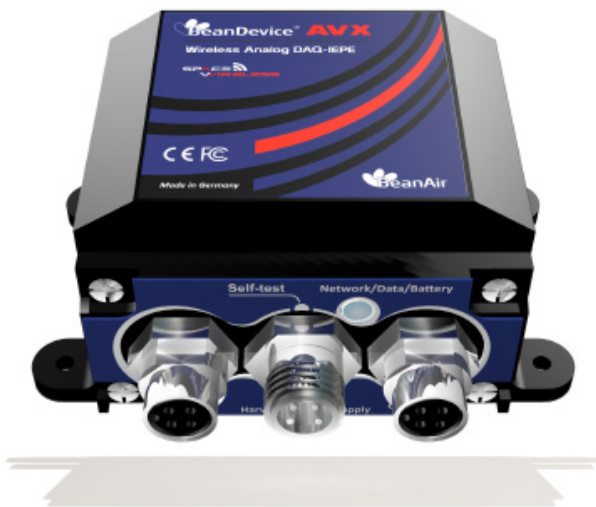
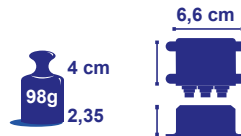


WIRELESS ANALOG DATA ACQUISITION SYSTEMS COMPATIBLE WITH LOW POWER IEPE SENSORS

APPLICATIONS

- made
- in
- Germany



FEATURED VIDEO



TECHNICAL NOTE



USER MANUAL



OVERVIEW

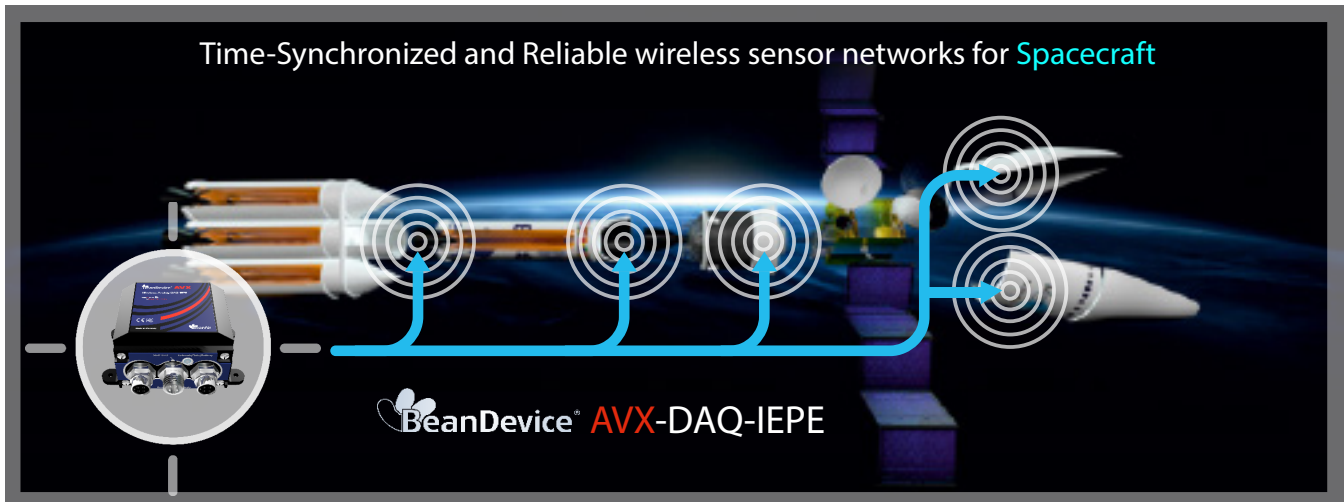
The **Beandevic**[®] **AVX-DAQ-IEPE** is a versatile and time-synchronized wireless DAQ System compatible with Low-Power IEPE and analog sensors:

- Low-Power IEPE (Bias voltage : 2.5V)
- Analog voltage sensors (up to 5V)

The Data Acquisition Module (4 channels) is based on a 24-bits Delta-Sigma architecture with selectable analog voltage range. The **Beandevic**[®] **AVX-DAQ-IEPE** can reach a high sampling rate: 32 KHz with a resolution 16-bit and 16 KHz with a resolution of 24-bit). Small and non-intrusive, the **Beandevic**[®] **AVX-DAQ-IEPE** comes with advanced mechanical features: waterproof (IP67/NEMA6), lightweight (less than 100g), and small enclosure (48mm x 39mm x 24mm). No need to use an external power manager, the **Beandevic**[®] **AVX-DAQ-IEPE** integrates a smart power manager and can be power supplied by both USB (5V maximum) and energy harvesting power source (Solar, Vibration, Heat).

A Time-synchronization with an accuracy of $\pm 5\mu s$ is reached by using IR-UWB radio technology combined with Time-of-Flight algorithms developed by Beanair.

HOW DOES IT WORK ?



MAIN FEATURES



Wireless DAQ based on IR-UWB radio technology



24-bit delta-sigma ADC with 4 synchronized channels



DAQ Module designed for: Low Power IEPE, and Low voltage sensors (strain gauge, pressure, ...) ,



Store&Forward+
Lossless & deterministic data transmission



Maximum sampling rate: 16KSPS with a resolution of 24-bit



Compatible with any kind of energy harvester source (Solar, TEG, Vibration...)



Wireless DAQ based on IR-UWB radio technology



Rugged (aluminum), waterproof (IP67) and lightweight casing (less than 100g)

TECHNICAL SPECIFICATIONS

Product Reference

BND-DAQ-IEPE

Analog data acquisition block specifications

Number of channels	4 Channels
A/D Converter	24-bits delta sigma with synchronized channels
Input referred noise	@1kSPS: 19.6 (ENOB) , 117.7 dB (daynmic range)
Sensor Compatibility	Low-Power IEPE sensors, Bias Voltage 2.5V Analog voltage sensor
Measurement range (for analog voltage sensor only)	Bipolar configuration : $\pm 2.5V$ maximum Unipolar configuration: +3V to +5V User configurable from the supervision software
Non-linearity error	15 ppm
Measurement accuracy(@25°C)	0,1% for analog voltage sensor
Sensor Connector	M8-8Pins coming with an IP rating IP67

Sensor Power Supply specifications

Excitation voltage	5volts, Maximum current : 25mA
Excitation voltage accuracy on full scale range(@25°C)	$\pm 0.2\%$

Over-the-air configuration (OTAC) parameters

Data Acquisition mode	Low Duty Cycle Data Acquisition (LDCDA) Mode: 1s to 24 hour Alarm Low Duty Cycle mode: 1s to 24 hour Streaming Mode: 100 SPS default Alarm Streaming Mode: 100 SPS by default
Sampling Rate (SPS = samples per second)	Minimum: 1 SPS Maximum: 16 KSPS (24-bit resolution)
Alarm Threshold	2 high levels alarms & 2 low levels alarms
Sensor power supply	Enable/Disable sensor power supply
Power Mode	Sleeping with Network Listening & Active

RF Specifications

Wireless Stack	IEEE 802.15.4A - IR-Ultra Wide Band
WSN Topology	Peer-to-peer/ Star
Raw data rate	6.5 Mbits/s, 850 Kbits/s and 110 Kbits/s
RF Characteristics	3.5GHz up to 6.5 GHz – 7 Channels
RF Transmit power	-14dBm or -10dBm
Maximum Radio Range	60m (L.O.S.) at 110 Kbits/s
WSN Diagnostic tool	<ul style="list-style-type: none"> · Energy Scan for choosing a suitable RF Channel · BeanDevice® PER (Packet Error Rate) calculation · LQI (Link Quality Indicator) between the BeanGateway® and the BeanDevice® · RF channels Blacklist

Environmental and Mechanical

Enclosure	Aluminum, Waterproof IP67 NEMA 6 Enclosure dimensions (w/o antenna) L x l x h : 66mm x 40mm x 31mm Weight : 98g
Shocks resistance	100g during 11ms
Operating Temperature	- 20°C to +65 °C

Time Synchronization

Time-synchronization accuracy (25°C)	±5µs
TCXO stability over temperature	±5ppm

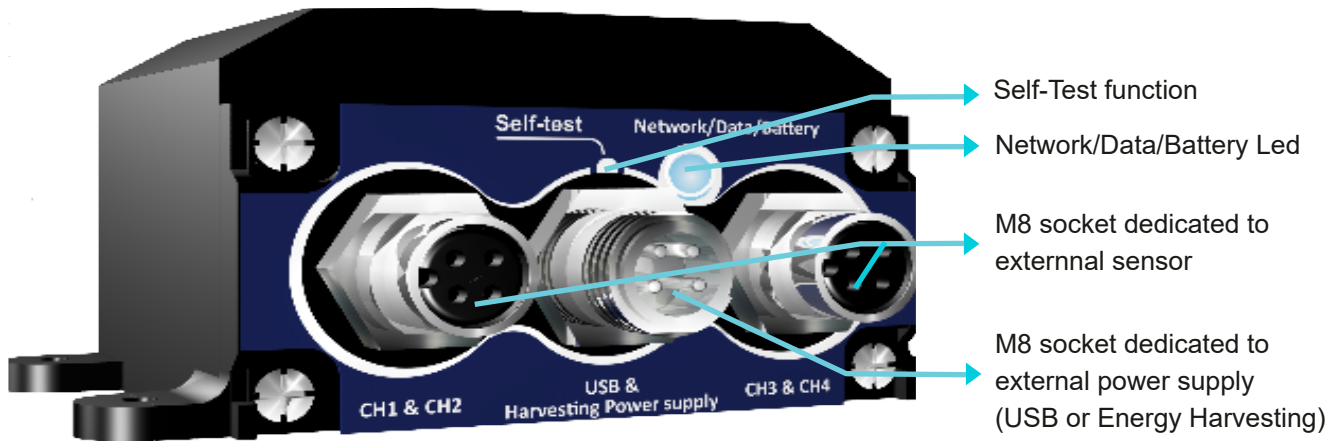
Power supply

Integrated battery charger	Integrated Lithium-ion battery charger with high precision battery monitoring Battery Temperature monitoring
Current consumption @ 3,3V	<ul style="list-style-type: none"> · During data acquisition : 70mA to 130 mA (depends on external sensor power supply) · During Radio transmission : 60 mA @ 0dBm · During sleeping: < 65 µA
External power supply	External power supply : +4,8v to +17,8v
Rechargeable battery	Lithium-Ion rechargeable battery capacity of 260 mAh

Options

Calibration certificate	Calibration certificate linked to national and international standards (DaKKS)
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BEANDEVICE REAR VIEW



CONTACT US

FOR MORE INFORMATION :

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Visit our website : www.space-wireless.com

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