

## **KENKUL NB-IoT(AI) Sensor Node**

### **KENKUL NB-IoT**

**KENKUL NB-IoT** Node supply sensor's working power, and provide multiple signal input, active push data to NB-IoT network service, the host computer can connecting with NB-IoT Node via TCP easily ◦

### **Application**

Geotechnical / Environmental  
Industry  
Home automation  
Agriculture  
Construction / Bridge  
Danger zone measurement  
Discard area measurement

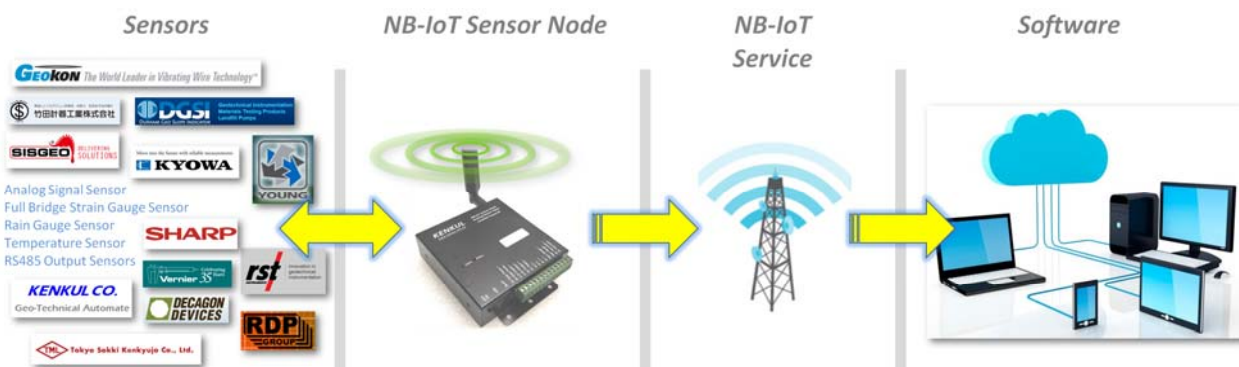
### **Network**

**KENKUL NB-IoT** network support up to 7 km (depend on service) for wireless measurement.

### **Feature**

Low cost  
Low power consumption  
High resolution A/D  
Multiple signal input  
Multiple IP communication  
Long life internal battery (Option)  
Replacement 3G measurement application

## **KENKUL NB-IoT System Structure**



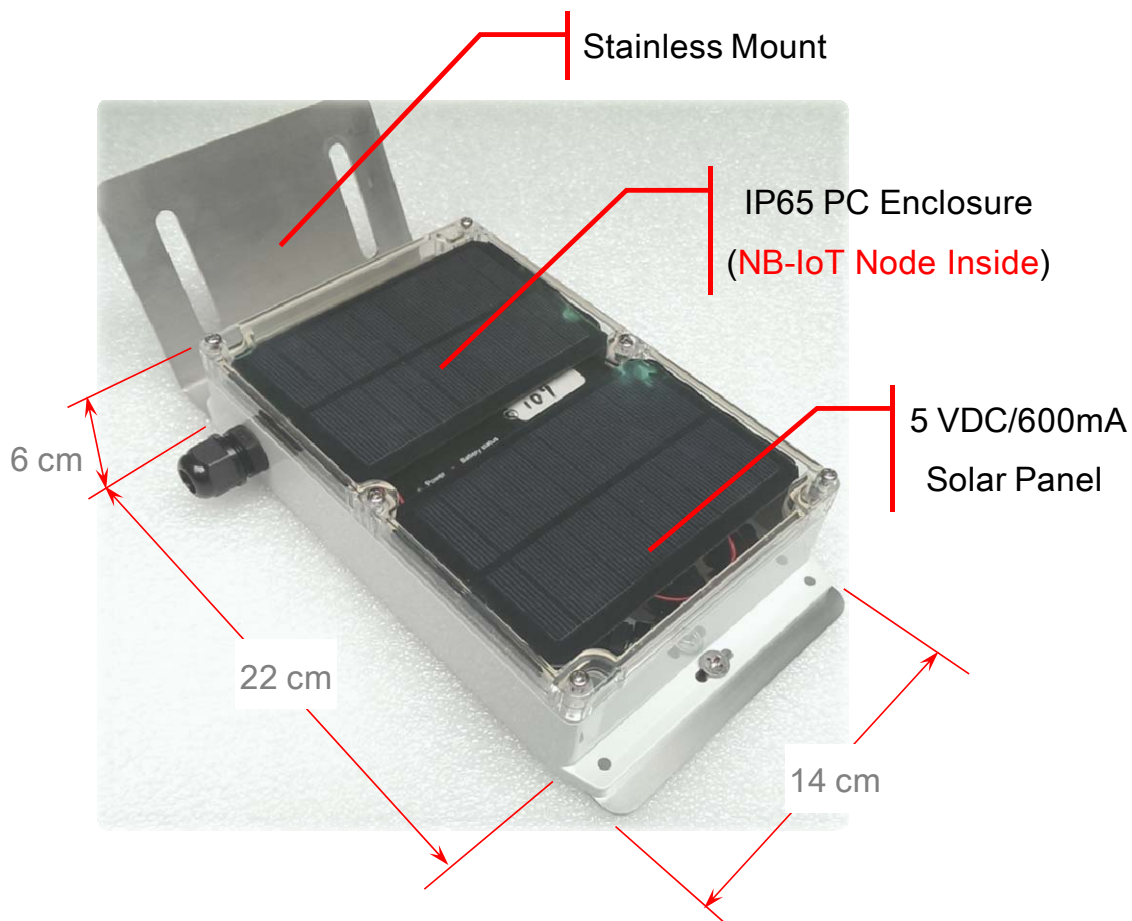
## KENKUL NB-IoT(Analog Input) Specification

<b>Analog sensor Input</b>	
Number of channels	2 differential channels
Input ranges	±5 V
ADC resolution	0.0001 VDC
ADC accuracy	16 Bit
<b>Rain gauge sensor Input</b>	
Number of channel	1 channel
<b>Thermistor sensor Input</b>	
Number of channel	1 channel (2 wires)
Temperature range	3K Thermistor
<b>Sensor power support</b>	
Voltage Output Maximum (100 mA)	5.0 VDC
<b>Extension Power support</b>	
Voltage Output (Battery Source)	3.3 VDC
<b>NB-IoT Wireless characteristics</b>	
Chipset	SIMCOM 7020E
RF data rate	26.15kbps (DL), Max. 62.5kbps (UL)
Support band	B1/B3/B5/B8/B20/B28
Connecting IP Address	Option 1 or 2 Address
Support Protcal	TCP/HTTP/MQTT
Antenna (Standard)	2 dBi
Transmission Range	Up to 7 km(Depend on service)
<b>Internal battery power</b>	
Type	3.3 V LiFePO4 3200mAh
Voltage range	3.0 ~ 3.6 V
<b>Power consumption(without sensors)</b>	
DAQ stage	22.0 mA(3.3 V)
Network work stage	>200 mA(3.3 V)
PSM stage	0.01 mA(3.3 V)
<b>Battery life(connecting 1 IP Address)</b>	
5 min sample interval(with 5V/10mA Sensor)	Up to 1 month (1 x 3.3V 3200mAh LiFePO4 Battery)
<b>External power charge</b>	
USB	5 V
Solar power	5 V (Max. 6.5 V Input)
<b>Physical characteristics</b>	
Dimensions (Not include Antenna)	118 x 36 x 150 mm



### **KENKUL NB-IoT Node Outdoor option accessory**

IP65 BOX with 5V(600mA)Solar panel kits(include stainless mount, NB-IoT Node space inside)



### Sensor Boost module option accessory

Sensor boost module cooperation with KENKUL LoRaWAN and NB-IoT node, support 12VDC to sensors and accept 2 of 4-20mA sensors converter signal to 1-5VDC to IoT node.

