



Schematic Notes:

Part Notes:

JTAG Header: CONN_10X2
20 Position Header Connector Through Hole
<https://www.digikey.com/en/products/detail/sullins-connector-solutions/PPPC102LFBN-RC/807245>

Board Connectors: 5530843-6
56 Position Female Connector Non Specified - Dual Edge Gold 0.100 in (2.54mm) Black
<https://www.digikey.com/product-detail/en/te-connectivity-amp-connectors/5530843-6/A31719-ND/770545>

Torpedo Connector: 0039301080
Connector Header Through Hole, Right Angle 8 position 0.165" (4.20mm) con-molex minifit jr.
<https://www.digikey.com/product-detail/en/molex/0039301080/WM1354-ND/561081>

Marker Dropper, Claw, Power Input Connectors: 0026013115
Connector Header Through Hole, Right Angle 4 position 0.165" (4.20mm) con-molex minifit jr.
<https://www.digikey.com/products/en?keywords=26013115>

DC/DC Converter: TMR6-2415
Isolated Module DC DC Converter 1 Output 24V 250mA 9V - 36V
<https://www.digikey.com/product-detail/en/traco-power/TMR-6-2415WIR/1951-2017-ND/9383494>

ARM Cortex Microcontroller: STM32F405RGT6
ARM Cortex-M4 STM32F4 Microcontroller IC 32-Bit 168Hz 1MB (1Mx8) Flash 64-LQFP (10x10)
<https://www.digikey.com/product-detail/en/stmicroelectronics/STM32F405RGT6/497-11767-ND/2754208>

N-Channel Mosfet: MOSFET-NCH-AO3404A
N-Channel 30V 5.8A (Ta) 1.4W (Ta) Surface Mount SOT-23-3L
<https://www.digikey.com/product-detail/en/alpha-omega-semiconductor-inc/AO3404A/785-1004-2-ND/1855776>

P-Channel PowerTrench MOSFET: FDD4141TO252
P-Channel 40V 10.8A (Ta) 50A (Tc) 2.4W (Ta) 69W (Tc) Surface Mount D-PAK (TO 252AA)
<https://www.digikey.com/product-detail/en/on-semiconductor/FDD4141/FDD4141TR-ND/1658354>

VBUS Converter: LM1117IMPX-3.3/NOPB
IC REG LIN 3.3V 800mA SOT223-4
<https://www.digikey.com/en/products/detail/texas-instruments/LM1117IMPX-3.3-NOPB/3440160>

Crystal Oscillator Capacitors:
CRYSTAL-SMD 32.7680KHZ 6PF 3.2X1.5MM
<https://www.digikey.com/en/products/detail/micro-crystal-ag/CM7V-T1A-32-768KHZ-6PF-20PPM-TA-QC/10499118>
CRYSTAL-16MHZPTH-HC49US (CRYSTAL-16MHZ)
<https://www.digikey.com/en/products/detail/abracon-llc/ABM3B-16-000MHZ-B2-T/675317?&N=4ligTCBcDaIKwGY4FoCcBGMZnuQQQBEQBdAXyA>

ERZ-VF2M270 Varistor
VARISTOR 27V 125A 2SMD JLEAD
<https://www.digikey.com/en/products/detail/panasonic-electronic-components/ERZ-VF2M270/672899>

3550120RJT Resistor
RES 3550 120 Ohm 5% 5W
<https://www.digikey.com/en/products/detail/te-connectivity-passive-product/3550120RJT/9927251>

DRV8816PWPR Motor Driver
IC MOTOR DRIVER 8V-38V 16HTSSOP
<https://www.digikey.com/en/products/detail/texas-instruments/DRV8816PWPR/4439658>

25TZV100M6.3X8 Electrolytic Capacitor
CAP ALUM 100UF 20% 25V SMD
<https://www.digikey.com/en/products/detail/rubycon/25TZV100M6-3X8/3134865>

UVK1E223MRD 22mF Capacitor
CAP ALUM 22000UF 20% 25V RADIAL
<https://www.digikey.com/en/products/detail/nichicon/UVK1E223MRD/2539394>

Additional Standard Components:

- Resistors
- Capacitors
- Polarized Capacitors
- LEDs
- Suppressor Diodes
- Switch

Administrative Notes:

Board Name: Titan Acuator
Schematic Creation: 09/2020
Schematic Designer(s):
Dylan Trainor, Tanner Lapp
Electrical Lead: Phillip Barker



Underwater Robotics
Team
Ohio State University

Electrical Team	
Actuator	
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