



Navigation and Target Acquisition System (NTAS)

The Navigation & Target Acquisition System (NTAS) supports observation crews for artillery and other remote weapons fire support.

The key elements of the system are the KN-4053TA MILNAV® Vehicle Reference Unit (VRU), the Control Display Unit (CDU), the Vehicle Motion Sensor (VMS), the Laser Range Finder (LRF), and the GPS receiver. The LRF or the GPS can be either customer-furnished or supplied by Kearfott.

Target position is calculated in three dimensions and is a result of the computation of the LRF sighting information and the MILNAV® (vehicle position, heading, pitch angle to target).

The MILNAV® VRU performs all navigation, attitude, pointing and north finding functions with heading accuracy to 1 mil RMS and attitude accuracy to better than 0.5 mil RMS. The VMS provides forward velocity aiding for optimal system performance. The GPS input channel is provided to achieve enhanced performance and to provide for initialization and alignment on the move. In addition to the normal alignment, and alignment on the move, the system has the capability of stored heading alignment and extended alignments as well as outputs using a variety of spheroid zones and extended zone coordinate systems.

The CDU is a rugged color liquid crystal daylight readable man-machine interface device. This CDU displays the menus required after initialization and is the readout device for vehicle navigation, attitude and driver information, as well as selected target location data.

Information typically displayed includes:

- Azimuth to target
- Elevation to target
- Range to target
- Target Easting
- Target Northing
- Target Altitude
- Vehicle heading
- Distance to go
- Steer to angle
- Present position, Northing, Easting and Altitude
- Absolute and Relative position
- Direction relative to North

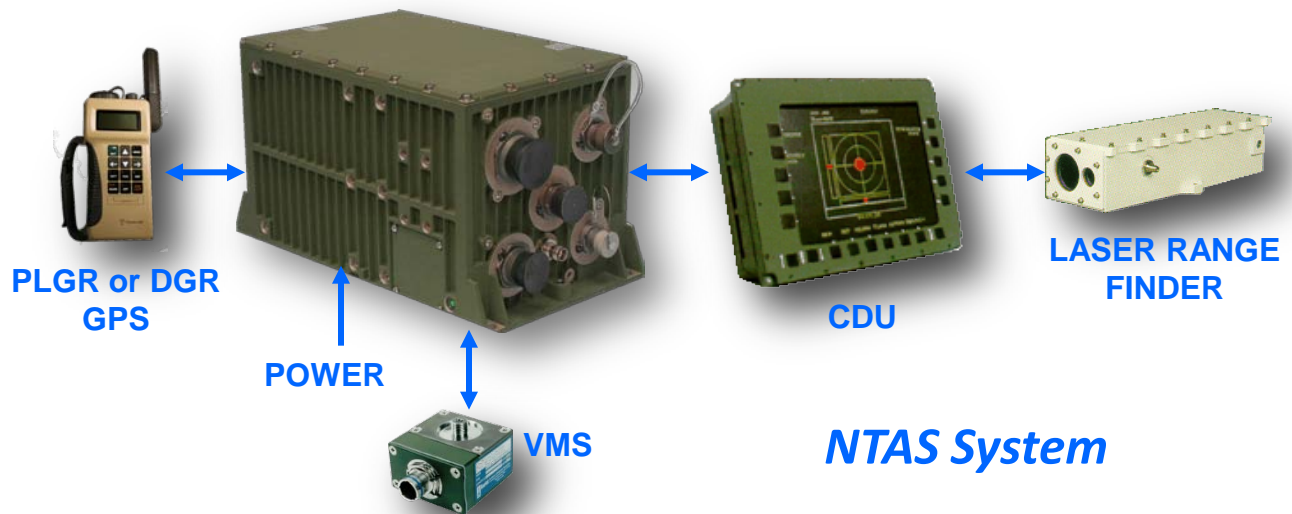
The Laser Range Finder (LRF) provides “range-to-target” measurement information to the CDU for processing. This data formatted on the RS-232 or RS-422 interface is then used to display three dimensional target location.

KN-4053TA NTAS System Characteristics

The NTAS system can be integrated into a variety of vehicles and/or systems for observation and target sighting. All system elements are mounted within the Cupola (except the VMS). The VRU and the LRF are mechanically coupled together so the VRU can measure LRF pitch and azimuth as targets are identified. For applications where varying turret orientation is required during navigation, the system will accept relative azimuth and elevation digital resolver outputs to facilitate VMS aided navigation. For applications where the LRF is not coupled to the VRU, the resolver input for azimuth and elevation can be used to provide viewing angles for the LRF input.

PERFORMANCE	KN-4053TA
HORIZONTAL TARGET ACCURACY (WITH P(y) CODE GPS)	15m CEP
VERTICAL TARGET ACCURACY (WITH P(y) CODE GPS)	15m PE
LASER ACCURACY	±5 METERS @ <10 KM
POINTING ACCURACY	1.0 MILS RMS
ROLL AND PITCH	0.5 MILS RMS
NAVIGATION ACCURACY WITH P(y) CODE GPS	
1. HORIZONTAL POSITION	10m CEP
2. VERTICAL POSITION	10m PE
NAVIGATION ACCURACY WITHOUT GPS*	
1. HORIZONTAL POSITION	10m CEP @ ≤ 4 KM 0.25% DT CEP @ >4 KM
2. VERTICAL POSITION	6.7m PE @ ≤ 10 KM 0.067% DT @ >10 KM

* VMS input required



This datasheet is for reference only, Specifications are subject to change

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