

NASNet® MTrx MkII

MOBILE TRANSCEIVER

Overview

NASNet® Mobile Transceivers (MTrx) are used to provide accurate positioning for remote objects throughout the water column, from seabed to surface. NASNet® MTrx can also be used as an acoustic data telemetry link for internal or external interfaced sensors.

NASNet® Operating Principle

NASNet® is an advanced subsea positioning system with a concept similar to GPS. Using advanced Nautronix Acoustic Digital Spread Spectrum (ADS²) signalling technology NASNet® employs a broadcast technique to determine accurate range measurements between the calibrated NASNet® array and the tracked targets. The positions of the targets can then be determined with ranges from a minimum of 3 NASNet® Stations.

This approach successfully overcomes the limitations of conventional Long Baseline (LBL) systems and provides a true multi-user system able to simultaneously position unlimited objects at fast update rates and with no acoustic interference.

NASNet® MTrx

NASNet® MTrx is a battery powered unit primarily used for positioning objects which have no physical data or power link to the vessel or ROV.

The MTrx in positioning mode is capable of receiving acoustic range pulse signals from up to 8 NASNet® Stations. The MTrx acoustically relays each range to the surface system to allow positions to be calculated. The constant transfer of range data means that the position update rate of a MTrx is significantly faster than conventional system, with a 1Hz position update being typical.

All MTrx units are identified by their specific code which allows multiple MTrx to be used simultaneously without risk of interference.

NASNet® MTrx can also be used as a source of range data. A prime example of this functionality would be to use a MTrx to position a structure during installation and then use the range data from the MTrx as-installed position as an additional reference range for subsequent structure installations.

NASNet® MTrx is fitted with internal depth and inclination sensors with data being passed acoustically to the surface unit. In addition the units are equipped with an interface port which allows additional sensors to transfer their data acoustically to the surface using NASNet®'s robust ADS² signalling technology.

The MTrx-EP (Electrical Power) is a variation designed to provide a long term positioning solution for objects with power but no communication links. This reduced length MTrx requires a 24V power supply but transfers range data acoustically in the same way as a standard MTrx.

Key benefits of NASNet® MTrx

- Long range capability
- Fast update rate¹ in any water depths
- True multi-user capability
- No frequency management issues
- Reliable communications due to advanced digital signalling techniques
- Robust acoustic data transfer capability
- Internal depth and inclinometer sensors

Typical applications of NASNet® MTrx

- Structure and pipeline positioning for deepwater subsea construction activities
- Subsea ROV positioning for ROVs with limited communication capacity
- Monitoring of remote objects such as risers
- Transfer of sensor data from remote objects
- Pipeline bundle monitoring during tow
- Real-time position QC of NASNet® positioning



NASNet® MTrx mounted on suction piles

¹Update rate typically 1Hz for all positioned targets

Frequency	11.25 kHz with a 3kHz spread
Signalling	Acoustic Digital Spread Spectrum (ADS ²)
Subsea Transmitter Beamwidth	210 degrees
Surface Receiver Beamwidth	210 degrees
Depth Rating	3,500m
Power Output	Programmable 157 - 196 dB μ Pa
Battery type	Alkaline or Lithium
Operational Battery Life	Operational at 180 dB μ Pa with a 1 second position update rate; battery life for each battery type is:
Alkaline cells	34 days continuous operation
Lithium cells	84 days continuous operation
Standby Battery Life (Alkaline)	Self discharge 1,200 days Listening mode 1,080 days
Main unit specifications	<ul style="list-style-type: none"> • Construction: 6082 Aluminium Alloy • Height: 1,285 mm • Diameter: 244 mm (excl. Flotation Collar) • Weight in Air: 70 kg (excl. Flotation Collar) • Weight in Water: +68 kg net uplift (incl. Flotation) / 35 kg (excl. Flotation Collar)
Internal sensors	Integrated CDL Mini Tilt <ul style="list-style-type: none"> • Accuracy: 0.05° or 0.1° options • Resolution: 0.01° Integrated Keller Series 33 x Standard <ul style="list-style-type: none"> • Accuracy: 0.1% FS (standard)
Optional Accessories:	<ul style="list-style-type: none"> • Flotation Collar • Programming Lead • Mounting Brackets • External Power Source • Extension Battery pack



NASNet® MTrx unit

**Global Leaders in Through Water Communication and Positioning Technology
for the Offshore Industry**

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All information contained herein is subject to change and does not form the basis of any contractual obligations

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