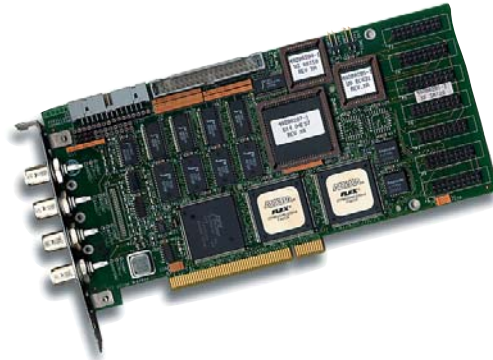


Ground Systems

PCI Decom/Simulator DSM720-PCI

- Supports NRZ-L PCM inputs to 20 Mbps
- On-board decommutation of individual parameters saves CPU time
- PCI bus master DMA takes no CPU time to transfer data
- Reconfigurable to 32 or 64 kwords per frame
- Supports primary frame and subframe synchronization and one or two asynchronous embedded serial stream outputs
- Contains two 64-bit correlators for frame and subframe synchronization
- Parallel port for the ADP716-PC Analog & Digital Ports board interface provides real-time analog output



L-3's high-performance PCI Decom/Simulator (32K words per frame) and large frame Decom (64K words per frame) process incoming PCM telemetry streams at rates up to 20 Mbps. For maximum flexibility, the DSM720-PCI can support either 32K 16-bit parameters and a simulator, or if larger telemetry frames are required, it can be configured without the simulator function to support 64K 16-bit parameters. Reconfiguration is accomplished by downloading a configuration file supplied with each board. Only L-3's PCI Decom/Simulator provides this level of configurability.

The PCI Decom/Simulator accommodates frame and subframe synchronization patterns as long as 64 bits and supports SFID, URC, FCC, and Unique Subframe synchronization strategies. Search-to-lock and lock-to-search strategies are programmable, and automatic polarity detection is provided as a standard feature.

Once synchronized, the PCI Decom/Simulator writes user-selected data from incoming streams into one of two ping-pong buffers in its on-board RAM. Each time a buffer is filled, the board interrupts the host and switches storage to the other buffer. The host can then initiate a DMA transfer of the full buffer without interfering with input stream synchronization during data acquisition.

The PCI Decom/Simulator comes with two asynchronous outputs, which can be used to pipe embedded serial streams to other modules for synchronization and decommutation.



communications

Telemetry & RF Products

Excellence You Can Measure

PCI Decom/Simulator Specifications DSM720-PCI

Decommutator:

Inputs

Internal	NRZ-L data and clock
External (rear panel)	2 BNC connectors (TTL levels) or 2 triax (RS-422 levels), and 26-pin header
External clock	TTL or optional RS-422
External data	NRZ-L PCM serial
Bit rate maximum	20 Mbps

Outputs

Connector	40-pin header (compatible with ADP716-PC)
Status output	Search, verify, lock, check
Data	16-bit parallel
Address	16-bit parallel

Frame Characteristics

Data alignment	MSB or LSB
Polarity	Normal, inverted, automatic
Minor Frame:	
Words per minor frame	32,768 max. or 65,535 max.
Word length	8 to 16 or 32 bits variable, word by word
Sync pattern	8 to 64 bits with any combination of 1, 0, or X
Max. bit errors in sync pattern	Programmable 0 to 7 bits
Search-to-lock strategy	Programmable 0 to 3 consecutive frames
Lock-to-search strategy	Programmable 0 to 3 consecutive frames
Sync aperture	Programmable window ± 0 or ± 1 bit
Major Frame:	
Words per major frame	32,768 max. or 65,535 max.
Minor frames per major frame	1 to 3,200 max.
Synchronization methods	Subframe ID; Sync Code; Unique Recycling Code (URC); Frame Code Complement (via URC)
Max. bit errors in sync pattern	Programmable 0 to 7 bits
Search-to-lock strategy	Programmable 0 to 3 consecutive frames
Lock-to-search strategy	Programmable 0 to 3 consecutive frames
Embedded Asynchronous Frame Extraction:	
Embedded frame location	Any primary frame words
Output	Serial data and clock

Simulator:

(not available if configured to 64K parameters)

Functions

Capability	Exercise all primary frame/subframe modes of operation
Simulated functions	Sine, triangle, ramp, square, pulse, random, constant
Simulation memory	128K x 16
Internal clock	60 MHz divided by any whole number less than 65,535 and 4 or more
Output	NRZ-L data and clock
External (rear panel)	2 BNC connectors (TTL levels) or 2 triax (RS-422 levels)
External clock input	20 MHz max.

Power

+5V supply	1.2 A max.
Power dissipation	4.0 W typical (16 BTU/hr.)

Physical Characteristics

Mechanical	PCI-compatible, requires one slot
Size	3/4-length PCI slot
Operating temperature	0 to 50°C
Relative humidity	< 90% (non-condensing)

Compatibility

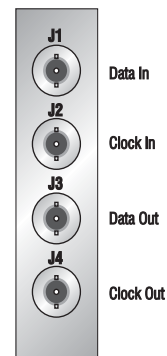
VTS Software	
Windows	2000, XP

Ordering Information

DSM720-PCI	PCI Decommutator/Simulator (20Mbps)
DSM720-PCI-T	PCI Decommutator/Simulator (20Mbps), Triax/Differential

Connector Pin Assignments

Input and output is through your choice of four BNC or triax connectors at the computer's rear panel.



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