



## FEATURE HIGHLIGHTS

- Extensive 3G and LTE Band Support
  - EU: 2100/1800/850/2600/900/800MHz (B1/B3/B5/B7/B8/B20)
  - US: 1900/AWS/850/700/700/1900MHz (B2/B4/B5/B13/B17/B25)
- VPN over IPsec, OpenVPN or PPTP, data-rate up to 37.9Mbps\*
- Wide temperature, industrial grade platform
- 1 x 10/100/1000Mbps Ethernet port
- 1-port RS-232/485, baud rate up to 921.6 Kbps
- 1-Port USB2.0 high speed OTG + 1-Port USB Power only
- TCP Server/Client, UDP, Virtual COM supported
- 2 Digital Inputs/ 2 Digital outputs in I/O version
- Additional embedded power-bank for fault-relay capability (B version)

## PRODUCT DESCRIPTION

### Providing connectivity for the Internet of Things

SE5901B, Atop's Industrial Serial to Ethernet and Cellular Gateway is a high-performance, cost effective gateway for serial signal communications; allowing almost any serial device to be connected to Ethernet network and providing connectivity to the world. Its powerful CPU provides up to 37.9Mbps\* software-assisted AES encryption for protecting your data flow through the Internet with a secure IPsec VPN tunnel.

### Advanced features available

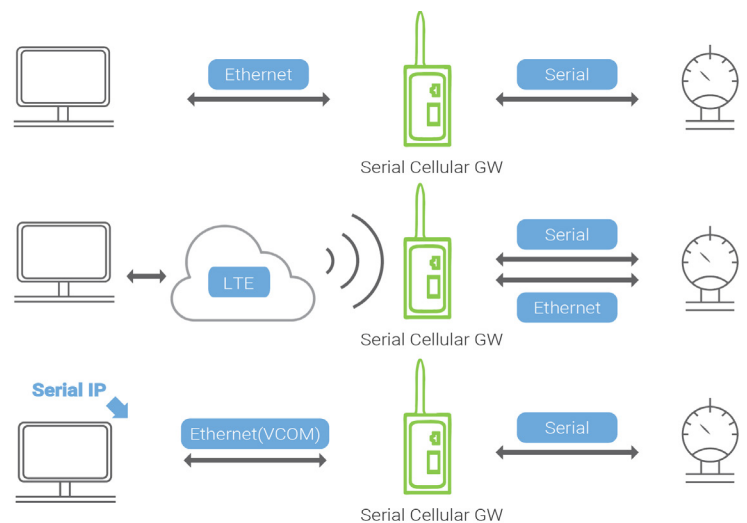
Flexible configuration options enable this unit to be setup over Ethernet by Telnet, Web Browser, Serial Console, or our Windows Utility. Atop Virtual COM software provides a virtual environment for applications when accessing SE5901B through TCP.

A dedicated I/O version provides 2 Digital Inputs and 2 Digital Outputs, GPS version provides Global positioning system geolocation and, specifically for the Internet of Things, a "B" version provides additional 15 seconds power during a power failure, allowing the device to relay back to the host the failure. This is Maintenance 4.0.

### Rugged and flexible for advanced developments

SE5901B embeds high EMC protection, wide temperature operation, programming and installation flexibility in one device. SDK versions

allow you to make use of the powerful hardware and develop your own applications on top of Atop's reliable APIs and with plenty of coding examples in Atop's SDK. SDK versions are available upon request. Please contact Atop's representative for additional information.



\* : test carried out with one VPN-IPsec Tunnel, Peer-to-Peer mode, Ethernet cable. Performance can change based on the Cellular Network.

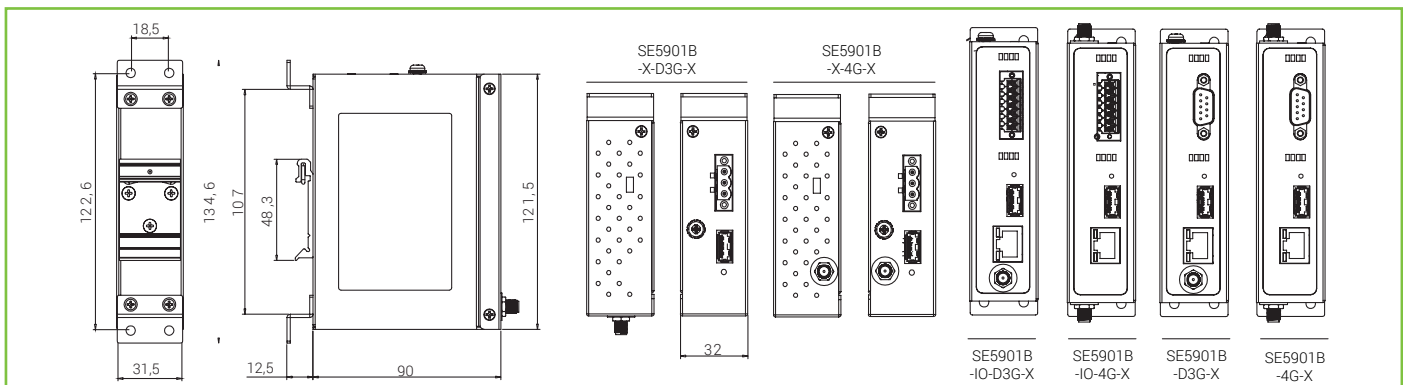
## SPECIFICATIONS

| Wireless Interface   |   |   |  |              |
|----------------------|---|---|--|--------------|
| Standard             | GSM/ GPRS/ EDGE/ UMTS/ HSPA+/ SCDMA/ LTE  |   |  |              |
| Wireless Module      | EU version: Quectel EC25-E<br>US version: Quectel EC20-A  |   |  |              |
| Antennas/ SIM card   | 1 (3G) or 2 (4G) - Included. Internal SIM card slot (x1)  |   |  |              |
| Band Options         | Version   | Band  | Bands  |              |
|                      | EU  | FDD LTE   | 2100/1800/850/2600/900/800MHz (B1/B3/B5/B7/B8/B20) |              |
|                      |   | TDD LTE   | 2600/2300/2500MHz (B38/B40/B41)                    |              |
| WCDMA<br>GSM         |   | 2100/850/900MHz (B1/B5/B8)<br>900/1800  |  |              |
| US                   | FDD LTE   | 1900/1700/850/700/700bMHz (B2/B4/B5/B12/B17)  |  |              |
|                      | UMTS<br>GSM   | 1900/1700/850MHz (B2/B4/B5)<br>850/1900MHz  |  |              |
| Data Rate            | Version   | Band  | Downlink Speed                                     | Uplink Speed |
|                      | EU  | LTE-FDD   | 150 Mbps   | 50 Mbps      |
|                      |   | LTE-TDD   | 130 Mbps   | 35 Mbps      |
| DC-HSPA+             |   | 42 Mbps   | 5.76 Mbps  |              |
| UMTS                 |   | 384 Kbps  | 384 Kbps   |              |
| TD-SCDMA             |   | 4.2 Mbps  | 2.2 Mbps   |              |
| EDGE<br>GPRS         |   | 236.8 Kbps<br>85.6 Kbps   | 236.8 Kbps<br>85.6 Kbps                            |              |
| US                   | LTE-FDD   | 100 Mbps  | 50 Mbps  |              |
|                      | LTE-TDD   | 61 Mbps   | 18 Mbps  |              |
|                      | DC-HSPA+  | 42 Mbps   | 5.76 Mbps  |              |
|                      | UMTS  | 384 Kbps  | 384 Kbps   |              |
|                      | TD-SCDMA  | 4.2 Mbps  | 2.2 Mbps   |              |
|                      | EDGE<br>GPRS  | 236.8 Kbps<br>85.6 Kbps   | 236.8 Kbps<br>85.6 Kbps                            |              |
| Network Interface    |   |   |  |              |
| Standards            | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3ab for 1000BaseT(X)                    |   |  |              |
| Ethernet Ports       | 1x 10/100/1000BASE-TX RJ-45   |   |  |              |
| Serial Interface     |   |   |  |              |
| Connector            | D-Sub9 RS-232/485 software selectable (DB model)<br>14-Pin 5.08mm Terminal Block (integrated with DI/DOs) |   |  |              |
| Ports                | 1 port RS-232/485 (2-wire) software selectable<br>1 port RS-232 (IO model only)                           |   |  |              |
| Configuration        | Baud Rate<br>Data Bits<br>Stop Bits<br>Flow Control   | 1,200 ~ 921,600bps software selectable<br>7, 8 software selectable<br>1, 2 software selectable<br>None, Xon/Xoff, RTS/CTS (RS-232 only) |  |              |
| Universal Serial Bus |   |   |  |              |
| USB ports            | 2 x USB A Type (USB 2.0) - 1-port High-Speed OTG + 1-port power only                                      |   |  |              |

| Digital Inputs/Outputs (IO Models)  |   |
|---|---|
| Digital Inputs (DIs)<br>Digital Outputs (DOs)                             | 2 channels photo coupled isolated digital input<br>2 channels digital output. N.O.( 2A@24VDC)             |
| GNSS (GPS Models)   |   |
| Supported GNSS  | GPS, Glonass, Beidou  |
| Connector   | 1x SMA  |
| Software  |   |
| Serial Server-related   | VirtualCOM (Serial/IP), Virtual Server (port Forwarding)  |
| Security  | IPsec, PPTP or OpenVPN VPN tunneling. Max VPN throughput 37.9Mbps *;<br>SMTP/TLS                          |
| Network   | ARP, IPv4, DHCP Client, ICMP, TCP, UDP, HTTP, RFC2217, TELNET, NTP Client,<br>NAT                         |
| Management  | Web, ATOP Device Management Utility, SNMPv1/v2c/v3, SMS   |
| Configuration   | Embedded Web-Server (Web UI), TELNET, Atop Device Management Utility                                      |
| Link Mode   |   |
| TCP Server<br>TCP Client<br>UDP   | 4 connections, Virtual COM, or Reverse Telnet<br>Dual destination or Virtual COM<br>Up to 4 ranges of IPs |
| Power   |   |
| Input Voltage   | 9-48 VDC  |
| Connector   | 3-Pin 5.08mm Lockable Terminal Block  |
| Power Consumption   | 0.6A @ 12VDC (7.2 W Max)  |
| Power Redundancy  | USB DC 5V Power Input   |
| Reverse Polarity Protection   | Yes   |
| Environmental limits  |   |
| Operating Temperature<br>Storage Temperature<br>Ambient Relative Humidity | -40°C~70°C (-40°F~158°F)<br>-40°C~85°C (-40°F~185°F)<br>5%~95%, (Non-condensing)                          |
| Mechanicals   |   |
| Housing   | IP30 protection, SPCC metal housing   |
| Dimensions(W x H x D)<br>Weight   | 32mm x 122mm x 92mm<br>400g   |
| Installation  | DIN-Rail or Wall-Mount (optional kit)   |
| Reset Button  | Yes   |

\* : test carried out with one VPN-IPsec Tunnel, Peer-to-Peer mode, Ethernet cable. Performance can change based on the Cellular Network.

## DIMENSIONS & LAYOUT



## REGULATORY APPROVALS

| Regulatory Approvals |   |                   |   |   |
|----------------------|---|-------------------|---|---|
| Safety               | EN 60950-1:2006, UL60950-1, IEC60950-1  |                   |   |   |
| EMC/Radio            | FCC 47 CFR PART 22H, FCC 47 CFR PART 24H, FCC PART 27L, FCC Part 15B, EN301489-1, EN301489-7, EN301489-19, EN301489-24, EN301489-52, EN301511, EN301908-1, EN301908-2, EN303413<br>EN55032, EN55024, EN61000-6-2, EN61000-6-4 |                   |   |   |
| Test                 | Item  | Value             | Level   |   |
| IEC 61000-4-2        | ESD   | Contact Discharge | ±6KV  | 3 |
|                      |   | Air Discharge     | ±8KV  | 3 |
| IEC 61000-4-3        | RS  | Enclosure Port    | 10(V/m), 80-1000MHz   | 3 |
| IEC 61000-4-4        | EFT   | AC Power Port     | ±2.0KV  | 3 |
|                      |   | DC Power Port     | ±2.0KV  | 3 |
|                      |   | Signal Port       | ±1.0KV  | 3 |
| IEC 61000-4-5        | Surge   | DC Power Port     | Line-to Line±1.0KV  | 3 |
|                      |   | DC Power Port     | Line-to Earth±2.0KV   | 3 |
|                      |   | Signal Port       | Line-to Earth±2.0KV   | 3 |
| IEC 61000-4-6        | CS  | 0.15-80MHz        | 10V rms   | 3 |
| IEC 61000-4-8        | PFMF  | (Enclosure)       | AC 50Hz 10A/m   | 3 |
| IEC 61000-4-11       | DIP   | AC Power Port     | >95%,Reduction,0.5period<br>30%, Reduction,25 period<br>>95%,Reduction,250 period | - |
| Shock                | IEC 60068-2-27  |                   |   |   |
| Drop                 | IEC 60068-2-32  |                   |   |   |
| Vibration            | IEC 60068-2-64  |                   |   |   |
| RoHS                 | Yes   |                   |   |   |
| MTBF                 | 20.88 years according to MIL-HDBK-217F (Model average)  |                   |   |   |
| Warranty             | 5 years   |                   |   |   |

## ORDERING INFORMATION

| Ordering information  |                        |          |                 |     |               |
|---|------------------------|----------|-----------------|-----|---------------|
| Software Type   | Model name             | Cellular | Serial Ports    | I/O | Other         |
| Ethernet/ Cellular to Serial Gateway, VirtualCOM and IPsec VPN Security | SE5901B-D3G-US         | 3G (US)  | 1 (DB9)         | -   | -             |
|   | SE5901B-IO-D3G-US      | 3G (US)  | 1 (TB) +1 RS232 | 2/2 | -             |
|   | SE5901B-IO-D3G-GPS-US  | 3G (US)  | 1 (TB) +1 RS232 | 2/2 | GPS           |
|   | SE5901B-4G-US          | 4G (US)  | 1 (DB9)         | -   | -             |
|   | SE5901B-IO-4G-US       | 4G (US)  | 1 (TB) +1 RS232 | 2/2 | -             |
|   | SE5901B-IO-4G-GPS-US   | 4G (US)  | 1 (TB) +1 RS232 | 2/2 | GPS           |
|   | SE5901B-4G-B-US        | 4G (US)  | 1 (DB9)         | -   | Battery       |
|   | SE5901B-IO-4G-B-US     | 4G (US)  | 1 (TB) +1 RS232 | 2/2 | Battery       |
|   | SE5901B-IO-4G-GPS-B-US | 4G (US)  | 1 (TB) +1 RS232 | 2/2 | GPS - Battery |
|   | SE5901B-D3G-EU         | 3G (EU)  | 1 (DB9)         | -   | -             |
|   | SE5901B-IO-D3G-EU      | 3G (EU)  | 1 (TB) +1 RS232 | 2/2 | -             |
|   | SE5901B-IO-D3G-GPS-EU  | 3G (EU)  | 1 (TB) +1 RS232 | 2/2 | GPS           |
|   | SE5901B-4G-EU          | 4G (EU)  | 1 (DB9)         | -   | -             |
|   | SE5901B-IO-4G-EU       | 4G (EU)  | 1 (TB) +1 RS232 | 2/2 | -             |
|   | SE5901B-IO-4G-GPS-EU   | 4G (EU)  | 1 (TB) +1 RS232 | 2/2 | GPS           |
|   | SE5901B-4G-B-EU        | 4G (EU)  | 1 (DB9)         | -   | Battery       |
|   | SE5901B-IO-4G-B-EU     | 4G (EU)  | 1 (TB) +1 RS232 | 2/2 | Battery       |
|   | SE5901B-IO-4G-GPS-B-EU | 4G (EU)  | 1 (TB) +1 RS232 | 2/2 | GPS - Battery |

| Optional Accessories |                 |   |
|----------------------|-----------------|---|
| Model name           | Part Number     | Description   |
| UN315-1212(US-Y) LV6 | 50500151120003G | Y-Type (5.08 mm) adaptor, 100-240VAC input, 1.25A @ 12VDC output, US plug |
| UNE315-1212(EU-Y)LV6 | 50500151120013G | Y-Type (5.08 mm) adaptor, 100-240VAC input, 1.25A @ 12VDC output, EU plug |
| ADP-DB9(F)-TB5       | 59906231G       | Female DB9 to Female 3.81mm TB5 Converter                                 |
| WMK-315-Black        | 70100000000050G | Black Aluminum Wall Mount Kit   |