1. User Features

The PACSystems* RX3i CPE330 is a richly featured programmable controller CPU equipped with a 1GHz dual-core microprocessor, 64Mbytes of built-in program memory and two independent high-speed Ethernet interfaces. It is ideally suited for multi-tier communications and for synchronizing large amounts of data. Its metal housing provides superior noise immunity.

The CPE330 is programmed and configured over Ethernet via GE's Proficy* Machine Edition (PME) software. It resides in the RX3i main rack and supports all RX3i I/O and Intelligent Option modules, up to 32K I/O points.

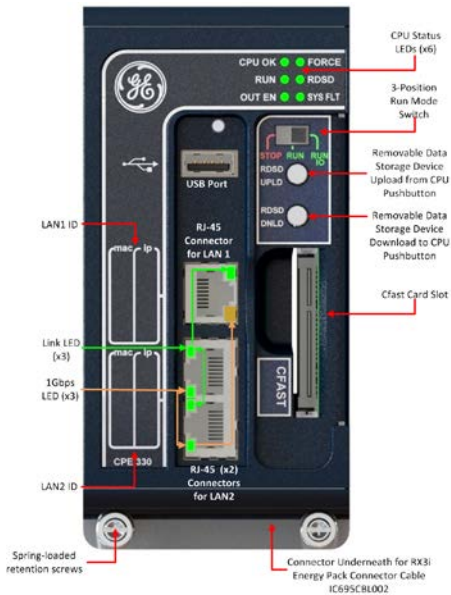

Figure 1: IC695CPE330 Features at a Glance

- RX3i Hot Standby Redundancy CPU with support for PROFINET I/O using IC695PNC001 PROFINET Controllers.
- RX3i Hot Standby Redundancy with Ethernet (EGD) & Genius I/O.
- Simplex PROFINET I/O Controller with support for up to 32 I/O devices and update rates of 1 – 512ms. I/O device update rates of 8ms and faster are possible with 16 or fewer devices. When there are more than 16 devices configured, update rates of 16ms and higher are available.
- Supports two independent 10/100/1000 Ethernet LANs. As shown in Figure 1, LAN1 attaches via the upper, dedicated RJ-45 connector. LAN2 attaches via the lower pair of internally-switched RJ-45 connectors.

- The embedded Ethernet interface is supported by a dedicated microprocessor core. This dedicated processing capability permits the CPU to support these two LANs with:
    - up to 48 simultaneous SRTP Server connections;
    - up to 16 simultaneous Modbus/TCP Server connections;
    - 32 Clients are permitted; each may be SRTP or Modbus/TCP.
    - OPC UA Server with support for up to 5 concurrent sessions with up to 10 concurrent variable subscriptions and up to 12,500 variables;
    - up to 255 simultaneous Class 1 Ethernet Global Data (EGD) exchanges;
    - two independent Redundant IP addresses, one for each of the embedded Ethernet LANs.
- Achilles Level 2 Communications Certification[1].
- Optional Energy Pack, IC695ACC402, allows CPE330 to instantly save user memory to non-volatile storage in the event of loss of power.
- Ability to transfer user programs and/or data to and from USB 2.0 A type Removable Data Storage Devices (RDSDs).
- HART Pass Through allows the CPE330 to communicate HART asset management data between HART-capable I/O modules and PC-based asset management tools. (Requires additional HART-compatible products.)
- User may program in Ladder Diagram, Structured Text, Function Block Diagram, or C.
- Contains 64Mbytes of configurable data and program memory.
- Supports auto-located Symbolic Variables that can use any amount of user memory.
- Reference table sizes include 32k bits for discrete %I and %Q and up to 32k words each for analog %AI and %AQ. Bulk memory (%W) also supported for data exchanges.
- Supports up to 512 program blocks. Maximum size for a block is 128KB.
- For supported I/O, Communications, Motion, and Intelligent modules, refer to the *PACSystems RX3i System Manual*, GFK-2314.

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[1] Achilles Level 2 Communications Certification available in CPE330 R8.80

- Ability to display serial number and date code in PME Device Information Details.
- Operating temperature range 0°C to 60°C (32 °F to 140 °F).

1.1. Switches

The Run/Stop switch and RDSD UPLD and RDSD DNLD pushbuttons are located behind the protective front door. Switch operation is given in the following table.

RDSD Pushbuttons	***Function***	
RDSD UPLD	Loads user program or data from CPU to RDSD.	
RDSD DNLD	Stores user program or data from RDSD to CPU.	
Run/Stop Switch Position	***A three-position switch which operates as follows:***	
	CPU and Sweep Mode	***Memory Protection***
Run I/O	The CPU runs with I/O sweep enabled.	User program memory is read only.
Run	The CPU runs with outputs disabled.	User program memory is read only.
Stop	The CPU is not allowed to go into Run mode.	User program memory can be written.

The **Run/Stop** switch is enabled by default; it can be disabled in the PME Hardware Configuration (HWC) settings. The memory protection function of this switch can be disabled separately in HWC. The memory protection functionality is disabled by default.

1.2. Light-Emitting Diode Indicators (LEDs)

Status Indicators

LED	*LED State*	*Operating State*
CPU OK	On Green	CPU has passed its power-up diagnostics and is functioning properly. *(After initialization sequence is complete.)*
	Off	Power is not applied or CPU has a problem, which may be indicated by blink pattern.
	Blinking Other LEDs off	CPU in Stop-Halt state; possible watchdog timer fault. If the programmer cannot connect, cycle power with charged Energy Pack attached and refer to fault tables.
CPU OK	On Amber	CPU indicating CPU320/CRU320 compatibility setting
FORCE	On Amber	Refer to the section, *Backward Compatibility with CPU320/CRU320/CPU315* for more information.
RUN **OUT EN**	Blinking in unison	CPU is updating an internal programmable hardware device.
RUN	On Green	CPU is in Run mode.
	Off	CPU is in Stop mode.
OUT EN	On Green	Output scan is enabled.
	Off	Output scan is disabled.
FORCE	On Amber	Override is active on a bit reference.
	Off	No Overrides active in I/O Reference Tables.
RDSD	On Green	USB Device detected (No Activity)
	Blinking Green	Port activity detected on USB Interface

LED	*LED State*	*Operating State*
	○ Off	No port activity detected on USB Interface
	● On Red	RDSD Failure
	✱ Blinking Red	Target name mismatch: Press same RDSD pushbutton again to dismiss.
SYS FLT	● On Red	CPU is in Stop/Faulted mode: a fatal fault has occurred.
	○ Off	No fatal faults detected.

CPE330 Ethernet Indicators

LED	*LED State*	*Operating State*
LINK (upper)	● On Green	The corresponding link is physically connected.
	✱ Blinking Green	Traffic is detected at the corresponding port.
	○ Off	No connection detected at corresponding port.
1Gbps (lower)	● On Amber (LAN1) or ● On Green (LAN2)	Corresponding network data speed is 1 Gbps.
	○ Off	Corresponding network data speed is 100 Mbps or 10 Mbps.

1.3. Ethernet Ports

LAN1 connects to the uppermost RJ-45 connector. It is not switched. LAN2 connects to the two lower RJ-45 connectors. They are switched internally. Record the IP Address of each LAN in the space provided (Figure 1).

Each of the embedded Ethernet interfaces automatically senses the data rate (10 Mbps or 100 Mbps or 1 Gbps), communications mode (half-duplex or full-duplex), and cabling arrangement (straight-through or crossover) of the attached link.