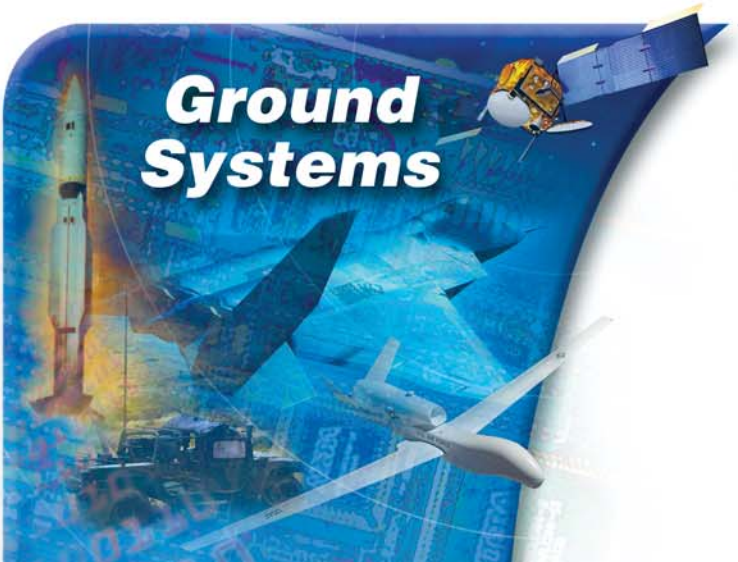
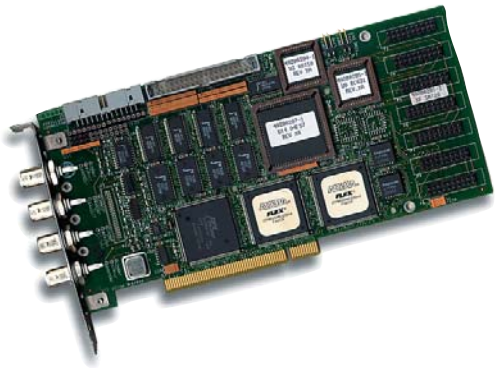


Decom/Simulator Boards

DSM720-PCI/DSM720-PC



- 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/ 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
- Synchronous time-tagging with microsecond resolution using either system time or IRIG time (IRIG requires Time Code Reader & Generator board)

Available for both PCI and ISA bus applications, L-3's high-performance 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 boards can support either 32K 16-bit parameters and a simulator, or if larger telemetry frames are required, they 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 Decom/Simulator boards provide this level of configurability.

The Decom/Simulator boards accommodate frame and subframe synchronization patterns as long as 64 bits and support 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 Decom/Simulator boards write user-selected data from incoming streams into one of two ping-pong buffers in their on-board RAM. Each time a buffer is filled, the boards interrupt the host and switch 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.

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

L3 communications
Telemetry–West

Excellence You Can Measure

Decom/Simulator Board Specifications DSM720-PCI/DSM720-PC

Decom:

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

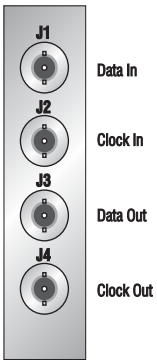
+5V supply	1.2 A max.
Power dissipation	4.0 W typical (16 BTU/hr.)

Physical Characteristics

Mechanical	PCI-compatible (DSM720-PCI) or ISA-compatible (DSM720-PC) card; requires one slot
Size	DSM720-PCI: ¾-length slot DSM720-PC: ½-length slot
Operating temperature	0 to 50°C
Relative humidity	< 90% (non-condensing)

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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