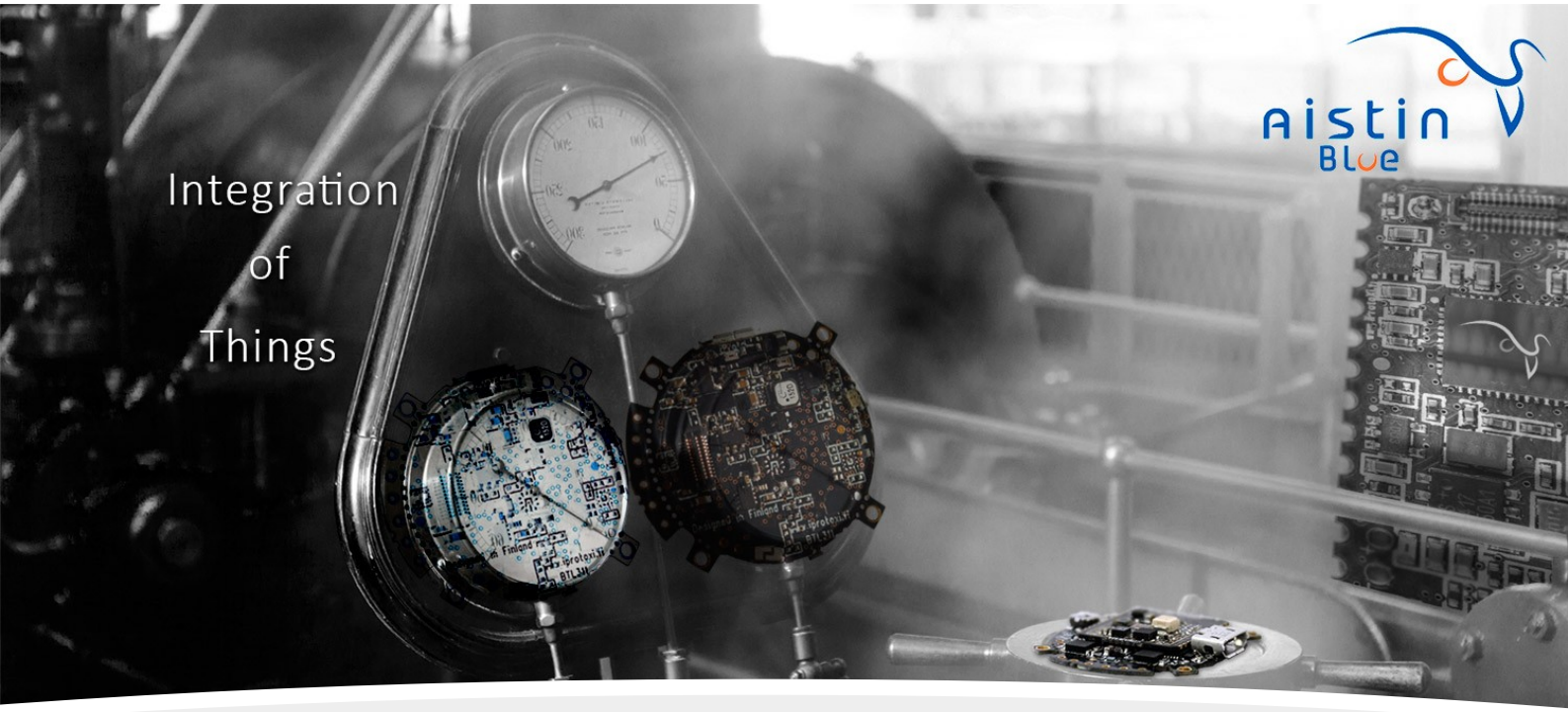


Aistin Blue BTL3K3

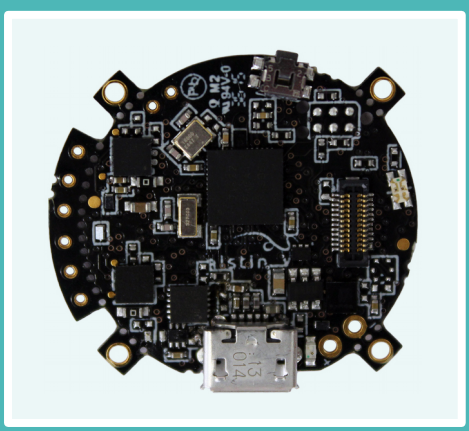
Bluetooth LE Development Board

Aistin Blue makes low energy battery-powered wireless Internet-of-Things solutions easy to build. This small and round device is only 32 mm in diameter, or only 27 mm if screw pads and trace points are not needed. The board is based on the famous Nordic Semiconductor's nRF51822 controller supporting Bluetooth 4.2 (Low Energy), and provides radio connectivity with integrated crystal antenna. Smart power control enables long usage times even with small battery, from days to several months depending on your application.

There are sensors for detecting 3D-acceleration, 3D-magnetism, 3D-rotation, air pressure with temperature, integrated onto the same board. Still more functionality can be obtained by mounting different Aistin Add-on Boards from the Aistin family.

Board comes with application firmware that makes possible to see sensor values instantly with our Android application. Other appliction specific sensor logics can be coded in C/C++ in case our example cases didn't suffice your innovative needs.

Technical Overview



**iprotoxi.fi/index.php/aistin-bus24*

Dimensions	→	**Ø 32/27 mm x 4.2 mm (0.6 mm PCB)**
Controller	→	**Nordic Semiconductor nRF51822** **ARM Cortex-M0 with Bluetooth 4.2** **16 MHz Clock Speed**
Connectors	→	**2 x Aistin Bus24 host connector*** **Battery connectors** **Micro-USB** **Tracing pads** **Screw holes for mounting** **SWD programming connector**
Indicators	→	**2 x red/green LED** **1 x green LED** **Charging LED**
Sensors	→	**3D-accelerometer, magnetometer, gyroscope, air pressure, temperature**
Other	→	**Programmable switch and power control**

Aistin Blue

Model BTL3K3

The model BTL3K3 includes all needed components for a versatile sensor unit in a cost-effective manner.

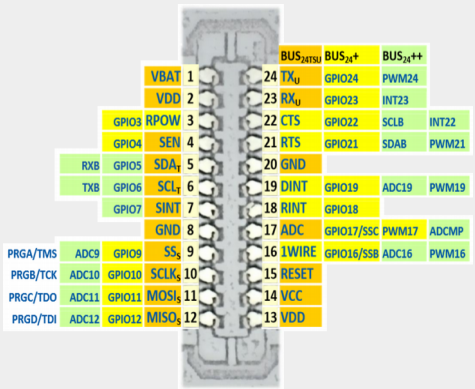
	BTL3K3
Aistin Bus 24 connector for add on boards	1
USB Charging	✓
USB-to-UART converter	✓
Battery connector	✓
BT-LE nRF51822, 256kB Flash, 32kB RAM	✓
Balun + crystal antenna	✓
Programmable power switch	✓
Indicator color leds	1
PWB 0.6mm	✓
Tag Connect for flashing and debug (SWD)	✓
Firmware-over-the-air support	✓
3D-accelerometer KX122	✓
3D-magnetometer KMX62	✓
3D-gyroscope KXG03	✓
Barometer BM1383AGLV	✓
I2C-buses	2
SPI-bus	✓
UART	✓
Configurable sensor interrupts	3
Test points and zero-resistors for configuring	✓

Since all the motion sensors KX122, KMX62 and KXG03 include also 3D-accelerometer, Aistin Blue provides exceptional possibility for very accurate 3D acceleration measurement.

Aistin Blue supports firmare updating over-the-air via Bluetooth LE, by using e.g. Android application called nRF Toolbox. Software development tools are provided for free by Nordic Semiconductor. Also, ARM MBED tools can be used.

Aistin Bus24 is an open standard and includes all necessary signals for still expanding the board's capabilities. The primary and alternative pin usages are shown in the chart.

Aistin Bus24 Signal Chart

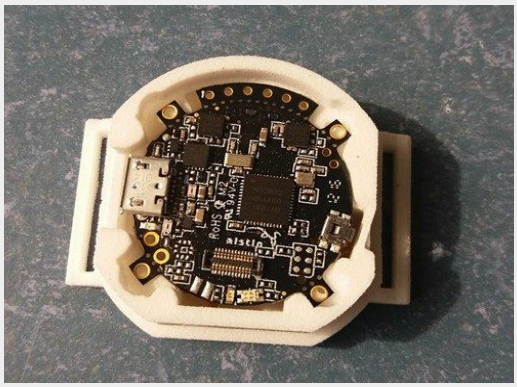


Aistin Blue Covers

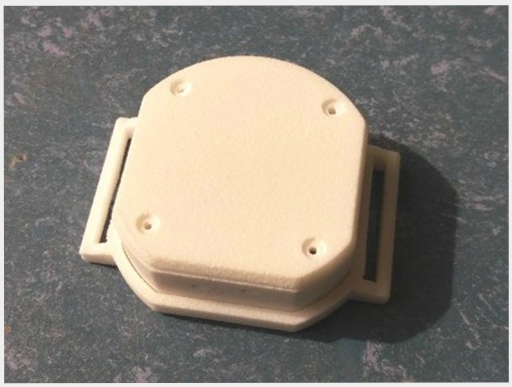
Aistin Blue can be ordered with optional housing, where the circuit board and a battery perfectly fits. It is made of three parts, *dock*, *capsule* and *cap* as shown in pictures below.

Aistin Blue "dock"
suitable for e.g. wrist strap

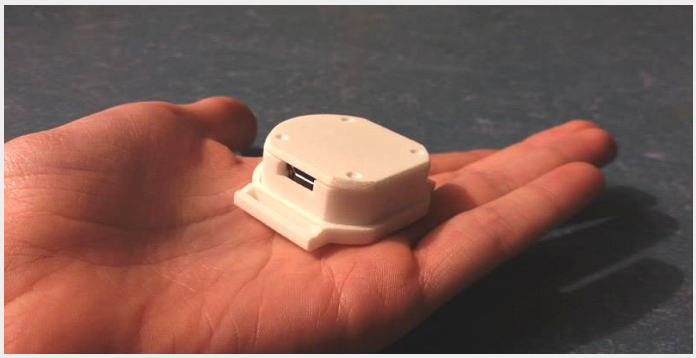
Aistin Blue "capsule"
installed on the dock



Aistin Blue circuit board put into
the capsule – battery fits under the board



After closing the capsule with "cap"...



...Aistin Blue is ready to go!

References

Accelerometer

KX122 http://www.kionix.com/product/KX122-1037

Accelerometer with magnetometer

KMX62 http://www.kionix.com/product/KMX62

Accelerometer with gyroscope

KXG03 http://www.kionix.com/product/KXG03

Barometer

BM138AGLV http://www.rohm.com/web/in/products

*These sensors can be mounted instead of the default ones on-demand.
Ask us for more information.