etap iCE™ RTU is a highly scalable data acquisition device with optimal adaptation to particular needs. The RTU is available with multiple communication options; including embedded Ethernet switches and built-in 4G/3G/GPRS modem. With high I/O density, iCE RTU devices provide I/O capabilities for direct data acquisition, which can be done by using RTUe devices.

Features

- IEC 62351 Cyber security compliance
- IEC 61850-3 EMC compliant
- IEC 61131-3 PLC automation programming
- EEE 1588 and NTP time synchronization
- Internal switch with HSR/PRP/RSTP redundancy
- Multiple communication media support: Serial, 10/100TX Ethernet, FX100 Ethernet, GPRS, 3G & 4G modems
- Support for VLAN and VPN connections
- Microseconds timestamp resolution and high accuracy RTC with 1.5 ppm time drift
- Two separate Ethernet interfaces with independent MAC address and multiple IP address configuration
- Remote Terminal Unit - RTU
- Data Concentrator - Gateway
- Bay Control Unit - BCU

Intelligent Control Enterprise
### General

| Configuration & Maintenance | Easy configuration with iConf tool  
|                            | Internal web server, allowing the real-time monitoring of the system and all internal parameters  
|                            | Command console with complete information of packet exchange on all available protocols  
|                            | Local or remote maintenance connection using USB or Ethernet ports |

| RTC | High accuracy real-time clock with 1.5ppm drift and microseconds resolution timestamp |

| CPU Features | ARM Cortex-A7 @ 528MHz, with 4GB Flash and 256MB RAM |

| Communication Ports Options | Serial ports: up to (4) ports with RS-232/RS-485/RS-422 selected by software  
|                            | Wireless connection: internal 4G(LTE), 3G and GPRS modem  
|                            | Ethernet: (2) 10/100BaseTX ports with independent MAC addresses  
|                            | Internal Ethernet Switch: up to (4) 10/100BaseTX ports with RJ45 connection and (2) FX100 with ST, SC connectors or SFP interface, and supporting RSTP, HSR and PRP configurations |

| Time Synchronization | Server: NTP, IEC 60870-5-101, IEC 60870-5-104, DNP 3.0, NTP  
|                      | Client: IEEE 1588(PTP), SNTP, IEC 60870-5-101, IEC 60870-5-102, IEC 60870-5-103, IEC 60870-5-104, DNP 3.0, DLMS, Procome and Profibus DP |

| Redundancy | Hot-standby configuration including optional redundant power supply |

| Security | IEC 62351-3 and IEC 62351-5 support, including TLS/SSL, SSH and VPN connections |

| Device features | IEC 61131-3 Automation | Logic and PLC programming, with LD, FBD, ST and SFC editor |
|                | Logical and Mathematical Expressions | LUA language to create simple or complex logic and mathematical expressions |
|                | Power Consumption | Depending on the model |

| Software application | Power Supply | W: wide range, 32 - 250Vdc / 80 - 250Vac (2.5kVrms isolation)  
|                      | 24: 19.5-60Vdc (2.5kVrms isolation) |

| EMC Type Test | IEC 60950-1, IEC 60255-5:2000, EC 60255-22:2000, EN 55022, IEC 61000-6-4, IEC 61000-6-5, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-9, IEC 61000-4-10, IEC 61000-4-12, IEC 61000-4-16, IEC 61000-4-17, IEC 61000-4-18, IEC 61000-4-29 |

| Environmental | Operating temperature: -25ºC to +70ºC  

| Vibration & Shock Test | IEC 60068-2-6, IEC 60068-2-7 |

| Physical | External dimensions: 173 x 137 x 78.4mm  
|          | DIN Rail mounting |

| I/O | Internal Boards | Digital inputs - D1: (24) digital inputs.  
|     |                | Combined I/O - C1: (8) digital inputs, (4) relay outputs and (2) DC current analog inputs |
Integrated & Expandable

Compact RTU

A stand-alone configuration with integrated PSU, powerful RTU and Gateway, flexible PSX and expandable I/O, works well with discrete and distributed power automation applications; from pole tops to MCCs. For critical applications, embedded programming language helps to perform local control functions.

Rack-Mounted Controller

The etap iCE 19” rack-mounted controller has a fully integrated CPU and communication module with add-on I/O unit. A modular controller design allows project hardware configurations with a wide variety of I/O requirements.

I/O Expandability - iCE RTUe

RTUe auxiliary units provide additional input and output ports for data acquisition and control capabilities. Each I/O board is equipped with a RS-422 serial expansion port or a duel Ethernet ST/SC connector to communicate with data collection servers, SCADA servers and other I/O modules.

- 48 Digital Inputs
- 24 Digital Inputs + 8 Digital Outputs
- 24 Digital Inputs + 8 Analog Inputs (0-20mA)
- 16 Digital Outputs
- 16 Analog Inputs
- Other configurations upon request
etap iCE hardware offers an intelligent control enterprise platform for power system monitoring, control and automation application in a wide variety of industries requiring optimal performance, fast response, and cyber security.

**Key Applications**

- Substation Data Acquisition & Control
- Field / Pole-mount RTU
- Feeder Remote Terminal Unit - FRTU
- Integrated RTU & Fault Detector
- Substation Automation
- Intelligent Load Shedding
- Generation Control
- Data Acquisition Gateway
- Secure & Scalable Controller

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