N-BOX

Flashlink one module desktop box

User manual

Rev. E

Nevion Support

Revision history

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

Rev.	Repl.	Date	Sign	Change description
E	4	2015-05-11	MB	Cover page update; DoC removed; no other changes to content
4	3	2010-05-21	TØ	Added chapter 2.2 on power constraints, and updated appendix A.1 Materials declaration.
3	2	2009-06-23	AS	New template. Added Declaration of Conformity.
2	1	2007-10-26		New front page and removed old logo.
1	0	2007-10-05		Added Materials Declaration and EFUP
0	-	2006-05-23	NBS	NBS: Initial Revision.

Contents

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.

> Please note the power constraint on older N-BOXs described in chapter 2.2.

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 Power constraints

There is a power constraint of 4W on N-BOXs delivered before 2008-09-01. This constraint has been removed for N-BOXs delivered after this date. This constraint causes some newer cards such as DWC-HD, ARC-SD, UDC-HD-XMUX and other power demanding cards to not function properly.

The two types of N-BOXs can be distinguished when looking at the power module on the back without having connected any Flashlink backplane into the N-BOX. N-BOXs produced before 2008-09-01 have the number 4052966 printed in the silk screen next to the 16 pin Flashlink connector. A newer N-BOX has no such marking.

2.3 Front view

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

Figure1: LEDs in from of the N-BOX

The leftmost[1] 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.

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

2.4 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

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.

> 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.
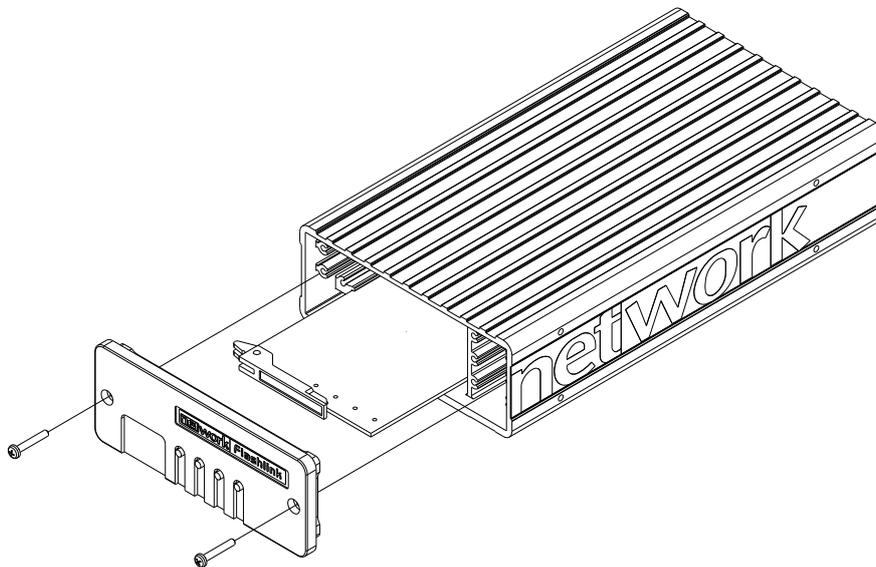

Figure 3: Removing the front panel

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.

> 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 **Error! Reference source not found.**. 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.
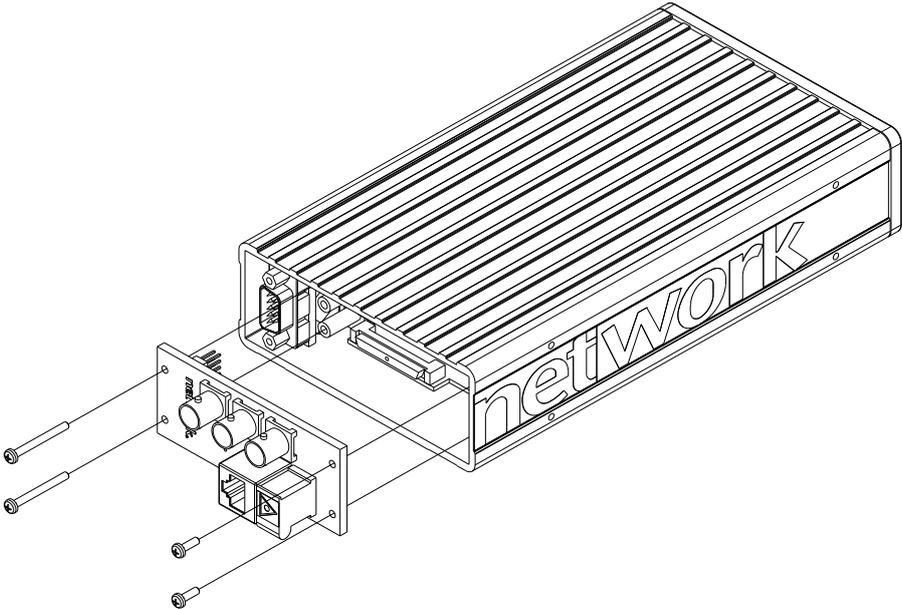
Figure 4: Removing/inserting back plane

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.

Figur 5: N-BOX in a 1RU frame

Please contact Nevion Europe AS 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.

Figur 6: Mounting plates for the N-BOX

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

Figur 7: Wall - Under desk – Wall

Figur 8: Between wall/desk - Wall - Under desk

Figur 9: Wall - Under desk

Please contact Nevion Europe AS for further information about the mounting kits.

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Nevion, which are available on the company web site:

www.nevion.com

Appendix A Materials declaration and recycling information

A.1 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	鉛 Lead (Pb)	汞 Mercury (Hg)	镉 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)
	Toxic or hazardous substances and elements					
N-BOX	O	O	O	O	O	O
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.						
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.						

This is indicated by the product marking:

A.2 Recycling information

Nevion provides assistance to customers and recyclers through our web site http://www.nevion.com/. Please contact Nevion's 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 Nevion 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 labeled 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.