

# TDK ROBOKIT1 Sensor-Packed Open Source SmartRobotics Module User Guide

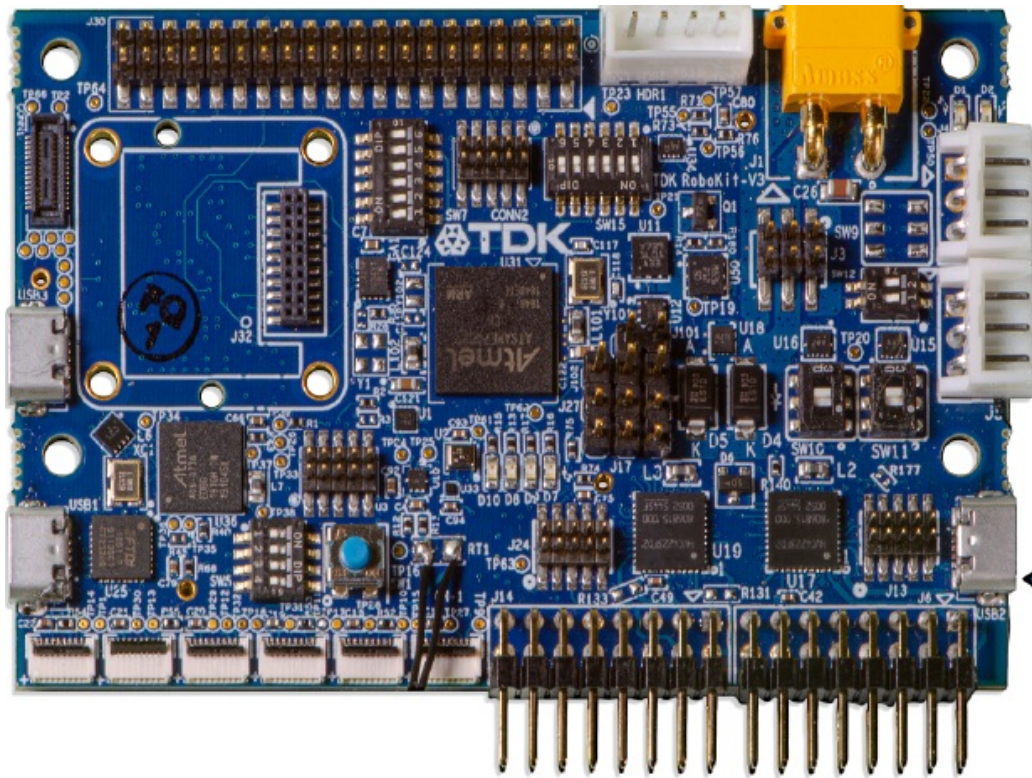
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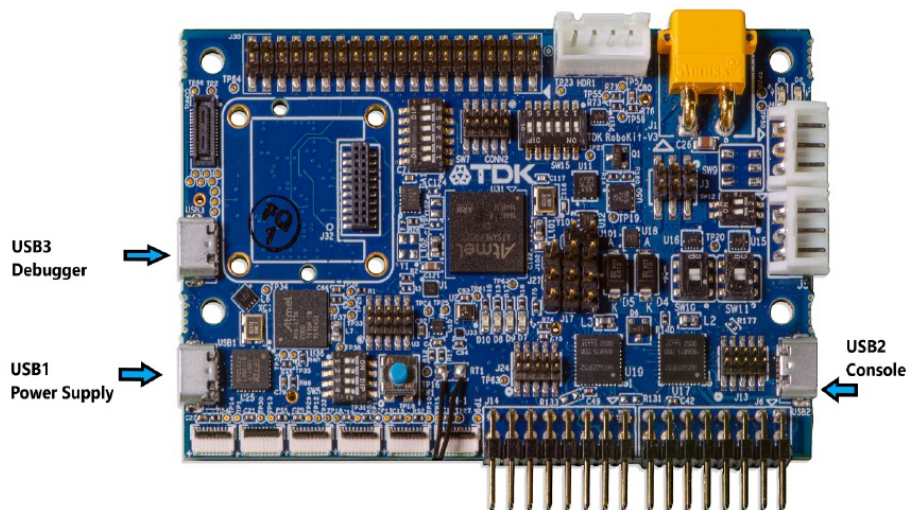


**TDK ROBOKIT1 Sensor-Packed Open Source SmartRobotics Module**



## ROBOKIT1 MODULE

This document provides an overview of ROS2 drivers that publish data on specific topics using ROS2 compliant message structures. This module includes a Pressure, IMU, Temperature, Magnetometer, Audio, Microphone, and Ultrasonic sensors.



## ROS2 DRIVER DEV ENVIRONMENT

- TDK RoboKit1 Board
- Raspberry Pi 4 / Ubuntu Machine
  - o Install all required packages for ROS2 Foxy
  - o Test that packages working as expected
- Build Sensor Packages
  - o Create your own workspace with src directory
  - o Internal package to clone

- GitHub – RoboKit1-ROS2-Drivers
- ROS2 nodes written in python
- Nodes inside tdk\_robokit\_ctrl\_sensors\_node package
  - o Build the packages in your local workspace
- `rm -rf install/ log/ build/`
- `colcon build --symlink-install`

## START ROS2 NODES AND LOG DATA

- `ros2 run tdk_robokit_ctrl_sensors_node icm42622_publisher`
- `ros2 run tdk_robokit_ctrl_sensors_node ak09918_publisher`
- `ros2 run tdk_robokit_ctrl_sensors_node icp10101_publisher`
- `ros2 run tdk_robokit_ctrl_sensors_node ch101_publisher`
- `ros2 run tdk_robokit_ctrl_sensors_node ads7052_publisher`
- `ros2 run tdk_robokit_ctrl_sensors_node ics43434_publisher`
- `ros2 topic list`
- `ros2 topic echo /tdk_robokit_icm4x6xx`
- `ros2 topic echo /tdk_robokit_ak09918`
- `ros2 topic echo /tdk_robokit_icp10101`
- `ros2 topic echo /tdk_robokit_ads7052`
- `ros2 topic echo /tdk_robokit_ch101`

## HOW TO USE THE DATA IN ROBOTIC APPLICATIONS

1. Ensure that RoboKit1 is powered on.
2. Check if the sensor is connected to the RoboKit1 board.
3. Connect the RoboKit1 board to the ROS2 Host machine.

**Note:** Sensor data publisher nodes are already provided in the package.

4. Create your own subscriber node for the specific topic.

**Note:** Subscriber node could be another node that processes data.

5. Start both publisher and subscriber nodes.
6. Use the data from publisher in subscriber node to control the robot.

## REVISION HISTORY

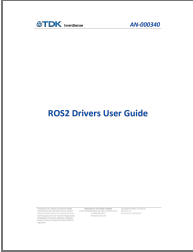
REVISION DATE	REVISION	DESCRIPTION
01/06/2022	1.0	Initial release

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**Documents / Resources**

	<p><b><a href="#">TDK ROBOKIT1 Sensor-Packed Open Source SmartRobotics Module</a></b> [pdf] User Guide ROBOKIT1, Sensor-Packed Open Source SmartRobotics Module, ROBOKIT1 Sensor-Packed Open Source SmartRobotics Module, ROS2 Drivers, AN-000340</p>
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