KHOMP

ZigBee IR transmitter/receiver with temperature/humidity sensor, temperature probe and IR extension

Main characteristics

- Designed to receive 38 kHz modulated IR signals and output signals from a wide range of modulations
- Supports Khomp 1-Wire temperature probes
- Capable of storing an IR command profile with more than 80 options
- Support for control in most commercially available air conditioning equipment
- Internal temperature/humidity sensor
- External temperature probe*****
- It has an external IR extension*****, providing exclusive control assurance in the system via infrared

Applications

- Commercial refrigeration control
- Avoid tampering of settings
- Large-scale automation
- Temperature and humidity monitoring
- Energy savings

* *Optional accessory.*

Overview

   The NIR 21IR makes it possible to automate an entire commercial/industrial environment, ensuring that the air conditioning system is turned on/off at the pre-programmed time, via gateway or in standalone mode (when the product is not communicating with the gateway). It is compatible with the ITG 200 ZigBee Indoor gateway (developed and provided by Khomp). The NIR 21IR pairs with most air conditioning models on the market. With its high power emitter and very high sensitivity receiver, it is able to operate at a high operating angle, detecting and recognizing commands with ease. The IR protocol allows the association with the NIT 21IR without the need to open the air conditioner, and all communication is wireless.

   The NIR 21IR is a repeater in the network, it can replicate messages from other endpoints (such as NIT2xZ and NIR2xZ). It uses ZigBee (IEEE 802.15.4) network to communicate with the gateway and make the configurations, its internal memory is capable of storing the latest configurations and logging the actuation times. It takes temperature and humidity readings according to the period that was set (factory default is 5 minutes). It has support for up to 4 temperature probes.
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The optional IR Extension has two sides, one side blocks the signal to other infrared devices and the other side is a transmitter, to ensure that the signal reaches the air conditioner. The NIR 21IR does not need to be directly in line with the infrared sensor of the air conditioner when equipped with this extension.

Model

Khomp offers the NIR 21IR and its peripherals with the following features:

Model	Product	Description
NIR 21IR	ZigBee indoor infrared control endpoint repeater	IoT Repeater Node ZigBee indoor infrared
IR Extension (optional)	Infrared endpoint read/lock extension	TTL read/lock extension of the infrared endpoint
Temperature probe (optional)	1-Wire infrared endpoint temperature probe	IoT 1-Wire temperature probe 3-meter infrared endpoint

Technical specifications

Technical Specifications
- Transmission power 19 dBm
- Endpoint transmitter and router
- Type: ZigBee / 2.4 GHz
- Up to 15 hops
- Up to 15 directly connected child endpoints

Sender Specification
- Transmission power 5 watts
- 120 degree radiation angle
- Adjustable power

Receiver Specification
- 90 degree reception angle
- High sensitivity
- Integrated 38 kHz signal demodulator

Thermo-hygrometer sensor specification
- 0.5 °C accuracy
- 0.5% RH accuracy

Compatible endpoint versions
- ITG 200: v2.5.x.x or higher

Temperature probe
- 0.5 °C accuracy

IR Extension (optional)
- 180-degree reception angle, when glued in front of the receiver of the controlled device
- 90-degree reception angle when used as a reception extension
- Integrated transmitter with reduced power of 0.5 W
- Integrated demodulator

Power
- USB: Input 5 VDC
- Consumption:
- Stand-by (standby mode): 1 W
- Transmitting IR: 6 W

Physical / Environmental
- Case dimensions (LxWxH):
- 17x100x55 mm
- Weight: 60 g
- Operating temperature: -10 °C to 85 °C
- Operating humidity: 0-100% (non-condensing)

Warranties and Certifications
- Full warranty (legal + Khomp warranty): 1 year
  - Legal warranty: 90 days
  - Khomp Warranty: 9 months
- Anatel certification
- ISO 9001 industry certified

Product images

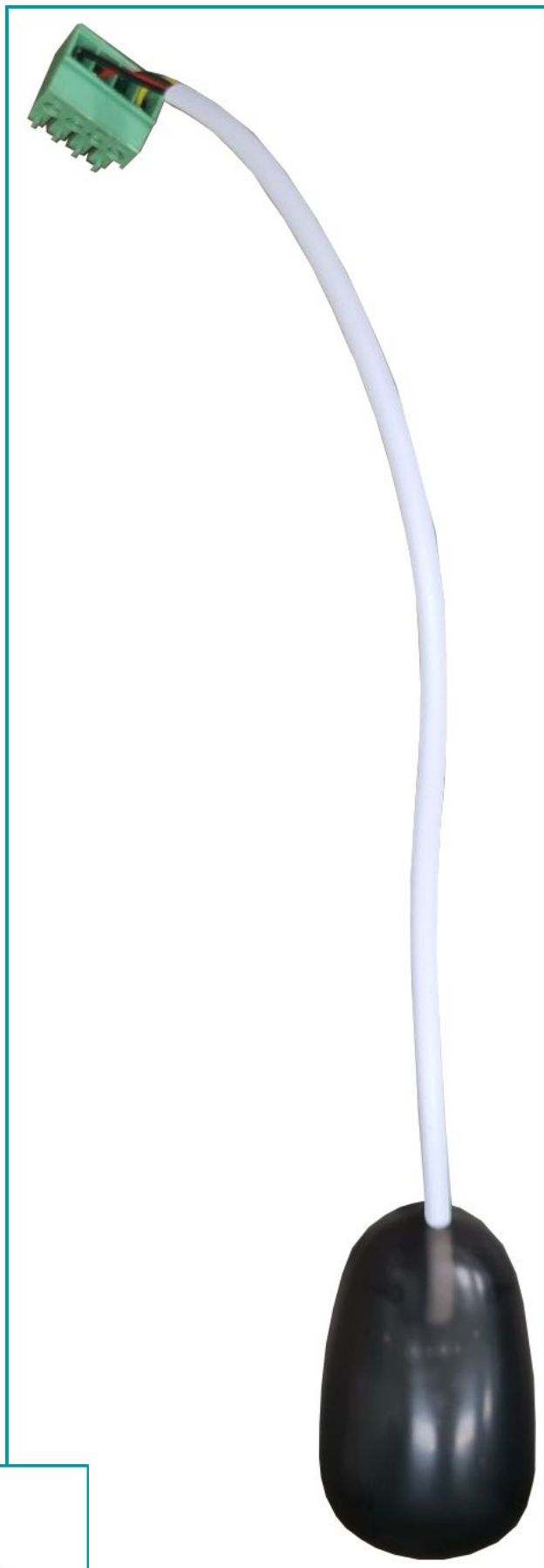**Caption**: *NIR 21IR, temperature probe, IR extension, power supply and source cable.*

Caption: *The side ports of the NIR 21IR are seen (connections for the Temperature Probe, the IR Extension, and the power supply).*

Product images

Caption: *Temperature probe.*

Caption: *IR Extension.*

Caption: *IR extension connected to the NIR 21IR.*

Product image

Caption: *Temperature probe connected to the NIR 21IR.*

Application model

IR is on the wall, in the same environment as the monitored device

Turns the air conditioning on/off via the IR extension