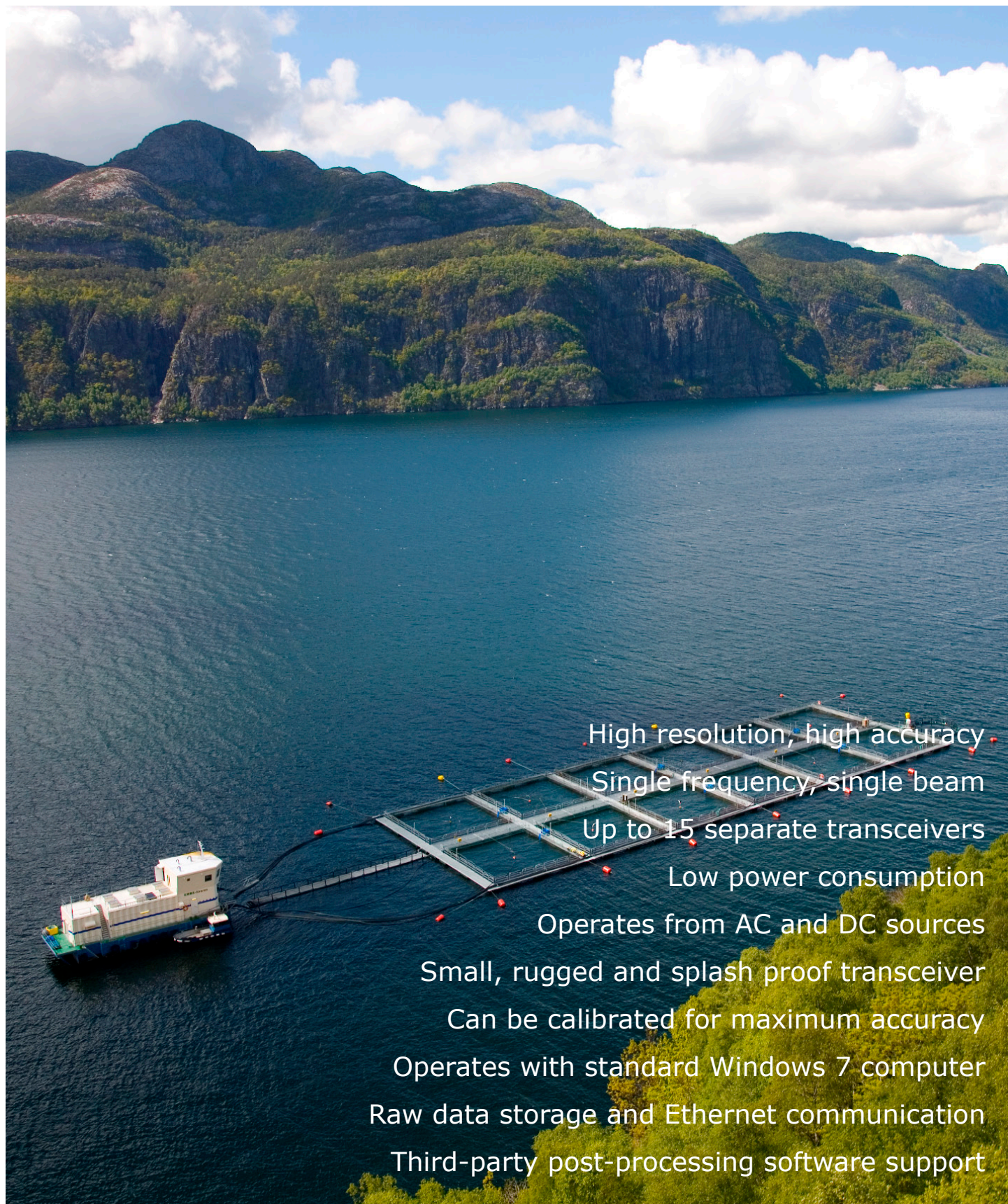


Simrad EK15

Multi purpose scientific echo sounder



High resolution, high accuracy

Single frequency, single beam

Up to 15 separate transceivers

Low power consumption

Operates from AC and DC sources

Small, rugged and splash proof transceiver

Can be calibrated for maximum accuracy

Operates with standard Windows 7 computer

Raw data storage and Ethernet communication

Third-party post-processing software support

Photo copyright EWOS Innovation AS, used with permission.

www.simrad.com

TECHNOLOGY FOR SUSTAINABLE FISHERIES

SIMRAD

The Simrad EK15 is designed for a variety of applications, and for both mobile surveys and fixed locations. You can put it to use in a wide variety of environments: lakes, fjords, harbours, shallow marine, rivers, and even in aquaculture fish cages. The unique functionality offered using numerous transceivers, raw data logging and interfaces to secondary systems allow you to use the EK15 for fish stock assessment, studies of fish behavior and fish-plankton interactions, habitat mapping and ecosystem monitoring.

The Simrad EK15 is based on a small and ruggedized single beam Transceiver Unit and a dedicated transducer. The operational frequency is 200 kHz, which offers a very high resolution and high accuracy. You can use the Simrad EK15 with up to 15 Transceiver Units. These will operate in parallel with either simultaneous or sequential pinging. Using multiple transceivers you can monitor large areas with only a single echo sounder system.

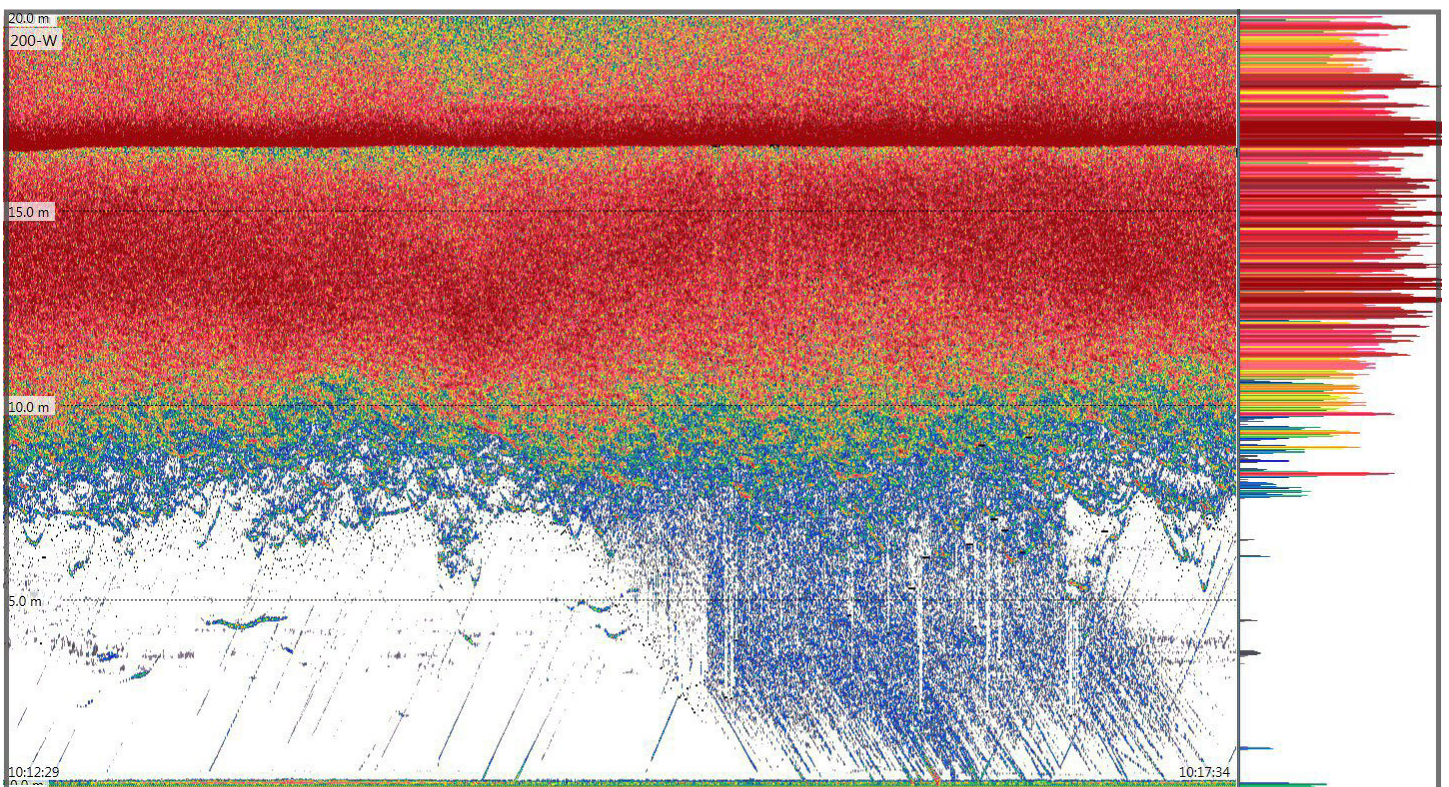
Due to the fact that the echogram presentation on the Simrad EK15 can be turned “upside down”, the sounder is the ideal solution if you need to monitor a large number of fish cages. One transducer can then be placed at the bottom of each fish cage looking

up. You can also set up a custom EK15 system to create an “acoustic fence”. Such “fences” are in frequent use to monitor the water inlets in a hydropower dam. A similar system can be used across a river or a fjord if you research fish migration, or simply needs to check the habitat and the occurrence of marine life.

You can also set up the Simrad EK15 for wireless communication between the computer and the Transceiver Units. This is a good solution for both portable and fixed installation systems as the amount of cabling is greatly reduced.



This screen capture (in Replay mode) shows the fish in a typical fish cage. The transducer is located in the bottom of the cage looking upwards, and the EK15 has been set in the corresponding mode of operation. Up to 15 fish cages can be monitored using a single EK15 system.



Applications

The Simrad EK15 multi purpose scientific echo sounder system is readily available for a large number of various applications.

Hydropower dams

Fish protection at hydropower dams is critical. Continuous online information about the presence of fish is needed to take necessary actions for fish protection. With the Simrad EK15 an array of transceivers can create an acoustic fence to monitor fish approaching water inlets.

River surveys

By employing the necessary number of transducers across a river, the Simrad EK15 can be used to monitor fish migration. Due to the compact size of the system units a complete scientific system will fit in a normal rucksack. The EK15 can thus also be efficient in remote areas.

Traditional lake surveys

The wide opening angle of the EK15 transducer offers a large sampling volume. This is an advantage in shallow water

environments, as it increases the coverage. Low power consumption, battery operation, and a small and splash proof transceiver makes deployment and operation easy under all conditions.

Habitat mapping

Habitat protection is critical for preservation of fish communities in

many areas. The Simrad EK15 can monitor the distribution of vegetation and determine the height of the marine growth. In combination with actual sampling a vegetation biomass index can be established.

Fish cages

Modern aquaculture involves growing fish in large net cages. Continuous monitoring of fish behavior, vertical distribution of fish, fish escape, food waste and environment are always critical. For more than two years, Simrad EK15 prototypes have been put to test by Norwegian industrial aquaculture companies for monitoring purposes. The results have been very successful.

Environmental monitoring

Due to the fact that the Simrad EK15 transceiver is very small with a low power consumption, it is easily adaptable to fit into subsea containers. These containers are placed at the sea floor or in the water column for long term ecosystem monitoring. EK15 prototypes have already been tested with such systems with great success.



Performance specifications

Operational frequency

- 200 kHz

Typical range

- 200 meters

Transmission

- Simultaneous or sequential
- Ping rate: Up to 40 Hz
- Pulse durations: 80 to 1240 μ s

Transceiver Unit

- Data rate: 1.6 Mbps
- Maximum number in use: 15

- Output power: 45 W

- IP rating: IP66

Calibration

- Built in single beam calibration

Data output formats

- Raw data (EK60 format)
- Processed data
- Raw data storage capacity only limited by disk size

Data subscriptions

- Ethernet datagram based system for remote subscription

Third party post-processing

- EchoView

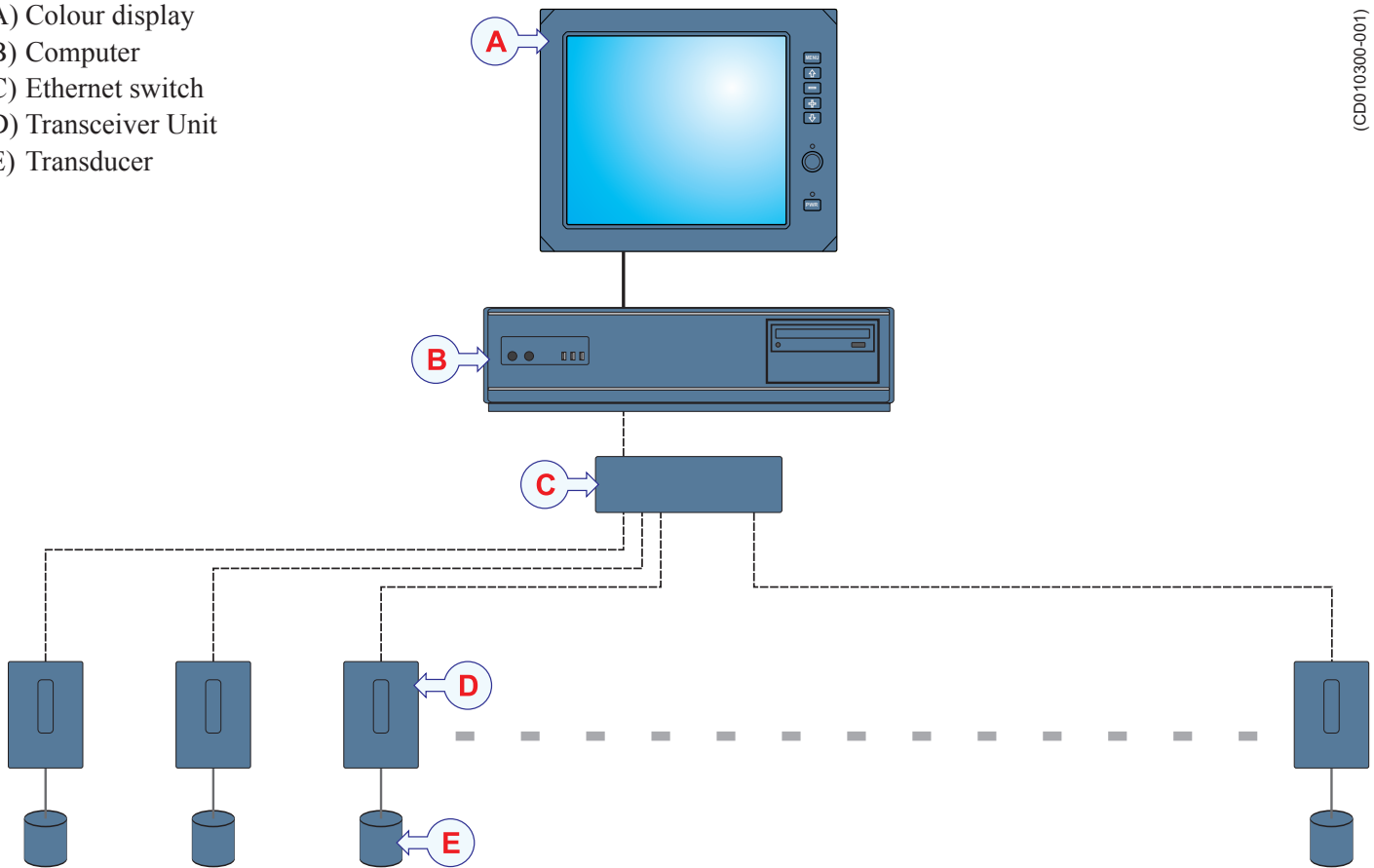
- Sonar5

Transducer

- Type: Single beam
- Maximum installation depth: 600 meters
- Beamwidth: 26 degrees

System configuration

- A) Colour display
- B) Computer
- C) Ethernet switch
- D) Transceiver Unit
- E) Transducer



(CD010300-001)

To control the EK15 operation you can use a standard commercial computer, even a laptop. The EK15 application supports Windows® 7 operating system. On a larger system with multiple transceivers we recommend using a large display in order to view all echograms simultaneously.

You can connect up to 15 transceivers to the computer by means of a commercial Ethernet switch. If you only need one transceiver, the switch is not required. Each transceiver is provided with a dedicated power supply for AC operation. The only communication between the transceivers and the

Ethernet switch (or computer) is the Ethernet cable. Due to the amount of information, only high quality Ethernet cables can be used. The cables may be easily replaced by commercial wireless systems.



<http://www.facebook.com/simrad>

367460 / Rev.A / January 2012

Simrad

Kongsberg Maritime AS
Strandpromenaden 50
P.O.Box 111
N-3191 Horten, Norway

Telephone: +47 33 03 40 00
Telefax: +47 33 04 29 87
www.simrad.com
simrad.sales@simrad.com

SIMRAD