

WIFI Antenna Modification

Allows you to use the standard CDPD antenna from a Toughbook for WIFI (802.11)

The first one shows removing the antenna mast (For those of you who may not know how); be sure to use a screwdriver with a tip that is thick enough and wide enough to fit the slot snugly. If it's too thin or too narrow you'll bugger up the slot & make the shiny part ugly. Don't worry if the screwdriver's a little too wide; you can push the antenna mast in so that it just flops in the hole and get the clearance you need that way. The two I had weren't terribly tight at all; obviously, if it seems really tight find another way or spanner tool to remove it. After that, just remove the two black screws that hold the rubber cap in place, and you'll see the antenna base as in pic 2.



If you look at the bottom row of solder points, you'll see there is one SMD (Surface Mount Device) coil all by itself. This was the "ground shunt coil" I removed for my test # 4. Removing these is easy if you have a good fine point soldering iron; put just big enough a blob of solder on the tip to contact both solder spots on the coil & touch both solder spots at the same time with the iron. In a second or less, it will want to float away with the solder & you can slide it gently off the solder pads. Then, just wipe the coil off the soldering iron tip onto your cleaning sponge, & tape it to a Post-It with an outline of the locations (They are all of different values) as shown in pic 3 in case you need them later.



Pic 4 shows the final mod; all 3 of the green coils have been removed, but leave the 0 ohm SMD resistor on the top row leftmost solder pads in place. Once the coils are removed, it was easy to solder another 0 ohm resistor robbed from a junk pc card to bridge the tiny gap; I chose that rather than bridge with wire or solder because these SMD devices are both insulative and non-inductive, meaning I'm not adding parasitic loss by using it. It probably doesn't matter compared to the big blob of solder where the printed ribbon board solders to the antenna coupler, but I figured I had the resistor easily available, so use it. Do a quick meter test to be sure the hot portions no longer carry continuity to ground (They will seem to as long as that ground shunt coil is in place) & that you do have continuity from center of your u.fl connector to the antenna coupler, then you're good to go try it out yourself. I recommend you make an adapter like I did earlier in this post; I know soldering seems best, but it's so hard to keep from creating an unbalanced load when you do it that way & with frequencies this high, it really is better to have a connector plug in twice than have it soldered once with pigtailed. Those connectors are designed to keep a balanced load as long as they're not contaminated by foreign matter, so it really is better.





