pre reqs
[st link v2](https://www.amazon.com/DAOKI-ST-Link-Programming-Emulator-Downloader/dp/B01EE4WAC8) - like this or any other clone along with male jumper wires, 30cm works somewhat larger would be better, may need to file down larger connectors
st link [utility](https://www.st.com/en/development-tools/stsw-link004.html)
the 878 hex [provided](https://mega.nz/%22%20%5Cl%20%22%21HFAQCIYa%21-AyYM1KOVm6eDTbF3AwEVXLh1WtS2Alj7NuXcVCpxug) by [**@UB1AAM**](https://github.com/UB1AAM), i believe if this taken down, it can still be recreated from the 1.10 firmware update
[878 1.10 firmware and icons](http://wouxun.us/Software/AnyTone-Software/AT-D878UV-FW-v1.10.zip)
backup codeplug, it does seem to be retained, but it couldn't hurt to do so

1. very carefully, [disassemble](https://www.qsl.net/dl4yhf/Anytone_D868UV/index.html) the radio, keypad/speaker and screen do not need to be attached.
2. [attach](https://github.com/geary/AnyTone-D868UV/issues/59#issuecomment-450688447) the st link to the radio using the CLK, GND and DATA pins/cables to the correct holes on the radio board. the connections should not be pushed down too far, they either need to fit tightly, or if not tightly, they cables need to be somewhat taut to make contact in the correct area.
3. holding down the radio or using a rubber band to keep the battery plugged in, turn the radio on to firmware update mode, holding down the ptt + the small top orange button, the led should start flashing red.
4. connect the st link to computer via usb, open st link utility, even though [**@UB1AAM**](https://github.com/UB1AAM) also provided a hex of the 868, it would probably be safe to still backup the existing flash your radio. in st link set the size to 0xFF800, default speed of 4,0 mhz and normal for mode is fine. select connect to target either from the upwards facing plug icon, or from target menu and connect. save the contents out to a bin/hex file.
5. click on binary file or file menu open file and select the 878MCU.hex file from the pre-reqs.
6. now select the icon with pen/paper or select target menu and program & verify.
7. the radio should program and reboot, you may need to also manually turn it off an back on, and or perform a full reset if wanted.
8. if it came back on fine, re-assemble the radio and apply the icons update from the 1.10 firmware package via usb.