

**GREENTEL R200 from SATEL USA
3G M2M Industrial Cellular Router**



GREENTEL R200 series from SATEL USA is a Machine-to-machine (M2M) industrial cellular router which operates on nationwide 2G/3G cellular networks to provide reliable and robust wireless connections.

GREENTEL R200 series is ruggedized for industrial M2M usage, and designed to endure extreme conditions, such as wide ranging temperatures, shock, vibration, or noise, and has low power consumption.

R200 series supports most high security network tunnels including PPTP, L2TP, GPE, IPSec VPN tunnel as a client or server.

Features:

Highly Reliable Network Performance

- High performance platform, 200 MIPS ARM9, 8 Mbytes NORFlash, 16 Mbytes SDRAM
- Software and hardware watchdog
- Always online: PPP LCP echo and ICMP keep alive for link inspection
- Dial on demand activated by Call/SMS/Local data flow
- High sensitivity: low signal strength required (CSQ>12)
- Remote and local firmware upgrade based on redundant firmware backup
- **Large scale remote management via Greentel Device Manager**

Ease to Use

- Embedded Linux system, TCP/IP and PPP stack, Plug and Play
- Configuration via WEB, TELNET, Hyper Terminal and SSH
- Backup and restore settings
- Reset button, software and hardware reset to factory default settings
- LED indicators for three level cellular network signal strength
- LED indicators for Power, Status, Warn, Error, Modem

Security

- **VPN IPsec: DES, 3DES, AES, MD5 and SHA-1**
- **Authentication: Pre-shared key, digital certificate**
- **Support PPTP, L2TP, GRE tunnels**
- Firewall: Stateful Packet Inspection(SPI), filtering multicast, filtering PING packet, preventing DoS attack, different firewall strategies
- Access control: Access control of TCP, UDP, ICMP packet
- MAC and IP filter, MAC address bundling
- DMZ: support virtual servers
- VRRP: Hot backup, auto switch to slave router when master router failed

Robust design for Industrial Application

- Rugged casing with DIN-rail mounting and wall mounting
- Industrial power terminal block, 9 to 48VDC wide range voltage power supply, anti-RCE (reverse connection error), over-current protection
- One Ethernet port, one RS232 for debug console, one RS232 or RS485 optional
- Support DTU mode, data transparent transmission via serial port
- Support Modbus RTU/TCP via RS485 (Optional)
- Wide range operation temperature: -25°C to 70°C
- Operation humidity: 5% to 95%, non-condensing
- IP30 grade protection
- Optimized EMC design

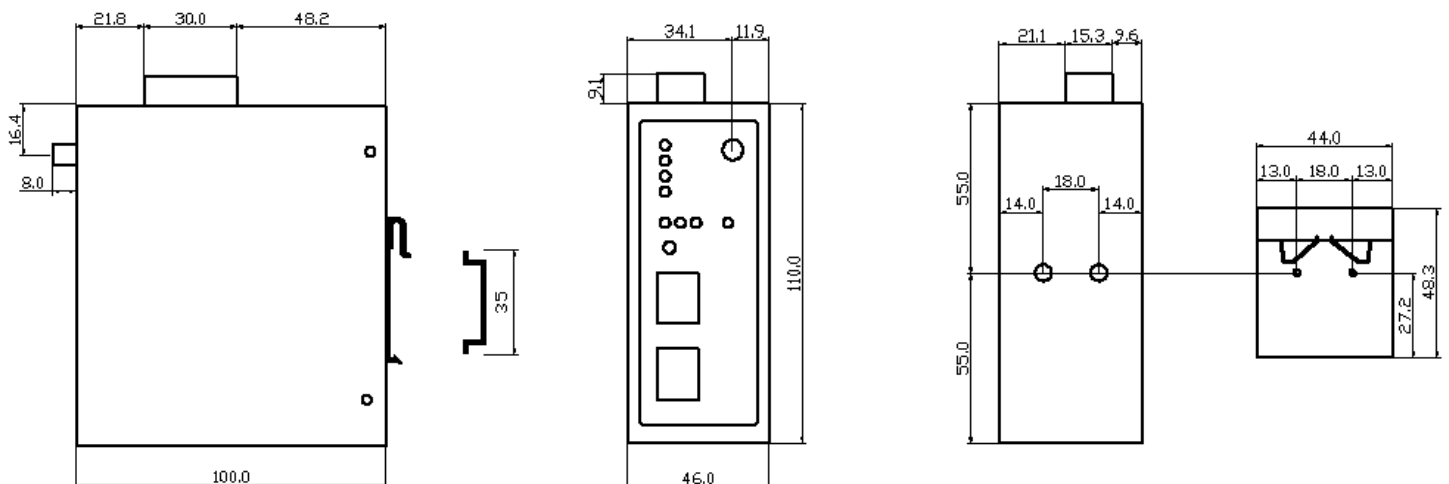
Applications:

- Machine-to-machine (M2M)
- Telemetry
- SCADA
- Monitoring and Surveillance
- DSL/Cable Infrastructure Backup
- AVL
- Credit card verifications, POS and ATM

Product Kit:

- M2M Industrial Cellular Router
- AC/DC Adapter
- Rubber antenna and magnetic mount antenna optional
- DIN-rail optional
- RS232 to RS485 converter optional
- Ethernet Cable RJ45
- Debug console cable RJ45-RS232 optional
- CD

Mechanism



Specifications:

Cellular	HSUPA (R200H)	UMTS 850/900/1900/2100 MHz Quad Band, GSM/GPRS 850/900/1800/1900 MHz Quad Band, DL/UL 7.2/2.0 Mbps		
	USB (R200U)	USB 2.0 host port x1, without embedded cellular module, connects to external 3G USB Modem		
	APN	APN and VPDN		
	Authentication Protocol	CHAP/PAP/MS-CHAP/MS-CHAP2/etc.		
	Dial On Demand	Activated by Call/SMS/Local data flow		
	Always online	PPP LCP echo and ICMP keep alive for link inspection		
	High Sensitivity	low signal strength required (CSQ>12)		
Ethernet	Interface	one 10M/100Mbase-T RJ45, auto MDI/MDI-X		
	Isolation Protection	1.5 kV between signals and Gnd		
Serial Ports	Port	3-Lined RS232 Serial Port X 1 (Optional with RS485)	3-Lined Debug Console Serial Port X 1	3-Lined RS232/485 Serial Port X 1 (Optional with RS232)
	Interface	screw pluggable terminal block, pitch=5mm	RJ45	screw pluggable terminal block, pitch=5mm
	Rate	1200bit/s to 115200bit/s		
	Communication Parameters	Parity: None, Even, Odd, Space, Mark; Data Bits: 5,6,7,8; Stop Bits:1,1.5,2		
	Flow Control	None		
	Isolation Protection	1.5 kV between signals and Gnd		
USB Port (R200U)	Interface	USB 2.0 Host port, Female Type-A		
System Management	Configuration	WEB, TELNET, Hyper Terminal and SSH		
	Upgrade	Remote and local firmware upgrade based on redundant firmware backup		
	Network Management	Self developed large scale management system		

Network Features	Routing	Static routing
	Multi-Protocol Support	ICMP, IP, TCP, UDP, DHCP, PPP, ARP, Telnet, DNS, SSH, VRRP, HTTP, HTTPS, NTP
	Connection Inspection	PPP LCP echo and ICMP keep alive for link inspection
	NAT and PAT	Network Address Translation (NAT) and Port Address Translation (PAT), hiding internal IP addresses and expand IP address space.
	DDNS	Support Dynamic DNS
	VRRP	Hot backup, auto switch to slave router when master router failed
Network Security	VPN IPSec Tunnel (Maximum 4 tunnels)	Support standard IPSec based VPN service, encryption methods including DES, 3DES, AES, data verification methods including MD5 and SHA-1
	Authentication Method	Pre-shared key, digital certificate
	PPTP, L2TP, GRE	Client
	Firewall Strategy	Stateful Packet Inspection(SPI), filtering multicast, filtering PING packet, preventing DoS attack, different firewall strategies
	MAC Address Bundling	Refuse illegal host access
	Port Mapping	Allow extranet user to access specific intranet port
	Access Control	Flexible access control of TCP, UDP, ICMP packet
	Traffic Control	Downlink and Uplink speed control
DMZ	Support virtual servers	
Embedded Advanced Functions	Beep	Configurable alarm output
	Real-time Clock	Manual Set, or Synchronize
	Watchdog	Software and hardware watchdog, insure system against dead-halt
	Signal Strength LED	3-level LED indication of cellular network signal strength
	Running Status LED	4 Running Status LEDs: POWER, STATUS, WARN, ERROR

Power Supply	Power Input		9 to 48VDC, Anti-RCE & Overcurrent
	Power Consumption		Communication: 300mA @ 12V(max) Idle: 120mA @ 12V(max)
	Burst Protection		4KV
	Surge Protection		2KV
	Connector		pluggable screw terminal block
Mechanical Features	Outer casing		aluminum
	Dimensions		46mm x 100mm x 110mm
	Weight		490g
	Installation Method		DIN-rail mounting/Wall mounting
	Operation Temperature		-25°C to 70°C
	Storage Temperature		-40°C to 85°C
	Humidity		5% to 95%, non-condensing
	Protection Level		IP30
Certification	Safety	Insulation Resistance	DC500V imposed on communication lines to ground and on power lines to ground, resistance >500MΩ
		Electric Strength	DC500V imposed on communication circuit to ground and on power lines to ground, leakage current 0mA
		Anti-shock	IEC60068-2-27
		Drop	IEC60068-2-23
		Vibration	IEC60068-2-6
	EMC	ESD	Meet EN61000-4-2, Electrostatic discharge: Level 4, ±8KV to all communication ports; Air discharge: Level 4, ±15KV to all parts of outer casing
		Surge	Meet EN61000-4-5, Level 3, between each group of lines and chassis ground, differential-mode ±1KV peak, common-mode ±2KV peak, 1.2/50us; not applicable to serial ports
		Electric Fast Transient/burst	Meet EN61000-4-4, power terminal, Level 4, ±4KV peak, repetition rate 5KHz; data terminal, Level 4, ±2KV peak, repetition rate 5KHz
		RF Electromagnetic Field Immunity	Meet EN61000-4-3, frequency range: 80MHZ to 1000MHZ, Level 3, 10V/m
		RF conducted interference	Meet EN61000-4-6, frequency range: 150KHz to 80MHZ, Level 3
		Damped oscillation Immunity	Meet EN61000-4-12, 1MHz power lines differential-mode ±1KV; 1MHz power lines, common-mode ±2.5KV
		Power-frequency electromagnetic fields Immunity	Meet EN61000-4-8, horizontal/vertical 400A/m