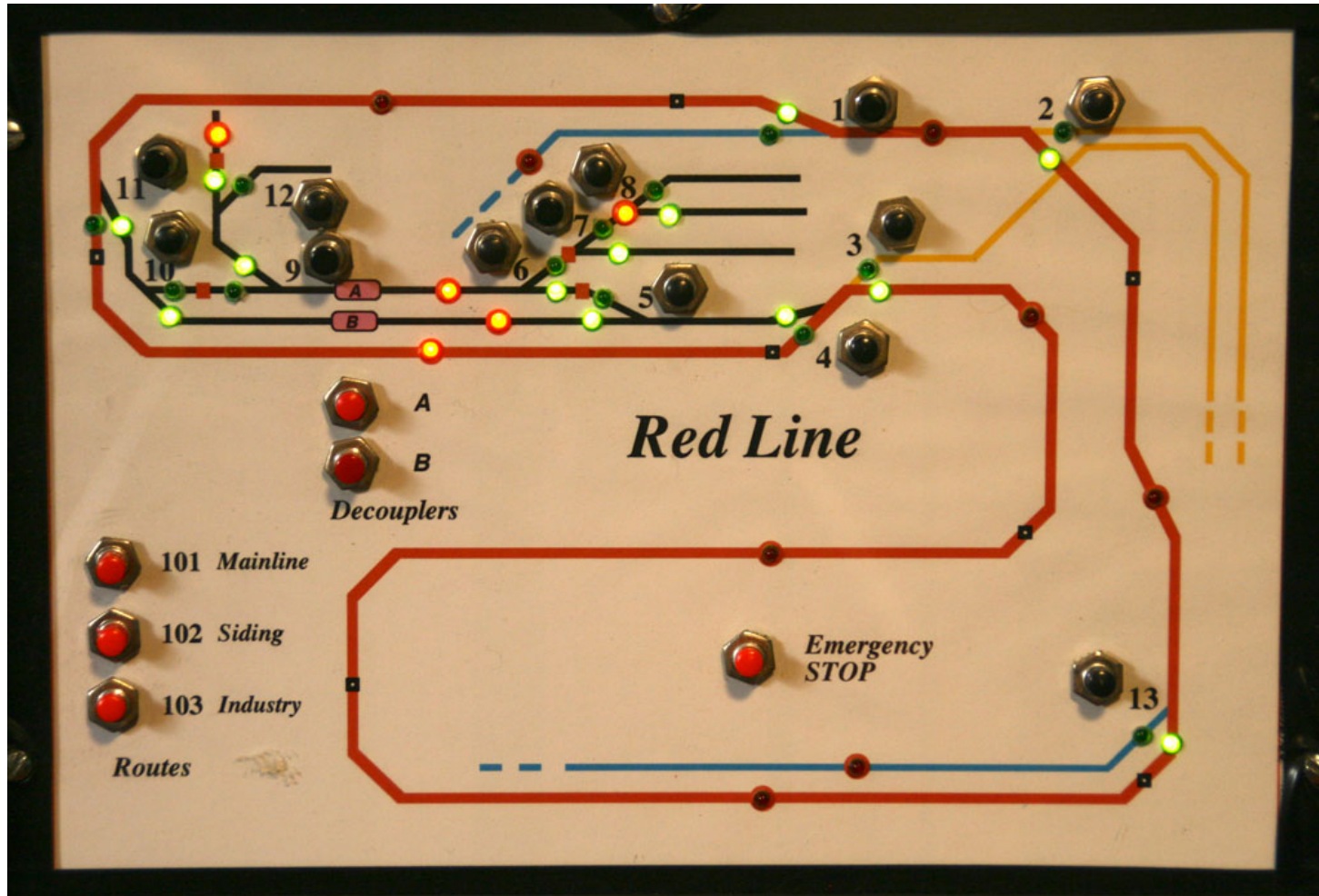
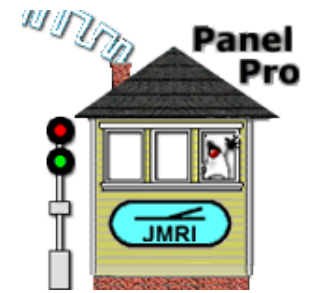
Control Type

Sensor Name

Sense for ON

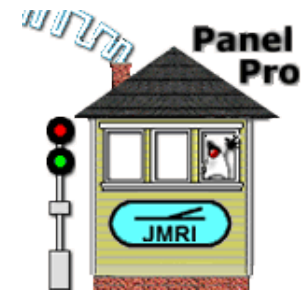


Fascia Panel Example





Set up of Fascia Panel Turnout Status LED Light



Add/Edit Light

Window Help

System Name: CL9

User Name:

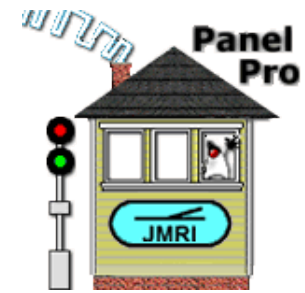
Light Control

Control Type	Description	Edit	Delete
By Turnout Status	ON when LT5 is Closed.	Edit	Delete

Change data and press Update, or press Cancel.



Control for Fascia Panel Turnout Status LED Light



Add/Edit Light Control

Window Help

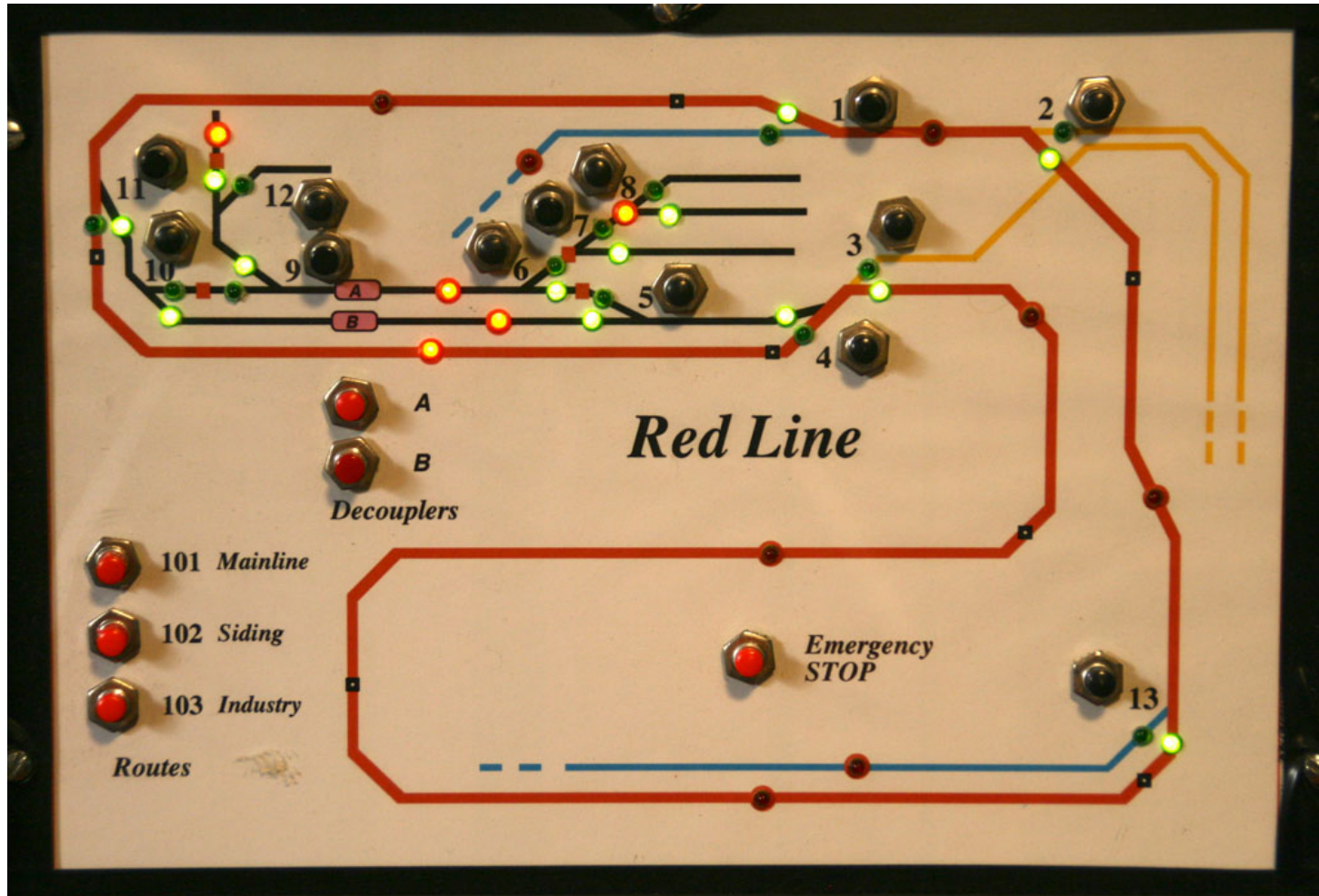
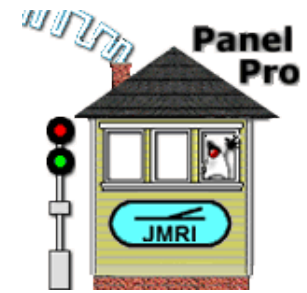
Control Type **By Turnout Status** ▼

Turnout Name

Status for ON **Closed** ▼

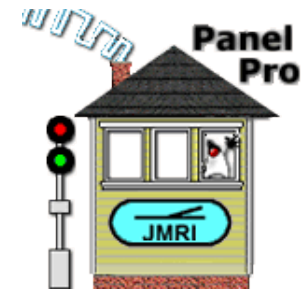


Fascia Panel Example





Set up of Fascia Panel Route Button Route Table



Routes

File View Window Help

System	User Name	Comment	Enabled	Locked		
IR101	Red Mainline	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR102	Red Siding	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR103	Red Industry	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR104	Red Transition	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR105	Red to Staging	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR111	Staging Outer (301 Button)	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR112	Staging Outer/Middle (302...)	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR113	Staging Inner/Middle (303...)	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR114	Staging Inner (304 Button)	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR115	Blue Mainline (201 Button)	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR116	Blue Siding(202 Button)	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR150	Up and Down	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR201	Blue Mainline	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR202	Blue Siding	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR203	Blue Reversing B	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR204	Blue Reversing C	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR205	Blue Transition	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR301	Staging Outer	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit
IR302	Staging Outer/Middle	Set	Delete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Edit

Add ...



Edit of Red Mainline Route (101)



Window Help

Add/Edit Route

Route System Name: IR101

Route User Name:

Show All Included Turnouts and Sensors

Please select Turnouts to be included in this Route.

System N...	User Name	Include	Set State
LT1	RedMainline/Blue Transition	<input checked="" type="checkbox"/>	Set Closed
LT2	RedMainline/Staging Reversing B	<input checked="" type="checkbox"/>	Set Closed
LT3	RedMainline/Staging Reversing A	<input checked="" type="checkbox"/>	Set Closed
LT4	RedMainline/Red Siding South	<input checked="" type="checkbox"/>	Set Closed
LT11	RedMainline/Red Siding North	<input checked="" type="checkbox"/>	Set Closed

Please select Sensors to be included in this Route.

System Na...	User Name	Include	Set State
--------------	-----------	---------	-----------

Play sound file: Run script:

Enter Sensor that Activates when Route Turnouts are correctly aligned (optional):

Enter Sensors that trigger this Route (optional)

Sensors:

Enter a Turnout that triggers this Route (optional)

Turnout: Condition:

Enter additional delay between Turnout Commands (optional), added delay: (milliseconds)

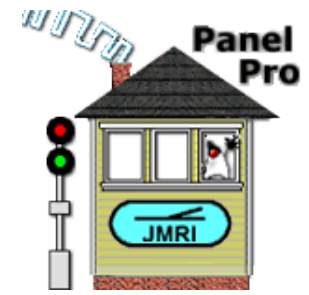
Enter a Turnout that controls the lock for this Route (optional)

Turnout: Condition:

To change this Route, make changes above, then click 'Update Route'.
To leave Edit mode, without changing this Route, click 'Cancel'.

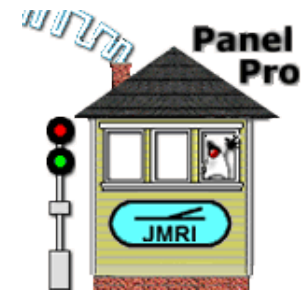


Campfire Example





Set up of Light for the Campfire



Window Help

System Name: CL1002

User Name:

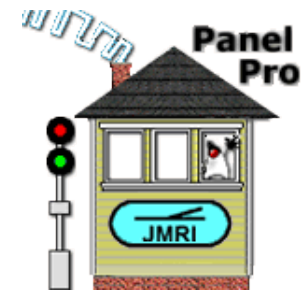
Light Control

Control Type	Description	Edit	Delete
By Fast Clock	ON at 19:45, OFF at 23:00.	Edit	Delete

Change data and press Update, or press Cancel.



Fire Light Control Setup



Add/Edit Light Control

Window Help

Control Type **By Fast Clock**

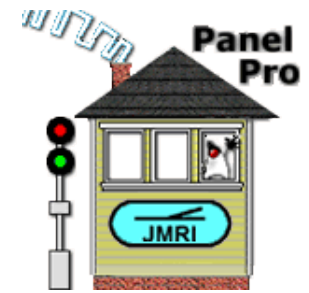
Time On (hh:mm) 19:45

Time Off (hh:mm) 23:00

Update Cancel

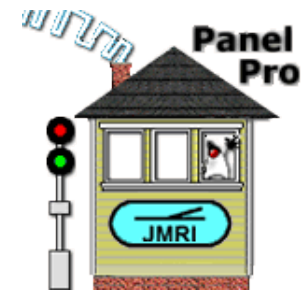


Grade Crossing Flasher Example





Crossing Flasher is controlled by a **Logix**



Logix

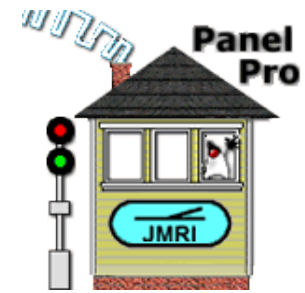
File View Options Tools Window Help

System Name ^	User Name	Enabled	Comment	
IXCrossingGate	TrentonCrossingGate	<input checked="" type="checkbox"/>		Select
IXCrossingS	ShortCrossingFlasher	<input checked="" type="checkbox"/>		Select
IXCrossingT	TallCrossingFlasher	<input checked="" type="checkbox"/>		Select
IXLT1_C_IHC7UR		<input checked="" type="checkbox"/>		Select
IXLT1_T_IHC7UL		<input checked="" type="checkbox"/>		Edit
IXLT21_C_IHC4UL		<input checked="" type="checkbox"/>		Copy
IXLT21_T_IHC4UR		<input checked="" type="checkbox"/>		Delete
IXLT22_C_IHC3UR		<input checked="" type="checkbox"/>		Select
IXLT22_T_IHC3UL		<input checked="" type="checkbox"/>		Select
IXLT23_C_IHC1UR		<input checked="" type="checkbox"/>		Select
IXLT23_T_IHC1UL		<input checked="" type="checkbox"/>		Select
IXLT24_C_IHC2UL		<input checked="" type="checkbox"/>		Select
IXLT24_T_IHC2UR		<input checked="" type="checkbox"/>		Select
IXLT2_C_IHC8UR		<input checked="" type="checkbox"/>		Select
IXLT2_T_IHC8UL		<input checked="" type="checkbox"/>		Select
IXLT31_T_IH31TC		<input checked="" type="checkbox"/>		Select
IXLT31_T_IH31TDB		<input checked="" type="checkbox"/>		Select
IXLT31_T_IH32C		<input checked="" type="checkbox"/>		Select
IXLT31_T_IH32D		<input checked="" type="checkbox"/>		Select
IXLT3_C_IHC6UR		<input checked="" type="checkbox"/>		Select
IXLT3_T_IHC6UL		<input checked="" type="checkbox"/>		Select
IXLT4_C_IHC5UL		<input checked="" type="checkbox"/>		Select
IXLT4_T_IHC5UR		<input checked="" type="checkbox"/>		Select
IXMusic1	Play Gazebo Music	<input checked="" type="checkbox"/>		Select
IXYARD	Set Yard Unoccupied for Signals	<input checked="" type="checkbox"/>		Select

Add ...



Crossing Flasher Logix has
one **Conditional**



Edit Logix

Window Help

Logix System Name IXCrossingT

Logix User Name

Conditionals (in Order of Calculation)

System Name	User Name	State	
IXCrossingTC1	CrossingLightFlasherOn	False	Edit

New Conditional Reorder Calculate

Done Delete Logix

Edit Conditional

Window Help

Conditional System Name IXCrossingTC1

Conditional User Name

Logical Expression:

Antecedent Expression (the 'if' part of the Conditional)

R1 or (R2 and R3) or (R4 and R5)

[Help](#)

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable Description	State	Trigger Ca...		
R1			Sensor "CS1006" state is Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete
R2			Sensor "CS1001" state is Sensor Inactive	True	<input checked="" type="checkbox"/>	Edit	Delete
R3			Sensor "LS2144" state is Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete
R4			Sensor "CS1001" state is Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete
R5			Sensor "LS2149" state is Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete

[Add State Variable](#) [Check State Variables](#)

Logic Operator

▼

Execute actions on change of state only
 Execute Actions whenever triggered

Actions

Consequent Actions (the 'then' part)

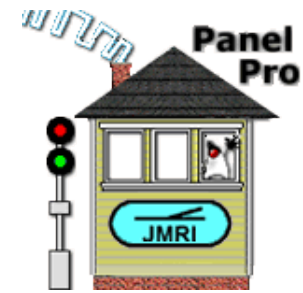
Action Description		
On Change To True, Set Light, "CL1005" to On	Edit	Delete
On Change To False, Set Light, "CL1005" to Off	Edit	Delete

[Add Action](#) [Reorder](#)

[Update Conditional](#) [Cancel](#) [Delete Conditional](#)

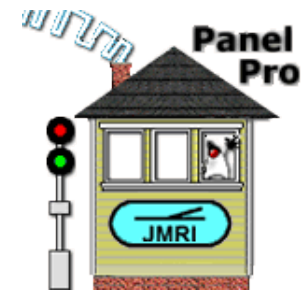


Special C/MRI Features





List C/MRI Assignments



List C/MRI Assignments

Window Help

C/MRI Node

Node: Show Input Bits Show Output Bits

SMINI - 24 input bits and 48 output bits

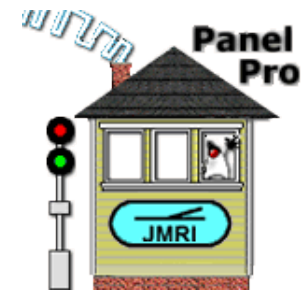
Input Assignments

Bit	Address	System Name	User Name
1	2001	CS2001	Button Turnout 21 Toggle
2	2002	CS2002	Button Turnout 22 Toggle
3	2003	CS2003	Button Turnout 23 Toggle
4	2004	CS2004	Button Turnout 24 Toggle
5	2005	CS2005	Button Turnout 25 Toggle
6	2006	CS2006	Button Turnout 26 Toggle
7	2007	CS2007	Button Turnout 27 Toggle
8	2008	CS2008	Button Turnout 28 Toggle
9	2009	CS2009	Button Blue A Decoupler
10	2010		
11	2011		
12	2012		
13	2013		
14	2014		
15	2015		
16	2016		
17	2017		
18	2018		
19	2019		
20	2020		
21	2021		
22	2022		

Print



List C/MRI Assignments



List C/MRI Assignments

Window Help

C/MRI Node

Node: Show Input Bits Show Output Bits

SMINI - 24 input bits and 48 output bits

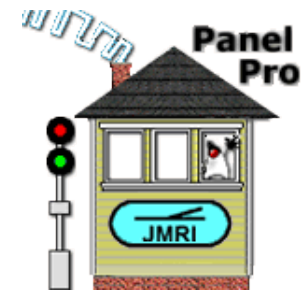
Output Assignments

Bit	Address	System Name	User Name
27	27	CL27	LED Red Mainline 1
28	28	CL28	LED Red Siding
29	29	CL29	LED Red Mainline 3
30	30	CL30	LED Red Mainline 4
31	31	CL31	LED Red Mainline 5
32	32	CL32	LED Red Mainline 6
33	33	CL33	LED Red Mainline 7
34	34	CL34	LED Red Mainline 8
35	35	CL35	LED Red Industry 1
36	36	CL36	LED Red Industry 2
37	37	CL37	LED Red Industry 3
38	38	CL38	LED Blue Reversing A 1
39	39	CL39	LED Red Transition 1
40	40	CL40	K-Streetlights
41	41	CL41	K-Scenery 6-8PM
42	42	CL42	K-Scenery 7-9:30PM
43	43	CL43	K-Scenery 6-10PM
44	44	CL44	K-Scenery 7-11PM
45	45	CL45	K-Scenery 6:30-12AM
46	46	CL46	K-Scenery 8:15-11PM
47	47		
48	48		

Print



Diagnostic



Run CMRI Diagnostic

Window Help

Test Type

Output Test Wraparound Test

Test Set Up

Node(UA): Out Card:

Output Test Only - Observation Delay:

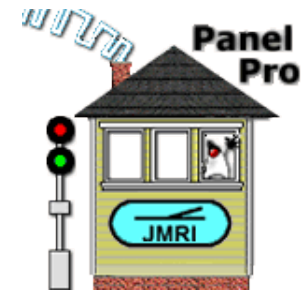
Wraparound Test Only - In Card: Filtering Delay:

Status

Please ensure test hardware is installed.
Select Test Type, enter Test Set Up information, then select Run below.



C/MRI Monitor



CMRI Serial Command Monitor

Window Help

```
[42 50] Poll ua=1  
[42 52 0a 00 00] Receive ua=1 IB=a 0 0  
[43 50] Poll ua=2  
[43 52 00 00 00] Receive ua=2 IB=0 0 0  
[44 50] Poll ua=3  
[44 52 16 14 00] Receive ua=3 IB=16 14 0  
[45 50] Poll ua=4  
[45 52 60 00 00] Receive ua=4 IB=60 0 0  
[41 50] Poll ua=0  
[41 52 e4 02 00] Receive ua=0 IB=e4 2 0  
[42 50] Poll ua=1  
[42 52 0a 00 00] Receive ua=1 IB=a 0 0  
[43 50] Poll ua=2  
[43 52 00 00 00] Receive ua=2 IB=0 0 0  
[44 50] Poll ua=3  
[44 52 16 14 00] Receive ua=3 IB=16 14 0  
[45 50] Poll ua=4  
[45 52 60 00 00] Receive ua=4 IB=60 0 0  
[41 50] Poll ua=0
```

Clear screen Freeze screen Show raw data Show timestamps

Choose log file Start logging Stop logging

Add Message