



MODEL 2130

TAIM1 TIME AND AUDIO INPUT MODULE

1. FEATURES

Accepts IRIG-B-122

- Encodes Days through Milli-Seconds
- Samples at TDM Frame Mark

Digitizes Audio (300 Hz to 3000 Hz)

- 3dB Response Flat to within 1dB
- Spurious / Noise 50dBc down
- Total Harmonic Distortion < 1%

Ease of operation

1 AL8400 card-slot



2. PURPOSE

The TAIM1 module is used in the model AL8400 Data Acquisition System (DAS) to acquire IRIG B-122 amplitude modulated time-code and make a digitized representation of Days through Milli-Seconds available for output. This module also accepts an audio input, which is derived from an intercommunications network or a simple microphone preamplifier. The audio analog source is encoded to a digital representation for insertion into the output TDM (Time Division Multiplex) stream of the AL8400. The audio signal may be reproduced by a standard digital-to-analog converter that is driven by the decommutated audio data extracted from the AL8400 TDM data stream. The digital representation of the time code may be used in a computer based analysis process.

3. FUNCTIONAL DESCRIPTION

The TAIM1 plug-in module is a single slot wide AL8400 DAS series compatible plug-in circuit card that is designed to accept audio and time for insertion into an AL8400 output TDM data stream. Figure 1 presents the module block diagram. The module accepts amplitude modulated IRIG-B time code and an audio input. These signals are separately encoded into digital representations that are made available to the PCM generator module in the AL8400. Software at the system level is used to define the output TDM data stream in which the data from the TAIM1 is inserted. IRIG time is sampled at the frame rate of the PCM generator. The resulting digital data is inserted into the TDM as specified by the system operator. The audio input is sampled at the rate at which it is inserted into the TDM. To obtain higher quality audio representations the audio words may be supercommutated in the output fram.

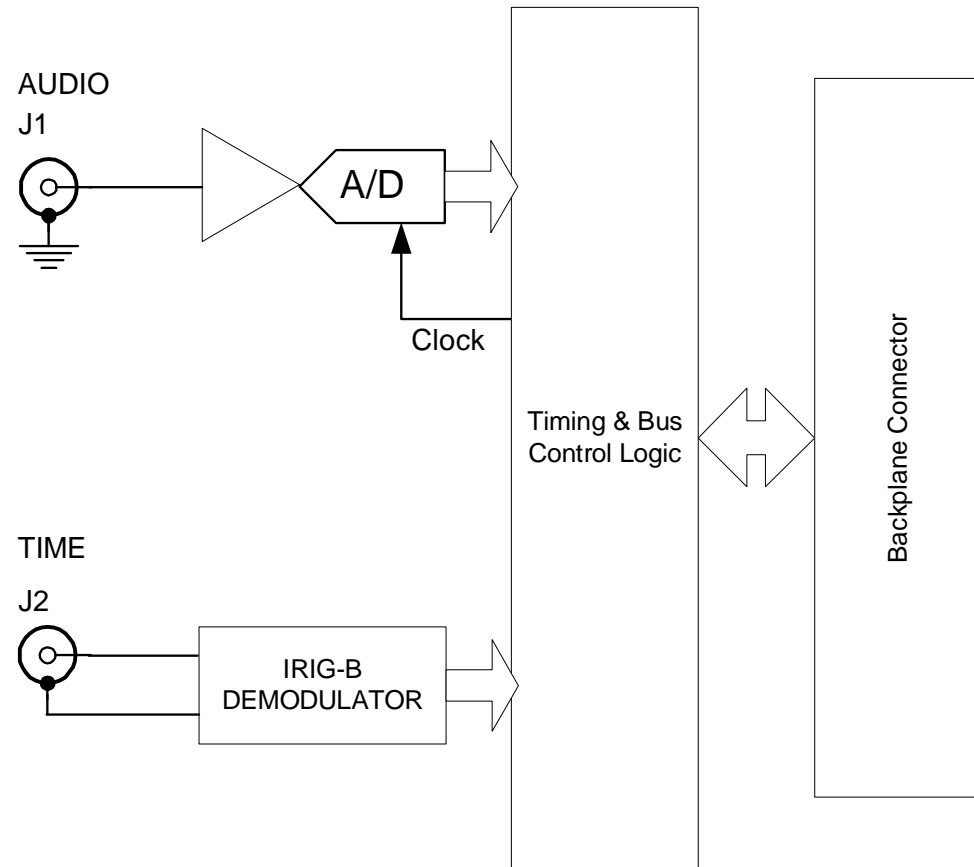


Figure 1: Model 2130 TAIM1 Block Diagram

4. SPECIFICATIONS

TIME INPUT

IRIG-B-122 Amplitude Modulated,
 2:1 to 6:1 modulation ratio
 Input Signal Amplitude 0.5 Vp-p to 5.8 Vp-p;
 AC coupled
 BCD Encoded (Days to Milli-Seconds) [BCD encoded
 from Days to Seconds, Milli-Seconds encoded in
 Time is Sampled at the AL8400 TDM Frame Mark
 User Programmable Insertion into TDM Words
 Input Termination Resistance (600 Ohms)
 BNC Connector, Isolated

AUDIO INPUT

0 dBm nominal level (2.2 Vp-p) into 600 ohms
 Maximum Input Level 2.7 Vp into 600 Ohms
 Anti-Aliasing Filter cut for 100k Hz
 12-bit Quantization Sampled at TDM Word-Insertion
 Rate [MSBs preserved if TDM word is less than 12-
 bits]
 Response @ 3 dB Flat to within 1 dB from 300 Hz
 to 3k Hz
 Total Harmonic Distortion less than 1%
 Spurious Levels -50 dBc
 Input Termination Resistance (600 Ohms)
 BNC Connector, Isolated

COMPATIBILITY

AL8400 Bus

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