



ABN 43 064 478 842

➤ 231 osborne avenue clayton south, vic 3169  
PO box 1548, clayton south, vic 3169  
t 03 9265 7400 f 03 9558 0875  
freecall 1800 680 680  
[www.tmgtestequipment.com.au](http://www.tmgtestequipment.com.au)

## Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

## Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

If you click on the “Click-to-Call” logo below, you can call us for FREE!

TMG Corporate Website

TMG Products Website



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# DASH 8Xe

DATA ACQUISITION RECORDER

**NEW!**  
**Xe Upgrade**  
• GBit Ethernet  
• USB 2.0



## FEATURING:

- 8 channels of modular inputs for any type of signal
- Record direct to hard drive at 200 kHz sample rate per channel
- Optional 4-channel, 10 MHz scope card for a total of 12 channels of acquisition
- 15-inch touch screen for data viewing, review and analysis

## IDEAL FOR:

- Drive system troubleshooting
- Power system monitoring & analysis
- Process sequencing & timing
- Automotive testing
- and more...

**Astro-Med, Inc**

TEST & MEASUREMENT PRODUCT GROUP

Measurement has never been this easy



# THE DASH 8Xe

*Measurement has never been this easy*

THE DASH 8Xe IS THE LATEST INNOVATION IN DATA ACQUISITION AND RECORDING FROM ASTRO-MED. ITS COMPACT, RUGGED DESIGN MAKES IT IDEALLY SUITED FOR USE IN METAL MILLS, PAPER MILLS AND OTHER HARSH ENVIRONMENTS. WITH 8 CHANNELS OF MODULAR INPUTS AND FOUR ADDITIONAL CHANNELS OF SCOPE RECORDING, THE DASH 8Xe IS SO VERSATILE THAT ONCE YOU USE IT, YOU'LL WONDER WHY YOU USED TO CARRY AROUND SO MUCH OTHER TEST EQUIPMENT! A DEDICATED 36 GBYTE HARD DRIVE FOR DATA CAPTURE AND INTEGRAL ETHERNET INTERFACE MAKE IT EASIER THAN EVER TO CAPTURE DATA AND UPLOAD IT TO YOUR PC FOR DATA ANALYSIS.

1

## *Modular high performance inputs*

The Dash 8Xe is designed for direct input from a wide variety of sensors and signals, with selectable input modules for differential voltage, high voltage, DC bridge, thermocouples, RTDs, ICP® transducers and more. With individual 16-bit A/D converters sampling each channel at 200,000 samples per second, you are assured of high accuracy, high resolution recording. Programmable, digital filtering allows you to filter out noise and other unwanted signals so you will only see data that is important to you.

2

## *Triggered data capture and high speed scope recording in one system*

If you are interested in long-term trend recording, traditional data capture, or high speed oscilloscope recording, the Dash 8Xe has it all. All eight signals can be captured to a dedicated 36 Gbyte hard drive so you'll never have to worry about running out of memory. Sample rates are selectable from one sample per minute to 200,000 samples per second per channel, allowing you to maximize memory and eliminate unneeded data points. For high speed recording, the Dash 8Xe offers 4 additional channels of oscilloscope recording with sample rates up to 10 MHz per channel.

3

## *Real-time data viewing with color, touchscreen display*

The 15-inch color display of the Dash 8Xe lets you view all of your signals as they occur, allowing you to make important decisions when you need to – in real-time. From a scrolling display of discrete channels to overlapped waveforms or numeric datalogger, the Dash 8Xe gives you the information you need in the format that you want. The Dash 8Xe's large color display makes it easy to view multiple data windows on one screen. With its intuitive touchscreen interface, you'll be up and running in no time.

4

## *Advanced data analysis*

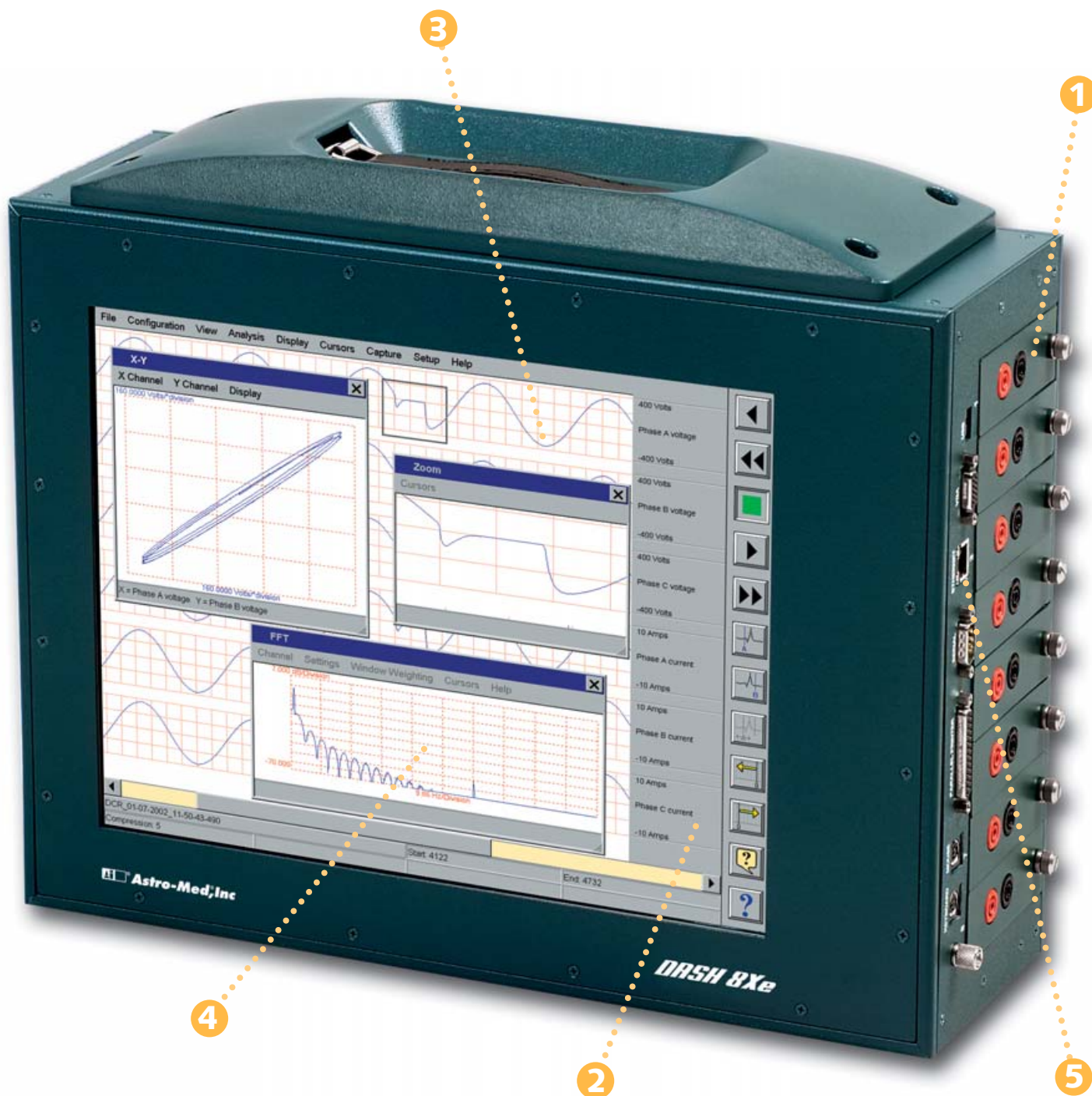
From basic data review to advanced data analysis, the Dash 8Xe has it all. Captured data can be reviewed on the screen, while cursors make timing and amplitude measurements a snap. For even more precise measurements, use the Dash 8Xe's integral zoom and filter windows. Add our optional FlexPro™ data analysis and presentation software, and you have a complete data acquisition and analysis system in one small box.

5

## *Use your own PC to setup the Dash 8Xe and upload data for review*

The Dash 8Xe has an integral 10/100/1000BaseT Ethernet interface to make importing data to your PC as easy as ever. Simply connect your Dash 8Xe to a network and upload some or all of your data files. Our PC-based AstroVIEW X and Dash 8Xe Offline programs allow you to setup your recorder and upload data files to your PC. For applications requiring transportable media, the Dash 8Xe's USB port opens up a world of possibilities. Connect an external CD-RW or an external DiskOnKey® storage device, and archive hundreds of Mbytes of data at once.





## DASH 8Xe WITH CHART RECORDER

Attach the optional 8.5-inch wide thermal array strip chart recorder to the Dash 8Xe, and you have a portable chart recorder and data acquisition system in one small package. The chart recorder can print both real-time and post capture data – perfect for trend recording or printing just what is important to you.



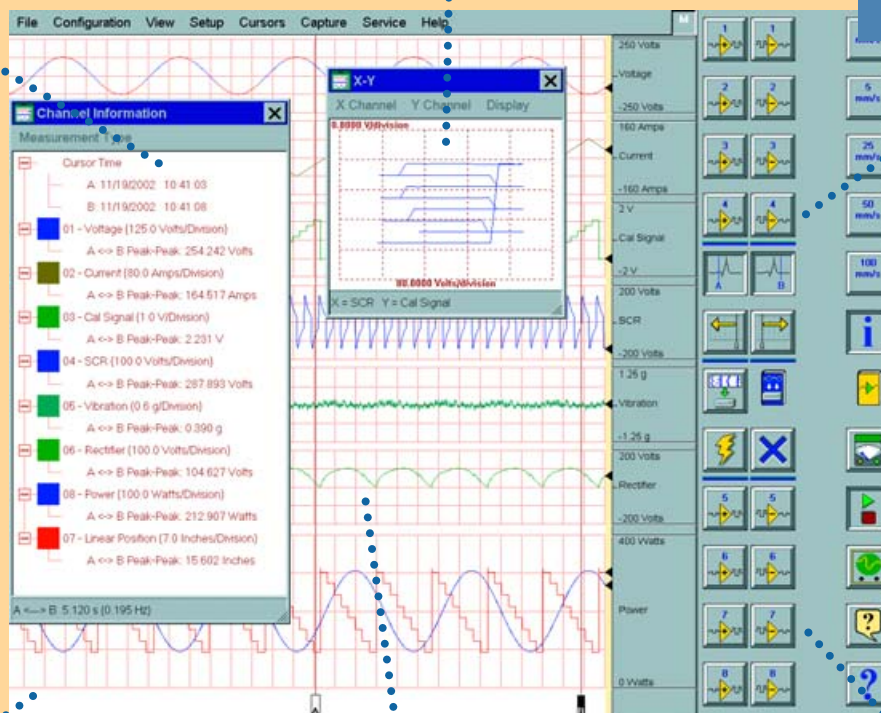


# REAL-TIME DATA DISPLAY

**Channel Information:** Drop down cursors, and the Dash 8Xe will make your measurements for you. Choose from average, min/max, peak-peak, slope or RMS measurements.

**X-Y Plot:** Provides a real-time graphical display of any two inputs. It is ideal for measuring phase relations or phase angles.

**Customizable user interface:** An intuitive, graphical user interface makes it easy to set up your Dash 8Xe and capture data. The interface is completely customizable, allowing you to design and save control panels to meet individual test needs.



**Custom grid layout:** View up to eight channels on discrete, overlapped, or custom grids. Each channel can be color coded for easy identification.

**Real-time monitor:** Provides real-time scrolling display of waveform data, with pen simulators. Scroll speeds can be varied from 1 mm/min up to 100 mm/sec.

**Touch-screen interface:** A touch-screen interface makes data recording quick and easy. From changing settings to making data measurements, it's as simple as pointing your finger and clicking!



Connect an external monitor to your Dash 8Xe and view data remotely.



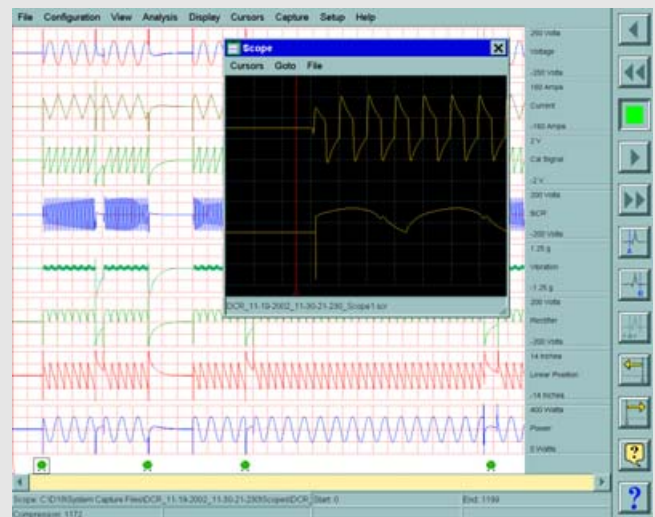
Linkability - Up to 8 Dash 8Xe systems can be linked together for synchronous recording of up to 64 channels!

# DATA ACQUISITION & SCOPE RECORDING

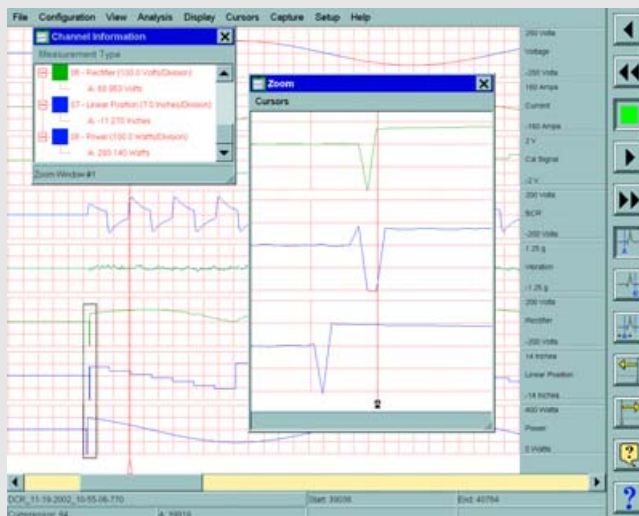
THE DASH 8Xe IS A POWERFUL DATA ACQUISITION AND RECORDING SYSTEM. A DEDICATED 36 GBYTE HARD DRIVE LETS YOU CAPTURE HOURS, DAYS OR EVEN YEARS WORTH OF DATA. SAMPLE RATES CAN BE VARIED FROM ONE SAMPLE PER MINUTE TO 200,000 SAMPLES PER SECOND PER CHANNEL, PROVIDING CAPTURE RATES FOR ANY APPLICATION YOU HAVE. POWERFUL TRIGGERING UTILITIES LET YOU CAPTURE DATA BASED ON TRANSIENTS, DROPOUTS OR OTHER ANOMALIES. FOR HIGHER FREQUENCY SIGNALS, THE DASH 8Xe HAS AN OPTIONAL SCOPE CARD THAT ACQUIRES AN ADDITIONAL FOUR CHANNELS OF DATA AT SAMPLE RATES UP TO 10 MHz PER CHANNEL.



▲ **Simple Capture Setup:** Select pre-trigger percentage, sample rates and capture duration, and let the Dash 8Xe go to work for you. A visual "gas gauge" indicator lets you know exactly how much hard drive space you are using!



▲ **Embedded Scope Capture:** Data acquisition can be performed in the background without interrupting real-time recording. Internal scope captures and optional scope card captures can be embedded in standard data captures, giving you trend recording and triggered captures in one file!\*



▲ **Data Review with Zoom:** Once data has been captured, the Dash 8Xe makes it easier than ever to review large amounts of data. View an entire capture on one screen, or use the Dash 8Xe's VCR-type controls to scroll forward and backward through your data. If you see data of interest, you can select a zoom window for even more detail, and use on-screen cursors to give you precise measurements.

**CAPTURE MINUTES, HOURS, WEEKS OR EVEN YEARS WORTH OF DATA!**

THE DASH 8Xe HAS A DEDICATED 36 GBYTE HARD DRIVE FOR CAPTURING DATA – LARGE ENOUGH TO HANDLE ALL YOUR NEEDS. WITH THE ABILITY TO VARY SAMPLE RATES FROM ONE SAMPLE PER MINUTE TO 200,000 SAMPLES PER SECOND, AND A MAXIMUM OF 3,000 RECORDS ON THE HARD DRIVE, THE DASH 8Xe IS VERSATILE ENOUGH FOR ALL YOUR DATA ACQUISITION NEEDS.

The following examples illustrate the amount of data that can be captured on the Dash 8Xe for 8 channels at various sample rates:

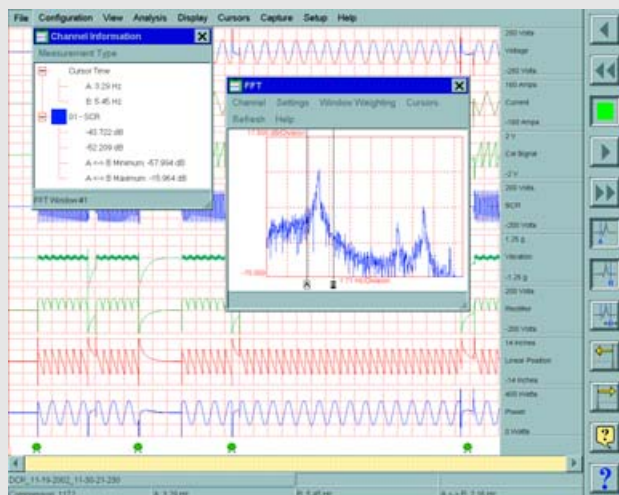
Sample rate	Total capture time
200 kSamples per second	2.77 hours
10 kSamples per second	55 hours
1 sample per minute	3,804 years

\*Under some conditions, triggered scope captures and scope captures larger than 16 kSamples may be ignored.

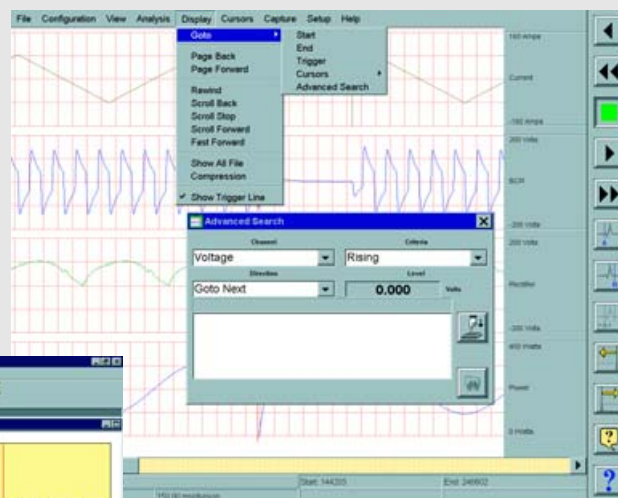


# BUILT-IN DATA REVIEW AND ANALYSIS

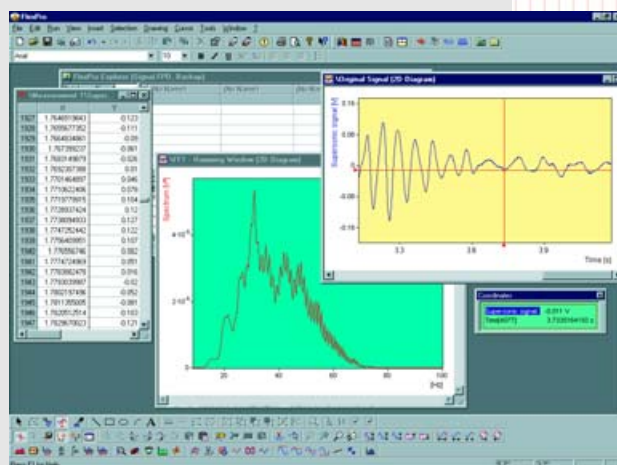
THE DASH 8X<sub>e</sub> HAS A WIDE VARIETY OF DATA REVIEW AND ANALYSIS TOOLS THAT MAKES REVIEWING MULTI-GBYTE FILES EASY. YOU CAN REVIEW AN ENTIRE RECORD ON A SINGLE SCREEN, PROVIDING AN OVERVIEW OF WHAT HAPPENED DURING A CAPTURE. ZOOM WINDOWS AND ON-SCREEN CURSORS ALLOW YOU TO MAKE PRECISE TIMING AND AMPLITUDE MEASUREMENTS. POST CAPTURE FILTERING AND FFT ANALYSIS CAN BE DONE AT THE TOUCH OF A BUTTON, GIVING YOU INSTANTANEOUS ANALYSIS OF YOUR DATA. INSTALL THE FLEXPRO DATA ANALYSIS PROGRAM FOR EVEN MORE ADVANCED ANALYSIS CAPABILITY.



On Screen Analysis: On screen cursors let you make precise, error-free waveform measurements. The FFT analysis window gives you access to your data in the frequency domain – ideal for power or audio applications. Embedded scope captures can be reviewed, along with waveform data, at the touch of a button.



Advanced Search Capability: Advanced search functions let you go right to events of interest in large files. Searches can be performed on any channel, and can be based on a channel rising above a level, falling below a level, or both.



FlexPro Advanced Data Analysis: Install FlexPro advanced data analysis and presentation software in the Dash 8X<sub>e</sub>, and you have a complete data acquisition and analysis system in one small package. With over 160 functions, plus the ability to customize algorithms, you can be sure that FlexPro has the functionality you need. ►

## DASH 8X<sub>e</sub> ACCESSORIES



State of the art DiskOnKey technology lets you transfer hundreds of Mbytes of data quickly and easily.



Connect a CDR/CDRW to your Dash 8X<sub>e</sub> to archive data to CD.



The Dash 8X<sub>e</sub> supports standard keyboard and mouse connections for operating the system and simplifying data entry.

# MODULAR INPUTS

## Modular Inputs

The Dash 8Xe is designed for direct input from a wide variety of sensors and signals, with selectable input modules for differential voltage, isolated high voltage, DC bridge, thermocouple and more. Each module is fully programmable from the touchscreen. DSP-based filtering lets you filter out noise and other unwanted signals so you can see only the data that is important to you.

## High Resolution, High Accuracy Recording

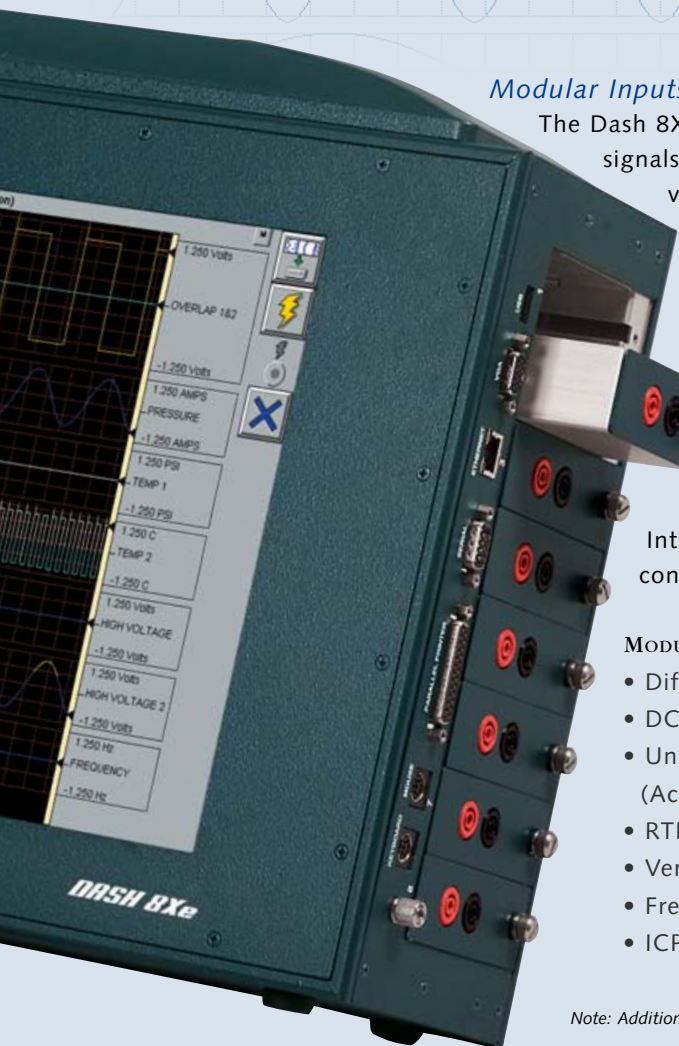
Each Dash 8Xe module is dedicated and optimized for the type of input it accepts. The modules are designed to give you high resolution and high accuracy recording. Built-in software routines allow you to calibrate your inputs with ease. Intuitive, graphical menus for setup make it amazingly simple to configure each module to fit your needs.

### MODULES ARE AVAILABLE FOR THE FOLLOWING MEASUREMENTS:

- Differential high voltage
- DC bridge
- Universal thermocouple  
(Accepts types J, K, E, T, N, & S)
- RTD for PT-100
- Very high voltage (up to 600 Vrms)
- Frequency to Voltage
- ICP transducer



*Note: Additional modules may be available. Contact factory for details.*



## APPLICATIONS AND INDUSTRIES

THE DASH 8Xe WAS DESIGNED WITH YOUR INDUSTRY IN MIND:

- Metal mills
- Aerospace
- Power
- Automotive
- Oil/NDT
- Transportation
- Pulp & Paper

THE DASH 8Xe IS IDEALLY SUITED FOR:

- R & D testing
- Drive system troubleshooting
- Power system monitoring & analysis
- Relay and control signal timing
- Environmental testing
- Rod drop testing
- Process sequencing & timing
- Rail car maintenance
- Vehicle testing

...And More!





# SPECIFICATIONS

## Color Display

Type	Active matrix color LCD (TFT)
Viewing Area	15-inch (diagonal)
Resolution	1024 x 768
Touch	Full screen, resistive

## Inputs

Maximum Modules	8
Maximum Waveforms	8
User Engineering Units Calibration	Yes
	Semi-automated to external reference

## Standard Event Inputs

Number of Inputs	8
Connector	D-shell (9 pin)
Input Type	TTL with pull up (0 to 5 V)
Response	Detects if duration is greater than 0.005 msec

## Data Acquisition

Recording Method	Internal 36 GByte hard drive
Maximum Sample Rate	200,000 samples/second per channel
Minimum Sample Rate	1 sample/minute per channel
Dual Sample Rate	Yes
Total Capacity	Over 18 billion samples
Maximum Record	2 billion sample periods
Time Stamp	Time and date automatically saved with data

## Trigger Point Location

	Amount of pre and post trigger is user adjustable
Auto Re-Arm	Allows automatic stacking of captures

## Auto Playback

Yes	
External Sample Rate	External TTL sample clock to 200 KHz (5 $\mu$ s jitter)

## Power

Input Voltage Range	102 to 264 VAC
Frequency Range	47 to 63 Hz
Power Consumption	150 W maximum
DC Power Input	24 V (regulated supply required)

## Compliance

Safety	EN 61010-1, UL 61010A-1, CSA C22.2, No. 1010.1-92
EMC	FCC Class A, EN 61326
Power Harmonics	IEC1000-3-2

## Physical

Enclosure	Aluminum
Dimensions	12.6" L x 16.7" W x 5.8" H (without feet)
Weight	22 lbs with 8 NDV1 modules
Input Module Size	1.25" W x 3" H x 4.5" D

## Environmental

Operating Temperature	5 to 40°C (40 to 105°F)
Operating Humidity	10% to 90% non condensing

## OPTIONS & ACCESSORIES

### Chart Recorder

Paper Width	8.5-inch
Chart speed	1 mm/min to 50 mm/sec
Resolution	300 dpi x 300 dpi
Weight	9 lbs without paper
Input Voltage Range	102 to 264 VAC
Frequency Range	47 to 63 Hz
Power Consumption	130 W maximum

### Removable Storage

DiskOnKey	up to 1 GByte capacity
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### DC Input Power

Input Range	9 to 18 VDC
Input Power	150 W maximum

### Scope Card

Number of Channels	4
Input Connector	BNC
Input Type	Single ended, DC coupled
Input Range	+/-5 V, +/-1 V selectable
Sample Rate	10 MSamples per second per channel maximum
	5 KSamples per second per channel minimum

### Signal Conditioner Modules

<i>NDV1 Non-isolated, Differential Voltage Module</i>	
Input	Differential, DC coupled
Isolation	No
Bandwidth	28 kHz (-3 db), 5 V attenuator

Measurement Ranges	34 kHz (-3 db), 40 V attenuator
Max Rated Input	0.5 VFS to 80 VFS
A/D Converter	40 V
Accuracy	14-bit
Connector	+/-0.25% of attenuator

### *IHV1 Isolated, Single-Ended High Voltage Module*

Input	Single-ended, DC coupled
Isolation	250 Vrms
Bandwidth	39 kHz (-3 db), 100 V attenuator

Measurement Ranges	40 kHz (-3 db), other attenuators
Max Rated Input	0.5 VFS to 800 VFS
A/D Converter	250 Vrms
Accuracy	16-bit
Connector	+/-0.15% attenuator
	Guarded banana jack

### *IHV2 Isolated, Very High Voltage Module*

Input	Isolated differential, balanced to common
Isolation	600 Vrms

Bandwidth	30 kHz (-3 db)
Measurement Ranges	10 VFS to 2000 VFS
Max Rated Input	600 Vrms
A/D Converter	16-bit
Accuracy	+/-0.5% of attenuator
Connector	Guarded banana jack

### *IBR1 Isolated, Differential Voltage Module (DC Bridge)*

Input	Differential, DC coupled
Isolation	250 Vrms
Bandwidth	40 kHz (-3 db)
Measurement Ranges	2 mVFS to 4 VFS
Max Rated Input	60 V
A/D Converter	16-bit
Accuracy	+/-0.25% of attenuator

Excitation Range	+ 0.1 mV
Autobalance	0.1 to 10 V DC

Connector	Yes
	5 wire screw terminal, removable

### *ITCU Isolated Universal Thermocouple Module*

Types	J, K, E, T, N, & S thermocouple
Isolation	Yes
Max Rated Input	+/-10 V
Bandwidth	5 Hz (-3 db)
Linearization	Yes
Cold Junction Compensation	Yes
A/D Converter	24-bit
Accuracy	+/-0.25% of measurement
	+ 1.5°C
Connector	Universal miniature thermocouple

### *IRTD Isolated RTD Module*

Input	Platinum RTD, 100 ohm
Isolation	Yes
Max Rated Input	+/-10 V
Bandwidth	5 Hz (-3 db)
Measurement Ranges	-100 to 450°C
Linearization	Yes
A/D Converter	24-bit
Accuracy	+/-0.5% of measurement
	+ 0.5°C

Connector	4 wire screw terminal, removable
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### *LIVM Low Impedance Voltage (ICP) Module*

Input	From ICP transducer
Isolation	No
Bandwidth	30 kHz (-3 db)
Max Rated Input	40 V
A/D Converter	16-bit
Connector	BNC

## OTHER PRODUCTS AVAILABLE FROM ASTRO-MED, INC.



**Dash 18:** Features 18 channels of universal inputs, data acquisition to internal hard drive at 100 kHz sample rate per channel.



**Everest:** Features up to 32 channels of analog or digital recording, 18.1-inch color touchscreen display, integral 16.3-inch chart recorder.



**Dash 2EZ:** Features 2 channels of selectable inputs, data acquisition to removable CF memory at 10 kHz sample rate per channel and 5.7-inch display.

**Astro-Med, Inc.**  
TEST & MEASUREMENT PRODUCT GROUP

### World Headquarters

Astro-Med Industrial Park  
West Warwick, Rhode Island 02893 U.S.A.  
Phone (401) 828-4000 • Fax (401) 822-2430  
E-mail: [mtgroup@astromed.com](mailto:mtgroup@astromed.com)  
Web Site: [www.astro-med.com](http://www.astro-med.com)  
**Toll-Free Phone (U.S.A. only):**  
(877) 867-9783

Astro-Med is system certified to ISO9001.

### FACTORY SALES AND SERVICE CENTERS

**CANADA** • Astro-Med, Inc., 648 Rue Giffard  
Longueuil, PQ J4G 1T8 Canada • Tel. (450) 651-7973 / Fax (450) 651-8987  
**UNITED KINGDOM** • Astro-Med House, 11 Whittle Parkway  
Slough, Berkshire SL1 6DQ • Tel. (44) (1628) 668836 / Fax (44) (1628) 664994  
**FRANCE** • Astro-Med SNC, Parc d'Activités de Pissaloup, 1 Rue Edouard  
Branly, 78190 Trappes • Tel. (33) (1) 3482.0900 / Fax (33) (1) 3482.0571  
**GERMANY** • Astro-Med GmbH, Senefelderstraße 1/T6 D-63110 Rodgau  
Tel. +49(0)6106-28368-51 / Zentrale 28368-0 / Fax +49(0)6106-771121  
**ITALY** • Astro-Med S.R.L., Via Plezzo 8, 20132 Milano  
Tel. (39) (02) 2641.1909 / Fax (39) (02) 2641.2828