

# GAUGEMASTER

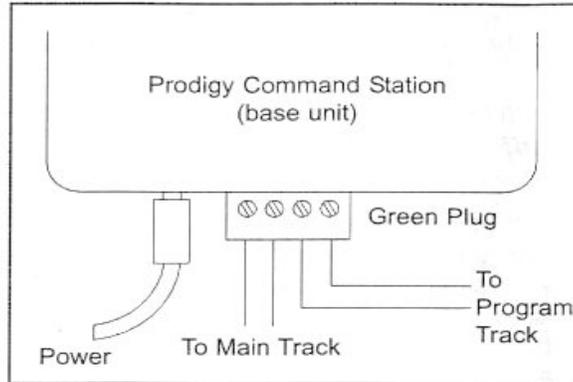


## PRODIGY ADVANCE --- WIRELESS ---

### DCC04 USER MANUAL

Version 1.1 2016

### Quick Start diagram



1. Plug the POWER SUPPLY into the BASE UNIT.
2. Plug the AC lead into your wall socket.
3. Using a small flat-bladed screwdriver, attach two wires (0.643mm or heavier) from your Main Track layout (one from each rail) to the terminals marked "Main Track" and two wires from your Program Track to the terminals marked "Programming Track".
4. Plug the receiver into a "Controllers" socket on the BASE UNIT. Do not use the socket marked "Factory Use Only" as this is for connecting Prodigy Booster unit only
5. Double check all wiring and then turn the power switch on the BASE UNIT to the "On" position. The power light should be on and you are now ready to run your Decoder Equipped locomotives.

In addition move the "Select Controller" switch on the BASE UNIT to "Ctrls 1-8". This will give you a faster response time. This is because the BASE UNIT will now only try to communicate with Controllers 1 to 8 and not 1 to 99. Naturally, this speeds things up a bit.

**The PROGRAMMING TRACK and MAIN TRACK must NEVER be CONNECTED TOGETHER as this will DAMAGE the unit.**

The PROG track output is un-powered and is not intended to be incorporated as part of the main layout, decoders can only programmed and read but not run on this output.

The **READ** facility on your Prodigy system can be impaired if used with older style decoders with only basic CV support, some power connectors can also cause problems if not intended for digital layouts.

Always check your CAB number is set to 1 (system 6) see user manual

With many manufacturers introducing bespoke changes to their decoders we cannot guarantee full compatibility with all decoders or accessories.

Old style consist settings are not retained in the base unit if power is disconnected, however the handset will continue to display the consist. Re-enter the consist or erase as required.

To remove a loco or consist address press and hold the DEL-1 key, unplug hand set to save new settings.

The SMPS (power supply) is a precision piece of equipment and is ideally used at room temperature; avoid exposure to very cold environments as this might prevent the unit from powering up correctly.

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# Getting Started

## Introduction

**Note** Although there are Quick-start instructions on the back of the Cab/ Handheld, please read these instructions thoroughly to better understand and enjoy your Prodigy Wireless DCC system.

Your Prodigy Wireless system consists of a base unit & receiver, a wireless handheld transmitter, four-rechargeable 600mAh NiMH AAA batteries, and a short cord for recharging the wireless handheld a power supply and cord set.

For best operation, the receiver base unit should not be placed under the layout in a “tangle of wires” or where scenery mesh screening may interfere with the radio transmissions.

The wireless handheld comes complete with on-board rechargeable batteries. The battery level should be checked prior to using the handheld for the first time. Best operation is accomplished with fully charged batteries. 5.5 volts is maximum voltage, and the handheld should be recharged anytime the indicator reads 4 volts or below. There is a power switch on the right side of the handheld. The handheld should be switched off when not in use to conserve battery life, and when recharging the on-board batteries. You can use the handheld while recharging the batteries; however, this will increase the charge time. The handheld has the same cable connection on the bottom as the tethered handhelds. To recharge the batteries simply plug the supplied cable into the bottom of the handheld, and the other end of the cable into a Controller's socket on your base unit. Normal charge time with the handheld powered off will be approx. 5 hours. If you change the supplied rechargeable batteries with rechargeable batteries with a higher mA rating, both the operating time and the charging time will increase. If you wish, you can substitute four AAA non-rechargeable alkaline batteries for use.

**Caution do not plug the handhelds into the base unit that have non rechargeable alkaline batteries installed. Non-rechargeable alkaline batteries are throwaway and are not designed to be recharged. Do not mix alkaline and rechargeable batteries together, and do not attempt to recharge alkaline batteries inside the handheld.**

You can do everything with this wireless handheld that you can do with its “wired” cousins: program on a program track; or program on the main; acquire and run all locos; set up consists & routes; and access accessory decoders. Button layout is similar to other MRC Prodigy handhelds, with the addition of three new buttons:

**PROG CV ON MAIN:** This button lets you automatically go into CV programming of the locomotive you are presently operating without having to press the program button, **PROG**, and **ENTER** numerous times to reach this feature. You can enter this programming mode, change the decoder's parameters, and exit the program mode anytime you want and as many times as you want.

**SAVE:** This button is used to save the last five locos you were operating, or up to any five locos you want to use in your next operating session.

**Note** Just turning off the wireless handheld power switch does not automatically save your locomotives in the recall stack for your next operating session.

**BAT VOLTAGE:** This is your battery voltage indicator button. Just press it to monitor the voltage level present in the on-board batteries; the display will show **bV** and the voltage level. 5.5 volts is maximum voltage, and the handheld should be recharged anytime the indicator reads 4 volts or below.

**Note** The Prodigy System does not support NON-decoder equipped or analogue locos.

## Specifications and Features

**Input:** 13-15 volts DC, 3.5 Amps. It comes with a universal switching power supply (good for USA and Europe)

**Output:** DCC signal with Voltage amplitude, for OO/HO and N scales or compatible models

**Maximum Current:** 3.5 Amps

**Note** Although you can draw more than 3.5 amps for short periods of time, it is not recommended

**Maximum number of Cabs:** Use up to 32 Cabs

**Address Capability:** 2-digit (1-127) or 4-digit (1-9,999)

**Speed Steps:** 14/28/128

**Accessory Functions:** 29 (F0-F28)

**Advanced and Universal Consisting**

**Program Loco on Program Track**

**Program Loco on Main Track**

**Read Loco on Program Track**

**Frequency:** 433 MHz

**FCC ID:** BTQ170495

## System Menu Summary Chart

Most functions are initiated by pressing their associated keys. However, there are ten functions initiated by pressing the **SYS** key followed by a numeric key (**0-9**). The following table summarizes these ten functions and the information about each function is found in the manual.

### Keys Function

SYS + 0 Clear routes

SYS + 1 Set time

SYS + 2 Set time ratio

SYS + 3 Yard on/off

SYS + 4 Set time mode: AM/PM/military

SYS + 5 Set routes

SYS + 6 View your Cab address

SYS + 7 Set last Cab allowed to program locos on the Main Track

SYS + 8 Set last Cab allowed to program locos on the Program Track

SYS + 9 Set total number of operational Cabs

## Prodigy Basics

### Connecting to Your Layout

Follow the diagram on the inside cover to connect the base unit to your layout.

1. Using a small flat-bladed screwdriver, attach two wires from the Main Track layout to the terminals marked Main Track and two wires from the Program Track to the terminals marked Program Track.

2. Plug the power supply into the base unit.

3. Plug the AC line cord into a wall outlet.

4. Charge the batteries in the handheld, if needed.

5. Turn power switch on the handheld to the "On" position.

6. Double check all wiring, the power light should be on and you are ready to run your **decoder equipped** locos.

### Running a Loco

To run a loco, you have to first know its address. Most decoders you purchase have the factory default address #3. Read your decoder and/or loco manual for your decoder address.

To select a loco, press the **LOCO** key. Using the numeric keypad (**0 - 9**), enter the loco address. Press **ENTER**. You have just acquired the loco.

The Cab will automatically remember the loco address for later recall.

Use the **DIRECTION** key to set the loco's direction. Turn the **THROTTLE** knob slowly to increase the loco's speed, the selected or current loco, will begin moving. You can also tap the **+1** or **-1** to adjust the loco's speed. **Do not** hold the **-1** key, since this is also the **DEL** key and will delete the loco. To toggle the headlight (F0) on or off, press **0**.

**Note** A blinking loco address indicates that another Cab is also controlling that loco. This is just a reminder and does not affect your control of the loco. However, since two Cabs are trying to control the same loco simultaneously, the loco may not act as you expect. One operator will have to relinquish control of the loco by deleting the loco from his Cab for proper operation.

### Controlling Accessory Functions

To control accessory functions F1 - F9, press **1 - 9**. To control F10 - F28, press **SHIFT**, then **input the two digit function number**. Only functions up to F12 will show in the display, F13 to F28 will be activated but will not be displayed on the screen.

### Recalling Locos

To call up previous locos stored in the memory, press **RECALL**. You can recall up to 25 locos.

**TIP.** Pressing the **RECALL** button at any time will Exit back to your standard running screen

### Saving Locos

To save the last five locos in use for the next operating session, press **SAVE** before turning off the handhelds power switch. Before switching off the power switch on the handheld, recall back to the five locos you wish to use in your next session, making sure all functions are off and the throttle is set to zero. After you have reset your five locos, press **SAVE**. Then turn off the power switch on the handheld and then shut down the power to your DCC system and layout.

**Tip** Use the **DELETE** button to remove any unused locos from the stack before saving your favorite five.

**Note** Although the Cab can recall up to 25 locos for operation, if you "power off" the Cab from the base unit, it will only retain the last five locos previously saved.

**Make sure to press SAVE before powering off.**

### Deleting Locos

The Cab can store up to 25 locos. If you select a new loco when the Cab is full, the new loco will replace the current loco. The current loco will be lost. To prevent this, we recommend you recall unused locos and delete them by pressing and holding **DEL** for 2 seconds.

### Emergency Stopping

For emergency stopping of the current loco, press **STOP**. Pressing and holding **STOP** for 2 seconds will stop the Main Track output. The 2 lights on the base unit will blink. To restore the Main Track output, press and hold **STOP** for 2 seconds again.

### **Speed Steps**

Speed steps are incremental steps the loco takes to go from 0 to top speed. There is three speed steps: 14, 28 and 128. The higher the speed steps setting, the higher the number of different speeds on which the loco can operate. When you enter a new loco address (an address that has not been stored in the Cab's memory), Prodigy Wireless will set 28 speed steps as the default setting for that address. In order to operate your loco properly, you may need to change the speed steps setting to match the decoder's speed steps. To select other speed steps settings, press **SPD STEP** repeatedly until you see your desired speed steps setting. Then press **ENTER**. The selected speed steps setting will apply only to that address.

**Note** Use of the speed step button will not alter the speed step originally programmed into the decoder. It only matches the throttle to the decoder.

### **Yard Mode On/Off**

To toggle the Yard Mode feature on or off, press **SYS** and **3**. In standard throttle mode, the throttle only controls loco speed. When the Yard Mode feature is on ("Yard" displayed on LCD), the yard throttle will control both the speed and direction of the loco. Let's explain how to use the Yard throttle. When the loco is travelling forward, turning the yard throttle clockwise will increase the loco's speed. Turning counter clockwise will decrease its speed until 0. Continuing turning counter clockwise will reverse the loco's direction. Continuing turning counter clockwise will increase the loco's speed in the reverse. Turning clockwise will decrease its speed in the reverse until 0. Continuing turning clockwise will reverse the loco's direction and set it forward. **TIP** using the - & + keys in Yard mode is most effective for fine shunting.

### **Fast Clock**

To view the fast clock, press **TIME**. The time will replace the address display on the LCD. You can still run the current loco while the time is displayed. To return to the loco address display, press **TIME** again. The time information is stored in the base unit and transmitted to the Cab. Each Cab displays the same time.

### **Overload and Short Circuit**

The base unit is rated at 3.5 amps. It is up to you to note how many locos and accessories can be run on the layout at the same time without triggering the circuit protector. If there is an overload or short circuit, the base unit will stop Main Track output for 2 seconds then resume. When this occurs both the power and link light will flash and SvDA or OvLd will be displayed on the handset if the base unit is active.

Please remove the overload or short circuit for proper operation. When operating larger layouts with numerous locos and accessories being operated at the same time you may need a DCC power booster.

Please refer to trouble shooting about short circuits and overloads

## **Cab Setup**

### **Setting Cab Addresses**

You can use up to 32 Cabs with the Prodigy Wireless. Each Cab must have a unique address. Any Cab you purchase has the factory default address #1. Cab #1 is the Master Cab that can perform all functions. Any additionally purchased Cabs are also Master Cabs and must have their addresses changed from #1 to unique addresses.

To view your Cab address, press **SYS** and **6**. The current Cab address will momentarily display. If you wish to change it, enter a new address (1-32) followed by **ENTER**. Otherwise, press **ENTER** to exit. Do not duplicate Cab addresses.

### **Setting the Total Number of Operational Cabs (Master Cab Only)**

The more Cabs in use at one time, the slower the system response is from Cab to loco because the base unit can communicate with only one Cab at a time. Setting the total number of operational Cabs will speed up your Cab's response time.

1. Make sure your Cab is the Master Cab (Cab #1).

Only the Master Cab (Cab #1) can set the number of Cabs allowed to operate on the DCC layout.

2. Press **SYS** and **9**.

3. Using **0 - 9**, enter the address of the last operational Cab. Press **ENTER**.

**Example** If you use 10 Cabs and program the Cab addresses #1 - #10, pressing **SYS, 9, 10**, and **ENTER** will set the last operational Cab number to 10. The base unit will not spend time trying to communicate to Cabs #11 - #32.

If you use 3 Cabs and program the Cab addresses #1 - #3, pressing **SYS, 9, 3**, and **ENTER** will set the last operational Cab number to 3. The base unit will only communicate to Cabs #1 - #3.

You will have a really fast response time.

### **Adding More Cabs**

The base unit of your Prodigy Wireless system has three controller sockets that can be used for charging the batteries in the handheld or for connection of tethered Cabs. If you need to use more tethered Cabs or you want to install the Cab Jacks around your layout, you will need an Extension Plate. The wireless base unit is able to power six tethered Cabs. If more tethered Cabs are needed, for every five Cabs you need a special extension plate with a built in power supply. Please contact us for more information.

**Note** The extension plates are not needed if you only use wireless Cabs.

### **Setting Last Cab Allowed to Program Locos on the Main Track (Master Cab Only)**

This feature prevents "novice" operators on your railroad from mistakenly reprogramming decoders on the layout.

1. Make sure your Cab is the Master Cab.

2. Press **SYS** and **7**.

3. Using **0 - 9**, enter the number of the last Cab allowed to program on the Main Track, then press **ENTER**.

**Example** If you press the **SYS, 7, 3** and **ENTER**, Cab #4 and above cannot program on the Main Track.

### **Setting Last Cab Allowed to Program on the Program Track (Master Cab Only)**

1. Make sure your Cab is the Master Cab.

2. Press **SYS** and **8**.

3. Using **0 - 9**, enter the number of the last Cab allowed to program on the Program Track. Press **ENTER**.

**Example** If you press **SYS, 8, 2**, and **ENTER**, Cab #3 and above cannot program on the Program track.

### **Programming Decoders**

The Prodigy Wireless allows you to easily program most NMRA compatible decoders. It guides you step by step through the programming process. No hexadecimal numbers are needed, to program decoders with this system. The Prodigy Wireless allows you to program decoders on a separate Program Track or on the Main Track layout, all without affecting any other locos operating on the Main Track.

## Decoder Terminology

**Note Before you start programming, please familiarize yourself with the following terminology.**

**Loco Address:** The address is the number assigned to a decoder to identify the decoder.

**Start Voltage:** This is the voltage required to start the loco's motor and overcome its weight and friction to make it begin to move. You can program your loco with a start voltage so that it will begin to move as soon as the throttle is turned.

**Top Voltage:** The top voltage (top speed) is the voltage (speed) at full throttle.

**Acceleration Rate:** This rate simulates the drag of a heavy load as the loco speeds up so when you increase the speed setting, the loco will gradually increase its speed.

**Deceleration Rate:** This rate simulates the drag of a heavy load as the loco slows down so when you decrease the speed setting, the loco will gradually decrease its speed.

## Programming Loco on the Program Track

1. Make sure your Cab is allowed to program on the Program Track.
2. Place the loco on the Program Track. Press **PROG** to select "Prog Prog Track". Press **ENTER**.
3. First, "Adr" will flash, prompting you to program the loco address. Using **0 - 9**, enter the loco address followed by **ENTER**, or press **ENTER** to skip.  
**Note For the beginner or if you want to only program the loco address, you can stop right here.** Press **RECALL** to exit programming  
Put the loco back on the Main Track. Select the loco by pressing **LOCO** then enter the loco address and press **ENTER**. Now you can run the loco.
4. Next, "SV" will flash, prompting you to program the Start Voltage. Input data and then press **ENTER**.
5. Next, "Acc" will flash, prompting you to program the acceleration rate. Input data and then press **ENTER**.
6. Next, "dEc" will flash, prompting you to program the deceleration rate. Input data and then press **ENTER**.
7. Next, "TV" will flash, prompting you to program the Top Voltage. Input data then press **ENTER**.
8. Finally, "CV#" will flash, prompting you to program a CV (Configuration Variable).  
At this point, you have already finished most of the decoder programming.  
You can stop programming here by pressing **ENTER**.
9. If you want to program a CV, enter a CV number. Press **ENTER**. Then enter CV data. Press **ENTER**. "CV#" will flash again, prompting you to program another CV. To skip, press **ENTER**.  
**Note** Programming a CV with incorrect data can cause a decoder malfunction.  
Read your decoder manual carefully before programming a CV

## Programming Locos on the Main Track

Programming on the Main Track can save you the effort of moving a loco to the Program Track for programming. However, you have to know the loco address in order to program on the Main Track. Otherwise you have to program the loco on the Program Track. Not all decoders support the

Program on Main feature. Please read your decoder's manual to check whether the decoder supports this feature.

1. Make sure your Cab is allowed to program on the Main Track
2. To program on the Main Track, press **PROG** to select "Prog Main Track". Press **ENTER**. The current loco address will flash, prompting you to program the current loco.
3. To program the current loco, press **ENTER**; to program another loco, enter its address and press **ENTER**.
4. The rest of the programming procedures are the same as the Programming on Program Track procedures (see above). We recommend you bring the loco to a stop before programming because if the moving loco has a bad pickup, it may fail to receive the program command, causing a malfunction.

## Reading Loco's Decoder Values on the Program Track

The Prodigy Wireless DCC system gives you the ability to read back CV values of a decoder equipped loco on the Program Track. This feature is useful if you do not remember the decoder address or what CV values your decoder has. Not all decoders support this feature. Please read your decoder's manual to check whether it supports this feature.

1. Place the loco on the Program Track.
2. Press **PROG** to select "rEAd Prog Track" then press **ENTER**.
3. First, "Adr" will flash, prompting you to read the loco address. Press **ENTER** to read or press **SHIFT** to skip to the next item. It may take several seconds to retrieve the address. If the decoder does not support read back feature, you will receive an "Err" (Error message).
4. Next, "SV" will flash, prompting you to read the Start Voltage. Press **ENTER** to read or **SHIFT** to skip.
5. Next, "Acc" will flash, prompting you to read the acceleration rate. Press **ENTER** to read or **SHIFT** to skip.
6. Next, "dEc" will flash, prompting you to read the deceleration rate. Press **ENTER** to read or **SHIFT** to skip.
7. Next, "TV" will flash, prompting you to read the Top Voltage. Press **ENTER** to read or **SHIFT** to skip.
8. Finally, "CV#" will flash, prompting you to read a CV. To read a CV, enter a CV number and press **ENTER**. After reading a CV, press **ENTER**. "CV#" will flash again, prompting you to read another CV. To end the read process, press **ENTER**.

### More about Decoder Read Back

Not all decoders support the read back feature. Although Prodigy Wireless has read back functions, it may still fail to read back the decoders. This does not mean that your Prodigy Wireless is defective. No DCC system is able to read all decoders 100%. This will not affect the operation of the decoder because you are always able to program your decoder.

## Configuration Variables – CVs

Configuration Variables, also known as CVs, receive and hold entered data that allow the decoder to be tailored to a specific loco or accessory. Some CVs are also called registers. The Prodigy Wireless DCC system allows you to perform most basic programming without having to concern yourself with CVs or registers. Of course, if you want to program CVs to custom tailor your decoders or select certain functions, the Prodigy Wireless has this capability.

### Most Commonly Used CVs

The CVs listed on the chart below are contained in almost all decoders, with additional CVs for extra functions – sound or light – in more specialized decoders. See the decoder manufacturer's instruction manual for a list of CVs contained in that specific decoder and what values to enter for those CVs.

### A Word About CV #29

CV29 is the most important CV of the decoder. Improperly programming the CV29 may cause decoder malfunction. We do not recommend you program CV29 yourself because the unit will take care of it for you in most cases. When you program your decoder's address with Prodigy Wireless, it will automatically program CV29. If you want to reverse the loco's polarity or set 14 speed steps, you have to reprogram CV29 after programming the loco's address. Please use the following table to reprogram CV29.

### More About Programming Locomotive Address on the Program Track or Main Track

To program a locomotive address involves programming a series of CVs such as CV1, CV17, CV18, CV19 and CV29. This can be somewhat complicated. For most decoders, Prodigy Wireless automatically handles this for you when programming the loco address. However, it may fail to program some old decoders and some new sound decoders made by QSI®. It does not mean that you cannot program these decoders. It only means you cannot use the Prodigy Wireless easy address programming feature. For QSI® decoders please refer to your decoder's manual and use CV programming to program the loco address.

Prodigy Wireless' default setting CV29 = 2 CV29 = 34  
Change polarity only CV29 = 3 CV29 = 35  
Change to 14 speed steps only CV29 = 0 CV29 = 32  
Change polarity & 14 speed steps CV29 = 1 CV29 = 33

### CV # Register # Function

1 1 Short address  
2 2 Start voltage  
3 3 Acceleration rate (momentum)  
4 4 Deceleration rate (momentum)  
5 --- Top voltage  
6 --- Mid voltage  
7 --- Manufacturer version #  
8 --- Manufacturer ID #  
17 --- Extended address - upper & lower bytes, 4 digit addresses  
18 --- Extended address - upper & lower bytes, 4 digit addresses  
19 --- Advance consist  
29 5 Configuration data #1

**Note** If you want to program a CV or a group of CVs for the current locomotive you are running on the Main Track, press **Prog CV on Main** and enter the CV number and the data value.

For some old decoders, you have to skip the **Adr** programming and use the Prog Track CV program mode to program CV29 with a value of 2 and CV1 with a short address (1-127).

Detailed steps are as follows:

1. Press **Prog** to select **Prog Prog Track**
2. Press **Enter** six times until **CV#** displays on the screen
3. To select CV29, press 29 and **Enter**
4. **CV data** displays. Press 2 and **Enter**
5. **CV#** displays again. Select CV1 by pressing 1 then press **Enter**
6. **CV data** displays. Press the loco address (1-127) and then **Enter**

## Consisting

Sometimes more than one loco is needed to haul heavy loads. These grouped locos are known as a multiple unit or a consist. The Prodigy Wireless DCC system allows you to build consists quickly and easily. There are two types of consisting methods, Advanced Consisting and Universal or Old Style Consisting.

### Advanced Consisting

You can only apply Advanced Consisting to a mobile decoder that has CV19 to support this feature. When you program a loco into an Advanced Consist, you actually program the consist number into the decoder's CV19, which will override the decoder's original address. Therefore, the loco will no longer respond to commands addressed to its original address, but rather only to commands addressed to the consist number. All decoders in the consist will receive the command addressed to the consist number at the same time and act as one until you clear the consist. The base unit does **not** hold the consist information. With Advanced Consists, **always** remember to clear the consist when you are finished or the locos will still run as part of the consist next time you use them.

### Programming Advanced Consists

1. Press **CONSIST** until "Cons SET" flashes in the LCD display. Then press **ENTER**.
2. "Cons #" will display, prompting you to enter a consist number. Enter a consist number (a short address 1-127) followed by **ENTER**.

**Note** Write down the consist number. You will need it later to clear the Advanced Consist.

3. "Add Loco" will display, prompting you to add a loco into the consist group. Enter the address of a loco you want to add. Press **DIRECTION** if you want the loco's direction reversed (forward is the default setting). Then press **ENTER**.
4. "Add Loco" will display again, prompting you to add another loco into the consist group. You can add as many locos into the consist as you would like. To end programming, press **ENTER**.

### Running Advanced Consists

Running Advanced Consist is just like running a single loco.

After setting up your consist group, use the consist number to run the consist.

1. Press the **LOCO** key. Make sure "Loco" appears on the LCD. If not, press the **LOCO** key again. Enter the consist number and press **ENTER**.
2. Turn the throttle and all the locos in the consist will start moving together. To control an individual loco's accessory functions use either the consist number or the loco's original address. Read your decoder's manual to find how to control the accessory functions.

### Clearing Advanced Consists

1. Press **CONSIST** until "Cons cLr" flashes in the display. Then press **ENTER**.
2. "Cons#" will display, prompting you to input the consist number. Enter number of the consist you want to clear and press **ENTER**.

Once you clear the consist, each loco will respond immediately to its original speed command.

**Note** If you forget the consist number, each loco's address in the consist must be reprogrammed on the Program Track, or program CV19 to zero, in each loco.

### **Universal (Old-Style) Consisting**

This feature allows you to use older decoders that do not have CV19 to support Advanced Consisting. In this type of consisting, the base unit stores all the information of the consisting locos and makes them run as a single loco. When you adjust the speed of the lead loco, the base unit distributes the speed setting to all the original loco addresses in the consist by sending the speed command to each individual loco. Although the consist acts as one loco, there is a slight time lag between the locos you may not be able to detect.

Locos consisted in this fashion will revert to their original addresses and direction settings when removed from the layout. If they are removed from the layout and placed back onto the layout during the same session, they will remain consisted. They will not be “consisted” if removed to another layout.

The Prodigy Wireless DCC system allows only ONE Universal Consist at a time regardless of how many Cabs are in use. One Universal Consist per system, not per Cab. Once programmed, the base unit will remember the consist group until you clear it. Turning off the base unit power will not clear it.

### **Programming Universal (Old-Style) Consists**

1. Press **CONSIST** until “oLd SET” flashes in the display. Then press **ENTER**.
2. “LEAd Loc” will flash, prompting you to enter the address of the lead loco. Enter the lead loco’s address. Press **DIRECTION** if you want the loco’s direction reversed (forward is default setting) and press **ENTER**.
3. “Add Loco” will flash, prompting you to add another loco into the consist group. Enter a loco address. Press **DIRECTION** if you want the loco’s direction reversed (forward is default setting) and press **ENTER**.
4. “Add Loco” will flash again, prompting you to add another loco into the consist. You can control up to 4 locos total (including the lead loco) in a Universal Consist. To end programming, press **ENTER**.

### **Running Universal (Old-Style) Consists**

**Note** Running a Universal Consist is different from running a single loco.

After setting up your consist group, use the lead loco’s address to run the consist.

1. Press **CONSIST** then **LOCO**. Make sure “Cons” appears on the LCD display.
2. Enter the address of the lead loco and press **ENTER**.
3. Turn the throttle and all the locos in the consist will start moving together.
4. To control accessory functions, use each loco’s original address.

**Note** When running a Universal Consist, LCD shows “Cons.” When running an Advance Consist, LCD shows “Loco.”

### **Clearing Universal (Old-Style) Consists**

To clear a consist, press **CONSIST** until “Cons oLd cLr” flashes in the display. Then press

**ENTER**. Turning off the power on the base unit will not clear the consist.

Once you clear the consist, each loco will immediately respond to its original speed command.

**Note always clear a Universal (Old-Style) Consist when you are finished with it.**

If when selecting a Loco it does not respond but the CONS symbol is displayed you will need to remove this by holding the **DEL-1** key for 2 seconds and then performing a **SAVE**.

## Fast Clock

### Setting Fast Clock (Master Cab only)

Only the Master Cab (Cab #1) can program the time, time ratio, and AM/ PM or (24 hr) time. The time settings entered by the Master Cab are stored in the Prodigy Wireless DCC system base unit memory. The settings will remain unchanged until you reprogram them. The time is sent to all Cabs operating on the layout so railroad schedules can be maintained.

### Setting Time (Master Cab only):

1. Make sure your Cab is the Master Cab.
2. Press **SYS** and **1**. The current time will be momentarily displayed.
3. Enter the new time. Press **ENTER**.

### Setting Time Rate (ratio) (Master Cab only):

The time rate is how many real seconds are in one fast clock minute.

**Example** Rate 1 means that one real second equals one fast clock minute, or 60 times as fast as real time. Rate 30 means 30 real seconds equal one fast clock minute, or twice as fast as real time. Rate 60 means 60 real seconds equal one fast clock minute, or real time.

1. Make sure your Cab is the Master Cab.
2. Press **SYS** and **2**. The current rate will be displayed for a second.
3. Enter the new ratio. Press **ENTER**.

### Setting AM/PM or 24hr Time (Master Cab only):

1. Make sure your Cab is the Master Cab.
2. Press **SYS** and **4**. Either "AM", "PM" or nothing (military) will display on the LCD.
3. Repeat step 2 above to select the desired setting.

## Accessory Decoders

The Prodigy Wireless will operate most NMRA compatible accessory decoders.

### Selecting Accessory Decoders

1. Press **ACCY**. Using **0 - 9**, enter the accessory decoder address. Press **ENTER**.
2. "1or2" will display reminding you to press only **1** or **2** to control the accessory. Press **1** to turn the accessory on and **2** to turn it off. You can keep pressing **1** or **2** until you are done with accessory.
3. Press **ENTER** to escape accessory operation.

## Accessory Routes

Grouping of turnouts (or accessories) can be consisted to form a route.

The Prodigy Wireless DCC system allows up to 31 routes and up to 8 accessories in each route. Please do not set a route number higher than 31, nor add more than 8 accessories into one route.

### Setting Accessory Decoder Routes (Master Cab only)

1. Press **SYS** and **5**.
2. "Route SET" appears in display. Press **ENTER**.
3. Enter route number (1 – 31). Press **ENTER**.
4. "Add Accy #" will display. Using **0 - 9**, enter an accessory address (1 to 255).  
If you want this accessory (turnout points) to move in a direction opposite its normally programmed direction (reverse polarity), use **DIRECTION** to set its direction. Press **ENTER**.
5. "Add Accy #" will display again, prompting you to add another accessory into the route. Repeat above steps to enter up to 8 accessories into one route.
6. When finished setting up your route, press **ENTER**.

### Running Accessory Routes

1. Press **ROUTE**. Enter the Route number you wish to run. Press **ENTER**.
2. "1or2" will display reminding you to press only **1** or **2** to select the routes.

### Clearing Accessory Routes (Master Cab only)

1. Press **SYS** and **0**. Then press **ENTER**.
2. Enter the route number. Then press **ENTER**.

### General Trouble Shooting

It takes the Command Station, the decoders and your layout to make the DCC system work. This Trouble Shooting Section has been arranged in a manner easiest for you to find the cause of your problem. Please go through this section in the exact order it appears because each following set of instructions assumes that the preceding set has been tested and that component of the DCC system found not defective.

#### **1. Plug in the power supply of the base unit and move the power switch to ON. The pilot light should turn on.**

If not, make sure the power supply is securely plugged into the base unit and into a working AC wall outlet. Then unplug the power, wait 3 seconds and plug back in. If power light still does not turn on, send the unit in for repair.

#### **2. Check the Main Track output.**

Place an analogue loco or test light on the Main Track. The loco should buzz or the test light should light. If not, check all connections and make sure the rear green plug is securely plugged in. Make sure the screws on the green plug are tightened on the wire and not on the wire cover (insulator). If the analogue loco still does not buzz or the test light does not light, send the unit in for repair. It is better to use a V.O.M (multi-meter) on the A.C. scale to check for track power, as DCC track power works like A.C. not D.C.

#### **3. LCD does not display anything.**

The Cab LCD should display the current loco when the power is on. If not, check the battery voltage level. If recharging or replacing the batteries does not help, send unit in for repair.

#### **4. Check the communication between the base unit and the Cab.**

*"Ensure the receiver is in a controllers socket"*

Press **2**. F2 should momentarily display on the LCD and the Link light should blink. If not, set the Cab to be the Master Cab (Cab #1) by pressing **SYS, 6, 1**, and **ENTER**. Make sure there is no other Master Cab in the system and try again. If there is still no communication, send the unit in for repair. If there is communication, you may have the wrong Cab setup. Read the Cab Setup section.

#### **5. Your loco may have a pickup problem.**

You should periodically clean your track and your loco's wheels. Oxide coating or dirt on either the track or loco's wheels often causes intermittent and jerky operation.

**If you pass the above steps, your Command Station and Cabs are fine. The problem may lie in the decoder.**

#### **6. Your decoder may have lost its memory or is in Advanced Consist mode (CV19 is not 0).** Reprogram the loco address and try again.

**7. Your decoder may have too much momentum.** Program the loco with zero acceleration and deceleration rates.

#### **8. The base unit may have a Universal Consist controlling your decoder.**

Clear the old consist by pressing **CONSIST** until "Cons oLd cLr" flashes in the display. Then press **ENTER**.

**9. The current loco speed command may not match the decoder's speed steps.**

Reprogram your decoder's address. When you program the decoder with Prodigy Wireless it will automatically set the decoder's speed steps to 28/128. Select 28 or 128 speed steps on the base unit and then try to run the loco.

**10. Check the decoder wiring and make sure everything is correctly installed.**

**11. Remove the decoder and test it on a decoder tester to make sure the decoder is fine.**

**12. If the decoder is fine, check the loco to make sure the loco is fine before installing the decoder.**

**Checklist for General Problems**

1. Clean your layout and the loco's wheels.
2. Check the layout's wiring.
3. Reprogram loco address and other data.
4. Check battery voltage level.
5. Reset the base unit by unplugging power supply.
6. Check loco for proper decoder installation.
7. Check wiring from the base unit to your layout.
8. Check for short circuits and/or stray objects lying across track rails.
9. Make sure the Link light flashes when you press F2.

**Special Trouble Shooting**

**Base unit power light is on but Cab does not display anything on the LCD display**

1. Check the Cab battery voltage level.
2. Rechargeable batteries will in time wear down, replace if needed.
3. Try another Cab.

**The loco's headlight turns itself off**

When you press **0** to turn on the loco's headlight, the base unit will send the command to the decoder to turn on the loco's headlight. The base unit will not continuously send the accessory command to the decoder like the speed command. When the loco hits a dirty track and loses its power, it will reset and lose the accessory command. You should clean the track and the loco's wheel to improve the loco's pickup.

**During operation all locos stop responding**

Unplug the power supply, wait 3 seconds and turn the power back on. If all the locos start to run and the system shuts down again, you may have too many locos and accessories connected to track power. Remove some locos and try again.

**Your loco doesn't work while other locos work**

The decoder may have lost its memory. Reprogram loco address.

**Your Cab doesn't work while other Cabs work**

Make sure each Cab address is unique. Make sure your Cab address is an operational address. Check battery voltage. If the Cab still does not work, it may be a defective Cab.

**Your Cab operates locos but cannot program on the Program Track**

1. If the Link light does not flash when you enter a data and press **ENTER**, it may have been limited by the Master Cab and is not allowed to program on the Program Track.
2. If the Link light flashes when you enter a data and press **ENTER**, then test the Program Track output. To test, place an analogue loco on the Program Track. During the programming process, the Link light should be on and the analogue loco should buzz. If the Link light is on and the analogue loco does not buzz, it is a defective Program Track output.

**Your Cab operates locos but cannot program on the Main Track**

The Master Cab may have limited it.

**Your Cab operates locos but cannot program an Advanced Consist**

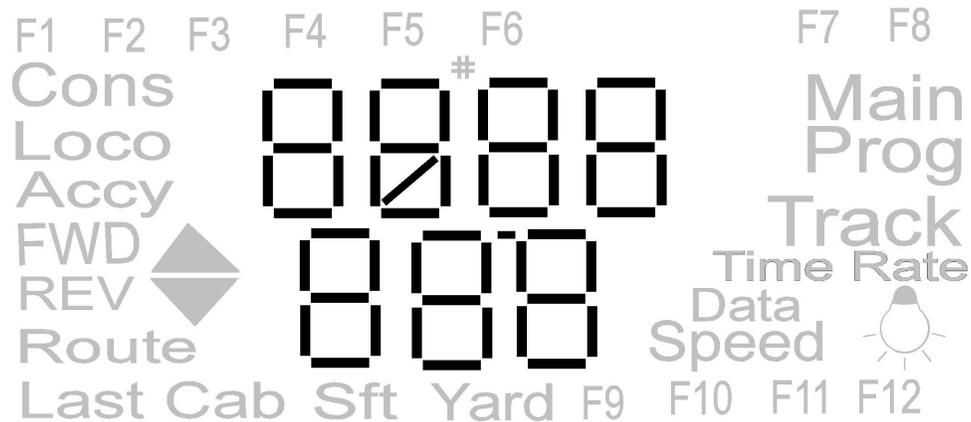
The Master Cab may have limited it. Your Cab must be able to program on the Main Track to set an Advanced Consist.

**Short Circuits and Overloads**

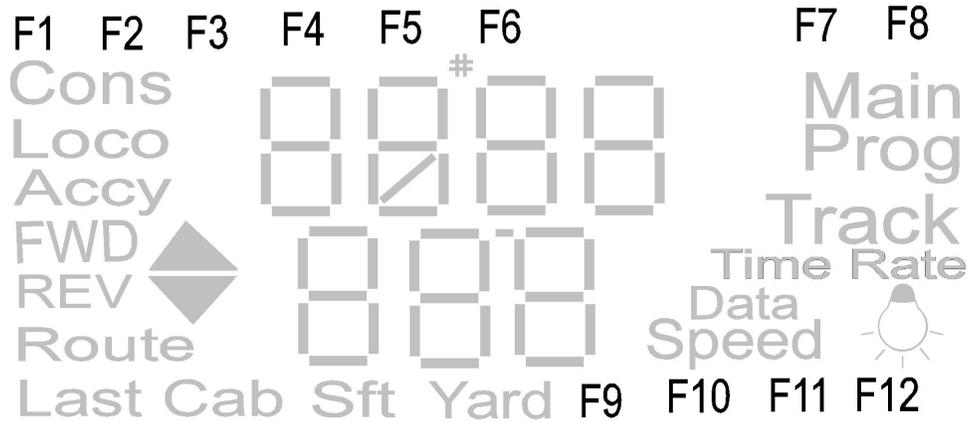
From time to time things can happen when the layout is not in use, typical examples are loco's or rolling stock accidentally derailed - tools or other conductive items being placed across the track - new track section installed incorrectly - new track driven devices to name a few.

When this type of issue occurs the Prodigy will typically not respond as it would in a normal overload situation, instead the power supply itself will activate its internal overload and the base unit will appear powerless. Quickest way to see if this is the case is to unplug the Green terminal plug from the rear of the base unit effectively disconnecting the layout, if the base unit then powers up as normal inspect the layout for faults.

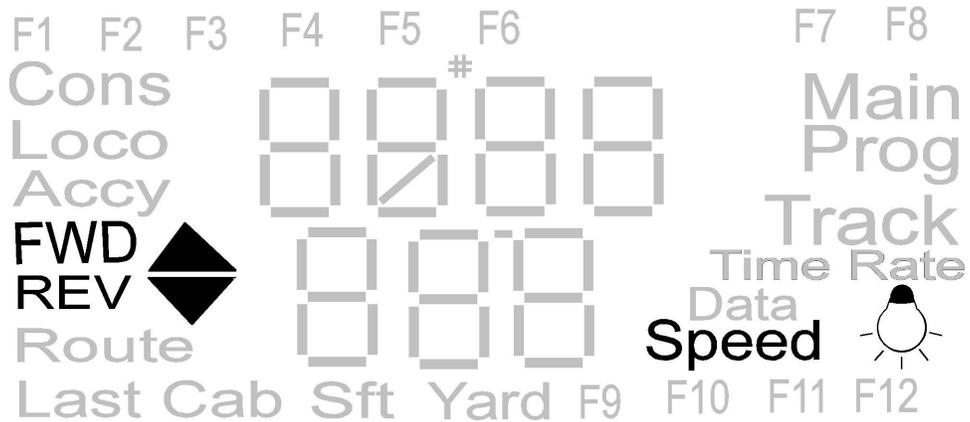
The LCD main display icons are used in all operation to display both numbers and symbols



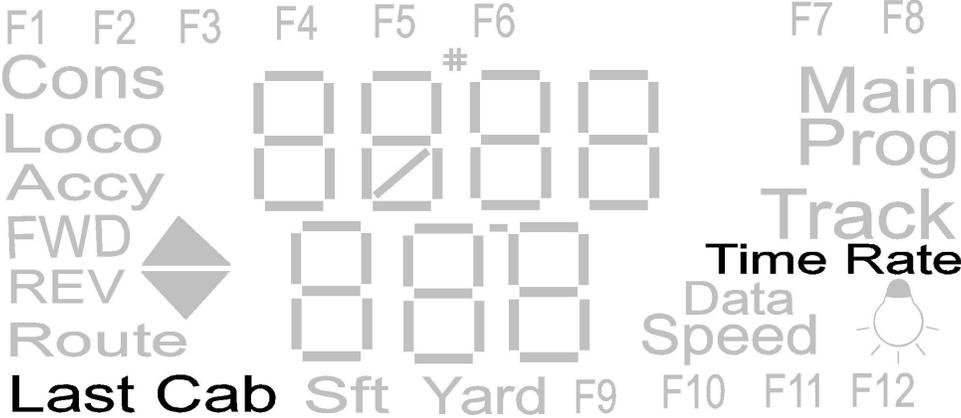
Function icons are displayed when operating loco functions



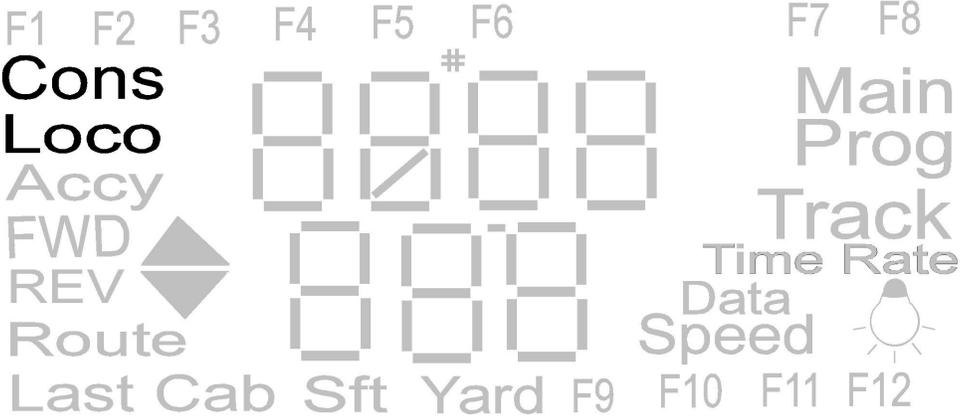
FWD / REV and SPEED icons display the loco speed and direction of travel  
The LAMP icon (F0) illuminates when the loco lights are activated

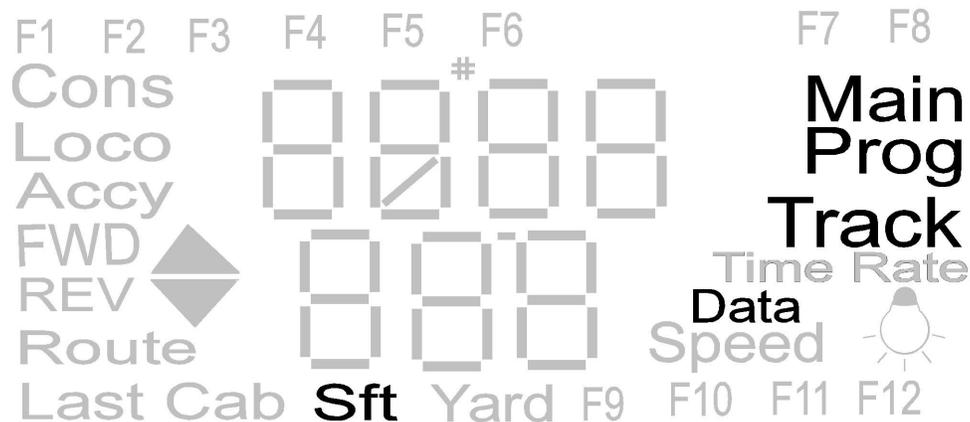


The LAST CAB icon is used in the system setting and the TIME RATE icon is displayed when operating the (fast clock) time mode



The LOCO and CONS icons are displayed when operating and programming locomotives and consists (DBL HEAD)





The MAIN / PROG / TRACK and DATA icons are displayed in programming and (READ) modes, the SFT (shift) icon is used in function selection and when selecting in READ mode

Our Prodigy Advance products carry a 1 YEAR GUARANTEE subject to the usual conditions  
Your statutory rights are not affected

If you believe your unit is faulty, please telephone us in the first instance. We will advise you of your best course of action. If it involves sending anything back, please send it to the address below via insured post and packed securely.

Gaugemaster Controls Ltd, Gaugemaster House, Ford Road, Arundel, West Sussex BN18 0BN

Tel. No: 01903 884321 Fax. No: 01903 884377 Email: [gaugemaster@gaugemaster.co.uk](mailto:gaugemaster@gaugemaster.co.uk)

Web: [www.gaugemaster.com](http://www.gaugemaster.com)

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