The SIG multi-channels streamers are dedicated to high resolution seismics.

The SIG 16 streamers do not require a french export licence. Depending on customers requirements, our streamers can also integrate other hydrophones of the market.

The active sections are configured with 4 to 24 channels in the analog version and 48 channels in digital version. Group spacing varies from 1 to 12.50 m.

⇒ Config. to customers requirements  
⇒ No export licence on SIG16 hydrophones  
⇒ Small diameter  
⇒ Short group spacing  
⇒ Entirely customizable

**MCsps deck unit**

The Multi-Channel Streamer Power Supply MCsps interfaces the analog multi-channel streamer to any third party recording system, and provides the power for the preamplifier in head of the section, and also provides high quality analogue frequency filters and selectable analogue gains.

**Analog amplification:** Selectable amplification settings, typical 0 dB, 2 dB, 4 dB, 6 dB, 8 dB, 10 dB, 12 dB, 14 dB and 16 dB, or user defined.  
This amplification is added to the amplification inside the head of the section.

**Analog frequency filtering:**
- High-pass filter: the low frequency noise is the most disturbing noise in the acquisition process, so the unit offers the possibility to apply 4 selectable high-pass filters.
- Low-pass filter: the LPF must be suited to the frequency range of the acoustic source, and can be user selected.

**Applications**

⇒ High resolution seismics for shallow  
sparker signal 200-2.000 Hz to boomers -10.000 Hz  
⇒ or deep water  
air gun signal 10-400 Hz
Penetration of more than 1 second TWT below the seafloor.

Location: Ligurian margin, offshore Nice

Energy source: Air Gun 35 in3
Sensor: Streamer SIG 16.24x24.350
Acquisition: DAAU24

Courtesy: J.-X. Dessa -- UPMC/Géoazur

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### Array Configurations

- **Hydrophones:** SIG 16 or market available hydros
- **Number of channels:** 4 to 24 analog, to 48 digital
- **Hydros per group:** 4 to 24
- **Hydros spacing:** 0.15 to 1 m
- **Group interval:** 1 to 12.50 m
- **Small diameter:** 30 mm up to 16 channels, 41 mm to 48 channels
- **Density:** 1.02 on standard
- **Type of tubing:** Polyurethane 1185A quality
- **Filling fluid:** Inert mineral oil
- **Preamplifier:** Single-ended or differential, depending on acquisition system requirement.
- **Frequency response:** 10 to 10,000 Hz, depending on configuration and hydrophone used.
- **Acceleration compensation:** Achieved using SIG 16 hydrophones

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### Digital Specifications

**Analog Front end:**
- Independant variable gain for each channel
- Adjustable in real time from 12 to 40 dB
- 5th order low pass anti-aliasing filter
- Bandwidth max 5 Hz to 16 kHz, TBD

**ADC :**
- 16 bit Analog to Digital convertor
- 86 dB signal to noise ratio
- -97 dB total harmonic distortion
- Sampling frequency from 1 kHz to 32 kHz

**Preamplifier**

The signal generated by each group of hydrophones is pre-amplified, either at the head of the section in a cartridge, easy to plug into the head piece and easy to replace, or at each group, inserted inside the section. An integrated band-pass filter cuts off undesirable high frequencies and disturbances from the DC component. Bandwidth to be defined according to the customers global system.

**ULTRA LOW-NOISE PREAMPLIFIER**

- **Gain:** 0 to 40 dB
- **Input/output:** Single ended or differential
- **Input impedance:** ≥ 22 Mohms
- **Bandwidth:** 1 Hz - 20 kHz
- **Current (mA@12V):** ≤ 1 mA
- **Supply voltage:** ± 5 V to ± 12 V