

# VooDooFX

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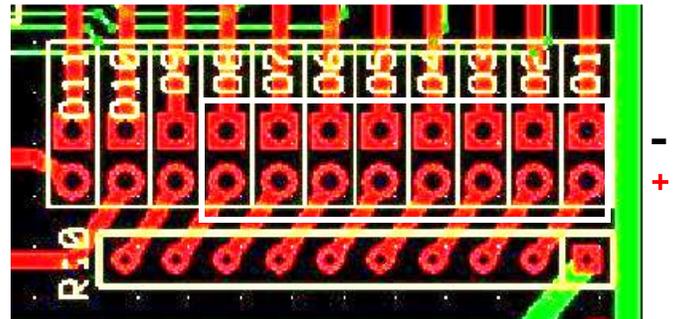
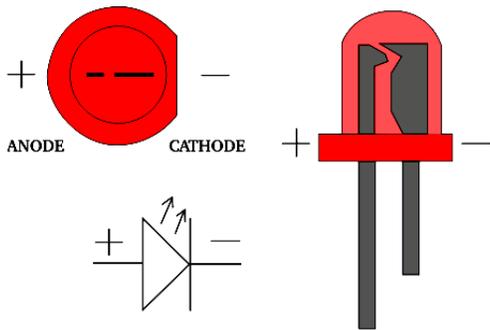
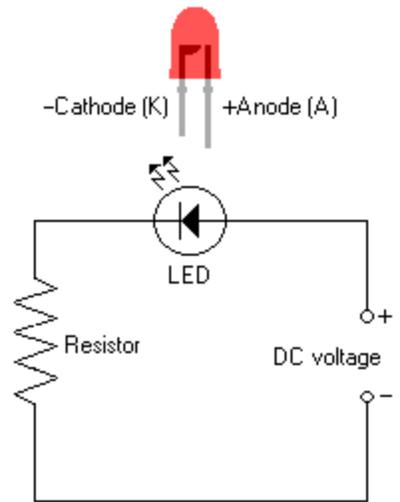
## 20-K Sub Lighting Kit

(Fits Nautilus Display Model Kits)



(VCNLK-1 Custom Electronics Kit Ver-1)

### General LED Diagram



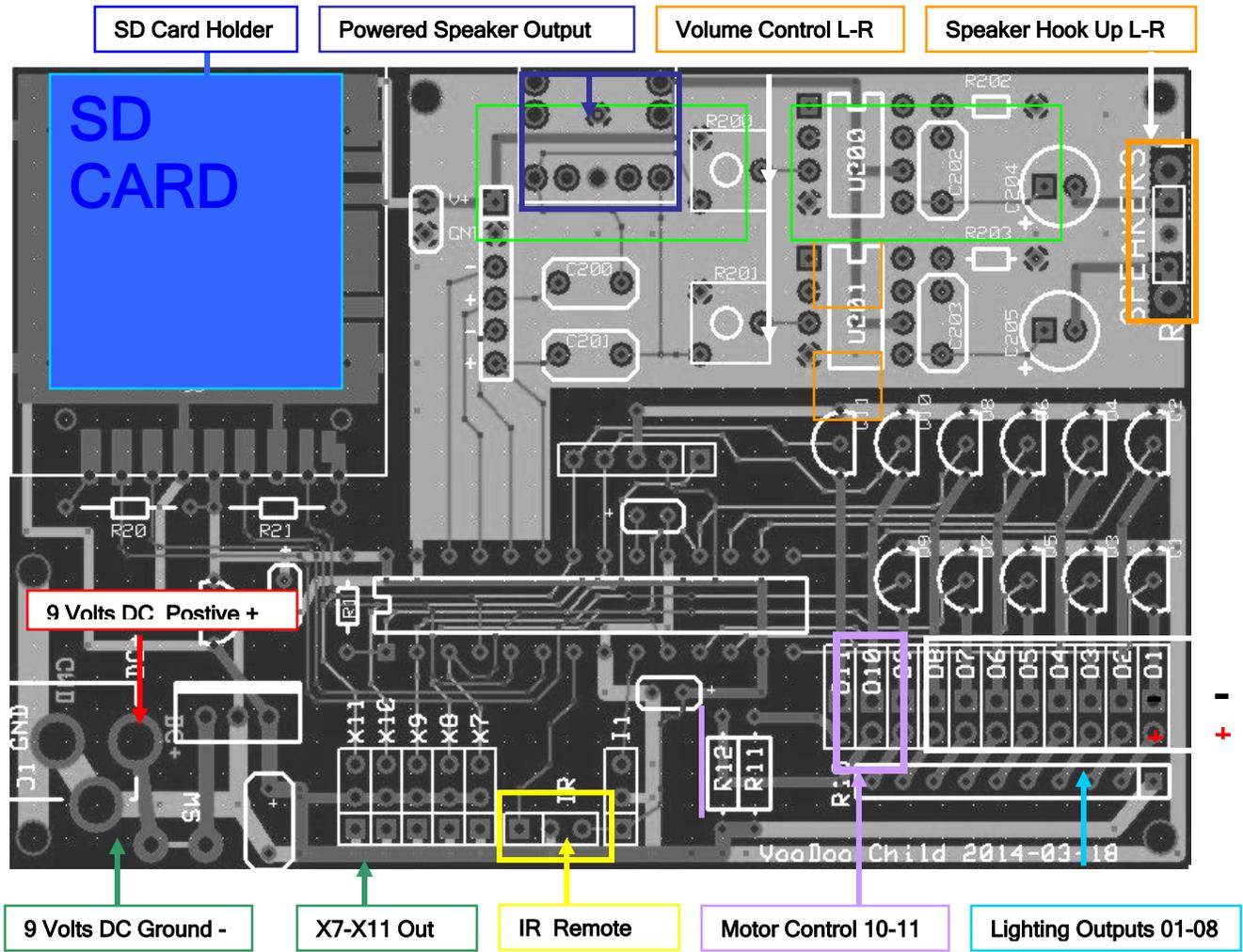
Lighting outputs can be used in two ways.

**A Mode:** 1 Led per port (DEFAULT) "Square Pad" is negative; "Circle Pad" is positive.

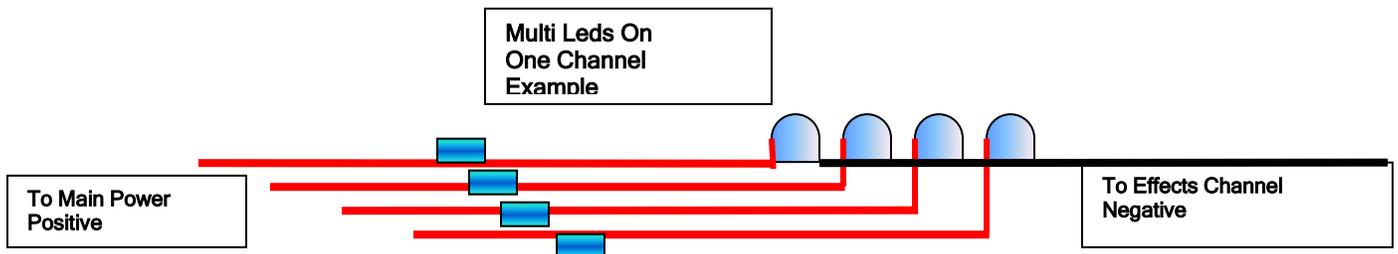
**B Mode:** Multi Leds per port, using "Positive inline resistor method". Negative or square pad is used only for effect.

**LEDs are polarity sensitive; make sure your leds are hooked up properly.**

(Voodochild Circuit Board Diagram 1.0)



PLEASE DOWNLOAD FULL INSTRUCTIONS AT [WWW.VOODOOEX.COM](http://WWW.VOODOOEX.COM)



(General Information)

First start by figuring out what areas you would like to light and study the circuit board diagrams. Since there are many different ways to place the lighting you will need to pick and choose the areas that work the best for you. In any area that you are trying to light, you should be aware of a few basic guidelines to follow. 1-Pick Placement Area 2- Pre Test Lighting Effect 3- Light Block Where Needed. You will need a few tools to hook up the electronics, low watt 25-30 watt soldering iron with a pin needle tip, .032 rosin core solder, small wire strippers, small side cutters, lighter, hot glue, metal tape, wire ties. If using this for a model or prop pick the location for the power source and on/off switch, figure out what area or zones you will be lighting, pre build 1 led and pick the effects port you want, test the light effect in the zone. You might need to use diffusion material to flatten the affect; this helps take away any hot spots from the leds. If you want to add more on lighting you can go direct to the power source and use in line resistor technique, look at the diagram. After finding that perfect

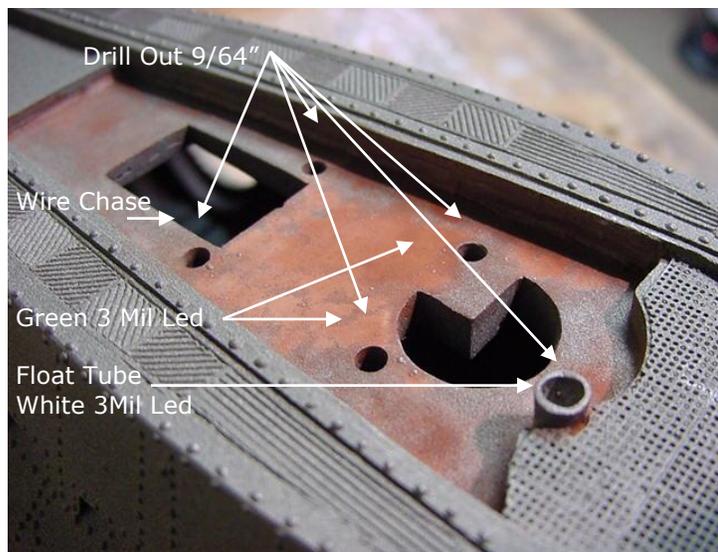
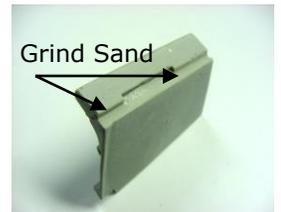
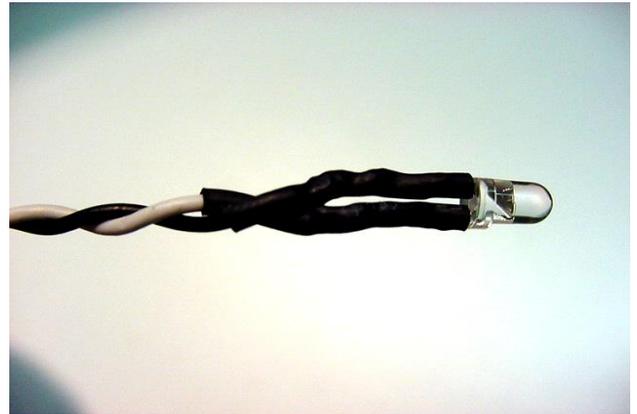
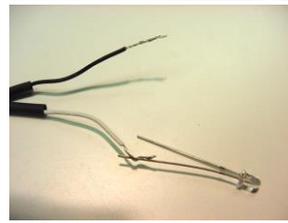
Prep pre cut wires. Strip off plastic coating about 1/8".  
 Twist bare wire into a tight braid, with no frayed ends.  
 Slip a 1/4" long piece of shrink tubing over both wires.  
**NOTE:** make sure to slip shrink tubing over wire before soldering.  
 Take the white wire and wrap it around + Anode positive side of led.  
 Take the black wire and rap it around - Cathode negative side of led.  
 Slide the raped wires up to square marks on the led leads.  
 The two marks are about 2 mm from the bottom of the LED base.  
 Solder the leds to the wire. **WARNING** Do not over heat LED.  
 Cut off extra led lead and slide shrink tubing over bare wire.  
 Heat seal and repeat process until all wires are finished.  
 Solder pre made wire & Leds to board. Start with port 1.  
 Strip wire back and insert wires in port 1. Bend over wire to prevent  
 drop out when soldering. Flip board over and solder on back side.  
 Make sure to get the positive and negative in the proper port.  
 Please look at first page for example!

After soldering cut off excess wire from bottom of board.  
 Now install resistor in the next port, it's to the right of led port.  
 Slide through and bend over resistor leads. Flip board over and  
 solder. Cut off excess wire from resistor and check solder joints.  
 Make sure to keep solder on pad area only. Be aware of possible  
 bridging between led ports and resistors ports. Check welds carefully.  
 Repeat process until all boards have been pre built.

**NOTE:** Leave the 2 -12" **CROCK EYES** off the board, these will be  
 soldered at the end of the project just before you mount board.

Drill a small pilot hole in center of crock eye location.  
**NOTE:** Apply extreme caution when drill to avoid drill through!  
 Drill about a 1/32" depth at a time. Finished whole use 13/64 drill bit.  
 You may need to modify hole larger for perfect fit. Take your time!  
 Drill Pilot hole inside of wheel house at a slight angle until  
 you meet upper crock eye hole. Grind where need to fit leds.  
 Grid back areas indicated on photos. Test fit leds for perfect fit.  
 Use a small amount of hot glue to mount in place.

Drill out lower back area of the map table & deck. This will  
 provide a chase way for the wire transfer to top half of the model.  
 The wires should fit in place with interior walls loosely fit.  
 Drill out float tube and 2 deck light holes with a 9/64 drill bit.  
 The green deck lights can be mounted any where inside the  
 wheel house floor. Customer's discretion.



Mark out center of salon spot lights. Pre drill pilot hole with pin vice and small drill bit. The finish size of the small 3 Mil led spot light holes is 11/64. Test each light, they need to be close to flush with the lower section of the light housing.

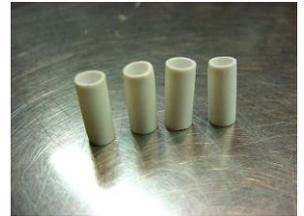
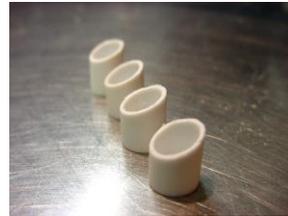
**Note:** Leds can not be higher than outer riveted area. If the leds are higher than the rivets the clear windows will not fit properly on iris. Mount left & right iris on lower half of hull.

Grind channels along lower iris area. This is the area for the wire. Pre cut plastic tubing for the upper light cans.

**Note** cut one end at an angle.

4- Small cans for the 3mil leds. 1/2" long.

Mount led cans on to iris body. Make sure to get them straight with pre drilled holes. Test fit led in holes. The 5mil can will require a little sanding to fit the led. Use small round file to open up the hole. Take upper half of hull and grind out area where cans will hit the upper half of the iris. This will take some time trim and fit.



Wire two 8" pieces of hook up wire on power jack. The center is + positive=white wire. The plug right next to it is the - negative =black wire. Slip on heat shrink tubing and solder. One power lead will go to the main circuit board.

Install power jack in lower hatch door. Make sure door will close.

Cut a flat square out of styrene and drill hole to mount switch on.

Mount switch on square washer and hot glue to lower half of hull.

You may also epoxy power jack in place.

Install prefabricated circuit boards. Now route

your wires on the lower bottom half of the hull. Use wire ties and

tie mount where needed. View last page for a detailed photo.

Mount salon lights first. Mount one at a time to insure proper

fit. Use a small amount of hot glue to mount led in place.

**NOTE:** Make sure led is in the exact placement. Hot glue sets very fast.

Mount wheel house leds next. This is a good time to solder the crock

eyes to board C. Leave the three interior light not mounted. Pick out

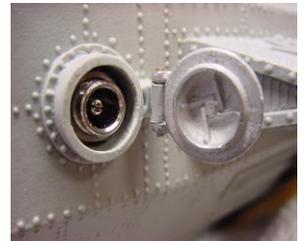
placement of salon interior lights toward end of project.

Plug in wall transformer and test lights. Check wire connections.

Make sure to run for a 20 minute cycle to test for any problems.

Trim any extra cable tie ends and close up model.

Sit back and enjoy you work, you deserve it!!!



If you having problems please call VOODOOFX.  
M-F 8:00am-5:00pm PST zone 650-568-3400

#### Danger & Hazard Warning

When sanding wear approved respirator protection.  
Avoid skin and eye contact.  
Work in area with adequate ventilation.  
Wear safety glasses at all times.  
Always adhere to all safety and product warning labels.  
Adult supervision recommended.

#### General Prep

- 1 - Sand down any high spots.
- 2 - Fill in any low spots.
- 3 - Sand entire surface for adhesion.
- 4 - Wash with mild dish soap & warm water.
- 5 - Rinse off entire surface with fresh water.
- 6 - Air dry or dry with clean cloth.
- 7 - Prime full surface with quality primer.
- 8 - Let primer dry 24-48 hours minimum.
- 9 - Paint to according colors and or preference.

#### Please Do Not Contact Distributor

If you having problems call VoodooFX.  
Phone 650-568-3400 M/F 8-5 pm P.S.T  
Email [fxshop@yahoo.com](mailto:fxshop@yahoo.com)

VoodooFX is not responsible for improper installation.  
There are no refunds on electrical parts or components.

All sales are final. Batteries not included.

**WARNING:** To guard against injury, basic safety precautions should be observed, including the following:

1. Read and follow ALL safety warnings, instructions and notices.
2. Do not use equipment for other than its intended purpose.
3. Do not alter design or construction.
4. **DANGER:** To prevent the risk of severe or fatal electrical shock. Always disconnect power before performing any maintenance.
5. Do not operate if power cord or plug is damaged.
6. Electrical power supplied MUST match power requirements listed.
7. **CAUTION:** Do not operate without proper electrical ground.

#### GENERAL LED HANDLING PRECAUTIONS:

**CAUTION:** The LED can cause permanent damage to eyes at close range.  
You should never look directly at the light source of the LED.

**CAUTION:** LEDs are static sensitive devices. Wear grounding wrist strap.  
When attaching leads, the leads should be at a point at least 3mm from  
The base of the LEDs. Avoid damage to LEDs by not soldering more than  
3 seconds with a 700\* iron. Do not use LEDs without a current limit resistor.  
The forward voltage rating is typical and can vary from part to part. LEDs  
may work fine connected to a battery of proper voltage, other LEDs will be  
over driven and destroyed! Always use a resistor in line with LEDs.

**CAUTION:** This kit contains small parts which may be hazardous to  
make any

representations regarding the use, validity, accuracy, or reliability of, or the results of the use of, or otherwise respecting, the materials

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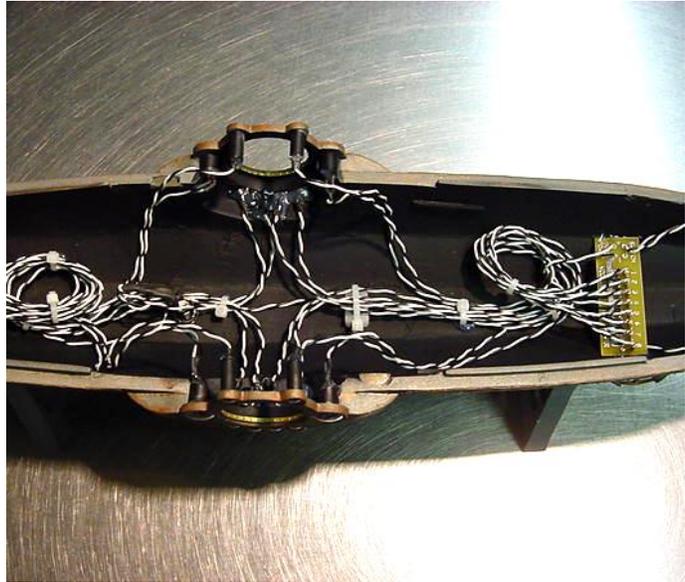
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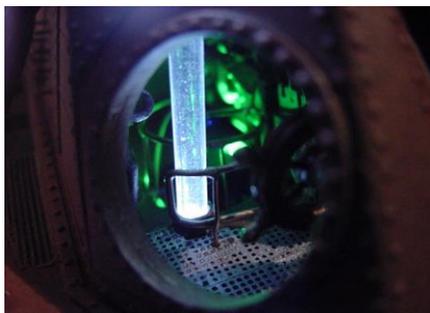
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#### Finished Lower Hull Wiring



**(Not Recommend For Underwater Use)**



# VooDoo Language

Draft 1.3, January 2 2014

By Dave August ACME Software

For Randy Neubert VooDoo FX

## VooDoo Language Overview

At its simplest VooDoo Language is a list of COMMANDS to specify Brightness and Time duration.

VooDoo Language also contains many COMMANDS to control the playing of audio files and synchronizing actions.

VooDoo Language is stored in a standard ASCII text file with an extension of .VFX and is saved on an SD card to be used with a VooDoo Child controller. This file may have any name you wish, but there should only be one .VFX file on the SD card.

VooDoo Language Files have sections for each Output it can control, and each of these sections contains a list of VooDoo Language Commands.

Each Output can be configured to drive either a PWM Brightness for an LED or Model Servo Motor.

## VooDoo Language Sections

A Section is specified by the Number of the output it controls and the Type of output timing, surrounded by [].

The Number is from 1 to the number of Outputs supported by the product and is followed by either LED, VU or SERVO to configure its timing.

Here are a couple of examples:

[1LED] ;this output is driving an LED for programmed brightness

[8VU] ;this output is driving an LED from the Audio file (explained later)

[9SERVO] ;this output is driving a Model Servo

# VooDoo Language Command Lists

The Section specification is followed by a list of VooDoo Commands each on its own line. The first word on the line is the command and is followed by some qualifiers. Commands and qualifiers are separated by commas or other special characters. When the VooDoo Language system reaches the end of a list it automatically goes back to the top of the Section and starts over again in an infinite loop. You may also include notes to yourself in the file , any characters following a semicolon are ignored till the end of the line

The simplest and most used command is BRIGHTNESS. The qualifiers for the BRIGHTNESS command are how bright in Percent and how long to stay this bright. The accuracy of brightness is 1% and time is 0.01 (1/100) of a second. Because the BRIGHTNESS command is used so often you can omit it and just list the qualifiers. For a simple example, assume you want an LED to blink 1 second ON and 2 seconds OFF.

```
[1LED]      ;we are going to use output 1 driving an LED
100% 1      ;100% brightness for 1 second
0% 2        ;0 % brightness for 2 seconds
            ;system automatically loops back to [1LED] and repeat this forever
```

Servo Motors use the same BRIGHTNESS command to control their position. 0% = Full left, 50% = Middle, 100% = Full Right. For a Simple Example, assume we want a Servo to go from full left to the middle, to full right, back to the middle and then back to full left, stopping at each position for 3 seconds.

```
[9SERVO]    ;we are using output 9
0% 2        ;full left, stay there 2 seconds
50% 2       ;middle, stay 2 seconds
100% 2      ;right, stay 2 seconds
50% 2       ;back to the middle, stay 2 seconds
            ;system automatically loops back to [9SERVO] and repeat this forever
```

You may also specify a random amount of brightness and time. This is explained in more detail in the following list of all the VooDoo Language Commands.

VooDoo language also supports playing audio files, and can play 2 files at the same time. It uses 2 different commands one called PLAY and the called EFFECT. Each command takes the name of the file to play. There is also a special section type that will vary the brightness of its output like a "VU Meter". Only the audio being played with the PLAY command will blink this LED.

This is a simple example showing how to play an audio file and have the output vary in brightness based on the audio.

```
[8VU]      ;we are using output 8 as a "VU Meter"
PLAY Alarm  ;play the file "alarm.wav" from the SD card
            ;automatically loop back and play forever
```

# VooDoo Language Commands

## BRIGHTNESS -----

This command specifies a brightness in Percent and a Time duration to stay that bright.  
The brightness may be specified as a range of 2 values separated by a dash.  
The time may be specified as a range of 2 values separated by a dash.  
Because the brightness command is used so much it may be omitted.

Examples:

```
100% 2 ;100% brightness for 2 seconds
50-60% 0.10 ;between 50 and 60 % for 1/10 of a second
0% 20-30 ;0% between 20 to 30 seconds
80-100% 0.01-1 ;between 80 to 100% brightness for between 1 /100 and a full second
```

## FADE -----

This command fades from the current brightness to the brightness value specified taking the amount of time specified to do the fade.  
The brightness may only be specified as a single value  
The time may be specified as a range of 2 values separated by a dash.

Examples:

```
; Sample Engine Pulse 2.5 second fade from 100-80
FADE 100% 2.5 ;fade up to 100, 2.5 seconds
FADE 80% 2.5 ;fade down to 80 , 2.5 seconds
```

## PLAY-----

This command plays a wave file. Once the audio file starts playing, the next command in the file will be executed. SO in this way you can play a sound and synchronize an LED to it. If you DO NOT want the next command to be executed you should use the WAIT command as shown later.

The PLAY command may have up to 4 file names and will randomly choose which one to play

Examples:

```
PLAY Alarm ;plays the "alarm.wav" file from the SD card.
WAIT Play ;waits for the PLAY sound to finish , before executing the next command
```

PLAY Bing, Boing, Bong, Crash ;randomly choose which of the 4 sounds to play.

It should be noted that the format of the .WAV files must be PCM and all the audio files for both PLAY and EFFECT should be of the same rate but may be both stereo and mono.

## EFFECT-----

This command also plays a wave file, and is used to play a second audio file at the same time as the PLAY command is play an audio file. Once the audio file starts playing, the next command in the file will be executed. So in this way you can play a sound and synchronize an LED to it. If you DO NOT want the next command to be executed you should use the WAIT command as shown later.

Example:

EFFECT Thunder ;plays the "Thunder.wav" file from the SD card.

WAIT Effect ;waits for the EFFECT sound to finish , before executing the next command

## WAIT-----

This command waits for something. The second argument is what to wait for and may be either PLAY or EFFECT.

Examples:

WAIT PLAY ;waits for the PLAY file to finish

WAIT EFFECT ;waits for the EFFECT file to finish

## GOTO -----

Goes back to an arbitrary place in a list instead of the beginning.

Example:

;this example will stay black for the first 10 seconds after power up

; and then blink on an off at a 1 second rate for ever

[1LED] ;using output 1

0% 10 ;stay black for 10 seconds

:loop ;is a "label" for where to loop back to and MUST start with a ":" (colon)

100% 1 ;full bright for 1 second

0% 1 ;black for 1 second

GOTO :loop ;goes back to 100% bright, not to the beginning where it would wait 10 seconds

## (REMOTE CONTROL)

### Features & Function

RCA503BR Series

VooDoo Child Remote Control Operation: The VooDoo Child uses the Akai 1675 Television IR Protocol. Any Infra Red Universal Remote may be use. Follow your manufactures instruction to setup the remote control for a television code. These units have been pre coded too 1675, if the code is lost open up back panel & install 2-AAA batteries. HOLD DOWN **SEARCH CODE** button until indicator light comes on, release the code search key and select the device you want "TV ONLY" the indicator light will blink and then remain solid on, inter the four digit code 1675 on the numbered key pad, light should go off when finished. Aim RCU at the devise and press ON/OFF, the devise should shut off. If not working repeat process.

The **POWER** button will stop and restart operation. Advanced note: When it restarts it reloads the last selected script.

Volume Up/Down change the volume, there is no mute.

The **PLAY** and **PAUSE** buttons pause and continue the script. These buttons do the same thing, meaning pressing either play or pause will stop a running script, or continue a paused script. All LEDS will be left at their current brightness. Advanced note: If a sound file was playing it will skip to the next sound when play is pressed. This may cause a time shift between lights and sound.

The **STOP** button stops a script from playing. All LEDS are turned off.

**PLAY** will restart the script from the beginning. Advanced note: The script is not reloaded, just restarted from the beginning. When a script is playing **FWD** will skip to the next Main sound. When a script is playing **REW** will skip to the next Effect sound. Advanced note: this may cause a time shift between lights and sound.

Pressing the **SOURCE** button followed by a number button 1-9 will select that script and start it playing.

Advanced note: This script is now "selected" and will also be played when the **POWER** button is pressed. There is a "safety timeout" of several seconds set when you press the **SOURCE** button and when you press the Number button. All button presses will be ignored until this time out expires. This means that you may not switch scripts in rapid succession.

Manual control of the LEDS may be controlled by pressing just a number button and then using the Channel Up/Down to control brightness. It is suggested that the script be **PAUSED** or **STOPPED** before doing this since the script takes priority over the manual control. Advanced note: Any LED not controlled by a script can be manually controlled while that script is running.

The RCU has to be sending "TV" codes. If press either the "SAT+CAB+DTC" or the "DVD+VCR" buttons the RCU essentially stops working. If not responding press the "TV Selection Button" followed buy-pressing button1.

