

Beyond Program Storage



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Benefits of Embedded Flash

- Over and above program storage, embedded Flash can provide a number of benefits over other non-volatile memory technologies, such as ROM or OTP.
- For example...



'On-chip' debug

- Effectively providing on-chip emulation capability.
- Eliminating the need for expensive development hardware, such as in circuit emulators.
- Utilizing the register-based architecture for program trace and debug via low cost USB interface to the PC.

Analog Precision & Tuning

- Tuning of Voltage Brown Out and Power On Reset for optimum battery life and graceful shut down of the battery powered system, for example, in universal remote control applications.
- Analog Digital Converter (ADC) correction for non-linearity during test of production devices allows for higher performance.
- User code for one time self-calibration of signal conditioning chain.
- Temp sensor calibration for enhanced precision across user specified temperature range.

Non Volatile Data Storage

- Substitute EEPROM with a single Flash block, some of which is used for Program Storage and some used for Non Volatile Data Storage.
- Increase number of cycles of data stored by algorithm stepping through multiple Flash sectors.

Reconfigurable Analog

- Flash memory used to reconfigure interconnects between standard analog building blocks such as op amps and comparators.
- Creating functions such as filters and Analog to Digital Converters for signal conditioning of sensor circuits.
- Configuration can be one time by the Silicon vendor or system designer.
- Or multiple times dynamically reconfiguring signal conditioning chain during application use.