AP 650

802.11n WLAN Access Point

FEATURES

Full 802.11n performance with standard 802.3af
Simplifies and reduces total cost of installation using standard Power-over-Ethernet (PoE)

One or two radio option
Helps reduce costs for single band networks

Multiband Operation
Allows concurrent sensing on 2.4 Ghz and 5.0 Ghz frequency bands for multi-band intrusion protection or troubleshooting

2x3 MIMO radio
High throughput MIMO technology with extended range capabilities

Mobility
Supports fast secure roaming

Security
This unique multi-purpose device can execute and enforce the IDS/IPS security policies configured in the Motorola wireless switch, and can also be utilized as a 24x7 dedicated sensor with Wireless IPS from Air Defense

The AP 650 is a thin (dependent) multipurpose access point designed to lower the cost of deploying and operating a secure, reliable 802.11n wireless LAN (WLAN) in branch offices or headquarters facilities. The AP 650 offers simultaneous WLAN access and sensing enabling remote over-the-air helpdesk support, or Wireless intrusion prevention.

Fast and Easy Deployment

The AP 650 derives its intelligence from an RFS switch/controller, so installation is plug-and play-for optimal service in new wireless WLANs.

Automatic Channel and Power Optimization

Common problems such as building attenuation, electronic interference or sub-optimal access point placement are minimalized as the SMART RF feature of the switch/controller automatically optimizes power and channel selection so each user gets always-on high-quality access and mobility.

On-the-fly Remote Helpdesk

The AP 650's multipurpose architecture allows IT to extend immediate helpdesk support – as if the technician was sitting directly under the access point. Motorola helpdesk solutions supported by the AP 650 includes:

AirDefense Advanced Troubleshooting allows any helpdesk technician to immediately emulate and test a user's connectivity over-the-air from device all the way to the back-end application and isolate the obstruction, even if it is not caused by the WLAN.

Spectrum Analysis allows the helpdesk technician to analyze the local spectrum for interference.

AirDefense Vulnerability Analysis allows the helpdesk to remotely scan for security breaches on the wired or wireless network on a scheduled or periodic basis to assure network security and regulatory compliance.

Gap-free Security

Security includes layer 2-7 stateful packet filtering firewall, AAA RADIUS services, Wireless IPS-lite, VPN gateway, and location-based access control. Users can also add role-based access control and AirDefense Wireless IPS and Rogue detection for premium-level security vigilance. Because the sensor supports simultaneous multi-band sensing (band un-locked) for both 2.4 MHz and 5.0 MHz spectrums, the Wireless IPS and rogue detection is always-on with no timeslicing.

High Reliability

The AP 650 is designed to optimize network availability through its central and pre-emptive intelligence which dynamically senses weak or failing signals, securely moves mobile users to alternate APs, and boosts signal power to automatically fill RF holes and ensure uninterrupted mobile user access.

Full Performance using Standard POE

The AP 650 is designed to provide full 802.11n performance using standard and lower cost POE 802.3 (af).

Application Support
Supports Call Admission Control, for optimized VoWLAN performance, as well as video streaming and data throughput for 802.11 a/b/g/n clients

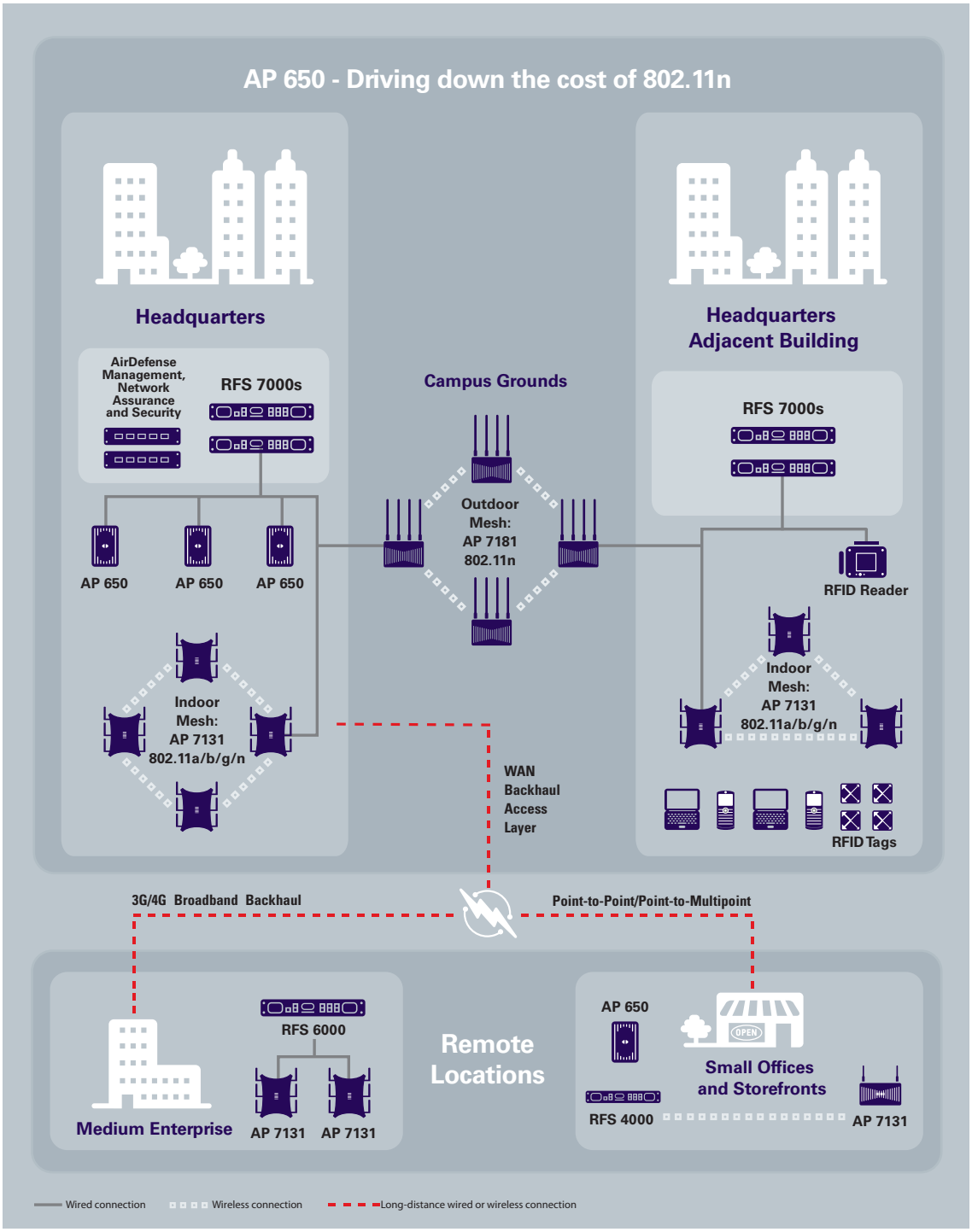
Load balancing, pre-emptive roaming and rate scaling
Increases reliability and resilience of the wireless network to support mission critical applications

Dual form-factors
Plenum-rated external antenna model with metal housing is ideal for installation above ceiling tiles; the plastic internal-antenna housing allows for installation within the "carpeted-space" and provides cost-effective coverage via the integrated 2.4 GHz and 5.2 GHz antennas

Flexible mounting options
Fast and easy installation with wall, ceiling and above-ceiling tile mounting options; internal antenna version snaps on to T-bars of suspended ceilings without the use of any hardware; external antenna version installs above ceiling tiles

AP 650 network architecture

The AP 650 offers the comprehensive functionality necessary to extend wireless voice, video and data access in any size facility – whether headquarters or branch location.



Device mobility
Supports fast, secure roaming at Layer 2 and Layer 3. In addition, the network optimizes mobile performance with load balancing, pre-emptive roaming and rate scaling.

Greater Coverage per AP
The powerful 24 dBm radio increases coverage, performance and obstruction penetration versus 23 dBm radios. In addition, receiver sensitivity has been increased proportionally so users have an increased ability to maintain high-performance access through thick doors and walls to users even while on-the-move. In addition, the AP 650's 2 x 3 MIMO design ensures premium transmit and receive communications.

Voice, Locationing, Hotspots, Guest Access
Out-of-the-box, the AP 650 supports voice over wireless LAN (VoWLAN) QoS, which ensures toll-quality even with many simultaneous VoWLAN calls on a single access point. Locationing services over 802.11 provide the ability to locate and track people or assets, and even to control access to the network or applications. In addition, its easy to provide hotspot and guest access and assure the user can only access authorized networks, sites, or applications.

Device and Network Acceleration
Device and network performance can be accelerated through a virtual LAN feature via the switch/controller. Each AP 650 access point can be virtualized into four unique VLANs which can be customized to direct broadcast traffic to the intended recipient. This reduces overall network traffic while improving device performance and battery life up — to 25%. This also reduces the overall number of access points required to provide unique device services.

Simple Maintenance
The AP 650 requires no configuration or manual firmware maintenance. The Motorola wireless controller discovers access points on the network and automatically downloads all configuration parameters and firmware, greatly reducing installation, maintenance and troubleshooting costs for Layer 2 and Layer 3 deployments.

For more information, visit us on the Web at www.motorola.com/ap650 or access our global contact directory at www.motorola.com/enterprisemobility/contactus

AP 650 Specifications

Physical Characteristics	AP 650 (internal antenna)	AP 650 (external antenna)
Dimensions:	9.5 in. L x 7.5 in. W x 1.7 in. H 24.13 cm L x 18.916 cm W x 4.36 cm H	8.5 in. L x 5.6 in. W x 1.5 in. H 21.64 cm L x 14.10 cm W x 3.771 cm H
Weight:	2.0 lbs./.91 kg	2.5 lbs./1.14 kg
Part number:*	AP-0650-60010-WW; AP-0650-60010-US; AP-0650-66030-WW ; AP-0650-66030-US	AP-0650-60020-WW; AP-0650-60020-US AP-0650-66040-WW; AP-0650-66040-US
Available mounting configurations:	Ceiling-mount (to suspended ceiling T-bars, below tile); wall mount	Ceiling-mount (above tile); wall-mount
Plenum rated:	No	Yes, certified to UL 2043
LED indicators:	2 LED indicators with multiple modes indicating 2.4GHz/5 GHz Activity, Power, Adoption and Errors	
Wireless Data Communications and Networking		
Data rates supported:	802.11b/g: 1,2,5.5,11,6,9,12,18,24,36,48, and 54Mbps802.11a: 6,9,12,18,24,36,48, and 54Mbps 802.11n: MCS 0-15 up to 300Mbps	
Network standard:	802.11a, 802.11b, 802.11g, 802.11n	
Wireless medium:	Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM), and Spatial Multiplexing (MIMO)	
VLANs/WLANs supported:	VLANs and WLANs are controller-dependent	
Uplink:	Auto-sensing 10/100/1000Base-T Ethernet	
Radio Characteristics		
Operating channels:	5GHz: All channels from 4920 MHz to 5825 MHz 2.4GHz: Chan 1-13 (2412-2472 MHz), Chan 14 (2484 MHz) Japan only Actual operating frequencies depend on national regulatory limits	
Maximum available transmit power:	24dBm	
Transmit power Adjustment:	1dB increments	
Antenna configuration:	2x3 MIMO (transmit on two and receive on all three antennas)	
Operating bands:	FCC EU 2.412 to 2.462 GHz 2.412 to 2.472 GHz 5.150 to 5.250 (UNII -1) 5.150 to 5.250 GHz 5.725 to 5.825 (UNII -3) 5.150 to 5.350 GHz 5.725 to 5.850 (ISM) 5.470 to 5.725 GHz (Country Specific) Japan 2.412 to 2.484GHz 4.900 to 5.000 GHz 5.150 to 5.250 GHz	

Continued on next page...

AP 650 Specifications (continued)

User environment	AP 650 (internal antenna)	AP 650 (external antenna)
Operating temperature:	32°F to 122° F/0°C to 50° C	
Storage temperature:	-40°F to 158° F/-40°C to 70° C	
Operating humidity:	5%-95% (non-condensing)	
Operating altitude:	8,000 ft./2438 m	
Storage altitude:	15,000 ft./4572 m	
Electrostatic discharge:	+/- 15 kV (Air), +/- 8 kV (contact)	

Power Specifications	
Operating voltage:	802.3af supply: 48 VDC @ 12.95W (typical), 36 VDC to 57 VDC (range)
Operating current:	270mA (typical)
Integrated Power-over-Ethernet support:	Standards-based IEEE 802.3af

Maximum radio transmit power:

BAND	SINGLE ANTENNA COMPOSITE TRANSMIT POWER	DUAL ANTENNA COMPOSITE TRANSMIT POWER
2400MHZ	+21 dBm	+24 dBm
5200MHZ	+19dBm	+22 dBm

Typical rms power consumption

Option1	DC VOLTAGE	DC AMPS	DC POWER CONSUMPTION
1	48V	270mA	12.95W
2	48V	209mA	10.00W

Antenna Specifications		
Type:	Integrated 2.4 GHz and 5.2 GHz Dual-Antenna Elements	Six RSMA connectors for external antennas (not included)
Band:	2.4 GHz to 2.5 GHz; 4.9 GHz to 5.850 GHz (actual operating frequencies depend on regulatory rules and certification agency)	
VSWR:	< 2:1	Antenna-specific
Gain:	2.0 dBi (2.4GHz), 4.8dBi (5GHz)	Antenna-specific

Internal antenna information

INTERNAL ANTENNA DESCRIPTION	VALUES
VSWR	< 2:1
Peak gain, 2.4GHz band	2.0dBi
Peak gain, 5.2GHz band	4.8dBi

Regulatory	
Product safety certifications:	UL 60950, cUL, EU EN 60950, TUV and UL 2043 (external antenna)
Radio approvals:	FCC (USA), Industry Canada, CE (Europe) and TELEC (Japan)

Continued on next page...

Receiver Sensitivity
(typical) at antenna housing connector (metal housing), 2400MHz band

Rate/MCS	Mode	Average sens (dBm)
1	Legacy	-95
2	Legacy	-94
5.5	Legacy	-93
11	Legacy	-90
6	Legacy	-94
9	Legacy	-94
12	Legacy	-94
18	Legacy	-94
24	Legacy	-90
36	Legacy	-87
48	Legacy	-83
54	Legacy	-82
MCS0	HT20	-94
MCS1	HT20	-93
MCS2	HT20	-91
MCS3	HT20	-87
MCS4	HT20	-84
MCS5	HT20	-80
MCS6	HT20	-79
MCS7	HT20	-77
MCS8	HT20	-94
MCS9	HT20	-91
MCS10	HT20	-88
MCS11	HT20	-85
MCS12	HT20	-82
MCS13	HT20	-78
MCS14	HT20	-77
MCS15	HT20	-75
MCS0	HT40	-88
MCS1	HT40	-88
MCS2	HT40	-87
MCS3	HT40	-84
MCS4	HT40	-82
MCS5	HT40	-77
MCS6	HT40	-76
MCS7	HT40	-74
MCS8	HT40	-88
MCS9	HT40	-87
MCS10	HT40	-85
MCS11	HT40	-82
MCS12	HT40	-79
MCS13	HT40	-75
MCS14	HT40	-73
MCS15	HT40	-71

Receiver Sensitivity
(typical) at antenna housing connector (metal housing), 5200MHz band

Rate/MCS	Mode	Average sens (dBm)
6	Legacy	-93
9	Legacy	-93
12	Legacy	-93
18	Legacy	-92
24	Legacy	-89
36	Legacy	-86
48	Legacy	-82
54	Legacy	-81
MCS0	HT20	-93
MCS1	HT20	-92
MCS2	HT20	-90
MCS3	HT20	-86
MCS4	HT20	-83
MCS5	HT20	-79
MCS6	HT20	-78
MCS7	HT20	-76
MCS8	HT20	-93
MCS9	HT20	-90
MCS10	HT20	-87
MCS11	HT20	-84
MCS12	HT20	-81
MCS13	HT20	-77
MCS14	HT20	-75
MCS15	HT20	-74
MCS0	HT40	-90
MCS1	HT40	-88
MCS2	HT40	-86
MCS3	HT40	-83
MCS4	HT40	-80
MCS5	HT40	-76
MCS6	HT40	-74
MCS7	HT40	-73
MCS8	HT40	-89
MCS9	HT40	-86
MCS10	HT40	-84
MCS11	HT40	-81
MCS12	HT40	-78
MCS13	HT40	-74
MCS14	HT40	-72
MCS15	HT40	-71

motorola.com/wlan

L-TRONDIRECT

Your Success is Our Passion!

35 YEARS

www.L-TronDirect.com

800-830-9523

info@L-Tron.com

Get in touch with us on social media!

596 Fishers Station Dr | Victor, NY | 14564 | Suite 1 A

www.L-Tron.com