

TSB41LV02/02A to TSB41AB2 Transition Document

TI 1394 Application Group

In June 2000 Texas Instruments will release to production the TSB41AB2PAP two-port physical layer (PHY). This part is an upgrade to the current two-port PHYs, the TSB41LV02 (data sheet, literature number SLLS355) and the TSB41LV02A (data sheet, literature number SLLS400).

Texas Instruments recommends that the TSB41LV02 not be considered for new designs, and that all new designs use the TSB41LV02A or the TSB41AB2. Existing designs may continue to use the TSB41LV02A, but may want to consider transitioning to the TSB41AB2.

The TSB41AB2 offers advantages over the existing TSB41LV02 and TSB41LV02A:

- The TSB41AB2PAP is pin-compatible with the TSB41LV02PAP and TSB41LV02APAP.
- The TSB41AB2 has lower active and idle power consumption (greater than 50% lower current) than the current TSB41LV02/02A.
- The TSB41AB2 has a 1394a compliant common-mode noise filter on the incoming bias detect circuit to filter out cross-talk noise.
- The TSB41AB2, like the TSB41LV02/02A, has an ultralow-power mode of less than 150 μ A when no ports are active.
- The TSB41AB2, like the TSB41LV02/02A, is fully 1394a–2000 compliant including the extended TPbias mode to accommodate older model DV camcorder hot-plug connectivity.
- The TSB41AB2 and the TSB41LV02A 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 TSB41AB2 uses a single, standard value 6.34-k Ω \pm 1% resistor between R0 and R1 instead of the 6.3-k Ω \pm 0.5% resistor used in the TSB41LV02 and TSB41LV02A device.

The TSB41AB2 is pin-compatible with the TSB41LV02/02A. However, to reduce power consumption further, the TSB41AB2 uses a 3.3-V PHY LINK interface instead of 5-V tolerant interface as in TSB41LV02/A.

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