Meraki Outdoor
User Manual (Draft)

meraki.

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.

FC Meraki Networks
Meraki Outdoor

FCC ID : UDX-MERAKI-OTDR

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.

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).

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication."

This device has been designed to operate with the antennas listed below, and having a maximum gain of 9 dB. Antennas not included in this list or having a gain greater than 9 dB are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

Antennas suitable for use with the Meraki Outdoor:
1. Dipole Antenna with 2dBi gain
2. Dipole Antenna with 7dBi gain
3. Patch Antenna with cable 7.5dBi total gain
4. Chip Antenna with 2dBi gain (onboard)

Antenna Configurations suitable for use with Meraki Outdoor:
1. Dipole Antenna with 2dBi gain
2. Dipole Antenna with 7dBi gain
3. Patch Antenna with cable 7.5dBi total gain
4. Chip Antenna with 2dBi gain (onboard)

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. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further <u>transmitter</u> 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 <u>can not be met</u> (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID <u>can not</u> 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. The final end product must be labeled in a visible area with the following: "Contains FCC ID:UDX-MERAKI-OTDR".

Manual Information To the End User

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 user's manual of the end

product which integrates this module.
The end user manual shall include all required regulatory information/warning as show in this manual.

Overview

The Meraki Outdoor 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 Outdoor 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 AR2317 SoC)
- 8MB Flash, 32MB SDRAM
- External RP-SMA antenna connector or internal chip antenna
- 2 10/100 Mbit/s auto-crossover Ethernet ports
- Headers for 3.3v serial port, GPIOs
- 5-22V DC tolerance

- Power-over-Ethernet support (non-802.3af)

Using the Module

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

1. Connect the antenna to the RP-SMA antenna port.
2. Apply power to the Meraki Outdoor Module, using either a DC adapter or compatible Power-over-Ethernet adapter. Note: the Meraki Outdoor Module uses a non-standard voltage of 5-22V.
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/*.