Maestro’s MT-40 series of IP67 microtrackers is especially designed to match the environmental, mechanical and electrical requirements of the vehicle tracking market with a special focus on light and electrical vehicles. The MT-40 Series provides key features for telematics applications including reporting of position, speed, mileage and ignition of the vehicle. Thanks to it’s compact size and light weight, Maestro MT-40 could be easily installed into places where space is limited.

**Key features**

- Automotive grade, IP67 casing
- Concurrent GPS & GLONASS
- 9VDC ~ 60VDC “roadworthy” power section
- Dual SIM
- Ignition sensing
- Two versatile I/Os
- 1-Wire interface
- RS-232

**Target markets**

- Motorbike / vehicle tracking
- Electric vehicles
- Car / bike sharing

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1. i.e. ISO21848-certified (the infamous «Pulse 5»)
2. i.e. user-configurable as analogue input or digital output
## Technical specifications

### FEATURES

<table>
<thead>
<tr>
<th>HARDWARE</th>
<th>MT-41</th>
<th>MT-44</th>
<th>MT-45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellular interface</td>
<td>4-band GSM/GPRS</td>
<td>2-band LTE Cat. 1</td>
<td>5-band HSPA</td>
</tr>
<tr>
<td>Bands</td>
<td>850/900/1800/1900MHz</td>
<td>1,2,5,6,8</td>
<td>1,2,5,6,8</td>
</tr>
<tr>
<td>Download / upload data rates</td>
<td>60kbps DL / 40kbps UL</td>
<td>10Mbps DL / 5Mbps UL</td>
<td>7.2Mbps DL / 5.76Mbps UL</td>
</tr>
<tr>
<td>Fall-back mode</td>
<td>x</td>
<td>x</td>
<td>4-band GSM/GPRS</td>
</tr>
<tr>
<td>Dual SIM operation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SIM interface</td>
<td>2FF SIM 1.8V / 3.0V x 2 or factory fitted MFF2 as SIM #2</td>
<td>Internal</td>
<td>Internal</td>
</tr>
<tr>
<td>Cellular &amp; GNSS antenna</td>
<td>Internal</td>
<td>Internal</td>
<td>Internal</td>
</tr>
<tr>
<td>Internet</td>
<td>TCP / UDP / SMS</td>
<td>TCP / UDP / SMS</td>
<td>TCP / UDP / SMS</td>
</tr>
<tr>
<td>RS-232</td>
<td>V.24 level on 2 wires</td>
<td>V.24 level on 2 wires</td>
<td>V.24 level on 2 wires</td>
</tr>
<tr>
<td>I/Os</td>
<td>- Analogue input: Maximum 24VDC</td>
<td>- Digital output: Open collector</td>
<td>- Digital input: Ignition sensing</td>
</tr>
<tr>
<td>1-Wire bus interface</td>
<td>3.3VDC for temperature / humidity sensor or driver ID</td>
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</tr>
</tbody>
</table>

### Power

- Input voltage: Roadworthy 9VDC ~ 60VDC in with built-in protection against voltage transients including engine cranking and >200VDC load dump
- Battery back-up: Li-ion 3.15Wh
- ISO 7637-2:2011: Road vehicles - Electrical disturbances from conduction and coupling (Pulse 1, 2a, 2b, 3a, 3b)
- ISO 16750-2:2003: Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 2 (Pulse 4a, 4b)
- ISO 21848:2005: Road vehicles compliant - Electrical and electronic equipment for a supply voltage of 42V - Electrical loads (Pulse 5)
- Power consumption: TBA, TBA, TBA
  - Normal operation: 1.2W

### GPS

- General: Multi-channel GNSS (GPS/GLONASS) receiver
- Protocols: NMEA
- Accuracy: Position: 2.5m GPS / 4.0m GLONASS | SBAS: 2m GPS / n.a. GLONASS
- Acquisition: Cold Start: 35s GPS / n.a. GLONASS | Tracking: -162dBm GPS / -157dBm GLONASS
- Cold starts: -148dBm (GPS) / -140dBm (GLONASS)
- Limits: Velocity: 500m/s (972 knots) | Altitude: 50,000m | Update rate: 1Hz

### Accelerometer

Internal 3-axis

### LEDs

Cellular and GNSS

### SOFTWARE

Device generated alert

- Wired or virtual ignition ON/OFF, direction change, speed, mileage, low battery, battery disconnect, heartbeat / power-up, tow
- Programmable alert for usage outside specified time, area, I/O read, threshold alert set

Messages

- Configurable alert messages for overspeed, geofence, ignition, etc.

Geofences

- Device generated rectangular / polygonal / circular geofences

M2M Services

- Software / Firmware upgrade over the air; Embedded profile to connect to D2Sphere remote management services

Status

- Device diagnostic status, GPS engine status

### General

Casing

Automotive graded, UV resistant, non-flammable fiberglass-reinforced IP67 certified casing

Dimensions (LxWxH)

70 x 52.5 x 20.6mm

Weight

100g

Wire harness

1m

Temperature range

- Operating without battery: Operating: -40°C ~ 85°C
- With Battery discharging: Charging: 0°C ~ 45°C / discharging: -20°C ~ 60°C

### CERTIFICATIONS AND APPROVALS (pending)

Regulatory

- CE / E-mark
- FCC / PTCRB
- CE / E-mark / FCC / PTCRB / IC / RCM / JATE

Carrier approval

Verizon Wireless

AT&T Wireless / Rogers / Telstra / NTT docomo

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Device part number</th>
<th>MT-41</th>
<th>MT-44 <em>4D</em></th>
<th>MT-45</th>
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</thead>
<tbody>
<tr>
<td>Evaluation kit part number</td>
<td>&lt;device part number&gt;_EVAL</td>
<td>&lt;device part number&gt;_EVAL</td>
<td>&lt;device part number&gt;_EVAL</td>
</tr>
</tbody>
</table>