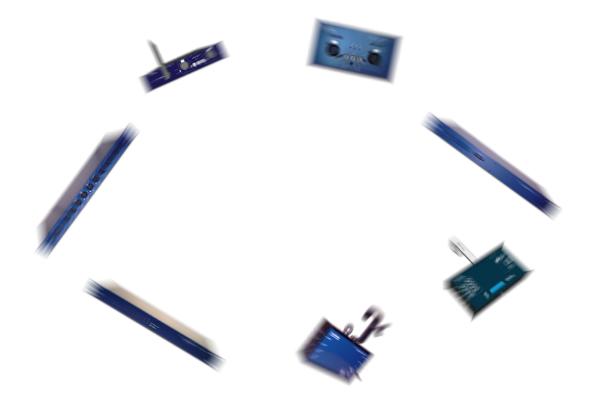
LUMINEX Lighting Control Equipment

Application Guide

Application examples



This application guide includes some (so not all) possible configurations or setups to be used with the whole Luminex product range; Most of these configurations can also be combined to give more possibilities.

The aim of this book is to help users, firstly, too show some possibilities of Luminex devices, and secondly, help them in configuring Luminex product to perfectly fit to their needs.

Each example is described , and all related products that fits for such applications are indicated in the title of the example. Usually, a screenshot of the builtin webserver of Luminex devices is displayed to help the user to configure its own product.

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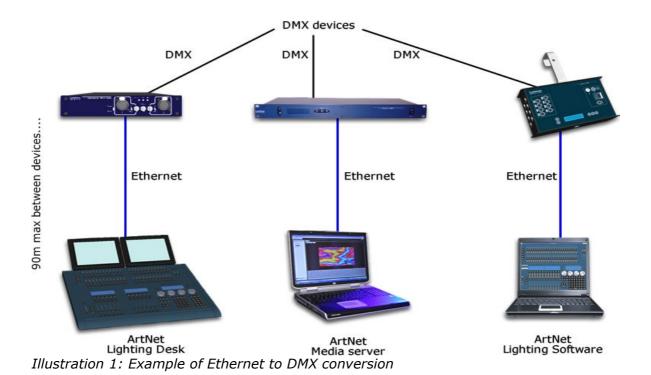
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Output Box

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup, the related products will be used as single output boxes (Ethernet to DMX) connected to any kind of ArtNet source (lighting software, lighting desk, media server...).



Connect your Ethernet-DMX device to its ArtNet source. Use a cross-cable if you connect your Luminex device directly to the ArtNet source.

Be sure your Ethernet-DMX device is set with an IP address within the same IP range as the ArtNet source. Usually ArtNet devices use 2.x.x.x or 10.x.x.x IP addresses.

All Luminex Ethernet-DMX product can be set either from the front end or through the built-in Web server. If your ArtNet source does not have a Web browser, set your Luminex device from the front end , either by loading a complete "output" profile or by setting each outlet one by one with the desired universe addresse and mode.

If you're able to reach the built-in Web server of your Luminex device, you should see Illustration 2: Loading an "All out 0" profile examples of output configurations, which is achieved by loading an output profile (All OUT 0) or you will see Illustration 3: Setting all outlets separately by setting all outlets separately.

	/2.0.0.2/cgi-bin	,proi						▼ © Go C.
					Tool	box:: I	Profile Ma	nager
	Select P	rofile						
	Select a	profile: 03:.	All Out 0	-				
		·						
ox		Reca	I Profile Save	e Profile	Delete Profile	Export Profi	e Import Profile	
file manager	Profile	REVIEW	(3: All O	ut 0)				
						_		
	DMX Rout	ina						
6		ing						
		Direction	Universe	Mode	IP Merge	Legend	Unicast Info	
	Outlet 1:			single				
	Outlet 2:							
	Outlet 3:							
	Outlet 4:			single	disabled			
	Outlet 5:			single				
	Outlet 6: Outlet 7:		005 (0x05) 006 (0x06)	single single	disabled disabled	Outlet 6 Outlet 7		
	Outlet 8:	output		single	disabled	Outlet 8		
	outlet 0.	output						
	<u>Global Set</u>	<u>tings</u>						
	ID No: 001 Trigger uni DMX detai							
	→ framera → break: 9 → MAB: 20							

Illustration 2: Loading an "All out 0" profile

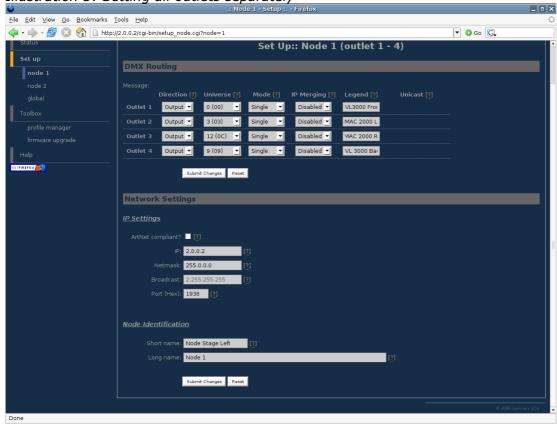


Illustration 3: Setting all outlets separately

Input Box

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup, the related products will be used as single input boxes (DMX to Ethernet). The Luminex device will convert DMX signal to ArtNet protocol in order to control a video Media server or any kind of ArtNet devices (see Illustration below).

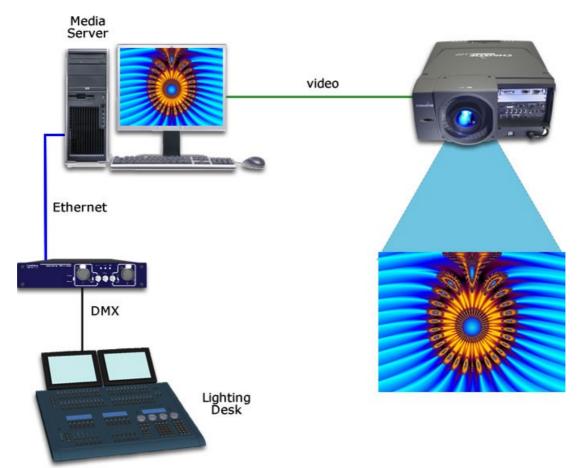


Illustration 4: Example of DMX to Ethernet conversion

Connect your Ethernet-DMX device to the DMX source with a male gender adaptor . This example show the use of one single DMX line, but depending of the Luminex device you're using, you can convert UP to 8 DMX lines to Ethernet.

Be sure your Ethernet-DMX devices is set with an IP address within the same IP range as the ArtNet device to control. Usually ArtNet devices use 2.x.x.x or 10.x.x.x IP addresses.

All Luminex Ethernet-DMX product can be set either from the front end or through the built-in Web server. If the ArtNet device you wish to control does not have a Web browser, set your Luminex device from the front end , either by loading a complete "input" profile or by setting each outlet one by one with the desired universe addresse and mode. If you're able to reach the built-in Web server of your Luminex device, see below 2 examples of input configurations , realized by loading an input profile (Illustration 5) or by setting all outlets separately (Illustration 6).

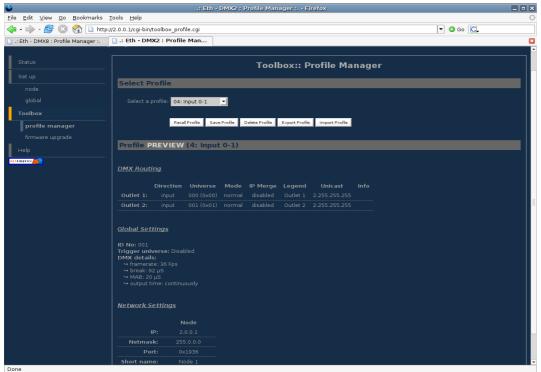


Illustration 5: Loading an Input profile (Input 0-1)

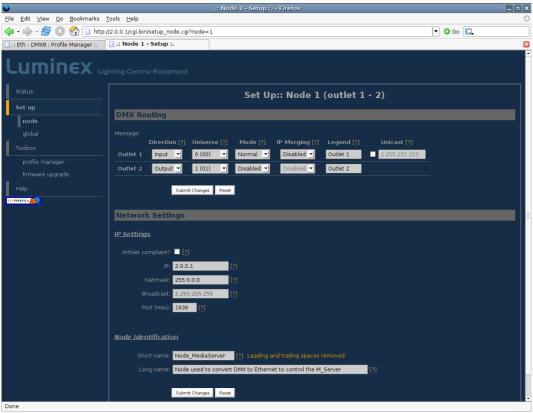


Illustration 6: Configure each outlet separately

Ethernet link between 2 DMX devices

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup, the related products will be used as input and output boxes . The first Luminex device will convert DMX signal to ArtNet protocol in order to run one single Ethernet cable instead of several DMX lines. However, please remember that Ethernet specification allows to use cables **no longer than 100m** between two active Ethernet devices.

Please notice that if you're not using an Ethernet switch to interconnect the 2 Ethernet devices, a crossover Ethernet cable will have to be used.

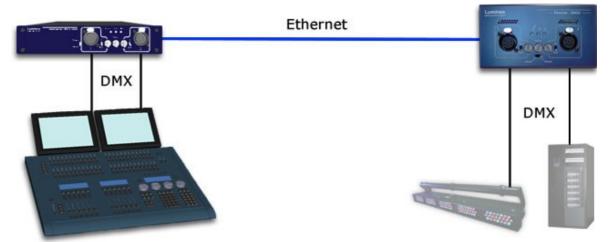


Illustration 7: Example of Ethernet link between 2 DMX devices

This kind of setup can be very useful for instance when you have to run your DMX signal through the existing network of a building or a venue.

Input/output box as dual splitter

Related products : Ethernet-DMX (8, 8/W, 8/T)

In this setup, the related products will be used as input/output boxes (see Illustration 8). The Luminex device is set to act as a dual splitter (1 input, 3 outputs on the same universe for each lighting desk).

The two lighting desks can run their dedicated DMX network on the same device. The node here can be compare to a Luminex 2.10 Splitter.

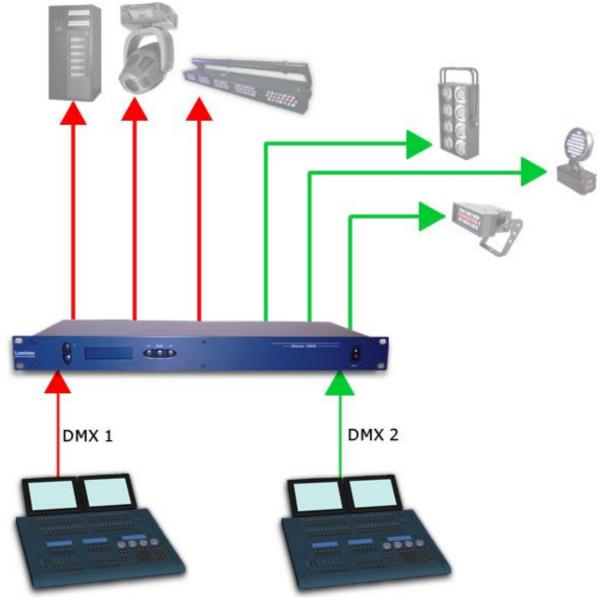


Illustration 8: Example of Input/output configuration : dual Splitter

The following screenshots (Illustration 9) display the "profile manager" page from the built-in Webserver. The selected profile is the one used in this example.

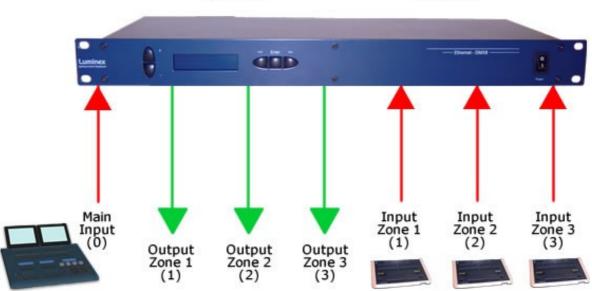
• 🛶 - 🥵 🛞 👔	http://2.0.0.2/index.	cgi							🗖 🔘 Go 🚺	L
Node 1 - Setup :.	: Node 1 /	-	tatus ·							-
uminex	, Lighting Control	l Equipme	nt							
itatus						S	tatus			
	DMX Rou	ting		_						
		lang	_	_	_	_	_	_		
		Direction	Universe	Mode	IP Merge	Legend	Unicast	Info		
	Outlet 1:	input			disabled	Outlet 1				
oolbox	Outlet 2:	output		single	disabled	Outlet 2				
	Outlet 3:	output		single	disabled					
profile manager	Outlet 4:			single	disabled	Outlet 4				
	Outlet 5:				disabled	Outlet 5				
	Outlet 6:	output		single	disabled	Outlet 6				
EFOX	Outlet 7:	output		single	disabled	Outlet 7				
	Outlet 8:			single	disabled	Outlet 8				
	Global Se ID No: 001 Trigger univ DMX details ↔ framerat ↔ break: 93 ↔ MAB: 20 ↔ output ti	verse: Disal s: e: 36 Fps 2 μS μS me: continu	ously							
	Network	Setting	s				_	_		
	II Netmasl Por									

Illustration 9: Loading a "2X1.3 hub" profile

Automatic DMX switcher

Related products : Ethernet-DMX (8, 8/W, 8/T)

This setup is inspired from a real installation; it perfectly shows the ability of Luminex products to answer to all kind of configuration.



2.0.0.2 2.0.0.3

The aim of this installation is to provide an automatic DMX switcher between three small lighting desks and a main one; Each small lighting desk is controlling a dedicated zone, and the main desk can control all zones.

The difficulty of the setup is that the main desk is not always connected, so the Luminex device has to switch automatically to the dedicated Lighting desk, for this to control its own zone.

The aim was not to use a merging policy, but a real automatic switcher between DMX sources.

The main lighting desk is running one single universe, split on each zone through the Luminex devices outlets.

Of course, the main desk patch has been split on the three small lighting desks to avoid channel overlapping.

The main principe of this auto switching is to use the builtin backup feature of Luminex devices, base on ArtNet source IP addresses.

As the Luminex device use two IP addresses, it's easy to virtually use 2 different IP sources. In this case, the main desk is 2.0.0.2 and the small desks are 2.0.0.3.

The following screenshots show the main configuration of the Ethernet-DMX8 and a the detailed configuration (see illustration 11) of one of the 3 outputs.

• 🔶 • 🛃 😣 🟠 🚺	http://2.0.0.2/index	.cgi							🔹 🕼 Go 💽	
Node 1 - Setup :.	📄 .: Node 1 /	node 2 - S	tatus :.							
uminex										
Status						Sta	atus			
										_
	DMX Rot	lting	_		_	_	_	_		
		Direction	Universe	Mode	IP Merge	Legend	Unicast	Info		
	Outlet 1:				disabled					
	Outlet 2:		000 (0×00) 001 (0×01)							
profile manager	Outlet 3:		000 (0×00) 002 (0×02)							
firmware upgrade Help	Outlet 4:		000 (0x00) 003 (0x03)					2.0.0.2 2.0.0.3		
FIREFOX	Outlet 5:				disabled					
	Outlet 6:									
	Outlet 7:				disabled					
	Outlet 8:	output		disabled	disabled	Outlet 8				
	Global S									
	Clobal S	ettings	_		_	_	_	_		
	ID No: 001 Trigger uni DMX detail ↔ framera ↔ break: 9 ↔ MAB: 20 ↔ output t	s: te:36 Fps 2 μS								
	Network	Setting	s	_			_	_		
		Node	1 Node 2							
		P: 2.0.0.								

Illustration 10: main configuration

٢	http://2.0.0.2	- Config outlet	4 - Firefox	_ _ _ _
	Ca	onfig Outle	et 4	_
		Submit Changes Re	eset	
	t Cusham II			
DMX Outpu	t Custom IP	Merging		
<u>IP/Universe Se</u>	<u>ettings</u>			
IP sourc	cel: 2.0.0.2	Uni	verse: 0 (00)	-[?]
IP sourc	ce 2: 2.0.0.3	Uni	verse: 3 (03)	- [?]
Backup time (i	ms): 400	Auto recover:	<mark>▶ [?]</mark>	
<u>Default Settir</u>	<u>ngs</u>			
Offset	t S1: 0	Set offset 1 [?]		
Offset	: S2: 0	Set offset 2 [?]		
Fr	rom: 1	To: 512 [<mark>?</mark>]		
м	ode: LTP	Set default mod	e [<u>?</u>]	
Trigger	Chn: 0 s	et default trigger		
Hide table Expo	ort patch			
Output channel[<u>?</u>]	Source 1 channel[<u>?</u>]	Source 2 channel[<mark>?</mark>]	Mode[<u>?</u>]	Trigger[<u>?</u>]
1	1	1	S2 Backup 🚽	-
2	2	2	S2 Backup 💌	-
З	3	3	S2 Backup 💌	-
4	4	4	S2 Backup 🗾	-
5	5	5	S2 Backup 🚽	-
6	6	6	S2 Backup 🚽	-
7	7	7	S2 Backup 🚽	-
8	8	8	S2 Backup 🚽	-
Done				

Illustration 11: Detailed output outlet configuration

Input/Output Box for Media Server

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup, the related products will be used as input/output boxes (see Illustration 12). One outlet of the Luminex device will be set as an input in order to convert DMX packets from the lighting desk to control the ArtNet media server. Then, all the other outlets will be set to DMX output, to have artNet packets, coming from the Media server, converted to DMX universes.

All outlets can be configure one by one, but all Luminex devices offers to quickly recall a built-in profile to setup the unit.

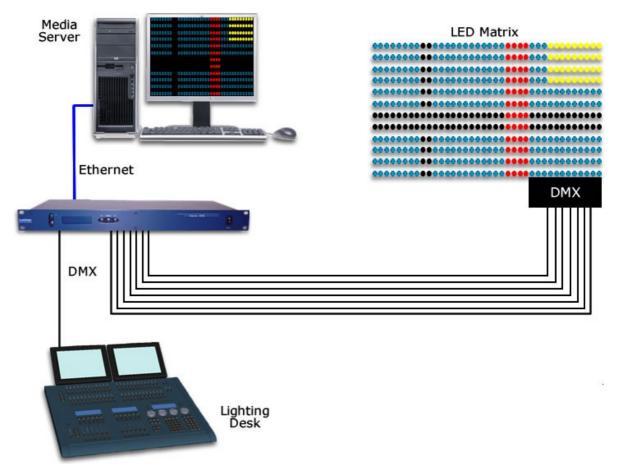


Illustration 12: Example 1 of Input/Output configuration

The following screenshots (Illustration 13) display the "profile manager" page from the built-in Webserver. The selected profile is the one used in this example.

					Tool	box:: P	Profile Ma	nager
	Select P	rofile						
		profile: 02:	1 In + 7 Out	_				
		Reca	ll Profile Save	e Profile	Delete Profile	Export Profile	Import Profile	
manager								
	Profile P	REVIEW	(2: 1 ln ·	+ 7 Out	t)			
	DMX Rout	ing						
		Direction	Universe	Mode	IP Merge	Legend	Unicast	Info
	Outlet 1:	input	000 (0×00)	normal	disabled		2.255.255.255	
	Outlet 2:				disabled			
	Outlet 3:							
	Outlet 4:	output	003 (0×03)	single	disabled	Outlet 4		
	Outlet 5:	output	004 (0×04)	single	disabled	Outlet 5		
	Outlet 6:			single	disabled			
	Outlet 7:			single				
	Outlet 8:			single	disabled	Outlet 8		
	<u>Global Set</u>	<u>tings</u>						
	ID No: 001							
	Trigger uni							
	DMX detail → framera							
	→ break: 9 → MAB: 20							
		ime: continu						

Illustration 13: Profile Manger : "1 in + 7 out" profile selected

Unicast

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

The ArtNet protocol used in all Luminex Ethernet-DMX devices is a broadcast protocol; this mean every packet sent from a single transmitter will be received by all receivers on the network. This can be useful if by instance you wish universes 1 and 2 to be available on several points of the set up. However, some Ethernet equipments, that should not received these packets, will see their link bandwidth consumption increase for no gain. This has not a big impact on wired network, depending on the type of converter you use.

But increase the number of universe on a wireless link can result in a very bad connection between your wireless nodes. This is why it can be sometimes useful to use unicast mode.

In the example below, we can stream through ArtNet the 4 universes needed here to each wireless node; but to avoid the bandwitdth consumption problem, we use the unicast feature to send the universes to the dedicated output boxes.



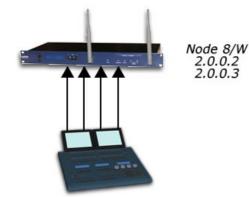
Node 2/W 1 2.0.0.10 Universes (0 & 1)



Node 2/W 2 2.0.0.20 Universe 2



Node 2/W 3 2.0.0.30 Universe 3



The following illustration (14) shows how to set unicast address per universe.

	.: Node 1 - Setup : Firefox	
e <u>E</u> dit ⊻iew <u>G</u> o <u>B</u> ookmark		
🛯 • 🔶 • ಶ 😣 🟠 🚺	http://2.0.0.2/cgi-bin/setup_node.cgi?node=1	
.: Node 1 - Setup :.	🗋 .: Node 1 - Setup :.	
_uminex		
	Set Up:: Node 1 (outlet 1 - 4)	
Set up		
node 1	DMX Routing	
node 2	Message:	
global	Direction [ʔ] Universe [ʔ] Mode [ʔ] IP Merging [ʔ] Legend [ʔ] Unicast [ʔ]	
	Outlet 1 Input 🌱 0 (00) 🝸 Normal 🍸 Disabled 🍸 Node 2/W 1 🗹 2.0.0.10	
	Outlet 2 Input 🚽 1 (01) 🚽 Normal 🚽 Disabled 🚽 Node 2/W 1 🗹 2.0.0.10	
	Outlet 3 Input ▼ 2 (02) ▼ Normal ▼ Disabled ▼ Node 2/W 2 ▼ 2.0.0.20	
	Outlet 4 Input V 3 (03) V Normal V Disabled V node 2/W 3 V 2.0.0.30	
Help		
TFIREFOX	Submit Changes Reset	
	Network Settings	
	<u>IP Settings</u>	
	ArtNet compliant? 🔲 [ʔ]	
	IP: 2.0.0.2 [?]	
	Netmask: 255.0.0.0 [2]	
	Broadcast: 2.255.255.255 [?]	
	Port (Hex): 1936 [?]	
	Node Identification	
	Short name: Node 1 [7]	

Illustration 14: Unicast example

Local Merging

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup (see Illustration 15), the related product will be used as a merger. The aim of this application is to merge two different DMX sources into one single Luminex device. This configuration can also be used if you want to have a main and backup desk system.



Illustration 15: Example of local merging

By using the built in Web server of each related product, you can create complexe merging policies on each channel of each outlet; for instance, merging channels 1 to 34 from both sources in HTP mode, then channels 35 to 256 in LTP. The rest of the channels can be set to act as backup source for the primary desk.

The following screenshots give you an overview of what can be done through the Web interface.

The first screenshot (Illustration 16) shows you how to quickly set up the second outlet as a merged input (in that example, all channels will be merged in HTP mode). For a deeper configuration of the merging policy, you can set the second outlet as a "Custom" input.

Then, a new pop up windows (see Illustration 17) allows you to set the desired merging policy on each channel. You can also notice that this system provides the opportunity to create a complete softpatch (the patch will be recorded directly into the node, but can also be saved and loaded).

🗳 .: Node 1 - Setup :, - Firefox 📃	۰X
Eile Edit View Go Bookmarks Tools Help	$\langle \rangle$
Set Up:: Node 1 (outlet 1 - 4)	
Set up DMX Routing	
node 1	
node 2 Message: Direction [?] Universe [?] Mode [?] IP Merging [?] Legend [?] Unicast [?]	
giobal Outlet 1 input ♥ 0(00) ♥ Merge ♥ Disabled ♥ Outlet 1 ■ 2.255.255.55	
Toolbox Outlet 2 Input Ch 1 HTP Disabled Outlet 2	
profile manager Outlet 3 Output 2 (02) Disabled Outlet 3	
Help Outlet 4 Output 🗹 3 (03) 🖵 Disabled 🗹 Disabled 🗸	
Submit Changes Reset	
Network Settings	
Network Settings	
I <u>P Settings</u>	
ArtNet compliant? 🔲 [
IP: 2.0.0.2	
Netmask: 255.0.0.0 [?]	
Broadcast: 2.255.255.255 [?]	
Port (Hex): 1936 [?]	
Node Identification	
Short name: Node 1 [?]	
Long name: Node 1	
Submit Changes Rest	

Illustration 16: Outlet 2 set as merged input in HTP mode

۵	http://2.0.0.2 - Con	ifig outlet 2 - Firefox	٤	
	Config) Outlet 2		4 20000
	Submit C	hanges Reset		
DMX Input Cu	stom Merging	_	_	
Backup time (ms)): 400 Auto	recover: 🔽 [<mark>?</mark>]		
Default Settings				
Offset SI	L: 0 Set offset	1 [?]		
Offset S2	2: 0 Set offset	2 [?]		
From	n: 1 To: 5	512 <mark>[?</mark>]		
Mode	e: LTP 🗾 Se	et default mode [?]		
Hide table				
Universe channel[<u>?</u>]	S1: Outlet 1 channel[<u>?</u>]	S2: Outlet 2 channel[<mark>?</mark>]	Mode[<mark>?</mark>]	
1	1	1	LTP	-
2	2	2	LTP	-
3	3	3	LTP	
4	4	4	LTP	
5	5	5	LTP	
Done				- ·

Illustration 17: Detail of a Custom merging policy

Local Backup

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup (see Illustration 18), the related product will be used as a backup switcher. In case of DMX failure from the first source, the Luminex device will automatically switch to the other source within the time you've chosen. The goal of this application is to deploy a backup solution to your lighting source. Connect your 2 DMX sources to the Luminex device, then configure either from the front end or the Web interface the backup time (time within the backup outlet has to wait before being activated in case of primary DMX source failure).

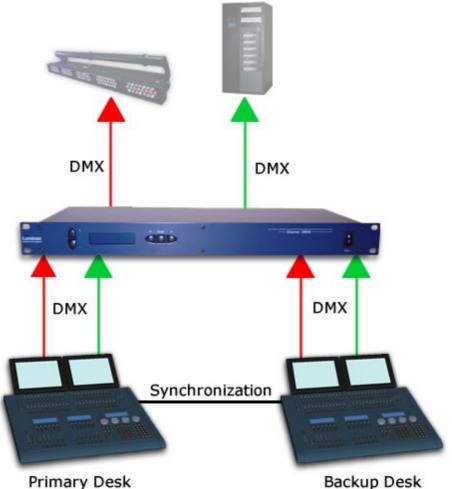


Illustration 18: example of local backup setup

The following screenshots (Illustration 19) display the configuration of the Luminex device to backup 2 DMX lines.

· 🛶 - 🌌 🔕 🟠 🚺	http://2.0.0.2/index.	cqi							🔽 🔕 Go 💽	
Iode 1 - Setup :.	: Node 1 /		itatus :.							
uminex										
tatus						St	atus			
	_									
node 1	- DMX Rou	iting								
node 2		Direction	Universe	Mode	IP Merge	Legend	Unicast	Info		
	Outlet 1:	input		merged	disabled					
	Outlet 2:									
	Outlet 3:				disabled					
profile manager	Outlet 4:	input		backup	disabled	Outlet 4				
	Outlet 5:	output	000 (0×00)	single	disabled	Outlet 5				
	Outlet 6:			single	disabled					
IREFOX	Outlet 7:									
	Outlet 8:					Outlet 8				
	Global Se	ettings								
	ID No: 001 Trigger univ DMX details ↔ framerat ↔ break: 9: ↔ MAB: 20 ↔ output ti	s: :e: 36 Fps 2 μS μS								
	Network	Setting	s							
		Node	1 Node 2							
	Netmas	k: 255.0.0								
	Poi	t: 0×193	6 0×1936							

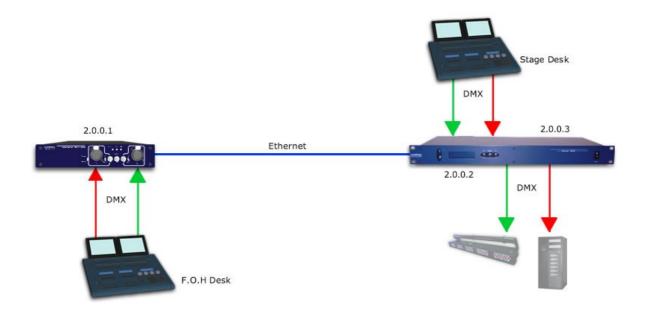
Illustration 19: Example of local backup setting

IP Merging

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

In this setup, the Luminex device will be used as networked merger. This means you can easily merge 2 DMX streams or ArtNet streams coming from any place of the network. In our example, we merge 2 DMX streams coming from the F.O.H desk and the Stage desk.

Compare to the local merging, the main settings have to be set on the output outlets, and not on the input outlets.



Thanks to the Luminex firmware, you can choose any kind of merging policy for your output outlets; you can even select a dedicated merging policy either for a single channel or for a range of channels.

The following screenshot (Illustration 20) is a good example of how to set your outputs outlets to create an IP merging.

The popup frame (Illustration 21) display the choice you have to select the desired policy for each of the channels. You can also notice the use of the softpatch.

	.: Node 1 - Setup :, - Firefox	_ 0
Edit View Go Bookmar		
•••>• 😼 😢 🟠 (http://2.0.0.2/cgi-bin/setup_node.cgi?node=1	
uminex		
	Set Up:: Node 1 (outlet 1 - 4)	
Set up	DMX Routing	
node 1 node 2	Message:	
global	Direction [?] Universe [?] Mode [?] IP Merging [?] Legend [?] Unicast [?]	
	Outlet 1 Input 🚽 0 (00) 🚽 Normal 🚽 Disabled 🚽 Outlet 1 🔲 2.255.255.255	
profile manager		
firmware upgrade	Outlet 3 Output 🗹 Single 🗹 Custom 🗹 Outlet 3	
Help	Outlet 4 Output 🗹 Single 🗹 Custom 🚽 Outlet 4	
FIREFOX		
	Submit Changes Reset	
	Network Settings	
	<u>IP Settings</u>	
	ArtNet compliant? 🔲 [?]	
	IP: 2.0.0.2	
	Netmask: 255.0.0.0 [?]	
	Broadcast: 2.255.255.255	
	Port (Hex): 1936 [7]	
	Node Identification	
	Short name: Node 1 [?]	
	Long name: Node 1 [7]	

Illustration 20: IP merging enabled on Output outlets

۲	http://2.0.0.2	- Config outlet	3 - Firefox	_ - ×
DMX Output	t Custom IP	Merging		
<u>IP/Universe Se</u>	<u>ettings</u>			
IP sourc	el: 2.0.0.1	Un	iverse: 0 (00) 🚽	[?]
IP sourc	e 2: 2.0.0.2	Un	iverse: 0 (00) 🚽	· [<u>?</u>]
Backup time (r	ms): 400	Auto recover:	<mark></mark>	
<u>Default Settin</u>	<u>lgs</u>			
Offset	S1: 0	Set offset 1 [?]		
Offset	S2: 0	Set offset 2 [?]		
Fr	om: 1	To: 5 [?]		
Mc	ode: HTP	Set default mod	de [<u>?</u>]	
Trigger C	Chn: 0 se	et default trigger [?]		
Hide table Expor	t patch			
Output channel[<u>?</u>]	Source 1 channel[<u>?</u>]	Source 2 channel[<u>?</u>]	Mode[<mark>?</mark>]	Trigger[<mark>?</mark>]
1	1	14	HTP 👤	-
2	2	2	S1 Only 🚽	-
3	3	15	HTP 👤	-
4	4	16	HTP 👤	-
5	5	17	HTP 👤	-
6	6	18	LTP 👤	-
7	7	19	LTP 👤	-
8	8	8	S2 Only 🚽	-
9	9	9	S1 Backup 🚽	-
10	10	10	S1 Backup 🚽	-
11	11	11	S1 Backup 🚽	-
12	12	12	S2 Backup 🚽	-
13 Done	13	13	S2 Backup 🚽	
Done				

Illustration 21: Custom merging policy + Softpatch

IP Backup

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

This configuration example (Illustration 22) can be realized in different ways. Here we want to establish a backup source to the primary one for the distant site. This backup source can be either a DMX or an ArtNet source. The following drawing shows the second case (artNet source).

The main difference between the two cases will be be in the way to set the outlets on the distant site. If you use an Ethernet backup source, you'll have to set the final outlet in a custom mode, with a Backup merging policy on the desired channels.

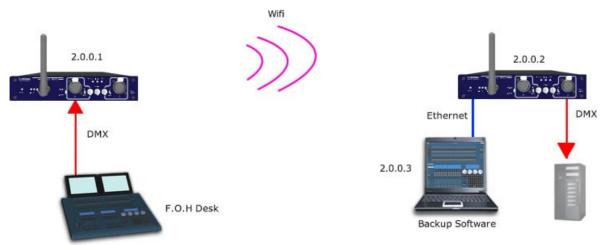


Illustration 22: IP Backup example

On the following screenshot (Illustration 23), you will discover the first way to set up a IP backup setup. The main rule is applied on final outputs (CUSTOM IP Merging). On the second popup frame , you can see the setting for the backup switching time.

0	.: Node 1 - Setup :, - Firefox	_ • ×
Eile Edit ⊻iew Go Bookmarks To		<u> </u>
	tp://2.0.0.2/cgi-bin/setup_node.cgi?node=1	
🗋 .: Node 1 - Setup :.	: Node 1 - Setup :.	
Status	Set Up:: Node 1 (outlet 1 - 2)	
Set up node	DMX Routing	
global	Message: Direction [?] Universe [?] Mode [?] IP Merging [?] Legend [?] Unicast [?]	
Toolbox	Outlet 1 Input 🚽 0 (00) 🚽 Disabled 🚽 Disabled 🖌 Outlet 1 🔲 2.255.255	
profile manager firmware upgrade	🛄 Outlet 2 Output 🚽 Single 🚽 Custom 🚽 Outlet 2	
Help	Submit Changes Reset	
OETFIREFOX		
	Network Settings	
	IP Settings	
	ArtNet compliant? 📕 [?]	
	IP: 2.0.0.2	
	Netmask: 255.0.0.0 []	
	Broadcast: 2.255.255.255 👔	
	Port (Hex): 1936 [1]	
	Node Identification	
	Short name: Node 1 [1]	
	Long name: Eth-DMX2 Node 1	
	Submit Changes Reset	
Done		

Illustration 23: IP backup setting on final outlet

http://2.0.0	.2 - Config outlet 2 - Firefox	_ - ×
	Config Outlet 2	
	Submit Changes Reset	
DMX Output Custom	IP Merging	
<u>IP/Universe Settings</u>		
IP source 1: 2.0.0.1	Universe: 0 (00) 🚽 [?]	
IP source 2: 2.0.0.3	Universe: 0 (00) 🖵 [?]	
Backup time (ms): 400	Auto recover: 🔽 [?]	
Select patch file:	Browse Load patch	
Show table		
	Submit Changes Reset	
http://2.0.0.2/help.html#COO1		

Illustration 24: details of the Backup time and IP sources

On the other hand, if you wish to use a DMX backup source, you'll just have to set one or more outlet as Input, with the IP Merging backup mode enable. Check the following screenshot (Illustration 25) to understand.

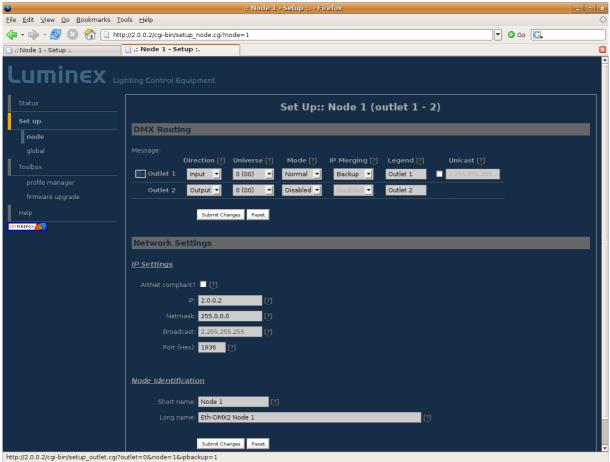


Illustration 25: Input set as IP Backup

IP triggering

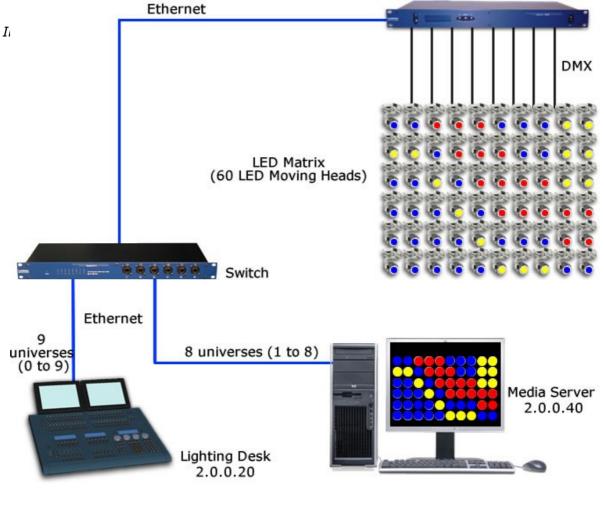
Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

This setup is a very good example of the power of the Luminex devices firmware. In this configuration, a lighting desk is controlling through ArtNet a media server that maps media onto a matrix composed of 60 LED wash moving heads, also patched on the lighting desk. The aim of that setup is to be able to control from both sources the LED matrix.

If we set the LTP merging policy as the default one for the Luminex device (here a Ethernet-DMX 8), we can control PAN&TILT from the lighting desk, and colors from the media server. However, if the Media server is always streaming its values, it will be impossible to control LED wash colors from the lighting desk.

Another good example would be if you would like to use some of the LED wash lights to light a part of the scenery, while the rest of the Matrix continue to display contents of the media server.

To do so, we use the Luminex trigger feature, available in all Ethernet-DMX product.



The first step is to set all outlets of the Luminex device used as output in Custom mode (See below)

• 🔶 • 🛃 🗵 🏠 🗋	http://2.0.0.2/index	.cgi							💌 🔘 Go 💽	
: Node 1 - Setup :.	📄 .: Node 1 /	node 2 - S	tatus :.							
.uminex										
Status						S	Status			
	- DMX Rot	utina		_		_	_			
				_						
		Direction	Universe	Mode	IP Merge	Legend	Unicast	Info		
	Outlet 1:		001 (0×01) 001 (0×01)					2.0.0.20 2.0.0.40		
Toolbox profile manager	Outlet 2:		002 (0x02) 002 (0x02)					2.0.0.20 2.0.0.40		
	Outlet 3:		003 (0×03) 003 (0×03)					2.0.0.20 2.0.0.40		
Help	Outlet 4:		004 (0×04) 004 (0×04)					2.0.0.20 2.0.0.40		
IREFOX	Outlet 5:		005 (0×05) 005 (0×05)					2.0.0.20 2.0.0.40		
	Outlet 6:		006 (0×06) 006 (0×06)					2.0.0.20 2.0.0.40		
	Outlet 7:		007 (0×07) 007 (0×07)					2.0.0.20 2.0.0.40		
	Outlet 8:		008 (0×08) 008 (0×08)			Outlet 8		2.0.0.20 2.0.0.40		
	Global S									
	Trigger univ DMX detail → framerav → break: 9 → MAB: 20 → output t	s: te:36 Fps 2 μS								

Illustration 27: All outlets set as output in Custom mode

Then, on each outlet, set the IP addresses of your two control sources (here 2.0.0.20 & 2.0.0.40).

Notice on the very right of the pop up frame (Illustration 28), the trigger field. Here you can enter the DMX channel you will use to remotely change the merging policy for all the channels of this outlet.

You will have to patch in your lighting desk or any DMX or Artnet controller the trigger channel (here N°512) in order to be able to change the merging policy of each channel controlled by this trigger channel. By changing the value of this trigger channel, you will affect the merging policy as follow :

- 0 7 Do nothing
- 8 15 Zero out
- 16 23 HTP merge
- 24 31 LTP merge
- 32 39 Source 1 only
- 40 47 Source 2 only
- 48 111 Reserved
- 112 119 Source 1 as backup
- 120 127 Source 2 as backup
- 128 255 Do nothing

When using the trigger from multiple sources (different desks), it's recommended to call "Do nothing" after you applied any values to the trigger channels. This will bring the trigger channel back to an idle state for that particular source (desk).

0	http://2.0.0.2	- Config outlet	1 - Firefox	_ 0 ×
<u>IP/Universe Se</u>	<u>ettings</u>			
IP sourc	e 1: <mark>2.0.0.20</mark>	Uni	iverse: 1 (01)	- [?]
	e 2: 2.0.0.40	Uni	iverse: 1 (01)	- [<u>?</u>]
Backup time (ms): 400		✓ [?]	
<u>Default Settir</u>	<u>ngs</u>			
Offset	: S1: 0 s	Set offset 1 [?]		
Offset	: S2: 0	Set offset 2 [?]		
Fi	-om: 1	To: 512 [?]		
м	ode: LTP	Set default mod	de <mark>[?</mark>]	
Trigger	Chn: 0 se	et default trigger		
Hide table Expo	rt patch			
Output channel[<u>?</u>]	Source 1 channel[?]	Source 2 channel[<mark>?</mark>]	Mode[<u>?</u>]	Trigger[<u>?</u>]
	1	1	LTP 🚽	512
	2	2	LTP 🚽	512
	3	3	LTP 👤	512
	4	4	LTP 👤	512
	5	5	LTP 👤	512
	6	6	LTP 👤	512
	7	7	LTP 👤	512
	8	8	LTP 👤	512
	9	9	LTP 👤	512
	10	10	LTP 👤	512
11	11	11	LTP 👤	512
12	12	12	LTP 👤	512
13	13	13	LTP 👤	512
Done				

Illustration 28: Trigger channel affected

The last step is to enable the trigger universe on the Luminex device for it to listen to trigger order coming from the DMX or ArtNet source :

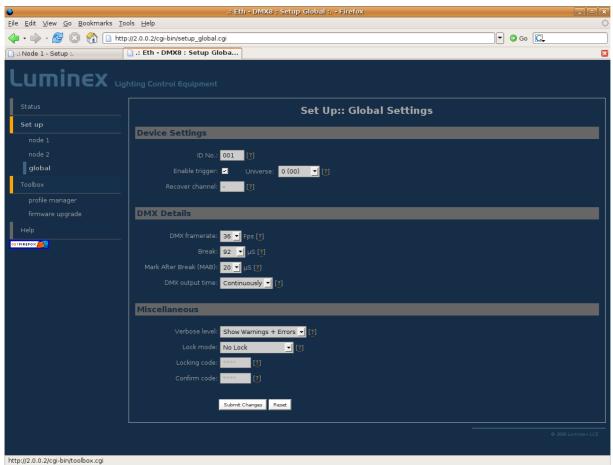


Illustration 29: Enable the trigger universe

In the case you would just like to takeover control on just a part of the LED Wash light Matrix, you just have to set a trigger channel to the channels you want to swap (by example just a part of the kit to light up the scenery).

The following screenshot (Illustration 30) shows how you can affect a trigger channel only on the desired channels.

		- Config outlet I		_ - x
IP source 2	2.0.0.40	Univ	rerse: 1(01)	· [<u>?</u>]
Backup time (ms)	400	Auto recover: 🛛	< [?]	
<u>Default Settings</u>				
Offset S1	0	Set offset 1 [?]		
Offset S2	: 0 :	Set offset 2 [?]		
From	8	To: 14 [?]		
Mode	S1 Only	▼ Set default mode	[?]	
Trigger Chn	512 se	et default trigger [?]		
Hide table Export pa	tch			
0.1		6		
•	Source 1 hannel[<mark>?</mark>]	Source 2 channel[<mark>?</mark>]	Mode[<mark>?</mark>]	Trigger[<mark>?</mark>]
1	1	1	LTP 👤	
2	2	2	LTP 👤	-
з	3	3	LTP 👤	-
4	4	4	LTP 👤	-
5	5	5	LTP 👤	-
6	6	6	LTP 👤	-
7	7	7	LTP 👤	-
8	8	8	S1 Only 🚽	512
9	9	9	S1 Only 🚽	512
10	10	10	S1 Only 🚽	512
11	11	11	S1 Only 🚽	512
12	12	12	S1 Only 🚽	512
13	13	13	S1 Only 🚽	512
	14	14	S1 Only 🚽	512
15	15	15	LTP -	-
16	16	16	LTP -	-
Done				

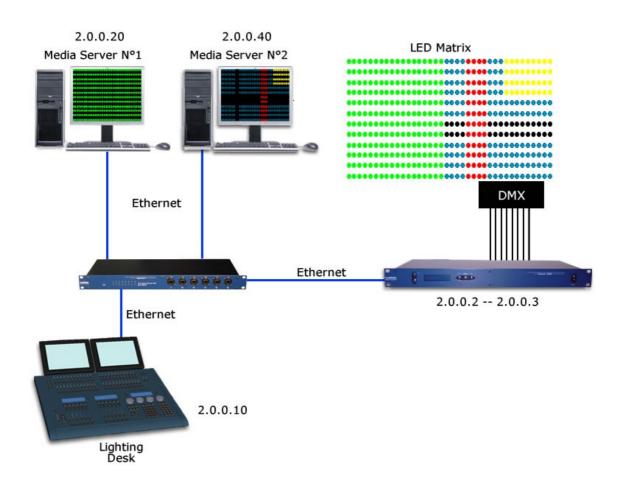
Illustration 30: Trigger channel affected on a part of channels

IP triggering with 2 media servers

Related products : Ethernet-DMX (2/B, 2/W, 2/M, 8, 8/W, 8/T)

The following setup is inspired from the first one, except that here we use to media servers for different reasons: the operator would like to have two different video feed to play with, the opportunity to mix, merge and split the 2 video signals, and a backup solution for the main media server.

The Luminex device configuration is quite similar to the previous example, all outlets are set as IP merged outlet in Custom mode.



The main difference between the way of using the trigger system; here we're going to use two different trigger channels to have the opportunity to split the LED screen into two. The following sceenshots (Illustration 31) illustrates perfectly the above drawing, were the two media server contents are maps on each side of the LED screen, thanks to the trigger system.

By using the different values of theses trigger channels, it will thus be possible to change the merging policies and have the second media server as a backup, or merge the 2 contents directly one the wall.

🗳 h	ttp://2.0.0.2	- Config outlet	1 - Firefox	_ O X
Default Settings	5			A
Offset SI	l: 0 s	et offset 1 [?]		
Offset S2	2: 0 s	et offset 2 [?]		
From	n: 1	To: 10 [?]		
Mode	S1 Only	Set default mode	[?]	
Trigger Chr	n: 512 Se	t default trigger [?]		
Hide table Export pa	atch			
Output channel[?]	Source 1 channel[?]	Source 2 channel[?]	Mode[<u>?</u>]	Trigger[<mark>?</mark>]
1	1	1	S1 Only 🚽	511
2	2	2	S1 Only 🚽	511
3	3	3	S1 Only 🚽	511
4	4	4	S1 Only 🚽	511
5	5	5	S1 Only 🚽	511
6	6	6	S1 Only 🚽	511
7	7	7	S1 Only 🚽	511
8	8	8	S1 Only 🚽	511
9	9	9	S1 Only 🚽	511
10	10	10	S1 Only 🚽	511
11	11	11	S2 Only 🚽	512
12	12	12	S2 Only 👤	512
13	13	13	S2 Only 👤	512
14	14	14	S2 Only 👤	512
15	15	15	S2 Only 👤	512
16	16	16	S2 Only 👤	512
17	17	17	S2 Only 👤	512
18 Done	18	18	s2 Only →1	512

Range Extender

Related products : Ethernet-DMX 2/BX, 2/WX – Gigaswitch

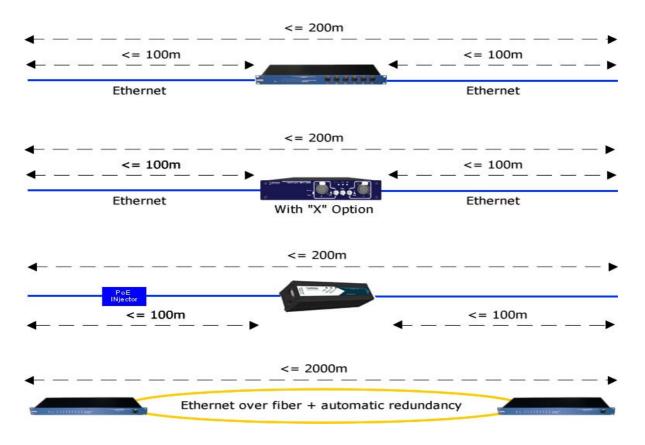
Safety Ring Switch, Eth-RXT

The Ethernet standard commonly used in the IT world or entertainment world recommend not to use Ethernet cable longer than 100m, due to the Ethernet specification. To reach further distance, several solutions can be used :

repeater : switches or repeaters can be used to extend the range of your Ethernet signal (no more than 100m between two active devices). The Luminex Gigaswitch, Safety Ring switch, and Eth-RXT can be used as repeater.

The Ethernet-DMX 2/BX and Ethernet-DMX2/WX (fitted with a second Ethercon connector) can act also as repeater, and offers you also to stream DMX in the middle of your link !

Media converter: the media converter usually convert a single copper cable to an optical fiber to run distance bigger than 100m. The Luminex Safety Ring Switch can be use as a media converter. Moreover, this one is equipped with a built in redundancy system that offers you a ultra reliable link for your datas.



Dual Ring

Related products : Safety Ring Switch

In this example, we point out one of the biggest problem in lighting networks used in Entertainment industry : the redundancy.

The Luminex Safety Ring Switch comes with a built in redundancy system that offers you to run 2 optical fibers or copper cables between your switchs to establish a backup link.

The generic setup used in lighting network is composed of two Ethernet switches (one at the F.O.H and one next to the stage).

But it can be useful sometime to have a third switch (see Illustration 32) : on stage left or right in addition to the second one, in a broadcast truck behind the stage, or in a control Room for CAD pre-encoding...

If your primary link between the FOH and stage is composed of an optical fiber, the common way would be to add the third switch into the optical ring.

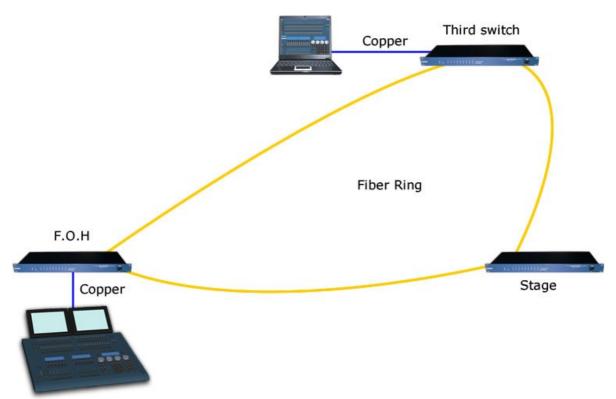


Illustration 32: Usual Ring topology

But sometimes it can useful to only run 2 copper cables to the third switch instead of optical fiber (availability, cost....).

The Luminex Safety Ring Switch comes with a default ring enabled on ports 8&9 (optical ports) but affords you to run two rings on a single device. So you need to enable the second ring on the stage switch (see Illustration 33):

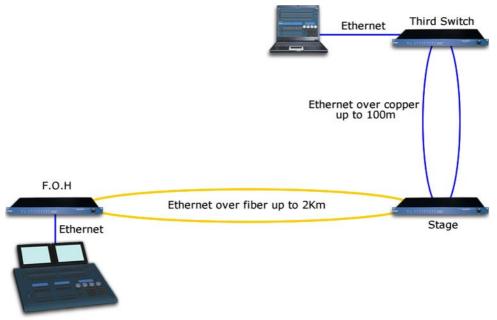


Illustration 33: Dual ring set on the stage switch

Launch the Safety Ring Switch Tool software downloadable on Luminex Website (support section), and create a new base configuration; In the ring setup section, enable the second ring on the ports of your choice (you can't choose the same ports for both rings). A small calculator indicates the maximum recovery time in case of link failure

şs									
Ring Ring 1	Er 🕱 Enab	able Ring	First Port	Second Port Port 9					
	Enab			Port 2					
ink Long	Recover	Calculator: -							
Num	nber of tches)mS = 45 mS	Recovery Time					
Num Swi	nber of tches	x 5mS + 30		Recovery Time	•				
Num Swi	nber of tches			Recovery Time	•				
Num Swi	nber of tches	x 5mS + 30		Recovery Time	T				
Num Swi	nber of tches	x 5mS + 30		Recovery Time	Ŧ				

Illustration 34: Second ring enabled on stage switch

Once the base is created, load it into the stage switch. Then load this base file into the third switch to enable the ring over copper.

<u>-</u> jle <u>E</u> dit <u>V</u> iew (fety Ring Switch	100	13						
Add New Base Configuration	Edit Base Configuration	Au	HA uto-Find Switches	5			Q Ring Switch Status	ा Monitor Networks	
Base Config	jurations 🔿		Switch Name	Δ.	Switch Type	MAC Address	Uses This	base Configuration	Modbus
Dual_Ring		÷	Stage Switch		SRS-9P-2MM	00:A0:1D: 2A:2A:C9	Dual_Ring	•	Disabled
						00:A0:1D:			