

## Using ISDN to Improve POTS Codec Performance

Many users of our BlueBox, Vector, Matrix and HotLine POTS codecs have purchased the units for quick, short notice, low cost drop in remotes. There is no question that these units fit this bill very well. Some users also have ISDN lines installed in their studios for regular, higher quality feeds using ISDN codecs. If this is the case, the ISDN line can be used to increase the performance of a POTS codec.

The main limitation of POTS Codecs is the quality of the telephone connection between the boxes. The modems will negotiate and adapt to the phone connection at the beginning of a call, and determine the highest rate each particular telephone connection can support. Because most inter-office telephone connections are digital and therefore pretty much identical, most of the telephone line limitation exists in the local loop on each end of the call (the pair of wires between you and the phone company), and in the analog/digital conversion at the central office where your loop is interfaced with the digital phone network. By using ISDN, you can remove these limitations on one of these analog loops, namely the loop between the studio and the telephone company.

ISDN, if configured as such, has the ability to send and receive normal (POTS) telephone calls. The ISDN circuit must have at least one of its "B" channels configured for "alternate voice/data" capability when it is ordered. You will also need a special type of terminal adapter which converts ISDN to POTS. We have tested and recommend the ADTRAN Express 3000. Because this product is targeted for a consumer market, it is very reasonably priced. An asynchronous port is also available which allows for easy ISDN internet access without reconfiguration. Use of such a system means that the telephone connection from the studio to the telco is near perfect, allowing higher and more stable connect rates. Of course, the system is still limited by the quality of the loop on the other (analog) end of the link.

The ADTRAN TA brings a POTS connection out to an RJ-11 jack, and provides dial tone, ringing, and call progress tones just like a regular, analog phone line. There are no changes to make to the BlueBox, Matrix, Vector or HoLine to use it in this mode. The ISDN may be changed between ISDN codec and POTS Codec use by means of a switch to change the tip and ring of the telephone line between the boxes. Once switched, however, the terminal adapters may take a minute or two to handshake with the ISDN before use.





