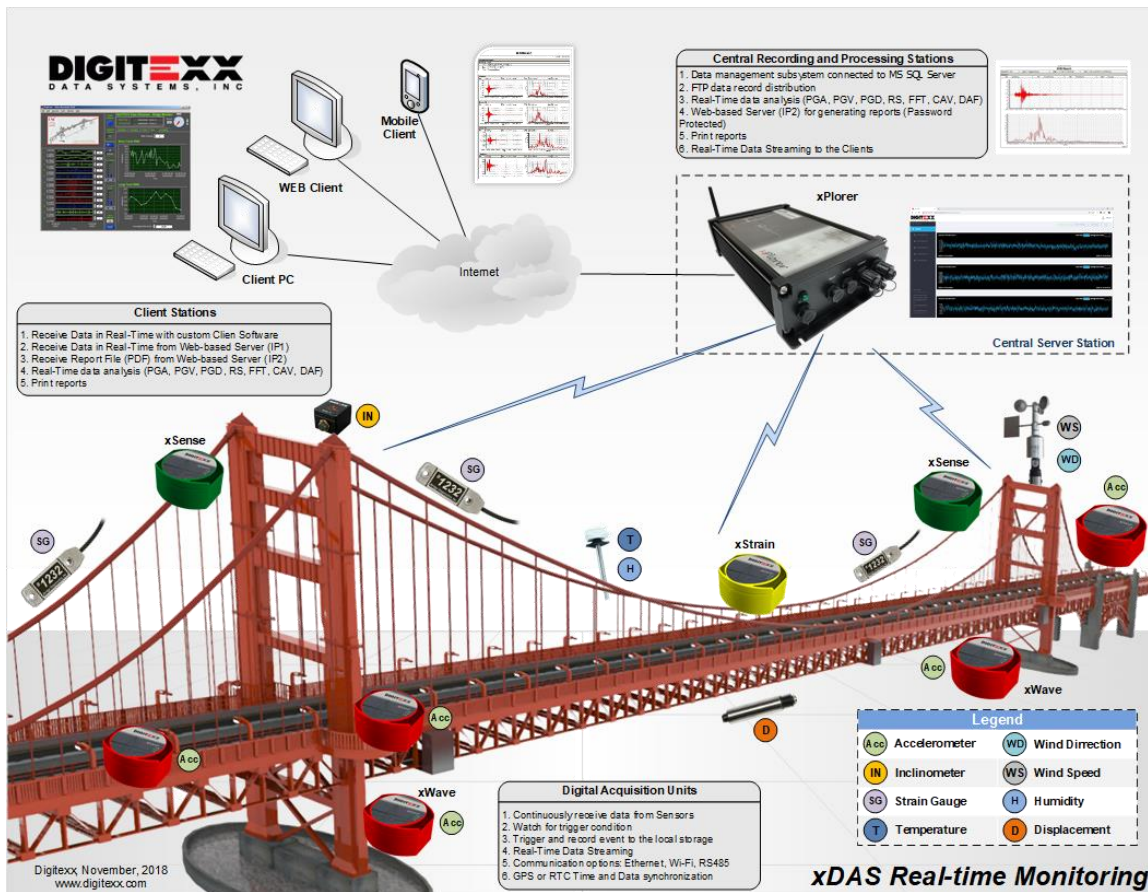




xDAS – Digital Structural Health Monitoring System

Overview:

- Internet of Things (IoT) units used as standalone or integrated in the system
- Modular, easy expandable system in daisy chain or star topology
- Wireless communication or low cost CAT5 cables used
- No inducted noise in cables, since the digitalization is done at the place of the sensor.
- Low power consumption, all system can be powered over POE.
- Competitive price
- Easy maintenance or replacement
- Up to 256 units using star topology, expandable with parallel networks



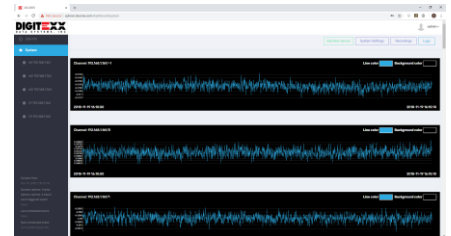


xPlover – Central Acquisition Unit

Overview:

xPlover provides Real-Time acquisition, management and analyzes of data from all xDAS units in a daisy chain SHM system. It offers an affordable and flexible solution for field/remote acquisition and structural data analysis. It is designed for applications in harsh environments and small places. Size, weight, and cabling are critical design requirements in almost any installation. Temperature ranges of -20° to 55° C (-4° to 131° F) and a variety of international safety, electromagnetic compatibility (EMC), and environmental certifications and ratings are all available with xWave.

The system can be set up to **run reliably for days, months, or years** without stopping.



Technical Information:

- Rugged industrial enclosure
- Web based server for generating reports,
- Data archiving (triggered, scheduled or buffered),
- Real-Time data streaming to the web clients,
- Triggering mechanism,
- Pre-Post event management,
- Data compression for reduced bandwidth,
- Ethernet/Wi-Fi/RS485 communication protocols
- GSM connectivity
- Self-Test function
- Remote power management
- Low power consumption
- GPS time and data synchronization,
- Digital Output signals for alarming and integration
- Can provide Power Supply for all nodes
- Wide range of Operating Temperature



| Power | |
|----------------------|---------------------------|
| Powering | 110/220VAC |
| Battery Backup | External connector, 24VDC |
| Power consumption | 3-5W |
| Power for xDAS units | Can provide up to 100W |

| Communication | |
|---------------|------------------------|
| Type | RS485, Ethernet, Wi-Fi |

| Environmental | |
|-----------------------|-----------------------------|
| Operating Temperature | -20 to 55°C (-4° to 131° F) |
| Humidity | 90% non-condensing |

| Physical | |
|------------|---------------------------|
| Packaging | Rugged aluminum enclosure |
| Protection | IP66/IP67 |
| Weight | 1.2 Kg |
| Dimensions | 320x200x80 mm |

| User Interface | |
|----------------------------|--|
| Informational LED | |
| System Configuration Panel | |
| Web Application Panel | |



xWave – Digital Accelerometer Unit

Overview:

xWave is a fully digital solution for building structural health monitoring systems. It offers an affordable and flexible solution for field/remote acquisition and structural data analysis. xWave designed for applications in harsh environments and small places. Size, weight, and cabling are critical design requirements in almost any installation. By taking advantage of the extreme performance and small size, xWave is able to deliver unprecedented control and acquisition capabilities in a compact, rugged package with extreme industrial certifications and ratings for operation in harsh industrial environments. Temperature ranges of -40° to 55° C (-40° to 131° F) and a variety of international safety, electromagnetic compatibility (EMC), and environmental certifications and ratings are all available with xWave.

xWave can be used as standalone accelerograph or as a digital accelerometer in a daisy chain SHM system. Series of xWave can be connected in a network using standard CAT5e cable for easy installation. xWave can embed different type of accelerometers, also can accept various type of sensors required for SHM instrumentation. The system can be set up to **run reliably for days, months, or years** without stopping.



Technical Information:

Software

Proprietary Digitexx Software included with xWave. Fully compatible with xPlover hardware and server software, xWave can work as part of xDAS SHM system. Available Digitexx PC software for data acquisition, streaming, data archiving, reporting, etc.

Hardware

xWave is available in two variants: with embedded accelerometer and a package for external sensors.

| Digitizer | |
|---------------|---------------------------------|
| Type | 24-bit $\Delta\Sigma$ |
| Sampling Rate | 200 sps typical (100, 500,1000) |
| Filters | Anti-aliasing, Software |

| Input Channels | |
|-----------------|---|
| No. of Channels | 3 with embedded accelerometer. As per request for external sensors. |
| Type | Differential |
| Full Scale [V] | w/o accelerometer: ± 2.5 |
| Input Type | Voltage |

| Communication | |
|---------------|------------------------|
| Type | RS485, Ethernet, Wi-Fi |

| Environmental | |
|-----------------------|------------------------------|
| Operating Temperature | -40 to 55°C (-40° to 131° F) |
| Humidity | 90% non-condensing |

| Power | |
|-------------------|-----------------------------|
| Powering | From CAT5e data cable |
| Input Voltage | 12-24 VDC or POE variant |
| Power consumption | 1-2W (w/o sensor) |
| Sensor power | Supplied from the digitizer |

| Physical | |
|------------|---------------------------|
| Packaging | Rugged aluminum enclosure |
| Protection | IP66/IP67 |
| Weight | 700 g |
| Dimensions | 130x120x65 mm |

| User Interface | |
|----------------------------|--|
| Informational LED | |
| System Configuration Panel | |
| Web Application Panel | |

| Sensors | |
|----------|-----------------------------|
| Embedded | Digitexx MEMS Accelerometer |
| External | Any voltage sensor |



xSense – Voltage Sensor Digitizer

Overview:

xSense is a fully digital solution for acquiring data from any sensor with voltage output. It offers an affordable and flexible solution for field/remote acquisition of data from environmental sensors or any other sensor with voltage output required for proper structural health monitoring. xSense is designed for applications in harsh environments and small places. Size, weight, and cabling are critical design requirements in almost any installation. By taking advantage of the extreme performance and small size, xSense is able to deliver unprecedented control and acquisition capabilities in a compact, rugged package with extreme industrial certifications and ratings for operation in harsh industrial environments. Temperature ranges of -40° to 55° C (-40° to 131° F) and a variety of international safety, electromagnetic compatibility (EMC), and environmental certifications and ratings are all available with xSense.

xSense can be used as standalone digitizer or as a part of daisy chain SHM system. Series of xDAS units can be connected in a network using standard CAT5e cable for easy installation. xSense can accept various type of sensors required for SHM instrumentation like: displacement transducers, temperature sensors, humidity sensors, wind speed and wind direction sensors, etc.



Technical Information:

Software

Proprietary Digitexx Software included with xSense. Fully compatible with xPlover hardware and server software, xSense can work as part of xDAS SHM system. Available Digitexx PC software for data acquisition, streaming, data archiving, reporting, etc.

Hardware

| Digitizer | |
|---------------|---------------------------------|
| Type | 16-bit SAR |
| Sampling Rate | 200 sps typical (100, 250, 500) |
| Filters | Software |

| Input Channels | |
|-----------------|-----------------------------|
| No. of Channels | 8/16 |
| Type | Single Ended / Differential |
| Full Scale [V] | 0-5, 0-10, ±5, ±10 |
| Input Type | Voltage |

| User Interface | |
|----------------------------|--|
| Informational LED | |
| System Configuration Panel | |
| Web Application Panel | |

| Environmental | |
|-----------------------|------------------------------|
| Operating Temperature | -40 to 55°C (-40° to 131° F) |
| Humidity | 90% non-condensing |

| Power | |
|-------------------|-----------------------------|
| Powering | From CAT5e data cable |
| Input Voltage | 12-24 VDC or POE variant |
| Power consumption | 1-2W (w/o sensor) |
| Sensor power | Supplied from the digitizer |

| Physical | |
|------------|---------------------------|
| Packaging | Rugged aluminum enclosure |
| Protection | IP66/IP67 |
| Weight | 700 g |
| Dimensions | 130x120x65 mm |

| Communication | |
|---------------|------------------------|
| Type | RS485, Ethernet, Wi-Fi |



xStrain – Bridge Sensor Digitizer

Overview:

xStrain is a distributed digitizer for monitoring Wheatstone Bridge sensors in SHM system. It offers an affordable and flexible solution for field/remote acquisition of data from sensors with very low voltage output (mV). xStrain is designed for applications in harsh environments and small places. Size, weight, and cabling are critical design requirements in almost any installation. By taking advantage of the extreme performance and small size, xStrain is able to deliver unprecedented control and acquisition capabilities in a compact, rugged package with extreme industrial certifications and ratings for operation in harsh industrial environments. Temperature ranges of -40° to 55° C (-40° to 131° F) and a variety of international safety, electromagnetic compatibility (EMC), and environmental certifications and ratings are all available with xStrain.

xStrain can be used as standalone digitizer or as a part of daisy chain SHM system. Series of xDAS units can be connected in a network using standard CAT5e cable for easy installation. xStrain can accept various type of sensors required for SHM instrumentation like: strain gauge transducers, load cell sensors, pressure sensors, displacement sensors, etc.



Technical Information:

Software

Proprietary Digitexx Software included with xStrain. Fully compatible with xPlover hardware and server software, xWave can work as part of xDAS SHM system. Available Digitexx PC software for data acquisition, streaming, data archiving, reporting, etc.

Hardware

| Digitizer | |
|---------------|---------------------------------|
| Type | 24-bit Delta Sigma |
| Sampling Rate | 200 sps typical (100, 250, 500) |
| Filters | Software |

| Input Channels | |
|-----------------|--|
| No. of Channels | 1/2/4 |
| Type | Differential |
| Full Scale [mV] | ±39.06, ±78.125, ±156.2, ±312.5, ±625, ±5000 |
| Gain | 1, 8, 16, 32, 64, 128 |
| Excitation [V] | 5V |
| Input Type | mV/V |

| User Interface | |
|----------------------------|--|
| Informational LED | |
| System Configuration Panel | |
| Web Application Panel | |

| Environmental | |
|-----------------------|------------------------------|
| Operating Temperature | -40 to 55°C (-40° to 131° F) |
| Humidity | 90% non-condensing |

| Power | |
|-------------------|-----------------------------|
| Powering | From CAT5e data cable |
| Input Voltage | 12-24 VDC or POE variant |
| Power consumption | 1-2W (w/o sensor) |
| Sensor power | Supplied from the digitizer |

| Physical | |
|------------|---------------------------|
| Packaging | Rugged aluminum enclosure |
| Protection | IP66/IP67 |
| Weight | 700 g |
| Dimensions | 130x120x65 mm |

| Communication | |
|---------------|------------------------|
| Type | RS485, Ethernet, Wi-Fi |