

# Telic

## Telematik & Telemetrie

The **new** Picotrack tracking device

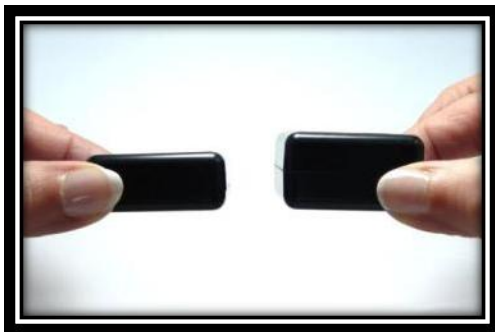
Features and benefits,  
Applications

Differences to the previous version



## Differences between old and new Picotrack

- 5 mm flatter
- Faster first fix in difficult environment
- More sensitive inhouse tracking
- Lower power consumption and extended battery life time
- More robust enclosure



### Table of content

- Unique selling Propositions
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- Typical application for Picotrack
- Battery life time examples
- Overview of typical end customer solution
- Business model with Telic and System integrator
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- Special versions of Picotrack for projects
- Summary
- Technical information



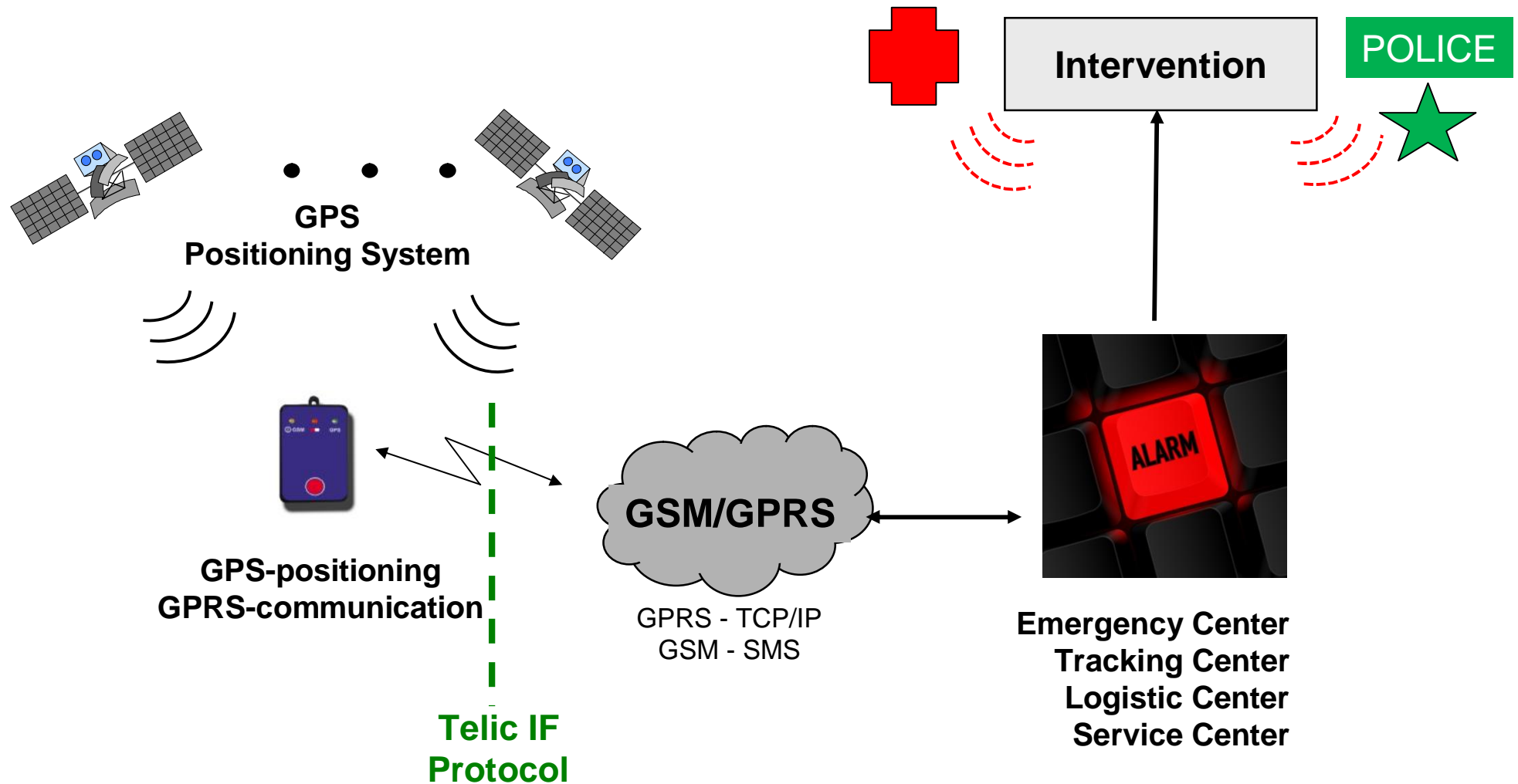
## Unique selling propositions (USPs)

- The smallest tracking unit in its class (57x38x15mm)
- Inhouse tracking based on GPS
- Best GPS-performance
- Made in Germany
- Customized versions available



# Picotrack system integration

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## Flatter than ever

- 5 mm flatter as the previous version (15mm compared to 20mm)

## Benefits:

- More comfortable to carry, e.g. in a trouser pocket
- Less obtrusive
- Easier to hide



## GPS based inhouse tracking

- Tracking even:
  - Within buildings
  - Without direct access to the sky
- Picotrack can even evaluate:
  - Weak GPS signals
  - Reflected GPS signals

## Benefits:

- Tracking is more reliable with Picotrack
- Activation of Panic alarms where it was not possible before
- Tracking of people even within buildings, e.g.: after hijacking

Big Antenna with  
25 x 25 mm

Minimum dBm values  
for operation

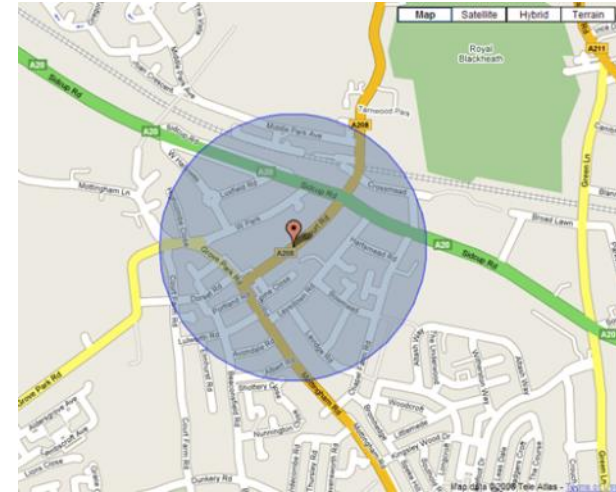
- 148dBm for cold start
- 165 dBm for operation



## Tracking options:

- Positioning with time stamp
- Distance tracking (e.g. each 500m)\*
- Time based tracking (e.g. every 1min)\*
- Direction changes  
(e.g. direction change  $>30^\circ$  at min. speed of 8km/h)\*
- Power on/ off (e.g. for Ignition on/off)
- Motion detection
- Milage counter by GPS

\*Or a combination of each (e.g. every 500m but at least every 10 mins)

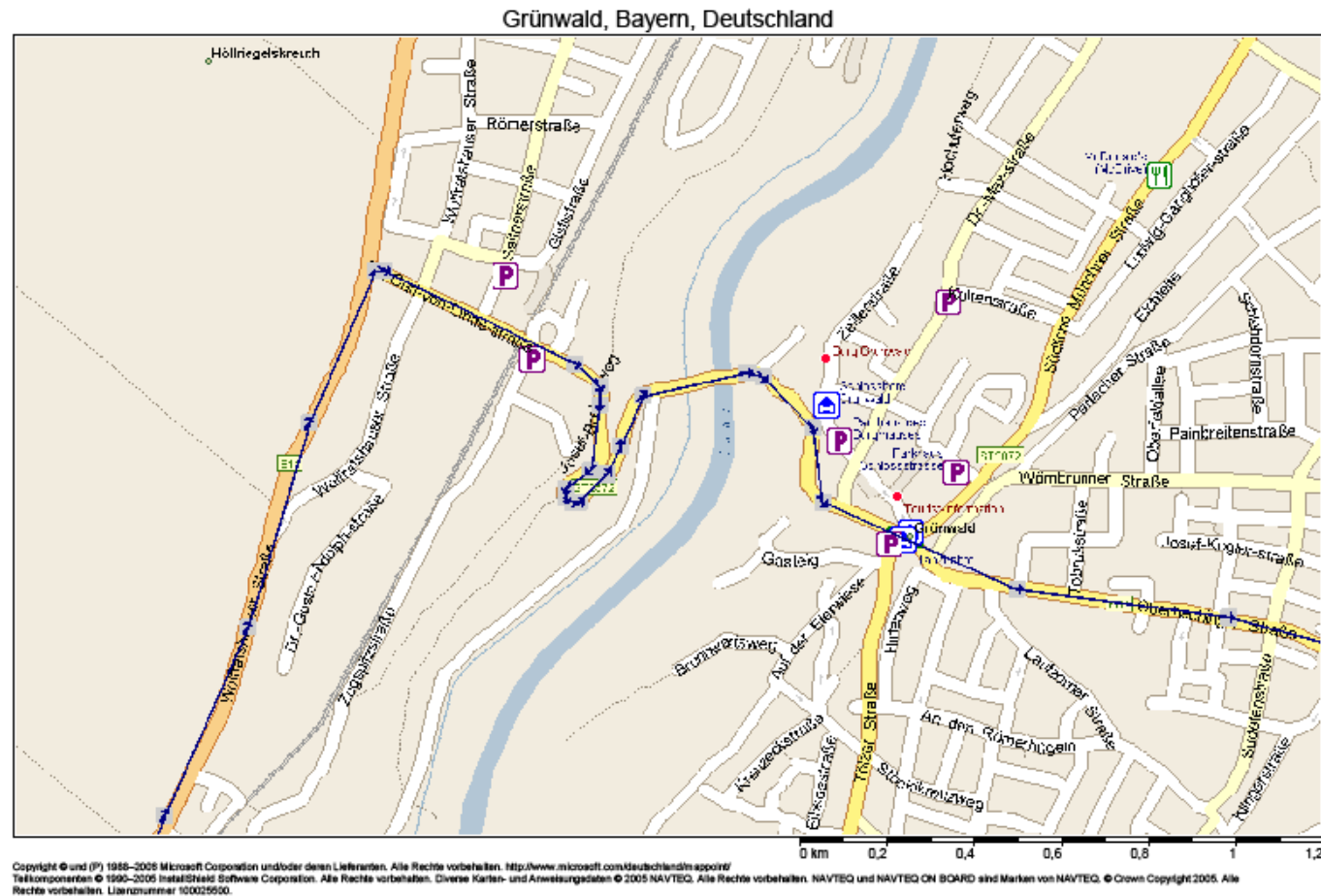


# Tracking examples

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## Configuration:

- Every 500m
- 30° @ >8km/h



# Log Book example



Ignition on/off	Date / Time	Address	Hight	Duration	Distance	Actual Speed	Average Speed
On	Freitag, 11. April 2008 13:08:02	82041/Oberhaching/Raiffeisenallee 14	583 m				
On	13:09:04	82041/Oberhaching/M11	580 m	00:01:02	0,65 km	86 km/h	38 km/h
On	13:14:54	82031/Grünwald/ST2072 35	593 m	00:00:30	0,48 km	63 km/h	58 km/h
On	13:16:21	86561/München (Gemfr. Gebiet)/ST2072	614 m	00:00:20	0,51 km	87 km/h	91 km/h
Off	13:17:54	82064/Straßlach-Dingharting/Kirchweg	625 m	00:00:10	0,02 km	0 km/h	6 km/h
Total Route :				00:07:46	8,14 km	max.: 98 km/h	Average: 63 km/h
On	14:05:27	82064/Straßlach-Dingharting/Kirchweg	625 m				
On	14:11:23	82031/Grünwald/M11	581 m	00:00:41	0,50 km	57 km/h	43 km/h
On	14:11:48	86561/München (Gemfr. Gebiet)/M11	590 m	00:00:25	0,49 km	82 km/h	70 km/h
Off	14:14:52	82041/Oberhaching/Raiffeisenallee 14	583 m	00:00:26	0,06 km	0 km/h	8 km/h
Total Route :				00:08:15	8,46 km	max.: 97 km/h	Average: 62 km/h
Total- :				00:16:01	16,60 km	max.: 98 km/h	Average: 62 km/h
Average / Route:				00:08:00	8,30 km	49 km/h	Average: 62 km/h
Total trip:				00:16:01	16,60 km	max.: 98 km/h	Average: 62 km/h

# Main features

## Faster first fix:

- ➔ After switch-on the device Picotrack permanently tries to make the connection to the satellite



## Benefits:

- ➔ Faster first fix in difficult environment
  - When you start your car in a car park
  - Within city centers
  - Distances with numerous curves and roundabouts



Target group: AVL

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## Automated Vehicle Location (AVL)

- Positioning with time stamp
- Theft protection
- Ignition on/off detection
- Integrated history log for off-line operation
- Easy installation in any car or truck



## Target group „Personal Tracking“

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### Children, VIP's, elderly people and animals

- Precise positioning at any time
- Alarm button for emergency
- Easy to carry, (low dimensions and weight)
- Supersensitive GPS (works also „upside down“ and inhouse“ close to windows)
- Makes it easy to find a person in case of an emergency



## Target group „Security Tracking“

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### For Vehicles, Valuable Goods, rental machines

- Precise positioning at any time
- Theft protection
- Easy to carry, (low dimensions and weight)
- Unobtrusive installation
- Additional GSM cell ID information possible
- Supersensitive GPS (works also „upside down“ and „inhouse“ close to windows)



## Target group „Asset Tracking“

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### Tracking of uncrewed vehicles and goods

- Precise positioning
- Theft protection
- Robust IP-approved housings
- Long stand-by times up to several years
- Device wakes up as soon as vehicle starts to move
- Low maintenance effort



## Target group „Outdoor Event Tracking“

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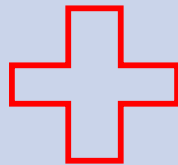
### Tracking at Outdoor events like Marathon , classic car races, Paragliding, Cross country skiing

- Precise positioning at any time
- Theft protection for classic cars
- Alarm button for emergency
- Low weights and easy to carry
- Profile for sport event tracking configurable
- Reliable tracking – even under bad conditions



Co-operation with telematic service providers

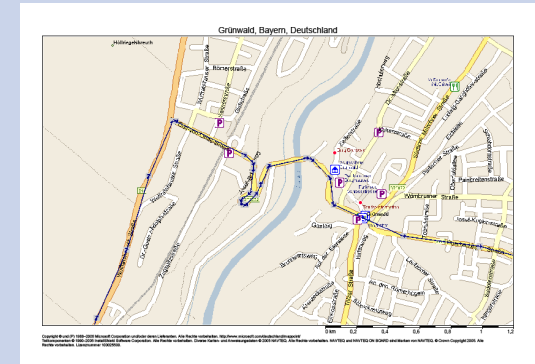
**Picotrack**



**Software from  
Telic Partner**



**End customer  
Solution**



## Battery life time examples

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**Fast charging option via USB connector (2,5hrs to 95%)**

### **Battery life time examples for Picotrack: 660mAh**

Pre-requirement is a very good GPS connection

Full power (sleep mode inactive; GSM low power inactive),  
**15 sec time interval      => approx. 8h**

Full power (sleep mode inactive; GSM low power active),  
**5 min time interval      => approx. 14h**

GSM sleep timer  
**5h time interval      => approx. 1 months**

**Permanent sleep      => approx. 6 months**

Picotrack  
Power  
provides  
double  
battery life  
time !



## Configurable roaming

### Description:

- A list with roaming partners can be configured with priorities

### Benefit:

- Safe money by choosing optimized network operators
- If no operator is available, data will be stored and uploaded later
- GPRS parameters can be pre configured depending on the SIM card
  - Reduces configuration errors like APN codes

		SIM List			
		26201	26202	26203	26207
Provider List	20404	1	0	0	0
	20408	0	0	1	0
	20412	0	0	0	0
	20416	2	0	2	1
	26001	3	3	5	0
	26002	0	1	0	0
	26003	4	2	3	2
	21401	0	0	4	0
	21403	5	0	6	0
	21407	6	0	0	3

# Main benefits and application

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## Feature:

- Geofencing

## Benefits:

- Sends message as soon as vehicle enters or exits a defined area
- Charge customers for specific routes or activity areas
- Tracking can be deactivated in a specific area, eg. vehicle depot
- Increase / Decrease of tracking in specific areas or abroad

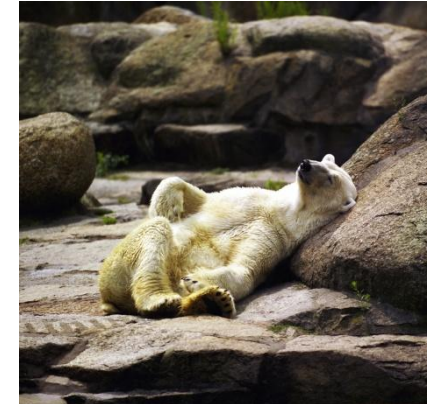
## Application:

- Theft protection
- Supervision of activity area for rental cars or machines
- Recognize if checkpoints are reached on time for time critical transports



## **Sleep Mode by time period:**

- After the last periodical event Picotrack falls asleep
  - Time frame for sleep mode is programmable
  - Device wakes up before the next periodical event is due



## **Sleep Mode with Motion Sensor:**

- Picotrack switches off when it has not moved for a specific time
  - Time frame for sleep mode is programmable
  - Wake up device as soon as motion detector notices a motion

**Advantage:** => Safe energy and enlarge battery life time

## **DOTA – Download over the Air:**

- Update Picotrack with new features / function from anywhere
- Easy and fast download via FTP, no extra software necessary
- LEDs displays the update process
- Command to check the successful update

## **Advantage:**

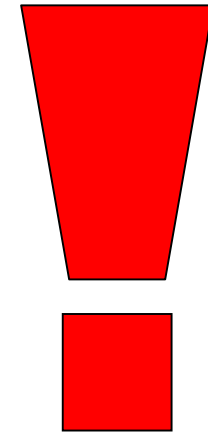
- Automatic update without touching the device
- Saving time money and effort



## Watchdog Features:

3-Level Watchdog system on ARM processor

- In case of GSM connectivity issues, reset of GSM without stopping GPS
- In case of GPS connectivity issues, reset of GPS without stopping GSM
- Up to a complete power cycle



## Feature:

- Made in Germany

## Benefit:

- High quality level of products
- Low distance between headquarters and manufacturing plant
- Fast intervention into manufacturing process possible if necessary
- Lower lead times
- More flexibility in terms of project specific variants

## Applications:

- Application with quality and stability approach



# Special versions of Picotrack

Special versions of Picotrack:

- Only for projects
- Minimum quantity at least 100 pc
- Price on request



## **Solar powered Picotrack „Endurance“**

- For applications without separate power supply

### Benefits:

- High tracking rate although there is no extra power supply

### Applications:

- Containers
- Uncrewed vehicles



## Special versions of Picotrack

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### **Picotrack Power:**

- For application with long stand-by times

### Benefit:

- Higher tracking rate although there is no extra power supply

### Application:

- All application as for the standard Picotrack that require a higher battery capacity



## Special versions of Picotrack

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### **Picotrack Flex:**

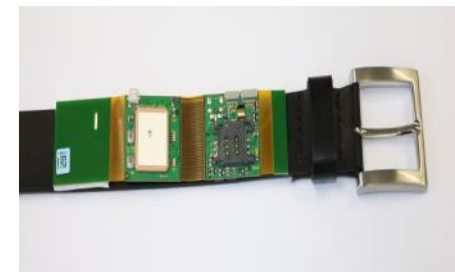
- For unobtrusive positioning

#### Benefit:

- It's small and flexible
- Almost impossible to find for thieves and hijackers

#### Applications:

- Purses
- Belts
- Money bundles



## Special versions of Picotrack

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### **Picotrack „IP69K endurance“**

- For installation in harsh environment
- For installation with long time frames with external power supply

### Benefits:

- Long battery back-up time
- Protected against spread water

### Applications:

- Containers
- Construction machines



## Special version of Picotrack

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### **Picotrack IP65 with magnet**

- For unobtrusive installation

#### Benefit:

- Fast installation (plug and play)
- Unobtrusive installation if necessary

#### Applications:

- When you need the tracking unit for more than one vehicle or device
- Detectives to observe cars
- Police for tracing

*007<sup>®</sup>*



## Summary

- Picotrack is the smallest tracking unit in the world
- Can be used to track vehicles, people as well as valuable goods
- Inhouse tracking
- Very fast first fix
- Sleep mode option guarantees a long battery life time
- Several special versions available for projects
- Made in Germany

## Picotrack features

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- **Compact** matchbox size (59x37x15mm)
- **Weight** ca. 35 Grams
- **Localisation** GPS-tracking (22/66 channels)
  
- **Communication** via GPRS (TCP/IP connection)
- **Configuration** via SMS, GPRS or locally at USB-connector (RS232)
- **Charging** Via USB-port of laptop, or power supply
- **maintenance** remote configuration or SW-download
- **fully integrated:**
  - SIM-card
  - LiPol battery (660mAh)
  - GSM/GPS-Antenna
  - motion sensor
  - position memory



## Picotrack technology

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### Designed to work! – based on latest technology

- **GPS:** MediaTek (22 tracking / 66 acquisition channel receiver)
- **GSM:** latest QUAD band GPRS module from Telit
- **Antennas:** GPS-patch antenna; customised GSM-antenna
- **Battery:** Rechargeable Lithium Polimer battery
- **Prozessor:** Low power Cortex-M3-processor from NXP

