AtlasScientific™
Environmental Robotics

Gen 2 Electrically Isolated USB EZO™ Carrier Board

The Gen 2 Electrically Isolated USB EZO™ Carrier Board Allows you to connect your Atlas Scientific circuit directly to your computer or Raspberry Pi, using standard USB drivers (for an FTDI device). Built in isolation ensures that your circuit will be protected from interference, ground loops, and harmful voltages.
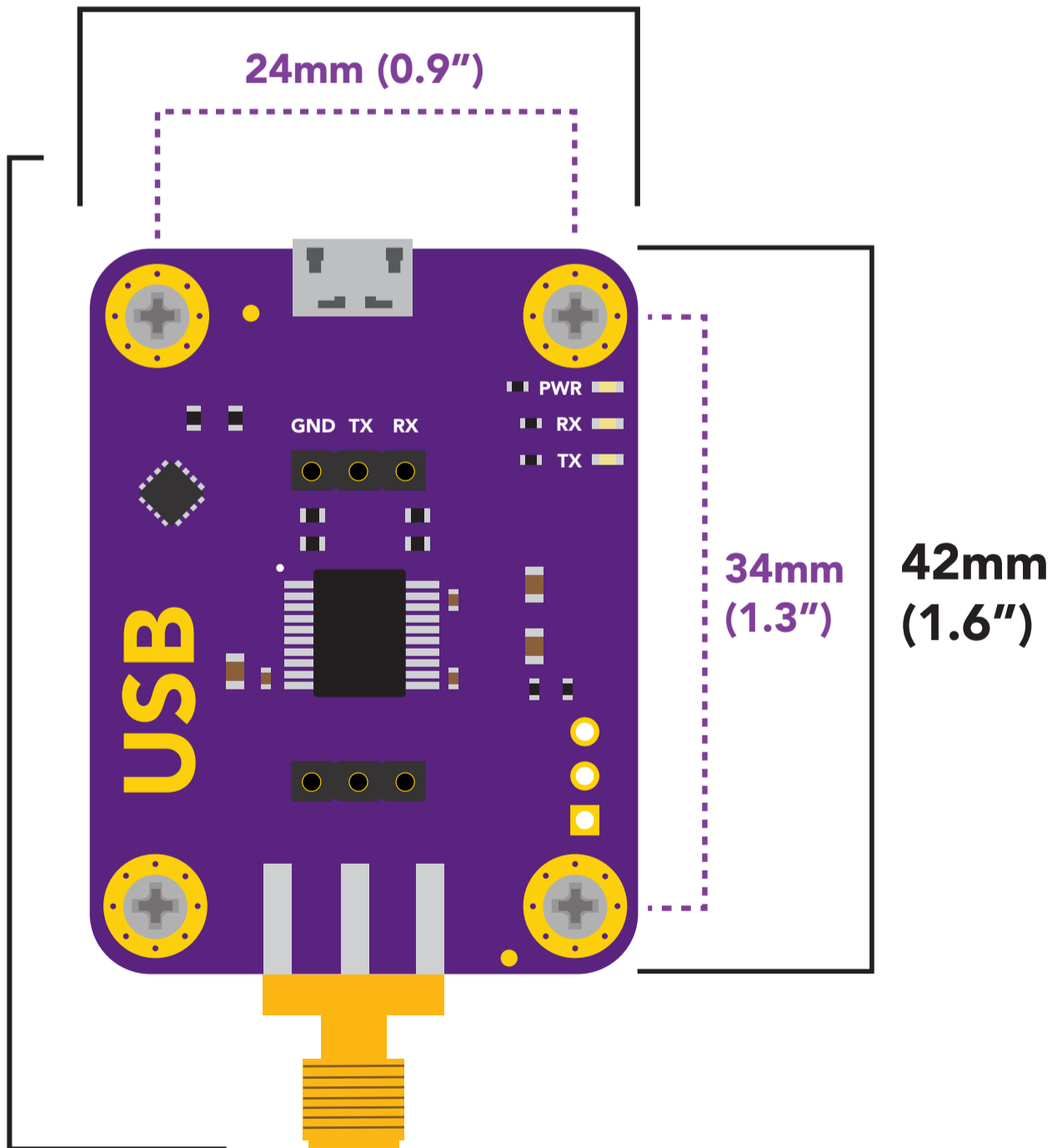
Power consumption

Circuit	5V
No Load	17mA
EZO™ pH	54mA
EZO™ ORP	54mA
EZO™ Dissolved Oxygen	52mA
EZO™ Conductivity	78mA
EZO™ Temperature	52mA
EZO™ Flow Totalizer	52mA

32mm (1.2")

24mm (0.9")

56.2mm (2.2")

34mm (1.3")

42mm (1.6")

GND TX RX

PWR
RX
TX

USB

AtlasScientific™
Environmental Robotics

Female SMA

9.3mm
(0.36")

22.3mm
(0.8")

11mm (0.4")

6.2mm Ø (1/4") 36UNS-2B
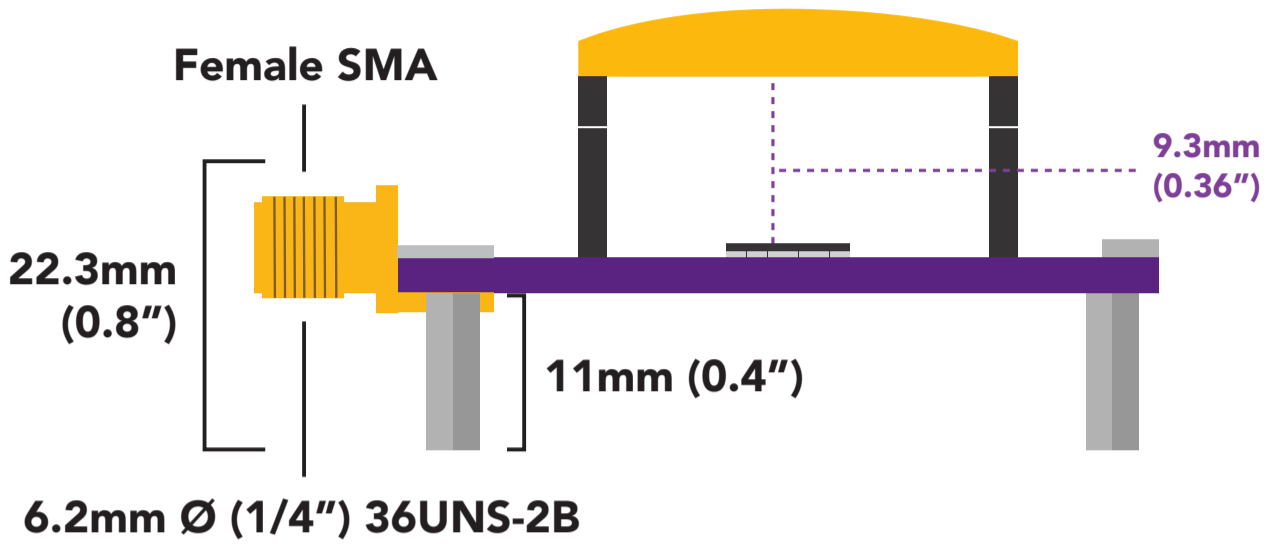
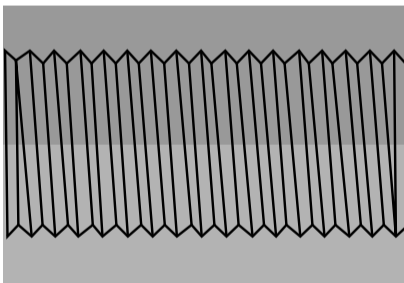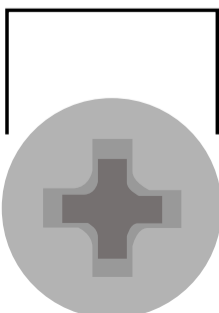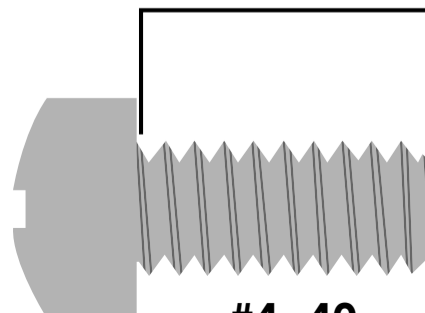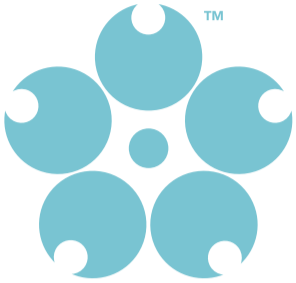# Standoffs
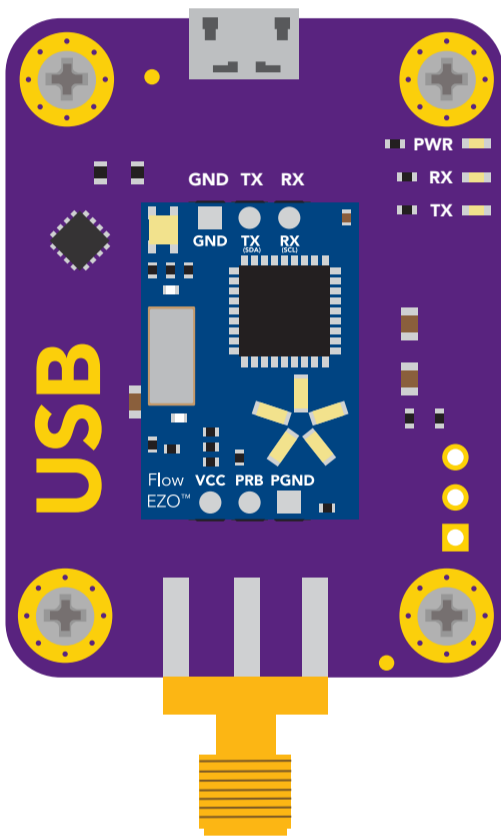
4.75mm
(0.1")

#4–40

11mm (0.43")

Screws

4.6mm
(0.183")

6.35mm
(0.25")

2.8mm
(0.112")

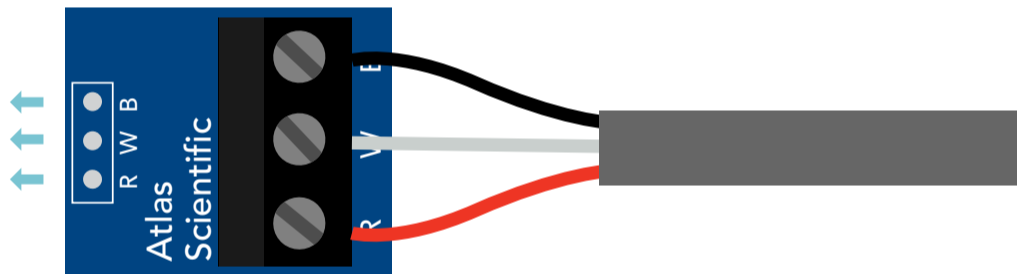#4–40

Proper setup for use with the EZO™ Universal Flow Meter Totalizer
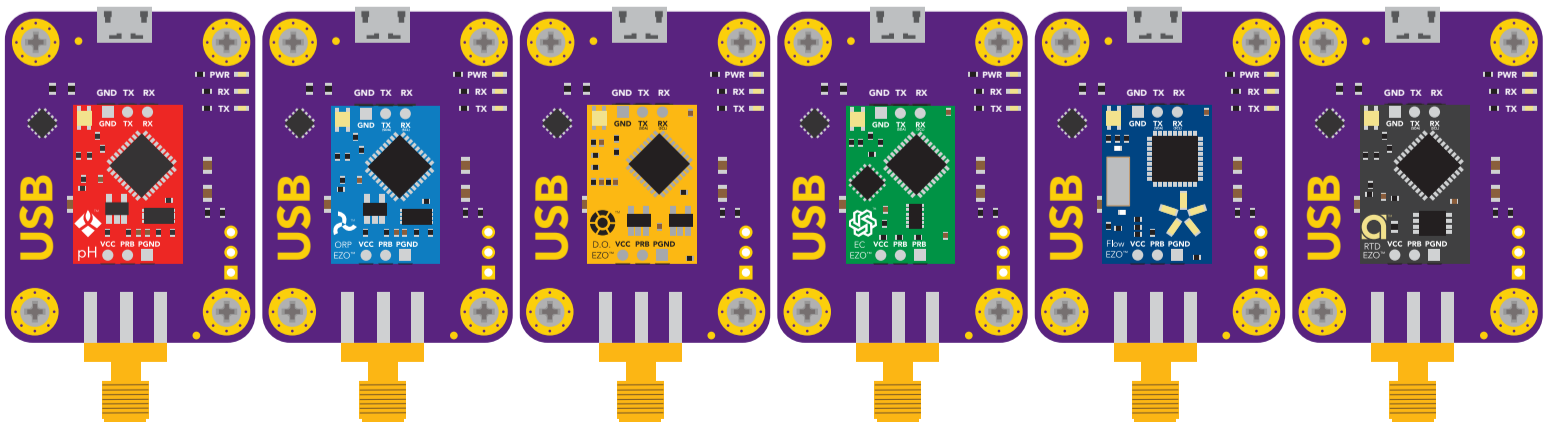

Connect Flow breakout board to the carrier board.

The Gen 2 Electrically Isolated USB EZO™ Carrier Board works with all EZO™ class devices.

The Gen 2 Electrically Isolated USB EZO™ Carrier Board does not come with EZO™ class devices.

AtlasScientific™
Environmental Robotics

This schematic shows exactly how we isolate data and power using the and a few passive components. The ADM3260 can output isolated power up to 150 mW and incorporates two bidirectional data channels.

This technology works by using tiny transformers to induce the voltage across an air gap. PCB layout requires special attention for EMI/EMC and RF Control, having proper ground planes and keeping the capacitors as close to the chip as possible are crucial for proper performance. The two data channels have a 4.7kΩ pull up resistor on both the isolated and non-isolated lines (R1, R2, R3, and R4) The output voltage is set using a voltage divider (R5, R6, and R7) this produces a voltage of 3.9V regardless of your input voltage.

Isolated ground is different from non-isolated ground, these two lines should not be connected together.

VCC = 3.0v – 5.5v

Non-isolated

Isolated

ADM3260

VDDP | VDDISO
VIN | VISO
| VSEL
RX2 | RX1
TX2 | TX1
NC | NC
GNDP
GNDP | GNDISO
GNDP | GNDISO
GNDP | GNDISO
PDIS | GNDISO

USB — D+ D− GND
FTDI USB converter
EZO Circuit — VCC, RX/SCL, TX/SDA, NC, GND

R1 4.7K, R2 4.7K, R3 4.7K, R4 4.7K, R5 1.5K, R6 1.5K, R7 1.5K
C1 0.1uf, C4 10uF, C3 0.1uF, C2 0.1uF, C6 10uF, C5 10uF

MCU — Computer
USB Isolator
EZO™ circuit