

# Tilta Nucleus M

**The Tilta Nucleus Core supports control of Tilta Nucleus-M motors via a wired connection.**

It operates through a USB-to-UART (TTL) converter. We have tested it using this converter in 3.3V mode:

<https://www.waveshare.com/usb-to-ttl-d.htm>

Other converters may work, but we cannot guarantee their compatibility. **Please ensure you use a 3.3V serial connection only.**

A custom cable is required to connect to the 7-pin LEMO connectors on the camera. This cable can be designed to provide both power and control, or control only.

## Pin-outs

Note: All pin-outs for camera interfaces appear as seen by the user.



### EXT-1/EXT-2

Connector ID: LEMO EEG.0B.307

PIN	SIGNAL	DESCRIPTION
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### DIRECTION

1	7.2 to 24 Volts DC	Power to the Nucleus-M Motor and batteries	In/Out
2	7.2 to 24 Volts DC	Power to the Nucleus-M Motor and batteries	In/Out
3	TTL Rx	TTL receive	In
4	+5.0V	5 Volt (200 mA Max)	Out
5	GROUND	Common ground	N/A
6	TTL Tx	TTL transmit	Out
7	GROUND	Common ground	N/A

The 7-pin 0B LEMO connector accepts DC input power from 7.2 V DC to 24 V DC. A built-in power conditioner protects against reverse-polarity connections.

When the voltage is lower than 12v, the MDR torque is smaller. The speed becomes slower; when it is higher than 18v, the torque is larger, the speed becomes higher, but the current becomes larger, but the safety of MDR at high voltage is at risk. The recommended voltage for the interface is 14.8V.

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