Signature Management Systems

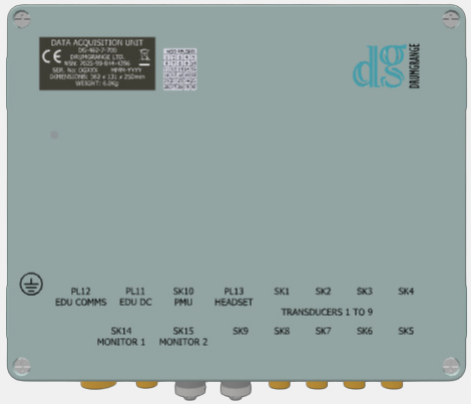
For organically monitoring the radiated acoustic emissions of warships and submarines, aiding the localisation of noise sources.

The standalone Signature Management System comprises transducer arrays, data acquisition subsystem, data distribution subsystems and PC-based operator workstation. Alternatively, we can offer the transducers with network-based telemetry and embed the software application within the platform's existing sonar or combat system.

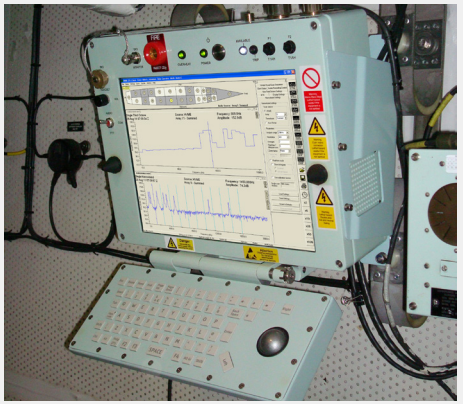
The transducers comprise arrays of hull internally-mounted accelerometers and external hydrophones, which can be populated throughout the platform or localised in particular compartments to provide real-time radiated noise estimates.

The software provides a modular acoustic analysis toolkit and an equipment database which allows the operators to customise the system to suit the platform configuration.

We can also provide fully-customised solutions to suit bespoke requirements.



DIGITAL ACQUISITION UNIT



HULL VIBRATION MONITORING EQUIPMENT

Key Software Features

- Windows-based application, operated independently or within a networked combat system
- Single transducer, compartment or whole platform acoustic measurements
- Narrowband or third octave analysis
- Single or summed Lofargram displays
- Frequency coverage depending on transducers
- Raw data capture for post-processing

Technical Specifications

Signature Management System Features

Monitoring and Analysis Displays

- Channel Analysis: 3rd Octave, Lofargram, Wideband
- Compartment Scan
- Whole Vessel Scan
- User-populated machinery database
- User-populated calibration factors
- Narrowband zoom
- Peak find function
- Save and restore scan results data
- Comparison function to overlay current scan results with previous scans
- User annotation of scan results

User Tools

- Line cursor identifying a single frequency and its associated amplitude
- Sideband cursor identifying a frequency and selected sidebands
- Harmonic cursor identifying a frequency and its harmonics
- Crosshair cursor identifying a frequency, amplitude and time on a lofargram display
- Machinery cursor identifying machinery frequencies from an operator-entered database of known frequencies

Aural Facilities

- Baseband operation
- Wideband and narrowband modes
- Can be slaved to analysis or scan channels

Alarms

Operator-controlled alarms on exceeding configured noise level limits

Data Logging

- Operator-controlled signal, signature and screen data logged to encrypted removable media
- Readout of disk space used

BITE Reporting

- BITE Reporting to LRU
- BITE Reports logged to removable media
- Serial PMS status reporting

Hardware Specifications

- Compact bulkhead-mountable console
- Rack-mounted processing enclosure
- COTS processing hardware
- Low noise signal conditioning and acquisition electronics
- EMC: DEF STAN 59-411 for below decks
- Environmental: DEF-STAN 00-035
- CE Marking: LVD2006/95/EC, EMC 2004/108/EC