

# Chirp III

SUB BOTTOM PROFILER

## High-Resolution Chirp Sub-Bottom Profiler System

Benthos is a pioneer in Chirp technology and was the first to bring a commercial Chirp sub-bottom profiling system to the market. Teledyne Benthos continues that advancement with the Chirp III sub-bottom profiling system.

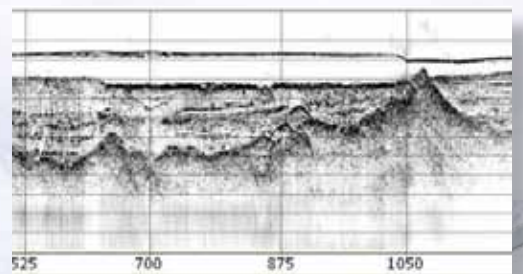
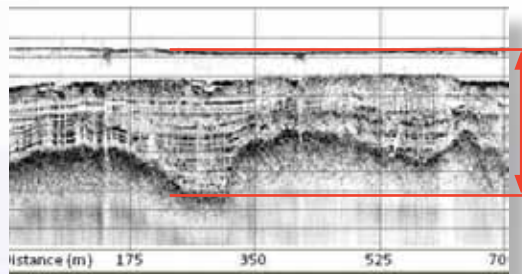
Portable and affordable, the Chirp III is a low cost system ideally suited for many applications. Its versatile system configuration has been designed to operate with various styles of tow vehicles and hull mounted arrays.

### System configurations include:

- TTV-170 Series
- TTV-290 Series
- AUV configuration
- Hull mount configuration

### Applications

- Offshore hazard surveys
- Pipeline and small object surveys
- Bridge piling scour and environmental surveys
- Mining and dredging
- Wind farm site survey (See data at right)



## System Specifications

Main Processor:	PC based sonar work station
Signal Resolution:	16 bit
Data Storage:	Stores raw data in SEG-Y format
Operator Software:	Windows™ environment
Display:	High-resolution display
Ping Rate:	15 pings/second maximum
Pulse Length:	User selectable from 5 msec. to 60 msec. Pulse waveforms stored in memory
Output Power:	4 KW each channel max
Transducers:	AT-471, Chirp bands 2 to 7 kHz AT-12D7, Chirp bands 10 to 20 kHz
Beam Angle:	TTV-170 .....100° Conical TTV-290 (2x2) Array.....45° Hull Mount (4x4) Array.....25°
Cable:	Kevlar electrical umbilical cable
Operating Depth:	TTV-170: Shallow water/small vehicle (200m) TTV-290: (200m)
Navigation/Annotation:	NMEA 0183 interface, event/fix marks, external interrupt
Hard Copy Recorder:	Grey scale graphic recorder (optional)
Operator Controls:	HW gain (dual channel) 0-42dB/channel; two stage TVG; bottom tracking (dual channel); smoothing; horizontal/vertical zoom; display gain control; repetition rate control; custom FM waveform design
Operator Displays:	Bathymetry display; reflectivity and hardness display; signal to noise ratio display; voltage display; custom color palette selection; color rotation; navigation map display
Tow Vehicle Dimensions & Weight:	TTV 170: 18 in O.D. x 24 in long; weight in air-98 lbs., weight in water-80 lbs TTV 290: 18 in O.D. x 64 in long; weight in air-300 lbs., weight in water-170 lbs

## Chirp III Hardware Features

- Simultaneous dual frequency operation allows for a choice of Chirp FM sweeps from 2 kHz to 20 kHz
- Flexible Chirp III acquisition/processing work station allows for versatile configurations including shallow and deep water vehicles, diverse hull mount arrays, and AUV's
- Ethernet output
- High power output -- up to 4KW each
- Integrated pressure sensor (optional)

## Chirp III Software Features

- Windows operating system
- User defined ping rate
- Automatic bottom tracking
- Interactive horizon picking
- Switch on the fly Chirp/CW pulse
- Simultaneous dual channel Chirp



**Digital Acquisition Computer with Monitor**



**Chirp III Transceiver (DSP-6651/DSP-6652)**