

CREATING A “PRODUCTION/NEWS” EXTENSION TO THE COMREX STAC SYSTEM

INTRODUCTION

The Comrex STAC (Studio Telephone Access Center) is a powerful tool to manage on-air phone calls in the broadcast environment. In some installations, it would be advantageous to be able to manage calls using the STAC system, but share phone lines with a news or production studio for separate handling. This application note describes a relatively simple means to achieve this.

You will require a STAC control surface dedicated to the alternate studio (The STAC mainframe can support up to 4 surfaces total) and an extra, stand-alone hybrid. The requirements of the hybrid are:

- 1) Must be capable of operating in “dry” mode (i.e. no DC current provided on the telephone line).
- 2) Should have a “loop through” function, where the line is available to a downstream device only when the hybrid has not engaged it.

The Comrex DH20 meets these requirements. Note that International versions of Comrex hybrids do not support “dry mode”, and North American versions are recommended for all users. Since the hybrid doesn’t actually touch the phone line (The STAC system buffers it completely), this should not trigger any telco compliance issues.

The application works as follows: When STAC control surfaces answer a call (transfers a phone line to the local handset), the telephone audio is simply transferred along one pair of the 4-pair control surface interface cable. Because this audio maintains the same levels and impedance parameters of a telephone line, an external hybrid works very well on the “extended” telephone line.

CONNECTION

The hookup requires that you modify the cable used to connect the control surface, essentially “intercepting” the telephone audio pair and routing it through your local hybrid, as shown in Figure 1 on page 2.

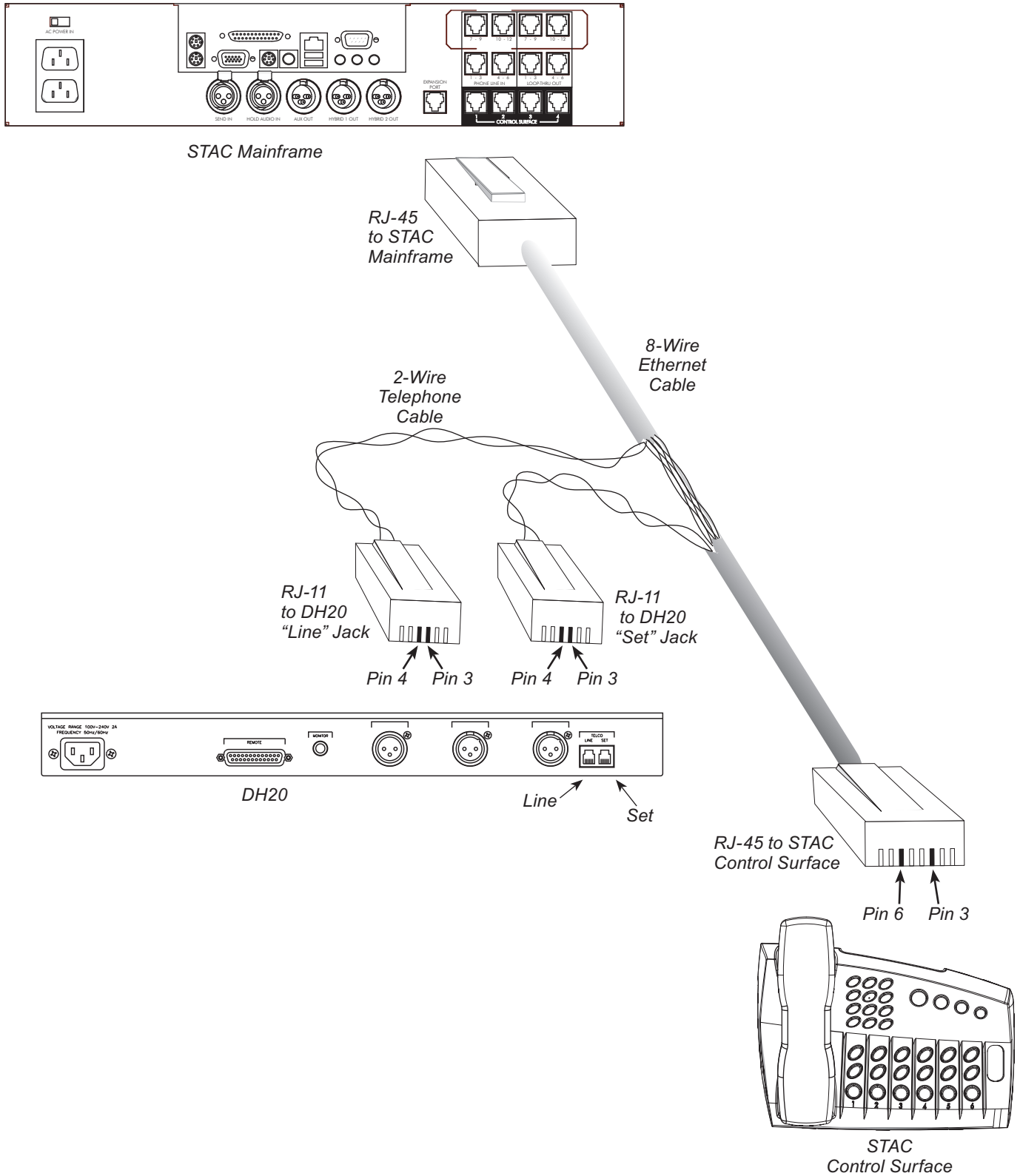


FIGURE 1 - HOOK-UP DIAGRAM FOR PRODUCTION/NEWS EXTENSION WITH PIN-OUT DETAIL FOR RJ-45 (ETHERNET) AND RJ-11 (TELCO)

CONNECTION (CONTINUED)

1. On the control surface cable, locate the twisted pair connected to pins 3 & 6 on the RJ-45 connectors. On Comrex supplied cables (and most others) this pair is colored Green and White/Green. This is a straight-through cable, so both ends are identical.
2. Intercept this pair at a convenient location in the cable and cut it. Route this pair to the center pins (3 & 4) of two RJ-11 connectors as shown. Polarity between pins 3 & 4 is not critical here.

Note that only the telephone audio pair should be altered (the pair connected to pins 3 & 6 on the RJ-45 connectors). The other three pair should run unmodified directly to the control surface. No change is required to the mainframe or other control surfaces.

OPERATION

It is recommended that the control surface used in the alternate studio be configured for screener mode to avoid inadvertently putting calls to on-air state in the main studio. When the hybrid is off-line (not “seized”) the control surface will function as normal, with the ability to dial out on any available line, answer any call, and put them on hold. To transfer calls to the local hybrid, simply make sure the call is first in answer mode on the control surface (i.e. you can speak to the caller through the handset) by pressing the top button for that line, then engage the hybrid. The handset will go dead and the call will be available on the hybrid. If the handset is returned to the control surface cradle, the call will be dropped (use of a headset will avoid this). When the hybrid is disengaged, the call will return to the handset. During this entire procedure the call will be locked out of other control surfaces and cannot be put on-air by the main studio.

Note that if a call is put on-hold in the alternate studio, the caller will hear the main on-hold audio, will participate in the priority queue, and be subject to going on-air via the “next” button if he reaches the top of the queue.