



Inside This Compact RTU

- ARM Cortex-A9Quad core, 1GHz CPU clock
- RAM 2GB
- Flash 4GB
- 16GB SD Card Storage
- 10/100 Mb/s ethernet with auto MDIX
- On Board IO/s 16DI / 8DO / 6AI
- Three RS-232, One RS-485 and Two USB Port
- Modbus Master/Slave and Modbus TCP Protocols
- Time stamped DNP 3 and IEC 60870-5 Protocol Support (optional)

Introduction

Accurate, timely monitoring and control of mission critical applications is imperative for the successful operation of a Utility. As a developer of one of the world's first flowchart programmable Remote Terminal Unit (RTU), CIMCON Software's intelligent RTUs have been utilized and proven themselves in thousands of projects worldwide, helping Utilities of all types to manage their operations, while avoiding crisis management situations.

The iRTU-3000 an Overview

CIMCON's iRTU-3000 is a compact, intelligent RTU that has been utilized globally in Water, Power, Oil and Gas Utilities to remotely monitor and control a broad range of mission critical applications.

The iRTU-3000 is an ideal solution for the monitoring and control of operations involved in Water Generation, Water Treatment, Water Distribution and Sewage, Electrical Feeder Monitoring and Control, Gas Compressor and Dispenser Monitoring. It lets Utilities quickly identify faults for immediate resolution, and its data logging capability provides the information needed for situation analysis. Given its unique blend of rugged Industrial Inputs/Outputs (I/Os), the iRTU-3000 can support the most demanding control applications. Real time, multi-tasking software combined with powerful communications capabilities based on proven technology and an open architecture enable inter-operability with other popular automation systems using universal protocols. The iRTU-3000 brings together the speed of a PLC, the precision of a Data Logger, and the flexibility of a large process controller.

Compact Intelligent Remote Utility
Monitoring and Control for



Water



Energy



Oil & Gas



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Global Leadership Through Technology Innovation

A Small, Compact Unit with Onboard I/Os

The iRTU-3000's small, compact size ensures easy portability. Onboard I/Os consist of 16 Digital Inputs, 8 Digital Outputs, and 6 Analog Inputs, making the iRTU-3000 beneficial in applications where limited I/Os are needed.

Report-by-Exception

The iRTU-3000 only provides reports to the SCADA system and GSM devices in the event of an abnormality, thus optimizing bandwidth utilization.

Real Time Monitoring

User programmable, the iRTU-3000 sends data to the SCADA station at a real time rate and frequency. In addition, it supports data transfer to a web-server thus enabling global web-based viewing.

Data Logging

The iRTU-3000 logs important process data in its non-volatile memory at user defined logging intervals. Data can be stored in memory for up to 10 years without charging.

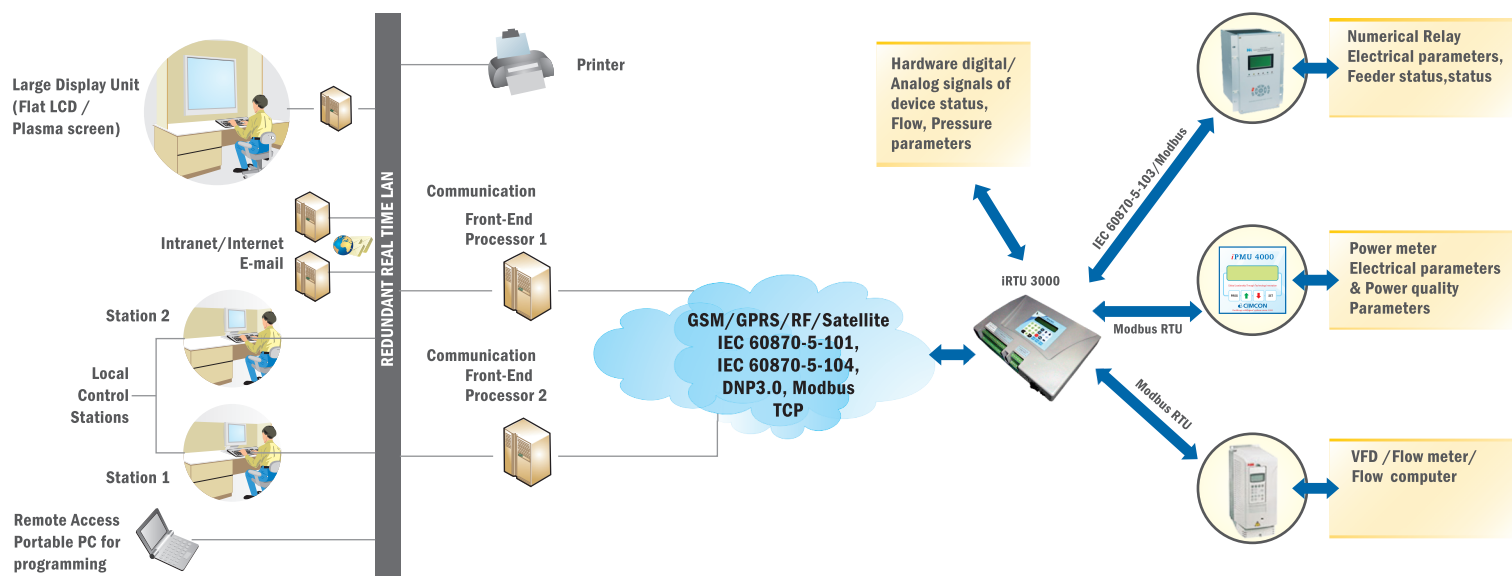
Alarm Time Stamping

For critical fault analysis, the iRTU-3000 is specifically designed to time stamp all alarms and events at the RTU level using a highly accurate real time clock.

Local Display at the RTU Level

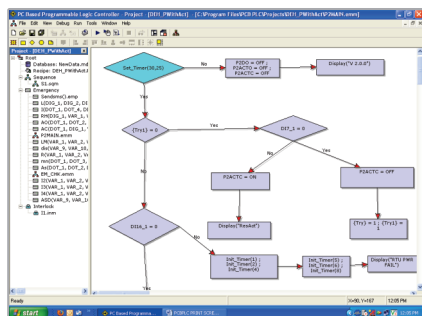
Each iRTU-3000 includes a 16 x 2 character backlit LCD for local monitoring of field data. A 4 x 6 matrix membrane keyboard is included for scaling and changing the limits of the I/O parameters and more.

System Diagram:



Benefits of Flow chart based Programming

As one of the world's first flowchart programmable controller, the iRTU-3000 provides the ability to develop complex control logic processes using flowchart building blocks provided by PCBPLC™ programming software. This capability is extremely valuable in situations where highly skilled personnel are not available with a Utility, as Flowchart based programming is easy to understand and can be learned quickly to enable application modifications.



Ordering Code:

Module	Description
iRTU 3000	Intelligent Remote Terminal Unit
	Code Number Of Channels
	0 16 DI, 8 DO, 6 AI
	Code Additional Channels
	0 None
	1 16 DI, 16 DO, 7 AI, 2AO
	2 32 DI, 32 DO, 14 AI, 4 AO
	Code Display
	0 Yes
	Code Communication Ports
	0 RS 232-3 Nos, RS 485-1 No, Ethernet 10/1000 Base T-1 No
	1 RS 232-3 Nos, RS 485-1 No, Ethernet 10/1000 Base T-1 No, USB Master Port-1 No, USB Slave Port-1 No.
	Code Communication Protocol
	0 Modbus RTU/TCP/CIMCON
	Code Additional Communication Protocol
	0 DNP 3.0/IEC 60870-5
	Code Memory
	0 128 Kbyte battery backed SRAM, 256 Kbyte EEPROM
	1 128 Kbyte battery backed SRAM, 256 Kbyte EEPROM, 64 MB Flash
	2 128 Kbyte battery backed SRAM, 256 Kbyte EEPROM, 4 GB SD
	3 128 Kbyte battery backed SRAM, 256 Kbyte EEPROM, 4 GB SD and 64 MB Flash
iCOM3000	GSM Modem
iRF	RF Modem
HMI-07	7" HMI
PCBPLC-001	PCBPLC Engineering Software
iRTU 3000 — 0 — 1 0 0 0 0 1	Example

Applications

The iRTU-3000 is an ideal solution for multiple Utility needs including:

Water Generation

The iRTU-3000 is an out-of-the-box solution used extensively in water generation systems, such as Tube Wells and Pumping Stations with numerous installations.

Water Treatment

iRTUs are excellent for monitoring and controlling water treatment plants and filtration bed operations. The iRTU-3000 has enough I/O capacity and communication capability to handle the automation of equipment found in any Water Treatment Plant.

Water Distribution and Sewage Stations

iRTUs are used in Pumping Station and Sewage Treatment Plant Operations. The iRTU-3000 can be used to monitor online pump efficiency.

Feeder Monitoring and Control

The iRTU-3000 can be used for Electrical Feeder monitoring and control in a substation. Its multiple communications options, including wireless communication is useful for remote monitoring of a feeder in a substation. The iRTU-3000's Alarm capability with time stamp is useful in problem diagnosis and fault analysis in electrical networks.

Gas Compressor and Dispenser Monitoring

The iRTU-3000 can be used for Compressor Parameter monitoring of Gas stations. Alarms related to temperature or pressure can be sent via SMS to identified individuals. Compressor loading and suction pressure can be set remotely at the SCADA station.

About CIMCON

Since 1988, CIMCON has been the world's leading provider of advanced turnkey industrial automation systems, delivering practical solutions from concept through commissioning. CIMCON's mission is to develop, market and support state of the art, scalable solutions that provide the lowest "lifecycle cost of ownership" for its clients. CIMCON solutions can include hardware, software and turnkey project implementation and operating services in all areas of automation.

Customer Training and Technical Support

CIMCON provides engineering design, integration and support of automation hardware, software, networks and systems through its worldwide staff of qualified engineers with extensive computer and industrial automation experience.

Global After Sales Support

CIMCON understands and values the importance of after sales support requirements of a mission critical real time system such as iRTU 3000. Highly experienced support engineers are always available just a phone call away.

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Technical Specifications

Processor	ARM Cortex-A9Quad core, 1GHz CPU clock
	RAM 2 GB
	Flash 4 GB
	microSD card slot x1
	RTC with battery backup Yes
Real Time Clock	Battery Backed RTC (20ppm crystal stability)
Storage Memory	16GB SD card storage
Power supply	12-24 VDC external power supply
Industrial IO Interface	Digital Input x16, Isolated, 24V DC operated
	Digital Output x8, Isolated, 24V DC switched output
	Analog Input x6, 16-bit resolution, 0-5V / 4-20mA input (x2 for expansion)
	HART Interface* Yes
	IO expansion* Upto 32-DI, 32-DO, 14-AI, 4-AO
Wired Connectivity	RS232 COM port x2
	RS485 port x1Isolated
	POE Ethernet port x1
	Gigabit Ethernet port x1, 10/100/1000 Mbps
	USB Host x1
	USB Device* x1 (Console)
Wireless Connectivity	Cellular modem interface 4G/Edge/GPRS/2G/NB-IoT (External)
	GPS interface (over Rs232) External
	Zigbee RF 2.4 GHz, IEEE 802.15.4, Data Rate: 250 kbps
	Wifi x1 (802.11b/g/n)
	Bluetooth x1 (4.0 BLE)
Analog Inputs	6 differential channel analog inputs with 16-bit Resolution
	Input Ranges: 0-5VDC, 4-20mA
Digital Inputs	16 optically isolated (5000 Vrms for 1min) Digital Inputs
	1 Pulse Digital Input
Digital Outputs	24V DC external wetting voltage
	8 optically isolated (5000 Vrms for 1min) digital outputs
	6-10A continuous current resistive load (Externally connected relay)
	Pulse On or Hold (latched outputs)
	Max switched current 10A@24 VDC or 240 VAC
	Max switched voltage is 240 VAC / 24 VDC
Expansion Capability	iRTU3000 expansion module offers 16 Digital Inputs, 16 Digital Outputs, 7 Analog Inputs and 2 Analog Outputs
	- Up to 2 Expansion modules per iRTU3000
GSM Characteristics (External Modem)	Quad band 850/900/1800/1900 Mhz
	- GPRS multi-slot class 10 (default)/ 8 (optional)
	- GPRS max downlink speed is 85.6 kbps
	- GPRS max uplink speed is 42.8 kbps
	- GPRS coding schemes CS1, CS2, CS3 and Cs4
	- External antenna required
Enclosure	Polycarbonate, other options available
Installation	Panel Mount or Wall Mount
Operating Conditions	0°C to 70°C / 32°F to 158°F
	5% to 95% Rh non-condensing
Storage Conditions	- 20°C to 80°C / -4°F to 176°F
	5% to 95% Rh non-condensing
Software	Desktop and Web based SCADA software for remote monitoring control

