

- Up to four channels of IF and/or baseband record/replay
- Standard IFs: 160, 140, 70 MHz (user-selectable)
- 80 or 100 MHz total recording bandwidth (see table)
- ± 2 dB frequency response
- >50 dB SFDR with real-world data
- Analog replay at baseband or IF
- Optimised (internal) anti-alias filtering
- Audio & IRIG-B channels
- Hot-swappable disk crates
- Windows GUI (optional)
- LOOP recording and playback with unique SKIP (write protect) feature
- Ethernet remote control
- USB-2 data extraction direct to workstation/network
- Files import directly into popular signal analysis applications



Avalon's new AE8400 rugged SIGINT Disk Recorders offer multi-channel IF and/or baseband (video) SIGINT recording/playback at bandwidths of up to 100 MHz. Standard IF centre frequencies of 160, 140 and 70 MHz are supported.

High capacity, hot-swappable disk crates offer long recording durations and re-arm times of less than 60 seconds while a comprehensive suite of software tools and facilities (Avalon Recorder Utility) support convenient data location, forwarding and archiving. An optional Disk Crate Reader is available for rapid transfer of recorded data to LTO-3 tape cassettes, networks, RAIDs or other portable media.

AE8400 SIGINT DISK RECORDER CONFIGURATIONS

| Model | Modes | Channel / Bandwidth Combinations ^{1,2} | Bits | SFDR (typical) | Approx Record Time | IRIG-B | Voice |
|---------------------|--------------------|---|--------|----------------|--------------------|------------------|-------|
| AE8400-80/40/20/10 | IF and/or baseband | 1 ch. x 80 MHz, or 2 ch x 40 MHz, or 1, 2 or 4 ch. x 20 MHz 1, 2 or 4 ch. x 10 MHz (user selectable) | 8-bits | >55 dB | 44 min. (min) | Yes ² | Yes |
| AE8400-100/50/25/12 | IF and/or baseband | 1 ch. x 100 MHz, or 2 ch x 50 MHz, or 1, 2 or 4 ch. x 25 MHz 1, 2 or 4 ch. x 12.5 MHz (user selectable) | 8-bits | >55 dB | 40 min. (min) | Yes ² | Yes |

Notes:

- 1) Stated bandwidths are true ± 2 dB (typical) user bandwidths.
- 2) Recorder time can be synchronised to external IRIG-B reference or PC time.

PRODUCT DESCRIPTION

Models AE8400-80/40/20/10 and AE8400-100/50/25/12 are the widest bandwidth members of Avalon's AE8000 family of field-proven SIGINT disk recorders. These rugged, go anywhere recorders are designed to deliver state-of-the-art performance in a wide range of IF and baseband (video) SIGINT data capture and analysis applications. They offer many important features, including LOOP-with-SKIP recording, Audio and IRIG channels, Event Marking, plus a comprehensive suite of software tools for remote control, computer networking, data extraction, forwarding and archiving.

DATA INTERFACE

Data Interface

AE8400 features an extremely versatile range of single and multi-channel data recording options that can be specified to support between one and four separate wideband analog input channels of Intermediate Frequency (IF) and/or baseband (video) signals. IF inputs are filtered, sampled and down-converted within the recorder using advanced DSP-based techniques and then recorded to the recorder's Disk Crate as I/Q pairs. Baseband inputs are digitised and recorded in 'real' format.

FEATURES

LOOP-with-SKIP Mode

AE8400 supports sustained, unrestricted endless loop recording. This unique **SKIP-with-LOOP** recording mode ensures that all contacts of interest can be captured and protected against over-writing regardless of Time-of-Arrival. Continuous recording sessions of hours, days or even weeks can be maintained in this way, depending on the duration and rate of occurrence of interesting events.

Audio Channel

All AE8400 variants include an audio record/playback channel for convenient voice annotation.

IRIG-B Channel

A separate input allows an external IRIG-B timing signal to be recorded and replayed. The recorder's clock will be synchronised to a valid

external IRIG-B source. It is also possible to set the recorder's clock from a host PC via the Ethernet remote control port.

Event Marking

Both variants include an event marking system, which can be incremented whenever an event of interest occurs. The event mark appears within the disk crate's Table of Contents as a numerical value associated with the event.

Remote Control and Data Extraction

The recorder can be controlled via 10/100-base Ethernet from a remote PC via a LAN, WAN or even over the Internet. Digital data is extracted from the AE8400 over a high speed USB-2 link.

Data Portability and Archiving

A rugged, hot-swappable disk crate is the primary means of storing and transporting recorded data. This can be transported either to a similar AE8400 data recorder for analog replay or to a separate Disk Crate Reader for digital data extraction to a range of standard computer storage devices.

Disk Crate Readers

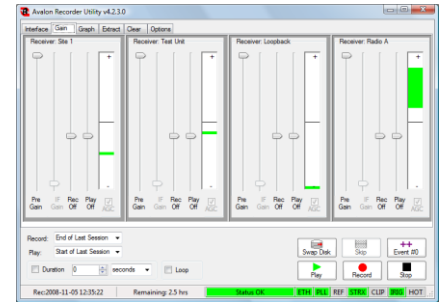


AE2604 Disk Crate Reader.

The **Disk Crate Reader Model AE2604** is an inexpensive Windows-based unit that offers a convenient means of extracting digital data from the AE8400 Disk Crate direct to local or networked storage devices. The PCI-X-based server is able to write to one (alt. two) 400 GB LTO-3 tape drives or to other networked devices (e.g. RAIDs) – including drives attached to Linux computers (running Samba). An optional built-in IQ/magnitude converter is also available.

Avalon Recorder Utility (ARU)

The Avalon Recorder Utility (ARU) is a stand-alone software application designed to support remote control and data extraction.



Specification – AE8400-series

| | |
|--|---|
| Channels: | 1, 2 or 4 (user-selectable) |
| Channel Modes: | IF and/or baseband |
| Standard IFs: | 160, 140, 70 MHz |
| Recording BWs: | 1 x 100 MHz |
| (AE8400-10/50/25/12) | 1 or 2 x 50 MHz 1, 2 or 4 x 25 MHz 1, 2 or 4 x 12.5 MHz |
| Recording BWs: | 1 x 80 MHz |
| (AE8400-80/40/20/10) | 1 or 2 x 40 MHz 1, 2 or 4 x 20 MHz 1, 2 or 4 x 10 MHz |
| SFDR: | >55 dB (typical) |
| Input Impedance: | 50 Ω |
| Input Level: | -30 to +10 dBm (IF) -20 to +10 dBm (BB) (menu selectable) |
| Output Level: | 0 dBm onto 50 Ω (for full scale input) |
| Group Delay: | ± 3 ns across 90% of BW. |
| Recording Format: | Alternating I/Q (IF) Real (baseband) |
| Replay Modes: | IF IN / IF OUT BB IN / BB OUT Exported digital files |
| Record Time: | 40 mins (100 MHz BW) 47 mins (80 MHz BW) |
| Physical & Electrical Specifications: | |
| Dimensions: | 177 x 432 x 500 mm (h x w x d) (incl. handles). |
| Weight: | 17 kg. |
| Power: | 110 – 240 VAC 50 – 400 Hz. <200 Watts |

The specifications in this document are provisional and subject to change without notice. Please contact Avalon Electronics for full technical details.

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