

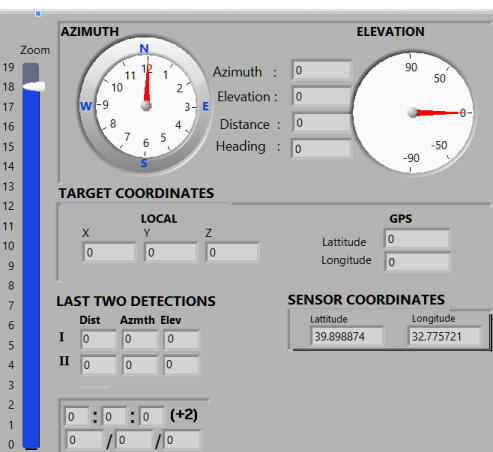
ACOUSTIC DIRECTION FINDING WITH MICROPHONE ARRAYS:

ATARGET Acoustic Direction Finding systems are used in different applications including gunshot detection systems, artillery detection systems, security systems, etc. This turn-key laboratory is designed to implement the basic technology behind the multichannel acoustic detection systems. Once this technology is acquired, students can build their own systems.



USER FRIENDLY GUI and MANUAL

Each experiment is supported with a user friendly GUI allowing complete observation of multichannel signals. GUI is designed using LabVIEW. Supplied codes can be modified to add new features. The projects and the software is supplied with the detailed information. The Laboratory manual is written to cover both theory and application. The engineering background is complemented with the step by step practical applications.



COMPLETE SOFTWARE SOLUTION

ATARGET Acoustic Direction Finding system software is seamlessly integrated with NI hardware and can be operated easily from its GUI. The software is coded in LabVIEW. Each project code is supplied with the laboratory manual. Students can easily modify these codes for custom applications. This software package allows students to localize sounds, identify azimuth and elevation angles of acoustic targets. The time and frequency characteristics of multichannel signals can be observed real-time. Students have the chance to operate with real-world signals and appreciate the power of signal processing provided by the ATARGET Acoustic Direction Finding system software.

Features

- Open Source Software For Custom Applications
- Seamless integration of NI hardware and software
- Plug and play PCB board with NI myRIO
- Acoustic Direction Finding with Microphone Array
- Turn-key acoustics teaching platform
- Real-time Mathscript for MATLAB codes

Laboratory Content with myRIO

A. Hardware

- Microphones (MEMS Mic. Array, Professional Mic. Array)
- Microphone Driver Circuit PCB
- Microphone Stand
- NI myRIO

B. Introduction to Acoustics and Microphone Sensors

- Acoustic Waves and Artifacts
- Sensing acoustic signals
- Types of Microphones

C. Simple Programming in myRIO

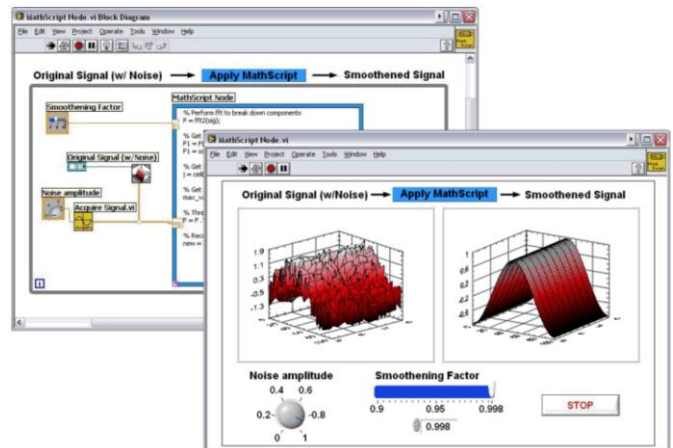
- Project Generation
- Virtual Instruments
- Running program on PC
- Running program on myRIO

D. Multichannel Signal Reception

- A/D operation
- FPGA programming
- DMA

E. Multichannel Acoustic Processing

- Sound Detection
- FFT and Spectrum Monitoring
- Direction Finding



ATARGET Ltd.
 ODTU TEKNOPOLIS
 Silikon Blok, BK18 Ankara/TURKEY



+90 312 286 87 80,
 +90 555 366 90 63



atargetmail@gmail.com