Interfacing Tact TA-4800 to A800-SIM

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General

This application note covers the interfacing and setting up of a Design 2000 Tact TA-4800 telephone interconnect to an A800-SIM.

A good understanding of the A800-SIM operation is required to configure the SIM for correct operation with the TA-4800. The A800-SIM Service Manual (AM8-SIM.pdf) will be required during the interfacing procedure.

Parts

The parts required are as follows:

Part Number	Description	Supplier	Qty.
8P8C	8 way RJ45 modular plug	Obtainable from almost any electronics supplier	1
15Way D-plug	15 pin D-range plug		1
8Way flat phone cable	8 core flat telephone cable		1

Procedure

1. A800-SIM

The A800-SIM has to be checked and configured properly to ensure the Tact will operate correctly with any radio equipment that is attached to the A800-SIM (i.e. TTR's and Link's etc).

The TA-4800 can connect to either Port 7 or 8 because both ports can be configured to have both inputs (i.e. Rx audio & Rx gates into SIM) and outputs (TX audio and TX key out of SIM) be present on one 15 way D-range connector. For the rest of this application note Port 7 will be assumed to be being used to connect to the TA-4800.

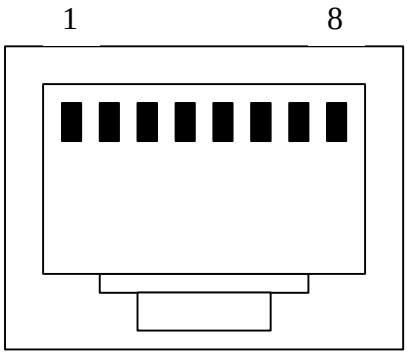
Port 7 (like Port 8) has 3 x 16 way IDC header connectors on the main A800-SIM PCB associated with it. Move the ribbon cable that connects to Port 7 Rx Port D-range (top D-range) to the 16 way IDC header pins labeled 'TARA'. The 'TARA' connector has both inputs and outputs present on it .

Configure the diode and resistor matrices in the A800-SIM so that the TA-4800 receives audio and gating signals from the other ports that radio equipment is connected to and that the TA-4800 keys up the other ports that radio equipment is connected to. Ensure that the diode and resistor matrices are configured such that Rx gating and audio received by Port 7 (from the TA-4800) do NOT go back out Port 7 (back to the TA-4800).

2. Interface Cable

The cable that connects to Port 7 of the A800-SIM (top D-range) to the TA-4800 'Radio' port is a simple RJ-45 to 15 way D-range cable. Below is the configuration of the cable:

A800-SIM Port 7 Function	15 way D-range pin #	Direction of Signal	RJ-45 pin #	TA-4800 'Radio' port function
Rx Audio	1	←	7	Audio out from Tact to radio
TX Audio	4	→	8	Audio in to Tact from radio
Rx Dec (gate)	12	←	2	PTT normally open
TX Key	13	→	4	COS from radio
Ground	14		6	Signal ground
Ground	15		1	PTT common



View from front of TA-4800 'Radio' socket

3. Tact TA-4800

None of the links on the TA-4800 PCB need to be moved from there default position.

Almost all the system configuration parameters (accessed via *6703#) can be left in there default states, the only parameters that may need changing are the following:

*40 Radio Mode – Ensure that 4 (Full Duplex) is selected.

*71 Radio TX gain – See the Audio Level Adjustments section in the TA-4800 User Handbook.

*72 Radio Rx gain – See the Audio Level Adjustments section in the TA-4800 User Handbook.

4. **Mobile or Hand-portable DTMF parameters**

When programming the DTMF parameters on a mobile/portable use the following as a guide to reliable sending of DTMF from a radio to the TACT TA-4800:

a) If Using DTMF 'Buffer mode' (whereby the nnnnnnnn# [n=phone number] are entered and then an ''Enter' key is pressed to send the string over the air) then have at least a 500ms lead in delay with the 0-9,#,* keys having a minimum tone duration of 500ms. Also make the minimum intertone gap be 100ms and the intertone hold time be 1000ms.

b) If the DTMF tones are sent to air as the keys are pressed then ensure there is no or minimum lead in delay with the 0-9,#,* keys having a minimum tone duration of 500ms. Also make the minimum intertone gap be 100ms and the intertone hold time be 2000ms.