

α Node-4AA Specifications

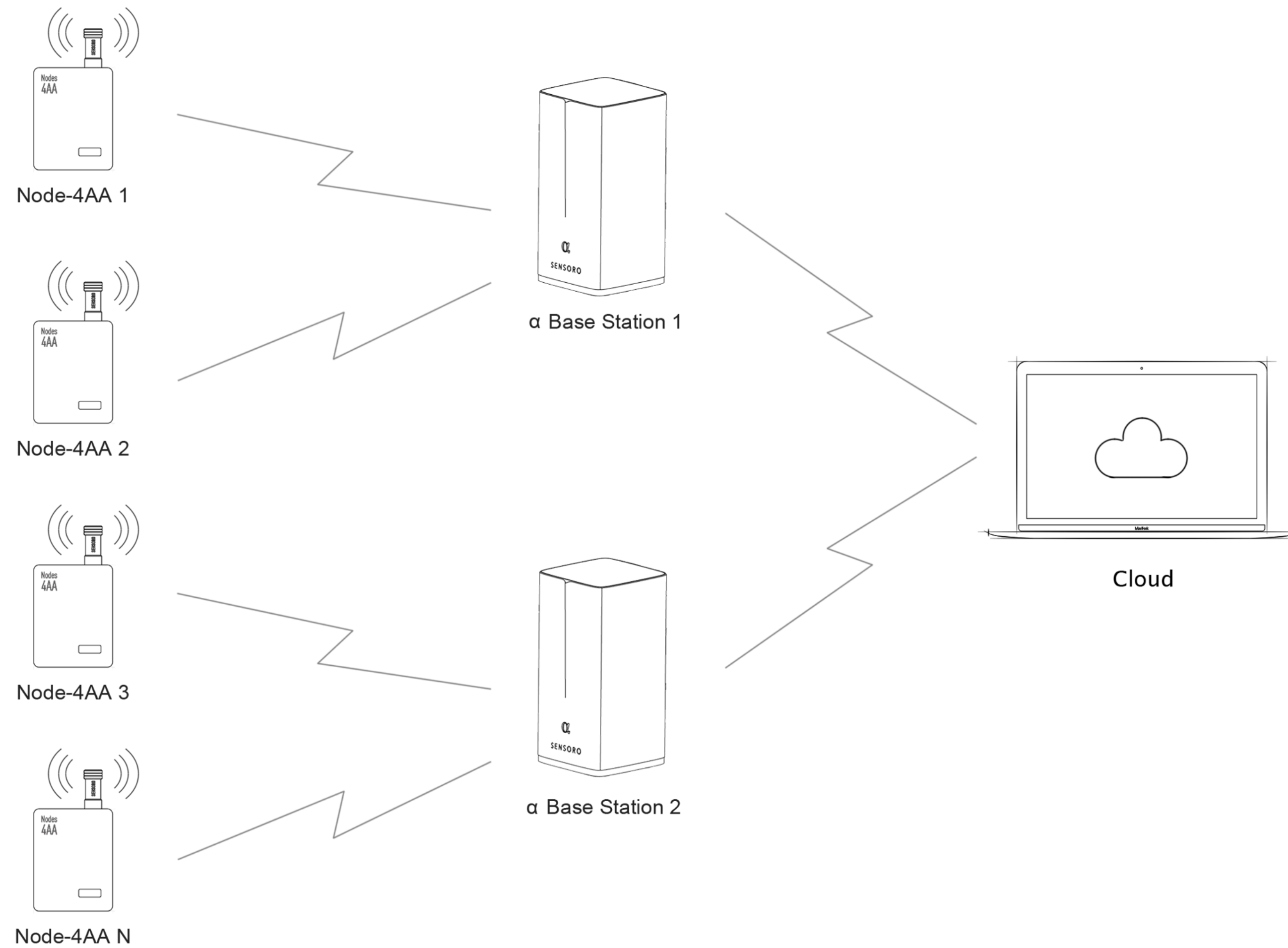


1. Product Description

α Node-4AA is an IoT low-power sensor developed by SENSORO with excellent signal coverage and commercial-grade hardware protection which supports both proximity and long-range dual-mode sensing network usages.

In the proximity use case, it works as a BLE-based low power beacon and supports multiple near-field transmission protocols such as Apple iBeacon, Google Eddystone and etc.; It also acts as a node of the IoT-WAN low-power network for long-range sensing, monitoring of the environment and devices, as well as remote device management. With Node-4AA, SENSORO provides dual wireless access to effectively connect the physical world, mobile internet and internet for the convergence of the physical world and the digital world.





- Node-4AA uploads sensor data to the α base station through IoT-WAN.
- Node-4AA is able to upload data to multiple base stations in the same network.
- The α base station transmits data to the cloud through multiple communication networks e.g. ethernet or 3G/LTE network.
- Terminal devices (Node-4AA) status & data transmission monitoring can be done in the cloud; The cloud is designed for terminal devices management in different scenarios, too.
- Dynamic optimization of the network (IoT-WAN) can be done from the cloud side to ensure stability and reliability of the communication.

2.Product Features

Enterprise-grade IoT-WAN	Ultra long-range data transmission (10 km) with IoT-WAN low-power network
	Wireless data access with ultra low power terminal devices at long range
	Supports thousands of low power smart sensors with access to IoT-WAN
	Dynamic network optimization for high efficiency & stability network communication
	Data rate: 200bps ~ 5 kbps
BLE Proximity Sensing	Wireless signal coverage up to 80m; minimum proximity range covered: 15cm
	Supports 100ms ~1200ms advertising interval (adjustable)
	Mobile internet connectivity with multiple sensor data sources
	Supporting near-field protocols including the iBeacon
Security	Tri-layer encryption for IoT-WAN data security
Battery Life	1 Years @ Typ.

3.Product Specifications

Product Information	Product name	Node
	Product model	4AA-02B / 4AA-02E / 4AA-02F
Physical Information	Dimensions (L*W*H)	117mm x 68mm x 26mm
	Weight	130g
	LED indicator	Indicates status e.g. system power on, running, error alerts
Power	Power input	4 AA-Batteries
		DC 3V @ 140mA max
	Rated power	150 mW @ Typ. (14dBm)
	Static power	13uA
Sensor	Temperature sensor	x 1 (Nominal resolution: 0.01°C, Nominal accuracy: ± 0.3°C, Response time: 5~30s, Range: -40 °C~125°C)
	Humidity sensor	x 1 (Nominal Resolution: 0.04%, Nominal accuracy: ± 3%, Response time: 8s, Range: 0% ~100%)
	Accelerometer	x 1 (Sensitivity: 1/2/4/12mg/digit , Range: ±2 /± 4/± 8/± 16g)
	Ambient light sensor	x 1 (Nominal resolution: 0.01lux, Relative accuracy: 0.2%,Range: 0.01 ~83K lux)
Environmental	Operating temperature	-20°C~+65°C
	Storage temperature	-40°C~+80°C

Environmental	Operating humidity	5% ~ 90% (non-condensing)
	Storage humidity	5% ~ 90% (non-condensing)
	Wind resistance	165MPH
	Operating altitude	-60 ~ 3000m
	Atmospheric pressure	53kPa ~ 106kPa
Radio specifications	IoT-WAN	
	Antenna type	External antenna
	Output power	10dBm @ 433MHz, 14dBm @ 868MHz, 20dBm @ 915MHz
	Receiver Sensitivity	-141dBm @ 200bps,433MHz -135dBm @ 900bps,433MHz -126dBm @ 5000bps,433MHz -140dBm @ 200bps,868MHz -135dBm @ 900bps,868MHz -126dBm @ 5000bps, 868MHz -140dBm @ 200bps,915MHz -135dBm @ 900bps,915MHz -126dBm @ 5000bps, 915MHz

	BLE	
	Antenna type	Built-in antenna
	Output power	4dBm
	Receiver sensitivity	-96dBm @ 250Kbps -93dBm @ 1Mbps BLE -90dBm @ 1Mbps -85dBm @ 2Mbps
Antenna specifications	IoT-WAN	
	Frequency band	433MHz / 868MHz / 915MHz
	VSWR	< 1.5
	Gain	3dBi
	Polarization	Line polarization
	BLE	
	Frequency band	2.4GHz
	VSWR	< 2
	Gain	1dBi
	Polarization	Line Polarization

4. Compliance & Standards

Safety	EN60950-1
Radio approvals	ETSI EN 300 328 ETSI EN 300 220-1 EN 62479:2010 FCC Part 15C: 15.247 FCC Part 15C: 15.249 FCC Part 2 KDB 447498 D01 IEEE C95.1
EMC	EN 301 489-1 EN 301 489-3 EN 301 489-17 FCC Part 15 EN 55022:2010 EN 61000-4-2 EN 61000-4-3
RoHS	CE/RoHS 2011/65/EU

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