

Yuktimantrah

Brief Introduction on LoRa Technology:

A LoRa-based IoT device is a communication system that uses LoRa (Long Range) technology to send and receive messages over long distances with low power consumption. These devices are often used in remote areas where cellular or Wi-Fi coverage is limited.

Key Features of a LoRa-Based Messaging Device:

- **Long-Range Communication** – Can transmit messages over distances of up to 10 km.
- **Low Power Consumption**
- **Decentralized Network**
- **Mesh Networking (Optional)**
- **End-to-End Encryption** – Ensures secure communication between devices.
- **GPS Integration** – Can include GPS for location sharing and tracking.
- **Private or Public LoRaWAN Support**

LORA BASED IoT DEVICE

- ❖ A LoRa Module (Low Power Radio waves to transmit data over long Range) is use to enable communication between 2 devices. (**1 transmitter & 1 receiver**)
- ❖ The IoT Device which we are presenting uses LoRa Technology.
- ❖ The Device can send signal from one to other.
- ❖ **Transmitter** has a keyboard where each key has different function.
- ❖ **Receiver** comes with four sockets (5 Amp each) which can be operated from transmitter.
- ❖ We can switch on & off the sockets attached at receiver from the transmitter.
- ❖ Each device comes with 12dBi antenna attached.
- ❖ In an Ideal Condition the Device can achieve ranges of several Km.
- ❖ Some tests have shown the result up to 10Km.



Use Cases:

- **Emergency Communication** – Used in disaster recovery when traditional networks fail.
- **Outdoor Adventures** – Ideal for hikers, campers, and explorers in remote areas.
- **Military & Defense** – Secure and reliable field communication.
- **IoT Applications** – Smart agriculture, remote monitoring, and industrial automation.
- **Community Networks** – Localized messaging systems in areas with poor connectivity.

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- 31 Punjab
- 9 Corps Sig Regt.
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- 20 MDSR
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