Highly versatile, reliable and rugged routers

Available in 3G and LTE and with WAN, LAN, Wi-Fi and serial connectivity, the E220 series of M2M routers is designed for mission-critical enterprise applications.

**Advanced Failover**
Maximise uptime by seamlessly switching between multiple Internet interfaces

**Advanced Load Balancing**
Spread or bind your data traffic across the multiple Internet interfaces, based on data type, source or destination and the relative WAN connectivity costs

**Multiple Tunnelling Schemes**
Secure your data using a variety of VPN tunnelling schemes, including PPTP, L2TP, OpenVPN, GRE and IPsec

**RS-485 Operation**
Integrate sensors and thirdparty devices over the RS-485 serial port to provide seamless connectivity to IP networks

**Industrial Automation**

**Sales & Payment**

**Infrastructure & Transportation**
## HARDWARE

**Material**: Brushed aluminium alloy

**Dimensions (mm)**: 61.25 x 85.75 x 24.9

**Weight (g)**: Approx. 165

- **Temperature & Humidity Ranges**:
  - Operating: -20°C to +60°C (E225 Lite models) or -30°C to +70°C (all other models);
  - Storage: -40°C to +85°C; up to 95% RH

**CPU**: MIPS32® 24KEc® CPU running at 580 MHz

**Built-in 64 KB [resp. 32 KB] instruction [resp. data] cache**

**SPI Flash Memory**:
- Either 32 MB (E225 Lite models) or 64 MB (all other models)

**Power-Off Timekeeping**
- RTC with an approx. 100-year data retention period; courtesy of a 15 mWh lithium manganese battery (not functional below -20°C)

**Power Consumption (W)**
- All figures worst-case (60°C, 60 V, all subsystems fired on, etc.)
  - Idle: x (E225); 1 (E224); 1 (E228)
  - Standby: x (E225); 2.3 (E224); 2.1 (E228)
  - Communication (Tx max.): 5 (E225); 6 (E224); 6 (E228)

**ePAC SOFTWARE SUITE**

**Administration and Network Protocols**
- Web-based user interface, setup wizard, console log viewer, save / load configuration, NTP, SMS / OTA remote configuration, TR-069-capable

**Redundancy**
- Ethernet, Cellular, Wi-Fi – configurable as failover or load balancing

**Resilience**
- Network connectivity watchdog (configurable), internal application watchdog

**Wi-Fi**
- Client or Access point (approx. 40-user), multiple SSID, WEP, WPA, WPA-PSK / WPA2-PSK security modes

**Device Management Services**
- via either our own D2SPHERE® platform or third-party platforms such as ThingWorx, ThingTime, Comumatic, etc.

**Security**
- Zone-based firewall, VLAN, DMZ, HTTPS local and remote connection, SIM PIN

**Performance and Fault Management**
- Real time processor load and interface (WAN / LAN / Wi-Fi), traffic analysis, ICMP, trace-route, NS lookup

**Routing**
- DHCP, static routing, port forwarding, traffic routing, static / dynamic DNS, DNS proxy, NAT, STP

**VPN**
- PPTP client, L2TP, OpenVPN client / server / passthrough, GRE, IPSec

**Industrial Protocols**
- MODBUS RTU/TC to IEC-60870-5-104 converter, Modbus Master mode, Modbus RTU to Modbus TCP converter, Modbus to MQTT / Cumulocity / FTP / Azure / Http, Serial to FTP converter, IEC-60870-5-101 to IEC-60870-5-104 converter, Modbus to DNPN converter

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## POWER

**Main Source**

**Alternate Source**
- Class 3 PD-0E-Pe with seamless fail-back onto the main source (if the latter is plugged in, obviously)

**Last Gasp**
- Appro. 100-second long, courtesy of two 96 mAh Li-Ion batteries (not functional below -10°C)

**Reset Button**
- Short (2 s < 10 s) / Long (> 10 s) press for Soft / Hard Reset

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## OPERATION AND CONTROLS

**I/Os**
- via either one (E225 Lite and E225 models) or two (all other models) SMA antenna connectors – cf. table below for details

**Cellular**
- Remote, adhesive, A31M0 or A31H0: E225 Lite models

**Location Services**
- Remote, adhesive, IP67-rated, ‘2-in-1′ LTE + GNSS, A14MO or A14H0: E225 models

**Operating Status LEDS**
- Pair of L-shaped, hinged, ‘dual purpose,’ A22H0: all other models

**MESS**
- Either substituted for, or in addition to, the standard mini-SIM holder Dual SIM / Single standby ("DSSS") operation in the latter case

**ESSENTIAL ACCESSORIES**

**Power Cord**
- KDC22

**Cellular and GNSS Antennas**
- Remote, adhesive, IP67-rated, ‘2-in-1′ LTE + GNSS, A14MO or A14H0: E225 models

**Wi-Fi Antennas**
- Pair of L-shaped, hinged, A24CO (while stocks last) or A21H0

**DIN Rail Clip**
- BR351, 3½ U

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## MODEL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Territories or Operator(s)</th>
<th>Cellular Type</th>
<th>Bands</th>
<th>Fallback Model(s)</th>
<th>Bands</th>
<th>Location Services</th>
<th>Planned / Obtained Certifications</th>
<th>Planned / Made FCS</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>E225 Lite</td>
<td>EMEA; South-East Asia; South Asia</td>
<td>3G2</td>
<td>8/1</td>
<td>2G91</td>
<td>8/3</td>
<td>x</td>
<td>CE</td>
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<td>E225PLS28</td>
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<td>World</td>
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<tr>
<td>E228G Mk II</td>
<td>EMEA; Taiwan; Brazil; ANZ; Thailand; Malaysia; Singapore</td>
<td>LTE cat. 4</td>
<td>3G2; 2G12</td>
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<td>CE (vi) / NCC</td>
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<td>E228G002S</td>
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<td>China; Indonesia</td>
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<td>Anatel; RCM; NBTC; SIRIM; IMDA</td>
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<td>Postal; ETA; TEC</td>
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<td>E228</td>
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<td>ISFD: FCC / PTCRB, AT&amp;T Wireless, Verizon Wireless</td>
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Please consult us regarding the models shown in grey, or the features shown in grey italics, which are subject to MOQ and other considerations.

1. Uplink / Downlink maximum data rates
   - 2G: ± 85 bps / 236 bps; or 236 / ± 236 bps; or ± 296 kbps
   - 3G: ± 5 bps / ± 7 bps; or ± 10 bps; or ± 42 Mbps
   - LTE cat. 1: 5 / 10 Mbps (FDD); 3 / 8 Mbps (TDD)
   - LTE cat. 4: 50 / 150 Mbps (FDD); 35 / 130 Mbps (TDD)

2. Ranked by increasing frequencies

3. Besides MIL-STD-810H

4. More precisely, 441 ± 1.75 MHz ± 2655 MHz subset, suited to China’s three operators and incl. TDD B38

5. Based on compliance with RED: EN 60950-1; etc.

6. First customer shipment [date of]