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)
- Programable 3 Axis Accelerometer
- 8 digital output open drain 200mA.
- 2 digital output high side 1A.
- 10 digital input 0 to 50V.
- 3 additonal 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)
- CELLULAR 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

CUSTOMER APPLICATION

OWASYS SOFTWARE

OWASYS HARDWARE
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.

• 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:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>0.335 mA</td>
</tr>
<tr>
<td>Standby</td>
<td>9.88 mA</td>
</tr>
<tr>
<td>RUN</td>
<td>47 mA</td>
</tr>
<tr>
<td>RUN + GSM + GPS</td>
<td>73 mA</td>
</tr>
</tbody>
</table>

• 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 -40ºC to +85 ºC
  – Operating -40 ºC to +85 ºC
  – Operating from Li-Ion Battery -20 ºC to +60 ºC
  – Li-Ion Battery recharge 0 ºC to +45 ºC

• 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.

• 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 (BdVI) / 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.

• 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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Advanced Wireless Devices
# owa450 Products

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

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>owa450/A</th>
<th>owa450/A</th>
<th>owa450/I</th>
</tr>
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<tbody>
<tr>
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<td>Cortex A8/800MHz</td>
<td>Cortex A8/800MHz</td>
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<tr>
<td>RAM</td>
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<td>1GB NAND SLC</td>
<td>1GB NAND SLC</td>
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<tr>
<td>MICRO SD</td>
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<tr>
<td>ACCELEROMETER</td>
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<tr>
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<td>LTE CAT1 GLOBAL</td>
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<td>14 PIN CONNECTOR</td>
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</table>

**OPTIONAL FEATURES**

| 9 AXIS MEMS | OPTIONAL | 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

Subject to change without prior notice

BOK 100 9108 B
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