BSI 4422-PCI

Telemetry Module

Limited Availability
Used and in Excellent Condition

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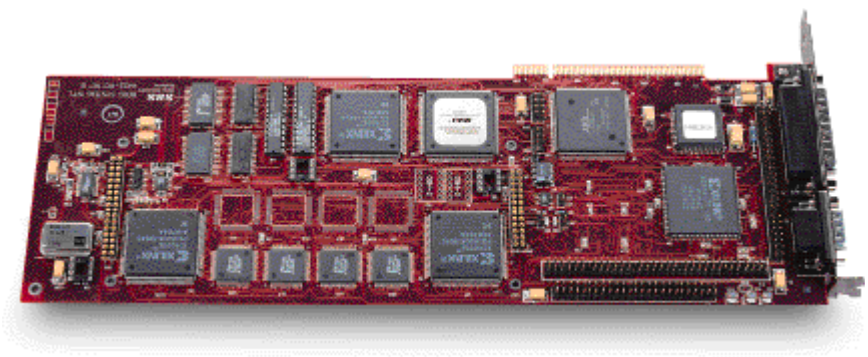
MODEL 4422-PCI
Telemetry Module

Features:

- **Supports PCM Decommutation up to 20 Mbps**
- **Variable Word Length processing (3 - 16 bits)**
- **On-board DMA Engine for High-speed Data Transfers**
- **SFID, FAC, & URC Subframe Methods**
- **Full-fidelity PCM Simulation up to 20 Mbps**
- **Minor Frame IRIG Time Insertion**
- **PCM Bit Synchronizer Daughter Card (Optional)**



The Model 4422-PCI is a complete, system level telemetry module for the PCI bus. The Model 4422-PCI contains an optional bit synchronizer, PCM decommutator, IRIG time code reader, and dynamic PCM simulator. The module supports all of the functions required for telemetry data acquisition for input data streams at rates up to 20 Mbps.

The optional bit synchronizer accepts all PCM codes and includes a tape driver output. The decommutator supports variable frame and word length formats. The simulator features dynamic and unique data word generation and can operate autonomously. The time code reader accepts IRIG (A or B) time codes and can be programmed to utilize system time in the absence of an IRIG time source.

The Model 4422-PCI has a DMA engine to facilitate high speed data transfers across the PCI bus using dedicated, on-board memory for buffer addresses.

Setup parameters for each function of the Model 4422-PCI are programmed via the PCI bus. Readback (status) is available over the same bus in a pollable status word.

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Model 4422-PCI Specifications

Performance

DECOMMUTATOR

Inputs	NRZ-L data & 0° clock
Input Levels	Single-ended TTL & RS-422
Input Data Rate	10.0 bps to 20.0 Mbps
Word Length	Variable (3 to 16 bits) word-by-word basis
Minor Frame Length	2 to 8,191 words per minor frame
Major Frame Length	Up to 256 minor frames per major frame
Bit Order	MSB/LSB-first (word-by-word basis)
Frame Sync Pattern	Up to 64 bits (any series of 0s,1s or don't care bits (Xs) may be used)
Frame Sync Location	Leading or trailing the frame
Frame Sync Strategy	Adaptive mode (search-lock-verify) & burst mode (search-lock)
Sync Error Tolerance	0 to 15 bits (selectable)
Sync Slip Window	1 or 3 bits wide (selectable)
Data Polarity	Normal,inverted or automatic (detection)
Subframe Sync	FCC (FAC),SFID or URC (Optional)
URC Location	May be any 64 bit window within the first minor frame not including the last bit in the minor frame
SFID Location	Any series of bits not including the last bit in the minor frame
System Output	Buffered output with status,time & data

SIMULATOR

Outputs	Data,0° & 90° clocks & minor frame strobes
Output Levels	Single-ended TTL & RS-422
Output Data Rate	1.0 bps to 20.0 Mbps (NRZ codes) 1.0 bps to 10.0 Mbps (all other codes)
PCM Codes	NRZ-L/M/S BIØ-L/M/S DM-M/S M^2 RNRZ-L (2^{11}-1 & 2^{15}-1)
Word Length	Variable (3 to 16 bits) word-by-word basis
Minor Frame Length	2 to 4,095 words per minor frame
Major Frame Length	Up to 256 minor frames per major frame
Bit Order	MSB/LSB-first on a word-by-word basis
Frame Sync Pattern	Up to 64 bits (any series of 0s or 1s may be used)
Subframe Sync	FCC (FAC),SFID & URC URC location may be any 64 bit window within the first minor frame not including the last bit in the minor frame
Common Words	Based on word location,up to 2,048 values may be programmed "on-the-fly"
Unique Words	Up to 7 programmable including:super-, sub- & super-sub-commutation (URC is programmed using a unique word)
Dynamic Words	Up to 5 programmed via look-up tables including the following waveforms: ramp,triangle, sine, square & step

IRIG TIME CODE READER

Input Format	IRIG A or B
Carrier	250 Hz to 20 kHz
Input Level	1 V (peak-to-peak) nominal
Latency	2 µs (maximum)
Outputs	Automatic time tags for PCM data blocks (time accessible via PCI I/O space)
Alternate Source	System Clock

BITSYNCHRONIZER (OPTIONAL)

SBS Technologies,Inc. offers two different bit synchronizers for the Model 4422-PCI:

Model 4400-TM (250 bps to 5.0 Mbps)
Model 4400-TF (250 bps to 10.0 Mbps)

For additional information & specifications please refer to the data sheet for each bit synchronizer listed above.

Mechanical

Form Factor	Single, full-size PCI bus module
Connectors	DB9 (bit sync),DB 25 (decom,simulator & time) & 50-pin parallel output header

Environmental

Operating or Non-Operating	Temperature:	0° to 50° C
	Humidity:	0 to 90% (non-condensing)
Non-Operating (in proper packing)	Temperature:	-25° to +70° C
	Humidity:	Packing must prevent contact with moisture and contaminants
Special Handling	Standard ESD handling methods are recommended	

Options

Option-B:	Model 4400-TM Bit Synchronizer
Option-F:	Model 4400-TF Bit Synchronizer
Option-U:	Unique Recycling Code

SBS Technologies, Inc., Telemetry and Communications Products
5791 Van Allen Way, Carlsbad, CA 92008 • Toll Free (877) SBS-2374 • Tel (760) 438-5656 • Fax (760) 438-0056
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