

With the exception of the first section of low pass filtering (C74, R94, R93 and C73) Yaesu have made an excellent job in the audio filtering stages. The first section however can be improved by some small changes to component values.

As I am the local FT102 Rig Doctor, I see many Rigs at my QTH and as such I get the chance to compare different makes. The TS430, TS830, and TS930 have all been compared against my FT102 and although I like the extra VFOs on the Kenwoods, my FT102 had the edge on them for pulling in the weak signals with the exception of the 28 Mhz band. I did also notice that when I compared my FT102 against Trevor's (GOCEM), that the back-ground noise on Trevor's Rig was much lower. It was when I later changed my diodes that I found out why that was !

CASE NOTES

The difference between the choice of diodes in the product detector stage are as follows :- (a) Silicon (1N4148 type) : Low priced : Easy to get : Strong signal handling : can't handle low signals .7 volt turn on : Noisy will distort on weak signals.

(b) Germanium (1N60 type) : Low priced : Easy to get : Good Low signal handling .2 volt turn on : Strong signal handling not so good and not easy to match in bridge configuration : Leaky can let through carrier which can remix giving distortion : Bit noisy.

(c) Passivated Schottky (BAR28 or HP5082 - 2835) : Med priced : BAR28 is easy to get (Maplins) : Good Low Signal handling .3 volt turn on : Good Strong Signal handling : Low 1/f noise : Low distortion : Not easy to match : Very fast switching upto U.H.F.

(d) Unpassivated Schottky (Mesh diode HP5802 - 2900) : Expensive : Very hard to

get : These diodes have extremely Low 1/f noise and are ideal for low noise mixing : Very easy to match : Very low distortion. : Can only get them in U.S.A. : Can get them in a bridge package : Very fast switching upto U.H.F.

NOTES: For most of us in the U.K. I can recommend the BAR28 at 48p each but you will need to get at least 6 diodes to match the 4 required. When matching any Schottky diode it is very important that you do not apply the meter tests leads directly to the diode. Always used a 4K7 resistor in series with the positive meter lead and use the OHMS x 1000 range.

For the purist get the HP5802 - 2900 Mesh diodes I would recommend the bridge package. Each single Mesh diode will cost you \$5 each. I am still waiting for mine to arrive ! I do not have any knowledge of the price of the bridge package yet, but I am working on it ! I do have the data sheets for all the Hewlett Packard diodes thanks to KB9MZ Art.

SURGERY

1. Disconnect all leads to rig, turn rig upside down and unscrew bottom cover. Locate A.F. unit (PB-2344), remove all plugs and unscrew the P.C.B. Refer to page 54 of your Instruction Manual for the circuit diagram.

1.1 Locate and unsolder D21, D22, D23 and D24 and replace with your own choice of schottky diodes. It was at this point of time that I noticed that on my board one of the original diodes had been *fitted the wrong way around* ! The 'K' cathode is marked on each diode with a band as is the P.C.B.

1.2 Locate and unsolder R94 (470R) and replace with a 2K2 resistor.

1.3 Locate and unsolder R93 (5K6) and

