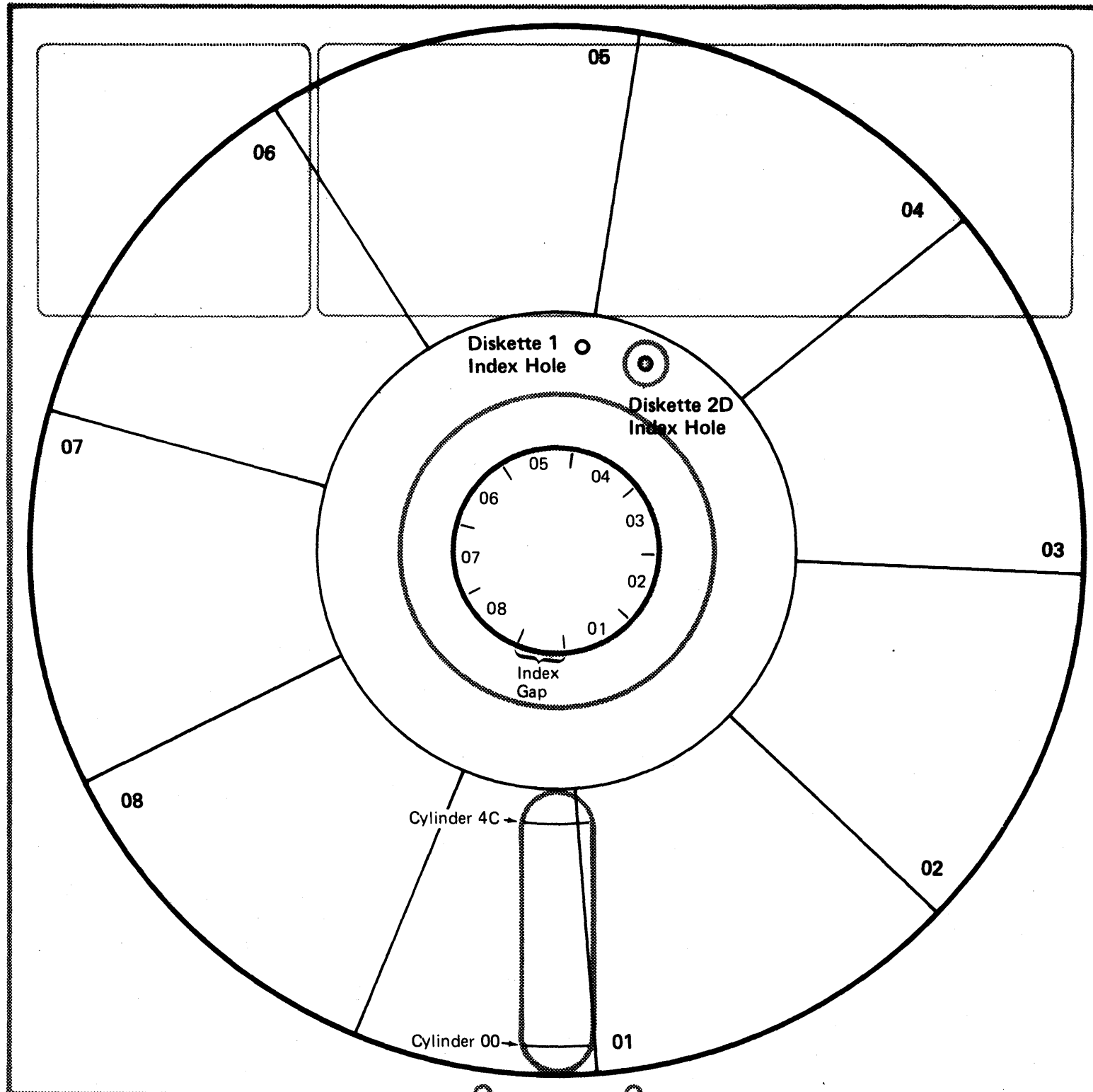
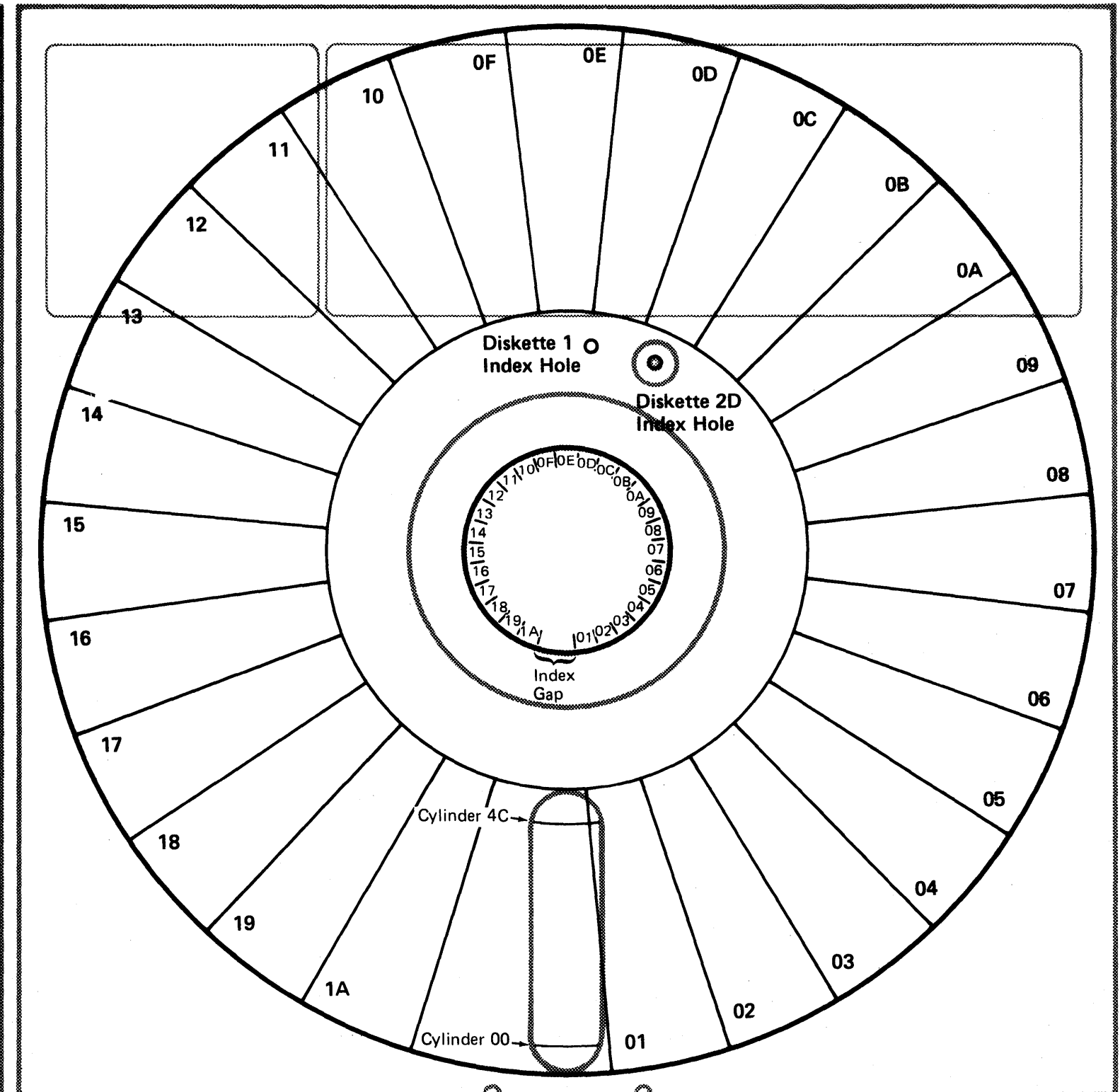


Appendix A. Diskette Formats



↑
Diskette
Index



↑
Diskette
Index

This page intentionally left blank.

Glossary

This glossary includes definitions developed by the American National Standards Institute (ANSI). This material is reproduced from the *American National Dictionary for Information Processing*, copyright 1977 by the Computer and Business Equipment Manufacturers Association, copies of which may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018.

ANSI definitions are identified by an asterisk. An asterisk to the right of the term indicates that the entire entry is reprinted from the *American National Dictionary for Information Processing*. Where definitions from other sources are included in the entry, ANSI definitions are identified by an asterisk to the right of the item number.

abortive disconnect: A disconnect that is not normal.

accumulate: To collect.

acknowledge character (ACK): In binary synchronous communications, a transmission control character transmitted to the sending station by a receiving station as a positive response to a data transmission. An acknowledge character can also be used as an accuracy control character.

acknowledgment: In binary synchronous communications, the transmission of acknowledge characters. See *acknowledge character*, *negative acknowledge character*.

ACK0: In binary synchronous communications, the even-numbered positive acknowledge sequence. See *acknowledge character*.

ACK1: In binary synchronous communications, the odd-numbered positive acknowledge sequence. See *acknowledge character*.

action control element: ACE.

action control word: ACW.

activate logical unit: ACTLU.

activate physical unit: ACTPU.

adapter control register: ACR.

adapter status register: ASR.

add operation: (1) A disk or diskette operation that adds records to a file that is already present. (2) A computer operation that adds a field to a field, a field to a register, or a register to a register.

address compare register: ACR.

address mark: AM.

address recall register (ARR): A 2-byte local storage register in the main storage processor that is used for temporary storage of an address that will be used later by the instruction being executed or by the program being run.

address translation registers (ATRs): Sixty-four 1-byte registers (32 for program-level tasks and 32 for I/O usage) that are used to convert the addresses specified by the program into the main storage addresses in which the program is stored. These registers are also used for main storage protection.

addressing: (1) In data communications, the means by which the sending or control station selects the unit to which it will send a message. Compare to *polling*. (2) A means of identifying storage locations.

algebraic: The rules of algebra that determine whether a result is positive or negative when numbers are added, subtracted, multiplied, or divided.

alphabetic character: Any one of the letters A through Z, or one of the special characters #, \$, and @.

alphameric character: An alphabetic character, or one of the digits 0 through 9. See *alphabetic character*.

alternating current: AC.

alternating current terminal block: ACTB.

alternative cylinder: A cylinder on a diskette that is made available by the system in place of a cylinder that cannot be used.

alternative sector: A sector on a disk that is made available by the system in place of a sector that cannot be used. See *sector*.

American National Standard Code for Information Interchange, X3.4-1968 (ASCII): The standard code, using a character set containing 7-bit characters (8 bits including parity bit), used to transmit and receive information between data processing systems, communications systems, and associated equipment. The ASCII character set contains control characters and graphic characters.

amplifier: A device that intensifies a signal.

analog: A continuous variable voltage.

and or invert: AOI.

ANSI: American National Standards Institute.

arithmetic and logic unit (ALU): A part of a computer that performs arithmetic and logic operations.

array: matrix.

assembler: A computer program that automatically converts instructions written in a symbolic code into the equivalent machine code.

asynchronous transmission: In data communications, a mode of transmission in which the bits included in a character or block of characters occur during a fixed interval. However, the start of each character or block of characters can occur at any time during this interval.

attachment: Circuits that connect the system channel to an I/O device. The attachment controls the read, write, and control information passed between the channel and the I/O device.

attenuate: To reduce a signal.

auto: automatic.

auto network shutdown: ANS.

auto network shutdown complete: ANSC.

automatic answering: AA.

automatic equalizer: AEQ/AEL.

automatic gain control: AGC.

auto-answer: In data communications, a machine feature that permits a station to respond to a call that it receives over a switched line without operator action. Compare to *manual answer*.

auto-call: In data communications, a machine feature that permits a station to make a call over a switched line without operator action. Compare to *manual call*.

backup mode register: BMR.

bandpass filter: A filter that reduces signals of low and high frequency and passes those of medium frequency.

bandwidth: A range of frequencies passed by a bandpass filter, amplifier, or telephone network.

base cycle steal: An interrupt level on the channel used by the display adapter.

basic information unit: BIU.

basic link unit: BLU.

basic transmission unit: BTU.

baud: Bits per second.

BCD character code: A character set of sixty-four 6-bit characters. Compare to *EBCDIC*.

behind home: BH.

binary-coded decimal: BCD.

binary-coded decimal character code: See *BCD character code*.

binary synchronous communications (BSC): A flexible form of line control that supplies a set of rules for transmitting data over a communications line connecting two devices that use a communications adapter.

binary synchronous transmission: Data transmission in which synchronization of characters is controlled by timing signals generated at the sending and receiving stations. Compare to *asynchronous transmission*.

bit: A binary digit.

bit ring: BR.

bits per second (bps): (1) The rate at which a device transmits or receives binary information, or the rate at which a recording head reads or writes data. (2) In serial transmission, the rate at which a device or channel transmits a character.

blast: A condition within the control processor whereby the port lines are reset.

block: (1) A record or a collection of records recorded or operated on as a unit. (2) In System/34, a 10-sector unit of disk storage that contains 2,560 bytes. See *sector*.

block check character: BCC.

block processor clock: BPC.

branch instruction: An instruction that changes the sequence in which the instructions in a computer program are executed. Execution of instructions continues at the address specified in the branch instruction.

buffer: (1) *An area of storage that is temporarily reserved for use in performing an I/O operation, into which data is read or from which data is written. (2) Storage or program steps that permit differences in the rate of data flow, or in the times when events occur, when transmitting data from one part of a computer system to another.

burst cycle steal: A continuous transfer of data uninterrupted between two points. See *interrupt, cycle steal*.

burst mode operation: Same as *burst cycle steal*.

byte: (1) The 8 bits that represent one character. (2) A sequence of 8 bits that are operated on as a unit and are the smallest unit of data in System/34 that can be addressed. (3) The amount of storage needed for one EBCDIC character.

byte counter: BC.

call: (1) The action of preparing a computer program, a routine, or a subroutine for operation, usually by specifying the entry conditions and then branching to an entry point. (2) In data communications, the action performed by the calling party, or the operations necessary in making a call, or the effective use made of a connection between two stations. See *calling station*. (3) To activate a program or procedure at its entry point. Compare to *load*.

called station: On a switched line, the location to which a call is made.

calling station: On a switched line, the location from which a call is made.

cancel: To end the current job before the job is completed.

carrier detect: CD.

cathode-ray tube (CRT): The part of a display station on whose face graphic information is displayed.

caution notice: Identification of an action that could damage a machine, a program, or a data file. Compare to *danger notice*.

CBS coupler: An automatically answering coupler.

CE panel: A panel that contains indicator lights and switches used by the CE during system maintenance.

CE track: An area on disk used as a read/write area for CE diagnostics.

cell: One bit time.

Celsius: C.

change of direction: COD.

channel: (1) A device or circuits that connect two or more devices that can receive, transmit, store, and process data. (2) A device that connects the processing unit and main storage with the I/O control units.

channel command bus: CCB.

character set: A group of characters used for a specific purpose; for example, the set of characters a printer can print.

check: CHK.

circuit breaker: CB.

clamp: In data communications, to inhibit a signal from its normal state.

clear to send: CTS.

clear to send/carrier detect: CSCD.

Cmd (key): A display station function control key that, when pressed, causes System/34 to recognize the 14 keys on the top row of the keyboard as command function keys. See *command function keys, function control keys*.

column: A vertical arrangement of characters, as on a punched card or a coding form. Compare to *position*.

command: A request for the performance of an operation or the execution of a specific program. See *execution*.

command bus in: CBI.

command bus out: CBO.

command function keys: The 14 keys on the top row of the display station keyboard that are used with the Cmd function control key to request functions of program products and user programs. Compare to *function control keys*.

command reject: CMDR.

common carrier: In data communications, any government-regulated company that furnishes communication services to the general public.

communications: COMM.

communications adapter: A hardware feature that enables System/34 to become a part of a data communications network.

communications control characters: See *transmission control characters*.

communications terminal block: COMTB.

compare: COMP.

computer: An electronic device that can store, get access to, and process data under control of a program.

configuration control register: CCR.

connect data set to line: CDSTL.

connection point manager: CPMGR.

console: CONS.

control: CTL.

control character: A character that starts, changes, or stops a control operation. A control character may be recorded for later use. A control character is not a graphic character, but may have a graphic that represents it. See *transmission control characters*.

control mode register: CMR.

control output register: COR.

control processor (CP): A group of programs that execute control storage instructions that determine channel data movements and main storage assignment.

control station: The primary or controlling computer in a multipoint data communications configuration. The control station controls the sending and receiving of data.

control storage (CS): Storage that contains control processor instructions and data. Compare to *main storage*.

control storage initial program load (CSIPL): The loading of system microcode from disk or diskette to control storage.

control storage interrupt level status word: CSILSW.

control storage program: A group of modules that include all code which loads to and executes in the control processor. See *module*.

controller: A device that controls operation of one or more input/output devices; for example, a work station controller.

controller command bus out: CCBO.

controller data bus in: CDBI.

controller data bus out: CDBO.

coupler: A device that connects a modem to a telephone network.

coupler cut through: CCT.

cradle: The part of a telephone that holds the handset.

crystal rectifier: CR.

cycle steal (CS): The process by which a device uses cycles of another machine or device. If, for example, the processing unit is performing an arithmetic operation when the disk needs service, the arithmetic operation is stopped while a byte of data is moved to or from the disk.

cyclic redundancy check (CRC): A method of error checking using a special check character following each block of data that is sent over a data link, or to or from an I/O device, such as a disk or diskette.

danger notice: Identification of an action or condition that could result in injury to a person. Compare to *caution notice*.

data access arrangement: DAA.

data address register: DAR.

data bus in: DBI.

data bus out: DBO.

data communications: The transmission of data between systems or remote devices over a communications line. See *remote*.

data communications attachment: The part of the system that permits the sending or receiving of data to or from a remote device over a data link.

data count field: DCF.

data link: The equipment and rules (protocols) used for sending data over a communications line.

data link control: DLC.

data link escape: DLE.

data link escape transparent mode: XDLE.

data management: A major function of the System Support Program Product (SSP) that receives a user program request to send or receive data, schedules the request, puts the data in the correct format, and performs other similar actions.

data modem ready: DA.

data ring: DR.

data set ready: DSR.

data storage facility: DSF.

data stream: All data transmitted over a data link during a single read or write operation.

data terminal equipment: DTE.

data terminal ready: DTR.

data tip: DT.

data transmission: The sending of data from one place to another. See also *data communications*.

de-activate logical unit: DACTLU.

de-activate physical unit: DACTPU.

deceleration: slowing down.

delimiter: A character that groups or separates words or values.

demodulate: To set a modulated signal to its original state.

descramble: To set a scrambled data block to its original state.

deserialize: To convert a sequence of 8 bits into a byte.

destination address field: DAF.

device address: DA.

device end: DE.

diagnostic control program (DCP): The supervisor program that executes diagnostic programs. Compare to *SSP utility program*.

diagnostic control register: DCR.

dibit: Two bits taken together.

differential phase shift keying: DPSK.

differentiator-amplifier: AR-DIFF.

Digital Data Service Adapter (DDSA): In data communications, a device used in place of a modem when transmitting data over private lines. Compare to *modem*.

digital-to-analog converter: DAC.

direct current: DC.

DISC: In data communications, the BSC transmission control sequence for disconnect.

disconnected mode: DM.

disk: A flat, circular plate with a magnetic surface on which programs and data files can be stored.

disk drive: The mechanism used to read from and write on disk.

disk drive A: The first disk drive installed on the system.

disk drive B: The second disk drive installed on the system.

disk enclosure: The part of the disk drive that contains the disk, the spindle, and the actuator.

diskette: A thin, flexible magnetic disk permanently sealed in a protective cover.

diskette door: The cover over the diskette slot. See *diskette slot*.

diskette drive: The mechanism used to read and write diskettes. See *diskette 1 drive, diskette 2 MFM drive*.

diskette slot: The opening into which the diskette is inserted before being written or read.

diskette 1 drive: The diskette drive mechanism (33FD) used to read and write Diskette 1 diskettes.

diskette 2 MFM drive: The diskette drive mechanism (53FD) used to read and write Diskette 2D diskettes.

displacement byte: A byte in an indexed instruction that is added to an index register to obtain a real address or to change the contents of an index register. See *byte, register*.

display: DPLY.

display screen: The part of a display station on which data, messages, or other information is displayed.

DLE (data link escape): In binary synchronous communications, a control character used only to supply additional line control information.

driver/receiver activity register: DRAR.

dump: (1) To copy the contents of all or part of storage, usually from storage to an output device. (2) Data that has been dumped.

duplex: A data communications network that permits data communications in opposite directions at the same time. Same as *full duplex*. Compare to *half duplex*.

EBCDIC (extended binary-coded decimal interchange code): A character set of two hundred and fifty-six 8-bit characters. Compare to *BCD character code*.

echo: A reflection of a signal used in channel operation.

Electronic Industries Association: EIA.

emitter column counter: ECC.

enable interrupt register: EIR.

end of file: EOF.

end of text: ETX.

end of text block: ETB.

end of transmission: EOT.

end write gap: EWG.

engineering change: EC

enquiry: ENQ.

equalization: The action performed by an equalizer. See *equalizer*.

equalizer: A device that corrects the waveshape of the signal to make it more suitable for a telephone network.

equivalent: Equal in force, amount, or value.

error recording analysis procedure: ERAP.

error recovery procedure (ERP): A procedure that aids you to isolate and, where possible, to recover from equipment errors. ERPs are often used with programs that record information about machine failures.

ETB: In binary synchronous communications, the end-of-transmission-block character.

ETX: In binary synchronous communications, the end-of-text character.

even positive acknowledgment: Same as ACK0.

exchange station ID: XID.

exclusively: One or the other, but not both.

execute: To cause an instruction, customer program, utility program, or other machine function to be performed. See *Utilities Program Product*.

execution: (1) The process of carrying out the instructions of a computer program by a processor. (2) The machine logic process that causes an instruction to be executed.

execution time: The time during which the operation specified by an instruction is performed.

expedited flow indicator: EFI.

extended binary-coded decimal interchange code: Same as *EBCDIC*. Compare to *BCD character code*.

extended storage control: ESC.

fetch: See *instruction fetch*.

field: One or more bytes of similar information in a record. See *byte*.

field effect transistor: FET.

field replaceable unit: FRU.

field service logic: FSL.

flip-flop: FF.

flip latch: FL.

format identification field: FID.

formatted diskette: A diskette on which track and sector control information has been written but which may or may not contain any data. See *sector*.

frequency modulation: FM.

frequency shift keying: FSK.

full duplex: Same as *duplex*.

function control keys: Special keys on the keyboard that are used to request specific system functions. Compare to *command function keys*.

guard band: GB.

half duplex: Permitting data communications in opposite directions, but not at the same time. Compare to *duplex*.

handset: The part of a telephone that sends and receives sound.

heading: (1) A title printed at the top of a column or page. (2) In ASCII and data communications, a sequence of characters, preceded by the SOH (start-of-heading) character, that controls the path of a message from the sending station to the receiving station. Compare to *text*.

hexadecimal: Pertaining to a numbering system with a base of 16; valid digits range from 0 (zero) through F (15).

I/O interruption: An interruption caused by the ending of an I/O operation or by an operator action. See *interruption*.

identification, identifier: ID.

identification buffer: IDB.

immediate power off: IPO.

impression control singleshot: IMPSS.

indexed address: An address that is changed by the content of an index register before or during the execution of an instruction. See *execution*.

indexed instruction: An instruction that needs address changes before the data byte is read from storage.

initial program load (IPL): A sequence of events that loads the system programs and prepares the system for execution of jobs.

initialization complete: INITC.

input: See *input data*.

input data: *Input to be processed.

input/output (I/O): (1) Relative to either input or output or both. (2) A general term for the equipment used to communicate with a computer. (3) The data transmitted during communication with a computer.

input/output block (IOB): A data area that may be used to pass the necessary information from the calling program to the input/output supervisor for data operations. See *call*. Compare to *loader parameter*.

input/output control handler (IOCH): Modules that supply the interface between the input/output supervisor and the I/O device or the device controller. These modules issue the commands to control the I/O device.

input/output supervisor (IOS): A routine or group of routines for moving data between main storage and the input/output control handler. See *input/output control handler*.

inquiry: (1) A request (entered from a display station) for information in storage. See also *inquiry program*. (2) A request for information that puts the system into inquiry mode. Compare to *response*.

inquiry program: (1) A program that enables the operator to access information from a disk file. See *inquiry*. (2) A program that is executed while the system is in inquiry mode.

instruction (INSN): A set of characters that specify an operation and the values or locations of the data to be processed.

instruction address: *The address that must be used to fetch an instruction. See *instruction fetch*.

instruction address register (IAR): A 2-byte local storage register in the main storage processor that contains the address of the instruction being read from main storage during instruction fetch time. See *instruction fetch*.

instruction fetch (I-fetch): The action of getting an instruction from storage and loading it into the correct registers. Compare to *execution time*.

interface: The hardware and programs that permit exchange of information between computer systems or devices. Also describes the junction of two or more devices.

interlock: (1) To prevent a machine or device from starting any more operations until the operation being executed is complete. (2) A part of a device that inhibits operation of the device when conditions are present that could cause personal injury or damage the device.

intermediate block check: In binary synchronous communications, a function that permits checking each record, instead of checking the contents of the total buffer, when large buffers of data are received. See *buffer*.

intermediate text block (ITB): In data communications, the intermediate-text-block character.

interrupt: (1) To stop a process in such a way that it can be started again. (2) In data communications, to take an action at a receiving station that causes the sending station to terminate a transmission.

interrupt level: IL.

interruption: A break in the normal sequence in which instructions are executed.

invalid: Not valid.

job control block: JCB.

job output stream: Same as *output stream*.

key: (1) One or more characters included in a data record that are used to identify or control the use of that data. (2)*To enter information from the keyboard. (3) A finger-operated switch that is part of a keyboard.

kilohertz: kHz.

landing zone: LZ.

latch: A circuit used to store a single bit of information.

leased line (LL): A connection between systems or devices that does not have to be completed by dialing. Same as *nonswitched line*. Compare to *switched line*.

least positive down level: LPDL.

least positive up level: LPUL.

length count recall register (LCRR): A register in the main storage local storage register (LSR) stack that stores the R-byte of the supervisor call (SVC) instruction. This information is then used by the control storage interrupt level 5 program routine when executing this nonexecutable instruction received from the main storage processor.

light-emitting diode: LED.

line printer: A device that prints all characters of a line in a single operation. Compare to *serial printer*.

link control: LC.

load: (1) To enter data or programs into storage. (2) To prepare an I/O device for operation; for example, to load paper in a printer.

loader parameter: A set of values that are used to pass the necessary information, from the calling program to the input/output supervisor, to enter programs into storage. See *call*. Compare to *input/output block*.

local: Pertaining to a device having a controller that is directly connected to or contained within a system without using a communication line. Compare to *remote*.

local session identifier: LSID.

local storage register: LSR.

logical unit: LU.

logical unit status: LUSTAT.

longitudinal redundancy check: LRC.

machine check interruption (MCI): An interruption that occurs as a result of an equipment failure or error.

macroinstruction: A single computer instruction that stands for a sequence of operations.

magnetic character reader: MCR.

magnetic ink character recognition: MICR.

main program level: MPL.

main storage: (1) General-purpose storage of a computer. (2) All storage that can be addressed by programs, from which instructions can be executed, and from which data can be loaded directly into registers. (3) Compare to *control storage*.

main storage address register: MSAR.

main storage initial program load (MSIPL): The loading of system microcode from disk or diskette to main storage.

main storage processor (MSP): Hardware that executes system instructions in main storage.

maintenance analysis procedure: MAP.

manual answer: In data communications, operator actions to make a station ready when the station receives a call over a switched line. Compare to *auto-answer*.

manual call: In data communications, operator actions to make a connection with a station over a switched line. Compare to *auto-call*.

MAP diagnostic integration: MDI.

mapping field: MPF.

mask: A pattern that controls the keeping, deleting, or testing of parts of another pattern of characters.

mega (M): Ten to the sixth power (1,000,000 in decimal notation). When referring to storage capacity, 2 to the 20th power (1,048,576 in decimal notation).

megabyte: MB.

megahertz: MHz.

menu: A displayed list of items (usually jobs) from which the operator makes a selection.

message identification code (MIC): A 4-digit number that identifies a record in a message member. This number can be part of the message identifier.

microaddress backup register: MAB.

microaddress register (MAR): A 2-byte local storage register in the control processor that is used to address the instruction byte being read from control storage during instruction fetch (I-fetch) time.

micro-operation register: MOR.

modem (modulator/demodulator): A device that connects a communications adapter to a communications line.

modem status register: MSR.

modified frequency modulation (MFM) recording: The recording method used on Diskette 2D diskettes.

modulation: Changes made in the frequency or amplitude of one signal by using the frequency or amplitude of another signal.

module: *(1) A program unit that is discrete and identifiable with respect to compiling, combining with other units, and loading; for example, the input to, or output from, an assembler, compiler, linkage editor, or executive routine. (2) A packaged functional hardware unit designed for use with other components.

monolithic storage technology: MST.

most positive down level: MPDL.

most positive up level: MPUL.

multiplex: To concurrently transmit two or more units of data on a single channel.

multiplexer port out: MPXPO.

multipoint data link: In data communications, pertaining to a network configuration in which connected stations communicate with each other in a time-sharing mode.

multitasking: Performing the processing for up to eight main storage tasks at the same time.

negative acknowledge character (NAK): In binary synchronous communications, a transmission control character transmitted by a station as a negative response to the station that the connection is set up with.

network: The term network has at least two meanings. A *public network* is a network established and operated by common carriers or telecommunications administrations for the specific purpose of providing circuit-switched, packet-switched, and nonswitched-circuit services to the public. A *user application network* is a configuration of data processing products (such as processing units or work stations) established and operated by users for the purpose of data processing or information exchange; such a network may use transport services offered by common carriers or telecommunications administrations. *Network*, as used in this publication, refers to a user application network.

network addressable unit: NAU.

no trouble found: NTF.

node: In systems network architecture, a junction point in a network, represented by a physical unit.

nonsequenced acknowledgment: NSA.

nonswitched line: A connection between systems or devices that does not have to be made by dialing. Same as *leased line*. Compare to *switched line*.

normal disconnect mode: NDM.

normal response mode: NRM.

normally closed: N/C.

normally open: N/O.

odd positive acknowledgment: Same as *ACK1*.

off-chip driver: OCD.

off hook (OH): Not on the cradle (a position of the telephone handset).

option: A choice.

origin address field: OAF.

oscillator: An electric signal generator.

output stream: Diagnostic messages and other output data, given out by an operating system or a processing program and displayed on output devices.

over current: O/C.

parameter: (1) A variable that is given a specific value for a specific purpose or process. (2) A value specified in a command statement or a control statement.

parity: P.

parity check: PC.

parity generate/parity generator: PG.

parity predict: PP.

party: See *called station, calling station*.

path control: PC.

path information unit: PIU.

phase lock oscillator: PLO.

phototransistor: PTX.

physical unit: PU.

point-to-point line: Data communications circuits and hardware used to connect a single remote station to a data processing system. A point-to-point line can be either switched or nonswitched.

polarity hold: PH.

poll/final: P/F.

polling: (1) (SDLC) A method by which each of the stations sharing a communications line is tested at fixed intervals to determine if it needs servicing. (2) (BSC) In a multipoint environment, a request to send, transmitted from the primary station to a specific secondary station.

port: An access point for receiving or transmitting data.

position: The address (location) of a character in a series, as in a displayed message or a computer printout. Compare to *column*.

position pulse: P.

power: PWR.

power distribution terminal board: PDTB.

power logic board: PLB.

power on reset: POR.

preamplifier: The first stage of an amplifier.

preequalizer: The first stage of an equalizer.

preload: To load before needed.

prepare to switch: PREPS.

presentation: The method by which information is given.

previous: PREV.

print fire number: PFN.

print position: PP.

print subscan: PSS.

printed circuit board: PCB.

processing unit (CPU): The parts of a computer that perform the processing and control functions for the system, perform operations on data, and control output. For System/34, these units include main storage, the main storage processor, control storage, and the control processor. See *main storage processor, control processor*.

processor (PROC): See *main storage processor, control processor*.

processor condition register: PCR.

program: (1) A sequence of instructions to a system, written in a special form that the system can interpret. A program instructs the system where to get input, how to process input, and where to put the results. (2) A set of instructions that instruct the system which operations are to be done and how to do them.

program mode register: PMR.

program product (PP): An IBM-written, licensed program for which a monthly charge is made. A program product performs functions pertaining to processing user data.

program status register: PSR.

public: Not private.

public switched network: PSN.

raw: A signal that has not been filtered properly.

read-only storage (ROS): Storage that can be read but not changed.

read/write: R/W.

recalibrate: Return to a starting position.

receive initial: In binary synchronous communications, a programming command that permits the communications adapter to receive synchronization characters.

receive time-out: In data communications, a signal that no data has been received by a BSC or SDLC communications adapter in a given interval.

recovery procedure: An action performed by the operator when an error message appears on the display screen. Usually, this action permits the program to continue or permits the operator to run the next job.

register: A group of latches or polarity hold circuits used to store one or more bytes of information.

remote: Relative to a device having a controller that is connected to a system over a communications line. Compare to *local*.

request: REQ.

request block: RB.

request header: RH.

request indicator byte (RIB): A byte of information used when an SVC instruction is transmitted. The request indicator byte indicates to the supervisor program what action the supervisor program should take.

request maintenance statistics error log: REQMS.

request recovery: RQR.

request shutdown: RSHUTD.

request to send: RTS.

request unit: RU.

reset: RST.

resistor/capacitor: R/C.

response: An answer to an inquiry. Compare to *inquiry*.

response header: RH.

response unit: RU.

result field: (1) The field that will contain the result of an operation. (2) An area in storage where the result is stored after an instruction is executed.

reverse interrupt: RVI.

ring indicate: RI.

RPG II: A commercially oriented programming language specifically designed for writing application programs that meet common business processing requirements.

scramble: To encode data such that repeating patterns that may cause timing problems in the modem are less probable.

sector: (1) An area on a disk track or a diskette track reserved to record a unit of data. (2) The smallest amount of data that can be written to or read from a disk or diskette during a single read or write operation.

sense input/output: SNS.

sense interrupt level status byte: SILSB.

separate: To divide.

sequence counter: SC.

sequence number field: SNF.

sequencer: circuit to establish order of operation.

sequential sector (SS): The format for representing the sequential sector address of a data sector on disk.

serial printer: A printer that prints characters one-at-a-time. Compare to *line printer*.

serialize: To convert a byte into a sequence of 8 bits.

serializer/deserializer: SERDES.

set and test sequence numbers: STSN.

signal ground: SG.

singleshot: SS.

solid logic technology: SLT.

spindle: The shaft that turns the disk.

SSP utility program: An SSP control program used by programmers in their daily system operations. For example, SSP utility programs can be used to copy files or initialize diskettes.

stage: A segment or part of the initial program load function.

standard character string: SCS.

start data traffic: SDT.

start input/output: SIO.

start of header (SOH): In binary synchronous communications, the start-of-heading character.

start of text (STX): In binary synchronous communications, the start-of-text character.

start write gap: SWG.

state: condition.

station: A system or device that can send or receive data over a communications line.

stepper: Advance one step at a time.

storage: STG/STOR.

storage address register (SAR): A register that points to the next byte to be written into or read from storage during execution time.

storage buffer address register: SBAR.

storage data register: SDR.

supervisor call (SVC): An instruction that causes control to be passed to the control processor; for example, a transfer control/system transient instruction.

swap: To exchange two parts that are exactly the same in a machine.

switch complete: SWICOM.

switch hook: SH.

switched line: In data communications, a connection between a communication controller and a remote station, or between two stations, that is completed by dialing. Compare to *nonswitched line*.

switched network backup (SNBU): A technique used in data communications to provide an alternative method of connecting two systems over telephone lines when the primary method of connection is via leased lines.

synchronous data link control (SDLC): Rules that control data movement over a communications line connecting two devices that use a communications adapter.

synchronous idle (SYN): In binary synchronous communications, the line synchronization character.

system bus in: SBI.

system bus out: SBO.

system console: A display station named to activate specific system functions, and to control and monitor system operation, in addition to operating as a work station. Compare to *work station*.

system interrupt level status word: SILSW.

system printer: The printer, named at system configuration time, that is used for system and display station printed output, unless the output is specifically sent to another printer.

system services control point: SSCP.

System Support Program Product: SSP.

system unit: The part of System/34 that houses the disk, the diskette drive, and the processing unit.

systems network architecture: SNA.

task: A unit of work for the main storage processor.

task control block: TCB.

temporary text delay: TTD.

terminal block: TB.

terminal unit block: TUB.

test header point: THP.

test mask: TM.

text: (1) In binary synchronous communications, a sequence of characters that are transmitted as a group when preceded by an STX transmission control character and followed by an ETX transmission control character. Compare to *heading*. (2) The control sections of an object module or load module. (3) The data section of a data communications message.

time delay: TD.

timer queue element: TQE.

track: A circular path on the surface of a disk or diskette upon which information is magnetically recorded and from which recorded information is read.

transient area: An area of main storage or control storage used for temporary storage of transient routines. See *transient routine*.

transient routine: A routine permanently stored on disk that is loaded into the transient area when needed for execution. See *transient area, execution*.

transmission control characters: In data communications, special characters that are included in a message to control communication over a data link. For example, the sending station and the receiving station use transmission control characters to exchange status information; the receiving station uses transmission control characters to flag errors in data it receives. Same as *communications control characters*.

transmission header: TH.

transparent block cancel: XENQ.

transparent data link escape: XDLE.

transparent end of text: XETX.

transparent end of text block: XETB.

transparent intermediate text block: XITB.

transparent start of text: XSTX.

transparent synchronous idle: XSYN.

transparent temporary text delay: XTTD.

transparent text mode: In data communications, a mode of binary synchronous transmission in which only transmission control characters preceded by the DLE control character are processed as line control characters. All other characters having the same bit pattern as transmission control characters are transmitted as data.

turnaround: Going from transmit mode to receive mode or from receive mode to transmit mode.

twinaxial cable: A cable made of two twisted wires inside a shield.

unit definition table (UDT): An area on disk or in storage that contains entries that describe the devices that run under control of the SSP.

unload: The opposite of load.

user area: (1) The area of main storage that is not used by the SSP. (2) The area on disk that is available to the user. Contrast with *transient area*.

Utilities Program Product: A program product for generating, maintaining, listing, and sorting data files; and, for generating, displaying, maintaining, and listing source members and procedure members in a library. This program product contains four programs: DFU, SEU, WSU, and Sort.

variable frequency oscillator: VFO.

velocity follow latch: VFL.

vendor transistor logic: VTL.

vertical redundancy check: VRC.

voice-grade telephone line: A telephone line that can be used for transmission of voice or data.

volts: V.

WACK (wait before transmit-positive acknowledgment): In binary synchronous communications, the DLE sequence sent by a receiving station to indicate that it cannot receive data at present.

work register: WR.

work station: A device that lets a person transmit information to or receive information from a computer, or both, as needed to perform his job; for example, a display station or a printer.

work station data management: WSDM.

work station input/output control handler: WSIOCH.

World Trade: WT.

write clock: WC.

write echo: Data read back to the attachment, while writing, for write verification.

zeros complemented transition coding: NRZI.

zone: The portion of a binary number that has a zone value.

Index

A

A and B registers (attachment controllers) 10-3
abortive disconnect error 12-53
access operation, 62PC 13-42
 performing the operation 13-44
 starting the operation 13-42
activate paper clamp
 3262 15-55
 5211 9-31
actuator
 62EH disk 7-4
 feedback 7-39
 lock 7-3
 movement 7-9
 position indicator 7-4
 62PC disk 13-1
 lock 13-1
 movement 13-34
adapter check error
 data communications 12-52
 disk, 62PC 13-71
add immediate 2-54
add logical characters (ALC), MSP 3-21
add to register (A), MSP 3-24
add zoned decimal (AZ), MSP 3-15
address compare register, MSP 3-54
address compare switch 6-17
address/data switches 6-16
address translation registers, MSP 3-55
addressing, 62PC 13-4
advance time line 5-16
alter MAR interrupt 6-9
alter storage 6-6
ALU (see arithmetic and logic unit)
any hammer on check
 3262 15-50
 5211 9-26
arithmetic and logic unit
 attachment controllers 10-3
 control processor 2-110
 gate high parity check generation 2-126
 gate low parity check generation 2-127
 main storage processor 3-49
 parity predict
 CP 2-111
 MSP 3-52
arithmetic instructions, MSP 3-13
ASCII characters, BSC 12-5

attachment controllers 10-1
 controller lines 10-4
 data bus lines 10-4
 data flow 10-2
 functional units 10-3
 storage data lines 10-5
 storage select lines 10-4
attachment to port lines 5-18
autoloader errors 14-54
automatic answering
 test 12-65
 1200 bps modem 12-64
 2400 bps modem 12-74
B
backup mode register, MSP 3-54
backup register 10-3
base cycle steal request lines 5-18
basic information unit, SNA 12-11
basic link unit, SNA 12-11
basic transmission unit, SNA 12-11
behind home
 62EH disk 7-11
 62PC disk 13-4
belt go and belt up to speed
 3262 15-54
 5211 9-30
belt/input buffer register, 3262 15-28
belt speed check
 3262 15-50
 5211 9-26
belt sync check
 3262 15-50
 5211 9-26
belt up to speed check
 3262 15-50
 5211 9-26

binary synchronous communications 12-2
 ASCII characters 12-5
 commands 12-40
 load 12-40
 sense 12-46
 EBCDIC characters 12-5
 error conditions 12-52
 line control characters 12-5
 message format 12-2
 operations 12-26
 multipoint 12-35
 receive initial 12-29
 receive initial delayed 12-29
 receive only 12-26
 transmit/receive 12-31
 transmit/receive initial 12-30
 transmit/receive overlay 12-29
 transparent 12-34
bit cells
 level 1 diskette 8-4, 8-8
 level 2 diskette 14-12
bit counter 12-24
blast conditions 5-56
block check error 12-53
block processor clock (BPC tgr) line 5-16
brake
 62EH disk 7-4
 62PC disk 13-1
brake applied error 13-72
branch (B), CP 2-34
branch and link (BAL), CP 2-36
branch on condition (BC), MSP 3-44
BSC (see binary synchronous communications)
buffer
 overrun error 14-52
 underrun error 14-52
burst cycle steal 5-19

C

CA data bus parity check 13-71
cable interlock check
 3262 15-50
 5211 9-26

cable interlocks
 3262 15-53
 5211 9-29
card gate, 62PC 13-3
carriage assembly, head
 53FD 8-6
 72MD 14-7
carriage bed failure error 14-55
carriage bed, 72MD 14-6
carriage go and carriage advance
 3262 15-54
 5211 9-30
carriage pedestal check, 3262 15-55
carriage space key and carriage restore key, 3262 15-55
carriage space switch and carriage restore switch, 5211 9-31
carriage 6 LPI, 5211 9-31
carriage 8 LPI, 3262 15-55
carriage, 5211
 checks 9-26
 controls 9-9
 return command 9-13
carriage, 3262
 checks 15-50
 controls 15-21
 return command 15-39
CBI bit 4 gated line 5-16
CE byte 0 6-13
CE byte 1 6-13
CE diagnostic CSIPL 2-15
CE panel 6-2
CE start switch 6-2
CE switch on
 3262 15-50
 5211 9-26
channel 5-1
 attachment to port lines 5-18
 control processor/port controls 5-16
 control processor to port lines 5-16
 data flow 5-1
 CP jump on I/O condition link 5-5
 LSR link 5-2
 processing unit storage link 5-2

channel (continued)
 direct lines—control
 processor/attachments 5-18
 error conditions 5-56
 blast conditions 5-56
 port checks 5-59
 processor check halt 5-62
 time-out conditions 5-61
 transfer error 5-60
 exerciser loop program 5-24
 I/O immediate instruction 5-26
 control processor load function (MPLF) 5-42
 control processor sense (MPS) 5-42
 I/O load 5-28
 I/O load or I/O control load (IOL, IOCL) 5-26
 I/O sense 5-34
 I/O sense or I/O control sense (IOS, IOCS) 5-32
 sense interrupt level status byte 5-38
 I/O storage instruction 5-43
 load 5-44
 sense 5-48
 interface parity check 13-75
 jump on I/O condition (JIO) instruction 5-52
 operations 5-19
 base cycle steal 5-22
 burst cycle steal 5-19
 microinterrupt level 5-24
 overrun check 13-71
 port/attachment controls 5-17
 port card 5-6
 clocks 5-8
 command bus out decode 5-15
 control lines 5-10
 data buffer 5-12
 data flow 5-6
 decodes 5-14
 LSR selection 5-14
 parity 5-7
 port checks register 5-14
 port register 5-13
 timings 5-9
 triggers 5-8
 port to attachment lines 5-17
 port to control processor lines 5-16

- channel decode, 3262 15-24
- channel status register
 - 3262 15-19
 - 5211 9-7
- channel transfer check, 62EH 7-65
- check status register
 - 3262 15-21
 - 5211 9-9
- check switch 6-16
- check, interlock and forms lights
 - 3262 15-55
 - 5211 9-31
- clock light 6-16
- clocks
 - common adapter, 62PC 13-10
 - control processor 2-3
 - main storage processor 3-4
 - port 5-8
- clocks/increment printer, 3262 15-34
- close contactor, 3262 15-55
- close 25-Vdc contactor, 5211 9-31
- command bus in lines 5-18
- command bus out decode 5-15
- command bus out 0-2 lines 5-17
- command error, 62PC 13-72
- command instructions, MSP 3-46
- commands, I/O
 - channel 5-25
 - common adapter, 62PC 13-65
 - data communications 12-40
 - disk
 - 62EH 7-48
 - 62PC 13-60
 - diskette
 - level 1 8-26
 - level 2 14-28
 - printer
 - 3262 15-40
 - 5211 9-16
 - work stations 11-16
- common adapter, 62PC
 - commands 13-65
 - file control block 13-20
 - interface 13-10
 - parity check 13-74
- communications
 - adapter 12-18
 - display indicators 6-17
 - display switch 6-17
- compare immediate (CI), CP 2-52
- compare logical characters (CLC), MSP 3-40
- compare logical immediate (CLI), MSP 3-39
- compare velocity line, 62EH 7-39
- composite sync, 62EH 7-26
- configuration control register, MSP 3-54
- console check light 6-1
- control field, SDLC 12-6
- control load command
 - channel
 - immediate 5-26
 - storage 5-43
 - data communications 12-40
 - disk
 - 62EH 7-48
 - 62PC 13-60
 - diskette
 - level 1 8-30
 - level 2 14-28
 - printer
 - 3262 15-42
 - 5211 9-18
 - work stations 11-18
- control mode register, MSP 3-55
- control out powered line 5-17
- control panel (see operator panel)
- control processor 2-1
 - channel communications 4-6
 - checks
 - during instruction execution 2-120
 - during IPL 2-24
 - clock 2-3
 - clocks 2-1
 - control of MSAR 2-67
 - data flow 2-2
 - default conditions 2-1
 - error conditions 2-119
 - error history table 2-25
 - functional units 2-108
 - arithmetic and logic units 2-110
 - control storage 2-109
 - local storage registers 2-113
 - micro-operation register 2-109
 - processor condition register 2-114
 - status 1 gate 2-117
 - status 2 gate 2-117
 - storage address register 2-109
 - storage data register 2-114
 - storage gate high/low 2-119
 - X-registers 2-109
 - Y-registers 2-109
- control processor (continued)
 - I-fetch 2-28
 - instruction times 2-28
 - instructions 2-32
 - add immediate (AI) 2-54
 - branch (B) 2-34
 - branch and link (BAL) 2-36
 - compare immediate (CI) 2-52
 - hexadecimal branch (HBN, HBZ) 2-80
 - hexadecimal move (SRL, SRLD, MZZ, MZN) 2-82
 - I/O immediate 2-88
 - I/O storage 2-100,5-43
 - jump on condition (JC) 2-38
 - jump on I/O condition 2-104, 5-52
 - load immediate (LI) 2-50
 - load register (L) 2-76
 - logical/arithmetic 1 2-42
 - logical/arithmetic 2 2-46
 - mnemonic list of 2-30
 - move local storage register (MVR) 2-78
 - register control (WMPR, RMPR) 2-73
 - routine listings 2-29
 - set bits off 2-60
 - set bits on 2-58
 - storage (LC, LM, STC, STM) 2-63
 - storage direct (L, ST) 2-76
 - subtract immediate (SI) 2-54
 - test mask (TM) 2-56
 - LSR stack addresses 6-5
 - MSP communication 4-6
 - operations 2-5
 - IPL-CE diagnostics 2-15
 - IPL-customer SSP from diskettes 2-13
 - IPL-customer user program 2-5
 - parity checking 2-1
 - port lines 5-16
- control processor load function (MPLF) 2-91, 2-99, 5-42
- control processor sense (MPS) 2-99, 5-42
- control sense command
 - channel 5-32
 - disk
 - 62EH 7-50
 - 62PC 13-62
 - diskette
 - level 1 8-40
 - level 2 14-32
 - printer
 - 3262 15-44
 - 5211 9-20
- control storage 2-109
- control storage initial program load
 - CE diagnostics, diskette 2-15
 - diagnostic sequence 2-17
 - diskette timing (level 1) 2-18
 - diskette timing (level 2) 2-21
 - error history table 2-25
 - error indications 2-24
 - flowchart (level 1) 2-19
 - flowchart (level 2) 2-22
 - switch options 2-27
 - control storage program check 2-119, 2-122
 - customer SSP from diskettes 2-13
 - customer user program 2-5
 - disk sequence 2-9
 - disk timing 2-7
 - display light sequence 2-7
 - storage table 2-8
 - disk
 - 62EH 7-46
 - 62PC 13-56
 - read operation, diskette level 2 14-26
 - switch 6-16
 - track counter, diskette level 1 8-47
- control storage layout 2-14
- control storage SAR parity check 2-128
- controller interrupt controls
 - 3262 15-21
 - 5211 9-11
- controller lines (attachment controllers) 10-4
- controller mode register
 - 3262 15-13
 - 5211 9-3
- controller status gate
 - 3262 15-20
 - 5211 9-8
- controller unit check
 - 3262 15-50
 - 5211 9-26
- cover open error, 72MD 14-55
- CSIPL cycle line 5-18
- CSY trigger line (channel) 5-16
- cycle steal 7-44, 13-20
- cycle steal overrun check error, 62EH 7-58
- cycle steal requests 4-1
- cyclic redundancy character shift register 8-48
- cyclic redundancy check, 62PC 13-73
- cylinder mismatch, 72MD 14-50

- D** data buffer (channel) 5-12
- data bus out parity error
 - data communications 12-53
 - disk
 - 62EH 7-57
 - 62PC 13-71
- data communications 12-1
 - adapter controls 12-22
 - bit counter 12-24
 - command decode 12-22
 - interrupts 12-22
 - NRZI 12-25
 - ones counter 12-23
 - zero insertion 12-25
- binary synchronous communications 12-1
 - ASCII characters 12-5
 - EBCDIC characters 12-5
 - line control characters 12-5
 - message format 12-2
 - operations 12-26
- commands, input/output
 - control load 12-40
 - load 12-40
 - sense 12-46
- communications adapter 12-18
 - data flow 12-18
 - functional units 12-19
- diagnostics 12-54
- EIA/CCITT 12-59
- error conditions 12-52
- functional units 12-19
- internal clock 12-58
- interrupts and command decodes 12-22
- modems 12-60
 - digital data service 12-78
 - external 12-59
 - types 12-17
 - 1200 bps 12-60
 - 2400 bps 12-66
- operations 12-26
 - BSC multipoint 12-35
 - BSC receive initial 12-29
 - BSC receive initial delayed 12-29
 - BSC receive only 12-26
 - BSC transmit/receive 12-31
 - BSC transmit/receive initial 12-30
 - BSC transmit/receive overlay 12-29
 - BSC transparent 12-34
 - SDLC receive 12-37
 - SDLC transmit 12-36

- data communications (continued)
 - synchronous data link control 12-6
 - commands 12-8
 - control field 12-7
 - frame 12-6
 - receive operation 12-37
 - responses 12-8
 - transmit operation 12-36
 - system level interface 12-26
 - input/output block 12-26
 - queue 12-26
 - wrap test
 - interface wrap 12-54
 - 1200 bps modem 12-65
- data control instructions (MSP) 3-26
- data count field 12-12
- data cyclic redundancy check 14-49
- data flow
 - channel 5-1
 - communications adapter 12-18
 - control processor 2-1
 - disk
 - 62EH 7-12
 - 62PC 13-8
 - diskette
 - level 1 8-11
 - level 2 14-16
 - main storage processor 3-6
 - printer
 - 3262 15-10, 15-11
 - 5211 9-2
 - system 2-2
 - work station 11-2
- data head
 - disk
 - 62EH 7-11
 - 62PC 13-3
 - diskette
 - level 1 8-4, 8-8
 - level 2 14-12
- data latch, 62EH 7-26
- data parity check
 - 3262 15-50
 - 5211 9-26
- data protection, 62PC 13-7
- data recording, disk
 - 62EH 7-8
 - 62PC 13-6
- data separator, diskette level 1 8-46
- data set (not) ready error 12-53
- data stream reject 9-26
 - 3262 15-50
 - 5211 9-26
- data tracks, disk
 - 62EH 7-5
 - 62PC 13-3
- data transfer check
 - 3262 15-50
 - 5211 9-26
- data unsafe error, disk
 - 62EH 7-70
 - 62PC 13-72
- decimal correct, MSP 3-52
- default conditions, CP 2-1
- default selection 2-1
- demodulation theory, 2400 bps modem
- destination address field, SNA 12-12
- diagnostic sequence, diskette 2-17
- diagnostics, data communications 12-54
- digital data service adapter 12-78
 - character flow 12-80
 - interface lines 12-81
 - line control characters 12-78
 - idle 12-78
 - out of service character 12-79
 - zero suppression 12-79
 - transmission rates 12-78
 - transmission signal 12-78
- direct lines--control
 - processor/attachments 5-18
- disk block processor clock line 5-18
- disk burst mode gated line 5-17
- disk drive and attachment, 62EH 7-1
 - actuator 7-4
 - lock 7-3
 - movement 7-9
 - position indicator 7-4
 - addressing 7-7
 - brake 7-4
 - circuit locations 7-4
 - command bus in 7-47
 - commands, input/output 7-48
 - control load 7-48
 - control sense 7-50
 - jump on I/O condition 7-54
 - load 7-48
 - sense 7-50
 - sense interrupt level status
 - byte 7-52
- disk drive and attachment, 62 EH (continued)
 - control storage initial program
 - load 7-46
 - cycle steal 7-44
 - from the control processor 7-44
 - to the control processor 7-45
 - data flow 7-12
 - data recording 7-8
 - enclosure 7-2
 - error conditions 7-56
 - channel transfer check 7-65
 - cycle steal overrun check 7-58
 - cyclic redundancy check 7-61
 - data bus out parity check 7-57
 - data unsafe condition 7-70
 - interrupt time-out check 7-69
 - not valid seek address 7-63
 - off track check 7-67
 - phase lock oscillator out of sync 7-68
 - sector check 7-62
 - sector sync check 7-66
 - serializer/deserializer parity check 7-60
 - write check 7-64
 - write data echo check 7-56
 - format 7-5
 - data tracks 7-5
 - guard band 7-8
 - landing zone 7-8
 - sector format 7-6
 - servo tracks 7-8
 - grounding 7-2
 - head alignment 7-11
 - input/output and sense lines 7-75
 - jump on I/O conditions 7-71
 - motor 7-4
 - operations 7-13
 - read data 7-18
 - read diagnostic 7-18
 - read identification 7-15
 - read verify 7-18
 - scan read data equal 7-20
 - scan read data high or equal 7-20
 - scan read data low or equal 7-20
 - write data 7-16
 - write identification 7-14
 - phase lock oscillator 7-34
 - power on and power off 7-42
 - power on and seek home 7-43
- disk drive and attachment, 62 EH (continued)
 - read circuits 7-26
 - recalibrate operation 7-35
 - seek operation 7-38
 - servo clock 7-32
 - spindle 7-3
 - subframe 7-2
 - track following principles 7-30
 - transducer 7-3
 - write circuits 7-22
 - write safety 7-5
 - disk speed 7-5
 - file ready 7-5
 - power on 7-5
- disk drive and attachment, 62PC 13-1
 - access operations 13-42
 - performing the operation 13-44
 - starting the operation 13-42
 - actuator 13-1
 - lock 13-1
 - movement 13-34
 - addressing 13-4
 - brake 13-1
 - card gate 13-2
 - circuit locations 13-2
 - command bus in 13-58
 - commands, common adapter 13-65
 - commands, input/output 13-60
 - control load 13-60
 - control sense 13-62
 - jump on I/O condition 13-64
 - load 13-60
 - sense 13-62
 - sense interrupt level status
 - byte 13-63
 - common adapter commands 13-65
 - common adapter file control block 13-20
 - loading the common adapter file control block 13-24
 - sensing the common adapter file control block 13-24
 - common adapter interface 13-10
 - control storage initial program
 - load 13-56
 - cycle steal 13-30
 - for a read 13-33
 - for a write 13-32
 - data flow 13-8
- disk drive and attachment, 62 PC (continued)
 - data protection 13-7
 - data recording 13-6
 - dedicated servo 13-36
 - diagnostic operations 13-19
 - disk drive interface 13-11
 - enclosure and spindle brake 13-1
 - error conditions 13-70
 - adapter check 13-71
 - any error 13-73
 - brake applied 13-72
 - CA data bus parity check 13-71
 - channel interface parity check 13-75
 - channel overrun check 13-71
 - command error 13-72
 - common adapter parity check 13-74
 - cyclic redundancy check 13-73
 - data unsafe 13-72
 - disk drive not attached 13-76
 - disk not ready 13-72
 - inbound interface error 13-71
 - missing sector pulse 13-76
 - no record found, 13-76
 - not valid command parameters 13-76
 - parallel DBO parity check 13-71
 - seek incomplete 13-72
 - tag parity check 13-71
 - time-out error 13-76
 - track unavailable 13-72
 - write gate return check 13-75
 - 62PC interface error 13-76
 - format 13-3
 - cylinders 13-3
 - data tracks 13-3
 - guard band 13-3
 - landing zone 13-3
 - sectors 13-4
 - servo tracks 13-3
 - grounding 13-1
 - head selecting 13-47
 - input/output lines 13-78
 - interrupts 13-28
 - motor 13-1
 - operation sequence 13-12
 - operations 13-12
 - read data 13-15
 - read diagnostic 13-15
 - read ID 13-14
 - read verify 13-15
 - scan equal 13-18
 - scan high or equal 13-18
 - scan low or equal 13-18
 - write data 13-17
 - write ID 13-16

disk drive and attachment, 62 PC (continued)
 power on and power off 13-7
 power sequence 13-54
 read data flow 13-11
 read waveshapes 13-52
 reading and writing data 13-6, 13-47
 sample servo 13-39
 waveshapes 13-40
 seek calibrate operation 13-44
 seek waveshapes 13-46
 servo tracks and servo track
 follow 13-34
 system I/O channel interface 13-10
 write data flow 13-11
 write waveshapes 13-50
 disk drive not attached 13-76
 disk not ready 13-72
 disk ready, 62EH 7-37
 disk strobe line 5-17
 diskette drive and attachment, level 1 8-1
 bit cells
 33FD 8-4
 53FD 8-8
 commands 8-26
 control load 8-30
 control sense 8-40
 jump on I/O 8-44
 load 8-26
 search for address mark byte 8-38
 seek to next track 8-37
 sense 8-28
 sense interrupt level status
 byte 8-43
 write address mark byte 8-32
 write byte 8-32
 write cyclic redundancy character
 byte 8-35
 write data trigger 8-34
 data flow 8-11
 diskette 1 format, 33FD 8-5
 diskette 2D format, 53FD 8-9
 error conditions 8-50
 diskette not ready 8-50
 diskette running too fast 8-50
 erase unsafe 8-52
 missing erase current 8-52
 missing record 8-52
 read overrun 8-50
 write overrun 8-51
 write parity check 8-51

diskette drive and attachment, level
 1 (continued)
 frequency modulation read and write
 circuits, 33FD 8-4
 functional units 8-46
 control storage initial program load
 track counter 8-47
 cyclic redundancy character shift
 register 8-48
 data separator 8-46
 index counter 8-46
 interrupt requests 8-49
 read bit ring 8-47
 read clock 8-47
 ready counter 8-47
 write bit ring 8-47
 write clock 8-47
 modified frequency modulation read/write
 circuits, 53FD 8-8
 operations 8-12
 find sector ID 8-20
 read 8-14
 seek 8-12
 write 8-18
 write sector ID 8-24
 33FD diskette drive 8-2
 carriage assembly 8-2
 drive assembly 8-2
 leadscrew 8-2
 operation 8-3
 read or write 8-3
 seek 8-3
 stepper motor 8-2
 timing sequence 8-3
 53FD diskette drive 8-6
 drive assembly 8-6
 operation 8-7
 read or write 8-7
 seek 8-7
 stepper drive 8-6
 timing sequence 8-7
 diskette drive and attachment, level 2 14-1
 commands 14-28
 control load 14-28
 control sense 14-32
 jump on I/O condition 14-34
 load 14-28
 sense 14-32
 sense interrupt level status
 byte 14-36
 data flow 14-16

diskette drive and attachment, level
 2 (continued)
 diskette 1 format 14-14
 diskette 2D format 14-15
 error conditions 14-48
 autoloader command reject 14-54
 autoloader error 14-54
 autoloader motion check 14-54
 buffer overrun 14-52
 buffer underrun 14-52
 carriage bed failure 14-55
 cover open 14-55
 cylinder mismatch 14-50
 data cyclic redundancy check 14-49
 diskette not ready 14-51
 failure to eject 14-55
 failure to pick 14-55
 fast check 14-51
 ID not found 14-52
 missing data address 14-49
 missing erase current 14-52
 no op condition 14-50
 not valid command check 14-54
 not valid control record check 14-51
 operation out of sequence 14-55
 parity check 14-54
 picker failure 14-55
 time-out check 14-54
 unexpected erase current
 present 14-52
 window magnet failure 14-54
 write/erase current present 14-55
 write error 14-51
 write verify mismatch 14-51
 frequency modulation read and write
 circuits 14-12
 functional units 14-37
 address mark detection 14-42
 autoloader control 14-47
 bit ring 14-42
 byte counter 14-46
 CBI assembler 14-47
 control storage initial program load
 track counter 14-38
 CSIPL autoloader sequence 14-38
 cycle steal control 14-46
 cyclic redundancy character shift
 register 14-43
 data buffer 14-45
 data separator 14-37

diskette drive and attachment, level
 2 (continued)
 DBI assembler 14-47
 ID buffer 14-44
 index counter 14-37
 interrupt level 4 request 14-47
 Op decode 14-47
 read/write clock 14-39
 ready counter 14-38
 sector sequence control 14-45
 seek control 14-47
 track sequence control 14-45
 write trigger 14-40
 500-kilohertz oscillator 14-47
 input/output lines 14-56
 modified frequency modulation read and
 write circuits 14-13
 operations 14-17
 autoloader 14-27
 CSIPL read 14-26
 find sector identification 14-23
 read 14-19
 seek 14-17
 write 14-21
 write sector identification 14-24
 write verify 14-22
 33FD diskette drive 14-2
 carriage assembly 14-2
 drive assembly 14-2
 leadscrew 14-2
 operation 14-3
 read or write 14-3
 seek 14-3
 stepper motor 14-2
 timing sequence 14-3
 diskette drive and attachment, level
 2 (continued)
 53FD diskette drive 14-4
 drive assembly 14-4
 operation 14-5
 read or write 14-5
 seek 14-5
 stepper motor 14-4
 timing sequence 14-5
 72MD diskette magazine drive 14-6
 autoloader operation 14-10
 carriage bed 14-6
 data head and carriage assembly 14-7
 diskette drive mechanism 14-7
 drive operation 14-11
 picker mechanism 14-6
 read or write 14-11
 stepper motors 14-8

diskette not ready error
 level 1 8-50
 level 2 14-51
 diskette running too fast error 8-50
 diskette 1
 level 1 8-5
 level 2 14-14
 diskette 2D
 level 1 8-9
 level 2 14-15
 display/data switches 6-16
 display light sequence—initial program
 load 2-7
 display power check switch 6-17
 display storage 6-10
 drive counter, 3262 15-15
 E
 EBCDIC characters, BSC 12-5
 echo, 3262 15-17
 edit (ED) MSP instruction 3-30
 EIA/CCITT 12-59
 line adapter 12-59
 wrap 12-54
 enable interrupt line 4-6
 end of forms error
 3262 15-50
 5211 9-26
 end of forms line
 3262 15-55
 5211 9-31
 erase unsafe error 8-52
 error conditions
 channel 5-56
 control processor 2-120
 data communications 12-52
 disk
 62EH 7-56
 62PC 13-70
 diskette
 level 1 8-50
 level 2 14-48
 IPL 2-24
 printer
 3262 15-50
 5211 9-26
 work stations 11-24

error conditions (continued)
error history table
 control processor 2-25
 main storage processor 2-25
error indicators (CP) 2-24
expedited flow indicator 12-12

F
failure to eject 14-55
failure to pick 14-55
fast check 14-51
fast sync 7-26
file not ready condition, 62EH 7-5
find sector ID operation 8-20
fire tier, 3262
 check 15-50
 circuits 15-16
 gate 15-22
 lines 15-52
fire tier, 5211
 check 9-26
 circuits 9-6
 gate 9-10
 lines 9-28
flags, SDLC 12-6
force clock switch 6-16
form feed command
 3262 15-37
 5211 9-13
format command
 3262 15-37
 5211 9-13
format identification field 12-12
forms jam
 3262 15-50
 5211 9-26
forms pulse
 3262 15-55
 5211 9-31
frame check error 12-53
frame check field 12-6
frame, SDLC 12-6
frequency modulation read/write 8-4

functional units
 channel, port card 5-6
 control processor 2-106
 data communications 12-19
 diskette
 level 1 8-46
 level 2 14-37
 main storage processor 3-50
 printer
 3262 15-12
 5211 9-3
 work stations 11-3

G
general-purpose registers 10-3
grounding
 62EH 7-1
 62PC 13-1
guard band
 62EH 7-8, 7-11
 62PC 13-3

H
hammer count register, 3262 15-28
hammer echo check
 3262 15-50
 5211 9-26
hammer echo check and counter, 5211 9-5
hammer sample and hammer echo return
 3262 15-53
 5211 9-29
hardware address and data bus, 3262 15-32
hardware on or single step, 3262 15-27
head and carriage assembly
 level 1 8-2, 8-6
 level 2 14-2, 14-4, 14-6
hexadecimal branch (HBN, HBZ)
 instructions 2-76
hexadecimal move (SRL, SRLD, MZZ, MZN)
 instructions 2-78
home
 3262 15-54
 5211 9-30

I
I-fetch 2-28
I/O control load 2-94, 5-26
I/O control sense 2-96, 5-32
I/O immediate instruction
 channel 5-26
 control processor 2-88
I/O instruction line 5-16
I/O load 2-94, 5-26
I/O sense 2-96, 5-32
I/O service request line 5-16
I/O storage instruction
 channel 5-43
 control processor 2-100
ID not found 14-52
idle characters, DDSA 12-78
immediate power off (IPO) switch
 (5340) 6-1
impression control singleshoot
 3262 15-54
 5211 9-30
inbound interface error 13-71
increment, 3262 15-35
incrementer or decrementer, MSP 3-51
index counter
 level 1 8-46
 level 2 14-37
indicator register
 3262 15-19
 5211 9-7
information field, SDLC 12-6
information transfer format, SDLC 12-7
initial program load 2-5
input bus lines 7-75
input/output and sense lines 7-75
input/output block, data
 communications 12-26
input/output lines
 disk, 62PC 13-78
 diskette, level 2 14-56
 printer
 3262 15-52
 5211 9-28
 work stations 11-30
insert and test characters (ITC), MSP 3-32
instruction address register 10-3
instruction formats, MSP 3-6
instruction times, control
 processor 2-28
interface clock times 5-18
interface, modems 12-17

internal clock feature 12-58
interrupt controls
 3262 15-21
 5211 9-11
interrupt/cycle steal indicators 5-16
interrupt/cycle steal priority control for
 LSRs 5-14
interrupt request to run latch line 5-16
interrupt requests 8-49
interrupt time-out check error 7-69
interrupts 4-1
 delayed action interrupts 4-1
 immediate action interrupts 4-1
 interrupt levels 4-3
 local storage register stack 4-2
interrupts and command decode 12-22
interrupts, 62PC 13-28
invalid ASCII character error 12-53
invalid frame error 12-53
invalid IOB
 3262 15-50
 5211 9-26
invalid SCS command
 3262 15-50
 5211 9-26
invalid SCS parameter
 3262 15-50
 5211 9-26
IPL-CE diagnostics 2-15
 diskette CSIPL diagnostic sequence 2-17
 diskette or CE diskette operation 2-17
 load 1 2-15
 load 2 2-15
 load 3 2-16
 load 4 2-16
IPL-customer user programs 2-5
IPL-reload customer SSP 2-13
IPL disk sequence 2-9
IPL disk timing 2-11
IPL sequence 2-9

J
jump on condition (JC)
 CP 2-38
 MSP 3-48
jump on I/O condition (JIO), CP 2-104

jump on I/O condition command
 channel 5-52
 disk
 62EH 7-54
 62PC 13-64
 diskette
 level 1 8-44
 level 2 14-34
 printer
 3262 15-48
 5211 9-24
 work stations 11-22
jump on I/O condition, channel 5-52
jump on I/O conditions 7-71

K
key status register, 3262 15-23

L
lamp test line 5-16
lamp test switch 6-16
landing zone
 62EH 7-8
 62PC 13-3
line control characters, BSC 12-5
link register (attachment
 controllers) 10-3
load address (LA), MSP 3-38
load command
 channel
 immediate 5-26
 storage 5-43
 data communications 12-40
 disk
 62EH 7-48
 62PC 13-60
 diskette
 level 1 8-26
 level 2 14-28
 printer
 3262 15-40
 5211 9-16
 work stations 11-16

- load from control storage (LC), CP 2-63
 - load from main storage (LM), CP 2-63, 2-70
 - load immediate (LI), CP 2-52
 - load main storage processor register (WMPR), CP 2-73
 - load program mode register (LPMR), MSP 3-45
 - load register (L), MSP 3-37
 - load switch/light (5340) 6-1
 - local storage registers
 - control processor 2-113
 - main storage processor 3-52
 - logical/arithmetic 1 instruction, CP 2-42
 - logical/arithmetic 2 instruction, CP 2-46
 - logical instructions (MSP) 3-39
- M**
- machine check interrupt and processor
 - check generator 2-120
 - machine check interrupt line 5-16
 - machine errors
 - processor check errors 2-24
 - wrap test errors 2-24
 - main storage 3-51
 - main storage access by control processor 2-66
 - main storage address register 3-51
 - main storage initial program load (MSIPL) 2-6
 - main storage layout 2-14
 - main storage processor 3-1
 - address decoding (second level) 2-69
 - address translation 3-11
 - address translation logical circuit 3-11
 - addressing 3-10
 - area number and address table 3-10
 - bus line control 2-68
 - load address (LA) 3-38
 - load program mode register (LPMR) 3-47
 - load register (L) 3-37
 - move characters (MVC) 3-28
 - move hexadecimal character (MVX) 3-26
 - move logical immediate (MVI) 3-34
 - set bits off masked (SBF) 3-35
 - set bits on masked (SBN) 3-35
 - store register (ST) 3-36
 - main storage processor (continued)
 - subtract logical characters (SLC) 3-22
 - subtract zoned decimal (SZ) 3-16
 - supervisor call (SVC) 3-47
 - check bits 1 and 2 2-129
 - data flow and clocks 3-2
 - clocks 3-4
 - instruction execution time 3-5
 - instruction fetch time 3-4
 - oscillator 3-4
 - parity checking and generation 3-2
 - determining instruction format 3-6
 - direct addressing 3-10
 - error conditions 3-56
 - error history table 2-25
 - functional units 3-50
 - address compare register 3-54
 - address translation registers 3-55
 - ALU (arithmetic and logic unit) 3-51
 - backup mode register 3-54
 - configuration control register 3-54
 - control mode register 3-55
 - data flow diagram 3-50
 - decimal correct 3-52
 - incrementer or decremter 3-51
 - local storage registers 3-52
 - main storage 3-51
 - main storage address register 3-51
 - operation register 3-51
 - program mode register 3-55
 - program status register 3-53
 - Q-backup register 3-51
 - Q-register 3-39
 - status byte registers 3-54
 - X-registers 3-51
 - Y-register 3-51
 - hardware checks 2-121
 - I-fetch operation 3-8
 - indexing 3-10
 - instruction execution 3-12
 - instruction fetch operation 3-8
 - instruction list 3-7
 - instructions
 - add logical characters (ALC) 3-21
 - add to register (A) 3-24
 - add zoned decimal (AZ) 3-15
 - branch on condition (BC) 3-44
 - compare logical characters (CLC) 3-40
 - compare logical immediate (CLI) 3-39
- main storage processor (continued)
- edit (ED) 3-30
 - insert and test characters (ITC) 3-32
 - jump on condition (JC) 3-46
 - test bits off masked (TBF) 3-42
 - test bits on masked (TBN) 3-42
 - zero and add zoned (ZAZ) 3-12
- lines and gating control 3-11
- operations 3-6
 - processor check 2-24
 - set interrupt level 5 4-7
- mapping field, SNA 12-12
- message format, BSC 12-2
- micro-operation register, CP 2-109
- microinterrupt request lines 5-18
- missing data address 14-49
- missing erase current error
 - level 1 8-52
 - level 2 14-52
- missing record 8-52
- missing sector pulse 13-76
- mnemonics, control processor
 - instructions 2-30
- mode selector switch 6-2
- modems
 - digital data service adapter 12-78
 - 1200 bps integrated modem 12-60
 - automatic answer test 12-65
 - automatic answering 12-64
 - line plate for public switched network 12-66
 - nonswitched network interface 12-60
 - normal data flow test 12-65
 - receive operations 12-64
 - switched network interface 12-62
 - transmit operations 12-64
 - wrap test 12-65
- 2400 bps integrated modem 12-66
 - automatic answering 12-74
 - demodulation theory 12-69
 - jumpers 12-77
 - modulation theory 12-68
 - operation 12-66
 - receive data flow 12-72
 - switched network 12-74
 - switched network backup 12-76
 - transmit data flow 12-70
 - unclamp demodulation circuits 12-72
 - wrap connections 12-76
- modified frequency modulation read/write
 - level 1 8-8
 - level 2 14-13
- modulation theory, 2400 bps modem 12-68
- MOR parity check generation 2-124
- motor
 - 62EH 7-4
 - 62PC 13-1
- move characters (MVC), MSP 3-28
- move hexadecimal character (MVX), MSP 3-26
- move local storage register (MVR), CP 2-78
- move logical immediate (MVI), MSP 3-34
- move zone to numeric (MZN) 2-82
- move zone to zone (MZZ) 2-82
- MPLF (control processor load function) 5-42
- MPLF (control processor load function) 2-99
- MPS (control processor sense) 2-91, 2-99, 5-42
- MPXPO bus out lines 5-17
- MPXPO data in lines 5-18
- MSP bus line control 2-68
- MSP check bits 1 and 2 2-129
- MSP hardware checks 2-121
- MSP instruction formats 3-6
- MSP running light 6-2
- multidevice response line 5-18
- multipoint network 12-1
- multipoint operation, BSC 12-35
- N**
- networks, data communications 12-1
 - new channel check line 5-16
 - new line command 9-13
 - no op condition 14-50
 - no record found 13-76
 - nonsequenced format, SDLC 12-7
 - normal data flow test, 1200 bps modem 12-65
 - not powered on
 - 3262 15-50
 - 5211 9-26
 - not print time
 - 3262 15-53
 - 5211 9-29
 - not ready check
 - 3262 15-50
 - 5211 9-26
 - not valid command check 14-54
- O**
- not valid command parameters 13-76
 - not valid control record check 14-51
 - not valid seek address error 7-63
 - NRZI encoding, SDLC 12-25
- P**
- off track check error 7-67
 - ones counter, SDLC 12-23
 - operation out of sequence 14-55
 - operation register
 - attachment controllers 10-3
 - main storage processor 3-51
 - operations
 - channel 5-19
 - control processor 2-5
 - data communications 12-26
 - disk
 - 62EH 7-13
 - 62PC 13-12
 - diskette
 - level 1 8-12
 - level 2 14-17
 - main storage processor 3-6
 - printer
 - 3262 15-37
 - 5211 9-13
 - work stations 11-12
 - operator panel 6-1
 - origin address field, SNA 12-12
 - out of service, DDSA 12-79
 - output bus lines 7-75
 - overflow circuit description 7-58
- P**
- parallel DBO parity check 13-71
 - parity check 14-54
 - parity checking, control processor 2-1
 - path information unit, SNA 12-11
 - phase A line 5-16
 - phase lock oscillator 7-34
 - phase lock oscillator out of sync error 7-68

- picker failure 14-55
- point-to-point networks 12-1
- port
 - check byte 5-59
 - checks (channel checks) 5-59
 - checks register 5-14
 - clocks 5-8
 - decodes 5-14
 - error byte (CE byte 1) 6-13
 - parity 5-7
 - register 5-13
 - to attachment lines 5-17
 - to control processor lines 5-16
- power check light (5340) 6-1
- power complete and power check, 5211 9-31
- power complete, 3262 15-55
- power control register 9-3
 - 3262 15-12
 - 5211 9-3
- power fault display switches 6-17
- power light (5340) 6-1
- power on and power off
 - 62EH 7-42
 - 62PC 13-7
- power on reset
 - 3262 15-55
 - 5211 9-31
- power on reset line 5-18
- power on, 62EH 7-5
- power sequence, 62PC 13-54
- power switch (5340) 6-1
- print data register, 5211 9-6
- print position register, 3262 15-28
- print subscans
 - 3262 15-54
 - 5211 9-30
- printer attachment
 - 3262 (see 3262 printer attachment)
 - 5211 (see 5211 printer attachment)
- printer busy
 - 3262 15-55
 - 5211 9-31
- printer data register, 3262 15-36
- printer power on, 3262 15-25
- proc interrupt 1, 2, 4 lines 5-16
- processing unit error byte 2-120, 6-13
- processor check
 - errors 2-24
 - halt 5-62
 - light 6-1

- processor condition register
 - attachment controllers 10-3
 - control processor 2-124
 - printer
 - 3262 15-13
 - 5211 9-4
- processor errors 2-120
- processor interrupt lights 6-16
- program mode register 3-55
- program status register 3-53

Q

- Q-backup register 3-51
- Q-register 3-51

R

- random access memory 10-3
- read bit ring 8-47
- read circuits 7-26
- read clock 8-47
- read clock and divide-by-two counter 7-26
- read clock sync 7-26
- read data 7-8
- read data operation
 - 62EH 7-18
 - 62PC 13-15
- read diagnostic operation
 - 62EH 7-18
 - 62PC 13-15
- read from control storage high 2-100, 5-43
- read from control storage low 2-100, 5-43
- read from main storage 2-100, 5-43
- read identification operation
 - 62EH 7-15
 - 62PC 13-14
- read operation
 - level 1 8-14
 - level 2 14-19
- read overrun error 8-50
- read waveshapes
 - 62EH 7-15
 - 62PC 13-52

- read/write controls, frequency modulation
 - level 1 8-4
 - level 2 14-12
- reading data bits
 - 62EH 7-9
 - 62PC 13-6, 13-47
- ready counter 8-47
- ready key and ready light, 3262 15-55
- ready switch and ready light, 5211 9-31
- recalibrate operation 7-9, 7-35
- receive operations
 - BSC 12-26
 - SDLC 12-37
- receive time-out error 12-53
- receiver, 2400 bps modem 12-66
- register control, CP 2-73
- register load clocks, 3262 15-24
- request/response, SNA
 - header 12-15
 - unit 12-15
- reset switch 6-16
- ribbon check
 - 3262 15-50, 15-55
 - 5211 9-26, 9-31
- RMPR (sense main storage processor register) 2-73
- routine printout 2-29

S

- sample servo, 62PC 13-39
 - waveshapes 13-40
- scan high or equal 13-18
- scan hit condition 7-73
- scan low or equal 13-18
- scan read data low or equal operation 7-20
- SDLC (see synchronous data link control)
- SDR parity check generation 2-123
- search for address mark byte 8-38
- sector check error 7-62
- sector format
 - 62EH 7-6
 - 62PC 13-4
- sector hit 7-72
- sector sync check error 7-66
- seek incomplete 13-72

- seek operation
 - disk
 - 62EH 7-9, 7-38
 - 62PC 13-44
 - diskette
 - level 1 8-12
 - level 2 14-17
- seek to next track 8-37
- seek waveshapes
 - 62EH 7-41
 - 62PC 13-46
- sense command
 - channel
 - immediate 5-32
 - storage 5-43
 - data communications 12-46
 - disk
 - 62EH 7-50
 - 62PC 13-62
 - diskette
 - level 1 8-28
 - level 2 14-32
 - printer
 - 3262 15-44
 - 5211 9-20
 - work stations 11-20
- sense interrupt level status byte command
 - channel 5-38
 - control processor 2-98
 - disk
 - 62EH 7-52
 - 62PC 13-63
 - diskette
 - level 1 8-43
 - level 2 14-36
 - printer
 - 3262 15-46
 - 5211 9-22
 - work stations 11-23
- sense lines used with MAPs 7-76
- sense main storage processor
 - register 2-73
- sequence number field, SNA 12-12
- serializer/deserializer parity check
 - error 7-60
- service in line 5-18
- service out powered line 5-17
- service request line generation 4-8

- servo clock 7-32
- servo track follow
 - 62EH 7-10
 - 62PC 13-34
- servo tracks
 - 62EH 7-8
 - 62PC 13-34
- session control request units, SNA 12-15
- set bits off (SBF), CP 2-60
- set bits off masked (SBF), MSP 3-35
- set bits on (SBN), CP 2-58
- set bits on masked (SBN), MSP 3-35
- shift right logical (SRL) 2-82
- shift right logical double (SRLD) 2-82
- SNA (see systems network architecture)
- SNA/SDLC buffer 12-11
- spindle 7-4
- standardized data latch 7-26
- start switch 6-2
- state decode, 3262 15-30
- state register, 3262 15-31
- state sequencer, 3262 15-2
- station address, SDLC 12-6
- status byte register 3-52
- status 1 gate 2-117
- status 2 gate 2-118
- stop light 6-2
- stop switch 6-2
- storage
 - clocks 2-4
 - cycle function for 33FD CSIPL 2-39
 - cycle request line 5-16
 - data register 2-114
 - direct instructions 2-76
 - function 2-4
 - gate high/low 2-119
 - gate high/low parity check
 - generation 2-125
 - instructions 2-63
 - select switch 6-16
- storage access timings 2-4
- storage address register
 - attachment controllers 10-3
 - control processor 2-109
- storage select lines 10-4
- storage select/write, 3262 15-26
- store register (ST), MSP 3-36
- store to control storage (STC) CP 2-65
- store to main storage (STM) CP 2-71

- strobe and data parity check
 - 3262 15-53
 - 5211 9-29
- strobe powered line 5-17
- subframe 7-2
- subscan bus register, 3262 15-29
- subtract immediate (SI), CP 2-54
- subtract logical characters (SLC), MSP 3-22
- subtract zoned decimal (SZ), MSP 3-16
- supervisor call (SVC), MSP 3-48
- supervisory format, SDLC 12-7
- switch status register, 5211 9-11
- switched data bus out, 3262 15-33
- switched network backup 12-76
- switches, CE panel (see CE panel)
- switches, operator panel (see operator panel)
- synchronization bits, SDLC 12-6
- synchronous data link control 12-6
 - commands, primary station 12-8
 - frame format 12-6
 - information transfer format 12-7
 - nonsequenced format 12-7
 - receive operations 12-37
 - responses 12-8
 - supervisory format 12-7
 - transmit operations 12-36
- system
 - bus in lines 5-16
 - bus out lines 5-16
 - command register
 - 3262 15-12
 - 5211 9-4
 - components, locations 1-1
 - data flow 1-2
 - data register
 - 3262 15-12
 - 5211 9-4
 - I/O channel interface 13-10
 - in use light 6-1
 - instruction step 6-13
 - level interface, data
 - communications 12-26
 - reset line 5-16, 5-18
 - status gate
 - 3262 15-20
 - 5211 9-8
- systems network architecture 12-10
 - basic information unit 12-11
 - basic link unit 12-11
 - basic transmission unit 12-11
 - data count field 12-12
 - destination address field 12-12
 - expedited flow indicator 12-12
 - format identification field 12-12
 - mapping field 12-12
 - origin address field 12-12
 - path information unit 12-11
 - request/response header 12-15
 - request/response units 12-15
 - sequence number field 12-12
 - session control request units 12-15
 - SNA/SDLC buffer 12-11
 - transmission header 12-12
 - formats 12-13
- T**
 - T-7 line 5-16
 - tag parity check 13-71
 - test bits off masked (TBF), MSP 3-42
 - test bits on masked (TBN), MSP 3-42
 - test mask (TM), CP 2-56
 - thermal check light 6-1
 - thermal check 1, 3262 15-55
 - thermal check 2, 3262 15-55
 - throat closed
 - 3262 15-55
 - 5211 9-31
 - throat open
 - 3262 15-50
 - 5211 9-26
 - time-out conditions 5-61
 - time-out error
 - data communications 12-47
 - disk 13-76
 - diskette 14-54
 - track follow principles 7-30
 - track unavailable 13-72
 - transducer, 62EH 7-3
 - transfer error 5-60
 - transfer error line 5-17
 - transmission header, SNA 12-12
 - format 12-13
- transmit operations
 - BSC 12-30
 - SDLC 12-36
- transmitter, 2400 bps modem 12-66
- transparent operations, BSC 12-34
- T4 through T6 line 5-16
- U**
 - unexpected erase current present 14-52
 - unprintable character
 - 3262 15-50
 - 5211 9-26
- V**
 - velocity follow latch 7-39
- W**
 - window magnet failure 14-54
 - WMPR (load main storage processor register) 2-73
 - work station attachment 11-1
 - base cycle steal 11-29
 - commands 11-16
 - control load 11-18
 - jump on I/O 11-22
 - load 11-16
 - sense 11-20
 - sense interrupt level status byte 11-23
 - error conditions 11-24
 - channel DBO parity check 11-28
 - controller DBO/DBI parity check 11-27
 - controller storage parity check 11-25
 - long time-out check 11-27
- work station attachment (continued)
 - serial parity check 11-28
 - work station controller check 11-28
 - functional units 11-3
 - channel interface 11-3
 - controller interface 11-4
 - serial interface 11-5
 - input/output lines 11-26
 - operations 11-12
 - displaying a message 11-13
 - receive 11-15
 - transmit 11-14
 - serial interface to work stations 11-6
 - bit synchronization 11-8
 - data transmissions 11-6
 - differential data 11-7
 - distorted data 11-7
 - frame synchronization 11-8
 - line turnaround 11-8
 - phase encoded data 11-6
 - predistorted data 11-7
 - typical transmission sequences 11-8
 - wrap test 12-54
 - wrap test errors 2-24
 - wrap test, 1200 bps modem 12-65
 - write
 - address mark byte command 8-32
 - bit ring 8-47
 - byte command 8-32
 - check error 7-64
 - circuits 7-22
 - clock 8-47
 - CRC byte 8-35
 - data 7-8
 - data echo check error 7-56
 - data operation
 - 62EH 7-16
 - 62PC 13-17
 - data trigger 8-34
 - error 14-51
 - gate return check, 62PC 13-75
 - identification operation
 - 62EH 7-14
 - 62PC 13-16
 - overrun error 8-51
 - parity check 8-51
 - safety 7-5
 - sector ID operation 8-24
 - verify mismatch 14-51
 - waveshapes
 - 62EH 7-23
 - 62PC 13-50
- write/erase current present 14-55
- write to control storage high (WTCH) 2-100, 5-43
- write to control storage low (WTCL) 2-100, 5-43
- write to main storage (WTM) 2-100, 5-43
- writing 0-bits 7-8
- writing 1-bits 7-8
- X**
 - X-registers, CP 2-109
 - X-registers, MSP 3-51
- Y**
 - Y-register, MSP 3-51
 - Y-registers, CP 2-109
- Z**
 - zero and add zoned (ZAZ), MSP 3-13
 - zero insertion, SDLC 12-25
 - zero suppression 12-79
- 1200 bps modem (see modems)

2400 bps modem (see modems)

3262 printer attachment 15-1

- attachment cards 15-1
- circuit locations 15-1
- commands, I/O 15-40
 - control load 15-42
 - control sense 15-44
 - jump on I/O 15-48
 - load 15-40
 - sense 15-44
 - sense interrupt level status
 - byte 15-46
- commands, output data stream 15-15
- controller card 15-1
- data flow
 - T2 card 15-10
 - U2 card 15-11
- error conditions 15-50
- functional units 15-12
- input/output lines 15-52
 - control interface 15-54
 - hammer interface 15-52
 - operator panel interface 15-55
- interface 15-55
- operations 15-37
 - as controlled by commands 15-37
 - examples of 15-38

33FD (see diskette)

5211 printer attachment (continued)

- functional units 9-3
 - input/output lines 9-28
 - control interface 9-30
 - hammer interface 9-28
 - operator panel interface 9-31
 - interface 9-1
 - operations 9-13
 - as controlled by commands 9-13
 - examples of 9-14
- 53FD (see diskette)

62EH (see disk drive and attachment, 62EH)

62PC (see disk drive and attachment, 62PC)

62PC interface error 13-76

7 second time-out (control storage program check) 2-119, 2-122

72MD (see diskette)

5211 printer attachment 9-1

- attachment card 9-1
- circuit locations 9-1
- commands, I/O 9-16
 - control load 9-18
 - control sense 9-20
 - jump on I/O 9-24
 - load 9-16
 - sense 9-20
 - sense interrupt level status
 - byte 9-22
- commands, output data stream 9-13
- controller card 9-1
- data flow 9-2
- error conditions 9-26

This page intentionally left blank.

READER'S COMMENT FORM

Please use this form only to identify publication errors or request changes to publications. Technical questions about IBM systems, changes in IBM programming support, requests for additional publications, etc, should be directed to your IBM representative or to the IBM branch office nearest your location.

Error in publication (typographical, illustration, and so on). **No reply.**

Page Number Error

Inaccurate or misleading information in this publication. Please tell us about it by using this postage-paid form. We will correct or clarify the publication, or tell you why a change is not being made, provided you include your name and address.

Page Number Comment

Note: All comments and suggestions become the property of IBM.

Name _____

Address _____

● No postage necessary if mailed in the U.S.A.

READER'S COMMENT FORM

Please use this form only to identify publication errors or request changes to publications. Technical questions about IBM systems, changes in IBM programming support, requests for additional publications, etc, should be directed to your IBM representative or to the IBM branch office nearest your location.

Error in publication (typographical, illustration, and so on). **No reply.**

Page Number Error

Inaccurate or misleading information in this publication. Please tell us about it by using this postage-paid form. We will correct or clarify the publication, or tell you why a change is not being made, provided you include your name and address.

Page Number Comment

Note: All comments and suggestions become the property of IBM.

Name _____

Address _____

● No postage necessary if mailed in the U.S.A.

Cut Along Line

Fold

Fold

Fold

Fold

FIRST CLASS
PERMIT NO. 40
ARMONK, N.Y.

FIRST CLASS
PERMIT NO. 40
ARMONK, N.Y.

BUSINESS REPLY MAIL
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

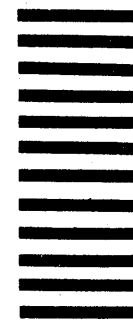
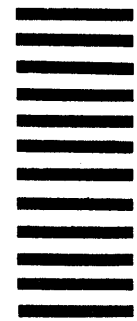
BUSINESS REPLY MAIL
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

POSTAGE WILL BE PAID BY . . .

POSTAGE WILL BE PAID BY . . .

IBM Corporation
General Systems Division
Development Laboratory
Publications, Dept. 245
Rochester, Minnesota 55901

IBM Corporation
General Systems Division
Development Laboratory
Publications, Dept. 245
Rochester, Minnesota 55901



Fold

Fold

Fold

Fold



International Business Machines Corporation

General Systems Division
4111 Northside Parkway N.W.
P.O. Box 2150
Atlanta, Georgia 30301
(U.S.A. only)

General Business Group/International
44 South Broadway
White Plains, New York 10601
U.S.A.
(International)



International Business Machines Corporation

General Systems Division
4111 Northside Parkway N.W.
P.O. Box 2150
Atlanta, Georgia 30301
(U.S.A. only)

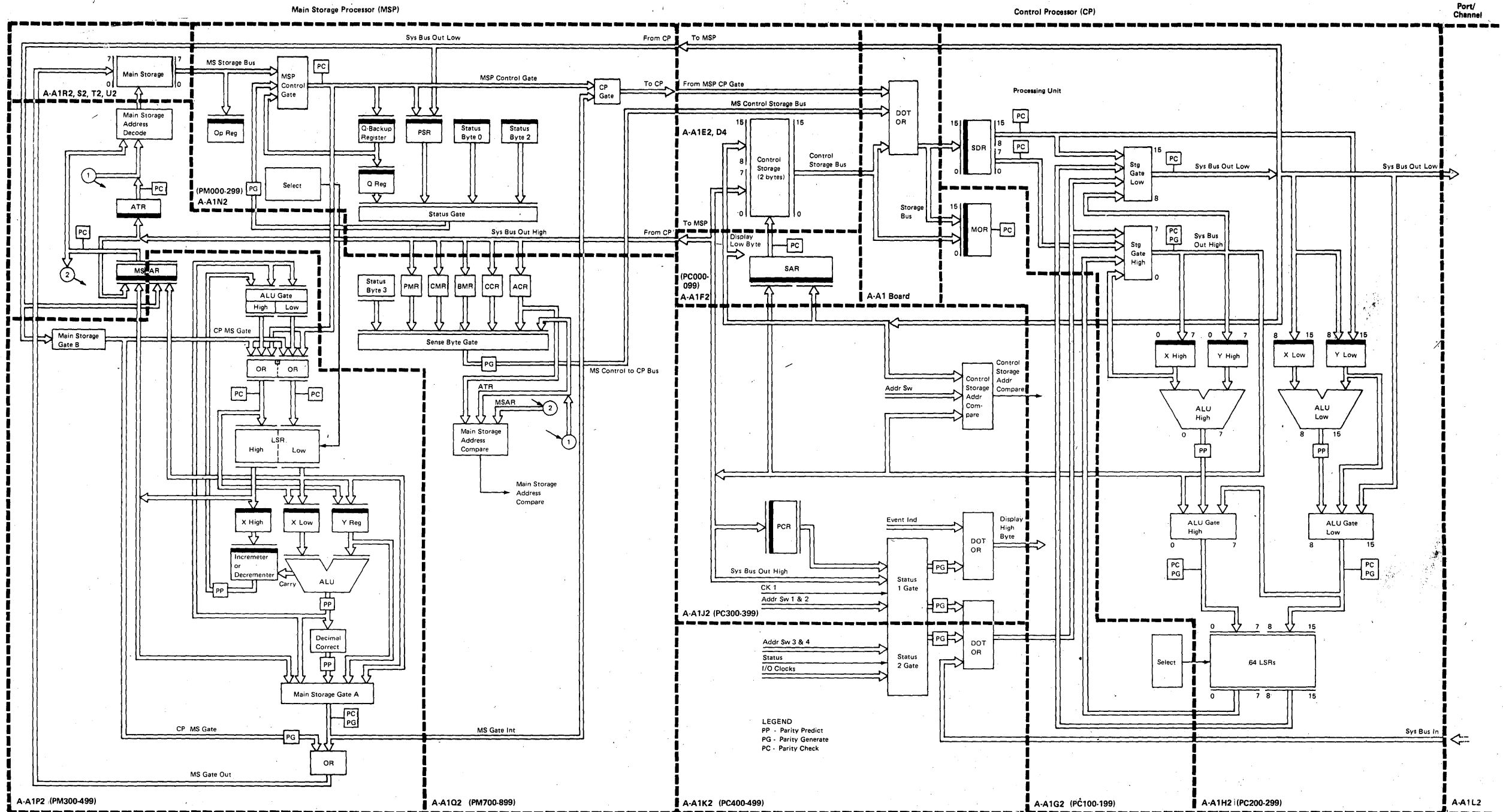
General Business Group/International
44 South Broadway
White Plains, New York 10601
U.S.A.
(International)



International Business Machines Corporation

General Systems Division
4111 Northside Parkway N.W.
P.O. Box 2150
Atlanta, Georgia 30301
(U.S.A. only)

General Business Group/International
44 South Broadway
White Plains, New York 10601
U.S.A.
(International)



*Data flow bus lines may not pass through FRUs as shown.