

ACU6-Lite

ACU6-Lite is aimed at customers that require a compact and cost effective solution for secure connectivity in 'off highway' applications such as asset management and machine control. ACU6 Lite supports worldwide cellular deployment in a single product variant. Together with its flexible subscription management, ACU6-Lite forms part of ACTIA's 'end to end' solution.

ACU6-Lite supports a number of telematics services such as tracking and system status as standard. User applications are simple to implement using the onboard software development kit (SDK). This can be done directly by the customer or by ACTIA.

The configurable input/output interfaces simplify adaptation to external sensors and actuators. Internal antennas for all radio functions as well as the optional backup supply results in a self-contained function and simplifies product integration.

A bracket is provided to simplify mounting of the ACU6-Lite unit to the target application.

**Wireless:**

LTE Cat M1, GNSS, Bluetooth low energy (BLE).
All antennas internal.

**Subscription:**

eUICC – Connectivity subscription setup is pre-loaded with 'multi-IMSI profile'. Customer SIM can be used.

**Network:**

CAN FD interface.

**Processing:**

System operation is managed by the CPU which hosts a Cortex-M7 core. The CPU also hosts a 512kByte RAM. 2MByte NOR Flash is used to store the executable code. A further 16MByte NAND Flash is used for data storage.

**Middleware:**

Software Development Kit (SDK) with libraries provides full support for customer applications such as data management and processing.

**Security:**

Secure boot supported. HSM is used for secure key storage.

**Upgrade:**

Software download is supported via the electrical network/s and 'over the air' via the cellular and BLE radio links.

**Internal sensors and indicators:**

Generic inputs/outputs and main supply. The interfaces and main connector can be adapted by configuration to fulfil specific customer needs.

**Supply:**

ACU6 Lite operates on 12V, 24V and 48V supplies. 48V requires an external converter, provided by ACTIA. The optional battery ensures that critical functions continue if the main supply is lost and ensures clean shutdown and network de-registration.

**Peripherals:**

Standard peripherals include a XYZ-axis accelerometer, three multi colour LEDs and a temperature sensor.

Technical specification

Cellular modem

LTE Cat. M1/ Cat. NB1 / Cat. NB2 / 2G

- LTE Power Class 5 (20 dBm)
- LTE Cat.M1 DL: max. 300 kbps, UL: max. 1.1 Mbps
- LTE Cat.NB1 DL: max. 27 kbps, UL: max. 63 kbps
- LTE Cat.NB2 DL: max.124 kbps, UL: max. 158 kbps

World coverage:

- FDD-LTE 1, 2, 3, 4, 5, 8, 12, 13, 14 (M), 18, 19, 20, 25, 26, 27(M), 28, 66, 71 (NB), 85
- GSM: 850, 900, 1800 and 1900 MHz

Bluetooth

Bluetooth low energy BLE 5.1.

Positioning

Satellite positioning based on GPS, Glonass, Beidou, Galileo. 1 position/sec. Accuracy <3m.

CPU

Cortex-M7 processor. 512kByte RAM. 2MByte NOR Flash (executable code) and 16MByte NAND Flash (data storage).

Supply

Primary supply:

- Operating voltage: 8V to 36V
8V to 72V (with external converter)
- Consumption @12V: 200mA (normal)
<3mA (standby)
<150µA (sleep)

Optional backup battery:

- 450mAh (replaceable)

Wakeup sources:

- Cellular activity (standby mode)
- BLE activity (standby/sleep mode)
- Key ON/OFF
- 3 analogue inputs (fixed level)
- CAN activity
- LIN activity
- RTC trigger
- Internal Accelerometer
- Main supply disconnect / Backup supply low

Internal sensors and indicators

- 3 x LEDs (red, green, blue)
- XYZ accelerometer 2g – 20g
- Temp sensor -40°C – 100°C

Interfaces

Flexible interface – configurable by parameters:

- 6 x Analogue or digital inputs (1 x frequency inputs)
- 2 x High/Low side outputs (HS 100mA / LS 500mA)
- 1 x Flight mode digital control line
- 1 x Key ON/OFF digital control line

Serial data interfaces:

- 1 x RS232
- 1 x RS485
- 1 x CAN FD
- 1 x LIN

Connectors

- 1 x Main connector: JAE MX23A26NF1

Dimensions (with mounting bracket)

- Depth: 117mm
- Width: 75mm
- Height: 39mm
- Weight <300g

Environment

- Qualification to ISO standards in accordance with OEM requirements for off highway usage
- Temperature: -40°C – +85°C
- IP67 / IP6K9K (with connectors mated)

