ELLIOTT 900

Volume 4:   ENGINEERING MAINTENANCE

Part   1:   BASIC EQUIPMENT

Section 7:   INTERFACE UNIT FOR SECOND PAPER TAPE/TELEPRINTER
               CONTROLLER (DPA 215)

Contents

Chapter 1:   DESCRIPTION

1.1   General

The Interface Unit enables a second paper tape station to be connected to the 900 Central Processor via the Paper Tape Interface on SK.10. The unit is contained on one logic rack which is mounted in the desk containing the second paper tape station.   The overall layout of the desk is shown in Figure 1 together with front and rear views of the Interface Unit rack.   The logic diagram of the Interface Unit is shown in Figure 3.

The second paper tape station is identical to that contained in the central processor desk and its operation is described in Sections 4.1.3 and 4.1.4 of this Manual.

Throughout this section the paper tape station in the central processor desk will be referred to as PTS/1 and the other as PTS/2.   The same suffices are used with signal names to indicate the origin or destination of signals between the Interface Unit and the paper tape stations.

1.2   Connections

The connection of the Interface Unit to the central processor and paper tape stations is shown in Figure 2.   The Paper Tape Interface on SK.10 of the central processor is connected to the Interface Unit which acts in the same way as a multiplexer to route information to and from the paper tape stations.

The power supplies for the Interface Unit are obtained from CNF, the 'Test' socket, on PTS/2.   The two supplies required are +6V d.c. and -6V d.c.

1.3   Logic Diagram

The logic elements used in the Interface Unit are Logic Sub-Assemblies (LSA), a description of these is contained in Section 4.6.1 of this

Manual. The table on Figure 2 provides details of the types of LSA element on each board and the location and value of any extra components used.

On the logic diagram (Figure 3) signals to and from the central processor are enclosed in square brackets [ ] and signals to and from the paper tape stations are enclosed in diamond brackets < >. All discrete components not being part of the logic sub-assemblies are fitted in Area G of the logic board.

1.4 Paper Tape Station Selection

Switch SWA either determines the paper tape station to be used or makes it possible for the selection to be carried out by means of program instructions. The switch has three positions:

(a) In position '1' all selection signals pass to PTS/1.

(b) In position '2' all selection signals pass to PTS/2.

(c) In the 'AUTO' position the paper tape station is selected by program instruction.

The instruction code for PTS/1 is identical to that used for a single paper tape station. The second station uses the same instruction code with the addition of address bit [A2].

If switch SWA on the Interface Unit is set to 'AUTO', the inputs to 23/6B11 and 23/6B12 are held false, so that when PTS/1 is required [A2] is false, hence $\overline{A2}$ is true and A2 false. The A2 signal fed to 23/5A13 and 23/5B13 prevents any selection signals being sent to PTS/2. $\overline{A2}$ is fed to 23/5A12 and 23/5B12 and being true, gates the selection signals to PTS/1.

When PTS/2 is required [A2] is true and hence A2 is true and $\overline{A2}$ false. In this case $\overline{A2}$ prevents any selection signals being sent to PTS/1 and A2 allows them to be fed to PTS/2.

If switch SWA is set to '1', the input to 23/6B12 is true and causes A2 to be held false even if [A2] goes true. A2 fed to 23/5A13 and 23/5B13 prevents selection signals being sent to PTS/2. All selection signals are gated with $\overline{A2}$ and fed to PTS/2.

If switch SWA is set to '2', the input to 23/6B11 is true and causes $\overline{A2}$ to be held false and A2 true. In this case all selection signals are routed to PTS/2.

1.5 Signal Transfer

The signals from the central processor, [OP1] to [OP8], [A1], [A3] and [RESET], are received by the Interface Unit and then transmitted to both of the paper tape stations. The selection signals [STP] and [STR] are gated by signals A2 and $\overline{A2}$ and only transmitted to the required paper tape station (see paragraph 1.4).

Signals from the paper tape stations are received by the Interface Unit and coupled together to form a common input signal for transmission to the central processor. These signals are [IR1] to [IR8] and [RTR]

[A2] is used internally in the Interface Unit.

1.6 Test Program

The paper tape stations and Interface Unit are checked by means of the daily test program X PTS1. Full details of these tests can be found in the Operating Instructions located in Section 3.1.2 of this Manual.