

## Testing Decoder using LT1 on a Genesis System

1. **Start with the system power off.**
2. **Select the lowest possible voltage setting** on your DB150. Select the N-scale setting on the "Scale" switch.
3. **Set up your transformer to power the booster.** Connect the power leads from the transformer to the DB150's "POWER IN" terminals but do not turn on the transformer yet.

## Connect the Decoder to the Command Station For Testing

Note: It is not necessary to solder any wires during the test procedure, simply twist the leads together to perform the test.

1. **Connect the protection resistor** to the RAIL A output on the booster. Connect one end of the large resistor from the test kit to the BLACK output terminal labeled RAIL A. This connection protects your Digitrax decoder from ANY subsequent wiring errors *as long as no other connection is made to the "RAIL A" terminal.*
2. **Connect the free end of the large resistor** to the decoder's Right hand power input lead (RED).
- 3 **Use a wire to connect the BLACK output terminal labeled RAIL B** on the DB50 (or other compatible booster) to the decoder's Left hand power input lead (BLACK). This is the "protected" power input to the decoder. This arrangement limits the track power available that could cause damage to an incorrectly wired decoder.

If you are not using a Digitrax system consult your system manual to determine the equivalent connections.

## Motor Operation Test

The objective of this test is to establish that the decoder correctly handles speed and direction commands sent by the command station.

1. **Connect the RED/YELLOW lead of the LT-1 to your decoder's Motor + lead (ORANGE).**
2. **Connect the BLACK/GREEN lead of the LT-1 to the decoder's Motor - lead (GRAY). Make sure none of the decoder leads is shorted to ANY other lead.**
3. We strongly recommend that you temporarily **tape the other leads out of the way.** These should be taped to a non-metallic bench or table top. This procedure will prevent unexpected results from leads shorting together.
4. **Turn on the booster power.** On the DB150, set the MODE switch to the RUN position. Connect the power leads to the power pack & switch the power pack on.
5. **Turn on your command station.** Connect the UT2 to either LocoNet A or B and the Track Status LED will come on. If it does not, then press and hold "RUN" and "ON" until it does.
6. **Set up your command station to send commands to address 03.** Use the two rotary dials on the UT2 to select address "03", then press "ACQ" to select.
7. **Send speed commands to the decoder.**  
Turn the knob on the UT2 clockwise and one of the LED's on the LT-1 will glow if the decoder is functioning properly.

- 8. Send direction change commands to the decoder.** Throw the toggle switch on the UT2 to change direction. The other LED on the LT-1 should glow showing that the decoder has received the change of direction command.
- 9. If the test LED does not light up,** try programming the decoder to address 03 then re test the decoder. If this does not work contact Digitrax for a replacement.

### **Directional Lighting Test**

The objective of this test is to establish that the decoder correctly handles light operation commands sent by the command station.

- 1. Turn off track power.** On the UT2 press "RUN" and "OFF" to turn of the track power.
- 2. Disconnect the GRAY & ORANGE decoder leads from the LT-1. Attach the BLACK/GREEN lead of the LT-1 to the wire that is connected to the decoder Left power lead (BLACK). Connect the RED/YELLOW lead of the LT-1 to the Forward light lead from the decoder (WHITE).** Be sure that all leads *not being used* are secured and not touching each other.
- 3. Use your command station to send light commands to the decoder.** Press "F0" on the UT2 to turn on the Front headlight on. One of the LED's on the LT-1 should glow, if not throw the reverse toggle switch. The LED should toggle on and off as the toggle switch is thrown.
- 4.** Repeat STEP 2 using the YELLOW lead from the decoder to test the REVERSE HEADLIGHT.

### **Function Outputs Test (Optional)**

The objective of this test is to establish that the decoder correctly handles function operation commands sent by the command station.

- 1. Turn OFF the track power** by pressing and holding down the UT2 "RUN" and "OFF" keys until the track status LED goes off.
- 2. Disconnect the decoder light leads from the LT-1 leads. Attach the BLACK/GREEN lead of the LT-1 to the wire that is connected to the decoder Left power lead (BLACK). Connect the RED/YELLOW lead of the LT-1 to the function output to be tested (Green=Function 1, Violet=Function 2, & Brown=Function 3). Test one function at a time.** Be sure that all leads *not being used* are secured and not touching each other.
- 3. Use your command station to send function commands to the decoder.** Use the UT2 to turn track power back on buy pressing the "RUN" and "ON" keys together. Then press the appropriate function button to test the lead selected. One LED on the LT-1 should glow when the function button is pressed.
- 4. Press and hold "RUN" and "OFF" on the UT2 to turn OFF track power each time you change the function lead to test a different function.**