

## ***TSB41LV01 to TSB41AB1 Transition Document***

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*TI 1394 Application Group*

In June 2000 Texas Instruments will release to production the TSB41AB1PAP one-port physical layer (PHY). This part is an upgrade to the current one-port PHY, the TSB41LV01 (data sheet, literature number SLLS365).

Existing designs may continue to use the TSB41LV01, but may want to consider transitioning to the TSB41AB1.

The TSB41AB1 offers advantages over the existing TSB41LV01:

- The TSB41AB1PAP is pin-compatible with the TSB41LV01PAP.
- The TSB41AB1PAP has lower active and idle power consumption (more than 50% lower current) than the current TSB41LV01.
- The TSB41AB1PAP has a 1394a compliant common-mode noise filter on the incoming bias detect circuit to filter out cross-talk noise.
- The TSB41AB1, like the TSB41LV01, has an ultra low-power mode of less than 150  $\mu$ A when no ports are active.
- The TSB41AB1, like the TSB41LV01, is fully 1394a–2000 compliant including the extended TPbias mode to accommodate older model DV camcorder hot-plug connectivity.
- The TSB41AB1 and the TSB41LV01 both have failsafe circuitry that senses sudden loss of power to the device and disables its ports. This ensures that the device does not load the port of the connected device on the other end of the cable and blocks any leakage path from the port back to the device power plane.
- The TSB41AB1 uses a single, standard value 6.34-k $\Omega$   $\pm$ 1% resistor between R0 and R1 instead of the 6.3-k $\Omega$   $\pm$ 0.5% resistor used in the TSB41LV01 device.

The TSB41AB1PAP is pin-compatible with the TSB41LV01PAP. However, to reduce power consumption further, the TSB41AB1 uses a 3.3-V PHY/LINK interface instead of a 5 V tolerant interface as in TSB41LV01.

The TSB41AB1 is also offered in a 48-pin PowerPAD™ package, orderable as the TSB41AB1PHP.

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