Hardware

Table of contents

I Introdução

Interfaces USB-DMX 512 canais

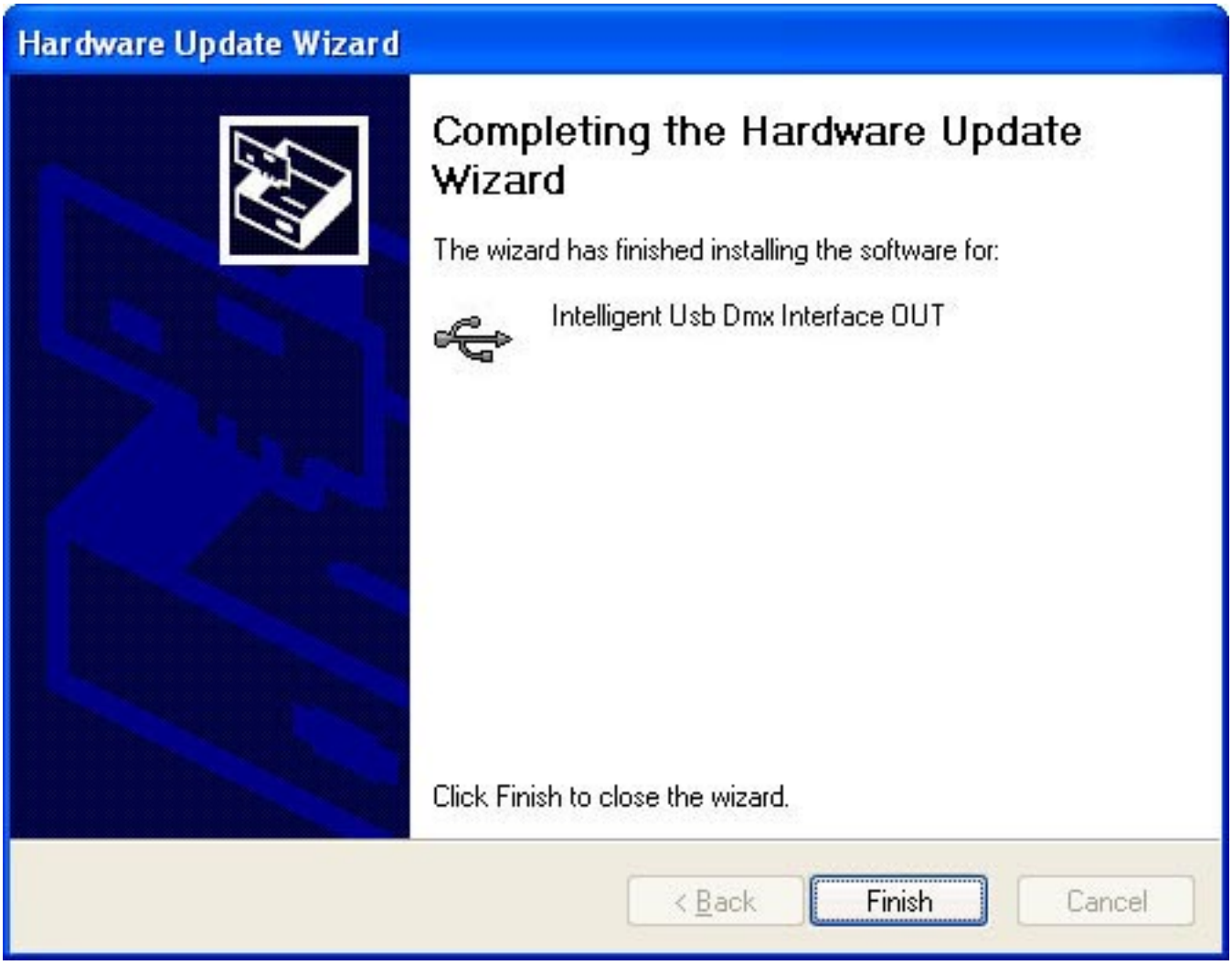
O padrão USB define um novo tipo de comunicação serial bem como um novo tipo de conector. Este padrãofoi introduzido em 1997 e tem se popularizado desde 1999.
Ele oferece muitas vantagens em comparação aos padrões anteriores. Por exemplo, permite que aparelhos sejam diretamente ligados via porta USB, bem como o uso simultâneo de vários equipamentos "Plug and Play" também se tornou possível.

A interface USB-DMX é a primeira inovação de um universo. Ela respeita completamente as especificações do protocolo USB e DMX512 para saída. É ligada diretamente via porta USB e controla todos os 512 canais em potencial de uma linha DMX. Se os 512 canais não forem suficientes, alguns softwares podem rodar até 10 interfaces USB simultaneamente, ou seja, 5.120 canais ao mesmo tempo.

II Installing the USB drivers

Embora a Microsoft não registre numericamente este driver, não há risco de incompatibilidade. Clique "Next" e continue a instalação do driver.

Você terminou! Seu USB-DMX está operacional!



A interface USB é ajustada e pronta para uso. Quando usar uma pela primeira vez, é necessário que os drivers USB sejam instalados. Na verdade, quando instalá-los pela primeira vez, os arquivos requeridos para o uso da interface serão instalados em seu PC, quer esteja usando um laptop ou um desktop.

A fim de instalar uma interface USB, apenas conecte-a a seu PC mesmo que ele esteja ligado. Seu computador automaticamente detectará quaisquer novos aparelhos e você deverá carregar um driver para ele (através da janela Assistente de Instalação).

Então insira o CD-rom em seu PC e clique Next. O Windows encontrará o driver apropriado.

III Role played by the Leds

O papel dos 3 Leds na interface

· O Led amarelo (no meio) indica que a interface está sendo propriamente alimentada.

· O Led vermelho situado junto ao conector DMX pisca para indicar que o sinal DMX está sendo enviado. Não piscar corresponde a falha da interface.

· O Led verde junto ao conector USB deve piscar rapidamente quando a interface está sendo controlada por um software. No modo standalone, este led verde pisca várias vezes para indicar número de cena ativo.

IV Memory capacity in stand alone mode

The stand alone memory capacity depends on the number of channels. More channels you use, less steps are available.

See the following table to know the number of steps available.

USB version

20 channels 2386 5629
100 channels 549 1297
248 channels 225 534
512 channels X 259

V External power

Aqui estão as características do abastecimento externo de força para as interfaces "stand alone":

Voltagem:
entre 9V e 12V DC
Intensidade:
300mA ou mais
Polaridade:
+ no centro
Recomendamos um abastecimento de força respeitando as normas de CE e UL.

VI HE10 connector

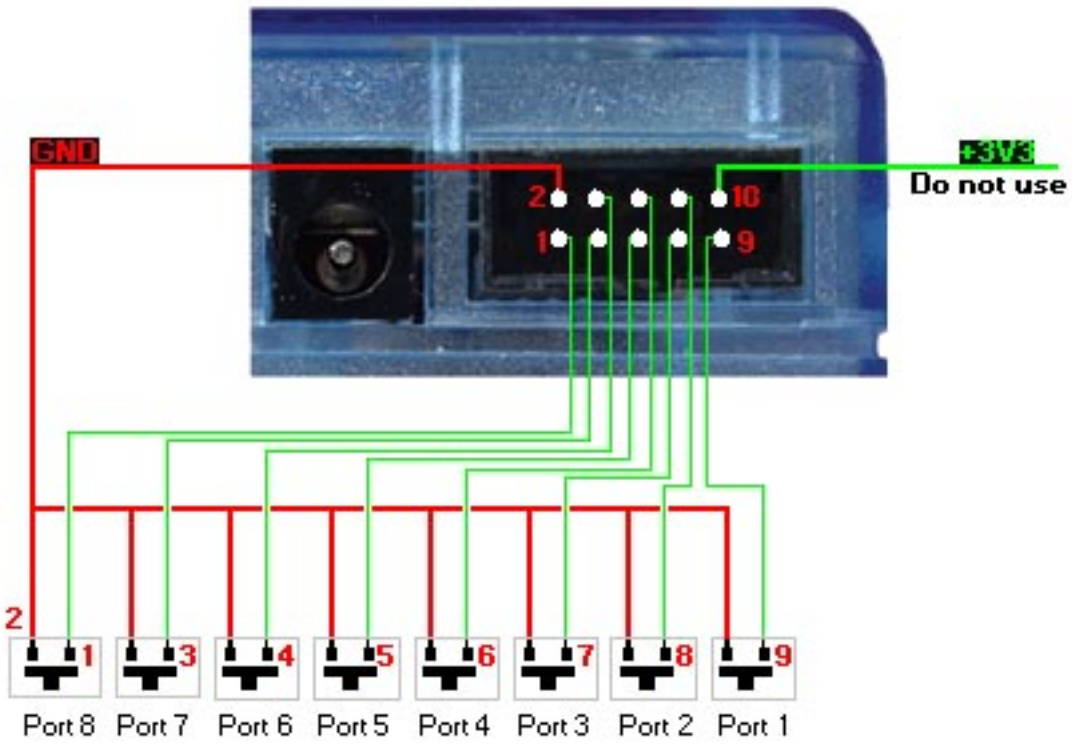
Ele habilita conectar 8 portas. Não há necessidade de força, você apenas precisa fazer um contato temporário entre o terra (pino 2)e uma das 8 portas (pinos 1,3,4,5,6,7,8,9). Se 8 contatos não forem suficientes, você pode usar várias portas simultaneamente para conseguir até 255 possibilidades usando combinação binária.

Designação de Pinos dos Conectores Externos:
Pino 1: Porta 8
Pino 2: Terra
Pino 3: Porta 7
Pino 4: Porta 6
Pino 5: Porta 5
Pino 6: Porta 4
Pino 7: Porta 3
Pino 8: Porta 2
Pino 9: Porta 1
Pino 10: + 3,3V

O conector de "expansão" interno

Designação de Pinos dos Conectores Internos:
Pino 1: Terra
Pino 2: Terra
Pino 3: DMX +
Pino 4: Botão -
Pino 5: DMX -
Pino 6: Botão +
Pino 7: +3V3
Pino 8: 'DMX' Led
Pino 9: V. EXT
Pino 10: '#' Led
As interfaces "stand alone" têm 2 conectores HE10.

O conector externo para "portas I/O"

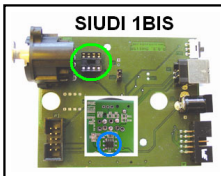
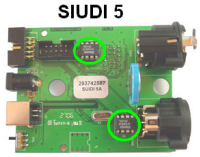


	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8
	1	2	4	8	16	32	64	128
Address 1	ON							
Address 2		ON						
Address 3	ON	ON						
Address 4			ON					
.....	.....	.....	.....	.....	.....	.....	.....	.....
Address 254		ON	ON	ON	ON	ON	ON	ON
Address 255	ON	ON	ON	ON	ON	ON	ON	ON

VII Changing the DMX chipset

If your interface is recognized by the software but you have no DMX signal on the output, may be the DMX chip need to be replaced and you can do this easely by yourself.

We advise you to have an available spare DMX chip (RS485 driver). This is an 8 pin electronic IC component that has been set inside the interface box for the purpose of "driving" the DMX512 line. It is available under several references, see below:

SIUDI 1BIS 	(3,3V DIP)SP3483EP-L SP3483CP-L MAX3483CPA+ ADM.....ISL83483IP	(3,3V CMS) SP3483EN-L SP3483CN-L MAX3483CSA+ ADM.....ISL	
SIUDI 5 	(5V DIP)SP485ECP-L MAX485CPA+ADM485J NZISL		

SP = made by Sipex www.sipex.com
MAX = made by Maxim www.maxim-ic.com
AD = made by Analog Device www.analog.com
LTC = made by Linear www.linear.com
ISL = made by Intersil www.intersil.com

You can purchase those components on several websites like www.farnell.com or www.radiospares.com.

Notes:
- for SIUDI 1bis and SIUDI 2, don't forget to remove the CMS chip if you want to plug a DIP chip
- The SIUDI 5 has DMX IN and DMX OUT, so the card uses 2 identical DIP chips. If you need urgently to repair the DMX OUT, a quick solution is to use the DMX IN chip (exchange the 2 chips) and buy a new chip later.

Test of electronic signals (for electronic technicians only)

The DMX DRIVER chip component has 8 pins. Here are the main pins :
Pin 4 DATA INPUT
Pin 5 GROUND
Pin 6 DMX + OUTPUT

Pin 7 DMX – OUTPUT
Pin 8 3,3V or 5V

If
there is a correct signal on pins 7 and 8 but nothing on the XLR connector, please check the 4 resistors (see the XLR chapter).
if there is not signal on pin 4, the interface has another problem.

VIII XLR choice : 3 or 5 pins

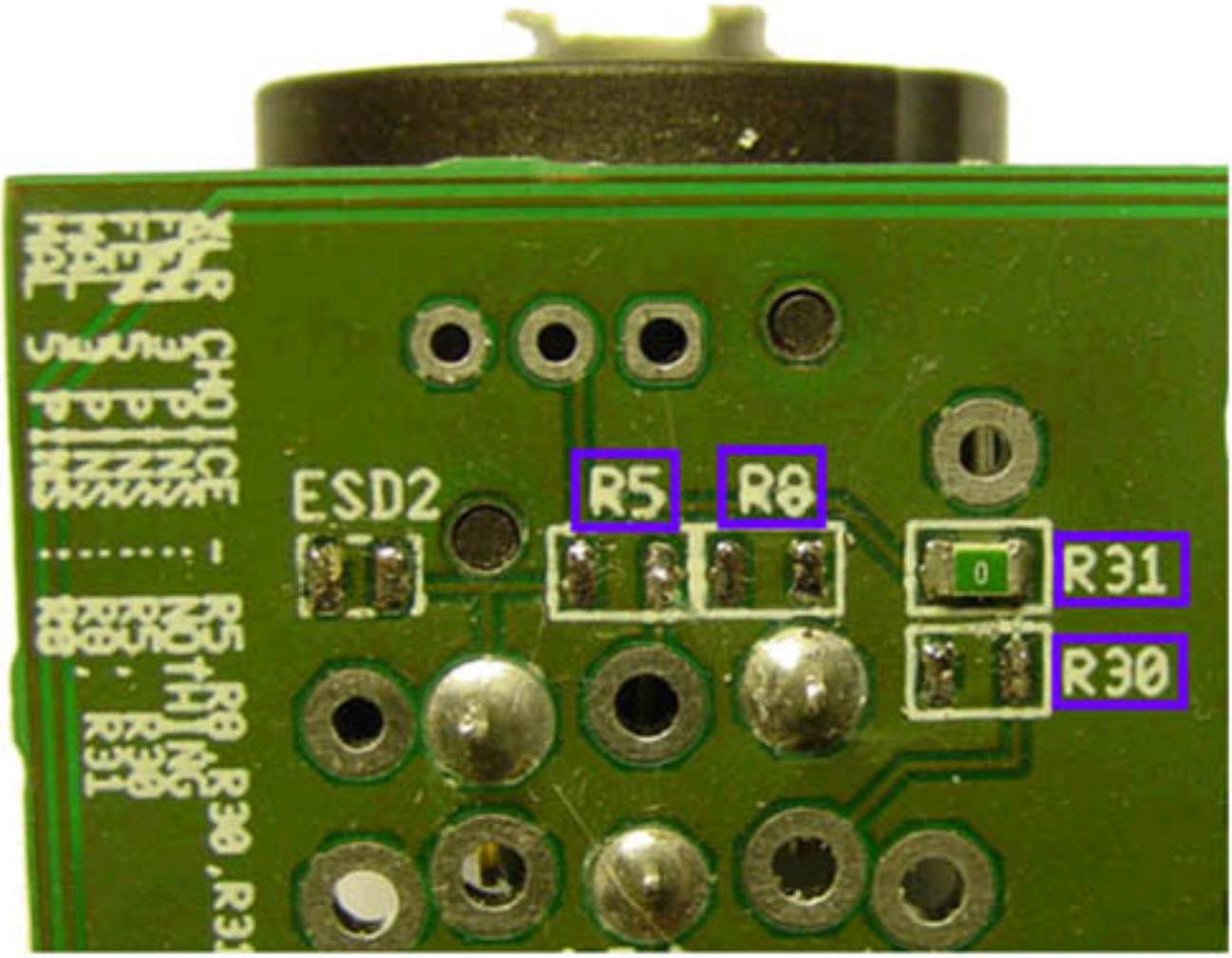
The "DMX" norm imposes 5-pin XLR but the use of 3-pin XLR is very widespread because of their cost. Our interfaces are available either in 3-pin or 5-pin. You can change the XLR connector if you want. To do so, there are 4 resistors that must be removed or not. See the table below:

	RSC (R5) 0 ohms	RSD (R8) 0 ohms	RSB (R30) 0 ohms	RSA (R31) 0 ohms
XLR Female 3 pins				
XLR Female 5 pins	YES		YES	
XLR Male 3 pins		YES		YES
XLR Male 5 pins		YES		

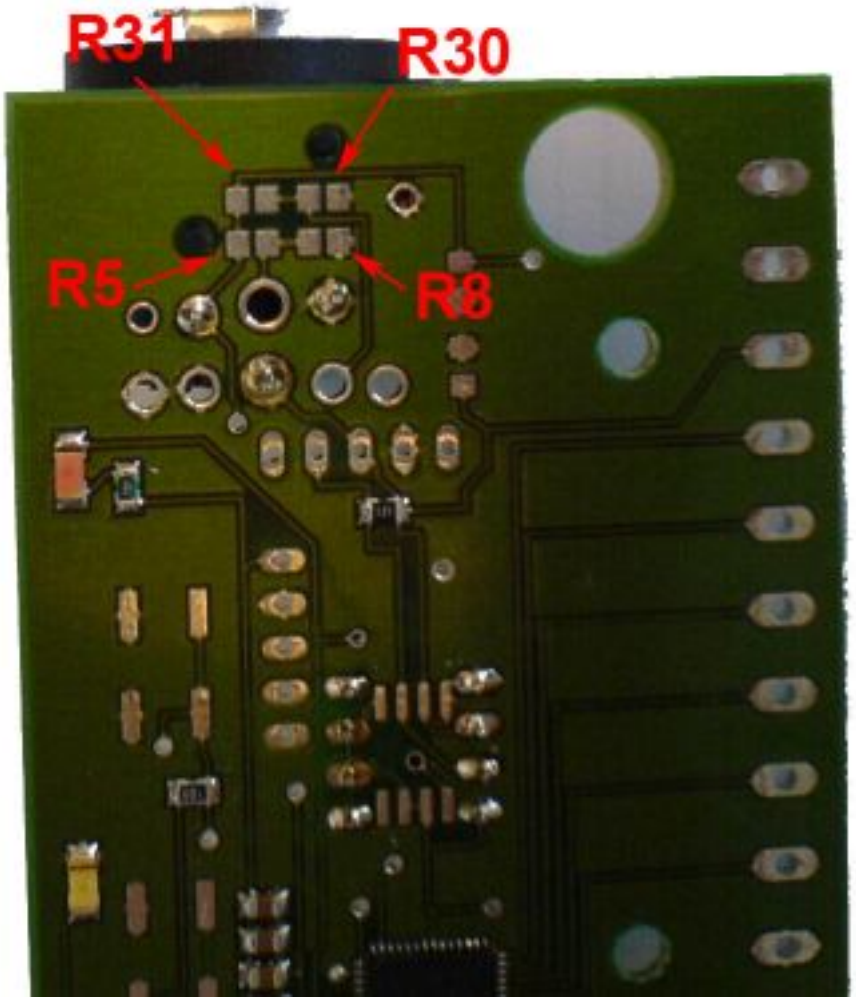
Caution:
You can not transform a "DMX OUT" interface in a "DMX IN" interface (or vice-versa) just by replacing the XLR connector.

XLR Connector Pin Assignment :
Pin1 : DMX OUT GROUND
Pin2 : DMX OUT DATA -
Pin3 : DMX OUT DATA +

SIUDI5 interfaces
The references are RSC1, RSD1, RSB1, RSA1 (DMX output) and RSC2, RSD2, RSB2, RSA2 (DMX input).



SIUDI6


R31
R30
R5
R8

IX Hints

Please read carefully the following preventive measures:

1. Place a DMX insulator between interface and DMX fixtures (e.g. Botex DD2, Elation DMX Branch/4) in order to protect them both from any interference and from overvoltage.

2. We advise you to have an available spare DMX chip (RS485 driver). This is an 8 pin electronic IC component that has been set inside the interface box for the purpose of "driving" the DMX512 line. It is available under several references …

3. Create stand alone scenes in your interface in order to lessen the impact of any potential computer breakdown. In this case connect interface via an external power supply.

4. As with any other DMX controller, keep aside an independent backup system, as this is the only way to be on the safe side when faced with any type of problem.

5. Save all scene programs and keep aside a CDrom software version: restoring the whole show only takes a few minutes !!

Using several USB interfaces simultaneously:

Connect all interfaces before starting on your computer in order to proceed to programming. If not so, the cards order could be inverted next time your computer get started. Your programming would consequently lose coherence.

X Troubleshooting

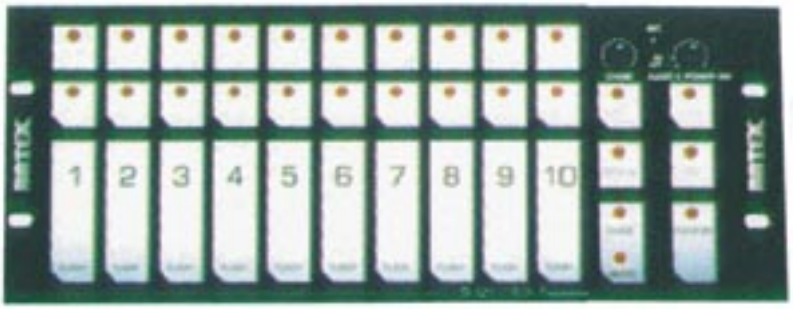
SYMPTOMS	CAUSES	REMEDIES
Software cannot found USB interface	USB cable is not connected properly or USB port is faulty "Intelligent USB DMX Interface" is not mentioned in list of devices : driver is not installed Interface is off Yellow leds are switched on but red led does not flash	Check cable connection or use another USB port See section "How to install USB-DMX 512 interface" Select "USB" position on power supply or connect via an external power supply Switch box breakdown : contact your retailer
DMX fixture does not respond	Receivers do not detect DMX, yet DMX signal output is operational DMX red led flashes, but DMX signal output is not operational	Check DMX wire and if possible test another DMX receiver Replace the 8 pin-chip set in the interface box.

XI Other connections

In this manual, you will find informations and hints about the several possible connections. However, some features may not be available with the product you have purchased.

1. DMX controllers

DMX controllers for "Club" or "DJ" applications:



For "Live" applications, the use of DMX console can be very useful. The faders and buttons of DMX controllers can give direct access to some features of your software.

Remarks:
· requires a "DMX IN" interface and associated functions in the software

· the DMX controller may be very useful in case of a computer crash

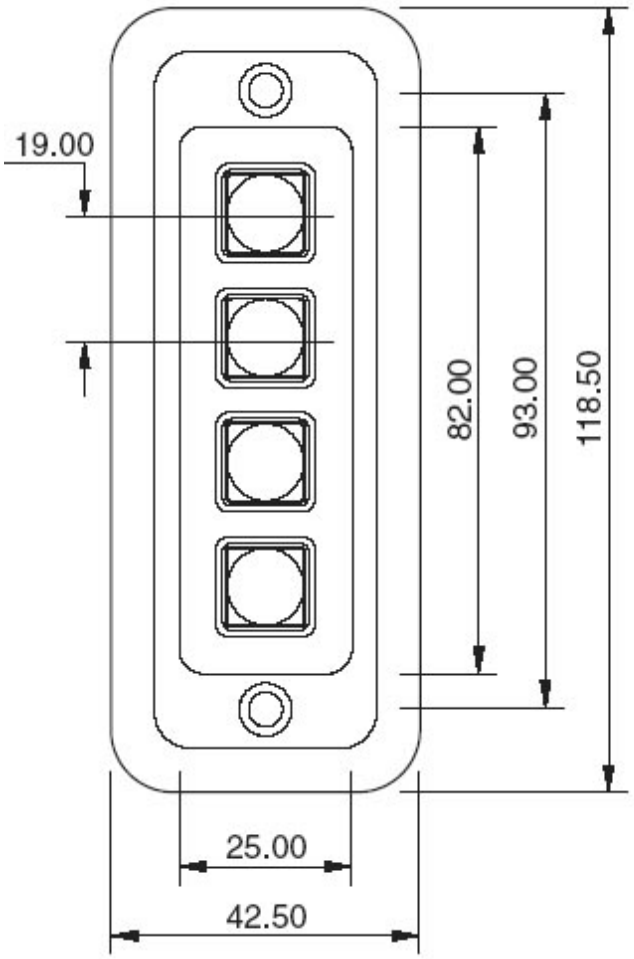
2. Contacts (input)

Most of our electronic interfaces have an HE10 connector to connect up to 8 contacts. The standard application is the connection of a panel with 8 (or less) buttons to trigger the differents "lighting shows". It is very useful for achitectural installations. You can connect any devices that can generate a contact: relays, IR detector, HF receptor, switches...

Sample of Keypads - Storm 4 buttons
(details and connections)

See below a complete description to order this keypad from Storm company and the components for the cable. We explain also how to make the connections. For more information visit www.storm-keypads.com

Serie	Picture	Ref. Storm	Ref. Farnell	Ref. Radiospares
Touch keypads for exposed public applications (Storm 1000 PLX series)		PLX0422 01	102957	301-3835
Robust keypads for harsh industrial use (Storm 2000 series)		2K0421 01	546392	
Touch keypads with snap-on keytops for custom legends (Storm Graphic Series)		GS0402 01	102799	301-3885



Connection Details for 4 Key Keypad

CONTACT CONNECTIONS

5 4 3 2 1

(As viewed from rear of keypad)

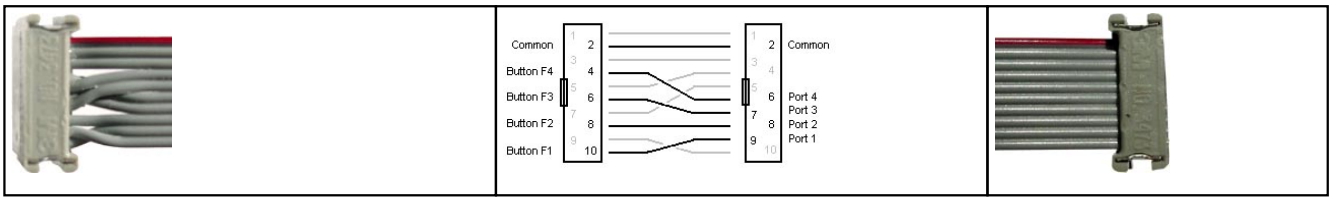
F1
F2
F3
F4

KEY LOCATION
(As viewed from front of keypad)

CONTACT MATRIX	
CONNEC. PIN	ROW/ COLUMN
1	common
2	F4
3	F3
4	F2
5	F1

Components to buy to make the cable	Pictures	Ref. Farnell	Ref. Radiospares
HE10 Connector female 10 pins (quantity 2)		249040	454-2362
Ribbon cable (Quantity 1m or +)		148011	246-8133

Connection to keypad 4 buttons	Here is the description of the connection. Only 5 wires are usefull to use the 4 buttons of the keypad, but we advise to connect the 10 wires of the ribbon cable.	Connection to DMX interface



Storm Interface - Keymat
14 Bentinck Court, Bentinck Road, West Drayton,
UB7 7RQ, England
Tel: +44 (0)1895 431421 Fax: +44 (0)1895 431132
Email: sales@keymat.com

Storm Interface USA
364 Pennsylvania Avenue, Suite 202,
Glen Ellyn, Illinois, 60137, USA
Tel: 630 469 2981 Fax: 630 469 2975
Email: sales.usa@storm-keypads.com

www.storm-keypads.com

3. 0-10V relay (output)

If you need to control external devices which do not accept the DMX signal, the best solution is to convert the DMX signal with DMX -> 0-10V or DMX -> RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

0-10V or DMX -> RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

0-10V or DMX -> RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

0-10V or DMX -> RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

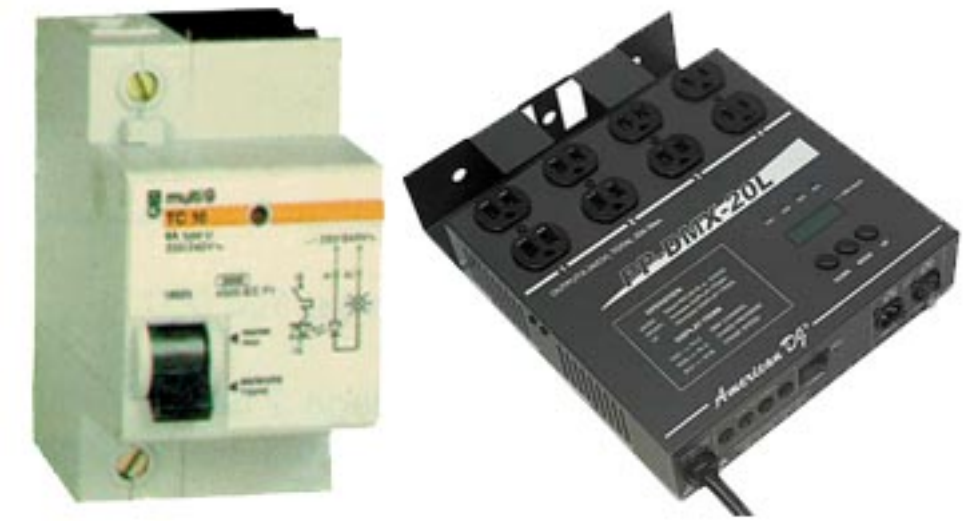
0-10V or DMX -> RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

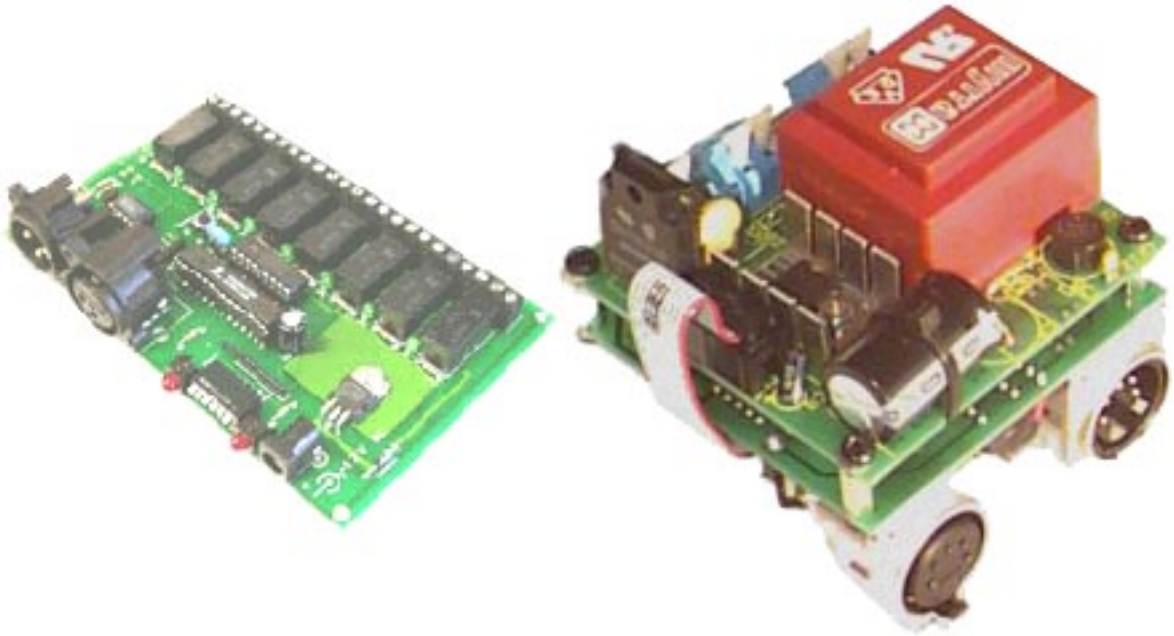
RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal lighting.

RELAY interfaces. You can aslo use dimmer packs which are generally used to connect traditionnal

lighting.



DMX - Relays - 0-10V interfaces:



4. MIDI controllers

For "Live" applications, the use of MIDI controller can be very useful. The faders and buttons of MIDI controllers can give direct access to some features of your software.

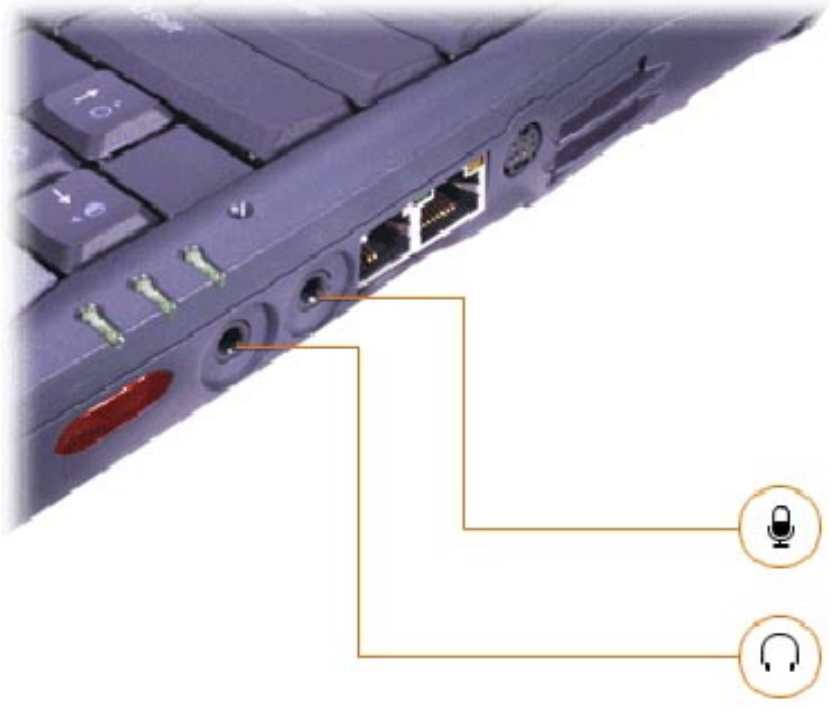
Remarks:
· requires MIDI functions in your software
· MIDI controllers are cheaper than DMX controllers

MIDI controller for "Club" or "DJ" applications. Traditionnal MIDI keyboards need a MIDI interface to be connected to a computer:

5. Audio Input/Output

All computers now have high quality AUDIO intput and output. You can play an audio signal (music, voice message...) by starting WAV or MP3 files.
The audio input enables to connect a mircrophone or a mixer in order to trigger your lights with an audio signal.

Connection of the audio input and output:



6. Special keyboards

The computer keyboard is very important to use your software. Read the software manual to know how to use your keyboard to trigger your software.

You can also purchase customized keyboards. The manufacturer VKS SYSTEM www.vks.fr, knows our products and has already made keyboards adapted to our software. You can find other manufacturers all over the world.

7. HF commands (wireless)

This technique consists in using a remote control (High Frequency (HF), Infra Red (IF) technologies...) to send informations to the software.

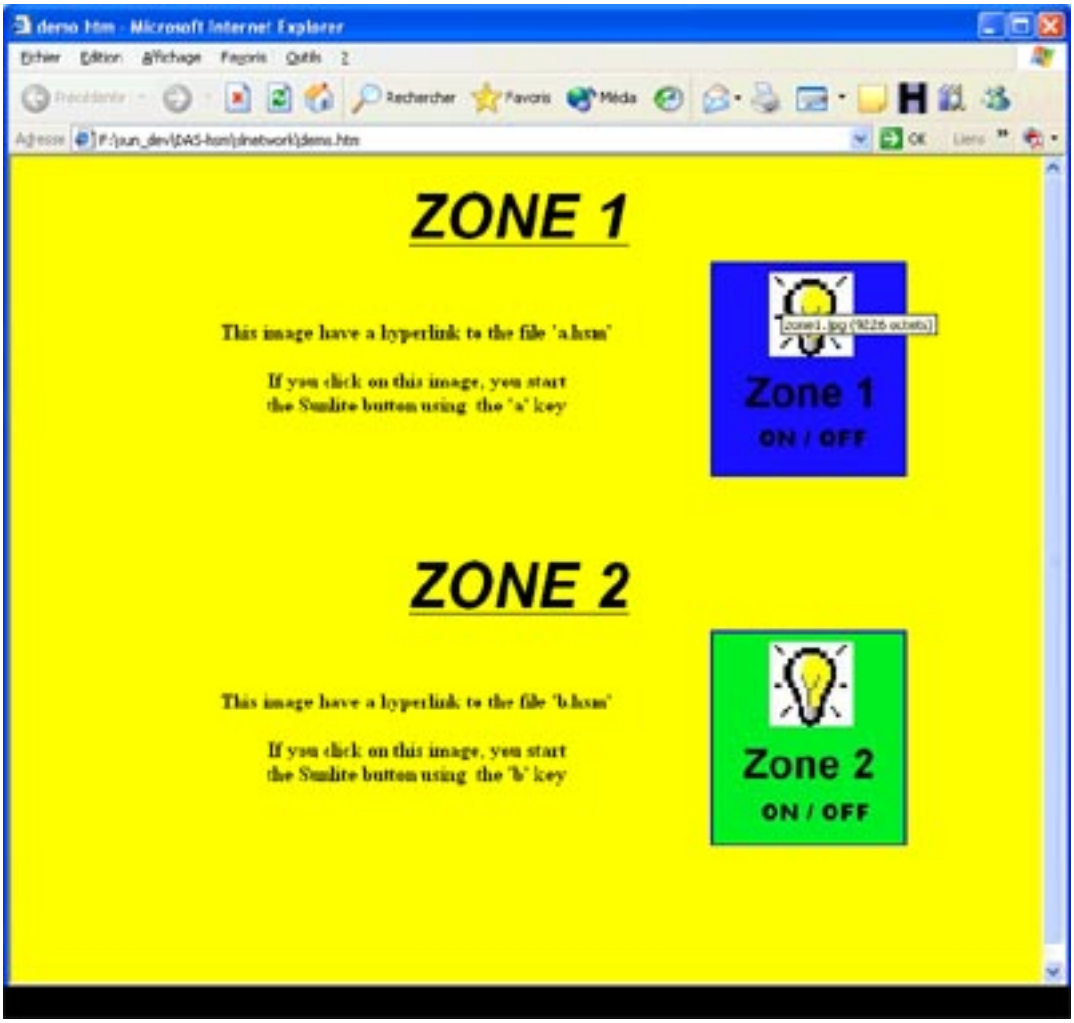
There are several methods to interface the receptor with our product:

· through the computer, using a software to affect a shortcut key or any other action to a button of your transmitter (only in "computer mode")
· through the I/O connector of your interface, in this case the receptor close a relay to trigger a port of your interface (can work in "stand alone" mode)

8. Touch screen

Touch screens enable not to use your mouse and keyboard anymore. You only have to touch the screen with your fingers what simulates a mouse click. These screens are compatible with all our softwares.

However, it is better to have big buttons on the user-screen in oder to push the right button. This is why, we advise you to create your own screen using a web page. To do so, we have made a "kit" that you can download from our website and which enables to "interface" your web page to the software by simulating the shortcut keys.



XII What is the minimum configuration required for your compute

Minimum requirements

- Windows 98, ME, 2000 or XP, with DirectX 9.0
- 500 MHz CPU (1,5 GHz)
- 256 Mb of RAM memory RAM (512 Mb)
- 64 Mb of video memory (128 Mb)
- 100 Mb of free disk space
- CD-ROM drive

- 1 or 2 USB2.0 Ports