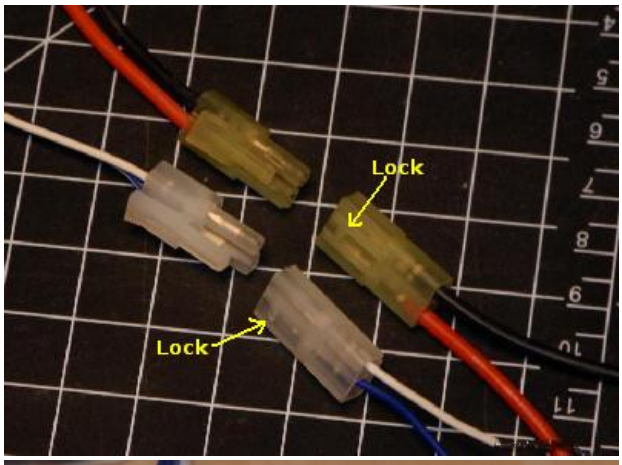
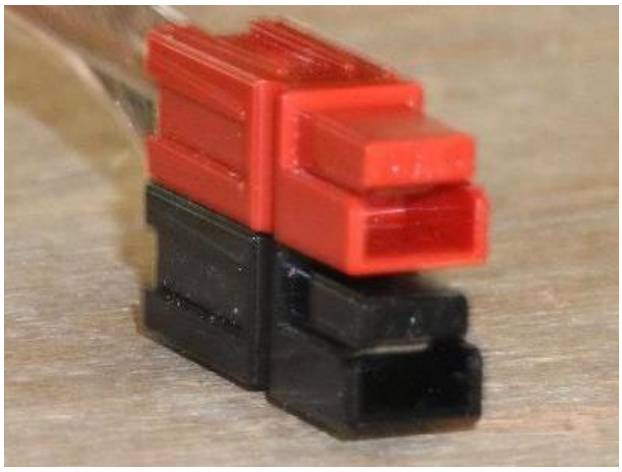
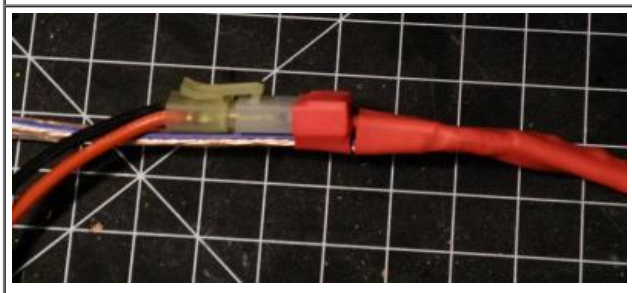
GRVS T-Trak Bus Lines

I initially thought that 12 gauge lamp cord was going to be reaily available. Boy was *I* mistaken! See below for new wire recommendations.

	Start with 12 or 14 gauge 2 conductor wire. Speaker wire can be found inexpensively.
	Note that one side of the cord has a blue line in this case. This side is the Power/Blue side. That obviously makes the other side the Neutral/White side. (other wire uses other indicators) Cut the cord into 16 foot lengths.
	Starting at 2 ft, strip a short section of each wire, offset as shown, every 4 feet. About 1/2 inch is more than enough.
 	The T-Trak connectors are relatively standard remote control connectors. They are called *mini Tamiya/Kyosho* connectors. The male plug (the power lead from the module) is the *Kyosho* The square female socket is the *Tamiya* Note that one lead is round and the other square. The square lead is the power lead. Verify that the power/blue wire is connected to the square side of the connector. If using the red/black wires from turnouts, the red wire is **not** connected to the square power lead. Also note the locking mechanism, esp. the lock tab on the *Tamiya*
	Size and strip the ends of the *Tamiya* connector.

	Optionally, attach the connector to the wire with shrink tube (5/8") or tape. Note the lock tab is on top and the power wires are properly oriented.
	Solder the wires.
	Shrink tube (5/8") or tape the connection. Use the appropriate color tape or tube. If using shrink tube on the wires, 3/8" works well.
	Add power Pole connectors to the ends, Red/Yellow/Blue to the Ridge/Power side. Connect them top to bottom, and verify that when the two ends of the bus are connected together the plug colors match.
	Plug in the module, or a 3-way, and you're ready to go.

GRVS T-Trak Bus Line components

- 16 ft, 14 AWG, 2 conductor wire (speaker seems most economical)
- 4 Tamiya connectors with 16/18 AWG wire (see below)
- 2 Black Powerpole connectors, 30amp
- 2 Colored Powerpole connectors, 30amp
  - Red for the outside DCC line.
  - Yellow for the inside DCC line.
  - Blue for the DC loop.
- Shrink tube to match the powerpoles.

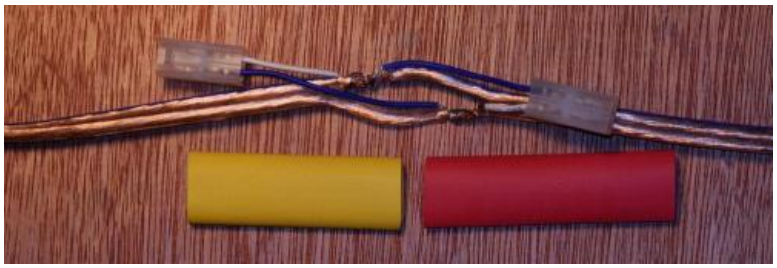
Using the colored PP and tube will give immediate feedback on which bus is which in case of problems. But if we come up short on a specific bus, any other color can be plugged in since all the buses are identical.

Personal Bus Lines

Make a single bus for home DCC use by splicing in 2 *Tamiya* connectors instead of one at each connection point. Of course you may make the buses any length you want with as many *Tamiya* connectors as desired. There is one difference that is quite important, though.

Add the outside track connectors normally. For the inside track, reverse the leads. This makes both *front* rails powered. In other words, the inside line is reversed from normal T-Trak design. This reversed phasing allows crossovers to work without problems. And since this is for your own personal home layout, this break from the standard is perfectly acceptable.

Be sure to correctly mark the connectors with shrink tube or colored tape.



Wire/Cable Prices – as of May 2013

The reason for 12 or 14 gauge wire is because the Powerpoles we use for NTrak will fit either gauge wire. We would have to buy two different sized Powerpole contacts if we went to a smaller gauge wire.

12 Gauge				
Dealer	**per Foot**	**#Feet**	**Total Cost**	**Type of Wire**
MyCableMart	**0.28**	250	69.90	speaker
MyCableMart	**0.30**	100	29.75	speaker
MyCableMart	**0.31**	50	15.69	speaker
Menards	**0.42**	100	41.87	low voltage
HomeDepot	**0.46**	200	91.00	low voltage
HomeDepot	**0.46**	50	23.10	low voltage
Menards	**0.50**	50	25.00	low voltage
Menards	**0.50**	50	25.00	low voltage
HomeDepot	**0.55**	100	54.60	low voltage
HomeDepot	**0.65**	1	0.65	landscape
powerwerx.com	**0.74**	100	74.37	zip
powerwerx.com	**0.80**	50	40.12	zip

14 Gauge				
MyCableMart	**0.19**	250	48.06	speaker
MyCableMart	**0.20**	100	19.50	speaker
MyCableMart	**0.21**	50	10.56	speaker
Menards	**0.30**	100	29.50	low voltage
Menards	**0.30**	50	15.00	low voltage
AxeMan	**0.33**	30	10.00	speaker
Acme	**0.44**	100	44.05	speaker
powerwerx.com	**0.49**	100	48.82	zip
powerwerx.com	**0.54**	50	26.77	
HomeDepot	**0.54**	1	0.54	zip
HomeDepot	**0.54**	1	0.54	landscape

Local Dealers			
My Cable Mart	6224 Bury Dr	Eden Prairie	952-486-8736
Acme **(AEI Electronic Center)**	6020 Highway 55 (at Douglas)	Golden Valley	763-543-2585

Connector Prices – as of May 2013

Unassembled Kit, add wire and crimp/solder

Individual Unassembled kit					
hobbyking	1.13	(10 pcs)	Tamiya Female Connector	AM-1023Bx10	.12 ea
hobbyking	1.39	(10 pcs)	Kyosho Male Connector	AM-1023A	.14 ea
maxxprod	1.50	(2 pcs)	Tamiya Connector	2917	.38 ea
maxxprod	1.50	(2 pcs)	Kyosho Connector	2914	.38 ea
onlybatterypacks	7.50	(10 pcs)	Tamiya Connectors	11015	.75 ea
onlybatterypacks	7.50	(10 pcs)	Kyosho Connectors	11014	.75 ea
onlybatterypacks	1.00	(each)	Tamiya Connector	10065	1.00 ea
onlybatterypacks	1.00	(each)	Kyosho Connector	10064	1.00 ea
Tamiya/Kyosho Unassembled sets					
tomsrc	8.45	(10 sets)	Tamiya set	tami0210x	.85 ea
tomsrc	4.95	(5 sets)	Tamiya set	tami025x	1.00 ea
Hub Hobby	1.50	(1 pair)	Tamiya set	---	1.50 ea
cermark	1.49	(1 pair)	Tamiya set	---	1.50 ea
maxxprod	1.50	(1 pair)	Tamiya set	2913	1.50 ea
Assembled with wires					
tomsrc	12.99	(5 pcs, 18awg)	Tamiya/Kyosho pair	tami03wf5	1.30 ea
tomsrc	2.69	(set, 18awg)	Tamiya/Kyosho pair	tami03w	1.35 ea
Hub Hobby	3.00	(set, 16awg)	Tamiya/Kyosho pair	---	1.50 ea
tomsrc	1.39	(each, 18awg)	Tamiya	trc-r08b	1.35 ea
Hub Hobby	1.50	(each, 16awg)	Tamiya	---	1.50 ea
maxxprod	3.00	(2 pcs)	Tamiya	2915	1.50 ea
onlybatterypacks	1.75	(each, 16awg)	Tamiya	11514	1.75 ea
tomsrc	1.39	(each, 18awg)	Kyosho	trc-r08a	1.35 ea
Hub Hobby	1.50	(each, 16awg)	Kyosho	---	1.50 ea
maxxprod	3.00	(2 pcs)	Kyosho	2916	1.50 ea
onlybatterypacks	1.75	(each, 16awg)	Kyosho	10750	1.75 ea

Note:

The wired assemblies above use a higher gauge wire than Kato uses. But, with careful web shopping, you can get the Kato extension cable (24-825) for under $3.00 ($2.45 was the lowest found, retail is $3.50). This would give you both T/K connectors plus a 28-30 inch blue/white wire for making additional jumpers, cables (using the unassembled T/K kits), and other cords. So, the use of the Kato extensions would be dependent on your personal preference of using Kato's 24awg vs 16/18awg.