Product specifications for the Power-Master Bridge (PMBR)

Introduction

The Power-Master Bridge (PMBR) unit provides a bridge between the Legacy system transmitting at 2.4 GHz and the previous system which transmits at 27 MHz. The Power-Master Bridge (PMBR) provides this bridge by accepting a serial stream of data from the Legacy system and transmitting the data on 27 MHz. By using the Legacy system with the Power-Master Bridge (PMBR) and Power Master (PM-1) module(s) it is possible to use one hand control unit to control both the newer trains and older trains with one control unit. Before the introduction of the Power-Master Bridge (PMBR) it would have required the use of the Legacy controller to control the newer trains and the CAB-1 hand controller unit to control the older trains using a Power Master (PM-1) module(s). The Power-Master Bridge (PMBR) only transmits on 27 MHz when there is serial data supplied to be transmitted.

The operation of the Power-Master Bridge (PMBR) is to allow the control of the voltage on a section of track by using a Power Master (PM-1) module. To simulate the track a light can be attached to the output of the Power Master (PM-1) module. By addressing the Power Master (PM-1) module a hand controller unit would be able to change the brightness of the light attached to the module output.

The user, in normal operation, will connect the Power-Master Bridge (PMBR) to the Legacy system using a Y cable to supply the serial stream of data to the Power-Master Bridge (PMBR) for transmission at 27 MHz.

Connections on the Power-Master Bridge (PMBR)

External connections on the Power-Master Bridge (PMBR) consist of the following:

- 9V AC power connector
- RS-232 connector

Internal connections on the Power-Master Bridge (PMBR) consist of the following:

- ICSP – In Circuit Serial Programming
- LED – control for the LEDs in the case

The 9V AC power connector is connected to an AC adapter that plugs into 110 V AC to supply power to the Power-Master Bridge (PMBR). When the 9V AC power is applied to the Power-Master Bridge (PMBR) the unit starts operation. After a short initialization the Power-Master Bridge (PMBR) is ready to accept serial data to be transmitted at 27 MHz.

The RS-232 connector is used to supply the serial data stream to be transmitted on 27 MHz. For normal operation a serial cable would be connect from the Legacy base unit. The connections for the Legacy to Power-Master Bridge (PMBR) are shown in Appendix.

The internal ICSP connect is used for in circuit programming and for entering the transmitter calibration mode. The transmitter calibration mode is expected to only be used at the factory or one of Lionels facilities.

The internal LED connect is used to connect the board to the two LEDs mounted in the case of the Power-Master Bridge (PMBR). The LEDs provide an indication of power and transmitter activity. For normal operation the green LED indicates that power is present to the Power-Master Bridge (PMBR). For normal operation the red LED flashes when the transmitter is in operation.
For transmitter calibration mode both the red and green LEDs will alternate as a distinctive pattern.

Appendix – Legacy Serial cable connection

The "Y" cord that comes with your Lionel LEGACY Control System makes it possible to use the Power-Master Bridge (PMBR) with the Lionel LEGACY Control System. To connect the LEGACY Control System to the Power-Master Bridge (PMBR), see the diagram below. TMCC Controller is not required for Power-Master Bridge testing.