Contact author:
NICK iKONOMOV - LZ1JY
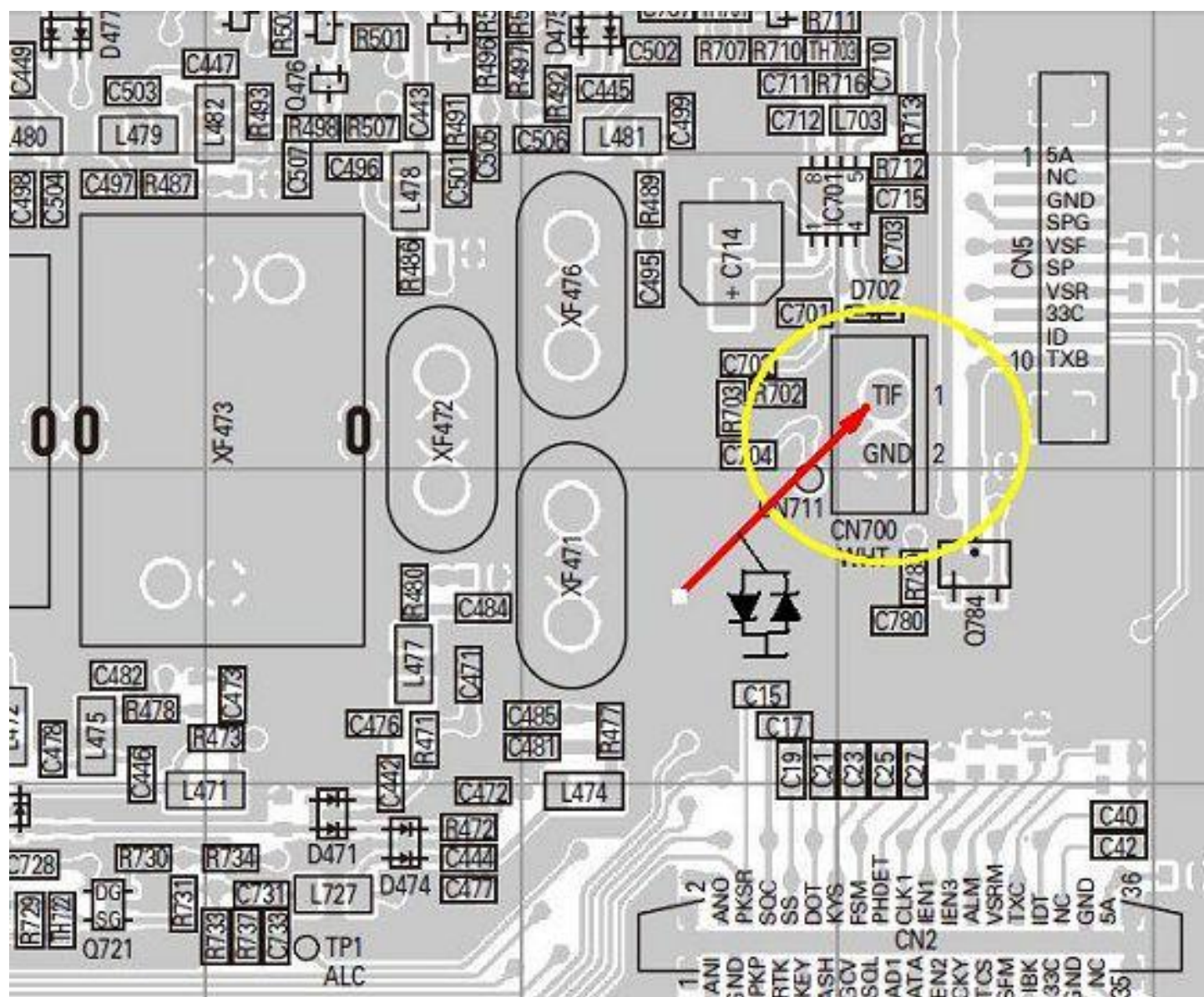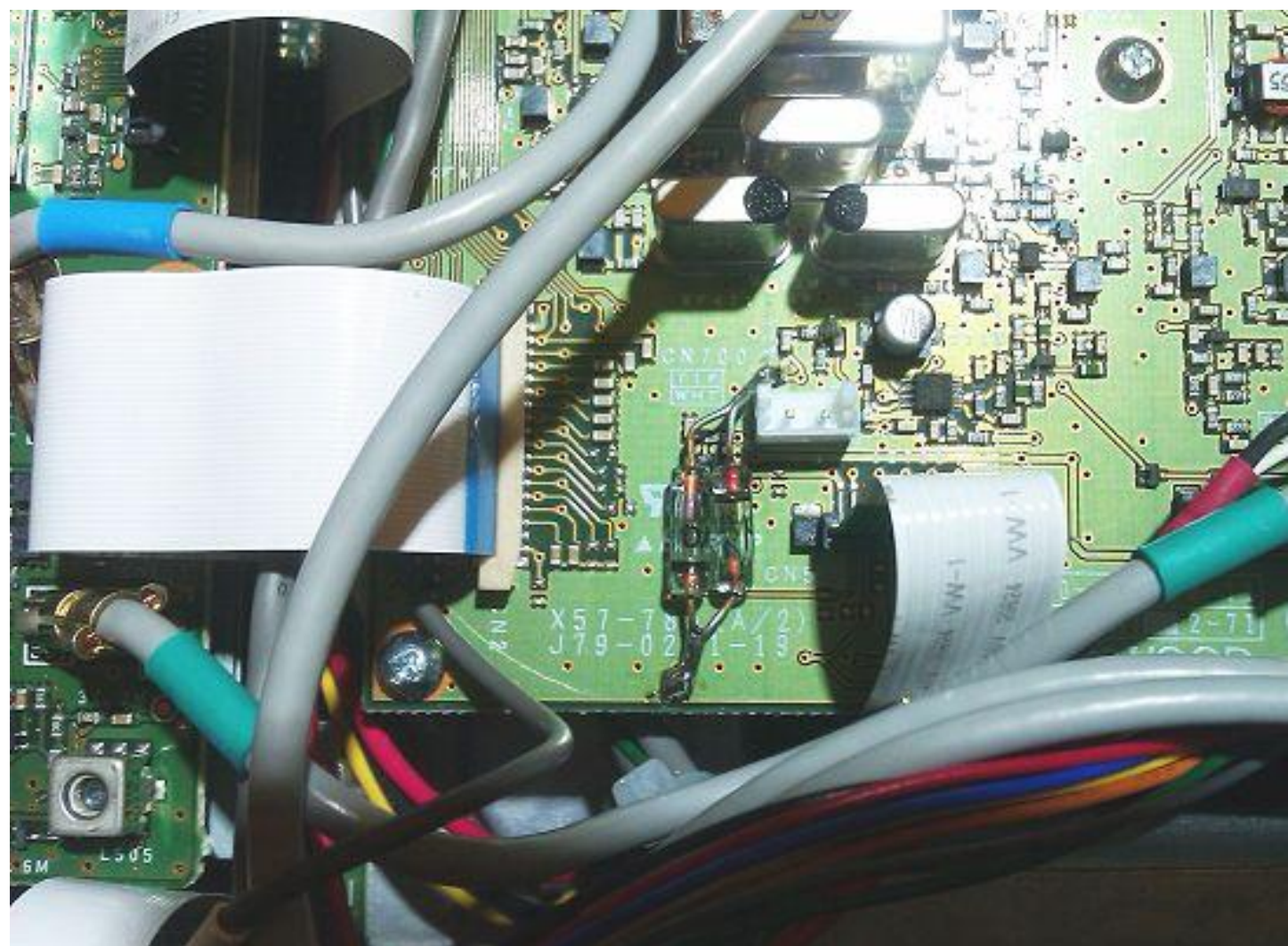

By LZ1JY

TS590S spike

Kenwood mode

TS590s radio was released with a number of careless problems, one of a majors is a short , but annoying and dangerous spike of power , when goes on transmit.

My experienced friend LZ5JF investigated all problems and came with conclusion, that the most boring and costly was excessive power final and driver transistors overload, when switching rx-tx. Simplest mod is adding a level limiter before amplifiers for all types of tx modes- ssb, cw , etc.

Locate on the bottom side of the radio , some 5-6 cm from main encoder, look for CN700 on X57-785-XX. unit.

Add 2 Germanium diodes as shown on the LAST picture , soldered between TP711 pin and ground - DONE!

C449 D477 C447 C503 R501 R496 R497 R5 D47 C502 R707 R710 TH703 R711
L479 L482 R493 Q476 R498 R507 C443 R491 R492 C445 C711 R716
480 C497 R487 C507 C496 C501 C505 C506 L481 C499 C712 L703 R713

CN5
1 5A
NC
GND
SPG
VSF
SP
VSR
33C
ID
10 TXB

XF473   XF476   R486   C495   + C714   C701 8 5   R712   C715
                                          CN701
         XF472   R489   C701   D702   1 4   C703
                          C70   R702   TIF   1
         XF471   R703   C704   GND   2
                          CN711   CN700   R78   Q784
                                   C780

C484   R480   L477   C471   C485   R477   C15
C482   C473   C476   R471   C481   L474   C17
R478   R473   C446   C442   C472   C19 C21 C23 C25 C27
C478   L475   L471   D471   R472   C40
L727   D474   C444   C42
R730 R734   R731   C731   C477
C728   DG SG   R733 R737 C733   TP1   36
R729 TH72   Q721   ALC   35

CN2
ANO PKSR SQC SS DOT KYS FSM PHDET CLK1 IEN1 IEN3 ALM VSRM TXC IDT NC GND 5A
ANI GND PKP RTK KEY ASH GCV SQL AD1 ATA EN2 CKY TCS SFM IBK 33C GND NC

73 Nick LZ1JY

On behalf of Mitko LZ5JF

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hI JEFF,

The diodes are any type with barrier about 0.4v , shotky are good as
well. As PA on the 590s is not ALC included , it is very easy to see
the effect of the limiter - spike drop twice and PTT clicks on full
proc and mike at 100% are showing on memory scope up to 125watts max/
we used OA1180 diodes , but any type will work. Softer effect is when
you use cap of 100nF in series with diodes, but just the diodes are
fine.

At least it is not 240Watts pick.

73! nNick

On Sun, 15 Feb 2015 18:16:47 +1300
  "Jeff King" <jking2603@gmail.com> wrote:
Hi Nick,

Thanks for your mod on dk.mods.

The LZ5JF mod looks easy enough to do.

Can you please help with the following.

Is there any before and after testing that has been done to verify the
effect of the modification.

What is germanium diode that has been used in the modification.

Really look forward to your reply.

Yours sincerely ZL4AI