



# HMS-622 12KM HULL MOUNTED CHIRP PROFILER

## Hull Mounted Seismic Profiler

Deep water sub-bottom profiling applications (1Km to 12Km) require an array of 4 to 36 low frequency transducers installed in a hull-mounted sea chest. The HMS-12KM system with the HMS-622 CHIRPceiver™ and hull mounted transducer arrays fills this range of survey requirements. The frequency bands supported by the HMS-12KM include LF (1KHz-10KHz) and HF (8KHz-23KHz) with a standard 2 channel transceiver. CW frequencies can also be programmed within the respective band. The transducer arrays are configured to perform both the transmit and the receive functions of the system. The transducers are wired to a junction box containing the SCP-10KM Software Controlled Preamp which is collocated with the sea chest and is permanently connected through a shipboard cable to a topside junction box which provides the interface to the HMS-622 CHIRPceiver and workstation.



The HMS-622 CHIRPceiver uses a flexible Graphical User Interface connected via Ethernet that allows the user to set CHIRP or CW modes of operation, Start and Stop frequencies, Pulse Lengths, and Power Level for the output pulses. The receiver controls allow for Gain and Attenuation as well as Diagnostic modes. The HMS-622 CHIRPceiver will also support multi-ping modes for higher along track resolution when operating in water depths deeper than a given ping rate. All sonar data is logged in SEGY format using industry standard acquisition software.

### FEATURES/BENEFITS

- Dual frequency operation with CHIRP acoustic pulses in standard bands; LF (1KHz-10KHz), HF (8KHz-23KHz) with selectable switchable on the fly CW modes provide bottom penetration through many sediment types
- Individually controlled transmit pulse width and frequency bands
- Flexible transducer array options for a variety of vessel configurations
- Remotely programmable low-noise pre-amp with high/low pass filters. 24bit A/D Sampling >110dB Dynamic Range
- Universal input power supply operates from 85 to 240 VAC
- Industry standard SEGY output
- Multi-ping mode for higher resolution in deeper water depths



32 Element 12KM LF Array with Preamp and Junction Box



# SPECIFICATIONS

## HMS-622 12KM Specifications

### IHA-XX-LF Low Frequency Channel Transmitter and transducer:

Array sizes from 04 to 36 Low Frequency 3.5 KHz Transducers

- 4 Element transducer array for 1Km performance (41.5° fore/aft, 41.5° athwart)
- 9 Element transducer array for 3.5Km performance (27.5° fore/aft, 27.5° athwart)
- 16 Element transducer array for 6Km performance (20.5° fore/aft, 20.5° athwart)
- 32 Plus element array for 12Km performance (10° fore/aft, 20.5° athwart)

### Power output:

@ 4.0KW, 20% duty cycle at 3.5 kHz for  
223 dB re 1  $\mu$ Pa @ 1 m nominal

### Frequency range:

Sweeps in the 1kHz to 10kHz band: Resolution (7.5 cm – 15 cm)

### Transducer radiation:

20.5° fore/aft, 20.5° athwart (for a 4x4 16-element array)

### IHA-1-HF High Frequency Channel Transmitter transducer:

One 7-element high frequency transducer

### Power output:

@ 4.0KW, 15% duty cycle at 15 kHz for  
220 dB re 1  $\mu$ Pa @ 1 m nominal

### Frequency range:

Sweeps in the 8kHz to 23kHz band:  
Resolution: (5 cm – 7.5 cm)

### Transducer radiation:

15° conical

### Power amplifiers (one for each channel)

- efficiency : >80%
- output power :  $\geq$ 4kW
- output impedance : 25~200 Ohms
- duty cycle :  $\geq$ 20% full power
- frequency : 1kHz~25kHz



## HMS-622 CHIRPceiver™

Trigger:

Frequency:

Pulse Length:

Transmit Power:

Preamplifier gain:

Preamplifier attenuation:

A/D Input:

Dynamic Range:

## Receiver/Processing & Controls

Internal or External

LF (1KHz-10KHz), HF (8KHz-23KHz) Chirp and CW

User Programmable for Chirp and CW modes (20% duty cycle)

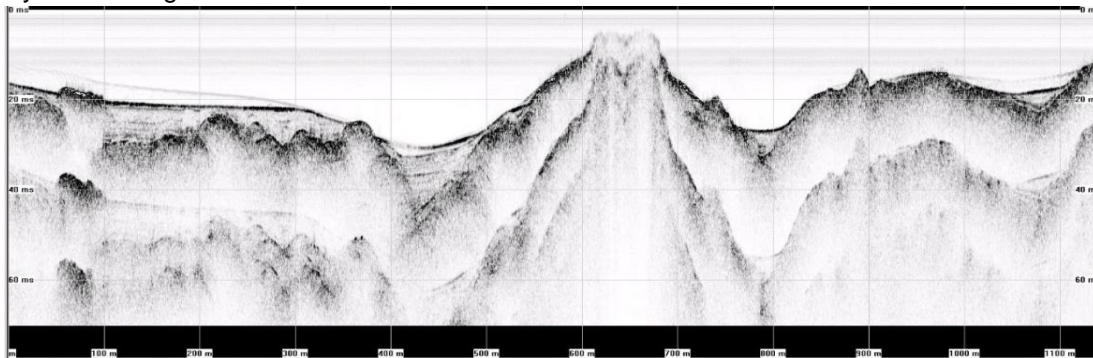
0-42 dB in 3 dB minimum increments

0-42 dB in 3 dB increments

0-(-42) dB in 3 dB increments

24bit up to 192KHz

>110 dB



1 March 24 Specifications Subject to Change Without Notice

Falmouth Scientific, Inc.

33 Jonathan Bourne Drive, PO Box 326, Pocasset MA 02559 USA

Email: [sales@falmouth.com](mailto:sales@falmouth.com) • Tel: +1-508-564-7640 • Fax: +1-508-564-7643 • [www.falmouth.com](http://www.falmouth.com)