

TS711 and TS811 CW PTT modification

Modification to the PTT circuitry in order to provide separate CW PTT applicable for Kenwood TS711 and TS811 radio's



PC5M, C. Mobach
Zuiderkreek 4
3832KJ Leusden
The Netherlands

Contact: pc5m@pc5m.com

December 7th 2009

1 The Issue

When using the TS711/811 in CW mode the break-in behavior can't be switched off, i.e. as soon as the KEY-line/input is active (ground) the radio will go into transmit and RF power is generated. Normally when using an external power amplifier or preamplifier some sort of sequencer/timing device is used which will control the sequence when going from transmit to receive and vice versa. An example of such a constellation is given in the figure below:

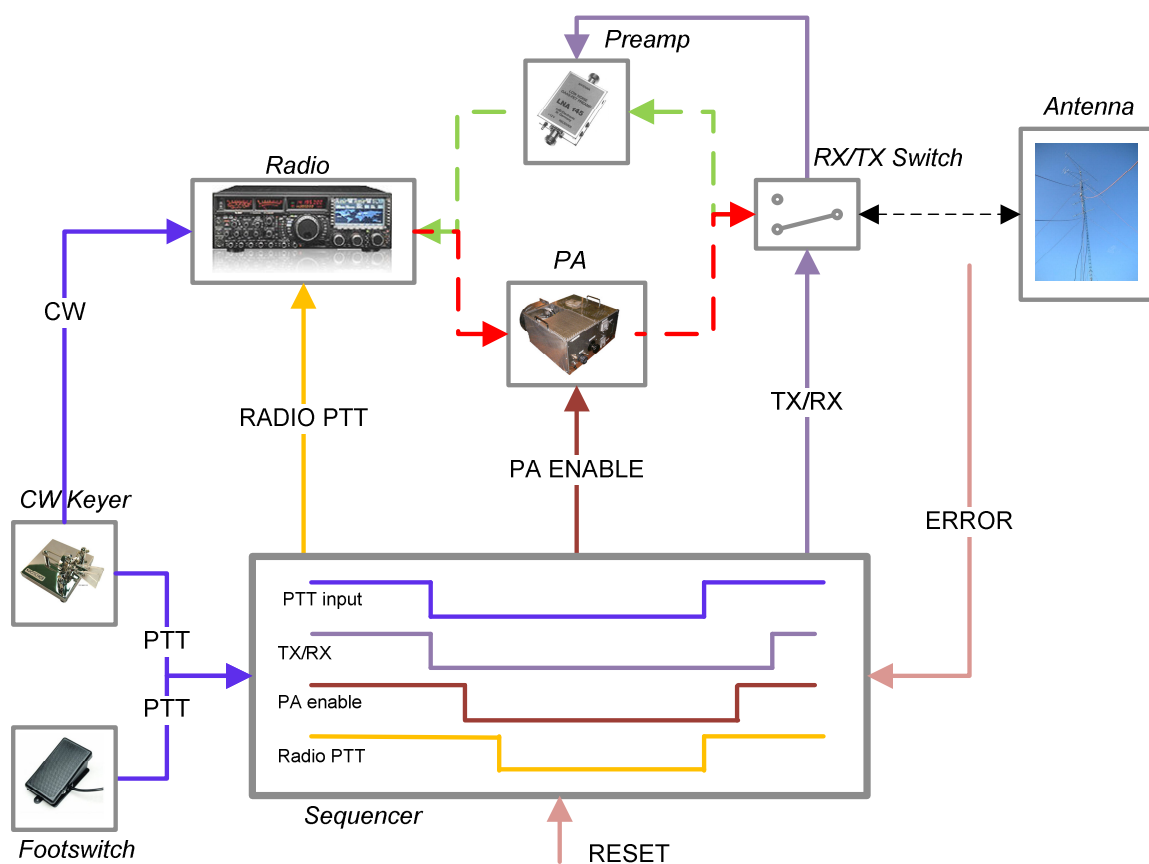


Fig 1: Sequencer controlling radio, power amplifier and RF switches

With an unmodified TS711/811 this is not possible. Even worse is the behavior when no key plug is attached to the key input jack at the back, radio is set to CW mode and PTT is engaged: Immediately a full power CW carrier is generated!

Modification is to remove two wires attached to the key input jack assembly and connect them together directly, so "STS" will always be held at 8V when CW mode is selected.

Detailed steps:

- Remove top cover
- Locate the "Display Unit" PCB (X54-1820-11) . This small PCB is located at the back of the transceiver.
- Detach connector "8", a 8 pole single row connector
- By using a small screwdriver both wires nr's 7 and 8th can be removed from the connector itself
- Put the connector back into place
- By using a small diameter of solid wire both of the removed wires can be connected. Isolate this assembly with heat shrink tubing or tape.

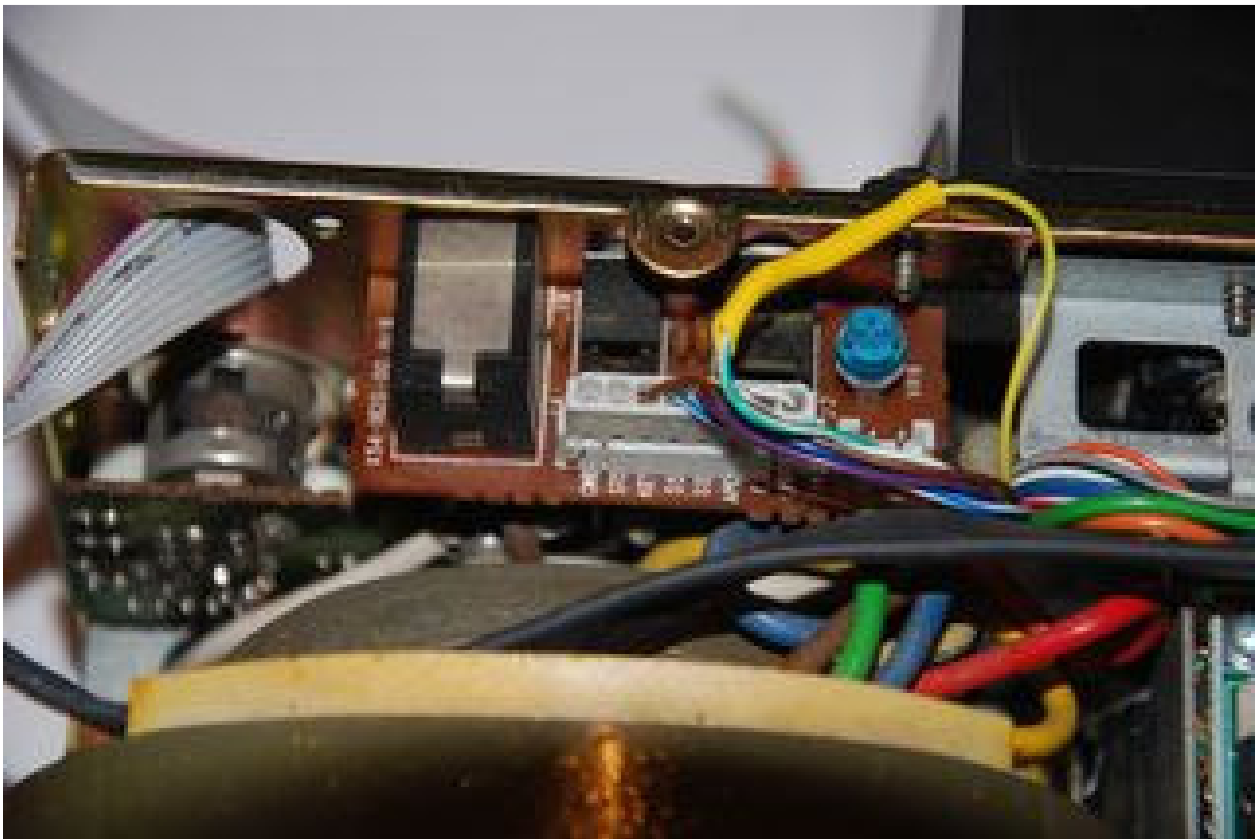


Fig 4: Connecting wires from display unit

2.2 De-activate break-in

As soon as CW key line "KEY" is activated a CW carrier will be generated because transistor Q16 will be pulling line "SS" low. Signal "SS" is the main PTT line which will put the transceiver in transmit. Among others "SS" is directly connected to the microphone PTT and pin 13 of ACC2 (PTT).

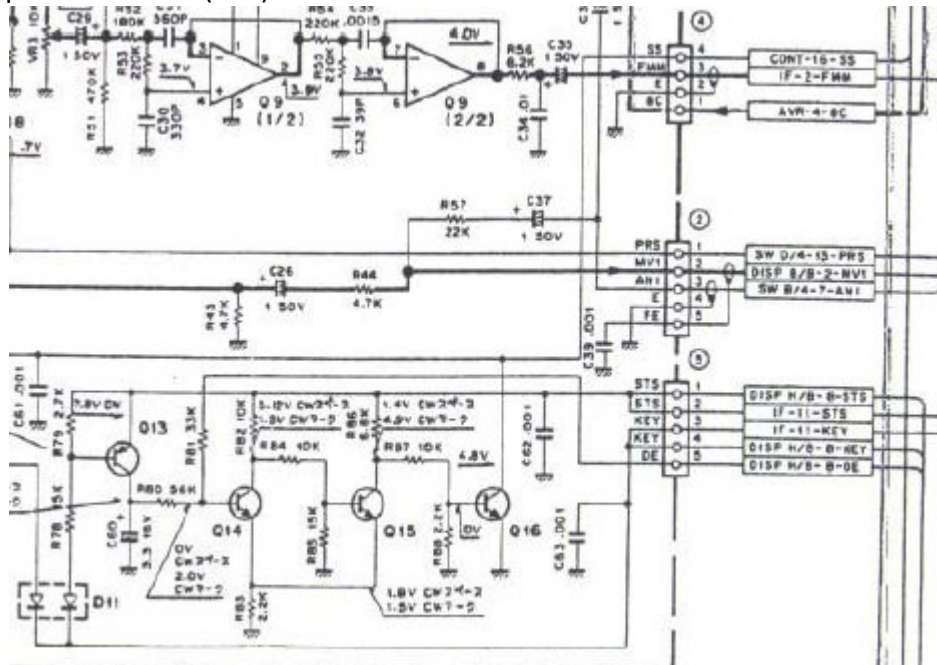


Fig 5: AF unit X49-1180

Modification is to force the base of Q16 to ground. This will hold the radio in receive mode even when the CW key is activated, only when the PTT is activated (via the handheld microphone, or via the external PTT input on accessory connector ACC2 pin 13). Point to note is that the sidetone is generated, irrespective the state of the PTT line input.

Detailed steps:

- Remove bottom cover
- Locate the "AF Unit" PCB (X49-1180-00).
- Locate transistor Q16 and resistors R88 and R87
- Short circuit with a small wire resistor R88 (2k2, red red red) as in picture below (black/white marked wire)

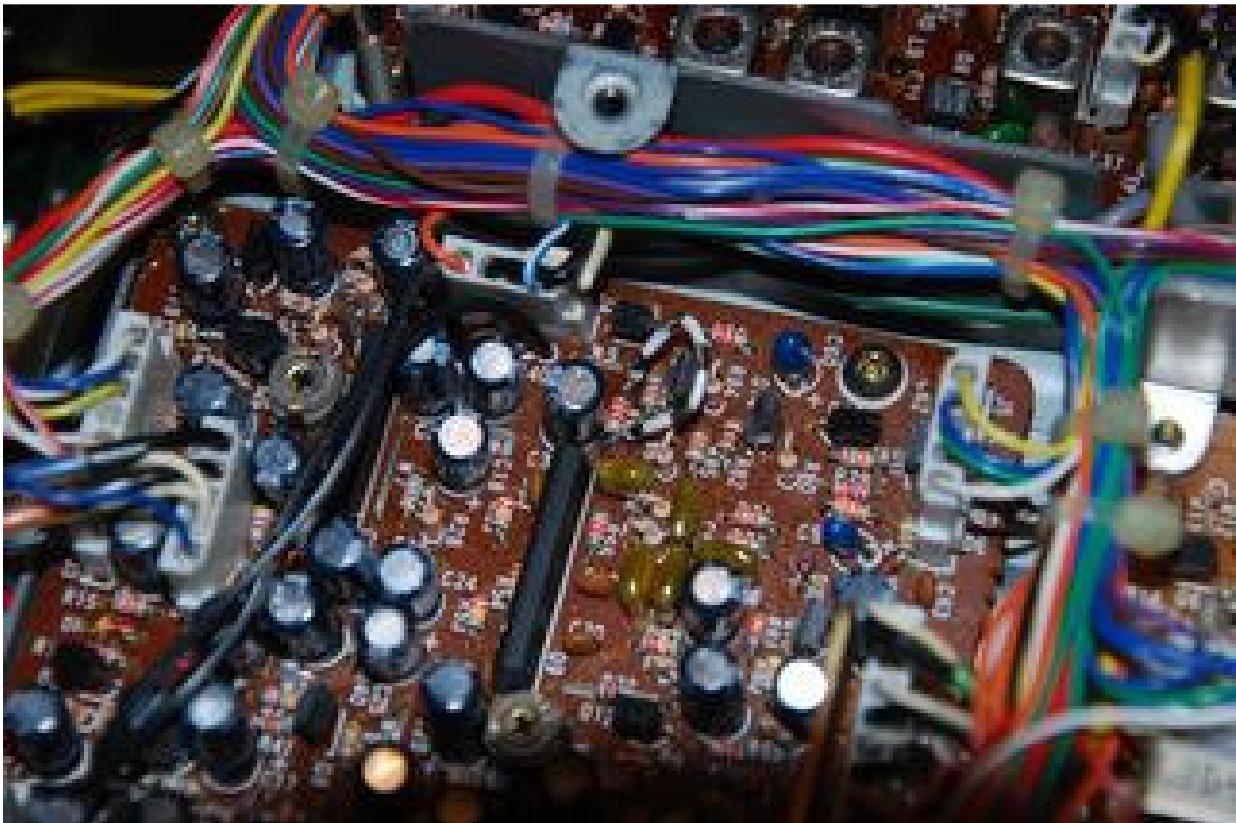


Fig 6: Short circuit resistor R88

3 Use after modification

After the modifications a sequencer can be utilized to control the radio in both SSB and CW modes. With reference to figure 1 how to connect things up:

- CW output to KEY input from the CW generating device
- Radio PTT from the sequencer or CW generating device to the PTT input (microphone and/or ACC2 pin 13).
- Microphone to the microphone input.