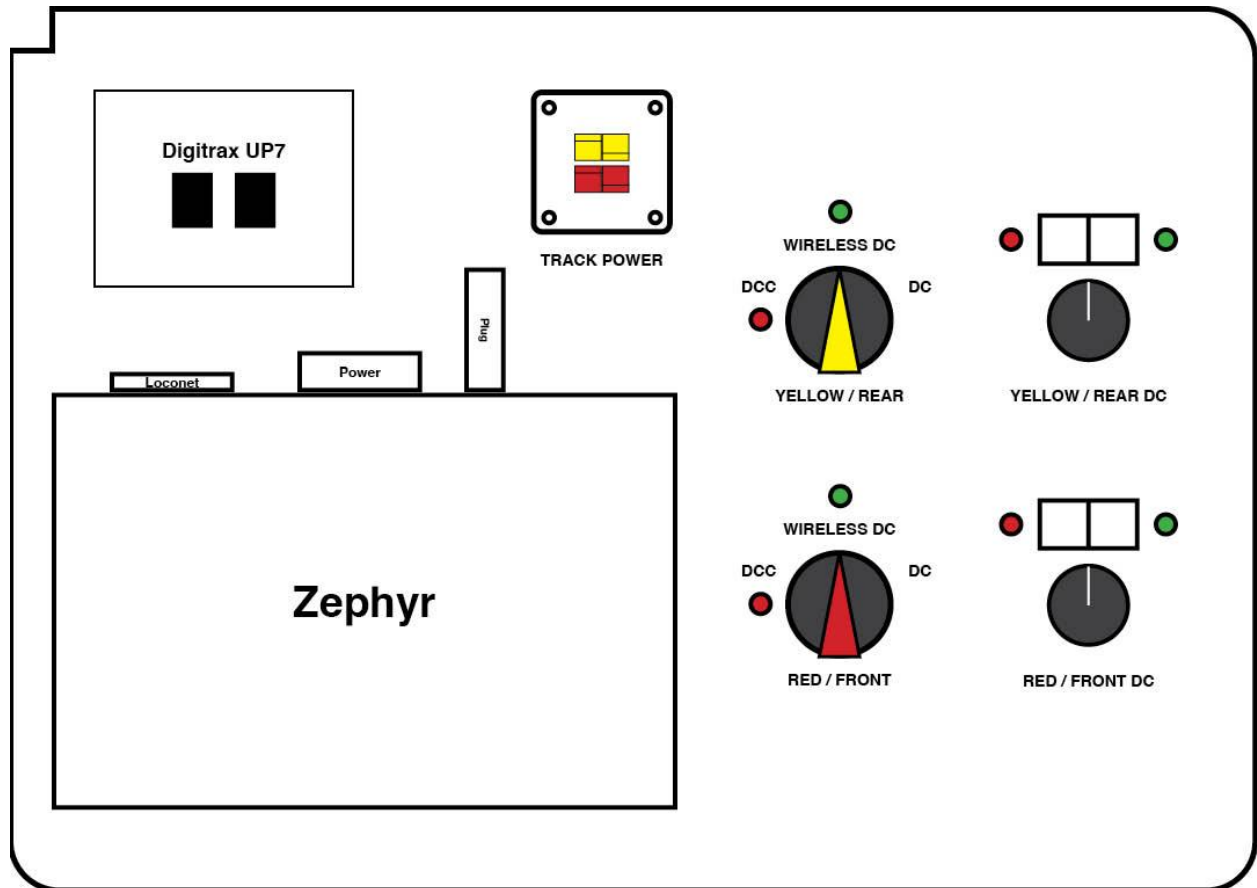


BANTRAK T-TRAK CONTROL CENTER INSTRUCTIONS & DOCUMENTATION



Updated: 12/9/2024

Getting Started

The BANTRAK TTRAK Control Center is designed to be easy to use but these instructions should hopefully help with any questions you may have.

One key thing to keep in mind is that the system follows the NTRAK track color convention: with the main track nearest the front of the modules referred to as "red" and the main track nearer the rear of the module referred to as "yellow".

Connecting to the layout

Connecting the system to a layout is as easy as plugging the provided Powerpole to Kato pigtails into the appropriate deck mounted plugs and connecting them to the layout. The "Red" connection should be connected to the front track on the layout while the "Yellow" connection should go to the inner track.

Powering up

The Control Center is powered by the attached extension cord. Plug it into a 120VAC wall socket to energize the system. This will provide power to the DC Cab Control, Wireless DC and DCC systems. You will then also need to turn on DCC track power using the Track Power button on the Digitrax Zephyr.

It is also generally a good idea to preemptively perform the "Slot Max" clearance procedure at the beginning of each use of the system..

Choosing your control method

With power supplied to the system, you can then independently choose the control method for each track independently using the selector knobs.

Turn the respective selector knob to the left position to select DCC for that track, to the center position for wireless DC control, or to the right position for DC cab control.

Using DC Cab Control

DC cab control should be the most familiar method for controlling trains. The control center has two DC throttles built in with one for each track. The green LEDs will illuminate when the system has power. Rotate the respective selector knob to the right position to enable DC cab control for the track.

Use the respective throttle to control the track: the knob provides speed control, the slide switch provides direction control, and the red LED and annunciator buzzer will indicate a short circuit on the track.

Using Wireless DC Control

Wireless DC control is an exciting feature of the TTRAK Control Center. It utilizes two radio control modules to provide remote control of DC powered tracks: one for each track. Choose the throttle that corresponds to the track you wish to control and use it to control your train by setting the selector knob to the centered position.

You may need to use the power button on the remote to turn on the track. The "Reverse" button is used to control direction and the "+" and "-" buttons control speed.

Speed control with this system is imprecise, but the ability to control a train from around the layout is convenient.

Using the Built-In Digitrax DCC System

The system provides Digitrax DCC with both Duplex Digitrax Radio and Wifi capabilities. Select the DCC system by setting the selector knob for the track you wish to control to the left position.

If you wish to use your own wireless throttle you will need to plug your throttle into one of the connected Loconet ports (either the UP7 on the control center or on another panel connected to the system) to connect it to the duplex radio system.

Wifi based throttles (like a mobile device or TCS UWT series device) can connect to the built in Digitrax LNWI by joining the **Dtx5-Dtrx0>68_21A5-7** wireless network and connecting to the server of the same name with the **IP address 192.168.7.1 on port 12090**.

There is one important limitation with the LNWI that this system uses: it only allows four consecutive connections and there is no good indication of how many are currently in use. Therefore, if you are using a device connected to it, **please disconnect from it when you are finished or if you are stepping away from the layout.**

"Slot Max!?!?" What It Is and How to Fix Resolve It

Receiving a "Slot Max" error on your throttle is an annoyingly frequent occurrence when using a Digitrax Zephyr system like this but luckily it is easily resolved. One important note to keep in mind, however, is that performing these steps will require all operators to reacquire their locomotives and rebuild any consists that they may have created.

This issue occurs because the DCS-52 Zephyr Express system has a limited number of memory "slots" that map throttles to engines. Once these slots are all filled up we get the "slot max" error and you are not able to acquire another locomotive on a throttle.

The Procedure for Resolving the Slot Max Error

There are two ways to clear the Slot Max Issue.

1. Set the Zephyr's "Op Switch 39" to "closed".
 - a. Press the "Menu" button on the Zephyr (it looks like three horizontal lines).
 - b. Choose menu option 3
 - c. Type the number "39" in using the keypad.
 - d. Press the menu button that corresponds to option "B" (closed)
 - e. Press the menu button that corresponds to option "C" (save)
 - f. You should now hear a few beeps from the Zephyr indicating it is complete
2. Use the "hardware reset" button
 - a. Identify the recessed reset button on the rear of the Zephyr command station
 - b. Use an object to press this button

Issues & Feature Requests

If you have any issues with the system that need immediate resolution, you can text Ed Kapuscinski at (410) 303-9583. If you have requests for improvement or issues that do not need immediate resolution, please log them on the notepad and include your name.

Under the Hood

Opening and Servicing the System

The control center's guts can be accessed by unscrewing the three 1/4-20 bolts on the deck. These screws engage nuts that are captured in mounting blocks, available here:

<https://www.tinkercad.com/things/27XSOk7R7F2-bantrak-box-mounting-block/>

To reattach the deck, ensure the nuts are lined up in the mounting blocks and screw the deck back down.

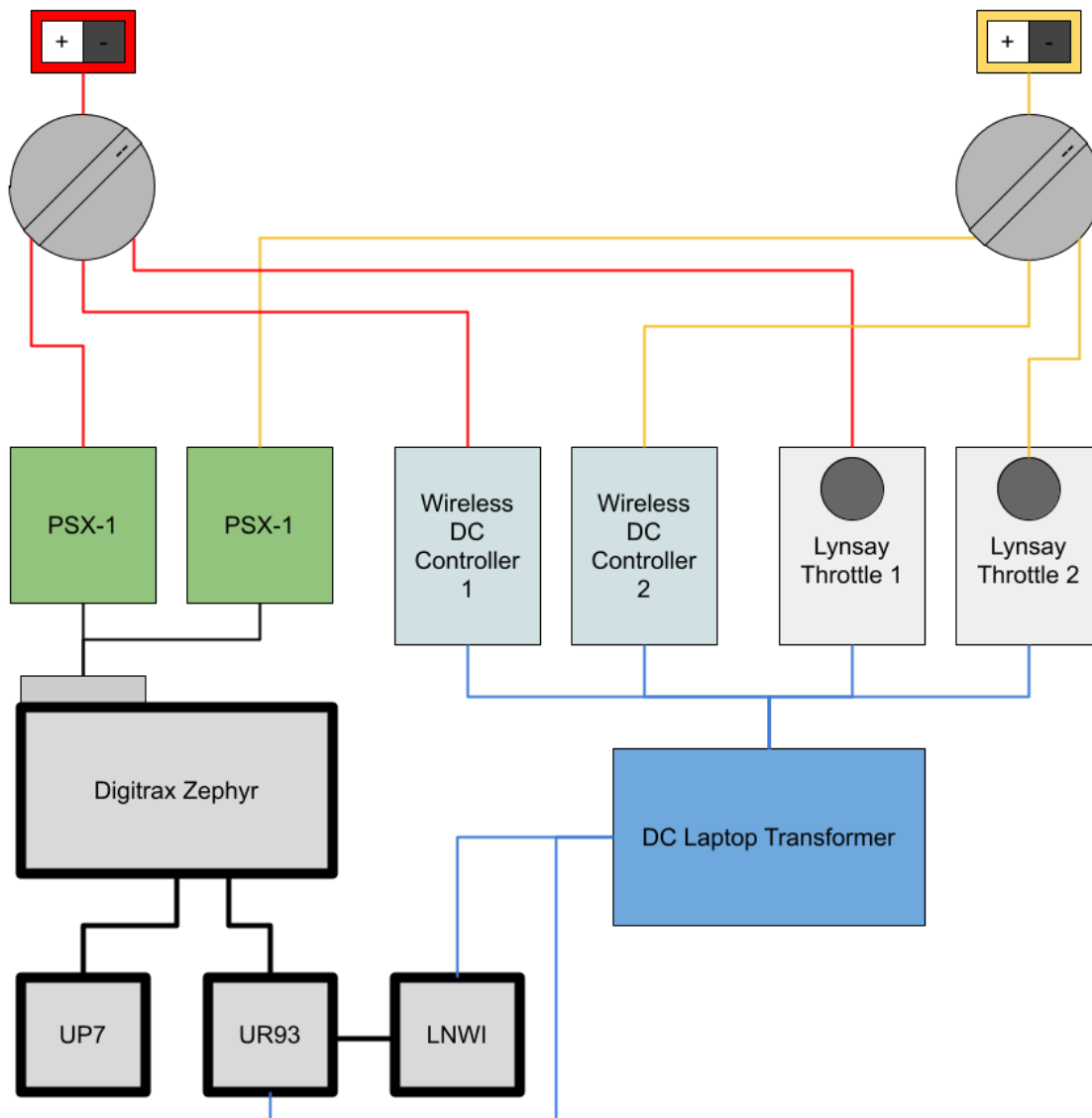
Components in Use

This is a list of the uncommon components in use in the control center, in case they ever need to be replaced.

- Power Supply: [UpBright 15V 6A AC/DC Adapter Compatible with Digitrax DCS100 DB150 DB210 DCS210 DCS240 DB 150 210 DCS 210+ 100 240 PS514 PS615 01 PS715 PS 615 514 715 LocoNet Command Station RC-218 90W Power Supply](#)
- DC Power Splitter: [Security-01 2Pack 1 to 4 Way DC Power Splitter Cable, Plug 5.5mm x 2.1mm](#)
- Barrel Size Reducer: [uxcell DC Power Converter 5.5x2.1mm Male to 5.5x2.5mm Female Adapter Barrel Connector](#)
- Wireless DC Controllers: [DC12V Motor Controller Kit Speed Regulator Wireless Remote Motor Controller \(386226396796\)](#)
- DC Voltage Regulators: [LM7805 LM7809 LM7812 DC/AC Three Terminal Voltage Regulator Power Supply Module](#)
- LEDs: [Green](#), [Yellow](#), [Red](#)
- Enclosure: [Harbor Freight APACHE 3800 Weatherproof Protective Case](#)

- Mounting Blocks: [3D Printed from Tinkercad designed parts](#)
- Lifting Tabs: [3D Printed from Tinkercad designed parts](#)
- Lever Wire Nuts: [Straight Through](#), [Assortment](#), [One-to-Five Splitter](#), [One-to-Two Splitter](#)
- Rotary Switch: [uxcell 4P3T 4 Pole 3 Position 2 Deck Band Channel Rotary Switch Selector](#)

Wiring Diagram



Original Proposal

If you are interested in reading the initial proposal for the construction of the control center, it is available here: [BANTRAK TTRAK Control Box](#)