

# **TMX-18®**



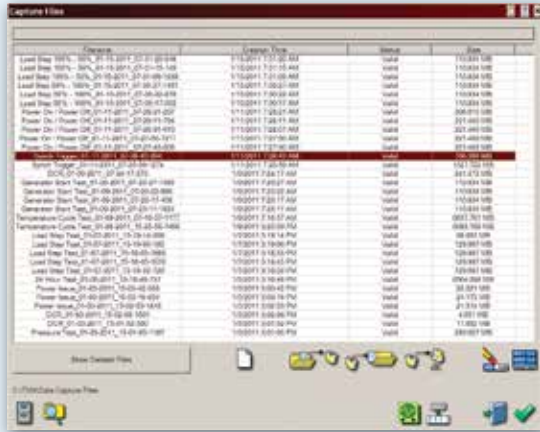
## *High-Speed Data Acquisition System*

**Rugged Construction for Field or Lab Applications**

## The Easiest to Use Data Acquisition Systems on the Market

AstroNova's TMX-18 is simple. Featuring a high resolution 17" touch screen display, as well as pre-defined set up options, makes test setup a breeze! With the TMX-18, you will be up and running in no time! With the TMX-18, you can even create and switch among multiple setup configurations.

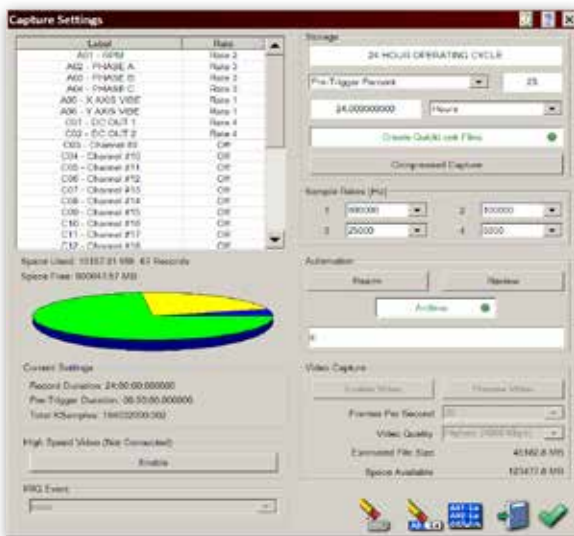
The TMX-18 allows you to stack thousands of data captures on the hard drive.



## PRECISE & SYNCHRONIZED DATA CAPTURE

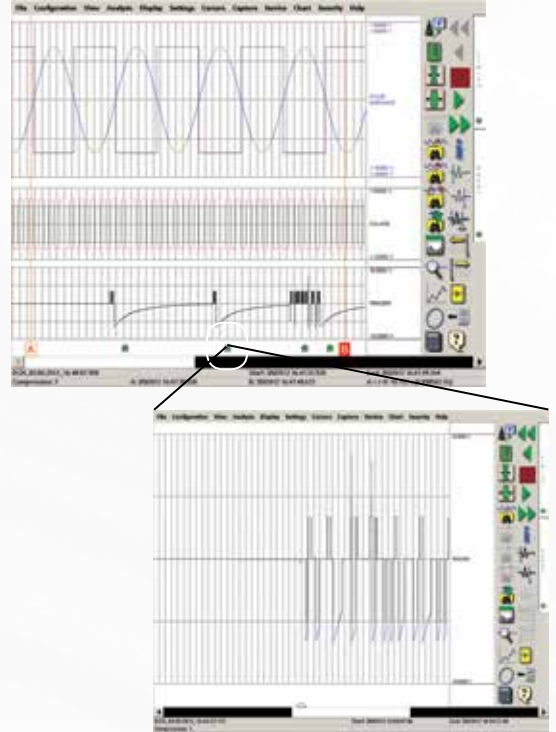
### Long Term Trending

Whether your test runs for 100 milliseconds or 100 hours, the TMX-18 won't miss a glitch. With its dedicated, 1 TByte hard drive for data capture, the TMX-18 is ideal for long-term trending and high-speed event detection. Each channel uses a separate 16 bit A/D for perfect data synchronization. AstroNova's powerful BackChannel technology ensures precise synchronization of analog, audio, video and data bus inputs, without relying on Windows® to synchronize data.



## Embedded Scope Captures

Using the powerful embedded scope capture and intelligent triggering, TMX-18 provides low speed trending while simultaneously monitoring and storing highly sampled time transients or events. TMX-18 will time stamp and embed important data into the trend recording, ensuring all details of critical data.



## Multiple Sample Rates

Up to four sample rates can be selected per TMX-18 data capture, allowing you to manage file size by assigning higher sample rates to critical signals and lower sample rates to trending signals.

## Triggering

TMX-18 contains advanced triggering capabilities that start and/or stop a recording based on changes in the input signals. The circular data buffer of the TMX-18 allows you to set and record large amounts of pre-trigger data. Window, level and slew triggering allows you to set up trigger conditions precisely for your application, while logical AND and OR triggering ensure that you trigger only on events that are important to you.

## Dedicated Hard Drive

Unlike Windows-based systems, the TMX-18 features a 1 TByte hard drive dedicated solely for capturing data. Removable drives allows data to be easily transferred and stored securely, leaving no proprietary data on the machine.



## IRIG/GPS (optional)

TMX-IR IRIG/GPS time option provides precise time-correspondence of data, video and all TMX-18 inputs with other devices.

## Video (optional)

The TMX-18 can record 30 frames per second video perfectly harmonized with your analog data. Each frame is linked to a sample point giving you in-depth detail of any test.

## Audio Notes

Save audio annotation into your data capture giving you a verbal account of your test.

## Bus Inputs (optional)

The TMX-18 CAN bus input option allows your critical bus data to be displayed and recorded with your analog signals.

## Filtering

The TMX-18 provides the most flexible data filtering options available. Raw, unfiltered data is stored to the hard drive, allowing you the choice of pre- or post- data acquisition, low pass, high pass, band pass, and band stop filtering using Bessel, Butterworth or Chebyshev topologies.

Advanced DSP filtering displays real-time analog data as an RMS measurement, ideal for power monitoring applications. The integration and differentiation filter functions provide useful tools for acceleration and deceleration measurement applications.

## Hardware Counters

The TMX analog input modules all contain hardware counters providing Frequency to Voltage (time and cycle based), Pulse Counter, Duty Cycle, Pulse Width, Quadrature and Period Detector measurements.



## DISPLAY

### Real-Time Viewing & Setup

The TMX-18 displays a large 17" screen which allowing you to view data in real-time and post capture. Operation of the TMX-18 is quick and easy with intuitive touch-screen display, interface icons and menus for straightforward setup and operation. The TMX-18 is easily customized it to fit your exact needs.

### Meters/Gauges/Bar Graphs

The advanced channel meters offer a variety of options to visually indicate channel activity. Your data can be viewed numerically or in other visual representations such as a gauge or horizontal/vertical bar, needle and LED readouts.

### Cursor Measurements

Placing cursors on the touch screen allows for quick measurements of Time, Sample Point, Average, Min/Max & Peak-Peak Slope, RMS, Sum, Sum of Squares, Variance, Standard Deviation & Area.

### Scope Mode

Scope mode acts like a digital storage oscilloscope, providing high time-base resolution for viewing high-frequency signals. Scope mode is useful for timing and synchronization analysis, transient capture, and high-speed testing. It can be used while continuously capturing data and monitoring signals on the display.

### Alarms

Alarms provide a visual indicator when signals extend below or above specified boundaries. These boundaries are defined by setting up low and high alarm levels. The utility / DIO port provides an alarm output pin that can be used to trigger an external process when alarm conditions for selected signals occur.

### Automation & Stimulation

Test stimulation and automation with the analog outputs, digital outputs, relays and counters (found on the DIOC-16) are possible when coupled with a background program running. Quick creation of temporary or unique test cells and even report files are available with programs such as script files up to third party graphical programming packages.

### Compressed Capture

Compressed Capture for long-term recording of data using a min/max method keeps the file size small. Fully recording the input signal amplitude at the full bandwidth (glitch capture), Compressed Capture has real-time digitizing sample rates up to 800 kHz (input module dependent) and selectable capture rates for a wide variety of applications. This can be combined with Scope capture for transient signals. Glitches are clearly seen when reviewing the data.



## REVIEW & POST PROCESSING

### QuickLook

The innovative QuickLook feature calculates compression and expansion factors while recording data, allowing you to review GBytes of data in seconds and scan through large data files quickly.

### LookBack

The TMX-18's unique LookBack feature allows you to review data during capture and allows you to transfer previously recorded data without interruption to the active trend capture.

### Exporting Data

The TMX-18 offers a number of ways to archive and export captured data. Data can be exported in our packed binary format, minimizing file size, or a generic ASCII format, which is compatible with most analysis packages. The TMX-18 provides eight USB 2.0 ports with an integral 1000BaseT Ethernet port. Simply connect the TMX-18 to a network and upload the data of interest. The Ethernet connection can also control the TMX from a remote location using a suite of host commands.

## SOFTWARE

### AstroVIEW® X

Each TMX-18 includes free AstroVIEW X PC based data review and analysis program. AstroVIEW X runs on any Windows PC and lets you upload and review data captured on the recorder. AstroVIEW X has built-in analysis and converts data into ASCII, Excel®, Mathcad®, DADISP® and other formats.

### TMX-18 Offline

TMX-18 Offline software, gives you the ability to create setups as well as review data on your PC. Developed for Windows based PCs, TMX-18 Offline software is powerful, easy to use and provides all the tools necessary to quickly configure the system, transfer files, review and analyze your data.

## HARDWARE CONFIGURATION

The TMX-18 is designed to go anywhere your testing sends you. The tough, MIL-STD-810 tested industrial grade package gives you the freedom to bring it onto the production floor or out to a remote site.

## Why Buy from AstroNova

- The TMX-18 is manufactured and tested in the USA.
- Our 24/7 customer service is rated #1 in the Test & Measurement industry by our customers.
- AstroNova has been in the data recording business for over 40 years and is still going strong.
- Supported in the USA as well as around the world.

## TMX SPECIFICATIONS

### 18-CHANNEL CHASSIS with 3 UNIV-6 Universal Isolated

#### Voltage Modules

Maximum Analog Modules	3
Maximum Analog Waveforms	18
Event Inputs (TTL)	16
Derived Channels	+, -, x, ÷, Exponential, Sin, Cos, Tan, Asin, Acos, Atan, Exp √, Absolute Value

#### Data Acquisition Recording

Operational Modes	Scope, Review, Real-time (strip-chart)
Recording Method	Internal removable 1 TByte SATA disk drive
Time Stamp	Time and date automatically saved with data

#### Trigger Point

Amount of pre and post trigger is user adjustable

#### Filtering

Low pass, high pass, band pass, band stop, RMS, integration & differentiation

#### Color Display

Type	Active matrix color LCD (TFT)
Viewing Area	17" (43.2 cm) diagonal
Resolution	1280 x 1024
Touch	Full screen, resistive

#### Compliance/Environmental

Operating Temp	32 to 104 °F (0 to 40 °C)
Operating Humidity	10 % to 90 % non condensing
Shock	MIL-STD-810F Method 516.5, Procedure I
Vibration	MIL-STD-810F Method 514.5, Procedure I

#### Physical

Enclosure	Aluminum, with armored end caps
Dimensions	14.5" (36.8 cm) H x 19" (48.3 cm) W x 7.5" (19.1 cm) D (without handle)

Weight (including 3 modules)	37 lbs (15.78 kg)
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#### Interface

Ethernet	1000BaseT
VGA	For displaying data on an external monitor
USB 2.0 (8 ports/unit)	For external peripherals and file export
Expansion Port	For connection of optional TMX-E

#### System Power

Input Voltage Range	100 to 264 VAC or 24 VDC at 11 A
Frequency Range	47 Hz to 63 Hz

## INPUT MODULE SPECIFICATIONS

### UNIV-6 Universal Isolated Voltage Module with DC Bridge

Channels (per module)	6
Maximum Sample Rate/Ch	800 kHz (400 kHz with TMX-E)
Isolation	250 Vrms or DC, Cat II
Maximum Bandwidth	Up to 100 kHz
Input Type	Isolated, AC/DC coupled
Specified Ranges	200 mVFS to 800 VFS

## TMX OPTIONS – ADVANCED

### TMX-VA Video/Audio Acquisition

Analog Input Type/Connector	Composite/BNC
Supported Video Formats	NTSC, PAL
NTSC Capture Rate	30 fps (frames per second)
PAL Capture Rate	25 fps (frames per second)
Audio Capture Rate	Up to 44.1 kHz

### TMX-HSV High Speed Video

Maximum Frame Rate	1000 fps
Maximum Storage	2 GBytes