There is no Business Like No Business

By Rafael Lozano-Hemmer

CONTENTS

General important information
This short section must be read for proper operation

Detailed technical information
A technical reference for preservation, maintenance and troubleshooting

General important information

There is no Business Like No Business (2009)
By Rafael Lozano-Hemmer

Technique
Neon, metal, arduino, ipod, transformers, custom-electronics

Dimensions
61 x 61 x 11 cm

Electrical details
The piece needs 300W peak consumption. <u>Check the electronics/ label in the back</u> to know if this piece is meant to run on your local voltage. Use a step-up converter or step-down converter to run this piece in regions with opposite voltage.

Edition
Edition of 6 + 1 AP

Description
A blinking neon sign, designed during the recession as a cruel beacon of optimism. The blinking speed is directly proportional to the trading volume of any commodity index chosen by the collector or curator, say NASDAQ or Apple or FTSE100. In a slow day, or when the market is closed, the lines of illuminated text will only switch every 8 seconds, while on the busiest trading day they may blink every 2 seconds. The net effect of the piece is that at a glance of the neon sign one can get a "feel" for how many transactions were done that day.

Operation

1. Take the piece out of the crate and follow the assembly steps in appendix 1.

2. Connect the piece to electrical power via an extension cable. Cardinal Directions comes with a standard computer power cable (NEMA 5–15 to IEC 320-C14). You will need to use an adapter to connect this plug to a non-American extension cable.

You can ONLY connect the piece to 100-120V 60Hz (American) or use with a step-down converter in regions that have 210-240V 50Hz (European). Unless we specifically manufactured a copy that can natively run on 210-240V without a converter.

3. To turn the piece ON, plug the above mentioned power plug in to the wall outlet. The iPod will turn on and the app will start automatically.

4. Connect the iPod to the wireless internet and select a stock in our custom app. This only needs to be done once in every new location.

5. To turn the piece OFF, unplug the power plug from the wall.

Internet Connection

Tab the settings button, navigate to the network settings and select your home wireless network.

Cleaning and Maintenance

If needed dust of the Neon sign very carefully.
For the metal base use a damp cloth with normal soapy water or spray on cleaners to clean the metal.

Placement Instructions

Make sure the metal frame is level and hung at 1.8 meter from the bottom of the frame to the floor.
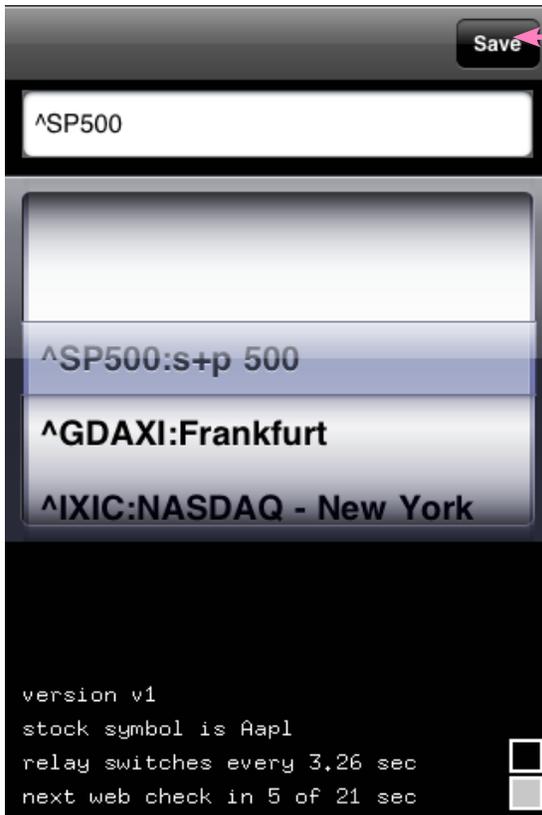
Note

Do not update the iPod's operating system. This could cause the piece to stop functioning.

The iPod is set to go to sleep if the software is not running to preserve the battery's charge.

The iPod needs to be connected to the internet of a wireless network.

Selecting and adding a Stock

^SP500

^SP500:s+p 500

^GDAXI:Frankfurt

^IXIC:NASDAQ - New York

```
version v1
stock symbol is Aapl
relay switches every 3.26 sec
next web check in 5 of 21 sec
```

To select a new stock scroll through the default list. Tap the "Save" button at the top right when you found a stock you would like to use.

The line "stock symbol is" will display your select stock.

The line "relay switches every" will display the switching timing, which directly relates to the current volatility of the selected stock.

The line "next web check in" will display the seconds until the stock performance will be check again.

The two small squares at the bottom right are a representation of the actual blinking of the neon sign.

Bac

^BVSP:Sao Paolo

^MERV:Buenos Aires

Appl:Appl

Aapl:Aapl

Q W E R T Y U I O P
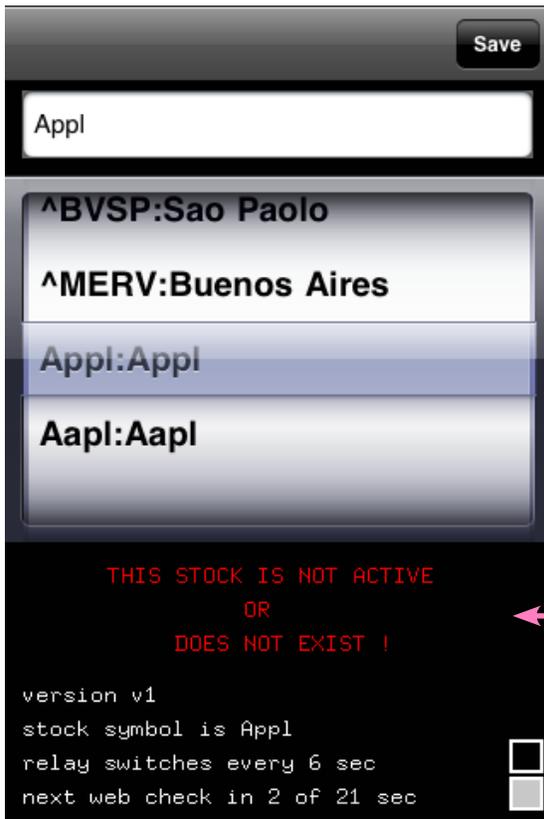A S D F G H J K L
Z X C V B N M
.?123 space Done

It is possible to enter a stock symbol that is not yet listed.

Tab the text field and a keyboard will be displayed.

Enter the stock symbol for the stock you are interested in. This website will help you find stock symbol: http://finance.yahoo.com/

After entering the new stock symbol tab the "Save" button at the top right.

The new symbol is now active and permanently added to the list.

If you enter a stock symbol that does not exist or refers to a stock that is not active or that can't be found by our system a message in red will be displayed:

"This stock is not active or does not exists".

Detailed technical information

Components of the piece

Metal Frame

The frame is made of stainless steel, 61cm x 61cm

Neon

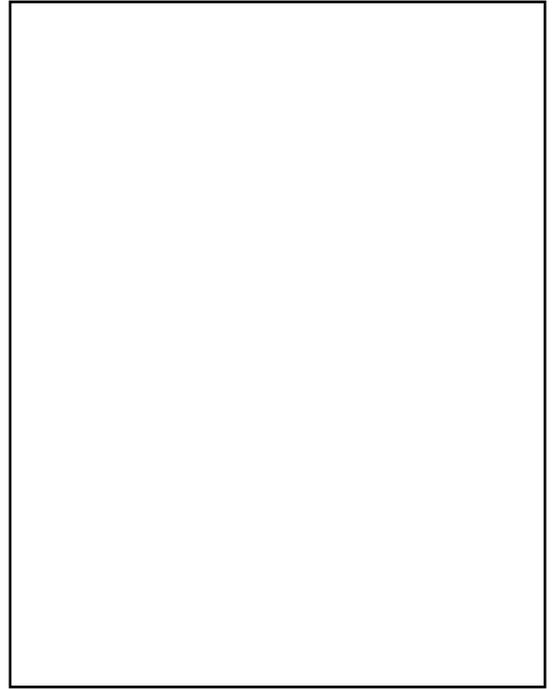The piece uses custom crafted neon tubes with a diameter of ca. 8 mm

iPod touch

The piece uses a jail broken, 2nd generation, 8.0 GB iPod touch, running the 4.2.1 firmware. The iPod communicates with the internet, outputs a audio signal to a micro controller which then turns one of two relays on/off.

Custom-made Electronics

An Arduino Nano micro-controller with an Atmel ATmega328 chip is running custom firmware. A spectrum shield with a MSGEQ7 seven band graphic equalizer is used to analyze the incoming audio from the arduino.

Troubleshooting

Appendix I

Assembly Instructions
Image #1 and #2
show the metal box with the small and large holes, with the correct orientation
(top, bottom, left, right) of the metal box.

The larger holes are for the glass neon pieces and the smaller holes are for sup-
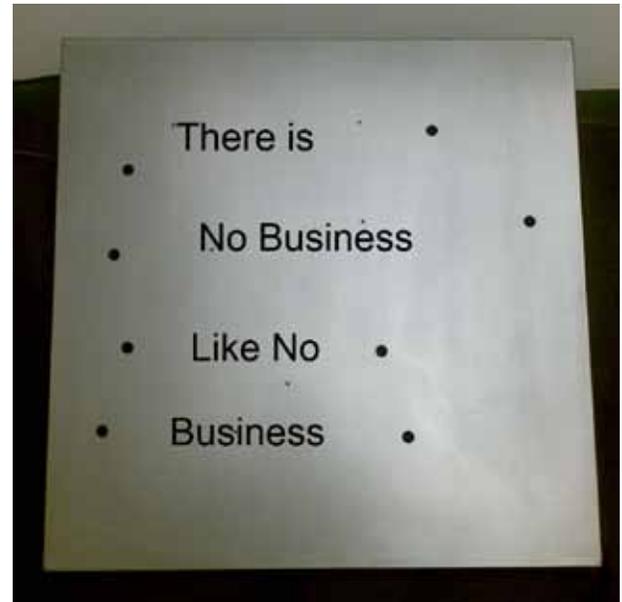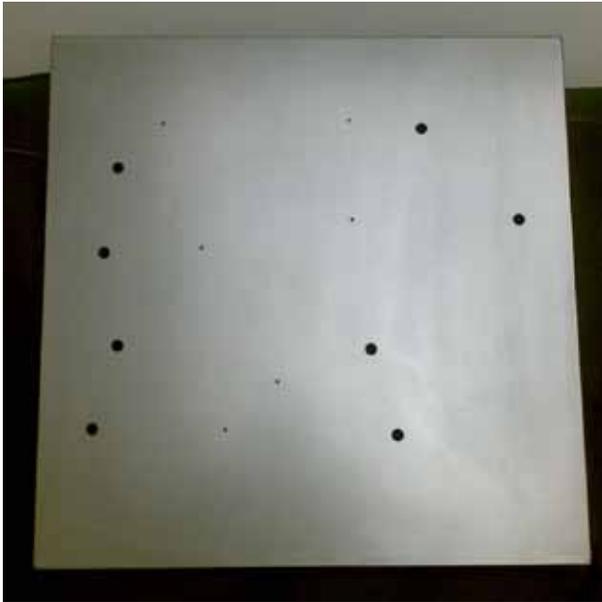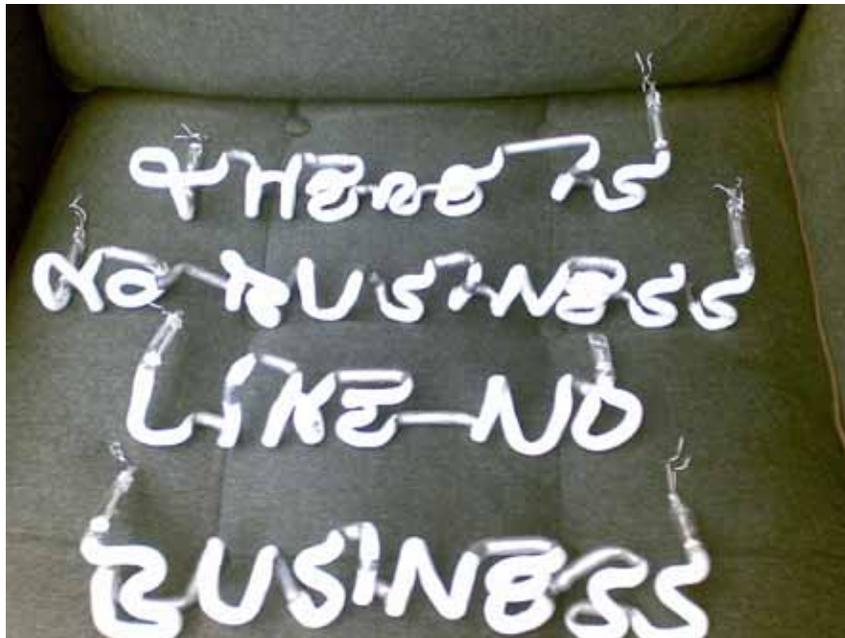port wires which hold the glass pieces close to the metal box.

Image #4 shows the 4 glass neon pieces.
Each piece starts and ends with metal wires that stick out of the glass.
These glass ends and wires have to be carefully inserted in to the larger holes of
the metal box.

Once all the neon glass pieces have been placed inside the larger holes, the support wires should be attached through the small holes.

Using a piece of thin wire, feed one end through a small hole, wrap it once around the glass piece and feed again through the same hole. On the back of the metal box make a knot big enough to prevent the wire from sliding out of the hole.
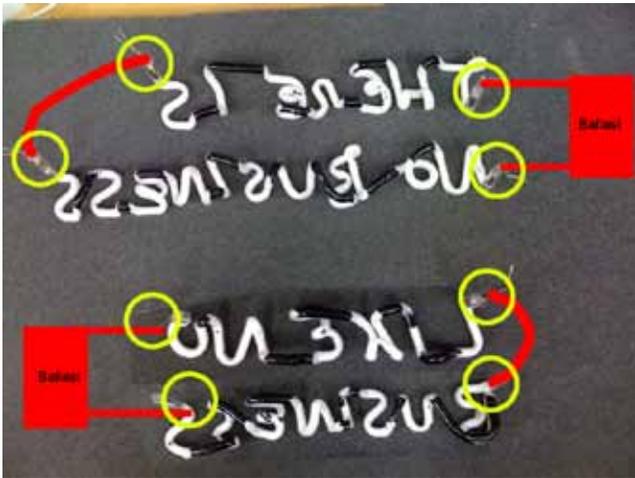
Do this for all the small holes.

Image#5
Next, look at the back of the metal box. There should be 8 glass pieces with wire sticking out of them. These are marked with circles.
Attach one of these wire from piece "There is" to one of wire of piece "No Business". Connect the wires by carefully twisting them together.

Do the same with "Like No" and "Business".

The two remaining ends for the top two words need to be connected to one ballast and the other two words to the second ballast. Again, connect the wires by twisting them.

Finally, plug the Flasher into a power extension cable and the piece should start working.

If this is not the case, pulling the small ball chains on each ballast to turn the ballast ON and OFF.

Bill of Materials

4 x custom neon tubes

custom stainless steel frame + mount

iPod touch, Apple, 2nd Gen, 8GB memory, firmware 4.2.1

custom PCB

arduino nano

sparkfun spectrum shield

2 x Crydom Solid State Relays CX240D5R

Innergie mMINI Dual USB Power Adapter (ADP-15AB AA)

3 x nema 5-15 AC power outlet q227-ND

black plastic for PCB CU-388 Utilibox (Style G)
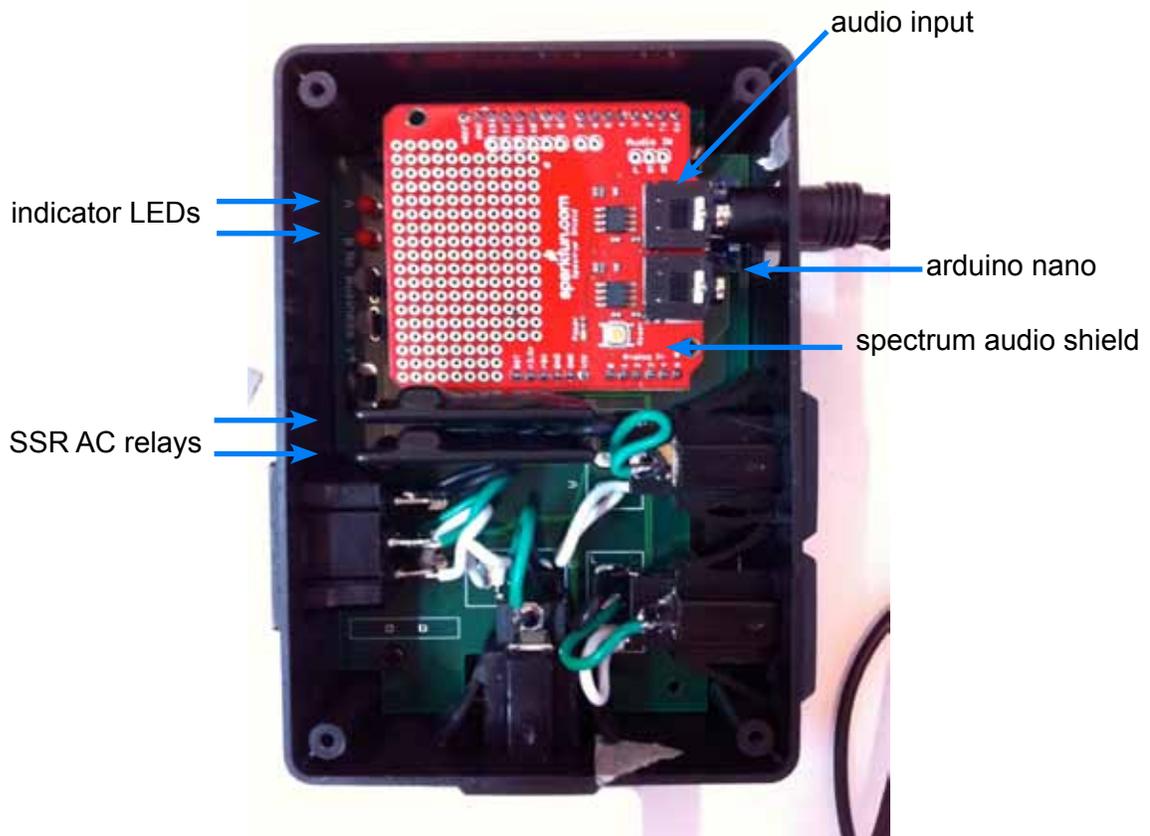
AC power inlet IEC 320-C14

ipod usb power supply cable

3.5 mm to 3.5 mm stereo audio cable

usb mini to usb A cable to power arduino nano

2 x neon power supplies, allanson pow-r-pax SS1235ICH, 120V, 2.5A 50/60Hz HPF SEC 12k VRMS 35 ma

Wiring

USB mini + audio jack

power for neon A

power for neon B

iPod audio output

AC power inlet

iPod charger cable

dual USB power supply

audio input

indicator LEDs

arduino nano

spectrum audio shield

SSR AC relays

Appendix 2

How to update iPod touch software via Cydia

This iPod touch is "jail broken". This allows us to add features that Apple has not yet officially endorsed. To update the noBusiness software you need to download a new version from Cydia.
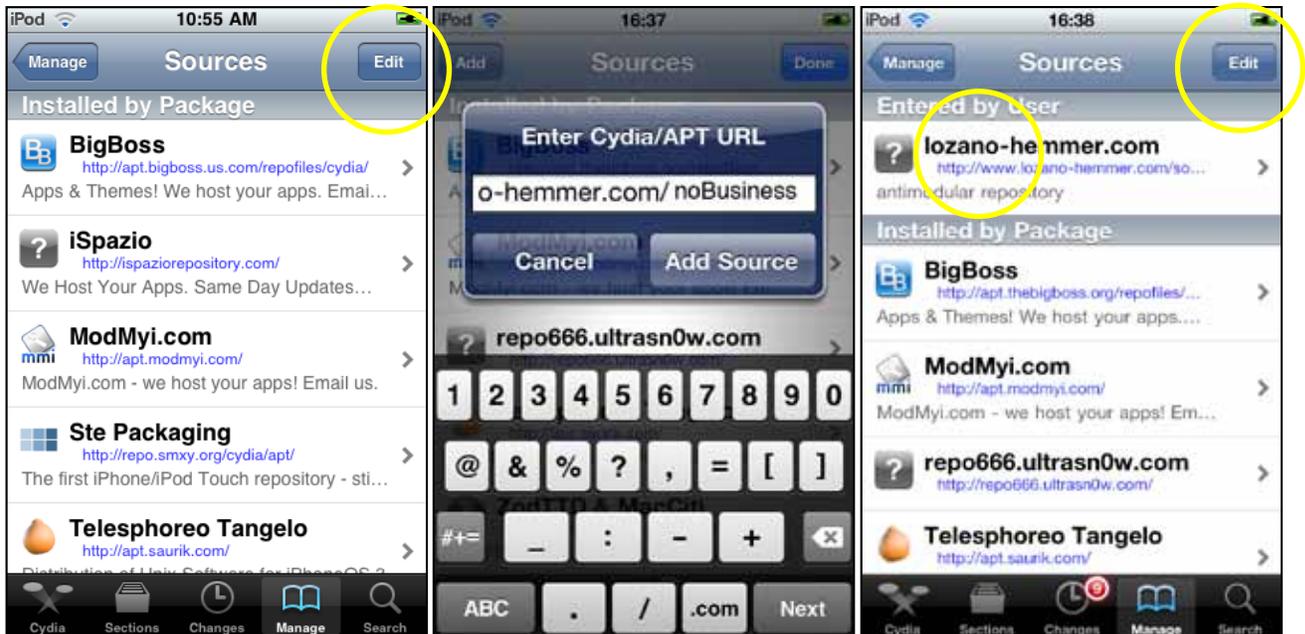
Cydia is much like the official App Store.

– Check your version number, then exit the noBusiness software by pressing the Home button (the physical button on the bottom of the iPod). You will see the home screen with the noBusiness icon in the Dock.

– Tap the Cydia icon. It will take a while to load. Tap cancel if it wants to update things. Tap the Manage icon at the bottom of the screen. Tap the big Source button in the middle of the screen.

– Tap the Edit button at the top right of the screen.
– Tap the Add button at the top left of the screen.
– A pop up window will ask you to enter the following URL:
http://www.lozano-hemmer.com/software/noBusiness??? (the ??? stand for version #)
– Tap the "Add Source" button.
– Tap the "Done" button at the top right of the screen.
– Tap the "lozano-hemmer.com" row in the section "Entered by User"

– Tap the "noBusiness" row.
– Compare your current version number with the one displayed in this screen. (ignore the number after the minus sign 2.0.0 - 1). Tap the install button if the two version number are different.
– Tap the confirm button. The screen will switch to a black screen with white writing.

– While on the black screen you might be prompted with a couple of error message. Tap Okay. It might take a while before the pop up message disappears.
– Once it is done press the Home button to get back to the home screen.
– Tap the noBusiness icon in the Dock. Check the version number that is now displayed in the cardinal software.
– done

Appendix 3

Installations shots