

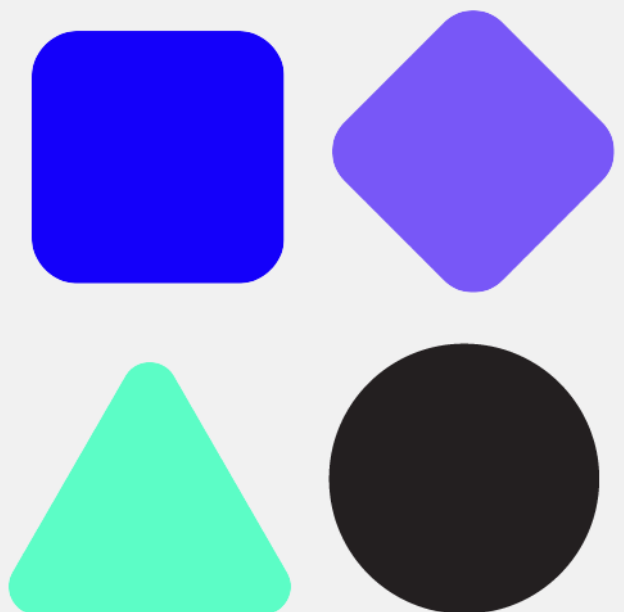


mistywest

MistyCarrier Board Product Brief

MW-V2L-G2L-I-WWB-V0

Last Updated: Feb 14 2023



Overview

The *MistyCarrier* board (MW-V2L-G2L-I-WWB-V0) is built as an accessory to *MistySOM-G2L* (MW-V2L-E32G-D2G-I-WX-V0) and *MistySOM-V2L* (MW-G2L-E32G-D2G-I-WX-V0) in order to provide a platform that allows easy accessibility to a variety of interfaces.

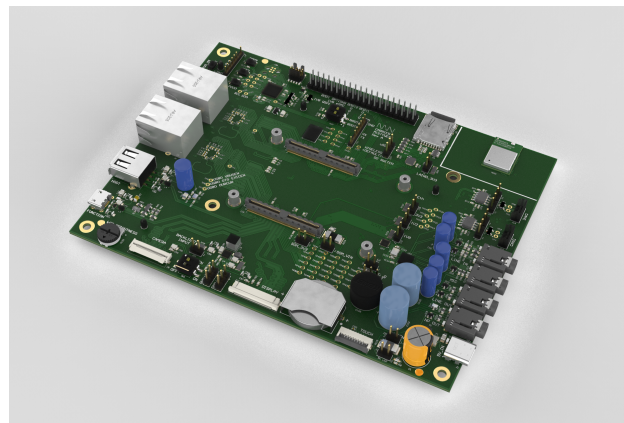
The *MistyCarrier* board enables a simple, quick and cost effective way to start development of customized solutions without taking risks associated with the spin-up of tailor-made development platforms. Designed with low power in mind, it includes sense resistors for measuring system currents and jumpers to disable interfaces.

Key Features

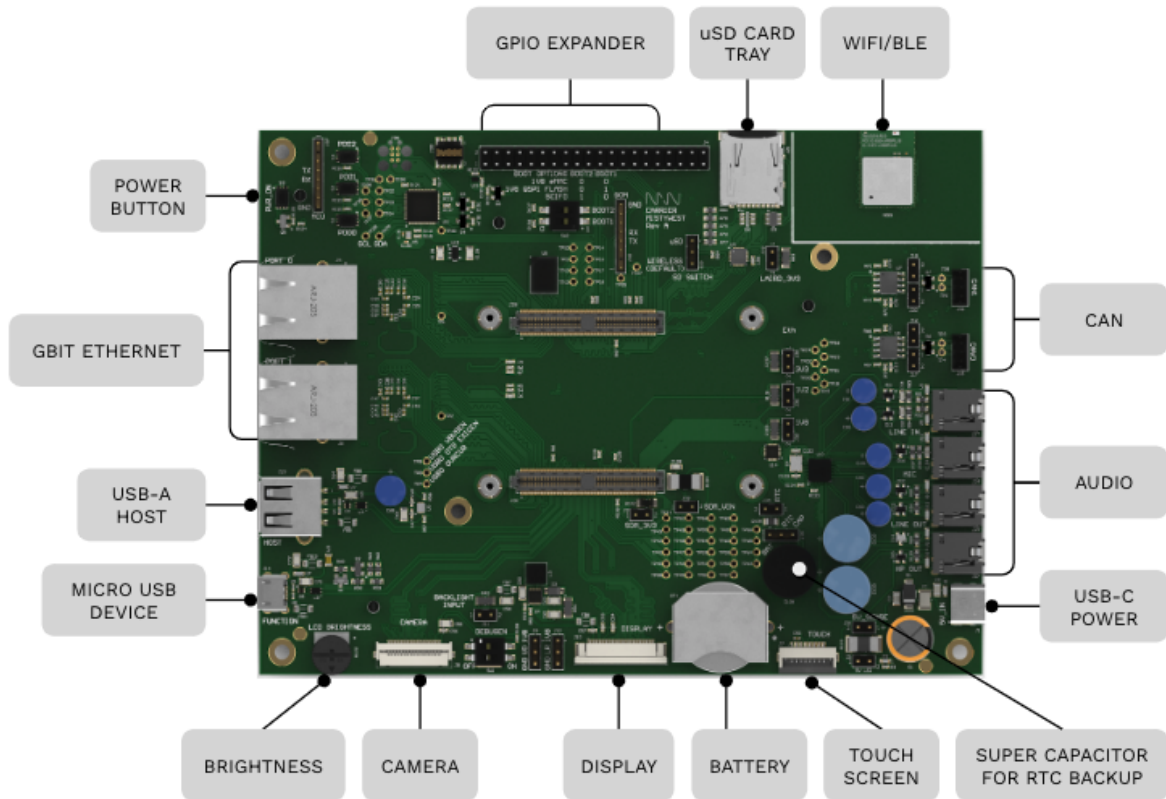
Rated for industrial temperature ratings, the *MistyCarrier* board features a 5V USB-C connector to supply power to *MistySOM* that plugs-in via high speed board-to-board connectors on top. A variety of interfaces are exposed and easily accessible via connectors or standardized 2.54mm headers.

Due to the high quiescent current of the PMICs on the SOM, an MCU was added to *MistyCarrier* to allow a true low power sleep state for the whole system. The platform should be at or below the self discharge rate of standard lithium batteries.

Altium design files are available upon request.



MistyCarrier Board Connectors



MW-V2L-G2L-I-WWB-V0 Specifications

Type	Specification
Temp. Range	-40 to 85°C
Dimensions	160 x 120 x 19.7 mm
Ethernet	2x Ethernet PHY 10M/100M/1G
USB	USB-A (USB 2.0) Host Micro USB, Type B (USB2.0) Device
Wireless	WiFi 5 (802.11a/b/g/n/ac 2.4GHz, 5GHz) and Bluetooth® v5.0
SD Card	MicroSD™ Card Connector
Headers	40 pin 2.54mm GPIO headers, featuring multiplexed functionalities: <ul style="list-style-type: none">• 13x 3.3V GPIO• 8x dedicated analog inputs (12 bit ADC)• 1x NMI (non maskable interrupt)• 2x I²C (1x shared with touch screen - when used)• 1x SPI• 3x UART (1x shared with BLE module)
Video	24 pin MIPI-CSI FPC Connector (comp. with Google Coral cam) 30pin MIPI-DSI FPC Connector 8 pin touch screen connector (shares RIIC1 I ² C interface)
CAN-FD	2x 3 pin 3.5mm, 3 side shrouded PCB Molex headers
Audio	1x 3.5mm Microphone in 1x 3.5mm Headphone out
Power	5V over USB-C (comp. with RaspberryPi 4 power adapters)*

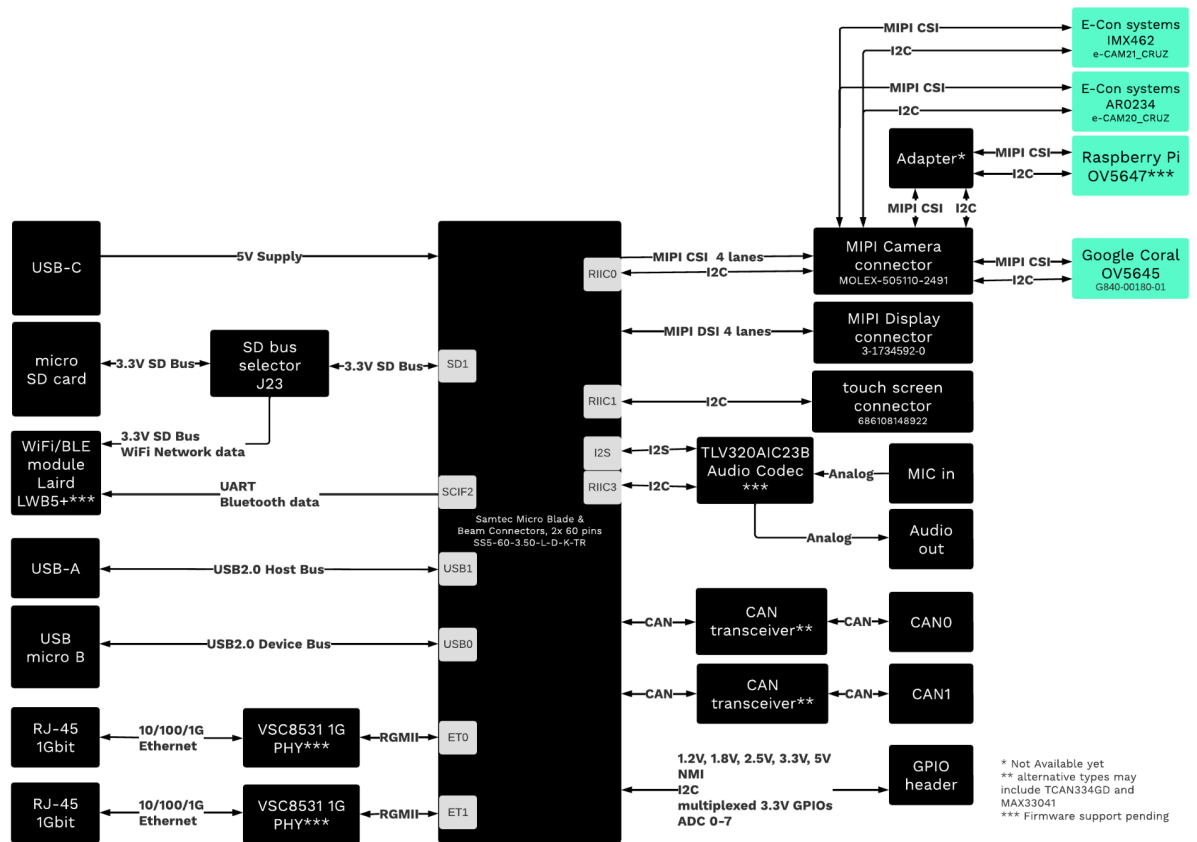
Environmental Specifications

Power in	15W, 5V/3A over USB-C (comp. with RaspberryPi 4 power adapters)
Temperature Rating	Industrial -40 - +85C

Active Components

Wireless	WiFi 5 (802.11a/b/g/n/ac 2.4GHz, 5GHz) and Bluetooth® v5.0
Ethernet	2x Ethernet PHY 10M/100M/1G
Audio	Audio stereo CODEC with Enhancement
CAN-FD	2x CAN Interface IC High-speed CAN transceiver
Power Management MCU	ARM Cortex-M23 MCU with ultra low power consumption, Ability to reduce the power draw to the absolute minimum

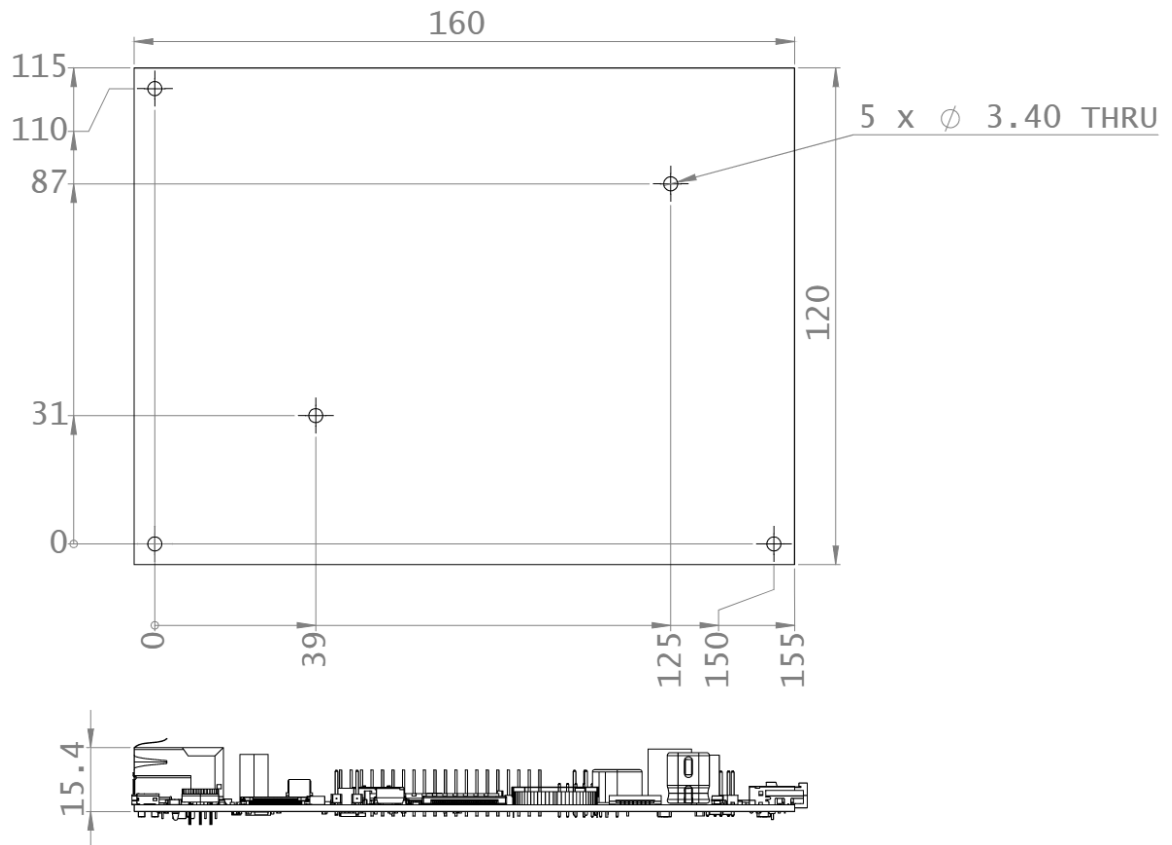
MW-V2L-G2L-I-WWB-V0 BLOCK DIAGRAM



Connectors and Interfaces

Ethernet	2x RJ-45 connector
Audio	1x 3.5mm Microphone 1x 3.5mm Headphone 1x 3.5mm line-in (not populated by default) 1x 3.5mm line-out (not populated by default)
CAN	2x 3 pin 3.5mm, 3 side shrouded PCB Molex headers
USB	USB-A (USB 2.0) Host Micro USB, Type B (USB 2.0) Device
SD Card	Micro SD Memory Card Connector
Headers	40 pin 2.54mm GPIO headers, featuring multiplexed functionalities including: <ul style="list-style-type: none"> • 13x 3.3V GPIO • 8x dedicated analog inputs (12 bit ADC) • 1x NMI (non maskable interrupt) • 2x I²C (1x shared with touch screen - when used) • 1x SPI • 3x UART (1x shared with BLE module)
debug pad (IOs)	28 pin debug pads featuring multiplexed functionalities including: <ul style="list-style-type: none"> • 24 bit Parallel LCD bus interface • 28x 3.3V GPIO • 5x IRQ inputs (IRQ7 shared with Power Management MCU)
Video	24 pin MIPI-CSI FPC Connector (comp. with Google Coral cam) 30pin MIPI-DSI FPC Connector 8 pin touch screen connector (shares RIIC1 I ² C interface)
Debug	<ul style="list-style-type: none"> • 2mm 8 pin UART debug header
Jumpers	<ul style="list-style-type: none"> • To activate/deactivate the power LED • To vertically flip the image on the LCD • To horizontally flip the image on the LCD • To switch between active WiFi/BLE or SDCard module • To enable standby power from a lithium battery (when populated) or the default super capacitor • Multiple measurement points at key locations to probe power consumption
Dip Switches	<ul style="list-style-type: none"> • Boot selector, used to select the active boot device <ul style="list-style-type: none"> - eMMC - QSPI - SCIF

Physical Specifications



Above: Size and mounting holes of MistySOM Carrier board (in mm)
 (NOTE: INNER HOLE POSITIONS SUBJECT TO CHANGE BEFORE START OF OFFICIAL CAMPAIGN)

Learn More

Distribution

More information about MistySOM can be found on the [MistySOM GroupGets campaign](#) page.



Distribution of MistySOM will be available through [Avnet](#). Custom designs and modifications available upon request.



Media

- [MistySOM: The Ultimate Low Power Computer Vision SOM by MistyWest](#) - GroupGets (YouTube)
- [How to Cross The Embedded Computing Valley of Death](#) - IoT One / Industrial IoT Spotlight
- [Embedded Vision and Connected Intelligence for IoT](#) - Industry40TV (YouTube)
- [Enabling Low Power Computer Vision Applications with MistySOM](#) - MistyWest

Get In Touch

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