TDT iR5 IR Driver Interface Instructions

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TDT iR5 IR Driver Interface

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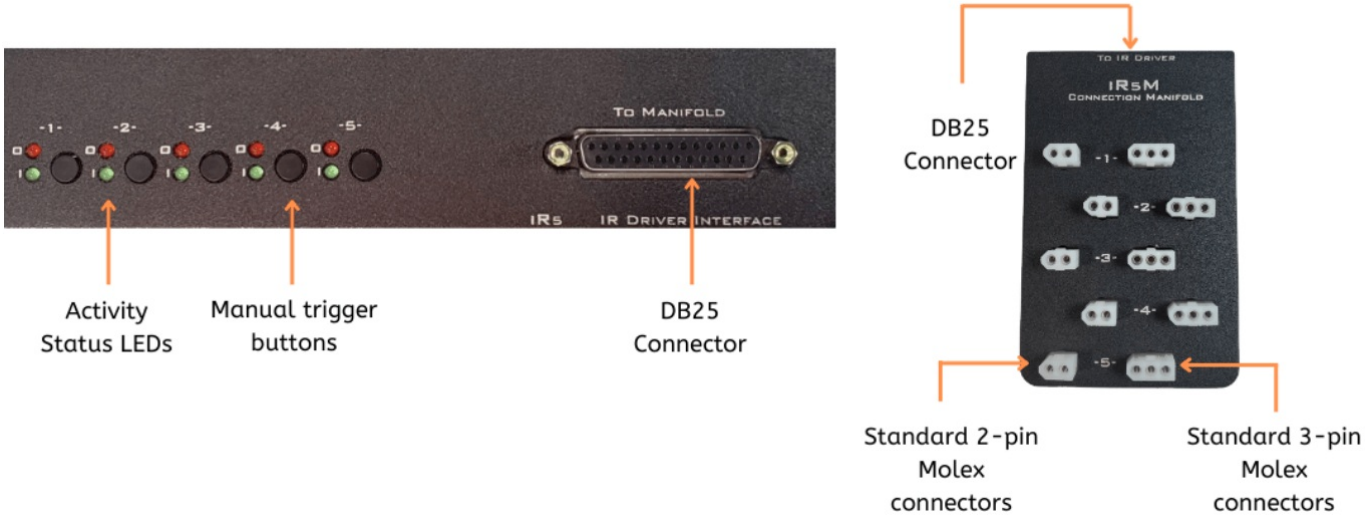
iRn IR Driver Interface



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 an IR driver and sensor 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. The 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.

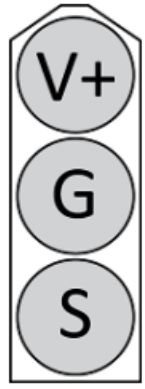
Setting	Supply Current (mA)
1	0.9
2	2.7
3	4.5
4	6.3
5	8.1
6	9.9
7	11.7
8	13.5

Sensor Input

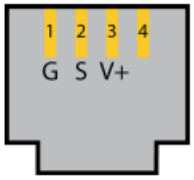
The sensor power output has a 10-ohm resistor in line. The output voltage changes with the current draw is as follows:

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

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



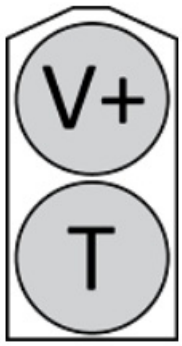
iR5M / iR10M



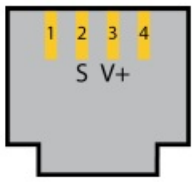
iR5m-RJ / iR10m-RJ

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

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

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Documents / Resources

	TDT iR5 IR Driver Interface [pdf] Instructions iR5, iR10, iR5 IR Driver Interface, IR Driver Interface, Driver Interface, Interface

References

- Welcome - TDT Knowledge Hub
- iRn - Synapse Manual

- **User Manual**