



LL-2500

FOUR TUNNELS RED AND GREEN LASER SHOW SYSTEM

User's Manual



Read this manual before using. Do not attempt to open the housing or repair this device by yourself without contact us!

DMX Address Chart

This chart lists the DMX dipswitch setting for DMX address 1 through 511. Follow the instructions below to configure fixture dipswitches with you desired DMX address.

DMX Address Quick Reference Chart

DipSwitch Position

DMX:DIPSWITCH SET					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
0=OFF					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
1=ON					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
X=OFF or ON					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0		32	64	96	128	160	192	224	256	288	320	352	384	416	448	480	
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481	
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482	
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483	
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484	
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485	
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486	
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487	
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488	
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489	
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490	
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491	
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492	
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493	
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494	
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495	
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496	
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497	
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498	
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499	
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500	
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501	
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502	
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503	
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504	
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505	
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506	
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507	
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508	
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509	
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510	
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511	

DipSwitch Position

DMX Address

Notes:

1. DMX console can not be used in Master-Slave operation (Sound Active or AUTO mode).
2. There should be only one master unit in Master-Slave operation.

Troubleshooting

1. If the power supply indicator doesn't light up and the laser doesn't work, please check the power supply and the input voltage.
2. In Stand-Alone operation, if the power supply indicator is light up and sound active indicator isn't light up, but the laser is shut off doesn't work.
 - A. Because sound is too small make for laser shut off in sound active, please increase the music volume or increase audio sensitivity with sensitivity knob, please check as below.
 - B. Please check if unit has been set up in slave mode, then set up in master mode.
3. In Master-Slave operation, slave unit don't function, please check as below.
 - A. Make sure to there's only one master in the chain, and the others are set in slave mode.
 - B. Make sure to control the unit without DMX console controlling.
 - C. Make sure to take a good quality power cable and connection.
4. In DMX mode operation, the laser is OFF and the DMX signal indicator is unlighted, please check as below.
 - A. Make sure to set up the DMX mode.
 - B. Make sure to have a good connection.
5. In DMX operation, the unit can't be controlled by the DMX console, but the DMX signal indicator is flashing, please make sure the DMX console and unit have the same channel.
6. If the output beam direction above isn't the right way, please restart the unit.
7. If the unit is fail, please turn off the unit, then turn on again after 5 minutes.

After trying the above solution you still have a problem, please contact your dealer or our company for service.

General instructions

Unpacking:

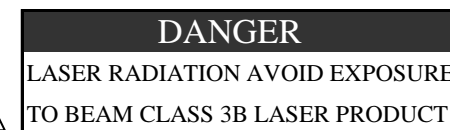
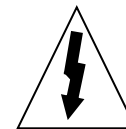
Thank you for purchasing this product. Please read user guide for safety and operations information before using the product. Keep this manual for future reference. This product can create perfect laser programs and effects since it has passed a series of strictly tests before delivery. Please check the attachments listed on the page after opening the carton. In the event of carton damage or attachment missing in transit, please contact your dealer or our after sales service department.

Attachments:

- | | |
|-----------------|------|
| 1. Laser Light: | 1PCS |
| 2. Power Cable: | 1PCS |
| 3. User Guide: | 1PCS |

Notice:

1. Do not exposure the human eye direct to laser beam.
2. Do not turn on and off the unit frequently.
3. Before using this unit make sure the power supply is ground.
4. This unit is intended for indoor use only and should be prevented form water, moisture and shake. The working temperature of this unit is 18~30°C, do not use this continuously over 4 hours, otherwise it shortens the lifetime of the unit.
5. Use cleaning tissue to remove the dust absorbed on the external lenses periodically to optimize light output.
6. Do not remove or break the warranty label, otherwise it void the warranty.
7. Always replace with the exact same type fuse, replacement with anything other than the specified fuse can cause fire or electric shock and damage your unit, and will void your manufactures warranty.



Technical Specification

1. Voltage: AC110V or AC220V-240V/ 50HZ-60HZ/ Fuse: 2A/250V
2. Rated Power: 30W
3. Laser: 25+25mW@532nm, green DPSS laser,100+100mW@650nm, red DPSS laser
4. Working Modes: DMX, Sound Active, AUTO, Master-Slave
5. DMX Control Channel: 7 channels
6. Graphics & Effects: more than 100 patterns, over 300 effects
7. Interface: 3 pins XLR jack for DMX or Maser-Slave linking
8. Size: 600*180*150mm
9. Weight: 6.8Kg

Features

1. Various working modes

Includes four working modes as DMX, Sound Active, AUTO and Master-Slave Control for different applications.

2. Various programs

The double tunnel laser beam is compages, more than 50 laser patterns, over 200 laser effects. Different working modes has different program.

3. DMX control

The unit has 7 channels to control in DMX mode. The unit has BLACK OUT function.

The unit will shut OFF if no DMX512 signal.

4. Master-Slave function

The system allow link many units (as slave unit) together to doing synchro job without console in sound active or AUTO mode.

5. LED indicating and shut-off function

In sound active mode, the unit's panel has LED indicating for sound active. The unit will shut off after 8 seconds when the music stops.

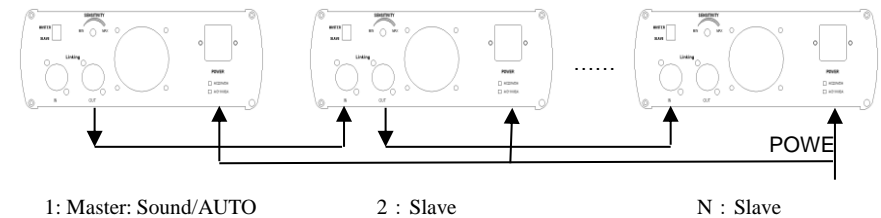
6. DPSS Laser

Use Diode-Pumped Solid State green laser, stable output and long working life.

Master-Slave Operation

This mode will allow you to link up to 32 units together without controller.

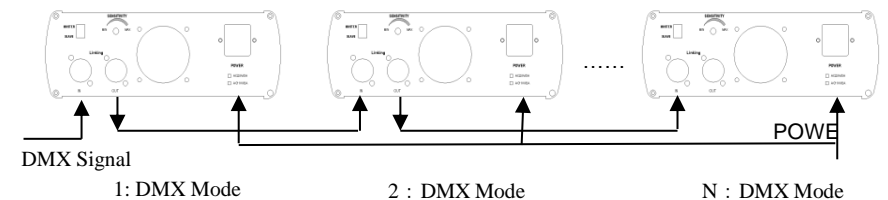
1. Install the units in a suitable position (laying or appending).
2. Choose a unit to function as Master mode, set dipswitch to select Sound Active or AUTO mode. The others must be set to Slave mode, set dipswitch to select Slave mode.
3. Use standard XLR microphone cable chain your units together via the XLR connector on the rear of the units. For longer cable runs we suggest a terminator at the last fixture.
4. Turn on the all units' power, the units begins reset, then the unit begins working. The slave units will react the same as the master unit.
5. The units will react to the low frequencies of music via the internal microphone. Adjust the audio sensitivity knob on the back of the master unit to make the unit more or less sensitive in sound active. The panel has LED indicating for sound active.



Universal DMX Operation (DMX mode)

This mode allows you to use universal DMX-512 console to operate.

1. Install the units in a suitable position (laying or appending).
2. Use standard XLR microphone cable chain your units together via the XLR connector on the rear of the units. For longer cable runs we suggest a terminator at the last fixture.
3. Assign a DMX address to each the unit using dipswitches, see the "DMX Address Quick Reference Char".
4. Turn on the all units' power, the units begins reset, then the unit begins working.
5. Use DMX console to control your units.



DMX address calculation

For DMX mode, DMX512 address from #1 to 9# dipswitches must be set, the address is set from 1 to 511. Each dipswitch represents a binary value.

Dipswitch	Value	Dipswitch	Value
# 1	1	# 6	32
# 2	2	# 7	64
# 3	4	# 8	128
# 4	8	# 9	256
# 5	16	# 10	Set to "0"

One unit has 7 channels, so each unit must be assigns 7 channels at least. We may assign 8 channels for one unit, then DMX address = 8*N + 1, N=0, 1, 2, 3

Example

One loop address=1, two loop address=9, three loop address=17, four loop address=25

Loop	Address	Binary	Dipswitches
1	1	10000000	# 1
2	9	10010000	# 1+#4
3	17	100010000	# 1+#5
4	25	100110000	# 1+#4+#5

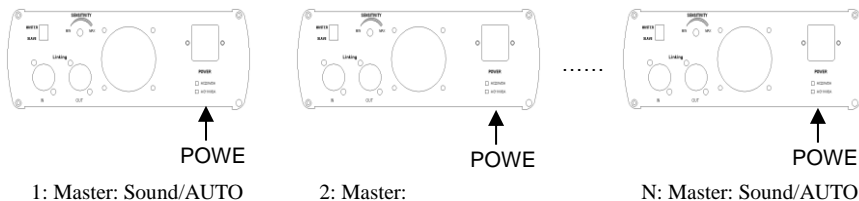
The dipswitches setting for DMX address see the " DMX Address Quick Reference Chart ".

Operation

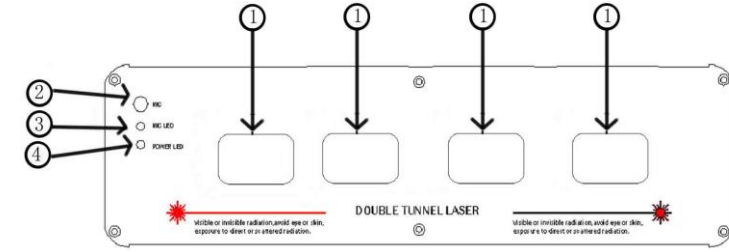
Stand-Alone Operation (Sound Active, AUTO mode)

The mode allows a single unit to react to the beat of the music in the master mode.

1. Install the units in a suitable position (laying or appending).
2. Set dipswitch to select Sound Active or AUTO mode.
3. Turn on the unit power, the unit begins reset, then the unit begins working.
4. The unit will react to the low frequencies of music via the internal microphone. Adjust the audio sensitivity knob on the back of the unit to make the unit more or less sensitive in sound active. The panel has LED indicating for sound active.

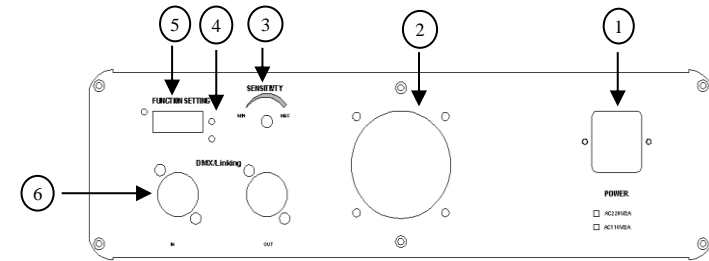


Front/Rear Panel



Front Panel Figure

1. Laser Aperture One
2. Sound Active Microphone
3. Sound Active Indicator:Blue
4. Power Indicator:Red



Rear Panel Figure

1. Power Jack
2. Cooling Fan
3. Audio Sensitivity Knob
4. DMX Signal Indicator: Green
5. Dipswitches: Function Setting
6. DMX or Linking Jack

Function & Setting

Sound Active

The change of the laser pattern is controlled by sound, that is, the rhythm of the sound control the effect of the changing laser pattern. Turning the sensitivity knob in the clockwise direction to increase the fixture's sensitivity to sound, the knob in the counter clockwise direction to decrease. The laser diode will automatically turn off after 8 seconds when the music stops.

AUTO

Auto cycles the built-in programs without being controlled externally. It has no laser OFF

DMX Control

The system only accepts the DMX512 signal of international standard to control the system mode, the laser pattern ON /OFF, the size, the position, the speed, etc.

DMX Control Parameter Chart

Channel	Function	Value	Description
CH1	Mode	0~49	Close, laser OFF
		50~99	Static patterns of DMX mode
		100~149	Dynamic patterns of DMX mode
		150~199	Sound active mode
		200~255	AUTO mode
CH2	Pattern selection	0~255	52 static/dynamic patterns
CH3	Position-X	0~255	Adjust position-X
CH4	Position-Y	0~255	Adjust position-Y
CH5	Scanning speed	0~255	0 is speedy, 255 is slow
CH6	Dynamic patterns play speed	0~255	0 is speedy, 255 is slow, has ten grade speed
CH7	Static pattern size	0~255	0 is small, 255 is big

CH2 Parameter Chart For Function

DMX value	Static patterns	Dynamic patterns	DMX value	Static patterns	Dynamic patterns
0~4	circle	circle to big	130~134	christcross	dot diagonal move
5~9	dot circle 1	dot circle to big	135~139	chiasma line	hori line flex
10~14	dot circle 1	scan circle to big	140~144	hor-extend line	hori dot line flex
15~19	scan circle	circle flash	145~149	hori-shrink line	hori line move
20~24	horizontal line	dot circle flash	150~154	hori-flex line	hori dot line move
25~29	hori-dot line	circle roll	155~159	ho-flex dot line	vertical line move
30~34	vertical line	dot circle roll	160~164	ver-extend line	vert-dot line move
35~39	vert-dot line	circle turn	165~169	vert-shrink line	rectangle extend
40~44	45° diagonal	dot circle turn	170~174	vert-flex line	dot rectangle extend
45~49	dot diagonal	dot circle to add	175~179	ve-flex dot line	square extend
50~54	135° diagonal	scan circle extend	180~184	ladder line 1	dot square extend
55~59	dot diagonal	circle jump	185~189	ladder line 2	rectangle turn
60~64	V line 1	dot circle jump	190~194	ladder line 3	dot rectangle turn

DMX value	Static patterns	Dynamic patterns	DMX value	Static patterns	Dynamic patterns
65~69	V dot line 1	hori-line jump	195~199	ladder line 4	square turn
70~74	V line 2	hori-dot line jump	200~204	tetragon 1	dot square turn
75~79	V dot line 2	vertical line jump	205~209	tetragon 2	pentagon turn
80~84	triangle 1	ver-dot line jump	210~214	pentagon 1	dot pentagon turn
85~89	dot triangle 1	diagonal jump	215~219	pentagon 2	tetragon turn
90~94	triangle 2	dot diagonal jump	220~224	pentagon 3	pentagon star turn
95~99	dot triangle 2	short sector round 1	225~229	pentagon 4	bird fly
100~104	square	short sector round 2	230~234	wave line	dot bird fly
105~109	dot square	long sector round 1	235~239	wave dot line	wave flowing
110~114	rectangle 1	long sector round 2	240~244	spirality line	dot wave flowing
115~119	dot rectangle 1	line scan	245~249	many dot 1	many dot jump 1
120~124	rectangle 2	dot line scan	250~254	many dot 2	square dot jump
125~129	dot rectangle 2	45° diagonal move	255	square dot	many dot jump 2

There are 52 static patterns, the sizes of the patterns that DMX value is 140 previous are adjustable, the following irregular patterns are non-adjustable. There are 52 dynamic patterns, whose sizes are non-adjustable.

Function setting

Uses dipswitches to assign a unit's function: DMX/slave, or sound active, or AUTO mode. For the unit is DMX mode, set the DMX address. Each dipswitch represents a binary value. See the "Function chart".

0=OFF 1=ON X=OFF or ON

DIPSWITCH CHART										FUNCTION
#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	
X	X	X	X	X	X	X	X	0	1	SOUND ACTIVE
X	X	X	X	X	X	X	X	1	1	AUTO MODE
SET DMX ADDRESS FOR DMX MODE									0	DMX / SLAVE

Function Chart

Dipswitch #10 is use to set master or slave mode. Master modes have sound active and AUTO mode. Slave modes have DMX and Slave mode. The units automatically identify DMX or SLAVE mode by data receives. Dipswitch #9 use to is set sound active or AUTO mode in master mode.

