# IoT Development Starter Kit XL

## Part No.: ACIOTDKXL

**MA:DE IN GERMANY**

# aconno

# aconno ACNPROG

The aconno ACNPROG USB dongle is the easiest way to program our ACN52832 modules. It features drag & drop programming, easy to use Tag-Connect connector and compatibility with all famous development suites.

**Product Overview:**

aconno's ACNPROG is making the programming process simple, efficient, and fast.

It's a compact programmer for our ACN52832 BLE module and any ARM® Cortex™ based microcontroller featuring Tag-Connect. To make the programming process even more comfortable, the ACNPROG will be recognized as an USB-storage device after plugged into your computer. Simply drag your compiled file onto the ACNPROG's storage device and the programming process starts … easy, fast and without annoying driver issues.

Based on the open source & open hardware project CMSIS-DAP, the ACNPROG offers a vendor independent CoreSight debug interface for ARM® 32-bit Cortex™ microcontrollers over the JTAG / SWD interface.

It also allows you to use debugging functions like stepping, breakpoints, watch points to get rid of bugs in your firmware faster, smarter and simpler than ever before.

Get started today using the ACNPROG. Go create – the future can't wait.

**Key Features:**
- USB interface to standard ARM® CoreSight™ Serial Wire Debug Port (SW-DP)
- Powerful NXP microcontroller with 48 MHz clock rate and low power consumption
- Full debug support for ARM® Cortex™ based microcontrollers
- Programming through drag & drop or directly through your programming suite
- No external power supply needed for the programming target, since the programmer offers 3.3V / 50mA power source
- Tag-Connect connector
- Firmware upgradeable
- Available in several funky neon colors
- Quality Made in Germany

**Compatible Development environments:**
- KEIL uVision
- OpenOCD
- GNU GDB
- iAR
- mbed.org online compiler
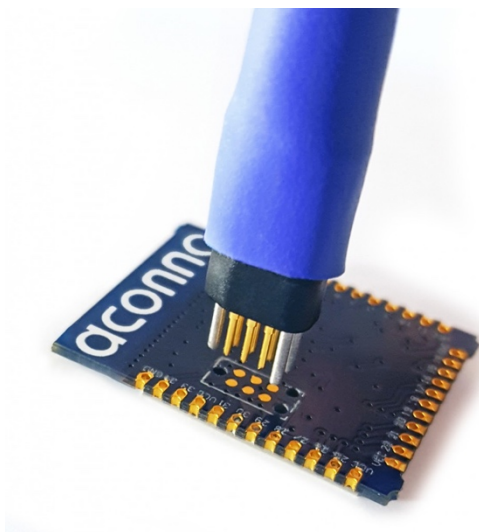
# aconno ACNPROG

**Firmware Upgrade:**

1. Place a common magnet onto the top side of the ACNPROG USB dongle
2. Plug the ACNPROG with the magnet on it into an USB Port of an PC/Mac
3. A device called "CRP DISABLD" should appear
4. Remove the magnet and open the new device "CRP DISABLED" with a file manager
5. Delete the file "firmware.bin"
6. Copy the new aconno firmware onto the device. It should be named like "ACNPROG_FW_VXXX.bin" were "XXX" stands for the firmware version
7. When the copy process is finished, disconnect the ACNPROG from the PC/Mac
8. Reconnect the ACNPROG and enjoy your upgraded programmer :)

# aconno ACN52832

The ACN52832 is a fully integrated, ultra-low power, Bluetooth Smart (former BLE) module in a small form factor, which features the advanced Nordic Semiconductor nRF52832 SoC.

Its capabilities are tailored for the upcoming demands of sophisticated IoT devices where small size, low power, application performance and radio-range are essential. Unlike many competitors it features a maker-friendly PCB scale package that allows a fast and easy integration without sacrificing access to its advanced peripherals and capabilities.

**Product Overview:**

- Based on Nordic Semiconductor's nRF52832 Bluetooth Smart SoC
- aconno's ACN52832 features a large number of GPIOs to max out your options
- excellent RF performance thanks to an on-board antenna
- CE compliant & certified
- To provide quick access to the programming interface of the SoC, the module also features a Tag-Connect connector.

Get started today using the ACNPROG. Go create – the future can't wait.

**Key Features:**

- Ultra low power consumption
- 32-bit ARM® Cortex™ M4F high performance 64 MHz core with 512kB Flash / 64 kB RAM
- Two On-board precision crystal clock sources
- Programmable peripherals for CPU-less operation
- SPI / UART / TWI (I2C)
- 200 ksps 12-bit ADC
- Low Power Comparator
- I2S and PDM peripherals for Audio
- Quadrature demodulator
- RGB LED
- -20 dBm to +4 dBm output power
- Maker friendly dimensions
- Temperature Range: -40°C to +85°C

# aconno ACD52832

Development board for Bluetooth Smart, ANT and 2.4 GHz applications

**Product Overview:**

The ACD52832 DK is a single board development kit for Bluetooth Smart, ANT and 2.4 GHz proprietary applications using the aconno ACN52832 module which is based on the highly integrated nRF52832 SoC by Nordic Semiconductor.

The development kit is equipped with a variety of sensors, input devices and a graphical HiRes electronic paper display enabling you to take full advantage of the aconno ACN52832 features and to accelerate development efforts for new highly integrated IoT devices.

To ensure the DK is easy to use, the kit contains a Segger J-Link OB programming and debugging device. It allows the kit to be used as J-Link through a standard USB interface with the Nordic toolchain using Keil, IAR and GCC. Alternatively you can use the mbed online compiler through drag & drop programing. Thus it is possible to program the board without the need for proprietary programming software and devices.
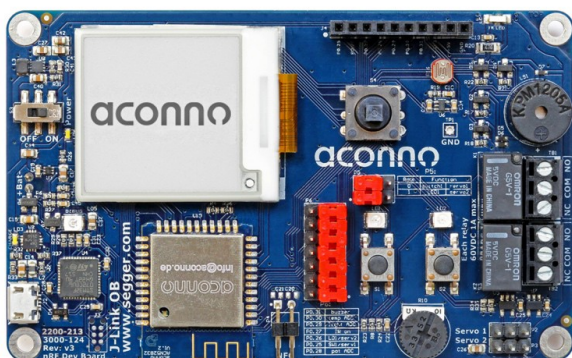


**Key Features:**

- For the development of smart user interfaces, advanced gesture recognition and gaming applications the ACD52832 is equipped with a ST iNEMO 9-DoF inertial module, which contains
  a 3D accelerometer,
  a 3D gyroscope and
  a 3D magnetometer
- EP Display with 200x200 pixels resolution and 184 dpi pixel density
- Integrated Texas Instruments USB Li-Ion battery charger with up to 0.5A charging current and automatically battery - USB power supply changeover (allows the development of mobile devices)
- Temperature sensor with a temperature range between -40°C and 125°C and ± 4K accuracy
- Light sensitive sensor
- IR-emitter
- Digital joystick
- Two LEDs
- Two tactile switches
- Potentiometer for ADC values
- Buzzer
- Pin-header with seven I/O –ports
- Two potential free relay outputs
- Two PWM controlled servo outputs

**Applications:**

- Internet of Things (IoT) – sensors and hubs
- Rapid prototyping
- Desktop peripherals
- Remote controls
- Sports & Medical
- Smarthome sensors
- Beacons
- Toys

**Application Code**

**SoftDevice**

**nRF52832 SoC**

**IoT development made easy**

The Core of the module ACN52832, a nRF52 series SoC (System on Chip) provides an unique software architecture which offers a clean separation between application code and Nordic's embedded protocol stacks (called SoftDevices). This means that the compile, link and run-time dependencies with the protocol stack and associated de- bugging challenges are removed. Application code can thus be developed and compiled independently of the protocol stack. This simplifies overall development efforts and reduces the possibility and complexity of bugs during development.

**SoftDevices**

The Nordic nRF52832 is supported by a range of protocol stacks. These Nordic protocol stacks are known as SoftDevices, they complement the nRF52 Series SoCs. SoftDevices can support Bluetooth Smart, ANT and Bluetooth Smart/ANT combinations. SoftDevices are pre-compiled binary files for nRF52 Series SoCs. They are available from Nordic Semiconductor as downloads. This brings maximum flexibility to application development and allows the latest stack version and associated features to be programmed into the nRF52 Series SoC.

**Kit content:**
- ACD52832 development board
- ACNPROG
- 3x ACN52832
- Micro USB cable

**Contact information:**

aconno GmbH
Volmerswerther Straße 80-86
40221 Düsseldorf
Germany

Tel.:  +49 211 93 07 78 09
Fax.: +49 211 94 21 66 62

www.aconno.com
info@aconno.de

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

**Как с нами связаться**

**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.