...measure anything anywhere!
Topologies (Ethernet)

- One Module PC-tethered (Ethernet)
- Multiple Modules via CX27C-R to PC (internal sync)
- Multiple Modules via EX23-R to PC (PTPv2)
- Multiple Modules via WiFi Sync (NTP, Telemetry, WAN)
- Data Recorder CX22B-R for Universal Testing
- Data Recorder CX22B-R for Mobile Vehicle Testing
- Data Recorder CX22B-R for Mobile Vehicle Testing (unattended)
- Gateway CX27C-R (XCP-on-Ethernet) for ECU Calibration
- Data Recorder CX22B-R for Railway Testing
- Gateway CX27C-R (EtherCAT, Profinet IRT) for Durability Test Bench
- Gateway CX27C-R (EtherCAT, Profinet IRT) for Powertrain Test Bench
- Gateway MX471C-R (CAN) for Test Bench
- Voltage-out Modules MX878B/MX879B for Test Bench
One Module PC-tethered (Ethernet)

**Input / Sensors**
- Analog sensors
- Digital sensors
- CAN

**MX modules:**
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Pressure
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

**DAQ Software:**
- catman
- Common AP
- LabView drive

**Analysis Software:**
- nCode
Multiple Modules via CX27C-R to PC (internal sync)

**Input / Sensors**
- Analog sensors
  - MX modules:
    - Universal
    - Bridge
    - CCLD / IEPE
    - Voltage, current
    - Pressure
    - Thermocouple
    - CAN / CAN FD
    - Frequency, encoder
- Digital sensors

**DAQ**
- Gateway:
  - CX27C-R
  - MX471C-R

**Software**
- DAQ Software:
  - catman
  - Common AP
  - LabView drive
- Analysis Software:
  - nCode
Multiple Modules via EX23-R to PC (PTPv2)

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Pressure
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

PTP Switch:
EX23-R

DAQ Software:
- catman
- Common AP
- LabView drive

Analysis Software:
- nCode
Multiple Modules via WiFi Sync (NTP, Telemetry, WAN)

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Pressure
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

DAQ Software:
- catman
- Common AP
- LabView drive

Analysis Software:
- nCode

NTP-Server

Analog sensors

Digital sensors

Input / Sensors | DAQ | Software
Data Recorder CX22B-R for Universal Testing

- Analog sensors
  - Digital sensors
  - CAN

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Pressure
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

CX22B-R Data Recorder:
- catman DAQ software

Remote Connection:
- Remote Desktop

Analysis Software:
- nCode

Input / Sensors

DAQ

Software
Data Recorder CX22B-R for Mobile Vehicle Testing

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

CX22B-R Data Recorder:
- catman DAQ Software

Remote Connection:
- Remote Desktop

Analysis Software:
- nCode

Analog sensors
- g
- CAN
- GNSS
- Wheel force transducer
- Camera

Digital sensors
Data Recorder CX22B-R for Mobile Vehicle Testing (unattended)

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

CX22B-R Data Recorder:
- catman DAQ Software

Cellular Router
- optional: remote connection and/or data transfer (cloud)

Analysis Software:
- nCode

Remote Connection:
- Remote Desktop
- Browser / Web server

Input / Sensors
- Analog sensors
- Digital sensors
- CAN
- GNSS
- Wheel force transducer
- Camera

Input / Sensors DAQ Software
Gateway CX27C-R (XCP-on-Ethernet) for ECU Calibration

- **MX modules:**
  - Universal
  - Bridge
  - CCLD / IEPE
  - Voltage, current
  - Thermocouple
  - Frequency, encoder

- **Gateway:** CX27C-R

- **Ethernet**

- **Analog sensors**

- **Digital sensors**

- **Input / Sensors**

- **DAQ**

- **Software**

- **MCD Software:**
  - ETAS INCA
  - ATI Vision
  - Vector CANape

- **Analysis Software:**
  - nCode
Data Recorder CX22B-R for Railway Testing

**Analog sensors**
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Thermocouple
- MVB (CAN)
- Frequency, encoder

**MX modules:**
- opto link (galvanic isolation)

**CX22B-R DAQ Software:**
- catman

**Remote Connection:**
- Remote Desktop

**Analysis Software:**
- nCode

**Input / Sensors**

**DAQ**

**Software**
Gateway CX27C-R (EtherCAT, Profinet IRT) for Durability Test Bench

**Input / Sensors**
- Analog sensors
- MX modules:
  - Universal
  - Bridge
  - CCLD / IEPE
  - Voltage, current
  - Thermocouple
  - CAN / CAN FD
  - Frequency, encoder

**Digital sensors**
- CAN

**Wheel force transducer**

**DAQ**
- EtherCAT
- Ethernet

**Test Bench Automation**
- EtherCAT Master
- PROFINET IRT Master

**DAQ Software**
- catman
- Common AP
- LabView drive

**Analysis Software**
- nCode
Gateway CX27C-R (EtherCAT, Profinet IRT) for Powertrain Test Bench

Input / Sensors

- Analog sensors
- Digital sensors

MX modules:
- Universal
- Bridge
- Pressure
- Voltage, current
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

DAQ Software:
- catman
- Common AP
- LabView drive

Analysis Software:
- nCode

Test Bench:
- EtherCAT Master
- PROFINET IRT Master
Gateway MX471C-R (CAN) for Test Bench

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

Digital sensors
- g

Analog sensors
- CAN

DAQ Software:
- catman
- Common AP
- LabView drive

Analysis Software:
- nCode
Voltage-out Modules MX878B/MX879B for Test Bench

MX modules:
- Universal
- Bridge
- CCLD / IEPE
- Voltage, current
- Thermocouple
- CAN / CAN FD
- Frequency, encoder

Analog sensors

Digital sensors

Test Bench

Ethernet

Voltage ±10V

DAQ Software:
- catman
- Common AP
- LabView drive

Analysis Software:
- nCode

Input / Sensors DAQ Software