

KENWOOD

2017 Dayton Hamvention Kenwood Forum



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Kenwood Forum Committee

Mark Gilger – WB0IQK
Jan Servaites – N8CBX
Jeff Covelli – WA8SAJ

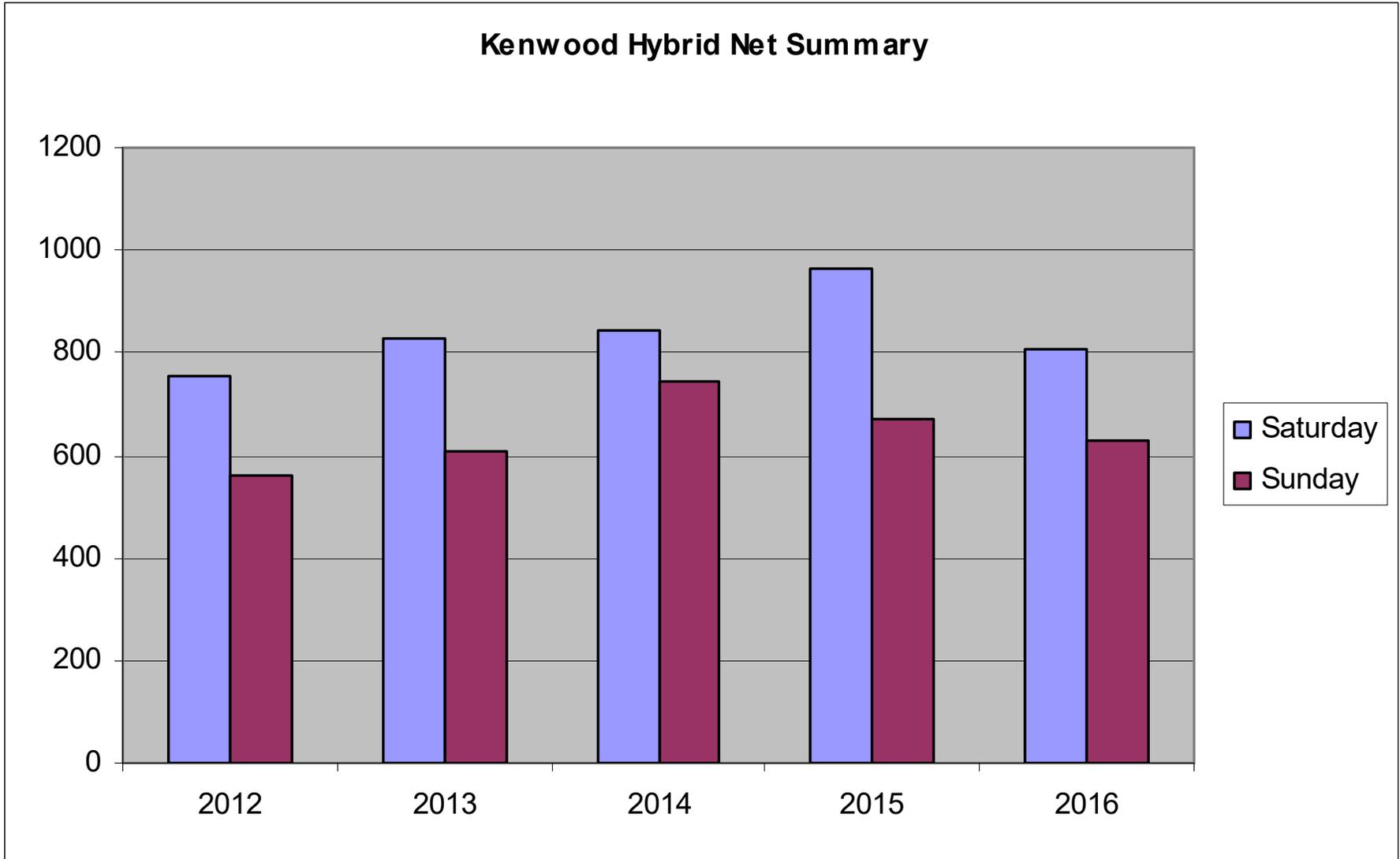
- **Agenda:**
 - Help with Parts, Documentation & Service
 - Hybrid Net Repeat Questions
 - Parts & Service
 - Basic Trouble shooting
 - The Early 500 series (TS500/510/511)
 - Questions and Answers

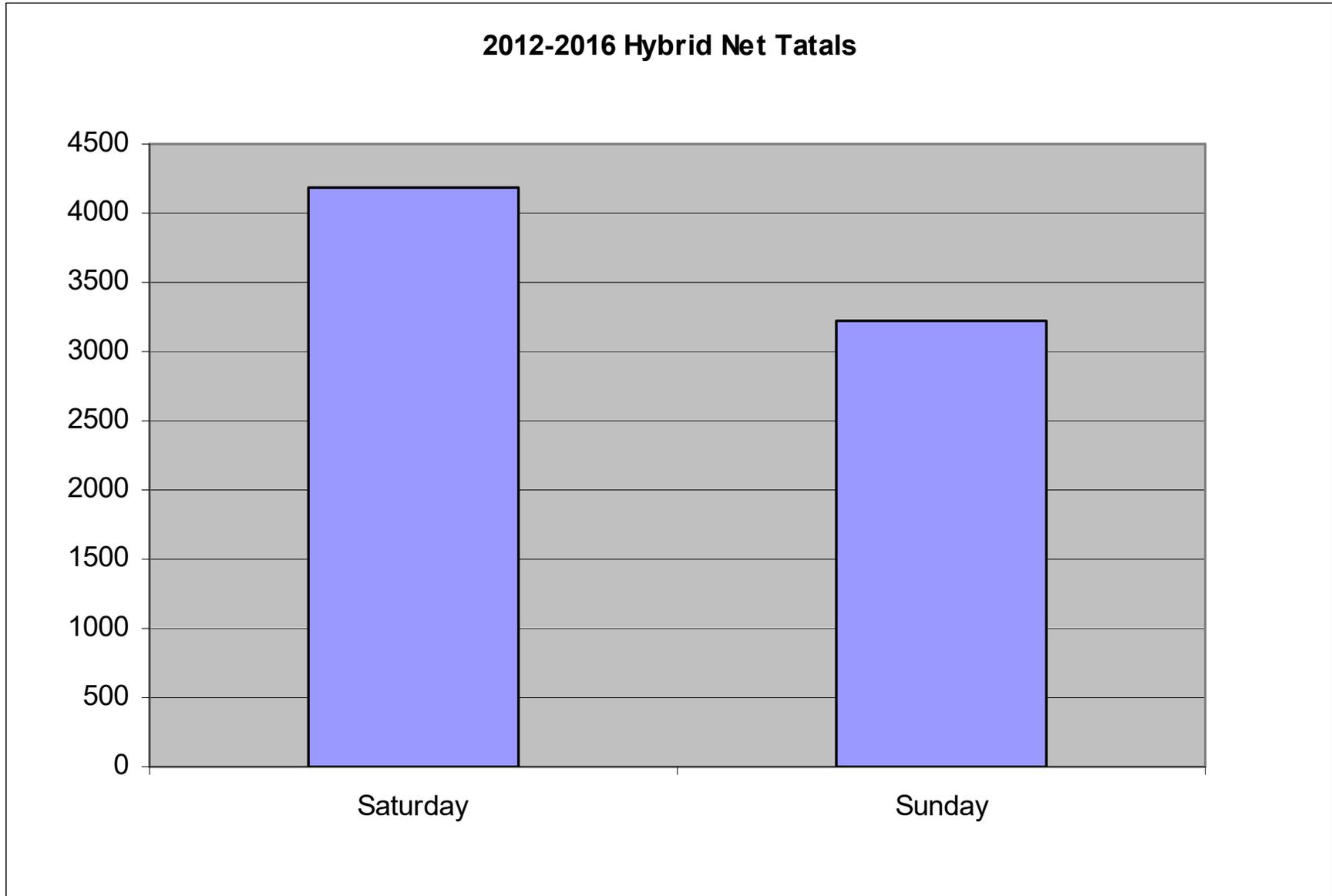
Request for information...

1. Suggestions for future Forum subjects.
2. Future Forum presenters needed.

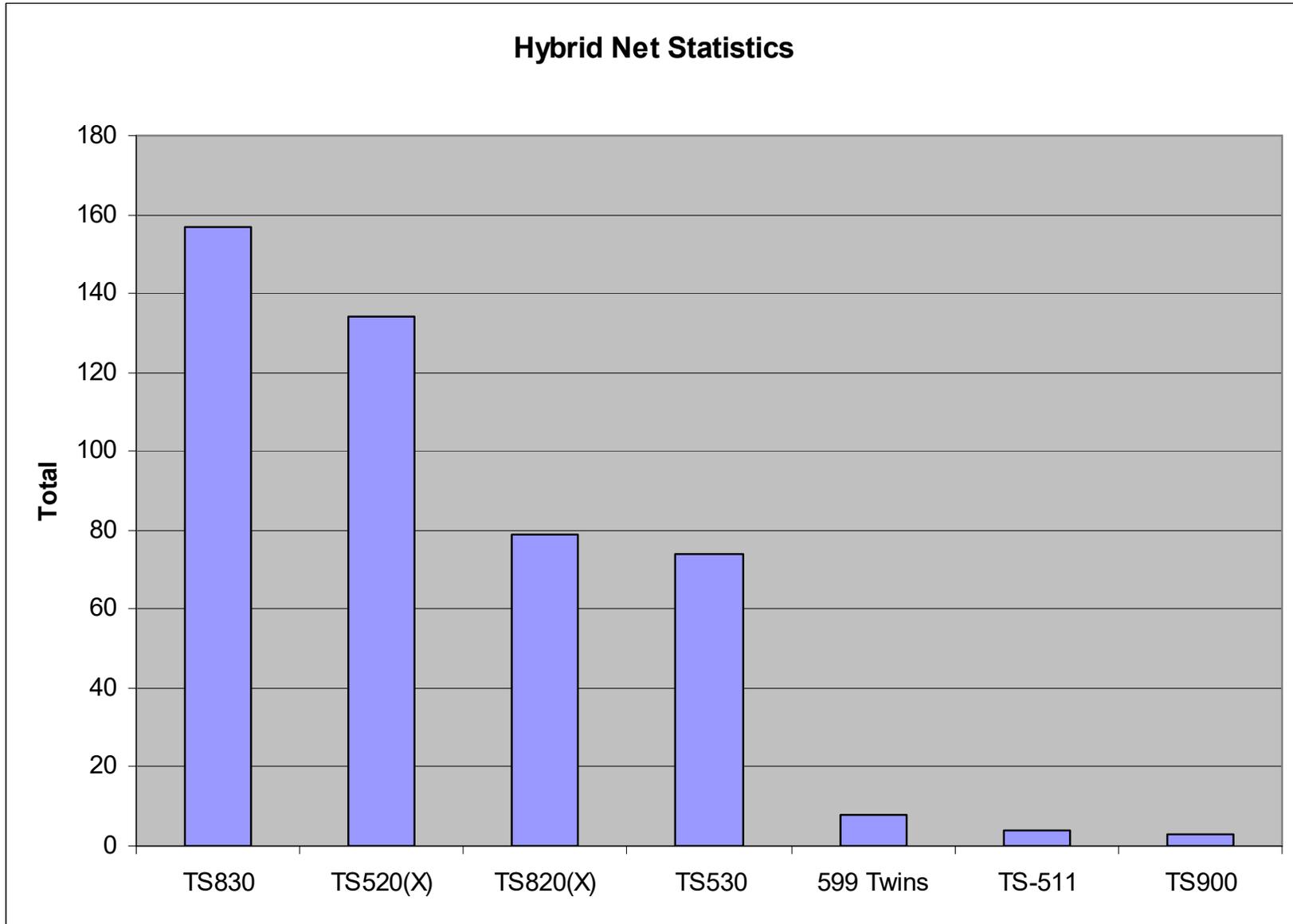
Send information to WB0IQK@ARRL.NET

- Kenwood Hybrid Legacy Radio Nets
 - Saturday, 7.235 mhz @ 3:30 pm Eastern
 - Sunday, 14.316 mhz @ 18:00 z
 - Yahoo Kenwood Group
- Hybrid Net Web Site:
 - www.wb4hfn.com
- Yahoo Kenwood Group
 - https://groups.yahoo.com/neo/groups/TS-520_820_530_830/info





Hybrid Net Check-in By Radio Statistics

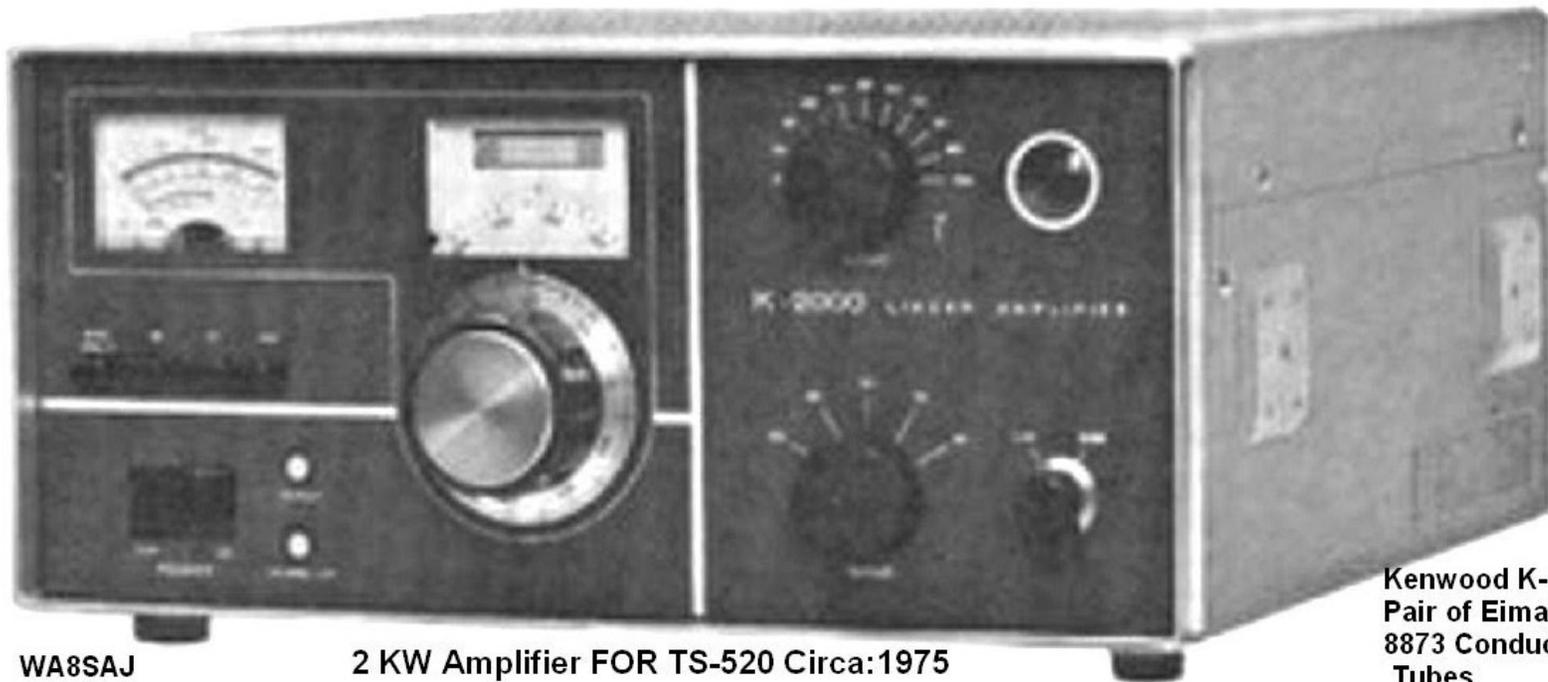


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Kenwood Trivia

- The K-2000 linear amplifier was built to match the TS-520 and T-599A radio's and was introduced in 1975 QST, Henry Radio advertisement.



WA8SAJ

2 KW Amplifier FOR TS-520 Circa:1975

Kenwood K-2000
Pair of Eimac
8873 Conduction
Tubes

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TS-801 TRIO

No Technical Details Available



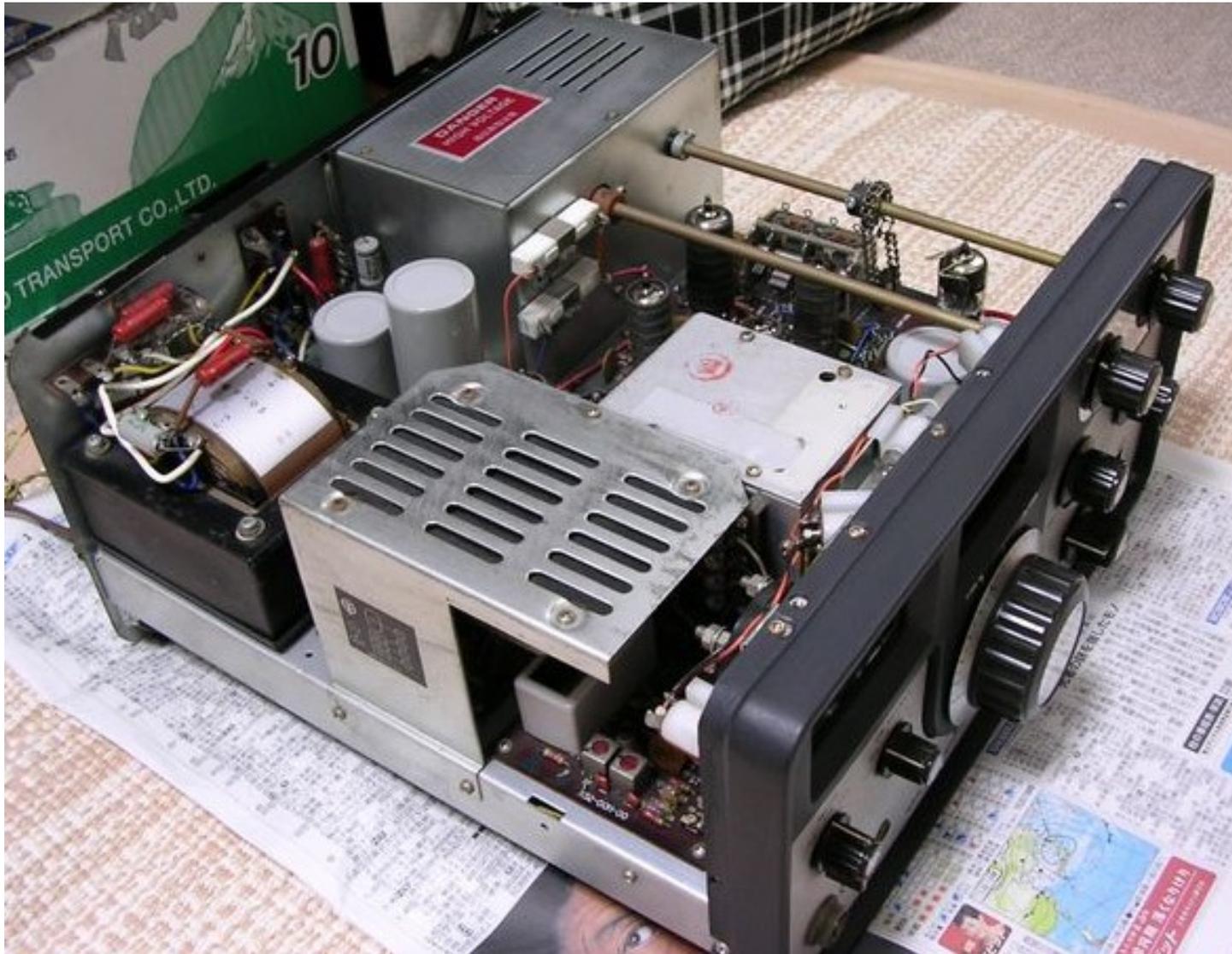
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TS-801 TRIO



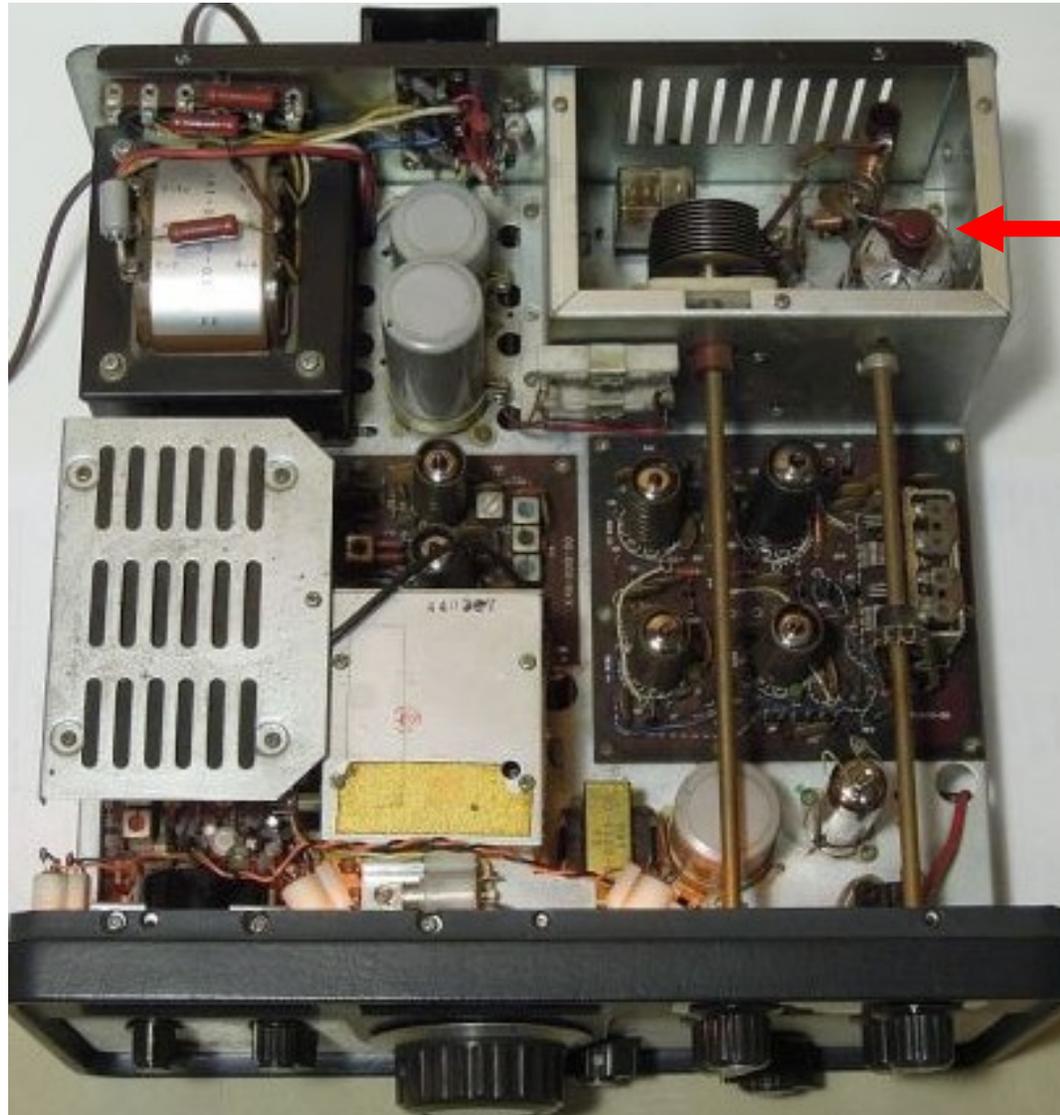
KENWOOD

TS-801 TRIO



KENWOOD

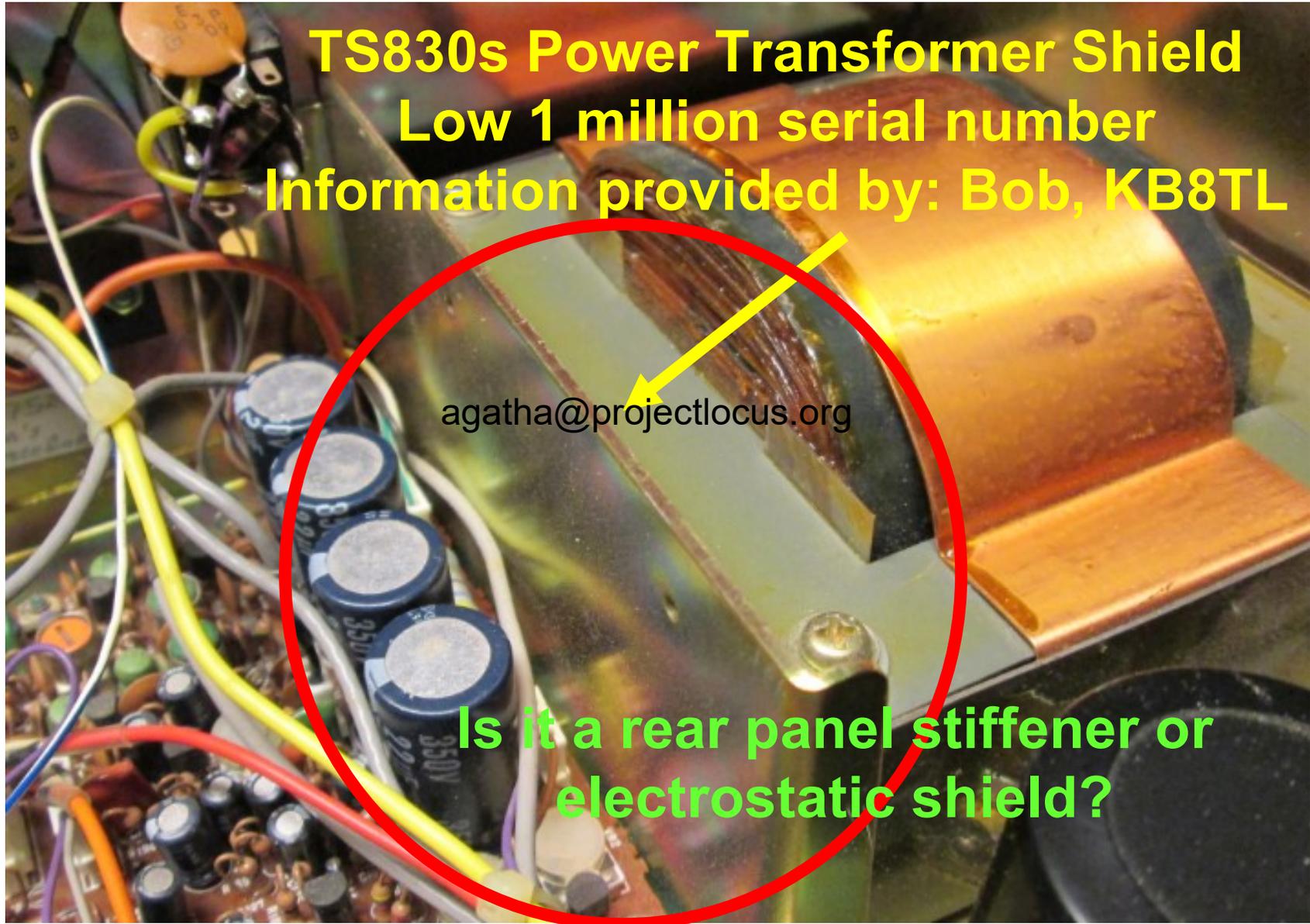
TS-801 TRIO



50 watts
with a
single
6146

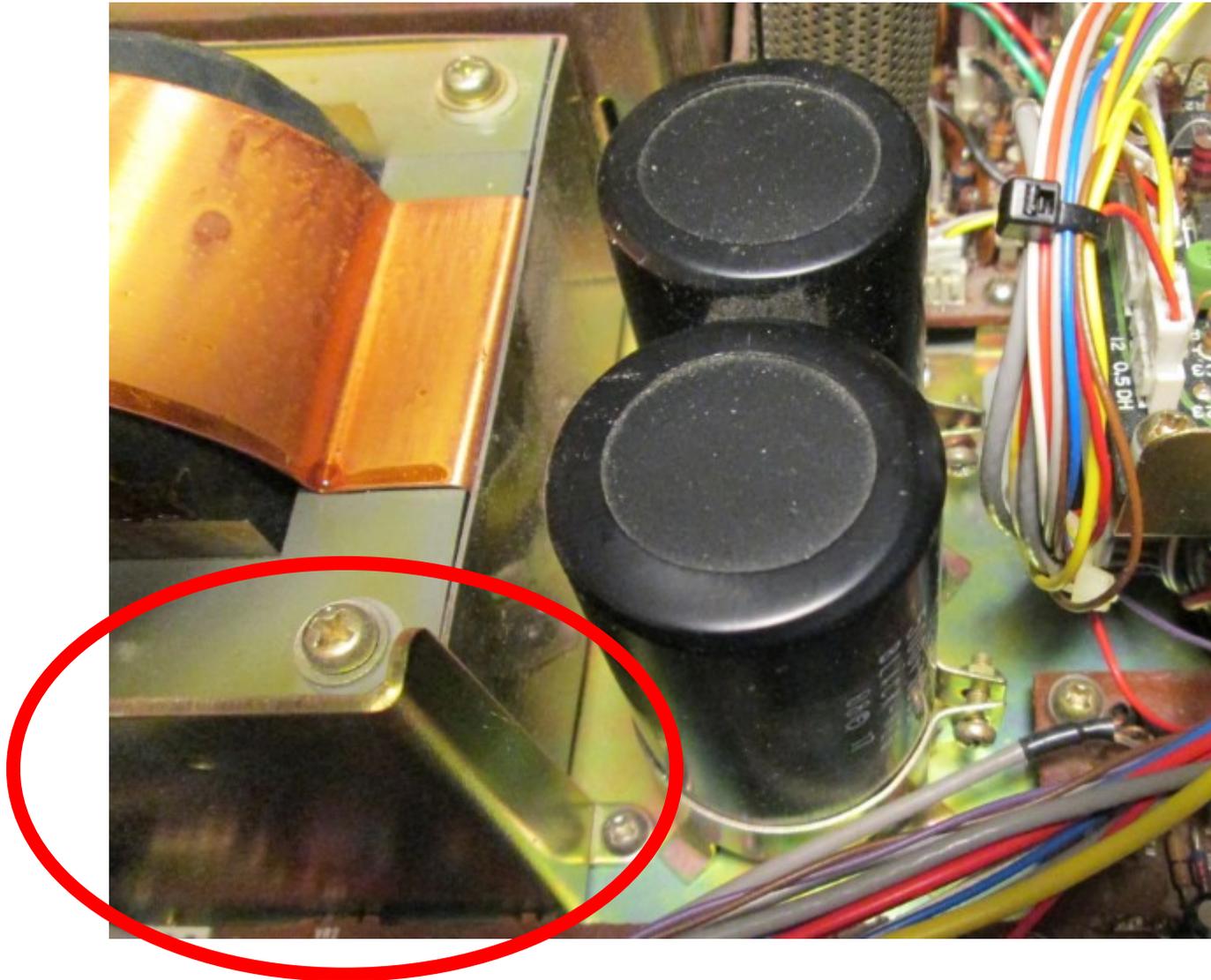
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TS-830S LOW SERIAL NUMBER



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TS830s Power Transformer Shield





TS-830S Gold Label vs Silver Label

(Dick Housden, W0NTA dick@w0nta.com)

Over the years, I have gone through 70+ TS-830S transceivers. The vast majority of these radios have not had the CW filters installed when I received them. I would estimate that number to be around 85%.

I have observed that there was a change from the original silver label radios somewhere in the 1 million serial numbers. Serial number 1050691 is a silver label. 1091856 is a Gold label. ALL radios I have seen with a serial number over 1091855 have been gold label. This now raises some questions:

1. If all of the gold label radios had both CW filters installed at the factory and they have been removed from many radios, where are they today? To my knowledge, the YG-455C and YG-455CN filters are only used in the TS-830S, the R-820 receiver and the R-2000 receiver.
2. If all gold label radios had both CW filters installed at the factory, why did Kenwood continue to list the YG-455C and YG-455CN filters as an option in their advertising brochures?

I have made another observation. All silver label radios that I have seen have a front panel labeled in the lower right corner as “**HF SSB Transceiver**” while the gold label versions are marked “**HF Transceiver**”. These are shown below.

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TS-830S Silver vs. Hold Label

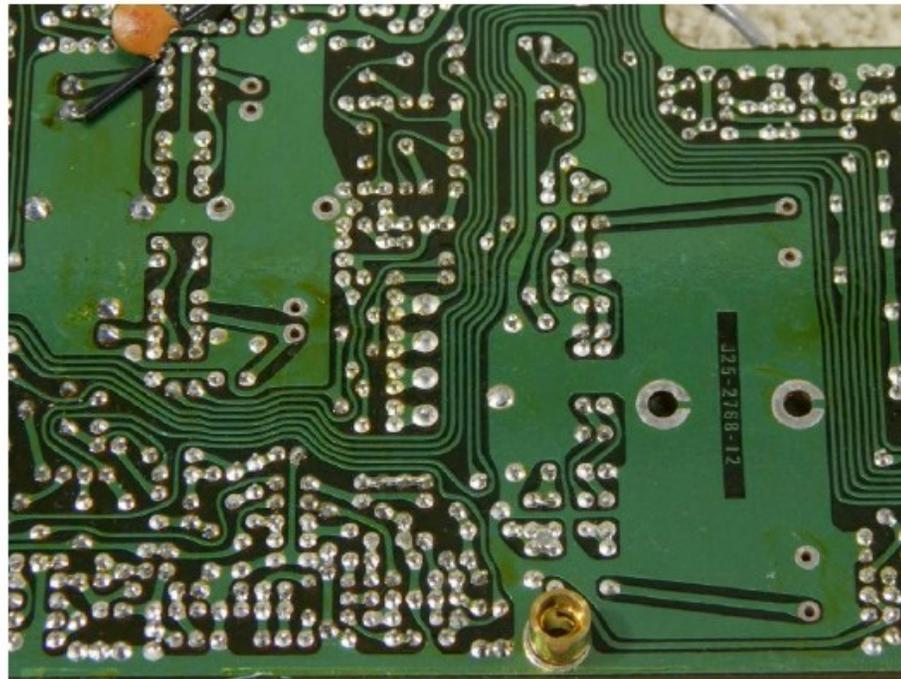


Note the silver label and words **HF SSB Transceiver**



Note the gold label and words **HF Transceiver**

I just removed the IF board from a TS-830S serial number 5100095 and I can detect no evidence of the optional CW filters ever having been installed.

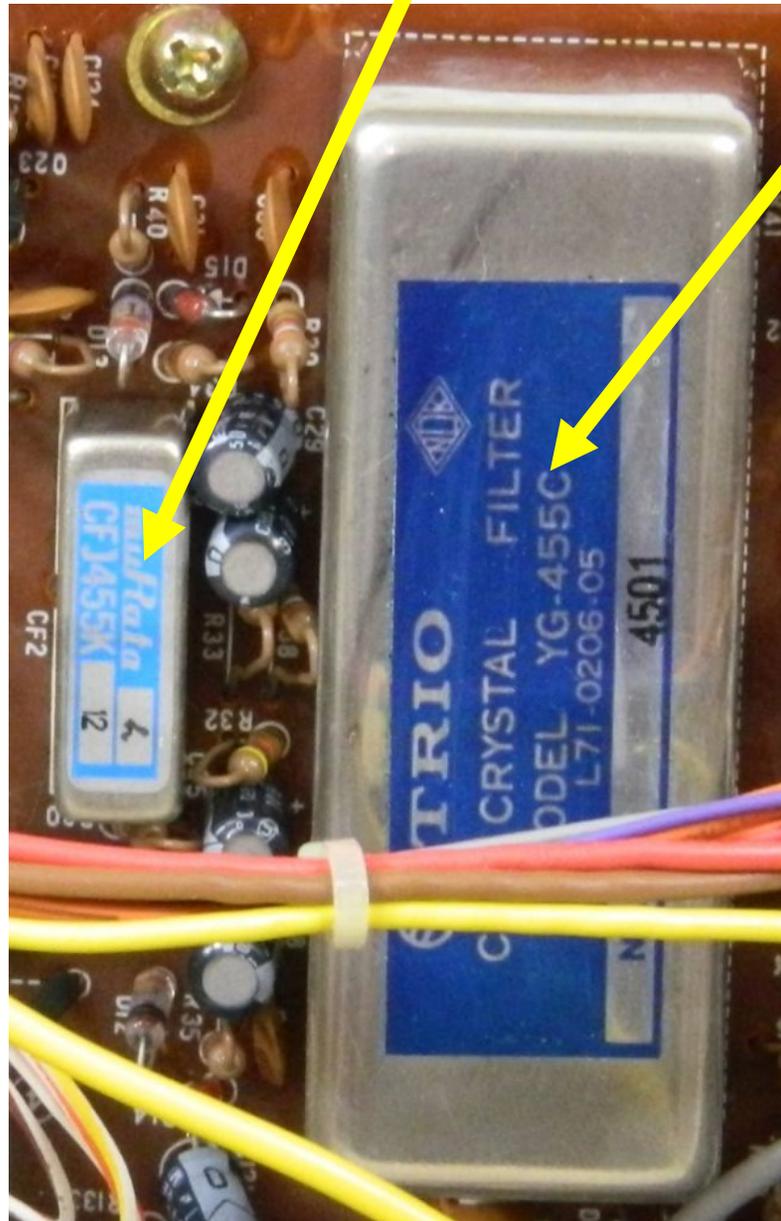


Note the holes for mounting the filters on this board show no signs of having solder applied and then removed.

My personal conclusion is that Kenwood did not install CW filters in all TS-830S transceivers with the gold label. They may have installed them at or near the end of production and sold them that way. I don't really know for sure.

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Standard CFJ455K-12 & Optional CFJ455K-5 SSB Filters



Kenwood Net Home Page

[Kenwood Brochures and Flyers](#)

[Kenwood Articles & Information](#)

[Kenwood Equipment Manuals](#)

[Kenwood Designed QSL Cards](#)

[Kenwood Magazine Advertisements](#)

Kenwood Hybrid Radio Nets:

Saturday - 7.235 MHz @ 3:30 EST

Sunday - 14.316 MHz @ 18:00 GMT



Kenwood Related Website Links

K4EAA – KEN - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com

KESFTF – Bob Mansker, Phone: (303)719-5433, Email: KESFTF@mail.com Sells parts on eBay & QTH.COM

East Coast – Phone: (800)632-3323, Web: <http://www.kenwoodparts.com/parts/index.php>

Radio Boatanchor Parts: TEL: 207-942-5745 xfrms@roadrunner.com http://tubes_tubes_tubes.tripod.com/index.html

Nationwide Radio & Eq. Sales LLC, Mark Olson, 1490 Norfield Rd, Suamico, WI. 54173, Email: ke9pg@new.rr.com

Phone: (920) 434-8097 Web: http://marketplaceadvisor_channeladvisor.com/StoreFrontProfiles/default.aspx?sfid=86409

Question:
Where Can I
get Parts?

WB4HFN.COM

- Tube Sources:
- ESRC Vacuum Tubes:
 - <http://www.esrcvacuumtubes.com/index.html>
- TTC The Tube Center
 - <http://www.thetubecenter.com/index.html>
- Nebraska Surplus Sales
 - <http://www.surplussales.com/index.html>
- RF Parts Company:
 - <https://www.rfparts.com/>



6146(B) or (W)

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www.wb4hfn.com

- **TUBES:**
- **ESRC Vacuum Tubes**, 6424 Pinecastle Blvd. Suite B, Orlando, FL 32809 Phone: 407-826-5808, Email: CustomerService@ESRCVacuumTubes.com Web: <http://esrcvacuumtubes.com/>
- **W9TEW Tube Sales**, Bob Bieker, 9528 Farmer Dr., Highland, IN 46322 Phone: 219-924-0945, Email: www.hamtubes.com ,
- **John Walker JR.**, 13406 W. 128TH Terr., Overland Park, KS. 66213, PH: 913-782-6455 (Home Evenings) PH: 913-568-7057 (Cell), Email: JWALKER83@KC.RR.COM
- **TTC The Tube Center**, Orlando, FL 32809 Phone: 407-826-9172, Email: customerservice@thetubecenter.com Web: <http://www.thetubecenter.com/index.html>
- **Radio Electric Supply**, 3500 N.W. 97th BLVD. Suite R, Gainesville, FL 32606, Phone: 352-332-8881, Email: tubes@mindspring.com Web: <http://www.vacuumtubes.net/>
- **Vacuum Tubes, Inc.**, Phone: (407)481-9994 Web: <http://www.vacuumtubesinc.com/> email, jim@vacuumtubesinc.com
- **SND Tube Sales**, Phone 636-939-9190, Fax 636-922-0601, E-mail: sndtubes@vacuumtubes.com Web: <http://www.vacuumtubes.com/>
- **The Tubestore.com**, Phone: 1-877-570-0979, Web: <http://www.thetubestore.com/thetubestore/index.html>
- **Antique electronic supply**, Phone 800-706-6789, E-mail: info@tubesandmore.com, Web: <http://www.tubesandmore.com>
- **VACUUMTUBES.BIZ**, KE7NTD – Roger Gould - Washington 16953 Tye Drive, Entiat, WA 98822 Web: <http://www.vacuumtubes.biz/index.html>
- **RF Parts** – San Marcos, California, Email: Terry@rfparts.com , 435 South Pacific Street, San Marcos, California 92078, Phone: (800) 737-2787, 760 – 744-0700 Web: <http://www.rfparts.com/?gclid=CJPr0Jf04cECFYdzMgod9woAgg>
- **Nationwide Radio & Eq. Sales LLC**, Email: ke9pq@new.rr.com Phone: (920) 434-8097 Web: <http://www.ke9pq.com>



Hybrid Service

Kenwood service and technical support: Last Updated: 9/25/2016

K4EAA – Ken, FL, - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com (Suspended Hybrid Repairs)

WA8SAJ – Jeff, OH - Phone: (440)951-6406, EMAIL: wa8saj@ncweb.com , Web: <http://wb4hfn.com/Services/WA8SAJ/SAJ-Repair.htm>

N9HE – Steve, AZ, Email: n9he@quarked.com

WB2KNR – Jim, NJ, Email: jimlamanteer@yahoo.com

AK4AA – David Lyndon, NC, Email: ak4aa36@gmail.com, Web: <http://oldhamdave.com/>

W0NTA – Dick, Greeley, CO, Phone: (970)381-6768 Email: dick@w0nta.com , Web: <http://www.w0nta.com>

K9TW – Terry, MI, Phone: (269)663-8943 Email: wagstw46@aol.com , Web: <http://www.k9tw.com>

HamRepair.com - Cal Fisher – TX, Phone: 214.476.5107, E-Mail: info@HamRepair.com, Web: <http://hamrepair.com/>

N0BXE, Affordable Radio Repair, Mike Alexander, Florence, CO. ,E-Mail: mike@affordableradiorepair.com Web:<http://www.affordableradiorepair.com/>

KA5IPF, Clif Holland, Avvid, Mabank, TX 75147 Phone: 214-850-0973 Email: clif@avvid.com Web: <http://www.avvid.com/> * (Also TS-940)

KE7OAY, Kenwood Restoration & Repair, Jim Showker, Eugene, Oregon, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>

K6ARU, Turner Radio, Lancaster, Calif., 616-945-9097 Email: k6aru@cwo.com

Midwest Technical Services, Watertown, Sdak, Phone: 605-882-1706, Email: tcmmoes@yahoo.com ,Web Page: <http://www.midwest-technical.com/>

AK4AA, Dave Lyndon, Hot Springs, NC, Phone: 828-622-0115, email: ak4aa36@gmail.com Web: www.oldhamdave.com * (Also TS-940)

KC9INK, Walley, Indianapolis, IN, Does local repair work only, Phone 317 823 9380, E Mail wallydoc@yahoo.com, *(Also TS-940)

K7ZS – Kevin Lahaie, Hillsboro, OR, Email: kevin@k7zs.com *(Also TS-940's)

Burghardt Radio Repair, Watertown, SD, Phone: (605) 886-7314, Email: service@burghardtradiorepair.com, Web: <http://www.burghardt-amateur.com/>
*(Also TS-940's)

Avvid Electronics, 322VZ County Road 2714, Mabank, TX 75147, Phone: 214-850-0973, Email: clif@avvid.com , Web: www.avvid.com / (Only later radio's, no hybrids)

WB0CJB, Paul Kemp, Columbia, TN, Email: pckemp4@hotmail.com (Works on most Hybrid Kenwoods, Drakes, Kenwood, etc.)

www.wb4hfn.com

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Hybrid Parts

Kenwood Parts:

K4EAA – KEN - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com

Kenwood Hybrid Restoration & Repair, KE7OAY, Jim Showker, Oregon Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>

KD7DNY – Walter Dilley, Email: walter.dilley@gmail.com Web: www.k7dny.com (Bought all of Bob Mansker, KE5TTF inventory) (**NEW WEB ADDRESS**)

Nationwide Radio & Eq. Sales LLC, Mark Olson, Suamico, Wi. 54173, Email: ke9pgg@new.rr.com Phone: (920) 434-8097 Web: <http://marketplaceadviser.channeladvisor.com/StoreFrontProfiles/default.aspx?sfid=86409>

Ken's Electronics: 2825 Lake St., Kalamazoo, MI 49048, Phone: (269)345-4609, Web: www.kenselectronics.com/

East Coast – Phone: (800)632-3323, Web: <http://www.kenwoodparts.com/parts/index.php>

Radio Boatanchor Parts: TEL: 207-942-5745 xfmrs@roadrunner.com Web: http://tubes_tubes_tubes.tripod.com/index.html

PacParts Inc., Phone: 800-421-5080, Web: <http://www.pacparts.com/>

Parts Description:

Band Switch Coupler:

1. K4EAA – KEN - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com
2. Kenwood Hybrid Restoration & Repair, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>
3. East Coast P/N: D22-0409-05 - (L5) NYLON COUPLER R-5000 TS-830S TS-820S R-1000 www.eastcoasttransistor.com



TS-520, TS-820, TS-530, TS-830 Flat Pack RL1:

1. K4EAA – KEN - EMAIL: ken@k4eaa.com , Web: www.k4eaa.com
2. Kenwood Hybrid Restoration & Repair, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>
3. Online Components, Web: <http://www.onlinecomponents.com/keywordsearch.aspx?text=nf4eb-12v>



TS-520, TS-820 Antenna Relay:

1. Kense Electronics, Web: <http://www.kenselectronics.com/> P/N: 401013-S term 12VDC *replace MH4P-12VDC in T599D, TS520S, TS820*
2. Kenwood Hybrid Restoration & Repair, Email: jim@hybridrestore.com Web: <http://www.hybridrestore.com/>



Misc. Items:

TS-830 & TS-530 L41 Replacement - KD7DNY – Walter Dilley, Email: walter.dilley@gmail.com Web: www.k7dny.com (**NEW**)

TS-830 Rectifier board relay – Source unknown at this time...

TS-940 Relay Omron G6E134P-ST-US-DC12 , Digkey Panasonic part # 255-1473-ND

TS-520, 820, 530, 830 Drive Sprockets, email: NR6C@roadrunner.com , Web: <http://nr6c.com/sprocket.htm>

TS-520/820 Paddle Switch Handles, eBay user: [id_dude](https://www.ebay.com/username/id_dude), Search for "Kenwood Paddle Switch Handles" .

TL-922 upgrades, Kessler Engineering LLC, Ph: 937-458-3173, email: don@KesslerEngineeringLLC.com , Web: www.KesslerEngineeringLLC.com

Cabinet Paint - ACE Hardware, Rust Stop, Machine & Implement, Ford Gray Gloss, Item# 082901171393



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Resource help for Parts, Service & Documentation

Kenwood Hybrid Transceiver Sales, Restoration & Service

by Ken K4EAA

Last Updated January 2013

Kenwood TS-520, TS-520D, TS-520S, TS-520SE, TS-520SP, TS-820, TS-820S, TS-530S, TS-830S, R-820

Amateur Radio equipment Information & Service : Transceivers, Receivers, VFO's, Antenna Tuners, Speakers, Ham Projects, Technical Information, Schematics, Repair Procedures, Information about Vintage Kenwood Ham Radio equipment



K4EAA.COM

Ken no longer does
any service work,
only parts sales.

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Resource help for Parts, Service & Documentation

Kenwood Hybrid Restoration & Repair

Kenwood Models TS830S, TS530S, TS820, TS820S, TS520, TS520S, TS520D, TS520SE, TS520SP

jim@hybridrestore.com

Jim (KE7OAY)



hybridrestore.com/parts/

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Resource help for Parts, Service & Documentation

W0NTA.COM

Amateur Radio Station W0NTA



These items are not for sale.

[Click Here for Manual Download Page](#)

[My Participation in the FYBO QRP Contest 2006](#)

The FYBO (Freeze Your Buns Off) QRP contest is a fun event where you operate outdoors during a date in February when the temperatures are usually rather cold. A multiplier is determined by the temperature - the lower the temperature, the higher the multiplier. I found that this page is still available on the net and decided to put a link here. We have since sold the place in the mountains. I miss it dearly as it was a great operating location and a relaxing venue.

[Rebuilding the bandswitch on a Kenwood Hybrid radio – TS-530S and TS-830S](#)

[Amateur Radio Items For Sale](#)

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Resource help for Parts, Service & Documentation

K9TW Hybrid Service

K9TW.COM

Welcome

Hello:

I am Terry Wagoner K9TW. I have been a licensed amateur radio operator since 1960. I hold an Extra Class License and the former FCC 1st Class Radio Telephone License. I have owned and operated all the KW Hybrid models over the years and currently own two full filtered gold emblem TS-830S radios as my primary daily drivers.

I have been servicing Kenwood Hybrid Transceivers for just over 11 years. I troubleshoot, repair, and perform full factory service manual alignments.

I also will on a limited basis perform email and telephone consultation in an effort to help a KW hybrid owner resolve operational issues. I charge no fee for this help.

I am a member of the Yahoo Kenwood Hybrid forum where I devote a considerable amount of time trying to help newly licensed hams who have purchased a KW hybrid as their first HF rig.

You can read a more complete biography on the QRZ.com website.

Welcome to my website (it is my first attempt and a work in progress)

Best 73s
Terry Wagoner K9TW



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Resource help for Parts, Service & Documentation

Various operator and service manuals by manufacturer

KENWOOD HYBRID

DG-5

1. [DG5 Service Manual](#)
2. [DG-5 operators manual](#)

W5RKL.COM

TS-520

1. [TS-520 operators manual](#)
2. [TS-520 service manual](#)

TS-520S

1. [TS-520S Operators Manual](#)
2. [TS520S service manual](#)

<http://w5rkl.com/kenwood-hybrid-operator-and-service-manuals/>

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BASIC TROUBLE SHOOTING

- Running the Hybrid net I've noticed that several problem repeatedly get asked.
 - What microphones work best on the Hybrids?
 - Low Mic. Level
 - VFO Unstable or Drifts
 - NO RF Output
 - NO ALC
 - Radio is DEAD ??
 - TS820s Display is Dead or erratic

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Which is the best Microphone to use with Vintage Hybrid radios?

- Kenwood MC-50
- Shure-522, lower drive than a 444 (**New from Amazon**)
- Shure-450 (**New from Amazon**)
- Shure-444
- Shure-444D dual impedance.
- Astatic D-104 no pre-amp, but a pre-amp can be bypassed & left installed
- Astatic 10D
- Turner 454C Ceramic, adding a 100K to 150K in series will up the base response.
- Turner 454X Crystal, adding a 100K to 150K in series will up the base response.
- Turner 254C

- Running the Hybrid net one problem I've noticed that has been mentioned several times was low or no microphone audio level.
- The first suspect is a bad microphone. After switching mic's, the low audio level is still present. This has been brought up at least a dozen times, if not more.
- Is the audio level ok if the processor switch is depressed?

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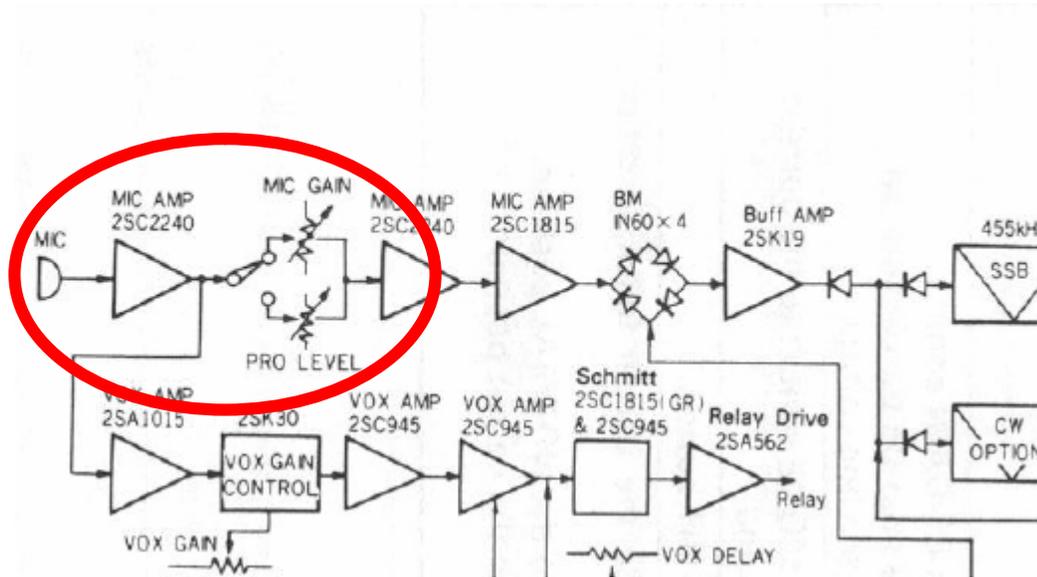
TS-830S Low Mic Audio Level Fix

- If ALC levels are normal when the processor switch is depressed, the fix is to take the cover off of the radio.
- Locate the processor switch. There is a cover that protects the rear of the PROC switch..



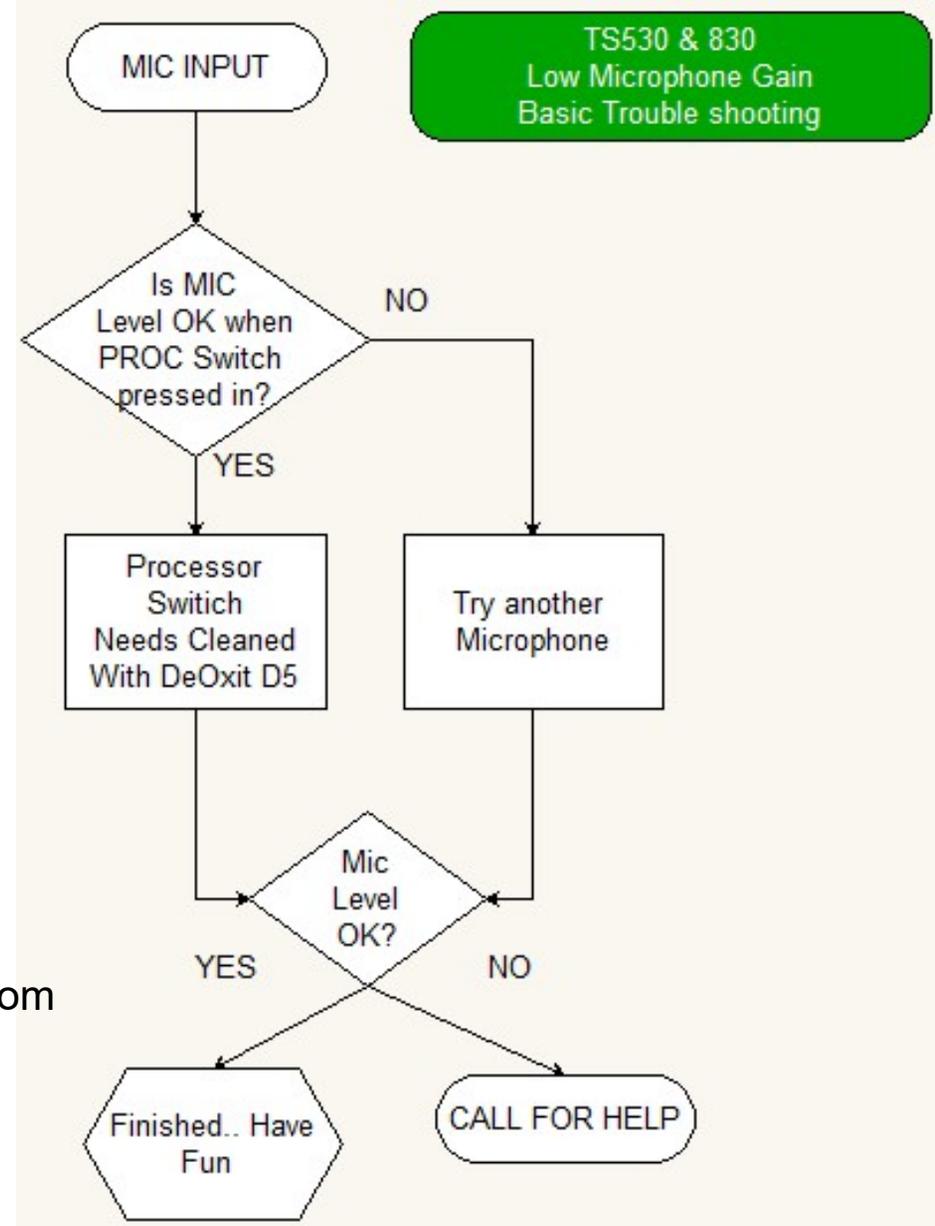
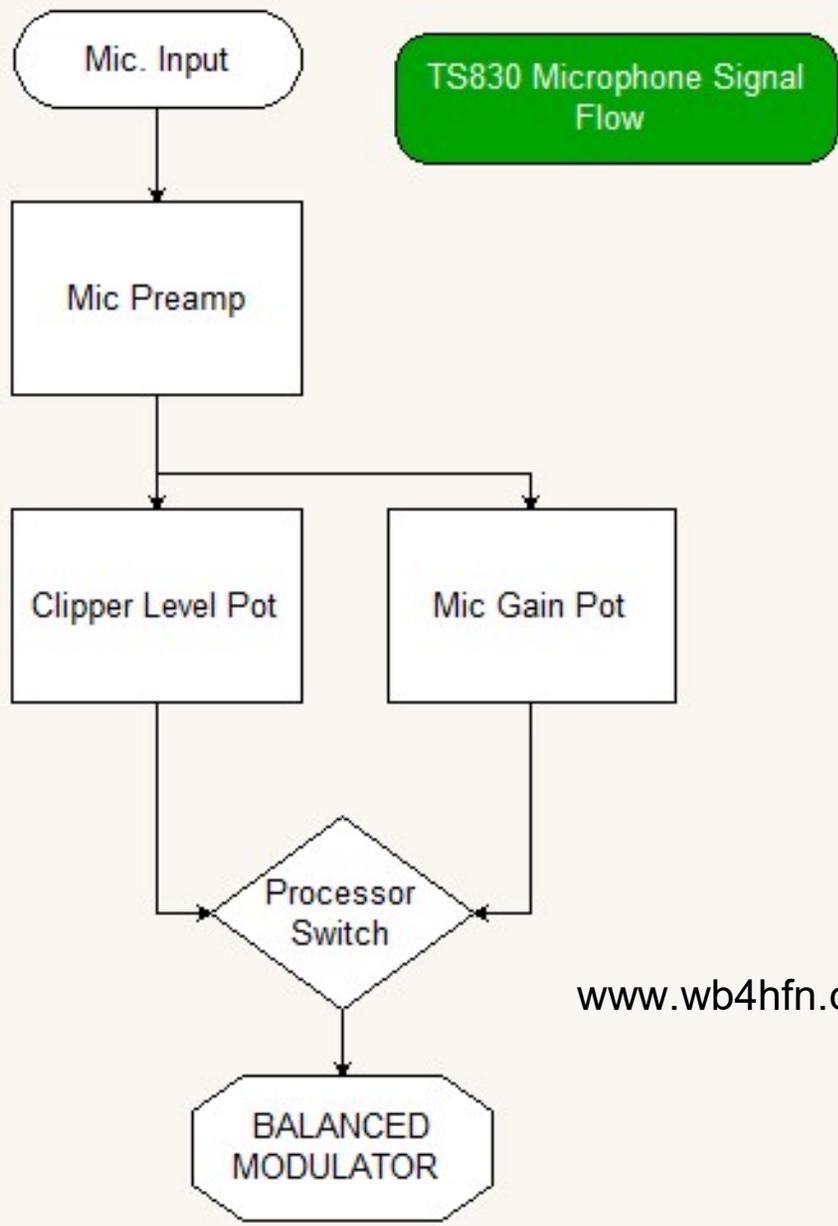
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TS-830S Low Mic Audio Level Fix



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TS830 LOW MIC GAIN

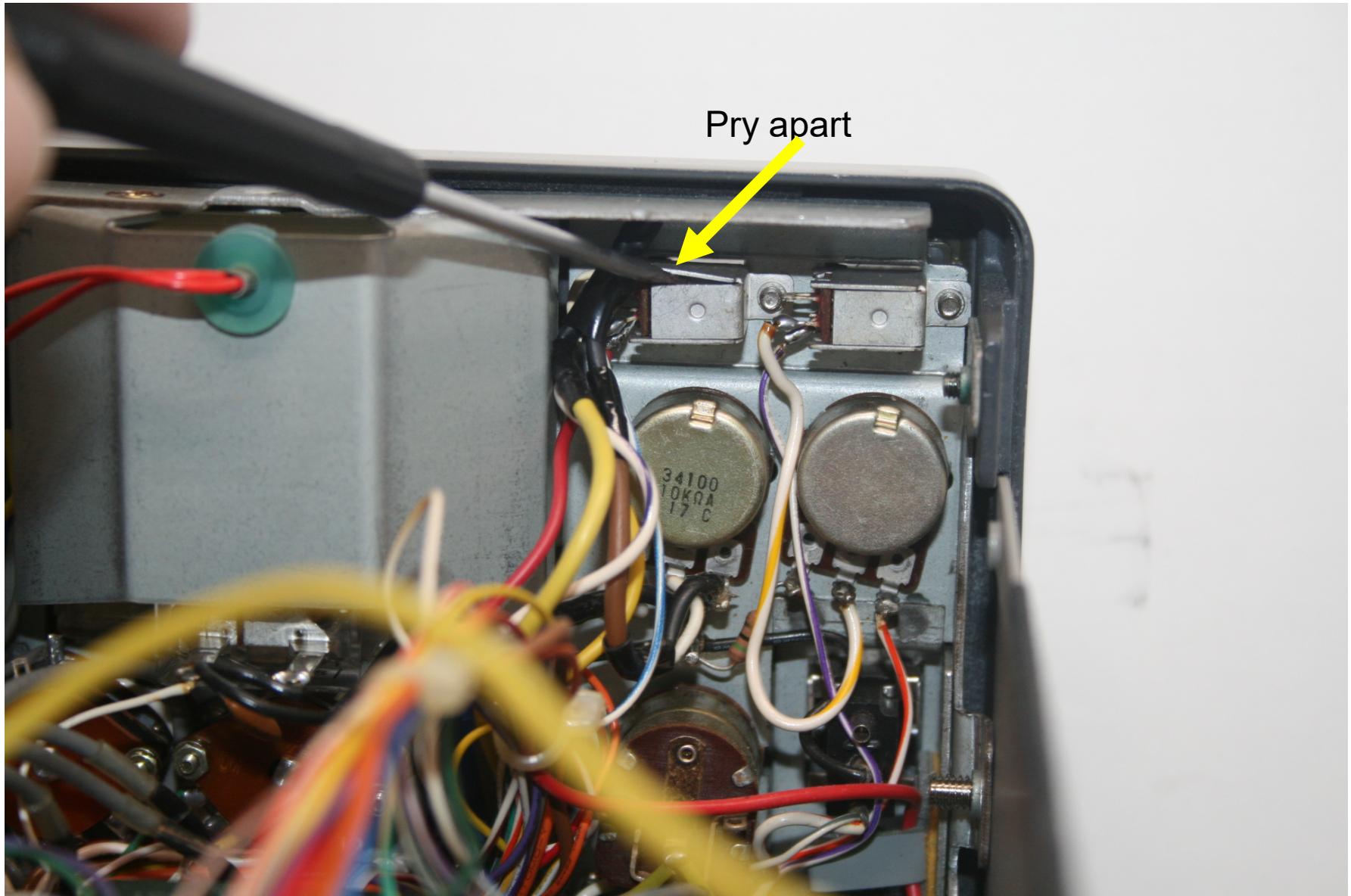


www.wb4hfn.com

- Put the radio on it's back with the rear panel against the table top.
- One of the switch cover corners needs to be pried apart enough to spray some DeOxit inside, letting it flow to the rear of the switch.
- Press the PROC switch several dozen times.
- This should fix the problem if the switch is in fact the cause of the problem.

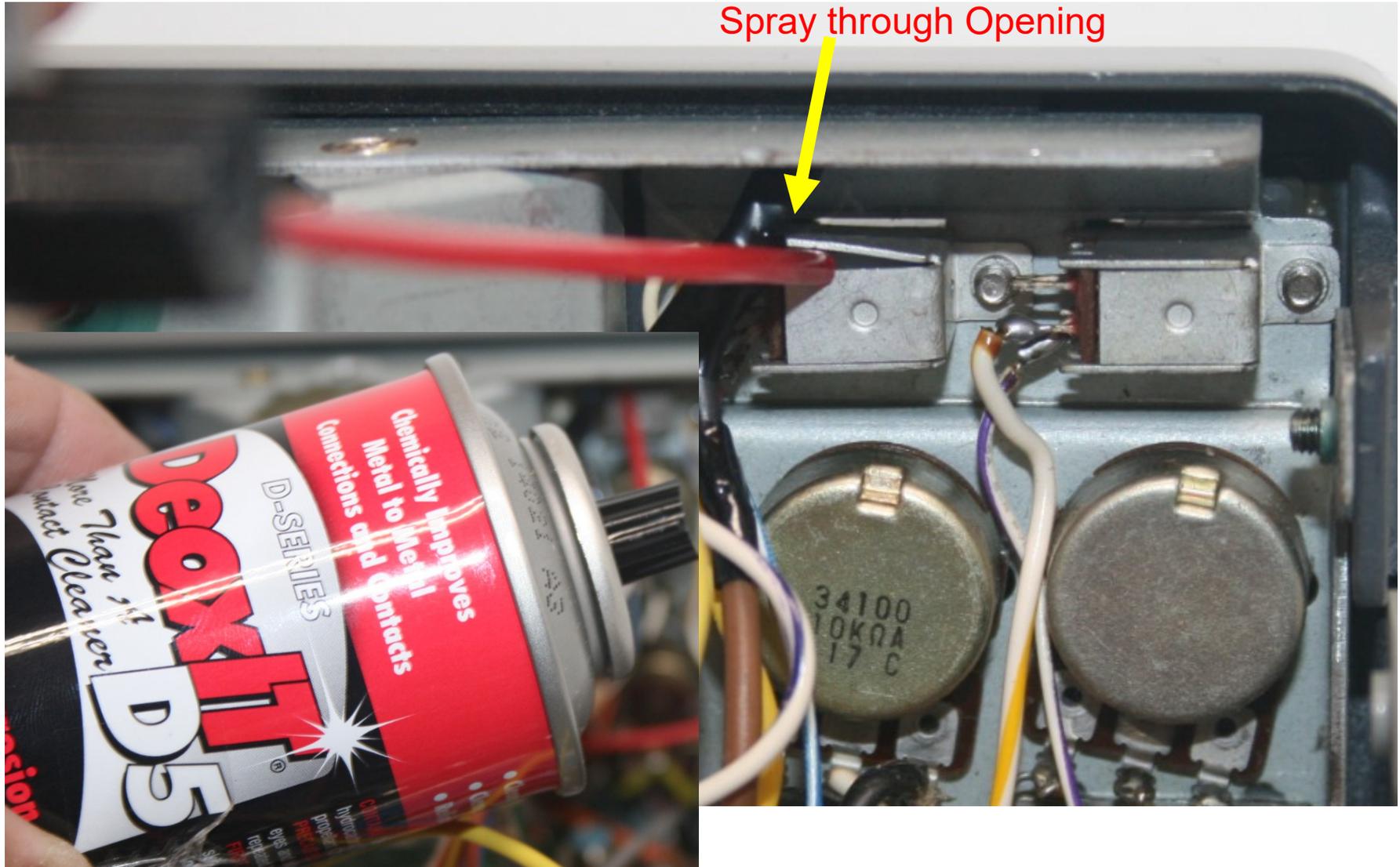
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TS-830S Processor Switch



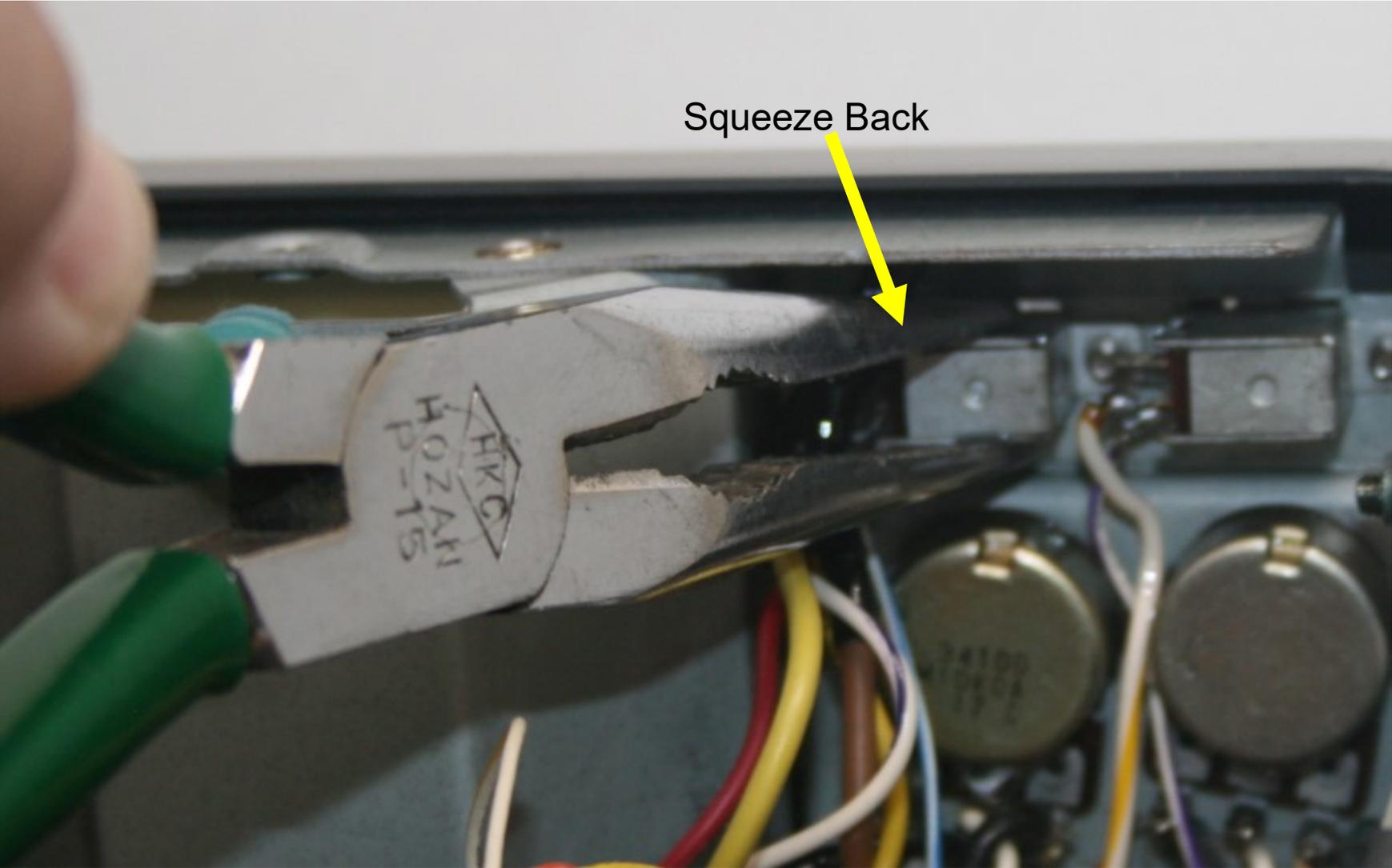
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TS-830S Processor Switch



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TS-830S Processor Switch



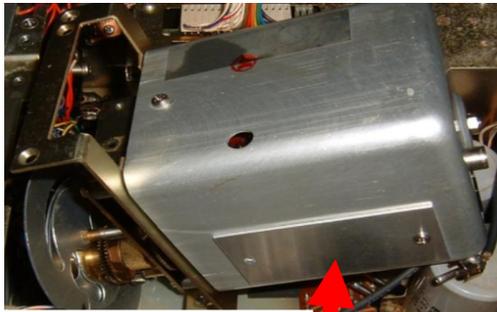
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TS-530S Processor Switch



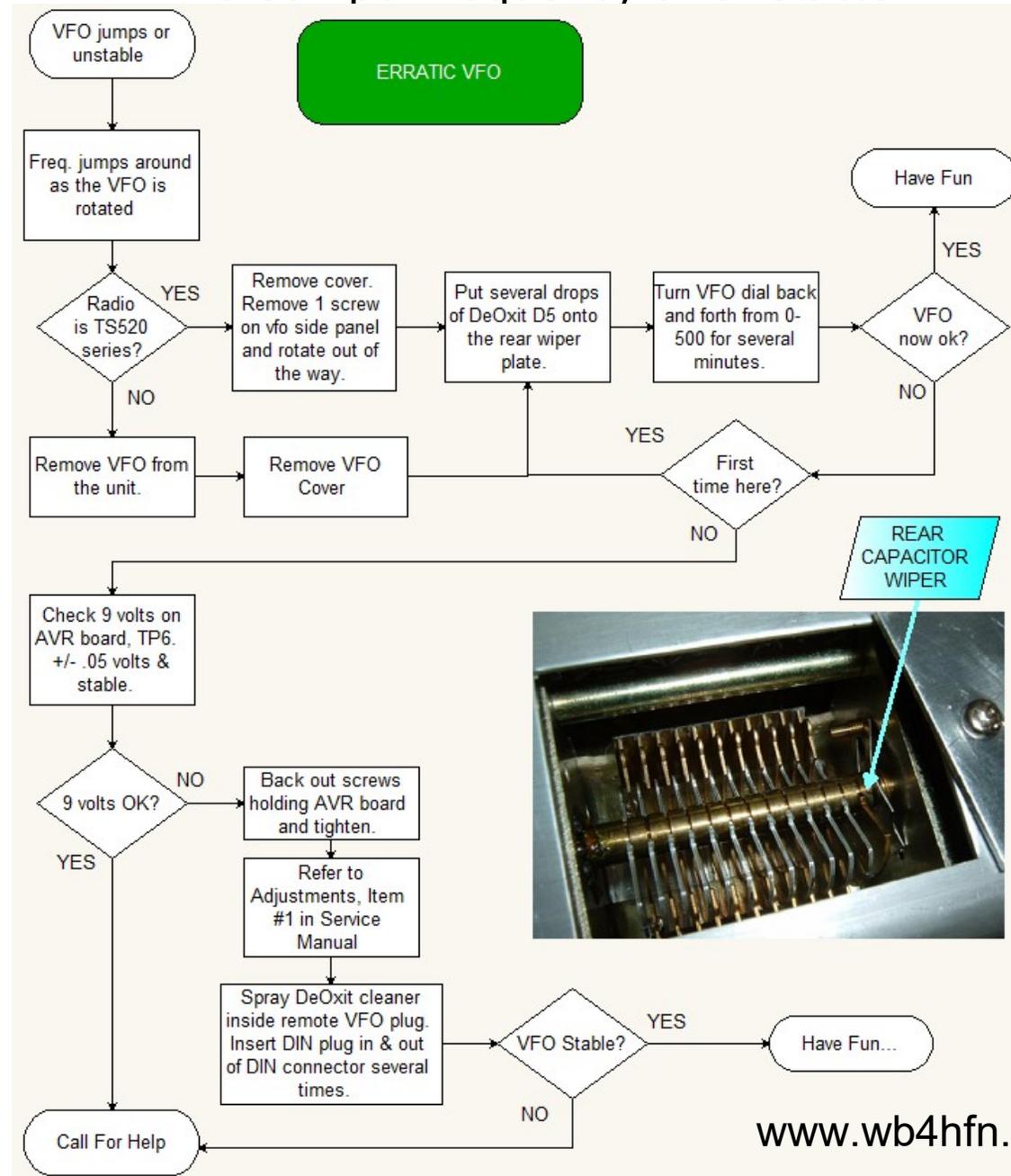
Put radio on it's rear and spray down into the front of the switch.

VFO Jumps Frequency or Unstable



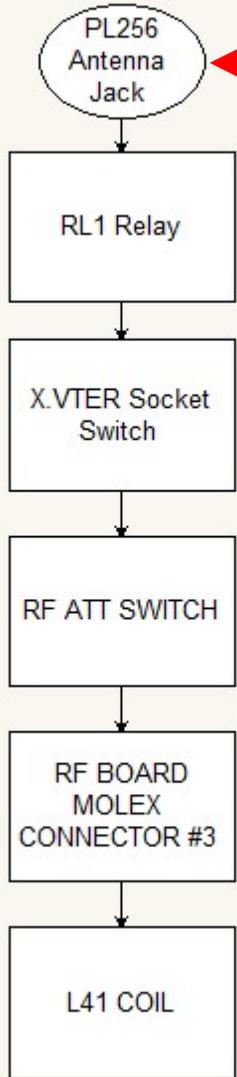
TS520 & 820

Cover slides out of the way by removing 1 of the 2 screws.

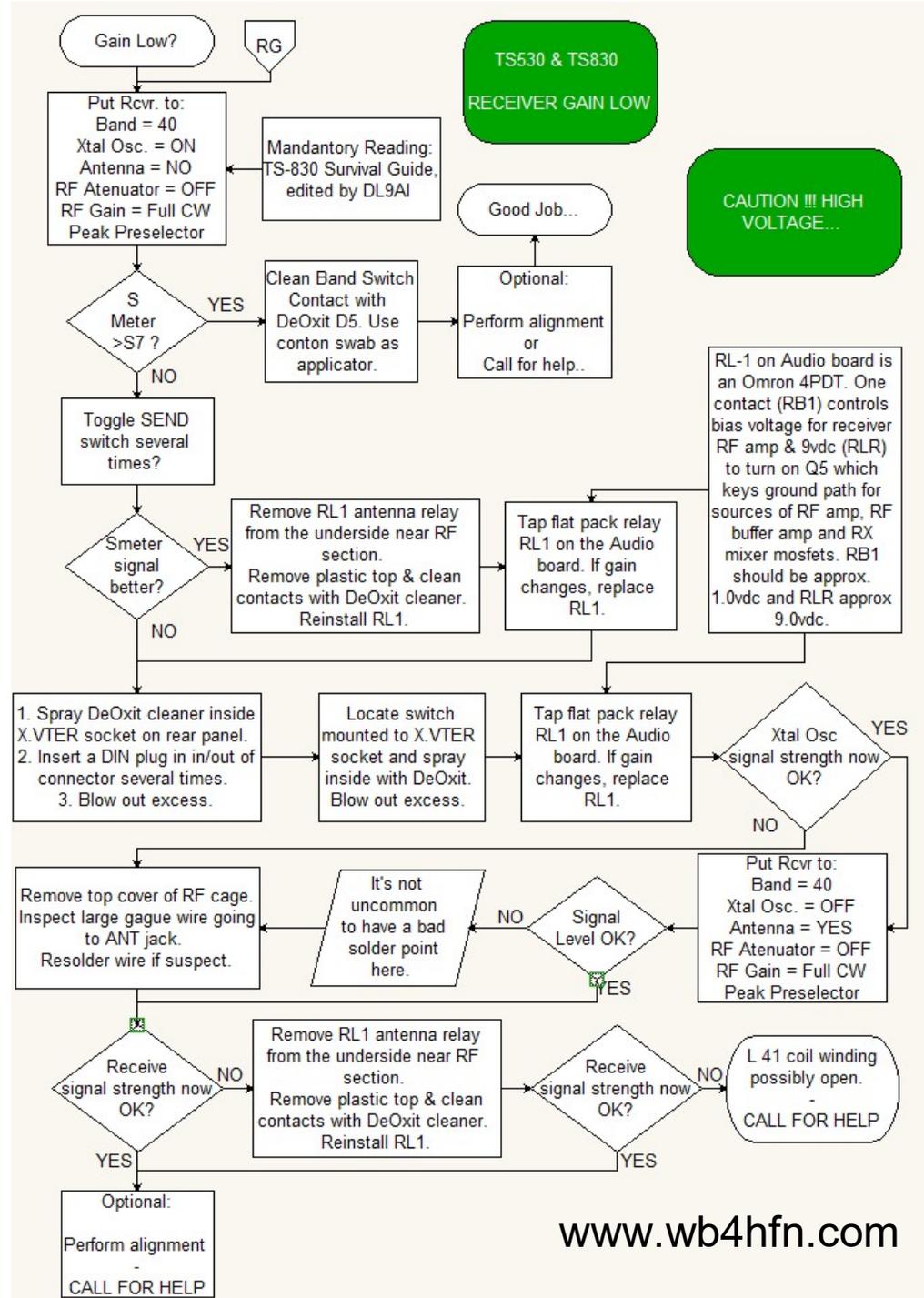


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TS830 RECEIVER LOW GAIN



Signal Path



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TS830 Display Dead – No Rcv or Xmit

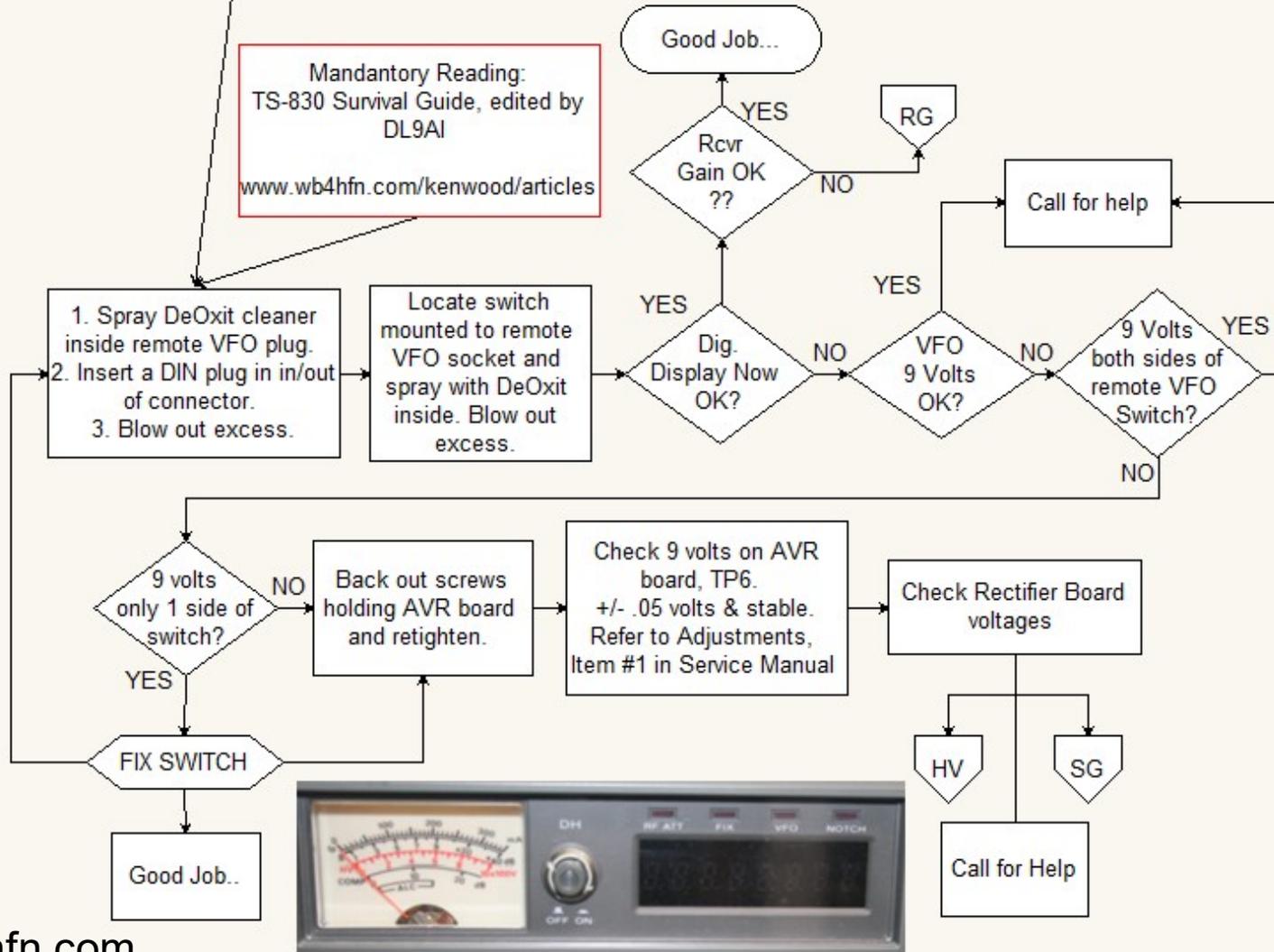


1. PILOT LAMPS OK.
2. AUDIO HISSES, BUT NO SIGNAL.
3. DISPLAY DOES NOT SHOW FREQ.

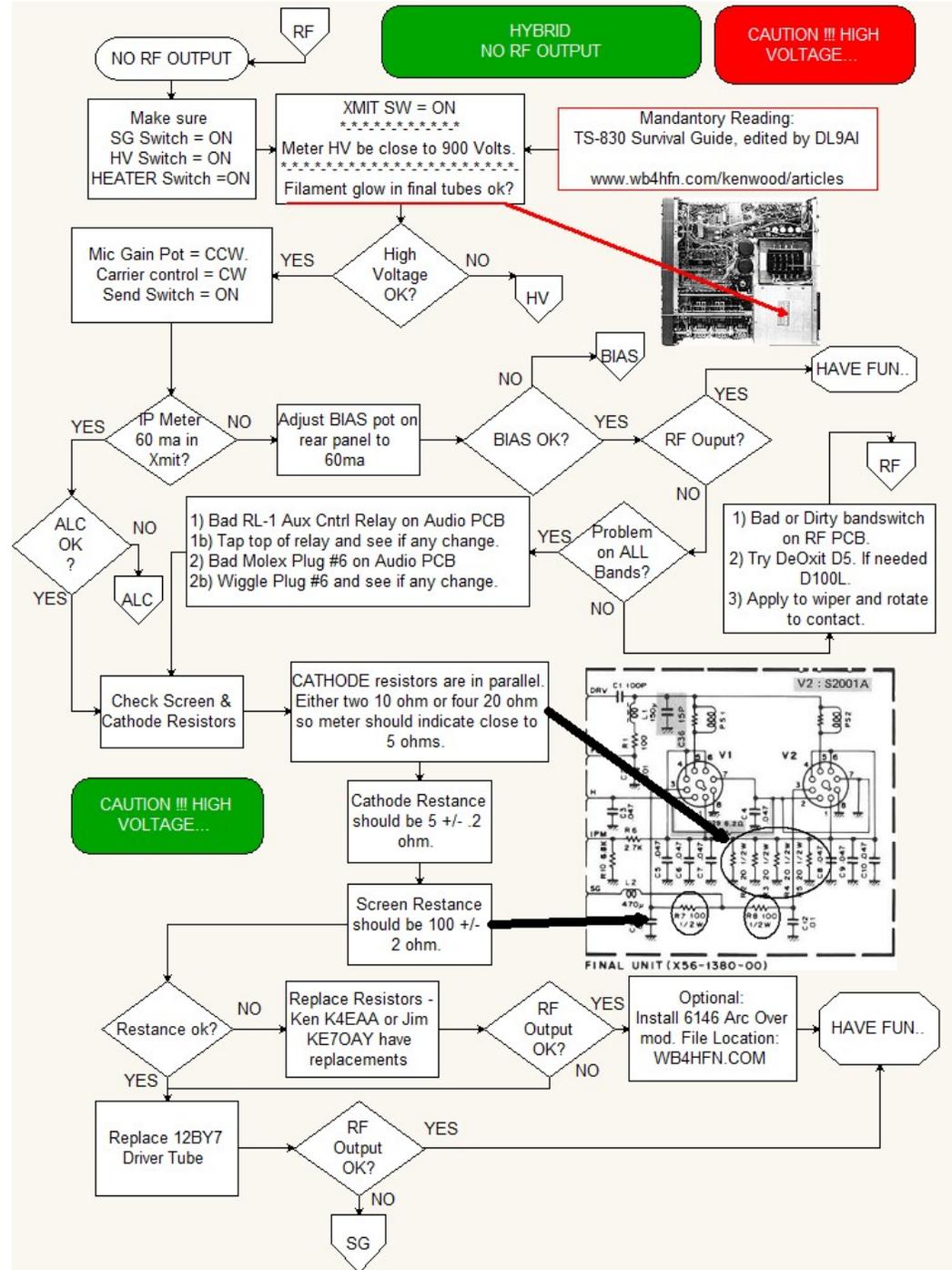
TS530 & TS830
Partially Dead

CAUTION !!! HIGH VOLTAGE...

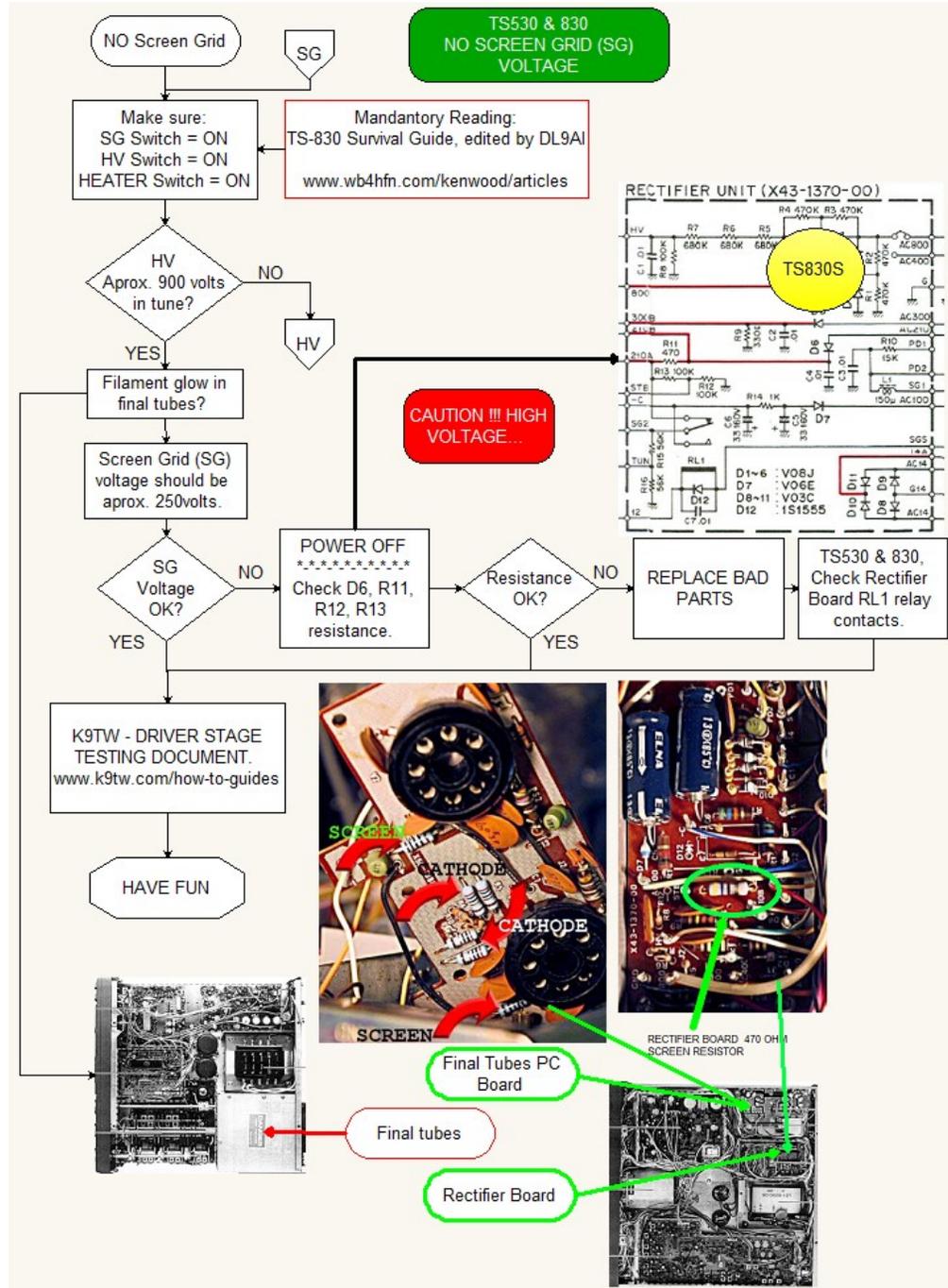
Mandatory Reading:
TS-830 Survival Guide, edited by DL9AI
www.wb4hfn.com/kenwood/articles



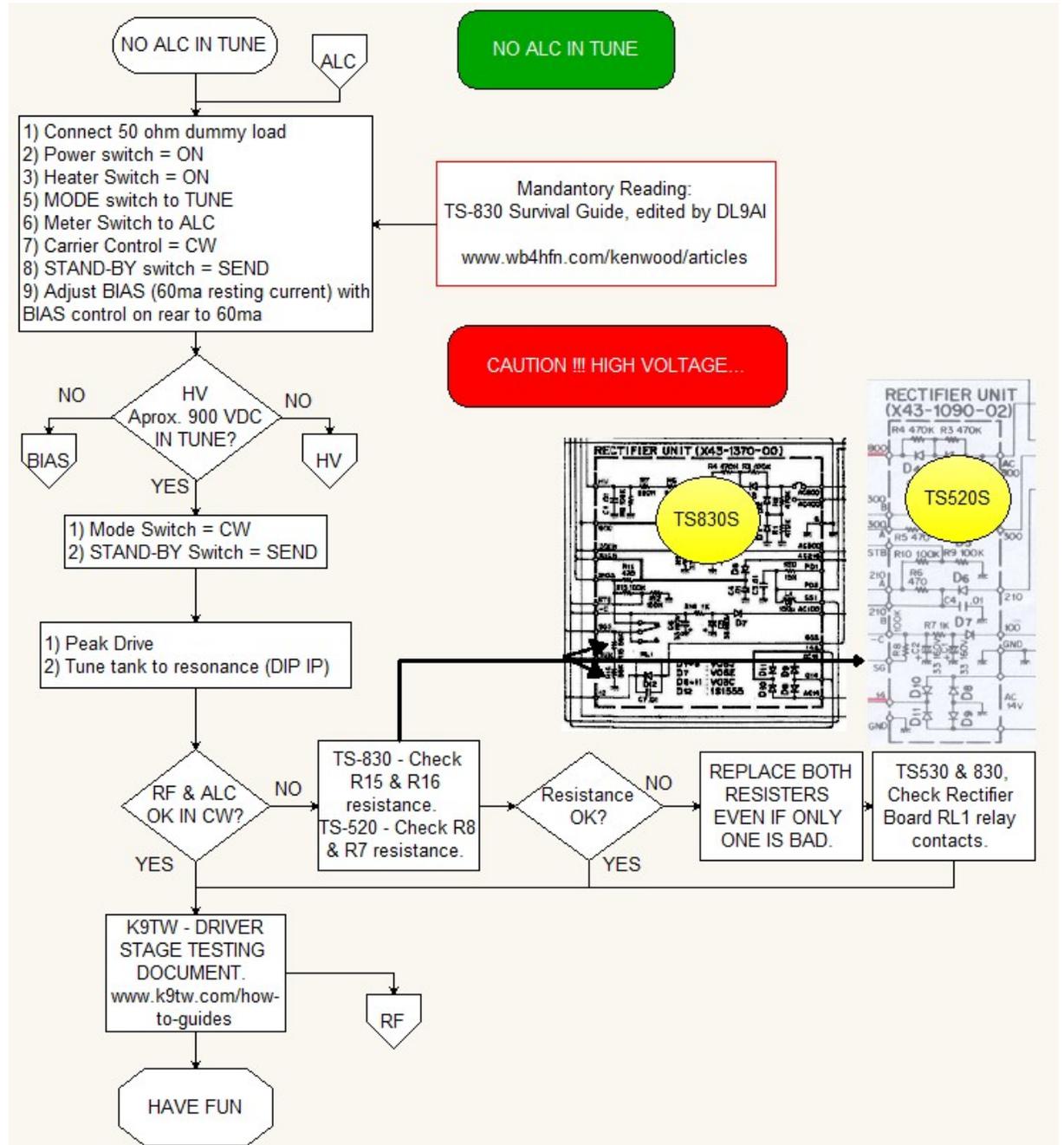
Hybrid – No RF Output



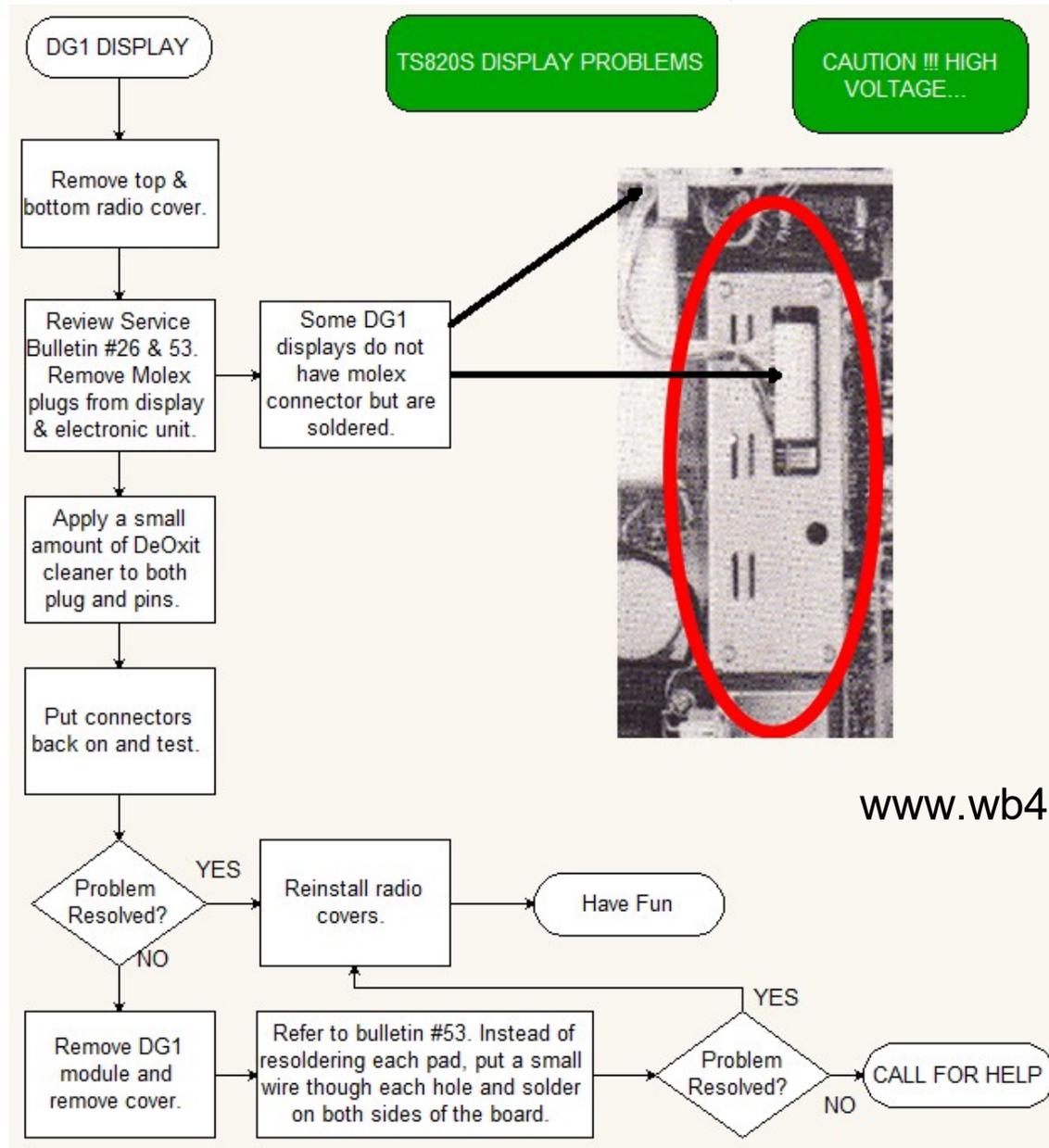
TS530 & 830 – No Screen Grid Voltage

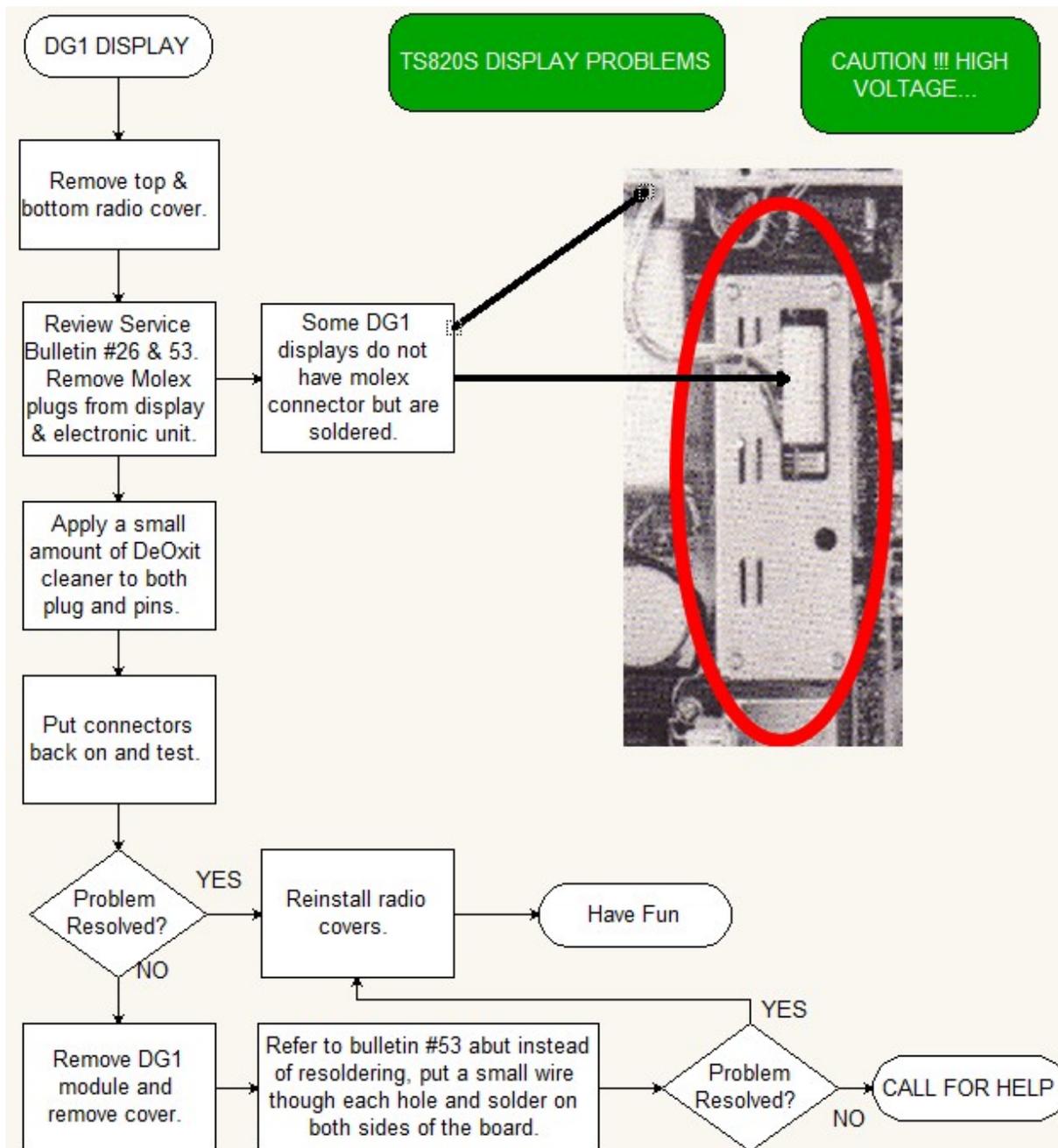


NO ALC In Tune Mode



TS820S Display Problem





TS820 DG1 Display

www.wb4hfn.com

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TS-820S DIGITAL DISPLAY



SERVICE BULLETIN

from: TRIO-KENWOOD COMMUNICATIONS, INC.

26

SUBJECT: SERVICE NOTE ON DG-1

DATE 10-25-79

It is our experience here in the Compton service facility that the vast majority of DG-1 problems are not component failure, but cold solder connections on the digital P.C.B. (X54-1160-00).

The second most frequent problem is dirty Molex connectors between the 2 P.C.B.'s in the DG-1.

Recommended service procedure: Remove both boards. Using a fine point, low wattage iron (less than 45W), and a good quality, low flux content solder, carefully resolder all component side connections plus the print throughs containing no components. (There are 18 of these points - only one is not top accessible, but is located under IC 11 and can be resoldered from the bottom). Resolder the Molex connectors. There are 9 print-thru's where solder may not have flowed thru to the component side.

Using a good quality tuner cleaner with silicone lubricant, spray both boards' Molex connectors and work the pins in 3 or 4 times to insure good contact. Reassemble and final check.

Total time on the bench: 20 minutes. We will allow up to 1 hour only warranty labor time.

JEB:adr

TRIO-KENWOOD
COMMUNICATIONS, INC.

1111 WEST WALNUT STREET - COMPTON, CALIFORNIA 90220
MAILING: P.O. BOX 7065 - COMPTON, CALIFORNIA 90224



SERVICE BULLETIN

from: TRIO-KENWOOD COMMUNICATIONS, INC.

53

SUBJECT: DG-1 STANDARD SERVICE PROCEDURE

DATE 8/10/79

1 of 2

INTRODUCTION

A majority of DG-1 failures are caused by either dirty connectors, or cold soldered connector pins between the top and bottom foil paths of the double printed boards.

Before any component level service is attempted, it is advisable to eliminate the possibility of an intermittent connection causing or complicating Counter failure.

1. PHYSICALLY DISCONNECT THE MAIN POWER CORD!
2. Remove cabinet covers; top with speaker load, and bottom.
3. Unplug the top and bottom connectors from the DG-1 unit.
4. Remove the Digital Unit assembly by removing 4 screws from the chassis underside.
5. Disassemble the Digital Unit; remove 8 screw and slide off the cover.
6. Remove both PC Boards, 4 screws each.
7. For those connector pins joining top and bottom foil paths; reheat pin, flow .031" diameter solder from the top to insure the solder joint through the PC Board.
8. Wash the board to board Molex connectors with FRESH trichlorethylene. Heat dry and inspect for flux residue. If necessary, reclean. Also, remove the pin connectors from the DG-1 chassis, (note they insert from the Digital PC board side) and clean in FRESH trichlor. Heat dry and spray with silicone lubricant. Spray into the board mounted connectors with silicone.
9. Reassemble by reversing steps 8,6, and 5.
10. Reinstall by reversing steps 4,3, and 2.

HOW TO SOLDER ON THE DG-1 PC BOARDS

1. Use a LOW POWER PENCIL, 35W or LESS!
2. Use rosin core solder, small diameter.
3. DO NOT create solder bridges or splashes.
4. DO NOT overheat or otherwise lift the foil from the board.
5. Wash excess flux away with FRESH trichlorethylene and a small flux brush. Neatness counts - it's YOUR radio.

TRIO-KENWOOD
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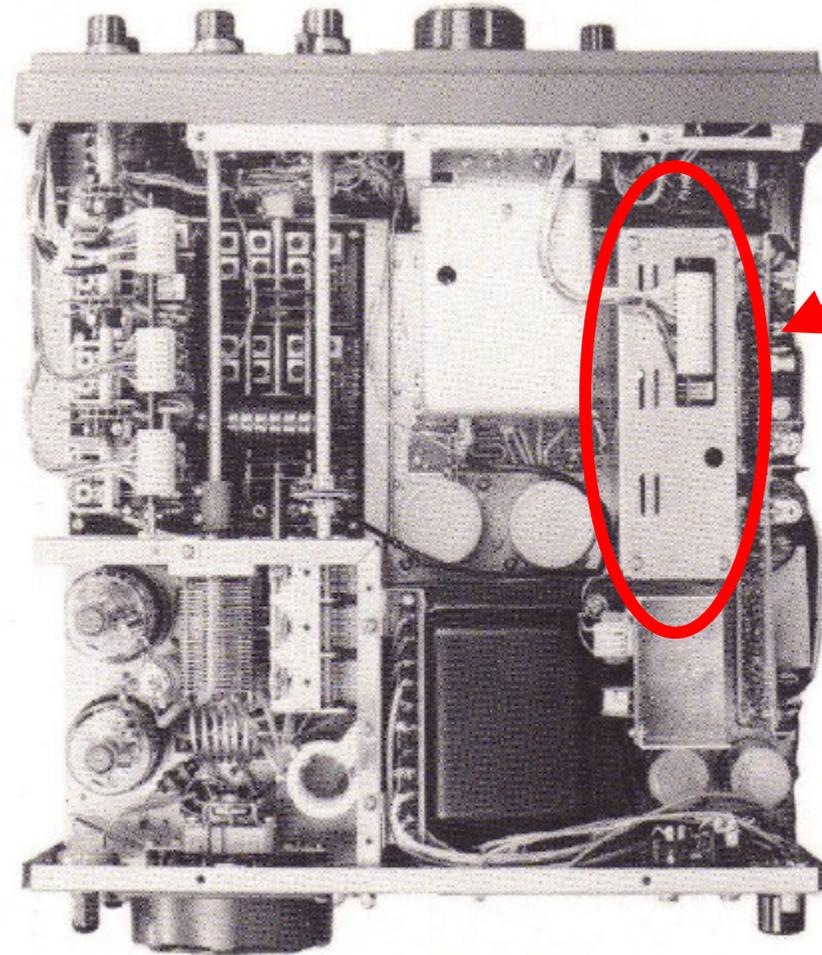
KENWOOD

TS-820S DG-1 Digital Display Module



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TS-820S DIGITAL DISPLAY



Remove 2
boards from
enclosure and
re-solder
connector pins
between the top
& bottom foil
pins.

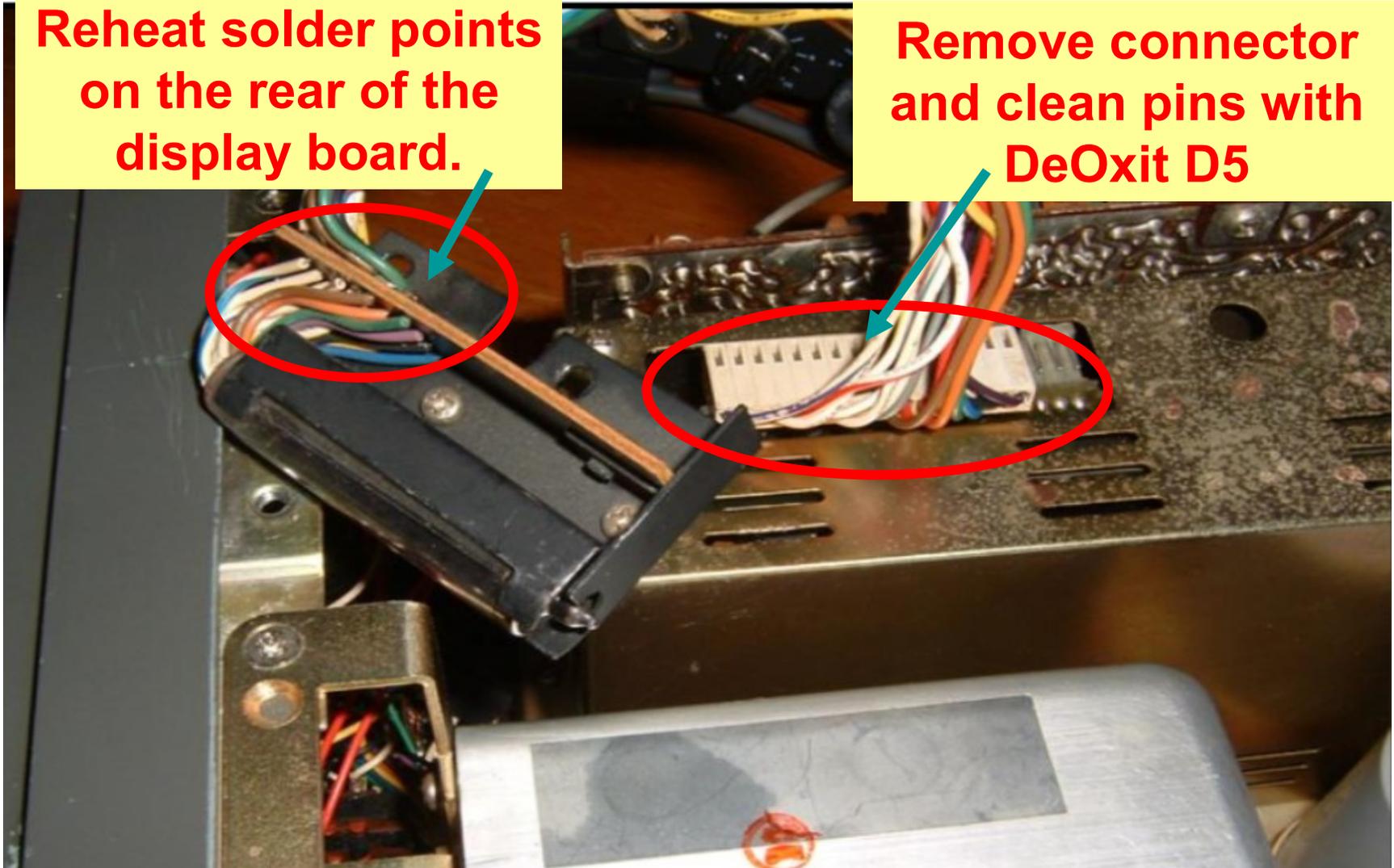
Top view

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TS-820S DIGITAL DISPLAY

Reheat solder points
on the rear of the
display board.

Remove connector
and clean pins with
DeOxit D5



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