

THURAYA/GSM MT 7003



SATTELITE BASED TRACKING UNIT MT 7003

is a highly featured product designed for centralized control and keeping track of the location, status and operability of mobile or stationary assets using the resources of satellite positioning GPS and modern wireless communications THURAYA/GSM. Mounted on board a vehicle the unit automatically performs the following basic functions:

- **Collecting digital and analogue sensors output signal information**
- **Collecting GPS data**
- **Data processing and logging**
- **Data output (SMS, DATA) for following transmission to the supervising equipment by means of wireless communications.**



PERFORMANCE

- GPS coordinate positioning, precision: up to 15 m.;
- GPS GMT time acquisition;
- Mobile objects' velocity determination;
- Traveled distance determination, resolution ratio: 0.1 km, accuracy – 20 %;
- Analogue-to-digital converter status determination: 6 channels, input voltage up to 35 V;
- Measuring-in the on-board power supply voltage: 30 V;
- Measuring-in the built-in backup battery voltage: 15V;
- Measuring-in temperature inside the monitoring unit: ± 0.5 °C;
- Digital inputs status determination: 8 channels;
- THURAYA/GSM signal status determination: 4 signal strength levels;
- Number of GPS satellites in-view determination: up to 12 (depends upon GPS module);
- On-board executive devices control: 4 'open drain' channels, 30 V – 1 A.
- Five operational modes can be combined.

SPECIFICATION

- **Unit-to-sensors wire length:** no more than 5 m.
- **"All set" time:** about 10 minutes.
- **Power consumption:** < 2.4 W.
- **Power supply:** 9V-30V DC; built-in battery: 7.2 V.
- **Environmental conditions:**
 - Temperature: -20 °C to +65 °C.
 - Relative air humidity: 60% - 90%, at +20 °C.
 - Atmospheric pressure: 84 - 107 kPa.
 - Vibration: 10-55 Hz, Amplitude 0.35 mm.
- **Dimensions:** 180 x 120 x 50 mm.
- **Weight:** < 1 kg.
- **IP65 case**

Functions

1. Mobile object localization:

- Coordinates fix;
- Altitude fix;
- GPS time determination;
- GPS coordinates-based velocity determination;
- Traveled distance calculation.

2. Geographical boundaries control:

- Checkpoints (up to 30 points, radius 50-2500m);
- Zone (polygon, made up of 30 points max);
- Route (polyline, made up of 30 points max).

The unit controls an object while moving on the route by registering such events as "Object entered/left the checkpoint". The checkpoints could be referenced to a definite check time: a period of time within which the object is supposed to pass a checkpoint. The zone control is performed by registering events like "Object entered/left the zone".

3. Operational profile:

The unit is designed to process operational events (up to 64 events). The device is commanded by a configuration profile which determines unit's reaction to events. The configuration profile can be uploaded into the unit's processor locally or wirelessly.

4. Communication:

The unit communicates with a dispatch center over GSM network by SMS messages and CS DATA (rate up to 9.6 kbit/s). The format of communication is determined by the operational profile saved to the unit's processor. These formats also could be selected by a dispatcher remotely.

5. Data collection and communication modes:

- **Event log** recording – All operational events, GPS locations and sensor data are registered in the log. It holds 8000 last positions. The list of sensed data to record in the log, type of events and record interval are determined by the profile saved in the unit's microprocessor, which could be modified wirelessly from the dispatch center.
- **Alarm mode** - Immediate SMS messaging in emergencies, when occurs an event, which was marked as an "alarm event" in the profile. The unit attaches to the alarm event the 2 sec interval track data information, preceding the alarm event. These data are determined by the profile and could be modified wirelessly by a command from the dispatch center.
- **Request** – Polling vehicle's location and status (real-time or track data). When the unit receives an SMS request from the dispatch center (time span, selected data to accompany GPS locations, data compression), it communicates back the requested data from the log in an SMS message format or SC Data packets (carrier is selected by a dispatcher). When using SMS as a carrier, the processor formats and compresses the data packet so that it fits the size of an SMS message (140 byte) and provide up to 20 location records in a single message.
- **Auto mode** – Standard on-road data accumulation and automatic dispatch to the dispatch center. When events, which were marked as "auto mode events" in the profile, occur the unit accumulates them to fill in the SMS message size (140 byte) and sends the message upon the buffer completion. "Auto mode events are saved in the profile all-time tracking. The dispatch center establishes a CS Data connection with the unit to receive data packets which could be modified wirelessly by a command from the dispatch center.
- **On-line** – In on-line mode object's whereabouts and telematic data are transmitted to the DC at 2 seconds interval via CS Data channel.
- **Voice connection** – The voice connection mode is used to communicate with the driver or tap the cabin. When the unit receives a call it automatically accepts it.
- **Remote firmware upgrade** – The outdated firmware can be replaced by a new version wirelessly from the dispatch center using CS Data channel.
- **Access protection** – The units is protected from any wireless unauthorized access by controlling the phone numbers. Legal numbers of dispatch centers (up to 20 numbers, 18 digits) are saved in its memory and could be modified or replaced only by the command from the dispatch center.