

# FlashCase-II

Mobile Flashlink frame  
for outside broadcast

## User manual

Rev. 1

## Nevion Support

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### Revision history

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

Rev.	Repl.	Date	Sign	Change description
1	0	2012-10-17	MR	In chapter "External power supplies" changed the description of "SL-PWR-90-FlashCase" and added a phrase about power supply for outdoor use.
0	-	2012-09-17	MR	Initial revision

# Contents

- Revision history ..... 2
- 1 Product overview ..... 4
- 2 Specifications ..... 5
  - 2.1 Ambient temperature ..... 5
  - 2.2 Internal voltage sources, max power ..... 5
  - 2.3 External power supplies..... 5
  - 2.4 GPI relays ..... 6
  - 2.5 Waterproof standards ..... 6
- 3 Configuration and assembly ..... 7
  - 3.1 Connection to Multicon GYDA ..... 7
  - 3.2 Frame number selection in Multicon GYDA ..... 7
  - 3.3 Module appearance in Multicon GYDA ..... 7
  - 3.4 Internal power board, connections ..... 7
  - 3.5 Defective fan replacement ..... 8
  - 3.6 Flashlink module installation ..... 8
    - 3.6.1 Flashlink backplane installation ..... 8
    - 3.6.2 Flashlink module installation ..... 8
  - 3.7 The fiber fix board..... 9
  - 3.8 EMC considerations ..... 9
  - 3.9 EMC gaskets ..... 9
- 4 Connections ..... 10
  - 4.1 The backplate ..... 10
- 5 Operation ..... 11
  - 5.1 Multicon GYDA ..... 11
  - 5.2 LEDs ..... 12
  - 5.3 Alarms, required actions ..... 13
    - 5.3.1 Fan alarms ..... 13
    - 5.3.2 Voltage alarms ..... 13
    - 5.3.3 Fuse alarm ..... 14
    - 5.3.4 Temperature alarm ..... 14
- Product Warranty..... 15
- Appendix A Materials declaration and recycling information..... 16
  - A.1 Materials declaration ..... 16
  - A.2 Recycling information ..... 16
- EC Declaration of Conformity ..... 17

## 1 Product overview



Figure 1: Rear view

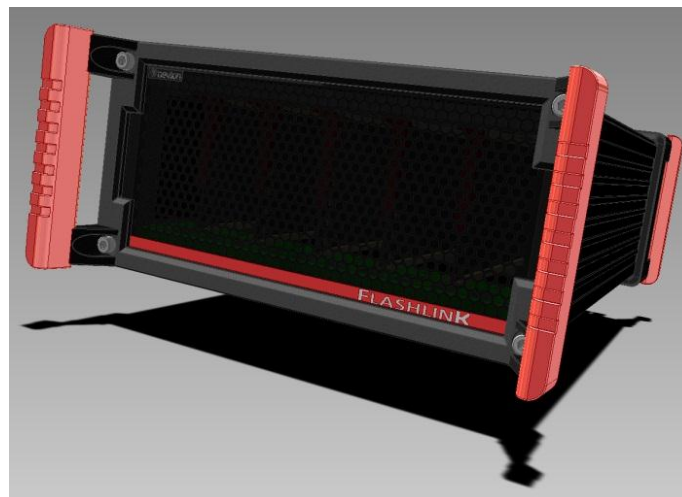


Figure 2: Front view

The FlashCase-II product family replaces all preceding FlashCase products, the key improvements to the line are:

- Ease of assembly
- Efficient fan operation, ensures better margins at extreme environmental conditions
- New waterproof option (IP54)
- New Multicon GYDA option
- New solution for organizing fibers
- Fabricated for Flashlink dual module solutions (10 card slots)

Each FlashCase-II contains common mechanical parts as well as printed circuit boards. However, the framework is fully customizable. A variety of custom and standardized solutions can be created by using different combinations of mounted backplates and Flashlink modules. (A backplate configurator is provided which generates backplate solutions designed to meet specific needs.)

## 2 Specifications

### 2.1 Ambient temperature

The equipment will meet the guaranteed performance specification under the following environmental conditions:

- Operating ambient temperature range: 0°C to +35°C
- Operating relative humidity range: <90% (non-condensing)

The equipment will operate without damage under the following environmental conditions:

- Temperature range: -10°C to +40°C
- Relative humidity range: <95% (non-condensing)

Warning: Exposure to direct sunlight during operation can result in the equivalent ambient temperature exceeding the specified allowed maximum.

NOTE: Due to the waterproof design which limits the heat dissipation from inside to ambient air, the max allowed temperatures are significantly lower than for the standard Flashlink frame.

### 2.2 Internal voltage sources, max power

The unit has 10pcs card slots and is designed to contain up to 5pcs one card- or two card FL-modules and combinations of such modules.

The power limitations for the internal power board are as follows:

“+5V”:	Max 25W
“+15V”:	Max 7.5W
“-15V”:	Max 7.5W

These limits are absolute and may limit the number and combination of Flashlink modules.

### 2.3 External power supplies

The external power supplies must meet the following specifications:

Voltage:	Min. 10.0VDC Max. 18.0VDC
Supplied power:	Min. 55W continuous
Ripple and noise:	Max. 100mVpp

When an AC source is available, use of the Nevision AC/DC supply

Enclosed SL-PWR-90-FlashCase is a desktop power supply for indoor use only. For outdoor applications always use power solutions suited for the current conditions.

Redundant power supply, via the two independent power connectors at the backplate, is standard.

Voltage failures in external power supplies are reported by GPI as well as by Multicon GYDA.

NOTE: There is no active load sharing between the two connected power supplies. The power supply having the highest voltage will take the greatest load.

- Each input circuit contains a fuse at the internal power board.
- A spare fuse is mounted close to the active fuses.
- Fuse failures are reported by GPI and Multicon GYDA.

## 2.4 GPI relays

Please keep within the following limits:

Voltage: Max +/- 30VDC between terminals

Current: Max 1A through terminals

## 2.5 Waterproof standards

The enclosure meets IP54 requirements. However consistent use of waterproof connectors is required to achieve IP54 for the complete solution.

Waterproof solutions will be available in the future.

## 3 Configuration and assembly

### 3.1 Connection to Multicon GYDA

Connection to Multicon GYDA may be performed in four different ways:

- RS-422 cable (Ethernet cable) from an FR-2RU frame containing a Multicon GYDA module
- Multicon GYDA module mounted in the FlashCase-II unit
- D-422-MG mounted in the FlashCase-II unit (requires two units, one in each end)
- “In band management”. Please contact Nevia concerning this option.

### 3.2 Frame number selection in Multicon GYDA

Configure the desired frame (0 to 7) in Multicon GYDA by using the rotary switch at the internal power board (Please see figure 3).

### 3.3 Module appearance in Multicon GYDA

The FlashCase-II unit (power board) will always appear as module number 6 of 10 in the Multicon GYDA frame.

The mounted Flashlink modules will appear as numbers 1 to 5, with number 5 in the card position furthest from the power board.

### 3.4 Internal power board, connections

The following connectors are in addition to the internal power connectors

- One RJ-45 for RS-422 communication
- One BNC for connection of a frame sync signal to the Flashlink modules
- One 4pin header, GPI alarm output;
  - Pin1/pin2: Fan alarm                      Relay output, shorted when in alarm status
  - Pin3/pin4: Voltage alarm                Relay output, shorted when in alarm status

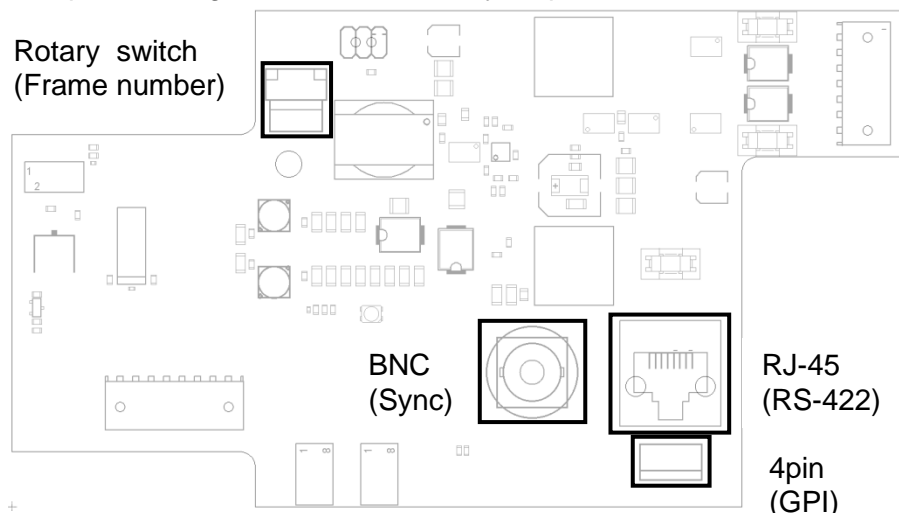


Figure 3: Power board connections

### 3.5 Defective fan replacement

To replace a defective fan:

- Release the backplate/chassis from the profile
- Release the fan connector from the board
- Remove the fan by unscrewing the two screws
- Mount the new fan

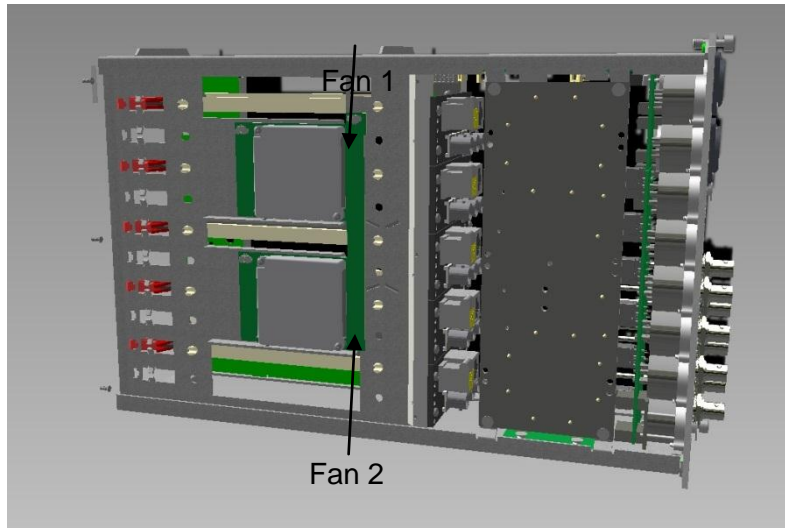


Figure 4: Fans numbering ref. Multicon GYDA

### 3.6 Flashlink module installation

#### 3.6.1 Flashlink backplane installation

Install the backplane closest to the power board first. This is the recommended procedure for an effortless installation.

#### 3.6.2 Flashlink module installation

Ensure that the plastic board clip “clicks” into the correct position and locks the module in place. This may require pushing the module with a gentle force against its backplane.

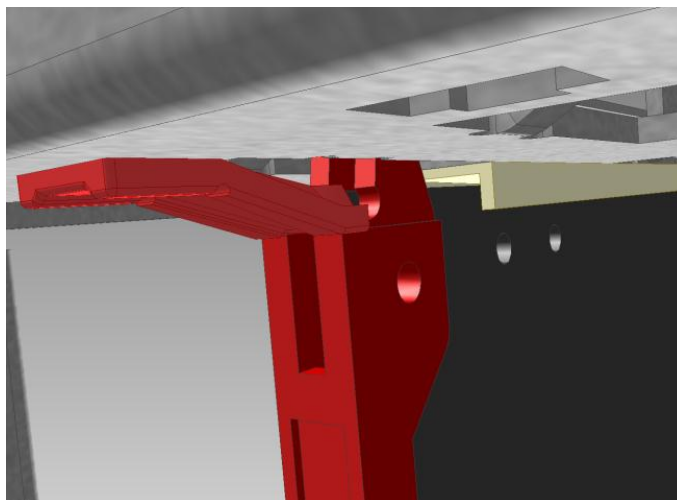


Figure 5: Correct position for board clip



### 3.7 The fiber fix board

FlashCase-II contains a board for the organization of optical components (such as CWDM filters and splitters) and fibers.

The mounting holes are designed specifically for optical components provided by Nevia.

Use the board to organize excessive fiber lengths. This will minimize the risk of fiber damage. The fiber clip circles have a diameter of 5cm. Make sure no fibers have a bending diameter lower than this value.

The twin holes along the long edges are for cable ties of 2-2.5mm width.

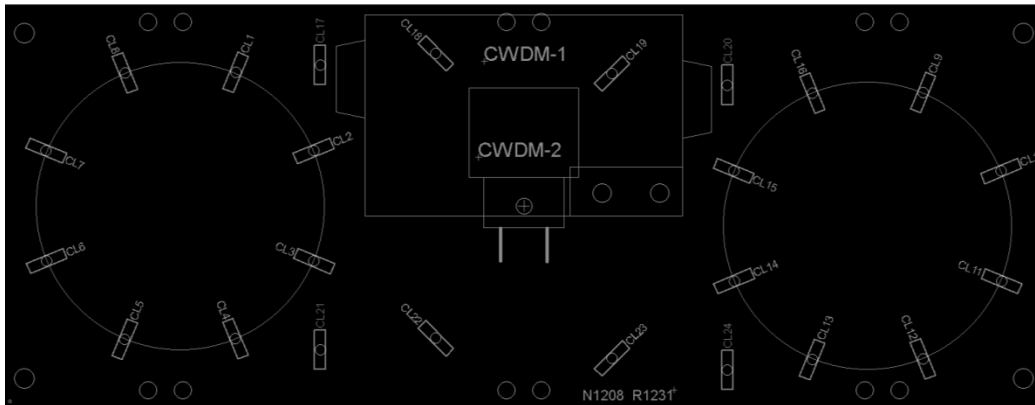


Figure 6: Fiber fix board layout

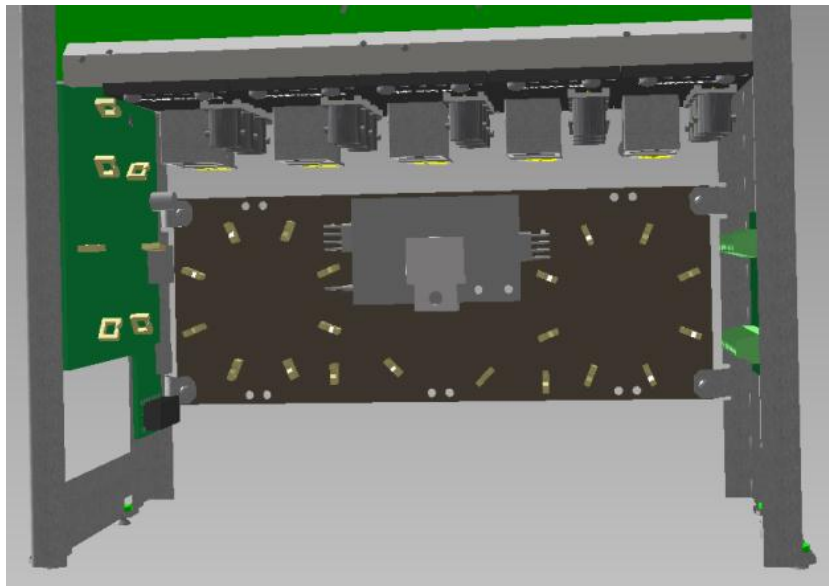


Figure 7: Fiber fix board mounted in chassis

### 3.8 EMC considerations

Electrical cables should be kept away from the power board to ensure minimum noise impact from the switching supplies.

### 3.9 EMC gaskets

Verify that all gaskets are properly mounted along the edge of the profile before mounting end plates and panels with handles.

## 4 Connections

### 4.1 The backplate

All external connections are made at the backplate which contains, in addition to the two standard redundant power connectors, all input and output connections to Flashlink modules and optical components.

Standard connectors found at the backplate are:

- XLR
- BNC
- Optical adapter
- RJ-45

Connector placements can be configured by using Nevia FlashCase Configurator.

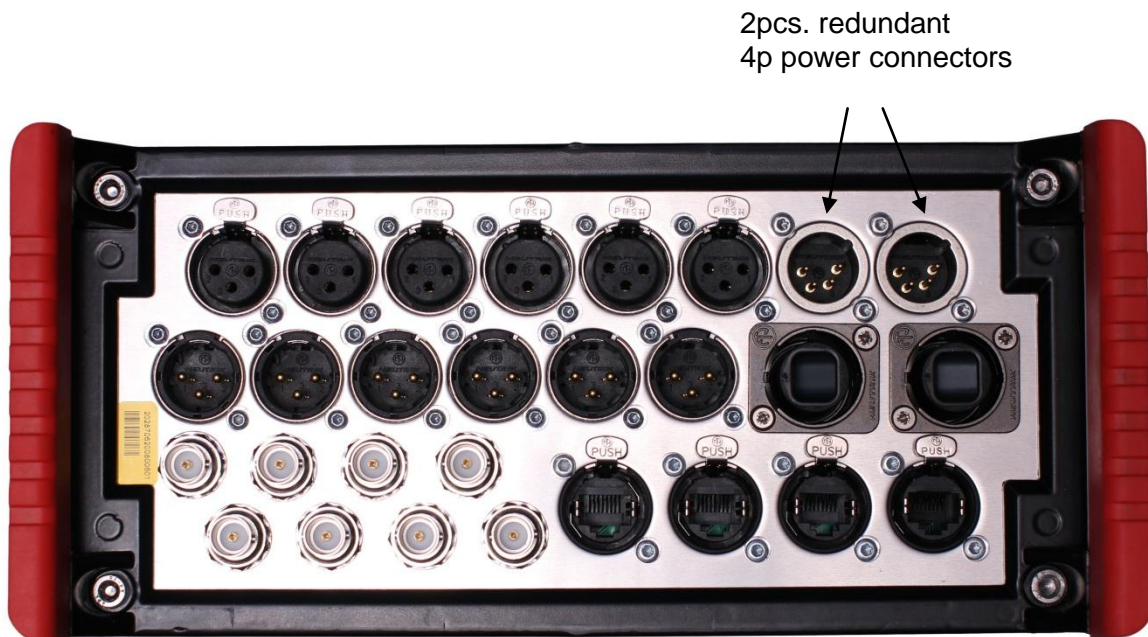


Figure 8: Example of mounted backplate (“MOD 1”)

## 5 Operation

### 5.1 Multicon GYDA

Figure 8 shows fan no. 2 failing and no external power supply connected to input 1.

NOTE: An alarm will be triggered when the system is started with only one external power source connection. This is a prompt to verify connection source.

- If the intention is to connect to one source, please acknowledge the alarm
- If the intention is to connect to two sources, please check the connections

The screenshot displays the Multicon GYDA front page. At the top, there is a navigation menu with options: GYDA, ALARMS, LOG, CONFIG, MANUALS, and ABOUT. Below the navigation is a status bar with 10 fan indicators (0-9) and two PSU indicators. Fan 6 is highlighted with a lightning bolt icon, and fan 7 is highlighted with a 'GYDA' icon. The PSU Load is shown as 16%.

### FlashCase Fan and Power Controller

Input voltage 1	0.56 V
Input voltage 2	15.02 V
Voltage (+5.2V)	5.17 V
Voltage (+15V)	14.76 V
Voltage (-15V)	-14.99 V
Fan voltage (+12V)	11.77 V
Temperature sensor 1	25.3 C
Temperature sensor 2	33.1 C

### Alarms

Fan 2 fail	ALARM	Acknowledge
Input voltage 1	ALARM	Acknowledge
Card removed	RESTORED	Acknowledge

Figure 9: GYDA front page

Figure 9 shows the configuration page.

NOTE: There are no user configurable parameters or alarm thresholds for this product.

NOTE: Fan voltage has no alarm in GYDA, however; a fan alarm ("Fan 1 fail", "Fan 2 fail") will be triggered when a significant drop in fan voltage occurs.

Multicon

nevision

GYDA ALARMS LOG CONFIG MANUALS ABOUT

MR\_MC\_GYDA

0 1 2 3 4 5 6 7

FlashCase Fan and Power Controller

Card label  Locate card  sec

Firmware upgrade Upload file:  Upload

Alarm	Lower limit	Upper limit	Alarm	SNMP trap
Fan 1 fail			<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Fan 2 fail			<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Fuse 1 fail			<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Fuse 2 fail			<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Voltage (+5.2V)	4960 mV	5480 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Input voltage 1	9500 mV	19000 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Input voltage 2	9500 mV	19000 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Voltage (+15V)	14190 mV	15850 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Voltage (-15V)	-16500 mV	-14190 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Temperature sensor 1	-20 mV	100 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
Temperature sensor 2	-20 mV	100 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore
System temperature	-10 mV	82 mV	<input checked="" type="radio"/> Normal <input type="radio"/> Ignore	<input type="radio"/> Send <input checked="" type="radio"/> Ignore

Card version

hw	1.0
lib	1.2.0
serial	2028700000000001
sw	1.0.4

Figure 10: GYDA configuration page

## 5.2 LEDs

At the Power board there is a dual (red/green) LED mainly meant for monitoring during the production process. The function of these LEDs is:

- Red: Alarm situation
- Green: Non-alarm situation

## 5.3 Alarms, required actions

Required actions when a fan alarm is present are dependent on the incident with regard to power load and environmental temperature.

### 5.3.1 Fan alarms

#### 5.3.1.1 One fan alarm

Load status	Ambient temperature	Expected consequences	Required actions
<= 50% (<= 20W)	Within spec.	None, the operation may be completed undisturbed	Replace the defective fan when operation is completed
Within spec.	<= 25°C	None, the operation may be completed undisturbed	Replace the defective fan when operation is completed
>50% (> 20W)	> 25°C	The Flashlink modules will function for a period of uncertain duration depending on the margins with regard to ambient temperature and power load.	Replace defective fan as soon as possible. <b>NOTE:</b> <b>Replacement may be performed while the unit is fully functioning by releasing the chassis/backplate from the profile.</b>

Table 1 Fan alarm, action plan

The above table is the suggested action plan. Actual results are dependent on factors such as:

- The condition of the Flashlink modules
- Actual bit rate
- Transmission margins

#### 5.3.1.2 Two fan alarms triggered simultaneously

This indicates a serious failure in the fan power circuit, and the unit should be repaired as soon as possible.

The Flashlink modules will function for a period of uncertain duration depending on the margins with regard to ambient temperature and power load.

## 5.3.2 Voltage alarms

### 5.3.2.1 Internal voltages

A voltage below the lower threshold may indicate an overload incident and should be investigated.

A voltage above the upper limit indicates an error at the internal power board which should be repaired/replaced.

### 5.3.2.2 External voltages

The defective power supply should be replaced.

**5.3.3 Fuse alarm**

A fuse failure usually indicates an overload incident.

Check the status of all Flashlink modules.

**5.3.4 Temperature alarm**

The temperature alarm is triggered when one of the measured temperatures reaches the alarm threshold.

When both fans are working properly, a temperature alarm indicates an overload incident of either power consumption or ambient temperature or a combination of both.

One or two failing fans can also trigger this alarm.

## **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](http://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	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)
FlashCase-II	○	○	○	○	○	○
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.



# EC Declaration of Conformity



<b>MANUFACTURER</b>	Nevion	
<b>AUTHORIZED REPRESENTATIVE (Established within the EEA)</b>	Not applicable	
<b>MODEL NUMBER(S)</b>	FlashCase-II	
<b>DESCRIPTION</b>	Flashlink frame for outside broadcast	
<b>DIRECTIVES this equipment complies with</b>	Low voltage (EU Directive 2006/95/EC) EMC (EU Directive 2004/108/EC) RoHS (EU Directive 2002/95/EC) China RoHS <sup>1</sup> WEEE (EU Directive 2002/96/EC) REACH	
<b>HARMONIZED STANDARDS applied in order to verify compliance with Directive(s)</b>	EN 55103-1:1996 EN 55103-2:1996 EN 60950-1:2006	
<b>TEST REPORTS ISSUED BY</b>	<b>Notified/Competent Body</b>	<b>Report no:</b>
<b>TECHNICAL CONSTRUCTION FILE NO</b>	Not applicable	
<b>YEAR WHICH THE CE-MARK WAS AFFIXED</b>	2012	
<b>TEST AUTHORIZED SIGNATORY</b>		
<b>MANUFACTURER</b>	<b>AUTHORIZED REPRESENTATIVE (Established within EEA)</b>	<b>Date of Issue</b>
		<b>Place of Issue</b>
	 <b>NEVION EUROPE AS</b> O.nr. 976 584 201 MVA	
<b>Name</b>	Thomas Øhrbom	
<b>Position</b>	VP of Business Support Systems, Nevion (authorized signature)	

<sup>1</sup> Administration on the Control of Pollution Caused by Electronic Information Products