



Model Railroad Hobbyist |

DCC IMPULSES

column

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Traveling with DCC

As I was writing this, it was summertime in the USA, time to move about the country. Perhaps a long weekend away. Possibly going to a second home for an extended period of time. Or something in between.

Now that it's headed toward fall, for some folks travel involves just heading from home to the club. But it is becoming spring for folks in the Southern Hemisphere. And they may be traveling soon.

Either way, how would you like a DCC system the size of a cigarette pack?

I recently got my hands on a SPROG 3. All I can say is, "Wow." I can see a myriad of uses for this neat little box.

On a recent eMail thread, a user asked what SPROG stood for, since he didn't do well with acronyms. Well, it isn't an acronym, that is the name of the company and they spell it in all caps.

Also, this month, *Mr. DCC's Workbench* is taking a quick look at the new Digitrax DCS240 system box.

Introduction to SPROG

SPROG DCC (sprog-dcc.co.uk) is a company out of the U. K. that has been selling DCC products for about a decade. The BBM Group (bbmgroup.com) distributes SPROG DCC's products in North America. They are available from retailers (both online and brick-and-mortar) throughout the world.

There are two SPROGs currently available. The SPROG II V3 (\$105) is a decoder programming track driver and one-amp DCC system in a small box.

The SPROG 3 (\$130) is the same size, but has a 2-½-amp DCC system. Since I have garden locos, I chose the higher current capacity SPROG 3. Given the small price difference, I recommend the SPROG 3 for almost anyone. There are other products in the SPROG line, but these two are the basic ones.

1. SPROG 3 box next to a US quarter for size comparison



The SPROG [1] has a USB B connector on one end and a power / track connector on the other. Two LEDs on top tell status.

Let's establish what the SPROG is not:

- It is not a computer interface to any other DCC system.
- It is not a sound loader. (See my August 2016 column for those.)

So, what is it? It is a complete DCC system in a small box. It uses JMRI's DecoderPro (jmri.org) for control. Since JMRI uses run-time JAVA as a platform it will operate with Windows, Mac or Linux based computers. The major requirement is a USB port. Alas, many tablets do not have a USB port, so they won't work, even if they have run-time JAVA.

There are two ways to run trains with the SPROG products:

- DecoderPro's built in computer throttles
- With your smart phone using Engine Driver (Android) or WiThrottle (Apple)

The current SPROGs will read and write NMRA complaint decoders. That means that you don't need a programming track booster (PTB).

Setting the SPROG up

The SPROG 3 comes in a bag [2] with everything you need except a computer. A CD is included with the software you need, including JMRI, plus a detailed setup manual. Rumor has it that future shipments will have the software on a flash drive instead of a CD. You can view the manual at any time on the web (sprog.us.com/install). The Windows USB drivers are not signed but the work-around instructions for Windows 8 and later are included.

I set mine up on my (2009 vintage) MacBook Pro with OS X 10.11.5 (El Capitan).

Since I had a 4.1 version of JMRI on my machine and the CD included 4.2.1, I opted to install the new



2. SPROG 3 in the bag - BBM Group photo.

version. I already had Java 8 (aka 1.8) installed. Various versions of JAVA and, therefore JMRI, are available for older versions of OS X. See the SPROG instructions for the details.

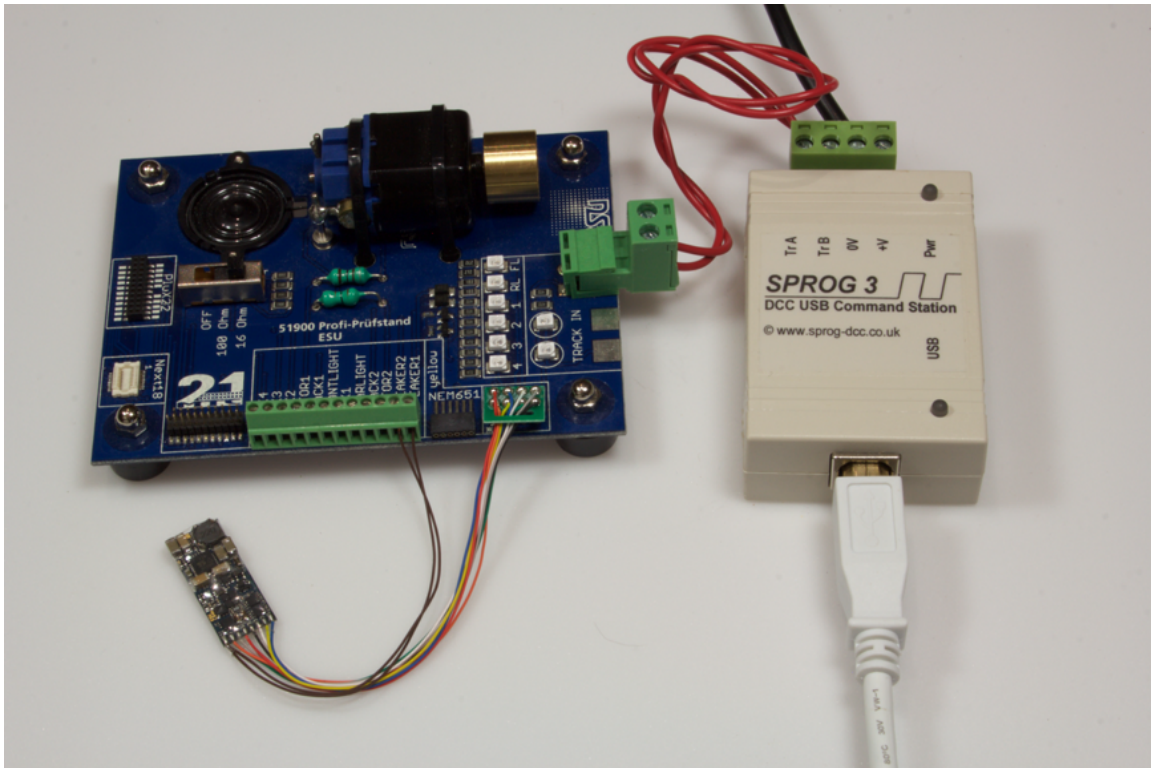
Later, I downloaded and installed the latest production version of JMRI (4.4.0) over top of the 4.2.1 without any issues.

The next step was to connect the SPROG to my USB port and install drivers. Oh, wait. The current SPROG products (IIv3 and 3) use generic USB drivers, so all I had to do was plug in. No fiddling around with driver installation.

The SPROG instructions cover how to set up a JMRI profile. I created a new one, called SPROG. This way I can flip between the existing NCE USB and the new SPROG with impunity.

Next, I connected an ESU decoder tester [3] with an ESU LokSound Micro decoder. In a few minutes I was running the decoder with the DecoderPro throttle. I then asked DecoderPro to read all the sheets for the LokSound decoder. This took a long time (about ½ hour - I didn't sit and watch and time it). This went perfectly well.

3. SPROG 3 connected to an ESU decoder tester and a LokSound Micro decoder



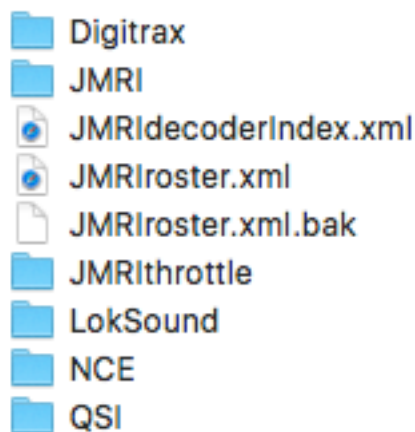
On the road

All the equipment (SPROG, power supply and cables) fits inside of the zipper bag it came in (about 2 quart size). With that, plus my MacBook, I can configure any DCC loco anywhere there is AC power. A rechargeable battery could run the SPROG for a totally “off grid” solution. Four lithium cells would work nicely.

Rosters

I have found that keeping my DecoderPro rosters in Dropbox simplifies things. I have one folder for my personal files [4] and another for the club (pcmrc.org) files. My MacBook JMRI points to the appropriate subfolders in my folder. The club computer’s points to their folder. If I want to work on a club loco at home, I copy the file from one roster folder to the other. When I’m done, I copy it back.

4. My Dropbox folder with sub folders for Digitrax, JMRI, LokSound, NCE and QSI. I store rosters, sound projects, drivers and PDF manuals.



I am sure that other cloud services will work well with this scheme. The club has been using Dropbox amongst the club officers for many years. After I put the club’s files in their folder, I moved my personal files in my personal Dropbox folder [4].

Running a layout

The SPROG 3 has enough power to run a small layout and they offer a similarly sized booster for expansion.

I feel that the highest and best use for the SPROG is on the workbench: customizing and verifying locomotives. No need to duplicate an extensive DCC system. I have been using a PowerCab in this format for years. The

SPROG 3 does the same function with more power. The only difference is that the SPROG uses the JMRI throttles, instead of a standard knob or button throttle.

Please share your experiences, comments and ideas. Just click on the Reader Feedback icon at the beginning or the end of the column. While you are there, I encourage you to rate the column. “Awesome” is always appreciated. Thanks.

Until next month, I wish you green boards in all your endeavors.

Coming up next is *Mr. DCC's Workshop* with a first look at the Digitrax DCS240.

Mr. DCC's Workshop

A first look at the DCS240 from Digitrax

As I was finishing this column, Jack from Litchfield Station called and asked if I'd like to check out the new DCS240 that Digitrax announced in June. I only had a couple of days before I left for about a month of rail fanning, but I still jumped at the chance. I brought home a DCS240 and the PS514 power supply that it was designed to mate with.

5. Digitrax DCS240 System Box (command station and booster).



I fired it up and here are my first impressions. Currently it seems that this box is only available as a stand-alone. Digitrax hadn't announced a new set with the DCS240 as the system box.

The DCS240 lists for \$375, which is \$70 more than the older DCS200 8-amp system. The DCS240 includes PR3Xtra functionality. The PR3Xtra lists for \$86, making the DCS240 a few dollars less expensive than the DCS200 plus a PR3Xtra.

The box [5] should be familiar to Digitrax users. It is the same size, shape and color that has been the Digitrax trademark since 1993. The front panel has been redesigned a bit to accommodate new features.

I read the manual. Not cover to cover, but I skimmed and read several sections. It is obvious that someone with some technical writing skills was involved. It is much better than any prior DCS manual I've seen.

The 5-amp vs. 8-amp personality was difficult to understand based on the public announcement. What I realized after a bit of time with the manual is that the DCS240 is designed to receive power from the PS514, via a coaxial jack on the front panel that is rated at 5-amperes. To use wires to connect to the DCS240, or if you want to run up to 8-amperes, there are wire connections on the familiar gray plug.

The gray plug on the DCS240 is pin-for-pin compatible with other DCS units, so the DCS240 may be able to be plugged in where a DCS100 or DCS200 had been. The direct swap will only work if the current power supply is DC. The DCS240 will only work with a DC power input. The vast majority of Digitrax installations have used transformers, not power supplies. Transformers supply AC and cannot plug directly into the DCS240.

Digitrax has buried the power supply information on page 23 of the manual. Once you get past the 5-amp vs. 8-amp connection issue, there is the selection of voltage. Track voltage cannot be more than the power supply DC voltage. The closer the power supply voltage is to the desired track voltage, the better. One to three volts above the desired track voltage is just fine. It would have been nice if the Quick Start section had said:

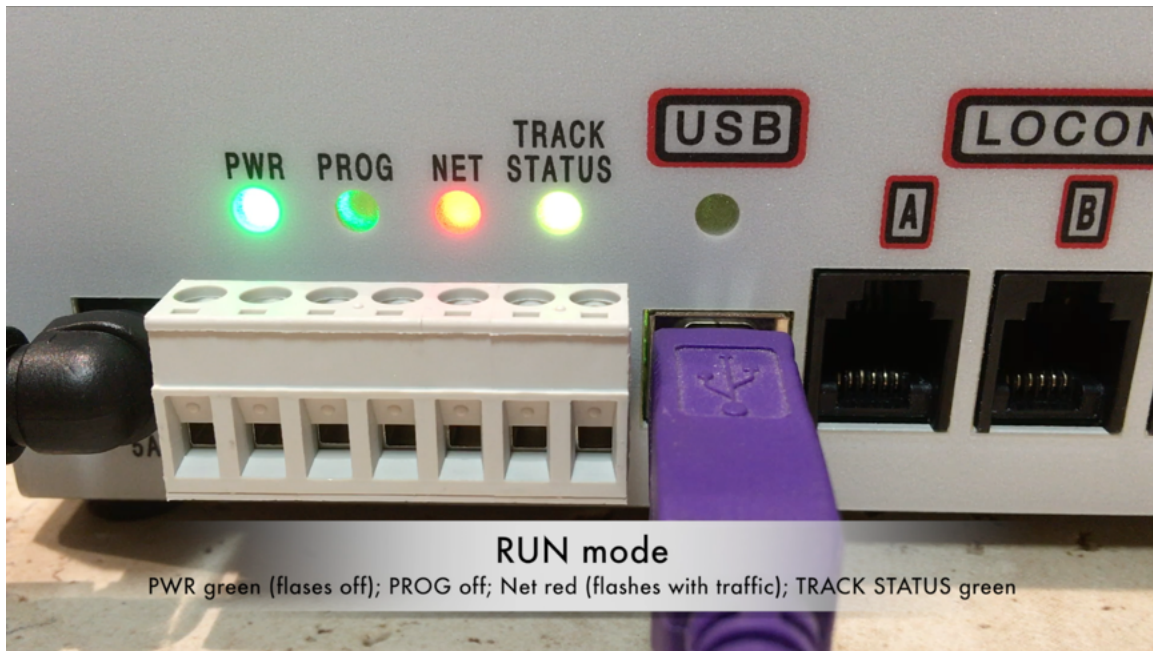
*“Unless you have adjusted track voltage from the default settings, set the PS514 voltage:
DCS240 scale switch to N, set the PS514 to the 13.8 volt position
DCS240 scale switch to HO, set the PS514 to the 16.8 volt position.”*

It took a bunch of flipping through the manual for me to sort that out. Track voltage for each switch setting is adjustable over a range shown in the chart on page 25 of the manual. This adjustment uses a complicated procedure shown on page 26 of the manual.

Good news. The factory default settings are such that when you apply power to the DCS200, it comes up with the track power turned on. If you don't change it, it will continue to do so.

There is a new look to the front panel LEDs. Prior units were designed when red and red / green bicolor LEDs were the norm. The DCS240 uses other colors, but not to the best advantage possible. I was disappointed to see that there was no optical isolation between front panel lenses [6]. Thus, one or two LEDs illuminated had ghosting in the unlit LEDs. That makes the difference between an off and on condition harder to detect.

6. Video of front panel LEDs. Note, the PROG LED is not lit. The green hue is ghosting from the PWR LED.



This video [6] shows the response of the LEDs in various configurations.

I have a bit of an issue with the NET light. It is a red LED, as it has been on prior DCS units. This results in a panel of mostly green LEDs, but one red LED in normal operation. To my view, a yellow LED would be easier to understand. Red implies danger or an error to me.

The USB LED lights up blue when there is a computer successfully connected to the DCS240.

The DCS240 allows sound loading and Digitrax device updates in the same manner as the PR3Xtra. This requires a Windows computer with a USB port

and uses SoundLoaderII software that is downloadable from the Digitrax site.

Although Digitrax' documentation ignores non-Windows computers, I was able to connect my MacBook Pro to the DCS240. The drivers imbedded in OS X were used. I mostly followed the PR3 instructions. There were a few wrinkles getting JMRI to talk with the DCS240, using version 4.4.0. I'm sure these will be ironed out in a future release of JMRI.

One feature that I like is the LOCO RESET button. Hidden at the bottom of the front panel, it requires a paper clip or ballpoint pen to activate. It clears out all the loco slots and consists. Prior DCS units needed an OP36 reset or using DecoderPro to clear things out.

The DCS240 supports 400 throttles and locos, provided you are using DT402 throttles that have been updated. The SoundLoader II software can update your DT402 throttles. UT4 and DT400 throttles are limited to the original 120 slots and are given preference for those slots.

Another front panel button is EZ RTS. This is used to make quick route settings. I didn't experiment with this feature. Also, time did not allow me to do a lab-test sort of evaluation. I don't expect much functional difference between the DCS240 and the older DCS200.