Elevating Bandwidth to the Nth Power: The Motorola AP 7181

The Motorola Mesh Wide Area Network (MWAN) portfolio includes the AP 7181, an outdoor high performance, multi-radio 802.11n mesh access point that delivers exceptional network capacity and performance. By embracing the 802.11n standard and optimizing radio hardware and software components, maximum throughputs and connections for mesh networking are realized. The AP 7181 delivers fast, stable connections and allows 802.11n capabilities to be extended outdoors. The AP 7181 is the result of years of customer research and development and is designed specifically to meet the outdoor network needs of enterprises, municipal agencies, and transit systems.



About Motorola Wireless Broadband

Motorola's comprehensive portfolio of reliable and cost-effective wireless broadband solutions, together with our WLAN solutions, provide and extend coverage both indoors and outdoors. The Motorola Wireless Broadband portfolio offers high-speed Point-to-Point, Point-to-Multipoint, Mesh, WiFi and WiMAX networks that support data, voice and video communications, enabling a broad range of fixed and mobile applications for public and private systems. With Motorola's innovative software solutions, customers can design, deploy and manage a broadband network, maximizing uptime and reliability while lowering installation costs.

Superb Antenna Technology

Motorola's exclusive intelligent ADEPT (ADvanced Element Panel Technology) antenna system was developed specifically for the AP 7181. The ADEPT system allows the AP 7181 to achieve maximum data rates by enabling dual data stream communication via dual polarization antennas. Leveraging multiple transmit and receive RF chains, dual polarized antennas and software configurable down tilt, the AP 7181 achieves excellent coverage without the self-shadowing caused by multiple dipole antennas.

High Capacity

The AP 7181 features 2.4 GHz and 5.x GHz radios that support 3x3 MIMO (Multiple Input Multiple Output) technology reaching a maximum data rate of 300 Mbps. This results in additional capacity, which delivers improvements at both the client and backhaul level. The MIMO technology is combined with high performance radios designed by Motorola to maintain high power transmissions at some of the highest data rates. These radios, coupled with the ability to use 40 MHz channel widths, allows the added capacity of the AP 7181 to be leveraged for advanced applications.

Excellent Mesh Routing

The AP 7181 offers robust data connections throughout the network by leveraging Motorola's leading routing technology, MeshConnex™. MeshConnex provides efficient routing, low latency, low routing overhead, high-speed handoffs and proven scalability. The Opportunistic Radio Link Adaptation (ORLA) is a key decision-making element within MeshConnex™, designed to select data rates that will provide the best throughput at any given time. ORLA helps ensure Motorola mesh networks deliver sustained throughput at the highest possible data rate.

The AP 7181 features fast hand-offs, intelligent routing and seamless security, all key mobility enhancements exclusive to Motorola. The AP 7181 enables a true mobile office in the field, keeping highly mobile workers connected to key office applications, resulting in improved response times and greater process efficiencies.

Mesh Wide Area Network Management and Deployment

The AP 7181 has been designed to provide added flexibility in both mounting location and software configuration to help minimize deployment and installation costs, maximize ROI and provide for a lower total cost of ownership (TCO). From a mounting perspective, the AP 7181 has been designed for easy installation on buildings, roof tops and light poles, reducing the time required for deployment.

The unit's deployment process offers a clear work flow and organized menu options for configuration. Coupled with network wide management through One Point Wireless Manager, one application can be used to monitor and maintain AP 7181 configuration consistency throughout a deployed network, and further assist with post deployment optimization via templates and discovery of installed nodes.

One Company. One Network. One Complete Solution.

Only Motorola delivers mobility and agility inside the enterprise, between locations and out to end-user devices. The AP 7181, together with the AP-7131 indoor access point, creates one of the only seamless indoor/outdoor mesh network solutions in the industry, ensuring contiguous coverage throughout city or campus environments.

Radio Features

802.11 b/g/n Radio

Operating Frequency: 2.4-2.462 GHz
Modulations:
- Orthogonal Frequency Division Multiplexing (OFDM)
- (BPSK, QPSK, 16-QAM, 64-QAM)
- 802.11b – DSS (BPSK, QPSK, CCK)

3x3 MIMO with 2 Data Streams
Supported Channels: 20 and 40 MHz
Maximum Transmit Power:
36 dBm EIRP*
Settable in 1 dB increments
Receiver Sensitivity
- 802.11g 2.4 GHz: -78 dBm @ 54 Mbps to -89 dBm @ 6 Mbps
- 802.11n 2.4 GHz: -70 dBm @ MCS 15 to -80 dBm @ MCS0

802.11 a/n Radio

Operating Frequency: 5.470-5.865 GHz (ETSI/EU), 5.725-5.850 GHz (FCC/IC)
Modulations:
- Orthogonal Frequency Division Multiplexing (OFDM)
- (BPSK, QPSK, 16-QAM, 64-QAM)

3x3 MIMO with 2 Data Streams
Supported Channels: 20 and 40 MHz
Maximum Transmit Power:
32 dBm EIRP
Settable in 1 dB increments
Receiver Sensitivity
- 802.11a 5.x GHz: -72 dBm @ 54 Mbps to -89 dBm @ 6 Mbps
- 802.11n 5.x GHz: -63 dBm @ MCS15 to -88 dBm @ MCS0

DFS Support:
ETSI EN 301 893 v1.5.1 for 5.4 GHz
ETSI EN 302 502 v1.2.1 for 5.8 GHz

Antenna Specifications

ADvanced Element Panel Technology (ADEPT)
- Integrated 2.4/5.x GHz antenna system
- Dual polarization
- Software configurable down tilt antennas
- Optional remote mounted panel antennas

*Transmit power may vary based upon the deployed country.

Hardware Specifications

AC Option: 100 – 240 VAC at 47-63 Hz
AC Power Consumption: 84 Watts Average, 126 Watts Peak
DC Option: 48 VDC
DC Power Consumption: 66 Watts Average, 99 Watts Peak
Ethernet Ports:
- 2 ports auto sensing 10/100/1000 Base-T Ethernet
- RJ45 Console port
- Integrated 802.3af PoE out

Hardware reset button
Network status LEDs
Dimensions: (height x diameter at widest point): 15.35" x 14" (39cm x 35.5cm)
Weight: 39 pounds (17.7 kilograms)

Environmental Specifications

Operating: -40 to +55 °C
Storage: -40 to +85 °C
Humidity: 5 to 95 % RH non-condensing
Enclosure:
- IP67 rated, corrosion resistant enclosure
- ASTM B117 salt, fog, and rust resistance

Wind Ratings: Wind survivability > 160 Mph
Operational Shock: MIL-STD-516.5 Procedure
Operational Vibration: MIL-STD-810F method 514.5A Procedure

Routing Protocol

MeshConnex™
- Layer 2 based routing providing greater performance and less overhead
- Multi-Radio mesh allows meshing on each radio
- Automatic neighbor detection and route determination
- Self-healing enabled by dynamic path selection

Security

Client Security: WPA, WPA2-PSK, WEP, 802.11i, RADIUS, 802.1X (includes EAP-TLS, EAP-TTLS)
Encryption: WEP, AES-CCM, TKIP
Intra-Mesh Encryption: Secure Mesh with AES
Authentication: 802.1x (Infrastructure/Client) and MAC address hardware authentication

Software Features

- 16 WLANs
- Multi-Radio mesh routing
- 802.11e QoS
- 4 BSSIDs per radio
- On demand channel scan
- Auto channel select
- Frame aggregation
- WEB-based GUI for local configuration
- Ethernet filters

Management

One Point Wireless Manager
- Device discovery
- Inventory management
- Alarm/event management
- Google Maps network view
- Over-the-air upgrades
- Fault, Configuration, Administration, Performance and Security (FCAPS)

BroadbandPlanner
- Performance prediction tools
- Streamline mesh deployments

Approvals

FCC CFR 47 Part 15, Class B Subpart C
Industry Canada RSS 210
UL 60950-1, -22
CE
EN 301 489-17
EN 300 328
EN 302 502 v1.2.1
EN 301 893 v1.5.1 DFS
CB – IEC 60950-1, -22
RoHS/WEEE, EPP, CMM

Optional Accessories

Optional mounting kits
Optional remote mounted panel antennas
Street light power tap adaptor
US, EU, DC power cables

Warranty

One (1) year on hardware, parts and software

MOTOROLA

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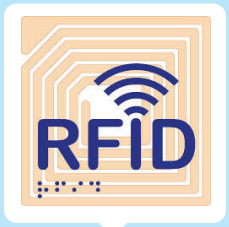
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GRUPO LOGISCENTER, S.L. - The Barcode Solutions Center
Av. Puente Cultural 10-A • 28702 San Sebastián de los Reyes - MADRID (Spain)
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