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Animated 'Haunted' Ouija Board

by **askjacob** on November 4, 2007

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Intro: Animated 'Haunted' Ouija Board

This animated "haunted" Ouija board was made as a Halloween prop. This was made with mainly junk materials from my garage, but if you have none of the parts you should be able to source them reasonably cheaply enough. You need handy-man skills, some electronic know-how, and be able to program a microcontroller or pic (or know someone who can do it for you!)

Update Alert

The board can now say messages sent to it via a serial device - step 12 covers the changes I made!

This is part build-log, part how to. I hope I give you enough info to inspire you to make something similar.

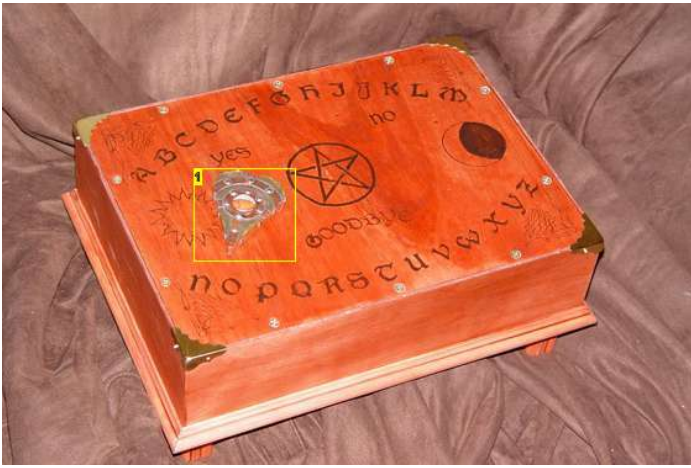Here is a video of the completed board with the lid off:

And here is a video of the completed box I had ready for Halloween 2007:

New Video

This new clip shows the serial communications link working:

Image Notes
1. Here is the planchette that moves about on it's own (or so it seems...)

Step 1: Stuff you will need

A Stepper motor, with gear box, pulleys and toothed belt - I had a set stripped from a dead cheap scanner. You could modify this project to use a braided steel wire or even string instead of the belt, it shouldn't be too hard.

Some wood to suit your design. I messed up when I built mine, and used some poorly finished pine and my not so great woodworking lead to nasty corner joints, which left me needing to veneer the wood with a thin plywood... so keep this in mind, and perhaps use some nice ply to start with, and skip needing to do the annoying veneer finish. Alternatively, you could use the oldest and most worn timber, for that 'ye olde' antique look. Heck, be creative and make it your project!

Something to drive the stepper motor (I'll provide a sample circuit and the microcontroller code) but if you already have something else, or know what you are doing, then knock yourself out, you'll figure it out from the steps I have outlined....

A microswitch for the home position sensor (I got mine out of an old printer)

A power supply (12v 400ma plugpack or 12v worth of batteries if you want it cordless)

Some hookup wire

5 minute epoxy

Items I used but you can substitute with something similar: piano wire, brass tubing, a strong magnet from a broken HDD, brass shim, copper shim, brass split pins, brass box corners, rubber o-rings, scrap aluminium angle stock, screws, small piece of self adhesive felt, hotglue.

Basic tools: Pliers, cutters, soldering iron
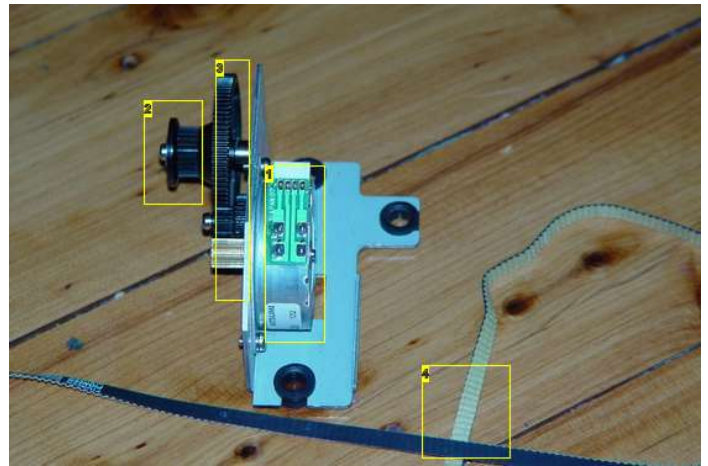
Image Notes
1. stepper motor
2. toothed belt pulley
3. gear assembly
4. toothed belt

Step 2: Building the box

You need to build a basic box to contain the mechanics of this project. I originally made mine to be about the size of a sheet of A4 paper, as I was going to print out the Ouija top and glue it on. That also worked with fitting in my proposed mechanical setup size wise. I made the box deeper than needed for the mechanics as I wanted it to seem like a piece of furniture rather than a 'board'. The box has plenty of empty space - room for other features you may want to add, like batteries, a sound chip, or a 'knocker' device (something I started to do but didn't get to finish in time for this year)...

Remember, as I said before, make this step count so you don't have to do what I did and veneer it to hide the dodgy sides...
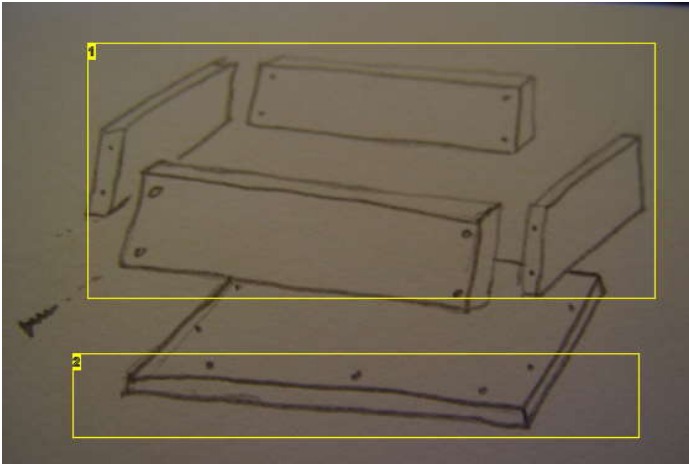
Image Notes
1. Pine sides, mine were 80*20 mm
2. 6mm ply base

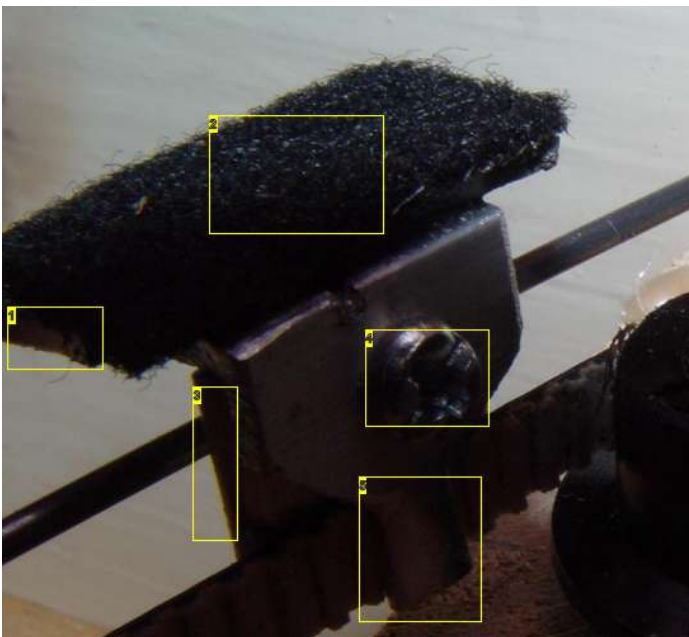## Step 3: Build the magnet bracket

Next I built the magnet bracket that attaches to the toothed belt. This was so I could then work out what height the stepper motor and pulleys needs to be mounted in the box. I cut two small pieces of aluminium angle. One of the pieces was been shaped to allow it to securely clamp the belt, yet still smoothly pass over a pulley. The other was cut into a small square.

I then drilled through them both, and used a small bolt and nut to clamp them to the belt.

Next I epoxied a chunk of strong (neodymium?) magnet broken from a larger flat magnet pulled out of an old hard drive.
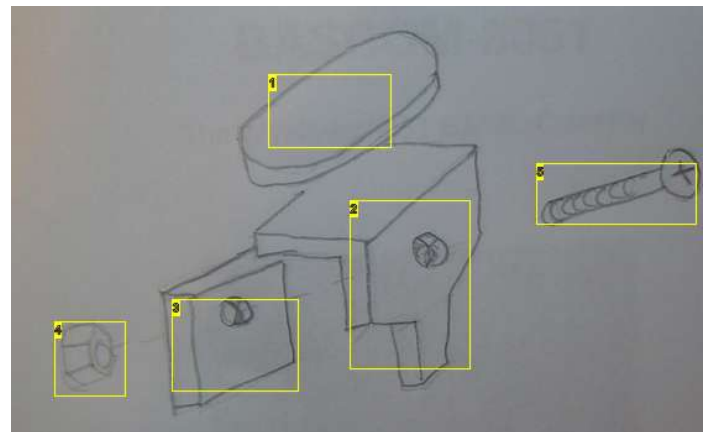
I stuck some felt on top of the magnet as a low friction surface.

A note here: you need to use a non-ferrous metal for the bracket otherwise it will cause problems with the magnets - e.g. it will get stuck somewhere, or worse will affect the magnetic field and make the magnet seem weaker.

Image Notes
1. magnet
2. bracket cut from a piece of aluminium angle
3. clamp also cut from same aluminium angle
4. nut
5. bolt

Image Notes
1. Magnet glued to aluminium bracket
2. self adhesive felt
3. Square price of aluminium to clamp to belt
4. nut and bolt
5. I filed this down, and put a bit of a curve on it so it will go more smoothly over the pulley
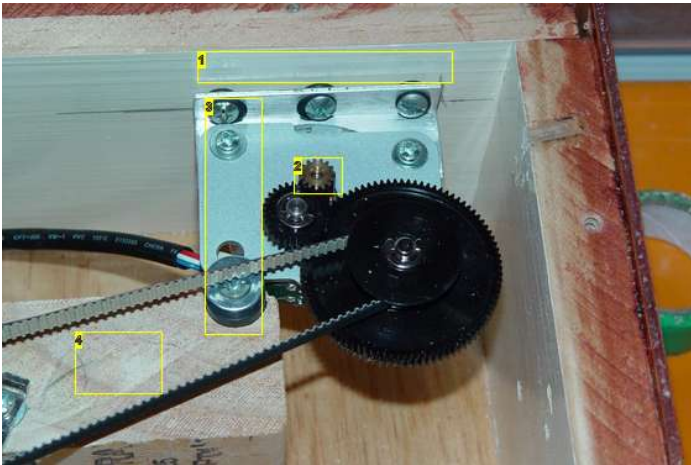
Step 4: Mount the motor

Now I had the bracket, I measured what height I had to install the motor and pulleys so that the magnet would be level with the top of the box. I then mounted the motor, and cut the pulley mounting blocks from scrap wood, and screwed them to the bottom of the case.
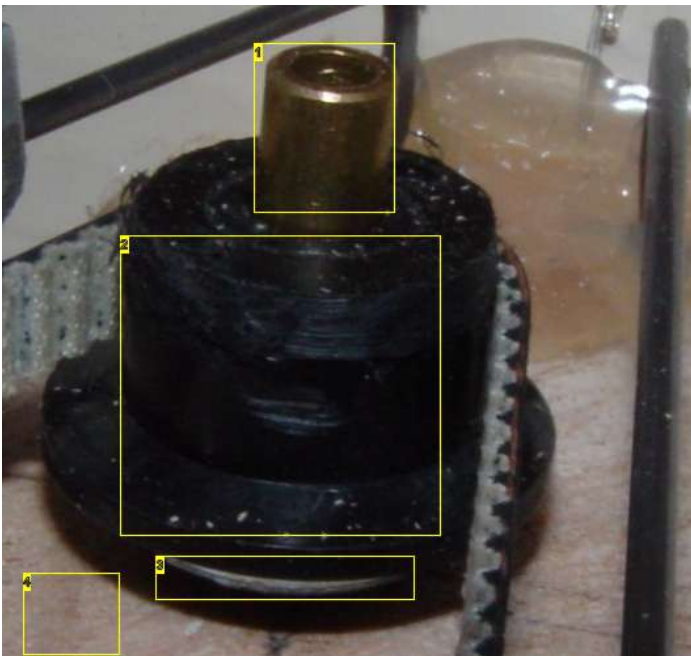

Image Notes
1. This is the height that worked out right for my bracket/magnet combo
2. Stepper motor drives this gear
3. I used rubber o-rings on the screws to minimise noise from the stepper motor being transmitted to the cabinet
4. scrap wood pulley mount block

Step 5: Pulley shafts

With the pulley blocks and layout ready, we need to install some shafts for the pulleys to run in. I had some brass stock that was the right size, so it was simply a matter of cutting off 3 lengths (you will need the third in the next step), drilling the holes in the pulley mounting blocks and expoxying them in.

I then waited for the epoxy to set, then slipped two washers over the shaft to get the pulley to the right height - to make sure the bracket runs flush with the 'lid' of the box

Image Notes
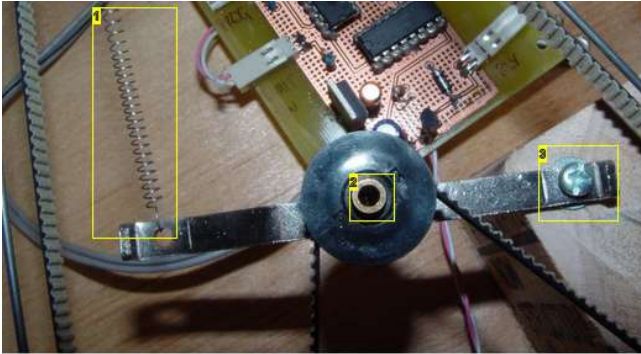1. brass shaft
2. pulley
3. washers
4. mounting block

Step 6: Set up a tension pulley

Now we need to setup the tensioning pulley - this is to keep the belt tight enough to engage the stepper motor, regardless of any slop and inaccuracies in the build, but also shlould allow the belt to slip if something goes wrong, without breaking anything.

I soldered the third shaft (from previous step) onto some scrap metal (from an old heatsink) with a hole for a pivot at one end, and a hole for a spring at the other. I then used a screw to loosely mount one end, and the other it pulled by some springs (pulled from old pens) to keep the belt tight.

The tension is not very critical at all - you just need enough to make sure it doesn't slip.

Image Notes
1. Spring to tension the belt
2. brass shaft
3. pivot point

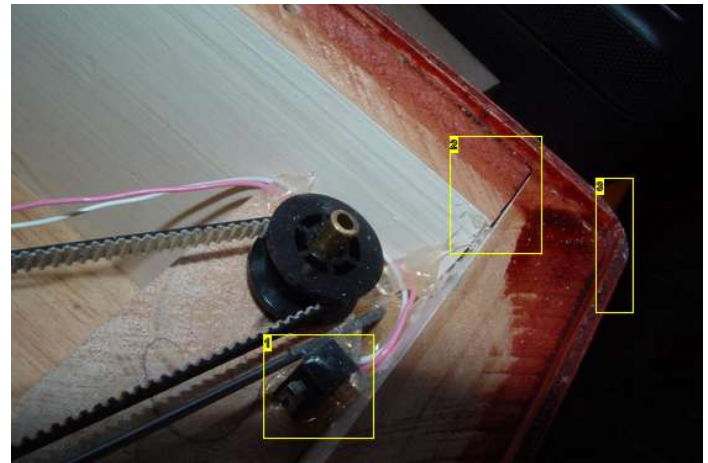## Step 7: Guide rails and home switch

I found that the weight of the bracket and magnet made the belt twist, if it is running without the planchette. The magnet in the planchette pulls the bracket up straight in norrmal use, but I wanted it to be able to cope with people picking up the planchette without it breaking or getting stuck. I used some piano wire to make some guide rails. The guide rails stop the bracket drooping so it won't be getting caught on anything.

I also glued in the microswitch at the home position of the belt, so the controller knows when the bracket its 'home' position

Image Notes
1. guide rail
2. guide rail

Image Notes
1. microswitch
2. These joints are why I veneered the box
3. the veneer

Step 8: The Electronics

OK so we now have the mechanism basically complete... now we need it to move!

Attached is the schematic and PCB done in eagle cad. I also included the PCB images as a bitmap file - make sure you print them at 300dpi if you don't want to use eaglecad to print the pcb.

This is a handy board for driving any bipolar stepper motor - also known as 4 wire steppers. They are a bit more complex to drive than 6 wire ones, but come with the bonus of higher torque. Most circuits out there I could find were for 6 wire motors - one of the other reasons I wanted to 'roll my own'.

Also attached is the bascom source file, and a compiled hex file for the atmega8.

I know that the Atmega8 is pretty overpowered for this simple job, but I had some around and had been doing other work with them recently. The code uses only 14% of the flash on this controller, so there is room aplenty for more customising!

The circuit has my own ISP header - easy to figure out the pinouts for another programmer if you need to. I also added some ballast resistors suitable for my motor to run from 12v (18 Ohm 5 watt) instead of 5 volts so it had better torque and top speed.

I had no idea which direction the motor would go, nor how many steps were needed to go from one end of travel to the other, so this is what I did: I moved the bracket to the middle of the travel (so it won't jam somewhere if it goes too far), set the program to step in one direction only for 500 steps, and saw which way it went. Easy huh?

Next, I sent it 'home' - it goes back to the home microswitch and sent it forward in ever increasing number of steps until I was happy that was as far as I wanted it to go. Then I had all the data I needed, to write the final program code. Most likely you will need to change these numbers to suit your layout, size and stepper/gear combo.

The final code has some failsafe work - if it hits the home switch unexpectedly it will recalibrate itself, and after 1000 moves it also recalibrates - just in case the stepper motor mis-steps - small errors in stepping cumulatively will add up over time, and we don't want this thing jamming up by moving too far...
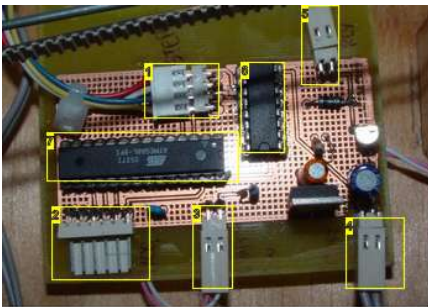
Image Notes
1. Stepper motor connector
2. programmer connector
3. home switch connector
4. power in connector
5. aux relay connector - I didn't end up using it but it was going to drive a solenoid to knock on the box
6. L293D H bridge motor driver
7. Atmega8P microcontroller
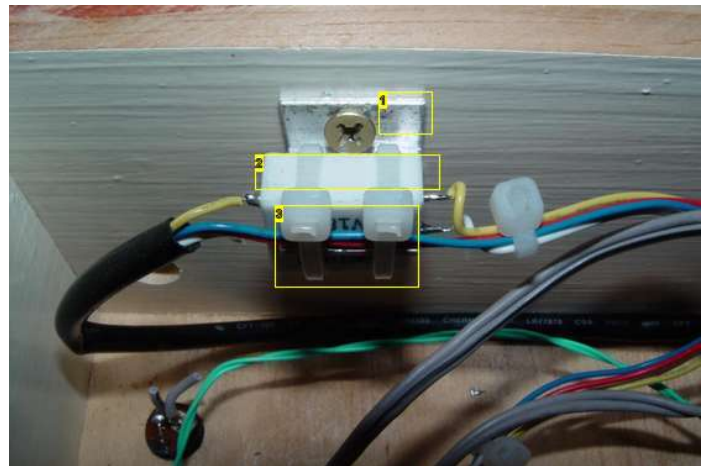
Image Notes
1. more of that famous aluminium angle bracket
2. ceramic power resisitors
3. cable ties - the resistors barely get warm, so these are fine to hold it together

File Downloads

OUIJA1.0.HEX (3 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'OUIJA1.0.HEX']

ouija1.0.bas (3 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'ouija1.0.bas']

eagle-ouija.zip (58 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'eagle-ouija.zip']

Step 9: Making the board

Ok, so now the magnet assembly is moving how you want, you now need to make the 'lid' with the Ouija symbols on it. This usually is the alphabet, 0-9, yes, no and goodbye. There are no hard and fast rules on how they should look or where they need to go (I have seen literally hundreds of different designs), so do it how you want!

My original plan was to use a sheet of plexiglass or Perspex for the lid, and print out my Ouija design on some parchment looking paper and varnish/glue it on top - so there is an idea for you. I did however think that would not have looked very handcrafted at all, so I ended up doing something else...

I fired up my old soldering iron for some wood burning action. You don't want to use your good iron here as it is pretty tough on the tip. If you have a woodburner tool (which is kinda like a soldering iron) then you have better tools than me, and you'll have more fun than I did.

I still printed out my design on paper, but then transferred the design onto my plywood top with a pencil - the old scribble on back of paper with soft pencil, flip over then trace over the design I-don't-have-any-carbon-paper-trick.

I then proceeded to spend an inordinate amount of time burning the design into the timber. I also got to discover that harder grain takes ages to burn into, and that my extremely el-cheapo plywood had filler in some areas - filler does not burn well!!

I then gave the lid 3 coats of stain/varnish with a light sanding between. I used a satin finish for two reasons... firstly because I wanted it to look old, and secondly I wanted the plachette to move in a slightly jerky movement (like a disembodied hand moving it) rather than just slip and slide around. The satin finish gives a bit more friction. I think matte would be too much, and would end up shiny from the sliding over time anyway. Gloss should be ok too, but the planchette movement would be much smoother.

On the bottom side of the board, I wanted to make sure the magnet bracket could slide along easily - so I used some spray glue to attach a sheet of OHP transparency film on the wood.

Image Notes
1. burnt in characters
2. I added some designs for decoration
3. countersunk screw holes
4. yes, I forgot to put numbers on the board
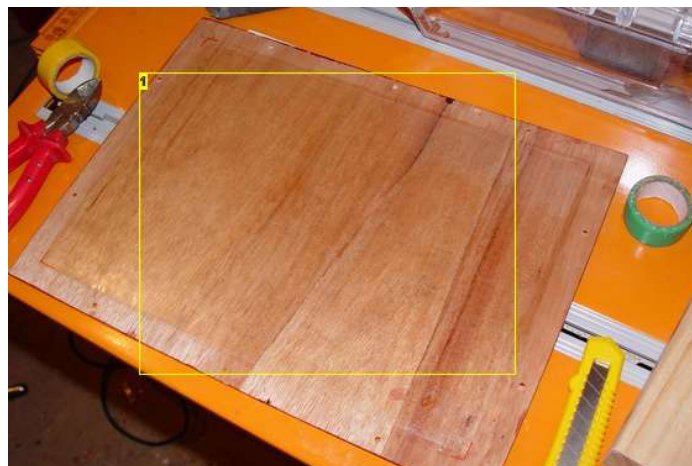
Image Notes
1. glued on transparency

Step 10: Make the planchette

Next I needed to make the planchette. I decided after a few sketches, and after how my lid came out that I would like to have a bit of a steampunk theme, so I designed it in that way. Whatever you want to make, the main parts of construction still are applicable.

I looked around for what a planchette should look like, and there are infinite variations, but a majority look like a 'stretched love heart' shape. I sketched out this shape onto some scrap 6 mm ply (left over from the base of the box) and cut it out.

Next I drilled the hole which is pretty common on the planchettes I have seen.

I then got my piece of magnet **matched** with the magnet on the bracket/belt in the box, and carved out a small recess on the bottom of the planchette with a knife to fit the magnet (and deep enough for the magnet to sit flush with the surface of the wood). The magnet is not centered with the planchette on purpose as it helps make the movement look less mechanical (or symmetrical). **Important!** Make sure you match the magnet - if you don't it will be repelled by the one on the bracket inside the box, and won't work. You need to flip over the planchette magnet and make sure it is attracted to the bracket magnet! Doubly sure the magnet is the right way up, I epoxied it into the recess on the planchette.

I then covered the planchette with brass shim, copper and used a small glass lens (also from the scanner the motor came from) to 'punk it up'. You may just want to stain the wood.
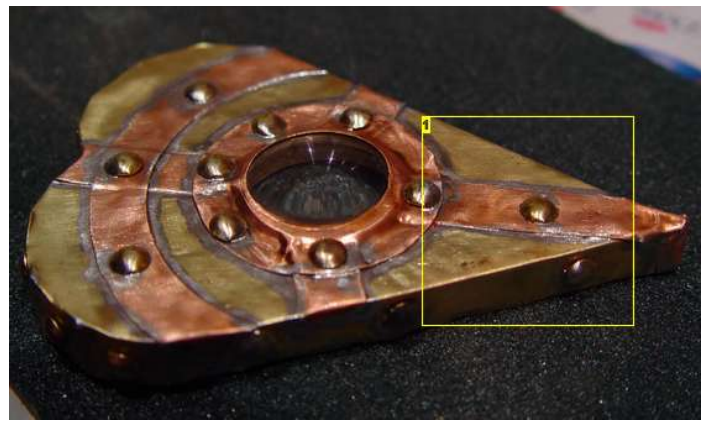Finally, cover the bottom of the planchette with some felt, for a nice smooth base that won't scratch up your lid/board.

Image Notes
1. this is plwood covered in thin metal sheeting
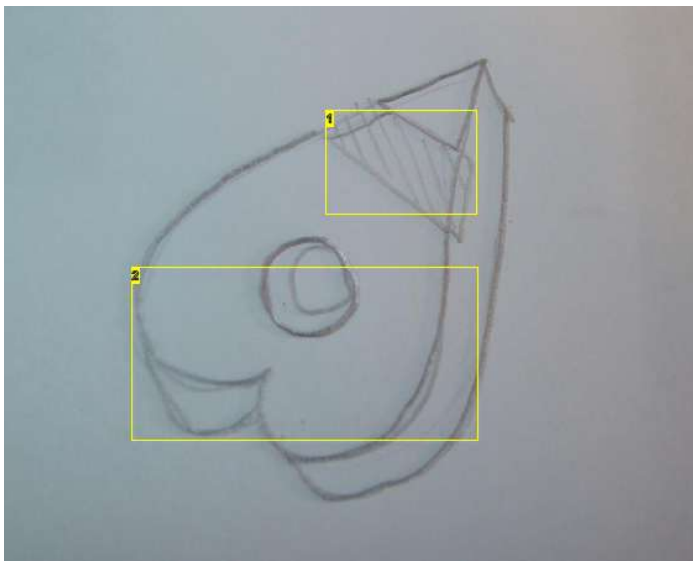
Image Notes
1. Cutout for magnet
2. underside view of planchette

Step 11: Finishing Up

There you go, it is pretty much finished now...

All you need is some finishing details.

I added some brass box corners, legs and beading trim to make it look more like a piece of furniture than just a box. All in all I think it came out pretty good... one of those satisfying projects that actually came out somewhat how I hoped!
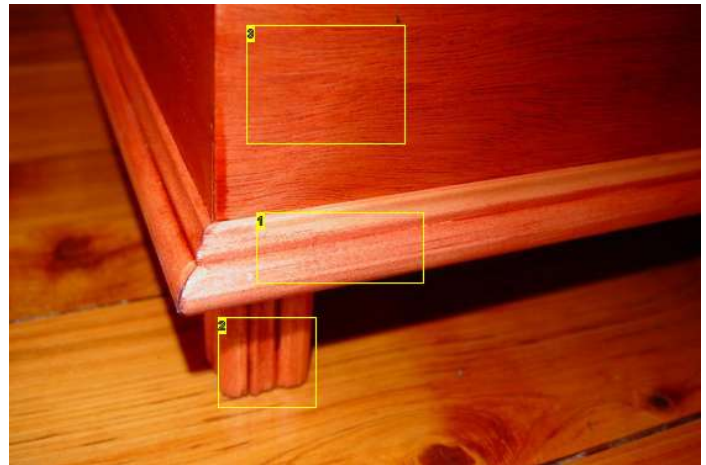
This was my 1st instructable. I hope you enjoyed it. I was blown away by how much work is needed to do one of these - it really helps me appreciate the work everyone else has put into this site. Thanks everyone!

Considering this is my 1st instructable, I would really appreciate comments and feedback.

Image Notes
1. glass lens
2. brass screws
3. brass box corners

Image Notes
1. beading
2. legs made out of the wood used for the beading
3. stained wood veneer

Step 12: Serial Communications Project Update

Due to popular opinion, I have now enabled the ouija board to comminucate - not with the dead, but with any device with serial output (like a PC, phone, bluetooth module).

I have no fancy stuff like a bluetooth module, so for this step I have used my laptop to send the messages to the Ouija board.

The video is now added, it is the 3rd video in the intro step to this instructable.

The Ouija board is now functional with full capacity - it can 'carry on' as it did originally, but connecting a serial device can invoke new behavior:

The board can talk to any serial device (so if you had a fancy bluetooth module or mobile phone or something tucked away in the case) for programming messages. It has a simple command structure, such as:

(asterisk) - begin new message

\# - end message
@ - repeat message over and over
(carat) - go to sleep (turn off)
! - stop moving
$ - turn off/on (toggle) random movements

(I had to type asterisk and carat as the actual characters made the text act weird in instructables!)

so, to say 'askjacob' over and over one would send the string '*@askjacob#'

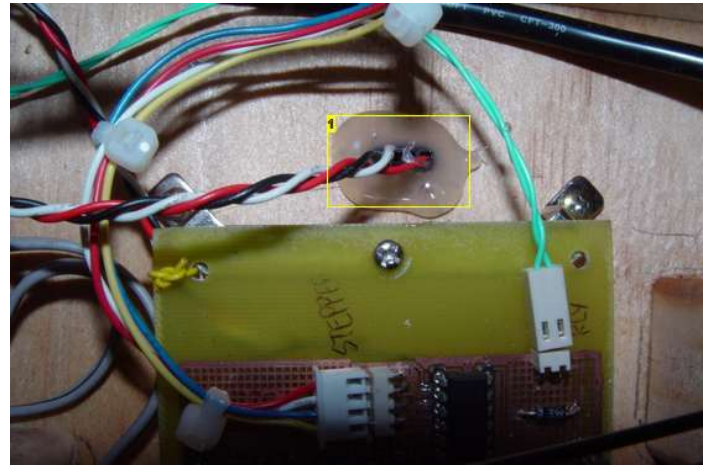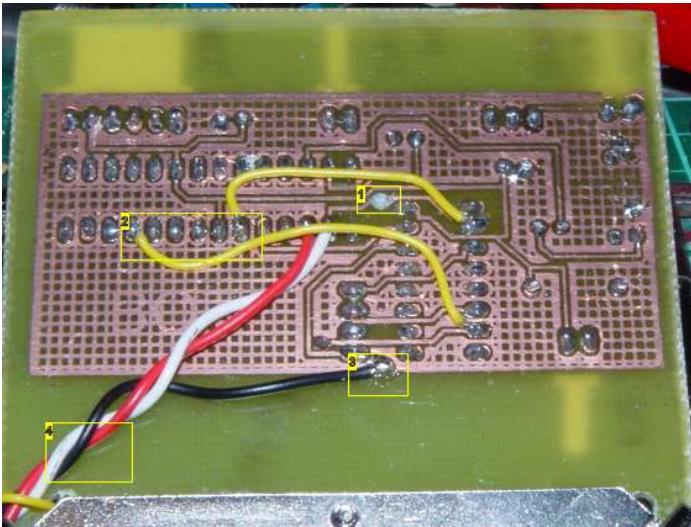if you just send '*askjacob#' , it would spell out askjacob and then go back to random movements.

if you send '$*askjacob#', it would spell out askjacob, and then stop, awaiting further instructions.

You can send stuff to the board at any time and it will not interrupt the movement - unless of course the command specifically does affect movement.

I am very happy with how it turned out. Because my original design didn't expect this capability, there are some mechanical limitations - I can't get the planchette to reach the L, M , Y or Z, but in this age of txt msgs isn't too bad... From what I have heard, messages from beyond don't always come through clearly anyway and need some 'interpretation'.


The images below are

1 - the changes to the PCB (I will upload new eagle schematics for the changes)
2 - how the serial connector goes 'outside' the box
3 - the setup with a laptop for testing
4 - soundproofing the box
5 - soundproofing the lid

Image Notes
1. cut in PCB track
2. new connections to L293D motor controller chip
3. black - ground
4. Old CD-ROM audio cable for serial cable

Image Notes
1. CD-ROM audio cable hot-glued into slot cut in bottom of the case

Image Notes
1. Bosh IXO - great little screwdriver!!
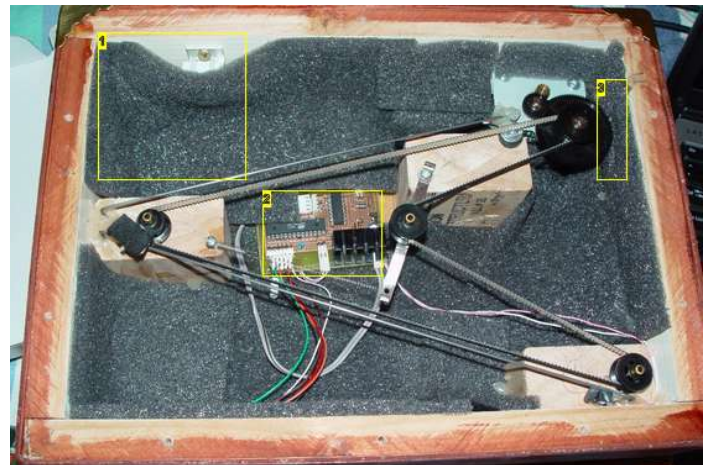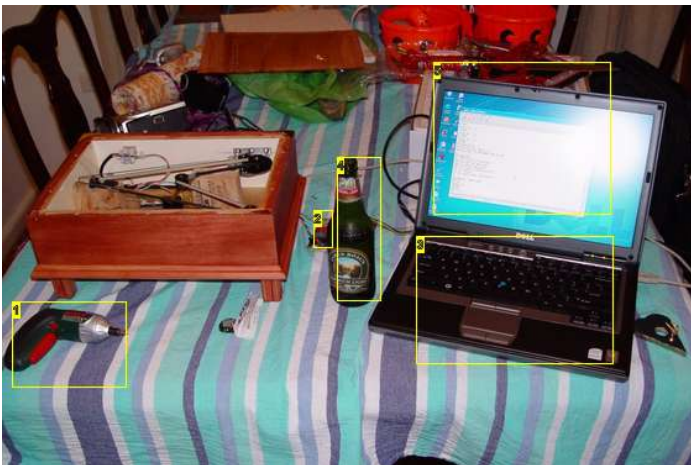
Image Notes
1. Foam! came in some PC parts packaging

2. behind the beer (bad photo!) is my ttl serial to RS232 level shifter pcb (using a max232) - needed for PC comms, but not for a bluetooth module etc
3. Laptop (!)
4. Beer - not vital, but helps
5. chatting to the board via hyperterminal, 38400bps, 8-n-1, no flow control

2. don't insulate the PCB - it may overheat if you do! (remote chance, but why risk it?)
3. make sure nothing will get into the works!
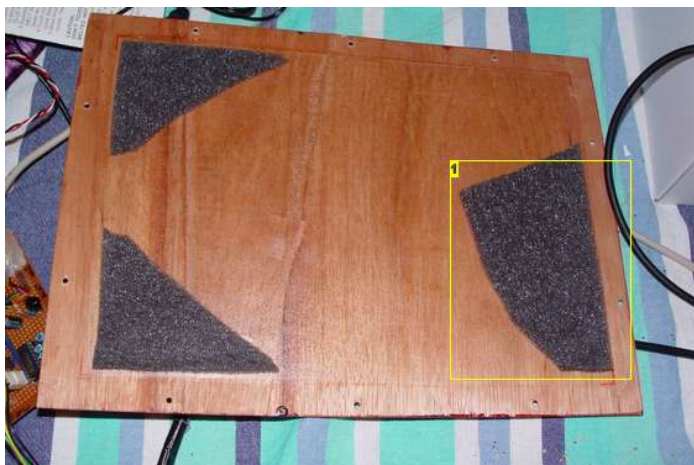
Image Notes
1. more foam, stuck where the magnet won't go, to minimise noise

Step 13: The Updated PCB and Code...

Finally, I have now uploaded the revised PCB and code.

Note that this PCB and code can be recycled to be used for any project that needs to use a 4-wire stepper motor, not just a haunted Ouija board!

The L293D motor controller is a pretty handy little chip - the PCB as is can also use it to control up to 2 DC motors, both forward and in reverse. With a bit of code work, you can also have proportional speed control using PWM for the two motors, so the PCB could be handy as a robotics motor control system. Rather than just a simple control for the motors, having the Atmega8 on board means you can make it an advanced controller, leaving your robot CPU free to do other work....

If anyone wants me to develop some revisions to the code for a general motor controller let me know and I'll get on it.

Attached are:
the .hex file : pre compiled code for the atmega8
the .bas file: Bascom AVR source code
the .sch file: The EagleCAD light schematic file
the .pcb file: The EagleCAD light circuit board file

Cheers and Happy New Year for 2008!

File Downloads

OUIJA1.9-SERIAL.HEX (9 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'OUIJA1.9-SERIAL.HEX']

ouijaserialv2.sch (174 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'ouijaserialv2.sch']

ouijaserialv2.brd (17 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'ouijaserialv2.brd']

ouija1.9-serial.bas (9 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'ouija1.9-serial.bas']

Step 14: More Details for building - including some ideas for simpler projects

Additional Details coming soon I promise!

I have had a few questions around the project lately, so I feel I should add some more information to the project!

I'll be adding more information around making the PCB, as well as some thoughts on making a simpler version for those who feel this version is in the 'too hard basket'.
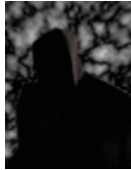
I'll work on the updates over the weekend!

Regards
Jacob

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Getting started with LCD's and Microprocessors by Johnny C.

Halloween Robot by climber-man

Getting started with ubuntu and the AVR dragon by }{itch

Getting Started with Atmel AVR and BASCOM by askjerry

Blue LED dawn simulator for Soleil Sun Alarm by ewilhelm

laser engraved - hand painted custom OUIJA board (Photos) by lowercase

Comments

50 comments   **Add Comment**

view all **65 comments**

---

cornetz says:
sir /mam; may i ask for specifications and prize for ur pulleys with diff sizes?thank you very much

Nov 12, 2010. 8:06 AM **REPLY**

---

frikkie says:
you have great talent at what you build,but I wont build something like that,even though it aint real,the board itself.

Oct 21, 2010. 8:16 AM **REPLY**

Thekodanator says:
This is an amazingly well written Instructable! Love it!

Oct 11, 2010. 10:27 PM **REPLY**

---

royblumenthal says:
Wow, Jacob! This is a dazzling piece of invention. Apart from the incredible work you've done on the mechanical aspects, you've clearly thought out the 'psychic' aspect very well indeed!

Oct 10, 2010. 10:55 PM **REPLY**

The pauses, the path the marker makes... very effective in showing that there's a ghost going to extraordinary effort to make that damn thing move! Must be super-freaky to experience!

One piece of 'authenticity' your device has built in is the inability to reach certain letters. Kinda like there's a ghost that can't really spell. Maybe you could put in a 'frustration' loop when it's supposed to hit an 'l' or 'm' or whatever? Something like an agitated motion going to the pentagram, then back to the regular spelling out of the rest of the letters?

Great work!

Blue skies
Roy

Treknology says:
If you watch the action of the puck, the builder has incorporated reverse correction so that it does end up pointing at the correct letter. The device is limited by the path of the drive belt. If it were built as an x/y plotter unit instead, then the extra movements that you suggest would be more easily implemented.

Oct 11, 2010. 5:46 AM **REPLY**

I like the way it is now, vaguely shuffling round--definitely enough to freak out a few idiots!

---

ktalex says:
does it make a loud racket?

Oct 10, 2010. 10:34 PM **REPLY**

---

johnet326 says:

Oct 10, 2010. 6:05 PM **REPLY**

This is a great project. Lots of potential for add-ons. Pics are great too. I'm one of the peeps who need to see something to get how it works. I like that the electronics could be used for a robot until Halloween. Thanks for sharing, really enjoyed reading this.

---

philh77 says:

Oct 10, 2010. 10:13 AM **REPLY**

would be better if you built it into a table and made it not look as thick. maybe just 1/2 inch above the table and the rest built in under the surface of the table, great idea.

---

askjacob says:

Oct 10, 2010. 3:40 PM **REPLY**

That is true, it does not look like a "real" ouija board which usually are a cardboard sheet (like a monopoly game board).

I wanted to make a transportable prop though, so making it into a desk would have not been very easy to to. For fun, a version could be made with much more powerful magnets and the base unit attached under any desk, but again I had to make do with the magnets I had at hand (broken chips of HDD magnets).

My plan was to make it look like a seperate piece of victorian furniture, but did make it deeper (chunkier) than it needed to be - it could easily be 1/2 the height ot less and still fit everything in.

Thanks for the comment!

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philh77 says:

Oct 10, 2010. 5:03 PM **REPLY**

something that fits under the table would be great, I never thought of that.
then use a regular board. I would love to see that.

---

askjacob says:

Oct 10, 2010. 3:50 PM **REPLY**

Just to keep you all updated - the board is still alive and kicking - or dead and writing 3 years on. Usually it is left in random mode, as in the usual halloween part environment no-one will really stand and see if the board is spelling out a message.

The message capability will be of more use for halloween games (spelling out clues) or a haunted house type of display/feature.

3 years on and I still am pretty happy with the project!

Treknology says:

Oct 10, 2010. 2:01 PM **REPLY**

I love it! You just need to get the noise factor down so that dweebs who really have no f'g idea about this stuff have the $%^& scared out of them!

---

askjacob says:

Oct 10, 2010. 3:43 PM **REPLY**

I really should add a new video. The noise factor was fixed after the video on here was tasken - there was sawdust in the stepper motor gear drive. Once cleaned up it runs quietly. The only sound with the lid off you can hear is the felt of the planchette dragging about - which makes people look for the source of the sound if they haven't seen the ouija board yet!

Cheers!

TheInventor says:

Oct 9, 2008. 12:57 AM

(removed by author or community request)

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askjacob says:

Oct 9, 2008. 7:37 AM **REPLY**

Sheesh. "Obviously" this is a fun project to make a prop. A prop. In case you had not noticed, I have steered clear of making any comment on Ouija boards in general, their use or what I think of them - I'm Ouija neutral here :) Thanks for the comment - I don't know the context of your comment so I'll take it as a friendly post. Oh, and no, I have not used a real Ouija board. But I have made a fake one :)

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gearskin says:

Feb 15, 2010. 7:05 PM **REPLY**

If you could sink it down into the table, and put mirrors around the outside, people would be floored. They would have no clue. It'd be awesome!

---

awkrin says:

Oct 9, 2008. 4:34 AM **REPLY**

it's a lot more fun to trick people this way!

---

dunnos says:

Aug 27, 2009. 11:04 AM **REPLY**

do you have an overall picture of the setup? i will be making a chess board with my arduino someday soon :)

TED5165 says:

May 15, 2009. 8:16 AM **REPLY**

Very well done.

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znelson710 says:
Apr 20, 2009. 6:10 AM **REPLY**

I am wanting to make one and yours looks all complicated ans stuff. I had the idea to either use an etcha sketch or similar setup. you could replace the knobs with motors and set it doun in the bottom of the box with a raised shaft wiht a magnet. it would be able to reach all the letters and you could increase the speed. just a thought

askjacob says:
Sep 29, 2008. 4:33 AM **REPLY**

It's getting to that time of year, and this project seems to be getting a bit of attention again. If you have any questions, best ask them here in the comments section for everyone to see. Anyone need further info, let me know and I'll add/update the instructable. Cheers Jacob

RetroPlayer says:
Oct 9, 2008. 6:25 AM **REPLY**

Jacob, I checked this out last year (still haven't built one though) and thought it was great. With your recent improvements, it is even better. Not sure if you realized it, but you can buy a bluetooth serial converter for $20 on eBay. I have one and they are super easy to use. You just gotta add a bluetooth connection for the full effect. The only other improvements I could think of would be voice recognition software and maybe some simple AI with "personalities" to really get the full effect. If "Alice" chatbots weren't so verbose, that might be an easy way to do it. I don't think people are going to be able to follow the puck for more than a 3 or 4 word sentence without losing interest. I know; always easier said than done. Just wanted to hound you to try it. :)

hornbadoing says:
Oct 9, 2008. 4:21 PM

(removed by author or community request)

RetroPlayer says:
Oct 9, 2008. 5:31 PM **REPLY**

uh... ok... I won't? You can go back to watching your cartoons now. :)

askjacob says:
Oct 9, 2008. 7:34 AM **REPLY**

Nice one! I'll dig about a bit and try to get one. Sounds like an accomplice would be easier than AI and voice recognition... that would be another big project on its own :) Thanks for the comment! Cheers Jacob

RetroPlayer says:
Oct 9, 2008. 8:56 AM **REPLY**

Well, unless you can find something "prepackaged" for the AI and voice recognition, I agree that it wouldn't be worth it. But there are quite a few pieces of software out there that you could experiment with. I think (but I am not 100% certain) that "Alice" is actually configurable enough that you might be able to make it less robust. The neat thing about it being somewhat AI based is that after your initial personality set up, the responses should be a little unpredictable even for you. You just might get goosebumps yourself wondering if 'something else' is guiding it. Just saying it might be worth experimenting a little and seeing what's out there.

askjacob says:
Oct 9, 2008. 4:54 PM **REPLY**

Haha- I have just been "talking" with Alice. Wow things have come a fairly long way since I had "Eliza" on the system80 :).

I will have a play with the software soon. For those interested, you can chat with alice here:
http://www.pandorabots.com/pandora/talk?botid=f5d922d97e345aa1

Cheers

RetroPlayer says:
Oct 9, 2008. 8:57 AM **REPLY**

Sorry, I meant "..less verbose" not "...less robust."

mycroftxxx says:
Oct 4, 2008. 10:44 PM **REPLY**

This project should really go down in history - it has to be fairly unique amongst output devices.

sueman2 says:
Jun 16, 2008. 10:44 AM **REPLY**

seems hard to build. i would add it to a huanted house, but for my own i do every year it seems like too much work, and people wouldn't wait around to see it. awsome instructable thoe.

askjacob says:
Jun 16, 2008. 7:48 PM **REPLY**

That is why I stick to 1 project per year for halloween stuff. Make 1 good thing a year, and over the years you will have quite a few items. Yes it was 'hard to build' in a way, but was very satisfying. There is no reason it needs to be as hard as the way I made it though :) Thanks for the comment!

bethehammer says:
Jun 14, 2008. 7:54 PM **REPLY**

What is the CD audio input for? did you add a speaker? Nice job on the instructable... and the updates

askjacob says:
Jun 16, 2008. 7:46 PM **REPLY**
I recycled a CD cable - it isn't an audio input, it was used to make a serial connector for the laptop. cheers

askjacob says:
May 18, 2008. 8:21 PM **REPLY**
Hey there! If you are leaving a rating for this, could you also please leave a comment? Let me know what is good/bad/whatever... Thanks! and thanks for looking at my instructable!

askjacob says:
Mar 24, 2008. 7:24 PM **REPLY**
Heh! I should add that the motor is not noisy anymore... It is quite quiet. The sound of the felt sliding on the wood is the loudest noise it makes....

j_l_larson says:
Mar 24, 2008. 7:18 AM **REPLY**
gorgeous and scary. just put it in a room with loud music to hide the noise of the motors. impressive.

j_l_larson says:
Mar 24, 2008. 7:20 AM **REPLY**
ooh, and I am the 13th rater and you have 13 steps. now I am creeped out. I'd better stay inside today.

DeusXMachina says:
Feb 7, 2008. 8:37 PM **REPLY**
Very beautiful AND technological. The pentacle is an excellent touch ;-).

askjacob says:
Dec 11, 2007. 3:52 PM **REPLY**
Video is uploaded now of finished system with serial communications ability. Still to come is the code and schematics for the revised version. The code has some useful snippets for handling serial communciations interrupts which was something new I learned while building this project....

askjacob says:
Dec 7, 2007. 9:23 PM **REPLY**
As promised, I have updated with step 12. Video link still to come. Cheers

askjacob says:
Dec 4, 2007. 5:21 PM **REPLY**
Finally the serial comms version of the firmware is done. I will update tonight with a new step covering this!

askjacob says:
Nov 25, 2007. 7:31 PM **REPLY**
Hi people - I have now updated the code to spell out messages. A video will be added in the next day or so- and I have the serial communication software underway. When that is complete I will be adding a new step covering these modifications...

askjacob says:
Nov 22, 2007. 5:22 AM **REPLY**
As an update: I have now modified the hardware a bit to allow a serial connection for messages - I am going to bed now - so the code will be done in the next few days. When done, I will put up some new video, and add a new step or two with the modifications. Cheers

bofthem says:
Nov 20, 2007. 4:10 PM **REPLY**
Would you consider submitting this to the Mashup contest? {http://www.instructables.com/id/How-to-Enter-the-Instructables-and-ReadyMade-Mash-/?utm_source=ads&utm_medium=adspot_mashup?ALLSTEPS}

askjacob says:
Nov 20, 2007. 10:02 PM **REPLY**
Thanks for the suggestion, but there are two reasons why I didn't enter the mashup competition.... 1st one is that I have already entered this one in the laser cutter competition (don't want to be greedy :). The second reason is that the conditions say it is only eligible for American/Canadian residents (and I am from Australia!)....

Alathald says:
Nov 10, 2007. 1:50 AM **REPLY**
Very cool, tho if you could control the messages on the fly it would make for an extremely awesome project. Maybe use the serial port (or usb to serial) of a laptop hidden in the bottom of the board to send x,y coordinates to the plotter and use a cell phone with bluetooth to send each letter to the laptop...bit complicated but a program on the computer and a java program on the cell phone should do it. Perhaps there is a easier way tho. Very nice board tho, very sharp and spooky!

wiml says:
Nov 17, 2007. 2:33 PM **REPLY**
Should be possible to connect the spare UART to one of those cheapish bluetooth serial modules ... I bet the uC has enough oomph to convert letters to coordinates. Then you could just send messages directly to the box from the cell phone applet (or wherever). Spoooky!

askjacob says:
Nov 15, 2007. 7:57 PM **REPLY**

I have finally found the schematics and PCB (trauma from changing PCs - luckily I had a backup ghost image I could trawl through to find it). Now you have everything I had to do this project. I have not made much progress yet with the message update - I have been busy lately and I need to re-open the box to make the changes... it still hasn't spent much of it's life put together, and I am loathe to pull it apart :). I have a weekend coming up, so should be done soon! Thanks again for the nice comments everyone!

peregrined says:
Nov 15, 2007. 5:47 PM **REPLY**

Wow, you should be proud- Very cool

whiteoakart says:
Nov 12, 2007. 8:31 AM **REPLY**

This is great. I don't have much to add, but I really like the detailing.

view all 65 comments

askjacob says:
Nov 15, 2007. 7:57 PM **REPLY**

I have finally found the schematics and PCB (trauma from changing PCs - luckily I had a backup ghost image I could trawl through to find it). Now you have everything I had to do this project. I have not made much progress yet with the message update - I have been busy lately and I need to re-open the box to