

owa3X platform

A NEW POWERFUL OPEN M2M PLATFORM SUITABLE FOR THE WIRELESS APPLICATION YOU NEED TO DEVELOP

A NEW GENERATION OF OPEN, FLEXIBLE AND POWERFUL WIRELESS EMBEDDED COMPUTERS, PROVIDING FULLY WIRELESS CAPABILITIES FOR REMOTE MANAGEMENT AND MONITORING.

A UNIQUE PLATFORM TO DEVELOP TELEMETRY AND TELEMATIC APPLICATIONS WITH OPTIONAL IP67 ENCLOSURE FOR RUGGED CONDITIONS, INTERNAL ANTENNAS AND A WIDE RANGE OF CONNECTIVITY.

owa3X PLATFORM INTEGRATES:

- GSM/GPRS (optional Double SIM)
- GPS
- EMBEDDED IP FUNCTIONALITY
- WIDE VARIETY OF INTERFACES
 - ANALOG AND DIGITAL I/O
 - 3 RS232 & 1 RS485
 - 2 CAN, 2 K-Line & iButton
 - AUDIO
 - ETHERNET, MICROSD, etc.
 - USB

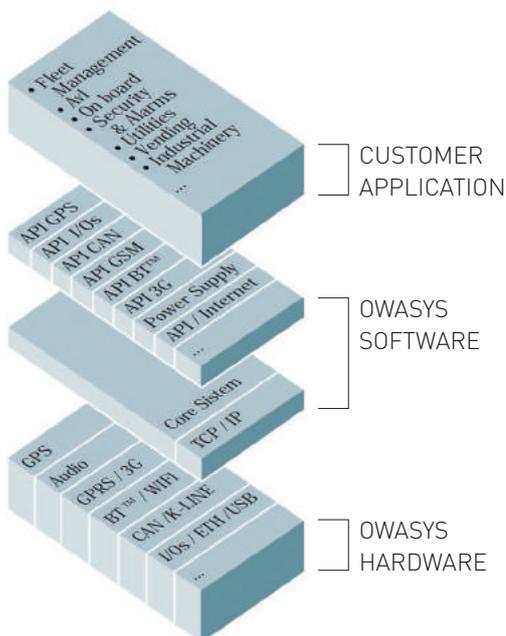


OPTIONAL COMMUNICATION TECHNOLOGIES:

- BLUETOOTH™ (Bluetooth 2.1, BLE)
- WiFi
- TETRA
- HSPA / UMTS
- SATELLITE
- I/Os Expansion Board



Wireless Embedded Computer



ARM

- ARM9 CPU 32bit
- 400 MIPS
 - 32MB FLASH
 - 32MB / 64MB RAM
 - Industry Standard Architecture



- LINUX and C
- Open Platform
 - Complex Applications
 - Flexible



- PSU
- Robust for Automotive
 - Very Low Power

TECHNICAL SPECIFICATIONS

• Interfaces

- 10 configurable digital input/outputs.
 - 40V max inputs (logic low <3V, high >5V).
 - 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.
- 4 analog inputs.
 - 10 bit resolution. 1% accuracy.
 - Share 4 of the digital I/O pins (only in owa3x-IP30 models)
 - 0-5.12V (5mV per bit) or 0-30.72V (30mV per bit) configurable by SW.
 - Internal ADCs for Vin, Vbat, Vbackup, temperature.
- Removable cover for SIM, main battery and microSD.
- microSD card holder.
- 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) or
 - 1 x (TX / RX / CTS / RTS / DCD / DTR).
- One RS485 port.
- Ethernet 10/100BaseT *.
- Vout 4.5 V power output (100 mA max).
- GSM / GPRS with FAKRA or SMA antenna connector.
- GPS with FAKRA antenna connector *.
- 4 LEDs for status indication (6 with Ethernet).
- Audio for external microphone and speaker *.
- CAN bus supporting full speed 1MBPS CAN 2.0B *.
- K-line bus *.
- Integrated Sensors
 - Programmable 3 axis accelerometer and or 3 axis gyroscope*.

Availability of features marked with (*) depend on model.
See BOK 100 6006 for more information.

• Power Supply

- Nominal range of 7 V to 48 V.
- Typical consumption at 12V:

Off	0.3 mA
Standby	15 mA
RUN	50 mA
RUN + GSM voice call	90 mA

• Batteries

- For 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 with GSM off	-40 °C to +85 °C
Operating with GSM on	-30 °C to +80 °C
Operating from Li-Ion Battery	-20 °C to +55 °C
Li-Ion Battery recharge	0 °C to +45 °C

• CPU

- ARM9 at 400MHz clock speed.
- Linux OS 2.6.36.
- FLASH 32Mbyte.
- RAM 32Mbyte / 64Mbyte.
- microSD card holder for additional storage.

• GSM/GPRS

- GSM850 + EGSM900 + GSM1800 + GSM1900.
- Class 4 (2W) for GSM850/EGSM900.
- Class 1 (1W) for GSM1800/GSM1900.
- GPRS Class B, Class 10 (4&2)
- Audio and CSD Data calls.
- SMS (MT/MO).
- Multiplexed communication supported allowing GSM events and SMS during GPRS connection.

• GNSS

- Receiver: GPS L1 frequency, C/A code
- 56-channel* continuous tracking receiver
- GALILEO L1 open service and GLONASS ready*
- SBAS: WAAS, EGNOS, MSAS, GAGAN
- Update Rate: 4Hz
- Accuracy: 2.5 meters CEP
- Signal Acquisition
 - Cold Start: 29 sec*
 - Warm Start: 28 sec*
 - Hot Start: < 1 sec
- Signal Reacquisition: < 1 sec
- Active Antenna Power Supply: +3.0V @ 30mA

* Features availability depending on version

• Mechanical

Aluminium Enclosure

- Environmental protection to IP30 standard.
(protection against objects larger than 2.5mm and no protection against water).
- Dimensions: 110 x 85 x 40 mm, excluding connectors.
- Weight: 270g
- Connectors:
 - GSM & GPS, 24 pin Machine, RJ11 (audio), microSD slot and SIM slot (optional dual SIM slot) Optional RJ45 (ETH) and Optional USB.
- Plastic mounting bracket with screw mounting holes. Can also be used for DIN rail mounting. Mounting bracket includes holes to support an optional expansion board.



Rugged Enclosure

- Environmental protection to IP67 standard.
(full protection against dust and water)
- Dimension: 179,5 x 57,5 x 146,5 mm, excluding connectors.
- Weight: 400g
- Material: Glass reinforced plastic.
- Connectors:
 - GSM & GPS, 42 pin Machine.
 - Optional ETH connector



• Conformity

- 1999/05/EC R & TTE Directive
- 2004/104/EC Directive
- 2002/95/EC ROHS Directive

• Development Kit

Includes: Developer's board owa3X, Power supply cables, Cables for interfaces, Antennas, Web Access to: Cross Compiler, API's, Libraries, Manuals and Application Notes.

• Options

- GYROSCOPE - TETRA - Additional I/Os
- BLUETOOTH - WIFI
- SATELLITE - HSPA

owa3X products

A NEW POWERFUL OPEN M2M PLATFORM SUITABLE FOR THE WIRELESS APPLICATION YOU NEED TO DEVELOP

					
FEATURES					
PROCESSOR / MHz	ARM9 / 400	ARM9 / 400	ARM9 / 400	ARM9 / 400	ARM9 / 400
LINUX OS	2.6.36	2.6.36	2.6.36	2.6.36	2.6.36
RAM	32MB / 64MB	32MB / 64MB	32MB / 64MB	32MB / 64MB	32MB / 64MB
FLASH	32MB	32MB	32MB	32MB	32MB
MICRO SD CARD	YES	YES	YES	YES	YES
GNSS	u-blox	u-blox	u-blox	u-blox	
GPRS / GSM ¹	GEMALTO	GEMALTO	GEMALTO	GEMALTO	GEMALTO
DIGITAL INPUTS / OUTPUTS	10	10	10	10	10
ANALOG INPUTS ³	4	4	4	4	4
ODOMETER / PULSE COUNTER	YES	YES	YES	YES	YES
DALLAS IButton ⁴			YES	YES	
RS232	3	3	3	3	3
RS485	1	1	1	1	1
ACCELEROMETER	YES	YES	YES	YES	OPTION
CAN	OPTION	OPTION	YES	YES	
KLINE ⁵			YES	YES	
AUDIO ²	YES	YES	YES	YES	OPTION
GSM / GPS CONNECTOR TYPE	FAKRA	FAKRA	FAKRA	FAKRA	SMA (GSM)
INTERNAL ANTENNAS		OPTION		OPTION	
2 USB HOSTS ⁶			YES		OPTION
ETHERNET			YES	YES	OPTION
OPTIONAL BATTERY	1800 mAh	1800 mAh	1800 mAh	1800 mAh	1800 mAh
OPTIONAL LONG LIFE BATTERY ⁷		4000 mAh		4000 mAh	
PROTECTION	IP30	IP67	IP30	IP67	IP30
OPTIONAL FEATURES					
I/Os EXPANSION BOARD ¹⁰			OPTION		OPTION
2 nd CAN			OPTION	OPTION	
2 nd KLINE			OPTION	OPTION	
GYROSCOPE			OPTION	OPTION	
BLUETOOTH ⁸ and/or BLE			OPTION	OPTION	OPTION
WiFi ⁹			OPTION	OPTION	OPTION
TETRA ¹¹			OPTION	OPTION	OPTION
HSPA / UMTS ¹³			OPTION	OPTION	OPTION
SATELLITE ¹²			OPTION	OPTION	
CODEC ¹³	OPTION	OPTION	OPTION	OPTION	OPTION

Notes:

1. Double SIM optional in products for the non-Rugged versions (aluminium enclosure).
2. AUDIO for HSPA/UMTS option requires CODEC.
3. Analog inputs shared with 4 digital I/O pins in non-Rugged models (aluminium enclosure).
4. iButton shared with one digital I/O pin.
5. KLINE shared with one digital I/O pin. KLINE and RS485 are not compatible.
6. Only 1 USB is available with BLE or HSPA options.
7. It is not possible to mount the 2 batteries at the same time.
8. BLUETOOTH option includes 64MB RAM. BLUETOOTH option uses one RX/TX UART (2 RS232 ports available).
9. WiFi option includes 64MB RAM. WiFi units do not have microSD card for the non-rugged (aluminium enclosure) variants.
10. Expansion Board with 16 Digital Inputs (40V max); 2 Analog Outputs 12bits (0-5.12V 1.25mV per bit); 8 Analog Inputs 12 bits (0-5.12V 1.25mV per bit; or 0-30.72V 7.5mV per bit); 4 GND [2 Analog]; 2 Vout (4.5V) power outputs 100mA max.
11. TETRA option will use one RX/TX UART, so RS232 ports will be available as 2x (TX/RX).
12. IRIDIUM 9602 Satellite. Option not compatible with Internal Antennas and/or TETRA. IRIDIUM will use one RX/TX UART, so RS232 ports will be available as 2x (TX/RX).
13. CODEC. Analog Input 1 not available when CODEC is present.

*** MORE INFORMATION IN INTEGRATORS MANUAL AND PRODUCT DATA SHEETS ***

owa3X development kit

A NEW POWERFUL OPEN M2M PLATFORM SUITABLE FOR THE WIRELESS APPLICATION YOU NEED TO DEVELOP

DK OWA3X INCLUDES:

1 Integrated Packages in FS

- Iptables
- OTA support
- Busybox(httpd, telnet...)
- can-utils
- aplay (units with codec)
- XML2,DBUS
- Bluez (units with BT)
- WiFi Tools (units with WiFi)

2 Available Packages

- GSM Network Service
- OpenVPN
- Dropbear
- Sqlite
- SSL
- MQTT library
- TCPDump
- SNMP
- Strace
- ifmetric

3 Developers Zone Access:

- Application notes:
 - IO → owa3x_AN3
 - GPS → owa3x_AN5
 - GSM → owa3x_AN24
 - Low Power → owa3x_AN8
 - Watchdog → owa3x_AN18
- Cross compiler
- owa3x Integrators Manuals (PDF)
- owa3x Programming Reference Manuals
- owa3x Programming Guide (PDF)
- Latest owa3x firmware

4 OWA3X Demo Application

A full-documented, **MQTT** based and highly **Configurable** Demo Application in ANSI C, to report power, I/Os and GPS/GLONAS information through the GSM Network. Demo Server Available.



5 Hardware and Accesories:

- owa3x to DK connection cable (24 ways)
- RS-232 Serial cable (standard) 3m
- RJ11 cable 100mm 6 wire
- GSM Antenna (Fakra)
- GPS Antenna (Fakra)
- Microphone and Speaker
- Developers board – owa3x
- AC/DC Power Supply 230Vac-12Vdc
- Ethernet Cable RJ45

m2m Germany GmbH
Am Kappengraben 18-20
61273 Wehrheim
Tel.: +49 6081 587 3860

www.m2mgermany.de
vertrieb@m2mgermany.de

owasys

Advanced Wireless Devices