

Quick Start Guide

This quick start guide is designed to provide documentation for initial setting of TDAQ IEPE and Accessories. Read these instructions carefully before starting.

Description: Quick Start Guide

Issued by: T.I.E.R.A Pvt. Ltd.

Edition: 2.1/2023

Contents

Introduction	4
Safe Work Habits	4
Getting Started	5
TVIB Software	5
System Requirements	5
Installing the TVIB Software	5
Software Initial Settings	6
Toolkit for Labview	9
TDAQ IEPE	10
Taking the first Measurement	11
Item List	12
Support	13

Thanks for purchasing the TDAQ IEPE. Hope our product will be beneficial for your application.!

If you require any help, please contact support@tieraonline.in

Your comments and recommendations on our products are valuable for us. Please share us your review on sales@tieraonline.in.

We have made sure that the manual is free from any errors to the best of our knowledge, in case of any inconsistencies (contact our support) we shall clarify and make the rectification as soon as possible.

TIERA Pvt. Ltd. will not be liable for any loss, whether direct, indirect, incidental, or consequential, resulting from the use or reliance on any of this document's content, regardless of whether such content is correct or comprehensive. TIERA Pvt. Ltd. will not be liable for any damages, punitive or otherwise, resulting from the use or reliance on any of the content in this manual.

Introduction

Read this section carefully and follow the safety instructions to avoid any damages or accidents.

Use TDAQ IEPE only for Sound & Vibration Measurement and Analysis with IEPE Sensors.

For connecting Tachometers make sure you have the proper signal conditioner and cables (Ordering Code: 8401) .

1. The DAQ is USB Powered (as default) and does not require any other external power supply.
2. It supports all general IEPE/ICP etc. Sensors
3. Make Sure you have a windows 10 or higher versions for software Installation

Safe Work Habits

1. Do not drop the Data Acquisition System, this may damage the electronic components.
2. Do not immerse/ expose the Data Acquisition System to water content.
3. The input voltage range of the Data Acquisition system is +/-10V. Make sure the Input is within the specified range.
4. Do not plug in a non IEPE Sensor without the required Signal Conditioner.

Getting Started

TVIB Software

System Requirements

Processor	Pentium 4M/Celeron 866 MHz (or equivalent) or later (32-bit) Pentium 4 G1 (or equivalent) or later (64-bit)
RAM	4 GB
Screen Resolution	1024 x 768 pixels
Operating System	Windows 10
Disk Space (Min)	2 GB

Installing the TVIB Software

For installing the software in Windows 10/ higher versions, follow the steps below.

1. Download T-ViB Installer.
2. Run the Install.exe file and complete the installation.
3. Open T-ViB.exe from the start menu for starting the application.

Software Initial Settings

Launcher

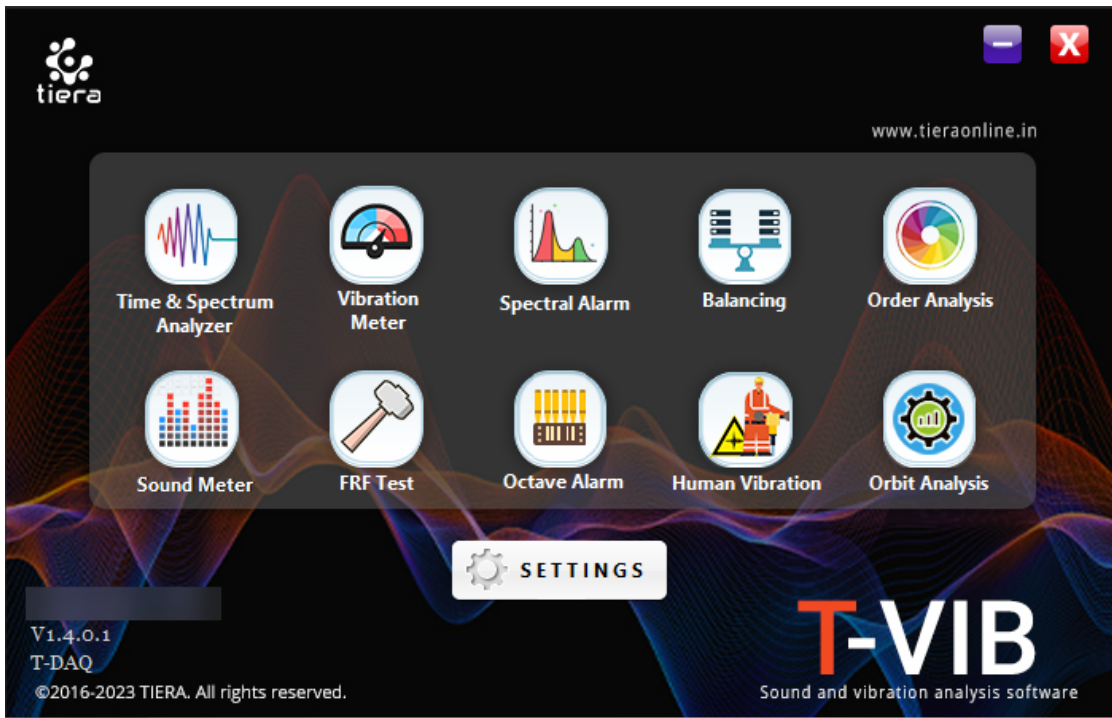


Fig 1 : Launcher

Channel Settings

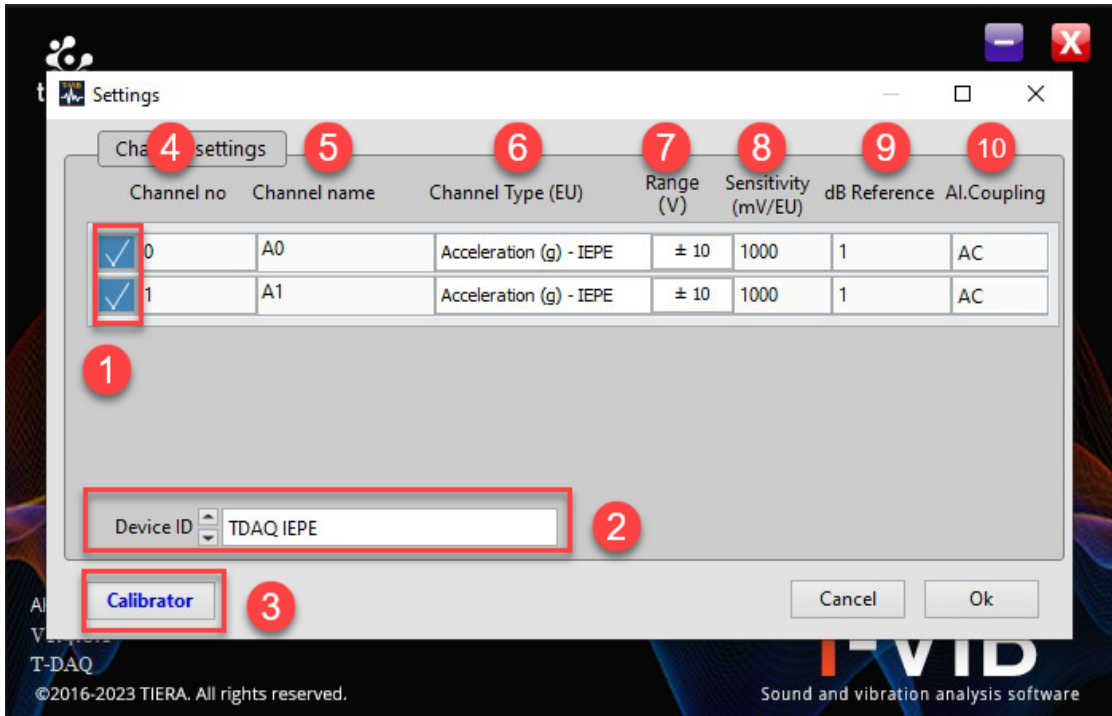


Fig 2 : Channel Settings

- 1 - Active Channel : Click the check box to enable a channel.
- 2 - Device ID: The name/ ID of the Data Acquisition Device connected to the software.
- 3 - Calibrator button: Click calibrate to use an external calibrator to calibrate the sensor connected to the Data Acquisition device.
- 4 - Channel No. : Number of the channel
- 5 - Channel Name: Enter a suitable channel name to denote the data from a particular sensor.
- 6 - Channel Type: Specifies units of measurement & the Sensor type. Following are the general units of measurement & Sensor type used.

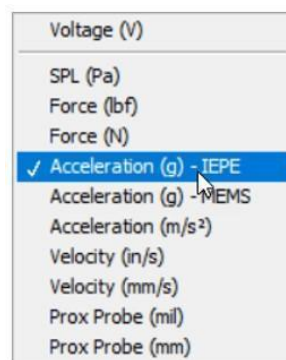


Fig 3 : Channel Type

- 7 - Range : Enter the maximum range of voltage, the sensor would output to the Data Acquisition device.
- 8 - Sensitivity: The voltage output per unit of the Engineering Unit.
- 9 - dB Reference : Is the reference with which the logarithmic (in decibels) is measured.
- 10 - AI Coupling : Analog Input coupling refers to the coupling in the Data Acquisition device. (Default is AC)

Using External Calibrator for Calibrating the Sensor

The screenshot shows a software window titled 'Calibrator'. At the top, there are three main sections: 'Time (S)' with a value of 5, 'Channel' set to 'Accelerometer', and 'Date of calibration' set to '09:12:18 06-07-2021'. Below these are two columns of settings. The left column, 'Calibrator specifications', includes 'Acceleration (g_{RMS})' set to 4, 'Calibration frequency (Hz)' set to 5, and 'Previous sensitivity (mV/g)' set to 100. The right column, 'Measured Parameters', includes 'Detected frequency (Hz)' set to 7, 'Detected voltage (V)' set to 0, and 'Measured sensitivity [mV/g]' set to 0.00. At the bottom right, there are two buttons: 'Measure' and 'Calibrate'.

Fig 4 : Calibration Menu (this function is applicable only with a sensor and its calibrator)

- 1 - Time (s) : Time frame of the signal from the sensor.
- 2 - Channel : The name of the channel which is to be calibrated.
- 3 - Date of Calibration : Set the date on which calibration is done.
- 4 - Acceleration (g rms) : The acceleration level of vibration set in the calibrator.
- 5 - Calibration frequency : The frequency of vibration set in the calibrator.
- 6 - Previous Sensitivity : The previous sensitivity value entered by the user or obtained in the last calibration.
- 7 - Detected frequency : The frequency of vibration detected from the calibrator by the sensor connected.
- 8 - Detected voltage: The Voltage Output from the sensor corresponds to the input from the calibrator.
- 9 - Measured Sensitivity : Sensitivity value of the sensor measured from the Calibration procedure.
- 10 - Measure : Press the Measure button to calculate the sensitivity value from the calibration procedure.
- 11 - Calibrate : Press the calibrate button to automatically enter the sensitivity value measured from the calibration procedure.

Toolkit for Labview

TDAQ IEPE has a toolkit for the LabVIEW™ Software, the library of VIs that enable programmers to access the data acquisition features.

To get the toolkit for labview, request your supplier the Toolkit file. Use the example file as a template for building the application.

TDAQ IEPE

TDAQ IEPE offers standard plug & play USB powered. Hassle free setup and intuitive functionality by just plugging the unit into a USB port and viewing signals from accelerometers, microphones, hammers, or any other IEPE/ICP-type sensor.



Fig 5: Top view

AI 0 : Analog Input Channel 0

AI 1 : Analog Input Channel 1



Fig 7: Side view, USB Port and indicators

Taking the first Measurement

Please follow the below steps for Setting up the unit for Vibration Measurement.

Step 1: Connect the Data Acquisition System to the PC with the USB Cable.

Step 2: Connect the Sensor to the Input Channel

Step 3: Configure the channel settings

Step 4: Run the Software

Item List

SL No.	Item Description	Quantity	Item code
1.	Data Acquisition System	1	TDAQ IEPE
2.	USB Cable	1	TDAQ IEPE: A1
4.	TVIB Software (online Link)	Single key License	TVIB *

*Check the code for Modules in the manual

Support

For any queries or assistance, contact support@tieraonline.in

For self-learn courses/ training, visit our website <https://learn.tieraonline.in/>



CONTACT US

Tyrannus Innovative Engineering and Research Academy Pvt. Ltd.
TrEST Research Park, TC- 4/2322, GEM building, (Opp) CET Thiruvananthapuram, Kerala
695016
GSTIN: 32AAFCT7371M1ZY
sales@tieraonline.in
www.tieraonline.in