



Interfacing a Plantronics W720 to my TS-890

Doug Crompton
WA3DSP

There have been several articles written on how to interface this headset to many of the common ham rigs. The bottom line is that it could be interfaced to just about anything that has an audio input and output. Please see the links at the end of this article for additional interfacing information.

In my case I am using a Kenwood TS-890 with a Max Processor. Because the version of the Max processor I have has dual inputs each controlled by a front panel pot it made it very easy to interface. One of the inputs is mic level and the other considered line level. The line level input worked fine with the W720 adjusting the microphone gain to maximum at the W720 and using the Max processor pot to fine tune the level.

Reports have been very good. The TS-890 has excellent audio and the Max processor and a good dynamic microphone gives excellent reports on both SSB and AM. Using the W720 the reports have also been very good although understandably not as good as the direct dynamic mic.

The W720 uses the DECT 6.0 transmission protocol and has very good range with exceptionally good audio quality. This is NOT Bluetooth which would not have the same range.

*Digital Enhanced Cordless Telecommunications, usually known by the acronym **DECT**, is a standard used for creating [cordless telephone](#) systems and for [IoT](#) systems. It originated in [Europe](#), where it is the common standard, replacing earlier cordless phone standards, such as 900 [MHz CT1](#) and [CT2](#). [\[1\]](#) The [IoT](#) usage relies on the new [DECT-2020](#) standard. It operates at 1.9 GHz*

Wiring is rather easy although it does require your knowledge of the connections to your rig or whatever you are interfacing it to. Connections to the W720 use an RJ45 (standard Ethernet) connector. It uses the first four pins of the connector. The easiest way is to use an existing RJ45 patch cable cutting off one end leaving about 6 inches of wire. Then strip back the end and isolate the four wires needed. The speaker and microphone common and hot connections use different wrapped pairs but they are easy to identify by the color standards. Use shielded cable for the microphone and shielded or two wire cable for the speaker.

Since many articles have already been written on this I will mostly refer you to them. I will show the page for Kenwood 8 pin round connections but information is available for many rigs.

One consideration is how to key the transmitter. The headset while having excellent two way communications does not have any capability to key your radio. You have two choices, use VOX which I personally really do not like or configure a remote relay for keying. I bought a FOB operated remote relay. This is available from Amazon and other sources.



<https://www.amazon.com/WOODGUILIN-Control-Wireless-Industrial-Security/dp/B09QGGZBMW/>

This is similar to what I bought. This one operates on 433 MHz. The one I have is on 315Mhz. These have comparable range to the W720. Again very easy to interface. Just wire it to your 12V supply and connect the normally open contacts to your PTT line. This can be in parallel to any other PTT on your rig.

The W720 headsets can be found used on Ebay for as little as \$30. I bought two at that price and I was very happy with them. Replacement earbuds and batteries are also available online if needed. I would not pay more than \$75 but even at that price it is a bargain over the \$200 plus original cost. Here is an example of a new one selling on Amazon.

<https://www.amazon.com/Savi-W720-83544-01-Dect-Head/dp/B005FSJ6PM?th=1>

Although it is unlikely this Ebay link will be active for long here is where I bought mine. As of 1/30/2024 there are still many available.

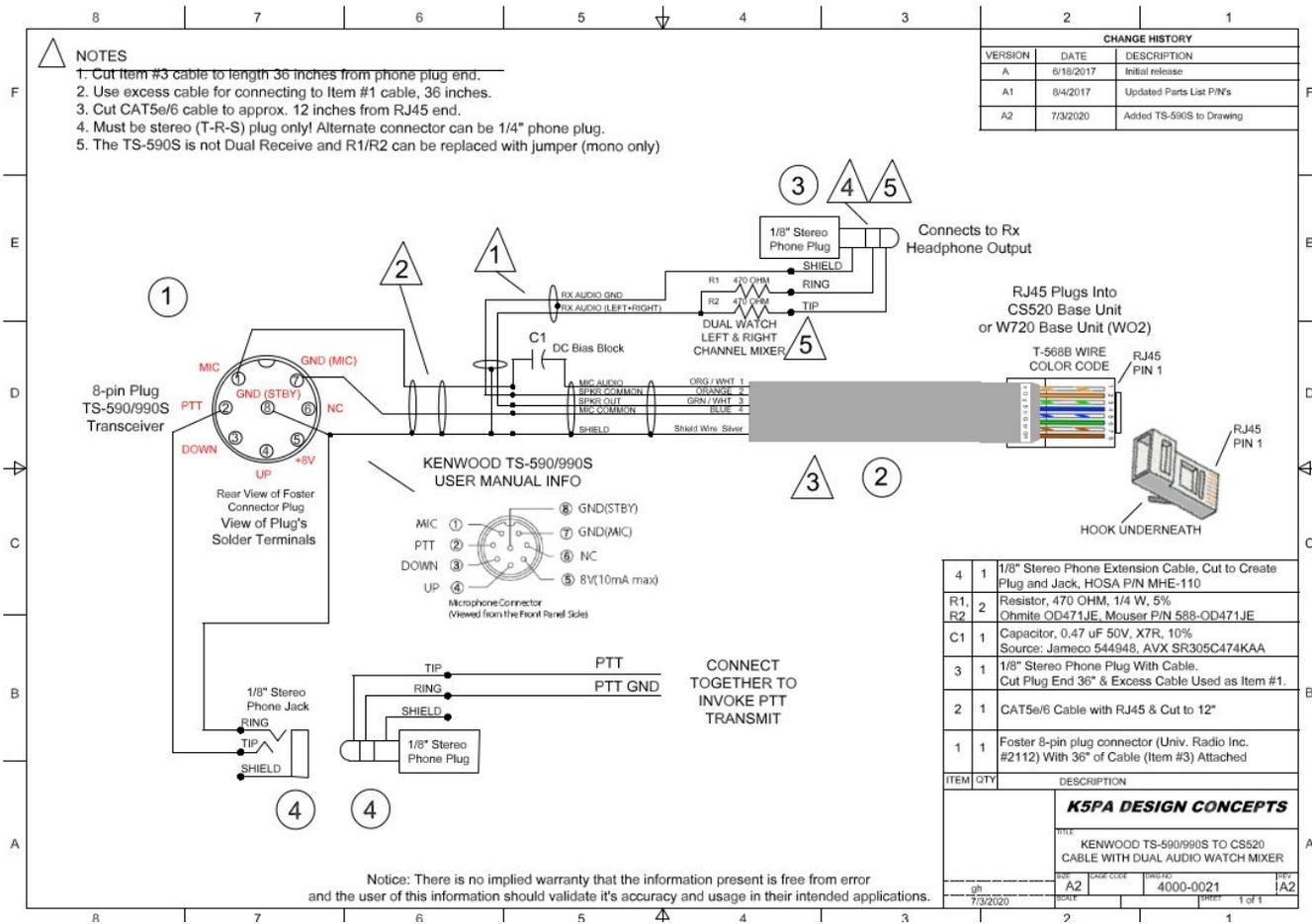
<https://www.ebay.com/itm/235351359231>

Search on Amazon for replacement earbuds and batteries.

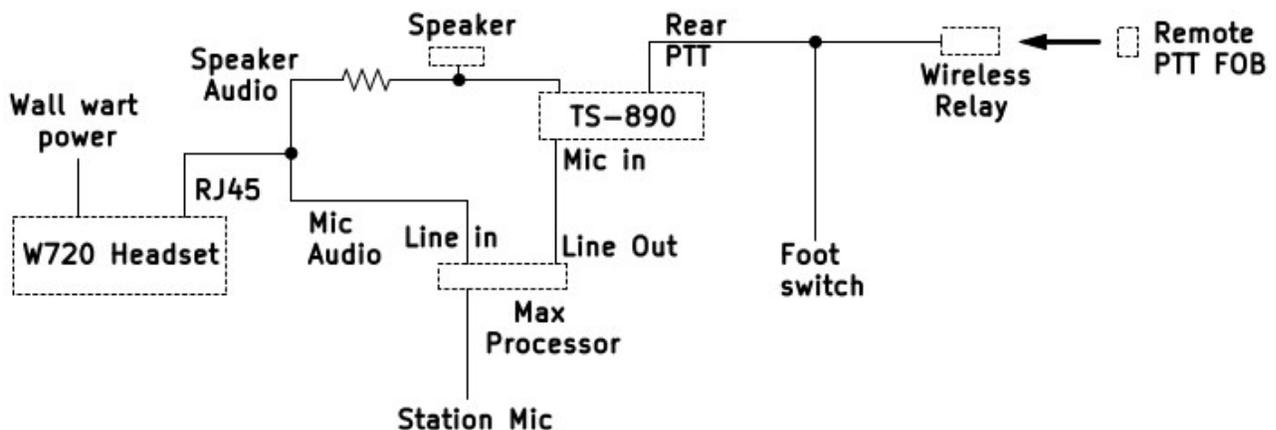
It helps to have an audio generator and a scope which you can use to send a sine-wave tone to the headset and view the microphone output on the scope for testing. I have a test cable I use to check these out on the bench. Simply feed the audio generator output to the W720 speaker input and connect the scope to the microphone output.

It is a joy to be able to walk around and operate my HF rig especially on long nets where we waste so much time just sitting in front of the rig waiting for our turn. You could be working at the bench or outside in the summer enjoying the sun while talking on your radio and it is hands free! I would be glad to answer any questions you may have. My email is good on QRZ. Have fun!

The following page is a reprint from the K5PA.com web page of the schematic for Kenwood TS-570 which has the standard 8 pin round Kenwood pin-out. The TS-890 uses this pin-out. Please refer to his site listed in the links for more information. This shows just how easy it is to interface. Note that in my case I connected the W720 microphone output to my Max processor line in and the W720 speaker line was paralleled with my TS-890 speaker, not the headphone jack. I used the TS-890 rear panel connection for PTT.



WA3DSP Kenwood TS-890 configuration using the Plantronics W720 headset



Control is switched with the Max processor line/mic switch

Links -

Description of the DECT format -

https://en.wikipedia.org/wiki/Digital_enhanced_cordless_telecommunications

User Manual for the W720 -

<https://www.manualslib.com/manual/1000000/Plantronics-Savi-7220-Office-Headset.html>

Presentation on Amateur Radio Untethered -

<https://k5pa.com/Ham%20Radio/Downloads/The%20JOY%20of%20Being%20an%20Untethered%20Ham%20Operator.pdf>

Lots of info on tethering with different rigs, etc.

<https://k5pa.com/>