

# ANS | 510-L

LAND INERTIAL NAVIGATION SYSTEM

#Navigation



1 MILS POINTING ACCURACY  
MIL-PRF-71185 PERFORMANCE SPECIFICATION  
EMBEDDED GPS



**aselsan**

# ANS | 510-L

## LAND INERTIAL NAVIGATION SYSTEM

ANS 510-L is an integrated position and attitude determination system for land vehicles. ANS 510-L supplies linear acceleration, linear and angular velocity, position, attitude to the host vehicle systems continuously.

ANS 510-L has an open architecture and hardware/software flexible unit which can be adapted to various land platforms. ANS 510-L consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS Receiver (EGR) and chassis. ANS 510-L is capable of using 12 channel P(Y) coded SAASM GPS receiver or commercial SPS GPS receiver as embedded GPS receiver. ANS 510-L is also capable of using external GPS receiver.

The tightly coupled, embedded INS/GPS and integrated odometer mechanization of ANS 510-L provides improved performance for land platforms.

ANS 510-L provides a hybrid (inertial+GPS+Odometer) navigation solution, inertial only navigation solution and a GPS only navigation solution simultaneously. ANS 510-L has the capability of providing high performance position and attitude with odometer update in case of lack of GPS signal.

### General Specifications

- Internal GPS (SPS/SAASM) Receiver
- Hybrid, Free Inertial, GPS Only Navigation Solution
- Odometer Update
- UTM or Geographical Position Calculation
- True, Grid or Magnetic Heading Calculation
- Position Update
- Start-Up BIT, Periodic BIT
- Field Programmable Software

### System Operational Modes

- Initialization
- Alignment
  - Gyro Compass (GC) Alignment
  - In Motion Alignment with Internal/External GPS (SPS/SAASM)
  - Stored Heading Alignment
- Navigation
  - Hybrid Navigation (HNAV)
  - Inertial Navigation (INAV)
- Initiated Built In Test (IBIT)



### System Interfaces

- MIL-STD-1275D Electrical Power Interface
- High speed RS422 Serial Test Interface
- RS422 Serial User Interface
- Spare RS422 Serial Interfaces
- External GPS Interface (ICD-GPS-153)
- Have Quick and 1PPS Interface (ICD-GPS-060)
- KYK-13 Interface
- Active and Passive RF Antenna Interface
- Discrete Interfaces
- KYK-13 Interface
- Active and Passive RF Antenna Interface
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### Navigation Performance (in compliance with MIL-PRF-71185)

	Horizontal Position (CEP)	Vertical Position (PE)
Inertial+ODO+GPS (PPS)	10 m	10 m
Inertial + ODOmeter (with ZUPT every 60 minutes)	0.0025 x (Distance travelled > 4 km)	0.00067 x (Distance travelled > 10 km)
	10 m (Distance travelled < 4 km)	6.7 m (Distance travelled < 10 km)
Free Inertial (with ZUPT every 4 minutes)	18 m	10 m
Azimuth	1 mils RMS(<0.2 mils RMS, with internal GPS)*	
Roll, Pitch	0.5 mils RMS(<0.2 mils RMS, with internal GPS)*	
* When adequate maneuvers are performed with internal GPS		

### Alignment Modes and Durations

Ground Alignment Mode	GPS (SAASM/SPS) In-Motion Alignment Mode	Stored Heading Alignment Mode
15 min.	10 min.	30 sec.

### Environmental Conditions

- MIL-STD-810

### Electromagnetic Environmental Effects

- MIL-STD-461 / DO-160E

### Dimensions and Weight

- ~ 26cm x 19cm x 15cm (including connectors)
- Less than 6.2 kg with GPS receiver installed

Specifications are subject to change without any notice. | All tolerances are within ±10%.