



REFERENCE DATA

CHARACTER CODES

| OCTAL | XS-3 | ASC II | FIELD DATA | MNEMONIC                                   |
|-------|------|--------|------------|--|
| 000   | SP   | NUL    | MS         |  |
| 001   | -    | SOH    | Sh U       | SRQ  |
| 002   |      | STX    | Sh D       | SRA  |
| 003   | 0    | ETX    | LF         | DSR  |
| 004   | 1    | EOT    | CR         | C  |
| 005   | 2    | ENQ    | SP         | SLQ  |
| 006   | 3    | ACK    | A          | SLA  |
| 007   | 4    | BEL    | B          | DSL  |
| 010   | 5    | BS     | C          | LQ, ZQ                                     |
| 011   | 6    | HT     | D          | LA, ZA                                     |
| 012   | 7    | LF     | E          | LB, ZB, NOOP                               |
| 013   | 8    | VT     | F          | ENY  |
| 014   | 9    | FF     | G          | SQ, CPQ                                    |
| 015   | \    | CR     | H          | SA, CPA                                    |
| 016   | :    | SO     | I          | SB, SZ                                     |
| 017   | [    | SI     | J          | STIME, NINT, HINT                          |
| 020   | &    | DLE    | K          | AA   |
| 021   | :    | DC1    | L          | ANA  |
| 022   | .    | DC2    | M          | M  |
| 023   | ?    | DC3    | N          | D  |
| 024   | A    | DC4    | O          | RA   |
| 025   | B    | NAK    | P          | RAN  |
| 026   | C    | SYN    | Q          | AQ   |
| 027   | D    | ETB    | R          | ANQ  |
| 030   | E    | CAN    | S          | LSUM                                       |
| 031   | F    | EM     | T          | LDIF                                       |
| 032   | G    | SUB    | U          |  |
| 033   | H    | ESC    | V          |  |
| 034   | I    | FS     | W          | RSUM                                       |
| 035   | #    | GS     | X          | RDIF                                       |
| 036   | <    | RS     | Y          | RI   |
| 037   | =    | US     | Z          | RD   |
| 040   | ,    | SP     | )          | LLP  |
| 041   | *    | !      | -          |  |
| 042   | \$   | "      | +          |  |
| 043   | !    | #      | <          | CM   |
| 044   | J    | \$     | =          | RLP  |
| 045   | K    | %      | >          |  |
| 046   | L    | &      | -          |  |
| 047   | M    | '      | \$         |  |
| 050   | N    | (      | *          | OR   |
| 051   | O    | )      | "          | XOR  |
| 052   | P    | "      | '          | SC   |
| 053   | Q    | +      | :          |  |
| 054   | R    | ,      | ?          | ROR  |
| 055   | (    | -      | !          | RXOR                                       |
| 056   | @    | .      | ,          | RSC  |
| 057   | Δ    | /      | '          |  |
| 060   | ∞    | 0      | 0          | RIL, JRIL, JQF, JQN<br>JAZ, JANZ, JAP, JAN |

ABBREVIATIONS FOR CHARACTER CODE TABLES:

- MS = Master Space      Sh U = Shift Up
- SP = Space              Sh D = Shift Down
- CR = Carriage Return    LF = Line Feed

CHARACTER CODES

| OCTAL | XS-3 | ASC II | FIELD DATA | MNEMONIC            |
|-------|------|--------|------------|---------------------|
| 061   | %    | 1      | 1          | J, JC, JSC          |
| 062   | ,    | 2      | 2          | ICIN, ICOUT         |
| 063   | +    | 3      | 3          | IBIN, IBOUT         |
|       |      |        |            | LCIN, LCOUT         |
|       |      |        |            | LBIN, LBOUT         |
| 064   | /    | 4      | 4          |                     |
| 065   | S    | 5      | 5          | RJ, RJC, RJSC       |
| 066   | T    | 6      | 6          | STOP, TIO, SIL, RIL |
| 067   | U    | 7      | 7          | SCIN, SCOUT         |
|       |      |        |            | SBIN, SBOUT         |
| 070   | V    | 8      | 8          |                     |
| 071   | W    | 9      | 9          | BSK                 |
| 072   | X    | :      | :          | CPFI, JBNZ          |
| 073   | Y    | :      | :          | JOVF, LBJ           |
| 074   | Z    | <      | /          | PULLT               |
| 075   | □    | =      | .          | PULLB               |
| 076   | >    | >      | □          | PUSHT               |
| 077   | )    | ?      | ↑          |                     |
| 7705  |      |        |            | XR                  |
| 7726  |      |        |            | LMC                 |
| 7727  |      |        |            | TSF                 |
| 7742  |      |        |            | LST                 |
| 7745  |      |        |            | SST, SSTQ           |
| 7760  |      |        |            | LSR                 |
| 7770  |      |        |            | SSR                 |

ADDITIONAL ASC II CHARACTER CODES:

| OCTAL | CHAR-ACTER | OCTAL | CHAR-ACTER | OCTAL | CHAR-ACTER | OCTAL | CHAR-ACTER |
|-------|------------|-------|------------|-------|------------|-------|------------|
| 100   | @          | 120   | P          | 140   | ¢          | 160   | p          |
| 101   | A          | 121   | Q          | 141   | a          | 161   | q          |
| 102   | B          | 122   | R          | 142   | b          | 162   | r          |
| 103   | C          | 123   | S          | 143   | c          | 163   | s          |
| 104   | D          | 124   | T          | 144   | d          | 164   | t          |
| 105   | E          | 125   | U          | 145   | e          | 165   | u          |
| 106   | F          | 126   | V          | 146   | f          | 166   | v          |
| 107   | G          | 127   | W          | 147   | g          | 167   | w          |
| 110   | H          | 130   | X          | 150   | h          | 170   | x          |
| 111   | I          | 131   | Y          | 151   | i          | 171   | y          |
| 112   | J          | 132   | Z          | 152   | j          | 172   | z          |
| 113   | K          | 133   | [          | 153   | k          | 173   | {          |
| 114   | L          | 134   | \          | 154   | l          | 174   |            |
| 115   | M          | 135   | ]          | 155   | m          | 175   | } ~        |
| 116   | N          | 136   | ^          | 156   | n          | 176   | ~          |
| 117   | O          | 137   | -          | 157   | o          | 177   | DEL        |

OCTAL AND DECIMAL

To find the decimal number, locate the Octal number and its decimal equivalent for each position. Add these to obtain the decimal number. To find the Octal number, locate the next lower decimal number and its Octal equivalent. Each difference is used to obtain the next Octal number until the entire number is developed.

| OCT | DEC         | OCT | DEC        | OCT | DEC       | OCT | DEC     |
|-----|-------------|-----|------------|-----|-----------|-----|---------|
| 0   | 0           | 0   | 0          | 0   | 0         | 0   | 0       |
| 1   | 16,777,216  | 1   | 2,097,152  | 1   | 262,144   | 1   | 32,768  |
| 2   | 33,554,432  | 2   | 4,194,304  | 2   | 524,288   | 2   | 65,536  |
| 3   | 50,331,648  | 3   | 6,291,456  | 3   | 786,432   | 3   | 98,304  |
| 4   | 67,108,864  | 4   | 8,388,608  | 4   | 1,048,576 | 4   | 131,072 |
| 5   | 83,886,080  | 5   | 10,485,760 | 5   | 1,310,720 | 5   | 163,840 |
| 6   | 100,663,296 | 6   | 12,582,912 | 6   | 1,572,864 | 6   | 196,608 |
| 7   | 117,440,512 | 7   | 14,680,064 | 7   | 1,835,008 | 7   | 229,376 |

TI CODES

CARD PUNCH CHARACTER CODE

| CHAR-ACTER | PUNCH | CHAR-ACTER | PUNCH  | CHAR-ACTER | PUNCH    |
|------------|-------|------------|--------|------------|----------|
| 0          | 0     | M          | 11-4   | <          | 12-8     |
| 1          | 1     | N          | 11-5   | .          | 12-3     |
| 2          | 2     | O          | 11-6   | ,          | 0-3      |
| 3          | 3     | P          | 11-7   | :          | 5-8      |
| 4          | 4     | Q          | 11-8   | ;          | 11-6     |
| 5          | 5     | R          | 11-9   | !          | 11-0     |
| 6          | 6     | S          | 0-2    | ?          | 12-0     |
| 7          | 7     | T          | 0-3    | \$         | 11-3     |
| 8          | 8     | U          | 0-4    | '          | 4-8      |
| 9          | 9     | V          | 0-5    | *          | 11-4     |
| A          | 12-1  | W          | 0-6    | Space      | No Punch |
| B          | 12-2  | X          | 0-7    | ∞          | 0-2      |
| C          | 12-3  | Y          | 0-8    | Δ          | 11-7     |
| D          | 12-4  | Z          | 0-9    | "          | 0-5      |
| E          | 12-5  | (          | 0-4-8  | %          | 12-8     |
| F          | 12-6  | )          | 12-4-8 | @          | 7-8      |
| G          | 12-7  | /          | 0-1    | \          | 0-6      |
| H          | 12-8  | -          | 11     | &          | 2-8      |
| I          | 12-9  | =          | 3-8    | #          | 0-5      |
| J          | 11-1  | +          | 12     | [          | 12-5     |
| K          | 11-2  | >          | 6-8    | ]          | 11-5     |
| L          | 11-3  |            |        |            |          |

| CHAR | OCTAL | ARTS III | CHAR                  | OCTAL | ARTS III |
|------|-------|----------|-----------------------|-------|----------|
| 0    | 00    | TQ       | R                     | 33    | TRQ      |
| 1    | 01    | TIQ      | S                     | 34    | TSQ      |
| 2    | 02    | TJQ      | T                     | 35    | TTQ      |
| 3    | 03    | TKQ      | U                     | 36    | TUQ      |
| 4    | 04    | TLQ      | V                     | 37    | TVQ      |
| 5    | 05    | TSQ      | W                     | 40    | TWQ      |
| 6    | 06    | TBQ      | X                     | 41    | TXQ      |
| 7    | 07    | TTQ      | Y                     | 42    | TYQ      |
| 8    | 10    | TBQ      | Z                     | 43    | TZQ      |
| 9    | 11    | TSQ      | .                     | 44    | TPERQ    |
| A    | 12    | TAQ      | +                     | 45    | TPUSQ    |
| B    | 13    | TBQ      | Δ                     | 46    | TRINCQ   |
| C    | 14    | TCQ      | /                     | 47    | TVIRGQ   |
| D    | 15    | TDQ      | *                     | 50    | TASTQ    |
| E    | 16    | TEQ      |                       | 51    | TSPCQ    |
| F    | 17    | TFQ      | □                     | 52    | TSQQ     |
| G    | 20    | TCQ      |                       | 53    |          |
| H    | 21    | THQ      |                       | 54    |          |
| I    | 22    | TIQ      |                       | 55    |          |
| J    | 23    | TJQ      |                       | 56    |          |
| K    | 24    | TKQ      |                       | 57    |          |
| L    | 25    | TLQ      | START BLINK CHARACTER | 60    | TSBQ     |
| M    | 26    | TMQ      |                       | 61    |          |
| N    | 27    | TNQ      |                       | 62    |          |
| O    | 30    | TOQ      | PAD                   | 62    | TPADQ    |
| P    | 31    | TPQ      | EOM                   | 63    | TEOMQ    |
| Q    | 32    | TQQ      | SPACE                 | 64    | TSPCQ    |
|      |       |          | SEP CODE              | 65    | TSEPCQ   |
|      |       |          | LF/CR                 | 66    | TCRCQ    |

| OCT | DEC    | OCT | DEC   | OCT | DEC | OCT | DEC | OCT | DEC |
|-----|--------|-----|-------|-----|-----|-----|-----|-----|-----|
| 0   | 0      | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 1   | 4,096  | 1   | 512   | 1   | 64  | 1   | 8   | 1   | 1   |
| 2   | 8,192  | 2   | 1,024 | 2   | 128 | 2   | 16  | 2   | 2   |
| 3   | 12,288 | 3   | 1,536 | 3   | 192 | 3   | 24  | 3   | 3   |
| 4   | 16,384 | 4   | 2,048 | 4   | 256 | 4   | 32  | 4   | 4   |
| 5   | 20,480 | 5   | 2,560 | 5   | 320 | 5   | 40  | 5   | 5   |
| 6   | 24,576 | 6   | 3,072 | 6   | 384 | 6   | 48  | 6   | 6   |
| 7   | 28,672 | 7   | 3,584 | 7   | 448 | 7   | 56  | 7   | 7   |

CHAIN INSTRUCTIONS

| BINARY FUNCTION CODE | SYMBOLIC CODE SEQUENCE(S) | DESCRIPTION  |
|----------------------|---------------------------|--|
| 00                   | BCW n,y                   | Buffer Control Word, n = number of words to be transferred.                            |
| 010 j = 0, k = 0     | EFW y,I                   | External Function: Whole Word, I = 1 for Indirect                                      |
| 010 j = 1, k = 0     | FEFW y,I                  | Force External Function: Whole Word, I = 1 for Indirect.                               |
| 010 j = 0, k = 1     | EFH y,I                   | External Function: Half Word, I = 1 for Indirect.                                      |
| 010 j = 1, k = 1     | FEFH y,I                  | Force External Function: Half Word, I = 1 for Indirect.                                |
| 011                  | I/STOP,m                  | I/O STOP, m = 1 for Monitor Interrupt.   |
| 100                  | IOCL y                    | I/O Clear Flag: 0 → (y <sub>29,28</sub> )  |
| 101                  | IOJ,m,k y                 | I/O Jump, m = 1 for Monitor Interrupt, K = 1 insert channel number in y <sub>3-0</sub> |
| 110                  | IOSET y                   | I/O Set Flag: 1 → (y <sub>29,28</sub> )  |
| 111                  | IONOOP                    | I/O NO Operation   |

CHAIN INSTRUCTION FORMATS

|         |    |     |          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |
|---------|----|-----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|
| 29      | 28 | 27  | 26       | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 0       | 0  | n-1 |          |    |    |    |    |    |    |    |    |    |    |    |    | y  |    |    |    |   |   |   |   |   |   |   |   |   |   |
| 0       | 1  | 0   | k        | j  | I  | y  |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |
| f = 3-7 | m  | k   | not used |    |    |    |    |    |    |    |    |    |    |    |    |    | y  |    |    |   |   |   |   |   |   |   |   |   |   |

INTERRUPTS

| INTERRUPT BY PRIORITY ①                                | INDIVIDUAL CLASS INTERRUPTS   | RELATIVE INTERRUPT ENTRANCE ADDRESS (BINARY) ② |
|--|---|--|
| Power Class I (highest)                                | Power Tolerance Error   | 1 00X XX0 010                                  |
| Hardware Class II (first come — first served priority) | Memory Address Parity Error   | 1 011 000 000                                  |
|  | Memory Resume Error   |  |
| Hardware Class II (first come — first served priority) | Memory Data Parity Error  | 100 001 00X XX1 001                            |
|  | High Priority Device Interrupt (a memory resume interrupt occurs if this address is non-existent) |  |
| Program Class III                                      | Program Fault Monitor Clock   | 1 011 000 001<br>1 00X XX1 010                 |
| Normal Communication Class IV                          | Normal Device Interrupt   | 1 00X XX1 001                                  |
| Class V  | I/O Channel Interrupt   | 0 XXX CCC C11                                  |

NOTES: ① If AUTO START switch is selected and power applied, processor starts at address 1 00X XX0 001.  
② XXX implies 3 bit device number placed in address, thus completing relative address. CCCC represents channel number.

CONSOLE TYPEWRITER

| Command Word Format                                 |   |   |   |   | Status Word Format   |   |   |   |   |
|---|---|---|---|---|--|---|---|---|---|
| 4   | 3 | 2 | 1 | 0 | 4  | 3 | 2 | 1 | 0 |
| Not Used  |   |   |   |   | Not Used   |   |   |   |   |
| 00 = Master Clear<br>01 = Keyboard<br>1 X = Printer |   |   |   |   | 001 = End of Transmission<br>010 = Input Parity Error<br>100 = Output Parity Error |   |   |   |   |

MAGNETIC TAPE UNIT

| EXTERNAL FUNCTION COMMANDS |   |   |   |   |   |                                  |
|----------------------------|---|---|---|---|---|----------------------------------|
| 5                          | 4 | 3 | 2 | 1 | 0 |                                  |
| 0                          | X | X | 0 | 0 | 0 | Read                             |
| 0                          | X | X | 1 | 0 | 0 | Search Read                      |
| 0                          | X | 0 | 0 | 0 | 1 | Write                            |
| 0                          | X | 0 | 1 | 0 | 1 | Write XIRC                       |
| 0                          | X | 1 | 0 | 0 | 1 | Write Tape Mark                  |
| 0                          | X | X | X | 1 | 0 | Backspace                        |
| 0                          | X | 0 | 0 | 1 | 1 | Rewind                           |
| 0                          | X | 0 | 1 | 1 | 1 | Rewind, Clear Write Enable       |
| 0                          | X | 1 | 0 | 1 | 1 | Rewind, Read                     |
| 0                          | X | 1 | 1 | 0 | 1 | Write XIRC, Tape Mark            |
| 0                          | X | 1 | 1 | 1 | 1 | Rewind, Clear Write Enable, Read |
| 1                          | X | X | X | X | X | Master Clear                     |

External Interrupt Status Codes

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 5   | 4 | 3 | 2 | 1 | 0 |
| 01 BOT<br>10 Low Tape<br>11 EOT   |   |   |   |   |   |
| 01 Read Parity Error<br>10 IOP Parity Error<br>11 Read and IOP Parity Error |   |   |   |   |   |
| 01 I/O Timing Error<br>10 Tape Mark<br>11 Improper Condition                |   |   |   |   |   |

INTERFACILITY COMMUNICATION ADAPTER

| ICA Command Format   |   |   |   |   |   |   | ICA Status Formats              |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---------------------------------|---|---|---|---|---|---|---|---|
| 7  | 6 | 5 | 4 | 3 | 2 | 1 | 0                               | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Not Used   |   |   |   |   |   |   | 1 = Input Lateral Parity Error  |   |   |   |   |   |   |   |   |
| 01 = Disable Send<br>10 = Enable Send<br>11 = Enable Send          |   |   |   |   |   |   | 1 = Output Lateral Parity Error |   |   |   |   |   |   |   |   |
| 01 = Disable Receive<br>10 = Enable Receive<br>11 = Enable Receive |   |   |   |   |   |   | 1 = LRC Error                   |   |   |   |   |   |   |   |   |
|  |   |   |   |   |   |   | 1 = Input Timing Error          |   |   |   |   |   |   |   |   |
|  |   |   |   |   |   |   | 1 = Output Timing Error         |   |   |   |   |   |   |   |   |
|  |   |   |   |   |   |   | 1 = End of Message              |   |   |   |   |   |   |   |   |
|  |   |   |   |   |   |   | 1 = Sync Detected               |   |   |   |   |   |   |   |   |
|  |   |   |   |   |   |   | 1 = Data Set Alarm              |   |   |   |   |   |   |   |   |

EXTERNALLY SPECIFIED INDEXING

| Interrupt Status Word Format |    |    |    |    |    |   |   |   |   |   |   |   |   |
|------------------------------|----|----|----|----|----|---|---|---|---|---|---|---|---|
| 29                           | 28 | 27 | 26 | 25 | 24 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Device Number                |    |    |    |    |    |   |   |   |   |   |   |   |   |
| Ext. Int. Status Word        |    |    |    |    |    |   |   |   |   |   |   |   |   |
| Interrupt Identifier         |    |    |    |    |    |   |   |   |   |   |   |   |   |
| Always = 00                  |    |    |    |    |    |   |   |   |   |   |   |   |   |

CHANNEL ORIENTED INTERRUPTS

| Format of Interrupt Control Words |  |  |
|-----------------------------------|--|--|
| Word                              | 29 ← → 18  | 17 ← → 0   |
| #1 TCW                            | Top Space Count                                      | Top Address Pointer                                      |
| #2 BCW                            | Bottom Space Count (not used for Interrupt Handling) | Bottom Address Pointer (not used for Interrupt Handling) |
| #3 REFILL                         | List Length  | Base Address   |
| #4 IEW                            | Interrupt Entrance Address                           |  |

Status Word Format

|   |    |    |    |    |    |   |   |   |
|---|----|----|----|----|----|---|---|---|
| 29  | 28 | 27 | 26 | 25 | 24 | ← | → | 0 |
| External Interrupt Status Data  |    |    |    |    |    |   |   |   |
| 000 = Ext. Int. Parity Error Int.<br>001 = Input Buffer Parity Error Int.<br>010 = Input Chain Monitor Int.<br>011 = Output Chain Monitor Int.<br>100 = Ext. Int.<br>101 thru 111 not used<br>Always = 00 |    |    |    |    |    |   |   |   |

INTERRUPT ENTRANCE ADDRESSES

| Channel | Address          | Peripheral Equip. or Subsystem   |
|---------|------------------|----------------------------------|
| 0       | XX0000           | Beacon DAS (input only)          |
| 1       | XX0004           | Interfacility Comm. Adapter      |
| 2       | XX0010           | Magnetic Tape Unit               |
| 3       | XX0014           | Console Typewriter Adapter       |
| 4-15    | XX0020 TO XX0084 | DEDS Console (as req'd by site)  |
| 16      | XX0070           | Uniservo VI C                    |
| 17      | XX0074           | 9300 Processor                   |
|         | XX1001           | POWER RESTART INTERRUPT ENTRANCE |
|         | XX1002           | POWER TOLERANCE INTERRUPT ENTR.  |
|         | XX1006           | IOP I/O WRITE LOCKOUT INTERRUPT  |
|         | XX1011           | NORMAL INTERRUPT ENTRANCE        |
|         | XX1012           | MONITOR CLOCK INTERRUPT ENTRANCE |
|         | XX1013           | WRITE LOCKOUT INTERRUPT ENTRANCE |
|         | XX1017           | READ LOCKOUT INTERRUPT ENTRANCE  |

MEMORY ADDRESS ALLOCATIONS

| Address | Function        |
|---------|-----------------|
| XX1200  | REAL TIME CLOCK |
| XX1201  | B1 REGISTER     |
| XX1202  | B2 REGISTER     |
| XX1203  | B3 REGISTER     |
| XX1204  | B4 REGISTER     |
| XX1205  | B5 REGISTER     |
| XX1206  | B6 REGISTER     |
| XX1207  | B7 REGISTER     |
| XX1210  | MONITOR CLOCK   |

REPERTOIRE OF INSTRUCTIONS

Table with columns: MNEMONIC, FUNCTION CODE, FORMAT, SYMBOLIC CODE SEQUENCE(S). Rows include AA, ANA, ANQ, AQ, BSK, C, CM, CPA, CPFI, CPQ, D, DSL, DSR, ENY, HINT, IBIN, IBOU, ICIN, ICOUT, J, JAN, JANZ, JAP, JAZ, JBNZ, JC, JOVF, JQN, JQP, JRIL, JSC, LA, LB, LBIN, LBJ, LBOUT, LCIN, LCOUT, LDIF, LLP, LMC, LQ.

REPERTOIRE OF INSTRUCTIONS

Table with columns: MNEMONIC, DESCRIPTION. Rows include AA, ANA, ANQ, AQ, BSK, C, CM, CPA, CPFI, CPQ, D, DSL, DSR, ENY, HINT, IBIN, IBOU, ICIN, ICOUT, J, JAN, JANZ, JAP, JAZ, JBNZ, JC, JOVF, JQN, JQP, JRIL, JSC, LA, LB, LBIN, LBJ, LBOUT, LCIN, LCOUT, LDIF, LLP, LMC, LQ.

REPERTOIRE OF INSTRUCTIONS

Table with columns: MNEMONIC, FUNCTION CODE, FORMAT, SYMBOLIC CODE SEQUENCE(S). Rows include LSR, LST, LSUM, M, NINT, NOOP, OR, PULLB, PULLT, PUSH, RA, RAN, RD, RDIF, RI, RIL, RIL, RJ, RJC, RJSC, RLP, ROR, RSC, RSUM, RXOR, SA, SB, SBIN, SBOUT, SC, SCIN, SCOUT, SIL, SLA, SLQ, SQ, SRA, SRQ, SSR, SST, SSTQ, STIME, STOP, SZ, TIO, TSF, XOR, XR, ZA, ZB, ZQ.

INSTRUCTION WORD FORMAT

Diagram showing bit positions 29 to 0 for instruction formats I-G, I-OP, II-G, II-OP, III, and IV. Includes a 'Not Used' box for bits 18-21 in format III.

- 1 See List of Special Designators
2 See List of Special d, e, c Designators
3 See List of Special Push, Pull Designators.

nc = Non-Circular (Opt.) Otherwise Circular
Y = The Operand Regardless of Source, i.e., y, (Y), Y or sy
Y = The Source or Destination of the Operand, i.e., y extended plus Bb

All non-existent function codes will cause control to be transferred to the program fault interrupt entrance address.

REPertoire OF INSTRUCTIONS

Table of instructions including LSR, LST, NINT, RD, RIL, RJC, ROR, RSC, RSUM, RXOR, SRA, SBOUT, SCIN, SCOUT, SIL, SLA, SRA, SST, SQT, STOP, SZ, TIO, TSF, XOR, XR, ZA, ZB, ZQ.

SPECIAL j DESIGNATOR

Table of special j designators with columns for j, MN, C f04, MN, D f23 k ≠ 7.

INTERPRETATION OF "s" DESIGNATOR

The IOP interprets the "s" designator for the following instructions: For all Format I read instructions 01-13, 20-23, 28-31, 40, 43, 50-52, 71 when k ≠ 0, 4, 7.

ADDRESS EXTENSION(s) DESIGNATOR

Table of address extension designators with columns for s, MNEMONIC, DESCRIPTION.

STATUS REGISTER FORMAT

Table of status register format with columns for BIT(S), STATUS INDICATED.

PUSH, PULL CONTROL PARAMETER WORDS

Table of push/pull control parameter words with columns for address ranges and instruction types.

SPECIAL PUSH, PULL j DESIGNATORS

Table of special push/pull j designators with columns for j, MNE-MONIC, DESCRIPTION.

NORMAL b DESIGNATOR

Table of normal b designators with columns for b, MNE-MONIC, DESCRIPTION.

NORMAL j DESIGNATOR

Table of normal j designators with columns for j, MNE-MONIC, DESCRIPTION.

NORMAL k DESIGNATOR

Table of normal k designators with columns for k, READ, STORE, REPLACE.

JUMP

Table of jump instructions with columns for k, MN, Jump to Modulo 2^18.

SPECIAL d,e,c DESIGNATOR

Table of special d,e,c designators with columns for DES, MNEMONIC, DESCRIPTION.