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PROTECTED LAND NAVIGATION

LanNAV™ - ADVANCED | LanNAV™- EMBEDDED | LanNAV™ - TARGETING

PROTECTING YOUR POSITION

A PROVEN LEADER IN RUGGED AND COMPACT NAVIGATION SYSTEMS FOR THE NETWORKED BATTLEFIELD

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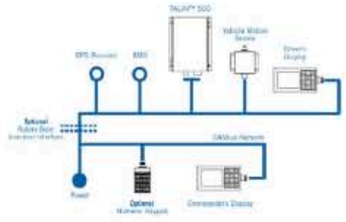
ENHANCING THE COMMON OPERATING PICTURE THROUGH PROTECTED NAVIGATION SOLUTIONS

LanNAV™ - ADVANCED

This highly accurate and protected MOTS navigation solution utilises Honeywell's TALIN™500 Inertial Navigation Unit with rugged ring laser gyroscopes to deliver unparalleled capability. In combination with Honeywell's Vehicle Motion Sensor, LanNAV™ – Advanced delivers proven protection from GPS jamming, spoofing and terrain masking.

A compact Human Machine Interface is provided by Tectonica's CDU-NAV™ rugged military navigation display. Using structured code running on a real time operating system the CDU-NAV™ provides an easy growth path to meet emerging operational requirements. The CDU-NAV™ is designed and certified to operate in the harsh environments encountered by wheeled and tracked military vehicles.

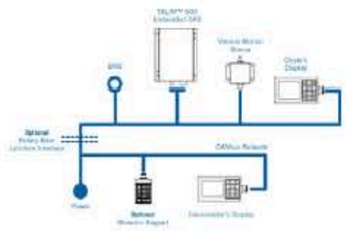
LanNAV™ – Advanced uses a Military CANbus architecture for system data communications. With simple wiring, it eliminates bulky control and interface modules and seamlessly integrates with modern Battle Management Systems.



LanNAV™- EMBEDDED

The increasing need for space in modern armoured fighting vehicles demands compact equipment. The LanNAV™ - Embedded is the smallest MOTS tactical navigation system available. Requiring only two sensor systems and CDU-NAV™ displays, LanNAV™ – Embedded provides the driver and commander with unparalleled accuracy and protection when GPS can't be relied on.

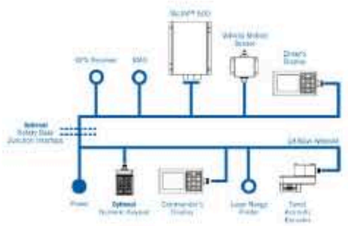
Incorporating the latest TALIN™500 Inertial Navigation Unit with embedded GPS receiver, this system delivers a complete navigation solution with reduced footprint and complexity. Unlike other systems the LanNAV™ – Embedded requires only the displays, inertial sensor and VMS to provide highly accurate navigation.



LanNAV™ - TARGETING

To ensure commanders can accurately locate, communicate and track targets on the battlefield LanNAV™ – Targeting incorporates a fully integrated Turret Azimuth Encoder (TAE) and Laser Range Finder (LRF).

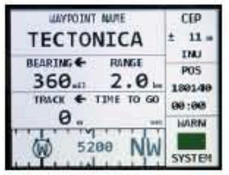
Advanced target management software means that commanders can identify the enemy's position with a high degree of accuracy and crews know they can rapidly engage targets with confidence. The system builds on the unparalleled accuracy, stability and reliability afforded by Honeywell's TALIN™500 Inertial Navigation Unit to inform and protect the combined arms force. This fully integrated and proven MOTS system delivers a technological edge to the warfighter.



NAVIGATION DISPLAY - CDU-NAV™

The integration of equipment in modern fighting vehicles means that space is at a premium. The CDU-NAV™ is a compact Control and Display Unit that has been purposely designed and certified to operate in the harsh environment of wheeled and tracked fighting vehicles.

- Compact and light weight
- Intuitive operator interface
- Ruggedised for military tracked vehicles
- Interchangeable between the Commander and Driver positions
- Colour, multi-lingual QVGA LCD with blackout mode
- NVG compatible display
- Compatible with military and commercial GPS systems
- Compatible with Honeywell® TALIN™ inertial navigation systems
- MIL-STD-461E and MIL-STD-810F compliant
- Optional data entry keypad for fast text entry

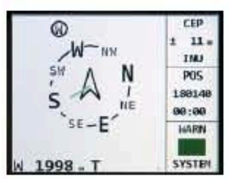


PROTECTED NAVIGATION SOFTWARE - AcuNAV™

Tectonica's protected navigation software AcuNAV™ provides continuous situational awareness information to vehicle commanders and drivers in a simple, easy to use format. The flexible user interface enables crews to input mission profiles and easily navigate to waypoints. Seamless navigational information is provided regardless of GPS signal reliability which allows the crew to focus on their mission, confident of their position.

AcuNAV™ Features

- Easy entry of waypoints and target locations
- Simple "steer-to" display for driver navigation
- User selectable MGRS or Geodetic formats
- GPS and inertial integration for a seamless navigation view
- Compass rose provides quick vehicle heading reference guide
- Display alerts commander when GPS signal is not available or is being spoofed
- Simple situational awareness screen actively tracks waypoints and targets
- Turret azimuth is displayed to provide increased protection
- Compass tape enables rapid engagement of designated targets
- Silent watch operations supported with a black out mode
- System memory rapidly cleared of navigation data for enhanced security
- Software supports multilingual applications



OPTIONAL NUMERIC KEY PAD - NKP-NAVTM™

A rugged numeric keypad, NKP-NAV™ has been designed as an accessory for Tectonica's family of Protected Land Navigation Systems. It provides operators with an affordable and certified user input device for rapid entry of navigation data.

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LanNAV™ - PRODUCT FAMILY

FEATURE	ADVANCED	EMBEDDED	TARGETING
GPS	Not included	Optional	TALIN™500
VMS	✓	✓	✓
CDU-NAV™	1-2 Units	1-2 Units	1-2 Units
TAE	Not included	Not included	✓
LRF	Not included	Not included	✓
ACCURACY	within 1% distance travelled	within 1% distance travelled	within 1% distance travelled
BMS INTERFACE	Turret Orientation	Not included	Not included
FAR TARGET LOCATION	Not included	Not included	✓
ACUNAV™ SOFTWARE	✓	✓	✓
NKP-NAV™	Optional	Optional	Optional

LanNAV™ - GENERAL SPECIFICATIONS

OPERATIONAL

INITIALISATION

System Start up	30 seconds
Alignment	300 seconds (< ±65° N/S magnetic latitude)
Alignment	700 seconds (> ±65° N/S magnetic latitude)

ACCURACY

System	< 1% distance travelled
Turret	± 5°

LOCATION

Reference System	MGRS or Geodetic (user selectable)
North Reference	rue, Magnetic or Grid (user selectable)
Altitude Reference	Mean Sea Level or WRT Datum
Datum Reference	120 different datum's (user selectable)

DISPLAY RESOLUTION

Position	1 meter or 0.01° (user selectable)
Azimuth, Bearing and Heading	1 mil

DIGITAL OUTPUT

Position	1 meter or 0.01° (user selectable)
Azimuth, Bearing and Heading	1 mil
Dip Angle	±90° N/S magnetic latitude

TILT ANGLE

Roll Angle	± 180°
Pitch Angle	± 90°
Azimuth Angle	± 180°
Input voltage	I+15 to +36 VDC (MIL-STD-1275E)

POWER CONSUMPTION

Advanced	24.5 Watts – Includes DAGR GPS, does not include BMS
Embedded	28.5 Watts – Does not include BMS
Targeting	33.5 Watts – Includes DAGR GPS, does not include BMS

INPUT / OUTPUT

CAN	Conforms to CAN 2.0B
RS232	Conforms to RS232 EIA standard
USB	Conforms with USB 1.1 standard
Ethernet	Supports Ethernet interface

MESSAGE RATE

Navigation	Navigation 1 Hz
Track	Track 1 Hz

WEIGHT

Advanced	7.3 kg – Without cables, brackets, GPS receiver
Embedded	7.8 kg – Without cables, brackets, GPS receiver
Targeting	9.2 kg – Without cables, brackets, GPS receiver

ENVIRONMENTAL

Altitude	25,000 meters
Environment Rain	DEF-STAN 00-35 CL27), Dust/Sand (CL25), Salt Fog (CN2), Fluid Contamination (CN4) and Low Pressure (CL21)
Temperature	DEF-STAN 00-35 -10°C to +70°C
Shock	DEF-STAN 00-35, M3 Tracked Vehicles DEF-STAN 00-35, M4, Drop, Topple and Roll
Vibration	DEF-STAN 00-35, M1, Level 1
EMI/EMC	MIL-STD-461E
Reliability	Calculated MTBF in excess of 3,900 hours operating between -10° C to +70° C for ground mobile applications