



# Flea 3

## A Complex World

To know what's happening inside a vehicle is essential for car manufacturers in today's complex world - during development as well as during subsequent life. To get to know it in an efficient manner: do it remotely! For many years, therefore, CarMedialab has combined telematics and diagnostics knowledge as its core competency. The world's major car manufacturers are benefiting from this technology by improving the quality of their vehicles and by reducing maintenance costs over their lifetime.

## Key Requirements

- Quality assurance
- Fast feedback programs
- Evolution tracking of test vehicles
- Automated development documentation
- Customer behaviour analysis
- Preparation of new telematics opportunities

Hardware	Flea 3
Processor	ARM11 32 Bit 532 MHz
Main memory	128 MB SDRAM
Flash memory	1 GB NAND, 8 MB NOR
Ethernet	10 Base-T/100Base-TX
UMTS/GPRS/EDGE	UMTS/HSPA (800/850/900/1700/1900/2100 MHz), GSM/GPRS/EDGE quad-band
Wireless LAN	optional
Bluetooth	V2.0 + EDR
GPS	GPS/QZSS, GLONASS, BeiDou, MSAS Galileo-ready E1B/C
Interfaces	1x pressure sensor, 2 x RS232, 1 x J1708/RS485, 1 x K-Line/LIN configurable, 4 x CAN high speed, 1 x CAN high speed/low speed switchable, 1 x USB 2.0, 1 x I2C, 1x Ethernet, 8 x digital outputs, 8 x analog inputs, 1 x custom interface module
Input voltage	5 V ... 36 V
Operating temp	-40°C ... +85°C
Dimensions	136 mm x 106 mm x 36 mm incl. main connector
Weight	420 g
Software	
Operating System	Embedded Linux/Kernel 4.1
Applications	Diagnostics, Onboard Statistics, CAN Monitoring

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# Flea 3

## Technical Specifications

### General Specifications

- **Power Supply:**
  - 5V ... 36V
- **On-board supply:**
  - 12 V and 24 V  
(passenger cars and trucks)
- **Overvoltage Protection:**
  - 36 V
- **Interfaces:**
  - 2 x RS232, 1 x RS485/1 x J1708
  - 1 x K-Line/LIN configurable
  - 4 x CAN High Speed
  - 1 x CAN High/Low Speed
  - 1 x USB 2.0
  - 1 x I2 C
  - 1 x Ethernet RJ45
  - 1 x custom interface module
  - 8 x digital outputs
  - 8 x analog inputs
  - GPS antenna connector
  - GSM antenna connector
- **Power Consumptions:**
  - Off: 0 mA
  - Sleep (Systemcontroller only): < 0,5 mA
  - Run : 300 mA
  - Hibernation: < 10mA

### Memory

- Flash NOR: 8 MB
- Flash NAND: 1 GB
- RAM: 128 MB

### USB

- 2 x USB 2.0 Host (1 internal)

### UMTS/EDGE/GSM Specifications

- Six-band UMTS/HSPA 800/850/900/1700/1900/2100 MHz
- Quadband GSM/ E-GSM 850/900/1800/1900 MHz
- Power Class 4 for GSM, Power Class E2 for EDGE, Power Class 3 for HSPA
- Data calls
- SMS (MO/ MT)

### GPS

- 72-channel
- GPS/QZSS L1 C/A, GLONASS L10F, BeiDou, MSAS Galileo-ready E1B/C
- Position accuracy 2 m/2.5 m
- 3 V power supply for active antenna

### CAN

- 5 HS CAN interfaces OR 4 HS + 1 LS CAN interface
- Operating independently or as gateway
- Immediate startup

### Network

- Ethernet
- 10 Base-T/100 Base-TX
- IEEE 802.3u Standard

### Bluetooth

- V2.0 + EDR, CE, FCC and IC, Class1/ 2/3
- EDR compliant with v2.0.E.2 of specification
- For both 2 Mbps and 3 Mbps modulation modes

### Mechanical Design

- Dimensions: 136 mm x 106 mm x 36 mm incl. main connector
- Weight: 420 g
- Connector: ELO

### Wakeup Options

- RTC
- Ignition
- CAN (dominant level, any message, special message)
- FlexRay
- Modem Ring

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