

## Advanced PMU for SiRF Prima™ and Atlas IV™

### FEATURES

- Optimized for SiRF Prima™/Atlas IV™ Processors
- Three Step-Down DC/DC Converters
- Four Low-Dropout Linear Regulators
- I<sup>2</sup>C™ Serial Interface
- Advanced Enable/Disable Sequencing Controller
- Minimal External Components
- Tiny 5x5mm TQFN55-32 Package
  - 0.75mm Package Height
  - Pb-Free and RoHS Compliant

### APPLICATIONS

- Personal Navigation Devices
- Portable Media Players
- Tablet Devices
- Smart Phones
- MIDs

### GENERAL DESCRIPTION

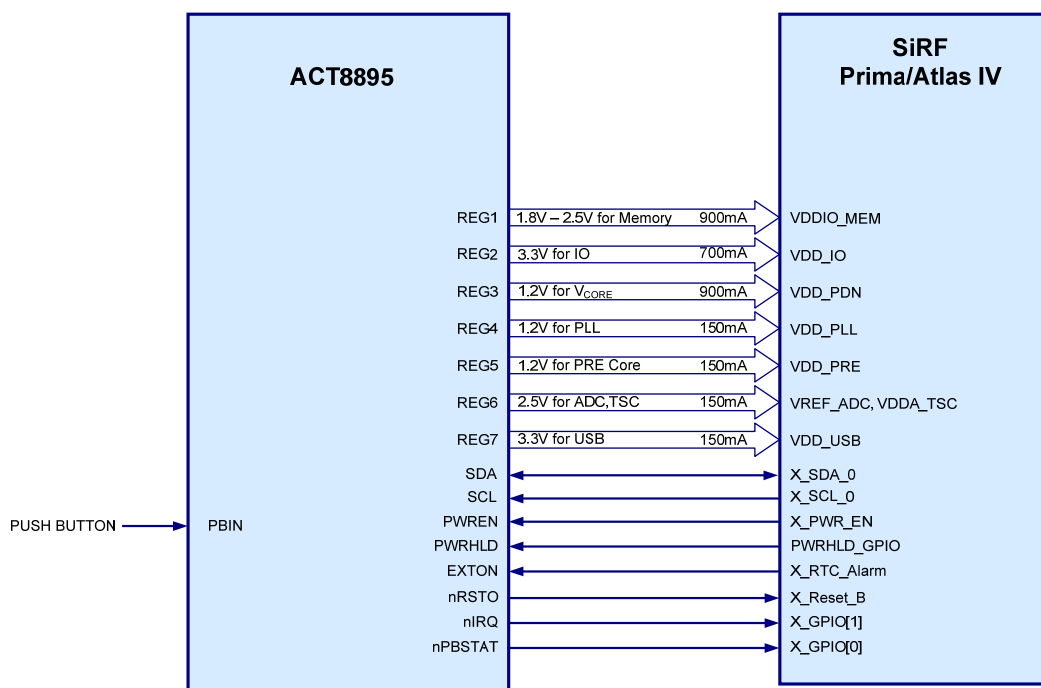
The ACT8895 is a complete, cost effective, highly-efficient *ActivePMU*™ power management solution, optimized for the unique power, voltage-sequencing, and control requirements of the SiRF Prima™ and Atlas IV™ processors.

This device features three step-down DC/DC converters and four low-noise, low-dropout linear regulators.

The three DC/DC converters utilize a high-efficiency, fixed-frequency (2MHz), current-mode PWM control architecture that requires a minimum number of external components. Two DC/DCs are capable of supplying up to 900mA of output current, while the third supports up to 700mA. All four low-dropout linear regulators are high-performance, low-noise, regulators that each supply up to 150mA.

The ACT8895 is available in a compact, Pb-Free and RoHS-compliant TQFN55-32 package.

### TYPICAL APPLICATION DIAGRAM



| Block | Function        | Output Voltage              | Capability |
|-------|-----------------|-----------------------------|------------|
| REG1  | Step-Down DC/DC | Adjustable, or 0.6V to 3.9V | 900mA      |
| REG2  | Step-Down DC/DC |                             | 700mA      |
| REG3  | Step-Down DC/DC |                             | 900mA      |
| REG4  | LDO             | 0.6V to 3.9V                | 150mA      |
| REG5  | LDO             |                             | 150mA      |
| REG6  | LDO             |                             | 150mA      |
| REG7  | LDO             |                             | 150mA      |

The diagram illustrates the internal architecture of the ACT8895 System Control IC. It features a central 'System Control' block that manages various functions. On the left, input pins include a PUSH BUTTON, PBIN, nRSTO, nPBSTAT, nIRQ, PWRHLD, PWREN, EXTON, SCL, SDA, VDDREF, REFBP, GA, and EP. These pins are connected to internal logic and control blocks. The central block is connected to a battery and a system control block. On the right, output pins include VP1, SW1, OUT1, GP1, VP2, SW2, OUT2, GP2, VP3, SW3, OUT3, GP3, INL45, OUT4, OUT5, INL67, OUT6, and OUT7. These pins are connected to internal logic and control blocks. The diagram also shows the internal structure of the regulators (REG1, REG2, REG3, REG4 LDO, REG5 LDO, REG6 LDO, REG7 LDO) and their connection to the battery and system control block.