| CODE | DRWG. NO. | REV. LTR. |
|---|---|---|
| FD | D-166-Ø-IOT,1 | A |

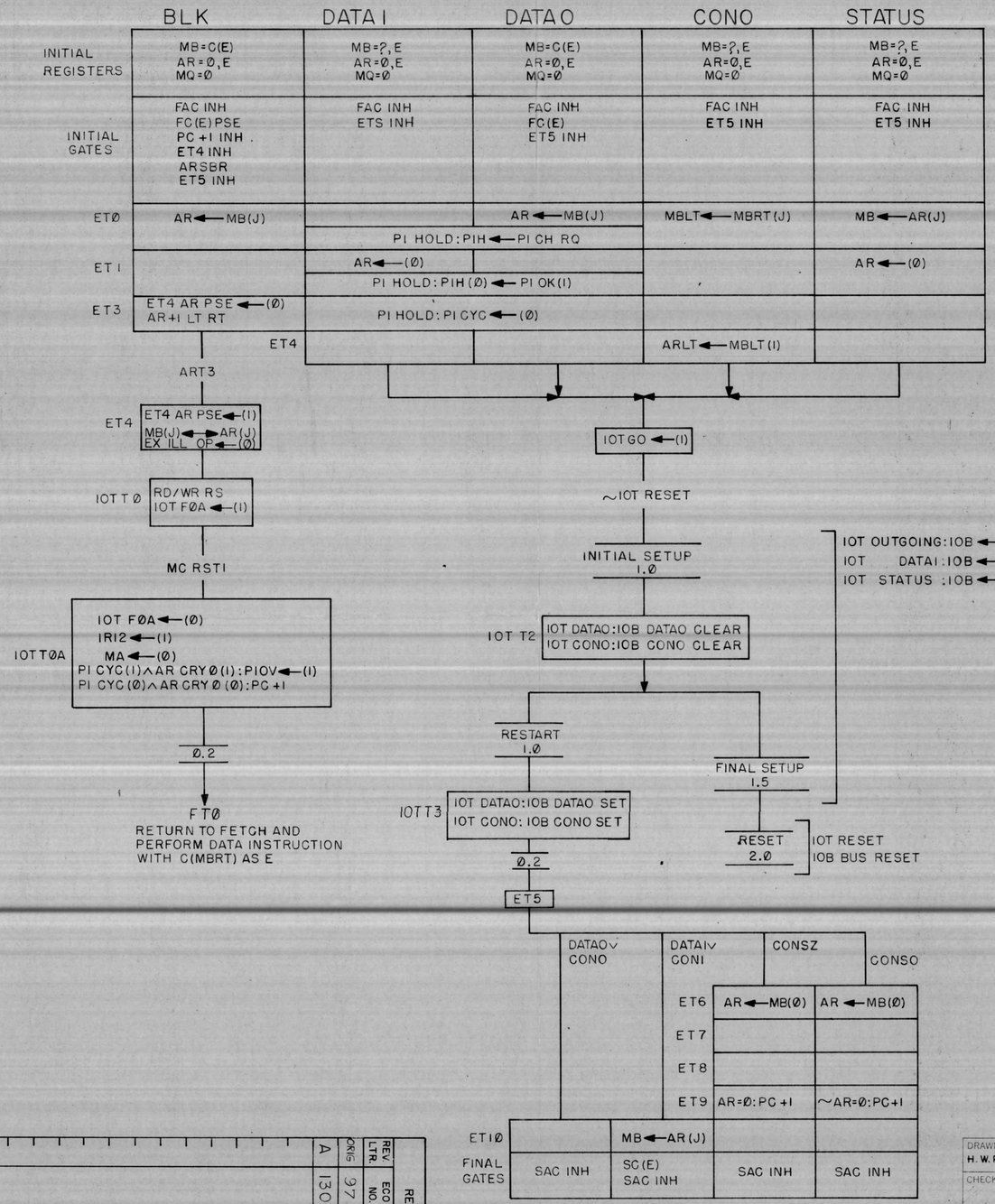
# IN-OUT TRANSFER

IR= III XXX XXX XXY Y
IOTA
IR IOT=IR IOTA∧~EX IR UUO
(SEE FIGURE 4-6)

XXXXXXX=DEVICE CODE
YYY=IOT INSTRUCTION

| YYY | IOT INSTRUCTION | ACTION |
|---|---|---|
| ØØØ | BLKI | C(E)+1ØØØØØ1 → E<br>DATA IN → C(C(ERT)) |
| ØØ1 | DATA I | DATA IN → E |
| Ø1Ø | BLKO | C(E)+1ØØØØØ1 → E<br>C(C(ERT)) → DEVICE BUFFER |
| Ø11 | DATAO | C(E) → DEVICE BUFFER |
| 1ØØ | CONO | E → DEVICE CONTROL |
| 1Ø1 | CONI | STATUS → |
| 11Ø | CONZ | (STATUS∧E)=Ø:PC+1 |
| 111 | CONSO | (STATUS∧E)≠Ø:PC+1 |

IOT BLT=IOT(BLTI∨BLTO)
IOT OUTGOING=IOT(DATAO∨CONO)
IOT STATUS=IO(CONI∨CONSZ∨CONSO)
IOT DATA I VO=IOT DATA I∨DATA O)
PI BLT RST=IOT DATA I∨O∧PI OV (Ø)
PI BLT RST∧PI CYC (1):PI HOLD




IOT OUTGOING: IOB←AR(1)
IOT DATAI: IOB←DATAI
IOT STATUS: IOB←STATUS

ARITHMETIC PROCESSOR CPA (APR) DEVICE CODE ØØØ ØØØØ(ØØØ)
MR START: CPA FLIP-FLOPS
CPA DATAI: CPA∧TURNON IOB←DATAI: AR←DATA SW(1)
EX CLR: PR, RLR←Ø
EX SET: PR←IOBØ-7(1); RLR←IOB18-25(1)

| IOB | CPA CONO SET | CPA STATUS |
|---|---|---|
| 18 | CPA PDL OV←(Ø) | |
| 19 | IOB RESET | CPA PDL OV(1) |
| 20 | CPA IOT USER←(1) | CPA IOT USER (1) |
| 21 | CPA IOT USER←(Ø) | EX USER B(1) |
| 22 | CPA ILLEG OP←(Ø) | CPA ILLEG OP(1) |
| 23 | CPA NON EXIST MEM←(Ø) | CPA NON EXIST MEM(1) |
| 24 | CPA CLOCK ENABLE←(Ø) | |
| 25 | CPA CLOCK ENABLE←(1) | CPA CLOCK ENABLE(1) |
| 26 | CPA CLOCK FLAG←(Ø) | CPA CLOCK FLAG(1) |
| 27 | CPA PC CHANGE ENABLE←(Ø) | |
| 28 | CPA PC CHANGE ENABLE←(1) | CPA PC CHG ENABLE(1) |
| 29 | | AR PC CHG FLAG(1) |
| 30 | CPA AR OV ENABLE←(Ø) | |
| 31 | CPA AR OV ENABLE←(1) | CPA AR OV ENABLE(1) |
| 32 | | AR OV FLAG(1) |
| 33-35 | CPA PIA←IOB 33-35(1) | CPA PIA(1) |

60 TIMES PER SECOND FROM POWER CONTROL: CPA CLOCK FLAG←(1)
MC ILLEG ADDRESS: CPA ILLEG OP←(1)
MC NON EXIST MEM: CPA NON EXIST MEM←(1)
ET1Ø∧[JP∧IR6(Ø)]∧AR CRY Ø(1): CPA PDL OV←(1)

IOB PI REQ CH C(CPA PIA)

CPA ILLEG OP(1)
CPA NON EXIST MEM(1)
CPA PDL OV(1)
CPA CLOCK ENABLE(1)∧CPA CLOCK FLAG(1)
CPA PC CHG ENABLE(1)∧AR PC CHG FLAG(1)
CPA AROV ENABLE(1)∧AR OV FLAG(1)

PRIORITY INTERRUPT PI (PRS) DEVICE CODE ØØØ ØØØ1(ØØ4)
MR START: PIOV, PICYC←(Ø); PI RESET
IOB CONO CLEAR∧PI SELECT∧IOB 23: PI RESET
PI RESET: PI ACTIVE, PIO, PIR, PIH←(Ø)

| IOB | PI COND SET | PI STATUS |
|---|---|---|
| 24 | PIR←IOB 29-35(1) | |
| 25 | PIO←IOB 29-35(1) | |
| 26 | PIO(Ø)←IOB 29-35(1) | |
| 27 | PI ACTIVE←(Ø) | |
| 28 | PI ACTIVE←(1) | PI ACTIVE(1) |
| 29-35 | | PIOI-7(1) |

ISSUED
JUL 7 1965

| REVISIONS | | | | |
|---|---|---|---|---|
| REV. LTR. | ECO NO. | DATE | ENG. |
| A | 97 | 7/15/65 | — |
| ORIG | 130 | 9-24-65 | JPS |

AP FIGURE 4-12

| DRAWN | DATE |
|---|---|
| H. W. PORTER | 12-23-64 |
| CHECKED | DATE |
| ENG | DATE |
| PROJ. ENG | DATE |
| PROD | DATE |

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: IOT INSTRUCTIONS
FOR:

| ASSY NO | CODE | DRWG NO | REV LTR |
|---|---|---|---|
| | FD | D-166-Ø-IOT,1 | A |
| SCALE | SHEET | OF | |