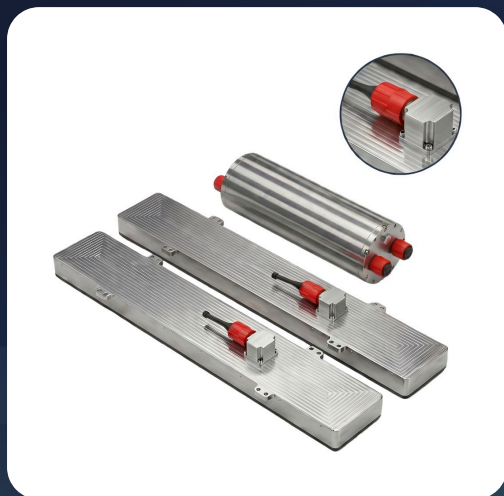




GeoTexture X155 Series

Subsea Bathymetric Side-scan Sonar

Interferometric · 150 / 550 kHz · 6,000 / 11,000 m

Description

GeoTexture X155 is a subsea bathymetric side-scan sonar for wide-area deep-sea mapping and detailed target investigation. Its interferometric architecture resolves phase differences across multiple receive sub-arrays, so **every pass yields both high-resolution side-scan imagery and a 3D bathymetric point cloud** — where a conventional side-scan returns a 2D image only.

A 1 m solid-state array is standard, running at 150 kHz and 550 kHz with CW or Chirp pulses: long range at the low frequency, fine seabed texture at the high one. The electronics bottle can host an integrated sub-bottom profiler, and the hardware is provisioned for an upgrade to synthetic aperture sonar (SAS). A half-metre transducer option suits vehicles with tighter payload and trim limits.

Application

- ▶ Abyssal geological exploration and large-scale 3D terrain modelling
- ▶ Deep-water pipeline and trans-ocean cable route survey and inspection
- ▶ Wreck search, underwater archaeology, reef and shallow-buried obstacle survey
- ▶ Deep-sea mineral resource assessment and seabed sediment classification
- ▶ Wide-area autonomous survey on AUV / ROV

Features

- ▶ **Imagery and bathymetry in one pass**
Phase processing across sub-arrays delivers dual-sided imagery and full-swath 3D bathymetry together.
- ▶ **Rated to 6,000 m**
Terrain mapping and buried-target discrimination in deep water; an 11,000 m version is available.
- ▶ **Dual frequency, 150 / 550 kHz**
750 m total swath at 150 kHz; ≤ 1.5 cm across-track resolution at 550 kHz.
- ▶ **Ready for SAS**
The standard 1 m array has a hardware upgrade path to synthetic aperture side-scan.
- ▶ **Optional integrated SBP**
A sub-bottom profiler fits inside the electronics bottle — seabed surface and sub-surface data from one payload.
- ▶ **Two transducer lengths**
1 m standard, 0.5 m optional, to match vehicle volume and buoyancy trim.

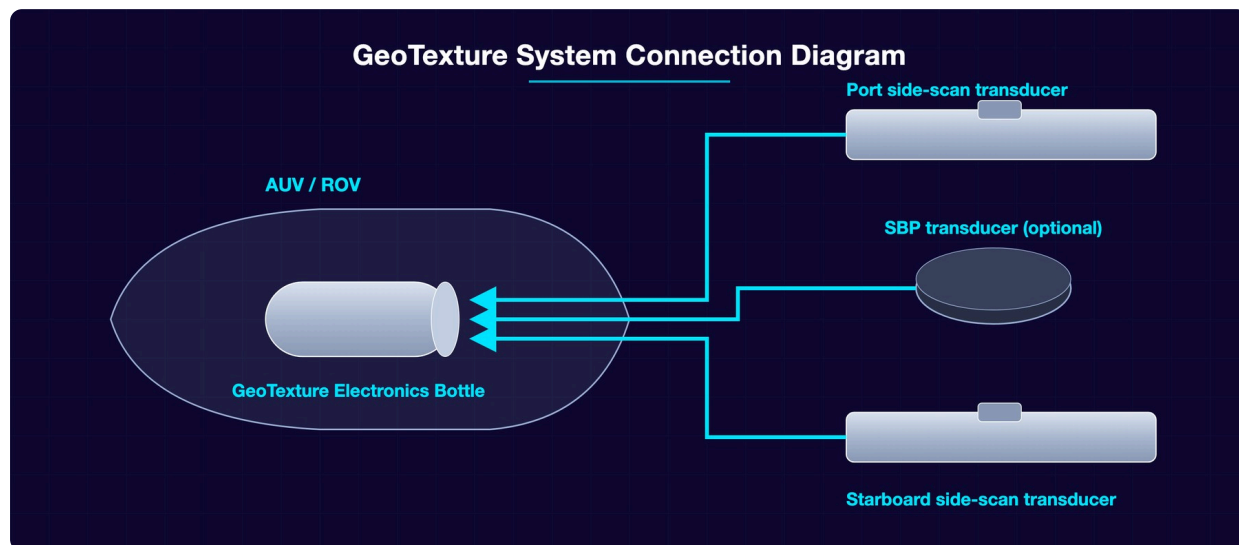
Technical Specifications of GeoTexture X155 Series

Technical Specifications	
Max. Working Depth*	6,000 m
Operating Frequency	150 kHz / 550 kHz (dual frequency)
Pulse Type	CW / Chirp
Side-scan Across-track Resolution	≤3.5 cm @ 150 kHz; ≤1.5 cm @ 550 kHz
Side-scan Along-track Beamwidth	0.8° @ 150 kHz; 0.3° @ 550 kHz
Side-scan Swath (both sides)	750 m @ 150 kHz; 200 m @ 550 kHz
Bathymetry Swath (both sides)	250 m @ 150 kHz
Triggering	Internal / external
Temperature	−3 to +40 °C operating (in water); −10 to +55 °C storage
Physical Specifications	
Power Supply	46 – 50 VDC
Power Consumption	75 W average; 200 W peak (transmit)
Communication	Gigabit Ethernet
External Interface	External trigger input
Connector	MCBH21M
Electronics Bottle	Ø140 × 476 mm (758 mm incl. connectors), without SBP Ø140 × 656 mm (938 mm incl. connectors), with SBP
Electronics Bottle Weight	18 kg in air / 10 kg in water
Transducer (1 m standard)	1,048 × 118 × 101 mm
Transducer Weight (1 m)	26 kg in air / 19 kg in water
Transducer Option	0.5 m shortened version for compact payload bays

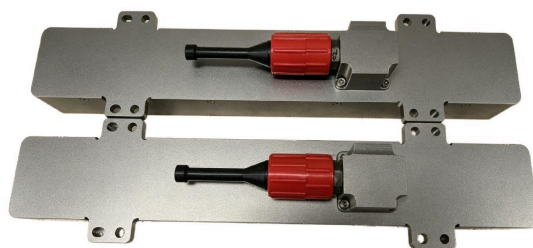
* An 11,000 m full-ocean-depth version is available on request.

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Ver. 26.10.10

System Connection of GeoTexture X155

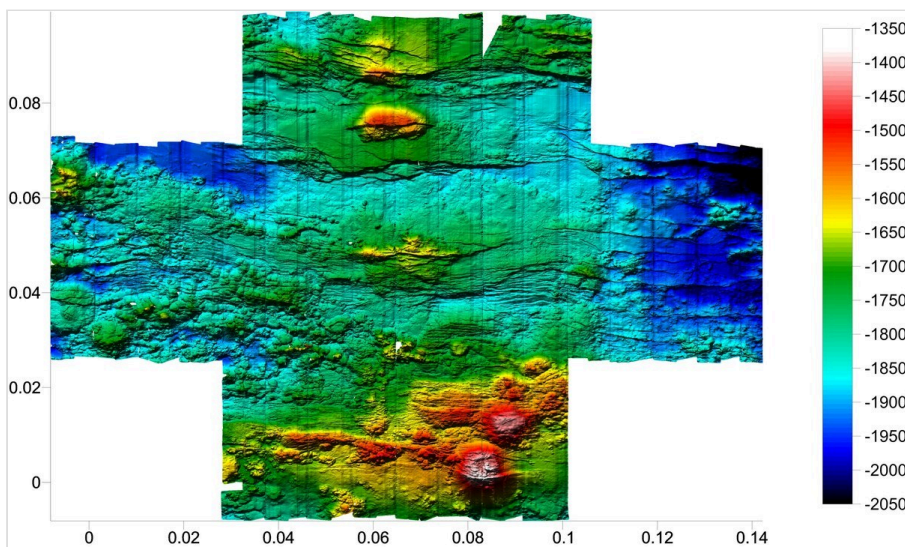
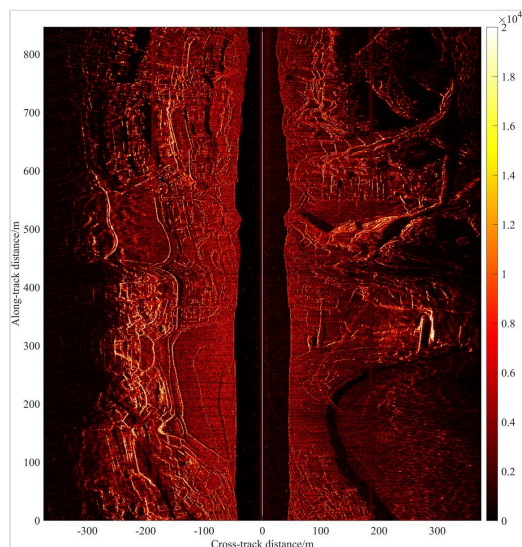


Standard 1-metre transducer



Optional half-metre transducer

Data Examples by GeoTexture X155



Seafloor imagery from GeoTexture field data: side-scan mosaic (left) and 3D bathymetry (right)