Array 48: Microphone Phased Array System

Applications: Engineering and scientific research

Turnkey system includes:
- Array with 48 condenser microphones (Earthworks M30)
  - 5 Hz – 30 kHz microphones
  - 142 dB maximum SPL
- 1 m array diameter
- Precision machined aluminum tooling plate
- 4’ × 4’ × 6” structure with stand
- Camera window and digital camera
- Beamforming frequency range: 200 Hz – 45 kHz
- 6 8-channel preamplifiers (Digidesign PRE)
- 2 24-channel A/D converters (24 bit, 96 kHz)
- Cables and connectors
- 2 equipment racks
- Standard audio data files compatible with external analysis packages such as Matlab

Beamform Interactive software:
- Beamforming images labeled by SPL and superimposed on optical image
- Several frequency ranges:
  - Narrowband
  - 1, 1/3 and 1/12 octave kHz
  - OASPL over a specified range
- Unsteady analysis
- Very fast beamforming (about 1 second per image in many cases)

Advanced options included
- Nearfield Acoustic Holography/Generalized Inverse method
- TIDY wide band deconvolution (OptiNav proprietary)
- Quantitative integrated spectra over selected regions
- Lower sidelobe levels (12 dB typical)
- Improved resolution
- Narrowband deconvolution modes
  - DAMAS, DAMAS2, Orthogonal Beamforming, CLEAN-SC,
  - Linear Programming deconvolution (Patent pending)

Sweep modes
- Depth
- Time
- Frequency

Additional options
- Focused copy
- Dedopplerization for moving sources

One-year warranty and e-mail support
One day of training at the customer’s site