



NORBIT WINGHEAD® i77h Apogee



Superior Performance Ultra High-Resolution Curved Array Bathymetric System.

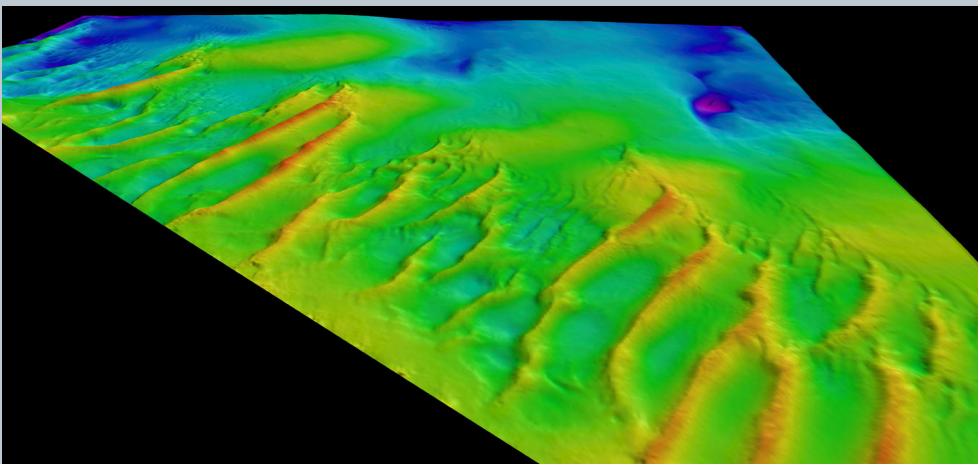
NORBIT introduces the first cylindrical, ultra-high-resolution curved array bathymetric system, designed for rapid mobilisation anytime, anywhere. It features an industry-leading integrated GNSS/INS positioning system of the highest standard.

NORBIT WINGHEAD sonars are built on a state-of-the-art analogue and digital platform, equipped with advanced signal processing capabilities. They offer roll-stabilised bathymetry along with multiple imagery and backscatter outputs, ensuring exceptional survey data quality. With broad R&D expertise, NORBIT has developed exciting new technology from the ground up, enabling both new and existing applications to benefit from the advantages of a compact, wideband curved-array multibeam sonar.

The NORBIT WINGHEAD i77h Apogee is a compact, ultra-high-resolution curved array broadband multibeam sonar tightly integrated with GNSS/INS (SBG Apogee). It is designed for use in the most demanding operational environments, including under bridges and in rough sea conditions.

Characterised by its small form factor, low power consumption, and tight integration, the WINGHEAD i77h Apogee can be installed on a wide range of surface survey platforms—from small USVs to permanent hull mounts on large vessels.

The system is supported by DCT (NORBIT's integrated data acquisition software), enabling efficient and reliable survey data collection.



WINGHEAD i77h Apogee,
Shown with optional fairing



WINGHEAD i77h Apogee

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Features	Applications	Options
<ul style="list-style-type: none"> ✓ Multibeam Sonar with Integrated Inertial Navigation System & Integrated NTRIP Client ✓ 80kHz Bandwidth ✓ Roll-stabilisation ✓ Backscatter outputs (Intensity, Sidescan, Snippets, Water Column) ✓ Multidetect ✓ Pipeline Mode ✓ Simple Ethernet Interface ✓ Integrated Sound Velocity Probe ✓ 1024 Dynamically Focused Beams ✓ FM & CW Processing ✓ Mounting Bracket Included ✓ Exceeds IHO Exclusive Order & USACE New Work 	<ul style="list-style-type: none"> ✓ Shallow Water Bathymetry ✓ Pipeline & Cable Inspection Surveys ✓ Quay Wall, Bridge and Structure inspection Surveys ✓ Pond, River and Estuary Surveys ✓ Harbour and Lake Surveys ✓ USV & UUV ✓ Coastal Surveys 	<ul style="list-style-type: none"> ✓ Permanent Hull Mount, Non-corrosive Titanium Housing (WINGHEAD i79h) ✓ Extended Depth Range ✓ Flexible Surface/ROV Configuration ✓ Pole Mount ✓ Sound Velocity Profiler ✓ Supports NORBIT iLiDAR ✓ Detached INS Version ✓ Fairing ✓ Can be Delivered with Software Packages e.g. DCT, HYPACK, Qinsy, BeamworX and Others ✓ MarineStar

TECHNICAL SPECIFICATION

SWATH COVERAGE	5-210° FLEXIBLE SECTOR (SHALLOW WATER IHO SPECIAL ORDER >155°)
RANGE RESOLUTION	<10mm ACOUSTIC w. 80kHz BANDWIDTH
NUMBER OF BEAMS	256, 512, 1024 EA & ED
OPERATING FREQUENCY	NOMINAL FREQUENCY 400kHz (FREQUENCY AGILITY 200-700kHz)
DEPTH RANGE	0.2m to >400m
PING RATE	UP TO 60Hz, ADAPTIVE
RESOLUTION (ACROSS X ALONG)	STANDARD: 0.5° X 0.9° @400kHz, 0.3° x 0.5° @700kHz
POSITION	HOR: ±(10mm +0.5ppm X DISTANCE FROM RTK STATION, (INDEPENDENT OF ANTENNA SEPARATION) VER: ±(15mm +1ppm X DISTANCE FROM RTK STATION, (INDEPENDENT OF ANTENNA SEPARATION)
HEADING ACCURACY	0.02° (0.01 PPK) WITH 2m ANTENNA SEPARATION, RTK INDEPENDENT
PITCH/ROLL ACCURACY	0.008 RTK (0.005 PPK), INDEPENDENT OF ANTENNA SEPARATION
HEAVE ACCURACY	2cm OR 2% (DELAYED HEAVE), 5cm OR 5% (REAL TIME)
INTERFACE	ETHERNET
POWER CONSUMPTION	<90W (10-28VDC, 110-240VAC) TOTAL
DIMENSIONS	DIMENSIONS WITHOUT BRACKET H: 447mm/17.605", L: 296mm/11.657", W: 101.9mm/4.010"
WEIGHT	8.1kg (AIR) 4.8kg (WATER) EXCL. BRACKET 8.5kg (AIR) 5.2kg (WATER) INCL. BRACKET
CABLE LENGTH	STD 8m, OPTIONAL: 2m, 25m, 50m
OPERATING TEMP.	-4°C to +40°C (TOPSIDE -20°C to +55°C)
STORAGE TEMP.	-20°C to +60°C
ENVIRONMENTAL	TOPSIDE: IP67: DUST TIGHT, PROTECTED AGAINST THE EFFECT OF IMMERSION UP TO 1m WET-END (SONAR): 100m

OUTLINE DRAWING

