

Meraki Mini Module

User Manual (Draft)



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Revised: June 2006

Trademarks

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Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, Meraki reserves the right to make changes to the products described in this document without notice. Meraki does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein. Updated versions of this document may be available on the Web at <http://www.meraki.net/>.

Warranty

Meraki Networks, Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty.

Federal Communication Commission Interference Statement

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 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired

operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE: FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. We declare that the product is limited in CH1-CH11 for 2.4G band by specific firmware controlled by the manufacturer and is not user changeable.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. And OEM shall not supply any tool or info to the end-user regarding to change the domain selection.

As long as the three above conditions are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example :Access point, Wireless Router etc.). The final end product must be labeled in a visible area with the following: “Contains TX FCC ID: UDX-MERAKI-MINI”

Manual Information That Must be Included

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the users manual of the end product which integrate this module.

The users manual for OEM integrators must include the following information in a prominent location:

“IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. We declare this product is limited in CH1-CH11 for 2.4G band by specific firmware controlled by the manufacturer and is not user changeable.”

EN 55 022 Declaration of Conformance

This is to certify that the Wireless Router is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class B (CISPR 22).

Overview

The Meraki Mini Module is a hardware platform for the Meraki Mesh routing software. The device simultaneously operates as a mesh router, bridge and access point, and is suitable for use in either a standalone or embedded configuration. In embedded settings, integrators may connect their existing Ethernet-based devices to the Meraki Mini Module to add mesh networking capabilities.

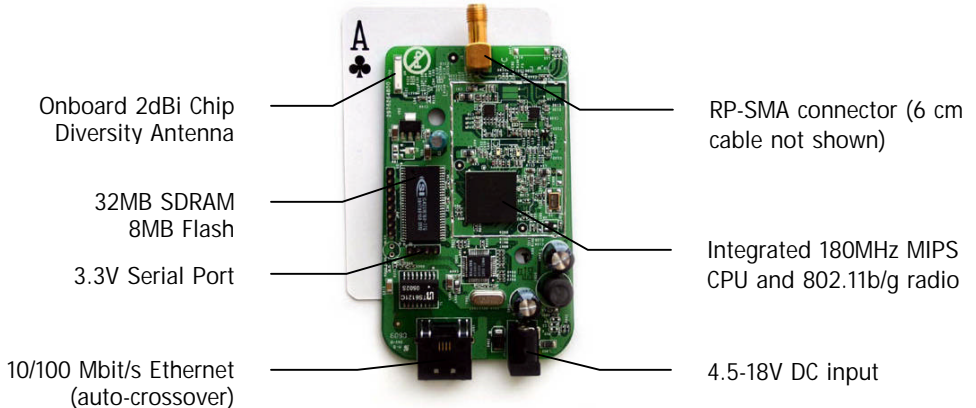
The mesh routing software is updated often, and is thus not described in this manual. For more information about Meraki Mesh, please visit <http://www.meraki.net/>.

Specifications

- 180MHz MIPS CPU (Atheros AR2315 SoC)
- 8MB Flash, 32MB SDRAM
- 60mW 802.11b/g radio
- External RP-SMA antenna connector, internal chip diversity antenna
- 10/100 Mbit/s auto-crossover Ethernet port

- Headers for 3.3v serial port, GPIO
- 4.5-18V DC tolerance
- Power-over-Ethernet support (non-802.3af)

The Meraki Mini Module



Using the Module

The Meraki Mini Module comes pre-installed with Meraki Mesh firmware. The following steps describe how to install the Meraki Mini Module as part of a network.

1. Connect an antenna to the RP-SMA antenna port. The Meraki Mini Module is certified for use with omni-directional antennas with 5dBi or less gain.
2. Apply power to the Meraki Mini Module, using either a DC adapter or compatible Power-over-Ethernet adapter. Note: the Meraki Mini Module uses a non-standard voltage of 4.5-18V. Check that the power indicator LED on the Ethernet connector is lit.
3. Allow the device to boot for one minute.
4. Connect a computer to the module to complete configuration. You can either use the Ethernet interface by connecting a standard RJ-45 Ethernet connector, or connect to the device using an 802.11 client adapter. The preconfigured SSID is "meraki".
5. Once connected, use a web browser to view the local connection statistics by visiting <http://192.168.85.1/>. If the signal is weak, consider repositioning the device to improve signal quality.

Firmware Upgrades

The Meraki Mesh software automatically applies firmware upgrades over the network. During the upgrade, the power LED on the bottom of the module will flash off and on for up to 15 minutes. Do not power down the device during this time.

Advanced Developer Documentation

Additional documentation for third-party software developers, such as serial port settings, source code and examples are available online at <http://www.meraki.net/>.