

Maka Niu Specifications & Capabilities

Maka Niu is a low-cost, low-logistics oceanographic imaging and sensor system that enables the exploration of deep ocean environments. Based on off-the-shelf single-board computers and readily available microprocessors, Maka Niu is inexpensive to produce, easy to program, and simple to use.

General Specifications

Depth Rating | 1,500 m

Dimensions | L:261 x W:66 x H:76 mm

Weight | 870 grams in air, -120 g in water

Power | 12V, 40-120 mA

Duration | 25-90 hours

Imaging

Camera | Raspberry Pi Zero W

Video | 1920 x 1080 HD video at 30 fps

Still Imaging | 2592 x 1944 pixels

Timelapse | Programmable time lapse rate

Burst | 2 photos per second

Environmental Sensing

Environmental Sensor | Keller Series 7LD Temperature and Pressure Sensor

Pressure | Operating range 3 to 200 bar/30 to 2,000 meters $\pm 0.15\%$ Full Scale

Temperature | Operating range -40 to 110°C $\pm 2^\circ\text{C}$

Telemetry

GPS | Sierra Wireless AirPrime XM1110 GNSS GPS receiver

Sensitivity | -165 dBm

Update Rate | 1 Hz (up to 10 Hz)

User Interface and Data Management

Wi-Fi | Custom Wi-Fi connectivity for mobile devices

Mission Programming | Easy to use, custom mission programming interface

On-board Data Storage | Samsung EVO 128GB micro SD card

Data Management | Direct upload to Tator Video and Image Annotator

Power Charging | Wireless charging cradle. 100-220V ~50/60hz input. 12V/2A output

