

CIRCUIT DESCRIPTION

CD-5D503-02  
ISSUE 2M  
APPENDIX 1M  
DWG ISSUE 11M  
DISTN CODE BT13

**SESS® SWITCHING EQUIPMENT  
ENHANCED 911 SERVICE ADJUNCT  
(ESA)  
CIRCUIT  
(SINGLE AND MULTIPLE SWITCH APPLICATIONS)**

*Description of Changes*

Change 508 to 505 and D/A to D/B, ADD Filler Panel to card position 508 and in card position 511 show J5 as Reserved.

AT&T BELL LABORATORIES

DEPT ND9220300-JAP-PK

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**1. GENERIC DESCRIPTION**

**1.1 PURPOSE OF CIRCUIT**

The 911 is intended to be a nationwide, universal telephone number which provides the public with direct and immediate access to a public safety answering point (PSAP). A PSAP is an agency or facility that is designated and authorized to receive and respond to emergency calls requiring one or more public services such as police, fire, medical, etc.

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**2. BACKGROUND**

Enhanced 911 (E911) service provides several improvements over the current service. The major improvements of E911 are: PSAP is provided with the calling station's automatic number identification (ANI) and address; selective routing of a 911 call to a PSAP is based on a caller's ANI, and by configuring one E911 5ESS® switch tandem office in a central location to serve multiple end offices, the local end offices need not be equipped with additional E911 features.

The 5ESS® switch with StarServer™ fault tolerant (FT) computer provides the following E911 capabilities:

**Table 1. E911 CAPABILITIES**

Routing Features	Transfer Features	PSAP Control Features	Display Feature
Selective Routing - with an ESA (optional) Non-Selective Routing - without an ESA Alternate Routing Default Routing Office Handoff	Selective Transfer Fixed Transfer Manual Transfer	Forced Disconnect	Flash Calling Display

### 3. PRODUCT OVERVIEW

The ESA platform includes the AT&T StarServer™ FT computer system with triple modular redundant (TMR) central processing units (CPUs), duplexed memory, input/output processors (IOPs), buses, power, and small computer system interface (SCSI) disk drives. Tape devices include a 1600/6250 BPI nine-track tape drive and one-quarter inch cartridge tape. Both synchronous and asynchronous communication interface boards are used to support the various ESA interfaces. The system also includes UNIX® as the operating system (SVR3.1.1 with block separator digit [BSD] extensions and reliability enhancements), X.25 communications software for the adjunct processor interface (API) links, and ESA application software developed using "C" Language. Maintenance features of the StarServer™ FT include on-line diagnostics, remote administration, and fault location software. The ESA provides the ANI-to-emergency service number (ESN) translator for the 5ESS® switch selective routing feature and maintenance functions of the database. There are interfaces to the switching control center system (SCCS), automatic location identification/database management system (ALI/DMS), and 5ESS® switch through an API link.

If selective routing is used during E911 "call setup," the 5ESS® switch sends a query to the ESA using the subscriber's ANI and the ESA responds with an ESN. This ESA is used as an index to the data on the 5ESS® switch containing the primary PSAP dialing number (DN), two alternate PSAP DNs, and up to six selective transfer DNs. The Release 2 ESA supports multiple 5ESS® tandem switches (a maximum of 20 million telephone numbers for all switches).

**4. REFERENCE DATA**

**4.1 CONNECTING CIRCUITS**

- (a) 5ESS® Application Schematic - SD-5D014-02
- (b) 5ESS® AC Power Distribution Circuit - SD-5D004-01
- (c) 5ESS® DC Power Distribution Circuit - SD-5D005-01

5. ACRONYMS

ALI	Automatic Location Identification
ANI	Automatic Number Identification
API	Adjunct Processor Interface
BSD	Block Separator Digit?
CPU	Central Processing Unit
DMS	Database Management System
DN	Dialing Number
ESA	Enhanced 911 Service Adjunct
ESN	Emergency Service Number
FT	Fault Tolerant
IOP	Input/Output Processor
PSAP	Public Safety Answering Point
SCCS	Switching Control Center System
SCSI	Small Computer System Interface
TMR	Triple Modular Redundant

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