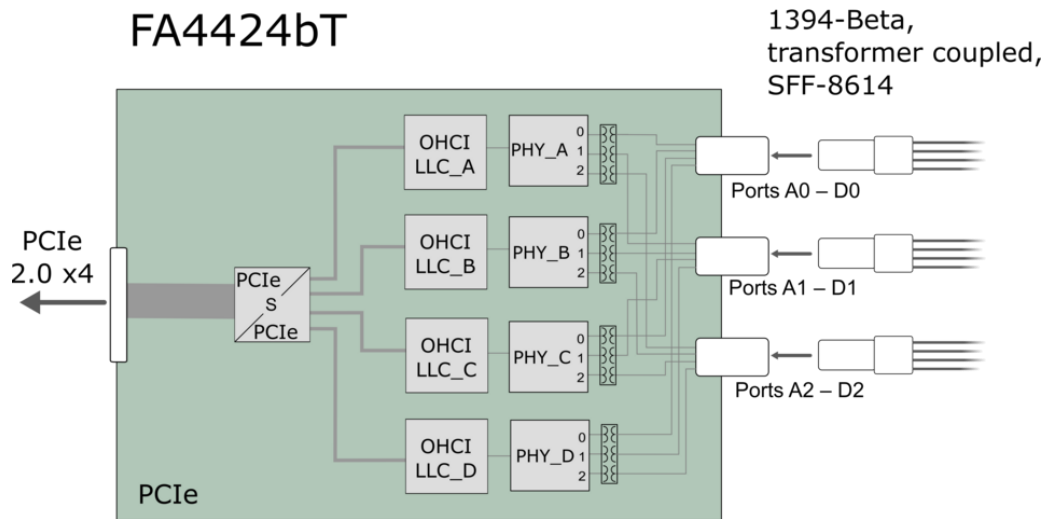


Workaround for DIODES Erratum E2: “ACS P2P Request Redirect Is Not Functional” affecting DAP FireAdapters



The DAP FireAdapter FA3465bT, FA3445bT, FA4424bT and FA3424bT internally use a PCIe switch, the DIODES/Pericom PI7C9X2G608GP. Erratum E2: “ACS P2P Request Redirect Is Not Functional” for this component reads:

When ACS P2P Request Redirect function is enabled by setting ACS Capability Register (CFG Offset 224h, bit 18) and bandwidth between upstream port and downstream port is not balanced, packets are queued in the internal buffer of packet switch until CLPD pkt.

Workaround:

1. Do not enable ACS P2P Request Redirect function.
2. If ACS is enabled, set store and forward mode (CFG Offset 74h, bit 0). This bit can be changed by CFG command, EEPROM or I2C/SMBUS.

Status:

No fixes for this issue are planned.

DAP has observed that the BIOS or UEFI firmware in certain computers enables the Access Control Services (ACS) bits on the PI7C9X2G608GP chips during startup, including the ACS P2P Request Redirect function bit. This leads to symptoms like the computer freezing, crashing or becoming sluggish as soon as the OHCI functionality is accessed, and corruption of FireWire traffic.

Here are some suggestions to implement the workaround for the DIODES Erratum E2:

Disable “Intel VT-D” in BIOS. DAP has observed that systems that set the ACS P2P Request Redirect bit, stopped doing so when Intel VT-D was disabled in the BIOS. This solution is independent of the Operating System or FireWire stack used.

FireStack 3.0.18 on Linux implements the second workaround, to set store and forward mode if the ACS P2P Request Redirect bit has been set by BIOS.