

owa450

TAKE COMPLETE CONTROL OF REMOTE DATA COLLECTION AND PROCESSING
THE owa450 IS THE PERFECT PLATFORM FOR CONTROLLING AND MONITORING
YOUR INDUSTRIAL MACHINES AND VEHICLES

owa4X Core:

- LINUX Kernel 4.14.67
- Debian 9 Distribution File System
- ARM Cortex A8 32 bit 800MHz
- 512MB DDR3
- 1GB NAND Flash
- Access to Debian Standard Repositories



Key Features:

- IP40 Enclosure
- CAN (up to 4 interfaces)
- Kline (up to 2 interfaces)
- RS485 (up to 2 interfaces)
- Programmable 3 Axis Accelerometer
- 8 digital output open drain 200mA.
- 2 digital output high side 1A.
- 10 digital input 0 to 50V.
- 3 additional optional digital input.
- 4 analog input, 0 to 5,12V or 0 to 30,72V
- 5V voltage output
- 3 RS232 (TX, RX) interface
- Ethernet 100Mbps
 - RJ45 or M12 connector
- MicroSD
- Micro SIM
- USB 2.0
- Programmable 9 Axis sensor (optional)
Accelerometer/Gyroscope/Magnetometer.

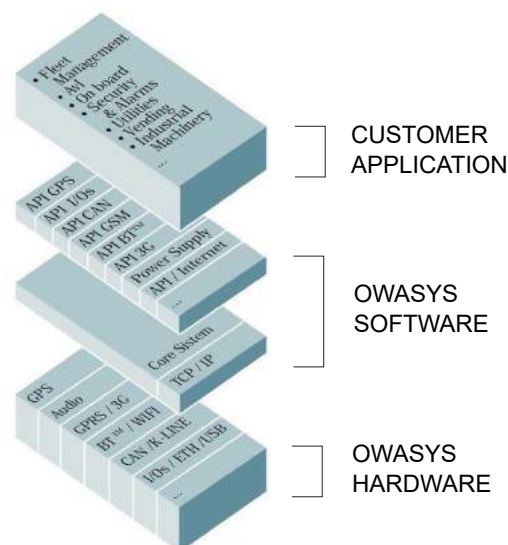
Wireless Interfaces:

- GNSS (GPS + GLONASS)
- CELULAR COMMUNICATIONS
 - LTE Cat 1 with 3G and 2G fallback
 - Region: Global (Worldwide)
- WiFi 802.11 a/b/g/n/ac
- BT 4.2

Mechanics

- IP40
- 150mm x 94mm x 32 mm

Wireless Embedded Computer



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TECHNICAL SPECIFICATIONS

• CPU

- ARM Cortex A8 at 800MHz clock speed.
- Linux Kernel 4.14.67
- Debian File System
- NAND FLASH 1GByte.
- DDR3 512MBytes.
- MicroSD card holder for additional storage.

• GNSS

- Receiver: GPS/GLONASS/QZSS/BeiDou.
- 72-channel* continuous tracking receiver.
- GALILEO E1B/C ready.*
- SBAS: WAAS, EGNOS, MSAS, GAGAN.
- Update Rate: 10Hz.
- Accuracy: 2 meters CEP.
- Signal Acquisition:
 - Cold Start: 26 s.
 - Hot Start: < 1.5 s.
- Signal Reacquisition: < 1 s.
- Active Antenna Power Supply: +3.3V

* Features availability depending on version.

• LTE Cat 1 with UMTS/HSPA and GSM fallback

- LTE Cat 1 Twelve band, 700 (Bd12 <MFBI Bd17>, Bd28) 800 (Bd18, Bd19, Bd20) 850 (Bd5) / 900 (Bd8) / AWS (Bd4) / 1800 (Bd3) / 1900 (Bd2) / 2100 (Bd1) / 2600 (Bd7)
- UMTS/HSPA+: Seven band, 800 (BdXIX) / 850 (BdV) / 900 (BdVIII) / AWS (BdIV) / 1800 (BdIX) / 1900 (BdII) / 2100MHz (BdI)
- GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz
- DL 10.2Mbps, UL 5.2Mbps
- GPRS Class B, Class 12 (4&4).
- No standard voice calls support, calls must be done using a SIP client.

• Interfaces

- Up to 4 CAN bus supporting full speed 1Mbps CAN 2.0B.
- Up to 2 K-line bus.
- Integrated sensors.
 - Programmable 9 axis sensor, accelerometer, gyroscope and magnetometer.
- 10 configurable digital input/outputs:
 - 50V max inputs (logic low <1.5V, high >3V).
 - All inputs function as wake signals for low power modes.
 - All inputs can be used as counters (odometer). 32bit, 3Khz max.
 - 8 open collector outputs (100mA each).
 - 2 high-side switches to Vin for output (1A each).
 - Short-circuit protection for all outputs.
- Optional 3 extra digital inputs in expansion connector.
- 4 analog inputs:
 - 12 bit resolution, 1% accuracy.
 - Multiplexed with digital I/O pins.
 - 0-5.12V (5mV per bit) or 0-30.72V (30mV per bit) configurable by sw.
- Maxim 1wire.
- microSD card holder.
- USB Host 2.0.
- 3 external RS232 ports. 6 pins configurable by SW as follows:
 - 3 x (TX/RX) or
 - 1 x (TX/RX) & 1 x (TX/RX/CTS/RTS)
- Up to two RS485 port.
- Ethernet 10/100 BaseT.
- Vout 5V power output (500 mA max).
- FAKRA antenna connectors.
- 4 LEDs for status indication.
- Audio CODEC for external microphone and speaker.

* Availability of features depends on models.

• Power supply

- Nominal range of 9 V to 48 V.
- Typical consumption at 24V:

OFF	0.335 mA
Standby	9.88 mA
RUN	47 mA
RUN + GSM + GPS	73 mA

• Batteries

- Back-up when there is no power supply available.
- Standard backup battery for RTC. Duration 10 years.
- Optional rechargeable Li-Ion 3.7V.
Inserted via rear battery cover.

• Temperature

Storage	-40 °C to +85 °C
Operating	-40 °C to +85 °C*
Operating from Li-Ion Battery	-20 °C to +60 °C
Li-Ion Battery recharge	0 °C to +45 °C

* Safety purposes Temp range without Li-ion battery -40°C to 60°C

• Rugged enclosure

- Environmental protection to IP40 standard.
(protection against dust).
- Dimension: L=150 x W=94 x H=32 mm)
- Weight: 254g
- Material: PC+ABS.
- System connectors: Molex Microfit 24 way 43045-2400
- MicroSIM
- MicroSD
- Ethernet RJ45 or M12

• Development Kit (POP 100 9100#90)

Includes: Developer's board owa450, power supply cables, cables for interfaces, speaker, microphone, antennas, web access to: cross compiler, API, libraries, manuals and application notes.

• Options

See DESI-BOK 100 9108 for product variants and options.




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owa450 Products

POWERFUL LINUX IoT GATEWAY TO PROCESS DATA COMING FROM WIRED AND WIRELESS SENSORS/DEVICES/PERIPHERALS.

FEATURES	owa450/A	owa450/A	owa450/I
			
Processor/MHz	Cortex A8/800MHz	Cortex A8/800MHz	Cortex A8/800MHz
Linux OS	4.14.67	4.14.67	4.14.67
RAM	512MB DDR3	512MB DDR3	512MB DDR3
FLASH	1GB NAND SLC	1GB NAND SLC	1GB NAND SLC
MICRO SD	YES	YES	YES
ACCELEROMETER	YES	YES	OPTIONAL
GNSS	UBLOX	UBLOX	
LTE CAT1 GLOBAL	GEMALTO	GEMALTO	GEMALTO
DIGITAL I/O ^{1,2,3,4}	10	8	10
EXPANSION DIGITAL INPUTS		3	
ANALOG INPUTS ¹	4	4	4
IBUTTON ²	YES	YES	YES
RS232	3	3	3
RS485	YES	YES	YES
2 nd RS485			OPTIONAL
CAN	YES	YES	OPTIONAL
CAN 2 ⁴	OPTIONAL	YES	
CAN 3 ³		YES	
CAN 4 ⁵		YES	
KLINE ³	YES	YES	
KLINE 2 ³	OPTIONAL	OPTIONAL	
AUDIO CODEC		OPTIONAL	
USB	YES	YES	YES
ETHERNET (RJ45)	YES	YES	YES
ETHERNET (M12)	OPTIONAL	OPTIONAL	
FAKRA	YES	YES	
SMA			YES
24 PIN CONNECTOR	YES	YES	YES
14 PIN CONNECTOR		YES	
OPTIONAL FEATURES			
9 AXIS MEMS (ACC+GYRO+MAG) ⁵	OPTIONAL	OPTIONAL	
WIFI + BT4.2	OPTIONAL	OPTIONAL	OPTIONAL
OPTIONAL BATTERY 2000mAh	OPTIONAL	OPTIONAL	OPTIONAL

Notes:

1. Analog inputs shared with Digital I/O pins 0 to 3
2. iButton multiplexed with DIO6
3. KLINE shared pin with DIO-7. RS485 and KLINEs cannot work at the same time (SW selected). 2nd KLINE will share pin with DIO-5 and remove UART 1 TXD1/RXD1
4. 2nd CAN removes DIO-2 and DIO-4
5. CAN4 not compatible with 9 Axis MEMs