



MEMBER

Printed Circuit

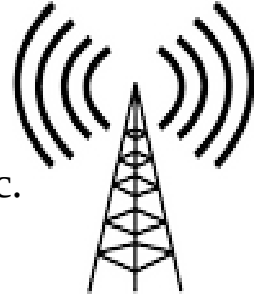
– Dec 2022 –

Published by the Southwest Iowa Amateur Radio Club Inc.

SWIARC meets the 4th Thursday of every month at the Loess Hills Red Cross Chapter

Charles E. Lakin Human Services Campus

705 N. 16th Street Council Bluffs, IA 51501



Visit us at <http://www.swiradio.org>



Welcome to the Swiarc Inc Printed Circuit Newsletter. Started in the 1980's, This is a newsletter to announce, inform and enhance the Amateur Radio Enthusiast enjoyment of the hobby. But as a club newsletter it needs input from every Amateur Radio Hobbieist, stories of DIY projects, awards and radio activities to make it enjoyable to read. Thoughts even 1 or 2 paragraphs is perfect and pictures with or without comment are extremely welcome.

The Printed Circuit will be distributed on a Bi-Monthly basis with the option to expand to a monthly or

Special Edition basis as material is submitted. The distribution of the newsletter will be thru Groups.io email(Don't have a Groups.io account? [Registration](#) is free and easy). Please register if not already a Swiarc Groups I/O member as numerous other notices and club communications are sent thru Groups.io email.

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What is a "State QSO Party?" check the link out!

Pronounced "Q S O party," a State QSO Party refers to a contest where you try to work as many stations as possible in a specific state or group of states.

IMPORTANT REMINDER

SWIARC Club Dues \$20/year starting in 2023. You may bring a check to any 4th Thursday club meeting, or send it to the club address.

Dues for students are half price!

SWIARC INC

PO BOX 661

COUNCIL BLUFFS IA 51502

SWIARC Xmas Dinner



It's set for Thursday 29 December at the INTERNATIONAL BUFFET, 48th and L St in Omaha, at 6:30PM. If you've never been there, it's behind the gas station at 48th and L. The buffet is eighteen (\$18) bucks per person (used to be a lot less) and includes a drink like tea or lemonade.

All are welcome.

You don't have to be a member.

No RSVP Necessary!

The Action 2023

Dec 3 8-930am	Saturday Breakfast Sugars Diner*
Dec 3 9-1030am	Heartland Hams Monthly Breakfast Toby Jacks Mineola Steak House*
Dec 22 7-8pm	SWIARC Club Meeting Red Cross Building*
Dec 29 6:30 - ?	Swiarc Xmas Dinner see above
Jan 7 8-930am	Saturday Breakfast Sugars Diner*
Jan 7 9-1030am	Heartland Hams Monthly Breakfast Toby Jacks Mineola Steak House*
Jan 26 7-8pm	SWIARC Club Meeting Red Cross Building*

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Sugars Diner
2725 E Kanessville
Blvd, Council
Bluffs, IA 51503

Red Cross CB
705 N. 16th Street
Council Bluffs, IA
51501

Toby Jacks
408 Main St,
Mineola, IA
51554

Welcome

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Submitting content is as easy as sending an email to newsletter@swiradio.org or bringing to a business meeting occurring every 4th Thursday of the month at the Red Cross location in Council Bluffs, Iowa

Charles E. Lakin Foundation, Inc.
705 N. 16th Street
Council Bluffs, IA 51501



November Club Meeting Presentation

Thanks to Rich wa0zqg

Regulated Pwr Supplies

Astron linear regulated power supplies (the heavy ones, not the switchers) are known for reliability. Mine, bought used with 1988 date codes on the 4 transistors in back, was used for a couple of decades and then sold in favor of ones from Yaesu and Kenwood which are prettier.



The club Astron 35 is the plain one, RS-35A with no meters or up front voltage adjustment. The main high current rectifying diodes blew and were replaced, and an LED voltage display was added. Ready to go again.

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SWIARC FREQUENCIES and NETS:

Club Repeaters

Primary Club Repeater: 2M @ 146.820 R- No PL

SWIARC digital C4FM 442.225 PL 136.5 Wires-X connected.

Club Nets

146.82 Tues. OPS Net 9:00 pm - 10:00 pm

146.82 Wed. Ragchew Net 9:00 pm - 10:00 pm

146.82 Sat. Swap Net 12:00 pm - 1:00 pm

More Local Nets here:

<https://swiradio.org/ants/>

For you gas conscience mobile operators

Check  for BEST prices

SWIARC ONLINE



Club Officers:

Pres: Derek W0TYG
president@swiradio.org

V.P: Rick KA0RLR
vicepresident@swiradio.org

Sec'y: Rich WA0ZQG
secretary@swiradio.org

Treasurer: Greg N0GR
treasurer@swiradio.org

Station Trustee: Chris KF0FBL
repeater@swiradio.org

For More Contact Info see

<https://swiradio.org/club-contacts/>



Would you like to submit an article to the SWIARC Newsletter?

We encourage your involvement. Share your stories, wit, knowledge, experience, and upcoming events here. Submit your articles at a SWIARC Meeting, or to newsletter@swiradio.org

or SWIARC PO Box 661 Council Bluffs, Iowa 51502.

Please use this address to also make requests for newsletter re-prints and your feedback of the newsletter.

Regulated Pwr Supplies

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Comparing the Astron with my 25 Amp Yaesu, and measuring the transformer core, the Astron measures 49 cubic inches of iron (including the holes for the windings) and the 25 Amp Yaesu measures 41 C. I. (6 to 5 ratio). Astron says 25A continuous and Yaesu says 17. Hmm. Maybe the Astron is only good for $(6/5 \times 17)$ about 20A.

Astron circuitry is based on the late 1960s era type **723 Integrated Circuit** regulator, plus a current amp, and then the four 2N3771s in back. Works well, and easy to fix or adjust. It also has instant over voltage protection, but in this model, no overheat notice until it pops. I'd be cautious using it in 100% duty cycle repeater service past 10 or 12 Amps, especially if the regular Nets were of the long winded hour long variety.

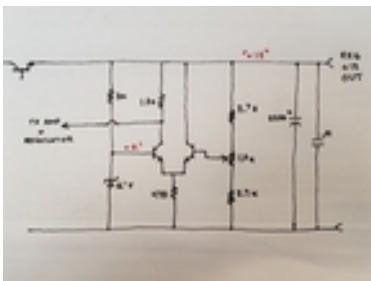
In the picture at left the Astron has its cover off and a green voltage display added to the top right while the Yaesu (black) and Kenwood (grey) have DSO 138 flat screen oscilloscopes added to the front showing ripple on filter capacitors.

The key to voltage regulation is a reference Zener diode, and a comparator (differential amp using 2 transistors). The Astron's comparator is inside the 723 I.C.

Here's the basic circuit if you want to build your own.

Parts needed: two transistors, a variable resistor, and half a dozen more resistors. The comparator circuit works better if the transistors are matched.

When constructed at the same time inside an I.C they tend to be matched whereas individual transistors may vary 50% or more.



Cont. Column 2

Remember YOUR participation in submitting Articles, Info and Pictures make the Printed Circuit what it is !!!

From the Swiarc Univ.

visit us Swiarc University

Kit Built mini Power Supply

Mike KCOFAN, Football At Nebraska, went to the Heartland Hams sponsored Kit Building program in Glenwood IA recently, and has now built this cute little variable power supply.

It's only ~eighteen bucks on Amazon, and comes complete with a transparent plastic case to keep your fingers from contacting the 120VAC.



He says, It was a fun project to do. The board is laid out well and I do like the case so I'll keep my fingers out of the line voltage.

If I was doing a class on kit building this project would make a great starting point.

Toughest thing on this one was the IC base and mods to the display leads so it can be hardwired and mounted to the board. I did use the ps last night to check the led (just for the fun of it.) on the 'transistor checker'.

The 'transistor checker' is Mike's second kit project.

[Check out other Swiarc University articles](#)

Regulated Pwr Supplies

cont from Column 1

Here are a couple of questions:

If Zener is 6.1 V then what is V on Q2 Emitter?

What is V on Q1 Base?

If output V increases slightly, which way does the V on arrow (to amp & reg) go, + or - ?

Silicon transistors (when drawing current) have a junction voltage of around 0.7 volts, so the Emitters are at 5.4 volts, and Q1 Base will also be right around 6.1 volts.

Plus (+) change on output (reduced demand) means plus (+) a little on Q1 Base, similarly the Emitter, and same phase, plus (+) on Collector. The 'amp' should invert this trend before giving it to the NPN regulator (negative feedback).

73 Rich wa0zqg