

## List of indoor Lora gateways

NO	Product Name	Features	Description	Indicative Price
1	PICO CELL V1.5 (ETHERNET WIFI GATEWAY LORA INDOOR EU868)	<ul style="list-style-type: none"> <li>▪ Max Channel: 8</li> <li>▪ Radio Frequency: 868Mhz</li> <li>▪ Ipsec Supported: Yes</li> <li>▪ Backhaul: Ethernet, Wifi and LTE (via USB port, optional dongle)</li> <li>▪ 3dBi antenna</li> <li>▪ Noise scan parallel</li> <li>▪ Web and App management Software for easy Installation and configuration</li> <li>▪ ThingPark LRR preinstalled</li> <li>▪ ThingPark LRR licenses included</li> <li>▪ Reconfigure for partners.thingpark.com (aka dev1.thingpark.com)</li> </ul>	<ul style="list-style-type: none"> <li>▪ This Picocell gateway is the perfect solution for Home Area Network or when local coverage is needed. The gateway has an intuitive Web and application interface for an easy installation</li> <li>▪ This gateway version is for non-commercial usage on partners.thingpark.com.</li> <li>▪ Provide a IoT total solution for HAN (Home Area Network)</li> <li>▪ Integrated Bluetooth, wireless and LoRa in one Gateway</li> <li>▪ ARM Cortex A8 CPU</li> <li>▪ Web &amp; App management SW for easy Installation and configuration</li> </ul>	<p>Price: 225 Euros</p> <p>Link:  <a href="https://market.thingpark.com/gateways/ufispace-pico-cell-v1-5-gateway-868mhz-lora-indoor-with-thingpark-lrr-preinstalled">https://market.thingpark.com/gateways/ufispace-pico-cell-v1-5-gateway-868mhz-lora-indoor-with-thingpark-lrr-preinstalled</a> </p>

			<ul style="list-style-type: none"> <li>▪ Easy Installation and configuration</li> <li>▪ Management UI</li> </ul>	
2	<p>Dragino:</p> <p>Open Wrt Lora Gateway LG01-P and LG01-S</p>	<ul style="list-style-type: none"> <li>▪ Dragino’s LoRa Gateways run OpenWrt on an Atheros AR9331</li> <li>▪ And Arduino on an ATmega328P</li> <li>▪ And bridge LoRa wireless with IP using WiFi, Ethernet, or 3G/4G.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The gateways offer support for single-channel LoRa wireless, which offers “extremely long ranges at low data-rates,” and “provides ultra-long range spread spectrum communication and high interference immunity,” says Dragino.</li> <li>▪ Estimated range. 5-10km.</li> <li>▪ The LoRa Gateway runs on 12V power and offers 2x 10/100 Ethernet ports, a USB 2.0 host port, and a second internal USB 2.0 interface.</li> <li>▪ The USB port is said to enable sensor network connectivity, while the internal USB supports an optional 3G or 4G cellular modem.</li> <li>▪ The gateway includes a 12dBi WiFi directional antenna, and supports LoRa at 433MHz, 868MHz, 915MHz, or</li> </ul>	<p>Price LG01-P: 56\$ LG01-S: 61\$</p> <ul style="list-style-type: none"> <li>▪ Link: <a href="http://linuxgizmos.com/openwrt-driven-lora-gateways-feature-indoor-and-outdoor-models/">http://linuxgizmos.com/openwrt-driven-lora-gateways-feature-indoor-and-outdoor-models/</a></li> </ul>

			920MHz.	
3	ITALKS INDOOR LORA GATEWAY	<ul style="list-style-type: none"> <li>▪ Frequency band: 868 MHz</li> <li>▪ Sensitivity: -138 dBm</li> <li>▪ Maximum Power: +27 dBm (500 mW)</li> <li>▪ Lora demodulators: 49</li> <li>▪ Parallel Channels: 8</li> <li>▪ Max connected nodes: ~ 60,000 (**)</li> <li>▪ Processor: 1GHz, ARM Cortex A8</li> <li>▪ OS: Linux</li> <li>▪ Software: Open Source</li> <li>▪ The Things Network</li> <li>▪ Lorient.io</li> </ul>	<ul style="list-style-type: none"> <li>▪ The ITalks Indoor Lora Gateway is a value for money ‘indoor Gateway, with which an on-site Lora Private network can be built up.</li> <li>▪ The Italks Indoor Lora Gateway is provided with “pre-loaded” software so that it will automatically connect to the Italks LoRaWan server .</li> </ul>	<p>Price: NA</p> <p>Link: <a href="https://www.mcs-nl.com/producten/italks-indoor-lora-gateway/">https://www.mcs-nl.com/producten/italks-indoor-lora-gateway/</a></p>
4	IFEMTOCELL LORA INDOOR GATEWAY	<ul style="list-style-type: none"> <li>▪ Indoor LoRaWan Gateway</li> <li>▪ Plastic case Connector: RJ45, USB (type A), for Lora SMA antenna (supplied with it), DC jack 12V power supply.</li> <li>▪ Ethernet 10/100 base Ethernet compliant external antenna is supplied with it,</li> </ul>	<ul style="list-style-type: none"> <li>▪ This indoor Lora Gateway is ideal for indoor Internet of Things (IoT) applications. He is easily installable and configurable and works with the LoRaWan protocol.</li> <li>▪ The iFemtocell can be used in two ways to build a private network Lora</li> </ul>	<p>Price: NA</p> <p>Link: <a href="https://www.mcs-nl.com/producten/ifemtocell_indoor_lora_gateway/">https://www.mcs-nl.com/producten/ifemtocell_indoor_lora_gateway/</a></p>

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5	Lora Gateway LORIX One IP65 indoor	<ul style="list-style-type: none"> <li>▪ Power supCpu ARM Cortex A5 600MHz</li> <li>▪ Ram 128 Mbytes DDR2 200MHz</li> <li>▪ Nand 256 Mbytes flash with PMECC</li> <li>▪ Linux Yocto 4.4</li> <li>▪ Passive PoE 9-50</li> <li>▪ Ethernet 10/100</li> <li>▪ SD-Card slot</li> <li>▪ mini USB serial interface</li> <li>▪ SX1301 gateway chip SPI based</li> </ul>	<ul style="list-style-type: none"> <li>▪ LoRa Gateway LORIX One IP65</li> <li>▪ Indoor Antenna 2 dBm</li> <li>▪ Mounting Loop</li> <li>▪ 24V power adapter</li> <li>▪ Injector PoE 24V</li> </ul>	<p>Price: 496 euros</p> <p>Link: URL link: <a href="https://wifx.net/shop/lora/1294-lora-gateway-lorix-one-ip65-indoor.html">https://wifx.net/shop/lora/1294-lora-gateway-lorix-one-ip65-indoor.html</a></p>

6	STARTER ITALKS PRIVATE INDOOR LORA	<ul style="list-style-type: none"> <li>▪ Out of the box Private Lora network for smart building applications</li> <li>▪ Lora indoor iFemtocell – Kerlink</li> <li>▪ Italks ERS Full CO2 sensor (incl. 2 batteries)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Starter Italks Private indoor Lora Smart Building includes all the components to make your own on your own Private Lora network, suitable for indoor measurements in buildings. That you are able for example to measure temperature, CO2 levels, PIR and humidity. Starter you are with these fully equipped. You only have through an API connection to read the data. The API connection is made via the Italks LoRaWan server.</li> </ul>	<p>Price: NA</p> <p>Link: <a href="https://www.mcs-nl.com/producten/starterskit-private-lora-indoor/">https://www.mcs-nl.com/producten/starterskit-private-lora-indoor/</a></p>
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**Remarque:** Given the provided features of the products, I propose to use “PICO CELL V1.5” indoor lora gateway since it provides many features that are suitable for indoor lora network testing. It also supports both Wifi and Ethernet connection. Moreover, it has a reasonable price.