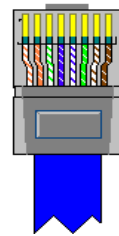


Making a standard Cat5 Ethernet Cable

- The Cat5 cable can be of any length. There is absolutely no loss of signal in this cable. Pick any routing that is easy but try to avoid attaching it to wiring bundles that may contain AC current. DC current will have no effect.
- Pick a location in the boat where you will mount the Power Injector. This should be in a place where it is easy to reach but yet out of the way.
- Should you need to cut the cable during installation, use the factory end of the cable at the antenna, follow these instructions and use standard RJ-45 connectors at the Power Injector end. You will have to borrow the proper crimping tool if you do not have one.
- Route the Cat5 cable to the Power Injector and cut the cable to length plus about two feet or a length that gives you room to work when attaching the RJ-45 plug to the end of the cable. Add a few inches so you have room to start over if you make a mistake.
- Now strip back about two inches of the outer jacket of the Cat5 cable.
- Untwist the individual wire pairs.
- Sort the wires to where they lay flat with the wire colors in the following order from Left to Right: **Orange/White, Orange, Green/White, Blue, Blue/White, Green, Brown/White, Brown.**
- Trim the wires to be equal length and ½ inch beyond the cable jacket.
- Pick up a RJ-45 plug and hold it with the bottom facing you and the clip facing away from you.
- Insert the wires in the RJ-45 plug as in the picture here.
- Double check, then triple check that the wires are in the correct order.
- Push the cable jacket so that the cable jacket is pushed into the plug.
- Use a proper RJ-45 Crimp tool to drive the knife pins into the wire.
- The completed plug should look similar to this picture.
- If you make a mistake cut the plug off and start over.



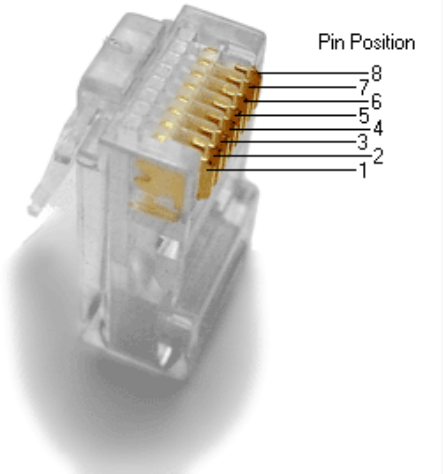
















Power to the radio is provided on the following wires:

- Pins 4 & 5 Blue and Blue White are Positive (+) 12VDC
- Pins 7 & 8 Brown and Brown White are Negative (-) Ground

Making a Power over Ethernet Crossover Cable

Installations in which power is mixed with data in the same cable require that the "non-data" pins (4, 5, 7 and 8) remain un-crossed. Follow the wiring color codes and pin assignments below when making up the RJ-45 plugs for a Crossover Cable

Pin	Connection 1			Connection 2			Pins on plug face
	signal	pair	color	signal	pair	color	
1	Data	3	 white/orange stripe	Data	2	 white/green stripe	
2	Data	3	 orange solid	Data	2	 green solid	
3	Data	2	 white/green stripe	Data	3	 white/orange stripe	
4	12 VDC Positive	1	 blue solid	12 VDC Positive	1	 blue solid	
5	12 VDC Positive	1	 white/blue stripe	12 VDC Positive	1	 white/blue stripe	
6	Data	2	 green solid	Data	3	 orange solid	
7	12 VDC Negative	4	 white/brown stripe	12 VDC Negative	4	 white/brown stripe	
8	12 VDC Negative	4	 brown solid	12 VDC Negative	4	 brown solid	

Making a Power Injector

1. You need to acquire the following parts and tools:
 - a. Two RJ-45 Jacks, preferably in two different colors. One should be RED the other any other color.
 - b. A two port surface mount RJ-45 Jack mounting box.
 - c. Approximately 5 feet of SOLID Cat5 cable.
 - d. A punch down tool to properly insert the wires into the RJ-45 Jacks
2. Cut off about a 6 inch piece of the Cat5 cable and remove the outer jacket exposing the four pair of twisted wires.
3. Insert the RJ-45 Jacks into the mounting box.

NOTE: *There are several different style of RJ-45 Jacks. All have color coded labels of which wire goes where. And there are two different color code standards, the "A" standard and the "B" standard. We will use the "B" standard.*

4. Take the short length of Orange Orange/White twisted pair wire and insert the wires according to the "B" color codes in both jacks making certain the wires remain twisted and are as short as reasonable possible and secure them with the punch down tool.
5. Next take the short length of Green Green/White twisted pair wire and insert the wires according to the "B" color codes in both jacks making certain the wires remain twisted and are as short as reasonable possible and secure them with the punch down tool.
6. Take the remaining length of your SOLID Cat5 Cable and strip back about 1 inch of the outer jacket and cut off the Orange Orange/White and the Green Green/White wires so that only the Blue Blue/White and the Brown Brown/white wires remain.
7. On the RED RJ-45 Jack and ONLY the RED RJ-45 Jack insert the Blue Blue/White and Brown Brown/White wires according to the "B" color code and secure them with the punch down tool and secure the Cat5 cable to the mounting box so it can not pull loose.
8. Strip back 3 inches of the outer jacket on the remaining end of the Cat5 cable and cut off the Orange Orange/White and the Green Green/White wires so that only the Blue Blue/White and the Brown Brown/white wires remain.
9. **TRIPPLE CHECK EVERYTHING.** *If you have made a mistake, start over. If any wires are reversed or in the wrong place it will damage your equipment.*
10. Power to the radio is provided on the following wires:
 - a. Blue and Blue White are Positive (+) 12VDC
 - b. Brown and Brown White are Negative (-) Ground

