

PULSE Array Acoustics Wideband Holography BZ-5644

Uses

- Noise source identification for engines and gearboxes where close-range measurements are often not possible
- Calculations on stationary and quasi-stationary noise sources

Features

- Patented method
- Available option for slice wheel array systems
- Works with application packages Acoustic Holography Type 8607 and Beamforming Type 8608

Benefits

- Saves time by eliminating the need for two measurements
- Good sound power estimates over a wide frequency range

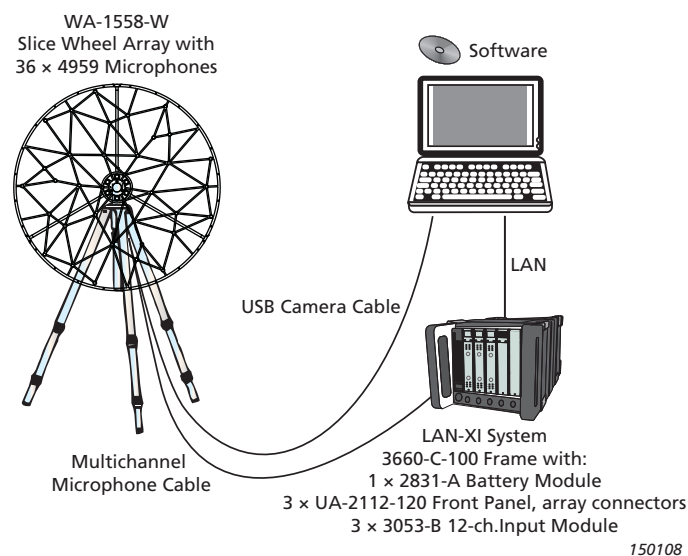


Description

Development and troubleshooting engines and gearboxes frequently uses noise source identification techniques based on acoustic holography and beamforming. The two methods require measurements at different distances and require separate processing. Furthermore, it can be difficult to combine the results to form a complete representation of the full frequency range. With PULSE™ Array Acoustics Wideband Holography BZ-5644, a single measurement at a relatively short distance produces a single result that covers the full frequency range.

System Setup

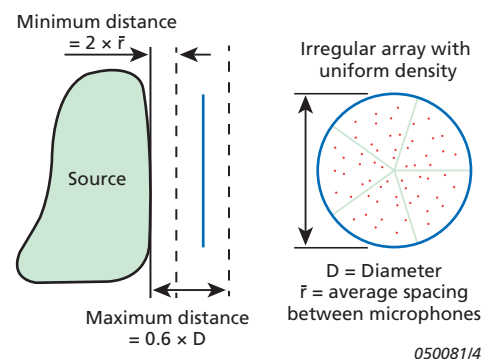
Fig. 1 Typical noise source identification system



Measurement Distance for WBH

Wideband holography (WBH) requires the use of an optimized random or pseudo-random array geometry. The placement of the array is very important to the quality of the results. The optimal distance from the array to the surface of the sound source is between the minimum and maximum array placement distances (see Table 1). Within this range, a comparison of the sound power determined from WBH and a direct measurement of the sound power using a sound intensity probe exhibits good agreement.

Fig. 2 Measuring distance for wideband holography



Slice Wheel Array Placement Specifications

Table 1 Optimal placement distance (from sound source) for various slice wheel arrays

Number of array channels	Diameter of array*	Average distance between microphones*	Minimum distance (recommended)*	Maximum distance (recommended)*	Optimal distance*
18	0.40	0.08	0.17	0.24	0.21
18	0.55	0.11	0.23	0.33	0.29
36	0.55	0.08	0.16	0.33	0.20
60	0.55	0.06	0.13	0.33	0.16
84	0.55	0.05	0.11	0.33	0.13
36	1.05	0.16	0.31	0.63	0.39
60	1.05	0.12	0.24	0.63	0.30
84	1.05	0.10	0.20	0.63	0.25

* Measurement given in metres

Specifications – PULSE Array Acoustics Wideband Holography BZ-5644

Configuration

OPERATING SYSTEM REQUIREMENTS

Microsoft® Windows® 8 Pro (x64) or Windows® 7 SP1 (x32 and x64)

OTHER SOFTWARE REQUIREMENTS

Microsoft® Office 2007 SP2, Office 2010 SP2 (x32), or Office 2013 (x32)
Microsoft® SQL Server® 2012 (Express (SP2) included in installation)

COMPUTER CONFIGURATION/DATA

ACQUISITION FRONT-ENDS
As for PULSE

Ordering Information

Typical 36-channel system*

PULSE SOFTWARE†

- One of the following:
 - Type 8607-N: PULSE Array Acoustics Acoustic Holography
 - Type 8608-N: PULSE Array Acoustics Beamforming
- Type 7770-N: PULSE FFT Analysis
- Type 7761-N: PULSE Acoustic Test Consultant
- Type 3099-A-N: PULSE Front-end Driver

PULSE DATA ACQUISITION HARDWARE FOR 36-CHANNELS

- Type 7200-C-SE1: DELL Latitude Standard Notebook

- Type 3660-C-100: LAN-XI Mainframe with GPS, 5 modules
- 3 × UA-2112-120: LAN-XI Front Panel with array connectors, 2 × LEMO (7-pin), 12-channel
- 3 × 3053-B-120: LAN-XI 12-channel Input Module, 25.6 kHz (CCLD, V)
- 1 × Type 2831-A Battery Module

36-CHANNEL SLICE WHEEL ARRAY BEAMFORMER

- WA-1558-W-xxx: 36-channel slice wheel array with camera and specified diameter
- WL-1297-W-008: Bundle of 6 LEMO to LEMO cables, 5 m collected in braided sleeve with individual numbering
- WA-0728: 6-channel Pistonphone Adaptor
- Type 4228: Pistonphone

SOFTWARE MAINTENANCE AND SUPPORT

Available for all software packages. See the PULSE Software Maintenance and Support Agreement Product Data (BP 1800) for further details.

- One of the following:
 - M1-8607-N: Maintenance and support for Type 8607-N, one year
 - M1-8608-N: Maintenance and support for Type 8608-N, one year
- M1-7770-N: Maintenance and support for Type 7770-N, one year
- M1-7761-N: Maintenance and support for Type 7761-N, one year
- M1-3099-A-N: Maintenance and support for Type 3099-A-N

* Ordered via Project Sales

† The following documents contain more information on Wideband Holography's software components:

Product Data: PULSE Array-based Noise Source Identification Solutions (BP 2144), including Beamforming Type 8608 and Acoustic Holography Type 8607

System Data: Software for PULSE (BU 0229), including Type 7770

Product Data: Acoustic Test Consultant with Noise Source Identification Type 7761 (BP 1908)

Product Data: PULSE Front-end Driver Type 3099-A (BP 2398)

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