NEWSLETTER

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Digital Consultants
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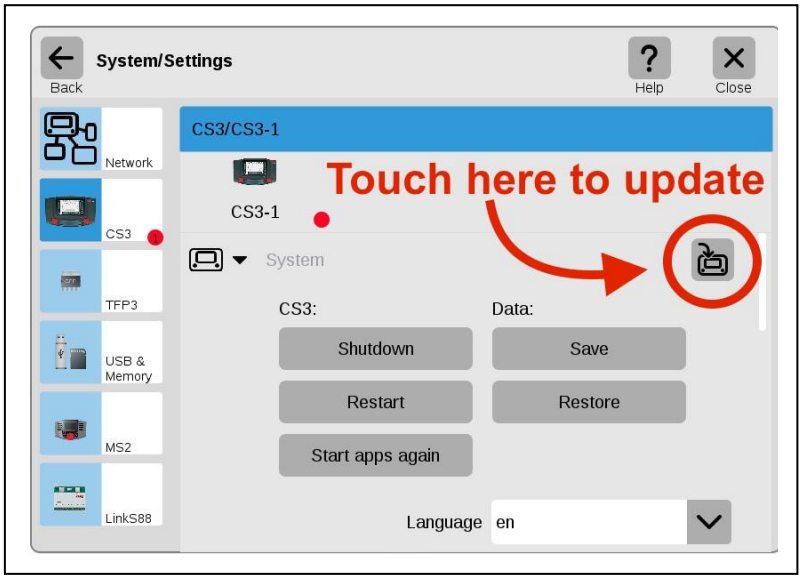
Current Central Station 3 Version – 1.3.3 (1)
Current Central Station 2 Version – 4.2.1 (0)
Current Mobile Station 2 Version – 2.7

We have been enjoying some new items that have rolled in and we have been to two train shows since our last newsletter. We just exhibited the CS3 at our ETE Club EuroWest show and ran LGB with the CS3 at the Garden Railway Convention and show in June.

Coming up next is the NMRA National Train Show in Kansas City, Missouri. We are always excited to attend this show. Then after that, we exhibit at the LGB 50th Anniversary Event in Perris, California. Please see our "Upcoming Appearances" below.

CS3 Update

The new CS3 update is available. Your CS3 should give you a red dot next to the CS3 icon. This indicates that it has discovered a download. The icon is in the "System" tab under the CS3 icon. As long as your CS3 is checked to "Auto-update check" and plugged into your router, the CS3 will let you know it is ready for an update. On the CS3 screen you can initiate the update by touching the update icon.



Our first article is on the modification of a 7292M grade crossing for those who want to explore what an M84 can do for old accessories. Our second article explains the advantages of connecting your Central Station to a PC.

Grade Crossing Modification

Fig. 1 - 7292M Grade crossing

I kept coming across my old 7292M grade crossing that I had on my layout when I was a child (Fig. 1). It is still in good working order, but it is for M Track. I wanted to incorporate it into my test layout to show that old accessories can be controlled digitally and used on a modern layout. Since the new M84 is perfect for this task, I thought of some modifications I might be able to do to the crossing to utilize the M84 more effectively.

The first thing I wanted was for this grade crossing to be used with C Track. I did not want to use M to C track adaptors, (which is possible), because the space in which I wanted to install the crossing has curves before and after it. So, I bought the 74930 multi-track extension set. This gave me the C Track center section for the rails. I would be wasting the automobile road extension, but it is still less expensive than buying a whole new grade crossing and I am able to use this “childhood memory” once again on my layout.

The crossings 74923 and 7292M / 7292K work the same in their factory configuration. One rail is insulated and the axles of the train and cars close the circuit and activate the crossing, similar to an s88 contact section. Once the train leaves the insulated rail section, the unit is deactivated. This works well and it is very reliable. The downside is the rails and wheels need to be clean and make good contact across the whole insulated section.

Although the factory configuration worked well, I remember as a child the gates would come down and bounce due to poor contact (children rarely think of cleaning track and wheels). In addition, I had M Track, so it wasn’t as reliable as C Track is today. I wanted to have the level of reliability as if it were new track and cars all the time.

Since the unit itself is reliable, the problem had to be the contact of the axles. So my thought was to make this work with an M84. This would give me the reliability that I wanted and the ability to program the action into a route. With the versatility of the M84, I would be able to modify the grade crossing to perform as desired.

The factory configuration of the grade crossing works like this:

1. The locomotive makes contact in the insulated section
2. The lights turn on and the gates come down simultaneously
3. The unit stays activated until the last car leaves the insulated section
4. The lights turn off and the gates go up simultaneously

What I want is this:

The locomotive enters a contact section and activates the route script:
1. The lights go on
2. A half second delay
3. The gates come down

Once the last car has left a second contact section after the grade crossing:
4. The gates go up
5. A half second delay
6. The lights go off

This will require some modification to the unit. Please note that this procedure is for the M/K Track grade crossings only.

Wiring Modification

First, I would need to modify the wiring in the grade crossing to separate the lights from the electro-magnet of the gates to get the delay I desired. This meant opening up the bottom.

I should point out, I had opened this grade crossing as a child to modify it once before. The reason was to make the lights flash back and forth with a flasher unit. So in this article, the pictures will show a modified unit (please forgive the poor solder job and the total disregard of thought for the wire colors that I chose as a child). The flasher unit is still used for a nice visual effect. This meant I had to separate the lights from each other while the bottom is open.

Removing the Base-plate


Fig. 2 - Terminal with wires removed

The first things to remove are the gates that come down. They will easily pop out. Then I had to unsolder the wires from the terminal that has the clip on the top of the grade crossing (Fig. 2).

I need to CAREFULLY unsolder the electro-magnet wire from the terminal clip that is on the top of the grade crossing. It is VERY important to take care and not break this wire.

The base-plate on the bottom of the grade crossing needs to be taken off. It is held in place by the molded plastic that has been mushroomed like a rivet to hold it in place (Fig. 3).

To get this plate off, I just gently pry up the plate while heating the plastic rivets one at a time with my soldering iron. I don't need to touch the rivet, I just hover the tip over the rivet until the plastic is soft. This way I can put the plate back without using glue.


Fig. 3 – Plastic rivet

Once the plate is off, I had to be very careful and mind the wires.

Next, I needed to unsolder the common ground for the lights. They are soldered to the base-plate.

Once the unsoldering is done, the lights are electrically separated from the electro-magnet.

Rewiring

The rewiring is pretty simple and it is just a matter of attaching longer lengths to the existing wires to reach under the layout.


Fig. 4 – Electro-magnet ground

The base plate gets a ground that goes to the electro-magnet. Since the other pole of the electro-magnet is soldered to this plate, I saw no reason to risk breaking it and I just soldered a wire to the tab in the middle of the base-plate (Fig. 4).

The other wire to the electro-magnet gets a wire soldered to it also. This is a varnish insulated copper wire. It is very fragile (Fig. 5). I had to scrape off a little varnish for good contact then soldered a wire to it (Fig. 6).

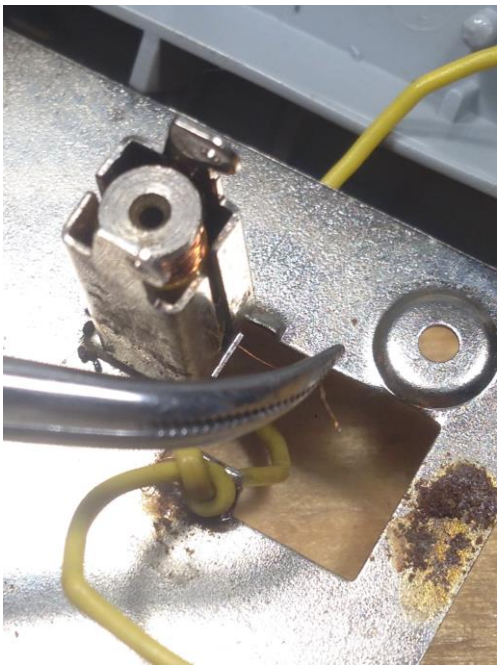


Fig. 5 - Varnished electro magnet coil wire

I then hot glued the new wire for strain relief (not shown). Once this was done, I lengthened the light wires (Fig. 7).

If I had thought of it (when I was younger), I would have also soldered the common ground for the lights to the base-plate. This would have given me a common ground for the lights and electro-magnet. Since I did this work years ago, I didn't think I needed to change it now.

Fig. 6 – Wires soldered

Fig. 7 – Light wires lengthened

Now that all the wires have been separated and lengthened, the last thing I need to do is to remove the unsightly terminal from the top. I never liked the look of a wire going to it and now it's unnecessary. Later, I can cover the area with some scenery to make it look more natural (Fig. 8 - 9).

Fig. 8 – Unsightly terminal

Fig. 9 – Terminal removed

Next, I need to do the same procedure to the other half of the grade crossing. After both halves were rewired, I installed the base plate and warmed up the plastic alignment pins with my soldering iron then smashed the pin back into a rivet.

Wiring

As I mentioned earlier, I had installed a flasher unit for the lights when I was younger. I would still like to have the lights flash. The flasher is a Circuitron FL2 flasher unit (Fig.10).

Fig. 10 - Circuitron FL2 flasher unit

This unit will make the lights blink alternately. It is a simple matter of wiring the lights to the flasher. There is power supplied to the unit and the output goes out to alternate the lights. Then the flasher is activated by the M84.

Once the flasher is installed, the crossing gates are wired to another port of the M84 to activate the gates.

I did a test to see if the whole thing worked using track power to activate the flasher/lights and gates. The problem with track power is the digital code interferes with the components. The lights flashed with one staying on longer than the other and the electro-magnets were not steady. They sounded like a machine gun with a slow buzz.

Other than the digital interference, the grade crossing worked as I had hoped.

We have a Google+ page that we set up to occasionally post some Märklin projects we are doing. If you want to see the test video, visit “Märklin Dudes” at Google+ or click on this link:

https://plus.google.com/photos/photo/101163204729985203728/6255682519041654754

Since the test went well, I decided to install the grade crossing in the layout. Once all the wiring was in place, I had to solve the interference problem. This problem is easily fixed by using a different power supply for the grade crossing.

I have created a basic diagram to show the wiring (Fig. 11).

Right after I installed the grade crossing, a friend gave me an old Märklin bell that he had bought in the 1950s as a child. I thought it would be great to integrate the bell into the layout as part of the grade crossing and the route script.

I didn’t want it to ring constantly, so I have it ring for a half second when the grade crossing activates.

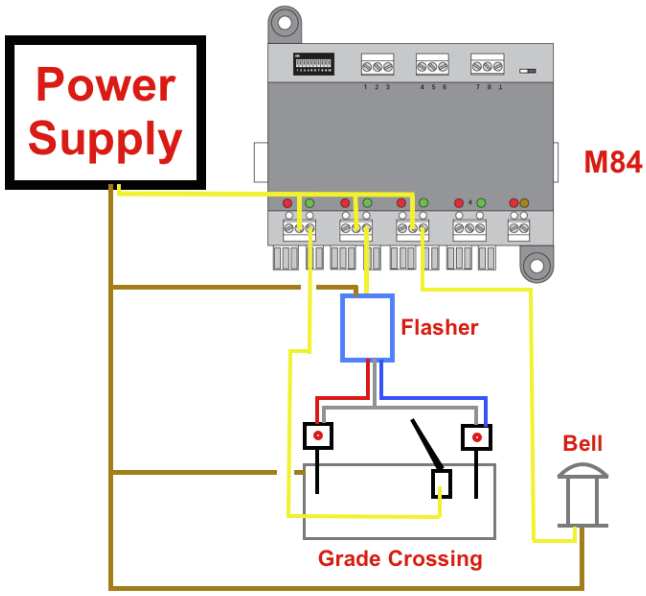


Fig. 11 – Wiring diagram

Now the route script looks like this:

The locomotive enters a contact section and activates the route script:
1. The lights go on
2. Bell starts to ring
3. A half-second delay
4. Bell stops ringing
5. The gates come down

Once the last car has left a second contact section after the grade crossing:
6. The gates go up
7. A half-second delay
8. The lights go off

I had an old 18v power supply that I used to power the crossing. It made the lights nice and bright, but it would make the gates slam down. I switched to a 12v power supply and it runs the sequence nice and smooth.

I also did a finished video of the crossing but it was just before the bell was installed. To see the finished video click on this link:

https://plus.google.com/u/0/photos/photo/101163204729985203728/6288786103691325970

Here are pictures of the finished grade crossing and the bell next to it (Figs. 12-13).

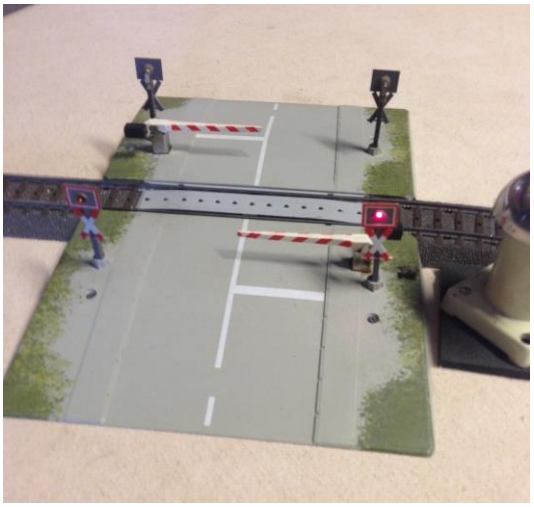


Fig. 12 – Installed crossing

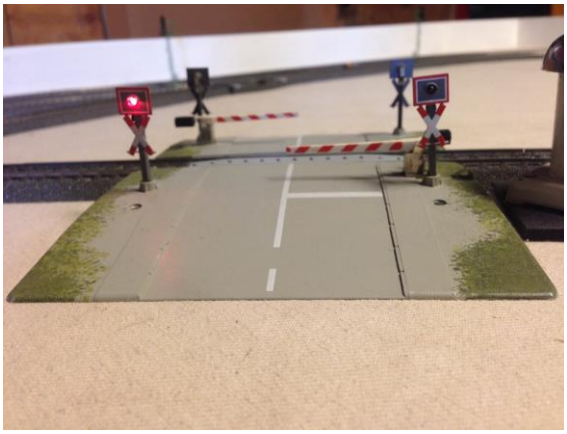


Fig. 13 – Installed crossing

This has been a fun and rewarding project. It is nice to see an older accessory working digitally and with the minor modifications, it works in a more prototypical manor. Now, I might have to look at some other analog accessories to see what can be done.

Enjoy your hobbies!
Rick Sinclair

Computer Connection with Your Central Station

Learning the ins and outs of the CS3 can sometimes be considered challenging without proper guidance. There can be usability features that one may never know exist, only because they are seldom mentioned. This issue's article will cover one of those features - connecting your CS to a PC. I will also explain why you might wish to do this, because it's not just about connecting to your computer, but also about using your computer to interface with your CS (and trains).

Hardware Setup

To get started, I'll run through the hardware setup procedure. The first step is to connect your CS3 to a network router. It is important to do this before turning on your CS3. (Note – if you have ever set up your CS3 to be operated wireless using a mobile device, then you can skip to the next section). Whether you use a wireless or non-wireless router only matters if you wish to operate your layout with a wireless mobile device (Android, iPhone, Tablet). You'll need to connect to the LAN port of your router. Once you make this connection, then go ahead and power up your CS3.

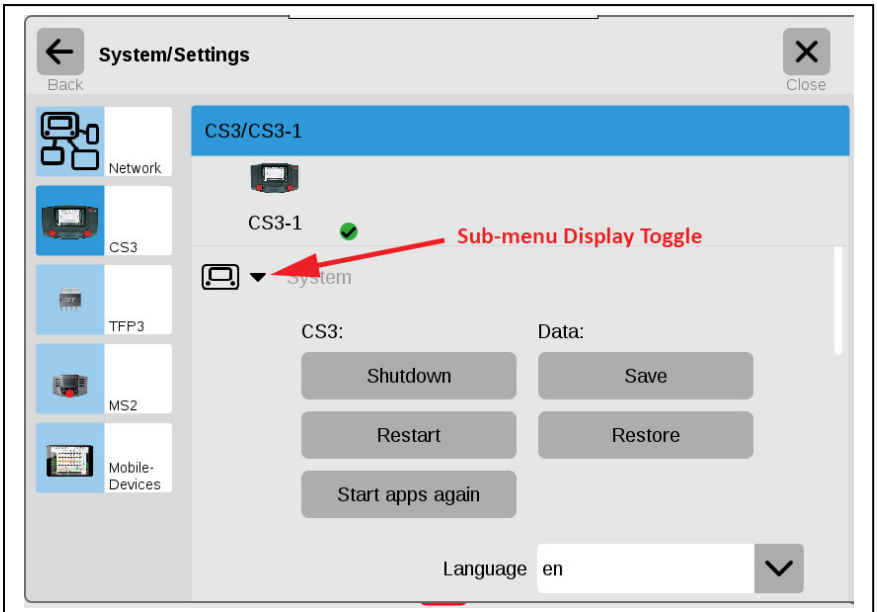


Fig. 1 - CS3 System sub-menu and display toggle

Once your CS3 is fully powered, click on the 'System' icon on the top left of the screen. The screen will now display various icons of system components. Look for the CS3 icon and click on that. It may already be displayed as the default window (see Fig. 1).

The Sub-menu Display toggle is indicated in Fig 1. By clicking on the triangle, it will point to the right and hide the 'System' sub-menu and display the list of other sub-menus available in the CS3/CS3-1 menu (see Fig. 2).

Click on the Sub-menu toggle to display the IP Settings to verify that you are properly connected to the router. There are 4 fields you should be able to view: 'IP Address,' 'IP Network Template,' 'IP Gateway,' 'DNS Server.' Each field should be filled with numbers. If any of them are empty, then you will need to reboot the CS3 (see Fig. 3).

Fig. 2 - CS3 Sub-menu list

Software Connecting

Once you've gotten all of the IP fields full of numbers, the item to remember will be the 'IP Address' field number. Now you can go to your computer and open up your web browser (Internet Explorer, Safari, Mozilla, etc.).

At the top of your browser where you would normally type in the Web address (*www.example.com*), you will type in the IP Address numbers, including the '.'s. If everything is properly connected, you will see the page displayed in Figs. 4a and 4b.

Figure 4a details an example of the IP Address at the top. Below that are 3 links: 'Startseite,' 'Lokbilder' and 'System.' In this article, I will only look at the 'System' link.

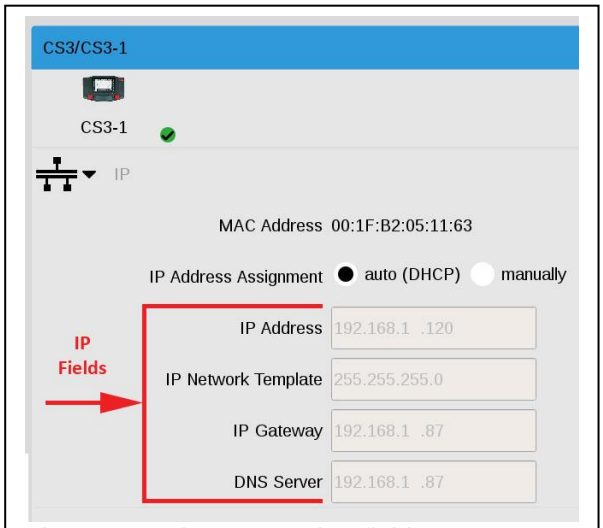


Fig. 3 - IP Sub-menu and IP fields

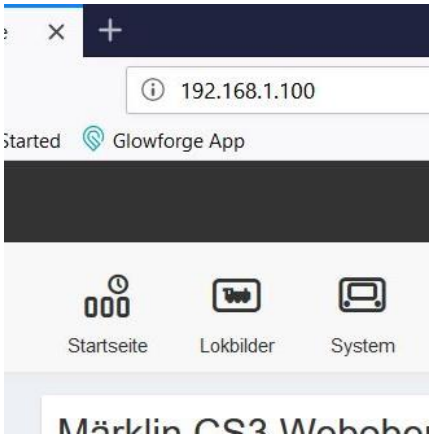


Fig. 4a - IP Address in browser and initial page buttons

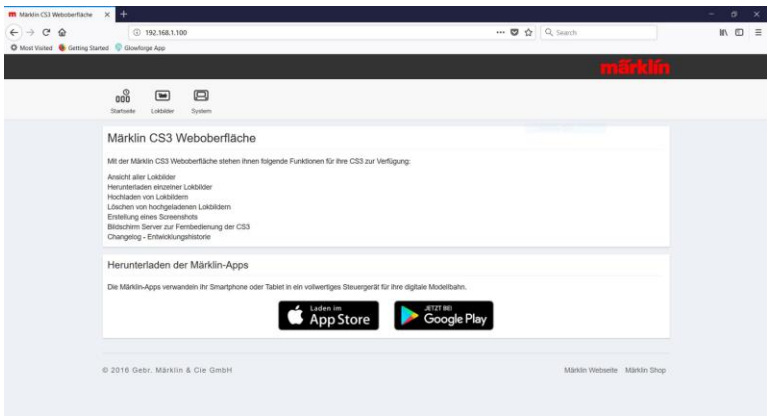


Fig. 4b - IP Address page in browser

Clicking on the 'System' link will display a Central Station Information page (Fig. 5).

Here, you can see 4 panels on your CS3: 'Info,' 'Screenshot,' 'Notupdate,' and 'CS2Bildschirm Server.' Of the four, there are only two panels that you should ever really want to use: the 'Screenshot' panel and '… Server' section. The 'Info' panel doesn't have any interactive features and the 'Notupdate' panel is for authorized service technicians. If you press this button and anything goes wonky, I won't be able to help you with it. Your CS will need to be sent back to the factory for service.

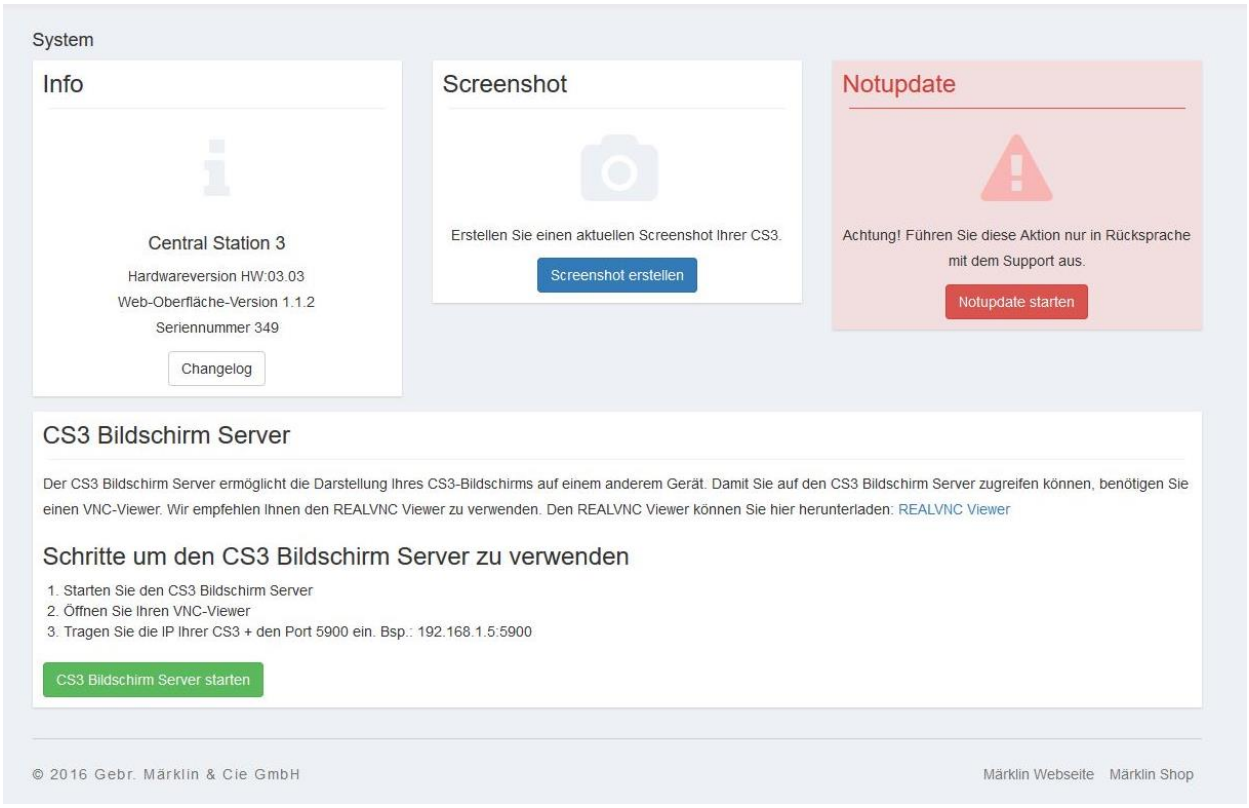


Fig. 5 – CS3 System link page

Anyway, back to the useful panels. The ‘Screenshot’ panel allows you to get a screen image of your current displayed image on the CS3. This can come in handy if you have any questions, or purpose regarding the CS3 and you need to send out what is on the screen. Clicking on the blue button labelled ‘Screenshot Erstellan,’ will automatically place the image in your downloads folder (at least with the Mozilla brower), so you may have to look for it. It is prefixed with the label ‘cs3_screenshot,’ so you can do a search for any images taken.

The fun panel, is the ‘CS3 Bildschirm Server.’ This panel allows you to have auxiliary control and display of your CS3. To do so, you are going to need to download an application called, ‘REALVNC Viewer.’ To get this app, click on the link supplied in this page of your browser. It is written in blue, so you can’t really miss it. When you download the app, be sure to place it somewhere handy, because you need to open it as a second step.

To clarify what these ‘steps’ are, they are listed under the header, ‘Schritte um den CS3 Bildschirm Server zu verwenden.’ Rather than explaining, let’s just go through the procedure.

First, click on the green button labelled, ‘CS3 Bildschirm Server starten.’ You may have to wait a few seconds until the button turns red and is labelled with ‘… stoppen’ instead of ‘starten.’ In short, this button just starts and stops the CS3 from communicating with the PC as a Server.

The second step, once you've started the CS3 Server, would be to open the REALVNC Viewer application. Figure 6 displays a cropped view of the REALVNC Viewer application. The first time you use the viewer, you won't see the screen icons in the main panel as shown in the figure. What you will need to do is enter the IP address number similar to what you entered into the web browser.

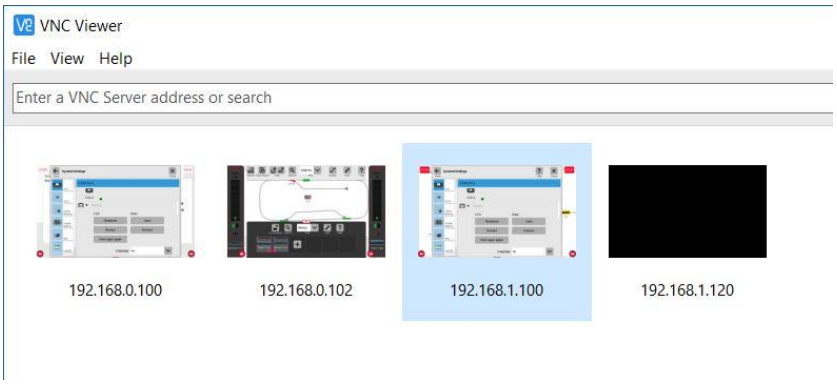


Fig. 6 - REALVNC Viewer interface.

Once entered, press the 'enter' key on your keyboard. After a few seconds, a window will pop up with a display of your CS3's screen. To back-track a bit, whenever you open a new window with the IP Address, a clickable icon will be created in the main panel of the viewer (as in Fig. 6). The next time you use REALVNC Viewer, you should only need to click on the icon with the appropriate IP address, rather than entering a new one (if you choose). Returning to the new window that displays your CS3 screen, there is a settings menu that can be accessed when you roll the mouse's pointer along the top edge of the window (Fig. 7). This menu allows you to expand the window to full screen, as well as make the screen larger to fill the full screen.

Connecting to your computer allows you to work with your CS3's controls and settings using a larger screen. It can come in useful for doing presentations or fulfilling the need for a larger display screen.

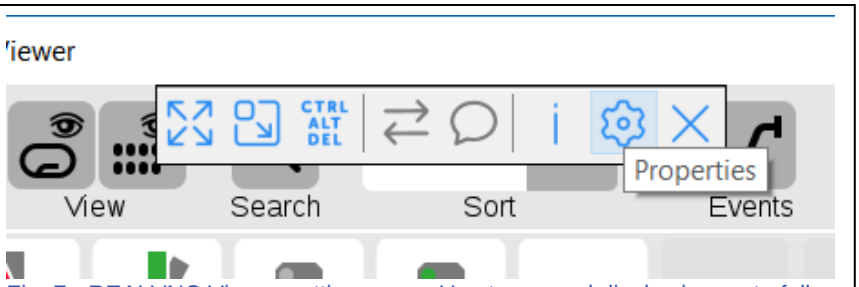
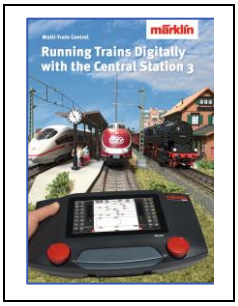


Fig. 7 - REALVNC Viewer setting menu. Use to expand display image to full screen

Please note: While it is possible to control your CS3 via the computer interface, be aware that with some setups (speed of your network, setup, etc.) there can be some operational lag, which causes delays in control. If you happen to run across an operation emergency on your layout, it would be best to use the CS3 directly.

Another thing to be noted, is if your computer is timed to go into a sleep mode, it can often interfere with the CS3 server connection. Re-awakening your PC may not give you any control of the CS3 and you'll have to close the connection and start the server again. It's more reliable if you shut off your computer's sleep timer.

As always, have fun with it!
Curtis Jeung



Available from Märklin Dealers!

Running Trains Digitally with the Central Station 3

This book provides extensive information about the Märklin Digital system. It contains all of the essential information about the new controller Central Station 3. Another focal point is the description of the new generation of decoders. In addition, all of the Märklin Digital system's components are featured with complete explanations of their use on a Digital layout.

191 pages in the DIN A4 format. Version with English text. #03092

Upcoming appearances:

NMRA National Train Show
Kansas City Convention Center
301 West 13th St
Kansas City, MO
August 10-12, 2018

LGB 50th Anniversary Event
Orange Empire Railway Museum
Perris, CA
September 2, 2018, 4:00 pm – 8:00 pm
For more information and to RSVP by August 6, 2018: 573-365-9522 or stacy.cousins@marklin.com
Come out and celebrate LGB! Meet LGB representatives, including a special guest from the factory, explore the museum and enjoy free food. Plus, many other activities, including a Märklin Digital LGB Demonstration. Sponsored by Märklin, Inc.

Just Trains Open House
5650 Imhoff Dr, Ste H
Concord, CA
October 7, 2018

Upland Trains Open House
1531 W 13th St, Ste G
Upland, CA
October 20, 2018

Rocky Mountain Hobby-Expo
Denver Mart
451 E 58th Ave
Denver, Colorado
October 27-28, 2018

Trainfest
Wisconsin State Fair Park Expo Center
8200 W Greenfield Ave
West Allis (Milwaukee), Wisconsin
November 10-11, 2018

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