



SPI-APPNOTES: ALARM & MONITORING SIGNALS

Switching Power, Inc. typically employs alarm and monitoring signals in its standard and custom power supplies. The signals are used by their host systems for house keeping and data protection functions.

SIGNALS DEFINED

AC Power Fail: An isolated logic signal which is asserted high when sufficient energy is stored in the converter to guarantee continuous operation within specification for a period of time typically at least 5 milliseconds from nominal AC line. The signal resumes its high state when sufficient input voltage is recovered. The signal is capable of sinking 20mA maximum. It is used to provide time for the host system to perform various housekeeping functions prior to the loss of regulated DC power.

DC Power Good: A logic signal is asserted high when the logic voltage outputs are above 90%. If the logic voltage crosses below the threshold, the signal activates to its low state, indicating a loss of the power supply's ability to provide specified regulation.

DEG#: The 'Derating' signal, as described by the PICMG Power Interface Specification, is an output from the power supply indicating that the power supply's internal rise temperature has reached a point at which the host system should reduce the load immediately. It is used to avoid thermal shutdown or a degradation of power supply reliability.

FAL#: The 'Supply Fail' signal, as described by the PICMG Power Interface Specification, is an output from the power supply indicating the impending loss of output due to a loss of input current or a failure within the power supply.

I²C bus: An EPROM installed in the power supply provides identification and monitoring feedback to the host system through this bus.

INH#: The 'Inhibit' signal, as described by the PICMG Power Interface Specification, provides the same functionality as described herein for Remote Inhibit.

PW_OK: This signal is described in the ATX power supply specification. It is essentially a combination of the AC Power Fail and DC Power Good signals described above. It is an ORed signal that monitors both the 5 volt and 3.3 volt logic voltage outputs as well as the input power. If the input power or either of the logic voltages is threatened as described above, the PW_OK signal activates low.

Remote Inhibit: This feature is widely used in system platforms of many types for housekeeping and service. Connecting the power supply's Remote Inhibit pin to Common causes the duty cycle of the supply's pulse width modular to close, effectively shutting off the output of the power supply. Power supplies in redundancy can be individually inhibited, because the pin on the PWM control chip has built-in isolation. This is the option of the system designer. It is important to note that with Remote Inhibit, the input section of the power supplies will remain energized as long as the AC or DC input voltage is applied. To de-energize the power supply's input, removal of the input power is required or toggling the input power switch, if present, is required.



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