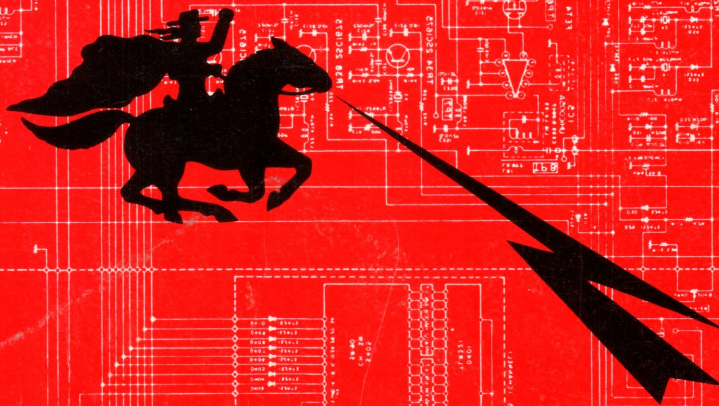


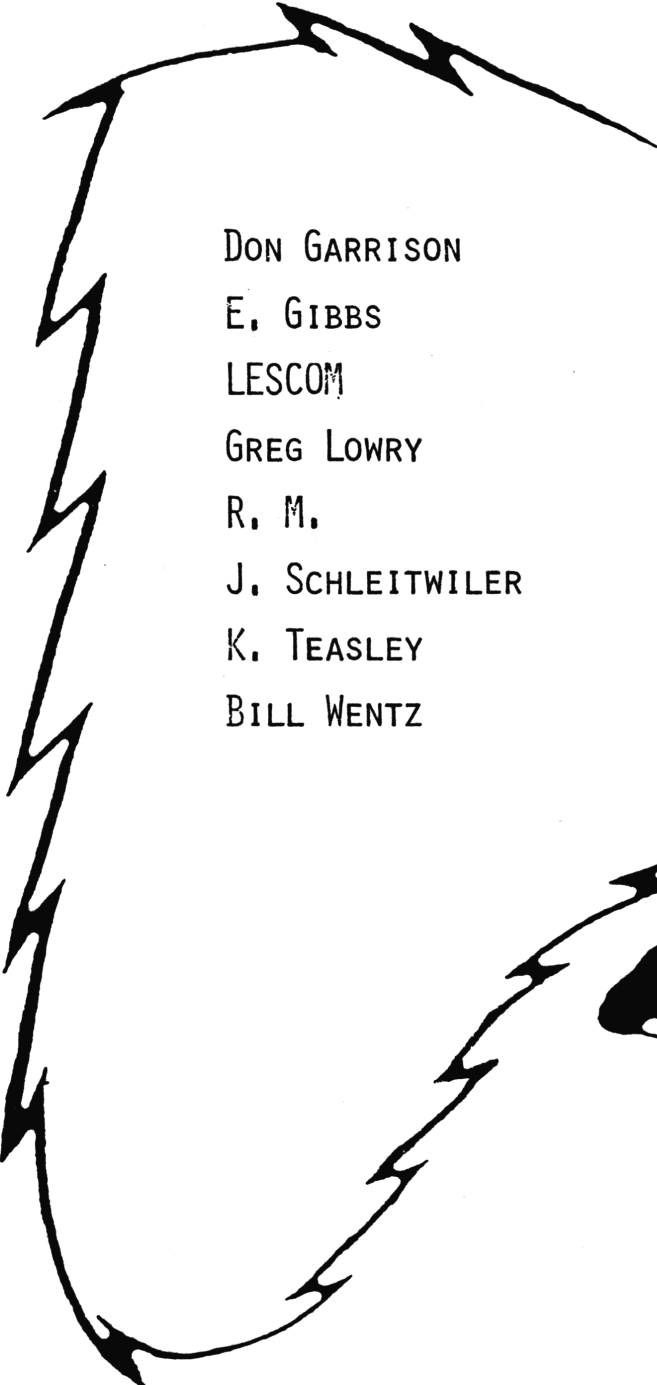
SECRET SECRET



CONFIDENTIAL
**FACTUAL
REPORT**
SCHEMATICS ETC.

ACKNOWLEDGEMENTS

SECRET CB WISHES TO GRATEFULLY ACKNOWLEDGE THE FOLLOWING PEOPLE FOR THEIR HELP AND CONTRIBUTIONS TOWARD GETTING VOLUME 23 IN PRINT. THEIR ENCOURAGEMENT AND CONTRIBUTION OF MATERIAL HAS BEEN INVALUABLE.



DON GARRISON
E. GIBBS
LESCOM
GREG LOWRY
R. M.
J. SCHLEITWILER
K. TEASLEY
BILL WENTZ

WANTED

NEW MODIFICATIONS
NEW CONVERSIONS
TECHNICAL TIPS
PROJECT PLANS
ETC. ETC. ETC.



DORIS SAYS "THANKS" AND A FREE BOOK TO THE ABOVE PEOPLE.

I N T R O D U C T I O N

Eight years and twenty-three volumes of 'SECRET CB'. Not the goal that was set of one volume each quarter but, with the slow down of CB manufacturing & sales, we feel its a good record. So, again 'THANKS' to all of our contributors and readers that keep us working on that next volume.

We have a few new products introduced in this volume. Maybe they are just what you have been waiting for!

The main problem we have now is finding parts for the older units and parts & schematics for the FM units. Does anyone out there have the solution??

With the Holiday Season approaching our thoughts will soon be turned to celebrating Thanksgiving and Christmas. The SECRET CB gang would like to take this opportunity to wish all of you a VERY HAPPY HOLIDAY SEASON. Your continued support has made this a very SPECIAL & HAPPY time for us.

TILL VOLUME 24!

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Another volume finished, thanks to the amount of information received and scrounged.

The Phase Lock Loop cross-reference in rear of this volume will be a great value to those who utilize it properly. (Keep it updated, as reference will be made back to it from time to time.)

Many thanks to "Custom Conversions" for releasing additional 'custom' write-ups/conversions for publication. More will be released in future volumes.

(Special Note: NO 858 SSB Chassis conversions will be released.)

The AM to AM/SSB conversion was a joke! But the 'jocks' did inquire on how-to-do-it?

As for the Centerfold, have been busy trying to censor some of these.... Who ever sent in the twins', need your address/phone.

A possible conversion of the SuperStar Mark 1 Voice Scrambler will be in Vol. 24 also. This will do away with the box and have it installed inside a unit. Will turn on and tune with one knob, volume to be controlled with the unit's volume control.

Remember, put it in writing - but PRINT.... no telephone info. will be accepted for publication.

CORRECTIONS

SCB Vol. 22, pg. 21: Superstar 1700...
CHANGE - (uPD2810-PLL), to read (IC7120-PLL).
DELETE - See volume 19, pg. 30 for alignment.

SCB Vol. 20, pg. 53: Uniden PC77...
try removing R156 (100 ohm)
CHANGE - the underlined to read:
R132 (1.5K ohm)

- - - - - W A R N I N G - - - - -

NO RUMOR The FCC is hot, HOT to catch 'out of band' operators
on the following frequencies:

26.620MHZ, this is the Civil Air Patrol frequency for search and rescue.

26.800MHZ, Military and Border Patrol.

26.945MHZ, FAA - stay clear!

*27.575 and 27.585MHZ; now why anyone would talk on these frequencies
is beyond me - as are used by the FCC. Also the
Coast Guard, FAA, and just about every U.S. Govt.
Agency for low powered communications.

27.720MHZ, NASA and Air Force in Florida.

27.750 and 27.785MHZ; these are both US Navy and US Coast Guard.
Reason will be obvious if you monitor.

27.870MHZ, NASA and Air Force in Florida.

27.900MHZ, used by both the US Army and Navy for operations.

27.980MHZ, U.S. Coast Guard

SEE VOLUME 14 for complete listing of 25-29MHz Frequency Assignments..

Information Needed

Of all listings in Volume 22, received only the Fox (all) and Midland
77-155. The schematics for all the Fox units were not reproduceable,
but only because the factory sent bad ones to start with.

So nothing is really new in the request line at this time, just keep
it coming.

CONNEX 3300

CONNEX 3300

Serial Number 900036

Supposed to be replacement for and better than the Formac 700. AM/FM with built in Echo with On/Off switch. Advertised as 480 channels. I've always believed that 1 frequency position equals 1 channel. Has 240 frequency positions. Has the following switches and/or controls. Vol/Sq, Mike/RF Gain, PA/FM/AM, 3 position range switch with Hi/Lo band switch, Echo, Time, Echo On/Off, Hi/Lo power, and NB/ANL/Off. Has a junkie 2SC1969 final with thick, thick white insulators. Does not have SWR capability. Has the MCL45106 PLL chip. Has NO schematic. How the HE-- do you work on a radio without a schematic? Imagine...sending someone who has never even been to New York to an address right in the middle of the Bronx. Give him no instructions, no map, no CB, and lock his windows and doors from the outside!

Power out of the box.

Freq	Hi	Lo	Mod
28,305	7W	4W	95-100
27,405	8W	5W	95-100
25,615	*4W	2W	80-85

Rejection quality very poor on this unit

Comments on Echo

An Edsel and a Mercedes are both automobiles and will get you from point A to point B. The Connex 3300 and Formac 700 both have Echo units, but here the similarity ends. Former unit has no adjustments on the echo board, latter does. Talkback in the Formac 700 very quick and simple. A 40-60 ohm resistor from the ground side of the Ext speaker jack to chassis ground. This point on the Connex 3300 is already at chassis ground so this won't work. Have spent a couple of hours so far trying to make it feed back but haven't been successful yet. (See above note on schematic). Had to listen to Echo quality on a PA speaker and another radio. Echo quality is poor.

Design layout and quality are ok and everything is labled. Has two confusing controls mounted on the board. CW MON & ALC. Unit does not have CW or SSB capability. Unit is not as cosmetically nice as the Formac 700.

Altogether this unit is not that bad and it will sell if the buyer does not have a choice, but if I had a choice I'd buy the Formac 700 two to one over this one.

Wouldn't it be great if just once the Importers would have something evaluated or ask us what we want before they dump a bunch on the market? Or keep a good one when they come up with it.

NEW PRODUCT RELEASE

THE DP2112A PHASE-COHERENT LOW-PASS FILTER MODULE

The DP2112A is a state-of-the-art Phase Coherent Low-Pass Filter which is guaranteed to improve the "EARS" on any communications receiver in any service (AM/FM/SSB). The EXCLUSIVE CIRCUITRY pulls those weak signals out of the "mud", and allows you to enjoy Dxing like never before. A front-panel-mounted "PEAKING CONTROL" permits the operator to swing the filter's characteristics and completely knock out hash and hiss while allowing 100% Voice Recovery.

In addition, a special Hetrodyne Rejector Circuit gently mutes the 2112 whenever a 4 khz or higher Hetrodyne is detected for much more enjoyable communicating in SSB service.

Ready to install, with installation and operating instructions.

THE DP2112B PCLP FILTER w/ RECEIVE ANTI BLASTER

Have you ever had the volume on your receiver cranked up all the way trying to pull in that weak station, only to have a local operator key-up and blow your ears and speaker away?

The solution to this problem is the DP2112B PCLP filter with Receive Anti-Blast.

The 2112B offers all of the great filtering action of the 2112A, but, in addition, incorporates special circuitry which controls receiver audio output, to prevent the ear-blasting situation described above.

A must-have for the hard-core Dxer or SWL.

THE DPPM-1 POWER MIKE MODULE

The DPPM-1 is a miniature high-performance self-contained Power Mike Module unlike any other available on the market today. This device has an ELECTRET microphone element and a built-in thin film Intergrated Circuit Preamp, with a FET output stage for low noise and high power. Their response curve is tailored for voice frequencies. It is 100% RF Shielded and can be operated at full output without any RF feedback or "Squealing".

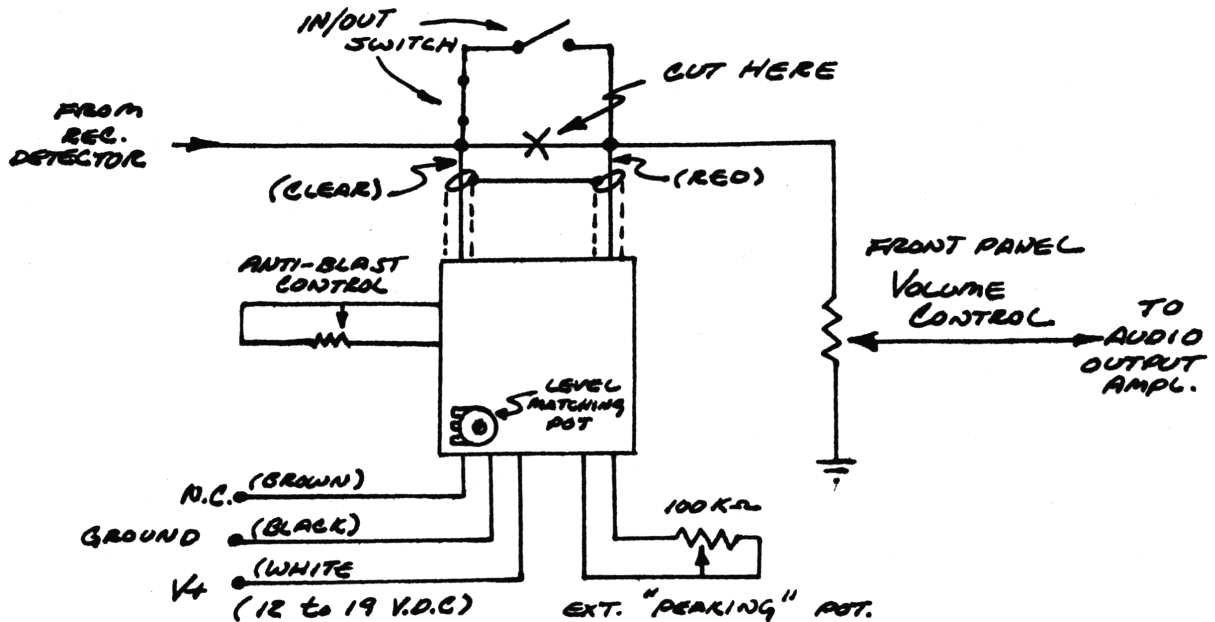
All of this in a package that is 1" long x 1/2" wide x 3/8" deep!! Operates on 3-9 Vdc. Open Circuit Output = -31 \pm 2 db. re 1 volt. Made in USA. Limited Quantity Available.

ORDER YOURS NOW FROM: SELMAN ENTERPRISES - 512/853-2935

INSTALLATION INSTRUCTIONS
DP2112A/B Phase Coherent Low-Pass Filter

Installation

Install DP2112 in Radio Chassis, and wire as shown in diagram below



Alignment

1. Turn "AUDIO PEAKING" and "ANTI-BLAST" controls full CCW.
2. Turn on radio, and tune in a weak station (less than 3 S-units)
3. Continuously operate In/Out switch and adjust LEVEL MATCH control until there is no change in volume.

OPERATION

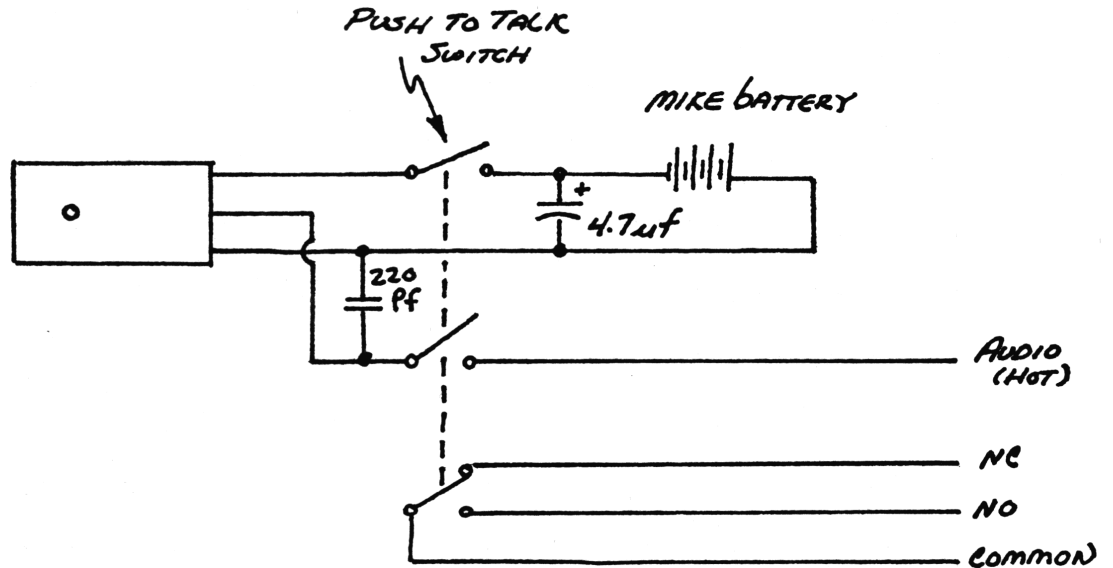
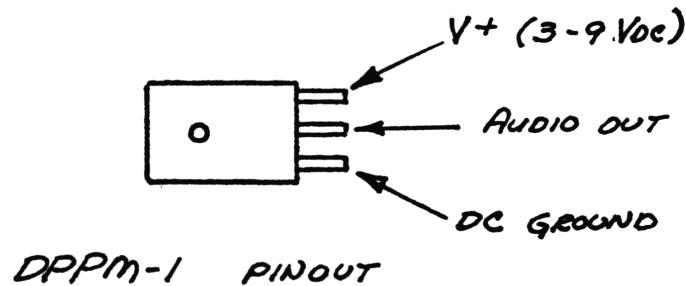
Use AUDIO PEAKING control to provide highest voice recovery/lowest noise. As control is turned clockwise, voice and noise will increase together. at some point, voice will increase and noise will disappear.

Use ANTI-BLAST control by first setting receive volume at a comfortable level. Then turn ANTI-BLAST control clockwise until volume begins to decrease.

INSTALLATION INSTRUCTIONS ~ DPPM-1 POWER MIKE MODULE

1. REMOVE OLD MIKE CARTRIDGE AND AMPLIFIER PCB.
2. INSTALL DPPM-1 MODULE USING DOUBLE-SIDED TAPE
3. WIRE AS SHOWN.

NOTE: DO NOT EXCEED 9VDC BATTERY VOLTAGE



Superstar 1700S (LC7120-PLL)

by B.W.

WEIRD, 'set-up/manufacture' involved with this unit.

Schematic is WRONG! Use Ham International UK for reference in doing any line-up/repair. Component wise is identical to the unit; location of parts will differ; as VR's for power/modulation are on board #444FM. (Schematic is on page 56 of Vol. 22.)

"1st thing to check for before applying power"....cable from #54 of PCB #444FM (Orange in this unit), should be soldered to Pin 24 of PLL chip....which is an idiot practice. If broken loose as it was in this unit, resolder to case of L5.

S/N: 4165122, Out-of-box: 1W, 4.5W, and 8W, in power ranges with maximum modulation of 35%. Alignment/Tune-up is as follows:

TX: L8, L9, L10, L12, L15, and L16. RX: L18, L19, L20, L22, L23, and L24.

VR1 - TX Mtr, VR2 - Sq Rng, and VR3 - RX Mtr....these adjustments will be found on the main PCB. VR10 thru 15 are on the small PCB #444FM:

VR10 - FM Insertion, VR11 - Hi Pwr Mod, VR12 - Mid Pwr Mod,

VR13 - Low Pwr Mod, VR14 - Mid RF Pwr, VR15 - Low RF Pwr.

Checking out/Playing around with this unit came up with the following: Q21 has been changed to a 2SD234. Rejection isn't that bad, so don't suggest adding another filter in series. C81 can be increased in value if needed for better ANL. By 'swapping crystals and realigning PLL circuitry' found out that chassis will start to "drop out" at about 28.8MHz, WITH PRESENT COMPONENTS... So if you wanted to shift the unit to upper Fo band will have to play with some component changes. Also, it is best to align in about 5W range for AM, while tuning for maximum modulation. 'Don't try to set-up in max RF range!..... Overall is very versatile and cheap unit.

CLARIFIER TRACKING CIRCUIT

by J.S.

If you don't own a frequency counter, figuring out if you're operating above or below channel center can be a real pain on rigs equipped with modified clarifiers (especially those with 10-turn pots).

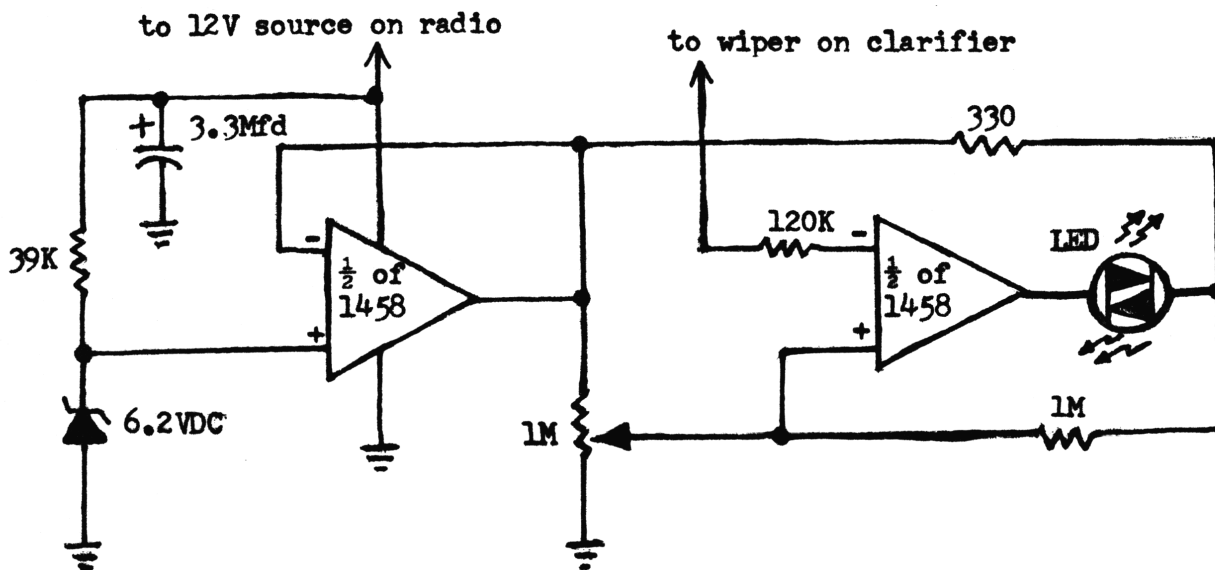
In response to many customer complaints about this, we developed the circuit shown below, which uses a dual-color LED to provide a visual indication of "Where you're at" as far as your clarifier is concerned. This circuit works so well, that we would like to share it with your readers.

PARTS REQUIRED:

1458 dual op-amp (Radio Shack 276-038)
Tri-color LED (R.S. 276-035)
1N4735 6.2 volt Zener diode (R.S. 276-561)
3.3 uf Capacitor 16 wv
330 ohm resistor 1/4 watt
39k ohm resistor 1/4 watt
39k ohm resistor 1/4 watt
120k ohm resistor 1/4 watt
1 meg ohm resistor 1/4 watt
1 meg ohm PC Pot (R.S. 271-229)
Small piece vector board
18 ga hookup wire

CONSTRUCTION

Construct circuit shown below, and wire into your rig.



CALIBRATION

Monitor output frequency with a counter, and adjust clarifier to channel center. Adjust pot on clarifier tracking circuit until LED JUST GOES OUT. As you operate your clarifier to swing above center frequency, the LED will glow green and will become increasingly brighter the farther you get above center. Below center, the LED will glow red, and will increase in brightness as output freq. goes lower. LED OUT = Channel Center.

BASE STATION "TAPE MONITOR"

by J.S.

A "Tape Monitor" switch (like the one on your home stereo) is an important addition to any base station, as it allows the station operator to connect home audio components such as graphic equalizers, DBX and DOLBY noise reduction units, etc. into the receiver's audio section. The positive impact of this type of setup is so great, that it must be heard to be fully appreciated.

Parts Required:

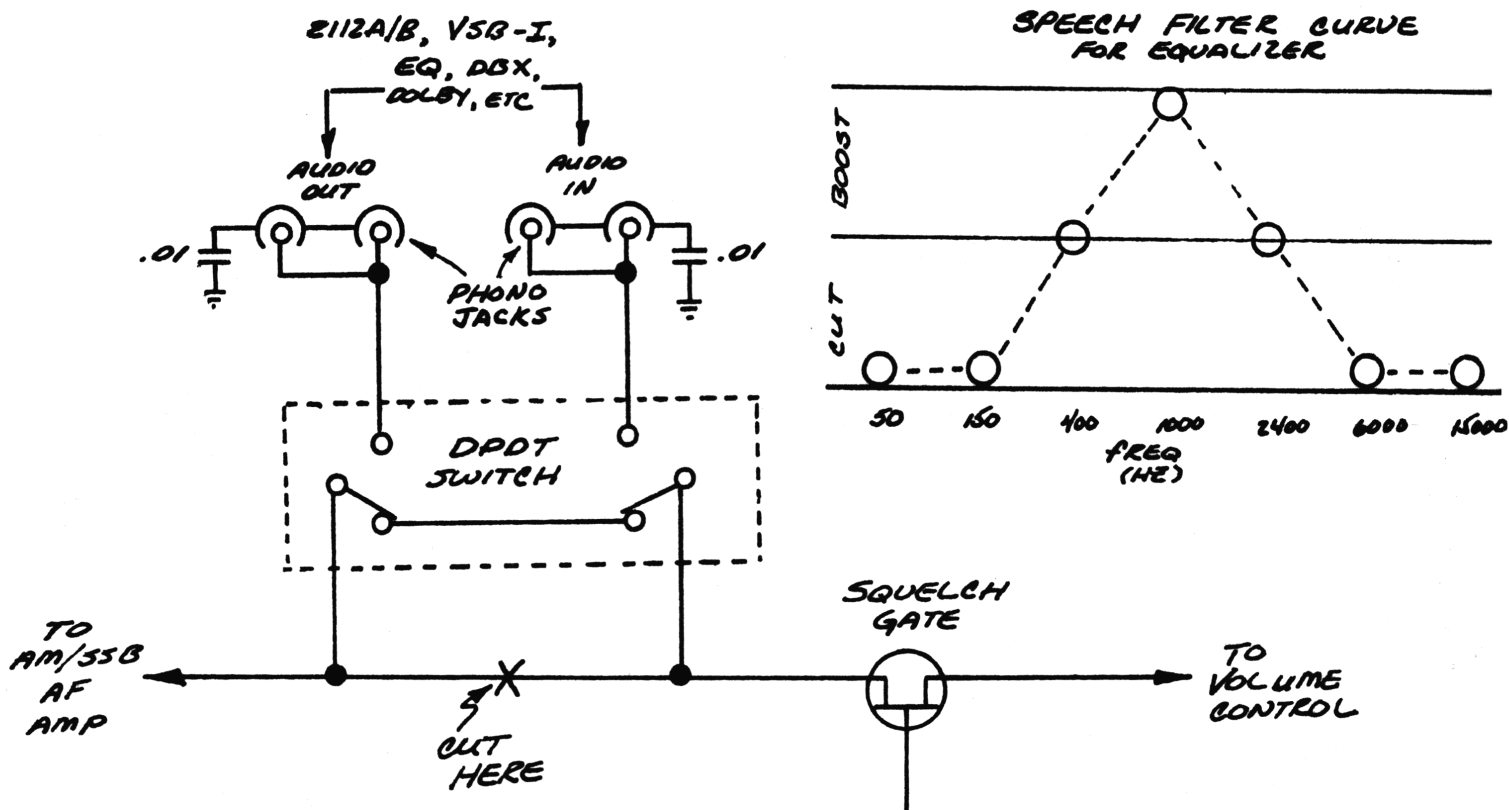
Dual phono jack (R.S. 274-332)

DPDT Switch (R.S. 275-662)

Miniature shielded audio cable (R.S. 278-752)

.01 uf disc capacitor (2 req'd. R.S. 272-131)

Install phono jack on rear panel of CB. Install SPDT switch in convenient place (or use existing switch, if possible). Connect shielded cable and capacitors as shown in following diagram. VERY IMPORTANT!! LOCATE CABLE AWAY FROM RF PORTION OF CIRCUIT.



"Tape Monitor" circuit shown is for 858 installation.

Other installations are similar.

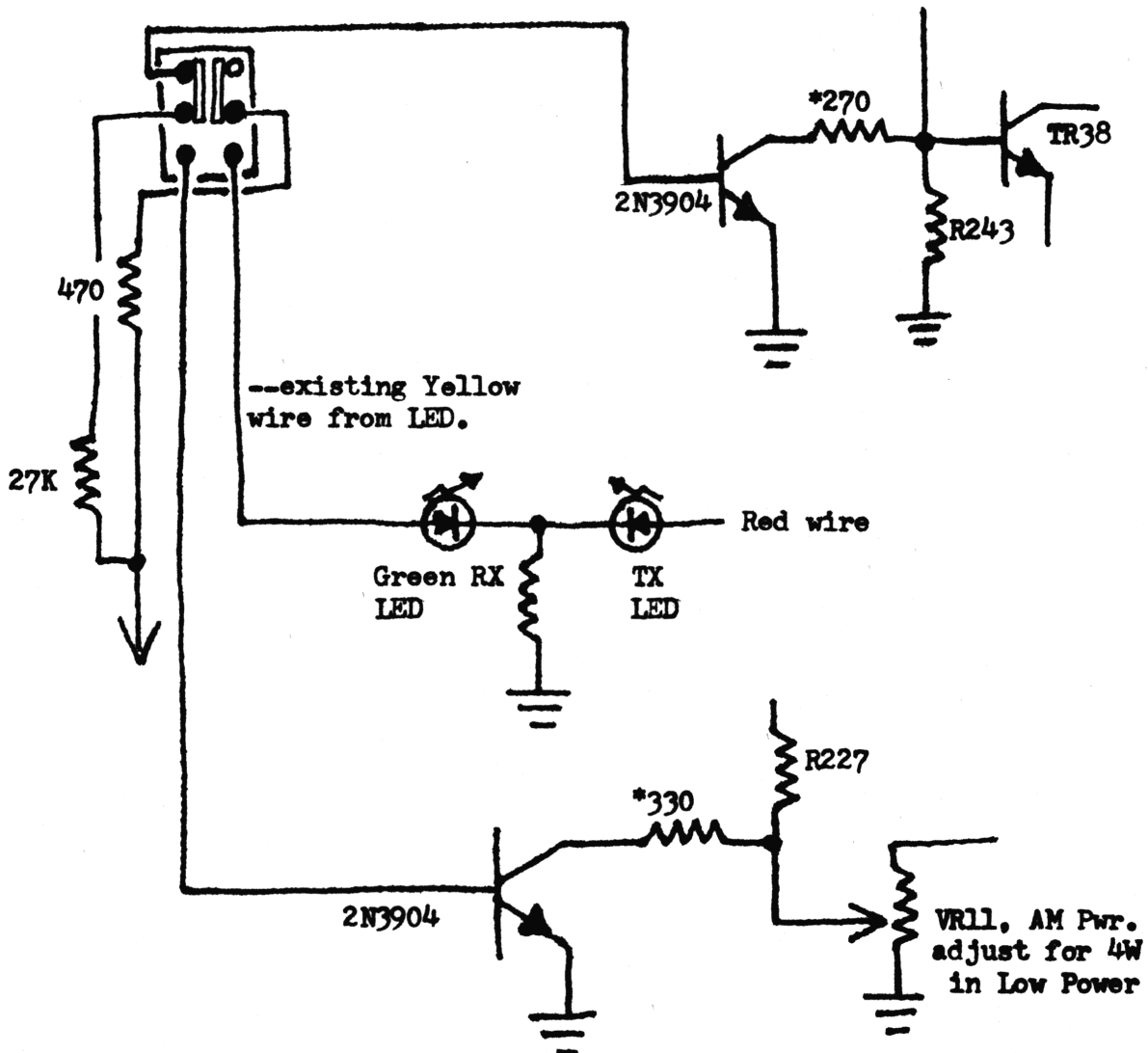
Jackson Power Switch Mod.
by Lescom

Yep, another modification for Hi/Low RF Output Power.

This version utilizes the present Dual LED (Rx-Tx). Green Rx side is disabled and rewired to indicate Hi Power.

Use schematic below for "building" new switch — an existing push button switch can be 'hardwired' and used for this purpose.

DPDT Switch - shown in Low Power position



* a 500 ohm trimmer may be substituted by wiring as follows..

VR8 is now SSB 'HI POWER' adjustment.



"Scrambling" - UPDATE
by R.M.

Satellite.... Seems that HBO is now scrambling their satellite signal on a part time basis. Full time scrambling date isn't known. The equipment for encoding/decoding is already installed at the authorized cable outlets.

The only sure thing is that the Home Satellite Receiver Industry is all shook up!

HBO 'decoders' are not available to the home TVRO systems.....as yet. (AND DON'T THINK THEY WILL BE....)

The "En/Decoding" equipment is supposed to be so sophisticated that the technology is CLASSIFIED by the U.S. Government!

Video Cassette.... A new version of 'scrambling' a tape is on the market. Called "Macrovision", and encodes the tape with a signal that screws up the AGC (automatic gain control), of the VCR.

'Cotton Club' and 'Torchlight', are the two known releases by Embassy to have this process applied.

I rented 'C-C', and tried to duplicate the tape. It was a mess on color; but if you only have a B&W T.V.; no problem! A local rental outlet is having a number of complaints, about tapes not being stable on T.V. in normal playback operation. This I did checkout and found true on some models of T.V.'s.

NOTE: Cable companies are checking out this method of encoding their signals so that home taping of programs by their subscribers will be next to impossible.

HINTS/KINKS/GOOFS

Information utilized in this column doesn't receive a free volume. But have reviewed all info and that used other places has entitled contributor to a "free-bie"...

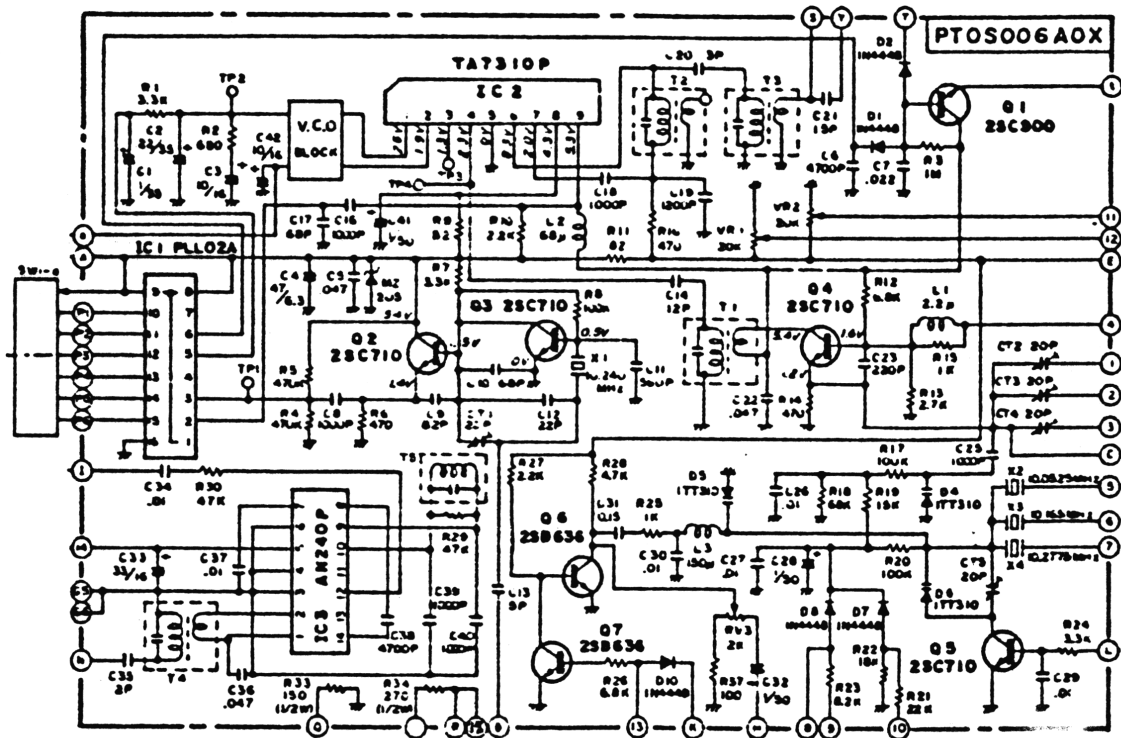
Uniden PC244: After changing D30 to an MV2205, with a 3.3_mH choke in series with the anode, USB and AM wouldn't adjust down to the same center frequency spot as LSB.
FIX--add a 5.6_mH choke in between L16 and D27 for AM, and between L17 and D28 for USB; then realign.

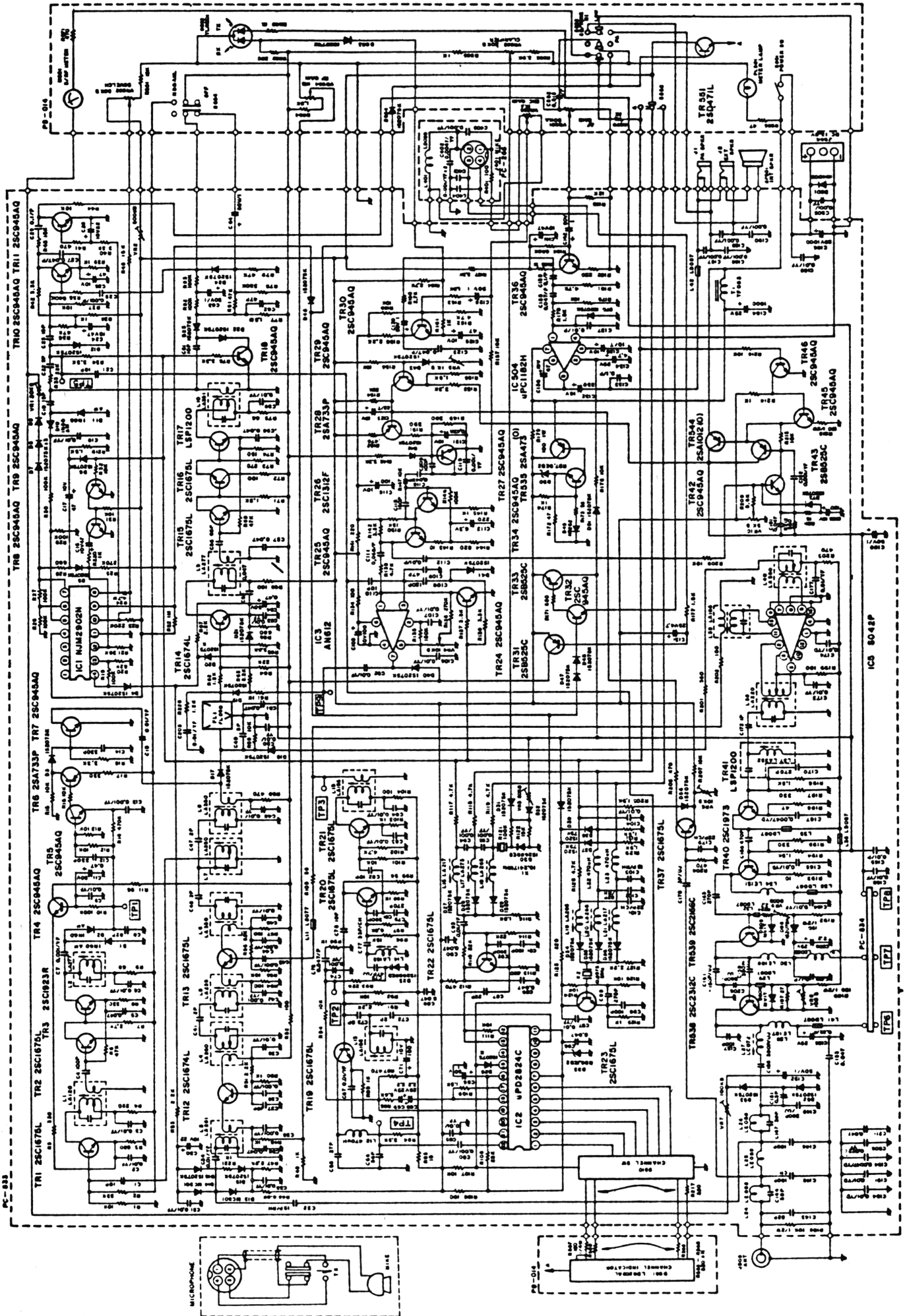
Motorola: When the microphones in these units give up the ghost, don't throw them away (the radio). Replace with an amplified microphone that has capability of opening the audio line on RX mode. Also insert a 10Mfd/25VDC in series with the audio feed to block DC voltage.

ARGO 300 (Base and Mobile - both): For a HOTTER receive change R50 to 47K ohms.

PTS006AOX - O2A EXPORT PCB, Schematic

This is a very unique PCB as it contains the PLL, FM, and VCO chips. The crystal switching and clarifier circuitry. It is used in the Ham International Multimode II, and modification possibilities are many for frequency expansion.





Midland Md1. 79-012, "Slide Modification"
by B.W.

This is a '6001' marked front panel, but is a 79-012 chassis!
NOT the 79-006, which is also marked '6001' on the front panel....
MODIFICATION BELOW IS FOR THE 79-012 ONLY! Performed on S/N:23000315.

1. Remove front panel carefully; all below required to remove.
 - A. Screw on etch side of front panel PCB.
 - B. Meter leads must be unsoldered and bent back.
 - C. Retainer nut and washer on the volume pot.
 - D. Screws (4), on side of front panel, and of course all knobs.
2. Remove following from front panel PCB.
 - A. R555, clean out hole that is on clarifier pot leg etch.
 - B. Solder a BLACK 10" wire in hole.
 - C. R569, clean out hole next to LED readout.
 - D. Solder a RED 10" wire in hole.
3. Re-route wires to etch side of chassis while replacing the front panel. (Be especially careful with meter and TX/RX LED.)
4. Remove D32 from the main PCB.
5. Clean out the + hole of C197. NOT in chassis - location is to left of VR2 on component side.
6. To immediate left of R185 is a hole with no numbering, clean out. Check with VOM - should be direct short to DC Ground.
7. Put a 1,000MFD/16VDC (minimum voltage) electrolytic from the + hole of where C197 should be, to the hole cleaned out next to R185. DO NOT PUT THE MINUS LEAD OF CAPACITOR WHERE IT IS MARKED ON PCB! Bend over the leads, cut short and solder carefully.
8. Solder the BLACK wire to - lead of capacitor on etch side.
9. Solder the RED wire to + lead of capacitor on etch side.
10. Center the clarifier knob, adjust the following at 20 on channel selector... Read frequency in the TRANSMIT condition on a dummy load.

AM - adjust L16 for 27.205MHz
USB - adjust L17 for 27.206MHz
LSB - adjust L18 for 27.204MHz
11. 'Slide' with present Varactor diode in unit gave \pm 2KHz. Replacing this diode (D30) with a "Super Diode" will give about \pm 5KHz.

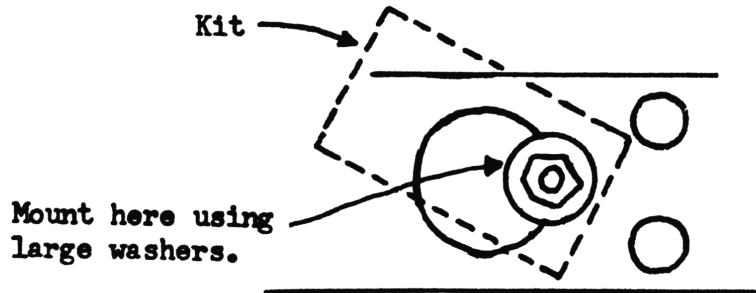
MIDLAND 79-012: KIT #106. 26.515-27.855MHz

KIT-106 for Midland 79-012 (6001, with uPD2824C PLL Chip).

Kit Installation...

1. Kit will install on side of chassis next to PLL chip.

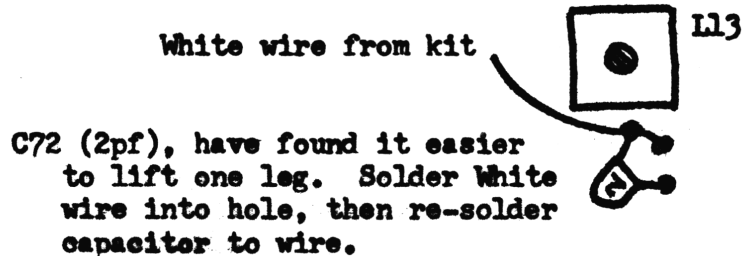
Mount in the microphone hole per drawing below - you might have to enlarge the key-way slightly to get enough bite for the washers. In this manner will only have to remove a small amount of metal from each case cover. **DON'T MOUNT THE KIT YET....**



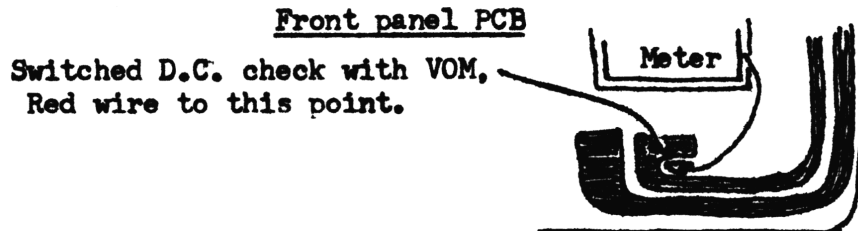
2. Kit wires go the following locations:

Black - D.C. Ground (try hole to right of L14, is un-used and DC Gnd.)

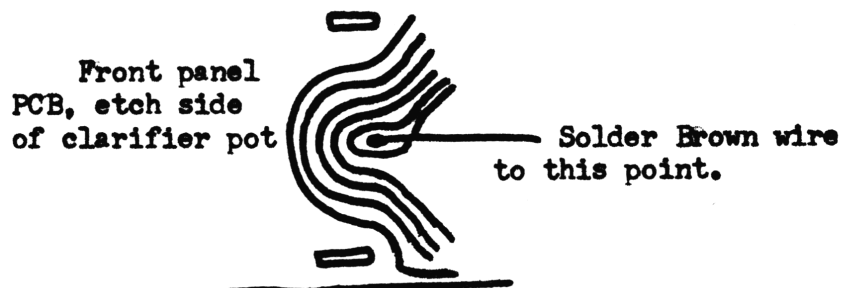
White - Solder to C72, side closest to L13 - see below:



Red - Solder to switched DC input to unit, see below:



Brown - 'wiper' of the clarifier potentiometer, see below:



Kit 106 - Midland 79-012 (Cont.)...

3. 'Tack solder' all wires and check out kit before installing.
4. If when mounting the UP position is throwing in the Low Fo's, just switch crystals on the kit PCB.
5. SPECIAL NOTE: test unit S/N 23000315 required a 'Super Diode' in the VCO circuit for full frequency coverage and stability. This is D25, located to left of L14.
6. Permanently install kit, and shorten wiring after checking out operation.
7. Using L13 and L14 will get the frequencies to 'come up', L14 has the most effect. Then tune L15, L40, L39, L38, L37, and L28 for best overall LINEAR RF OUTPUT Power in SSB mode.
8. Additional adjustments for this unit:
 VR1-S Mtr, VR2-Sq Rng, VR3-LSB Fo Adj. (disabled if slide is installed), VR4-Carrier Balance, VR5-AMC, VR6-AIC, VR7-Tx Mtr, VR8-Final Bias (100ma), VR9-Driver Bias (10ma), VR10-AM Power.

Kit-106, Frequency Chart

Down		Middle		Up	
Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency
1	26,515	1	26,965	1	27,415
2	26,525	2	26,975	2	27,425
3	26,535	3	26,985	3	27,435
4	26,555	4	27,005	4	27,455
5	26,565	5	27,015	5	27,465
6	26,575	6	27,025	6	27,475
7	26,585	7	27,035	7	27,485
8	26,605	8	27,055	8	27,505
9	26,615	9	27,065	9	27,515
10	26,625	10	27,075	10	27,525
11	26,635	11	27,085	11	27,535
12	26,655	12	27,105	12	27,555
13	26,665	13	27,115	13	27,565
14	26,675	14	27,125	14	27,575
15	26,685	15	27,135	15	27,585
16	26,705	16	27,155	16	27,605
17	26,715	17	27,165	17	27,615
18	26,725	18	27,175	18	27,625
19	26,735	19	27,185	19	27,635
20	26,755	20	27,205	20	27,655
21	26,765	21	27,215	21	27,665
22	26,775	22	27,225	22	27,675
23	26,805	23	27,255	23	27,705
24	26,785	24	27,235	24	27,685
25	26,795	25	27,245	25	27,695
26	26,815	26	27,265	26	27,715
27	26,825	27	27,275	27	27,725
28	26,835	28	27,285	28	27,735
29	26,845	29	27,295	29	27,745
30	26,855	30	27,305	30	27,755
31	26,865	31	27,315	31	27,765
32	26,875	32	27,325	32	27,775
33	26,885	33	27,335	33	27,785
34	26,895	34	27,345	34	27,795
35	26,905	35	27,355	35	27,805
36	26,915	36	27,365	36	27,815
37	26,925	37	27,375	37	27,825
38	26,935	38	27,385	38	27,835
39	26,945	39	27,395	39	27,845
40	26,955	40	27,405	40	27,855

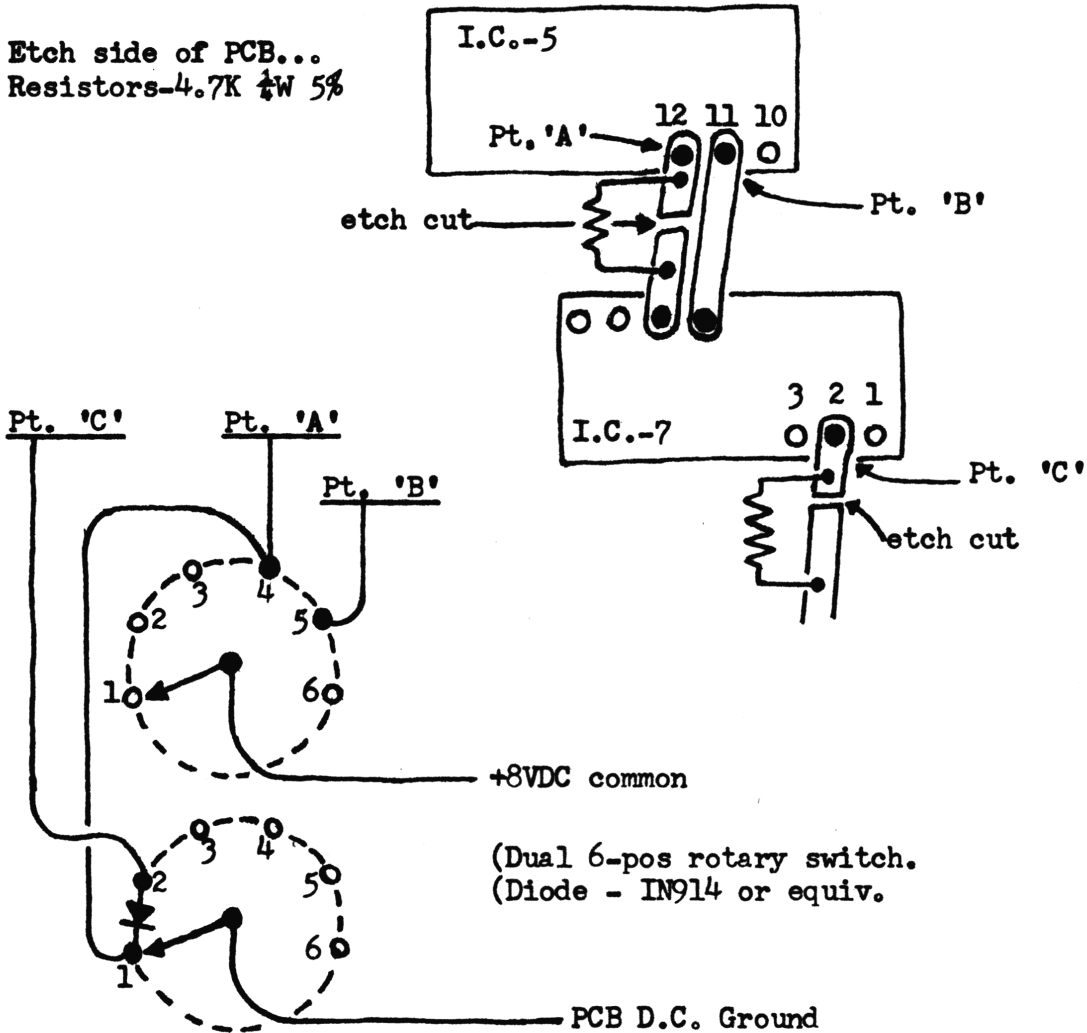
JACKSON: Rotary Switch Mod.
by D.G.

NOTE: UNIT MUST HAVE VCO MODIFICATION INSTALLED.....

Diagrams below show the modifications to PCB and switch wiring for operation between 25.295-28.885MHz. (28.445-28.495 missing).

Sw. Pos.	Range Sw.	Fo Range	Selector
1	A	25.295 - 25.415MHz	16 - 27
2	A	25.425 - 25.855	1 - 40
2	B	25.865 - 26.045	1 - 15
3	All	Normal out-of-the-box operation	
4	E	28.325 - 28.435	12 - 21
5	E	28.505 - 28.885	1 - 35
6	All	Normal out-of-the-box operation	

Etch side of PCB...
Resistors-4.7K $\frac{1}{4}$ W 5%



JACKSON: Facts about Varactors D26-D29, & D31.

by D.G.

1. Both pairs D26/27 and D28/29 are necessary for all freqs. One pair isn't for part of freqs and the other for the rest.
2. Super Diode in place D26/27 and stock diodes for D28/29: unit will, with difficulty cover the range of 25.285-28.305MHz per prior mod instructions.
3. Super Diode for each pair - unit will cover all low/lower Fo's and go beyond 28.305; BUT misses all of original Fo's on A,B,C, above Channel 8..??? Still working on explanation for this.
4. Super diode for D26/27 and one of the diodes from a Grant slider kit for D28/29. Best configuration for these 2 pairs. VCO range now 25.295-28.665MHz,
5. Same as step 4 but replace D31 with a Super Diode - range now 25.295-28.445 (*), and 28.505-28.895 (**).

(*) These are difficult to program in..

(**) Very little power at 28.895 (3-4W).. Main reason for this is that is going out of VCO coil's range, as slug is bottomed out. (CW or in-down on VCO slug, L12 is going up range.)

JACKSON: Hi Fo Modification

by D.G.

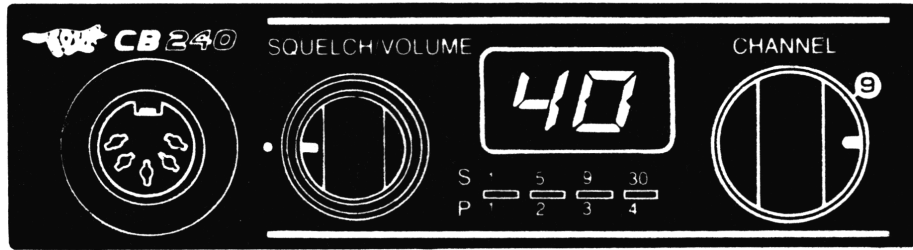
25.295-28.455 (*), 28.495-28.895 (**) with Hi and Low/Lower Fo Mods.

1. Remove diode pair D26/27, replace with Super Diode.
2. Remove diode pair D28/29, replace with Varactor from a 'Grant Slide Kit'.
3. Remove D31, replace with Super diode.
4. On Band E, pin 12 PLL chip at Logic 1 state the following;
Ch. 1-21: 28.185-28.435
5. On Band E, pin 12 PLL chip normal and pin 11 PLL at Logic 1 state the following; Ch. 1-35: 28.505-28.895
(Power quite low at 28.895...but could be retuned for desired operating range.)

NOTE: Top 5 addresses of Pin 11 and all 164 of Pin 10 are still available - a long way to go...but VCO coil problem.

(*) - with +10 Sw. and +10 slide... (**) - with -10 slide...

Fox 240, (IC7132-PLL)



Had someone send all of the FOX units to me for evaluation.
The Mdl. 240 is a very compact unit - actual size is above!

S/N: 0006574, out of the box.... 3W, 35% modulation.

Tune-up: TX - L6, L7, L8, L9, L11, and L12.

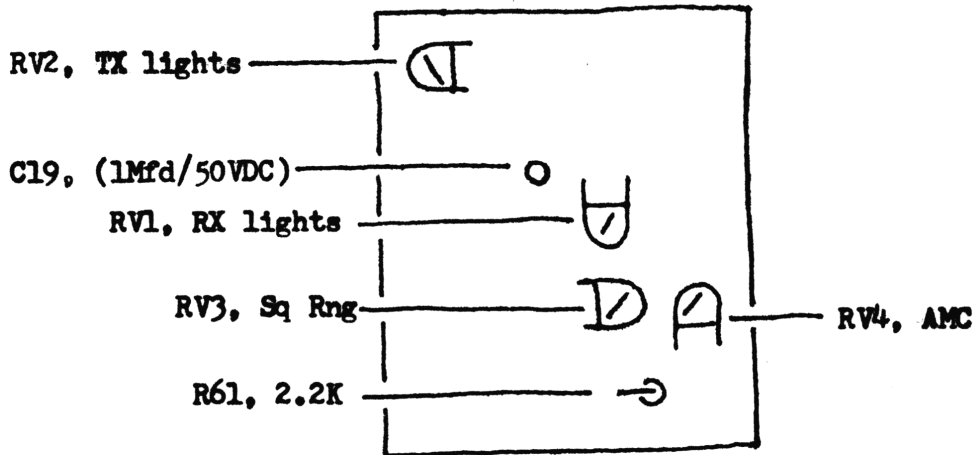
RX - L1, L2, L3, L4, and L5.

RV1 - RX lights; RV2 - TX lights; RV3 - Sq Rng;
RV4 - is the AMC, but didn't give or do enough in test
unit. (R61, is the AMC defeat...)

C19 was changed to a 3.3Mfd/50VDC for additional noise
limiting.

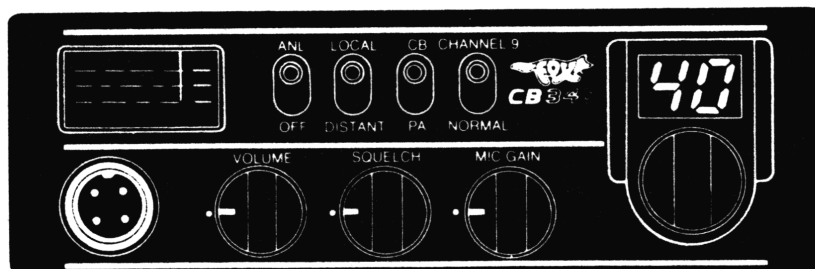
Rejection is better than I thought it would be, don't
waste your filters on this unit unless you have a bunch.

Final setup after tune-up was: 3.9W/100% modulation, actually a
better radio for the money than the
Mdl. 340 and 440.



A REPRODUCEABLE SCHEMATIC OF THIS UNIT IS NEEDED, schematic on
file is barely legible.....

Fox 340, (LC7131-PLL)



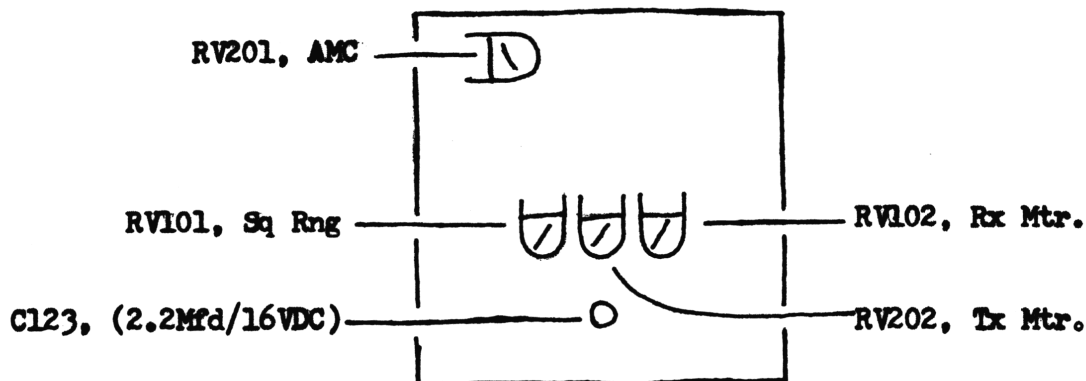
S/N: 0003690, out of the box.... 3W, 70% modulation at max mike gain.

Tune-up: TX - L301, L302, L303, L304, L305, and L306.

RX - L101, L102, L103, L104, L105, L106, and L107

RV201 - AMC; RV202 - TX Mtr; RV101 - Sq Rng; RV102 - RX Mtr.
C123 was changed to a 3.3Mfd/50VDC for additional noise limiting.

Final setup after tune-up was: 4.1W/100% modulation at max mike gain.



A GOOD SCHEMATIC, is needed for reproduction.....

Fox Mils. 240, 340, 440

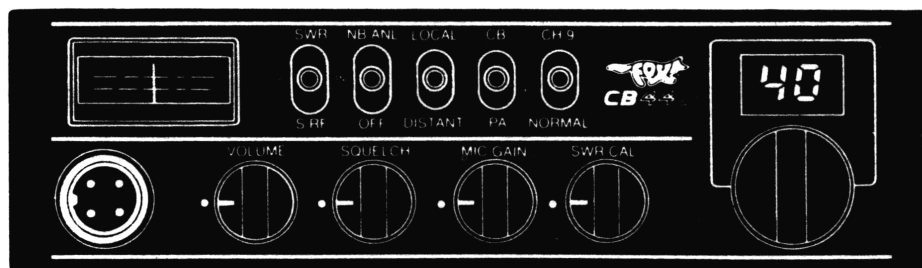
The following resistors may be lowered in value for RF output power increase - USE CAUTION:

240 - R85 and R87, either or both.

340 - R330 and R332, either or both.

440 - R92 and R94, either or both.

Fox 440, (1C7132-PLL)



S/N: 50100845, out of the box.... 3.2W, 40% modulation at max mike gain.

SPECIAL NOTE: "Q.C. INSPECTED", tag on rear of chassis.. Reason for mention is that exterior of case was 'touch-up' painted, and also had spot they missed? I guess this is what "Q.C." means; also the covers don't butt up against each other.

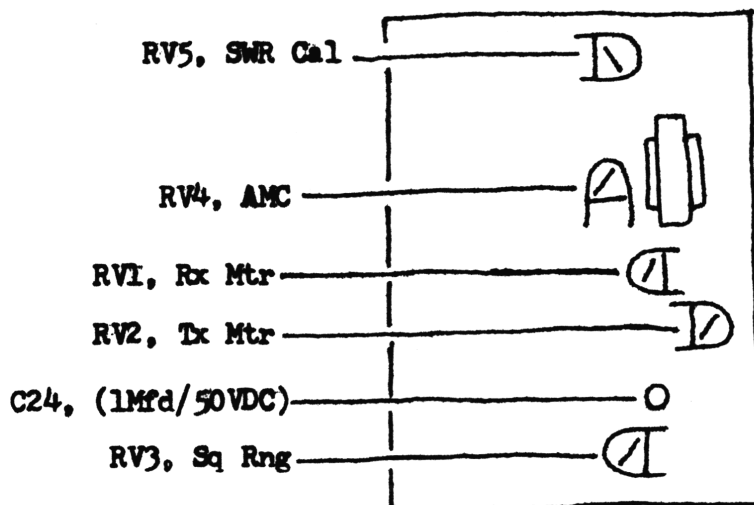
Tune-up: TX - L7, L8, L9, L10, L11, L12, and L14.

RX - L1, L2, L3, L4, L5, and L6.

RV1 - Rx Mtr, RV2 - Tx Mtr, RV3 - Sq Rng, RV4 - AMC,
RV5 - SWR Cal.

C24 was changed to 3.3Mfd/50VDC for additional noise limiting.

Final setup after tune-up was: 4.2W/100% modulation at max mike gain.



A GOOD schematic of this unit is also needed.....

Fox units (240, 340, 440)

Ed. note

Overall these units were surprising on the rejection, seems that someone is waking up at the MAXON factory in Korea.

EXPORTS

Argo 300 (Base), 240 ch. AM/FM 26.065-28.755MHz (O2A-PLL):

No name on unit anywhere, also I.D. of any kind is not on unit! Identical PCB and Fo's as the Argo 300 mobile. See write-up this volume....

Argo 5000 (Base), 240 ch. AM/FM/SSB/CW 26.065-28.755MHz (O2A-PLL):

Another of the Argo series, no name or I.D. anywhere. Unit is 3-xtal multiplex chassis. "Handles" on front for 'rack mounting'; but doubt will fit standard size rack; as is only 13½" wide. Clarifier is split TX/RX; Hi/Low RF Power switch (for AM/FM modes); phone jack in front. (Special note: NO owner's manual or freq. chart came with unit, but a line-up procedure and very bad - USELESS - copy of schematic did.) I don't think that the lineup procedure will accompany all of these units. Use any of the standard O2A Export multiplex schematics for troubleshooting and the Palomar 2400 alignment procedure as a guide. (CAUTION: Ed. Note....unit I had for evaluation ran HOT in RX mode, power supply might give some problems....)

Hygain 2795, 120 ch. AM/FM/SSB 26.515-27.855MHz. (O2A-PLL):

Basic O2A-Direct Switch Chassis; owner's manual and correct schematic accompanies unit. This is a basic 'no-frills' unit, the readout does count to 80. Use the Export 'O2A' alignment as a guide!

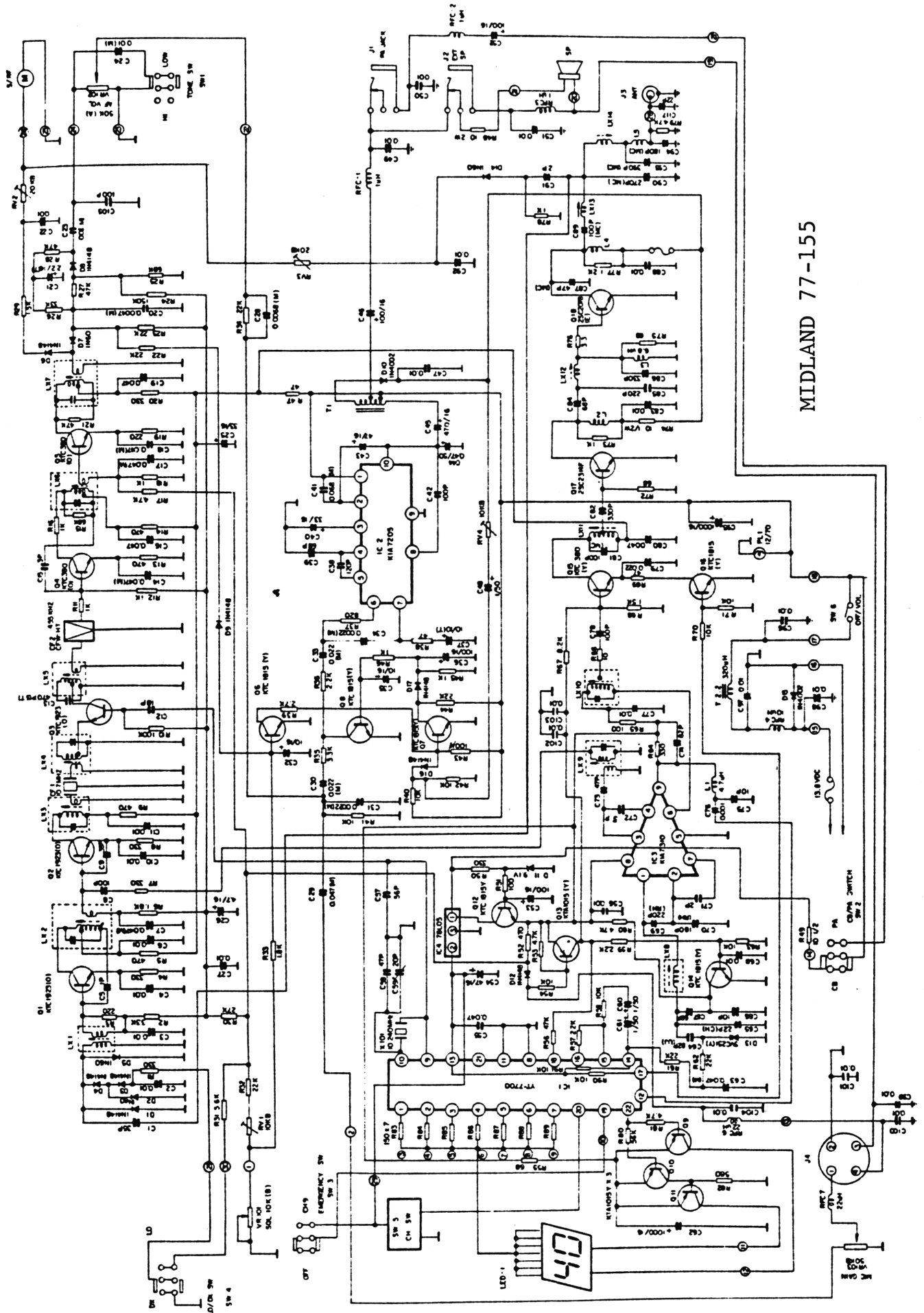
Colonel FR360, 120 ch. AM/SSB 26.965-27.805MHz, AND, 28.365-28.805MHz.

(MC145106-PLL): This is a long gone unit from what I understand, but some are popping up. It originally was one of the 1st 'Exports' to make it into the U.S. Two different frequency bands in this unit, and also has a direct digital frequency readout....NOT A TRUE FREQUENCY COUNTER! The clarifier is still a clarifier, and if you want to modify - check out the chassis! Almost identical to Palomar 500SSB (Late).

Superstar 1700S, 120 ch. AM/FM 26.515-27.855MHz. (LC7120-PLL):

Another No-Frills unit... schematic in owner's manual is wrong. Similar to other AM/FM 3-stage RF output units. See write-up in this volume.

No other new information on Export units up to 1 Sept..... BUT, the rumors are still out there about a couple of things that are supposed to out perform the Jackson...? As for the export market shutting down, I really can't say as they are still out there if you know where to look.....



MIDLAND 77-155

Midland 77-155, (YT-7700, PLL?)

Received this unit to evaluate and tune-up if needed.

S/N: 0019161, out of the box.... 3.4W, 75% modulation at max mike gain.

A major discrepancy was noted immediately.. Schematic says that the PLL chip is YT-7700; but the chip itself is marked C5121...?

If anyone comes up with any information on the chip; forward S.V.P...

Tune-up: TX - LX10, LX11, LX12, LX13, and LX14.

RX - LX1, LX2, LX3, LX4, LX5, LX6, and LX7.

VR1 - Sq Rng, VR2 - Rx Mtr, VR3 - Tx Mtr, VR4 - AMC
C21 was changed to a 3.3Mfd/50VDC for additional noise limiting.

Rejection was O.K., better than most.

The readout is GREEN, excellent visibility.

Final setup after tune-up was: 4.7W/100% modulation at max mike gain setting.

...Special Notes... C21 is located in front of LX6; is small PINK tantalum capacitor.

R74 and R76 may be lowered in value for additional RF output power-use CAUTION. Test unit did not have these values changed.

? (Export) ADAMS ?

Received this unit when I ordered an Adams (President) from a distributor who just happened to come across a lot that had been stored in a warehouse. The box was re-labeled; 80 ch; the owner's manual is for regular 40 channel unit.

Regular '858-PLL' Adams with the PA/CB switch modified to Low/High

Band switch. Low - Regular C.B. Fo's
 High - Selector 1-7, is 27.565-27.635MHz
 8-40 .. 27.455-27.805MHz

No clarifier modification to unit. Other than above is still the basic "858 - Adams", a great catch if you find one!

The following conversion is reprinted by permission of "Custom Conversions".

The first two pages and frequency chart are condensed...

(1.) CUSTOM CONVERSION #19

(Code Name: DART)

Chassis: Sears Roadtalker 40, 934.38260700 (CM-4700S)

Parts cost to modify, including SAMS - \$20 minimum.

Time to modify will vary - initial unit with all parts on hand, 6 hrs.

Gain in unit: Frequency Range 26.325-28.045MHz (See Note 1 and 2)

Variable Frequency Transmit

High Frequency Audio Filter

"Illegal Frequency Alert"

Loss in Unit: P.A. capability

Initial conversion performed on S/N 0084x. Run number A71531.

(2.) Sears Roadtalker 40, 934.38260700 (CM-4700S) Code-Dart, S/N: _____

This radio is extensively modified for operation between the frequency range of 26.325-28.045MHz. (\pm KHz of the center Fo.)

Unit is capable of 208 separate 'channels'.

Frequency is determined by the main channel selector and frequency range selectors - at any time you are capable of transmitting of an 'Illegal Frequency', the meter light will be out on the RF/S meter.

Transmit Frequency is variable in both AM and SSB modes.

WARNING: An amplified microphone must not be used with this unit; distortion and possible frequency 'splitting' may occur.

A Bandit antenna will cover the entire frequency range, if carefully 'tuned'. Don't exceed 1.5 S.W.R. if possible.

For complete DART Fo Chart, see SCB Vol. 16, page 20.

Red Code.....	Selector positions:	1-40; 26.325-26.545MHz
Red/Blue.....	12-27; 26.555-26.640MHz	
Red/Yellow.....	1-40; 26.645-26.865MHz	
Red/Blue/Yellow.....	12-27; 26.875-26.960MHz	
Blue.....	12-27; 27.425-27.595MHz	
Yellow.....	1-40; 27.605-28.045MHz	

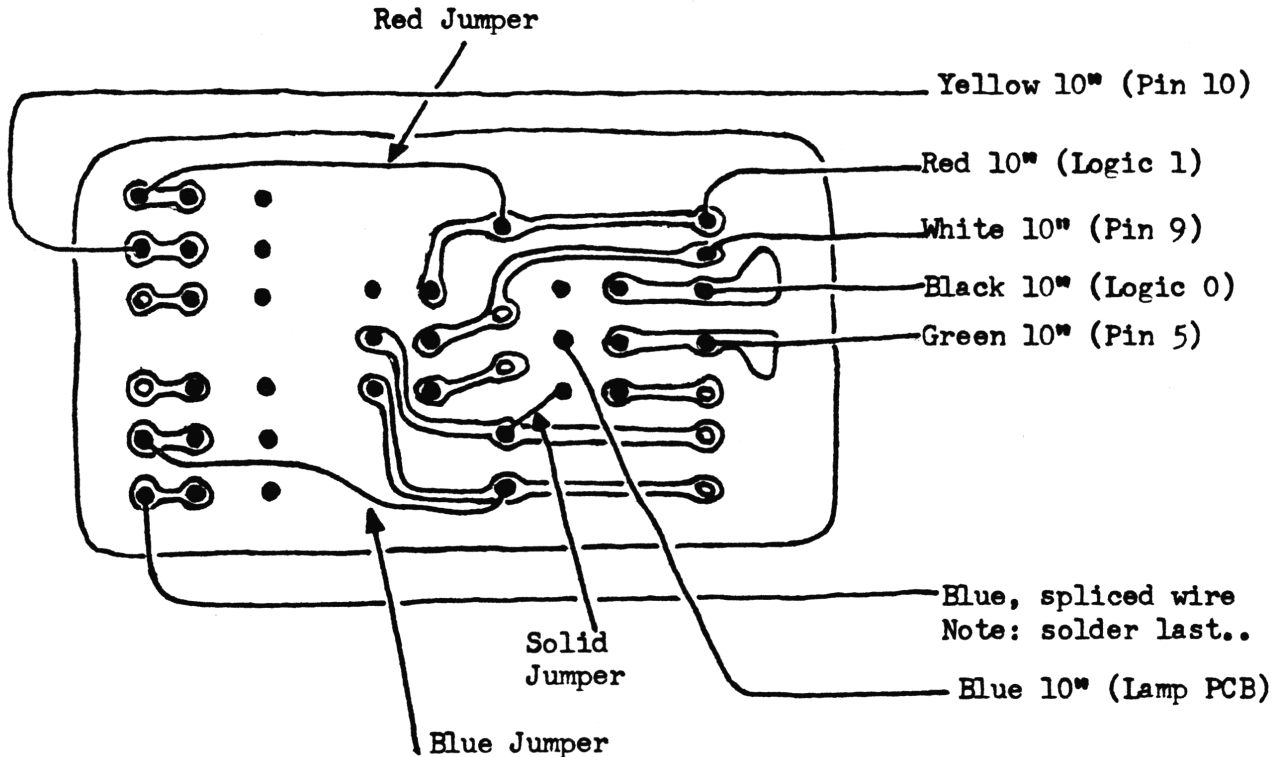
Note #1: All Fo's below 26.965MHz are in 5KHz increments.

Note #2: Unit may be 're-tuned' for higher Fo's using Blue/Yellow selectors and starting at 12 position on channel selector.

Read thru this and write down all parts you will need to perform the conversion before attempting! DO NOT ATTEMPT TO CONVERT WITHOUT THE FOLLOWING: SAMS#254, Dummy Load, Frequency Counter, and Power/Modulation Meter - are minimum needed.

1. Remove Top and Bottom covers carefully, undo the speaker wires. (from this point on use an external speaker until finished).
2. Check the Power Transistors for thin mica insulators, if the thick type-replace.
3. Do a complete line-up per SAMS#254 (FIRST-remove wax from T-204 and T-702).
4. Remove all harness ties.
5. Remove all knobs and channel indicator (indicator has a set screw in it, may be reached from behind the plastic panel).
6. Remove plastic panel carefully.
7. Remove channel selector locknut and washer.
8. Remove the two chassis screws holding the front panel.
9. Gently unscrew the switch assy board screws, pull the front panel forward so that you can work the shafts clear.
10. Follow the steps below exactly as written do not deter!
 - A. Pink cable with shield and White wire, cut off board. Trace cable to PCB-remove plugs. Cut cable about 1" from plug; solder the shield and center conductor together; sleeve with heat shrink. Replace the plugs. (DX-permanent)
 - B. Cut Blue and Blue/Black wires off the board, trace to PCB. Remove both plugs, no modification.
 - C. Cut Green and Green/Black wires off board, trace to PCB. Remove both plugs; cut wires about 1" from plugs-solder together-sleeve with heat shrink. Replace both plugs. (NB-on permanent).
 - D. Cut the Yellow wire from board; trace to PCB; remove completely.
 - E. Cut Black wire from board; trace back (thru connector) to the rear jack board; remove completely.
 - F. Cut Orange wire from board, trace to PCB (located under SWR board), remove completely.
 - G. Cut Red and Red/Black wires from board; trace to PCB; remove both plugs. Cut wires about 1" from plugs, solder together and sleeve with heat shrink. Replace plugs. (PA permanently eliminated, CB is only function.)
 - H. Clean all wires and excess solder off the switch assembly board, clean the holes out also.

11. Make sure unit is unhooked from power source, turn ON/OFF switch ON...
12. Unsolder Blue wire from meter lamp at PCB (Note location)!!
13. Splice another piece of Blue wire to wire (solder/sleeve) 6" long.
14. Using 24ga. stranded color coded wire re-wire the switch board exactly as shown below.....



15. Mount in chassis with Yellow wire outboard and up! Feed all wires up and to the left first. Put screws back onto board and tighten securely..
16. Carefully replace the front chassis panel to the main chassis, put in screws and tighten securely. Replace the channel selector washer and nut.
17. Unsolder the metal top directly behind the meter, carefully.
18. Unsolder the Blue wire, solder a 68 ohm $\frac{1}{2}$ watt 5% to the wire. Sleeve with heat shrink, bend other end of resistor so it can resoldered to where the Blue wire removed. Resistor must fit down behind the meter.
19. Solder the other Blue wire coming from switch board to the same point on PCB. Replace the metal top.
20. Unsolder the 2 White lamp wires from the PCB. Resolder both to far left etch (A Black wire is located on the etch-also was same location where Blue-spliced wire was removed in Step 12.

21. Pull the remaining wires away from the PCB. Apply power and check to make sure the meter light is out when any or all switches are in the down position. All up, lamp should be lit.
22. Disconnect power, turn switch on again to bleed off D.C.
23. Use an isolated tip soldering iron when wiring up the remaining wires from the switches to the PLL chip.
24. Pre-tin the wires after cutting to length and solder exactly per directions..
 - A. Yellow to Pin 10 (Solder to etch furthest point from pin).
 - B. Black to D.C. ground.
 - C. Solder the Green wire carefully to Pin 5.
 - D. Solder the Red wire to etch going to Pin 1.
 - E. Solder the White wire to Pin 9 carefully.
25. Double-check with magnifying glass for any possible shorts on connections to Pin 5 and 9.
26. Replace the front panel carefully, don't forget to replace the dust covers over the switches first. Don't tighten down the screws to tight or you will break the plastic.
27. Replace the channel indicator and calibrate, don't forget to tighten the screw. Replace remaining knobs; exception is Fine Tune knob; leave off.
28. Punch out the "holes" of colored electrical tape and place below the switch locations the following colors. (Use a paper punch). LO/DX-Red, NE/OFF-Yellow, PA/CB-Blue
29. Check out all frequencies per Code Sheet (You will have to re-align the VCO, T-702 ONLY at this point to get the frequencies in for balance across the range.) Once you have them up across the whole band, "broadband tune" the whole range of transmitter adjustments on page 84 of SAMS. **DO NOT TUNE IN THE AM MODE..USE USB AS THE SAMS CALLS OUT.....**
30. Note: Original Final in this unit is 25W, BUT the driver is only 1.5W. Transmitter/Modulation design is poor, so be satisfied with whatever you get out of it. Don't exceed normal specs. If you have to, the AMC defeat is Q -303: remove.
31. Remove R-711 (1K ohm), replace with solid buss wire.
32. Inside the PLL Oscillator Cage you will find R-702, remove, (22K). NOTE: It is easier to cut the parts out of the cage than to disassemble and unsolder, just be very careful when cutting.
33. Cut the following out on the PLL Oscillator Board also: C-753 and C-701.
34. Trace the Red wire from FINE TUNE control to the plug-in connector. Cut the wire at connector, re-route through the front to etch of PCB. Solder to the etch connected to Pin 3 of IC-502. Check first to make sure you have 8V there!

35. Calibrate the Fine Tune knob for "Ident" at 12 o'clock position at center frequency. Unit should now "Slide" approximately + 2KHz.
36. For additional slide D-702 must be replaced with a "SUPER DIODE".
37. This chassis leaves a lot to be desired but is O.K., as will not broadband very much and keep transmit power linear.
38. One advantage of the way this unit is now modified is that if you need additional frequencies on the high end and don't mind loss on the low end. All you have to do is re-align the VCO and transmitter circuitry.

With Blue and Yellow both on (down)

Freq	Code	Selector
28.055	B-Y	12
28.065	B-Y	13
28.075	B-Y	14
28.085	B-Y	15
28.105	B-Y	16
28.115	B-Y	17
28.125	B-Y	18
28.135	B-Y	19
28.155	B-Y	20
28.165	B-Y	21
28.175	B-Y	22
28.185	B-Y	24
28.195	B-Y	25
28.205	B-Y	23
28.215	B-Y	26
28.225	B-Y	27

Note: Some units may not go this high, but the wiring is there!

39. Another cronic problem with this unit is L-764 (RF coil coming out of the balance modulator stage). Coil cracked or busted, just barely holding together. SAMS doesn't give a value or list, if bad replace with a piece of solid buss wire. No adverse effects have been noted in 6 such units.
40. Lace up all the loose cable wiring carefully.
41. Install a 50MFD, 50V "Non-polarized" electrolytic capacitor, across the speaker terminals. If the audio is lowered too much lower the value of capacitor, or leave off...
42. Put covers back on the unit, re-check all frequencies...
ENJOY!

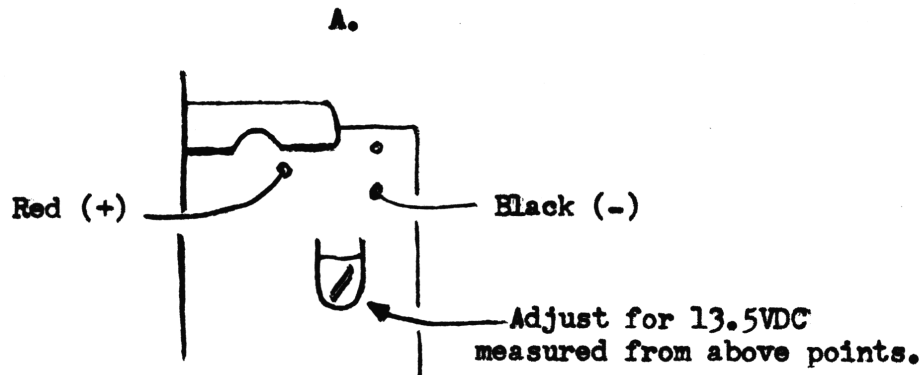
Argo 300 - Base (Export)

The owner's manual and schematic received for this unit were for the mobile unit! See Volume 21, pgs 49-51; as will only note additional information below; pertaining to this unit.

A. To set the P/S voltage - RV6 fully CCW.
RV7 fully CW
Ch 20, Band C
TK into dummy load.

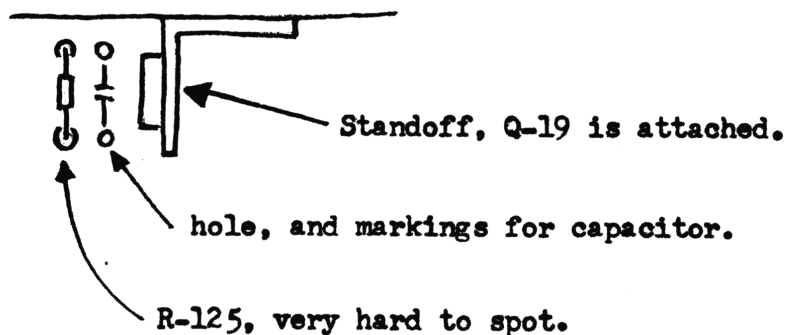
1. Adjust pot on P/S board for 13.5VDC under 'Dead Key' conditions.
2. Check with modulation, should be very stable!
(Test unit was exceptional, excellent P/S design, regulation.)

B. To 'vary' the Low/High power, R125 must be changed in this unit also. R125 was found to be 6.8K instead of 3.3K as in the mobile version. Changed to 1.2K for approximate 1/2 of high power in low power. (See drawing 'B' below, applicable to both mobile and base units.)



B.

This is for all the phone calls, 'where is R125'?.....



*Value of R-125 is directly proportional to Low versus high power output.

ICOM IC-745 Base; TX Mod.
by G.L.

TOP QUALITY piece of equipment. HF Transceiver/General Coverage Receiver. Some specs are: 200W in SSB/CW, up to 100W in AM. FM is an option, as is the power supply and 'whole bunch' of other stuff. Suggest getting catalog spec sheets for full information....

For transmit in the entire General Coverage Fo spectrum:

1. Remove top and bottom covers.
2. Stand unit on left side, so right side is facing you.
3. Locate J7, about middle of board.
4. 'CAREFULLY', about three inches from connector clip the wire leading to Pin 1. This has been a BROWN wire in every unit, so far!
5. Insulate both ends of cut wire with heat shrink.
6. Reassemble the unit using caution not to pinch any wires!

When General Coverage button is ON the unit will TX over entire Frequency Range... use CAUTION....

ICOM IC-751 Base; TX Mod.
by R.M.

This is the Big Brother of the IC-745. RF Transceiver/General Coverage Receiver. This unit comes with FM, some specs are: Max RF SSB/CW-200W, AM-10W, and FM-40W. Power supply is an option!

For transmit in the entire General Coverage Fo spectrum:

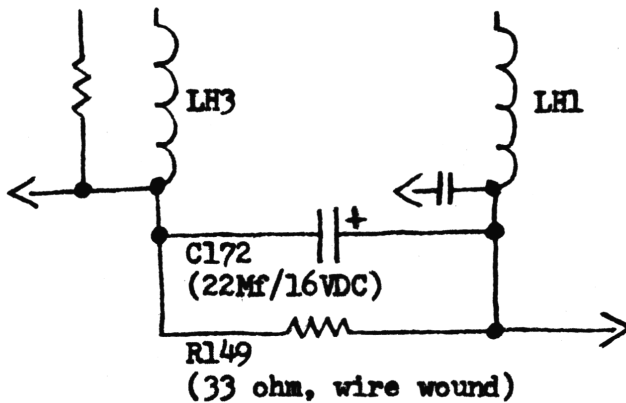
1. Remove the top cover.
2. Locate the RF PCB (J2). if you are having trouble finding it - on the right side of unit.
3. 'CAAAREFULLY', about three inches from the connector, clip the wire leading to Pin 1. In all units this wire has been BLACK, so far!
4. Insulate both ends of the cut with heat shrink..
5. Reassemble unit being careful not to pinch any wires.

When in General Mode now, can transmit over the entire range.

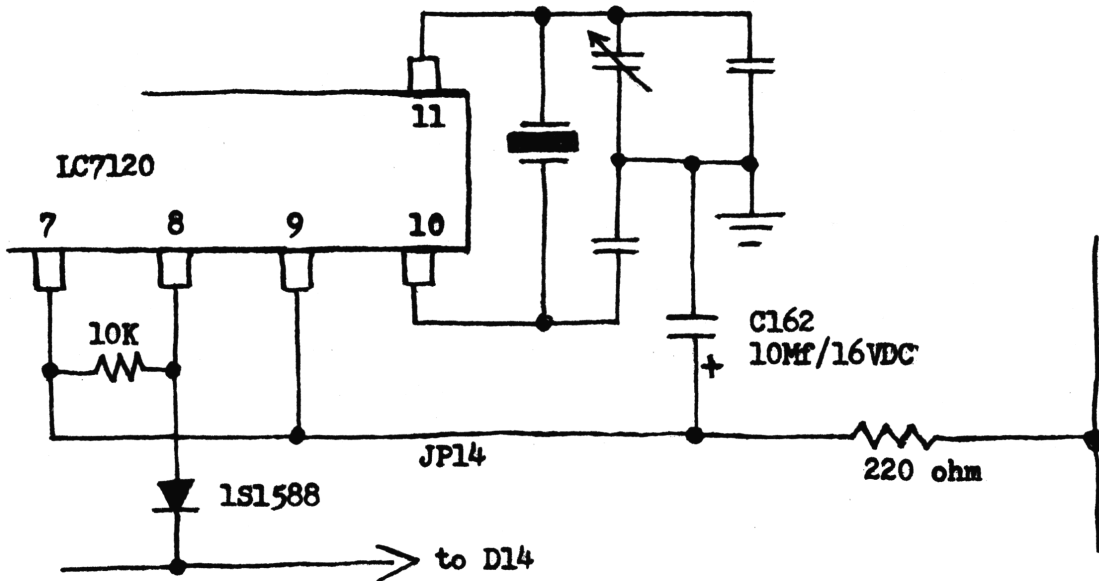
FORMAC 700 (Export) - UPDATE
by R.M.

Some major main PCB changes from the Formac 240 are noted below; (Reference to Formac 700, S/N: 500194).....

DRIVER/FINAL, Collector circuit feeds; only those items with values are new.....



PLL, timing and logic; only those items with values are new.....



Other component changes; IN SOME UNITS....

C1, and C9 are 150pf. R4 is 270 ohm. R49 is 220 ohm.

C65 thru C69 are deleted.

FORMAC 700 (Export) - Power/Echo Modification
by B.W.

CAREFULLY, remove all knobs and front cover plate....

1. Remove R149 (33 ohm wirewound), replace with 8.2 ohm wirewound.

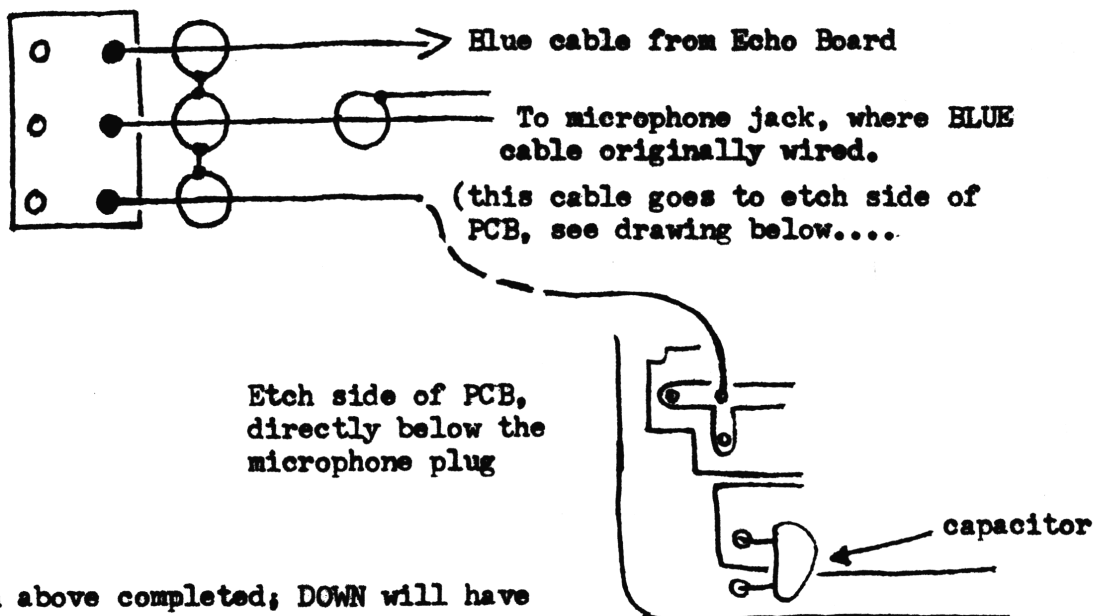
Value is up to you... lower the value, higher the drive to RF

Final. I used 8.2 ohm as medium point, and gave 8W in High Power position. NOTE: check RF Final for mica insulator....

RF Power modification is now complete!

1. Remove NB/ANL switch.
2. Cut the WHITE and YELLOW wires off at switch.
3. Trace WHITE wire to PCB, remove-clean out hole.
4. Solder YELLOW wire to where WHITE was removed. Noise Blanker/ANL is now permanently hardwired.
5. Clean off switch.
6. Trace BLUE cable (shielded, on Pins 3 and 4) from Echo board plug, to the microphone jack. Unsolder cable at the jack-carefully.
7. Pre-tin 2 pieces of 4" shielded audio cable.
8. Re-wire the NB/ANL switch as shown:

RE-MOUNT IN CHASSIS THIS SIDE UP



9. With above completed; DOWN will have regular modulation; UP will switch in the Echo....

It is possible to utilize the 23 Ch. 02A PLL chassis within the following frequency range: (26.115-27.275MHz).. The only real problem is keeping power up across the entire transmit range to be of use..

The following parts may be changed in most units; (ONLY IF NEEDED); for helping keep the VCO operational at the wider spread of frequencies if needed: C101-increase value no higher than 50pf.; C103 increase value to no higher than 10pf TOTAL. D101 may be changed to a Super Diode also.

Freq. Chart will follow logic states via selector:

1. Pins 9 & 10 isolated, but tied together..
2. Pins 9 & 10 isolated, but tied together. Pin 11-Logic 1.
3. Pin 9 isolated.
4. Pin 9 isolated. Pin 11-Logic 1.
5. Pin 10 isolated.
6. Pin 10 isolated. Pin 11-Logic 1.
7. All normal track (Regular C.B. 23 Ch. F₀).
8. Pin 11-Logic 1

LOGIC 1: Etch feed from selector cut; bridged with a 5.1K 1/4W; apply the PLL logic voltage directly to PLL Pin.

ISOLATED: Pin is completed isolated by cutting the etch feed to the pin or any permanent states which a pin may be tied.

Select.	1	2	3	4	5	6	7	8
1	.....	.....	26.325	.....	26.645	.....	26.965	.....
2	.....	.....	26.335	.....	26.655	.....	26.975	.....
3	.....	26.185	26.345	26.505	26.665	26.825	26.985	27.145
4	.....	.....	26.365	.....	26.685	.....	27.005	.....
5	.....	.....	26.375	.....	26.695	.....	27.015	.....
6	.....	.....	26.385	.....	26.705	.....	27.025	.....
7	.....	26.235	26.395	26.555	26.715	26.875	27.035	.....
8	.....	.....	26.415	.....	26.735	.....	27.055	.....
9	.....	.....	26.425	.....	26.745	.....	27.065	.....
10	26.115	26.275	26.435	26.595	26.755	26.915	27.075	27.235
11	26.125	26.285	26.445	26.605	26.765	26.925	27.085	27.245
12	26.145	26.305	26.465	26.625	26.785	26.945	27.105	27.265
13	26.155	26.315	26.475	26.635	26.795	26.955	27.115	27.275
14	26.165	.....	26.485	.....	26.805	.....	27.125	.....
15	26.175	.....	26.495	.....	26.815	.....	27.135	.....
16	26.195	.....	26.515	.....	26.835	.....	27.155	.....
17	26.205	.....	26.525	.....	26.845	.....	27.165	.....
18	26.215	.....	26.535	.....	26.855	.....	27.175	.....
19	26.225	.....	26.545	.....	26.865	.....	27.185	.....
20	26.245	.....	26.565	.....	26.885	.....	27.205	.....
21	26.255	.....	26.575	.....	26.895	.....	27.215	.....
22	26.265	.....	26.585	.....	26.905	.....	27.225	.....
23	26.295	.....	26.615	.....	26.935	.....	27.255	.....

PATIENCE is the key to building a unit with full coverage.....
 Note: Frequency repeats are not marked on above chart.

The following conversion is reprinted by permission of "Custom Conversions".

The first two pages are condensed.....

(1.) CUSTOM CONVERSION #9

(Code Name: MonGoose)

Chassis: Realistic TRC-424 (21-1522)

Parts Cost to modify including SAMS, \$25 maximum....

Time to Modify will vary - initial unit 6 Hrs, without all parts on hand.

Gain in Unit: Frequency Range 26.425-27.555MHz (See Note #1)

"Illegal Frequency Alert"

(See Note #2)

Loss in Unit: P.A. capability

Initial conversion performed on S/N 73702907, Production Run 2A7

(2.) Realistic TRC-424 (21-1522).....Code-MonGoose, S/N: _____

This unit is extensively modified for operation between the frequency range of 26.425-27.555MHz. (See note #1).

Frequency is determined by the Channel Selector and Frequency Range Selector switches.

At any time unit is capable of transmitting on an "Illegal Frequency", the RF/S Meter light will be out.

Do Not use an amplified microphone with this unit if the modulation limiter is removed. Also use caution on the AMC adjustment, as unit will distort the audio very easily.

A Bandit antenna will tune over the entire frequency range with no problems. Do not exceed an SWR of 1.5 if possible.

For complete Frequency Code Chart: See SCB Vol. 16, pg. 15.

Abbreviated Fo's: Red Code - Selector Pos. 9-24, 26.425-26.595MHz.

Red/Yellow Code - Selector Pos. 12-40, 26.605-26.915MHz.

Yellow Code - Selector Pos. 12-24, 27.425-27.555MHz.

NOTE 1: Wiring is installed for Wild Goose configuration (Frequencies), circuitry realignment is all that is needed. See SCB Vol. 20, 8-15.

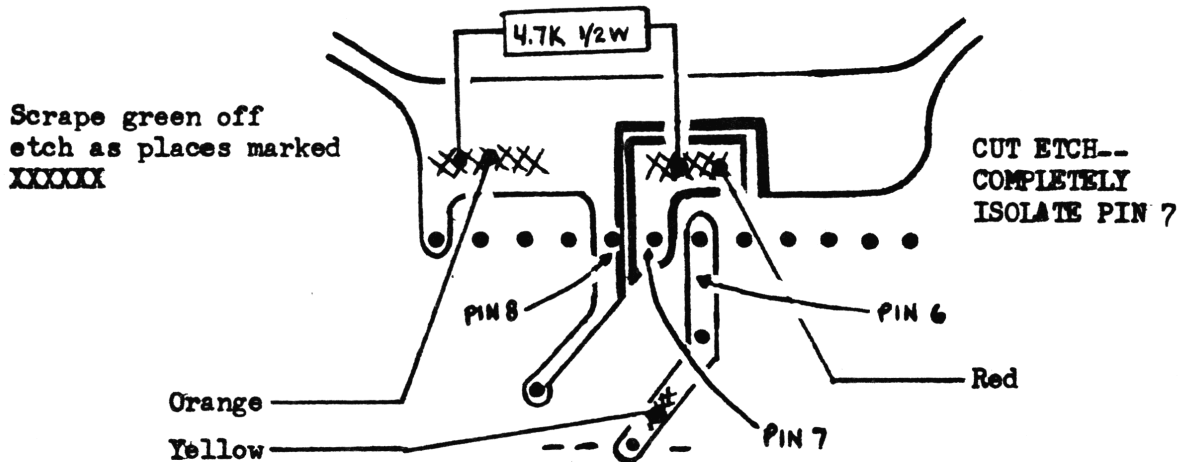
NOTE 2: See SCB Vol. 20; pg. 12, step 29.

The alignment procedure on pg. 15, step 46; of the same volume will be of some help if you attempt to realign for the lower portion.

Read thru this and write down all parts you will need to perform the conversion before attempting! DO NOT ATTEMPT TO CONVERT WITHOUT THE FOLLOWING: SAMS #189, Dummy Load, Frequency Counter, and Power/Modulation Meter are the minimum needed.

1. Remove covers, mark one of the speaker wires for correct polarity.
2. Do a complete line-up per SAMS #189. **CAUTION:** Do not move any slugs that are fixed with glue, as will bust the slug!!!
3. Remove C-518 (3.3mf electrolytic 35 or 50VDC), no replacement.
4. Cut any cable ties when necessary in moving wires!
5. Remove NB, PA/CB switch assembly. (2 screws on inside of front chassis).
6. Follow directions to the letter...Modification of the Noise Blanker Sw:
 - A. Blue Cable-cut Red and white wires off, trace to PCB, undo at standoffs-remove completely.
 - B. Cut Orange wire off assy.
 - C. Cut Violet wire off assy.
 - D. Unsolder carefully the green choke from assy., clean it up.
 - E. Remove Orange wire from standoff.
 - F. Solder one leg of choke to standoff.
 - G. Solder Violet wire to other leg of choke.
7. Follow directions to the letter..Modification of PA/CB Sw:
 - A. Cut Pink (SAMS, calls out a red wire, but is pink), off assy.
 - B. Cut Gray wire off assy.
 - C. Trace both back to Squelch/sw-pot.
 - D. Cut about 1½" from pot., strip insulation and solder together, cover with 2 layers of heat shrink.
 - E. There are 3 separate wires (Blue, Gray, and Yellow) which run along the left to the rear and over to the right. (Blue-goes to the audio transformer).
 - F. Cut all three wires off assy.
 - G. Remove Yellow wire completely from standoff.
 - H. Leave about 2" of the Gray and Blue wires to work with-strip insulation and solder together, cover with 2 layers of heat shrink.
 - I. Cut Green wire off assy.
 - J. Cut White wire off assy. (Note: This white wire should trace to a standoff between L-902 and L-903..some units have a different colored wire)
 - K. Remove Green wire at standoff.
 - L. Strip about 1½" insulation off white wire, and wire wrap to the standoff where the Green wire was.
 - M. Gray cable on assy. cut off, trace to volume pot-remove completely, easier to cut off!
 - N. Cut remaining Blue cable off assy., trace to PCB, remove completely, cut the shield off as is a tight spot.
 - O. Remove the 3.9K resistor from Sw. assy. board carefully, clean it!
 - P. Solder one end of 3.9K to standoff labeled (SW3-3-3).
 - Q. Solder Yellow wire to other end of resistor (use wire discarded in Step 6-F) Sleeve entire resistor/solder joint.
 - R. Wire wrap other end of yellow wire to standoff labeled (SW3-3-2).

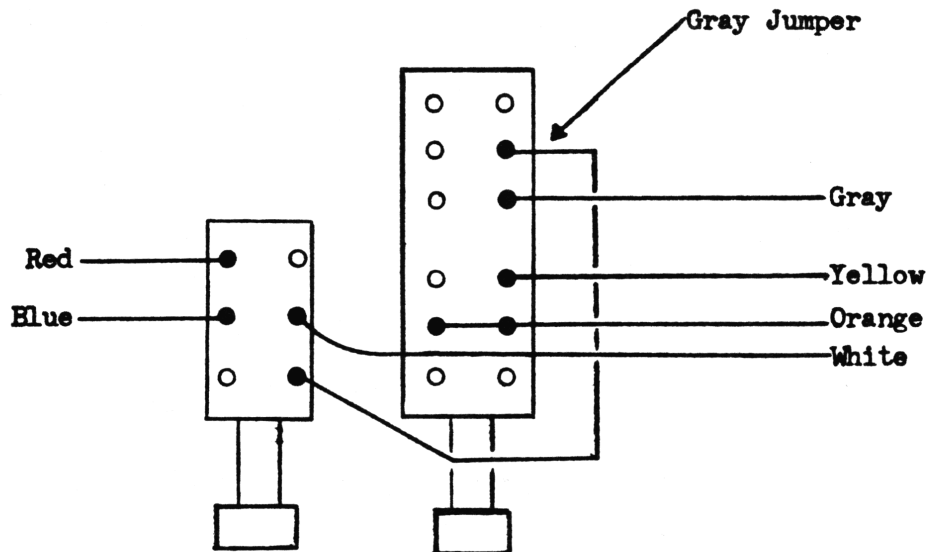
8. Turn unit on (use external speaker) check for receive audio, power out, and modulation. Note: Modulation should be about 100% +, on an un-amplified microphone. ANY USE OF AN AMPLIFIED MICROPHONE MAY DAMAGE UNIT, ITS USE IS NOT RECOMMENDED AS CAN DAMAGE TRANSMIT SECTION..
9. Remove the bottom cover plate from the PLL circuit carefully.
10. Clean completely the switch assembly board, remove the capacitor, double check that there are no shorts, make sure all top pins are open as wiring modifications will be made there.
11. Use diagram below for the PLL wiring changes/modification:



___ USE ISOLATED TIP SOLDERING IRON WHEN WORKING AROUND PLL ___

12. Scrape off insulation at places marked with XXXXXX.
13. Completely isolate Pin 7 from Pin 8, make cut between pins exactly as shown above.
14. Use a 4.7K resistor and bridge cut, exactly as shown above: Note.. Resistor must be laid down onto the board or cover will not fit when replaced.
15. Use color coded solid copper wire and solder wires in place, wire length must be at least 14" long.
16. Check for shorts and make sure that wires are laid down flat before replacing cover.
17. Replace the cover carefully-you must use extreme caution that the tabs do not short out anything when replacing. NOTE: some covers do not have insulation on the bottom, if not place strips of electrical tape in place.
18. Feed the wires to the component side via gap next to meter-lay down permanently and tie up the cable bundle for support.
19. Trace meter lamp white wire to PCB, remove the white wire at point marked PL. Clean out the hole.
20. Solder Gray wire removed in Step 6-F (long Gray wire) to that point.
21. Re-install the NB, PA/CB Switch assembly in chassis, use small lock washers.

22. Use a paper punch and punch out the holes in colored electrical tape. Put Red on the NB button and Yellow on the PA/CB button.
23. Solder a Blue wire removed in Step 6-F (long wire) to D.C. ground on etch side of PCB. Feed up thru gap with other wires.
24. Wire-up per diagram the P.A. and Noise Blanker Switches exactly as shown below. Cut all wires to length and bundle as you go.



25. Turn unit on and check that RF/S meter light will go out when either or both buttons are pushed in.
26. Check to see the frequency spread as it is..Do Not Adjust Anything.
27. Adjust L-901, L-902, L-903 for balance of power and frequency range, do not adjust anything else.
28. The high frequencies are usually there with no trouble, the lower band is the hardest to tune in.
29. CAUTION: If the VCO slug is not glued you may now realign it slightly to try to get the lower frequency band in. If it is glued and you bust the slug, good luck!!
30. Try to align the 3 slugs in Step 27 for maximum power across all frequencies you can obtain. (Not all units will stretch down to 26.425).
31. Adjust L-904 for maximum forward modulation at 27.005Mhz.
32. Peak L-905 for maximum power at 26.905Mhz.
33. Re-check the frequencies and mark which ones are not present on frequency chart.
34. Tie up all cables.
35. Place electrical tape on bottom of cover which might come in contact with NB-PA buttons. Resolder speaker wires correctly. Replace covers.
36. Recheck frequencies., enjoy!

Cobra 146GTL - "Slide Mod."
by B.W.

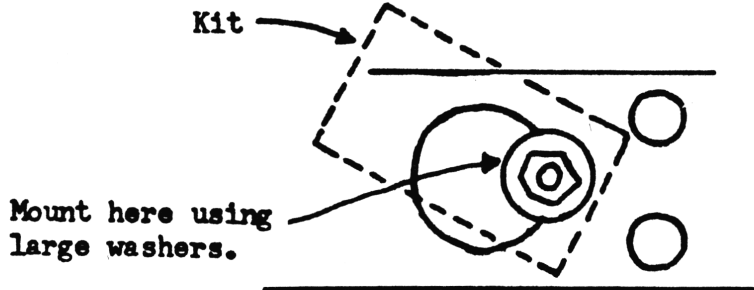
The reason for 're-writing' of this is to clear up Vol. 15 pgs. 18 and 19. Use the following to do the slide and filter modification. Performed on S/N: 43003199.

1. Remove front panel carefully; all below required to remove.
 - A. Screw on etch side of front panel PCB.
 - B. Meter leads must be unsoldered and bent back.
 - C. Retainer nut and washer on the volume pot.
 - D. Screws (4), on side of front panel, and of course all knobs.
2. Remove following from front panel PCB.
 - A. R405, clean out hole that is on clarifier pot leg etch.
 - B. Solder a BLACK 10" wire in hole.
 - C. JP407, clean out hole that is on clarifier pot leg etch.
 - D. Solder a RED 10" wire in hole.
3. Re-route wires to etch side of chassis while replacing the front panel. (Be especially careful with meter and TX/RX LED.)
4. Remove D32 from the main PCB.
5. Clean out the + hole of C197. NOT in chassis - location is to left of VR2 on component side.
6. To immediate left of R185 is a hole with no numbering, clean out. Check with VOM - should be direct short to DC Ground.
7. Put a 1,000MFD/16VDC (minimum voltage) electrolytic from the + hole of where C197 should be, to the hole cleaned out next to R185. DO NOT PUT THE MINUS LEAD OF CAPACITOR WHERE IT IS MARKED ON PCB! Bend over the leads, cut short and solder carefully.
8. Solder the BLACK wire to - lead of capacitor on etch side.
9. Solder the RED wire to + lead of capacitor on etch side.
10. Center the clarifier knob, adjust the following at 20 on channel selector... Read frequency in the TRANSMIT condition on a dummy load.

AM - adjust L16 for 27.205MHz
USB - adjust L17 for 27.206MHz
LSB - adjust L18 for 27.204MHz
11. 'Slide' with present Varactor diode in unit gave ± 2KHz. Replacing this diode (D30) with a "Super Diode" will give about ± 5KHz.

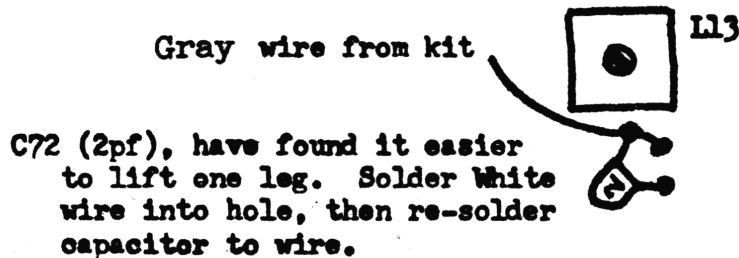
Kit Installation...

1. Kit will install on side of chassis next to PLL chip.
Mount in the microphone hole per drawing below - you might have to to enlarge the key-way slightly to get enough bite for the washers. In this manner will only have to remove a small amount of metal from each case cover. **DON'T MOUNT THE KIT YET....**



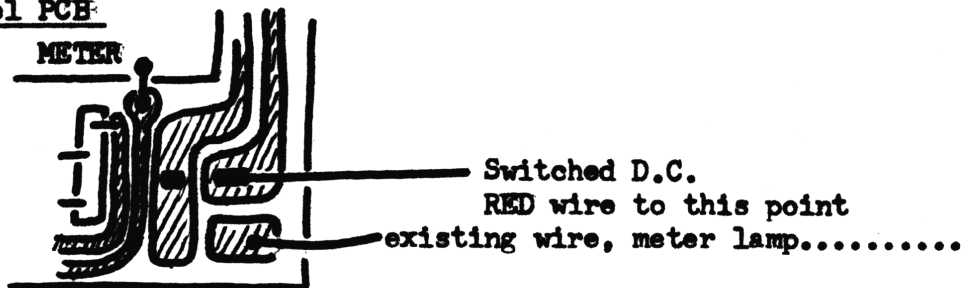
2. Kit wires go the following locations:

Black - D.C. Ground (try hole to right of L14, is un-used and DC Gnd.)
Gray - Solder to C72, side closest to L13 - see below:



Red - Solder to switched DC input to unit, see below:

Front panel PCB



Brown - 'wiper' of the clarifier Potentiometer, see below:



Kit 106 - Cobra 146GTL (cont.)

3. 'Tack solder' all wires and check out kit before installing.
4. If when mounting the UP position is throwing in the Low Fo's, just switch crystals on the kit PCB.
5. SPECIAL NOTE: test unit S/N 43003199 required a 'Super Diode' in the VCO circuit for full frequency coverage and stability. This is D25, located to left of L14.
6. Permanently install kit, and shorten wiring after checking out operation.
7. Using L13 and L14 will get the frequencies to 'come up', L14 has the most effect. Then tune L15, L40, L39, L38, L37, and L28 for best overall LINEAR RF OUTPUT Power in SSB mode.
8. Additional adjustments for this unit:
 VR1-S Mtr, VR2-Sq Rng, VR3-LSB Fo Adj. (disabled if slide is installed), VR4-Carrier Balance, VR5-AMC, VR6-AIC, VR7-Tx Mtr, VR8-Final Bias (100ma), VR9-Driver Bias (10ma), VR10-AM Power.

Kit-106, Frequency Chart

Down		Middle		Up	
Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency
1	26.515	1	26.965	1	27.415
2	26.525	2	26.975	2	27.425
3	26.535	3	26.985	3	27.435
4	26.555	4	27.005	4	27.455
5	26.565	5	27.015	5	27.465
6	26.575	6	27.025	6	27.475
7	26.585	7	27.035	7	27.485
8	26.605	8	27.055	8	27.505
9	26.615	9	27.065	9	27.515
10	26.625	10	27.075	10	27.525
11	26.635	11	27.085	11	27.535
12	26.655	12	27.105	12	27.555
13	26.665	13	27.115	13	27.565
14	26.675	14	27.125	14	27.575
15	26.685	15	27.135	15	27.585
16	26.705	16	27.155	16	27.605
17	26.715	17	27.165	17	27.615
18	26.725	18	27.175	18	27.625
19	26.735	19	27.185	19	27.635
20	26.755	20	27.205	20	27.655
21	26.765	21	27.215	21	27.665
22	26.775	22	27.225	22	27.675
23	26.805	23	27.255	23	27.705
24	26.785	24	27.235	24	27.685
25	26.795	25	27.245	25	27.695
26	26.815	26	27.265	26	27.715
27	26.825	27	27.275	27	27.725
28	26.835	28	27.285	28	27.735
29	26.845	29	27.295	29	27.745
30	26.855	30	27.305	30	27.755
31	26.865	31	27.315	31	27.765
32	26.875	32	27.325	32	27.775
33	26.885	33	27.335	33	27.785
34	26.895	34	27.345	34	27.795
35	26.905	35	27.355	35	27.805
36	26.915	36	27.365	36	27.815
37	26.925	37	27.375	37	27.825
38	26.935	38	27.385	38	27.835
39	26.945	39	27.395	39	27.845
40	26.955	40	27.405	40	27.855

Phase Lock Loop I.C. Chart

Listing is by PLL chip utilized in various units.

Chart will of aid in figuring out different modifications by cross-indexing in the SCB index. If no modification is listed for particular unit, another may be used as reference. In most cases the only difference is name on unit, and extra 'garbage' switches.

EXAMPLE: You have a Pace 8193; no conversion is listed in SCB index. BUT, you know that it has a CCI3001 PLL chip.

Under CCI3001 listing is Royce 642, 639; SEE LCMS-4; and Pace 8093. These are in Vol.s 7/34, 13/24, and 15/48; if you look them up in the index.

In this manner we now will not have to 're-print', or 're-hash' basically the same unit.

The following PLL chips have the same 'pin out functions' and

thus will be grouped together: MC145104, MM114, MM55104, MM55124,
MN6040A/C, SM5104, ECG1255, 00S09,
MC145106, MM55106, MM55116, MM55126,
MC145107, MM55107, SM5107,
MM55108, SM5118,
uPD2814, HD42853, KM5624
MB8719, MB8734,
M58476, NDC40013
MCS42502P, 3001-201.
PLL02A... AN6040, MC14510 , MM48141, MN6040,
SM5109, TC9100P, ECG1167,
PLL02AG.. ECG1233,
uPD858, ECG1198
uPD861, ECG1254

Phase Lock Loop I.C. Chart (cont.)

CCI3001..... Pace 8093, 8193,
Globephone GS-480DX,
Royce 582, 639, 642, 651
Sommerkamp TS-340DX
SEE LCMS-4,

CCI3002..... Pace 8003,
Great K605/GT-818,
Royce 607,

SEE LCM-8P

HD42851..... Sharp CB5470SSB,

LC7110..... GE 3-5804A, -5871B,

Realistic TRC-454, 470,

Sanyo TA2000, TA4000, TA6000,

LC7113..... Realistic TRC-459, 480,

LC7120..... Colt 150, 190, 222(Early), 510,
Formac 240, 700,
Commtron XII,
Lincoln 1500,
Midland 77-101B, 77-101C, 77-824C, 2001(Export),
150M(Export),
Ham International: UK-120FM,
Realistic TRC-462,
Palomar 1200
Robyn SB-540D,
WKS 100,
SEE 47CB,
Stag 357,
Superstar 1700(S and B),

LC7130..... Cobra 19X

Colt 210, 222(Late),

GE 3-5805B

Midland 100M, 102M, 150M, 2001, 3001, 4001,
Omnivox CB-1000,
Realistic TRC-421A, 422A,

Phase Lock Loop I.C. Chart (cont.)

LC7131..... Cobra 19XS,
Commtron IV,
Colt 355,
GE 3-5826A,
Midland 1001(77-001), 103M(77-103), 102M,
151M, 202M,
K40 SSB,
Realistic TRC-410, 428, 472, 412, 414,
Fox 340
Uniden PC77,
USACO U900CB,

LC7132..... GE 3-5806,
Fox 240, 440
Midland 77-104,

Realistic TRC-413,

M58472P..... Channel Master CB6830, 6834, 6835,

GE 3-5800A, 5801A, 5810A, 5821A, 5871A,

Teaberry Racer 'T', 'T' Charlie

M58473P..... American Motors 32311847, 32311848, 32311849,
32311850,

ITT 4400M,

Kraco KCB-4005,

Royce 632

Wards GEN-702A, 730A, 774A, 775A, 828A,

Phase Lock Loop I.C. Chart (cont.)

MB8719, MB8734..... Cobra 46XLR, 47XLR, 50XLR, 55XLR, 140GTL, 142GTL,
148GTL, 148GTL-DX(Early), 2000GTL,

Courier Galaxy
Grant DX,
Midland 63-445, 79-900,

President (New Models), Washington, Grant, McKinley,
Madison,

Realistic TRC-450, 490,

Robyn SB-505D(New),

SEE LCMS-8

SuperStar 360, 360FM,

Teaberry Starlker IX, IX-DX, IX-FMDX, XV, XX,
XX-FM,

Tram D80, D300,

MC145104..... Courier Caravelle 40D, Conqueror 40D
MN114, MM55104,
MM55124, MN6040A, Fanon Fanfare 880DF
MN6040C, OOS09,
SM5104, ECG1255, JC Penney 981-6241, 6246,

Kris XL-45

Midland 77-825, 77-861,

Motorola CM-540,

Panasonic RJ-3050, 3100, 3150, 3700,

Pearce-Simpson Super Tiger 40A,

Realistic TRC-455

Robyn 007-140, DG-130D, GT-410D, LB-120, SX401,
SX402D, WV-110,

Sears 934.3826, 3827, 3831,

Utac TRX-500, 4000,

Phase Lock Loop I.C. (cont.)

MC145106,..... Browning Mark IVA
MM55106,
MM55116, Cobra 148GTL-DX(Late),
MM55126, Colonel FR360
Dak Mark V, Mark IX

Excalibur SSB,

Jackson DX,

Lake 400, 600,

Pacific 800SSB,

Palomar 500SSB(Late),

Regency CB501,

Robyn 440

SuperStar 360FM, 3600, 3600(Low Band), 3900(High Band),

MC145107,..... Lafayette LM-200, Telsat 1240,
MM55107,
SM5107, Lake 650,

Pace 8008, 8010A, 8015A, 8113, 8117, 8155, 2300C,

SHE 41CB, 42CB,

Sears 370.3805,

MM55108,..... Automatic CHR-2175
SM5118,

Boman CHR-9940

Chrysler 4048076, 4048077,

Lake 410

Pace CE185, 8041, 8046, 8047, 8092,

Panasonic CR-B4737EU, CR-B4747EU,

Pearce-Simpson Leopard B

RCA 14T405, 14T410,

Phase Lock Loop I.C. (cont.)

PLLO2A and O2AG
are listed together:

AN6040, MC145109, ARGO 300-(mobile and base), 5000,
MM48141, MN6040,
SM5109, TC9100P, Boman CB910, CB920, CB930, CB950, CBH990,
ECG1167, ECG1233, Clarion PE672E/JC202E, RCJ003/JC202E, RE-367E,
DMA-066,
Cobra 148GTL-B, 148GTL-DA, 150GTL,
Colt 290, 390, 480, 800, 870, 1000, 1200,
160DX, SX33, 2400, 485, 320FM,
Dak Mark X
Falcon 2000
G.E. 3-5804D, 5810B, 5811B, 5812A, 5813B,
5814B, 5819A, 5825A, 5825B, 5875A,
Gemtronics GT44, GT55, GTX66, GTX77,
Ham Internatl... Concorde 2, Jumbo 3, Multimode 3,
M-788, Concorde 3,
Hygain 2679, 2679A, 2680, 2681, 2682, 2683, 2701,
2702, 2703, V(Export), 2795(Export),
J.C. Penney 981-6204, -6218, -6247,
Kraco KCB-2320B, 2330B, 4010, 4020, 2030, 4045,
Lafayette Com-Phone 23A, ComStat 525, Dyna-Com 40,
HB640, HB650, HB740, HB750, HB940, HB950,
LM100, LM300, Micro 223A, TelSat 1050,
TelSat 1140, TelSat SSB-140, 1800, 2400,
Major M-120,
Marko CB-444,
Medallion 63-030,
Midland 13-830, -857B, -882C, -888B, -955;
76-858, -863, -886; 77-830, -838, -849,
-857, -882, -888, -889, -899, -955, -963;
78-574, -976, -999; 79-891, -892,
Mopar 4094176, 4094177, 4094178,
Morse/Electroponic 3005,
NATO 2000,

Phase Lock Loop I.C. (cont.)

PLLO2A / O2AG cont...

Palomar 2400, 2900, 4100, 5000,

Pearce-Simpson Lion 40, Tiger 40, Tiger 40A,
Tiger Mark 2,

Ray Jefferson CB-845,

RCA 14T260, 14T270, 14T275, 14T300, 14T301,
14T302, 14T303, 14T304, 14T305,

SBE LCBS-4

SuperStar 2000(both versions)

Tristar 747, 848,

Truetone MCC4434B-67, CYJ4732A-77, CYJ4832A-87,
CYJ4834A-87, CYJ4837A-87, CYJ-4862A-87,

Thunder 2000,

MSC42502P..... General Motors (G.M.) 4170, 4175, 4120,

Johnson Messenger: 40, 50, 80, 191, 4120,
4135, 4140, 4145, 4230,
4250,

Johnson Viking: 200, 230, 260, 270, 4330, 4360,

MSM5807..... Alaron B-4900,

Fieldmaster Micro-mini 40,

Kraco KCB-4000,
Mectron ME-400,
Palomar 49,

Realistic TRC-205,
RoadRunner CB5000A,
Tenna 10901, 10902, 11302,

Phase Lock Loop I.C. (cont.)

MSM5907..... Gemtronics GTX-4040, GTX-5000,
NOTE: This is not Bristol BCB-2271,
a PLL chip. Robyn T-240D,
Phase Detector/ Colt 900,
Programmable Shakespeare GBS-240,
Divider - used
with MSL2301 Teaberry Model 'T',
Divider.

M58476,..... Craig L131, L231,
NDC40013,
Johnson Viking: 4730, 4740,
NDI PC201,
Pace 1000B, 1000MC,
Tram D64,

NIS7261A..... Pearce-Simpson Jaguar 40B
Vector X, 770, 790,

NIS7264B..... Kraco KCB-4003, 4088,
Morse/Electroponic 2001,
Orbitsonic 200,
Pace 8340,
Surveyor 2630,

PLL01A..... Hygain 681, 682,
Kraco KCB-2310A, KCB2320A,

PLL03A..... Delco (GM) 80BCE2, 90BCE1, 90BCE2, 90ECE1,
90BFTC1,
GE 3-5813A, -5814A, -5817A, -5818A,
-5819B, -5869A,
JC Penney 981-6216,
Midland 77-821, 77-859, 5001,
SBE LCM-8,

Phase Lock Loop I.C. (cont.)

Rec86345..... Courier: Elazer 40D, Nightrider 40DR,
Ranger 40D, Renegade 40, Rogue 40,

Fanon Fanfare: 125F, 182F, 184F, 185DF, 185PLL,
190DF,

Realistic TRC-448,

TC5080P, ECG1207... Browning Baron, Sabre, SST-2,

NOTE: This is not
a PLL chip.

Programmable
Divider, used
with TC5081 and
TC5082.

Cobra 32XLR, 86XLR, 87XLR, 132XLR, 135XLR,

Kraco KCB-4090, KCB-4095,

Sears 562.3820

Sharp CB750A, CB800A, 2260, 2460,

Tram D42, D62,
Xtal XCB-71,

TC9102P..... Midland 76-860, 77-861B,

Sharp CB2170, 4370, 4470, 4670,

TC9103P..... Medallion 63-540,

Motorola CT950AX,

TRS Challenger 730, 1200,

Wards GEN-680A, 696A, 716A,

TC9106P..... Cobra 18LTD, 20LTD, 21GTL, 21LTD, 25GTL, 25LTD,

GE 3-5804B, -5804F, -5805A, -5815A,

Midland 77-824B, 200M

President: Andrew J, AR7, AR711, AX43, AX44, AR44,
Seahawk 40, AX711,

Realistic TRC-425, 426, 427, 473.

Teaberry Stalker III,
Uniden: PC43, PC66, PC33, PC3, PC55.

Phase Lock Loop I.C. (cont.)

TC9109P..... Cobra 19GTL, 78X,
Craig L-103,
GE 3-5804G, -5816, -5900A, -5900C,

President: 'Veep', ARL4,
Realistic TRC-210, 212,
SBE LCMS-4, LCM5,

Sears 663.3802, 663.3803,

Teaberry Stalker IV, VIII,

uPD858,..... Boman CER-9600,
ECG1198,

Cobra 21X, 21XLR, 29XLR, 89XLR, 77X, 138XLR,
139XLR, 45XLR,

Courier Centurion 40, Gladiator 40, Spartan 40,
Rebel PLL, Rebel 40A,
Fanon Fanfare 350F, 100F1,

Midland 13-883B, 77-883, 79-893,

Palomar 500A-SSB (Early),

President: Adams, Honest Abe, Teddy R, John Q,
(OLD-Washington, Madison, Grant, Zachary T,
(Mckinley,

Realistic TRC-449, 452, 457, 458,

Robyn AM500D, SB-510D, SB-520D,

Teaberry Stalker 101, 102, 202, 'T' Bear,
'T' Command, 'T' Dispatch,
Titan 'T',

Phase Lock Loop I.C. (cont.)

uFD861,..... Boman CEM-6100,
ECG1254,

Colt 350,

Convoy CON-400,

J.C. Penney 981-6221, 981-6225, 981-6237, 981-6255,

J.I.L. 202,

Panasonic RJ3250, RJ3450, RJ3600, RJ3650,

Realistic TRC-424, 431, 440, 456, 461, 466, 467,
468,

SBE 49CB, LCB-8,

Sears 934.3806, 934.38062, 934.380807, 934.380817,
934.3811, 934.3812,

Superscope CB140, CB340, CB640, CH1040,

TRS Challenger 460, 600,.

uFD2810..... Audiovox MDU-6000,

Colt 444,
SuperStar 95,
Tristar 727,

TRS Challenger 850, 1400,

uFD2812..... Audiovox MCB-5000,

JIL 615CB

uFD2814,..... Cobra 66GTL,
HD42853,
KM5624,

Craig L150

Midland 77-856

President AR11, James K, Old Hickory,

Realistic TRC-420A, 421, 422, 432, 441, 469,

Uniden PC22,

Phase Lock Loop I.C. (cont.)

uPD2816..... Cobra 29GTL, 29LTD, 63GTL, 87GTL, 89GTL,
1000GTL,

Midland 79-006, 79-007.

President: Thomas J, Dwight D.(new), Zachary T.(new),
McKinley(new),

SBE ICB-8,
SuperStar 120, 120FM,
Teaberry Stalker V, XII,

uPD2824..... Cobra 146GTL,
Craig 1132, 1232,
Midland 79-012,

President AR144, AX144,

Realistic TRC-451, 453,

Sears 663.3810,

Uniden PC244,

Wards GEN-719A,

YT7700 (C5121)..... Midland 77-155,

FOR TALK BACK ON COBRA 146GTL AND UNIDEN AX-144:
REMOVE R176 (10K Resistor) - THATS IT!

THERE IS AN ERROR IN THE TABLE OF CONTENTS OF VOLUME 22:
Pages 28 & 30 are the line up procedure for SUPERSTAR
3900 (High Band) - NOT 3600.

NOISE REDUCTION TECHNIQUES FOR SUPER DXING

by J.S.

MOBILE

Parts Required:

- Auto stereo Graphic Equalizer/Power Booster
- Pair of good quality Car Stereo Speakers (prefer 3-way)
- DPDT Switch
- 14 ga. stereo hookup wire

Connect EQ/BOOSTER to CB as shown below. Setup EQ curve to resemble Fig. B., and then experiment to find loudest voice/lowest noise. "WALKMAN" stereo headphones work great tool!

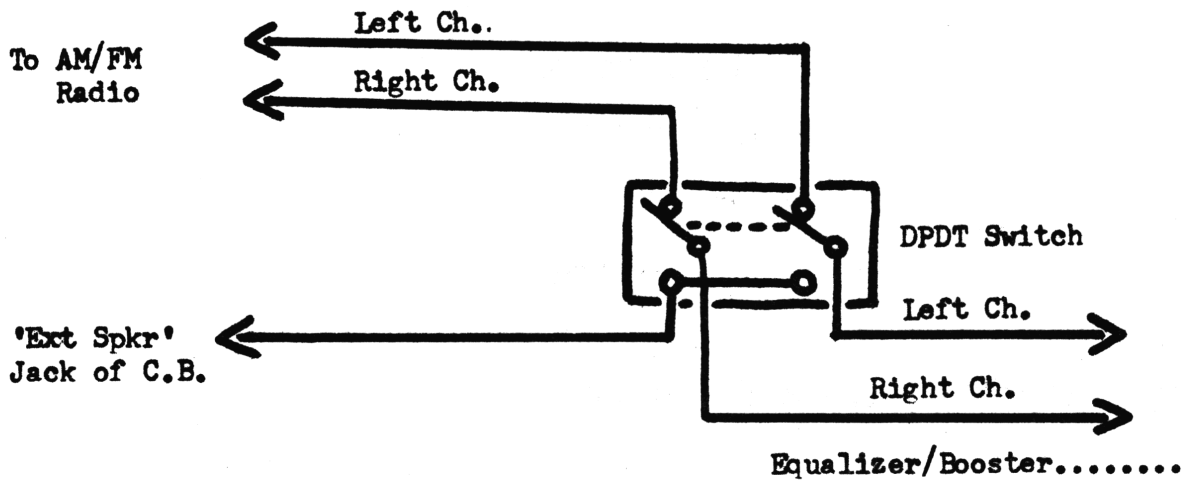
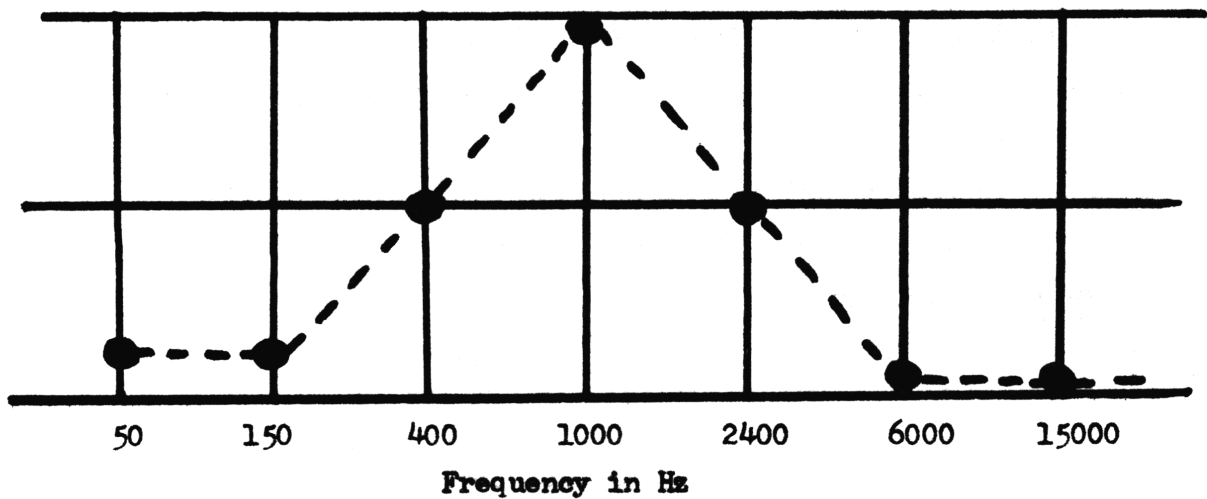


Figure B.



Speech Filter Curve for Equalizer/Booster....

SECRET CB INDEX - VOLUMES 1 THRU 22

CODES: A - ALIGNMENT PROCEDURE; C - CONVERSION; FC - FREQUENCY CHART; M - MISCELLANEOUS INFORMATION;
S - SLIDE; SC - SCHEMATIC; I - TUNE UP.

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 SM5104 SSB.6/26-27;9/20-22
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 B-5200.....T-3-41

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 46XLR.....T-3/43
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 55XLR..C-16/53,18/22;T-3/43
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 78X.....T-4/49;6/19;8/44
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 132-B.....C-1/53
 132XLR..C-4/47;T-3/45;16/39
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 139XLR.....C&S&T-1/20-23
 140GTL...C&S&T-4/50;S-6/64
C&T-3/19-20;T-3/58
C&S-10/28-29
 142GTL...C&S&T-4/50;S-6/64
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 146GTL.C&S11/17-18;SC-21/64

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T-6/19
 148GTL-B...C-17/40-43,19/60
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 148GTL-DX.....C-15/20-24
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 485.....C&S&T-3/8-15
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T-17/42,45
 800.....C&T-3/4-7;10/58
 870.....SC-21/53
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 2000 LOW.....C-9/23
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 L102.....T-6/20
 L131...C&S-9/12-14;T-10/59
 L132...C-9/12;10/47;11/10
S&T-9/12;10/47
 L231...C-9/12-14;T-10/60
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 L232.....C&S-9/12
C&S&T-10/47;11/10
 L321...C&S-14/12
 4102.....T-16/32

CRYSLER
 4048076/8077.....T-6/18

DAK
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 MARK IV...C-5/21-23;9/18-19
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FORMAC
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CODES: A - ALIGNMENT PROCEDURE; C - CONVERSION; FC - FREQUENCY CHART; M - MISCELLANEOUS INFORMATION;
S - SLIDE; SC - SCHEMATIC; I - TUNE UP.

	VOL/PG		VOL/PG		VOL/PG		VOL/PG
FORMAC (cont.)		HYGAIN		KRACO		MIDLAND (cont.)	
700.....M-22/20;T-22/32		I-A.....C-1/22		KCB1401.....T-18/57;19/42		13-882C.....C-13/62;15/35	
FUZZBUSTER		PLL.....C-1/32		KCB2320.....T-20/36	T-13/62	
Z-40.....T-22/33		II.....C-8/20		KCB2330A.....C-9/15		13-883B.....C&S-12/4	
GENERAL ELECTRIC		IV 673.....T-18/34		KCB2340.....T-2/42		13-892..S-4/48;11/13;T-4/48	
3-5800A.....T-3/50		HY-RANGE V.....T-18/51		KCB2345.....T-18/34		13-893.....S&T-4/51	
3-5801A.....C-16/33;17/39		V.....C-8/18;S-11/11		KCB4000.....T-11/43		13-898.....S-1/36	
3-5804B.....T-6/21		V-EXPORT.....A-19/48-51		KCB4003.....C&T-3/42		13-898B.....S-1/35	
3-5804F.....M-21/16;T-10/61		VIII.....C-8/18;T-3/59		KCB4005.....T-9/38;11/43		63-445.....T-11/45	
3-5804G.....T-12/35		623.....S-1/33		KCB4006 "MAYDAY I".....T-22/33		76-858...C-16/21-24;T-3/49	
3-5805A.....T-9/31;10/61		674A.....S&T-4/60	SC-22/45		76-860.....T-14/51	
3-5806.....T-18/65;19/64		V-674B.....T-1/21		KCB4009 "MAYDAY II".....T-22/33		76-863.....C&T-3/50;9/33	
.....SC-19/65		2701.....T-2/42	SC-22/47		77-101B.....T-8/44	
3-5811B.....T-9/31;10/61		2702.....T-3/48		KCB4020.....T-3/49		77-101C.....T-12/38	
3-5812A.....T-10/61		2703.....T-3/48		KCB4030.....T-8/44		77-104.....M-21/52;T-21/16	
3-5813A.....C-14/41		2716.....T-12/36		KCB4045.....T-14/47		77-808.....T-18/51	
3-5813B.....T-18/34		ICOM		KCB4080.....T-3/50		77-821.....C&T-3/42	
3-5814B.....T-6/21		720A.....C-21/39		KCB4090.....C-19/52		77-824.....T-8/44	
3-5816A.....T-21/60		ITT		KCB4095.....C-19/52		77-824B.....T-12/38	
3-5817A.....T-7/51		CB-4000M.....C&T-13/61		KCB4806.....C-15/59		77-824C.....T-12/39	
3-5818A.....T-2/42		CB-4400M.....C&T-4/17-18		KCB4088.....T-3/50		77-830.....C-20/56	
3-5819A.....T-11/42		JC PENNEY		KRIS		77-838.....T-9/33	
3-5821A.....T-9/31		PINTO SSB.....S-1/44		XL25.....T-2/43		77-849.....C&T-3/50	
3-5821B.....C&T-3/54		6241.....C-8/18;T-18/51		LAFAYETTE		77-853.....T-16/55	
3-5825A.....T-9/31-32		6246.....C&T-13/61		COMSTAT.....T-11/45		77-856.....T-11/45	
3-5825B.....C&S-20/55		6247.....S-13/13		DYNA-COM 40.....T-11/44		77-861.....C-12/26;T-3/50	
3-5826A..G-22/50-51;S-20/54		6248...C-8/24;S&T-13/14-15		CHB740.....T-15/60;16/55		77-861B.....T-11/45	
3-5830.....T-3/42		981-6203.....T-15/30		HB640.....T-2/43		77-865.....T-9/33	
3-5869A.....C-14/41;T-2/42		981-6204.....T-9/32		LM-100.....T-12/36		77-899.....T-9/33	
3-5871A.....T-13/60		981-6221.....T-21/35		LM-300.....T-12/37		77-963.....C&T-3/42	
3-5871B.....C&T-3/46		981-6225.....T-14/47		MICRO-723.....T-19/42		78-574.....C&S&T-14/10	
3-5875A..C&S&T-10/48;T-9/32		981-6235.....T-19/42		SSB75.....C&S&T-14/9	T-9/38;12/39	
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