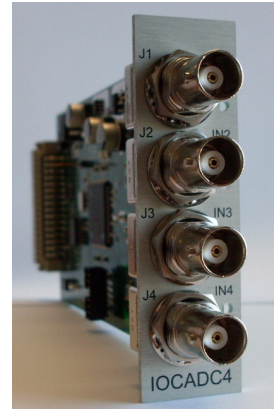




IOCADC4 ANALOG TO DIGITAL CONVERTER MODULE



FEATURES

- Analog to digital converter module (10 bit)
- 50 to 80,000 samples/second
- Super commutation supported
- Four independent channels inserted consecutively into PCM data stream
- Input ranges: 0V to 5V; +/- 2.5V; 0V to 10V; +/- 5V; +/- 10V; -5V to 0V
- Selectable input terminations of 75Ω and 10KΩ
- Selectable input coupling: AC/DC
- 10 KHz input bandwidth
- Straight binary coding
- Programmable features:
 - ◊ Word location
 - ◊ Interval (super commutation)

OVERVIEW

The IOCADC4 module is a 4 channel 10 bit analog to digital converter designed to receive analog signals and convert them to a digital binary representation. The resulting digital information is inserted into the PCM data stream defined by the IOCPCM2 module as part of an AL2873 Data Acquisition system. Data is inserted into the data stream MSB justified at a user selected word location and word interval for super commutated data words. The 4 individual channels are inserted into the PCM stream in consecutive order (1-4) with channel 1 being inserted into the user selected word location. The user can selectively activate between 1 and 4 channels. Inactive channels are not inserted into the data stream.

The IOCADC4 requires an IOCPCM2 module in an AL2873 chassis to be functional. The IOCPCM2 reads data from the individual acquisition modules over the AL2873 PCM bus and inserts the digital information into the user defined PCM data stream. Up to 13 IOCADC4 modules can be installed in a single AL2873 chassis providing up to 52 individual ADC channels. An additional 13 IOCADC4 modules can be configured in an expansion chassis expanding the number of analog channels per PCM stream to 104.

Control of the IOCADC4 is via the front panel keypad and 3" x 2" LCD or Ethernet and the APEX software package. When configured, the current setup is retained in non-volatile memory and is automatically restored on power up with a recovery time of less than 20 seconds.

APPLICATION NOTES

The IOCADC4 is the analog to digital conversion portion of a data acquisition system. This module is used in conjunction with the suite of data acquisition boards that plug into the AL2873 chassis. The IOCADC4 is capable of acquiring analog signals from DC to 100 Hz at levels from -10V to +10V. A fully configured system is capable of acquiring analog, digital, PC COM ports, audio, and IRIG timing. Typical signals (but not limited to) are receiver AGC levels, Bit Sync and Frame Sync lock status, station timing, station voice, GPS RS-232 outputs, and serial data streams from antenna position encoders.

System block diagrams are shown below.

Figure 1: Fully Populated Chassis

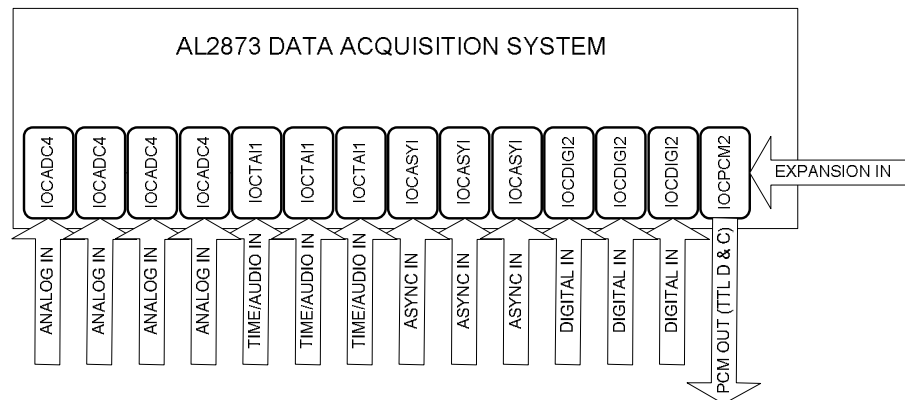
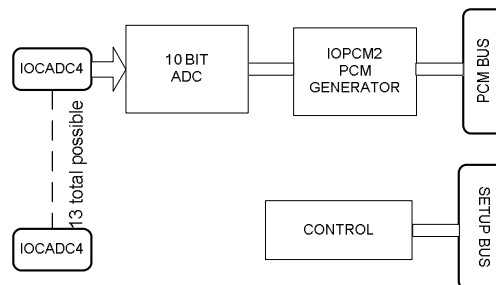


Figure 2: Functional Block Diagram



SPECIFICATIONS

GENERAL

- Single slot module (3" x 6" x 0.9")
- Up to 13 modules per chassis

INPUT

- Single ended analog
- DC to 10 KHz
- Jumper Selectable AC/DC input coupling
- BNC connectors
- Jumper selectable 75Ω and 10KΩ input termination
- Front panel User selectable range per channel:
0 to +5V; +/- 2.5V; 0 to +10V; +/- 5V; +/- 10V; -5V to 0V

OUTPUT

- Binary coded data on internal AL2873 PCM bus
- 8 to 16 bits
- Super commutation supported
- User selectable word location in PCM frame

ENVIRONMENTAL

- Operating temperature: 0° to 50° C
- Relative humidity: 15% to 95%; non-condensing
- Altitude: Sea level to 10,000 feet

POWER

- +5V input from AL2873 chassis backplane

MEAN TIME BETWEEN FAILURES

- ~ 100,000 hours