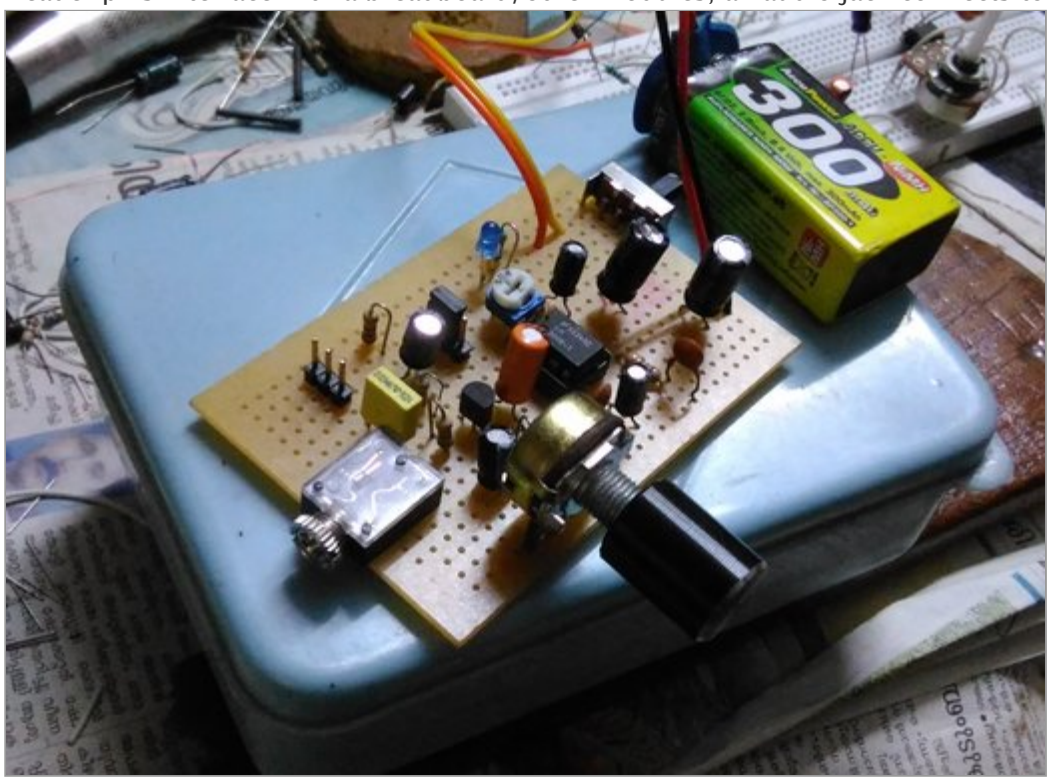
Homebrew~

Sat Jan 04, 2020 7:36 am

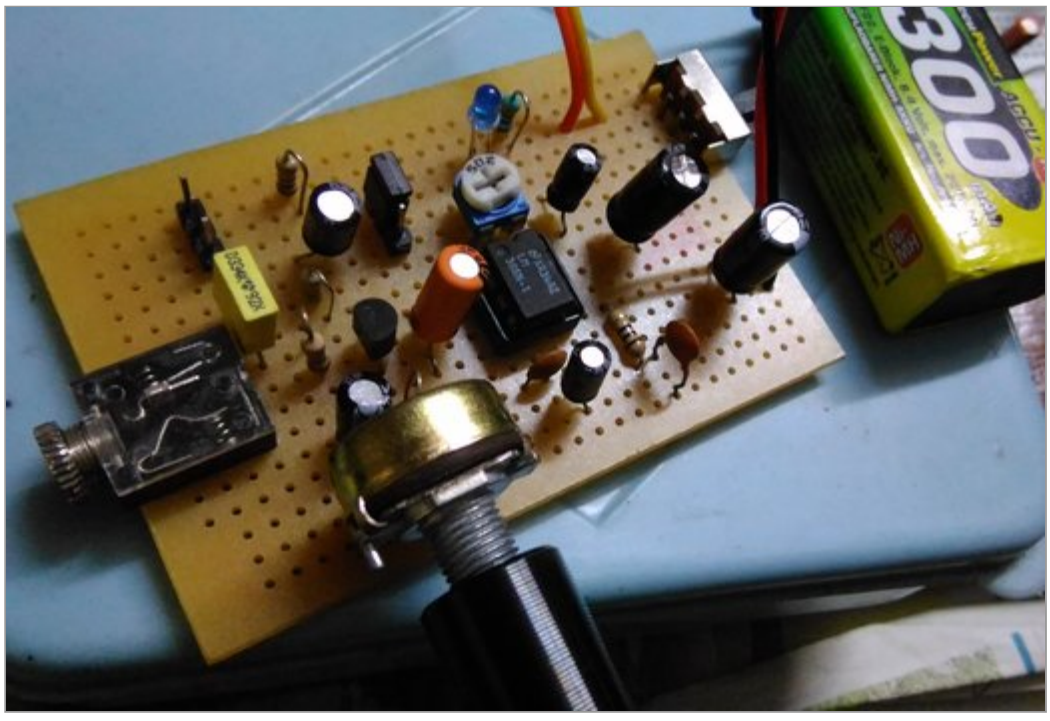
I'll update this thread on some random small projects & ideas.

Recently made a new high gain '386 amplifier to avoid repetitive breadboard audio wiring tasks. This one uses a BC549 preamp –the same used in 2019 contest radio– with an additional boosted gain control on LM386(normally switched off using jumper). It can hear almost anything at low level, very sensitive stuff.

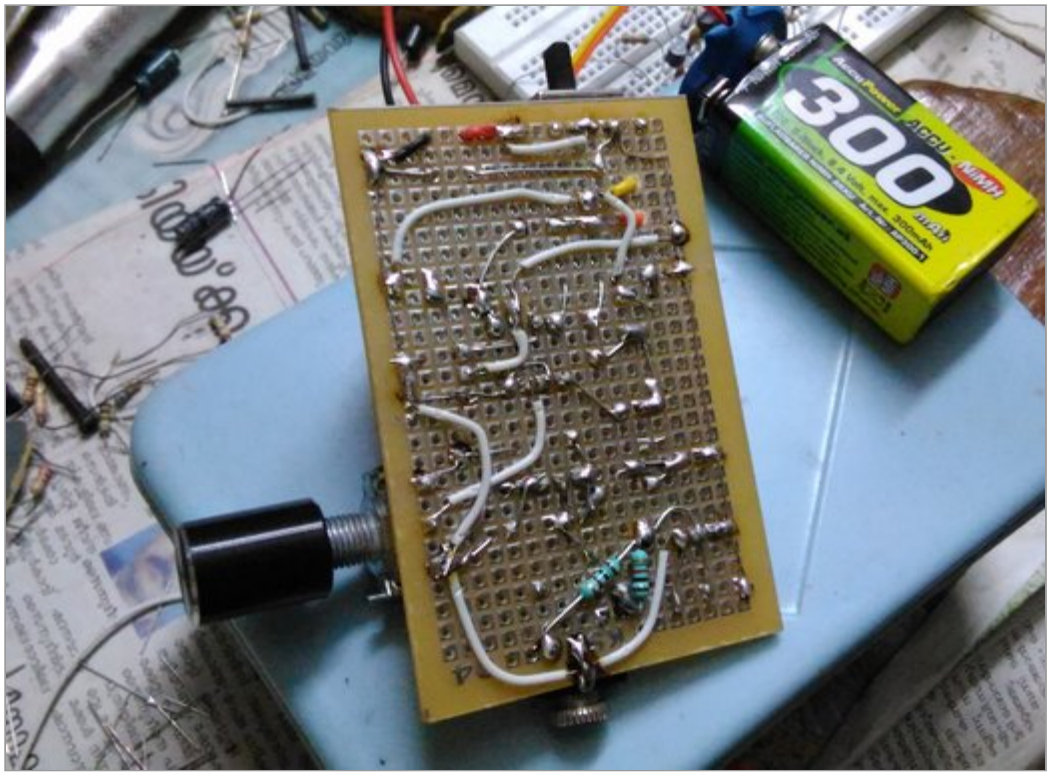
Header pins interface with a breadboard/other modules, an audio jack connects to other devices as well.



386_1.jpg (67.82 KiB) Viewed 1433 times



386_2.jpg (56.87 KiB) Viewed 1433 times



386_3.jpg (74.18 KiB) Viewed 1433 times

Mjones

Re: Homebrew~

Sat Jan 04, 2020 8:50 am

Hello, this looks useful. Could you post a link to the schematic?

How do you find audio quality when comparing the LM386 in normal and high gain ? I'm thinking about the significantly higher distortion reported by Qrpman in this thread:
viewtopic.php?f=8&t=9146&p=90638#p90638

I wondered whether you had added the pre amp so as to avoid having to use the high gain mode.

transistor495

Re: Homebrew~

Sat Jan 04, 2020 10:15 am

Pre-amp schematic you can find from below post:-

viewtopic.php?p=88723#p88723

I don't have any comparison of normal vs high gain mode, but in normal cases I tend to avoid the high gain mode to stay away from noise floor/audio quality issues resulted in high gain mode. So used a preamp instead.

Line level signals(~1V) will overload it, so I'll add one more switch to bypass the pre-amp, directly to '386. The high gain mode of '386 is switchable.

Mjones

Re: Homebrew~

Sat Jan 04, 2020 10:37 am

Thank you, that's very helpful.

I'd missed your contest radio posts before, looks very good. Interested to see that you had used the Haigh circuit with variable AGC. That's a modification I've considered for my simple zn414 radio. Another one to add to the list of project ideas...(which grows quicker than I can actually build them).

achu

Re: Homebrew~

Sat Jan 04, 2020 1:06 pm

I heard LM386 is really noisy.
What do you think?

transistor495

Re: Homebrew~

Sat Jan 04, 2020 2:52 pm

> **Mjones wrote:** ↑
> I'd missed your contest radio posts before, looks very good.

Thanks, you may sometimes try the contest circuit -which is a very stable version of '414 series.

> **achu wrote:** ↑
> I heard LM386 is really noisy.
> What do you think?

Yes, mostly in high-gain mode. Better suits for AM radio circuits, not for FM.

gridleak2

Re: Homebrew~

Sat Jan 04, 2020 3:31 pm

> **achu wrote:** ↑
> I heard LM386 is really noisy.
> What do you think?

I have found that for headphone use, even in low gain more there is considerable hiss. I guess you could say the LM386 loves to throw a non-stop hissy-fit. Bwahahahahaha!

achu

Re: Homebrew~

Mon Jan 06, 2020 4:00 pm

> **gridleak2 wrote:** ↑
>
> I have found that for headphone use, even in low gain more there is considerable hiss. I guess you could say the LM386 loves to throw a non-stop hissy-fit. Bwahahahahaha!

Yeah I could never operate it at gain 200.

transistor495

Re: Homebrew~

Mon Feb 03, 2020 12:08 pm

A beginner level shortwave superhet with various add-ons described here-

https://www.americanradiohistory.com/UK ... nBP276.pdf

You can hopefully use a BF998/similar in place of 40673.

JohnBoy

Re: Homebrew~

Tue Feb 04, 2020 4:54 am

Beautiful work.

How about an audio / video...

transistor495

Re: Homebrew~

Thu Feb 06, 2020 10:23 am

> **JohnBoy wrote:** ↑
> Beautiful work.
>
> How about an audio / video...

Thanks. It's a very common amp circuit..so no video planned for this 😀

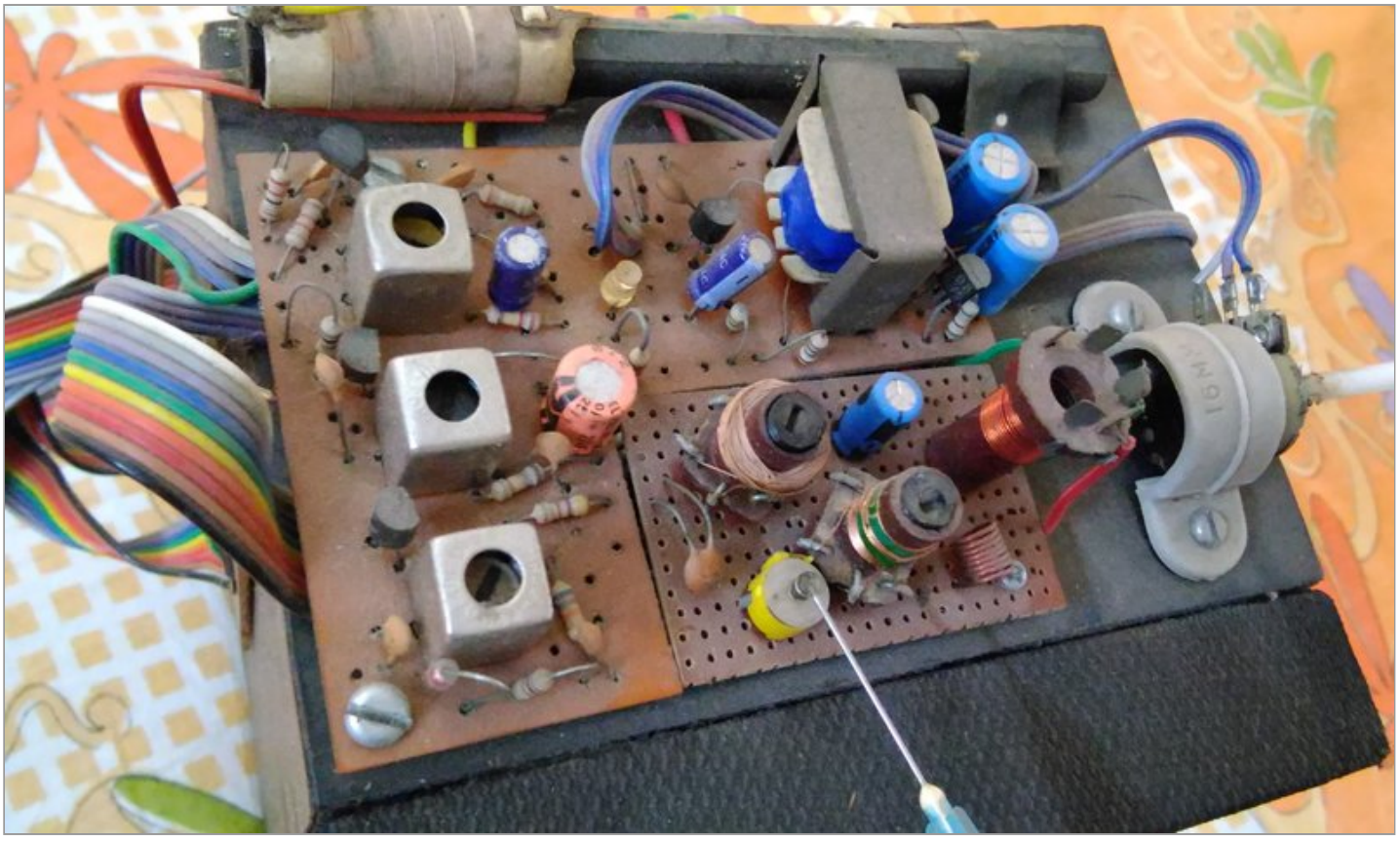
transistor495

Re: Homebrew~

Mon Feb 10, 2020 10:29 am

Recently resurrected couple of my earlier builds from attic -the left one is a twin diode reflex AM RX with LA4510 output audio operated on 3v supply. I had a lot of great evenings listening to this nice radio. Right one is a 2 band superhet and I guess this is the 1st working superhet I made. You can see the *fine tuning* lever attached to the LO trimmer and it helped great in resolving shortwave stations because it covered a wide frequency range in single band 😀 . These are more than a decade old builds probably during 2006 - 2007 period.

rflx_sprht_1.jpg (80.81 KiB) Viewed 627 times



rflx_sprht_2.jpg (108.05 KiB) Viewed 627 times

Mjones

Re: Homebrew~

Mon Feb 10, 2020 11:34 am

I love the fine tuning lever! Is it just soldered on? It occurs that a lever could also work with a plastic variable capacitor, as attaching shafts and control knobs can be a pain.

transistor495

Re: Homebrew~

Mon Feb 10, 2020 4:52 pm

> **Mjones wrote:** ↑
> Is it just soldered on? It occurs that a lever could also work with a plastic variable capacitor, as attaching shafts and control knobs can be a pain.

IIRC it's a superglue stuff, the *lever* is actually a medical syringe needle and it goes around 2mm into the trimmer slot and you can glue it over there..I don't think soldering work on these metals(brass + steel)

For polyvaricons, you should be able to screw a lever before applying the glue...and as you increase the lever length, the fine control touch also increases 😜 But this is better suitable for fine control kind of application than a coarse tuning IMHO- like regen throttle etc. Solder may work on brass + brass lever and is also detachable than a permanent glue fix.

transistor495

Re: Homebrew~

Sun Mar 01, 2020 7:33 am

A photo of a readily available analog FM circuit board, that I can still buy in the market-

I've bought many AM/FM/SW discrete/IC circuits/kits in the past when they were freely available. I've dissected many of them to learn the stuff and then gather the parts 🙂 . The build quality of earlier circuit boards were fantastic and offered different models/features because it was a good business that time.

This one costs around 2USD. It still uses original Sony CXA1619BS chip, and I would think probably last in the line-up before disappearing completely in another year or so-

fm_board.jpg (70.55 KiB) Viewed 411 times

Mjones

Re: Homebrew~

Sun Mar 01, 2020 8:09 am

The drive shaft for the polyvaricon looks very useful, solving the difficulties of working with these in practice, particularly with VHF. Have you come across anything like that available separately?

transistor495

Re: Homebrew~

Sun Mar 01, 2020 9:15 am

> **Mjones wrote:** ↑
> The drive shaft for the polyvaricon looks very useful, solving the difficulties of working with these in practice, particularly with VHF. Have you come across anything like that available separately?

I'm glad that you liked it, like me

That's actually a 4mm 'D shaped shaft extension/coupler for commonly available potentiometer knobs in here. They were plenty available separately in the past with required nuts & screws in a small packet, but now became a scarce part. It makes the polyvaricon installed on a case just like a potentiometer and use same category of knobs. Clever part!

I bought a handful of them during 2009 period and the price was as cheap as 30pcs/USD! I bought 10 I think.

Here's a detailed view of what I have now in my junkbox:-

shaft_extn.jpg (26.57 KiB) Viewed 243 times

transistor495

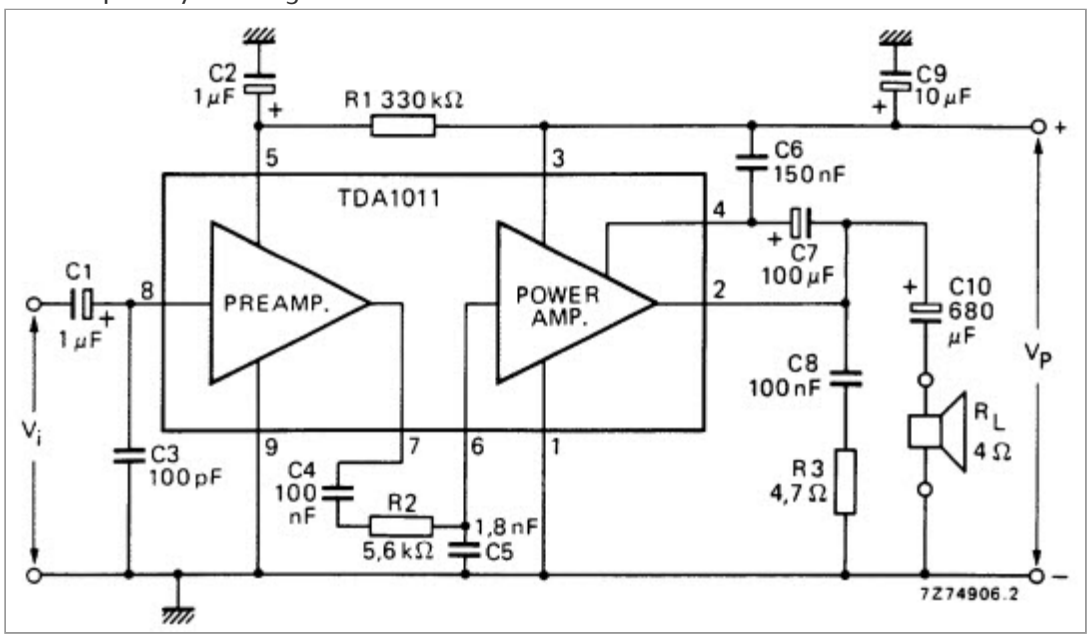
Re: Homebrew~

Fri Apr 10, 2020 4:36 pm

If you're looking for some solid high quality audio output power for your DIY FM radios, you can try TDA1011. It's one of my favorite amp chip at high power category for portable radios. It works on a wide range of supply voltages.

TDA1011 can deliver ~2W at a typical 9V supply. Don't use pp3 batteries, use a power supply with adequate amperage.

NOS chips may cost high.



tda1011.jpg (31.28 KiB) Viewed 127 times

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next page

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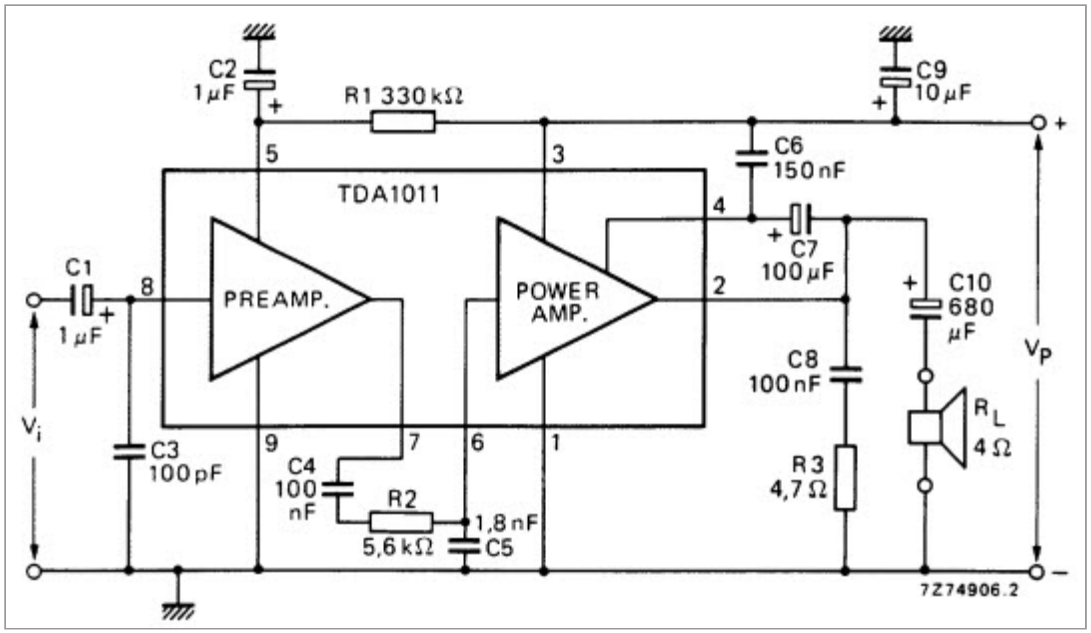

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