

Sonar Phidget

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Getting Started

Welcome to the DST1200 user guide! In order to get started, make sure you have the following hardware on hand:

- DST1200 - Sonar Phidget
- VINT Hub
- Phidget cable
- USB cable and computer

Next, you will need to connect the pieces:



1. Connect the DST1200 to the VINT Hub using the Phidget cable.
2. Connect the VINT Hub to your computer with a USB cable.

Now that you have everything together, let's start using the DST1200!


Using the DST1200

Phidget Control Panel


In order to demonstrate the functionality of the DST1200, the Phidget Control Panel running on a Windows machine will be used.

The Phidget Control Panel is available for use on both macOS and Windows machines.

Windows

To open the Phidget Control Panel on Windows, find the  icon in the taskbar. If it is not there, open up the start menu and search for Phidget Control Panel

macOS

To open the Phidget Control Panel on macOS, open Finder and navigate to the Phidget Control Panel in the Applications list. Double click on the  icon to bring up the Phidget Control Panel.

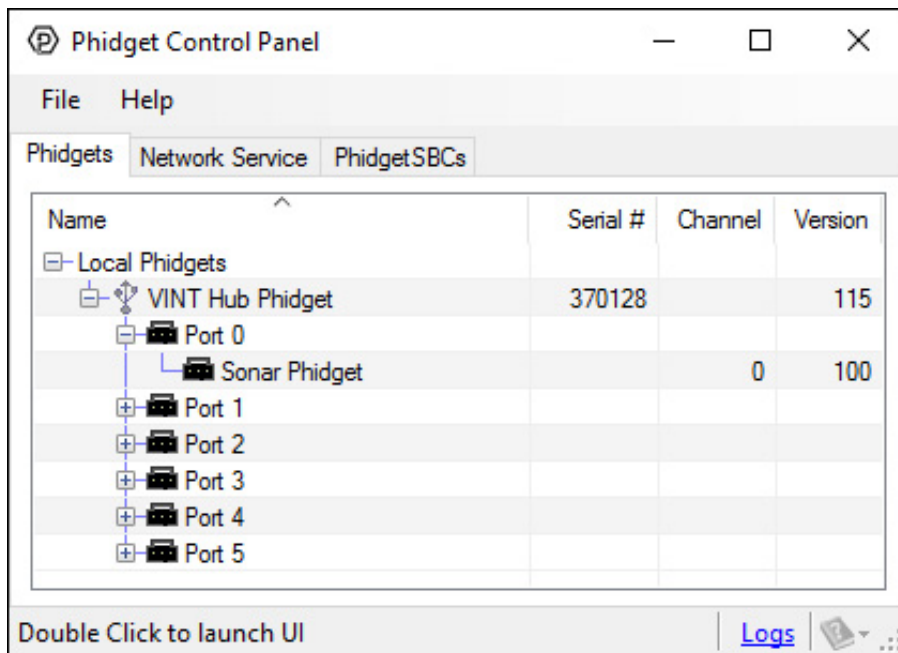
For more information, take a look at the getting started guide for your operating system:

- Getting started with Windows
- Getting started with macOS

Linux users can follow the getting started with Linux guide and continue reading here for more information about the DST1200.

First Look

After plugging the DST1200 into your computer and opening the Phidget Control Panel, you will see something like this:



The Phidget Control Panel will list all connected Phidgets and associated objects, as well as the following information:

- **Serial number:** allows you to differentiate between similar Phidgets.
- **Channel:** allows you to differentiate between similar objects on a Phidget.
- **Version number:** corresponds to the firmware version your Phidget is running. If your Phidget is listed in red, your firmware is out of date. Update the firmware by double-clicking the entry.

The Phidget Control Panel can also be used to test your device. Double-clicking on an object will open an example.

Distance Sensor

Double-click on the Distance Sensor , labelled Sonar Phidget, object in order to run the example:

Phidget Info

Attached: DST1200 - Sonar Phidget

Version: 102 Hub Serial Number: 370181

Channel: 0 Hub Port: 0

Settings

Change Trigger: 0mm

Data Interval: 100ms

Sonar Quiet Mode

Data

Distance 2010

Sonar Reflections

Count 8

	Distance (mm)	Amplitude
0	2010	280
1	2230	108
2	2310	202
3	2420	74
4	4030	106
5	4140	36
6	4290	34
7	4590	30

General information about the selected object will be displayed at the top of the window. You can also experiment with the following functionality:

- Modify the change trigger and/or data interval value by dragging the sliders. For more information on these settings, see the data interval/change trigger page.
- Toggle the Quiet Mode with the checkbox. For more information on Quiet Mode, check out the technical section.
- The distance (mm) of the strongest reflection will be shown in the Data box. All other reflections (distance and amplitude) can be seen in the Sonar Reflections box. These additional reflections can correspond to other objects, or echoes of the primary object.

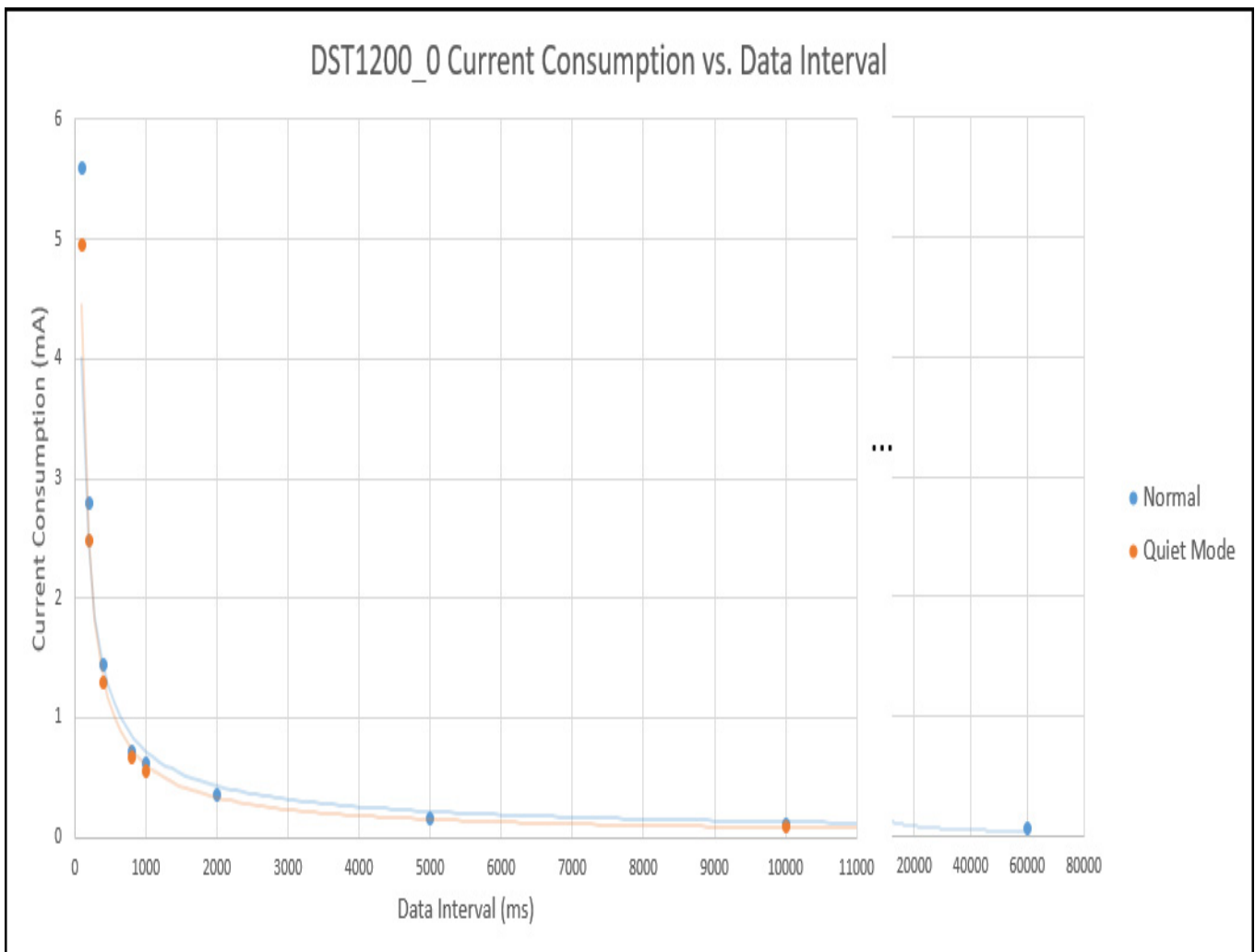
Technical Details

Quiet Mode

The DST1200 has a Quiet Mode property which, as the name suggests, reduces the volume of the sound pulses used by the sonar sensors. While the sound that this Phidget makes is audible in either mode, it is much more noticeable without quiet mode enabled. By enabling quiet mode, you will affect the maximum sensing range and the number of reflections detected. Quiet mode also consumes less power, as explained in the next section.

Current Consumption

The current consumption of the DST1200 varies depending on the data interval you choose. The longer the interval between samples, the lower the current consumption. Switching to quiet mode also lowers current consumption slightly.



Amplitude Response

When you receive data from the DST1200, you'll end up with an array of sonar reflections that each have a distance and an amplitude. The distance, of course, refers to how far away the object is. The amplitude gives you a general idea of the size of the object. The amplitude value can range from 3 to approximately 900, with 3 being a very small reflection and 900 being a very large one. In most applications, when you're using the DST1200 as an ordinary distance sensor, you'll probably want to ignore all reflections except for the one with the greatest amplitude.

Saturation

The DST1200 will fire saturation error events when the nearest reflection is closer than 40mm from the sensor. At this range it is too close for the sensor to accurately determine the range of the object.

What to do Next

- [Software Overview](#) - Find your preferred programming language here to learn how to write your own code with Phidgets!
- [General Phidget Programming](#) - Read this general guide to the various aspects of programming with Phidgets. Learn how to log data into a spreadsheet, use Phidgets over the network, and much more.
- [Phidget22 API](#) - The API is a universal library of all functions and definitions for programming with Phidgets. Just select your language and device and it'll give you a complete list of all properties, methods, events, and enumerations that are at your disposal.

