Tynemouth Software

TYNEMOUTH SOFTWARE PET DIAGNOSTICS USER GUIDE

INSTALLATION

The PET Diagnostics board plugs into the 6502 CPU socket in place of original CPU. This should be socketed on all PET models. The edge with the DIP switch and the notch in the PCB is pin 1.

DIP SWITCH SETTINGS

The DIP switches on the PET diagnostics board select the mode for the video display and memory test

Sw1	Sw2	Sw3	Machine	ROM	RAM	Video
0	0	0	12" 4032	6x4K + 2K	32K	CRTC 40 col 50Hz
0	0	1	12" 4032	6x4K + 2K	32K	CRTC 40 col 60Hz
0	1	0	8032	6x4K + 2K	32K	CRTC 80 col 50Hz
0	1	1	8032	6x4K + 2K	32K	CRTC 80 col 60Hz
1	0	0	12" 4016	6x4K + 2K	16K	CRTC 40 col 50Hz
1	0	1	2001N-8/3008/4008	6x4K + 2K	8K	no CRTC 40 col
1	1	0	2001N-16/3016/4016	6x4K + 2K	16K	no CRTC 40 col
1	1	1	2001N-32/3032/4032	6x4K + 2K	32K	no CRTC 40 col

BOOT SCREEN

The first screen shows some information about the system condition at boot. Any lines which are stuck high or low, and the approximate length of the reset pulse.

If you don't see any screen, check the settings (PETS with a 6545 CRTC need switch 1 to be off in order to initialise the video mode). If you see a random pattern or stripes or a screen full of the same character, this indicates a fault in the video RAM or supporting circuitry.

CHARACTER MAPS

The next two screens show the full character set available in both normal / graphic and business mode. If any of the graphics are wrong, distorted or flashing, this indicates a fault in the video ROM or supporting circuitry.

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RAM TESTS

The RAM tests show results per bit of RAM. This differs for each board type. The results are laid out according to the layout of chips on the board, so you can see from the results which chip is at fault.

2001N (3008/3016/3032/4008/4016/4032 9" (NO CRTC)

If your board is a 2001N series board, 16K and 32K machines use 4116 chips which provide 1 bit each in 16384 bytes. 8K machines use 4108 chips which provide 1 bit each of 8192 bytes.

Address Range	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0000-3FFF	I2	I3	I4	I5	I6	I7	I8	I9
4000-7FFF	J2	J3	J4	J5	J6	J7	J8	J9

4016/4032/8032 12" (CRTC)

If your board is a 4000 or 8000 series board with a CRCT, this uses 4116 chips which provide 1 bit each in 16384 bytes.

Address Range	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0000-3FFF	UA5	UA7	UA9	UA11	UA13	UA15	UA17	UA19
4000-7FFF	UA4	UA6	UA8	UA10	UA12	UA14	UA16	UA18

ROM TESTS

ROM chips are tested several times and the resulting CRC compared to a list of known PET ROM chips. The chip locations are displayed on the screen during the test results. If the results show 'inconsistent CRC', this means the CRC changed during testing, indicating a faulty or intermittent ROM chip. This can be caused by one of the ROM chips being enabled over a wider address range than it should be due to faulty enable line or decoding logic.

BURN IN TEST

The tests will cycle for as long as you want.