Marklin Model Railroading

… And Everything you probably didn’t want to know about it…

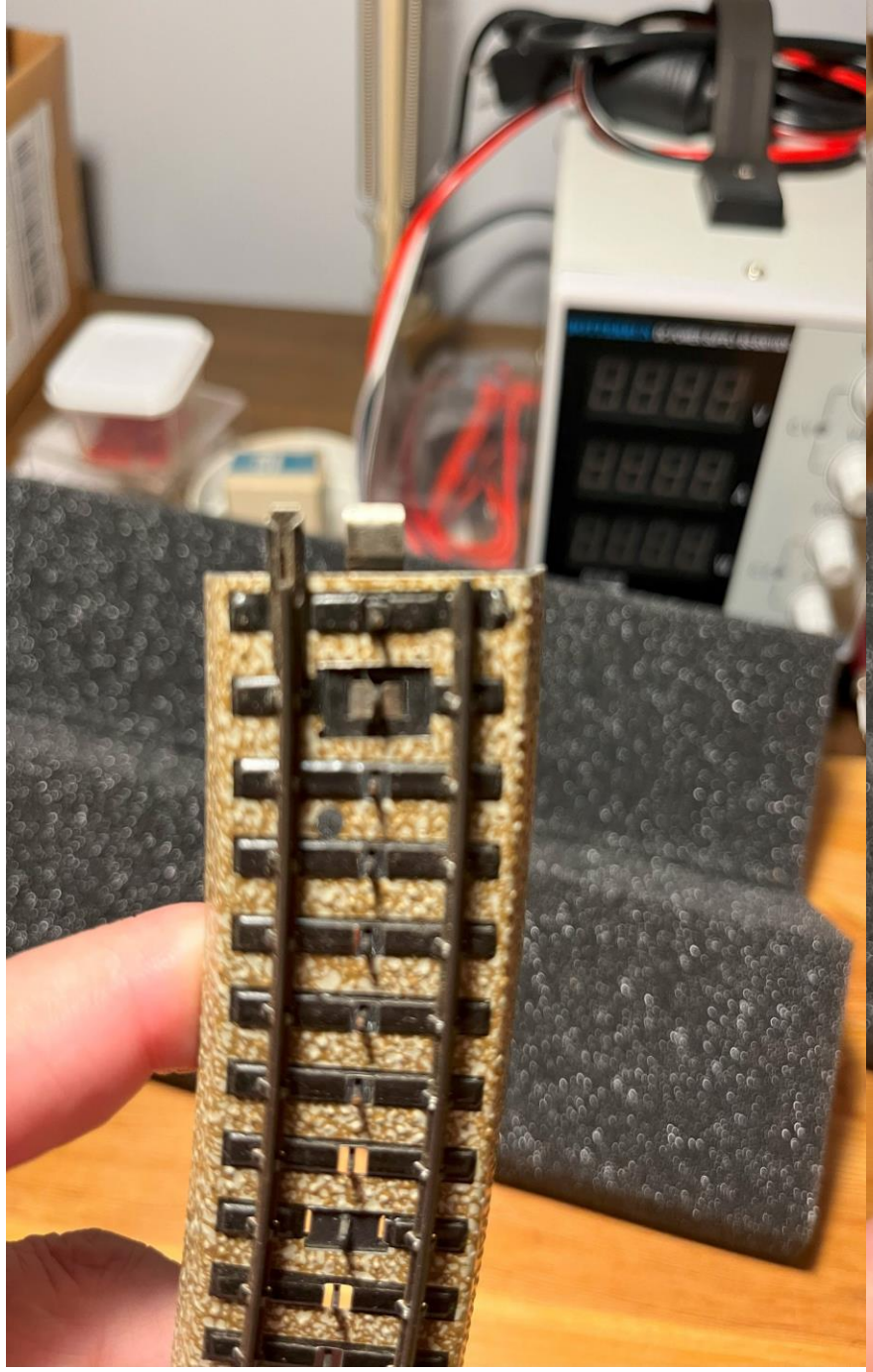
What is Marklin ?

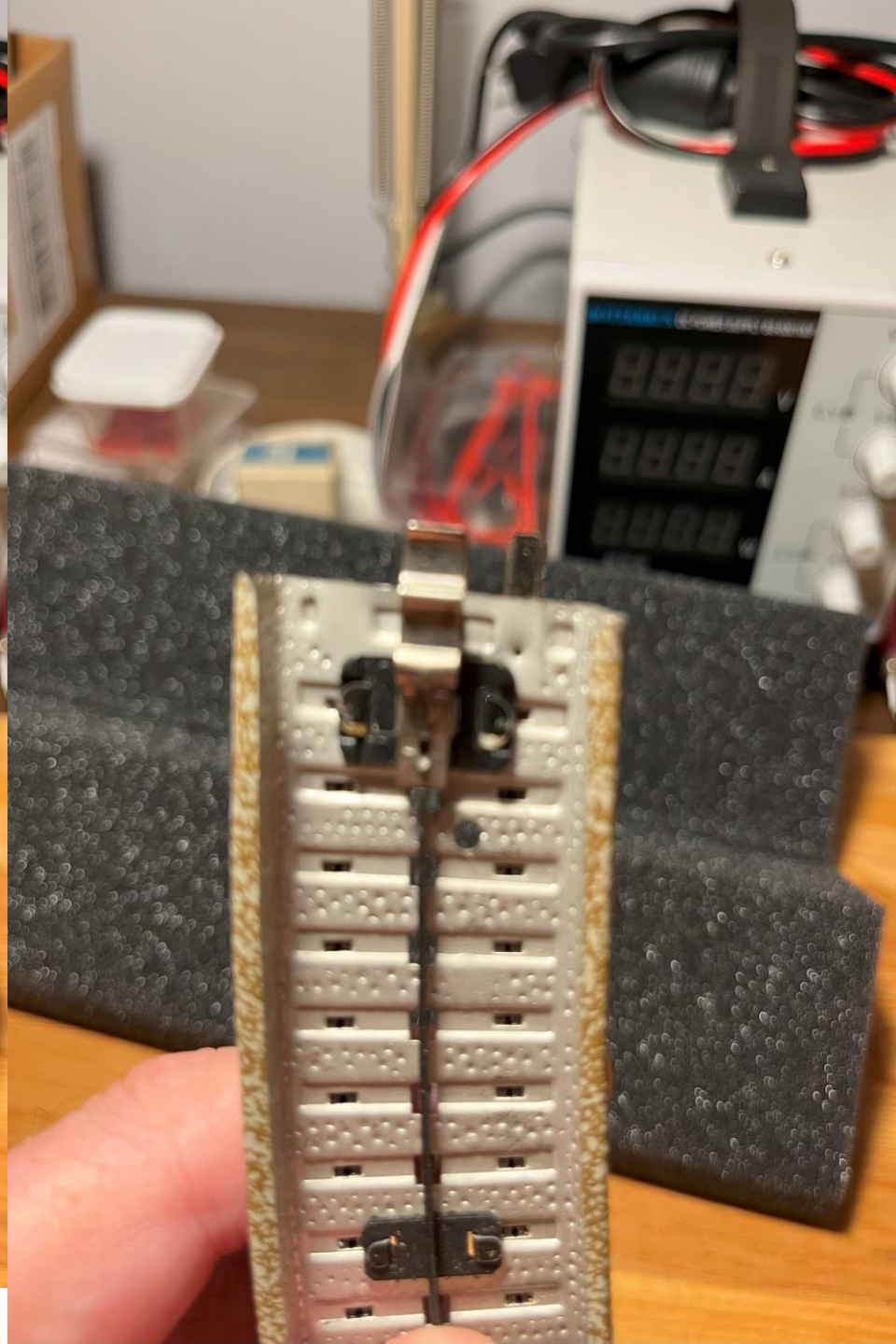
- A German toy company located in Goppingen, Baden-Württemberg, Germany.
- Founded in 1859
  - Family owned (Marklin, Friz and Safft)
  - 2006 - Kingsbridge Capital
  - 2013 - Simba Dickey Group
- Gebr. Marklin & Cie. GmbH
- A premier European model train manufacturer (50% market share in Germanic speaking countries)
- International scope
- Two factories (Germany, Hungary), one museum (Germany).
- Also owns Trix since 1997, LGB since 2007
- Other toys over the years: Doll houses, Wind up trains, Metal vehicles, Slot car racers, Meccano-Erector, Steam engines…

Marklin Trains

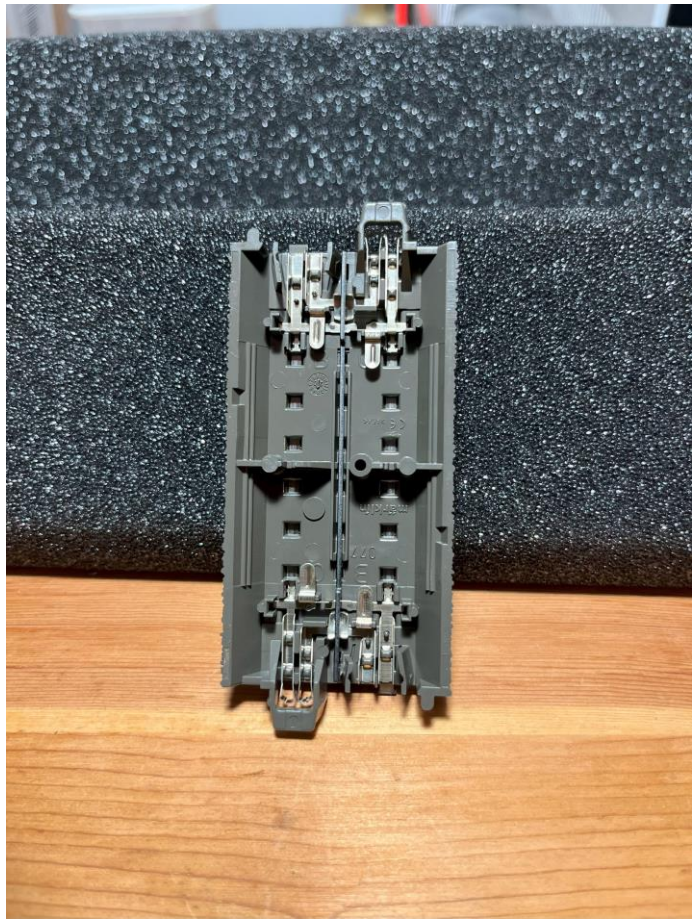
- Pioneered Gauge Standards: O, HO, Z (aka Mini-Club)
- Current Gauge offerings: Maxi 1(Marklin), HO(Marklin, Trix), Z(Marklin), G(LGB), N(Trix).
  - Gauge 1 is basically the same as Gauge G
- Standard Fare is 3-rail analog and digital.
- Originally Analog AC. Marklin engines that can run digital can still run AC analog
- Helped pioneered Digital control for HO(Marklin Digital, DCC)
- Offers complete system
  - Locos, & rolling stock
  - Controllers
  - Power – Switched mode transformers only for digital operation, and 32VA analog (1)
  - HO Track
    - “M” (Discontinued)
    - “C” and “K”, “C” has built-in ballast. “K” is rails and ties.
    - All are 3-rail.
  - Signals
  - Catenary

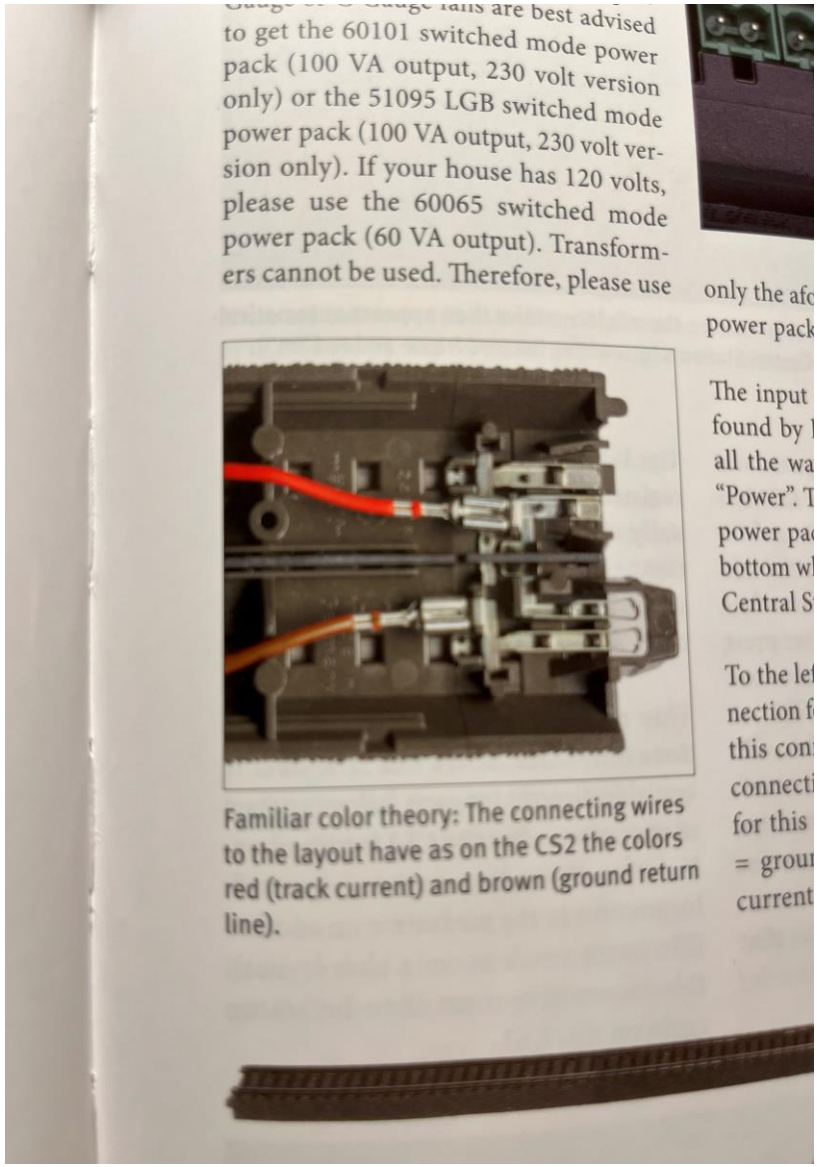
M Track





C Track

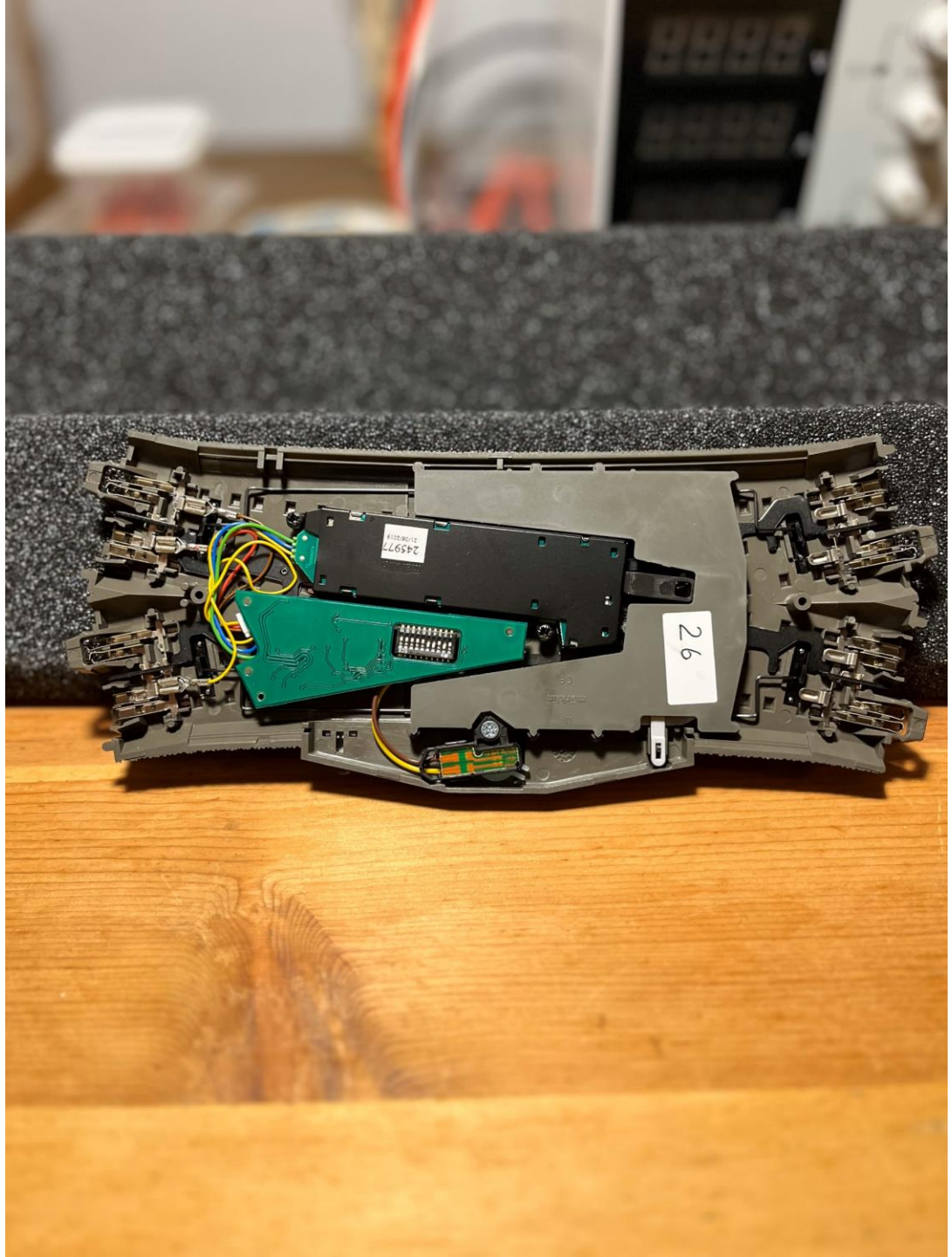




to get the 60101 switched mode power pack (100 VA output, 230 volt version only) or the 51095 LGB switched mode power pack (100 VA output, 230 volt version only). If your house has 120 volts, please use the 60065 switched mode power pack (60 VA output). Transformers cannot be used. Therefore, please use

Familiar color theory: The connecting wires to the layout have as on the CS2 the colors red (track current) and brown (ground return line).

Crossover



Switch

Signals


SURROUNDINGS
76471 Color Light Track Block Signal (for use in switching operation)
76472 Color Light Track Block Signal with a Pipe Mast (for use in switching operation)
76495 Color Light Home Signal with a Color Light Distant Signal (block signal, used on the road)
76496 Color Light Home Signal with a Color Light Distant Signal (exit signal)
76497 Color Light Home Signal with a Color Light Distant Signal (entry signal)
rview: the new generation of color light signals with distant signals (764xx). Built-in decoders included – ideal for digital operati
with generous space relation-
n the model scale, it is difficult
eve scale realism in the distance
n a distant signal and its home
A typical distance of 1,000 meters
ximately 3,250 feet results in the
1:87 in a distance of about 11.50
nately 37 feet. The cir-
he prototype too the
tance, offers a welcome alternative. We
need the following signals in order to
protect the line from Station A to B:
1. Exit Signal 76497
2. 2 Block Signals 76495
3. Entry Signal 76493
use for the setup for these signals
exit signal is a four-aspect signal
therefore in the position to show
different settings (Stop, Go, Go S
and Switching Permission). The
signals can show two different se
(Stop and Go). The entry signa
three-aspect signal (Stop, Go, a

Incompatibility with Other Manufacturers

- 3-rail(like Lionel)
  - Common outer rails
  - Isolated middle rail (tabs)
- Original power: Motors wired for analog AC only (field coils)
- Current digital controllers Capable of DCC or mFx, NOT ANALOG AC
- Analog Transformers for analog locos
- Complete conversion kits AC -> mFx, DCC
  - Does not include wheel kits to provide wheel isolation for DCC
- Many European Mfgs (Fleishmann, Roco, Lima, HAG,…) sell AC(3-rail) and DC(2-rail) versions. Other Mfgs(ESU, Lenz,…) sell compatible Decoders to convert analog to digital.

Loco/Rolling stock Styles

- Standard Steam, Diesel, Electric
- Every country has a unique style of older Locos.
- Rolling stock heavily standardized across German speaking countries
  - Germany, Austria, Switzerland
- Limited styles for other countries
  - Typically one-time or limited manufacturing runs
- One special locomotive item (for purchase) and rolling stock item (free for members) run per year for “Insider” club members.
- Special runs for Marklin dealers and other manufacture and service companies for advertisement.
- Locos and rolling stock split by Era of manufacture
  - Era I – 1835-1925
  - Era II – 1925-1945
  - Era III – 1945-1970
  - Era IV – 1970-1990
  - Era V – 1990-2006
  - Era VI – 2006 - present

Digital Control

- 1985 –Marklin Digital (Motorola) – 3-rail
  - Marklin first presented the new digital control system at the Nürnberg Toy Fair in 1979. The Motorola based system was officially introduced in 1985, developed by a relatively unknown electronics contractor with most components built by Märklin
  - Many upgrades
- 1986 – DCC (Marklin with Lenz, Arnold) – 2-rail
  - Bernd Lenz, would also work on the system producing locomotive decoders and, later, Märklin's first DC command control offering. This first DC offering was later developed into what is now known as Digital Command Control (DCC)

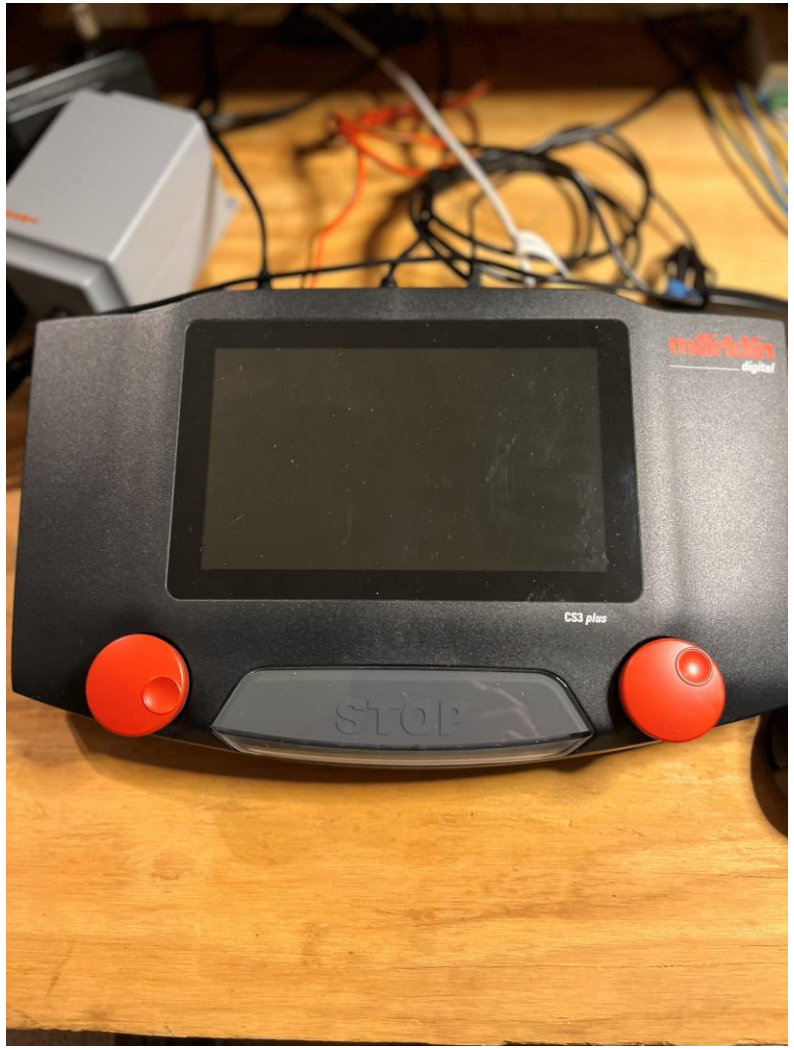
Digital Control (Continued)

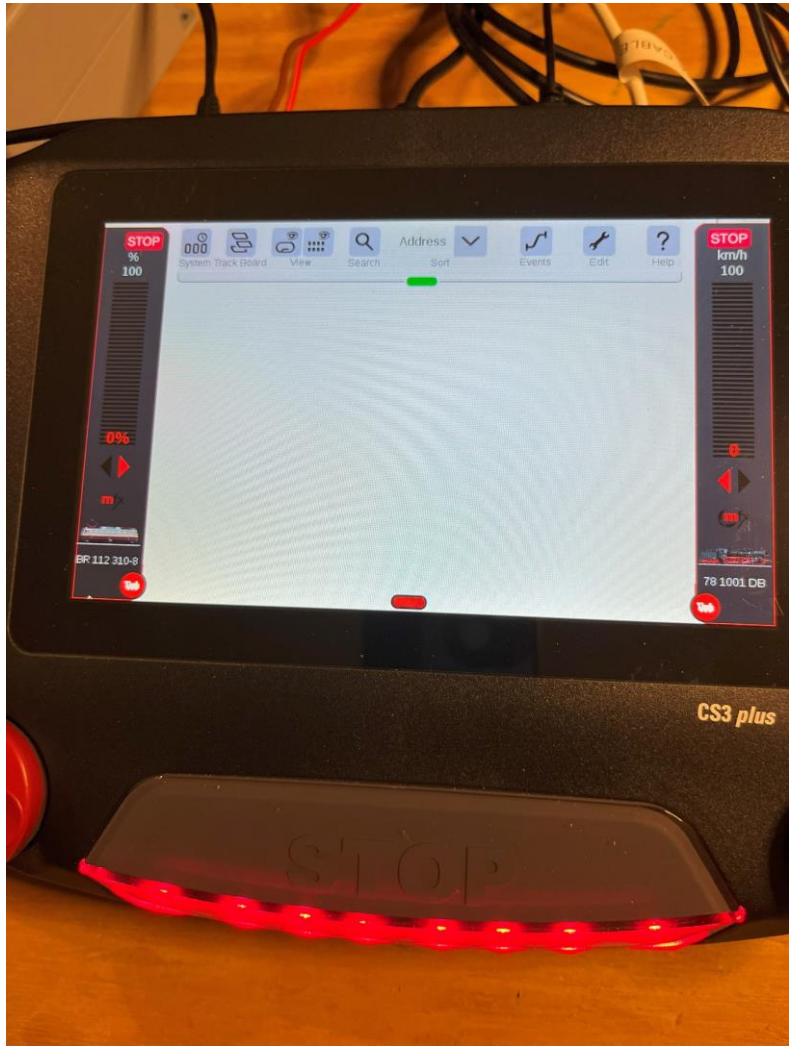
- Initial offering
  - Controllers
    - CS1
    - CS2
    - Delta(discontinued)
  - Limited specific functions
    - Lights
    - Couplers
    - Limited auxiliary
  - Decoders & Boosters
    - Loco
    - Accessory
    - Auto braking
    - Separate switch decoders
    - Separate feedback decoders

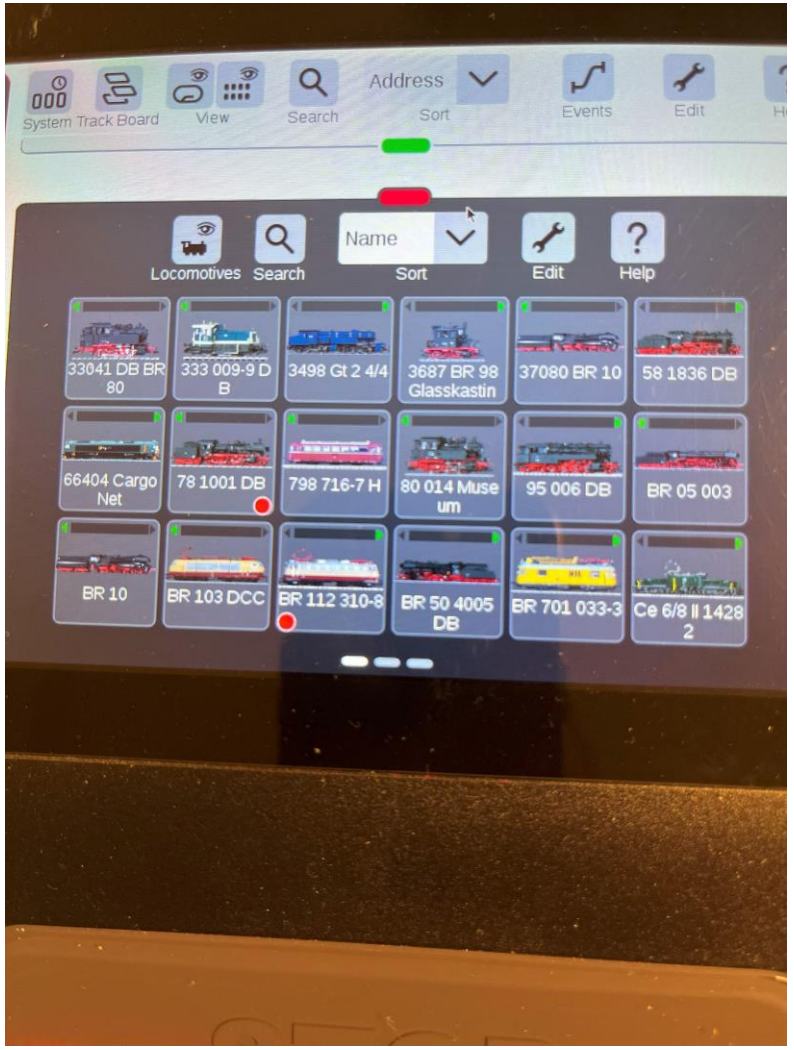
Marklin Digital - Early

CS2

CS3


märklin
digital
CS3 plus
STOP


STOP
%
100
0%
BR 112 310-8
STOP
km/h
100
78 1001 DB
CS3 plus
STOP


System Track Board
View
Search
Address
Sort
Events
Edit
Locomotives
Search
Name
Sort
Edit
Help
33041 DB BR 80
333 009-9 D B
3498 Gt 2 4/4
3687 BR 98 Glasskastin
37080 BR 10
58 1836 DB
66404 Cargo Net
78 1001 DB
798 716-7 H
80 014 Muse um
95 006 DB
BR 05 003
BR 10
BR 103 DCC
BR 112 310-8
BR 50 4005 DB
BR 701 033-3
Ce 6/8 II 1428 2

Digital Control (Continued)

- New
  - Decoders & Boosters
    - Functional (Separate from base increased number of functions)
    - Delta (discontinued)
    - mFx (command AND feedback) – Developed by ESU for Marklin
      - 65,000 controlled devices
      - cv parameters stored
      - Automatic operational parameters: Water, Pressure, Fuel, Fire state
      - Cab view
      - Mobile control station – Hand-held, Use in place of Central Station
      - Central control stations (upgrades in 2008, 2009, 2016)
      - Track layout views (Track route, Switches, Signals, Feedback sensors)
- With the exception of signals, track-based feedback, and power, exposed wiring is much reduced.

Mobile Controller - Old