5340 SYSTEM UNIT

PURPOSE

Contains main storage, disk storage, diskette drive, facilities for addressing main storage, and logical processing circuits and control for I/O units on System/34.

MODELS

Model	Main Storage	Diskette	Disk Storage Capacity (MB)
A11	32K	Diskette 1	8.6
A12	32K	Diskette 1	13.2
A13	32K	Diskette 1	27.1
A14	32K	Diskette 1	63.9
A15	32K	Diskette 1	128.4
A21	32K	Diskette 2D	8.6
A22	32K	Diskette 2D	13.2
A23	32K	Diskette 2D	27.1
A24	32K	Diskette 2D	63.9
A25	32K	Diskette 2D	128.4
A31	32K	Magazine	8.6
A32	32K	Magazine	13.2
A33	32K	Magazine	27.1
A34	32K	Magazine	63.9
A35	32K	Magazine	128.4
B11	48K	Diskette 1	8.6
B12	48K	Diskette 1	13.2
B13	48K	Diskette 1	27.1
B14	48K	Diskette 1	63.9
B15	48K	Diskette 1	128.4
B21	48K	Diskette 2D	8.6
B22	48K	Diskette 2D	13.2
B23	48K	Diskette 2D	27.1
B24	48K	Diskette 2D	63.9
B25	48K	Diskette 2D	128.4
B31	48K	Magazine	8.6
B32	48K	Magazine	13.2
B33	48K	Magazine	27.1
B34	48K	Magazine	63.9
B35	48K	Magazine	128.4
C11	64K	Diskette 1	8.6
C12	64K	Diskette 1	13.2
C13	64K	Diskette 1	27.1
C14	64K	Diskette 1	63.9
C15	64K	Diskette 1	128.4
C21	64K	Diskette 2D	8.6
C22	64K	Diskette 2D	13.2
C23	64K	Diskette 2D	27.1
C24	64K	Diskette 2D	63.9
C25	64K	Diskette 2D	128.4
C31	64K	Magazine	8.6
C32	64K	Magazine	13.2
C33	64K	Magazine	27.1
C34	64K	Magazine	63.9
C35	64K	Magazine	128.4
C36	64K	Magazine	192.9
C37	64K	Magazine	257.4
D11	96K	Diskette 1	8.6
D12	96K	Diskette 1	13.2
D13	96K	Diskette 1	27.1
D14	96K	Diskette 1	63.9
D15	96K	Diskette 1	128.4
D21	96K	Diskette 2D	8.6
D22	96K	Diskette 2D	13.2
D23	96K	Diskette 2D	27.1
D24	96K	Diskette 2D	63.9
D25	96K	Diskette 2D	128.4
D31	96K	Magazine	8.6
D32	96K	Magazine	13.2
D33	96K	Magazine	27.1
D34	96K	Magazine	63.9
D35	96K	Magazine	128.4
D36	96K	Magazine	192.9
D37	96K	Magazine	257.4
E11	128K	Diskette 1	8.6
E12	128K	Diskette 1	13.2
E13	128K	Diskette 1	27.1
E14	128K	Diskette 1	63.9
E15	128K	Diskette 1	128.4
E21	128K	Diskette 2D	8.6
E22	128K	Diskette 2D	13.2
E23	128K	Diskette 2D	27.1
E24	128K	Diskette 2D	63.9
E25	128K	Diskette 2D	128.4
E31	128K	Magazine	8.6
E32	128K	Magazine	13.2
E33	128K	Magazine	27.1
E34	128K	Magazine	63.9
E35	128K	Magazine	128.4
E36	128K	Magazine	192.9
E37	128K	Magazine	257.4
F22	256K	Diskette 2D	13.2
F23	256K	Diskette 2D	27.1
F24	256K	Diskette 2D	63.9
F25	256K	Diskette 2D	128.4
F33	256K	Magazine	27.1
F34	256K	Magazine	63.9
F35	256K	Magazine	128.4
F36	256K	Magazine	192.9
F37	256K	Magazine	257.4

Minimum System Configuration: A 5340 System Unit, a display/console (5251 mdl 1, 11, or 999, 5252, 5291, or 5292), and printer (serial -- 5219, 5256, ... line -- 5211, 5224, 5225, or 3262). A system printer must be provided to satisfy IBM maintenance requirements when using System Support Program (5726-SS1) or Preconfigured System Support Program (5726-SS2). Special microcode for the Preconfigured System Support Program (5726-SS2) must also be specified.

HIGHLIGHTS

- Multiple workstation system capability
- Multiprogramming and printer spooling provided with System Support Licensed Program (5726-SS1)
- Multiprogramming and printer spooling for entry level systems with Preconfigured System Support Program (5726-SS2)
- Extension of System/32 capabilities
- Local and remote workstation attachment flexibility:
  - 5219 Printer
  - 5224 Printer
  - 5225 Printer
  - 5251 Display Station
  - 5252 Dual Display Station
  - 5256 Printer
  - 5291 Display Station
  - 5292 Color Display Station
- I/O units:
  - 1255 Magnetic Character Reader
  - 3262 Printer
  - 5211 Printer
  - 5219 Printer
  - 5224 Printer
  - 5225 Printer
- Diskette Magazine Drive
- Communications capability via BSC or SDLC through attachment of one to four lines
- Easy-to-use workstation utility programming support available
- Facilities to provide high-level of system availability
- Main Storage Failure Recovery
- Scientific Instruction Set
- Fixed interval timer
- Address Translation Registers
- Storage protection
- MICR document processing capability
- 5211/3262 translation tables for character substitution

Processor Unit: The main storage processor represents a hardwired System/3 language processor with 32K, 48K, 64K, 96K, 128K, or 256K bytes of main storage. A microprocessor, with 16K words of control storage, operates in parallel with the main storage processor, and supports a microcoded control function and each of the I/O devices. The processor unit uses a combination of LSI/MSI - large and medium scale integration for the logic circuitry. Memory technology is Metal Oxide Semiconductor Field Effect Transistor (MOSFET). Data and instructions are stored as EBCDIC characters. Each EBCDIC character is stored in an 8-bit byte. A ninth bit is added for parity checking. Main storage internal cycle time is 600 nanoseconds.

Workstation Controller: The 5250 Information Display System devices (5251 mdls 1, 11, and 999 Displays, 5252 Dual Displays, 5291 Displays, 5292 Color Displays, 5219 Printer, 5224 Printer, 5225 Printer and the 5256 Printer), used as locally attached System/34 workstations, attach to a controller in the 5340 System Unit via four twinaxial cable connectors on the 5340.

One cable connector must be dedicated to attachment of a 5251 mdl 1, 11, or 999, or 5252, or 5291, or 5292 to be used as the system console. **Note:** If the 5291 or 5292 is to be attached to the System/34, the system must be at SSP Release 7 level or higher. Also, if the 5291 or 5292 is to be used as the console the System/34 must be at Diagnostic Release Level 9.2 or higher. For maintenance reasons, only one of the above machine types 5251, 5252 or 5291 should be attached to this cable. A 6 meter (20 foot) twinaxial cable is provided with the 5340 for attachment of the system console.

Up to three additional cables may be connected to the 5340 for attachment of additional workstation devices. A maximum of 16 display stations and printers (the 5252 counts as two display stations), including the console, may be attached when the optional Workstation Control Expansion B (#4901) is installed. The maximum length of any one twinaxial cable attached to the 5340 cable connector is 1,525 meters (5,000 feet). Multiple workstations (up to seven) may be attached to one cable via the Cable-Thru on the display station or printer (Cable-Thru is a standard capability on the 5291 Display

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Station). See *IBM System/34 Installation Manual - Physical Planning* (GA21-9242).

Diskette: Included in the mdls X1X of the System Unit is the Diskette 1 drive, mdls X2X incorporate the Diskette 2D drive, and the mdls X3X use the Diskette Magazine drive.

The Diskette 1 drive is capable of reading and writing the Diskette 1 in Basic format or Extended format. The Diskette 2D drive can read and write either the Diskette 1 (Basic or Extended format) or the 2-sided double density Diskette 2D (Basic or Extended format).

The Diskette Magazine drive can process individual diskettes or magazines. The magazine holds up to ten operator accessible diskettes. The magazine drive can accommodate two magazines and three individual diskettes. The selecting of diskettes within a magazine, and proceeding from the first magazine to the second, is automatic (under program control). The magazines will typically be used for Save/Restore functions. The three individual slots may be used for smaller jobs. Selection of up to three individual diskettes is automatic (under program control). Both Diskette 1 (Basic or Extended format) or the 2-sided double density Diskette 2D (Basic or Extended format) can be used in the Diskette Magazine. The select cycle time (eject diskette, move to next diskette, load diskette) is approximately three seconds.

The compatible media for data exchange with other devices such as 3740 is the Diskette 1 in Basic format or the 5280 is the Diskette 1 or 2D in Basic format. The formats for diskettes are:

	Diskette 1	Diskette 2D
Data Tracks/Diskette	74	148 (74 Cylinders)
Capacity		
Basic Format		
Bytes/Sector	128	256
Sectors/Track	26	26
Tracks/Cylinder	1	2
Data Bytes/Diskette	246,272	985,088
Extended Format		
Bytes/Sector	512	1,024
Sectors/Track	8	8
Tracks/Cylinder	1	2
Data Bytes/Diskette	303,104	1,212,416

The data transfer rate for the Diskette 1 drive is 31.2KB/sec; for Diskette 2D drive it is 62.5KB/sec (using Diskette 2D); and for the Diskette Magazine drive it is 125.0KB/sec (using Diskette 2D).

"Read or Write" of diskettes is overlapped with processing and other device functions except disk storage data transfer. All diskette seek operations are overlapped with processing and I/O devices.

Disk Storage: The 5340 System Unit can contain one of seven disk storage capacities. The disk storage is physically non-removable, high speed, direct access media, and the primary processing file in the system. Programs and data are stored on the disk for processing. Data can be stored off-line for security or backup purposes by first copying the data from disk storage to either of the two diskette media. The System/34 with the Diskette 1 drive, the Diskette 2D drive, or the Diskette Magazine drive, plus a multiprogramming capability provide flexible combinations to optimize diskette functions with system disk storage. Disk storage capacities available to the users may be reduced by the installation of optional features.

Disk Storage Specifications:

	8.6MB	13.2MB	27.1MB	63.9MB
Bytes/Sector	256	256	256	256
Bytes/Cylinder	46,080	46,080	46,080	180,224
Disk Spindles	1	1	2	1
Cylinders	187	288	589.33	354.5
Capacity *	8,616,960	13,271,040	27,156,480	63,905,792
Access Time (ms)				
Cyl-to-Cyl	10	10	10	9
Average **	33	38	38	27
Maximum	55	70	70	46
	(201 cyl/ spindle)	(302 cyl/ spindle)	(302 cyl/ spindle)	(359 cyl/ spindle)
Rotational Speed (rpm)	2,964	2,964	2,964	3,125
Data Transfer Rate (MB/sec)	.889	.889	.889	1.031

	128.4MB	192.9MB	257.4MB
Bytes/Sector	256	256	256
Bytes/Cylinder	180,224	180,224	180,224
Disk Spindles	2	3	4
Cylinders	712.5	1,070.5	1,428.5
Capacity *	128,425,984	192,946,176	257,466,368
Access Time (ms)			
Cyl-to-Cyl	9	9	9
Average **	27	27	27
Maximum	46	46	46
	(359 cyl/ spindle)	(359 cyl/ spindle)	(359 cyl/ spindle)
Rotational Speed (rpm)	3,125	3,125	3,125
Data Transfer Rate (MB/sec)	1.031	1.031	1.031

* These capacities (available to the user) may be reduced by installation of optional features. See "Limitations" under optional feature MLCA (#4500), and Workstation Control Expansion C (#4902).

** Average of all possible disk accesses.

System Console: A system console is not a component of the 5340 System Unit. The system console may be a 5251 Display Station, mdl 1, 11, or 999 a 5252 Dual Display Station, a 5291 Display Station, or a 5292 Color Display Station which is physically attached to the System Unit similar to other locally attached workstation devices. When using the 5291 or 5292 as the system console, the System/34 must be at SSP Release 7 or higher and Diagnostic Release Level 9.2 or higher. For system operation and service reasons, the console is required to be located within 6 meters (20 feet) of the System Unit. Its primary use is to facilitate operator control of the system via operator commands and to allow the operator to respond to system messages presented on the display. It may also be used as a data entry/inquiry workstation, interacting with a user application. The mode of operation is easily switched from workstation mode to console mode for servicing system requests.

Customer Responsibilities: The customer must be advised, in writing, of certain responsibilities related to the installation and maintenance of common carrier facilities/services as well as the IBM equipment. For further information see M2700 pages.

The marketing representative must have the customer obtain a firm installation date for the start of transmission services (including any required modems) prior to processing Order Confirmation.

SPECIFY

- Voltage (AC, 1-phase, 60 Hz): Specify **#9902** for 208V or **#9904** for 230V.
- Color: Pearl white only (no specify code required).
- Communications Cable (with #2500, #3500): Required for attaching System/34 to the communications facility regardless of whether an IBM integrated modem, an external modem, or DDSA is used. Specify **#9460** for a 6 meter (20 foot) cable or **#9461** for a 12 meter (40 foot) cable. Specify this cable only once per system. If two Communications Adapters are installed, the cable length will be the same on both.

  The communications cable for MLCA (#4500) will be 12 meters (40 feet) for each line. No specify for cable length is required nor can one be made. The cable for the 4800 bps Integrated Modem with Auto-Answer and Integrated Protective Coupler (#536X) will be 5.5 meters (18 feet).
- Twinaxial Cable: A 6 meter (20 foot) twinaxial cable is included with the system unit for the system console [5251 mdl 1, 11, or 999, 5252, 5291, or 5292]. A 6 meter (20 foot) cable is also included if a 5224, 5225 or 5256 Printer is used as the system printer . See M5251, 5252, 5291, 5292, 5224, 5225, and 5256 pages for additional workstation cable order information.
- System Printer: Specify **#9301** if 5211 mdl 1 is attached; **#9302** if 5211 mdl 2 is attached; **#9303** if 3262 mdl B1 is attached; **#9306** or if a 5256 is the system printer (no 5211 or 3262); **#9308** if a 5224 is the system printer, or **#9307** if a #5225 is the system printer (no 5211 or 3262).
- Up-Ending Kit: (**#9845**) enables the 5340 to be up-ended for installation or moving purposes. This kit is furnished only as necessary and remains the property of IBM.

Notes:

1. I/O Unit Attachments: Appropriate special features are required to attach some I/O units. See "Special Features".
2. System Support Licensed Program (5726-SS1): Should be ordered at equipment order entry time. See System Support Program (5726-SS1) for additional information.
3. Refer to *IBM System/34 Installation Manual - Physical Planning* (GA21-9242) for physical installation requirements.

SPECIAL FEATURES

Non-Communications Features

1255 Attachment (#1100): Required to attach 1255 Magnetic Character Reader mdls 1, 2, or 3. **Limitations:** The 1255 attachment cannot operate with the Communications Adapter (#2500, #3500) which has been assigned as the low-priority line. therefore, only the Communications Adapter (#2500, #3500) with the high-priority address can be used while operating the 1255. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** Processor Unit Expansion A and/or E may be required on certain mdls. See "Processor Unit Expansion

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Feature Configurator" and *IBM System/34 Installation Manual - Physical Planning* (GA21-9242) for cabling information.

1255 Attachment Expansion (#1105): Required when using the System/34 Assembler Macros to provide 1255 stacker logic programs. This feature provides an additional 28K of user programmable storage. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #1100.

5211/3262 Base Printer Attachment (#1110): Required when attaching either the 3262 or the 5211 Printer. **Maximum:** One. **Field Installation:** Yes.

Keylock (#4655): Replaces on/off power switch to protect against unauthorized use. See "Accessories" for information concerning additional keys. **Maximum:** One. **Field Installation:** Yes.

Internal Clock (#4703): Generates synchronizing and timing signals for BSC or SDLC operation when they are not provided by the modem on either Communications Adapter (#2500 or #3500). Clocking speeds available with this feature are 600 bps and 1200 bps. Selection of full or half-speed is indicated via a system utility program. When this feature is installed on System/34, all other BSC or SDLC stations attached to the same data link must also be equipped with a similar IBM Internal Clock feature. See IBM, for determination of the feature's requirement with planned modems. **Maximum:** One per system; will handle either or both lines. **Field Installation:** Yes. **Prerequisites:** Communications Adapter (#2500 or #3500), Interface (#3701 or #3702) or 1200 bps Integrated Modem (#5500, #5501, #6500, or #6501).

Workstation Control Expansion A (#4900): Required if Magnetic Stripe Reader (#4910) is installed on any 5251 or 5252 that is locally attached to the 5340. Also required when using the 3270 Device Emulation Licensed Program (5726-EM1). **Limitations:** May not be installed with Workstation Control Expansion B (#4901). **Maximum:** One. **Field Installation:** Yes.

Workstation Control Expansion B (#4901): Required when attaching nine to sixteen 5250 workstations and/or printers locally to the 5340 System Unit. This feature also contains the control necessary if Magnetic Stripe Readers (#4910) are installed on any 5251 or 5252 that is locally attached to the 5340. Also required when using the 3270 Device Emulation Licensed Program (5726-EM1). **Limitations:** May not be installed with Workstation Control Expansion A (#4900). **Maximum:** One. **Field Installation:** Yes.

Multinational Control (#4905): Required if Multinational Character Set (#4905) is installed on any 5251 or 5252 attached to the 5340 or if #9470 is installed on any 5224, 5225 or 5256. **Maximum:** One. **Field Installation:** Not recommended for field installation.

Internal Clock (#5321): Generates synchronizing and timing signals for BSC or SDLC operation when they are not provided by the modem used with any of the Line Base Adapters on the Multiline Communications Adapter (#4500). Clocking speeds available with this feature are 600 and 1200 bps. Selection of full or half-speed and the appropriate line is indicated via a system utility program. When this feature is installed on System/34, all other BSC or SDLC stations attached to the same data link must also be equipped with a similar IBM Internal Clock feature. See IBM, for determination of the feature's requirement with planned modems. **Maximum:** One per system; will handle one to four lines. **Field Installation** Yes. **Prerequisites:** #4500 and EIA Interface or 1200 bps Integrated Modem for the MLCA.

Processor Unit Expansion A (#5732): This is a feature I/O board required for 1255 Attachment (#1100). Not required on XX3 (27.1MB) mdls. **Limitations:** See "Processor Unit Expansion Feature Configurator". **Maximum:** One. **Field Installation:** Yes.

Processor Unit Expansion B (#5733): Additional power for communications. Required for 2400 bps Integrated Modem (#5600, #6600, #5601, #6601, #5602, #6602, #5610, #6610). Not required on XX4, XX5, XX6 and XX7 mdls. **Limitations:** See "Processor Unit Expansion Feature Configurator". **Maximum:** One. **Field Installation:** Yes.

Processor Unit Expansion C (#5734): I/O modem regulator required for Interface (#3701 or #3702), or 1200 bps Integrated Modem, (#5500, #5501, #6500, #6501). Not required on XX4, XX5, XX6, and XX7 mdls. Not required if Processor Unit Expansion B (#5733) is already installed. **Limitations:** Not used with the MLCA (#4500). See "Processor Unit Expansion Feature Configurator". **Maximum:** One. **Field Installation:** Yes.

Processor Unit Expansion D (#5735): Gate Assembly required for 2400 bps Integrated Modem (#5600, #6600, #5601, #6601, #5602, #6602, #5610, #6610). See "Processor Unit Expansion Feature Configurator". **Maximum:** One. **Field Installation:** Yes.

Processor Unit Expansion E (#5736): Additional power required for 1255 Attachment (#1100) on certain mdls. See "Processor Unit Expansion Feature Configurator". **Maximum:** One. **Field installation:** Yes.

Processor Unit Expansion Feature Configurator:

	5340 Mdls				
			X14		
			X15		
			X24		
			X25		
	X11		X34		
	X12		X35		
	X21	X13	X36	X31	
	X22	X23	X37	X32	X33
Attachments					
#1255	A	-	A, E	A, E	E
EIA/1200 IM *	C **	C **	-	C **	C **
2400 IM *	B, D	B, D	D	B, D	B, D

* These IM (Integrated Modem) features apply only to the First or Second Communications Adapter (#2500 or #3500).

** C is not required if both B and 2400 IM are installed.

Notes: Processor Unit Expansion Features required for communications features (EIA Interface or Integrated Modems) are required only once per system regardless of whether one or two Communications Adapters (#2500 or #3500) are installed. If 2400 bps Integrated Modem is installed on either Communication Adapter (#2500, #3500), order Processor Unit Expansion Feature B and D. If 2400 bps Integrated Modem is not installed on either Communications Adapter, order Processor Unit Expansion C for EIA or 1200 bps Integrated Modem. No Processor Unit Expansion Feature is required if DDSA is installed on both Communications Adapters.

5211 Printer Attachment (#5811): Required to attach a 5211 Printer mdl 1 or 2. A translation capability provides for use of translation tables for substituting characters when the characters to be printed are not contained on the print belt. **Limitations:** Cannot be installed with 3262 Printer Attachment (#5815). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** See "System Printer" in "Specify" above. 5211/3262 Base Printer Attachment (#1110).

3262 Printer Attachment (#5815): Required to attach a 3262 mdl B1 Printer. A translation capability provides for use of translation tables for substituting characters when the characters to be printed are not contained on the print belt. **Limitations:** Cannot be installed with 5211 Printer Attachment (#5811). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** See "System Printer" in "Specify" above. 5211/3262 Base Printer Attachment (#1110).

Communications Features

Communications Adapters - General: System/34 can attach up to four communications lines depending upon the adapters selected. Three separate adapters are available. The First and Second Communications Adapters (#2500 and #3500) allow one line each to be attached to the system. When these adapters are used, a total of two communications lines can be attached. The Multiline Communications Adapter (MLCA - #4500) can provide for attachment of from one to four communications lines but is mutually exclusive with the First and Second Communications Adapters. The MLCA has up to four Line Base Adapters, each allowing attachment of one line.

Below is a discussion of the communications hardware support: (1) common to both BSC and SDLC, (2) specific to BSC support, and (3) specific to SDLC support.

1. Support Common to Both BSC and SDLC:

   Communications Adapters #2500 and #3500 will allow System/34 to communicate on a nonswitched point-to-point or multipoint line at speeds up to 9600 bps and on a switched point-to-point line at speeds up to 4800 bps. Each adapter operates independently under program control; however, the maximum aggregate bit rate for adapters #2500 and #3500 operating concurrently is 9600 bps. The maximum aggregate bit rate for all lines for adapter #4500 is 65,600 bps. When one line operates at 19,200, 48,000, 50,000, or 56,000 bps, the remaining lines are restricted to a total aggregate rate of 9600 bps. See M2700 pages for information on communication facilities.

   The System/34 operates as a control station on a multipoint line for the 5251 mdl 2 or 12, 3601, 3694, 4701, System/36, and another System/34, all under SDLC. If the other device on a multipoint line is a control station, the System/34 operates as a tributary station for BSC or a secondary station for SDLC. Otherwise, communication with other devices must be on a point-to-point line only.

   Each communications adapter will operate in half-duplex mode over dial (switched network) facilities, and half-duplex mode over nonswitched (or equivalent private) communications lines which may be duplex or half-duplex facilities. Operation of each feature will be overlapped at all transmission rates with processing and/or I/O device operations. See tables below. Units at each termination, or drop point, of a communications line to which the System/34 is attached must use the same clocking source (modem

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or business machine) and must be set to operate at the same transmission rate and to use the same transmission code. Compatible modems must be used at all terminations on a network and must use the same mode of attachment (2- or 4-wire). Switched network versions include, as a basic capability, support of Manual Dial and Manual or Auto-Answer (where the attached modem supports this capability) operations.

2. Support Specific to BSC Operations:

   The communication adapter allows operation in BSC mode as requested by the executing program.

   See the System/34 programming pages for a description of the program support provided for this feature. ASCII, EBCDIC, or EBCDIC Text Transparency are standard. ASCII or EBCDIC transmission codes are selected at program compilation time. In conjunction with stored program control, this feature permits System/34 to function on a switched or nonswitched communications line as a processor/terminal communicating in binary synchronous mode with:

   - A Series/1 equipped with BSCA (#2074, #2075, #2093, or #2094) (as a System/3).
   - A System/3 equipped with #2074, #2084, or #2094.
   - A System/7 equipped with BSCA (#2074) (as a System/3).
   - A System/32 equipped with #2074.
   - Another System/34 equipped with #2500, #3500, or #4500.
   - A System/36 equipped with #2500 or #4500.
   - A System/38 with appropriately configured BSC adapter and subfeatures, (point-to-point only).
   - An S/360 mdl 20 equipped with #2074.
   - An S/370 via an Integrated Communications Adapter, a 4331 Communications Adapter, a 2701 Data Adapter Unit, a 2703 Transmission Control Unit, or a 3704/3705 Communications Controller with the Network Control Program (NCP) or the Partitioned Emulation Program (PEP), any of which are equipped with a binary synchronous adapter and appropriate sub-features.
   - A 3741 Data Station mdl 2 or 3741 Programmable Workstation mdl 4.
   - A 3747 Data Converter equipped with Communications Adapter (#1660).
   - A 5110 Computer equipped with BSCA #2074 (as a 3741 mdl 2 or 4).
   - A 5231 mdl 2 equipped with BSCA (#2074) (as a 3741 mdl 2 or 4 in transmit mode only).
   - A 5265 communicating mdl (point-to-point, batch transmission only).
   - A 5280 Distributed Data System equipped with #2500.

3. Support Specific to SDLC Operations:

   The communications adapter allows operation in SDLC mode as requested by the executing program. The System/34 provides SDLC communications support for multipoint line control when the 5251 mdl 2 or 12 Display Stations, 3601 Finance Communications Controller, 3694 Document Processor, 4700 Finance Communications System, System/36, or another System/34 are attached to the communications adapter. In conjunction with stored program control, this feature provides communications capability with 4331 Communications Adapter or a S/370, 303X, or 4300 via a 3704 or 3705 Communications Controller equipped with appropriate features. See M3704, 3705, or 4331 pages. Switched network backup and speed select modem features are not supported under program control when communicating with 5251 mdl 2, 12. See the System/34 programming pages for a description of the program support provided on System/34 for SNA/SDLC operations. ASCII support for 5251 mdl 2 or 12 is by RPQ only.

First Communications Adapter - BSC/SDLC (#2500): Required to attach a communications line via appropriate interface or modem. In conjunction with stored program control, this feature permits System/34 to function on a switched, nonswitched public or private communications line. The adapter provides both BSC and SDLC. The proper line protocol is loaded into the control processor at program execution time. The communications adapters (#2500 and #3500) operate at speeds up to 9600 bps on a nonswitched point-to-point or multipoint common carrier facility or equivalent privately owned communication facility and up to 4800 bps on a switched point-to-point facility. However, the aggregate bit rate when both adapters (#2500 and #3500) are operating concurrently is 9,600 bps. **Limitations:** Cannot be installed with Multiline Communications Adapter (#4500). SDLC support by System Support Program (5726-SS1) requires at least 48K bytes of main storage (5340 mdl BXX or larger). The 1255 attachment cannot operate concurrently with the Communications Adapter (#2500, #3500) which has been assigned as the low-priority line. Therefore only the Communications Adapter (#2500, #3500) with the high-priority address can be used while operating the 1255. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** One of the Integrated Modems, EIA Interface, or DDSA for this adapter. See "Specify" for required modem cable and attachment codes.

Second Communications Adapter - BSC/SDLC (#3500): Required to attach a second communications line via appropriate interface or modem. In conjunction with stored program control, this feature permits System/34 to function on a switched, nonswitched public or private communications line. The adapter provides both BSC and SDLC. The proper line protocol is loaded into the control processor at program execution time. The Communications Adapter features (#2500 and #3500) operate at speeds up to 9600 bps on a nonswitched point-to-point or multipoint common carrier facility or equivalent privately owned communication facility and up to 4800 bps on a switched point-to-point facility. However, the aggregate bit rate when both adapters (#2500 and #3500) are operating concurrently is 9600 bps. The Second Communications Adapter (#3500) may be physically attached to System/34 which also has the 1255 Attachment (#1100), but these two attachments (#1100 and #3500) cannot operate concurrently. **Limitations:** Cannot be installed with Multiline Communications Adapter (#4500). SDLC support by System Support Program (5726-SS1) requires at least 48K bytes of main storage (5340 mdl BXX or larger). The 1255 attachment cannot operate concurrently with the Communications Adapter (#2500, #3500) which has been assigned as the low-priority line. Therefore only the Communications Adapter (#2500, #3500) with the high-priority address can be used while operating the 1255. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500, one of the Integrated Modems, EIA Interface, or DDSA for this adapter. See "Specify" for required modem cable and attachment codes.

EIA Interface (#3701): Provides a cable and interface for attachment of an IBM modem or non-IBM modem meeting RS-232-C characteristics. Non-IBM modems may be attached subject to the Multiple Supplier Systems Policy. **Limitations:** Cannot be installed with 1200 bps Integrated Modem (#5500, #5501), or 2400 bps Integrated Modem (#5600, #5601, #5602, #5610), or DDSA (#5650, #5651). Maximum speed is 9600 bps. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500 and may require #5734. See "Processor Unit Expansion Feature Configurator". **Note:** This feature may also require Internal Clock (#4703) if the external modem does not provide its own clocking. See "Modem/Interface Feature Configurator".

EIA Interface (#3702): Provides a cable and interface for attachment of an IBM modem or non-IBM modem meeting RS-232-C characteristics. Non-IBM modems may be attached subject to the Multiple Supplier Systems Policy. **Limitations:** Cannot be installed with 1200 bps Integrated Modem (#6500, #6501) or 2400 bps Integrated Modem (#6600, #6601, #6602, #6610) or DDSA (#5652, #5653). Maximum speed is 9600 bps. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #3500 and may require #5734. See "Processor Unit Expansion Feature Configurator". **Note:** This feature may also require Internal Clock (#4703) if the external modem does not provide its own clocking. See "Modem/Interface Feature Configurator".

IBM Data Encryption Device (#3845, #3846): A 3845 or 3846 Data Encryption Device may be attached between the System/34 communications adapter and the external modem. **Limitations:** The 3845 or 3846 device operating with SDLC will not operate with NRZI transmission mode. **Prerequisites:** #3701, #3702, or #531X. **Note:** Refer to M2700, 3845, and 3846 pages for information on 3845 or 3846 configuration and communication capability.

Multiline Communications Adapter - MLCA (#4500): Four communications lines can be attached to System/34 using the MLCA. The MLCA is a microprocessor that operates in parallel with the main storage processor and other microprocessors in the system. Each communications line provides either BSC or SDLC protocol. The proper line protocol is loaded into the control processor at program execution time. This feature permits, in conjunction with stored program control, System/34 to function on a switched, nonswitched public or private communications line. Each communications line operates independently up to 9600 bps concurrently with the other lines. One line may operate at high-speed (above 9600 bps) independent of the other lines. However, the aggregate rate of the remaining lines must not exceed 9600 bps and the aggregate rate of all four lines must not exceed 65,600 bps. For BSC multipoint tributary operation, an auto-monitoring function is provided that allows the line to be monitored without a main storage program being required. In this mode, a negative response is sent to all polls and selects received from the host. For BSC processing to become active in main storage the operator must activate BSC data management. An SDLC auto-response mode is implemented in MLCA for secondary SDLC. The MLCA will handle some redundant supervisory responses, thus eliminating the need to always utilize the SDLC task is main storage for nonproductive activity. The MLCA in a primary SDLC environment off-loads from the main storage processor, the majority of the work required for nonproductive polling. In either case, an SNA/SDLC task must be active in main storage. The Multiline Communications Adapter (#4500) may be installed in place of the First and Second Communications Adapters (#2500 and #3500) providing for up to four communications lines. The maximum aggregate bit rate when all four lines of the MLCA are operating concurrently is 65,600 bps. One line may operate at 19,200, 50,000, or 56,000 bps, but the remaining lines must not exceed a total aggregate bit rate of 9600 bps. **Limitations:** When installed will reduce the disk storage available to the user by 80,640 bytes. Cannot be installed with First or Second

5340 System Unit (cont'd)

Communications Adapter (#2500 or #3500). SDLC support by System Support Program (5726-SS1) requires at least 48K bytes of main storage (5340 mdl BXX or larger). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** See "Specify" for mandatory attachment codes. A Line Base Adapter must be configured for each line. **Note:** The units position of features #53XX and #54XX corresponds to the line number position; e.g., #5301 refers to the Line Base Adapter for line 1.

Line Base Adapter (#5301, #5302, #5303, #5304): Required for attachment of communication lines to the MLCA. Each line is independent of the others and may be ordered in any sequence. However, it is recommended that lines be ordered and installed in sequence. **Limitations:** See "Multiline Communications Adapter Configurator" for possible combinations of features. **Maximum:** Four. **Field Installation:** Yes. **Prerequisites:** #4500 and an Integrated Modem, DDS Adapter, Wideband Adapter, Auto-Call Adapter, or EIA Interface.

EIA Interface (#5311, #5312, #5313, #5314): Provides a cable and interface for attachment of an IBM modem or non-IBM modem meeting RS-232-C characteristics. Non-IBM modems may be attached subject to the Multiple Supplier Systems Policy. **Limitations:** Cannot be installed with an Integrated Modem, Analog Wideband Adapter, Auto-Call Adapter, or DDS Adapter on the same Line Base Adapter. Maximum speed is 9600 bps. See "Multiline Communications Adapter Configurator" for possible combinations of features. **Maximum:** One per Line Base Adapter (four total). **Field Installation:** Yes. **Prerequisites:** The Line Base Adapter corresponding to line using the EIA Interface. This feature may also require Internal Clock (#5321) if the external modem does not provide its own 1200 bps clocking.

1200 bps Integrated Modem (#5331, #5332, #5333, #5334, #5341, #5342, #5343, #5344): A modem integrated into the system for SDLC or BSC data transmission at 1200 bps over nonswitched or switched facilities. Half-speed operation at 600 bps is indicated via system utility program. It is available in two different versions: #533X for nonswitched and #534X for switched with auto-answer. Attachment to the nonswitched (2- or 4-wire) facilities is via an IBM-provided cable directly to the line, type 3002. Attachment to the switched facilities is via an IBM-provided cable or to an FCC registered protective circuitry provided by the user. **Limitations:** Cannot be installed with EIA Interface, Analog Wideband Adapter, Auto-Call Adapter, another integrated modem, or DDS Adapter on the same Line Base Adapter. #533X and #534X cannot be installed together on the same Line Base Adapter. See "Multiline Communications Adapter Configurator" for possible combinations of features. **Maximum:** One per Line Base Adapter (four total). **Field Installation:** Yes. **Prerequisites:** Line Base Adapter corresponding to the line using the 1200 bps Integrated Modem and #5321. **Note:** The device communicating with System/34 must also be equipped with a 1200 bps Integrated Modem using the same 2-wire or 4-wire mode of attachment to the line.

4800 bps Integrated Modem (#5351, #5352, #5353, #5354, #5361, #5362, #5363, #5364): A modem integrated into the system for SDLC or BSC data transmission at 4800 bps over nonswitched facilities or switched network. Half-speed operation at 2400 bps is possible via a systems utility program. Configuration options such as "local speed control" or "remote speed control" are performed by Field Engineering at install time. For additional information on configuration options refer to M3864 pages. The 4800 bps modem is available in two different versions: #535X for nonswitched and #536X for switched with auto-answer and Integrated Protective Coupler (contingent upon FCC registration). Attachment to nonswitched (4-wire) facilities is via an IBM-provided cable directly to the line, type 3002 . Attachment to the switched network is directly to the line for the Integrated Protective Coupler . The 4800 bps Integrated Modem is equivalent to and compatible with the 3864 Modem. The device communicating with the System/34 must also be equipped with a 3864 compatible integrated 4800 bps modem or a stand-alone 3864 using the same 2- or 4-wire mode of attachment to the line. For additional information on the 3864, refer to *IBM 3863, 3864, 3865 Introduction and Site Preparation Guide* (GA27-3200).

Communications Facilities - Nonswitched Lines: Nonswitched modems attach to a 4-wire voiceband line, type 3002 (or equivalent). Special conditioning is not necessary. Attachment to the line is by a cable that is terminated with a 4-prong plug (WE 283B or equivalent). A 12 meter (40 foot) cable is furnished. The plug mates with a receptacle (WE 404B or 549A surface mount or 493A flush mount, or equivalent) which is connected to the line. The receptacle is a conventional item of communications equipment and is, upon customer request, ordinarily furnished by the telecommunications service supplier. Communications Facilities - Switched Lines: Switched modems attach to a 2-wire voiceband line. Attachment to the line is by a cable that is terminated with an 8-pin mini plug (USOC 45A or 41S). A 5.5 meter (18 foot) cable is furnished. The mini plug mates with a programmed data jack that is provided by the telecommunications service supplier.

Limitations: Cannot be installed with EIA Interface, 1200 bps Integrated Modem, Analog Wideband Adapter, Auto-Call Adapter, or DDS Adapter on the same Line Base Adapter. See "MLCA Feature Configurator" for possible combination of features. **Maximum:** One per Line Base Adapter; two per MLCA. **Field Installation:** Yes. **Prerequisites:** Line Base Adapter corresponding to the line using the 4800 bps Integrated Modem.

Digital Data Service (DDS) Adapter (#5391, #5392, #5393, #5394): An integrated adapter for BSC or SDLC data transmission at speeds of 2400, 4800, 9600, and 56,000 bps over the AT&T nonswitched Data-Phone® digital service network. The DDS Adapter interfaces to a channel service unit (not a Data Service Unit), the customer site termination of the DDS network. **Note:** This service is available only in certain cities within the U.S. The DDS Adapter may also be used to locally connect a System/34 to another supported device with a DDS Adapter. This connection requires a special accessory adapter cable and supports point-to-point connections only. No modem or channel service unit is required. See "DDS Adapter Connector" under "Accessories". **Limitations:** Cannot be installed with an Integrated Modem, Analog Wideband Adapter, Auto-Call Adapter, or EIA Interface on the same Line Base Adapter. When a DDS Adapter is operating at 56,000 bps, the other lines cannot exceed an aggregate rate of 9600 bps. See "Multiline Communications Adapter Configurator" for possible combinations of features. **Maximum:** One per Line Base Adapter (four total) **Field Installation:** Yes. **Prerequisites:** Line Base Adapter corresponding to the line using the DDS Adapter.

Analog Wideband Adapter (#5401, #5402, #5403, #5404): Provides a cable and interface for attachment of a WE 303 type modem or equivalent operating at 19,200 bps or 50,000 bps. Non-IBM modems may be attached subject to the Multiple Supplier Systems Policy. **Limitations:** Cannot be installed with an Integrated Modem, EIA Interface, Auto-Call Adapter, or DDS Adapter on the same Line Base Adapter. Other lines cannot exceed an aggregate speed of 9600 bps when operating in conjunction with the Analog Wideband Adapter. See "Multiline Communications Adapter Configurator" for possible combinations of features. **Maximum:** One per MLCA. **Field Installation:** Yes. **Prerequisites:** The Line Base Adapter corresponding to line using the Analog Wideband Adapter.

Auto-Call Adapter (#5411, #5412, #5413, #5414): Permits the System/34 when attached to a switched network facility via an appropriate external modem and Auto-Call unit, (meeting EIA Standard RS-366) to initiate a data link connection to a remote device. Provides automatic dialing under program control. An Auto-Call Adapter (#541X) must always be installed in conjunction with an Interface (#531X) on another line , thus utilizing two line positions on the MLCA. Therefore, the use of auto-call will reduce the total number of lines available. **Limitations:** Cannot be installed with an EIA Interface, Integrated Modem, Analog Wideband Adapter, or DDS Adapter on the same Line Base Adapter as the Auto-Call feature. See "Multiline Communications Adapter Configurator" for possible combination of features. **Maximum:** One per Line Base Adapter, two per MLCA. **Field Installation:** Yes. **Prerequisites:** Line Base Adapter corresponding to the line using the Auto-Call Adapter.

1200 bps Integrated Modem (#5500, #5501): A modem for SDLC or BSC data transmission at 1200 bps over nonswitched facilities or switched network. Half-speed operation at 600 bps is indicated via a system utility program. Available in two different versions: #5500 for nonswitched or #5501 for switched with auto-answer. Attachment to the nonswitched (2- or 4-wire) facilities is via an IBM-provided cable directly to the line, type 3002 . Attachment to the switched network is via an IBM-provided cable to an FCC registered protective circuitry of the CBS type (or equivalent) provided by the user . The device communicating with System/34 must also be equipped with a 1200 bps Integrated Modem. **Limitations:** Cannot be installed with Interface (#3701) or 2400 bps Integrated Modem (#5600, #5601, #5602, #5610), or DDSA (#5650, #5651). #5500 and #5501 cannot be installed together. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500, #4703, and may require #5734. See "Processor Unit Expansion Feature Configurator" and "Modem/Interface Feature Configurator".

2400 bps Integrated Modem (#5600, #5601, #5602): A modem for SDLC or BSC data transmission at 2400 bps over nonswitched facilities, equivalent to and compatible with similarly featured 3872 Modems. Available in three different versions: #5600 for nonswitched, point-to-point, #5601 for nonswitched, multipoint control and #5602 for nonswitched, multipoint tributary. Attachment to nonswitched (2- or 4-wire) facilities is directly to the line, type 3200 via an IBM-provided cable. The 2400 IM is equivalent to and compatible with the 3872 Modem. The device communicating with the System/34 must also be equipped with a 3872 compatible integrated 2400 bps modem or a stand-alone 3872 Modem. **Limitations:** Cannot be installed with Interface (#3701) or another Integrated Modem (#5500, #5501, #5610), or DDSA (#5650, #5651). #5600, #5601, and #5602, or #5610 cannot be installed together. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500, #5733 and/or #5735. See "Processor Unit Feature Expansion Configurator" and "Modem/Interface Feature Configurator".

5340 System Unit (cont'd)

2400 bps Integrated Modem (#5610): A modem for SDLC or BSC data transmission at 2400 bps over a switched network with automatic answer capability. This modem is equivalent to and compatible with similarly featured 3872 Modems. Half-speed operation at 1200 bps is indicated via a system utility program. Attachment to the switched network is via an IBM-provided cable to an FCC registered protective circuitry provided by the user, type CBS or equivalent. The 2400 IM is equivalent to and compatible with the 3872 Modem. The device communicating with the System/34 must also be equipped with a 3872 compatible integrated 2400 bps modem or a stand-alone 3872 Modem. **Limitations:** Cannot be installed with Interface (#3701) or another Integrated Modem #5500, #5501, #5600, #5601, #5602), or DDSA (#5650, #6551). **Maximum:** One. **Note:** This feature is not compatible with the 2400 bps Integrated Modem available on the 5251. **Field Installation:** Yes. **Prerequisites:** #2500, #5733 and/or #5735. See "Modem/Interface Feature Configurator" and "Processor Unit Expansion Feature Configurator". (

Digital Data Service (DDS) Adapter (#5650, #5651): An integrated adapter for BSC or SDLC data transmission at speeds of 2400, 4800 or 9600 bps over the AT&T nonswitched Data-Phone® digital service network. The DDSA interfaces to a DDS channel service unit (not a Data Service Unit), the customer site termination of the DDS network. Available at three speeds: 2400, 4800, or 9600 bps. For point-to-point or multipoint control (#5650), for multipoint tributary (#5651). **Notes:** This service is available only in certain cities within the U.S. The DDS Adapter may also be used to locally connect a System/34 to another supported device with a DDS Adapter. This connection requires a special accessory adapter cable and supports point-to-point connections only. No modem or channel service unit is required. See "DDS Adapter Connector" under "Accessories". **Limitations:** Cannot be installed with EIA interface (#3701) or 1200 bps Integrated Modem (#5500, #5501) or 2400 bps Integrated Modem (#5600, #5601, #5602, #5610). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500.

Digital Data Service (DDS) Adapter (#5652, #5653): An integrated adapter for BSC or SDLC data transmission at speeds of 2400, 4800,or 9600 bps over the AT&T nonswitched Data-Phone® digital service network. The DDSA interfaces to a DDS channel service unit (not a Data Service Unit), the customer site termination of the DDS network. Available at three speeds: 2400, 4800, or 9600 bps. For point-to-point or multipoint control (#5652), for multipoint tributary (#5653). **Note:** This service is available only in certain cities within the U.S. The DDS Adapter may also be used to locally connect a System/34 to another supported device with a DDS Adapter. This connection requires a special accessory adapter cable and supports point-to-point connections only. No modem or channel service unit is required. See "DDS Adapter Connector" under "Accessories". **Limitations:** Cannot be installed with EIA Interface (#3702) or 1200 bps Integrated Modem (#6500, #6501) or 2400 bps Integrated Modem (#6600, #6601, #6602, #6610). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #3500.

1200 bps Integrated Modem (#6500, #6501): A modem for SDLC or BSC data transmission at 1200 bps over nonswitched facilities or switched network. Half-speed operation at 600 bps is indicated via a system utility program. Available in two different versions: #6500 for nonswitched, #6501 for switched with auto-answer. Attachment to the nonswitched (2- or 4-wire) facilities is via an IBM-provided cable directly to the line, type 3002 . Attachment to the switched network is via an IBM-provided cable to an FCC registered protective circuitry provided by the user type CBS or equivalent. . The device communicating with System/34 must also be equipped with a 1200 bps Integrated Modem. **Limitations:** Cannot be installed with Interface (#3702) or 2400 bps Integrated Modem (#6600, #6601, #6602, #6610), or DDSA (#5652, #5653). #6500 and #6501 cannot be installed together. **Maximum:** One. **Prerequisites:** #3500, #4703, and may require #5734. See "Modem/Interface Feature Configurator" and "Processor Unit Expansion Feature Configurator".

2400 bps Integrated Modem (#6600, #6601, #6602): A modem for SDLC or BSC data transmission at 2400 bps over nonswitched facilities, equivalent to and compatible with similarly featured 3872 Modems. Available in three different versions: #6600 for nonswitched, point-to-point, #6601 for nonswitched multipoint control, and #6602 for nonswitched multipoint tributary. Attachment to nonswitched (2- or 4-wire) facilities is directly to the line, type 3002 via an IBM-provided cable. The 2400 IM is equivalent to and compatible with the 3872 Modem. The device communicating with the System/34 must also be equipped with a 3872 compatible integrated 2400 bps modem or a stand-alone 3872 Modem. **Limitations:** Cannot be installed with Interface (#3702) or another Integrated Modem (#6500, #6501, #6610), or DDSA (#5652, #5653). #6600, #6601, #6602, and #6610 cannot be installed together. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #6500, #5733 and/or #5735. See "Processor Unit Expansion Feature Configurator".

2400 bps Integrated Modem (#6610): A modem for SDLC or BSC data transmission at 2400 bps over a switched network with automatic answer capability. This modem is equivalent to and compatible with similarly featured 3872 Modems. Half-speed operation at 1200 bps is indicated via a system utility program. Attachment to the switched network is via an IBM-provided cable to an FCC registered protective circuitry provided by the user type CBS. The 2400 IM is equivalent to and compatible with the 3872 Modem. The device communicating with the System/34 must also be equipped with a 3872 compatible integrated 2400 bps modem or a stand-alone 3872 Modem. **Limitations:** Cannot be installed with Interface (#3702) or another Integrated Modem (#6500, #6501, #6600, #6601, #6602). **Note:** This feature is not compatible with the 2400 bps Integrated Modem available on the 5251. **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #3500, #5733 and/or #5735. See "Modem/Interface Feature Configurator" and "Processor Unit Expansion Feature Configurator".

Switched Network Backup (SNBU) (#7951): Provided for backup attachment of System/34 to the public switched network when the 2400 bps Integrated Modem (#5600, #5601, #5602) is used on a nonswitched line as the prime facility. It can communicate with a compatible 2400 bps Integrated Modem or a 3872 Modem when either is equipped with switched network capability. Selection of the primary or backup facility is via an operator invoked system utility program. Attachment to the switched network is made via an FCC registered protective circuitry provided by the user type CDT or equivalent. Calls must be established and answered manually. Operator intervention, program modification, or both may be required on the using system/terminal. Additional customer program routines will be required, in existing BTAM programming, to fully utilize the capabilities of the Switched Network Backup feature. For additional information, see the *IBM 3872 Modem User's Guide* (GA27-3058). **Limitations:** Cannot be installed with Switched Network Backup with Auto-Answer (#7952). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500 and #5600, #5601, or #5602, and appropriate Processor Unit Expansion Features for 2400 bps Integrated Modem.

Switched Network Backup with Auto-Answer (SNBU/AA) (#7952): Same as Switched Network Backup (#7951) plus the added capability of automatically answering incoming calls when attached to an FCC registered protective circuitry provided by the user of the CBS type (or equivalent). Selection of the prime or backup facility is via an operator invoked system utility program. Operation intervention, program modification, or both may be required on the using system or terminal. Additional customer program routines will be required, in existing BTAM programming, to fully utilize the capabilities of Switched Network Backup. For additional information see the *IBM 3872 Modem User's Guide* (GA21-3058). **Limitations:** Cannot be installed with Switched Network Backup (#7951). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #2500, #5600, #5601, or #5602, and appropriate Processor Unit Expansion Features for 2400 bps Integrated Modem.

Switched Network Backup (SNBU) (#7953): Provided for backup attachment of System/34 to the public switched network when the 2400 bps Integrated Modem (#6600, #6601, #6602) is used on a nonswitched line as the prime facility. It can communicate with a compatible 2400 bps Integrated Modem or a 3872 Modem when either is equipped with switched network capability. Selection of the primary or backup facility is via an operator invoked system utility program. Attachment to the switched network is made via an FCC registered protective circuitry provided by the user type CDT or equivalent. Calls must be established and answered manually. Operator intervention, program modification, or both may be required on the using system/terminal. Additional customer program routines will be required, in existing BTAM programming, to fully utilize the capabilities of the Switched Network Backup feature. For additional information, see the *IBM 3872 Modem User's Guide* (GA21-3058). **Limitations:** Cannot be installed with Switched Network Backup with Auto-Answer (#7954). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #3500 and #6600, #6601, or #6602.

Switched Network Backup with Auto-Answer (SNBU/AA) (#7954): Same as Switched Network Backup (#7953) plus the added capability of automatically answering incoming calls when attached to an FCC registered protective circuitry provided by the user type CDT or equivalent. Selection of the prime or backup facility is via operator invoked system utility program. Operation intervention, program modification, or both may be required on the using system/terminal. Additional customer program routines will be required, in existing BTAM programming, to fully utilize the capabilities of the Switched Network Backup feature. For additional information see the *3872 Modem User's Guide* (GA21-3058). **Limitations:** Cannot be installed with Switched Network Backup (#7953). **Maximum:** One. **Field Installation:** Yes. **Prerequisites:** #3500 and #6600, #6601, or #6602.

IBM Modems: One IBM Modem can be attached to each Communications Adapter. **Prerequisites:** Communications Adapter (#2500, #3500); Interface (#3701, #3702), Processor Unit Expansion (#5734) or Multiline Communications Adapter (#4500), Line Base Adapter (#5301, #5302, #5303, #5304), and Interface (#5311, #5312, #5313, #5314).

5340 System Unit (cont'd)

Modem	Speed (bps)
3863	2400
3868 mdl 1	2400
3864	4800
3863 mdl 2	4800
3865	9600
3868 mdl 3,4	9600
3872	2400/1200

Note: For communications capabilities, product utilization, and special features, see M2700, 3863, 3864, 3865, and 3872 pages. To verify the proper integrated or external modem interface configuration to #2500 and #3500, refer to "Modem/Interface Feature Configurator" below. Select one of the categories and follow across for the required and optional special features. To verify the proper integrated or external modem interface configuration to #4500, refer to "Multiline Communications Adapter Configurator" below.

Modem/Interface Feature Configurator: (#2500 or #3500) only.

Modem/ Interface	Internal Clock (#4703)	Processor Unit Expansion (1) B (#5733)	C (#5734)	D (#5735)	SNBU, SNBU/AA (#7951, #7952, #7953, #7954)
EIA Interface (#3701, #3702)	Optional	-	Required (2)	-	-
1200 bps Integrated Modem:					
Nonswitched (#5500, #6500)	Required	-	Required (2)	-	-
Switched with Auto-Answer (#5501, #6501)	Required	-	Required (2)	-	-
2400 bps Integrated Modem:					
Nonswitched Point-to-Point (#5600, #6600)	-	Required (3)	-	Required	Optional
Nonswitched Multipoint Tributary (#5602, #6602)	-	Required (3)	-	Required	Optional
Switched Network with Auto-Answer (#5610, #6610)	-	Required (3)	-	Required	-
Nonswitched Multipoint Control (#5601, #6601)	-	Required (3)	-	Required	Optional

Notes:

(1) See "Processor Unit Expansion Feature Configurator".

(2) Not required if Processor Unit Expansion B (#5733) and 2400 IM are installed. Not required on XX4, XX5, XX6, and XX7 mdls.

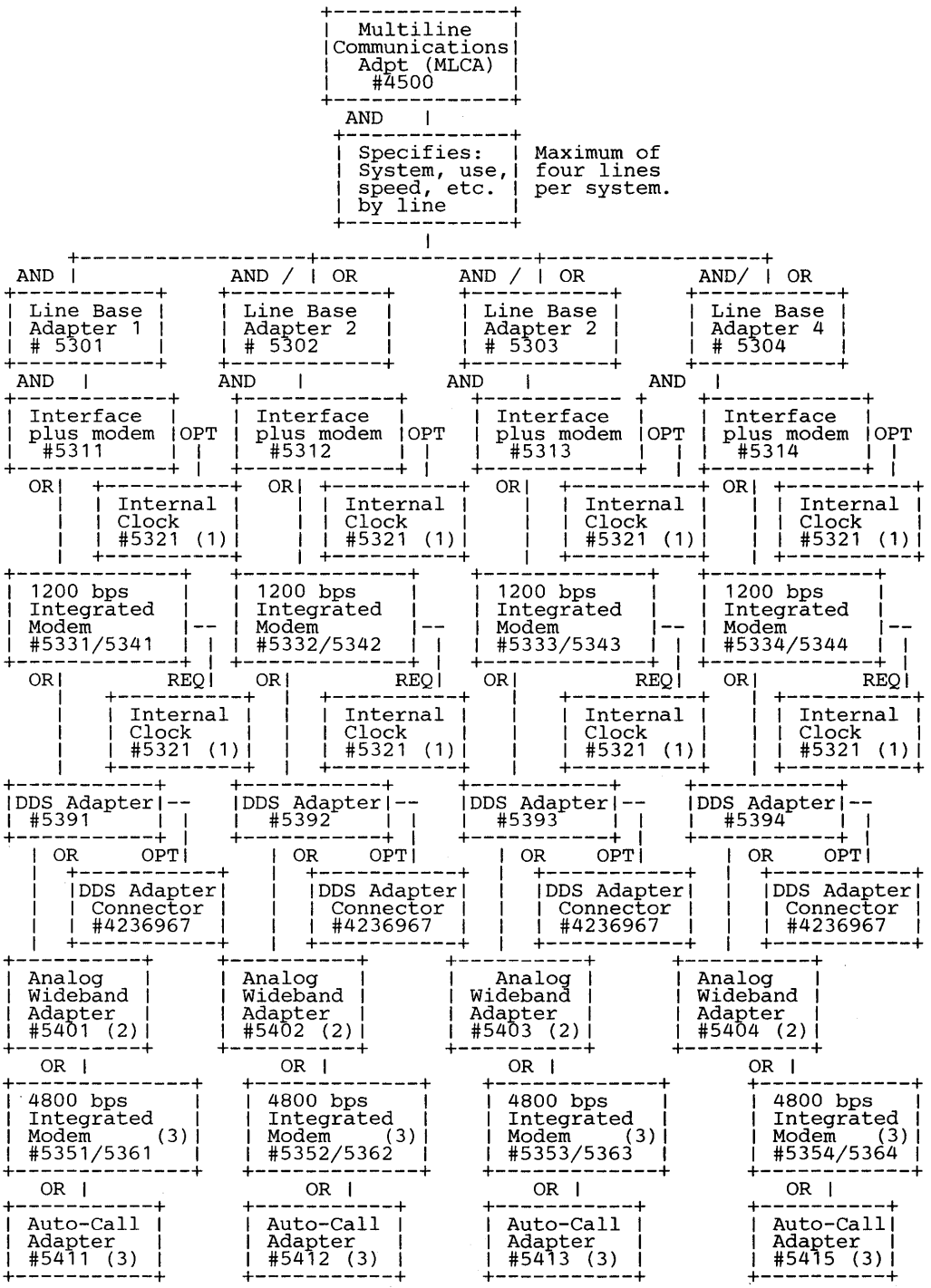
n(3) Not required on XX4, XX5, XX6, and XX7 mdls.

Adapter/Facility Specify Codes For Communications: One selection must be specified from each of the following four categories for each Adapter/Line:

	Line	1 #2500 or (#4500)	2 #3500 or (#4500)	3 (#4500)	4 (#4500)
A	**Transfer Rate (bps):**				
	600	#9001	#9401	#9501	#9601
	1200	#9002	#9402	#9502	#9602
	2000	#9003	#9403	#9503	#9603
	2400	#9004	#9404	#9504	#9604
	4800	#9005	#9405	#9505	#9605
	7200/3600	#9006	#9406	#9506	#9606
	9600	#9007	#9407	#9507	#9607
	High-Speed (above 9600)	#9008	#9408	#9508	#9608
B	**Network Attachment:**				
	Point-to-Point (nonswitched)	#9101	#9102	#9103	#9104
	Point-to-Point (switched)	#9111	#9112	#9113	#9114
	Multipoint Tributary	#9121	#9122	#9123	#9124
	Multipoint Control	#9131	#9132	#9133	#9134
	Local Attach via DDSA	#9141	#9142	#9143	#9144
C	**Line Facility:**				
	Duplex (4-wire)	#9311	#9411	#9511	#9611
	Half-Duplex (2-wire)	#9310	#9410	#9510	#9610
D	**Primary Line Control:**				
	BSC	#9201	#9202	#9203	#9204
	SDLC	#9211	#9212	#9213	#9214

5340 System Unit (cont'd)

Multiline Communications Adapter (#4500) Configurator:



Notes:

(1) Total of one per system, one will handle any or all lines.

(2) One only per system.

(3) Two only per system.

5340 System Unit (cont'd)

System Utility Support: A system utility program is used for the selection of certain data communications characteristics such as: full-speed or half-speed, internal or external modem clocking, line type, station address, etc. See the *System/34 System Support Reference Manual* (SC21-5155) for a complete description of $SETCF utility.

References: See the appropriate host system programming pages for possible restrictions.

See M2700 pages for additional information concerning modems, communications facilities, machine attachment requirements, terminal intermix, operating capabilities, and customer responsibilities.

Refer to *System/34 Installation Manual - Physical Planning* (GA21-9242) for physical installation requirements.

Replaced Parts: Replaced parts from any special feature installation or removal remain the property of the customer.

MODEL CONVERSIONS

All conversions may be field installed.

Any model upgrade that involves a disk storage capacity change may require replacement of the disk storage mechanism. Adequate provision must be made for retaining the data contained on the replaced disk mechanism and elimination of user proprietary information.

The upgrade purchase prices for model conversions may be greater than the purchase price differentials. The customer should carefully evaluate his future requirements when purchasing a system.

Replaced parts from any model conversion that includes a disk storage capacity change become the property of IBM.

Replaced parts from any model conversion which changes the diskette remain the property of the customer.

ACCESSORIES

Keys: The 5340 with Keylock (#4655) is shipped with two keys. Additional keys may be purchased from IBM. (Vendor will supply additional keys only to the original purchaser). Order , specifying P/N 2546418. A letter of authorization with key identification number must accompany each order. Allow six to eight weeks for delivery.

DDS Adapter Connector: A specially designed connector allows the cables from a System/34 DDS Adapter to be connected to another supported device with a DDS Adapter. This provides for the local connection of two devices without the use of any modems or channel service units. This is a purchase only item. Order , specifying P/N 4236967. Allow six to eight weeks for delivery. **Maximum:** One per Digital Data Service (DDS) Adapter (four per system total). **Field Installation:** Yes.

Cables: Required, see "Specify".

SUPPLIES

For Diskettes and Diskette Magazines see IBM.