ADDAC System
Instruments for Sonic Expression
Est.2009

INTRODUCING
ADDAC223
CV & MIDI TO DMX512 LIGHT CONTROL UNIVERSE

USER'S GUIDE . REV01
May.2025

ADDAC System

From Portugal with Love!

Welcome to:
ADDAC223 CV & MIDI TO DMX512 LIGHT CONTROL UNIVERSE USER'S GUIDE

Revision.01 May.2025

WELCOME

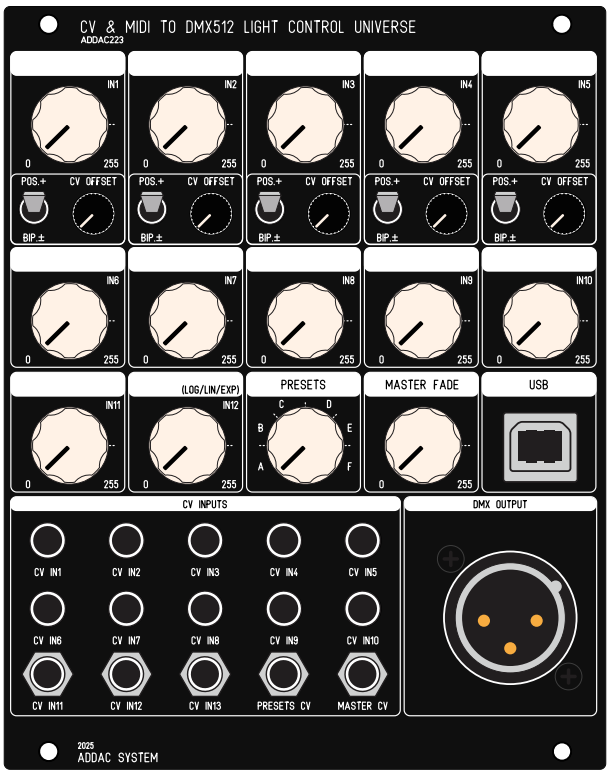
We released our first DMX output module ADDAC008 back in 2010 as part of our ADDAC001 VCC Series, now here's our updated solution to cover all DMX needs straight from your Eurorack frame in a simple fully configurable and most versatile system.

MAIN FEATURES

13 CV INPUTS routable to any DMX Channel
- 5 with Attenuator & Offset knobs + positive/bipolar switch
- 7 with Attenuator knob
- 1 CV input only

MASTER FADE control knob for full blackouts.
PRESETS control knob
USB for configuration and MIDI to DMX
XLR 3Pin for DMX output
Browser configurable
White areas in panel for user notation.

20HP



Tech Specs:
20HP
4.5cm deep
80mA +12V
80mA -12V

DMX512 INTRODUCTION

DMX PROTOCOL

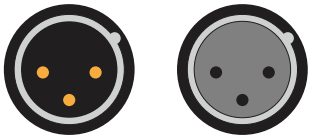
DMX (Digital Multiplexing) is the standard protocol used in any lighting rig around the world, from the biggest summer festival to the smallest venue or even home automation, if they're using any light fixtures then DMX is being used to control everything.
This also extend to other fixtures like smoke machines, fans, motors, confetti blowers, sparks generators or even pyrotechnics.
The DMX Protocol is extremely simple and versatile, basically features 512 channels that can be addressed individually and continuously updated. Each set of 512 channels is usually called a "Universe" as multiple Universes can be used in rigs that require more than 512 channels.
Any fixture that features a DMX input and output pair is compatible with this system.

DMX CHANNELS

Every fixture that uses DMX is different and will allow control to very diferent functions, for example a simple led light may have a single control for the light intensity but an RGB Light will need to have controls for the R, G and B so it uses more dmx channels (one for each of the functions offered). The user needs to be aware of how many DMX channels each fixture uses in order not to overlap fixtures channels. Fixtures' DMX channels and their functions are always described in the fixture's manuals.
Every fixture will allow the user to set the Initial DMX Address, for example if using a strobe light that takes 4 DMX channels and a Fog machine that uses 3 DMX channels, the user can set the Strobe Address to channel 1, knowing it will use channels 1, 2, 3 and 4, and then set the Fog machine to address 5 (using 5, 6 and 7) this way no address is overlapped. If channels overlap both fixtures will be controlled, the one intended and some other function of the inadvertly overlapping one.

DMX NETWORK CONNECTIONS

As all DMX fixtures have an input and an output they all connect in series up to the sensible number of 32 fixtures, if more fixtures are needed then DMX splitters/amplifiers may be needed.
At the end of every DMX chain a "termination" is used, normally a 120Ω XLR to avoid signal reflections in the communication line.
DMX uses standard XLR cables for all fixture connections, however there are some systems using 5pin XLR, it's convenient to have a 3pin (female) to 5pin (male) adapter for such situations.



DMX OUT (male)

DMX IN (female)

WIRELESS DMX

Any DMX Universe can be integrated with wireless data transmission using a sender (DMX Transceiver) and multiple DMX Receivers as needed. The sender often has a wireless output as well as a physical DMX output.
The use of such wireless devices allow to easily setup diferent clusters of fixtures at diferent positions in space without the need of extra long cables.

DMX512 INTRODUCTION

DMX MESSAGES

The DMX output simply sends a constant stream of messages into all fixtures connected to the network.
Each messages has 2 numbers: the DMX Channel (1 to 512) and a value (0 to 255).
As all devices receive all the messages, each device will check if any incoming message is addressed to itself and if so will update the corresponding function accordingly to the incoming value.

DMX FIXTURES

Every DMX fixture will clearly state their DMX channel chart on their user's manual.
The ammount of DMX channels in any fixture will allways be be diferent, some devices may even have different DMX modes to allow more or less control over all the features available.

Example #1:

A simple Fog machine may only have 1 DMX channel to turn the fog output on or off.
The threshold of the on/off action will also be detailed on its DMX chart, in this case we can state that if the value is smaller than 5 then the fog is Off and if anywhere between 6 and 255 it will be On.

Example #2

A Simple Strobe light with 2 DMX channels:

STROBE LIGHT
2 DMX CHANNELS
-
1: LIGHT INTENSITY: 0 to 100%
2: FLASH RATE: 2 to 20 FPS

Example #4

A Moving Head Spot with 12 DMX channels:

MOVING HEAD SPOT
12 DMX CHANNELS
-
1: PAN
2: TILT
3: PAN/TILT SPEED
4: SHUTTER/STROBE
5: DIMMER INTENSITY
6: COLOR WHEEL
7: ROTATING GOBO WHEEL
8: GOBO ROTATION
9: FOCUS
10: 3 FACET PRISM
11: PRISM ROTATION
12: INTERNAL PROGRAMS

Example #3

A RGBW LED Pixel Tube with multiple DMX modes allowing different DMX Channels configurations

RGBW LED PIXEL TUBE
MULTIPLE DMX MODES

RGBW LED PIXEL TUBE
3 CHANNELS MODE
-
1: RED 0 to 100%
2: GREEN 0 to 100%
3: BLUE 0 to 100%

RGBW LED PIXEL TUBE
4 CHANNELS MODE
-
1: RED 0 to 100%
2: GREEN 0 to 100%
3: BLUE 0 to 100%
4: WARM WHITE 0 to 100%

RGBW LED PIXEL TUBE
6 CHANNELS MODE
-
1: RED 0 to 100%
2: GREEN 0 to 100%
3: BLUE 0 to 100%
4: WARM WHITE 0 to 100%
5: MASTER DIMMER
6: STROBE

RGBW LED PIXEL TUBE
9 CHANNELS MODE
-
1: MASTER DIMMER
2: STROBE
3: RED 0 to 100%
4: GREEN 0 to 100%
5: BLUE 0 to 100%
6: WARM WHITE 0 to 100%
7: PRESET COLORS
8: INTERNAL PROGRAMS
9: PROGRAMS RUNNING SPEED

DMX ADDRESSES

Every DMX fixture will have a configurable DMX address, this will be the DMX channel it will start responding to.
For example this Strobe was addressed to DMX channel 33, it has 2 DMX channels and will respond to any message addressing DMX channels 33 and 34.

STROBE LIGHT 2 DMX CHANNELS	ADDRESSED TO DMX CHANNEL 33
-	-
1: LIGHT INTENSITY: 0 to 100% 2: FLASH RATE: 2 to 20 FPS	DMX CHANNEL 33: LIGHT INTENSITY: 0 to 100% DMX CHANNEL 34: FLASH RATE: 2 to 20 FPS

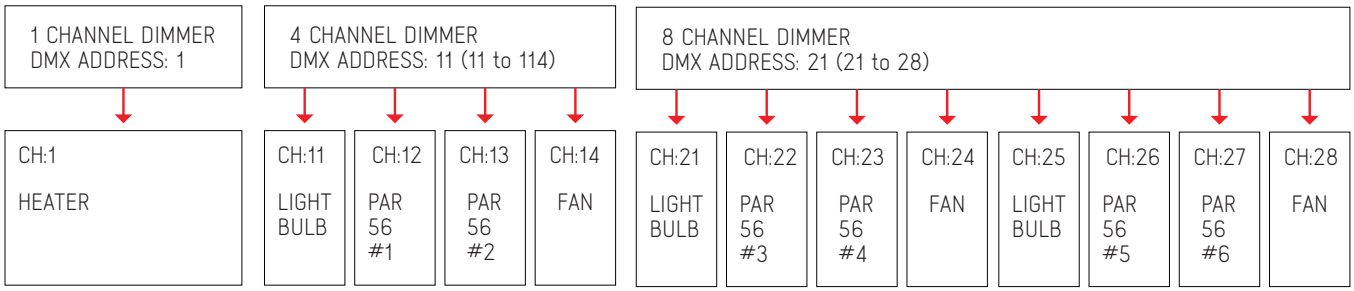
DMX512 INTRODUCTION

DMX DIMMERS

There are some fixtures that although not featuring DMX i/o can be controlled using a dimmer.
These are fixtures that are plug n'play, they work immediately after being connected to an AC source like a standard household lamp. Instead of connecting the fixture to a regular socket we connect it directly to a DMX Dimmer socket. The dimmer will then control the power delivered to the fixture. Dimmers may have one or multiple AC sockets where multiple fixtures can be plugged in and controlled from.

These allow to control any "plug n'play" AC powered device: incadescent light bulbs, fans, air blowers, big AC motors, a heater, even a watter kettle or a rice cooker, only depending on the max current that the dimmer can provide.
All dimmers will clearly state their maximum overall and individual channel current, normaly a fuse is present that will blow whenever the current limit is exceeded.
!!Beware that not all AC devices are dimmable and can be damaged by trying, you can drop us an email if in doubt!!

Dimmers are available in many sizes, from single channel to four channels in a compact format, or in rack format when more channels and/or current is required.



DMX NETWORK ACCESSORIES: WIRELESS, SPLITTERs, MERGERs

There are DMX accessories that can be used to create your network.

1.Wirelless transmitters & receivers make it easier to cover long distances avoiding cables

2.Splitters allow to split a DMX signal into 2 while also providing a buffer to allow longer cable distances.

3.Mergers can merge 2 DMX512 Universes, these can allow to merge the outputs of two ADDAC223s when more CVs are needed. It's important not to overlap DMX addresses on the input sources.

ADDAC223 CV IMPLEMENTATION

CV TO DMX

The 13 CV inputs can be assigned to any of the 512 DMX channels using the configuration webpage using Google Chrome: http://media.addacsystem.com/ADDAC223/

There are 30 Slots for 30 different assigns each assigns defines a CV Input and a DMX channel.
CV inputs can be assigned to different DMX channels

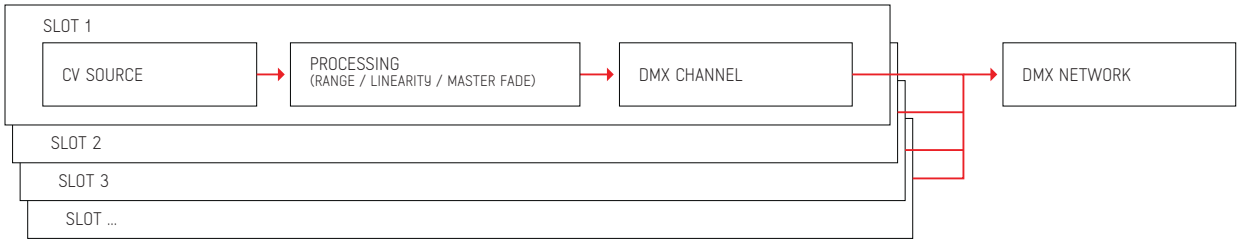
CV TO DMX CONFIGURATION

	DMX CHANNEL (1 - 512)	SOURCE (CV1 - CV13)	RANGE MIN (0 - 255)	RANGE MAX (0 - 255)	LOG/LIN/EXP (0-50-100)	<- CV12 (ON - OFF)	MASTER FADE (ON - OFF)	USER NOTATION
SLOT 1	1	CV 13	0	255	50	OFF	ON	GATE1 > DMX#1 > BULB#1

1. SLOT INDEX (Slot 1 of 20)
2. DMX CHANNEL : The DMX Channel to be assigned
3. CV SOURCE : The CV source to be routed
4. RANGE MINIMUM : The DMX output Minimum value
5. RANGE MAXIMUM : The DMX output Maximum value
6. LOG/LIN/EXP : The DMX output linearity
7. CV12 -> LOG/LIN/EXP : CV Input 12 controls LOG/LIN/EXP variable
8. MASTER FADE : Channel routed through Master Fade control.
9. USER NOTATION : User Label for quick reference

DMX CHANNEL & SOURCE

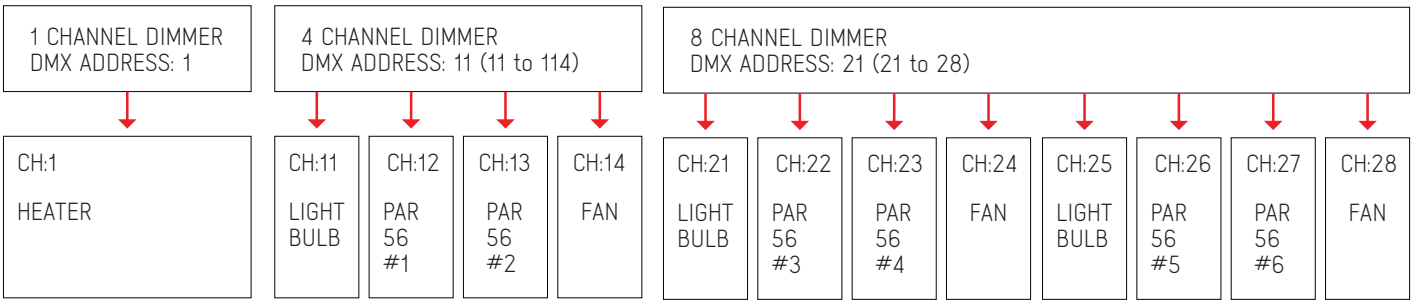
For every slot the CV source will be routed to the DMX channel assigned after being processed and then sent to the DMX Network.



ADDAC223 CONFIGURATION

EXAMPLE

Here's an example of how to configure the 3 dimmers we described previously.



CV TO DMX CONFIGURATION

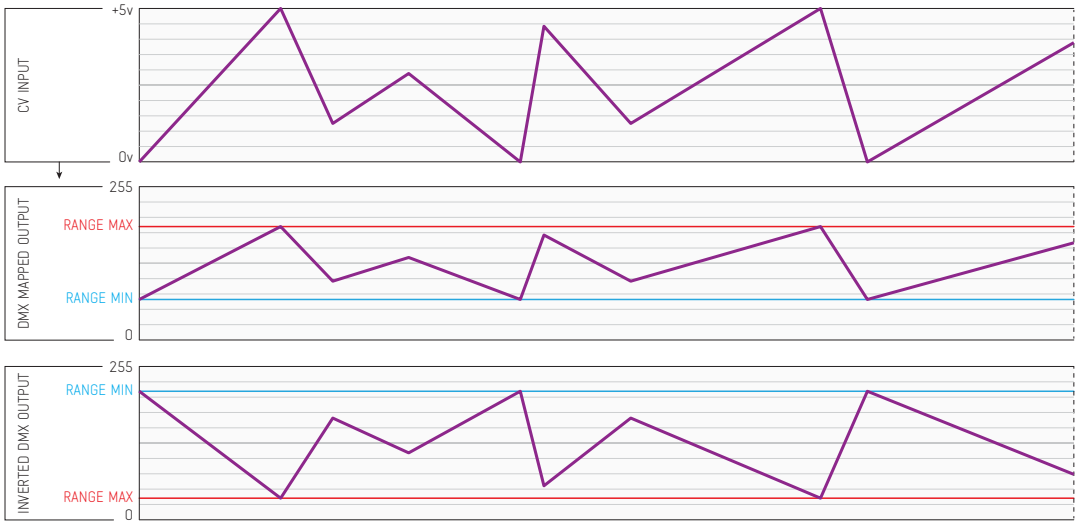
	DMX CHANNEL (1 - 512)	SOURCE (CV1 - CV13)	RANGE MIN (0 - 255)	RANGE MAX (0 - 255)	LOG/LIN/EXP (0-100)	<- CV12 (ON - OFF)	MASTER FADE (ON - OFF)
SLOT 1	1	CV 13	0	255	50	OFF	ON
SLOT 2	11	CV 1	0	255	50	ON	ON
SLOT 3	12	CV 2	0	255	50	ON	ON
SLOT 4	13	CV 3	0	255	50	ON	ON
SLOT 5	14	CV 4	0	255	50	OFF	OFF
SLOT 6	21	CV 5	0	255	50	ON	ON
SLOT 7	22	CV 2	0	255	50	ON	ON
SLOT 8	23	CV 3	0	255	50	ON	ON
SLOT 9	24	CV 8	0	255	50	OFF	OFF
SLOT 10	25	CV 9	0	255	50	ON	ON
SLOT 11	26	CV 2	0	255	50	ON	ON
SLOT 12	27	CV 3	0	255	50	ON	ON
SLOT 13	28	CV 12	0	255	50	OFF	OFF
...							

FIXTURE	FUNCTION	CV SOURCE
DMX #1 CH1	HEATER	COMPARATOR GATE 1
DMX #2 CH1	LIGHT BULB	SWELL PHYSICS CV1
DMX #2 CH2	PAR56 #1	ENV. FOLLOW LEFT
DMX #2 CH3	PAR56 #2	ENV. FOLLOW RIGHT
DMX #2 CH4	FAN	COMPARATOR GATE 2
DMX #3 CH1	LIGHT BULB	SWELL PHYSICS CV2
DMX #3 CH2	PAR56 #3	ENV. FOLLOW LEFT
DMX #3 CH3	PAR56 #4	ENV. FOLLOW RIGHT
DMX #3 CH4	FAN	COMPARATOR GATE 2
DMX #3 CH5	LIGHT BULB	SWELL PHYSICS CV3
DMX #3 CH6	PAR56 #5	ENV. FOLLOW LEFT
DMX #3 CH7	PAR56 #6	ENV. FOLLOW RIGHT
DMX #3 CH8	FAN	COMPARATOR GATE 2

ADDAC223 CONFIGURATION

DMX RANGE

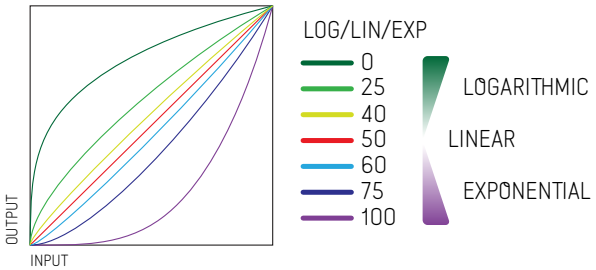
The range's minimum and maximum controls allow the user to map any 0 +5v to any segment of the 0-255 DMX range, including signal inversions. If Range Min is above Range Max the signal will be inverted. Setting Range Min to 255 and Range Max to 0 will create a full range inversion.



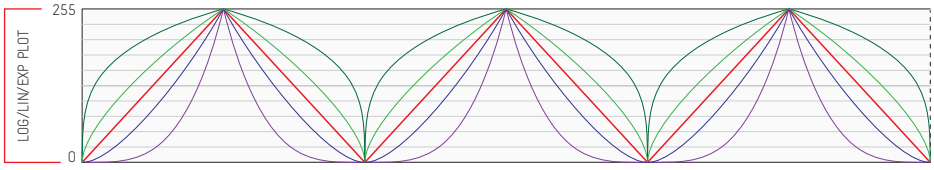
DMX OUTPUT LINEARITY - LOG/LIN/EXP & CV12

Light output is not linear, our perception makes us notices bigger changes when the brightness is changing at a low range than when it's changing on a high brightness range. When controlling the panning or tilt position of a moving head the output is linear, as it controls a specific angle translated into the motors of the device.
When controlling the dimming of a light it will control it by removing power (watts) in a linear way however the brightness is not perceived linearly, our perception always keeps the impression that a huge change just happened over the first 100 values of the DMX 255 range but from 100 to 255 we still notice some changes but just so slighltly.
This LOG/LIN/EXP parameters allow the user to weight the output curve of the incoming signal. Its the same principle of an AD (attack decay) envelope where both stages have the same curve (exp/exp, lin/lin or log/log) the effect is quite similar to controlling an AD envelope and hearing the sharpness of an exponential AD versus the fading of a linear AD versus the thumpiness of a logarithmic AD. This parameter has a very similar effect when translated into the light realm, the curve resemblance can be seen in the extended graphic below.

This value can be individually set to any addressed DMX channel however using the CV12 checkbox the user can set it to be controlled using CV INPUT 12, in this case CV 12 controls the LOG/LIN/EXP parameter of every slot active. CV 12 can still be used as the input source in other slots.



LOG/LIN/EXP (0-100)	<- CV12 (ON - OFF)
50	ON



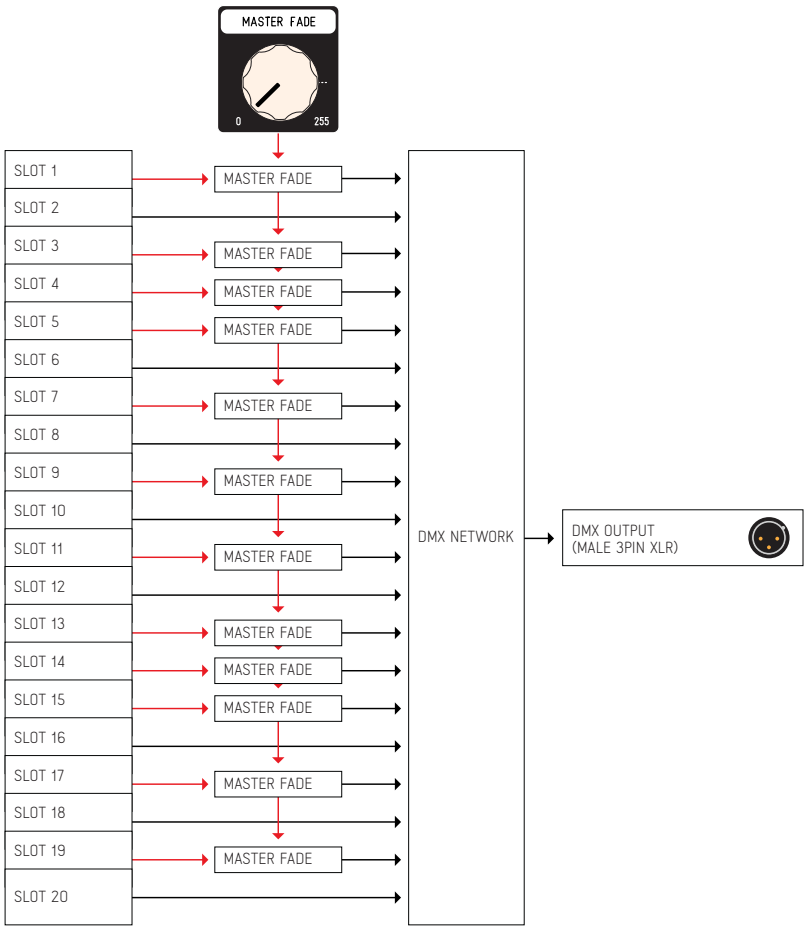
ADDAC223 CONFIGURATION

MASTER FADE

Master Fade just like any sound mixer is the MASTER DMX output control.
This allows for easy blackouts on call or as a panic button without the need of attenuating all incoming CVs.
As the user may not want to dim out all fixtures on a blackout the Master Fade checkbox needs to be active for the slot to be routed to the Master Fade. Any slot not routed to the Master Fade will be independent and always live.

When not to use the Master Fade, if the user is controlling a moving head beam and activates the Master Fade for the pan and tilt values then as the Master Fade starts fading out the pan and tilt values will change and will move the beam until its position reaches Pan = 0, Tilt = 0. While this motion on a blackout may be an interesting effect that the user wants to use most often this will not be the case and that motion is undesired.
Unless intentionally used for dramatic effect the user should leave parameters like these out of the Master Fade.

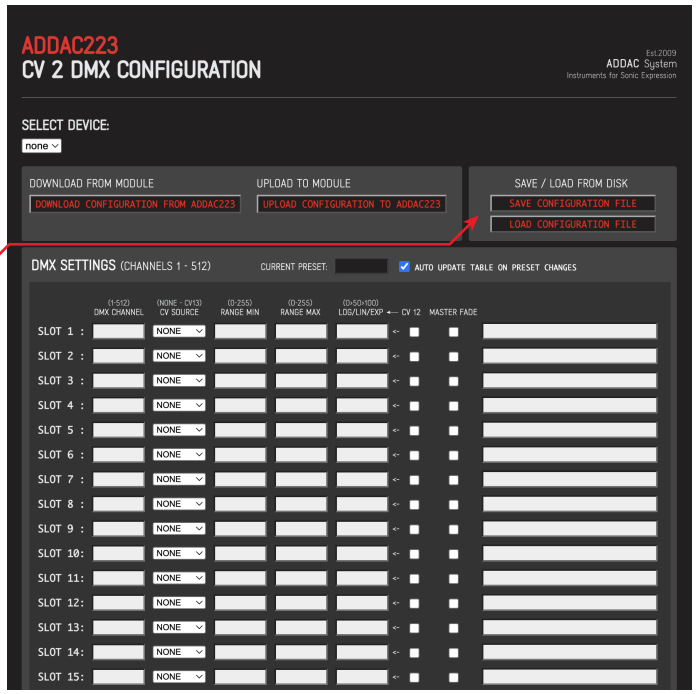
Like LOG/LIN/EXP this option will mostly be used for all dimming parameters.



ADDAC223 CONFIGURATION

WEBPAGE

All ADDAC223 configuration is done using Google Chrome, our configuration webpage directly connects to the module via MIDI and works as follows:



Acess the website using Google Chrome:
https://media.addacsystem.com/ADDAC223

1. SELECT DEVICE:
Select ADDAC223 from the available midi devices

2. DOWNLOAD / UPLOAD TO MODULE
#A. Clicking the **[DOWNLOAD CONFIGURATION FROM ADDAC223]** button will load the table with all the module's currently selected Preset data.

#B. Clicking the **[UPLOAD CONFIGURATION TO ADDAC223]** button will popup a warning message to confirm overwriting the module's currently selected preset with the table data.

3. SAVE / LOAD FROM DISK
Allows to save and load presets from the computer disk

#A. Clicking the **[SAVE CONFIGURATION FILE]** button will download and save the current data into a text file.

#B. Clicking the **[LOAD CONFIGURATION FILE]** button will load the data stored in the text file and update the table.

It's important to keep aware of the Module's selected Preset when downloading / uploading data.

4. DMX SETTINGS
In this table the user can configure up to 20 DMX Channels.
For each slot the user will set:

#A. the DMX Channel to address

#B. the CV Source that will be routed to the DMX Channel

#C+D. the RANGE of the CV Source value,
this will map the incoming 0 - +5v to a diferent range than 0-255.

#E. the linearity of the signal,
this allows to adjust the output value curve to adapt to the light dimming non-linear behaviour

#F. Activate CV 12 to directly control the LOG/LIN/EXP variable.

#G. activate the Master Fade link,
when active the slot control will react to the Master Fade.
This acts like the Master volume on a mixer, when brought to zero all values linked to it will go to zero, this allows for easier Blackouts turning off all fixtures at once.

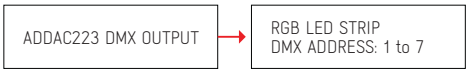
#H. text field for user notation.

ADDAC223 CONFIGURATION

ADDAC223 DMX NETWORKS Examples

Here we show a few examples of possible DMX networks

#1 Simplest Rig - Controlling a simple RGBW LED Strip



CV TO DMX CONFIGURATION

	DMX CHANNEL (1 - 512)	SOURCE (CV1 - CV13)	RANGE MIN (0 - 255)	RANGE MAX (0 - 255)	LOG/LIN/EXP (0-100)	<- CV12 (ON - OFF)	MASTER FADE (ON - OFF)	FIXTURE
SLOT 1	1	CV 1	0	255	50	ON	ON	R DIMMER
SLOT 2	2	CV 2	0	255	50	ON	ON	G DIMMER
SLOT 3	3	CV 3	0	255	50	ON	ON	B DIMMER
SLOT 4	4	CV 4	0	255	50	ON	ON	WHITE DIMMER
SLOT 5	5	CV 5	0	255	50	ON	OFF	AMBER DIMMER
SLOT 6	6	CV 6	0	255	50	ON	OFF	UV DIMMER
SLOT 7	0	NONE	0	255	50	ON	ON	
...								

#2 SIMPLE RIG, Accessing a venue rig thru their console

Any venue system will have a DMX input that will instantly give you access to all their fixtures, you just need to ask them for their address list and configure the ADDAC223 to the correct channels like the configuration shown below.

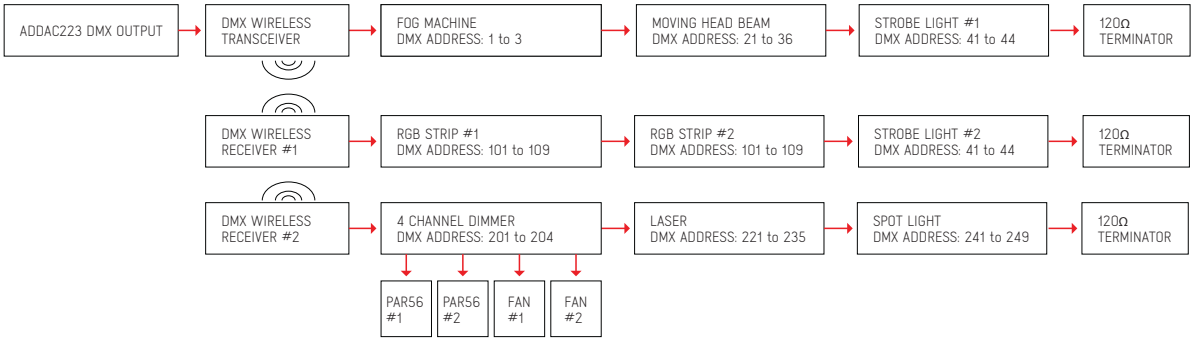
CV TO DMX CONFIGURATION

	DMX CHANNEL (1 - 512)	SOURCE (CV1 - CV13)	RANGE MIN (0 - 255)	RANGE MAX (0 - 255)	LOG/LIN/EXP (0-100)	<- CV12 (ON - OFF)	MASTER FADE (ON - OFF)	FIXTURE
SLOT 1	1	CV 13	0	255	50	OFF	OFF	FOG ON - ADDAC305 #1
SLOT 2	21	CV 1	0	255	50	OFF	OFF	BEAM PAN - JOYSTICK X
SLOT 3	22	CV 2	0	255	50	OFF	OFF	BEAM TILT - JOYSTICK Y
SLOT 4	28	CV 3	0	255	50	ON	ON	BEAM DIMMER - MONO ENV FOLLOW
SLOT 5	41	CV 3	0	255	50	ON	ON	STROBES DIMMER - MONO ENV FOLLOW
SLOT 6	42	CV 4	0	255	50	OFF	OFF	STROBES RATE - MONO ENV FOLLOW
SLOT 7	101	CV 5	0	255	50	ON	ON	STRIPS R DIMMER - LOWS ENV FOLLOW
SLOT 8	102	CV 6	0	255	50	ON	ON	STRIPS G DIMMER - MIDS ENV FOLLOW
SLOT 9	103	CV 7	0	255	50	ON	ON	STRIPS B DIMMER - HIGHS ENV FOLLOW
SLOT 10	201	CV 5	0	255	50	ON	ON	DIMMER CH1 PAR56 - KICK ENV FOLLOW
SLOT 11	202	CV 6	0	255	50	ON	ON	DIMMER CH2 PAR56 - SNARE ENV FOLLOW
SLOT 12	203	CV 8	0	255	50	OFF	OFF	DIMMER CH3 FAN #1 - ADDAC305 #2
SLOT 13	204	CV 9	0	255	50	OFF	OFF	DIMMER CH4 FAN #2 - ADDAC305 #3
SLOT 14	223	CV 5	0	255	50	ON	ON	LASER R DIMMER - LOWS ENV FOLLOW
SLOT 15	224	CV 6	0	255	50	ON	ON	LASER G DIMMER - MIDS ENV FOLLOW
SLOT 16	225	CV 7	0	255	50	ON	ON	LASER B DIMMER - HIGHS ENV FOLLOW
SLOT 17	221	CV 1	0	255	50	OFF	OFF	LASER PAN - JOYSTICK X
SLOT 18	222	CV 2	0	255	50	OFF	OFF	LASER TILT - JOYSTICK Y
SLOT 19	241	CV 10	0	255	50	ON	ON	SPOT DIMMER - LEAD ENV FOLLOW
SLOT 20	0	NONE	0	255	50	OFF	OFF	SPOT DIMMER

ADDAC223 CONFIGURATION

ADDAC223 DMX NETWORKS Examples

#3 COMPLEX RIG, Configuring your own light rig
Here's a more complex network, it also uses Wireless DMX.
This implements the same configuration as the previous example but in a locally created network instead of a pre set theater rig.



Notice how the channels are addressed to the fixtures, how each fixture is addressed in intervals of 20 and chains in intervals of 100, avoiding overlapping and making it easier when configuring the network. Starting at 1, 21, 41 also makes it easier when reading DMX channel charts, function number 1 will match the channel initial address 1, 21, 41... if function 8 is to be assigned then dmx channel 8, 28, 48 will be con
Keeping a spreadsheet of all fixtures and addresses of your network is advised, keeping addresses organized will lead to faster configuring and less debugging.

Also notice Strobe light #1 and Strobe light #2 share the same addresses even if on different chains, they are overlapping on purpose so that they always act together, Same case with the LED Strips both are controlled as a single fixture.

When using lights reacting to sound instead of a single mono envelope on the master output having many envelopes and envelope followers allows for independent control of specific lights from specific sequences or sound sources , for example tracking each source independently (kick, snare, bass, lead, etc) allows for a more dynamic light show

CV TO DMX CONFIGURATION

	DMX CHANNEL (1 - 512)	SOURCE (CV1 - CV13)	RANGE MIN (0 - 255)	RANGE MAX (0 - 255)	LOG/LIN/EXP (0-100)	<- CV12 (ON - OFF)	MASTER FADE (ON - OFF)	FIXTURE
SLOT 1	1	CV 13	0	255	50	OFF	OFF	FOG ON - ADDAC305 #1
SLOT 2	21	CV 1	0	255	50	OFF	OFF	BEAM PAN - JOYSTICK X
SLOT 3	22	CV 2	0	255	50	OFF	OFF	BEAM TILT - JOYSTICK Y
SLOT 4	28	CV 3	0	255	50	ON	ON	BEAM DIMMER - MONO ENV FOLLOW
SLOT 5	41	CV 3	0	255	50	ON	ON	STROBES DIMMER - MONO ENV FOLLOW
SLOT 6	42	CV 4	0	255	50	OFF	OFF	STROBES RATE - MONO ENV FOLLOW
SLOT 7	101	CV 5	0	255	50	ON	ON	STRIPS R DIMMER - LOWS ENV FOLLOW
SLOT 8	102	CV 6	0	255	50	ON	ON	STRIPS G DIMMER - MIDS ENV FOLLOW
SLOT 9	103	CV 7	0	255	50	ON	ON	STRIPS B DIMMER - HIGHS ENV FOLLOW
SLOT 10	201	CV 5	0	255	50	ON	ON	DIMMER CH1 PAR56 - ENVELOPE #1
SLOT 11	202	CV 6	0	255	50	ON	ON	DIMMER CH2 PAR56 - ENVELOPE #2
SLOT 12	203	CV 8	0	255	50	OFF	OFF	DIMMER CH3 FAN #1 - ADDAC305 #2
SLOT 13	204	CV 9	0	255	50	OFF	OFF	DIMMER CH4 FAN #2 - ADDAC305 #3
SLOT 14	223	CV 5	0	255	50	ON	ON	LASER R DIMMER - LOWS ENV FOLLOW
SLOT 15	224	CV 6	0	255	50	ON	ON	LASER G DIMMER - MIDS ENV FOLLOW
SLOT 16	225	CV 7	0	255	50	ON	ON	LASER B DIMMER - HIGHS ENV FOLLOW
SLOT 17	221	CV 1	0	255	50	OFF	OFF	LASER PAN - JOYSTICK X
SLOT 18	222	CV 2	0	255	50	OFF	OFF	LASER TILT - JOYSTICK Y
SLOT 19	241	CV 10	0	255	50	ON	ON	SPOT DIMMER - LEAD ENV FOLLOW
SLOT 20	0	NONE	0	255	50	OFF	OFF	

ADDAC223 MIDI IMPLEMENTATION

MIDI TO DMX

When connected to a computer MIDI can be sent to directly to the DMX Network via the module. Sending a CC message on any of the first 4 MIDI channels will control any of the DMX 512 channels.
The DMX value will be the CC Value * 2 (as MIDI resolution is 0/127 and DMX is 0/255)

MIDI CHANNEL 1 > CC 0 to 127 --> DMX CHANNEL 1 to 128
MIDI CHANNEL 2 > CC 0 to 127 --> DMX CHANNEL 129 to 256
MIDI CHANNEL 3 > CC 0 to 127 --> DMX CHANNEL 257 to 384
MIDI CHANNEL 4 > CC 0 to 127 --> DMX CHANNEL 385 to 512

This allows for precise control of any DMX fixture in the network straight from your favorite DAW and sequence any fixture's functions just like any other midi device.
Use MAX, Pure Data, Processing, Python and it can be generated, randomized....

We also provide a spreadsheet to keep track of your MIDI assigns, here's an example with 2 different notation approaches:

MIDI TO DMX CONFIGURATION

MIDI CHANNEL (1 - 4)	MIDI CC (0 - 127)	CCVALUE (0 - 127)
1	0 - 1	
1	10	
1	11	

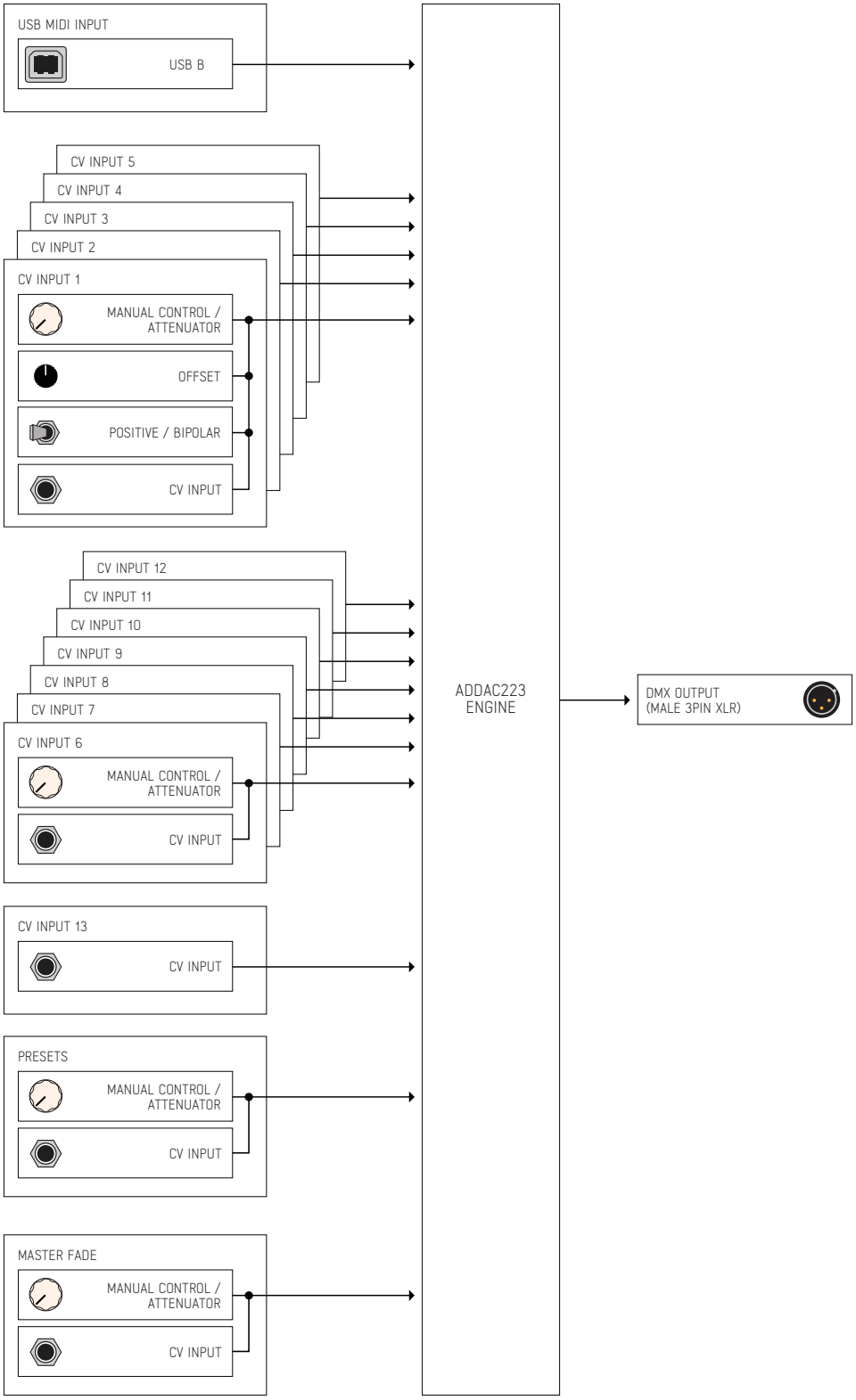
DMX CHANNEL (1 - 512)	DMX VALUE (0 - 255)	DMX FIXTURE	FUNCTION
1 - 2		STROBE #1	INTENSITY / RATE
11		STROBE #2	INTENSITY
12		STROBE #2	RATE

The spreadsheet also features two simple calculators to find the DMX channel given the MIDI channel and CC, or find the MIDI channel and CC given the DMX Channel:

CALCULATE DMX CHANNEL		
MIDI CHANNEL	MIDI CC	DMX CHANNEL
1	127	*128*

CALCULATE MIDI CHANNEL + CC		
DMX CHANNEL	MIDI CHANNEL	MIDI CC
512	*4*	*127*

SIGNAL FLOW DIAGRAM



DMX CHANNEL REFERENCE SHEET

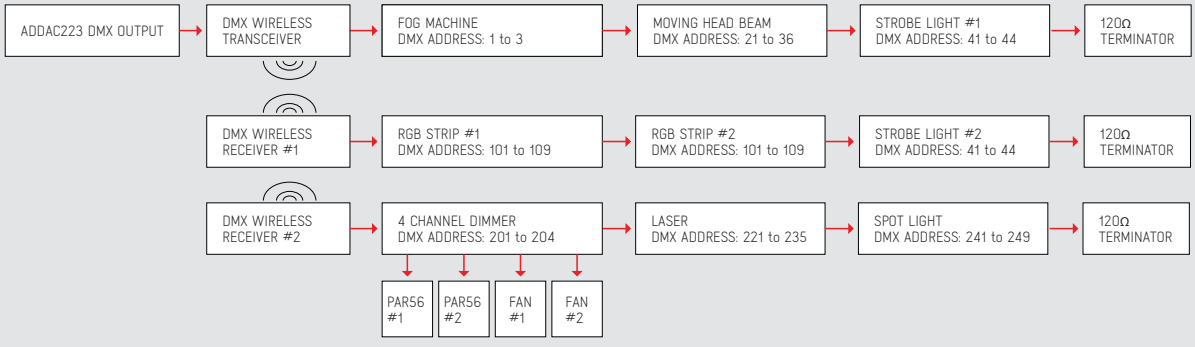
EXAMPLE

USING A FORM LIKE THIS ALLOWS FOR A FAST VISUALIZATION OF THE OVERALL DMX NETWORK

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380

FOG MACHINE
MOVING HEAD BEAM
STROBE LIGHT #1 AND #2
RGB STRIP #1 AND #2
4 CHANNEL DIMMER
LASER
SPOT LIGHT

USING THE SAME DMX NETWORK AS IN THE LAST EXAMPLE



DMX CHANNEL REFERENCE SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512								

Use highlighter markers with different colors to map the DMX fixtures in your DMX512 Universe

ADDAC223 CV TO DMX CONFIGURATION

Browser Configuration spreadsheet

CV TO DMX CONFIGURATION

	DMX CHANNEL (1 - 512)	SOURCE (CV1 - CV13)	RANGE MIN (0 - 255)	RANGE MAX (0 - 255)	LOG/LIN/EXP (0-100)	<- CV12 (ON - OFF)	MASTER FADE (ON - OFF)
SLOT 1							
SLOT 2							
SLOT 3							
SLOT 4							
SLOT 5							
SLOT 6							
SLOT 7							
SLOT 8							
SLOT 9							
SLOT 10							
SLOT 11							
SLOT 12							
SLOT 13							
SLOT 14							
SLOT 15							
SLOT 16							
SLOT 17							
SLOT 18							
SLOT 19							
SLOT 20							

FIXTURE	FUNCTION	CV SOURCE

DMX CHANNEL TO MIDI (CHANNEL, CC) CHEAT SHEET

DMX CH	MIDI CH	MIDI CC
1	1	0
2	1	1
3	1	2
4	1	3
5	1	4
6	1	5
7	1	6
8	1	7
9	1	8
10	1	9
11	1	10
12	1	11
13	1	12
14	1	13
15	1	14
16	1	15
17	1	16
18	1	17
19	1	18
20	1	19
21	1	20
22	1	21
23	1	22
24	1	23
25	1	24
26	1	25
27	1	26
28	1	27
29	1	28
30	1	29
31	1	30
32	1	31
33	1	32
34	1	33
35	1	34
36	1	35
37	1	36
38	1	37
39	1	38
40	1	39
41	1	40
42	1	41
43	1	42
44	1	43
45	1	44
46	1	45
47	1	46
48	1	47
49	1	48
50	1	49
51	1	50
52	1	51
53	1	52
54	1	53
55	1	54
56	1	55
57	1	56
58	1	57
59	1	58
60	1	59
61	1	60
62	1	61
63	1	62
64	1	63
65	1	64
66	1	65
67	1	66
68	1	67
69	1	68
70	1	69
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93	1	92
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114	1	113
115	1	114
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117	1	116
118	1	117
119	1	118
120	1	119
121	1	120
122	1	121
123	1	122
124	1	123
125	1	124
126	1	125
127	1	126
128	1	127
129	2	0
130	2	1
131	2	2
132	2	3
133	2	4
134	2	5
135	2	6
136	2	7
137	2	8
138	2	9
139	2	10
140	2	11
141	2	12
142	2	13
143	2	14
144	2	15
145	2	16
146	2	17
147	2	18
148	2	19
149	2	20
150	2	21
151	2	22
152	2	23
153	2	24
154	2	25
155	2	26
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157	2	28
158	2	29
159	2	30
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163	2	34
164	2	35
165	2	36
166	2	37
167	2	38
168	2	39
169	2	40
170	2	41
171	2	42
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173	2	44
174	2	45
175	2	46
176	2	47
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242	2	113
243	2	114
244	2	115
245	2	116
246	2	117
247	2	118
248	2	119
249	2	120
250	2	121
251	2	122
252	2	123
253	2	124
254	2	125
255	2	126
256	2	127
257	3	0
258	3	1
259	3	2
260	3	3
261	3	4
262	3	5
263	3	6
264	3	7
265	3	8
266	3	9
267	3	10
268	3	11
269	3	12
270	3	13
271	3	14
272	3	15
273	3	16
274	3	17
275	3	18
276	3	19
277	3	20
278	3	21
279	3	22
280	3	23
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377	3	120
378	3	121
379	3	122
380	3	123
381	3	124
382	3	125
383	3	126
384	3	127
385	4	0
386	4	1
387	4	2
388	4	3
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506	4	121
507	4	122
508	4	123
509	4	124
510	4	125
511	4	126
512	4	127

For feedback, comments or problems please contact us at:
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ADDAC223 USER'S GUIDE

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