HMS-620 Bubble Gun™

Ultra-Portable Low-Frequency Acoustic Seismic Systems

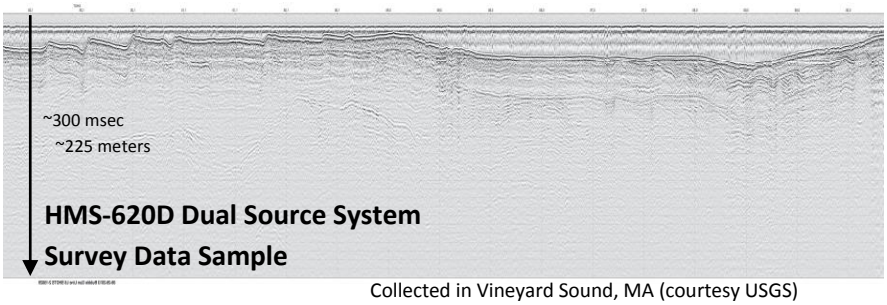
The HMS-620 Bubble Gun™ uses low-frequency acoustic signals to provide superior signal penetration vertically through coarse sand, gravel tills, and other difficult-to-penetrate sediments.

Small system component size and portability make this a valuable tool for any survey platform.

Complete Single-Source Bubble Gun™ System shown with source vehicle suspended on display frame and shipping case for transceiver and cables

APPLICATIONS

- Offshore Wind Turbine and Dam Site Surveys
- Cross River Surveys for Bridge Construction
- Bedrock Investigation
- Pipeline Construction Surveys
- Geotechnical Site Investigation
- Coastal Engineering



Collected in Vineyard Sound, MA (courtesy USGS)

FEATURES/BENEFITS

- **Wide-band 70-1700Hz pulse** provides bottom penetration through many sediment types
- **Very stable and repeatable source pulse without the need for external timing controllers**
- Rugged, lightweight transducer platform provides stable operation in adverse sea-state conditions
  - Electromagnetic Sound Source; **Contained Air Volume (no air compressor needed)**
  - Single and Dual Source Vehicles Available
  - No need for heavy handling or deployment equipment
- Flexible portable transceiver unit optimizes system for a wide range of sediments
  - Low-noise pre-amp with high/low pass filters and gain control
  - User-selectable trigger or external trigger
  - **Multiple Sources can be synchronized to a common trigger without need for external timing control**
  - **Repeatable Shot-to-Shot Phase and Amplitude Wavelet Correlation > 0.96**
- **Minimal Electric Power Requirements**
  - Selectable 110 or 220 VAC source of less than 1 KWatt for single source, 2 KWatt for Dual Source
  - Optional 24 VDC powered system available (two 12V batteries; no generator needed)
- Oil-filled single channel hydrophone streamer cable
  - 7-meter multi-element active section
  - 35-meter deactivation switches on each hydrophone element enable exportation outside of USA
- Compatible with industry-standard data acquisition software & multi-channel streamers

HMS-620D with Geometrics Geode and MicroEel multi-channel data acquisition system (courtesy Geometrics)

SPECIFICATIONS

HMS-620 Bubble Gun™ System Components

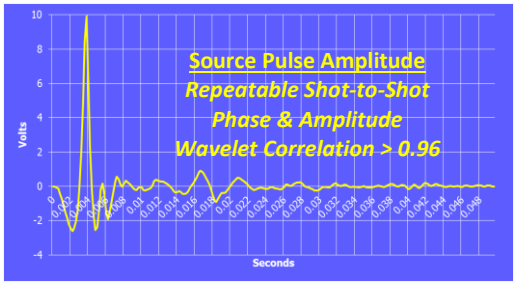
Source Vehicle and Electromechanical Tow Cable

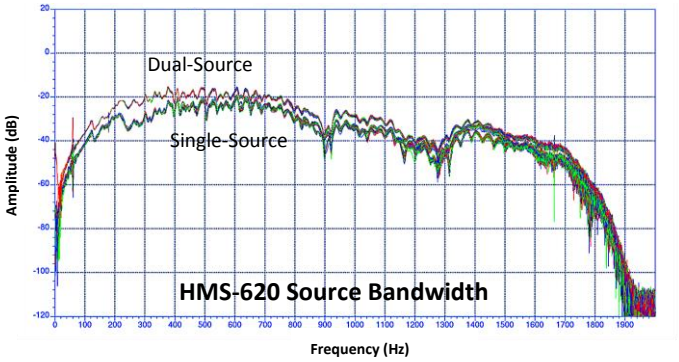
Source Type:	Electromagnetic / Contained Air Volume (no compressor needed)
Frequency:	Wide band, 70-700Hz pulse (100Hz peak)
Acoustic Source Level (single):	Approximately +200 dB ref 1µPa @ 1 meter with 15 cubic inch air volume (approx.. +204 dB for HMS-620D dual)
Normalized Shot-to-Shot Cross Correlation:	Repeatable Shot-to-Shot Phase and Amplitude Wavelet Correlation > 0.96
Phase:	Minimum Phase Wavelet
Tow Vehicle:	Stainless steel and plastic frame, buoyant surface-towed vehicle
Tow Cable:	50-meter abrasion resistant electro-mechanical cable
Dimensions (single):	109.22 cm x 93.97 cm x 48.26 cm (43 in x 37 in x 26 in)
Weight in Air (single):	Vehicle/Source – 43.5 kg (96 lbs) Tow Cable - 12.25 kg (27 lbs)

Source vehicle is compact and easy to deploy

Seismic Transceiver

Signal Input:	Designed to operate with HMS-620 System Hydrophone Streamer Cable; 7-pin Amphenol connector
Gain:	Adjustable in 3 dB steps 0 to 45 dB
Filters:	Adjustable high- and low-pass active
Analog Interface:	± 10 V Output





Power Supply

Trigger Input:	External key or manual time-based selection
Repetition Rate:	1/8 second maximum
Transducer Connector:	7-pin Amphenol to mate with HMS-620 Source Vehicle Tow cable
Packaging:	Portable splash-resistant case
Dimensions & Weight:	55.88 cm x 53.34 cm x 25.4 cm (22 in x 21 in x 10 in); 17.24 kg (38 lbs)

Hydrophone Streamer Cable

Length:	Active section - 7 meters; Single- channel, 24 elements; Leader – 50 meters
Preamplifier:	Integral preamp - 20 dB gain; Designed to operate with HMS-620 Transceiver
Power Input:	Supplied by transceiver
Weight in Air:	13.6 kg (30 lbs)

Specifications Subject to Change without Notice

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