RPMA® Network Access Point

Overview

The Ingenu RPMA® (Random Phase Multiple Access) Network Access Point (AP) provides the connection to all end points on the network and enables secure, remote monitoring of assets both above and below ground. A single RPMA Network AP can be deployed in rural or urban environments and when placed on a communication tower, building or hilltop, can provide reliable long-range coverage for up to 450 square miles. The Access Point communicates in a simple and efficient star topology and supports as many as 50,000 end points. With built-in security, dynamic failover, IP network management and simple provisioning, the RPMA Network Access Point provides low-power, wide-area networking with the least infrastructure requirements, resulting in the lowest cost of ownership for machine-to-machine communication.

Applications

RPMA Network Access Points are suited for numerous monitoring and management applications.

- Smart Utility/Smart City
- Transportation
- Industrial Monitoring
- Public Infrastructure
- Security Monitoring
- Asset Monitoring

Features & Benefits

- Low-power, wide-area coverage for connectivity in both rural and urban environments
- Remote monitoring of corporate assets, both above and below ground
- Manage costs with remote, over-the-air firmware update capability
- Near real-time communications reduces downtime and improves reporting
- Scalable device and network capability – one AP can support as many as 50,000 concurrent endpoints
- Security by design with AES 128-bit authentication, TDES 192-bit encryption
- Remote disconnect/reconnect supported
- Simple installation with integrated cellular and GPS antennas
- Simple network infrastructure with robust operation in the globally unlicensed 2.4GHz ISM band
- Industry standard interfaces for back-office and operational system integration

Technical Specifications

General

Frequency	2.4GHz ISM
Bandwidth	1 MHz
Transmit Power	+30 dBm (FCC/ICI), +27dBm (ETSI)
Receiver Sensitivity	-142 dBm (FCC/ICC), -142 dBm (ETSI)
Signal Modulation	DSSS ODPSK
Maximum Throughput	60 kbps (in 1 MHz)
Topology	Point-to-Multipoint / Star
Maximum Allowable Path Loss	172 - 180 dBm
Capacity per AP	Up to 50,000 devices per channel
RPMA Line-of-Sight Range	Up to 2,000 miles
RPMA Network Coverage	50-450 square miles
Product Lifecycle	Up to 20+ years

Physical Interfaces

ISM Antenna	N-Type Female
Data & Power Connector	RJ45
Power	Power over Ethernet (POE) - 4 connections, 2 spare

Mechanical

Enclosure	IP66 rated
Size	9.1"H x 8.1"W x 4.5"D / 232mm H x 202mm W x 111mm D
Weight (Maximum)	9.6 lbs. / 4.35 kg

Environmental

Operating Temperature Range	-40°C to +80°C
Storage Temperature Range	-40°C to +85°C
Relative Humidity	5% to 95% (non-condensing)

Electrical

Power Source Voltage Range	38 – 72VDC, Nominal 48VDC
Current Consumption	0.35 A maximum @ 48 VDC
Power Dissipation	17 watts (maximum)
Typical Power Consumption (Rx)	5.0W
Typical Power Consumption (Tx)	FCC 14W, ETSI 9.1W
Peak Draw	24 Watts

Security

Encryption	TDES 192-bit
Authentication	AES 128-bit, Mutual authentication of network elements

Agency Approval

FCC, IC	Part 15, RSS210e
ETSI	EN300-440-2, EN301-489-2

About Ingenu

Ingenu is building the first wireless Machine Network, the world's largest IoT network dedicated to connectivity for machines. Operating on universal spectrum, the company's RPMA® technology is a proven standard for connecting Internet of Things (IoT) and machine-to-machine (M2M) devices around the world, with more than 38 networks deployed over seven years. The Machine Network™ will have further reach, global range and longer lasting battery life than any existing network. It is also future-proof – enabling technology solution providers to maximize their product's efficiency and longevity, with unparalleled control and visibility. Information about Ingenu can be found at http://www.ingenu.com, or follow us on Twitter @ingenunetworks.

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