Electro-Mech Scoreboard Co.
Product Guide

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Introduction to the ScoreLink System

General Introduction

What is ScoreLink? ScoreLink is a wireless communication system between console and scoreboard, eliminating the need to have a physical cable running between your hardware. It is not inherently better than a cable. Which system works best for you is for you to decide (though we are always happy to help by answering questions). ScoreLink is an *accessory* that works on almost all scoreboards manufactured by Electro-Mech since 1998.

The ScoreLink communication system needs both a transmitter model (designated with the letters "TX" in the model name) and a receiver model (designated with "RX") to communicate commands from the console to the scoreboard at distances of up to 1000 feet. Within these two types of units are multiple variations. The version appropriate for your scoreboard is based on factors such as your specific scoreboard model's capabilities, location (indoor/outdoor), and your personal preference. If you have any questions regarding your ScoreLink unit, please don't hesitate to contact us.

How It Works and Common Instructions

ScoreLink 400 is a wireless communications system for Electro-Mech MM, MP, and LED scoreboards. It uses Radio Frequency (RF) waves in the 2.4 GHz range. To reduce the likelihood of interference, the signal is actually "hopping" frequencies 2400 MHz - 2483.5 MHz in a predetermined pattern referred to as a channel. If you have multiple ScoreLink systems on different channels, they are still all working in the same frequency range but searching for the data in different patterns over that range of frequencies.

For optimal performance, ensure there are no line of sight obstacles between the transmitter and receiver as this can significantly decrease the range and/or create unreliable communication. Also, all transmitters and/or receivers should be kept at least ten feet apart to avoid interference. Multiple scoreboards can be controlled from a single console with a single transmitter so long as each scoreboard has its own receiver and all units are on the same channel. For unit specific features, installation, and instructions, please find your model in the following pages.

RF Exposure Warning for Mobile Equipment

Warning: To satisfy FCC RF exposure requirements for mobile type transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation, with exception of hands, wrist, feet, and ankles. To ensure compliance, operating this device at a closer distance than this is prohibited.

Individual Unit Specifications and Instructions

Detached Transmitter Kit

Model SL-400 DTX

Description: This wireless transmitter attaches to any Electro-Mech console manufactured since 1998. For scoreboards to receive data from the console and transmitter, there must be a ScoreLink 400 wireless receiver unit connected to each scoreboard. This unit can be used indoors or outdoors, but it should be kept dry along with the console.

What's Included: This FCC compliant accessory includes:

- Transmitter assembly
- 10 ft. stereo patch cable
- 9 VDC Power Supply

Dimensions (L x W x H): 5.5 in. x 3.6 in. x 2.7 in.

Weight: 0.75 lbs.

Power Requirements: 120 VAC, 0.04 A, 60 Hz (standard grounded receptacle)

Installation: Connect the DC power supply into an available outlet and connect to the 3.5mm power jack. Plug the 10 ft. stereo patch cable into the 1/4 in. data input jack with the other end of the stereo patch cable plugged into the 1/4 in. data output jack on the back of the main console. Ensure there are no line of sight obstacles between the transmitter and receiver.

Detached Receiver Kit

Model SL-400 DRX

Description: This wireless receiver attaches to any **indoor** Electro-Mech scoreboard manufactured since 1998 and must receive data from a ScoreLink 400 wireless transmitter.

What's Included: This FCC compliant accessory includes:

- Receiver assembly
- 10 ft. stereo patch cable
- 9 VDC power supply

Dimensions (L x W x H): 5.5 in. x 3.6 in. x 2.7 in.

Weight: 0.75 lbs.

Power Requirements: 120 VAC, 0.04 A, 60 Hz (standard grounded receptacle)

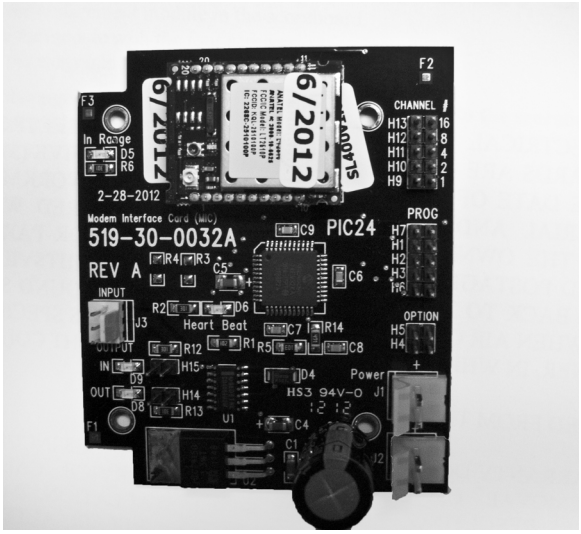
Installation: Connect the DC power supply into an available outlet and connect to the 3.5mm power jack. Plug the 10 ft. stereo patch cable into the 1/4 in. data output jack with the other end of the stereo patch cable plugged into the 1/4 in. data input jack on the scoreboard. Ensure there are no line of sight obstacles between the transmitter and receiver.

NOTE: FOR INDOOR USE ONLY

Embedded Transmitter Kit

Model SL-400 BTXK

Note: This embedded version of the SL-400 transmitter is integrated in the operating console and cannot be purchased independently as an upgrade to install on site. If you want to upgrade to an embedded transmitter, you must purchase a new console. If you are unsure if your console contains an embedded transmitter, check to see if you have an antenna attached to the back of your console (see top photo). For service issues related to the embedded transmitter, you may return the entire console to Electro-Mech for test and repair. We do not recommend field service and replacement of the transmitter card (bottom photo).



Embedded Receiver Kit

Model SL-400 BRXK

Description: This wireless receiver is designed for indoor or outdoor use. It includes a microstrip antenna mounted behind the ID label, which is coated with a layer of clear, resilient material for protection. It is compatible with Electro-Mech "LX-Series" scoreboards manufactured after April 1, 2012. The embedded receiver must receive data from a ScoreLink 400 transmitter.

Dimensions (L x W x H): 3.5 in. x 3 in. x 4.5 in.

Weight: 0.5 lbs.

Power Requirements: 18.9 VDC, 0.25 A (supplied via the scoreboard)

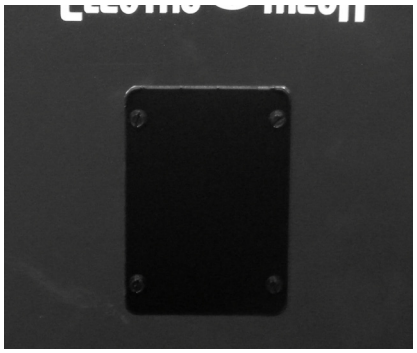
What's Included: The kit consists of an FCC approved receiver module, a cable assembly to connect the module to the LX Driver and Power Supply, four mounting screws, and six cable ties.

Installation: If you bought an embedded receiver at the time of purchase of your scoreboard, it will come installed from Electro-Mech. Otherwise, **disconnect all power before beginning installation.** Installation involves removing protective panels and exposing 120 VAC terminals. **Failure to disconnect power may result in electric shock.**

Replacing an Existing SL-400 BRXK: If you are replacing an existing ScoreLink 400 Embedded Receiver with a new Embedded Receiver, the process is simple. First, disconnect your scoreboard from power. Remove the four screws holding the old receiver module in place, and disconnect the cable from the back of the module. Connect the new receiver module, and secure it to the scoreboard face with the four screws. Power up and test your scoreboard. If your kit included a cable assembly, you my discard it.

First Time Installation Instructions: To find the location of the Primary Chassis on your scoreboard, please consult your scoreboard's manual. It is typically behind the digit furthest to the right on the lowest cabinet (if dealing with multiple cabinets). Common locations include behind the Home Score digit or the Quarter digit.

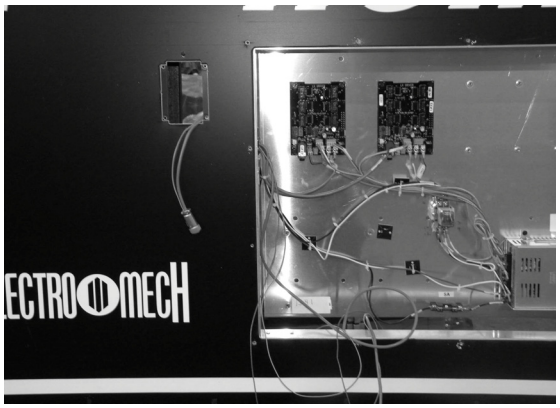
1. Tools needed: #2 Phillips head screwdriver, and another screwdriver with a 1/4-inch hex head or flathead.
2. Disconnect your scoreboard from power.
3. Locate and remove the plate covering the ScoreLink cavity. This plate is about 3 inches x 4 inches, black, and attached to the scoreboard face via four Phillips-head screws.



4. Locate and remove the digit mask or face panel covering the scoreboard's Primary Chassis.
5. Route the cable assembly from the ScoreLink cavity to the Primary Chassis. The lock-ring connector belongs in the ScoreLink cavity while the other end of the cable assembly belongs in the Primary Chassis. In some cases, you will need to pass the cable through holes punched in the metal frame members of the scoreboard cabinet. Always use pass-through holes that are protected with a plastic grommet so the cable assembly will not be damaged by sharp metal edges.

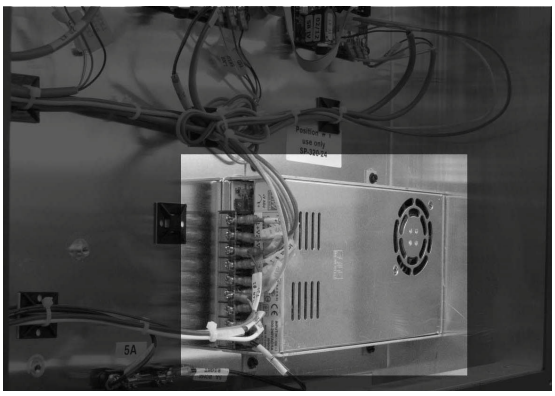
Pass-Through Hole With Grommet

Cable Assembly In Place

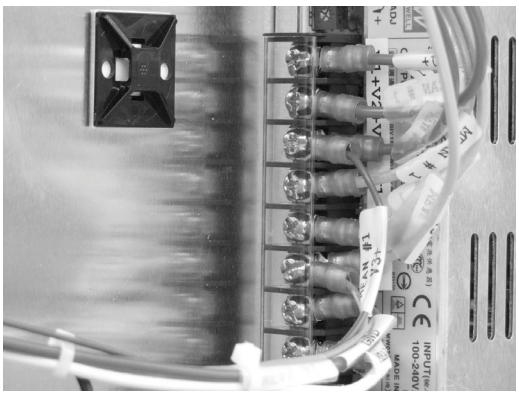


6. Connect the red and yellow wires to the Primary (#1) power supply module. The terminals of the power supply module are located along its left side and are covered by a clear plastic barrier. Remove this barrier to make the connections. The red wire attaches to the "V3+" terminal; the yellow wire attaches to the "V3-" terminal. Replace the barrier after making these connections.

Primary Power Supply(#1)

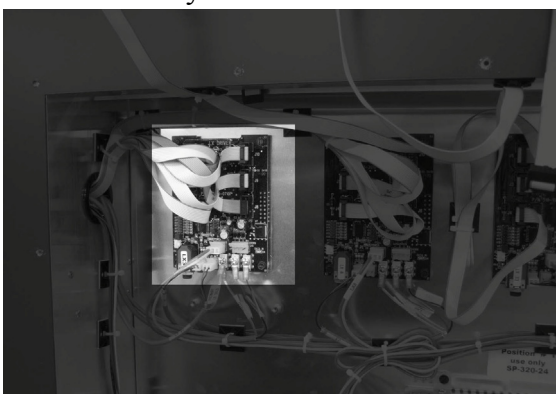


Power Connections (use V3+ and V3-)

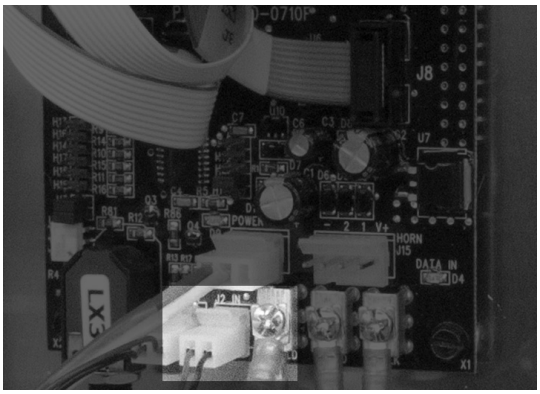


7. Connect the gray data cable and shield to the Primary LX driver. The Primary LX Driver is the circuit board in the upper left corner of the Primary Chassis. Plug the white plastic connector into the 2-pin "J2" header on the Primary LX Driver. Attach the silver Shield wire to the "SHLD" terminal on the Primary LX Driver.

Primary LX Driver Location

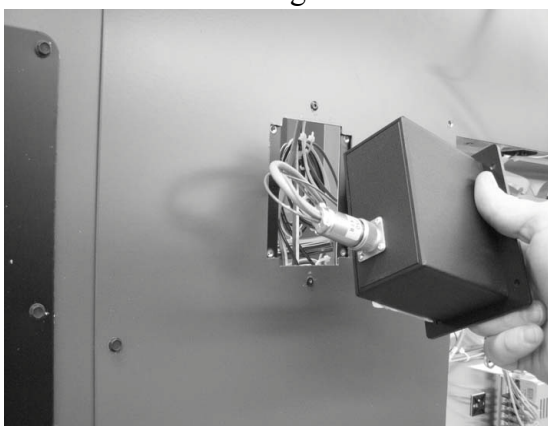


J2 and SHLD Location on LX Driver



8. Back in the ScoreLink cavity, attach the Receiver module to the 6-pin lock-ring connector. Secure the Receiver to the scoreboard cabinet using the four new Phillips-head screws provided in your kit.

6-Pin Lock-Ring Connection



Receiver Module Installed

9. Power up the scoreboard and test the system to make sure it receives data from the console.
10. Disconnect the scoreboard from power again.
11. Use the wire ties provided in your kit to neatly tie down the cable assembly.
12. Replace any digits or panels you removed during the installation of the cable.

Retrofit Receiver Kit

Model SL-400 RRXK

Description: This external receiver is designed for outdoor use on all Electro-Mech scoreboards manufactured since 1998. It must receive data from a ScoreLink 400 transmitter for operation.

Dimensions (L x W x H): 5.5 in. x 9.25 in. x 10.25 in.

Weight: 9.6 lbs.

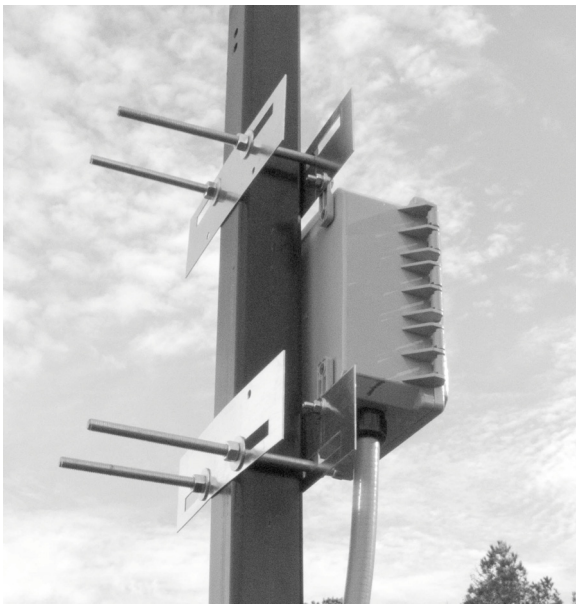
Power Requirements: 120 VAC, 0.04 A, 60 Hz (supplied via the scoreboard)

What's Included: This FCC compliant accessory includes a receiver assembly (receiver installed in a NEMA 4X enclosure) and mounting hardware.

NOTE: Disconnect all power before beginning installation. Installation involves removing protective panels and exposing 120 VAC terminals. **Failure to disconnect power may result in electric shock.**

NOTE: If replacing an embedded receiver, disconnect its power/data cable assembly prior to installing the retrofit receiver. For information about the embedded receiver and its cabling, see the installation instructions for the embedded receiver in the previous pages of this guide.

Installation: Use the provided mounting hardware to clamp the NEMA box to a post -- typically one of the posts used to mount the scoreboard. See the picture below for mounting hardware assembly details. Select the post nearest the scoreboard's rear access panel. The receiver should be mounted above the scoreboard with a clear line of sight to the transmitter. It is possible to mount the receiver below the scoreboard, but the closer the unit is to the ground, the less effective it is at receiving its signals from the transmitter.

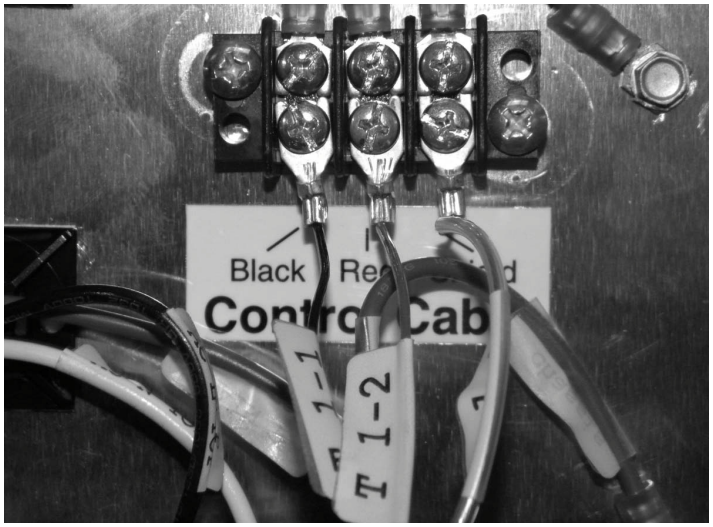


The NEMA box should be oriented so that the flex conduit extends from the bottom. Route the flex conduit to the access panel in the rear of the scoreboard. For scoreboards with multiple rear access panels, consult your scoreboard owner's manual to make sure you select the panel covering the main power and data input terminals. Remove the access panel to reveal the scoreboard's main junction chassis. You should see terminal blocks for power and data input. In addition, depending on the scoreboard model, there may be terminal blocks for data output, a horn, and interconnect cabling.

Next to or below the scoreboard access panel will be a set of round knockouts. These are covered by dome plugs when the scoreboard is shipped from the factory. Remove one of the dome plugs. The flex conduit ships with a fitting that mates with the scoreboard knockouts. Remove the ring from this fitting, pass the wires through the knockout, and attach the ring back to the conduit fitting on the other side of the knockout.

Data Connections

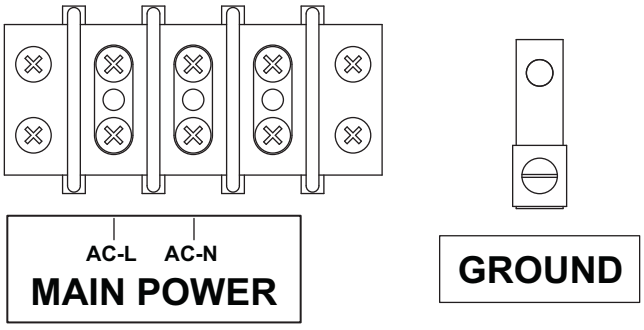
The wires supplying data to the scoreboard are labeled, "T 1-1", "T 1-2", and "T 1-3". Attach these wires to the terminal block labeled "Control Cable" or “Data Cable” matching the colors of the wiring sleeves to the appropriate positions on the terminal block (Black - Left; Red - Center; Shield (Silver) - Right). If you are retro-fitting this unit to a scoreboard that was hard wired, you must disconnect the old data cable before installing this unit’s data cables.



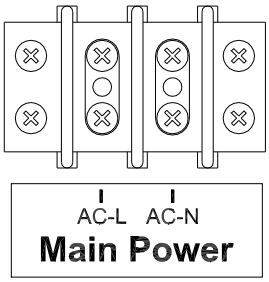
Power Connections

The wires supplying power to the receiver unit are labeled “AC-L” for the line wire and “AC-N” for the neutral wire. Attach these to the appropriate Main Power terminals. Find your board’s power terminal design in the illustrations below and on the following page and wire your receiver appropriately.

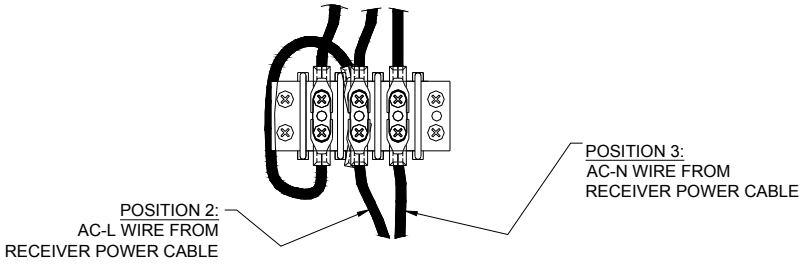
LX-Style Power Terminal Block



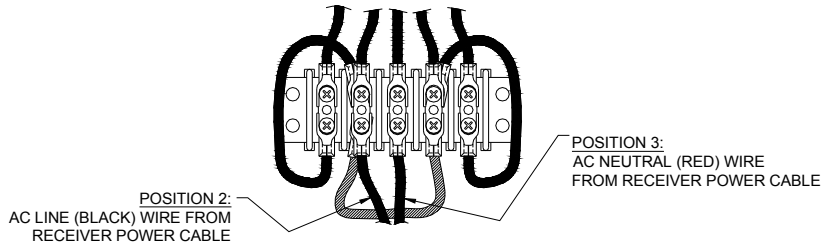
Older LED (LDM) Power Terminal Block



Three-Position Power Terminal Block (for smaller incandescent boards)



Five-Position Power Terminal Block (for larger incandescent boards)



Before closing up the scoreboard, test your system to make sure you are receiving data from the control console and transmitter. Once you have verified that your system works, disconnect the scoreboard from power, check to make sure the flex conduit fitting is tight, and reattach the access panel. This completes the installation of the Retrofit Receiver Kit.

Warranty

Electro-Mech Scoreboard Co. Five-Year Limited Warranty

The electrical components of all Electro-Mech scoreboards are guaranteed for a period of five (5) years from the date of invoice against defects in workmanship or material and will be replaced or repaired without cost to the owner, provided the equipment or parts are returned postage-paid to the factory in Wrightsville, GA. Shipping back to the owner will be via UPS ground service except when air or special method of return is specified by the owner, in which case shipping will be freight collect.

This warranty does not include labor charges incurred in the removal of component parts, service calls, or damages resulting from improper installation, improper operation, or problems caused by any repair, alteration or modification of the scoreboard not performed by Electro-Mech.

Equipment which is subjected to accident, neglect, abuse, misuse, or natural disasters, including but not limited to fire, wind, lightning, or flood, is not covered by this guarantee.