

SatTracker

- Seamless worldwide coverage
- Secure and reliable data processing
- Value-added information delivered to servers and desktop

The need for effective, reliable mobile asset management systems is becoming a necessity rather than a luxury in today's business world. TC's SatTracker is an extremely compact, single unit, low data rate satellite terminal, designed to operate over the Inmarsat satellites using the IsatM2M protocol. With an integral GPS receiver, TC's SatTracker provides low cost satellite communications for applications such as asset tracking, telematics and SCADA exception reporting. The SatTracker offers direct interfaces to most application environments without the need for additional external circuitry, significantly reducing system integration costs.



TC's SatTracker solutions and services are used to:

- Reduce insurance premiums
- Drive down operational costs
- Improve operational performance

SatTracker solutions provide many different data levels from basic information such as location of asset, through to alerting organisations about more complex issues such as:

- When a vehicle's engine is switched on/off or a trailer uncoupled from its tractor unit.
- When a vehicle door is opened.
- When a vehicle leaves a depot or a designated location.
- When a vehicle arrives at a destination.
- The location of a container can be pinpointed at any time, either by planned regular up dates or a request for a single position message.
- Geo-fences and tempo-fences can be added features. This allows remote staff to know if a vehicle goes into unauthorised areas or it enters at restricted times.
- For added security, vehicles can be equipped with panic buttons. When activated, a message can be sent alerting of a situation. Action can then be taken to solve the problem.
- Commands can be sent to the remote terminal to set off alarms, activate electronic locks, shut off the fuel facility as well as many other functions.

The SAT-202 is a compact, single piece unit, which provides a low data rate service. It has an integral 50 channel 3D GPS receiver and provides three inputs for sensor monitoring and one low-voltage digital output suitable for driving relays and indicators, all of which are user configurable. The data-logging functions include GPS positions, transmissions and data for more than 6,500 entries.



Specifications

physical

Dimensions 112mm(diam) x 45.75mm(height)
(Does not include mounting threads/extensions)
Weight 350g
Colour UN0332 (Coconut)
Connector 12 way plug. Bulgin 400 Series Buccaneer compatible

environmental

Temperature -40°C to +70°C
Humidity ≤ 95% @ +40°C
Vibration 5-20Hz: 1.92m2s-3 random noise
20-500Hz: -3dB octave random noise
Shock (survival) Half sine 6ms, 300ms-2
Ingress Protection Rating IP66 (when interface connector appropriately mated)

frequency range

Transmit 1626.5 MHz to 1660.5 MHz
Receive 1525.0 MHz to 1559.0 MHz
GPS 1575.42 ± 1.0 MHz

elevation angle range

0° to 90°

transmitter

EIRP 0 - 9 dBW
Modulation 2 level FSK, 256Hz tone spacing
Tx burst duration 8s (Global Beam)
User data rate ~10 bits per second (Global beam)
Message length (standard burst) Up to 84 bits per burst
Message length (double burst up to 170 bits)

receiver

G/T ≥ -25dB/K at EL = 30°
Modulation 32-ary FSK, 20Hz tone spacing
User data rate ~36 bits per second
Message length Up to 800 bits
Message latency <60s

GPS

Channels 50
Time To First Fix (Typical)
Cold start 29s
Hot start <1s (GPS was off for less than 2 hours)
Accuracy (SA Off)
Position (CEP, 2D) <2.5m (Typical)
Altitude maximum 12000m
Dynamic capability
Velocity maximum 310m/s
Acceleration ≤ 4g
Maximum update rate 1s

control & monitoring

Interface Asynchronous serial RS232
Baud rate 4800 or 9600 bps
Parity/data bits/stop bits N,8,1

data interfaces

3 x Inputs Individually configurable as:
Individually configurable as:

- High voltage digital input (15-32V maximum) with falling edge interrupt capability
- Switch input (internal pull up used with external switch to ground)

- Digital input (0-15V maximum) with falling edge interrupt capability
- Analog input (12 bit ADC, 0 to 2.5V)
- Digital output (3.3V, 330uA typical)

1 x Open drain output (250mA max sink current)

power consumption (typical@12V)

Sleep 0.75mW
Receive (incl. GPS) 1W
Slotted receive 50m W (Effective continuous receive power)
Transmit 6W

power supply voltage

9.6V to 32V 'smoothed' DC

functional

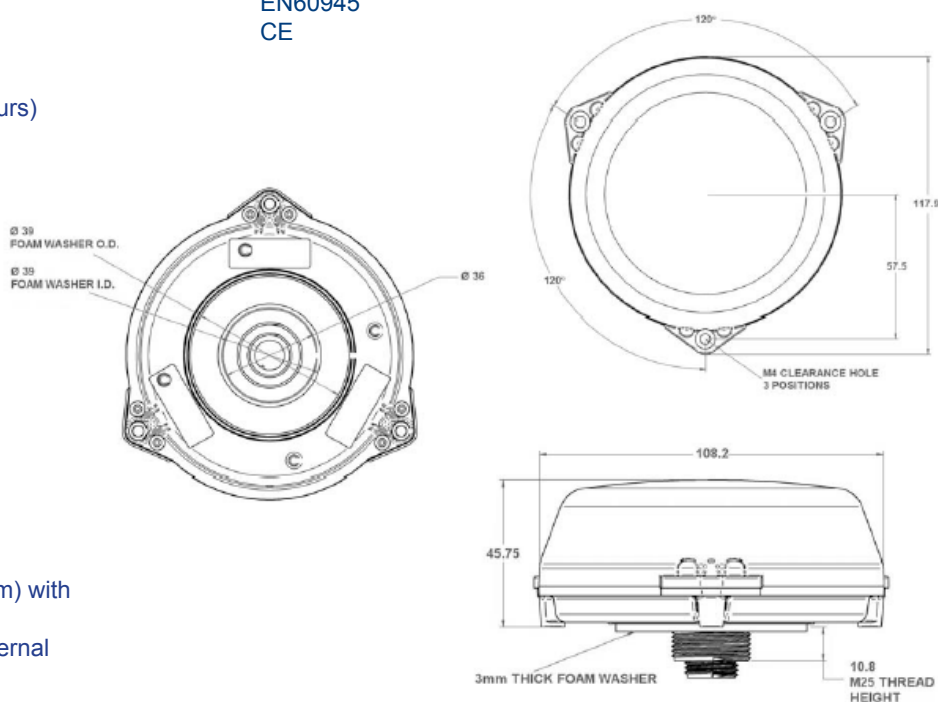
Enhanced scripting 64 operations
32 timers
32 alarms
Geofencing Complex
Point - radius
Configurable return burst data scrambling
Selectable NMEA interface protocol for connection to third party GPS devices/applications

IsatM2M specific

Message latencies (typical) Poll/response - 1 minute
Time to first transmission - 45 seconds
Forward message delivery - 45 seconds
Return message delivery - 20 seconds
Auto adjustment of return burst data rate to match quality of satellite link
Double burst messaging (IsatM2M)
Return message of up to 170 user bits (satellite link quality same as normal burst)

certification

Inmarsat-D Type Approved (IsatM2M mode)
FCC Compliant
EN60945
CE



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