

## CROSSTELL DATA BRIDGE AND CONTROL CIRCUIT SD-1G250-01 DESCRIPTION

### 1. GENERAL

**1.01** The crosstell data bridge and control circuit provides a data conference network for the exchange and control of SAGE/BUIC III 4-phase data between adjacent air divisions. The central office portion of the Crosstell Data System will be described in this section. See Section 981-272-100 for a description of the station switching circuit (SD-1G244-01).

**1.02** The bridge is a 5-port, 4-wire circuit. One port is designated as the input port and is connected to an AUTOVON off-hook service line (hot line). The other four ports are normally connected to switching machine terminations to

afford switched access by adjacent sector control centers to the bridge; up to three such centers will connect to the bridge. The fourth port is also terminated on the switching machine as a spare port. See Fig. 1.

**1.03** Control centers gain access to the switched appearance by dialing the precedence level P-1, special grade 11, then the 7-digit address assigned to that crosstell bridge. The input port of one crosstell data bridge will then be connected via AUTOVON to the input port of an associated crosstell data bridge.

**1.04** One crosstell bridge is designated the master bridge and the other a slave bridge. The

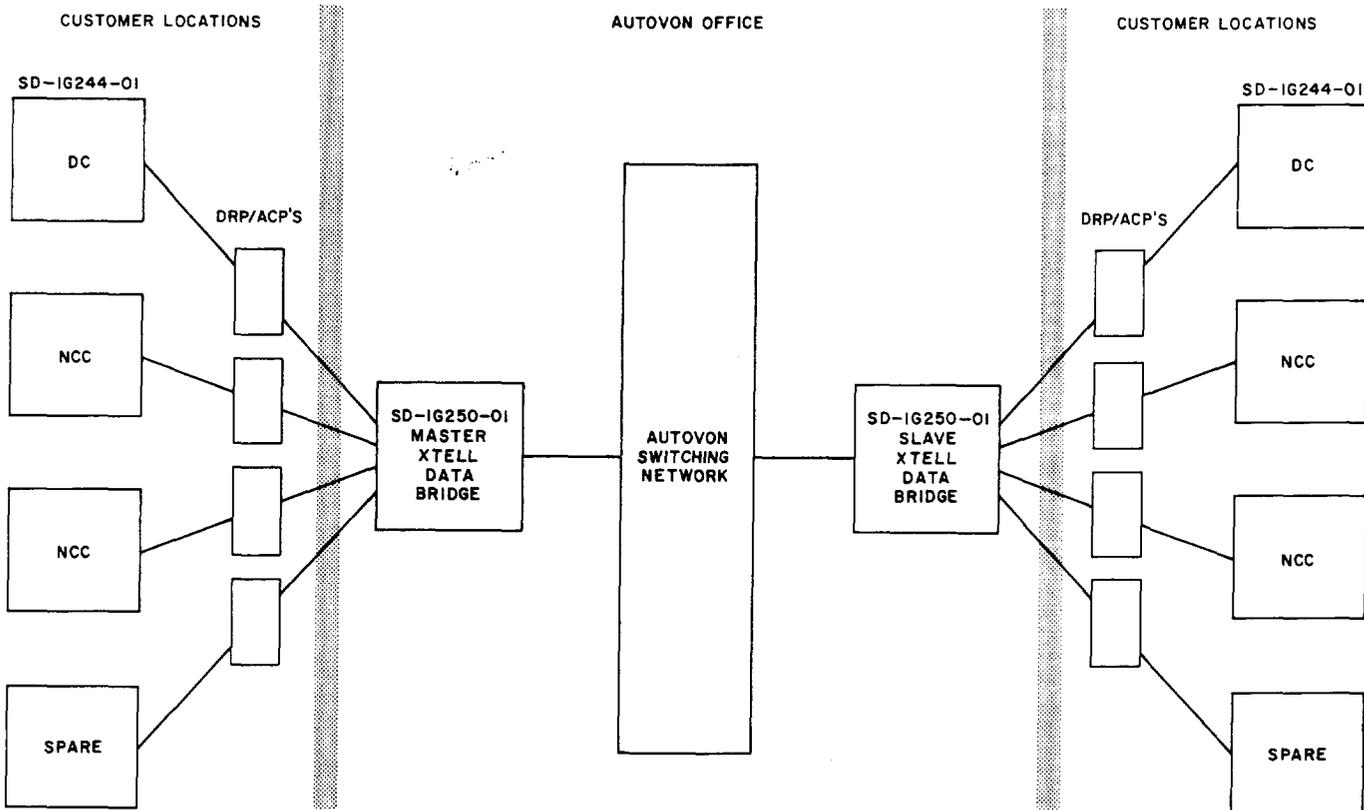


Fig. 1—Crosstell Data Bridge and Control Circuit—Block Diagram for SAGE/BUIC III

slave bridge can answer a call from the master bridge, but is not capable of initiating a call to the master bridge.

**1.05** Data received on the input port is bridged to permit simultaneous transmission to the four output ports. Data transmission from the output ports is on an exclusive OR basis. Only the data from the "controlling" control center is transmitted through the bridge in the reverse direction. (Data from "noncontrolling" centers is terminated in the impedances in the bridge.)

**1.06** A control center can seize control of the output to input transmission path by initiating a double wink signal (two 50 ms bursts of 460 Hz tone) on a frequency shift signaling circuit which is duplexed on the data path. A second double wink from the same control center will cause the master bridge to disconnect the off-hook service line and reestablish a new connection. When the master bridge is reconnected to the slave bridge over a new facility, the circuit is reset to respond to any number of additional double winks to attempt to establish new connections to the slave bridge.

**1.07** A control center not in control of the bridge will receive data plus 390 Hz tone from the bridge and transmit 390 Hz tone toward the bridge. When a control center desires to assume control of a bridge, the attendant will momentarily operate a control key on the auxiliary control panel (ACP) at the DC, NCC, or CC. Operation of the control key will activate the pulse generator in the station switching circuit and interrupt the 390 Hz tone with two 50 ms bursts of 460 Hz tone. The double wink detector in the bridge control circuit recognizes the port that sent the request and operates the

control relay for that port, returning 460 Hz tone to indicate control has been obtained.

**1.08** Loss of control tone on an output port operates a common alarm timer, which will release that switched connection in approximately 10 seconds. The bridge uses a common alarm timer for all four output ports and employs relay contacts to steer the time-out condition to the appropriate port.

**1.09** Initial line-up and routine trouble analysis of the bridge will be performed from the 19A or 21A testboard and associated SD-1C232-01 testing and patching jack circuit. See Section 314-550-307 for operation and maintenance of the crosstell bridge and control unit. Spare circuit packs must be available for maintenance purposes.

**1.10** Spare crosstell bridges should be provided with patching capability.

*Note:* The crosstell data bridge is not interchangeable with the addressable data bridge (SD-1G245-01); therefore, if both services are available in the same AUTOVON office, one spare bridge for each service should be provided.

## **2. EQUIPMENT**

**2.01** The crosstell data bridge and control unit (J1G023B) is 14 inches high and takes the space of seven 2-inch by 23-inch mounting plates. It will mount on bulb angle framework having a 10-inch wide guardrail, on sheet metal framework, or if adapters are used, on No. 1 ESS framework. See Fig. 2.

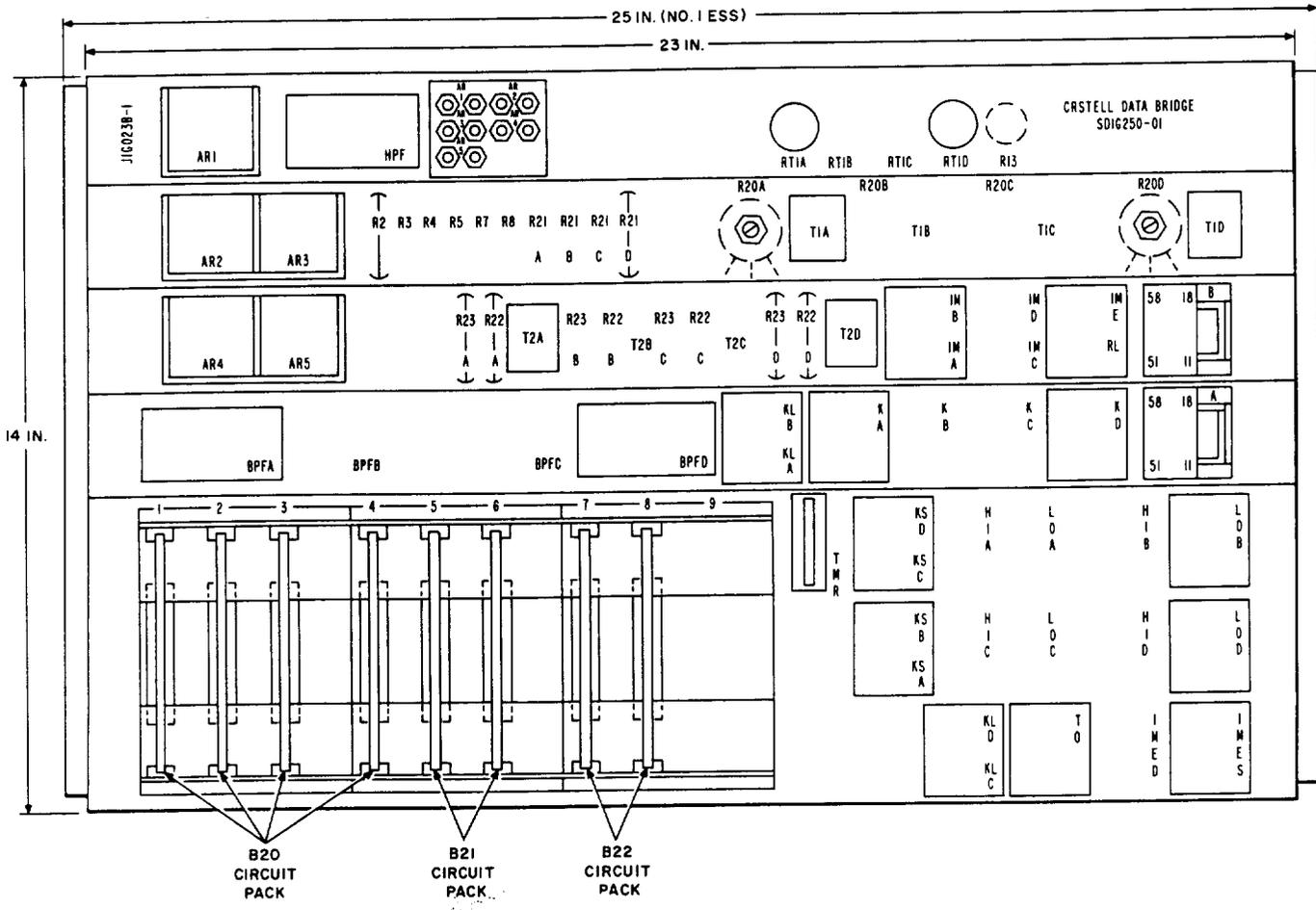


Fig. 2—Crosstell Data Bridge and Control Unit