

Flashlink One Module Desktop Box

Network Electronics ASA

Thorøya
P.O. Box 1020
Sandefjord, Norway

Phone: +47 33 48 99 99

Fax: +47 33 48 99 98

E-mail: support@network-electronics.com
www.network-electronics.com

Service Phone: +47 90 60 99 99

Revision history

Current revision of this document is the uppermost in the table below.

Revision	Replaces	Date	Change description
2	1	2007-10-26	New front page and removed old logo.
1	0	2007-10-05	Added Materials Declaration and EFUP
0	-	23/05/05	NBS: Initial Revision.

Contents

Revision history.....	2
1 Product overview.....	4
2 Specifications	4
2.1 General specifications	4
2.2 Front view	4
2.3 Rear view	4
3 Configuration	5
3.1 Address setting on each N-BOX.....	5
4 Connections	5
4.1 Power connection.....	5
4.1.1 Pin-out DC input	5
4.2 Module connections.....	5
5 N-BOX operation.....	6
5.1 Removing the front panel	6
5.2 Card removal.....	6
5.3 Back plane insertion.....	7
5.4 Card insertion.....	7
6 N-BOX configuration examples	8
6.1 N-BOX in a 1RU frame.....	8
6.2 N-BOX mounting brackets	8
Certificate of Conformity	10
Product Warranty	11
Materials declaration and recycling information.....	12
Materials declaration	12
Environmentally-friendly use period.....	12
Recycling information.....	13

1 Product overview

The N-BOX is meant to meet the need for a one module desktop box for flashlink® module cards. This box shall use the same backplane as in the standard 2RU frame. This means that the modules and backplanes can be removed from a desktop box and replaced into the FR-2RU-10-2 frame. In addition, 4 desktop boxes can be assembled together into a 1 RU box holder and function as a 1 RU unit.

2 Specifications

2.1 General specifications

AC Power:	External power supplies 100 - 260 VAC
DC Power:	±15V, connector DB9 male
Dimensions:	109 x 43 x 198 mm.
Card slots:	1.
Internal voltages:	+5V, -5V, +15V, -15V.

2.2 Front view

The front view of the N-BOX shows status LEDs for the module that is included in the N-BOX.



Figure 1: LEDs in front of the N-BOX.

The leftmost¹ LED of each module card is a "general status" LED.

- *Green light* means that the card is OK.
- *Red light* means that the card is faulty.
- *No light* means that the power is not switched on.

The meaning of each LED on the module cards is described in their respective manuals.

2.3 Rear view

Figure 2 shows an example of an N-BOX seen from the rear side. To the left is the connector module for the power supply delivered with the N-BOX. The other connector modules are described in their respective user manuals.

¹ LEDs from left to right when box is viewed as in this figure.



Figure 2: Rear view of an N-BOX.

3 Configuration

3.1 Address setting on each N-BOX

Each N-BOX can be assigned an address through the address selector on the underside of the box. Maximum 8 addresses are available.

This address setting only applies when your application includes more than one N-BOX. The addresses represent card positions in a FR-2RU-10-2 frame, and are numbered from 0 – 9.

Default address/card position is 0.

4 Connections

4.1 Power connection

DC: Connect the DB9 connector from the external DC power supply to the DB9 male connector of the N-BOX. Tighten the screws to ensure a proper contact.

4.1.1 Pin-out DC input

The maximum current drawn from each pin of the DB9 connector is 2,5A.

Pin #1	0V / GND	
Pin #2	+5V	Reserved.
Pin #3	Tx(+)	Output from module.
Pin #4	+15V	DC Input.
Pin #5	Rx(-)	Output from module.
Pin #6	Rx(+)	Output from module.
Pin #7	Tx(-)	Output from module.
Pin #8	-15V	DC Input.
Pin #9	0V / GND	

4.2 Module connections

The other connectors are module specific; hence they are described in their respective user manuals.

5 N-BOX operation

In order to reconfigure an N-BOX, the front panel must be removed. Each module has a corresponding connector module at the rear, and is hot swappable.

Note!

Use safety goggles when hot-swapping module cards.
If a receiver card is removed from the N-BOX, an invisible laser beam may be emitted inside the N-BOX from the laser at the other end. The laser beam might be harmful to your eyes.

5.1 Removing the front panel

Detach the front panel by unfastening the two screws fixing the front panel. Use a TX-08 screwdriver for this. A TX-08 screwdriver is included in the shipment of your N-BOX.

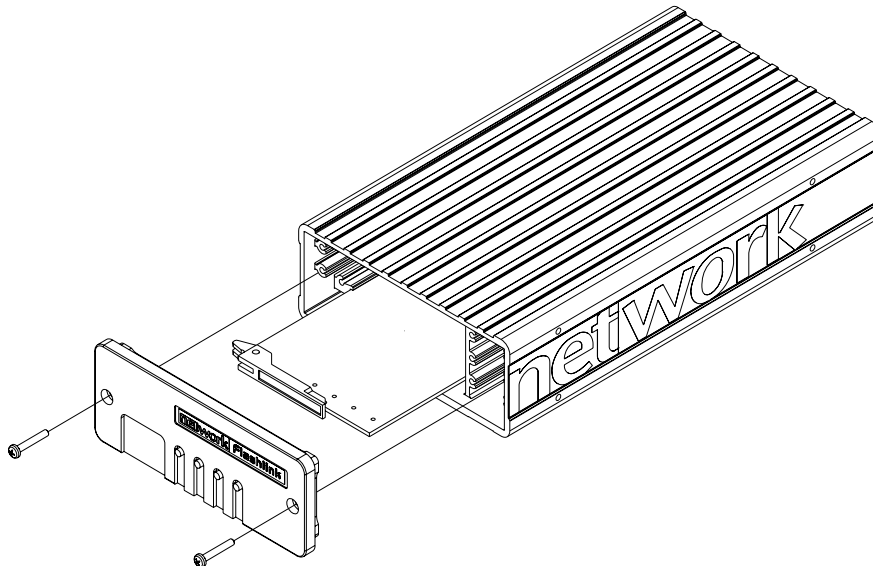


Figure 3: Removing the front panel.

5.2 Card removal

To remove a module card from the N-BOX frame, release the card by moving the red handle until it is in horizontal position. Then pull the card out of the N-BOX with the red handle. After removing a card, it is important that the protective cap is put back on the ferrule tip.

Note!

When removing a receiver card from the N-BOX (hot swapping), the laser beam may be present inside the N-BOX (transmitted through the fiber). To avoid damaging your eyes, never look directly into the N-BOX unless you are 100 % sure that no laser beam is present inside the N-BOX.

5.3 Back plane insertion

You must install the accompanying back plane card before you can insert a new module card into the frame.

Turn off the power by disconnecting the DB9 power contact to the N-BOX.

Remove the module card from the box, according to the procedure in Chapter 5.1. Please follow anti-static procedures when handling circuit boards with active components.

Remove all 4 screws from the back plane to be replaced. Remove the back plane by lifting it straight out from the rear of the frame.

Insert the new back plane and tighten the screws.

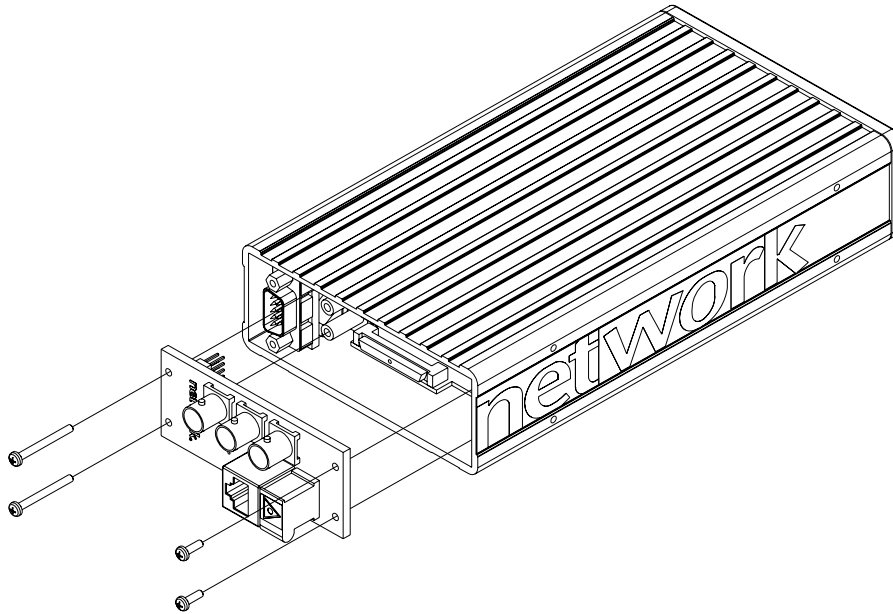


Figure 4: Removing/inserting back plane.

5.4 Card insertion

After the front panel is removed, full access to the card modules inside the N-BOX is given.

The N-BOX is equipped with guide rails to align the module card into its position.

6 N-BOX configuration examples

6.1 N-BOX in a 1RU frame

It is possible to mount up to four flashlink® N-BOX modules into a 19" 1RU frame, as shown below.

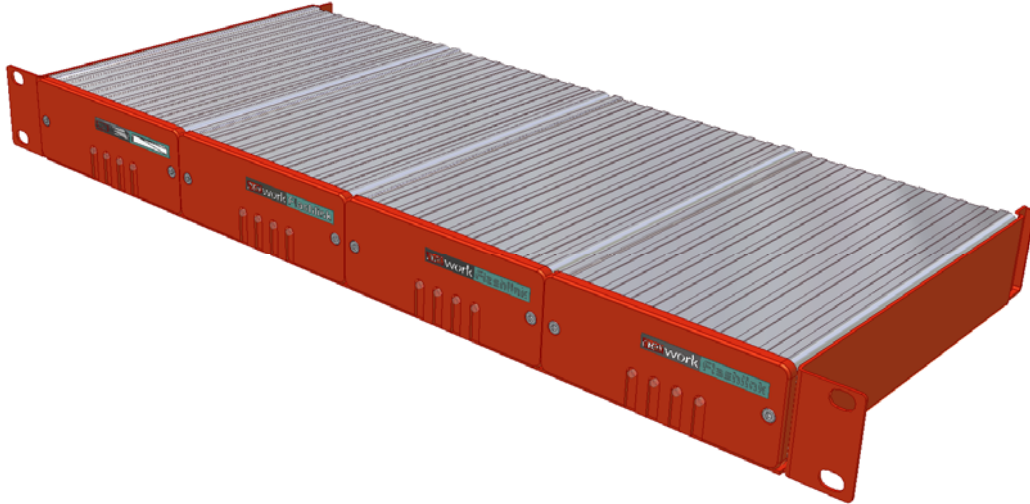


Figure 5: N-BOX in a 1RU frame.

Please contact Network Electronics ASA for further information about the mounting kits.

6.2 N-BOX mounting brackets

ETH-CON modules may also be mounted against walls, under desks, etc. The figure below shows available mounting plates for ETH-CON.

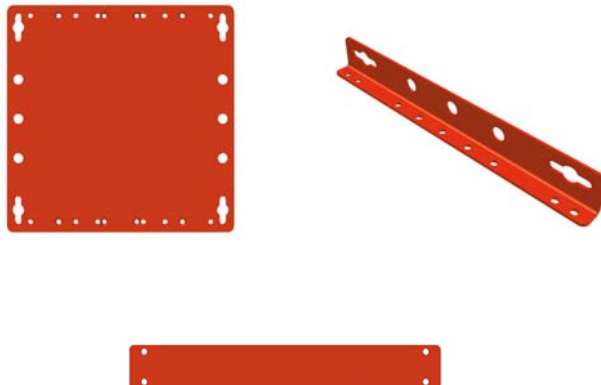


Figure 6: Mounting plates for the N-BOX.

The following examples show how to apply the available mounting kits.

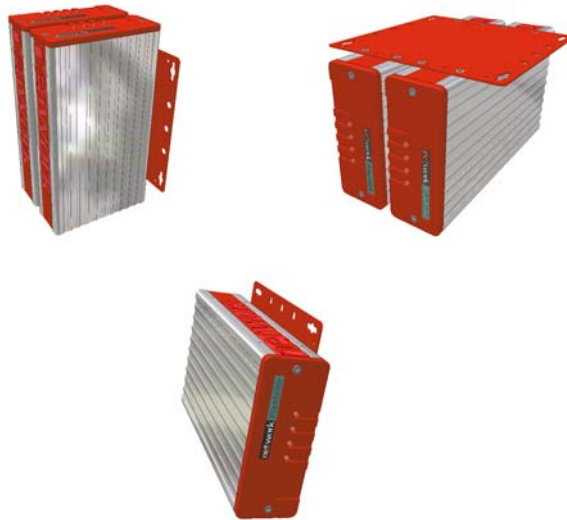


Figure 7: Wall – Under desk - Wall.



Figure 8: Between wall/desk – Wall - Under desk.



Figure 9: Wall - Under desk.

Please contact Network Electronics ASA for further information about the mounting kits.

Certificate of Conformity

Network Electronics ASA N-3204 Sandefjord Norway	Company Registration Number: NO 976 584 201 MVA
--	--

Declares under sole responsibility that the product:

Product Name:	N-BOX
Product Description:	flashlink® one module desktop box

To which this declaration relates are of Norwegian origin and are in conformity with the following standards:

EN 55103-1: 1996	Generic Emissions Standard
EN 55103-2: 1996	Generic Immunity Standard

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Network Electronics ASA. These conditions are available on the company web site of Network Electronics ASA:

www.network-electronics.com

Materials declaration and recycling information

Materials declaration

For product sold into China after 1st March 2007, we comply with the “Administrative Measure on the Control of Pollution by Electronic Information Products”. In the first stage of this legislation, content of six hazardous materials has to be declared. The table below shows the required information.

組成名稱 Part Name	Toxic or hazardous substances and elements					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
N-BOX	X	O	O	O	O	O
<p>O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.</p> <p>X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.</p>						

Environmentally-friendly use period

The manual must include a statement of the “environmentally friendly use period”. This is defined as the period of normal use before any hazardous material is released to the environment. The guidance on how the EFUP is to be calculated is not finalised at the time of writing. See <http://www.aeanet.org/GovernmentAffairs/qfLeOpAaZXaMxqGjSFbEidSdPNtpT.pdf> for an unofficial translation of the draft guidance. For our own products, Network Electronics has chosen to use the *50 year figure* recommended in this draft regulation. Network Electronics suggests the following statement on An “Environmentally Friendly Use Period” (EFUP) setting out normal use:

EFUP is the time the product can be used in normal service life without leaking the hazardous materials. We expect the normal use environment to be in an equipment room at controlled temperature range (0°C - 40°C) with moderate humidity (< 90%, non-condensing) and clean air, not subject to vibration or shock.

Further, a statement on any hazardous material content, for instance, for a product that uses some tin/lead solders:

Where a product contains potentially hazardous materials, this is indicated on the product by the appropriate symbol containing the EFUP. The hazardous material content is limited to lead (Pb) in some solders. This is extremely stable in normal use and the EFUP is taken as 50 years, by comparison with the EFUP given for Digital Exchange/Switching Platform in equipment in Appendix A of “General Rule of Environment-Friendly Use Period of Electronic Information Products”. This is indicated by the product marking:



It is assumed that while the product is in normal use, any batteries associated with real-time clocks or battery-backed RAM will be replaced at the regular intervals.

The EFUP relates only to the environmental impact of the product in normal use, it does not imply that the product will continue to be supported for 50 years.

Recycling information

Network Electronics provides assistance to customers and recyclers through our web site <http://www.network-electronics.com>. Please contact Network Electronics' Customer Support for assistance with recycling if this site does not show the information you require.

Where it is not possible to return the product to Network Electronics or its agents for recycling, the following general information may be of assistance:

Before attempting disassembly, ensure the product is completely disconnected from power and signal connections.

All major parts are marked or labelled to show their material content.

Depending on the date of manufacture, this product may contain lead in solder.

Some circuit boards may contain battery-backed memory devices.