

PULSE Array Acoustics, Proximal Holography BZ-5963

PULSE™ LabShop > Array Acoustics, Acoustic Holography Type 8607 > Option BZ-5963

Uses

- Noise source identification (NSI) on small objects
- Transient calculations (optional)
- Data can be used to create animated, 3D noise maps in PULSE Array Acoustics Post-processing

Features

- Conformal mapping of:
 - displacement
 - particle velocity
 - sound pressure
 - sound intensity
 - reactive intensity
- Accurate noise mapping of non-planar objects
- High-resolution map, even at low frequencies
- Near-field holography
- Uses equivalent source method (ESM)



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Description

PULSE Array Acoustics, Proximal Holography BZ-5963 is conformal noise-mapping software using the ESM algorithm. BZ-5963 is an option for PULSE Array Acoustics, Acoustic Holography Type 8607. See Product Data [BP 2144](#) for information about array-based NSI software for the PULSE Array Acoustics platform, including conformal mapping.

As with other conformal mapping procedures, BZ-5963 superimposes a conformal noise-map created from patch array measurements onto a 3D model of the noise source. However, Proximal Holography BZ-5963 produces the noise map with a single array measurement. As all the signals are obtained simultaneously, transient calculations can be performed to create animated, 3D noise maps.

Conformal Array

For good results with BZ-5963, it is important that the conformal array covers the whole noise source. Microphones in the array are placed close to the noise source, typically 2 cm, and spacing between the microphones is about the same. Therefore, BZ-5963 is ideal for small objects such as electric motors.

The size and design of the array varies according to the object being mapped. A file containing the microphone placement for the array is delivered for each custom setup. The microphone recommended for use in the array is 10 kHz Array Microphone Type 4957, see Product Data [BP 2172](#) for microphone specifications.

Prerequisites

A 3D model of the noise source is required, both to design the array and to use BZ-5963. An initial graphics exchange specification (IGES) file from a computer-aided design (CAD) model provides all the needed information. Another option is to use 3D Creator Positioning System WU-0695-W-001 (Product Data [BP 2383](#)) to create digital models.

Typical 48-channel System

A typical system for PULSE Array Acoustics, Proximal Holography BZ-5963 requires the following:

- PULSE Array Acoustics software
- LAN-XI Data Acquisition Hardware
- 48 microphones

Fig. 1 Typical 48-channel setup for NSI on small motors

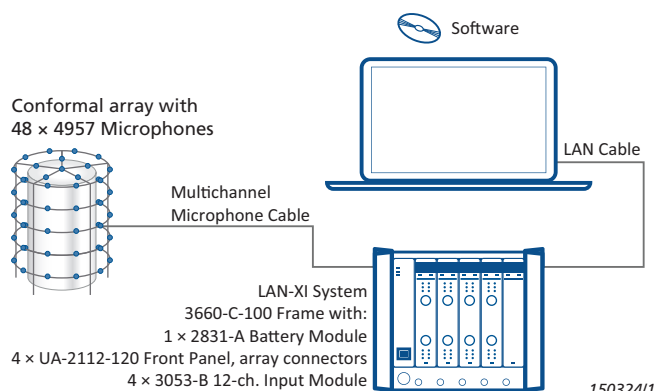


Table 1 Comparison of vibration measurement techniques

	Accelerometers	Laser Doppler Vibrometer	Microphone Array
Transient analysis	✓		✓
Works on rotating objects		✓	✓
Works on very warm objects		✓	✓
Direct surface measurement	✓	✓	
Detects acoustic leakages			✓

Specifications – PULSE Array Acoustics, Proximal Holography BZ-5963

BZ-5963 is an option for Array Acoustics, Acoustic Holography Type 8607, a Windows®-based Noise Source Identification (NSI) application for PULSE LabShop. Software is delivered via installation media (DVD or USB). The licence is either: node-locked to a PC host ID or dongle; or floating, locked to a network server

SYSTEM REQUIREMENTS

- The following BK Connect® applications:
 - Data Viewer Type 8400
 - Hardware Setup Type 8401
 - Hardware Setup (advanced) Type 8401-A
 - Data Processing Type 8403
 - Array Analysis Type 8430 (includes PULSE Acoustic Test Consultant Type 7761)

- PULSE Array Acoustics, Acoustic Holography Type 8607
 - Microsoft® Windows® 10 Pro or Enterprise (x64) with either Current Branch (CB) or Current Branch for Business (CBB) servicing model
 - Microsoft® Office 2016 (x32 or x64) or Office 2019 (x32 or x64)
 - Microsoft® SQL Server® 2017 or SQL Server® 2019
- Note:** Microsoft SQL Server 2017 is included in BK Connect installation

RECOMMENDED SYSTEM CONFIGURATION

- Intel® Core™ i7, 3 GHz processor or better
- 32 GB RAM

- 480 GB Solid State Drive (SSD) with 20 GB free space, or better
- 1 Gbit Ethernet network*
- Microsoft® Windows® 10 Pro or Enterprise (x64) with CB
- Microsoft® Office 2016 (x32)
- Microsoft® SQL Server® 2017
- Screen resolution of 1920 × 1080 pixels (full HD)

* A dedicated data acquisition network (LAN or WAN) is recommended. A network that only handles data from the front end improves the stability of the data

Ordering Information

Due to the number and variety of components, systems are ordered through Project Sales.

Licences are either node-locked or floating.
BZ-5963 **PULSE Array Acoustics, Proximal Holography**

SOFTWARE MAINTENANCE AND SUPPORT
 M1-5963 Agreement for BZ-5963

Optional Accessories

- WU-0695-W-001 3D Creator Positioning System
- BZ-5636 PULSE Array Acoustics, Transient Calculations

Typical 48-channel System

PULSE SOFTWARE†

- Type 8607: PULSE Array Acoustics, Acoustic Holography
- BZ-5963: Proximal Holography
- Type 8400: BK Connect Data Viewer
- Type 8401: BK Connect Hardware Setup
- Type 8401-A: BK Connect Hardware Setup (advanced)
- Type 8403: BK Connect Data Processing
- Type 8430: BK Connect Array Analysis

SOFTWARE MAINTENANCE AND SUPPORT
 Available for all software packages

† Please visit bksv.com/analysis-software for information about BK Connect applications and Type 8607

DATA ACQUISITION HARDWARE‡

- Type 7200-C-SE1: DELL Latitude Standard Notebook
- Type 3660-C-100: 5-module LAN-XI Front-end Frame with GPS
- 4 × UA-2112-120: LAN-XI Front Panel with array connectors, 2 × LEMO (7-pin), 12-channel, detachable
- 4 × Type 3053-B-120: LAN-XI 12-channel Input Module 25.6 kHz (CCLD, V)
- 1 × Type 2831-A Battery Module

48-CHANNEL CONFORMAL ARRAY

- 48 × Type 4957: 10 kHz Array Microphone

‡ Please visit bksv.com/lan-xi for information about LAN-XI Data Acquisition Hardware

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