

STM6904 and STM6905

Quad/quintuple, ultra-low current,
multiple-voltage supervisors



ST is expanding its portfolio of multiple-voltage supervisors with the introduction of the STM6904 and STM6905 which are able to monitor 4 and 5 power supply voltages respectively.

Today's complex system designs often have several processors, ASICs or FPGAs, all of which typically operate at different power supply levels. These systems require accurate monitoring and resetting of all their different voltages to ensure system integrity.

The STM6904 and STM6905 offer the flexibility of monitoring 4 or 5 voltages in the configurations of 2 fixed and 2 externally adjustable (STM6904) or 2 fixed and 3 externally adjustable (STM6905).

Key features

- Accurate ($\pm 1.8\%$) across temperature voltage threshold ($\pm 1\%$ at $25\text{ }^{\circ}\text{C}$)
- Primary supply (V_{CC}) monitor: fixed (factory programmed) reset thresholds: 3.078 V to 2.866 V
- Second fixed ($V_{2_{IN}}$) monitor: fixed (factory programmed) reset thresholds: 2.333 V to 1.050 V
- Three additional adjustable supply monitor inputs (externally adjustable)
- 600 mV internal reference
- $\overline{\text{RST}}$ output (open drain)
- Output guaranteed for $V_{CC} \geq 0.8\text{ V}$
- Reset delay time (trec) on power-up: 210 ms (typ)
- Manual reset input (MR)
- Low supply current of 12 μA (typ)
- Power supply voltage: 0.8 V to 5.5 V
- 8-pin MSOP/TSSOP
- Operating temperature: $-40\text{ }^{\circ}\text{C}$ to $85\text{ }^{\circ}\text{C}$ (industrial grade)
- RoHS compliant (green package)

Applications

- Set-top boxes
- Multi-voltage systems
- Cable/satellite applications
- Computer systems
- Data storage systems

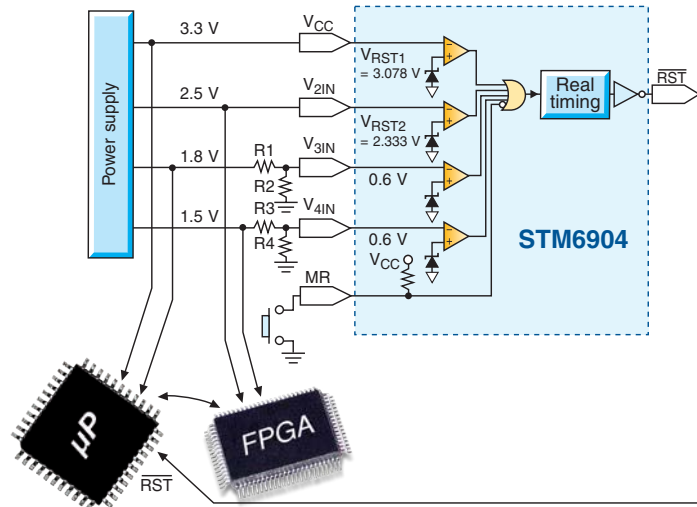
The STM6905 monitors 5 voltages while the STM6904 monitors 4. Both devices have 2 fixed voltages that are factory set, and many voltage combinations are possible (see below). The other voltages are adjustable by the system designer. Voltage thresholds range from 1.050 V to 3.078 V with a very high accuracy of +/-1.8% across the full temperature and voltage range. Accuracy is +/-1% at 25 °C, and the parts have a very low supply current of 12 mA (typical).

A push-button or manual reset input (MR) is also available. If any of the four or five monitored voltages

drops below its factory-trimmed or adjustable threshold, or if MR is asserted low, the reset output (RST) is asserted (driven low). Once asserted, RST remains low for a minimum delay period (trec) after all monitored supplies rise above their respective thresholds and MR returns to high.

Both devices have configurable reset-delay times (trec). The initial devices have a 210 ms trec. The STM6904 has a dedicated trec select pin so the user can select between 210 ms or 420 ms. Different fixed reset thresholds and trec times are available upon request.

Typical circuit



STM6904 and STM6905 product family

Part number	Fixed monitored voltages		Adjustable monitored voltages	Manual reset input	Reset delay adjust pin
	Vrst1 (V)	Vrst2 (V)			
STM6904TZEDS6F	3.078	2.333	2	Y	Y
STM6904TWEDS6F	3.078	1.683	2	Y	Y
STM6904TGEDS6F	3.078	1.110	2	Y	Y
STM6904SFEDS6F	2.955	1.050	2	Y	Y
STM6904SYEDS6F	2.955	2.188	2	Y	Y
STM6904PWEDS6F	2.866	1.683	2	Y	Y
STM6905TZEDS6F	3.078	2.333	3	Y	N
STM6905TWEDS6F	3.078	1.683	3	Y	N
STM6905TGEDS6F	3.078	1.110	3	Y	N
STM6905SFEDS6F	2.955	1.050	3	Y	N
STM6905SYEDS6F	2.955	2.188	3	Y	N
STM6905PWEDS6F	2.866	1.683	3	Y	N

All part numbers are available in an MSOP8 (TSSOP8) package



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