connectors should be connected to these sockets.

the Power lap to that particular source.

power source.

power source.

• Disconnect **DATA IN** and **DATA PWR OUT** before opening the enclosure.

• The Power Tap DATA IN and DATA/PWR OUT ports are RJ-45 sockets. Only RJ-45 data

voltage indicated on the label is different from the power outlet voltage, do not connect • A voltage mismatch can cause equipment damage and could pose a fire hazard. If the

Ensure a fuse or circuit breaker no larger than (277VAC, 5A) is used on the phase • This product relies on the building installation for short-circuit (over current) protection.

Follow basic electricity safety measures whenever connecting the Power lap to its

Canada Recommended - Gardner Bender 6-14 AWG Mechanical Lug; GSLU-3; UL Listed).

approved connector that is certified, as appropriate, for country of installation. (For US/

• The protective earth wire connector is not supplied with the device. Use only a suitable

• The protective earth cable is not supplied with the device. Use only a minimum wire size

• The earth ground connector must be connected to a earth ground as defined by local

Extra-Low Voltage) circuits according to IEC 60950. These interfaces can only be

• The power cable must be rated for a minimum of 277VAC RMS operation, with a

• Only trained and qualified personnel should install and remove the Power Tap.

• The Power Tap **BATA U** and **BATAQ** bns **VI ATAQ** are qualified as SELV (Safety

that's certified, as appropriate, for the country of operation. Unly a licensed electrician

• A power cable is not supplied with the device. Use only a correctly rated power cable

installation and use of the device. Also, review standard practices for preventing accidents.

before operating any equipment, review this document for any hazards associated with

• Read the installation instructions before connecting the Power Tap to a

of 14 AWG that is certified, as appropriate, for the country of installation.

• All primary wiring must be completed by a licensed and certified electrician.

minimum rated current capacity of 5A [or as defined by local code].

connected to SELV interfaces on other equipment.

should install the power cable.

Revision A April 2007

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(3)

444 118 945 7360 Distributor Operations Contact local distributor or call Europe/Mid-East -1-954-255-2610 Ot32-232-439-14 Sales Support earn America 2U 9bisnl 8710-745-008-1 Outside Spain +34 81 354 40 00 84422900 Sweden/Sverige Inside Spain Spain/España 91 324 40 00 11-8095311 South Africa +47 2232 4375 Norway/Norge Netherlands/Nederland 319-5/1/00 9581-029-9 ΙΛΙθΧΙCΟ/ΙΛΙΘΧΙCΟ l.bbb8b-7. taly/Italia nermany/Deutschland 07064-40050 12-22-96-04-10 -rance 089 7048 6 Finland/Suomi 8171-0207 Denmark/Danmark Austria/Osterreich J-800-672-906 0-1649-909-Australia United Kingdom 0096-9649-99+ JSI3/Pacific 0800 358 5454 1-631-738-2400

> United States contact Motorola.

facility's Technical or Systems Support. If there is a problem with the equipment, they will applications. If you have a problem running your unit or using your equipment, contact your Before using the unit, it must be configured to operate in the facility's network and run your Service Information

0989-899-008-L

Callada

# **Technical Specifications**

# **Physical Specifications**

977/-679-906

Width 6.5 inches (165 mm) Heiaht 3.75 inches (95 mm) 8 inches (203 mm) Depth Weight 1.6 lbs (726 grams)

#### **Environmental Specifications**

-30°C to 55°C (Operating), -40°C to 85°C (Storage) Temperature Humidity 5% to 95% Non-condensing (both Operating and Storage)

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Altitude 8,000 feet/2438 m @28°C (Operating) 15.000 feet/4572 m @12°C (Storage)

Electrostatic Discharge 20kV (air) @ 50% rh, 8kV (contact) @ 50% r

Bench drop 36 inches to concrete Dron Wind Blown Rain 40 MPH @ 0.1inch/minute, 15 minutes

## **Electrical Specifications**

Operating Voltage (input) 100-280VAC Operating Voltage (output) 48VDC

representative. The packages should contain the following:

## Verifying Package Contents

installation procedures, refer to the site-specific documentation derived from site survey and guide does not provide site-specific installation procedures. For detailed site-specific National Electrical Code (NEC) and Canadian Electrical Code (CEC) standards. This guide

# To the Installer

**Caution** - Only a certified electrician should attempt to open the Power Tap and feed the power

AP-5181 1-Port Power-over-Ethernet

ONUORO HTRAE

The Power Tap has a "transient ground" on the back of the unit used to ground the unit at the point of installation as a means of surge protection. A separate Power Tap is required for each AP-5181 comprising the network. The connection of the transient ground to an earth ground is

abiua noitallaten

Power lap

**Caution** - Ensure the Power Tap is connected to a protected AC supply (AC mains service disconnect box or breaker box). Again, only a certified electrician should attempt to open the

**Caution** - Using the Power Tap with an unsupported Motorola device (other than the AP-5181

- Meets the IEEE 802.3af standard- mid span power over un-used pairs (no discovery)
- Minimum port output continuous allowable power of 15W at 48V minimum (minimum 12 95W at the PDTF)
- Wall mount installation support

• 2 Weather Sealed Connector Plugs

• 1 Connector Cover

• This Power Tap Installation Guide (Part No. 72-95250-01)

• 1 Power Tap (Part No. AP-PSBIAS-5181-01R)

Justicet the package contents and report any missing or damaged items to your sales

site network analysis.

brovides specifications, procedures and guidelines to use during the installation process. This assumes the technician is familiar with basic Ethernet LAN-based networking and IEC60364, This guide is intended for the technician responsible for installing the Motorola Power Tap. It

The Power Tap has a 100-280 VAC power input (LINE AC connector) on the bottom of the unit,

accessed through a weather sealed gland. To supply power, a certified electrician is required

to open the Power Tap enclosure, feed the power cable (customer supplied) through the Line

AC gland, secure the power cable to the unit's three screw termination block and tighten the

3-ground

unit's LINE AC gland (by hand) to ensure the power cable is properly weather sealed.

2-neutral

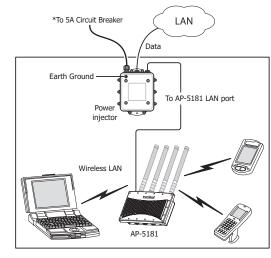
#### Safety Information

Introduction

When users purchase a Motorola WLAN solution, they often need to place access points in obscure locations. In the past, a dedicated 24-hour, power source was required for each access point in addition to the Ethernet infrastructure. This often required an electrical contractor to install power drops at each access point location. With the Motorola AP-5181 Power Tap solution (Part No. AP-PSBIAS-5181-01R), centralized power can now be provided for an AP-5181 (deployed outdoors) without a local power supply for each AP-5181. Thus, the Power Tap is optimal for proper electrical isolation from outdoor electrical events.

# **Product Description**

The Motorola Power Tap (Part No. AP-PSBIAS-5181-01R) is a single-port, 802.3af compliant Power-over-Ethernet hub combining low-voltage DC with Ethernet data in a single cable connecting to an AP-5181 model access point. The Power Tap is designed and ruggedized for use with an AP-5181's outdoor deployment. The Power Tap's single DC and Ethernet data cable creates a modified Ethernet cabling environment eliminating the need for separate Ethernet and power cables.



\* 5 Amp Circuit Breaker - UL Listed; 1 or 2 Pole for L/N only.

Caution - The Power Tap should only be used with a Motorola AP-5181 model access point cable into the unit, as a shock hazard exists when working inside the Power Tap enclosure.

required to ensure the safe operation of the Power Tap.

Power Tap enclosure and install the unit.

model access point) could render the device inoperable and void the device's warranty.

The Power Tap has no On/Off power switch. The Power Tap receives power and is ready for AP-5181 device connection and operation as soon as AC power is applied.

The Power Tap has the following features:

- Supports standard 10/100BaseT Ethernet networks over a standard TIA/EIA-568 Category 5 (or higher) cabling
- Power Input (LINE AC connector): 100-280 VAC

# Installation

#### Preparing for Site Installation

The Power Tap can be wall mounted using the Power Tap's wall mounting key holes or using an Accessories Kit (Part No. KT-5181-WP-01R). The following guidelines should be adhered to before cabling the Power Tap:

- Verify the device receiving converged power and Ethernet from the Power Tap is an AP-5181 model access point.
- Do not block or cover airflow to the Power Tap.
- Verify the power cord is UL listed and marked "water resistant," "outdoor," "W" or
- Ensure overcurrent protection (meeting the maximum rating of 5A) is installed at the access point's installation site in front of the Power Tap and access point.
- Mount the Power Tap with its cabling facing downward.
- Ensure the communication cable (CAT5, CAT5e or CAT.6) is 26AWG min, type CM, CMG, CMR or CMP, and UL listed. Refer to Articles 725 and 800 (specifically) for clearances from power and lighting conductors and transient protection.
- The Power Tap is not a repeater, and does not amplify the Ethernet data signal. For optimal performance, ensure the Power Tap is placed as close as possible to the network data port. Do not configure the cable length between the Ethernet network source, the Power Tap and the AP-5181 beyond 100 meters (333ft).

Verify all cable connections are complete before supplying power to the AP-5181 access

**Caution** - Unlike other Motorola Power-over-Ethernet solutions, the AP-5181 Power Tap (Part No. AP-PSBIAS-5181-01R) does not have LED indicators. An AP-5181 is ready for operation (at an operating temperature at or above -30°C) as soon as all cable connections have been made and the Power Tap has been connected to a correctly rated power supply.

#### **Troubleshooting**

The following potential Power Tap problem scenarios should be addressed as follows:

#### Power Tap does not power up properly

- Verify the power cord is rated appropriately for the intended country of operation
- Verify the voltage at the power inlet is between 100 and 280 VAC.
- Remove and reapply power to the Power Tap.

#### AP-5181 receives power but no Ethernet

- Verify the Ethernet cable is connected to an active hub or switch port on the network.
- Verify the port indicator on the front panel is continuously illuminated. Verify you are using a standard UTP/FTP Category 5 straight (non-crossover) cabling
- with all four pairs Ensure the Ethernet cable length is less than 100 meters from the Ethernet data source
- to the Power Tan Reconnect the AP-5181 to a different Power Tap. If the AP-5181 receives power, there is probably a faulty port or RJ-45 connection on the Power Tap.

#### **International Contacts**

Outside North America: Symbol Place

Winnersh Triangle, Berkshire, RG41 5TP

United Kingdom

Telephone: 0800-328-2424 (Inside UK), +44 118 945 7529 (Outside UK)

#### **Customer Support Web Sites**

Comprehensive on-line support is available at the Support Central site at http://www.symbol.com/support/. Support Central provides our customers with a wealth of information and online assistance including developer tools, software downloads, product manuals and online repair requests.

#### **Product Downloads**

http://www.symbol.com/downloads

http://www.symbol.com/manuals

#### **Additional Information**

Obtain additional information by contacting at:

- 1-800-722-6234, inside North America
- +1-631-738-5200, in/outside North America

# Mounting the Power Tap

The Power Tap can be mounted to any wall (or other vertical flat surface).

To mount the Power Tap:

- Attach the Power Tap to a wall with flat side flush against the wall.
- Position the Power Tap in the intended location and mark the positions of the two mounting screw holes

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- Drill two holes in the wall that match the marks defined for the screw holes. Align the Power Tap in its intended mounting position. Ensure the Power Tap's **DATA/PWR OUT** connector is oriented downward.
- Secure the Power Tap to the wall using two customer supplied screws.

#### Cabling the Power Tap

**Caution** - As part of the Power Tap installation, an electrician is required to open the Power Tap unit, feed the power cable through the Line AC gland, secure the power cable to the unit's three screw termination block and tighten the unit's Line AC gland (by hand) to ensure the power cable is weather sealed. Only a certified electrician should conduct the installation.

**Caution** - Ensure AC power is supplied to the Power Tap using an AC cable with an appropriate ground connection approved for the country of operation.

**Caution** - Ensure the Power Tap's protective earth terminal is permanently connected to earth.

To install the Power Tap to an Ethernet data source and Motorola device:

- Connect an RJ-45 Ethernet cable between the network data supply (host) and the Power Power Tap's **DATA IN** connector.
- Connect an RJ-45 Ethernet cable between the Power Tap's **DATA/PWR OUT** connector and the access point's LAN port. **Caution** - Cabling the Power Tap to the access point's WAN port renders the access point non-operational. Only use the Power Tap with the AP-5181's LAN port.
- Have a certified electrician open the Power Tap enclosure, feed the power cable through the unit's LINE AC gland, secure the power cable to the unit's three screw termination block and tighten the unit's LINE AC gland (by hand) to ensure the power cable is
- Attach a ground cable between the **EARTH GROUND** terminal (on the back of the unit) to a suitable earth ground connection as defined by your local electrical code. Failure to do so will significantly reduce outside surge protection and put internal network connectors at risk of shock.

# **Customer Support**

Motorola provides its customers with prompt and accurate customer support. Use Motorola Support Central as the primary contact for any technical problem, question or support issue involving Motorola products. If the support specialists cannot solve a problem, access to all technical disciplines becomes available for further assistance and support. Motorola Support Central responds to calls by email, telephone or fax within the time limits set forth in individual contractual agreements.

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When contacting Motorola Support Central, please provide the following information:

- Serial number of unit
- Model number or product name
- Software type and version number

#### North American Contacts

Inside North America, contact Motorola at:

#### For sales and product information:

Motorola, Inc. One Motorola Plaza

Holtsville, New York 11742-1300

Telephone: 1-631-738-2400/1-800-SCAN 234

Fax: 1-631-738-5990

#### For product support and service:

Support Center

Telephone: 1-800-653-5350, +1-631-738-6213 (Outside North America)

Fax: 631-563-5410

Email: <a href="http://www.symbol.com/support/">http://www.symbol.com/support/</a>

# Regulatory Information

This device is approved under the Symbol Technologies brand; Symbol Technologies, Inc., is the Enterprise Mobility business of Motorola, Inc ("Motorola").

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All Motorola devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required. Any changes or modifications to Motorola equipment, not expressly approved by Motorola, could void the user's authority to operate the equipment.

This guide is available in local languages, translations can be downloaded from the following Website: http://www.symbol.com/manuals.

#### **Potentially Hazardous Atmospheres**

You are reminded to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

# Radio Frequency Interference Requirements—FCC



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in

accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

#### Radio Frequency Interference Requirements - Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

# CE Marking and European Economic Area (EEA)

#### Statement of Compliance

Motorola hereby declares that this device is in compliance with all the applicable Directives, 89/336/EEC, 73/23/EEC.

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A Declaration of Conformity may be obtained from <a href="http://www2.symbol.com/doc/">http://www2.symbol.com/doc/</a>.

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