DREAM 6800 Archive

The **"Dream 6800"** was a popular build-it-yourself computer which I designed in 1978. The project was published in *Electronics Australia* magazine in 1979. The Dream was a ridiculously simple hobby computer with 2K bytes of memory that played game programs on a TV. The 1KB ROM (1024 bytes!) contained a simple interpretive programming language known as "CHIP-8", devised by Joe Weisbecker of RCA Labs. I developed a CHIP-8 interpreter to run on the Motorola 6800 processor. CHIP-8 originally ran on the RCA_COSMAC VIP board. It was amazing to see what could be done with the available memory and a "chunky graphics" display of just 64 x 32 pixels -- for example, "Dream Invaders", a crude version of *Space Invaders,* as adrenalin-pumping as the real thing. User groups proliferated.

DREAM 6800 prototype (above)
Internal view -- note the expansion board (below)

Since there seems to be on-going interest in the DREAM 6800 computer on the web, I have posted various Dream 6800 archive material here for downloading.

While rummaging through junk in the attic, I found a binder full of old DREAM-6800 material, including a 6800 assembler listing of the CHIPOS ROM code. I tried scanning this and converting it to a text file with the aid of an OCR app, but unfortunately the OCR app could not cope with the dot-matrix printout... too many read errors to fix. Consequently, I simply made a multi-page PDF document from the scans. The binder also contained copies of the original *Electronics Australia* articles, in pristine condition, which I have also scanned and converted to PDF.

Original E/A published articles...
Part 1 - May 1979 (PDF ~ 3.7MB)
Part 2 - June 1979 (PDF ~ 3.8MB)
Part 3 - July 1979 (PDF ~ 3.2MB)
Part 4 - Aug. 1979 (PDF ~ 2.3MB)

CHIPOS 6800 Assembler Code Listing (PDF ~ 3.7MB)

The text in the published E/A articles referred to a timing diagram for the video generator circuit. The editor of the magazine chose not to include the timing diagram, but neglected to omit my reference to it in the text. To help (or confuse) those attempting to understand its workings, here is the original timing diagram for the Dream's video display generator (VDG) circuit...
Video generator timing diagram (JPG ~ 800kB)

CHIPOS Calls Manual (PDF ~ 800kB)
3-page document which summarises "system calls" -- subroutines within the CHIPOS ROM which may be called from user programs (6800 assembler or machine code).

Dream Invaders (PDF ~ 3.5MB)
Game program & instructions. (Also contains details of RAM expansion and sundry info.)

Sound Effects Add-on (PDF ~ 2MB)
Analogue sound effects synthesizer module. Uses TI SN76477 SFX chip.

Hi-Res Display Mod. (PDF ~ 1.2MB)
Modification to increase video display resolution to 128 x 64 pixels.

For further information, or technical help to resurrect a Dream 6800, send email to the author at this address:

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MJB's home page