



Sony 9 pin wiring & Patch Panels

When you have a combination of multiple machines and controllers then a Sony 9 pin patch is a sensible solution. Although a 9 pin switch can be used to select between two video machines this solution although fast and easy to use is limited. The most flexible solution is almost always a 9 pin Patch.

Using a 9 pin patch is almost the same as using an audio patch; you simply connect outputs to inputs. The only difference is that the 9 pin connector includes both send and return data, you can normally only connect one output to one input. This document includes connection data for standard 9 pin cables, Tx-Rx invert cables, parallel connections to multiple machines, and eavesdrop slaves.

Note it may be necessary to modify the line termination to run more than two machines or two eavesdrop slaves.

There are **multiple** common ways of implementing 9 pin patch panels

9 pin 'D' back to back female connectors on a rack panel (Recommended for Small Patch Panels Only)

The advantages of this approach are

- 1) Simplicity, use existing 9 pin cables to connect and ready made 9 pin patch cables
- 2) No conversion needed cables are one to one, you can also use **Tx-Rx** invert patch cables.
- 3) RS sell a 2U panel with multiple 9 pin cut outs.

The disadvantages are

- 1) Screw lock connectors, slow to use
- 2) Patch leads tangle easily because of screw locks

RJ45 patch panel (Recommended for Large Patch Panels)

The advantages of the RJ45 patch panels are

- 1) Ready made RJ45 normal and **Tx-Rx** invert cables are available
- 2) Simple quick latching connectors
- 3) RJ45-9pin 'D' conversion plugs easily available
- 4) Smaller than 9 pin 'D' connectors

The disadvantage of the RJ45 patch **panels** are

- 1) You have to make special cables from the patch to the machines
- 2) Connectors are less robust

Sub D 9 F with RJ-45

The advantages of this approach are

- 1) Simplicity, use existing 9 pin patch cables
- 2) Use of CAT 5 (E) cables.

The disadvantage of the RJ45 cables is

- 1) You have to make special connection on machine side (CAT-5E to SuB-D9M)

Connecting multiple Machines to a single Controller

It is possible to connect multiple machines to one output but in this case the return data is derived from once machine only.

Connections for Standard and Tx-Rx Invert Cables

T5.03 STANDARD SONY 9 PIN CABLE			
Controller Function	9 pin 'D' Male	9 pin 'D' Male	
Tx-	2	2	
Rx+	3	3	
Ground Tx	4	4	Screen
Ground Rx	6	6	Screen
Tx+	7	7	
Rx-	8	8	

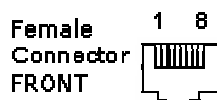
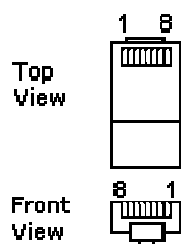
T5.04 TX-RX INVERT SONY 9 PIN CABLE			
Controller Function	9 pin 'D' Male	9 pin 'D' Male	
Tx-	2	8	
Rx+	3	7	
Ground Tx	4	4	Screen
Ground Rx	6	6	Screen
Tx+	7	3	
Rx-	8	2	

Connections to RJ45

T.05 9 pin 'D' to RJ45		
Controller Function	9 pin 'D' Male	RJ45
Tx-	2	2
Rx+	3	3
Ground	4	7
Ground	6	8
Tx+	7	1
Rx-	8	6

Controller to two machines

T5.06 CONTROLLER TO TWO MACHINES 9 PIN			
Controller Function	Controller	Machine 1	Machine 2
Tx-	2	2	2
Rx+	3	3	
Ground Tx	4	4	4
Ground Rx	6	6	6
Tx+	7	7	7
Rx-	8	8	



Eavesdrop Slave

T5.07 MACHINE TO TWO CONTROLLERS 2 ND AS EAVESDROP 9 PIN .			
Controller	Controller 1	Machine	Eavesdrop Controller
Tx-	2	2	
Rx+	3	3	3
Ground Tx	4	4	4
Ground Rx	6	6	6
Tx+	7	7	
Rx-	8	8	8

This allows a second controller to listen to the timecode and status data from a machine. Note if the main controller does not request this information then the second controller will not receive it!

Parallel Machine control and eavesdrop slave may be implemented as parallels on the patch.









Appendix: Category 5(e) (UTP) colour coding table

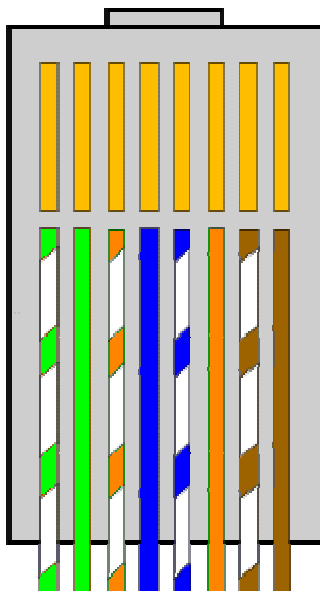
The following table shows the normal colour coding for category 5 cables (4 pair) based on the two standards supported by TIA/EIA

TIA/EIA 568A Wiring

1		White and Green
2		Green
3		White and Orange
4		Blue
5		White and Blue
6		Orange
7		White and Brown
8		Brown

TIA/EIA 568B Wiring

1		White and Orange
2		Orange
3		White and Green
4		Blue
5		White and Blue
6		Green
7		White and Brown
8		Brown



Note:

Hold the RJ45 connector with the 'clip' on the bottom and have the 'opening' (where you insert the cable) facing you.

Standard patch

In general, the patch cords that you use with your Ethernet connections are "straight-through", which means that pin 1 of the plug on one end is connected to pin 1 of the plug on the other end.

In this particular case it is not then important to wire them as shown.

Pin 1 is Pin 1 etc etc.

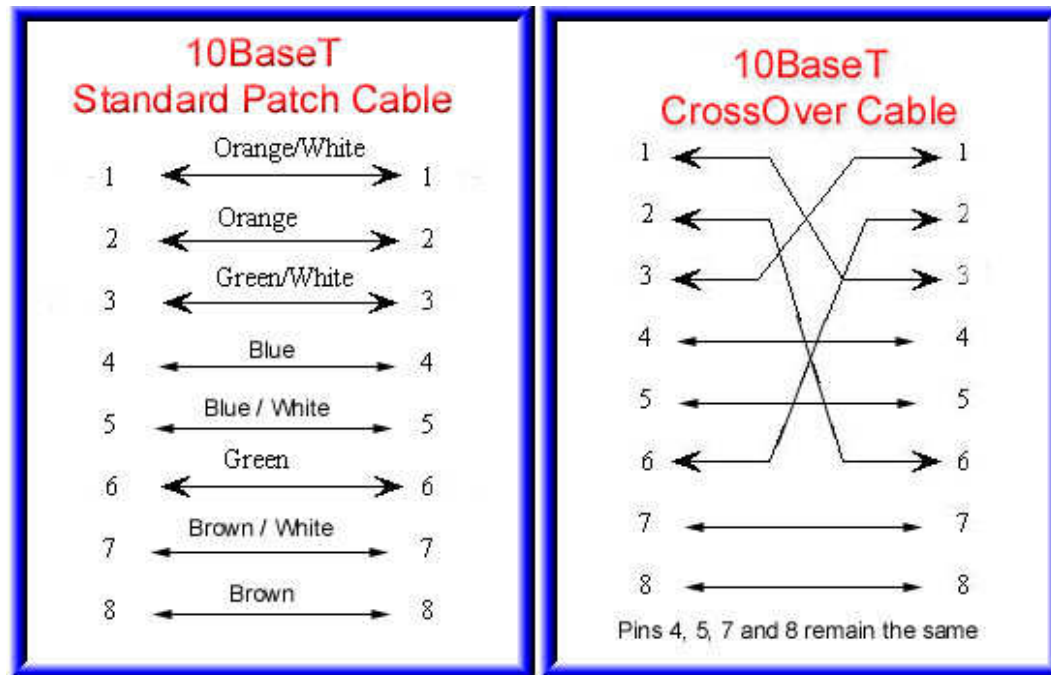
However for the sake of uniformity it may be best to wire your cables with the same colour sequence throughout.

Cross-over cable

Cross-Over cables are "crossed" end to end data cables aren't.

It helps for future reference to mark or attach a tag to the cross-over cable so that you do not attempt to use it as a 'normal' patch lead at some time in the future.

Pin No.	Wire Colour	Name
1	white and orange	Tx+
2	Orange	TX-
3	white and green	Rx+
4	Blue	+5v (POE)
5	Blue and White	+5v (POE)
6	Green	Rx-
7	Brown and White	Ground (POE)
8	Brown	Ground (POE)



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