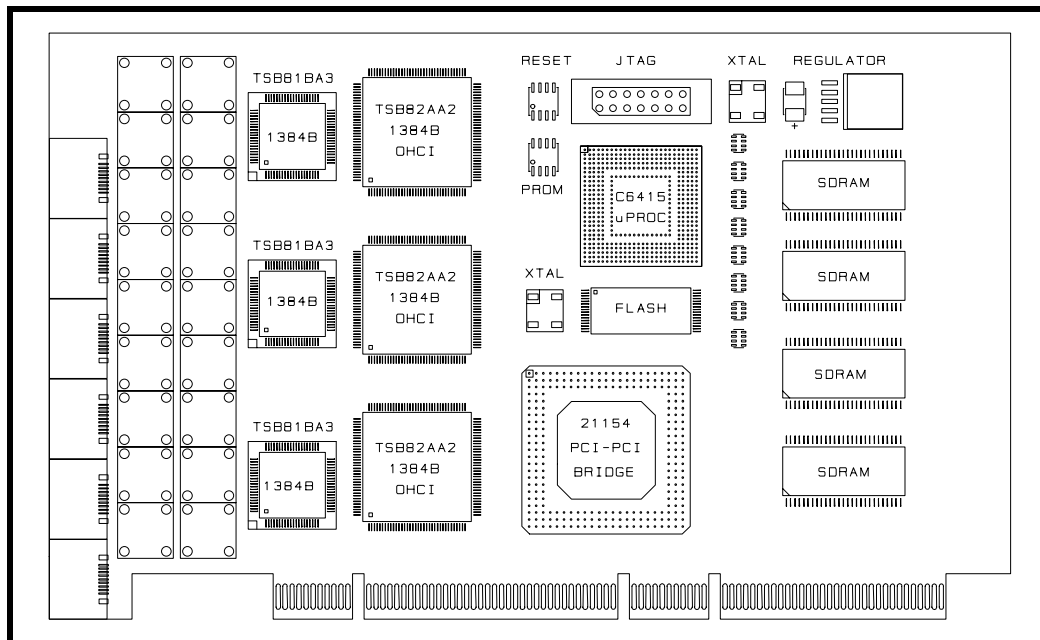




## ATT PCI Multi Channel Intelligent 1394b Firewire Card



### Outline Description

The ATT PCI-JSFFirewire is a PCI based multi-channel 1394b Firewire card designed to interface to various systems within the X35/F35/JSF program. The card uses the very latest chipset technology from Texas Instrument to implement three 1394b nodes, each with 3 ports. The 1394b I/O signals may optionally be transformer coupled to provide a greater degree of isolation from the unit under test.

Each node is implemented using the TSB82AA2 and TSB81BA3 chipset configured for 1394b mode operation. This chipset directly supports the OHCI-Lynx interface standard. Therefore, the three 1394b nodes are all fully compatible with a wide range of industry standard operating systems, including Windows 2000 and Windows XP.

The three 1394b channels (and the onboard processors' memory) are all made visible to the host PC via an Intel 21154 PCI 2.2 compatible PCI to PCI bridge chip. The onboard PCI local bus is configured to run at 33Mhz, with a 64-bit data path to the 1394b interfaces. The Host side of the PCI Bridge is completely flexible. It supports 32 of 64 bit data paths, 33Mhz or 66Mhz clock rates, and 3v3 or 5v signalling which makes it possible to run the card in virtually any PC with a PCI slot. However, for maximum performance it is recommended that Server motherboards are used which can take advantage of the 64bit/66Mhz interface, allowing data transfer rates as high as 532Mb/sec.

The Intel 21154 chip is natively supported by Windows based operating systems, as is the Texas 1394b Firewire chipset. Therefore, this card can be used 'as is' in standard 1394b modes using Microsoft supplied device drivers and the 'Plug and Play' options available in the OS's. However, to use the card in X35/F35/JSF applications greater synchronisation between the three channels is required than can typically be achieved using a Windows based PC. Therefore, a processor has been added to the card, allowing much better control of the 1394b channels.

The processor section of the card contains a 600Mhz/4800MIP TMS320C6415 DSP processor, together with up to 128Mb of high speed SDRAM (typically used for buffering data). This processor allows synchronisation of data being transmitted by any/all of the 1394b channels. The processor interfaces to the 1394b interfaces via the onboard PCI local bus, and contains multiple DMA channels to burst data to or from the desired location.

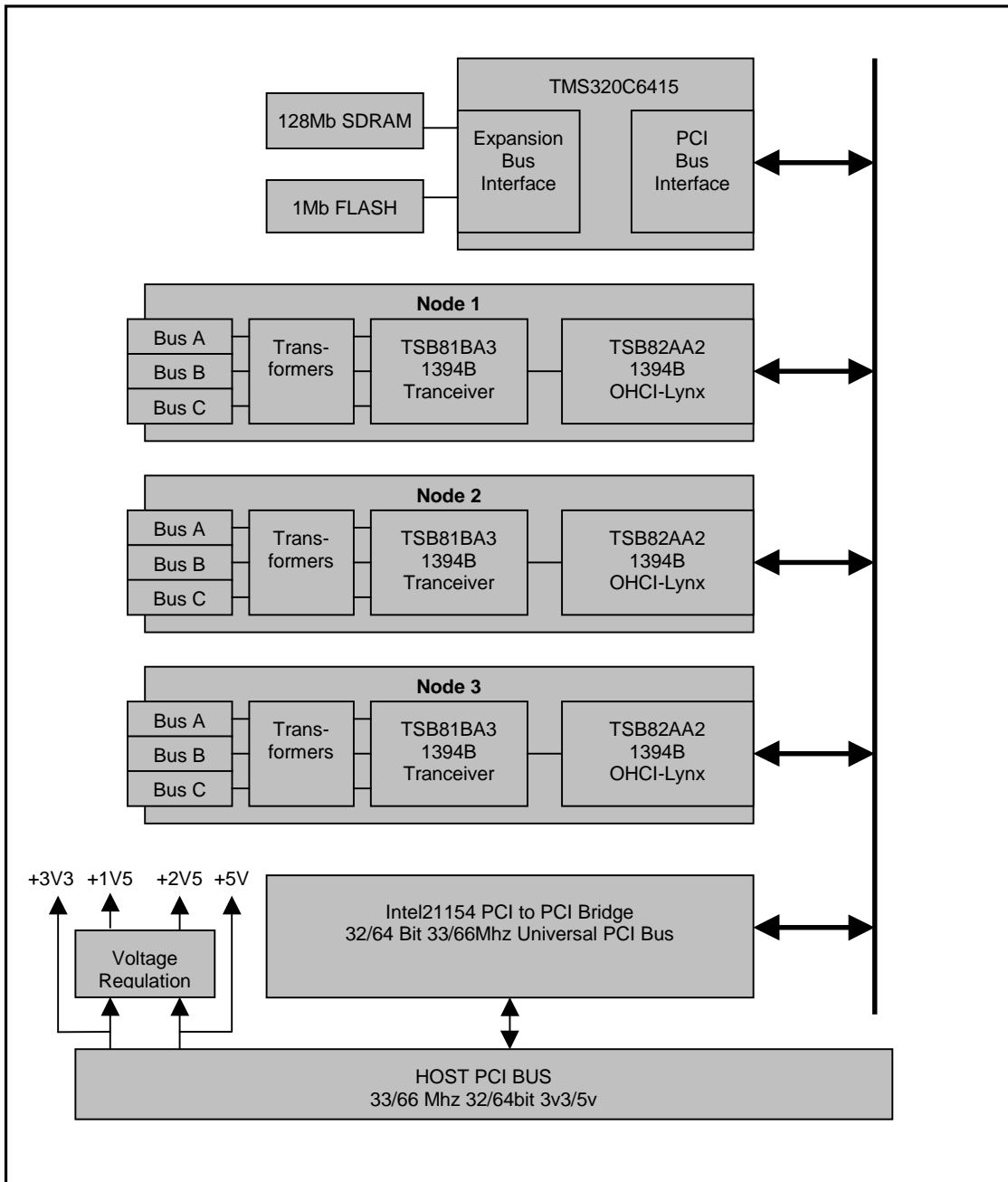
For many applications, the DSP processor may contain sufficient internal data memory to hold the required structures for control of the 1394b busses. However, if additional memory is required, the processor may have an additional 128M Bytes of high speed SDRAM fitted. This memory is fully visible to the host system via the PCI bus. Additionally, up to 1Meg bytes of FLASH EPROM is available to the processor. This contains the boot code and application firmware for the processor.

Back panel connections are made via 9 Beta Socket connectors, as defined in the 1394b specification. Six of these connections are mounted on the card, and form a standard PCI back panel. The remaining connectors are mounted on a daughter card, which should be mounted in an adjacent PCI slot.

**ADVANCE INFORMATION.** This datasheet describes a product currently in the design stage of its development. During this phase, extra features may be added, and existing features may be changed or deleted. Please contact ATT Avionics for further information on this product.

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# Block Diagram



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