Customer Success Story

GEM-Shark

Imaging of subsurface sediments

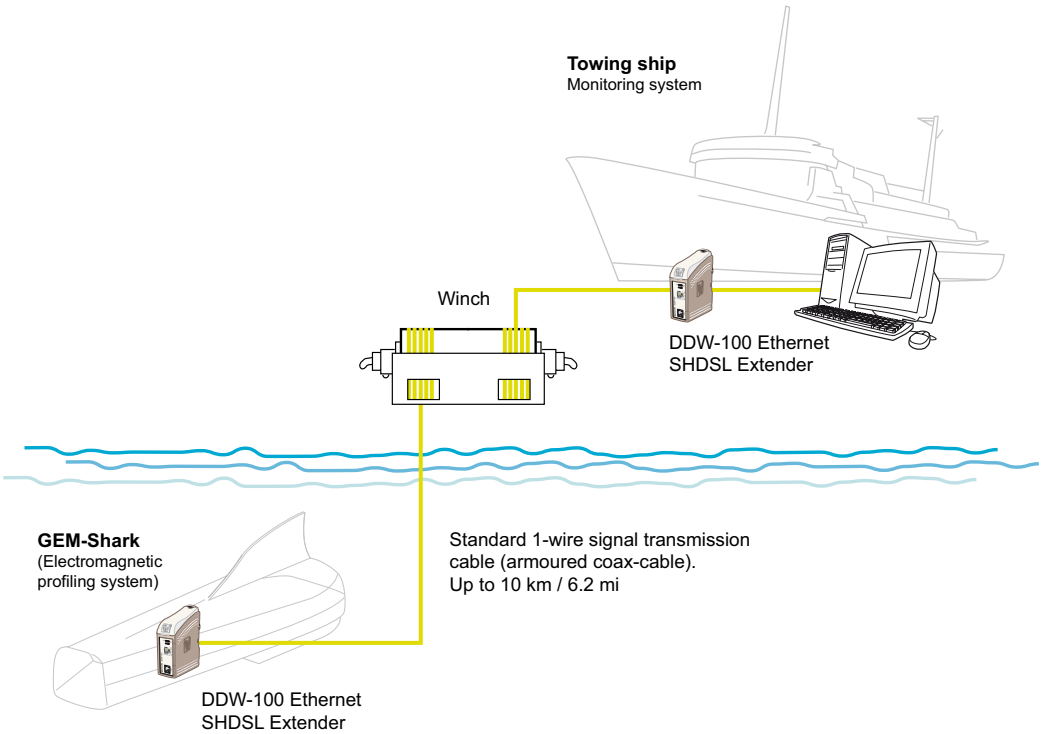
westermo®

Robust Industrial Data Communications – Made Easy

GEM-Shark - Imaging of subsurface sediments

The Centre for Marine Environmental Sciences (MARUM) is a group of institutions working closely together with the aim at unravelling the oceans role in the earths ecosystem by employing state-of-the-art methods.

One of the MARUM projects, called the GEM-Shark project involved communications equipment from Westermo. The GEM-shark is an unmanned and autonomous submarine designed to monitor and estimate sea bed pollution pathways, transport processes and alteration of marine sediments where conventional methods cannot be applied due to harsh seawater conditions. The GEM-shark is a ruggedly designed fibreglass submarine with a fully equipped pressure housing that holds network components, various power and communication interfaces. The Submarine is lowered down to 300 meter (330 yd) water depth and an armoured coax-cable between the submarine and the towing ship allows real-time communication using a DDW-100 from Westermo at both ends that provides a high-speed communication link up to 10 km (6.2 mi).


Towing ship
Monitoring system
Winch
DDW-100 Ethernet
SHDSL Extender
GEM-Shark
(Electromagnetic
profiling system)
Standard 1-wire signal transmission
cable (armoured coax-cable).
Up to 10 km / 6.2 mi
DDW-100 Ethernet
SHDSL Extender

A product range to meet every demand

Westermo provides a full range of data communication solutions for such demanding applications as railways, aeronautics, defence, water treatment, substation automation, roads and tunnels. The staff at Westermo can provide the highest levels of service and technical support to help our customers to choose, configure and install the best solution for each specific application requirement. Our knowledge goes far beyond our own product range; we have a unique competence regarding your environment whether it is on a train, in an aeroplane, on the seabed or in a substation. To ensure a close relationship with the customer, Westermo has a local presence in more than 35 countries. The Westermo product line includes more than one thousand different types and versions of our modems, switches, routers, time servers and converters.

DDW-100 Ethernet Extender

The DDW-100 is a plug and play Industrial Ethernet SHDSL extender. It is designed as a transparent Ethernet Extender for 10/100BaseTX networks. This unit provides the ability to reuse existing twisted copper pair The DDW-100 is a bridge simple to install with all configuration done by DIP-switches. The DIN rail mounted DDW-100 is designed for industry. It can be powered from two separate supplies.

- 192 kbit/s to 2.3 Mbit/s
- Up to 10 km (6.2 miles) on twisted pair
- FRNT/RSTP redundancy protocol
- Comprehensive diagnostics
- Wide temperature range (–25°C to +70°C
- Galvanic isolation and transient protection
- Industrial and Railway approval
- DC supply 10–60 VDC

Wolverine