

GPS Systems

<u>Customer</u>	<u>Your Requirements</u>	standard	Sample:	Sample:	Sample:
		OEM Logger	ZHAW Logger	Mini Logger	Tracker Box
Application		any	any	any	any
Components					
GPS receiver		u-blox LEA-4_ or LEA-5_	u-blox AMY-5M	u-blox LEA-4_ or LEA-5_	u-blox LEA-4_ or LEA-5_
Processor		AT91SAM7S256	AT91SAM7S256	ATMEGA 128	none (TELIT)
Antenna					
internal		ceramic Patch 25x25x2mm	ceramic Patch 25x25x2mm	fractal	ceramic Patch 25x25x2mm
External antenna		opt.	opt.		
External antenna type (activ/passive)		passive	active/passive		
Logging					
Frequency of position logs		0.5s - several days	0.5s - several days	0.5s - several days	0.5s - several days
Delay for start of logging		-	1s to several days in 1s steps	-	-
GPS Data to be recorded:					
Longitude		X	X	X	X
Latitude		X	X	X	X
Altitude		X	X	X	X
Date & Time (in seconds)		X	X	X	X
Signal Quality		X	X	X	X
Number of Satellites		X	X	X	X
Accuracy of position signal (Dillution)		X	X	X	X
Geoide		X	X	X	X
other (specify)					
Other data stored					
Sensors		opt	opt	-	--
Communication information					
other					
Data stored on PC					
as .csv table		X	X	X	
as .kml Google Earth		X	X	X	
other format (specify)					customer specific
Communication					
Communication interface					
Zigbee					
Bluetooth					
WLAN					
GSM					TELIT GE864-PY
other custom made (specify)					
USB		max 250 kB/s	max 250 kB/s	max 3 kB/s	max 250 kB/s
Communication range [m] or world wide					GSM Range
Voice communication					
constant					
Emergency only					X
Number of data communications / day					SLA 900/1800
Interval of Data downloads through USB [d]					Card holder 1440
Power					
Minimum run time		15 hrs	50 hrs (with movement detection)	5 hrs	36 hrs
Power source					
Internal battery rechargeable		700 mAh (other opt)	880 - 2640 mAh (exchangeable)	230 mAh (other opt)	3'800 mAh
Charge through		USB	USB	USB	5V Charger
Internal battery no rechargeable		opt. 1-5V			
Car battery 12V					
Car battery 24V					
Wall power adapter (230V AC)					
other (specify)					
Electronics					
size LxWxD in mm					
w/o battery		58 x 45 x 7.5	65 x 45 x 7.5	56 x 30 x 5.8	110 x 61 x 17
w battery		58 x 45 x 11	65 x 45 x 18	56 x 30 x 9.5	110 x 61 x 19
weight					
w/o battery		16g	18g	9g	49g
w battery		29g	72g (large battery)	13.5g	121 g

Enclosure	standard 64/74 x 49 x 17 w/wo key ring	standard 71 x 50/64 x 28 w/wo belt strap	standard 59 x 31 x 12	standard 115 x 70 x 25
Max size LxWxD in mm				
Max weight (system)	50g	122g (large battery)	19g	179g
Housing material				plastic
Destruction proove				
Lock				
Housing type				
Industrial ("square", functional)	X	X	X	X
Consumer (nice looking)				
Special requirements (specify)		bike holder addable		
Environmental conditions				
Temperature				
Humidity				
Water proof				
Vibration				
Shock				
other (specify)				
Special requirements				
any other (specify)				
Norms to be followed				
Sensors				
ON/Off button	X	X	X	X
Buttons (number of)	2 opt	2 opt		2
Movement detection		X		
Acceleration		opt (3 Axes)		
Gyro		opt (3 Axes)		
Temperature		opt		
Air pressure		opt		
Humidity				
other (specify)	opt (1 digital, 3 analog/digital Inputs)			
Actuators				
Display	opt (Graphical 32x128)	opt (Graphical 32x128)		
Vibration (to inform the user), Alarm (audio - to inform the user), other (specify)				via GSM by pressing button
	opt (4 digital outputs)			
Memory				
Fix Flash Memory [MB]	8MB	4MB		--
~ number of logs (x/y/z, date, time)	320'000	160'000		
Memory Card [MB]	opt			SD-Card
other (specify)				
Commercial				
Planned production volume / annum				200 once
Project run time [years]				
Device target costs (including development cost)				
Estimated batch size				
Most important facts				
Weight	+	+	++	+
Size	+	+	++	+
Runtime	+	++	+	++
Accuracy	+	+	+	+