

Product Details: Abacus

Function:

- People counting
- Environmental parameters measurement

Typical use:

- Determine utilization of meeting rooms vs capacity
- Recording of people movement in and out of indoor spaces
- Measure environmental wellness of indoors spaces

Operation:

- Time of flight directional sensor utilizing a 940 nm invisible laser
- Two zones (region of interests) measured to detect direction
- Configurable to ignore door movement
- Ideally suited for standard door width of 800mm
- Wider entrances covered by pairing two (or more) Abacus units
- Counting accuracy of 95 – 97%
- Event data is recorded continuously
- Time and date information of events stored on device for transmission
- Environmental data is recorded continuously
- Transmission takes place at predetermined intervals (standard 15 minutes)
- The transmission interval configurable based on requirement
- Data buffering prevents data loss when connectivity is disrupted

Dimensions:

100mm x 90mm x 25mm

Weight:

70g

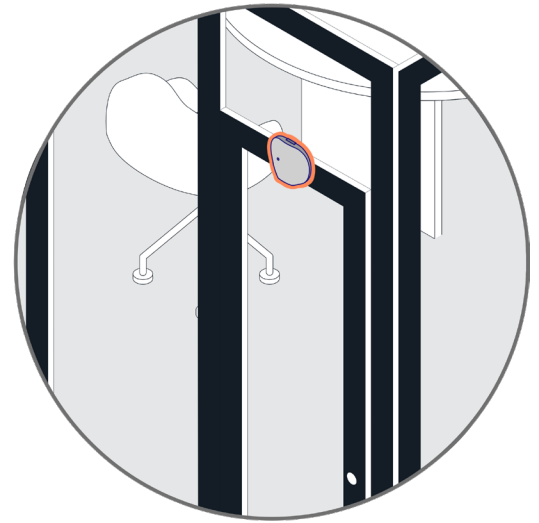
Views:



Measures:

								
Occupancy	People Counting	CO2	TVOC	Temperature	Humidity	Ambient Sound	Light Lux	Particulate Matter

Placement Example:



Communication:

- On board SIM (swappable) enables 4G transmission to cloud-based analytics platform
- Protobuf encoded with schemas available
- MQTT protocol used for data transmission
- Meta Data includes Device Type & ID, Firmware version, SIM ID
- Low volumes ensure cost effective communications
- No other gateway or integration with client network infrastructure required
- Pairing via Bluetooth connectivity

Power:

- 5 Volt PSU with Micro USB

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	Time of Flight ranging sensor

Occupancy Sensor:

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

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