

## Serial Data Recorder Family SDR-10x

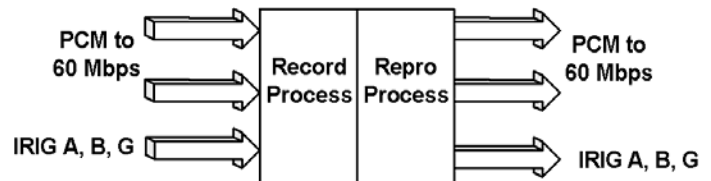
### Features

- Compliant to IRIG 106 Chapter 10 recording format
- Available in compact compact 1U rack-mount design for lab applications as well as commercial, industrial, and MIL-SPEC packaging
- Supports one or two PCM streams to 60 Mbps each
- Handles IRIG A, B, or G input and output with microsecond time resolution
- Available with bit sync or direct data/clock input
- Records to CD, DVD, disk, tape, or network attached storage (NAS)
- Offers true read-after-write data integrity validation
- Provides independent and asynchronous record and reproduce operation
- Comes standard with dual-redundant power supplies and fans
- Includes gigabit Ethernet for control and data record pathing

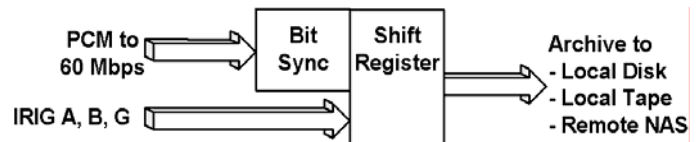


### Introduction

The Serial Data Recorder (SDR) establishes a new price/performance paradigm for PCM data recorders and is our company's forth-generation data recorder. In packages as small as 1U, the SDR offers the features that are mandatory for high-availability designs including hot-swap, dual-redundant power supplies and redundant fans that come with simple network management protocol (SNMP) alarm features and remote Ethernet control. Coupled with the flexibility and inter-industry support of the new IRIG Chapter 10 format, the SDR family is the ideal solution for high-rate PCM recording requirements.



Our SDR provides up to 60 Mbps operation speed for each PCM stream with either data/clock input or base-band video to a "one-decibel to theoretical" bit synchronizer input. Data can be recorded locally as well as remotely to network attached systems (NAS).



SDRs are available in many configurations from lab to MIL-SPEC applications. The smallest 1U design supports two streams of data and clock plus time. Larger configurations can support up to six additional PCM streams.

## System Software

The SDR comes with graphical user interface software that can be used locally or in a networked IP-centric environment. If interfacing to a custom environment is more suited to your needs, simple command syntax operations make user control and custom menu selection simple and easy.

SNMP is used to support e-mail and pager alerts when alarm conditions occur for unit temperature, power supplies, disk drives, or any other major system events. This support also applies to NAS devices that are attached to the SDR.

## Chassis

Our family of SDRs offers a chassis to meet any application. From the commercial chassis to the MIL-SPEC chassis, there is an SDR that will provide the level of operability and support needed for today's data recorder users.

### Commercial

The commercial packages come in 1U and 2U designs. Both have redundant power supplies and redundant fans. This package is provided with gigabit Ethernet, dual 72 GB disks, and a CD/DVD drive, which ensure that captured sessions can be easily moved to either a local device or to a network.



### Industrial

The industrial package is configured as a 2U device that supports up to six removable disk drives as well as the features that form the core of the SDR family: dual power supplies, dual 72 GB disks, a DVD drive, and gigabit Ethernet for remote NAS-type applications. Power supply and fan monitoring are included so that immediate maintenance can be addressed. The redundancy built into the power supplies and fans ensures complete 24/7 operation.



### MIL-SPEC

The MIL-SPEC chassis is a 4U compact PCI chassis with dual disk drives and fan monitoring features and alerts. The MIL-SPEC chassis meets the shock and vibration requirements for MIL-STD-810E and MIL-STD-167/1. In addition, the chassis provides excellent electromagnetic interference (EMI) characteristics that meet Federal Communications Commission Class B EMI standards. The entire chassis is built of .090-inch, seam-welded aluminum alloy using stainless steel fastener hardware.



**Inputs**

PCM Data/Clock	Quantity Per Slot	Two simultaneous independent PCM inputs, NRZ-L, M, or S data and clock
	Polarity	Normal and inverse, programmable
	Clock Input Phase	0° or 180°, programmable
	Impedance	Low (75 ohms) and High (10 Kohms), programmable
	Levels	TTL and RS-422 differential, programmable
	Rate	1 bps to 60 Mbps (configuration dependent)
	Time Input Source	External or internal, programmable
	External Time	IRIG A, B, G modulated carrier input; 1/4x, 1/2x, 1x, 2x, 4x (IRIG A and B) rate; LED indicator of signal presence
	Internal Time	On-board timer seeded from any source internal to computer; e.g., computer clock or GPS receiver
PCM Data	Codes	NRZ-L/M/S, BIØ-L/M/S, BIØ-M/S, DM-M/S, RZ
	Level	500 mV to 10V peak-to-peak
	Derandomizer	Forward & reverse, 5 lengths: 9, 11, 15, 20, 23
	Impedance	75 ohms or 10K ohms (programmable), 50 ohms available (single-ended), 110 ohms (differential)
	Sources and Type	One single-ended and one differential, programmable
	Polarity	Normal or inverted, programmable
	Loop Bandwidth	0.004% to 5%, programmable, 0.004% resolution
	Operating Range	NRZ – 10 bps to 60 Mbps Non-NRZ – 10 bps to 30 Mbps
	Sync Status	TTL logic line indicating status bit sync; on-board status LED of bit-sync lock and PCM signal presence

**Processing**

*Note: Signal processing is used for data quality monitoring and not for processing data to be recorded.*

Sync Pattern Length	4 to 64 bits, programmable
Sync Pattern Errors	0 to 16 bits, programmable
Sync Word Mask	Any bits masked, programmable
Sync Strategy	1 to 16 pattern matches (lock and drop) programmable
Sync Modes	Normal, jam sync, burst, flow-through, and self-test, programmable
Bit Slip	0, ±1, ±2, ±3 bits, programmable
Minor Frame Length	Up to 65,536 words/minor frame, programmable
Reed-Solomon	CCSDS compatible (255, 223) code with field generator polynomial of $x^8 + x^7 + x^2 + x + 1$

<b>Outputs</b>	PCM Codes	NRZ-L/M/S, Bi $\emptyset$ L/M/S, DM-M/S, and RNRZ-1 (forward or reverse lengths 9, 11, 15)
	Rates	NRZ codes to 60 Mbps; others to 30 Mbps
	Polarity	Normal or inverted (programmable)
	Level	TTL compatible (single-ended) into 75-ohm load 1V peak-to-peak with no DC offset into 75-ohm load RS-422 differential (120 ohms)
<b>Electrical &amp; Environmental</b>	Form Factor	Standard 19-inch, rack mounted
	Connectors	IEC-320 for power DB high density connectors for signal
	Operating Temperature	32° to 158 °F (0 °C to 70 °C)
	Storage Temperature	14° to 185 °F (-10° to 85 °C)
	Operating Altitude	0 to 10,000 feet (0 to 3,100 meters)
	Storage Altitude	-1,000 to 20,000 feet (-300 to 6,200 meters)
	Humidity	20 to 95% noncondensing
<b>Ordering</b>	SDR-101-01	Serial Data Recorder, PCI, 1U
	SDR-102-01	Serial Data Recorder, PCI, 2U
	SDR-202-01	Serial Data Recorder, C-PCI, 2U, Industrial
	SDR-203-01	Serial Data Recorder, C-PCI, 3U, Industrial
	SDR-304-01	Serial Data Recorder, C-PCI, 4U, MIL-SPEC
	SDR-431-01	PCM Input with Bit Sync, 30 Mbps
	SDR-461-01	PCM Input with Bit Sync, 60 Mbps
	SDR-432-01	PCM Input, Dual, 30 Mbps
	SDR-532-01	PCM Output, Dual, 30 Mbps
SDR-562-01	PCM Output, Dual, 60 Mbps	