DAQStreaming
40MB/s Data Recorder for Analog and Digital Signals

Features
- Windows-based turnkey system for recording analog and digital signals
- Up to 40MB/s real-time data recording throughput
- Up to 1.5 hours recording duration at maximum data rate
- Diversified models for
  - High-speed analog signals
  - Multiple-channel simultaneous analog signals
  - High-speed digital patterns
- Digital pattern playback
- C-like file API to manage recorded data
- Complete software architecture for customized data processing
- PXI platform DAQStreaming is also available

Introduction
DAQStreaming is a revolutionary high-speed data recorder that takes advantage of advanced software technologies and the high data throughput of SCSI devices to meet the needs of high-speed, real-time, and sustained data recording with up to 40MB/s data throughput.

Background & Technologies
Some data acquisition applications need to continuously acquire and store high volumes of data for the off-line processing. However, due to disk speed limitations and file system overhead, it's virtually impossible to provide real-time data recording capabilities with data rates over 10MB/s. Traditionally, a proprietary hard disk control card is used to transfer the acquired data from the DAQ device to the hard drive via a DMA (path #1) or a front panel connection (path #2). Using current technologies, data throughput from 60MB/s to 200MB/s is achievable using proprietary data acquisition and hard disk control cards.

Introducing proprietary devices increases costs, making it priced out of reach to many users requiring high-speed data recorders. ADLINK proposes a revolutionary concept to utilize commercial SCSI devices and data acquisition cards to make high-speed data recording affordable.

In existing computers, the PCI bus provides 132MB/s bandwidth. Meanwhile, a SCSI adapter allows up to 320MB/s data transfer rate (Ultra-320) and the burst data transfer of a SCSI hard disk is up to 70MB/s data throughput. Combined with a precise DMA control and raw disk access capabilities, 40MB/s data throughput is available in the current computer architecture. ADLINK's DAQStreaming is a turnkey system integrated with commercial data acquisition devices, SCSI devices and complete software architecture to provide a cost-effective solution for high-speed data recording.
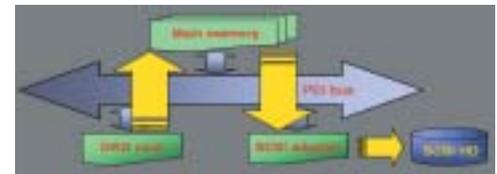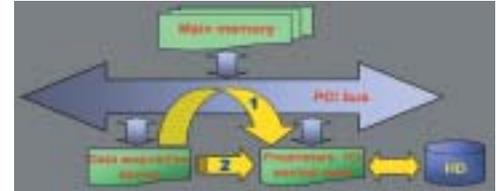
Hardware Architecture
Storage Device
DAQStreaming is equipped with state-of-art SCSI storage devices, including a Ultra-160 SCSI adapter and high-capacity SCSI hard disk(s). The SCSI drive is assembled in a swappable mobile rack for flexible capacity expansion. The DAQStreaming default configuration includes one mobile rack with a 36.7GB SCSI drive which allows 15 minutes recording duration at maximum data rate. A fully configured system contains 3 SCSI mobile racks, each with a 73GB drive to extended the capacity to 220GB for 1.5 hours recording time.

Data Acquisition Device
DAQStreaming is designed to record both analog and digital data. Integrated with ADLINK's most advanced data acquisition devices, DAQStreaming high-speed data recorder offers diversified models for different signal types.

- DAQStreaming-A1 for burst analog signals
  Designed to record burst analog signals, such as explosion and radar echo. This model is equipped with a high-speed data acquisition card which provides 4-CH analog input channel with a 20MS/s sampling rate. Users can obtain sustained analog signal recording with the following settings:
  - **1-CH @ 20MS/s**
  - **2-CH @ 10MS/s for each channel**
  - **4-CH @ 5MS/s for each channel**

- DAQStreaming-D1 for high-speed digital patterns
  Designed to record and playback digital patterns such as GPS and satellite signals. This model is equipped with a high-speed digital input/output which provides a variety of configurations and a maximum 20MHz update rate. Users can obtain sustained digital pattern recording with the following settings:
  - **16-CH record @ 20MHz**
  - **32-CH record @ 10MHz**
  Or reproduce the recorded digital patterns with the following settings:
  - **16-CH playback @ 20MHz**
  - **32-CH playback @ 10MHz**

- DAQStreaming-S1 for simultaneous analog inputs
  Designed to record multi-channel, phase-related analog signals, such as vibration and sound. This model is equipped with state-of-art simultaneous data acquisition cards which provide 8-CH simultaneous analog inputs and a maximum 2MHz sampling rate for each channel. Users can obtain sustained analog signal recording with the following setting:
  - **8-CH simultaneously @ 2Msps for each channel**

* All specifications are subject to change without further notice.