

# Quick Start Guide

For the Bachmann®  
DCC Sound-Equipped  
N Scale Charger  
(SC-44, ALC-42)



Featuring WOWSound®  
DCC Sound Technology  
by TCS

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**For More Information Visit:**

[www.TCSDCC.com](http://www.TCSDCC.com)

**For WOWSound® Video Tutorials Visit:**

[www.youtube.com/TCSDCC](http://www.youtube.com/TCSDCC)

### **Overview**

Congratulations on the purchase of your Bachmann locomotive with digital sound installed. This state-of-the-art locomotive with a Digital Sound Decoder incorporates WOWSound® Digital Sound Technology with realistic operational performance and the benefits of DCC (Digital Command Control) technology.

This Quick Start Guide assumes that you have some understanding of, or experience with, other “prototype” trains and TCS decoders. This guide covers the differences you may need to know between the decoder used in this model and any you may have used previously.

If you are new to WOWSound®, you should start by visiting the TCS website at [www.tcsdcc.com](http://www.tcsdcc.com) to review the WOWSound Comprehensive Guide, as well as watch the video tutorials provided by TCS.

For most DCC operations of the locomotive (selecting new sounds, adjusting volumes, remapping or changing lighting effects, etc.), it is easiest to use Audio Assist®, accessed by pressing function button 8 four times in quick succession while you are operating your locomotive in DCC mode. From there the decoder will take over, talk to you, and explain how to perform the various configuration actions available. It is not necessary to look up or program CV values when using Audio Assist®.

## **New Features**

The Charger locomotive from Bachmann includes several brand new features from the prototype for added realism and enjoyment during operation!

### **Emergency Brake Feature:**

This locomotive features a new emergency braking operation. If an emergency stop is triggered, the emergency brake dump sound will play and, on the SC-44 model only, the red emergency strobe will begin to flash, just like on the prototype. The emergency brake sequence can be activated via the following means:

- Pressing the E-Stop button on your command station (if supported)
- Pressing the Train Brake (Function 5) five times in a row
- Crew Alert Timer expiration

### **Crew Alert Feature:**

Sometimes known as a Dead Man's Switch, this is a safety feature on modern locomotives. An engineer must perform some action periodically to ensure that they have not fallen asleep, or worse. If not, after a set amount of time, an alarm will sound. If no action is taken, the train goes into emergency stop. If this feature is turned on, the decoder will monitor for speed changes or function presses. If the time has expired without any user input, an alarm will sound, quickly increasing in volume. If no further input is received after a short amount of time, the locomotive will enter emergency stop. Any user input will reset the timer. This feature is disabled by default and can be turned on or off at any time via Function 17. An auditory cue can be heard when the feature is turned on.

### **Dynamic Brake Operation:**

The Charger has the ability to come to a complete stop by using the dynamic brakes, just like the prototype. The multi-stage Dynamic Brake Function (Function 9) can be pressed multiple times to decrease the speed by a factor upon each press until you reach a stop.

## **WOWSound Decoder Features:**

With WOWSound® decoders, the real sounds of locomotives are carefully recorded, preserved, and played back without distortion or manipulation. WOWSound® provides modelers with the closest experience to standing track side.

In addition to excellent audio performance, WOWSound® decoders also feature Keep-Alive® UPS (Uninterruptable Power Supply) for uninterrupted operation, even over dirty track, and the TCS-exclusive Audio Assist® for easy configuration without programming CVs.

## **Operational Features:**

- Three available throttle modes
- Button actuated multi-stage braking
- Variable momentum for realistic acceleration and deceleration
- Auto-adjusting Back EMF for superior slow speed operation
- Automatic sounds when operating on DC power
- Supports 14/28/128 speed step modes
- Both simple and advanced consisting for MU (Multiple Unit) operation
- Supports user-loadable speed tables for completely custom speed curves

## **Light Features:**

- Full Rule 17 dimming features
- Directional marker lights
- Interior corridor work lights
- Illuminated number boards (ALC-42 only)
- Programmable alternating ditch lights
- Prototypical flashing strobe lights (SC-44 only)
- Realistic operating emergency strobe (SC-44 only)
- Programmable lighting effects
- Light Mode/Sound Mode function mapping that allows buttons to perform two actions independently

### **Sound Features:**

- Load-Based motive power sounds that adjust automatically to the load, speed, and track conditions on your layout
- Variable length horn/whistle sound for custom signalling
- Low horn/high horn options. By default, the low-tone horn will sound when the locomotive is moving at a scale speed of less than 3 mph or is stopped. The high-tone horn will sound when the locomotive is moving at speeds higher than 3 mph. Control of the low and high horn functionality can be adjusted using CV 58.
- A large number of sound variations to make MUs more enjoyable
- Function page mapping that allows you to control all functions with just buttons 0-9

### **Throttle Modes:**

TCS WOWSound<sup>®</sup> decoders offer multiple throttle modes to change the response of certain sound functions to match your preferred method of operation. You may change the active mode by using Audio Assist<sup>®</sup>. More information on each throttle mode can be found on TCS' website [tcsdcc.com](http://tcsdcc.com).

*Traditional Throttle Mode* is the default throttle mode active on your Charger model out of the box. This throttle mode mimics the "traditional" behavior of a DC locomotive where momentum values are very low, meaning the throttle response is very fast. Additionally, the prime mover notch will be determined exclusively by speed.

*Prototype Throttle Mode* will add more realistic momentum to your locomotive, meaning you should use the train brake or dynamic brakes to bring your engine to a stop. In prototype mode, the notch of the prime mover will dynamically react to the load placed on the locomotive.

*Manual Notching Throttle Mode* operates just how it sounds. Automatic notching is disabled, meaning you are in complete control. Using the Manual Notching buttons (Function 10 and Function 11), you can shift the RPM of the prime mover at will to any of the 8 notches.

### **Programming Your Locomotive:**

\*Note that this Keep-Alive<sup>®</sup>-equipped WOWSound<sup>®</sup> decoder may require a programming booster for reliable programming operations with some systems. Visit your local hobby retailer for more information.

### **Address Programming:**

The default address of all DCC decoders is 3, so you can start by placing the locomotive on the rails and selecting address 3 on your Command Station.

To change the address to another number less than 126 (99 for some Command Stations), place the locomotive on the programming track and follow your Command Station instructions for programming CV 1 to your chosen address less than 126.

For addresses higher than 126, use your Command Station's instructions for "long address" programming.

### **Bachmann E-Z Command<sup>®</sup>:**

*For Bachmann's E-Z Command<sup>®</sup> system, simply follow your command station instructions for programming the address (programming track not required).*

### **Configuring with Audio Assist<sup>®</sup>:**

With your locomotive addressed and responding on the DCC mainline, press function button 8 four times rapidly to enter Audio Assist. Audio Assist will then guide you through configuring a wide array of features.

#### **Resetting Your Locomotive:**

*To reset your locomotive to factory default settings, you can program CV8=2 or (while operating on DCC) through Audio Assist.*

*From the Audio Assist Main Menu, the button presses, in order, for a full factory reset are:*

*Button 4 → Button 3 → Button 2*

### **Running Your New Locomotive:**

Your new locomotive is pre-configured with all of the settings best suited to replicate the prototype. This means you can place your engine on the track and immediately start running with either a DCC Command Station or a variable DC power pack supporting up to 18V.

### **DC Operation:**

Your decoder will work best in analog mode when using an electronically regulated power pack which supplies smooth, filtered DC power. Older rheostat-style power packs and pulse power packs will result in erratic and unreliable operation. If your power pack features a pulse power switch, leave it in the 'Off' position. Using a variable DC power pack with filtered output, your WOWSound<sup>®</sup>-equipped locomotive will come to life as soon as you place it on the track and ramp up the power to 7.5v and above. In DC operation, the lights, directional horn, and bell sounds will play automatically based on direction and speed; a grade-crossing quill can be triggered by quickly increasing or decreasing the voltage.

### **DCC Operation:**

With your locomotive address selected, you can begin moving the locomotive with the throttle control, and controlling the light and sound functions with the function buttons.

## WOWSound® Charger Paginated Function Mappings For *E-Z Command*® System

**Press function button 8 twice rapidly to switch from page 1 Sound Mode to page 1 Light Mode. Every double press of function button 8 after will rotate to the next function mapping page.†**

### Function Page 1:

	Sound Mode	Light Mode
F0	Headlights On/Off (F10)	
F1	Bell; Ditch Lights Blink	
F2	Horn* – Long; Ditch Lights Blink	
F3	Horn* – Short	Ditch Lights
F4	Whoosh	Number Board (ALC-42 only)
F5	Train Brake	Strobe Lights‡ (SC-44 only)
F6	Prime Mover	Marker Lights
F7	Dims Headlight (Rule 17)	
F8	1x Press to Mute/Unmute 2x Press to rotate light/sound mode or page 4x Press to enter Audio Assist®	

† The function pagination feature found on this decoder is designed to allow users with *E-Z Command*® systems to access all functions. For systems that support all function buttons, it is not necessary to use the pagination system. On these systems, you may use the standard function button control method. Each “page” of functions will correspond to a group of up to ten functions: 0 through 9, 10 through 19, and 20 through 28.

‡ For the SC-44 only, the strobe lights will match the behavior seen on the prototype. These lights will only come on if the locomotive is in the forward direction, the headlight is on at full brightness, and the ditch lights are on.



\* Low horn/high horn options. By default, the low-tone horn will sound when the locomotive is moving at a scale speed of less than 3 mph or is stopped. The high-tone horn will sound when the locomotive is moving at speeds higher than 3 mph. The locomotive speed at which the low-tone horn transitions to the high-tone horn can be changed by adjusting the value of CV 58. The higher the value, the faster the locomotive will travel before this change occurs. By default, CV 58 arrives set to 7. To disable the low horn entirely, set the value to 0.

<b>WOWSound® Charger Paginated Function Mappings For E-Z Command® System (continued)</b>	
<b>Function Page 2:</b>	
F0	Manual Notch Up (F10)
F1	Manual Notch Down
F2	Coupler Close
F3	Coupler Release
F4	Brake Release
F5	Traction Motor Blower
F6	Momentum
F7	Crew Alert
F8	1x Press to Mute/Unmute 2x Press to rotate light/sound mode or page 4x Press to enter Audio Assist®

<b>Function Page 3:</b>	
F0	Grade-Crossing Quill (F10)
F1	Forward Quill
F2	Reverse Quill
F3	Stop Quill
F4	Rotate Horn/Bell
F5	Windshield Wipers
F6	Station Announcements – Departing
F7	Station Announcements – Arriving
F8	1x Press to Mute/Unmute 2x Press to rotate light/sound mode or page 4x Press to enter Audio Assist®

**WOWSound®  
Charger Locomotive  
Function Mappings  
For 28-Function Systems**

**Function pagination will still operate on any DCC-system, but is not necessary to use on systems that support all 28 functions. Press function button 8 twice rapidly to switch from Sound Mode to Light Mode.**

**Sound Mode Functions**

F0	Headlights On/Off
F1	Bell; Ditch Lights Blink
F2	Horn* – Long; Ditch Lights Blink
F3	Horn* – Short Blast
F4	Whoosh (run-by)
F5	Train Brake
F6	Prime Mover Ignition
F7	Dims Headlight (Rule 17)
F8	1x Press to Mute/Unmute 2x Press to rotate light/sound mode or page 4x Press to enter Audio Assist®
F9	Dynamic Brakes
F10	Manual Notch Up
F11	Manual Notch Down
F12	Coupler Close
F13	Coupler Open
F14	Brake Release
F15	Traction Motor Blower
F16	Toggle Momentum Mode
F17	Toggle Crew Alert
F18	1x Press to Mute/Unmute
F19	Random Whoosh On/Off

\* Low horn/high horn options. By default, the low-tone horn will sound when the locomotive is moving at a scale speed of less than 3 mph or is stopped. The high-tone horn will sound when the locomotive is moving at speeds higher than 3 mph. The locomotive speed at which the low-tone horn

transitions to the high-tone horn can be changed by adjusting the value of CV 58. The higher the value, the faster the locomotive will travel before this change occurs. By default, CV 58 arrives set to 7. To disable the low horn entirely, set the value to 0.

<b>Sound Mode Functions (continued):</b>	
F20	Grade-Crossing Quill
F21	Forward Quill
F22	Reverse Quill
F23	Stop Quill
F24	Rotate Horn/Bell
F25	Windshield Wipers
F26	Station Announcements – Departing
F27	Station Announcements – Arriving
F28	1x Press to Mute/Unmute

<b>Light Mode Functions:</b>	
F0	Headlight
F1	Bell; Ditch Lights Blink
F2	Horn - Long; Ditch Lights Blink
F3	Ditch Lights On/Off
F4	Number Boards (ALC-42 only)
F5	Disable Automatic Strobes (SC-44 only**)
F6	Directional Markers
F7	Dims Headlight (Rule 17)
F8	1x Press to Mute/Unmute
F9	Interior Corridor Work Lights
F10	Ditch Lights Blink
F11	Emergency Strobe

\*\* For the SC-44 only, the strobe lights will match the behavior seen on the prototype. These lights will only come on if the locomotive is in the forward direction, the headlight is on at full brightness, and the ditch lights are on.

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COMPATIBLE  
WITH THE NMRA  
STANDARDS AND  
RECOMMENDED  
PRACTICES

In the event you have a defective or damaged product, do not return the locomotive to the store where it was purchased. After checking all procedures listed in this guide and the warranty included, contact us at:

Bachmann Industries, Inc.  
1400 East Erie Avenue  
Philadelphia, PA 19124 USA  
[service@bachmanntrains.com](mailto:service@bachmanntrains.com)

Should you need service or repairs, please include a detailed description of your concern and complete contact information. For some service issues regarding DCC sound decoders, the Bachmann Service Department may forward your locomotive to TCS for resolution.



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