DATA ACQUISITION

THE STS4 CORE DATA LOGGER IS A RUGGEDIZED CUSTOM-BUILT INDUSTRIAL COMPUTER THAT IS DESIGNED TO FACILITATE DATA ACQUISITION IN THE HARSHEST OF ENVIRONMENTS. THE CORE DATA LOGGERS ARE FIELD-PROVEN TO PROVIDE CONTINUOUS AND RELIABLE OPERATION FOR STRUCTURAL MONITORING APPLICATIONS. THE CORE DATA LOGGERS ARE PRECONFIGURED TO RUN THE STS-CORE APPLICATION THAT PROCESSES ALL RAW DATA FROM OUR DISTRIBUTED DATA ACQUISITION HARDWARE. AN STS4 CORE DATA LOGGER IS TYPICALLY DELIVERED ALONG WITH A TURN-KEY STRUCTURAL MONITORING SYSTEM.

FEATURES

+ STS-CORE OS controlling Windows 8 Embedded Standard™
+ Intel Atom processor with 2 GB RAM
+ 128 GB Solid State Drive (expandable)
+ Two Intel Gigabit Ethernet interface cards
+ 12v DC operation, 10w max operating power
+ STS-MONITOR application for system configuration
+ Ambient operation temperature -40˚to +85˚C
+ Convection cooling requires no internal or external cooling fans in operating temp range
+ Humidity 5 to 95% non-condensing
+ Vibration resistant
+ Custom device drivers for third party hardware

DATA PROCESSING MODES

TREND DATA: Captures statistical readings at a lower data rate for the purposes of viewing long-term trend data.

EVENT DATA: Captures higher-speed blocks of data based on a triggered threshold, typically from one or more sensors. Data is recorded pre- and post-trigger and customizable.

RAINFLOW: Captures stress cycle counts and binned into user defined stress ranges using ASTM E 1049-85

LIVE-LOAD: The system can be configured to run live-load tests, essentially a means to capture real-time data at the user-defined sample rate.

FREQUENCY: Raw data can be processed into the frequency domain and recorded. Frequency modes can be binned similar to RAINFLOW mode or used to calculate cable forces.

SPECIFICATIONS

MODEL	STS4-CDL
CPU	Intel® Atom™ processor E3800 family
MEMORY[1]	2 GB DDR3L 1066/1333
STORAGE	128 GB SATA Solid State Drive
OPERATING SYSTEM	STS-CORE control system over Windows® 8 Embedded
INPUTS/OUTPUTS	
DISPLAY	1 x Display Port (2560x1600), 1 x VGA (1920 x 1200)
USB	1 x USB 2.0 (Front), 2 x USB 3.0 (Rear)
SERIAL	One Selectable RS232/422/485 port
ETHERNET (LAN) INTERFACE	2 x Gigabit Ethernet
POWER	
POWER INPUT	+12 V_{dc}
TYPICAL POWER CONSUMPTION[2]	8.24 W
PHYSICAL	
ASSEMBLED SIZE (W X L X H)	5.9 x 6.9 x 1.6 in (150 x 175 x 41 mm)
ASSEMBLED WEIGHT	1.15 lb (0.52 kg)
TEMPERATURE	
OPERATING	-40 to 185 °F (-40 to +85 °C)
STORAGE	-40 to 185 °F (-40 to +85 °C)
RELATIVE HUMIDITY	5 - 95% non-condensing
WARRANTY	12 Months

[1] Memory upgradeable to 8 GB.
[2] Typical power consumption is based on processor running at 50% capacity.

OPTIONS & ACCESSORIES

+ Nema 4X enclosures
+ Ethernet communication devices
+ Power distribution
+ Cabling
  ▪ Power
  ▪ Ethernet
  ▪ Custom armored cables

+ Solar & AC battery backed power systems
+ Wireless options
+ External communications
  ▪ Cellular
  ▪ Land Line
  ▪ Satellite

APPLICATIONS & DATA MANAGEMENT

STS-MONITOR: Desktop application for directly or remotely connecting to the Core Data Logger. Used to configure the Core Data Logger and view data real-time.

STS-SYNC: Desktop application for retrieving data files from the Core Data Logger.

PLATFORM INTERACTIVE: Web-based data hosting and visualization solution. All data is pushed to Microsoft Azure cloud service and securely managed and presented. Customizable interface with user defined alerts.

PUSHING DATA: Core Data Logger can be setup to push data to a user designated computer or server.

SUPPORT

BDI offers structural monitoring design services to help our clients develop the most efficient Structural Monitoring System for their project needs.