

## Yaesu FT227R Memorizer

**Out of Band Mod:** TX range 143.990 Mhz - 149.000 Mhz

1. Open radio and locate PLL control unit.
2. Remove D701 and D702. do not place in a jumper.
3. Locate Q712 (MC14028b) and break the connect to pin 6 (blue wire)
4. Connect pin 1 of Q711 (red wire) to ground.
5. Reassemble radio

NOTE: Automatic repeater OFFSET is lost.

### **FT227R faults:**

My PLL seems to "unlock" from time to time. Any idea on how to fix this or who could do a good job fixing it? I have had my 227R for over 20 years and would hate to give it up. Thanks.  
Harris VE6DK/W6

Try cleaning the TX/RX changeover relay that switches +8V from RX to TX. If the PLL unlocking is intermittent, then the RX8V and / or the TX8V maybe intermittent or low in value. If that doesn't cure the unlocking then the VCO is next on the list and probably needs to be replaced.

Its a usual thing when the 227R gets old...Check the 8V DC line to the synthizer.. The relay that switches 8V could use cleaning..also the OFFSET switch on the front panel will cause it...clean that switch as well....be sure to use a SAFE cleaner that does not leave a residue and doesnt harm plastics....check the 8V regulator that is mounted to the upper chassis on the right side of the radio....if the solder joints come loose on the bottom of the PC board, it will cause that also...

**NO AUDIO OUTPUT:** If there is no DIN plug (with pins 1+4 shorted together) fitted in the accessory socket, then there will be no audio. The audio IC (575C2) sometimes fails.

**TUNING CONTROL ONLY WORKS ON PART OF ROTATION:** If the optical disc is out of alignment then it may have become scratched, causing this fault.

**NO TX (RELAY NOT OPERATING):** Q713 relay driver on PLL control unit – circuit reference may be different on some models.

**TUNING CONTROL INOPERATIVE:** Check supply volts to the LEDs in the photo-couplers on the opto disc. Also check the CMOS inverter IC the photo-coupler outputs connect to.

**NO RF OUTPUT:** I've never had a PA failure on this rig but faults I have had include Q11 (2SD235 - power control), Q206 (predriver), and X401 (10.7MHz).

**NO RX AND NO TX:** I've twice had failure of the VCO unit - this is epoxy filled and requires replacement of the whole unit.

**ONLY LAST DIGIT SHOWING:** PLL out of lock. I once had Q308 faulty.

**SCAN FAULTS (SOME MODELS ONLY):** Check the CMOS ICs in the scan control circuitry - specifically those connected direct to the scan control i/ps.

## Other Modifications

The default frequency shown at switch-on is loaded into the BCD up/down counter ICs Q707, Q708 and Q709 according to the state of their preset pins 3,13,12 and 4 as per the table below.

Some neat work with a sharp knife will be necessary, but all the tracks are easily accessible by removing the cardboard cover.

Q709 does the MHz. N = 0 corresponds to 143 MHz, N=1 to 144 MHz and so on.

Q708 does the 100 kHz digit, and Q707 the 10 kHz.

PIN					PIN				
N	3	13	12	4	N	3	13	12	4
0	L	L	L	L	5	L	H	L	H
1	L	L	L	H	6	L	H	H	L
2	L	L	H	L	7	L	H	H	H
3	L	L	H	H	8	H	L	L	L
4	L	H	L	L	9	H	L	L	H

L = LOW (pin 8), H = HIGH (pin 16)

The ICs are type MC14510. Q709 is at the front centre close to the screw, Q708 is next left and Q707 on the far left.