SERIES SHOW

CE

YX-2009

Show Beam (RGB) Laser

USER MANUAL

www.yagang.com

SILVER STAR
Professional Lighting

Version 1.0

ATTENTION

1. Must operate according to the user manual. Don't separate the light personally. Call the technician when the machine breaks down.
2. Please do not see the laser beam directly to avoid any damage.
3. Before connect or disconnect the power, please adjust the luminance of the laser diode to the least to avoid any damage to the laser diode.
4. This unit should be keep dry, do not use in the rain or dank and dusty environment. It can be use in the outdoor with the water-proof cover protector.
5. Set the light immobility and try to avoid strong shake or hit.
6. Prevent dust into the equipment to avoid problems.
7. Please keep that there's no other equipment or decorating materials obstructed the exhaust fan and the vent-pipe when the equipment was working.
8. Before connect power, check the plug is immobility or not, power line should be connect well.
9. Please do not open or close the equipment frequently that's to avoid any affect to the life span of the laser diode, and try the best to avoid the long time working.
10. Due to the characteristic of the laser diode, after three hours working, it should be close at least 25 minutes until the laser diode cooling then work again.
11. Don't touch the light or draw the power line when your hand was wet. And do not pull the electronic power line.
12. Maintain the distance at least 10M above from the equipment to the object.
13. This equipment does not have any parts can repair for the users, please do not open the equipment.
14. When the laser diode became dim or damaged please contact the dealer timely.
15. To use the original package when transport again and to avoid shake.

Warning

1、Don't look the light directly to prevent make some destroy with eyes..
2、Keep the space between light equipments and the lighted things more than 10 M.

OPEN THE BOX FOR CHECKING

In order to use this product safety and reasonable for the users, please read over this manual carefully before use and the operation must strictly according to this manual to avoid any damage to the product and personal safety.

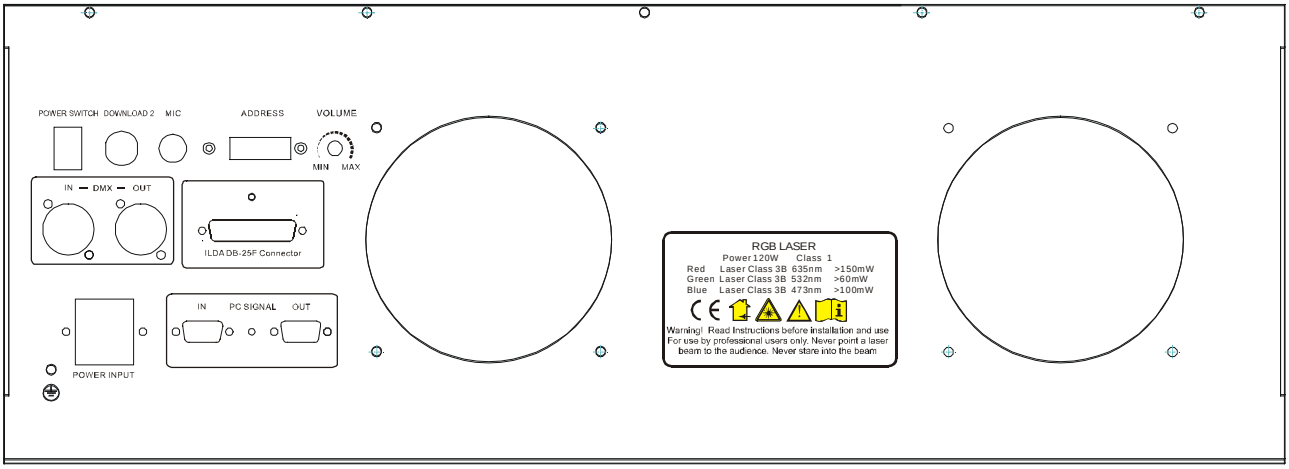
Once after received this products please take and put carefully. And check carefully that whether the product was damaged or not during the transportation and please check the following things were enclosed:

Laser light 1PCS	Graphics USB card 1PCS
9 pin signal line 1PCS	USB connection cable 1pcs
3 pin signal line 1pcs	User manual 1pcs
Power cable 1PCS	Install CD-ROM 1PCS

INSTALLATION

1. Please check the voltage whether is the same with the one showed on the equipment or not.
2. It must ask for the technical person and set the light safety when installation. And let the light beam at the suitable angle.
3. When install this equipment please make sure there's no flammable surfaces (decorated things, etc) within at least 1.5M and maintain minimum distance of 0.5M from the equipment to the walls.
4. Please make sure that there's no other equipment or decorating materials obstructed the exhaust fan and the vent-pipe.
5. Products should be install immobility.
6. In case of safety, it's very important that to connect the earth with line.

CONTROL BOARD INSTRUCTION



POWER INPUT: Input power, with inner fuse.

PC SIGNAL IN/OUT: USB connection port signal input/output

DMX IN/OUT: DMX 512 signal input/output

POWER ON/OFF: power on/off

Donwload2 : Download method 2 used

MIC: Receive Music.

MIN-MAX: Music sensitivity potentiometer

ADDRESS: the 10^{th} code is switch code. When the 10^{th} code is OFF, 1~9 are function codes. When function code is 0, the working mode is Music Active (Master mode); when function code is 1, the working mode is Automatic (Master mode); when function code is 2 or more, the working mode is Slave mode. When the 10^{th} code is ON,1~9 will be DMX address codes. The address code of first light usually by 1, the second light is 14 and so on.

ILDA DB 25 F Connector: signal input connection port of the laser perform software that in accordance with the ILDA standard.

NOTE:

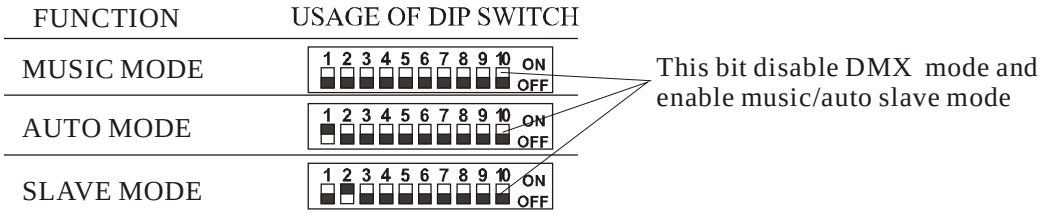
1. When **PC SIGNAL IN** and **ILDA DB 25F connector ' s** connection port are free, the lamp will drive by the inside program, temporality it can control by music or DMX 512 signal.

2.When **PC SIGNAL IN** connects with USB interfacial card, the lamp will be control by software which was installed in the computer.

3.After connect the ILDA DB 25F, The lamp will change to ILDA connected port drive mode ,this connection port can receive all the signal of laser perform software that accord with the ILDA standard, such as LD-2000 of Pangolin Company.

4.When the **PC SIGNAL IN** and the **ILDA DB 25F Connector** were connected, then the system will at an abnormal statement, lamp still control by inside program , but not respond to the exterior input signal.

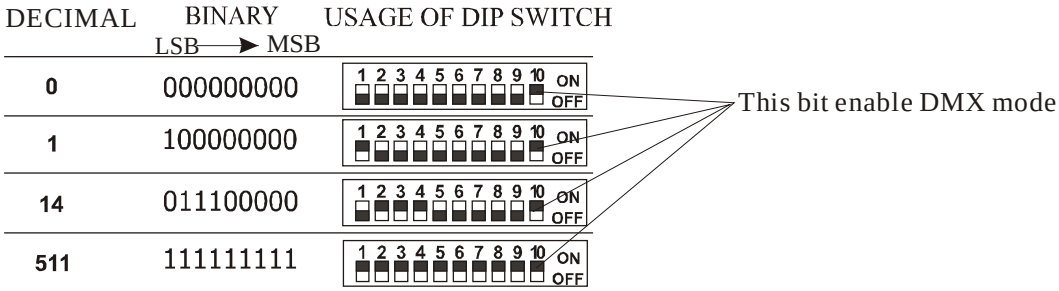
Music mode/auto mode/slave mode setting:



DMX address code setting:

in the binary, each digit have " 0 " or " 1 " just correspond to " OFF " or " ON " switch situation.

Example for DMX address code:



DMX512 OPERATE

The product has 13 operate channels(international standard DMX512 signal),The details as follow：

CHANNEL	DMX512 VALUE	FUNCTION
1 Control Mode	0-63	Music Active, 5-13channels out of effect
	64~127	Stand Alone, 5-13 channels out of effect
	128~191	Manual (Music Active)
	192~255	Manual (Automatic)
2 Color	0~22	Close
	23~45	White
	46~68	Red
	69~91	Yellow
	92~114	Green
	115~137	Cyan
	138~160	Blue
	161~183	Purple
	184~206	Full multi color
	207~229	Stochastic single color
	230~252	Stochastic multiple color
	253~255	Fluent
3 Pattern	0~255	64 patterns(0~255)/4=(0~63)
4 Speed	0~255	12 grade speed(0~255)/23=(0~11)
5 horizontal & vertical roll	0-63	No rolling
	64~127	Horizontal roll
	128~191	Vertical roll
	192~255	Horizontal & vertical roll
6 Rotation & Point-Draw	0-63	No Rotation & No Point-Draw
	64~127	Rotation
	128~191	Point-Draw(Only Point)
	192~255	Rotaion & Point-Draw

7 Horizontal & vertical move	0-63	No move
	64~127	Horizontal move
	128~191	Vertical move
	192~255	Horizontal & vertical move
8 Horizontal & vertical stretch	0~63	No stretch
	64~127	Horizontal stretch
	128~191	Vertical stretch
	192~255	Horizontal & vertical stretch
9 Small To Large & Large To Small	0~85	No Zoom
	86~169	Zoom from one point to large
	170~255	Zoom from large to one point
10 Slow-draw speed	0~255	255 grade speed
11 Scan Speed	0~255	255 grade speed (fast to slow)
12 Change Color Speed	0~255	12 grade speed(0~255)/23=(0~11) (fast to slow)
13 Size	0	Original size
	1~255	42 grade size(1~255)/6=(0~42) 0~19 reduce 20 original size 21~42blow up

SPECIFICATION

- Voltage: AC 220V~240V, 50/60Hz
- Total power: 90W
- Signal input power: -5~+5V
- X/Y axes beam scanning optical angle: 0~±30 °
- Input signal bandwidth: 0~1000Hz
- Condition temperature: -10℃~+35℃
- Laser light power: Red Laser Class 3B 635nm >250mW
  Green Laser Class 3B 532nm >150mW
  Blue Laser Class 3B 473nm >150mW

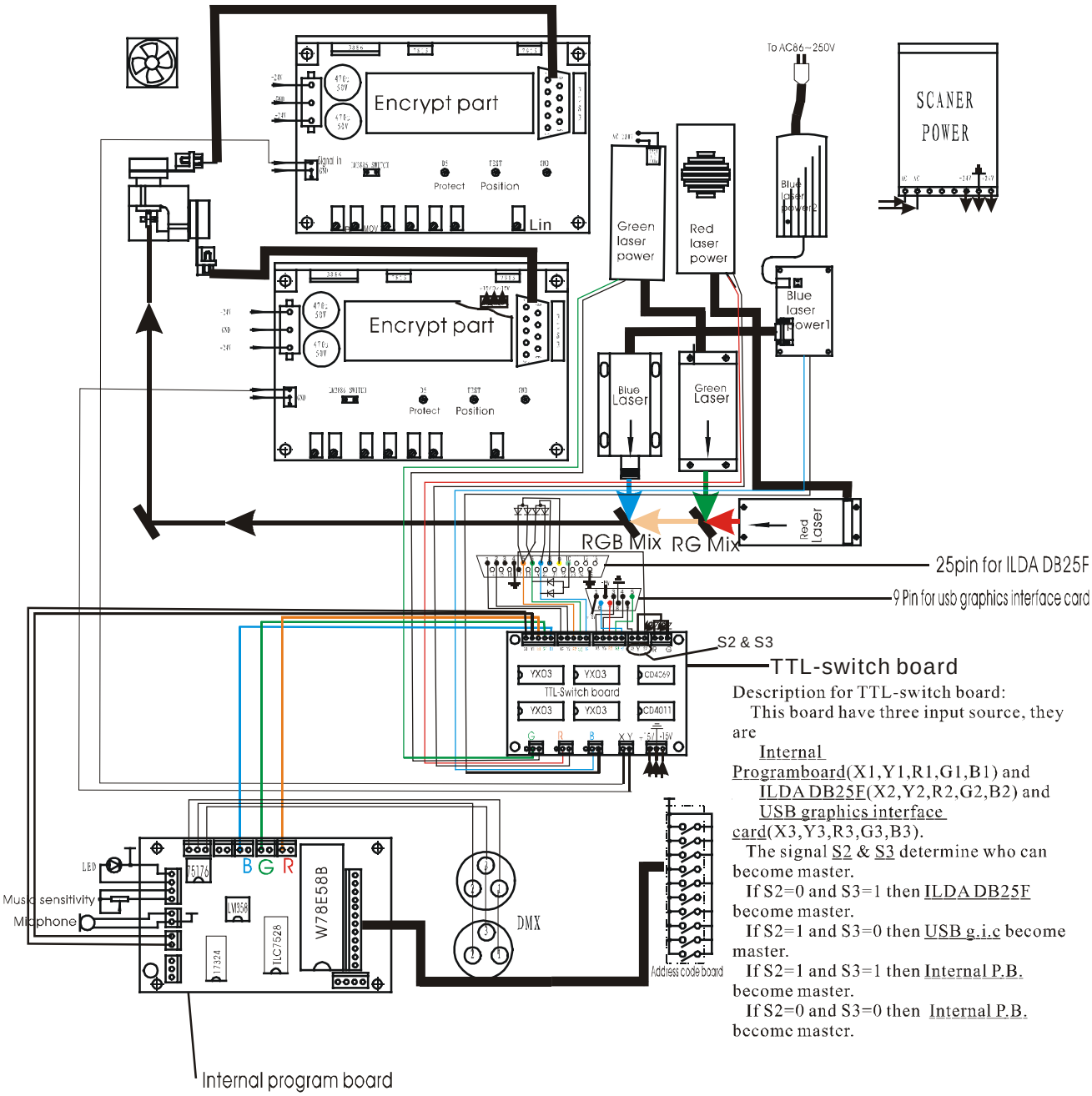
  Frequency of MCU :24MHz
  Size of flash rom for download :32K Byte
- Net weight:40KG
- Dimension:73×42×28cm

MAINTAIN

- Maintenance should be performed every 15-day period, by using a sponge which is dipped with alcohol, rather than wet cloth or other chemical liquid, to clean the mirror.
- Warning: Power must be disconnected before maintenance or repair. Do not look at the light source directly.

ATTENTION: DISCONNECT INPUT POWER BEFORE MAINTAIN.
DON'T LOOK STRAIGHTLY AT THE LIGHT SOURCES.
NOTE: Don't seperate laser machine from laser power and repaire them by yourself otherwise no good repair service will be supplied.

ELECTRICAL DIAGRAM



TTL-switch board

Description for TTL-switch board:

This board have three input source, they are

Internal Programboard(X1,Y1,R1,G1,B1) and

ILDA DB25F(X2,Y2,R2,G2,B2) and

USB graphics interface card(X3,Y3,R3,G3,B3).

The signal S2 & S3 determine who can become master.

If S2=0 and S3=1 then ILDA DB25F become master.

If S2=1 and S3=0 then USB g.i.c become master.

If S2=1 and S3=1 then Internal P.B. become master.

If S2=0 and S3=0 then Internal P.B. become master.

TROUBLE SHOOTING

SIUATION	REASON	FAULTY PART	PART No.
No power	Damaged fuse	Fuse	09-00-3001-01
	Damaged power switch	Power switch	08-05-04210-02
	Damaged power supply	±24V	16-03-0004-00
No music-active/ Music-active No sensitivity	Damaged mic	MIC	16-03-0001-00
	Damaged control PCB	Control PCB	26-2A-LT6V20-00
	Damaged potentiometer	Potentiometer	04-03-0105-03
	Damaged 78E58B IC	78E58B IC	00-78E58B-00
X&Y axis motors no power	Damaged scanner	Scanner	15-01-0002-00
	Damaged 78E58B IC	78E58B IC	00-78E58B-00
	Damaged control PCB	Control PCB	26-2A-LT6V20-00
	Damaged power supply	±24V	16-03-0004-00
	Damaged scan board	Scan board	26-2A-FASTSCAN-00
No light output / light output low	Dirty lens	Please refer to the user manual for further instruction	
	Damaged laser diode	Green laser diode	07-01-0250-00
		Red laser diode	07-03-0350-01
		Blue laser diode	07-02-0080-00
	Damaged Control PCB	Control PCB	26-2A-LT6V20-00
	Operate	Please refer to the user manual for further instruction	
No control	Operate	Please refer to the user manual for further instruction	
	Damaged Control PCB	Control PCB	26-2A-LT6V20-00
	Damaged power supply	±24V	16-03-0004-00
	Damaged address board	LT6 address board	26-2A-LT6SW-00
	Damaged USB controller	2008USB controller	USB20-KT-00
	Internal wires are disconnected	USB signal cable	27-08-0014-00
		LD2000 signal cable	

Appendix：

ILDA DB 25F PINOUTS DB 25 definens

1	X＋	-5 to ＋5V
2	Y＋	-5 to ＋5V
3	Intensity/Blanking＋	0V to ＋2.5V
4	Interlock A	Connected to pin 17 inside the Qm2000
5	Red＋	0V to ＋2.5V
6	Green＋	0V to ＋2.5V
7	Blue＋	0V to ＋2.5V
8	Deep blue＋	0V to ＋2.5V
9	Yellow＋	0V to ＋2.5V
10	Cyan＋	0V to ＋2.5V
11	Z＋	Depth Z(not intensity), -5 to ＋5V
12	Not connected	
13	Shutter	0V to ＋5V
14	X－	－5V to ＋5V
15	Y－	－5V to ＋5V
16	Intensity/Blanking－	－2.5V to 0V
17	Interlock B	Connected to pin 4 inside the Qm2000
18	Red－	－2.5V to 0V
19	Green－	－2.5V to 0V
20	Blue－	－2.5V to 0V
21	Deep blue－	－2.5V to 0V
22	Yellow－	－2.5V to 0V
23	Cyan－	－2.5V to 0V
24	Z－	－5V to ＋5V
25	Ground	Cable shield