CONNECTING AN EXTERNAL HYBRID TO COMREX STAC

Comrex's STAC system integrates two digital telephone hybrids along with control functions, audio on hold, and other conveniences. STAC has a single audio input for both hybrids. This is designed for a single mix-minus input (i.e. an audio feed with both callers removed). STAC provides an audio path between the hybrids so callers can hear one another.

Some circumstances may require the use of two hybrids with independent audio inputs, without the facility for the callers to hear each other from within STAC. An example of this would be a console that only provides a single mix-minus for each fader, with no facility to subtract two signals from its mix-minus feed. STAC does not support this by default, but an external hybrid (such as the Comrex DH20) can be added to facilitate this.

In *External Hybrid Mode*, you essentially bypass one of STAC's internal hybrids and substitute an external, discrete hybrid. This will provide an independent audio input for that hybrid.

*Note: This mode emulates the **Split Hybrid Mode** as used in the Gentner TS612 system. **Split Studio Mode** is not supported, so it's not possible to assign selected phone lines to individual hybrids. Hybrids are always assigned to calls on the default 1-2-2-1 order.*

The instructions assume you will be connecting a Comrex DH20 to STAC. The DH20 hybrid processing is identical to STAC, so both hybrids should sound identical. Only North American versions of DH20 may be connected this way (Pan Euro and Australian models don't support *Dry Mode*).

To configure STAC for *External Hybrid Mode*:

1) Determine whether you want to bypass Hybrid 1 (the first hybrid assigned) or Hybrid 2 (only used during conferencing), or both in STAC).

2) Open the top cover on STAC. Remove the one or two telephone interface boards from the unit, noting cable connections.

3) Locate **Header J27** on the main PC board in the bottom of the chassis. Note this is located partially under the embedded PC board, and you may need to remove this as well for clear access. (You can typically pull the embedded PC board out of the way without removing all the cables.) A diagram of **J27** is shown in Figure 1 on page 2.

**FIGURE 1 - HEADER J27 ON THE STAC MAIN BOARD**
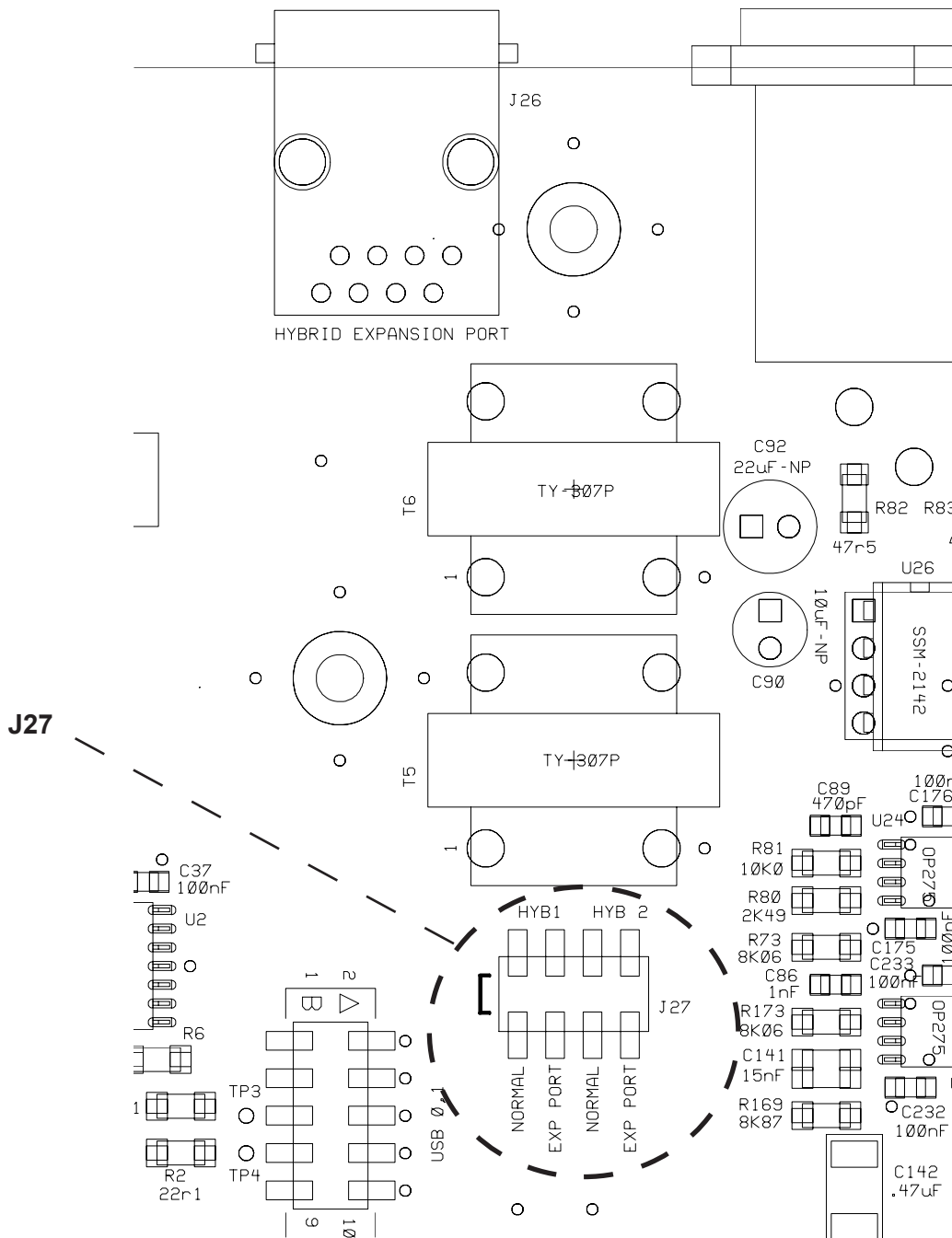
4) Determine which STAC hybrid is to be bypassed and move the jumper(s) designated by the legend for Hybrid 1, Hybrid 2, or both to the **External Port** position. This audio for the selected hybrid(s) will now be transferred to the **Hybrid Expansion RJ-45** on the rear panel, rather than the internal hybrid(s).

5) Reassemble the boards into STAC and replace the top cover.

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6) Remove the cover of the DH20 and locate **Header J11.** (See Figure 2.) Move **J11** from its default location to the **Dry Mode** setting. This allows the DH20 to operate without DC current flowing through the line.

FIGURE 2 - HEADER J11 ON THE DH20 MAIN BOARD
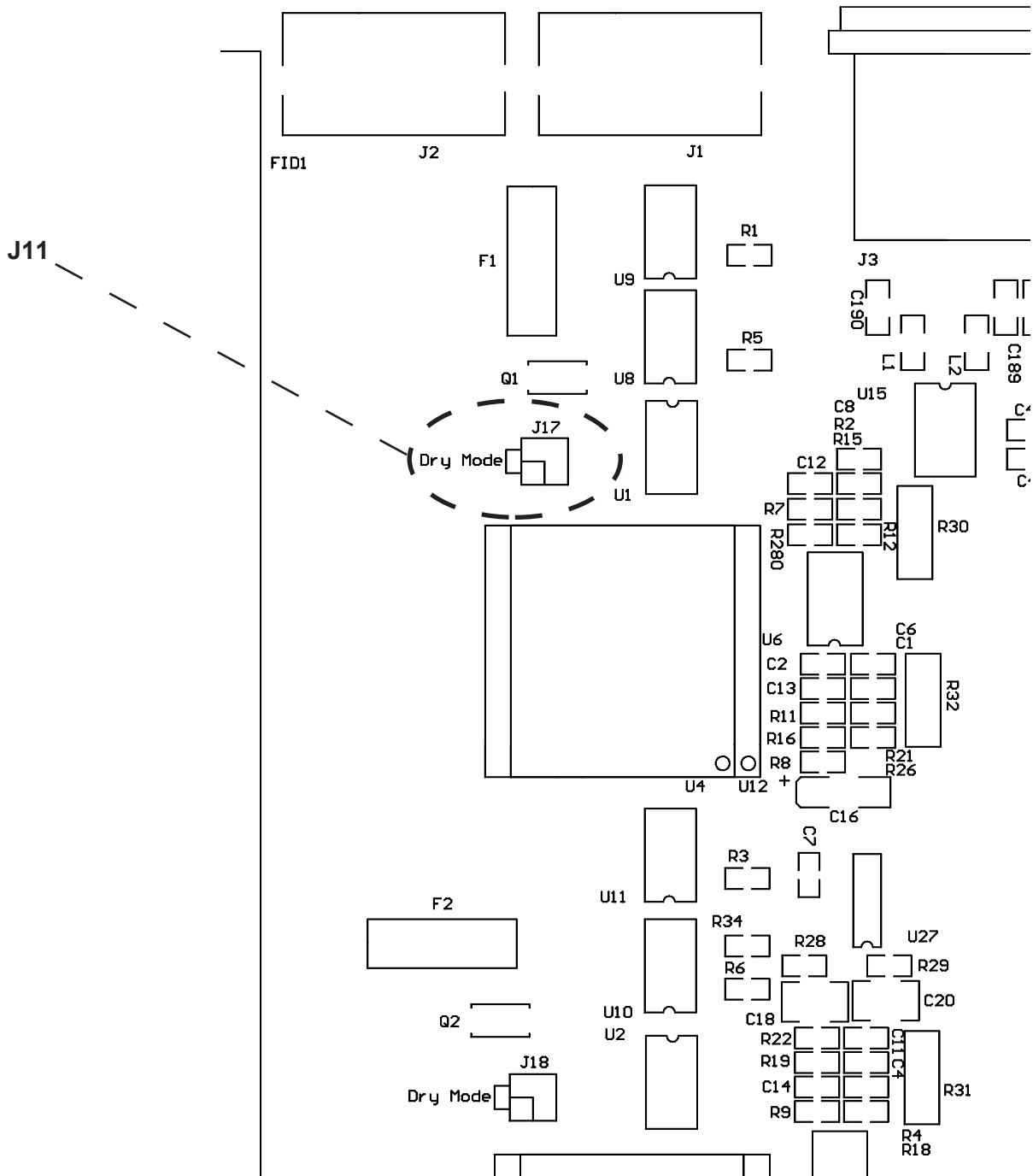
7) Connect **Pins 1 & 25** on the **DB-25 Connector** located on the DH20 rear panel. This allows the DH20 to remain *On Line* at all times.

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8) Create a cable to connect between STAC and the DH20. STAC connection will require an RJ-45 (8 position) plug and the DH20 will require an RJ-11 (6 position) plug. This can often be built easily by grafting a telephone cable to an Ethernet style CAT5 cable. *Note: If bypassing both hybrids, a pigtail-style cable can be created, connecting the RJ-45 jack to two RJ-11 jacks.* The cross-pinning is shown below:

To bypass Hybrid 1 on STAC

DH20 RJ-11	STAC RJ-45
3	4
4	5

To bypass Hybrid 2 on STAC

DH20 RJ-11	STAC RJ-45
3	1
4	2

9) Connect the cable from STAC's **Hybrid Expansion Port** to the DH20 **Tel Line In Jack**.

10) Connect send audio for STAC's internal hybrid to the **Send In Port** on STAC. Connect receive audio to the correct port on STAC for the internal hybrid that was not bypassed.

11) Connect send and receive audio to the DH20.