

# Atari 800 - Amiga similarities:



Atari 800

Lead designers: Jay Miner and Joe Decuir.

Custom chip architecture: A display chip, graphics manipulator/DMA handler, and an audio chip.

Display list graphics system (adjust gfx per scanline).

Custom hardware for reading display list data into RAM. WAIT command for horizontal beam sync.

Hardware interrupt management for display list and vertical blanking.

Custom hardware for making color changes per raster line easier. Conducive to racing-the-beam techniques.

Graphics manipulator tracks display's vertical blanking status and handles beam synchronization.

Hardware-managed DMA for playfield, sprites, and RAM arbitration between graphics chipset & CPU.

Multi-directional hardware scrolling.

Eight reusable hardware sprite engines (infinite height, option to combine two sprites for more than double the number of colors per sprite). Sprite data auto-fetched.

Double-color mode that uses a second set of half-luminance tonal values. Via GTIA.

3-voice square wave+noise audio with option to combine voices to enhance audio capabilities. Max cycles-per-second tied to display chip refresh rates.

Support for playback of digitally sampled audio.

Graphics chipset can steal RAM access cycles from the CPU on an as-need basis (graphics-centric).



Amiga

Lead designers: Jay Miner and Joe Decuir.

Custom chip architecture: A display chip, graphics manipulator/DMA handler, and an audio chip.

Display list graphics system (adjust gfx per scanline).

Custom hardware for reading display list data into RAM. WAIT command for horizontal beam sync.

Hardware interrupt management for display list and vertical blanking (interrupt system augmented).

Custom hardware for making color changes per raster line easier. Conducive to racing-the-beam techniques.

Graphics manipulator tracks display's vertical blanking status and handles beam synchronization.

Hardware-managed DMA for playfields, sprites, and RAM arbitration between graphics chipset & CPU.

Multi-directional hardware scrolling (incl sub-pixel).

Eight reusable hardware sprite engines (infinite height, option to combine two sprites for more than double the number of colors per sprite). Sprite data auto-fetched.

Double-color mode that uses a second set of half-luminance tonal values. EHB mode.

4-channel state-machine audio with option to combine channels to enhance audio capabilities. Maximum cycles-per-second tied to display chip refresh rates.

Playback of digitally sampled audio, plus wavetables.

Graphics chipset can steal RAM access cycles from the CPU on an as-need basis (graphics-centric).