

# Instructions for using JMRI v4 DecoderPro for programming Team Digital Products

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### 1. Programming with JMRI v4 – DecoderPro reference

JMRI website: <http://jmri.sourceforge.net/>

DecoderPro manual: <http://jmri.sourceforge.net/help/en/manual/index.shtml>

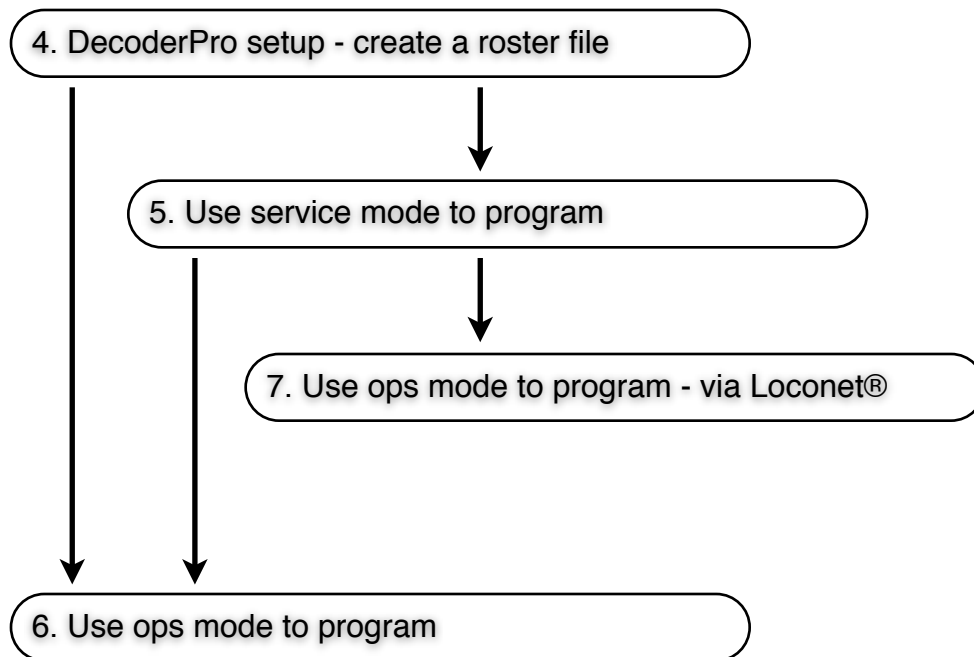
### 2. Requirements:

Computer with USB or serial port, JMRI (Decoder Pro) and a command station compatible with JMRI or a Locobuffer.

For more details see: <http://jmri.sourceforge.net/help/en/html/apps/DecoderPro/index.shtml>

### 3. Programming overview:

This following diagram shows the document section numbers and the flow of using DecoderPro for programming Team Digital products with configuration variables (CVs).



#### 4. DecoderPro setup (create a roster file):

The goal is to create a roster file which provides for a way of storing the decoder CV values. It can be used to program in Service Mode or Operations Mode. A roster file must be created while in Service Mode. Once the roster file is saved it can then be opened from Operations (Ops) Mode.

1. Open DecoderPro
2. Click on the New Loco button in the upper left part of the screen to open the New Loco window
3. Select Team Digital folder from the list in the New Loco window
4. Select a decoder or open the Stationary Decoder folder then select a decoder
5. Type in the Roster Id field the name for this decoder like 'SRC162-1 main yard'
6. Type in the Active DCC Address of one (1)
7. Click on the Open Comprehensive Programmer button
8. Click on the Save to Roster button  
This will create a Roster File in DecoderPro that can be opened for Operations Mode programming with the default ops address as one (1)
9. At this point the decoder power terminals could be connected to the programming track and programmed (It may be useful to change the decoder Ops mode address and/or basic configuration here.) See section 5
10. If you do not go to section 5, close this window  
Saving at this time is not required as it was done in step 8  
The new roster that was just created will be in the list in the main DecoderPro window

## **5. Using Service Mode to program the Decoder from the program track:**

Connect the decoder to the program track. Team Digital decoders are accessory decoders and do not have any built in CV read back capabilities. If you came here directly from section 4 step 9, than you can skip to step 2 here and begin programming. Note: this section does not apply to the CSC.

1. Open DecoderPro
2. Click on the roster line of the decoder to select it
3. Select Programming Mode as Paged in the upper right of the window
4. Select the Programming Track near the lower right of the window
5. Click on the Program button  
This opens the Service Mode (Program Track) Programmer Setup window
6. CV programming can start.
7. When finished go to the Roster Entry tab
8. Click on the Save to Roster button

Recommendations for minimum programming at this point:

If the the decoder has an accessory serial bus interface (Loconet®) and is going to be used than it should be enabled. The bus on the SIC families is enabled from the factory.

If you want to change the ops address or always have ops mode enabled now is a good time. Ops mode can temperately be enable via the “Smart” button.

DecoderPro CV value fields can have different colors: white to indicate a confirmed value, yellow to indicate a non-confirmed value and orange to indicate a changed value. Red is used to indicate some type of an error like not successfully programmed.

## 6. Using Ops Mode to program the Decoder from track power :

The decoder is powered by the command station track power. If the decoder has an accessory bus interface it is not used at this point and should not be connected. Team Digital decoders are accessory decoders and do not have any built in CV read back capabilities in this mode. Note: This section does not apply to the CSC.

1. Be sure track power off. Connect the decoder to the track bus  
If you enabled ops mode in service mode programming turn on track power then skip to step 5.
2. Press and hold the Smart Programming button on the decoder
3. Turn on track power
4. Release the Smart Button just after you see the Green LED come on. **(Warning: If the red LED starts to flash during this time the above steps were not completed correctly - start over from step 1.)**
5. The decoder is now ready to be programmed
6. Click on the roster line of the decoder to select it
7. Select Programming on Main near the lower right of the window
8. Click on the Program button
9. At this point CVs can be programmed - they can be written not read
10. When finished go to the Roster Entry tab
11. Click on the Save to Roster button

Note: If a Function Label tab is present ignore it as it is not used by these decoders

## 7. Using Ops Mode to program the Decoder via Loconet®:

In a Digitrax system the decoder should be powered from a filtered DC power supply\*. Otherwise (non-Digitrax system) it can be powered by the track. If the decoder has an accessory serial bus interface (Loconet®) it should be connected at this point.

(If you enable ops mode in service mode programming you can connect power to the decoder and then skip to step 5.)

1. Be sure power is off by remove one of the power wires to the decoder
2. Press and hold the Smart Programming button on the decoder
3. Turn on Power to the decoder
4. Release the Smart Button just after you see the Green LED come on. **(Warning: If the red LED starts to flash during this time the above steps were not completed correctly - start over from step 1.)**
5. The decoder is now ready to be programmed
6. Click on the roster line of the decoder to select it
7. Select Programming on Main near the lower right of the window
8. Click on the Program button
9. At this point CVs can be programmed
10. When finished go to the Roster Entry tab
11. Click on the Save to Roster button

Note: If a Function Label tab is present ignore it as it is not used by these decoders.

\* In a Digitrax system the reason the decoder can not be powered from the track WHEN programming is that the decoder will receive program instructions from the track and Loconet® at the same time. This can be problematic. Once programming is complete the decoder can be power from the track. **Note:** An alternate scheme to program using track power is to create a separate Loconet® bus as show in the diagram below.

\* Our products have CVs programmed at the factory. The fact that DP shows a particular CV as zero (if no read back has occurred) does not mean the CV is zero. In custom programming every CV that you use should be programmed even if zero. This is paricularly important with SIC and CSC families.

## 8. Product programming reference:

The following table shows some of our products and the type of programming they support. The product must be powered from track power to program via DCC Ops mode or from the programming track to program via DCC service mode.

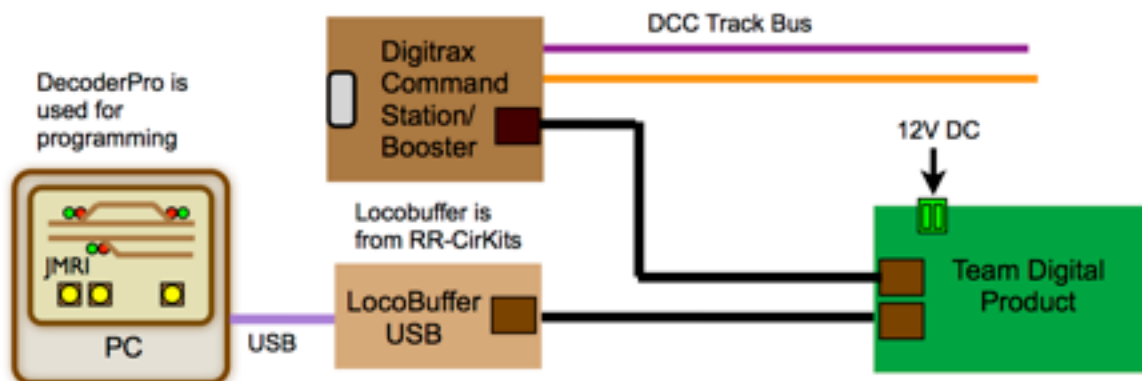
The product must have a LocoNet® connector to be programmed via LocoNet®.

Product	DCC Service Mode	DCC Ops Mode	LocoNet® Service Mode	LocoNet® Ops Mode
SC8(2)	write	write		read/write <sup>2</sup>
BlocD8	write	write		read/write <sup>2</sup>
SRC16(2)(2e)	write	write		read/write <sup>2</sup>
SMD84	write	write		read/write <sup>2</sup>
SMD82	read/write <sup>1</sup>	write		
SMC4	write	write		
SIC24(AD)(e)	write	write		read/write <sup>2</sup>
SIC24	write		read/write	read/write

1. An external resistor is required to read - see manual
2. In a Digitrax system the decoder should be powered from a filtered DC power supply when programming via Loconet®. The reason that the decoder can not be powered from the track WHEN programming is that the decoder will receive program instructions from the track and Loconet® at the same time. This can be problematic. Once programming is complete the decoder can be power from the track. **Note:** An alternate scheme to program using track power is to create a separate Loconet® bus as show in the diagram below.

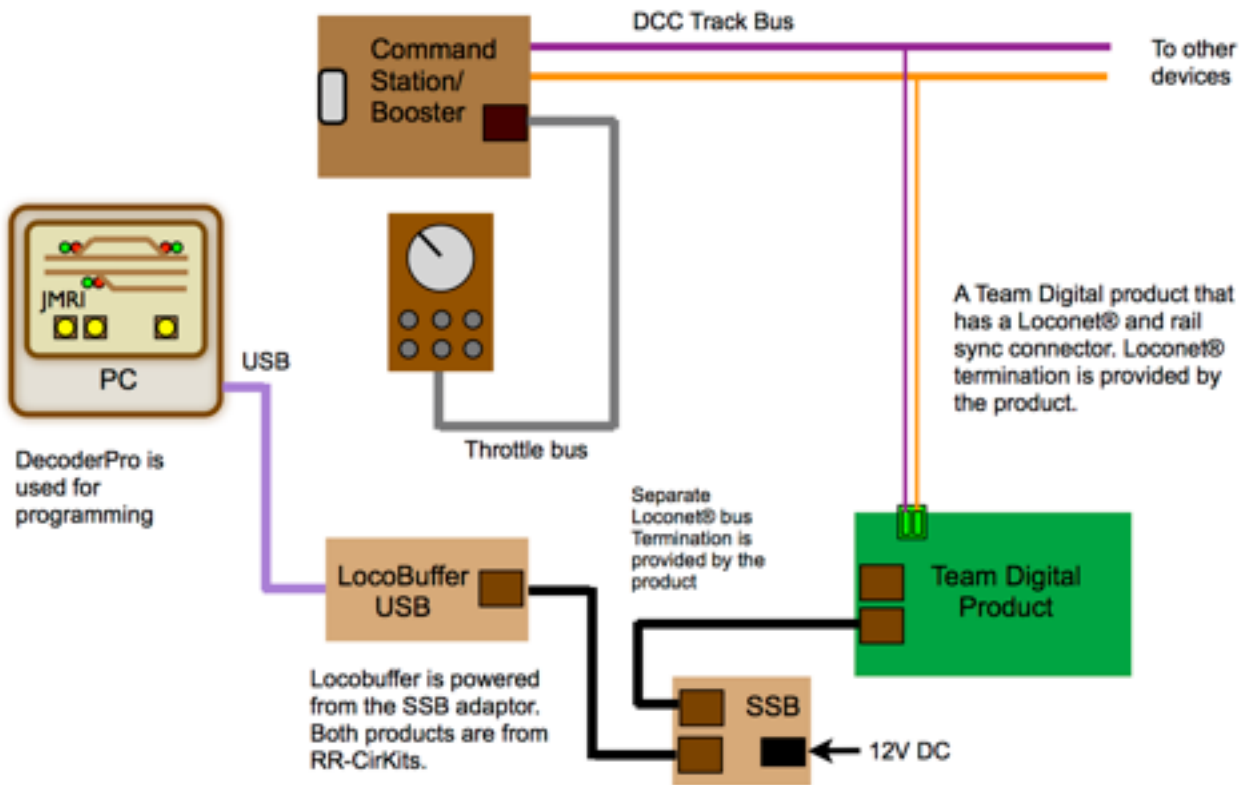
## Programming via Loconet with DecoderPro

### Digitrax systems



# Programming via Loconet with DecoderPro

Non-Digitrax system



## 8. Ops Mode Specific:

Team Digital products like a mobile decoder used in locomotives it has an address which is used for programming CVs. The default value is 1. This is strictly used for programming in Ops Mode and has nothing to do with the operating addresses (like turnout addresses). If you are going to have Ops Mode enabled all the time this needs to be a unique number not used by other decoders.