



AFI Application Note:

Standby (Redundant) Power Supplies:

A standby (redundant) power supply is two or more units in one sub rack card cage, where each can supply the full amount of power to the system, such that if one fails, the other will take over and the system never goes down. AFI has two options for providing power supply redundancy in the SR-20 sub racks.

Passive Standby (Master/Slave)

One option utilizes the PSR-1M and PSR-1S power supplies which operate in a Master and Slave configuration. These Master/Slave units are 75W unregulated linear power supplies. Under normal operating conditions, the Master provides the total power to the sub rack cards. The Slave power supply will automatically switch on and provide the sub rack power in the event that the Master power supply fails, loses input power, or is switched (turned) off. When the Master power supply is replaced or switched back on, the Slave power supply needs to be reset (by recycling input power).

Active Standby

The second option utilizes two PSR-2H power supplies which operate in an “active (hot) standby” configuration. These PSR-2H units are 100W regulated high efficiency power supplies. These two power supplies connect to the sub rack backplane in an “either or” configuration which means that one or both may be providing power to the sub rack simultaneously. However, when both are providing power, the current requirement from each supply is reduced proportionally. If both supplies are providing power equally to the sub rack load, each will then be operating at only 50% of its total power capacity. Typically the power supplies are not perfectly balanced and one or the other of the PSR-2H power supplies are providing most or all of the sub rack power requirements. If either one of the PSR-2H power supplies fails, loses input power, or is switched (turned) off, power is seamlessly maintained to the sub rack by the second unit. When the non operating power supply is replaced or switched back on, both the PSR-2H power supplies are automatically available to provide sub rack power. No reset is required.