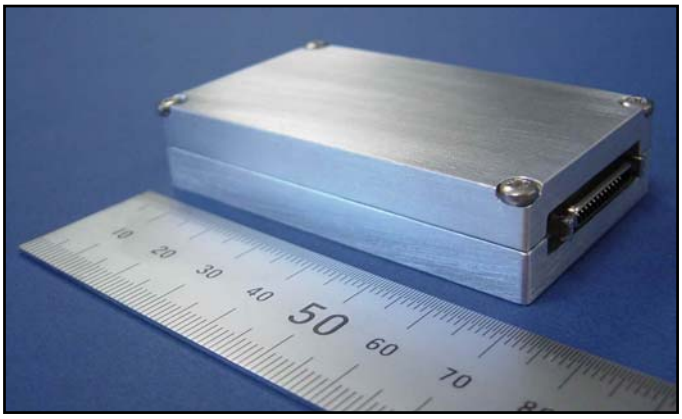
Warp 1.0 Wireless™ Operational Description

The WP0100NS is a compact asset-tracking device which utilizes the GPS satellite system to determine location and the GSM/GPRS mobile Cellular/PCS system for communication. User parameters are configured using a PC ASCII terminal, or remotely by SMS or GPRS. Various reporting modes are supported and the unit has some exceptional features, per below:

- Real-time reporting via GPRS (TCP)
- SMS text mode (either plain text or MPTP format)
- SMS PDU mode – 8 positions per SMS (to reduce running costs)
- Data logging only for download on demand
- Tiny dimensions
- Low power consumption
- Dual band GSM/GPRS modem
- 900/1800 or 900/1900MHz
- SMS and GPRS modes
- A-GPS compatible
- Over-the-air programming
- External sensor inputs and outputs
- On-board power management
- On-board zone alarm function
- Simple user configuration
- Wide DC power input



In full power mode, typical current consumption is only 22mA at 13.8VDC. Faster GPS and reduced processor consumption allow even greater power savings in low power modes of operation. Autonomous battery powered applications (e.g., cargo tracking) will benefit from extended operating durations or smaller, lower-cost battery solutions.

The WP0100NS incorporates the latest GPS technology from FastraX. In addition to the size and power efficiency benefits, many applications will benefit from tracking into marginal areas that were previously beyond typical GPS coverage.

When GSM communications are unavailable, data is logged to non-volatile flash memory for sending when communications resume (or downloading over GPRS upon request). The WP0100NS has sufficient on-board flash memory for storage of 10,000 individual position/time/date/status reports.

The GSM modem is a *WaveCom* dual band device (900/1800 or 850/1900), and is capable of fully automatic international roaming. Application configuration has been greatly simplified. The user simply selects the desired operating mode, depending on the required battery life:

Mode	GPS Status	GSM/GPRS Status	Average power consumption
Always on	Continuous tracking	Continuously online	200mW
Powersave	Fix every minute	Continuously online	105mW
Micropower	Fix every 5 minutes	Continuously online	80mW
Picopower	GPS returns a fix every hour	Powers up every hour	10mW

WARP 1.0 Wireless™ has 4 opto-isolated digital inputs for monitoring of external data (e.g., ignition ON/OFF) and 4 switchable outputs for control of external devices (drive up to 0.5A at user-defined voltage). Two analog inputs are available to monitor levels (temperature, pressure, etc.), one of which is assigned to monitor the input supply voltage by default.

TECHNICAL INFORMATION

Version 1.1 1/05

Dimensions:	82.5 x 45 x 15 mm (3.2” x 1.8” x 0.6”)	
Weight:	80g / 2.82 oz.	
E-GSM/GPRS Modem:	2 Watts EGSM (GSM900 Class 4) 1 Watt GSM1800 (DCS1800 Class 1) GPRS class 10 Audio support (with echo-cancellation and noise reduction)	
GSM up-link (TX):		
Frequency	880 – 915 MHz, 1710 - 1785 MHz 824 – 849 MHz, 1850 – 1910 MHz	WP0100NSE WP0100NS
GSM down-link (RX):		
Frequency	925 - 960 MHz, 1805 - 1880 MHz 869 – 894 MHz, 1930 - 1990 MHz	WP0100NSE WP0100NS

GPS Receiver:	
L1 receiver:	12 channels
3D position error (95%)	2m
Receiver sensitivity (tracking):	-152dBm
TTFF: Cold start	44 sec
Hot start	9 sec
Quick start	5 sec
Re-acquisition	12 sec (after 5-minute signal blackout)
Input voltage:	6 – 30 volts DC
Data transfer modes:	SMS Text SMS PDU (buffered with up to 8 positions per SMS) GPRS (TCP)
Inputs/outputs:	4 digital inputs (opto-coupled) 4 digital outputs (max. 0.5A @ user-defined voltage < 15V) 1 ADC input (10-bit resolution) Microphone and speaker (for voice features) 2 RS232 serial ports (GPS and GSM)
Average current consumption:	
@ 13.8VDC:	
GPS + GSM ON	25 mA
GSM ON, GPS OFF	7 mA
GPS + GSM OFF	2 mA
Temperature	
Operating	-20 to +55□C
Storage	-30 to +85□C
Connectors	
GPS	SSMB
GSM	MCX
Programming and I/O	JAE TX20A
Power	AMP 103653-1, 104505-1 (mating parts 104257-1, 166722-1)
Model Designators:	
WP010NSE	900/1800MHz
WP010NS	850/1900MHz
Product Approvals:	CE, EC/95/54 and EC/97/24 (e11*72/245*95/54*2303*00)