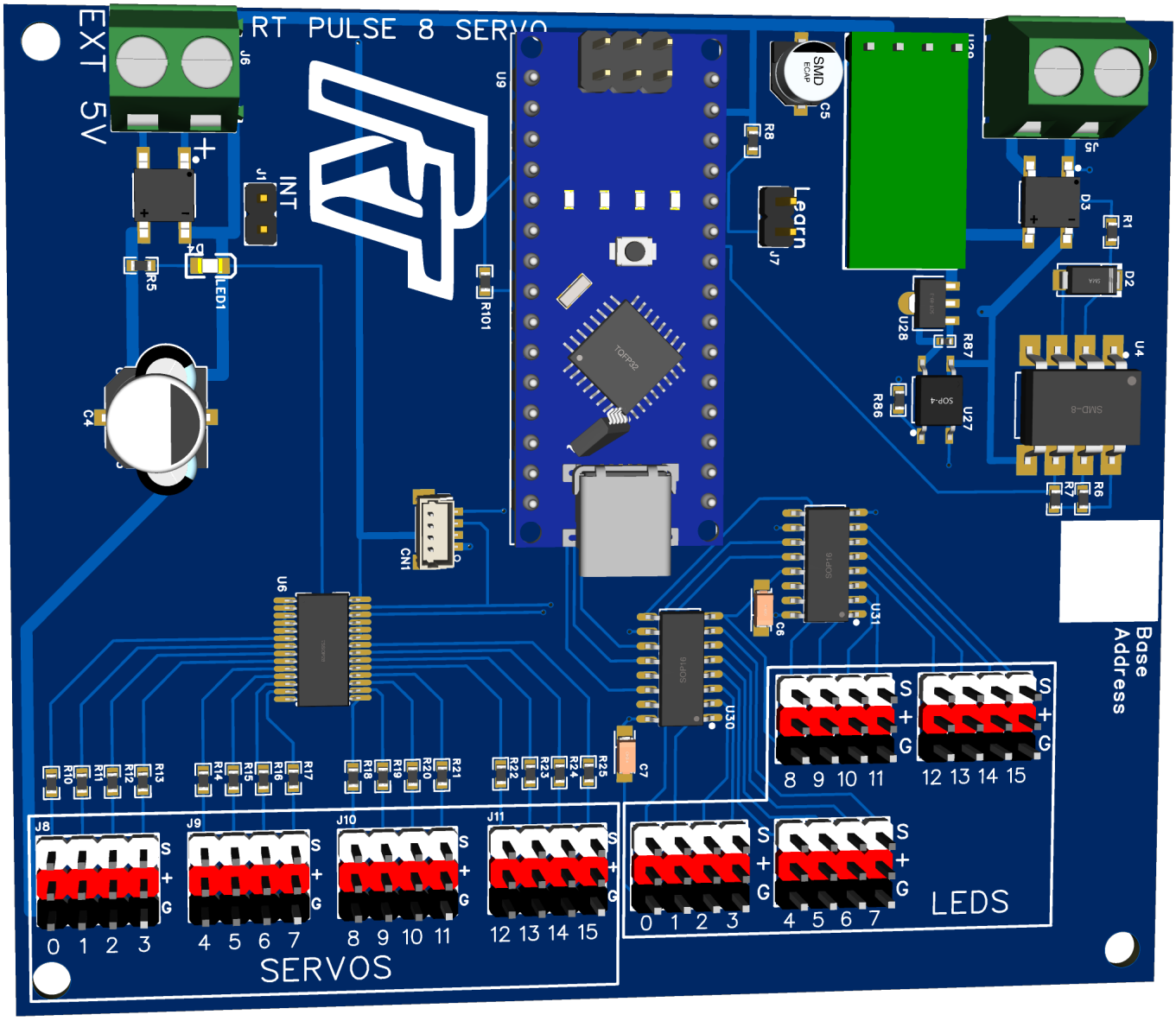
CONSTRUCTION MANUAL

Model Railroad DCC accessory decoder servo.



CONSTRUCTION MANUAL

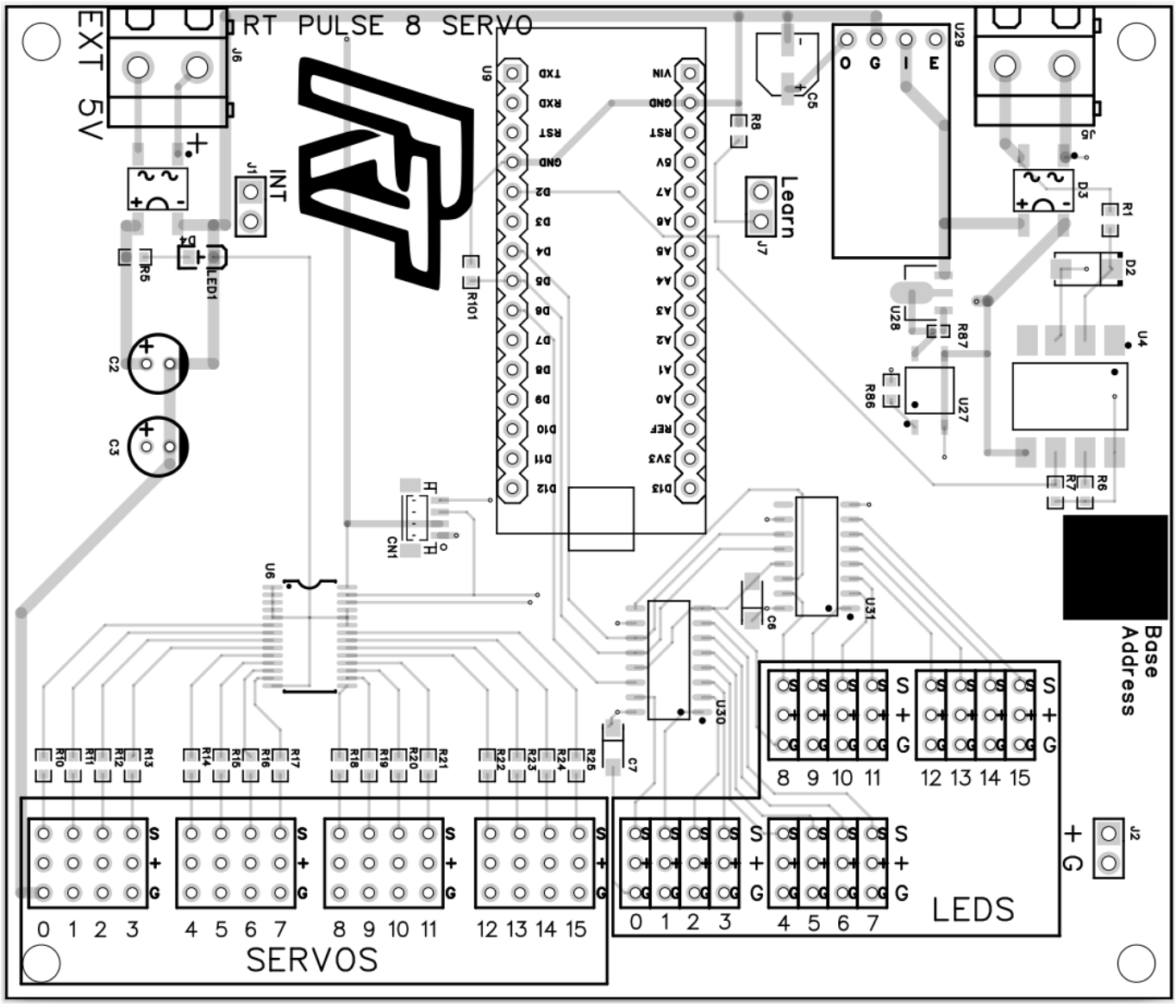
This board is a DCC accessory decoder. It is designed to control upto 16 servos.

This document describes the construction of the board.

The firmware is available here:

https://github.com/Rosscoetrain/DCC-Turnout-Decoder-Servo

Please read all this document before construction of the PCB.



Bill of Materials

PCB	RT PULSE 8 SERVO
SERVOS 0 - 15	3 way 2.54mm male header
LEDS 0 - 15	3 way 2.54mm male header
J5,J6	2 way 5.08mm screw terminal
J1,J7	2 way 2.54mm male header
U9	Arduino Nano 15 pin female headers x 2 for Arduino Nano *

If you want to use coloured headers for the servos and the leds, as in the main image. Then they are divided into groups of 4 way 2.54mm headers.

Construction of the board.

As with most PCB construction start with soldering in the lowest profile items first.

I suggest marking them of the list on the next page as you go.

Recommended soldering order:

		Done
LEDS 8 - 15	3 way 2.54mm headers or coloured as above	
LEDS 0 - 7	3 way 2.54mm headers or coloured as above	
SERVOS 8 - 15	3 way 2.54mm headers or coloured as above	
SERVOS 0 - 7	3 way 2.54mm headers or coloured as above	
J1	2 way 2.54mm header	
J7	2 way 2.54mm header	
U9	2 x 15 pin female headers for Arduino Nano	
J6 PWR IN	2 way 5.08mm (0.2”) screw terminal or pluggable terminal	
J5 DCC IN	2 way 5.08mm (0.2”) screw terminal or pluggable terminal	

Other information.

The Arduino Nano should be mounted into 15 pin female headers. If your Nano does not have male headers already installed then you will need to solder them on the underside of that as well.

Optional components.

C2 and C3 are for optional capacitors on the supply to the servos and leds. In most cases they are not needed.

They can be any 2.54mm pitch electrolytic capacitors of suitable voltage eg 100uF 16V.

Addendum

References.

PCB at Rosscoe Train store:

Servo accessory decoder firmware:

https://github.com/Rosscoetrain/DCC-Turnout-Decoder-Direct