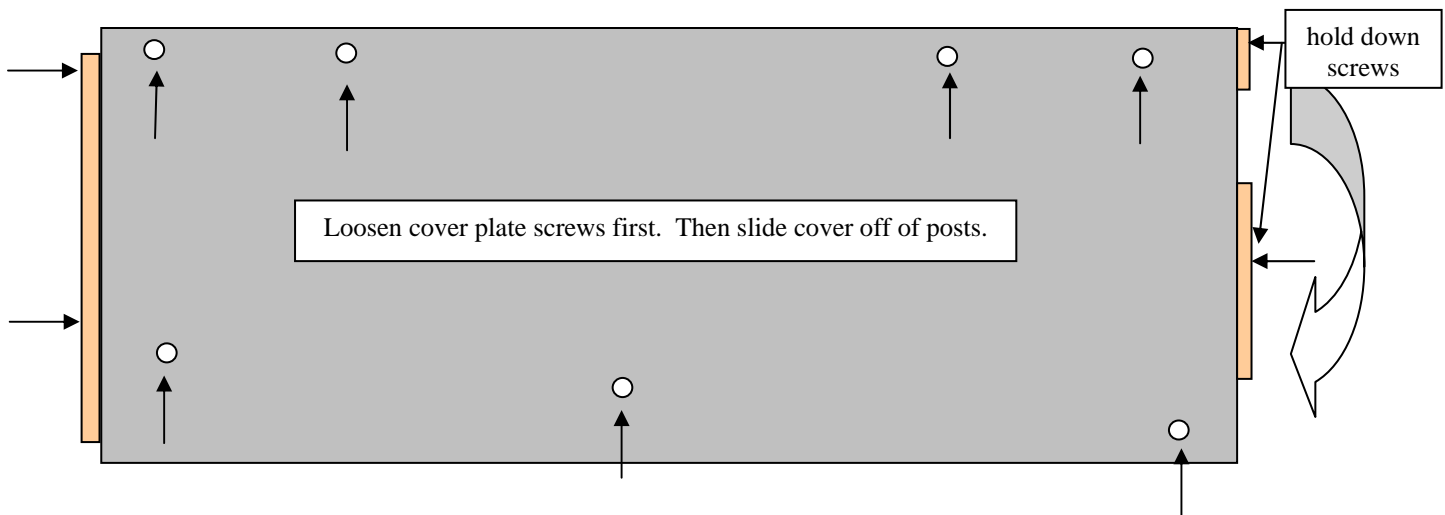


J11 Processor System

The UIC¹ 8223/J11 processor system consists of a DEC² DCJ11 microprocessor (16 bit data, 22 bit address bus), 128k word non-volatile CMOS memory, quad serial line unit (QSLU communications ports), DRV parallel I/O (not used) and a machine MIB interface. Options include a 128k word non-volatile CMOS memory board (used on most systems) and a second quad serial line unit.

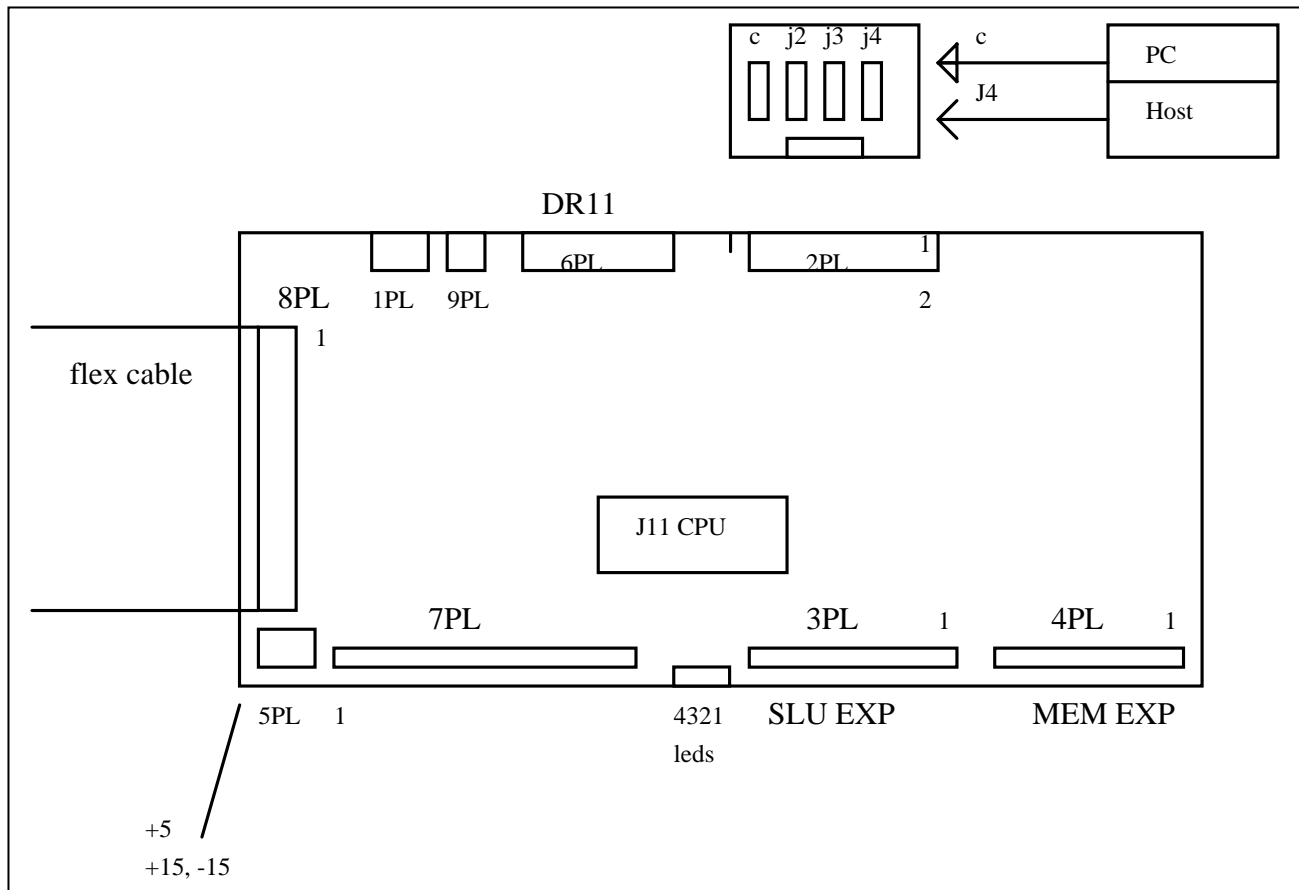
Removal

- If possible, save all pattern programs to disk. Print or record all machine set command settings.
- Locate and verify a proper executive program exists for the machine controller.
- Power down and disconnect power to machine.
- Wear a ground strap!
- Pull I/O box out, rotate down.
- Remove the J11 cover (loosen 7 screws on face plate and slide cover off of screws).
- Carefully remove connectors on 1, 2, 6 and 9PL
- Remove the hold down screw permitting the RHS of the J11 to hinge up from the chassis.
- Unplug 5PL by squeezing tabs and rocking lightly while pulling.
- Carefully remove the 8PL flex cable from the rear of the MIB backplane by pulling straight off from both ends. Inspect the backplane pins. Rotate/lower J11 assembly horizontal again.
- Remove the two hinge screws from the LHS of the chassis. Slowly remove the J11.



¹ UIC is a registered trademark of Universal Instruments Corporation.

² DEC and DCJ11 are registered trademarks of Digital Equipment Corporation (Compaq).



Jumper Settings

The J11 has many jumpers to configure its features. While most of the jumpers are common between the various machine types, some jumpers are critical.

K13, K14, K15, K16 determine the mode (i.e. RS232 or RS422).

K20, K21, K22, K23 determine the BAUD rate (example: 9600 baud).

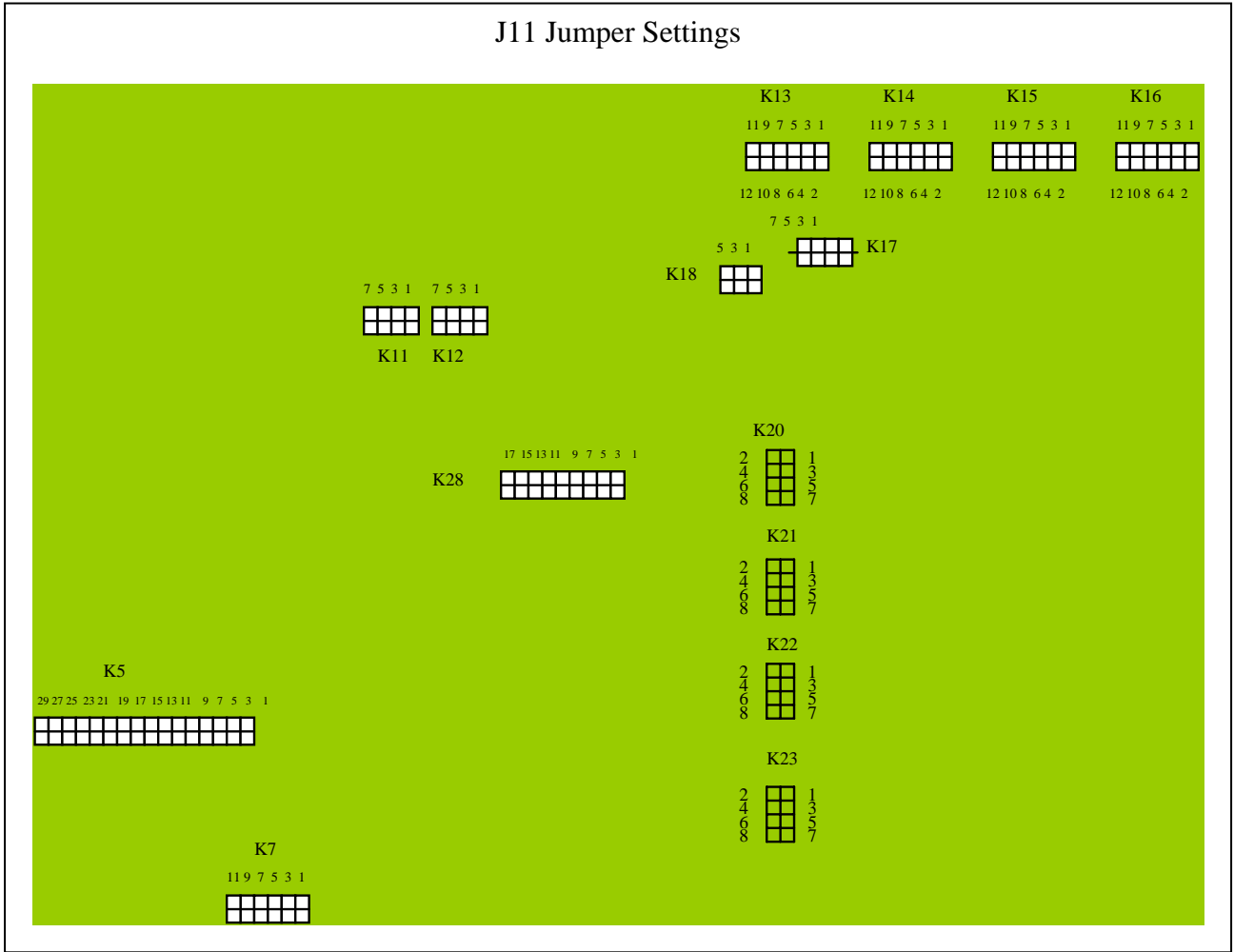
K17 supplies power to the communication port connectors. Always installed but no effect.

K11 and K12 select the addressing for the auxiliary com ports 1 and 2 (rarely used).

K7 selects a local machine (typical) or external machine and machine number (all in).

K5 is the most important jumper, it determines the machine type. Record this setting.

J11 Jumper Settings



Jumper	Description	Setting
K5	Machine type and options	refer to manual or prior setting
K7	Enable local machine # 1	all in
K11	J3 serial I/O port address	3-4, 5-6, 7-8 in @17776510
K12	J2 serial I/O port address	1-2, 5-6, 7-8 in @17776520
K13	J1 Communication Mode (RS232/RS422)	1-2, 7-8 in RS232
K14	J2 Communication Mode (RS232/RS422)	1-2, 7-8 in RS232
K15	J3 Communication Mode (RS232/RS422)	1-2, 7-8 in RS232
K16	J4 Communication Mode (RS232/RS422)	1-2, 7-8 in RS232
K17	12VDC to communications interface	all in
K20	J1 BAUD rate setting (Console)	1-2, 5-6, 7-8 9600 BAUD*
K21	J2 BAUD rate setting (AUX 1)	1-2, 5-6, 7-8 9600 BAUD#
K22	J3 BAUD rate setting (AUX 2)	1-2, 5-6, 7-8 9600 BAUD#
K23	J4 BAUD rate setting (Host)	1-2, 5-6, 7-8 9600 BAUD
K28	CPU Configuration	5-6, 7-8 in all others out.

*Use 1-2, 7-8 for 4800 BAUD if program or exec loading has errors. # see original for options, ex. SBT, BMC etc.

The K5 jumper selects the machine type and options, improper K5 settings will lead to unexpected machine action (i.e. improper order of tooling movements). Please be certain the K5 setting matches the original setting or is set based on the machine documentation.

Communications settings for the console port (J1) are most important to establish a connection to the J11 controller from the PC terminal. Configure the J11 and the PC communication port to the same BAUD rate and communication mode. Typically RS232 mode, 9600 BAUD, 8 data bits, 1 stop bit and no parity is used. Again, make sure both are configured for the same settings. In UCTII³, Ctrl-F6 opens the port configuration screen. If using COM2, be certain to configure COM2 port settings by pressing (F1) to select port 2. Once the port is configured, UCTII also permits switching the active port at any time (useful when multiple machines share a PC). Using ALT-1 or ALT-2 will select the communication ports COM1 or COM2 respectively.

Trouble Shooting

The J11 system can be tested for basic functionality prior to attempting an executive program load. If the basic ROM based diagnostics are unable to run or if console communications are established, there is no point in attempting the executive load.

ROM Diagnostics

Place controller in halt mode (EMI/PS run/halt switch in front of I/O box).

Power Up controller.

@ sign should appear on terminal

771000G Initiate memory map routine

0--377776 128K

0--757776 256K

771004G Initiate LTC test

after 60 P's print to screen

enter @R2/001700 (1700 value indicates a 1 ms clock)

Executive Loading

If basic diagnostics are successful, an executive load can be performed. Executives are loaded using a terminal emulation program (i.e. UCTII). There is no error checking except in protocols, if prompts do not appear after the load is complete, the load may not actually be working. Configuration of executive handling parameter may be needed. BAUD rates above 9600 are problematic unless some type of character pacing is employed (not in UCTII). Some programs such as Btalk have advanced features allowing higher transfer speeds.

³ UCTII is a registered trademark of Universal Instruments Corporation.

Diagnostics After the Executive is loaded

Waiting for machine power on

Using odt to examine the status of these registers is my favorite way to verify the machine power on bits. It can be difficult because the response is in octal, you may also use the executive diagnostics to examine DSF15, it will give you the actual bit values.

The object is to see if the MIT and local I/O on the J11 is actually present. Bit 15 is hardwired on both the local I/O of the J11 and on the remote MIT board, if the I/O has power-the bit is read as a 1, otherwise a zero (indicating machine power off)

In odt the machine address may be entered to examine DSF15
example machine 1 @17 766 000 DSF00

...
@17 766 036 DSF15

at the ODT prompt "@" enter 17766036
the octal value after the "/" will denote the K5 bit switch settings

example: @17766036/100000 indicates machine 1 power on, no k5 jumpers in
^
machine power on bit

If this response is not found (bit 15 being the machine power on), make sure K7 has all jumpers installed. (important: bit 15 of this location is the machine power on status bit).

Now check the the remote I/O via the MIT board

ref: @17766400 DSF00 machine 9
...
@17766436 DSF15 machine 9

@17766436/1xxxxx the response should match the 7 and 8 position bit switches
^
machine power on bit