Thank you for choosing the cnMatrix switch, a Cambium Networks communications device. Before you begin installing the switch, verify you have all the package contents available, and a PC with SSH client, such as PuTTY or OpenSSH SSH Client.

**Package Contents**

Rack mount ears (2x) with screws (8x) are included with the 28-port models.
(Spare rack mount ears: MX-EXTXFULLA-0)

A rack mount kit for the 10-port models can be ordered as an optional accessory.
(MX-EXTXHALFA-0)

**cnMatrix Switch**

EX1010 models:

EX1028 models:

Power Cord (separate accessory)
Product Overview

The cnMatrix switch comes in four SKUs to support various deployment scenarios.

<table>
<thead>
<tr>
<th>Model Name / Part Number</th>
<th>Number of Ports</th>
<th>Power over Ethernet</th>
<th>Throughput</th>
<th>Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>cnMatrix EX1010 / MX-EX1010xxA-0</td>
<td>10</td>
<td>No</td>
<td>20 Gbps</td>
<td></td>
</tr>
<tr>
<td>cnMatrix EX1010-P / MX-EX1010PxA-0</td>
<td>10</td>
<td>Yes</td>
<td>20 Gbps</td>
<td></td>
</tr>
<tr>
<td>cnMatrix EX1028 / MX-EX1028xxA-0</td>
<td>28</td>
<td>No</td>
<td>128 Gbps</td>
<td></td>
</tr>
<tr>
<td>cnMatrix EX1028-P / MX-EX1028PxA-0</td>
<td>28</td>
<td>Yes</td>
<td>128 Gbps</td>
<td></td>
</tr>
</tbody>
</table>

Powering Up

Connect the power cord to the power inlet, and then plug the power cord into a wall socket.

When the switch is booting up, the illuminated Cambium Networks logo will be blinking blue. When the switch is fully up and running, the illuminated Cambium Networks logo is solid blue.
Default Configuration

When booting up for the first time the cnMatrix EX1K switch will try to acquire a dynamic IP address through DHCP.
If a DHCP Server is not present on the network, the switch will fall back to 192.168.1.1 static IP address on the In-Band ports.

Note: DHCP is enabled by default on In Band Ports (VLAN)

Default login information:
Username: admin
Password: admin

Configure Management PC

1. For Windows operating system, open the Control Panel window.
2. In the Control Panel window, select the View network status and tasks option. The Network and Sharing Center window is displayed.
3. Click the Change adapter settings option. The Network Connections window is displayed.
4. Double-click the interface connected to the switch. The interface Properties window is displayed.
6. The Internet Protocol Version 4 (TCP/IPv4) Properties is displayed. Select Use the following IP address. Set The IP address of the interface to 192.168.1.10 and the Subnet mask to 255.255.255.0
## Logging in to the switch

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use PuTTY SSH client.</td>
</tr>
<tr>
<td>2</td>
<td>On the PuTTY Configuration window, in the Host Name field, enter 192.168.1.1 IP address and in the Port field, enter the 22 value.</td>
</tr>
<tr>
<td>3</td>
<td>Click Open. The login prompt is displayed.</td>
</tr>
<tr>
<td>4</td>
<td>In the cnMatrix login prompt enter the default username: <strong>admin</strong></td>
</tr>
<tr>
<td>5</td>
<td>In the Password prompt enter the default login password: <strong>admin</strong></td>
</tr>
</tbody>
</table>
Hardware Overview

**Specifications**

<table>
<thead>
<tr>
<th>cnMatrix Models</th>
<th>EX2028-P</th>
<th>EX2028</th>
<th>EX2010-P</th>
<th>EX2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTBF (hours)</td>
<td>285.350.90</td>
<td>432.283.26</td>
<td>338.917.20</td>
<td>806.354.10</td>
</tr>
<tr>
<td>Power budget</td>
<td>400W</td>
<td>n/a</td>
<td>100W</td>
<td>n/a</td>
</tr>
<tr>
<td>Power supply</td>
<td>AC/Internal</td>
<td>AC/Internal</td>
<td>AC/Internal</td>
<td>AC/Internal</td>
</tr>
<tr>
<td>Weight</td>
<td>3.96 kg (8.75 lb)</td>
<td>2.77 kg (6.1 lb)</td>
<td>1.99 kg (4.375 lb)</td>
<td>1.6 kg (3.5375 lb)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>44 x 4.4 x 25 cm (17.3 x 1.75 x 9.85 in)</td>
<td>44 x 4.4 x 20.9 cm (17.3 x 1.75 x 8.22 in)</td>
<td>21 x 4.4 x 25 cm (8.26 x 1.75 x 9.85 in)</td>
<td>21 x 4.4 x 25 cm (8.26 x 1.75 x 9.85 in)</td>
</tr>
<tr>
<td>LEDs per port</td>
<td>Link/Activity, PoE</td>
<td>Link/Activity, PoE</td>
<td>Link/Activity, PoE</td>
<td>Link/Activity, PoE</td>
</tr>
<tr>
<td>Rack mountable</td>
<td>Yes 1U</td>
<td>Yes 1U</td>
<td>Yes 1U</td>
<td>Yes 1U</td>
</tr>
<tr>
<td>Operating</td>
<td>-0°C to + 50°C (+32°F to + 122°F)</td>
<td>-0°C to + 50°C (+32°F to + 122°F)</td>
<td>-0°C to + 50°C (+32°F to + 122°F)</td>
<td>-0°C to + 50°C (+32°F to + 122°F)</td>
</tr>
<tr>
<td>Operating</td>
<td>+55° at 95% RH</td>
<td>+55° at 95% RH</td>
<td>+55° at 95% RH</td>
<td>+55° at 95% RH</td>
</tr>
<tr>
<td>Storage</td>
<td>-40°C to +70°C (-40°F to +158°F)</td>
<td>-40°C to +70°C (-40°F to +158°F)</td>
<td>-40°C to +70°C (-40°F to +158°F)</td>
<td>-40°C to +70°C (-40°F to +158°F)</td>
</tr>
</tbody>
</table>
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### Jansson 2.11

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<thead>
<tr>
<th>OpenSSL 0.9.8i</th>
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<tbody>
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<tr>
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</table>

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<table>
<thead>
<tr>
<th><strong>Open SSH 5.1</strong></th>
<th>1)</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>[However, none of that term is relevant at this point in time. All of these restrictively licenced software components which he talks about have been removed from OpenSSH, i.e.,</td>
<td></td>
</tr>
<tr>
<td>- RSA is no longer included, found in the OpenSSL library</td>
<td></td>
</tr>
<tr>
<td>- IDEA is no longer included, its use is deprecated</td>
<td></td>
</tr>
<tr>
<td>- DES is now external, in the OpenSSL library</td>
<td></td>
</tr>
<tr>
<td>- GMP is no longer used, and instead we call BN code from OpenSSL</td>
<td></td>
</tr>
<tr>
<td>- Zlib is now external, in a library</td>
<td></td>
</tr>
<tr>
<td>- The make-ssh-known-hosts script is no longer included</td>
<td></td>
</tr>
<tr>
<td>- TSS has been removed</td>
<td></td>
</tr>
<tr>
<td>- MD5 is now external, in the OpenSSL library</td>
<td></td>
</tr>
<tr>
<td>- RC4 support has been replaced with ARC4 support from OpenSSL</td>
<td></td>
</tr>
<tr>
<td>- Blowfish is now external, in the OpenSSL library]</td>
<td></td>
</tr>
<tr>
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@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>  
@author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>  
@author Paulo Barreto <paulo.barreto@terra.com.br>

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You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

signature of Ty Coon, 1 April 1990
Ty Coon, President of Vice
That's all there is to it!

Hardware Warranty

Cambium provides standard warranty as per Cambium's standard warranty policy for applicable warranty period for each product type. For details, regarding Cambium's warranty policy, warranty terms and conditions and applicable warranty periods, please click
Electrical Safety Information

This switch is designed with a power inlet with an integrated ground. A power cord from the switch shall be connected to a power outlet with ground connection.

To prevent loss of life or physical injury, observe the following safety guidelines. In no event shall Cambium Networks be liable for any injury or damage caused during the installation of the switch.

The equipment is designed for indoor installation and not intended to be connected to exposed (outside) networks.

Equipment intended for installation in Information Technology Equipment Rooms. “Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.”

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect power cord to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.

There are no serviceable parts inside this equipment. Service should be provided only by a qualified service technician.

Le switch est conçu avec une prise de courant possédant une connexion à la terre. Un cordon d'alimentation devra être connecté à la prise de courant possédant une connexion à la terre.

L'équipement est prévu pour des installations en intérieur et n'est pas prévu pour être installé à l'extérieur.

CAUTION: The SFP/SFP+ ports should use UL listed Optical Transceiver product, Rated Laser Class I. 3.3Vdc.

Si le transceiver optique n’est pas livré avec l’appareil, le manuel d’utilisation doit comporter la description ci-dessous ou son équivalent : « Ce produit est destiné à être utilisé avec un transceiver optique homologué UL, tension DC3.3V, classe laser I.

FCC Compliance

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.

2. This device must accept any interference received, including interference that may cause undesired operation.

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

**Modifications:** Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

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**RoHS/WEEE Compliance**

**Caring for the Environment: RoHS/WEEE**

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

**Europe- EU Declaration of Conformity**

Hereby, CAMBIUM NETWORKS, Inc. declares that the equipment type [EX2010, EX2010-P, EX2028, EX2028-P, EX2052, EX2052-P, EX2052R-P, EX2016M-P] is in compliance with Directive 2014/30/EU. The full text of the EU declaration of conformity is available at the following internet address: [https://www.cambiumnetworks.com/](https://www.cambiumnetworks.com/)

**Online Resources**

User Guides: [https://www.cambiumnetworks.com/guides](https://www.cambiumnetworks.com/guides)

Technical Training: [https://learning.cambiumnetworks.com](https://learning.cambiumnetworks.com)