INFINITE UPTIME

Plug-n-Play Industry 4.0

IDE+ Spec Sheet 2018

Digitize any equipment in under 1 minute!

It installs on any machine within seconds through a magnetic connection. It gives immediate feedback through visual fault detecting indicators and you can monitor remotely and wirelessly to mirror notifications and record data.

IDE+ functions / features

- Production monitoring:
  - Production cycles detection
  - Part counting
  - Cycle time measurement, OEE reporting
- Machine monitoring:
  - Activity mode detection
  - Anomaly detection and alerts
  - Long term reporting, trend analysis, etc
  - FFT analysis for rotating equipment
- Low Power consumption
- Geo-location
  - 4 GNSS concurrently available (GPS, Galileo, GLONASS, BeiDou) for maximum worldwide availability
- Visual feedback through LEDs and color codes
- Easy 1-min installation:
  - Magnetic fixation for a non-invasive mounting
  - Waterproof (IP66) and harsh environment (PESO) certified enclosure
  - Universally powerable (USB Type-A)

Connectivity

Bluetooth Low Energy

- Low power
- 5m open-air range
- Easy to connect the IDE+ to the Infinite Uptime Android app to:
  - configure the IDE+
  - visualise real-time data or use the IDE+ as a stethoscope
  - manually tag activity periods or job types to train pattern recognition algorithms

WiFi

- Smart power management
- 35m open-air range
- MAC address displayed in Android app for MAC filtering in the Company network
- Dynamic or static IP attribution support
- Packet filtering firewalls support: a limited list of IP addresses and port should be opened
- Proxy support

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Technical Specifications

IDE+ General Specifications

Parameter	Specification
Dimension (L x W x H)	84mm x 58mm x 30mm
Weight	200 g
Power Supply	USB Type-A (5V, 0.5A)
Waterproof ISO Certification	IP67 certified
Explosion proof certification	Intrinsically Safe, under PESO certification
Operating Temperature Range	-40° to +120°C

Bluetooth

Transceiver Module	Nordic nRF52832 SoC
Version	Bluetooth 4.2 (Bluetooth Smart) Concurrent Central & Peripheral (S132)
Frequency Range	2.360GHz to 2.500GHz
Transmit Power	Range: -30dBm to +4dBm
Receiver Sensitivity	Nominal: +4dBm
Antenna	Integrated
Encryption	AES-128

WiFi

Standard	FCC/CE/TELEC/SRRC
Protocol	802.11 b/g/n/e/i support
Frequency Range	2.4GHz to 2.5GHz (2400MHz to 2483.5MHz)
Transmit Power	802.11 b: +20 dBm, 802.11 g: +17 dBm, 802.11 n: +14 dBm
Receive Sensibility	802.11 b: -91 dbm (11 Mbps), 802.11 g: -75 dbm (54 Mbps), 802.11 n: -72 dbm (MCS7)

Antenna	Integrated
Security	WPA/WPA2
Encryption	WEP/TKIP/AES
Network protocols	HTTP, MQTT, TCP/IPv4

Additional Specifications

Sensor Technology	MEMS

3-Axis Accelerometer

Output data rate (Sampling rate)	Up to 6.6kHz
Accelerometer Sensitivity	±2 (0.061 mg/LSB), ±4 (0.122 mg/LSB), ±8 (0.244 mg/LSB), ±16 (0.488 mg/LSB)
Accelerometer Resolution	16 bit
Derived values	• 3-axis acceleration RMS, velocity RMS, displacement RMS • 3-axis acceleration, velocity and displacement FFT • 3-axis spectral features as per requirement
FFT frequency resolution (delta-f)	Nominal: 1.95Hz
Temperature Sensitivity	256 LSB/oC The output of temperature sensor is 0 LSB (typ.) at 25 °C.
Shock Tolerance Range	10,000g for 0.2ms

Sensors- Digital Microphone

Output data rate	48kHz
Sound frequency range	Wide frequency response from 60 Hz to 20 kHz 16 bit
Sensitivity	26dB FS ±1 dB
Derived values	Sound Level A-weighting (dB A), FFT, Spectral features

Global Navigation Satellite System Module

Supported GNSS	GPS, Galileo, GLONASS, BeiDou
Antenna	Embedded
Sensitivity	-145dBm
Output data rate	Up to 1 GPS fix per minute
Resolution	Down to < 2.5m, Nominal: < 50m
Security	Built-in spoofing detection Signal integrity with SHA256 signature