Doc: Product Information

The Doc has two main functions; measuring environmental conditions and communication.

The Doc measures environmental metrics such as ambient temperature, humidity, sound and light conditions, as well as air quality parameters including CO2 and TVOC levels.

It also acts as the communications gateway between Pebble sensors and the cloud based Solutions Hub. Data collected via Pebble occupancy sensors is relayed to the Doc via a closed Bluetooth mesh network. This information as well as the environmental data collected by the Doc itself is streamed to the Solutions Hub at pre-determined intervals.

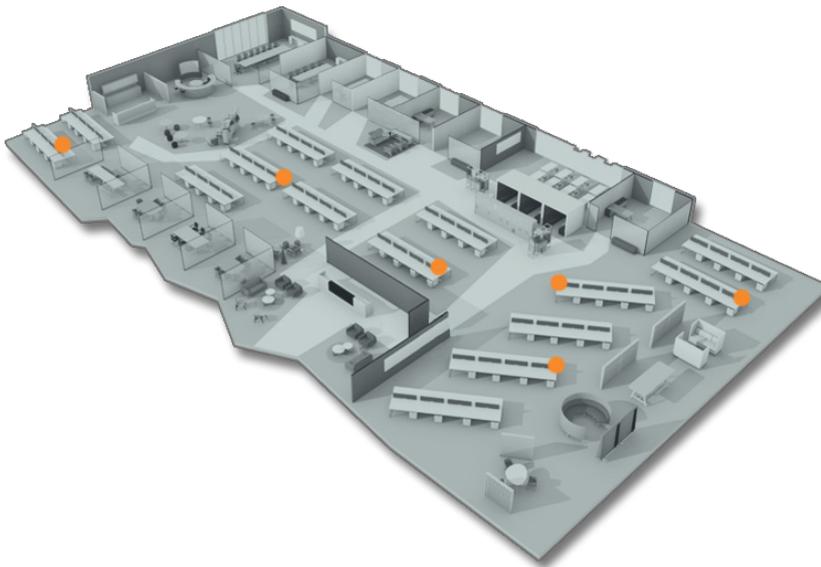Understanding environmental conditions in the office enables organizations to make informed decisions on optimizing their spaces, leading to higher cognitive performance in employees and improved employee productivity.

Dimensions:

103mm x 90mm x 24mm

Weight:

61,5g

Placement Example:

Measures:

CO2 levels

TVOC levels

Temperature

Humidity

Sound levels

Light lux level

Power and Communication:

Data collected via Pebble occupancy sensors is relayed to the Doc via a closed Bluetooth mesh network. This information as well as the environmental data collected by the Doc itself is streamed to cloud-based Solutions Hub at pre-determined intervals. This transmission happens securely and seamlessly anywhere in the world via GSM using MQTT communications protocol. The secure independent connectivity means no other gateway function, or integration with client network is needed.

No on-site configuration is required, the transmission will happen automatically when the device is powered. Docs only need to be plugged in using the supplied 5-volt power supply. Docs will immediately start measuring and sending data to the cloud.

Doc: Specifications

Operating Voltage	4-5V
Operating current	100mA-2.1A
Power Supply	5V micro USB
Operating Temperature	-5C-50C
Storage Temperature	-20C-85C

General Sensor Operation:

User input	Single push button
Microphone sensitivity	>40dBA
Temperature sensor range	-10C-85C
Humidity sensor range	0-80%
CO2 sensor range	400ppm up to 32768ppm
VOC sensor range	0ppb up to 32768ppb
Lux sensor range	0.01-64k lux
Battery power measurement	N/A
Occupancy/People counting	N/A

GSM Modem:

GSM operating frequencies RX	EGSM900: 925-960MHz
	DCS1800: 1805-1880MHz
LTE Bands	1,3,5,7,8,20,38,40
GSM operating frequencies TX	EGSM900: 880-915MHz
	DCS1800: 1710-1785MHz
LTE Bands	1,3,5,7,8,20,38,40
GSM antenna	Ceramic dual band monopole antenna
Sim card	Standard size Sim card or on board chip SIM

Bluetooth low energy:

BLE version	ver 4.1
RF frequency	2.4GHz
TX power	+4dBm
RX sensitivity	-88dBM
BLE Module FCC Compliance	Part 15
BLE Module certification	CE qualified
	FCC, IC modular approval certified
	TELEC
	BQE qualified
BLE antenna	Onboard chip antenna
Range	5-10m individual node range in BLE mesh non line of sight

Bluetooth low energy mesh:

Provisioning	Devices added to a network are provisioned using proven security algorithms using 256-bit elliptic curves
	Provisioning and network layer based on Mesh profile v1.0
Communication	All messages in the network are encrypted with AES-128 CCM mode
Privacy	Privacy through obfuscation
Data protection	Protected against security attacks like Brute-force, Bit-Flipping, Eaves Dropping, Replay, Trashcan, Man in the middle and physical insecure device attacks

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