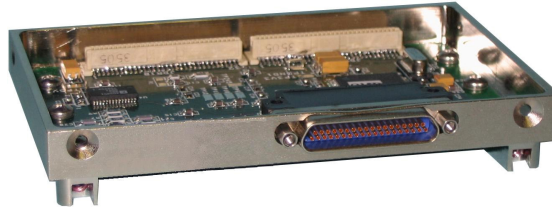# APOGEE LABS

4082
APaKCol Packet Collector Module

FEATURES

- Generates composite output data as transfer frames
- Typically <3% overhead
- TTL, PECL, and RS-422 serial output s
- Operate from 200 Kbps to 35 Mbps (NRZ codes); 200 Kbps to 15 Mbps (Bi-phase & DM codes)
- Accepts IRIG-B amplitude modulated timecode
  - Transports digitized timecode to PaKDst for reproduction

- Onboard rate synthesizer, 1 bps Steps
- Galvanic isolated serial outputs
- Supports 128 character 'Notes' page
- FCS for data integrity verification
- Micro D-37 pin connector interface

OVERVIEW

The APaKCol packetizer module collects source packets from all of the AL4000 Multiplexer/Demultiplexer data channel cards (via the module interconnect backplane) and multiplexes the packets into a serial data stream suitable for an RF modulator, recorder, wire interconnect or other digital data transmission system. An internal system clock is user programmable to set the desired data transfer rate. Alternately, an external clock (ST) may be applied to generate the output data stream. Output serial data and clock are provided in three electrical formats: RS-422 differential, PECL differential, and TTL single-ended. All user inputs and outputs are accessible via the Micro-Miniature D-37 pin interface connector.

The 4082 accepts an analog IRIG-B input, converts this to a digital representation that is passed in the transfer frame with the captured data packets to the receiving system. There is no additional overhead imposed on the system as a result of including this time code information. At a demultiplexer site, the time code may be reconstructed to its original analog modulated form.

The 4082 APaKCol is used in conjunction with the Apogee Labs' 2150 PaKDst module.

SPECIFICATIONS

GENERAL
- Single height module, 0.40" x 2.5" x 4.0" (4 Cubic Inches)
- Weight: 2.5 oz (71 grams)
- Power consumption: 3.77W
- Maximum slots scanned: 17

COMPOSITE OUTPUT FORMAT
- CCSDS packet telemetry transfer frame
- 8192 bits / transfer frame

COMPOSITE OUTPUT FORMAT (CONTINUED)
- Up to 128 characters of notes
- Digitally encoded IRIG-B-122
- Power consumption: 3.77W
- Maximum slots scanned: 63

OUTPUT INTERFACES
- RS-422 differential 0 to +5V
- PECL differential +3V to +4.1V
- TTL single ended 0 to +5V

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SPECIFICATIONS (CONTINUED)

SERIAL BIT FORMATS

- NRZ-L,M,S
- BiØ-L,M,S
- DMM-M,S
- RNRZ-L (15 bits)

SERIAL DATA OUTPUT SINGLE ENDED

- TTL data and clock
- 0.2 Mbps to 35 Mbps NRZ codes
- 0.2 Mbps to 15 Mbps BiØ and DM codes

SERIAL DATA OUTPUT DIFFERENTIAL

- RS-422 data and clock
- PECL data and clock

OUTPUT RATE

- 0.2 Mbps to 35 Mbps (10ms SI) data and zero degree clock. 1 Mbps to 35 Mbps using 1ms SI

EXTERNAL CLOCK (ST) INPUT

- RS-422 differential (120Ω)
- TTL single ended (50Ω)

TIME CODE INPUT

- IRIG-B-122 amplitude modulated (0.5Vp-p to 10Vp-p; 2:1 to 4:1 modulation ratio)

COMPLEMENTARY HARDWARE

- 2150 PaKDst