



Clipper SR0M

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- Serial bit stream loaded into Alpha I-cache at reset
- Two physical implementations
 - 32KBx1 Serial SRAM
 - 128KBx8 Flash SRAM
- EV serial port used for “mini-console” port
- Code in Alpha Macro

- Initialize the EV6
- Initialize Tsunami chipset
- Determine System Configuration
- Jump to Flash SROM

Flash SROM

- Initialize EV6,Tsunami chipset
- Start Secondary CPUs
- BCache Test
- Configure and Test (32MB) of Memory
- Thrash test
- Load Console firmware from Flash
- Jump to Console

Serial Line

```
SROM V1.00 CPU #00 @ 0500 MHz
SROM program starting
Reloading SROM

SROM V1.00-F CPU # 00 @ 0900 MHz
SROM program starting
Starting secondary on CPU #1
Starting secondary on CPU #2
Bcache data tests in progress
Bcache address test in progress
CPU parity and ECC error detection in progress
Bcache ECC data tests in progress
Bcache TAG lines tests in progress
```

OCP

```
SROM 0 PCI Test
SROM V1.00
SROM 0 Power on
SROM 0 Reload
SROM 0 PCI Test
SROM V1.00-F
SROM 0 Power on
SROM 0 RelCPU 1
SROM 0 RelCPU 2
SROM 0 BC Data
SROM 0 BC Addr
SROM 0 Par/ECC
SROM 0 BC ECC
SROM 0 BC TAG
```

Serial Line

Memory sizing in progress
Memory configuration in progress
Memory data test in progress
Memory address test in progress
Memory pattern test in progress
Memory thrashing test in progress
Memory initialization
Loading console
Code execution complete (transfer control)

OCP

SROM 0 Size Mem
SROM 0 Cfg Mem
SROM 0 Mem Data
SROM 0 Mem Addr
SROM 0 Mem Patt
SROM 0 Mem Thra
SROM 0 Mem Init
SROM 0 Load ROM
Jump to Console.

SROM: Determine configuration

- Looks for configuration information in:
 - CPU 0
 - CSB

Will not jump to Flash SROM if...

- Configuration information is unreadable
- Bad Flash SROM
- New configuration that the SROM hasn't seen yet.

SROM: Memory configuration

- Utilizes JEDEC data on DIMM.
- Will report configurations errors if no memory is available for console.

M:0 D:3

ILLEGAL

MISSING

INCMPAT

SROM: Powerup Diagnostics

- If OCP displays
 - CPU0 fails
- Powers on then off

Likely Failure:

The CPU couldn't talk to CSB

If Multi-CPU and powers on then off try CSB first.

- If OCP displays
 - SR0M 0 PCI Test
 - SR0M 0 PCI Err

Likely Failure:

- CPB
- CSB
- PCI device in PCI hose 0

- **Automatically invoked if console flash is corrupted**

Sequence is

- Console flash is bad
- load from floppy
- floppy load good then jump, bad next step
- load flash console anyway and jump

- Main method to communicate to the RMC
- Holds failure information for Compaq Analyze to interpret
- TIG bus is the path from the CChip to the DPR

COMPAQ

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