AT&T CALL ACCOUNTING SYSTEM

GBS Planning, Configuration, and Implementation Guide

Document Number 999-500-247
Issue 1, August, 1986

To order copies of this guide,

Call: AT&T Customer Information Center

1–800–432–6600

or

Write: P.O. Box 19901

Indianapolis, IN 46219

Order: Document Number 999–500–247

Preface

This guide is used by the Sales representative as a planning tool for preparing and providing the necessary equipment for the AT&T Call Accounting System (CAS).

This guide is divided into three sections as follows:

1. Planning and Configuration – This section gives an overview of the hardware, software, cabling, PBX compatibility, and call costing. Included is the ordering and manufacturing/shipping intervals.

2. Implementation – This section provides information on product delivery, return procedure, trouble reporting procedures, and available documents.

3. Price Element Code – Attribute Specifications

   This section contains the Configuration information with the machine model and feature Price Element (PE) and Attribute codes for the AT&T Call Accounting System.

This guide is used to:

- Determine hardware requirements, based on customer needs, for a particular installation.
- Specify PE Codes (PEC) and Attribute Specifications from the configuration list.
- Determine customer–specific call costing requirements.

To use this guide, the Sales representative must understand the following:

- customer’s requirements
- customer’s telephone system
- PEC structure including machine model and feature codes
- particular products' hardware and options

Other documents useful in supporting the AT&T Call Accounting System are as follows:

- CAS User’s Guide (555–006–201)
- Administration and/or Reference Manuals for Communications Systems with SMDR capability.

Table of Contents

MERLIN is a registered trademark of AT&T

1. PLANNING AND CONFIGURATION

INTRODUCTION

The AT&T Call Accounting System consists of six different models based on various station capacities:

Model 100 (61370)	– designed for MERLIN® CS and AT&T System 25 with up to 100 stations/Personal Dial Codes (PDCs)*.
Model 200 (PEC 1201–001)	– designed for MERLIN, System 25, and Horizon Communications Systems with up to 100 stations/PDCs.
Model 300 (PEC 1202–001)	– designed for telephone systems, with up to 150 stations/PDCs.
Model 500 (PEC 1202–002)	– designed for System 25, System 75, System 85, Dimension and other telephone systems, with up to 500 stations/PDCs.
Model 2000 (PEC 1202–006)	– designed for larger systems, with up to 2000 stations.
Model 5000 (PEC 1202–003)	– designed for very large telephone systems, with up to 5000 stations.

* Personal Dial Codes used only with System 25

MICROPROCESSOR BASED CAS (Model 100)

Product Description

The AT&T Call Accounting System (CAS) Model 100 is a cartridge–driven microprocessor based system compatible with the MERLIN® CS and AT&T System 25. Costing is based on AT&T Communications tariffs and local calls are estimated using the lowest AT&T tariff rate. Daily chronological and four summary reports are provided.

The chronological report is printed as each call is made and includes the information provided by the telephone system, plus the cost of the call. Each day the system clears the previous day's summary data.

The summary reports are a collection of four daily reports that contain costed call data for the previous day's calls. These summary reports are printed automatically immediately after the first call is placed the following day.

Technical Considerations

Limitations

- Maximum of 200 9–digit account codes
- Maximum of 4 digit extension number
- Maximum of 50 lines/100 stations on PDCs
- Summary report limited to one 24–hour period

Rate Table Update

– Order new cartridge. Three rate cartridges are available for use with MERLIN 1030/3070 and System 25 as follows:

  61371 – MERLIN 1030/3070
  61372 – System 25 with Personal Dial Code (PDC) costing

Customer Requirements

– A model 475 (3330–475) or 476 (3330–476) printer

Telephone System Compatibility

– MERLIN 1030/3070
– System 25

Telephone System Cabling

- Refer to the MERLIN and System 25 Documentation for proper installation of SMDR options. Figure 1 in section three provides additional information.

- MERLIN 1030/3070
  - 355AF Adapter (2750–A25)
  - 14 feet 4 pair cord (32814)
  - A MERLIN Voice Terminal wiring run to within 10 ft. of the Model 100 CAS

PC 6300 BASED CAS

Product Description

The AT&T CAS Models 200 through 5000 are software diskette systems that can be added to an AT&T PC 6300 with MS/DOS 2.11, 3.1, and 3.2 to provide computerized accounting of business telephone costs.

The CAS records and stores call records placed through the telephone system, assigns costs to the calls, and generates standard summary, detail, account code, selection and pre–selected reports. These reports provide information to control telephone expenses. The system computes costs for telephone calls made over local, DDD, IDDD, FX, WATS, Tie, and other interexchange carriers (IXCs).

The PC 6300 requires the hard disk configuration to be equipped with 512K of RAM. In this configuration it can handle up to 150,000 call records and support up to 5,000 stations.

Multi–Function Mode

The Multi–Function Mode of operation allows the user to print reports, edit system tables, run other PC–based programs (word processing, spreadsheets, etc.) while the AT&T Call Accounting System continues to collect and buffer calls received from the telephone system. This data collection program is described as "operating in the background" while the other programs are "operating in the foreground."

The AT&T Call Accounting System performs four main functions: Call record processing, report generation, system management, and directory lookup & message center.

Process Calls

Involves screening and then calculating and storing the cost of valid calls, along with the other call record information.

Generate Reports

Prints call record information in several different reports. The user can select the exact report needed or set up a special combination of reports from among the following list.

The Summary Reports are a collection of reports which condense and summarize call record information by total number of calls, duration, and cost. The reports are broken down by department, department/cost center, department/cost center/extension, call type, trunk, cost, duration, time of day, date, and account code.

The Organization Report prints a detailed report of each call record in the system sorted by department, cost center, and extension.

The Selection Report will selectively print call record information. This report may contain summary or detailed information based on any combination of the following selection criteria: time of day, date, cost, duration, extension, trunk, account code, dialed number, and call type.

The Account Code Detail Report prints detailed call record information records sorted by account code. [Account codes, maximum of 16 Digits, are used to assign telephone call charges to a client account for calls made on the client's behalf.]

The Preselected Reports consist of up to five predefined reports which may include any of the above mentioned reports. These reports can be run upon request or automatically at a specified time and date for a single report; or on a daily, weekly, monthly or unscheduled basis.

System Management

System Management will perform several functions. These include editing the company's organizational information, configuring the PC and the telephone trunks, setting up account codes, defining preselected reports, and keeping call rate information up to date. System housekeeping is also performed under system management. This will establish passwords, delete records from the system, determine call processing options, or perform various disk operations.

The system management function (call record management) provides the capability to delete call records on or before a user–specified date. It is recommended that this activity be performed approximately once per month.

Directory Lookup and Message Center

Will locate anyone in the organization by last name, first name, or extension. Messages may be stored for individuals and can be printed or displayed on demand.

Storage Space

It is the customer's responsibility to control the number of call records stored in the system. If the PC is dedicated to the call accounting function, 10 megabits of hard disk will store up to 150,000 call records.

To help alert the user when the PC is reaching its capacity, the AT&T Call Accounting System Software will display warning messages at 50%, 90%, and 100% capacity levels (based upon available disk storage). These messages will appear on the display, in reverse video, and read "Call Record Storage XX% full, delete calls via the System Management Function". The internal PC alarm will sound for 10 seconds. In addition, the call processing monitor display also shows the number of calls in the database. This online display will keep the user abreast of the status of his/her system.

Technical Considerations:

Limitations

- Maximum of 4 Digit Station Numbers
- Up to 5000 stations maximum depending on model
- 15 Character Department/Cost Center Names
- 16 Digit Account Codes
- 150,000 call record capacity
- Model 200 – 2,000 Account Codes & 100 stations or Personal Dial Codes* (PDCs)
- Model 300 – 5,000 Account Codes & 150 stations/PDC
- Model 500 – 5,000 Account Codes & 500 stations/PDC
- Model 2000 – 15,000 Account Codes & 2,000 stations
- Model 5000 – 15,000 Account Codes & 5,000 stations

*Personal Dial Codes used only with System 25.

Rate Table Update Service (Optional)

Rate Table Updates are offered as a single one–time update service that is orderable at any time or as a Subscription Service on an annual basis. The subscription service provides four rate updates annually. The initial update ensures that the system is current. The remaining three updates are provided on a quarterly basis. One update is provided free of charge (except for the Model 200). Procedures for ordering the single update or subscription service are found in the Sales Manual and in the last section of the CAS User’s Guide (supplied with each system).

Customer Requirements

Related Equipment

- AT&T Personal Computer 6300-CPU3 (PEC 3703-030)

  . 512K RAM required (feature code 37304)
  . Hard Disk: 1 360K byte Disk Drive
    1 10M or 20M hard disk
  · Monitor: Monochrome or Color (PEC 37313 or 37318)
  . Keyboard: (PEC 37301)
  . MS/DOS GW Basic Rel. 2.11 Software (PEC 1021-001)
  . MS/DOS GW Basic Rel. 3.1 Software (PEC 1021-009)
  . MS/DOS GW Basic Rel. 3.2 Software (PEC 1021-001)

- Parallel Printer - Model 473 (PEC 3330-473)
  Model 474 (PEC 3330-474)

References

- AT&T Call Accounting System User's Guide (555-006-201)

Telephone System Cabling

The cables used for Horizon®, Prelude®, Dimension®, System 75, and System 85 are all the same.

Male connector to PBX.
Female connector to the PC.

See Figures 2 and 6 in Section 3 for addition information.

These cables are a standard E.I.A. (pins 1-8 and 20) configuration.

Cables:

- 9 Feet (PEC 272101J)
- 25 Feet (PEC 272101S)
- 50 Feet (PEC 272101V)

®Registered trademarks of AT&T

Telephone System/CAS Models 200-5000 Compatibility List

Manufacturer	Model	Model/Feature Package/Software Release
AT&T	200	MERLIN™ 1030/3070* (Model 200 only)
AT&T	All	System 25
AT&T	300-500	PRELUDE®
AT&T	All	HORIZON ACS®
AT&T	300-500	DIMENSION®, FP 4, 7, 8, 10, 11, 12, 15
AT&T	300-500	SYSTEM 75
AT&T	300-500	SYSTEM 85
American Telecom	300-500	FOCUS HYBRID, Release 4
American Telecom	300-500	FOCUS® ELITE™, FP A-E-No Authorization Codes
American Telecom	300-500	FOCUS® ELITE™, FP F,G-No Authorization Codes
American Telecom	300-500	FOCUS® ELITE™, FP F,G-With Authorization Codes
Executone® Vista™ 192 (Not MX)	300-500	GS 2, 3, 4
GTE/OMNI I, II & III	300-500	Software Version Release (SVR) 51XX, 61XX, 71XX, 81XX, 82XX
Honeywell/Ericcson	300-500	DELTAPLEX 2000
Intertel SPK II	300-500	Issue 3 (April, 1983)
ITT 3100L™	300-500	Gen. B2.1 (Normal width call record format only)
Iwatsu Omega IV	300-500	IDS-238 & EX824/1648
Mitel SX100/200®	300-500	All up to Generic 217
NEC 16/48	300-500	SMDS as of April, 1983
NEC 2400	300-500	Phase III
Northern Telecom SL-1™	300-500	X04, X05, X07, X11, X37
	300-500	(All with no auxiliary ID)
ROLM® CBX	300-500	Release 5, 6, 7, 8, 9
Siemens SD192 (Not MX)	300-500	GS 2, 3, 4
Stromberg Carlson	300-500	Release 2
Progress ™CDSS	300-500	
TIE VDS/DataStar	300-500	As of 1/1/84
TIE TCX™-128/Delphi BX	300-500	Issue 1.0 as of March, 1983

Note: The above list is not all inclusive. While the list is accurate as of this printing, additional PBX switches may be added or changes may be made. For a final determination on PBX front-end compatibility, check with your Area Staff.

®Registered trademark of AT&T
™Trademark of AT&T

CALL COSTING

Costing Algorithms

LATA, long distance, (including Inter/Intra Lata), and international direct dialed calls are costed using actual AT&T Communications and Other Interexchange Carrier (IXC) tariff rates. Operator-assisted calls, as well as direct dialed calls, are costed at actual rates. Only calls dialed through the telephone system, including 0 + dialing, credit card calls, operator-assisted calls, or incoming "chargeable calls," (e.g., Incoming WATS) can be costed. Since the telephone system has no way of discriminating between operator assisted and direct dial credit card calls, both types of calls will appear in detail and summary reports.

Calls made over WATS, Tie, FX, and other special facilities are costed on a user-specified average per-minute basis. The per-minute cost should be determined by dividing total monthly cost by estimated total monthly usage. Except for the first month, the system provides this estimate. The user has the capability to re-cost calls made over WATS facilities. This re-costing feature adjusts the cost of each call based upon the complete charge for the WATS facility over the billing period, as identified by the user, and also adjusts the estimated cost to be used for the next billing period.

The AT&T Call Accounting System will compute the total number of calls and total cost for each special facility monthly. A new, more-accurate cost per minute estimate may then be entered for the next month's calls. In this way, businesses with fairly constant WATS, Tie, and FX calling volumes can achieve approximately 95% costing accuracy.

The cost of the call, based on rates, tariffs, and user-supplied data, is stored with the call record in the detail call record storage area. At the time the user runs reports, the user may adjust this call cost in one or more of the following ways:

1. markup or markdown by a user specified percentage
2. add a user specified surcharge to the call
3. add tax to the call cost
4. assign a minimum charge to the call, regardless of its actual cost

These cost adjustment parameters can be selectively applied to different call types, so that local calls may be handled differently from long distance calls, etc.

In all cases, the computed cost of the call remains intact; the cost adjustment parameters are applied only at the time the report is run.

Power Back–Up

In the event of a power outage, the only calls that will be lost are those stored in the PC's RAM (i.e. have not been buffered to disk).

Minimum Call Duration and Network Correction Time

All telephone systems time calls when the first digit is dialed (beginning of call) until the call is terminated by the originator (completion of call) regardless of whether a call is answered or even fully dialed. The CAS parameter "minimum duration" provides a means to ignore calls which are of shorter duration and the CAS parameter "network correction time" together allow the user to compensate for calls that are not completed (e.g., telephone not answered, misdialed digits, etc.) and for the time required for a call to be dialed, connected, rung, and answered at the destination.

Minimum duration for good calls represents the length of time a call must last before it is considered valid. Only calls that pass this minimum duration will be costed. Minimum duration is usually set between 25 and 35 seconds.

Network correction time represents the time needed for a call to be passed through the network and answered. Network correction time is subtracted from actual time before a call is costed, thereby increasing the costing accuracy. The CAS system can accommodate a different network correction time for each of the 23 call types. This means that an overseas call can have a longer correction time and a local call a shorter correction of time. Initially the network correction time is set to 30 seconds.

Minimum call duration and network correction time are set on a per call–type basis using the instructions provided in the CAS User’s Guide. The minimum duration time is always longer than network correction time. A longer network correction time is required for rotary systems than for touch–tone systems and for international calls than for domestic calls. Both parameters can be modified as necessary to increase accuracy but previously recorded calls cannot be recosted and will retain their original values.

Call Costing Accuracy

Call costing accuracy is determined by comparing the CAS computed cost with the telephone company's measured cost. The telephone company’s measured cost is determined by measuring the duration of a call which begins when the called party has answered and ends when either party has hung up. This time is then rounded up to the nearest minute.

A telephone system at either end of this call can only estimate when the called party has answered and can determine only when the caller has hung up. These constraints, somewhat compensated for by the network correction time, result in differences between a CAS reported cost and the telephone company's measured cost.

To help in understanding the difference in costs, the CAS reports the duration in minutes and seconds as received from the telephone system. However, the duration used for call costing is the reported time reduced by the network correction and rounded up to the nearest minute.

The following three examples are useful to describe the significance of this process.

Example 1

A call from New Jersey to Haiti

	Duration	Cost	Start of Call
CAS Reported	00:53	1:18	9:38AM
N.J. Bell Reported	1:00	1:18	9:39AM

CAS computed the cost by reducing the duration by 30 seconds (00:23) and rounding up to the nearest minute (1:00). In this case CAS and the telephone company agree even though the start of call differed by 1 minute.

Example 2

A call from New Jersey to New York City.

	Duration	Cost	Start of Call
CAS Reported	3:06	1:04	10:13
N.J. Bell Reported	4:00	1:32	10:13

CAS computed the cost by reducing the duration by 30 seconds (2:36) and rounding up to the nearest minute (3:00). This results in a difference of one minute and 28 cents in cost. Perhaps this site should use a network correction time of five seconds for out of state, out of LATA calls.

Example 3

A call from New Jersey to Hong Kong.

	Duration	Cost	Start of Call
Cas Reported	26:08	30:42	11:08AM
N.J. Bell Reported	26:00	30:42	11:09AM

CAS computed the cost by reducing the duration by 30 seconds (25:36) and rounding up to the nearest minute (26:00) the difference in the start time would indicate that it took one minute or less before connection was established.

These examples demonstrate the difficulty in determining the accuracy of the Call Accounting System as it will vary depending on the type of call, the type of telephone company equipment at the serving Central Office, and the individual's dialing habits.

Nevertheless, CAS will accurately cost the call, given that the Telephone Company CAS computed duration are the same and the rate tables are current. The two durations can never differ by more than one minute, given a network correction time less than one minute.

Network correction times can be measured by having the customer record the duration from the beginning of dialing to when the called party answers. Do this for each type of call (in state out of LATA, out of state, out of LATA, local calls, and WATS calls). Do this several times and compute the average.

This will result in the largest number of calls matching the telephone company bill.

Call Volume Statistics

When processing call records, the Call Volume Statistics portion of the screen displays up–to–the–minute information of the system at work. The user will see the statistics change on the screen, as calls are made and sent to the PC, costed, and stored.

The number of calls in disk buffer shows how many calls are contained in the disk buffer. This number changes to zero when the buffer empties and the call records are processed. Local calls in disk buffer indicates the number of local call records received from the telephone system.

Calls below the minimum threshold (or duration) indicates how many calls are being discarded because they do not attain the value set as a minimum duration for a call. If the number shown for this item is a high percentage of total calls, the user may be discarding valid calls and must check the minimum duration setting.

Call Processing Configuration

This selection enables the user to set up special features used to identify call records for processing. These features fall into three major categories:

The first category, Call Storage Option, allows the user to selectively store call records. The user may elect to store or reject local calls, and to specify a minimum call duration before a call may be stored. This results in greater storage capacity for longer or more costly calls.

The second category, Call Output Options, lets the user print certain types of calls, as they are processed. The user may choose to print monitored calls, calls which exceed a certain cost, and those which are longer than a specified duration. This feature allows the user to keep a permanent record of system messages and to call immediate attention to very costly or lengthy calls.

The third category is called Call Monitor Option. This feature lets the user choose to monitor calls-- either as they are received from the telephone system, or after their cost has been computed.

ORDERING INFORMATION

Price Element (PE) Codes

PE codes for the AT&T Call Accounting System and associated peripheral equipment appear on the Configuration Order Sheet. These codes should be used to order both software and hardware following standard Branch Office procedures.

The Sales representative is also responsible for configuring the unit and ensuring the proper implementation of the CAS. Any questions should be directed to National Technical Marketing for GBS or LBS.

Manufacturing/Shipping Interval

DOSS order process to Material on Job (MOJ) = 8 weeks

2. IMPLEMENTATION

PRODUCT DELIVERY

- Will ship directly from factory to the staging location.

- Is customer installable.

  Installation is optional. If selected, system technician will provide basic installation. Basic installation includes the installation of system software application packages, and if required, software peripheral cards along with a demonstration to the customer that the system is operable. This demonstration is not intended to be a tutorial on the use of the software. It is a demonstration of attendant diagnostics, successful loading of the operating system (receiving the system prompt is sufficient), and successful calls to application programs from the system prompt.

  The entire demonstration is to end with the execution of the power down sequence by the Systems Technician, followed by power up and loading sequence performed by the customer with the technician observing the operation.

- If the customer wants the technician to configure system parameters, T&M charges will apply.

- User's Guide used by the customer and the technician will be shipped with software package. Do not remove from customer premises.

RETURN PROCEDURE

The customer will call the Computer Hotline if return of the media and/or applications hardware is required. The Computer Hotline will arrange with MOSCOM Corporation to mail a new package.

TROUBLE REPORTING PROCEDURE

Customer/Sales Representatives

During the 90 Day Warranty Period, customers receive free Hotline support (Monday-Friday 8AM-5PM) for any troubles encountered. The telephone number is 800-922-0354, and can be found on the PC Service Information Card. After the system has been installed, customers should direct all problems to the PC Hotline.

DOCUMENTATION

There is no additional documentation for the CAS other than that listed in this guide. All the information required to install and use the system appears in the CAS User’s Guide. One copy of the document is shipped with the unit. Account Teams should refer to the GBS Marketing Guide for prices, applications, and marketing strategy.

3. CONFIGURATION PRICE ELEMENT CODES AND ATTRIBUTE SPECIFICATIONS

The following pages provide (1) Price Element Codes (2) Attribute Specifications, and (3) illustrations, including wiring information, of CAS Models 100, 200, 300 connections with MERLIN 1030/3070, AT&T System 25 and System 75.

PRICE ELEMENT CODES
Model 200 – Model 5000

PRODUCT CODE ID: KI

HARDWARE	PRICE ELEMENT CODE MACHINE MODEL	PRICE ELEMENT CODE FEATURE CODE	DESCRIPTION	SWITCH SUPPORTED	MIN QUANTITY REQUIRED
BASIC SYSTEM			AT&T CAS – PC based call accounting system that supports a maximum of 5000 stations, with a storage capacity of up to 150,000 call records	See Page 1-8	1 of the models
Model 200	1201–001		Supports up to 100 stations		
Model 300	1202–001		Supports up to 150 stations		
Model 500	1202–002		Support up to 500 stations		
Model 2000	1202–006		Supports up to 2,000 stations		
Model 5000	1202–003		Supports up to 5,000 stations		
AT&T PC 6300	3703–030				1
MS DOS Software	1021–001				Required
512K RAM		37304			Required
Printers:					
Model 473	3330–473		Parallel (80 column)		1
Model 474	3330–474		Parallel (132 column)		1
DOCUMENTATION	555–006–201		AT&T CAS User's Guide		
			GBS AT&T CAS Marketing Guide		

ATTRIBUTE SPECIFICATIONS

An attribute is required to specify the customer's primary and secondary carrier, and the method by which the telephone company bills local calls. Use the following table to determine the appropriate attribute. If you cannot meet your customer's needs using the table, then follow the instructions for the CAL 51 attribute, (see next page.).

LOCAL BILLING METHOD FOR:		PRIMARY CARRIER / SECONDARY CARRIER				
Extended Local Calling Area	Local Calling Area	AT&T Only	MCI AT&T	AT&T MCI	GTE AT&T	AT&T GTE
NO EXTENDED LOCAL EXCHANGES	Not Known	CAL 01	CAL 11	CAL 21	CAL 31	CAL 41
	Flat Rate	CAL 02	CAL 12	CAL 22	CAL 32	CAL 42
	Message Rate	CAL 03	CAL 13	CAL 23	CAL 33	CAL 43
	Measured Rate	CAL 04	CAL 14	CAL 24	CAL 34	CAL 44
MESSAGE RATE FOR EXTENDED LOCAL EXCHANGES	Flat Rate	CAL 05	CAL 15	CAL 25	CAL 35	CAL 45
MEASURED RATE FOR EXTENDED LOCAL EXCHANGES	Flat Rate	CAL 06	CAL 16	CAL 26	CAL 36	CAL 46
	Measured Rate	CAL 07	CAL 17	CAL 27	CAL 37	CAL 47
	Message Rate	CAL 08	CAL 18	CAL 28	CAL 38	CAL 48

DEFAULT VALUE: CAL01

DEFINITIONS:

Local Call Area: Those exchanges that are billed using a local rate.

Extended Local Calling Area: A group of exchanges outside the customer's local calling area that are also considered as local exchanges for billing purposes.

Flat Rate: There is no charge for calls made within the local calling area. There is a line charge.

Message Rate: The customer pays a fixed amount for each local call.

Measured Rate: The customer pays a certain amount dependent upon the duration of the call.

Primary Carrier: The long distance carrier selected with "1-Plus" dialing.

DEFINITIONS (CONTINUED):

Secondary Carrier:	An alternate long distance carrier that is selected by dialing "1-0" followed by the carrier's three digit code in equal access areas, or by dialing the carrier's local telephone number in other areas.
Not Known:	If there are no options for local billing service in your area, or if you are not certain of your local billing method, then the prevailing billing method for your area is selected for you.

CAL51

If you cannot describe your customer's needs using this table, then you should select CAL51 and immediately FAX or mail the answers to the following questions directly to the order processing center:

Customer Name:
Location Telephone Number:
DOSS Order Number:
Primary Carrier:
& Contact Number:
Secondary Carrier:
& Contact Number:
Local Billing Method:
Account Executive:
& Contact Number:

Send to:

AT&T CAS Order Processing
300 Main Street
East Rochester, NY 14445
FAX NO: 716-381-9553

FIGURE 1
AT&T CALL ACCOUNTING SYSTEM MODEL 100 TYPICAL CONFIGURATION

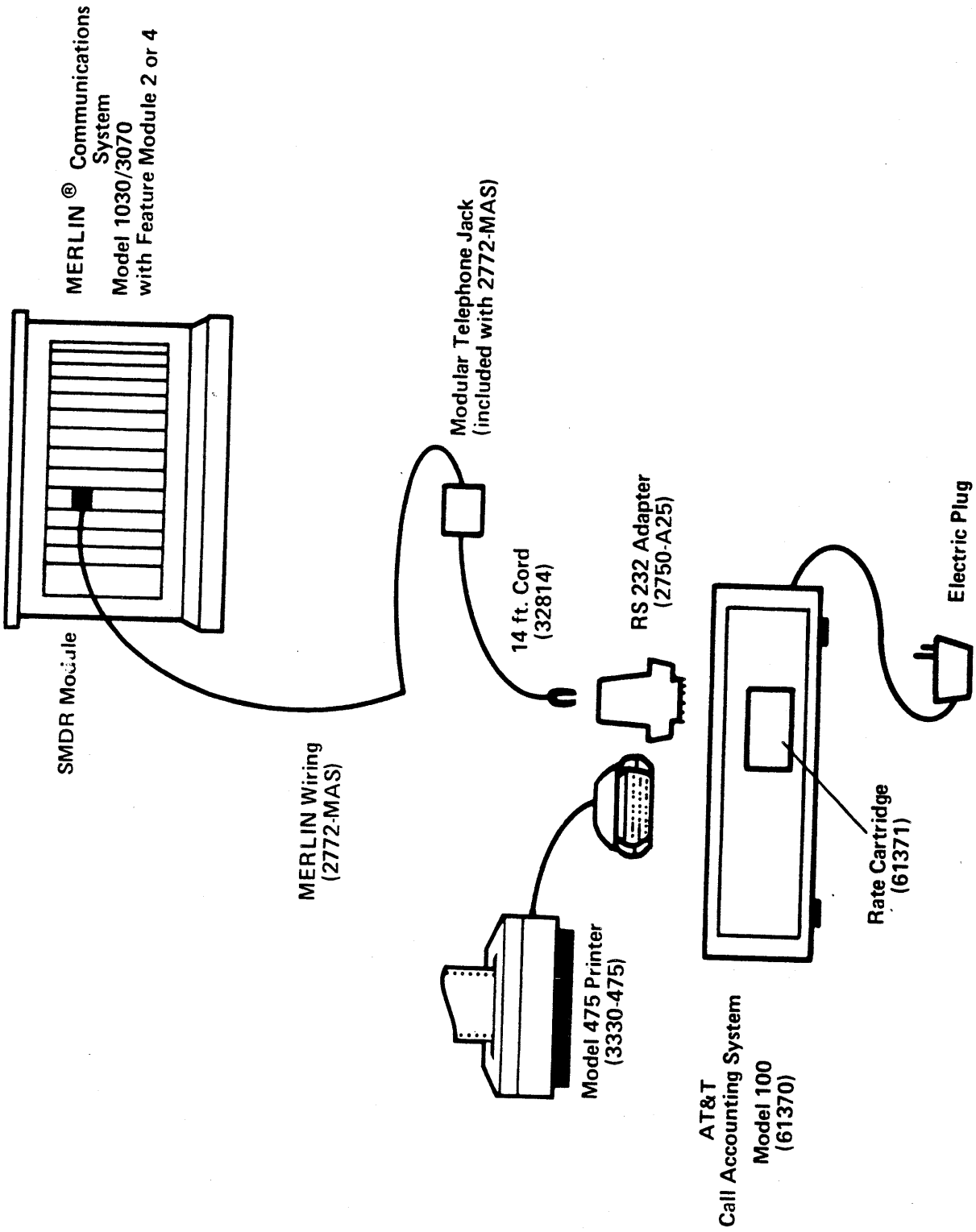


FIGURE 2
AT&T CALL ACCOUNTING SYSTEM MODEL 200
TYPICAL CONFIGURATION

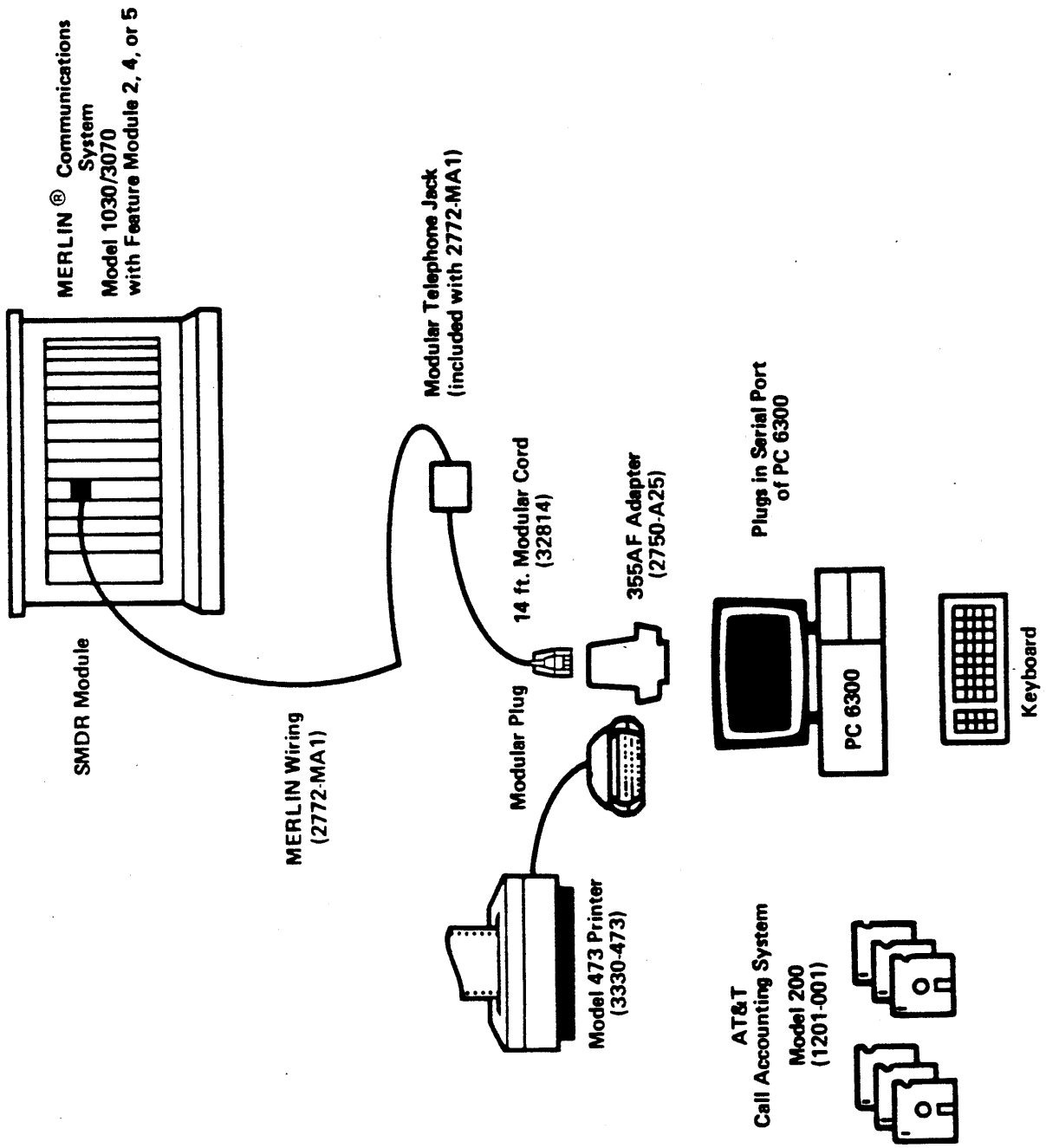


FIGURE 3 SYSTEM 25 SMDR CONNECTIONS

For Connections Of Less Than
50 Feet -- Not Through Station
Interconnect Panel (SIP)

Option 1

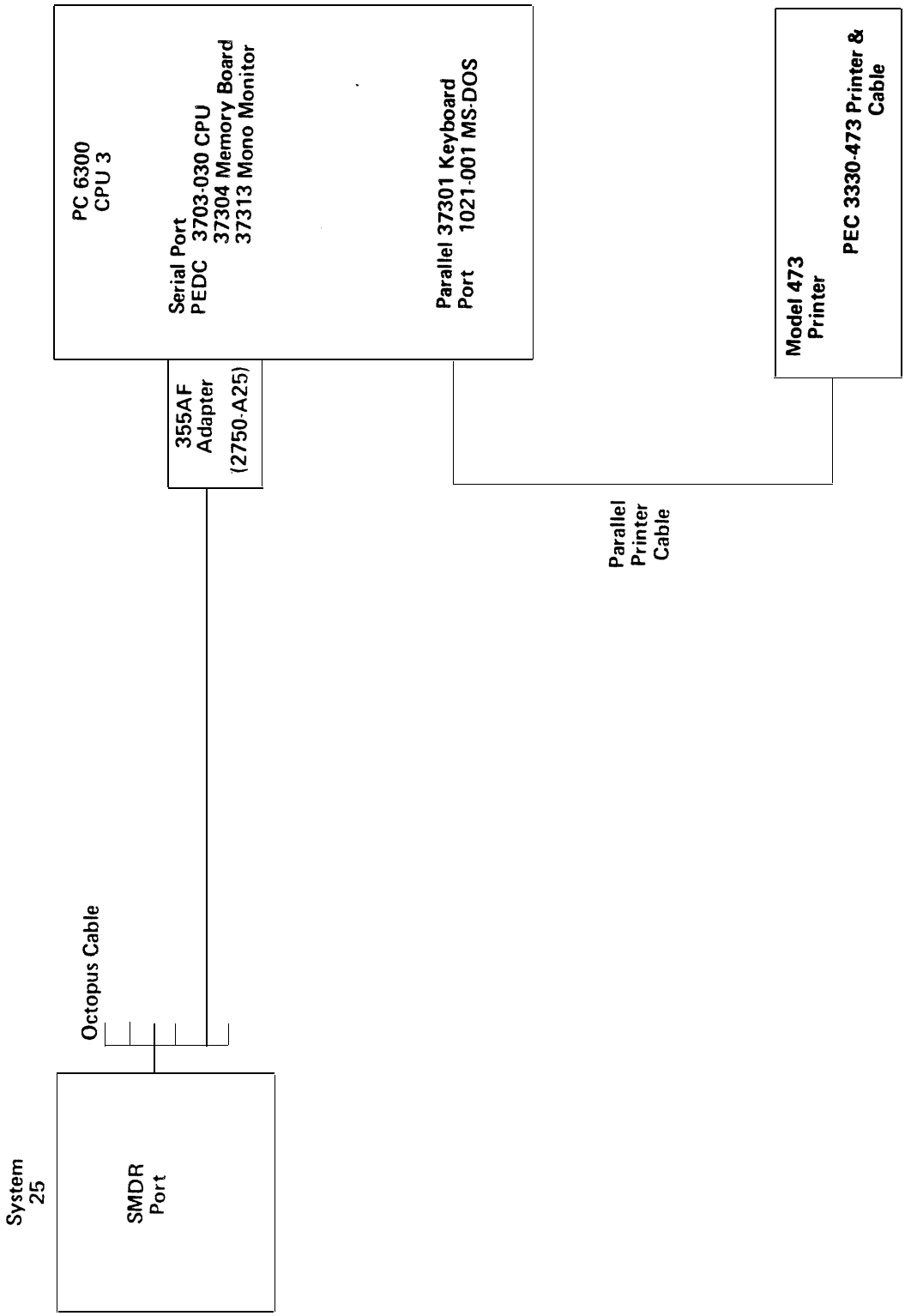


FIGURE 4 SYSTEM 25 SMDR CONNECTIONS

For Connections Of Less Than
50 Feet – Through Station
Interconnect Panel (SIP)

Option 2

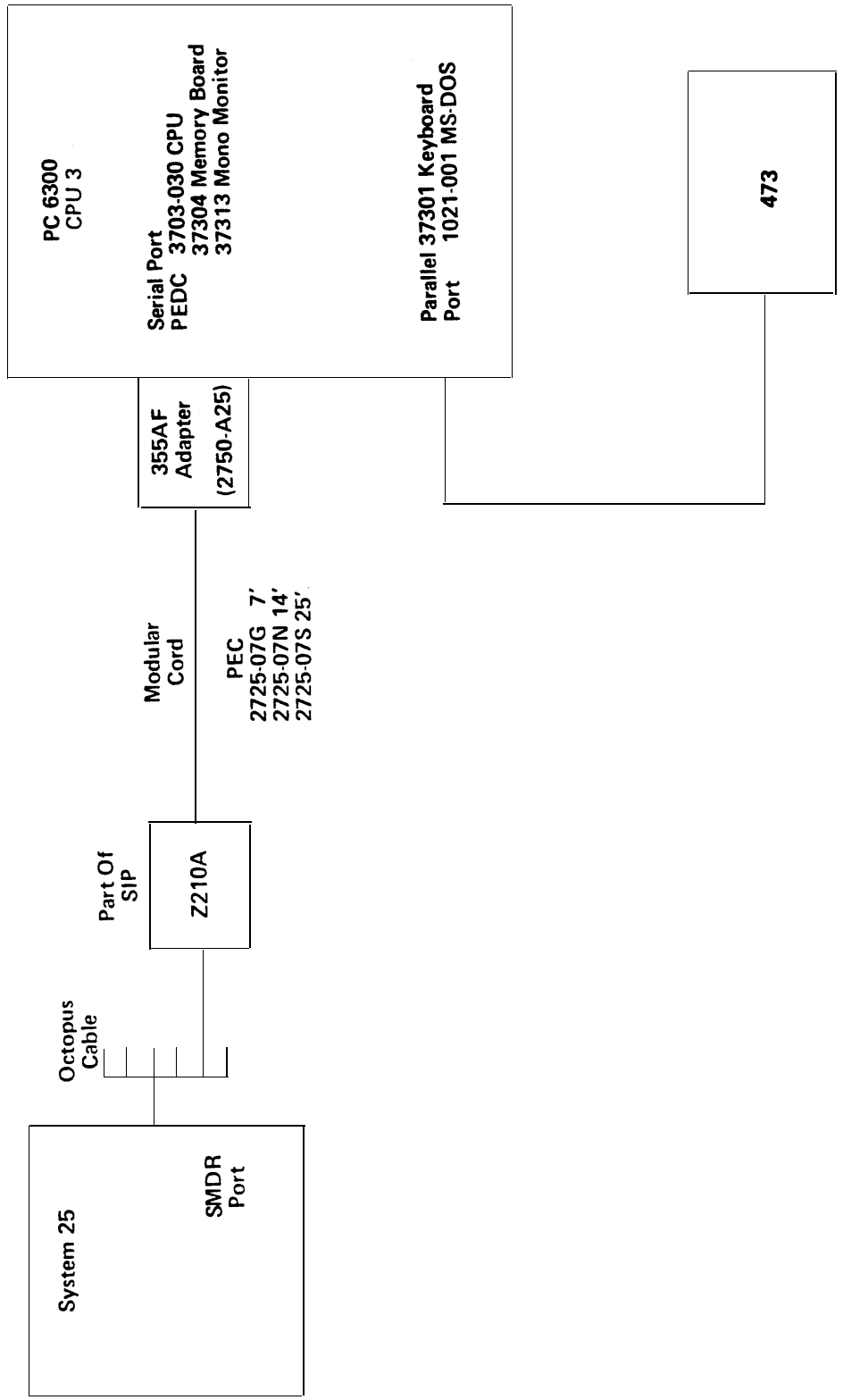
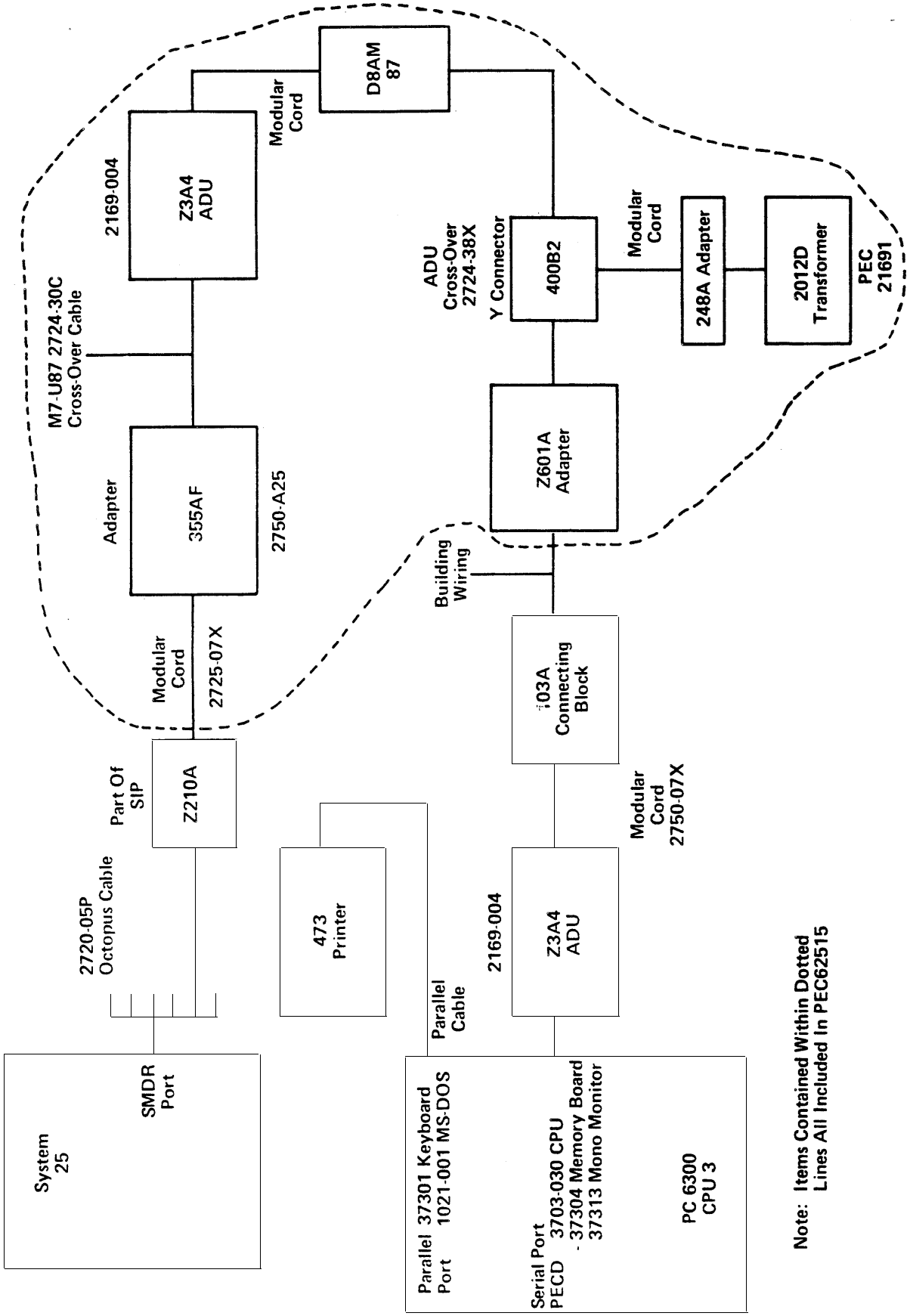


FIGURE 5 SYSTEM 25 SMDR CONNECTIONS

For Connections Greater Than
50 Feet — Through SIP

Option 3



Note: Items Contained Within Dotted Lines All Included In PEC62515

FIGURE 6 SYSTEM 75 SMDR CONNECTIONS