

STRPM Module Standards (loosely based on FREE-MO)

Introduction

The object of the Free-mo Standard is to provide a platform for prototype modeling in a flexible, modular environment. Free-mo modules not only provide track to operate realistic models, but also emphasize realistic, plausible scenery, realistic, reliable track work and operations. Free-mo was designed to and continues to push the envelope of modular model railroading to new heights. It goes beyond the traditional NMRA closed-loop setup in creating a truly universal “free-form” modular design that is operations oriented and heavily influenced by prototype railroading. Setups include point-to-point, point-to-loop, and loop-to-loop with multiple branches.

Specifications

Table

- Mating edges shall be 5 ¾” tall and made of ¾” plywood or equivalent (birch plywood works well) to provide sufficient strength for clamping to adjacent modules.
- For maximum module life, we recommend not using dimensional lumber or pine. Good choices are ¾” birch or cabinet grade maple plywood.
- Any shape you want provided it has minimum 8” flat edges, preferable 24”, for clamping to adjacent modules.
- Elevator Bolts; adjustable +/- one inch.

Track

- All rail center lines must be at least 4” from the table edge.
- Code 83
- 50” railhead on through routes at mating edges.
- Perpendicular to mating edge and level for six inches.
- SP Black Ballast mix preferred (Woodland Scenics fine Black Ballast or equivalent okay) on main route.
- Standard rail color on the through route is Floquil/Polly-S Tie or Roof Brown or equivalent.
- Ballast and ties to edge. Rails are to be set back 1” from the edge.
- There shall be a minimum of 12” of straight track between reverse curves.
- The points of a turnout should not be within 6” of the end of a module.
- Sidings, spurs and other tracks of a Main line module may be Code 83 or smaller, but shall be no less than Code 40.

Main Line

- The minimum permitted radius of curves on the through route of a main line module is 60”, larger curves are preferred.

- We encourage prototype practice in turnout selection: Minimum #8s in yards. Minimum #10s on the Main.
- Minimum permitted turnouts on the through route of a main line module are #8s, #10s or larger are preferred.
- Turnouts on the main controlled/status monitored via DCC. (For signals.)
- Main line blocks wired with block occupancy detectors. (For signals.)
- Operating signal heads on modules longer than three feet.

Branch Line

- Through route 48 inch minimum radius.
- Through route turnouts shall be at least #6.

Electrical and Control

- “Digitrax Digital Command Control (DCC).
- Control from both sides.
- Powered UP5s on both sides of modules where operators will likely need to plug in. (By turnouts, etc.)
- To enable DCC power districts, your module must be able to accommodate insulated rail joiners at each mating edge.
- Wiring consists of 1 pair of buss wires (booster buss) and a 6-conductor LocoNet buss cable.
- Booster buss wire shall be 12 AWG or larger.
- The LocoNet buss shall be 6-conductor satin cable.
- There shall be a 2 (or more) position barrier strip under the module at each end for booster buss wire hook-up.
- All ends (mating edges) shall have a pair of Anderson Power poles for the booster buss connection.
- Local current limiter per block per module.
Preferred: DCC Specialties Powershield
Okay: (auto tail lamps 1 1156 bulb – 2.1 amp limit. See slides 41, 47 on DCC. The good, the bad, the ugly slides from Model Railroad Hobbyist see video segments 3 and 4 at http://model-railroad-hobbyist.com/mrht_dcc-good-bad-ugly)and / or DCC Short Management.
- Track feeder wire must be 24 AWG or larger, but not longer than 6” to the track buss to avoid voltage loss. Recommended Practice: One set of drops per piece of track.
- All turnout frogs shall be powered. Turnouts shall not rely on switch points to power the frog. Recommend powering frog through auto tail light (1152 bulb).
- All ends (mating edges) shall have LocoNet connectors w/ couplers for LocoNet Buss.
- Each module will have its own UL rated power strip for powering its UP5s, turnout decoders, signals, etc.