



## Application Note: AZD018 Setup of IQS127 for Data Streaming (1-Wire Protocol) using VisualProxSense

The IQS127D must be in “Debug Mode” in order to make use of the one-wire protocol for data streaming to a MCU or PC. Debug mode is a one-time programmable (OTP) bit selection that must be set to “Enable” using USBProg as shown in Figure 1.

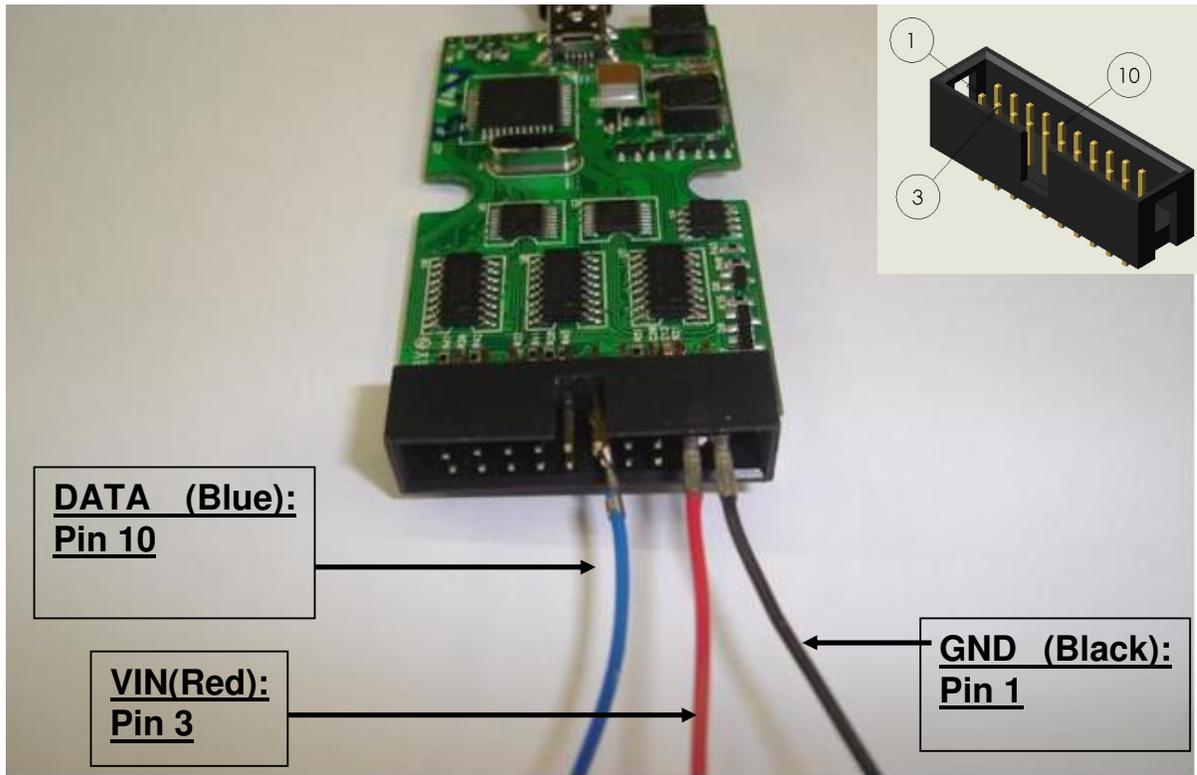
| Options:                            | IQS127D            |   |
|-------------------------------------|--------------------|---|
| POUT + TOUT Logic Select            | Active Low         | ▼ |
| POUT Function Select (Prox)         | Active             | ▼ |
| TOUT Function select (Touch)        | Active             | ▼ |
| Proximity Threshold                 | 2 (Most Sensitive) | ▼ |
| Touch Threshold                     | Automatic Adjust   | ▼ |
| Power Mode                          | Normal Power Mode  | ▼ |
| THALT Timing                        | 18.6s              | ▼ |
| Long Term Noise Filter (LTN)        | Enabled            | ▼ |
| Debug Mode                          | Enabled            | ▼ |
| Antenna Tuning Implementation (ATI) | Enabled            | ▼ |
| ATI Value                           | 1800               | ▼ |

Figure 1: Enabling Debug Mode using USBProg\_V5.1.4.

Ensure that the latest version of the firmware (CT120\_v0.31.hex or later) is loaded on the configuration tool. The latest version of the firmware can be downloaded from the Azoteq website, [www.azoteq.com](http://www.azoteq.com), along with the application note “Updating Firmware on CTxxx” for further instructions.

To be able to use the IQS127 for data streaming, only 3 wires need to be connected between the IQS127 PCB and the configuration tool (CT120).

- Step 1.** Connect three wires to the CT120 (Pins 1, 3 and 10) as shown in Figure 2, where:
- a. Black = Gnd (pin 1)
  - b. Red = Vin (pin3)
  - c. Blue = Data (pin10)

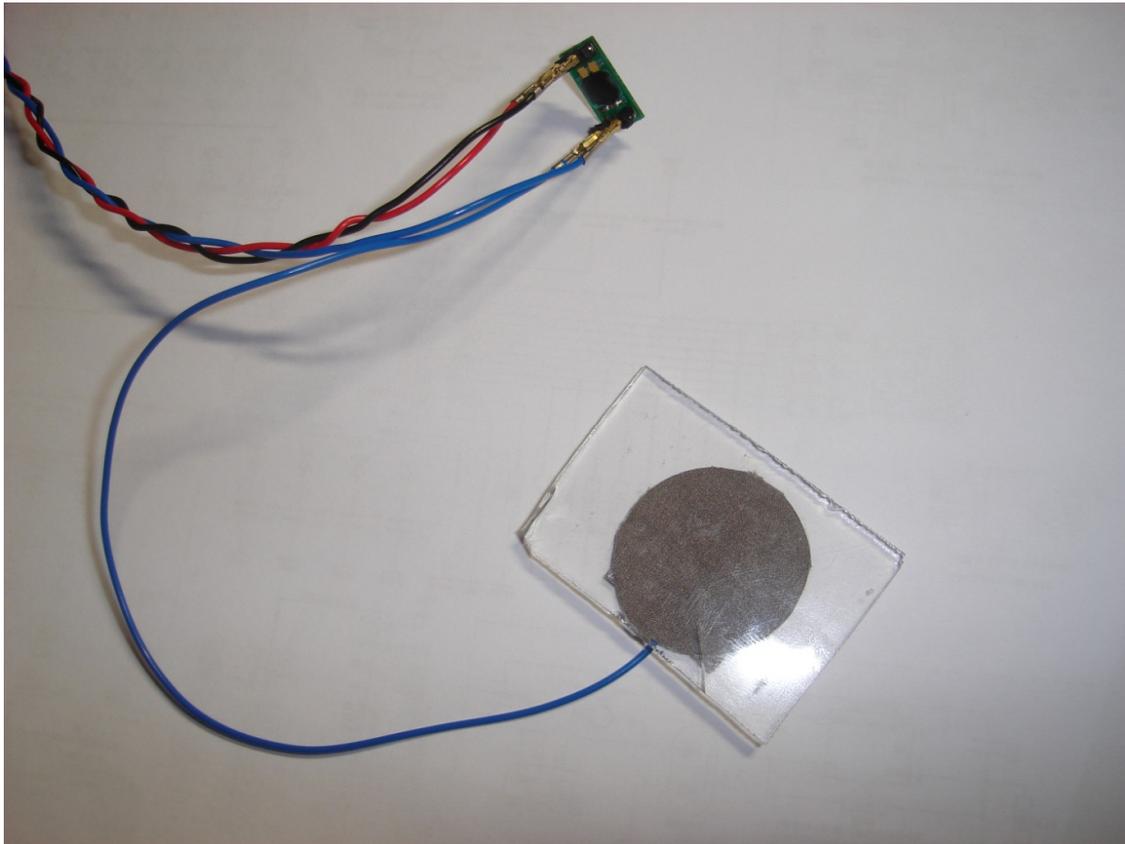


**Figure 2:** Pins used on the CT120 configuration tool.

**Step 2:**

Connect the other ends of the 3 wires to the IQS127 PCB and connect a sense plate to the same PCB, as shown in Figure 3.

- Pin 10 on CT120 -> OUT on PCB (Data), POUT/TOUT, OUT and TOUT pins for the IQS127D, IQS127S and IQS127R respectively
- Pin 3 on CT120 -> VIN on PCB
- Pin 1 on CT120 -> GND (Ground) on PCB
- Sense Plate -> SNSE (Sense) on PCB



**Figure 3:** Connecting a sense plate to the IQS127 PCB (AZP112A01).

**Step 3.** Connect the CT120 to a PC using a mini USB cable.

To start streaming data:

- Open VisualProxSense
- Select IQS127
- Click on Start Data
- Click on Scope/Bar, whichever is preferred