

iRn IR Driver Interface

Hardware Reference



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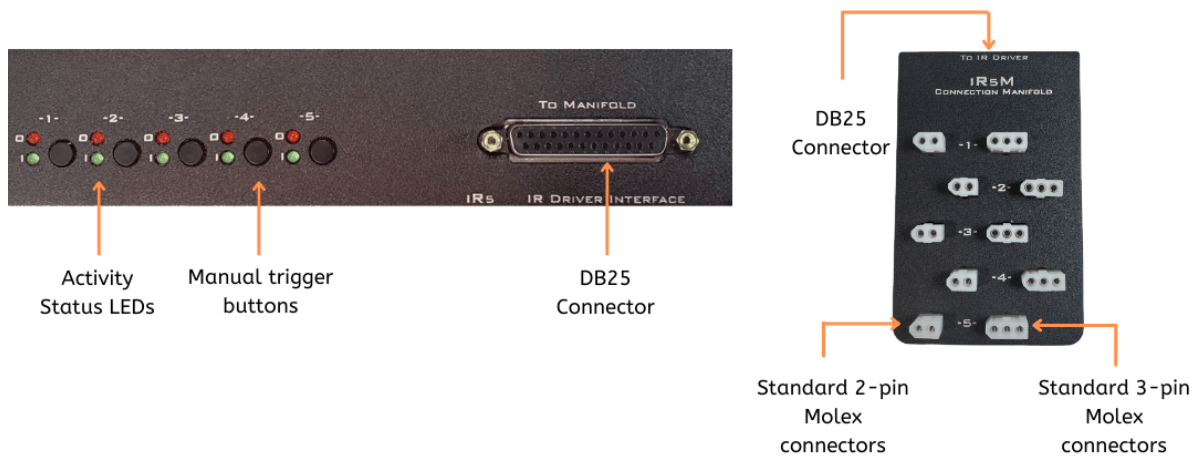
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iRn IR Driver Interface



The iR5/iR10 is a specialized interface for up to five or ten infrared sensor beams. This module has built-in power and logical connections to drive external IR sensors. It sends TTL events whenever the subject crosses the beam, without the need for any external signal processing.

- Manual trigger buttons for each IR port simplify testing and debugging
- Status lights for each IR beam monitor subject movement during sessions.

For information on software control of the iRn, see the [Synapse Manual](#).

Manifolds

The iRn connects to a manifold via a DB25 cable.



iR5M Molex Manifold



iR5m-RJ RJ22 Manifold

iRSD38

The iRSD38 is a 38kHz IR driver and sensor combination that connects to the iR5m-RJ / iR10m-RJ manifolds to form a beam break. The drivers have a red band around them and the sensors have a blue band. The modules have two mounting holes for flathead #4 screws. Standard cable length is 42".



iRSD38 Sensor and Driver

Output Power

The IR LED output power is adjustable through Synapse software configuration (1-8). This adjusts an in-line resistor value from 4 kOhm to 500 Ohm. Power output depends on this power setting and the voltage drop of the LED. The table below shows the supply current for a typical IR LED with a 1.4 V voltage drop.

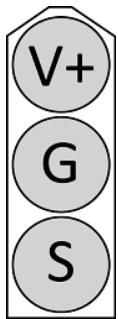
Setting	Supply Current (mA)
1	0.9
2	2.7
3	4.5
4	6.3
5	8.1
6	9.9
7	11.7
8	13.5

Sensor Input

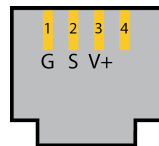
The sensor power output has a 10 ohm resistor in line. The output voltage changes with the current draw as follows:

Current Draw (mA)	Voltage
1	3.29
3	3.27
10	3.2
30	3
100	2.3
300	0.3

Receiver Pinout



iR5M / iR10M

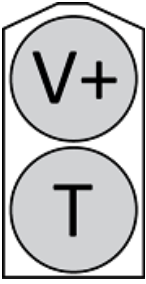


iR5m-RJ / iR10m-RJ

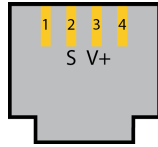
Pin	Name	Description
V+	Sensor power	+3.3 V with 10 Ohm in-line resistor
G	Ground	
S	Sensor	Sensor output

When the Sensor output is pulled low, it triggers the event.

Driver Pinout



iR5M / iR10M



iR5m-RJ / iR10m-RJ

Pin	Name	Description
V+	Driver voltage	+5 V output with a variable in-line resistor
T	Toggle line	Determines if power output is on