Tech Note
Sage 960B 4-Wire Analog Interface FAQ

1. Please describe the 4-wire analog interfaces.
    Ans: Viewing the 960B front panel, locate the two groups of modular jacks located at the right side. Each group consists of (3) individual modular jacks. From left to right, they are labeled 2W, 2W, and 4W. The types of jacks are RJ11, RJ11, and RJ22, respectively.

    For a 4-wire interface, use the far right "4W" RJ22 jacks (2 & 4). These interfaces do not provide any signaling supervision capability. They are intended only to connect to a telephone handset interface. I've provided the pin out information, below:

    ```
    Pin     Function
    1 ----- 960B XMT
    2 ----- 960B RCV
    3 ----- 960B RCV
    4 ----- 960B XMT
    ```

    When you double-click on the "channel" in the "Span/Channel View", the top right of the resulting screen has a couple of level adjusting up/down scroll boxes; one for Tx gain and the other for Rx gain.

    Note that the 4-wire interface is NOT a calibrated 600 ohm interface, so any measured levels are for indication only, and are not to be assumed "accurate".

2. When analog ports 2 or 4 are configured for 4-wire operation in order to connect to the handset interface of a digital or IP phone
    a. What are the recommended initial TX and RX gain settings?
        Ans: TX = -25, and RX= +14

        Table 1, below shows sample values for various phones:

Phone	TX	RX
AT&T analog phone Model 830	-24	+14
NEC PBX phone (digital) Model Dterm SeriesE #DTP-16D-1	-25	+19
GrandStream Budgetone 100	-24	+17

Table 1 — Sample Empirical Data

3. What type of RJ22 cable might I need to connect the 960B to a telephone handset interface?
   Ans: For most phones, you can use the black RJ22 cable supplied in the 960B cable kit, or a standard RJ22 coil-cord telephone handset cable. If you want to make your own, see *Figure 1*, below:
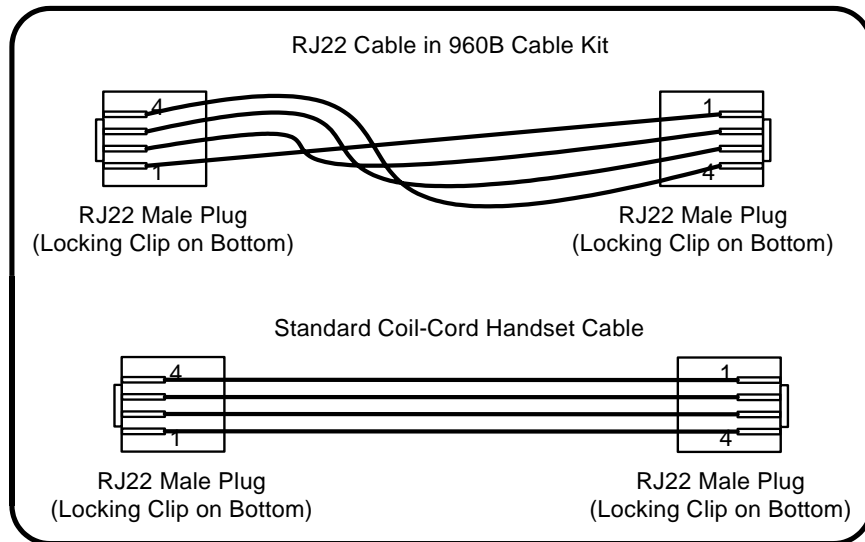
Figure 1 — RJ22 Cable Wiring Satisfactory for Most Phones

However, some IP phones will require an RJ22 "crossover" cable. Sage does not currently supply such a cable. To make your own, see the *Figure 2*, below:
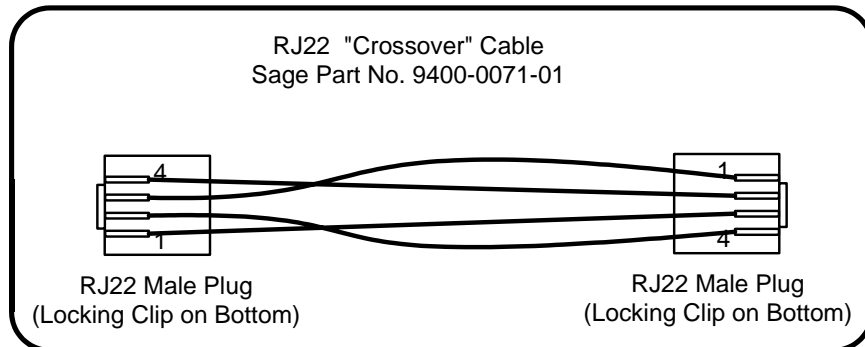
Figure 2 — RJ22 Crossover Cable

4. What kind of cable do I need to interface to a PC Sound Card?
    Ans: Figure 3, below illustrates the required electrical connections. The "stereo" mini plugs are 3.5 millimeters in diameter.
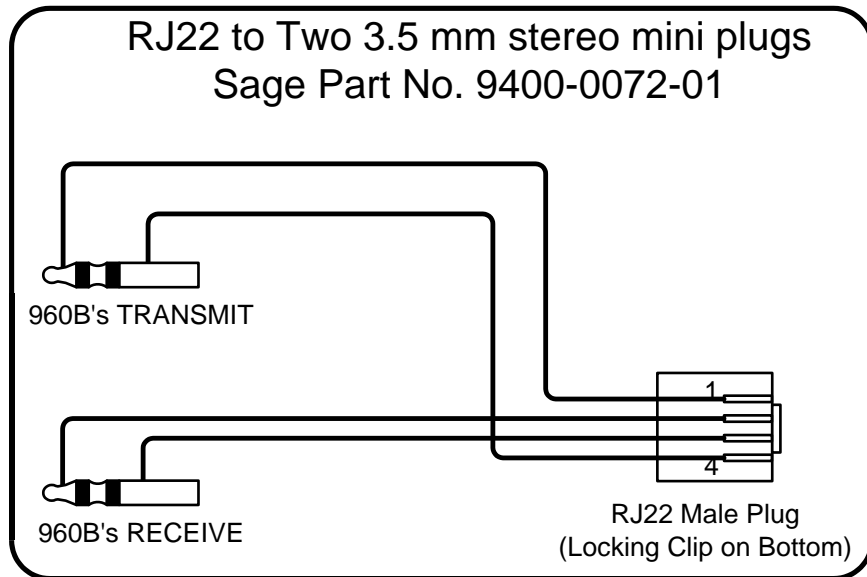

Figure 3 — Cable for 960B to PC Sound Card Interface

5. What kind of cable do I need to interface the 960B to a Cell, WiFi, or cordless phone?
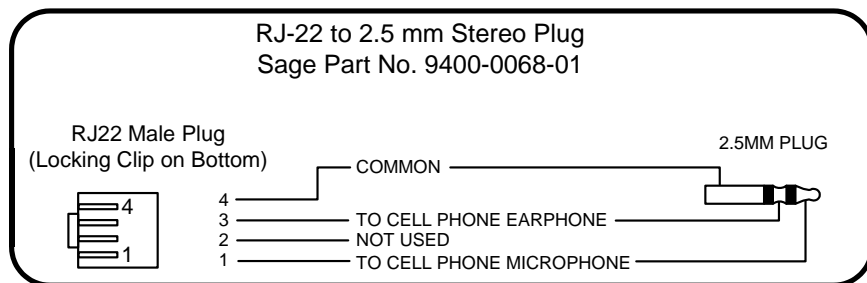   *Ans:* Figure 4, below illustrates the required cable wiring:

Figure 4 — Cable for 960B to Cell/WiFi Phone