etap iCE Gateway is designed to collect data from multiple devices and protocols and convert them to a single output protocol. It is available with multiple communication options, including embedded Ethernet switches and built-in 4G/3G GPRS modem. Direct I/O capability can be added by using iRTUe devices.

**Features**

- IEC 62351 Cyber security compliance
- IEC 61850-3 EMC compliant
- IEC 61131-3 PLC automation programming
- IEEE 1588 and NTP time synchronization
- 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
- 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
- Data Concentrator - Gateway
- Bay Control Unit - BCU
### General

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<th>Specification</th>
<th>Details</th>
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| **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 1.5 ppm 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 selectable 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 |

### Device features

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| **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 |
| **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 |

### Software application

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<td><strong>Power Consumption</strong></td>
<td>Depending on the model</td>
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| **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 61000-2-9 |
| **Environmental** | Operating temperature: -25°C to +70°C  
| **Vibration & Shock Test** | IEC 60068-2-6, IEC 60068-2-7 |
| **Physical** | External dimensions: 173 x 137 x 78.4 mm  
DIN rail mounting |
| **I/O** | Digital inputs - D1: (24) digital inputs.  
Combined I/O - C1: 8 digital inputs, (4) relay outputs and (2) DC current analog inputs |
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

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.
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