PAWS for ULX3S Risc-V RV32IMC CPU

25MHZ SYSTEM CLOCK

> 50MHZ CPU CLOCK

50MHZ MEMORY CLOCK

> 50MHZ I/O CLOCK

25MHZ VIDEO CLOCK

50MHZ GPU CLOCK

MEMORY

BRAM 16k BIOS / Stack SDRAM 32MB 16k Cache

CPU

COMPRESSED INSTRUCTION EXPANDER

ADDSUB BRANCH COMPARISON LOGICAL SHIFTER

ACCELERATED DIVIDER DSP MULTIPLIER

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BITMAP

640x480 64 colour ALPHA CHANNEL

GPU

Pixel
Blitter
(Filled) Circle
Line
Filled Rectangle
Filled Triangle
Vector Block

BACKGROUND GENERATOR
42 x 32 SCROLLABLE TILEMAP
LOWER SPRITE LAYER
UPPER SPRITE LAYER
80 x 30 CHARACTER MAP
80 x 8 TERMINAL WINDOW

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2 × **AUDIO CHANNELS**

(LEFT & RIGHT)
SQUARE WAVE
SAWTOOTH WAVE
TRIANGLE WAVE
SINE WAVE
WHITE NOISE

BUTTONS

LEDS

PSEUDO RANDOM NUMBER GENERATOR

SPI SDCARD

2 x 1hz TIMERS 2 x 1khz TIMERS

UART 115200 BAUD