DIY PROJECT

CS520 Wireless Headset to Cell Phone or Tablet *Adapter Box*

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Also Check Out the CS520 Resource Page
http://cs520hams.k5pa.com
Rationale for Using CS520 With Your Cell Phone

• What is the Purpose for a Wireless Headset to a Wireless Phone?
  – Many wireless phones operate poorly in rural areas due to poor cell tower coverage
  – If a sweet spot in the home is found for phone placement, why not leave the phone there and you roam?
  – CS520 is perfect and allows roaming within a 350 foot radius of optimal phone placement
  – Headset provides comfort, great listening focus and transmit audio on your phone call
  – Bonus feature of simultaneously conferencing of up to 3 additional headsets for family calls
• CS520 Cabling With Your Cell Phone is an Easy DIY Project
Connectivity

CS520 Wireless Headset
Encrypted and 1900 GHz

Adapter Box
Wired Using Drawing 4000-0031

RJ45 to RJ45 Plugs
To Connect Base Unit With Interface Box

Cell Phone or Tablet
1/8" Plug Into Device

1/8" Plug Into Device
NOTES

1. Item 2 can be a TRRS plug on cable cut to length.

2. Pin 1 wire print circuit trace must be cut so capacitor can be soldered in series with Pin 1. Cut through the trace on upper AND lower side of PCBA!

3. Add 2 jumper wires to connect grounds together on circuit board, Pins 2-4-S (Shield)

4. Resistor connects to Pin 1 (TRRS Plug Side) and Pin 2 (GND)

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RJ45 Socket.
Use RJ45 Male to RJ45 Male Cable to plug into CS520 Base Unit.

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MIC COMMON / Wire to Pin 4 on Terminal Post.
SPKR OUT / Wire to Pin 3 on Terminal Post.
SPKR COMMON / Wire to Pin 2 on Terminal Post.
MIC AUDIO / Wire to Pin 1 Terminal Post.

If polarized capacitor selected, Positive Lead Here (+).

BIAS BLOCK
0.47 uF, 50 VDC

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K5PA DESIGN CONCEPTS

CS520 to Cell Phone TRRS Plug
Notes: Item 7 may be needed for cell phones or tablets that have a protective case with very small access holes for the mic/phone plug. This particular Y-cable has a very small diameter plug making it easier to insert the phone plug through the case. One of the two jacks can be cut and removed if it is not wanted on the cable.
Board Construction
(Shielded Breakout With Terminals)

Notes:
1) This is an RJ45 SHIELDED cable breakout to circuit board with screw terminals. It has holes to solder components.
2) TRRS means Tip-Ring-Ring-Sleeve, 4-pin connector.

Red Wire Not Used on TRRS connector.
It is normally the other sound channel in a stereo audio connection. CS520 is MONO only.

Cut Trace by Scribing Circuit Board With EXACTO Type Knife.
YOU MUST CUT TOP AND BOTTOM OF BOARD!

Jumpers Added To Connect Grounds and Shield Lines Together
Helpful Tool: Xacto X75300 Razor Saw Set
(Available at All Hobby Stores and Amazon)

https://www.amazon.com/Xacto-X75300-Precision-Razor-Saw/dp/B00004Z2U4/ref=sr_1_1?ie=UTF8&qid=1502015797&sr=8-1&keywords=xacto+x75300
Must Notch Board Edges To Allow Fit Within Width of Box

- Place Ink Lines Where Cut is to Occur
- Mark Front and Back Side
- Where Eye Protection! Cut Fiberglass Can Get Into Eyes!
- Use the Razor Saw to Saw a Line Across the Ink Guide Marks, Both Front and Back Side
Snap Off at Saw-Grooved Lines

- Grab the Corners with Needle Nose Pliers and Snap Off
- Use File to Clean Edges and Check for Fit
- File Additional Amount if Needed for Perfect Fit
RJ45 Square Cut Out
(5/8” Square)

**Overview**

- Horizontally Center the Area to Be Cut, 5/8” Width Total. Observe Vertical Cut Out Begins at Top Edge of Box (Not the Lid).

- Xacto Brand Saw Used to Cut Vertical Lines for RJ45, 5/8” Depth (see next page)

- Scribe Used to Mark Horizontal Line

- Pliers Used to Wiggle Free the Plastic

- Make a Small Notch for Cable Exit at the Rear of Box Also
Square Cut Out For RJ45

Horizontally Center the Area to Be Cut, 5/8” Width Total. Observe Vertical Cut Out Begins at Top Edge of Box (Not the Lid).
Mark Lines Where Square Notch Is Needed for RJ45 and Saw Downward
DIY Project Completion

• Populate the Circuit Board with Components and Wiring Per Schematic

• Once the Interface Box is Complete
  – Connect CS520 to Interface Box using an RJ45 plug to RJ45 plug
  – Connect the 1/8” TRRS phone plug (4-conductor) to your cell phone or tablet device
  – If you play music you should hear the sound from the headset
  – If you make a phone call, the audio should be heard by party called

• DIY Project is Complete!

• Find a Good Location to Leave Your Phone While You Roam Around Your Location

• Making or Disconnecting a Call Will Require You to Be at Your Phone Since the Interface Box Only Permits Audio to Pass Back and Forth