

TECHNICAL WHITE PAPER

Title : DASBOX oem product description

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INTRODUCTION:

The DASBOX ecosystem has been created from a need to monitor temperature, humidity level and sound pressure level of an inhabited condo unit in Florida, while the owner was living in Quebec for the summer. The Sensing unit needed to warn the owner of a drastic change in temperature or humidity level, or even a potential intrusion. The unit needed to be low cost, minimal maintenance and needed to communicate with the internet using 4G/LTE network. The prototype has been built and successfully tested for over two years before we decided to go to production with it.

This document refers to our OEM product offering. The OEM version of our leading DASBOX cube product is made to be installed as an aftermarket item to existing designs by third parties. The technology is the same to the exception of the enclosure and the optional external antenna provided with the OEM product.

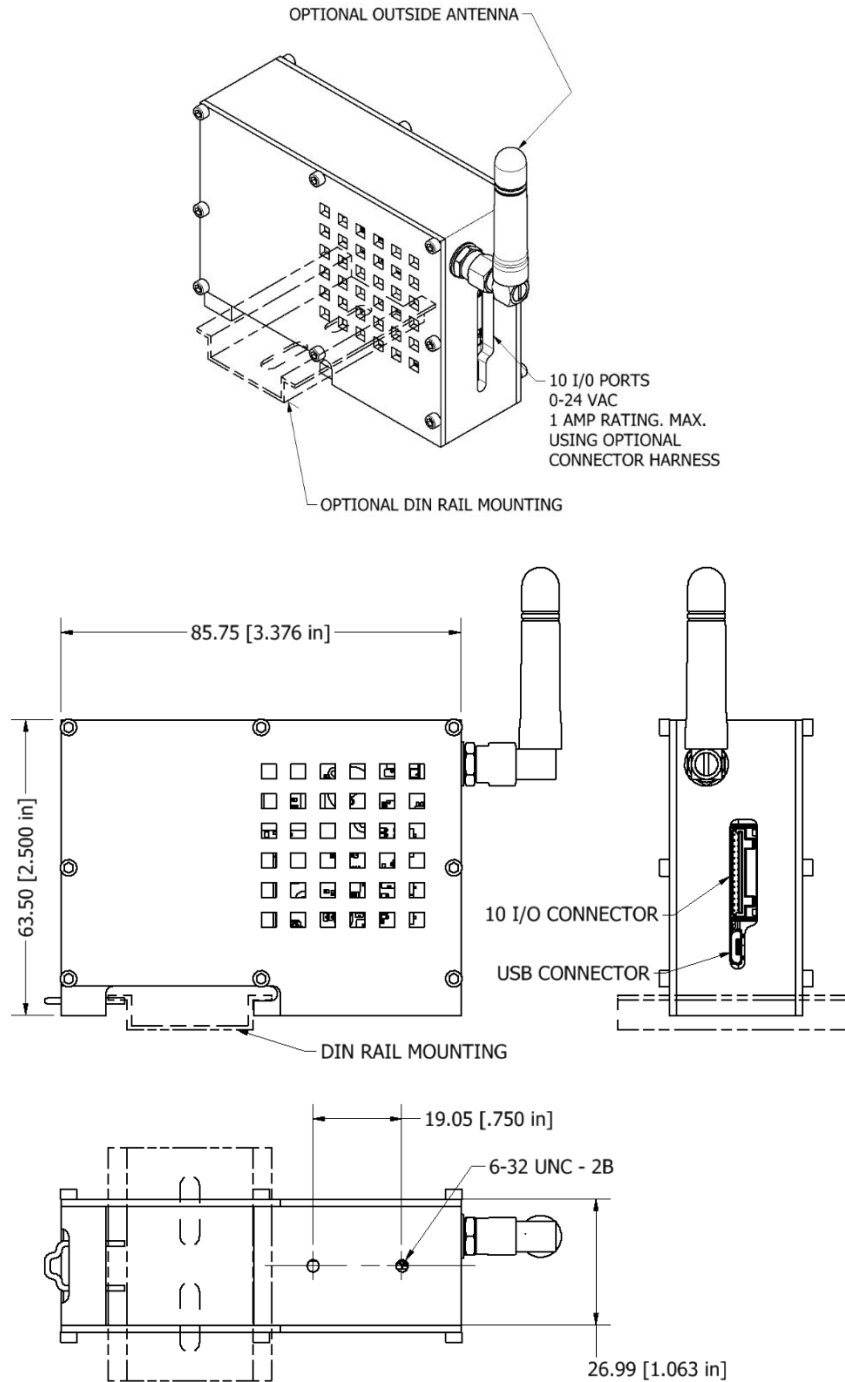
SHORT DESCRIPTION:

A multi-purpose, industrial strength and cloud based modular multi-sensor data acquisition system to be used to collect and send 36 different data to a web server that will analyze and send warnings to specified email addresses, SMS, and phone calls with pre-recorded voice messages. It includes a 4G/LTE communication module, a power cord, and a battery which allows it to be autonomous. It can be configured via a cellphone app or web application.

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PRODUCT IMAGE:



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SPECIFICATIONS :

Sensors:

Type	Temperature	Specification
Accelerometer	-40C to +85C	$\pm 2g/\pm 4g/\pm 8g/\pm 16g$ 6D/4D orientation detection Free-fall detection Motion detection
Ozone Sensor	-40C to 70C	Ozone O ₃ (10 – 1000ppb)
Multi-Gas Sensor	-30C to 85C	Carbon monoxide CO (1 – 1000ppm) Nitrogen dioxide NO ₂ (0.05 – 10ppm) Ethanol C ₂ H ₆ OH (10 – 500ppm) Hydrogen H ₂ (1 – 1000ppm) Ammonia NH ₃ (1 – 500ppm) Methane CH ₄ (>1000ppm) Propane C ₃ H ₈ (>1000ppm) Iso-butane C ₄ H ₁₀ (>1000ppm)
Light Level Sensor	-40C to 85C	600M : 1 Dynamic Range
Motion Sensor	-40C to 70C	Field of View $\theta_1=\theta_2=45\text{deg.}$
Audio SPL sensor	0C to 100C	Range 20Hz to 10KHz High SNR of 65dB(A) Directivity Omnidirectional Sensitivity S 94 dB SPL @ 1 kHz = -26 dB Signal to Noise Ratio SNR 94 dB SPL @ 1 kHz = 65dB
Temperature, humidity, pressure sensor	-40C to 85C	Humidity range: 0-100% Humidity precision : $\pm 3\%RH$ Pressure range : 300-1100 hPa Pressure precision : $\pm 1.0\text{ hPa}$ Temperature range: -40C - +85C Temperature precision: $\pm 1.0C$

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Externally sourced data acquisition :

Feature	Specification
External Inputs	10 individual inputs 0 VAC – 24 VAC Individually protected Common ground
RS 485	Full duplex TIA/EIA-485A Standard Compliant RS 422 compatible Message length to be defined Q1 2017

Geolocation :

Feature	Specification
GPS	99 acquisition-/ 33 tracking channels Tracking sensitivity: -165dBm Position update every 5 secs.

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Powering options :

Source	Specification
Battery - Included	Polymer Li-ion with Built in Protection IC (PCB) to avoid battery over charge and over discharge Voltage: 3.6V Capacity: 2000 mAh Estimated duration: 2 weeks of autonomy.
USB charger	Input Voltage: 100-240v 50-60Hz / Output Voltage: 5vDC 1.2Amp Connector: AC to Micro-USB Length: 4ft
I/O connector	0-36 VAC Use optional connector harness. Common Ground

APPLICATIONS :

- Cold supply chain monitoring.
- Shipping tracking.
- Loss prevention.
- Liability prevention.
- General data acquisition.
- Intelligent cities.
- Intelligent signage.
- Intelligent transport.
- Manufacturing process monitoring.
- Preventive maintenance.
- Agriculture data capture.
- Existing equipment retrofits.
- Power usage monitoring.
- Building management.



PURCHASING INFORMATION:

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