iocast™

LPWAN for the Internet of mission-critical things

Iocast is a wireless WAN that connects sensors and other low-energy nodes to back-end application servers. Iocast uses licensed narrowband land mobile radio (LMR) channels to increase range and performance and to safeguard against interference.

An iocast network includes *nodes* (sensors and other objects with embedded transceivers), *base transceivers*, a real-time *control stack*, and *application servers*, which communicate with their nodes using the *Iocast API*.

Iocast features a carrier-grade MAC layer and 128-bit encryption. Applications include security, asset tracking, public safety, mining, power generation, and other missions requiring long range, low node power, security, and high reliability. An Iocast network can concurrently support multiple application servers and applications ranging from a few nodes to billions of nodes.

Compared to ISM and cellular solutions, iocast offers a unique combination of reliability, security, and scalability for mission-critical IoT.

An Iocast network features licensed narrowband channels and a carrier-grade MAC layer, enabling secure and reliable wide-area communication with mobile and fixed nodes. A base transceiver can cover a single building up to a 1,200 square mile rural area. 4-7 base stations typically cover a major urban center, supporting multiple concurrent applications and millions of nodes. Authorized nodes may securely roam between systems.

Secure and Reliable
Carrier-grade protocol with dedicated channels
Mission-critical redundancy and fault-tolerance
128-bit AES encryption and key management
Secure node authentication and configuration

Flexible
Node mobility and secure roaming
Narrowband emissions (7X60FXD)
Compliant with FCC 22, 24D & 90

Scalable
Dozens to billions of nodes per system
9,600 bits/second/channel raw throughput
Multicast-capable MAC for large node groups

High-Performance Base Transceivers
Digital fixed transmitter and receiver
Transmit power from 0.25W to 250W
Micro and macro receiver diversity
Up to 600 square miles per base station

Low-Power Node Transceivers
Zero power static sleep mode
I^2C transceiver interface
Configurable per-node power consumption

Powerful API
Based on gRPC and proto3
Send/receive datagrams to/from nodes
Manage nodes and multicast groups

For more information, please contact us at info@criticalresponse.com.

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