



Windows desktop application for wireless BLE sensors

General description

The windows desktop application designed by AMSYS GmbH & Co. KG, Germany, is used for the visualization and monitoring of wireless AMSYS Bluetooth sensors and can be used with a PC with windows operating system.

Hardware & System Requirements

- PC with USB 2.0 interface
- USB Dongle: BT900-US (*Figure 1*)
- Operating Systems: Windows XP, Windows 7, Windows 10 (x86 and x64)
- Microsoft .NET Framework 4.6.1 or above (x86 and x64)



Figure 1: USB Dongle BT900-US (Laird)

Use of the desktop application

Using the AMSYS desktop application, AMS Bluetooth sensors can be displayed in numeric and graphical way. In addition, measurements such as pressure and temperature can be plotted (logged) over time.

Dongle Installation

Insert the Dongle into the USB drive of the PC. The PC should install the related USB drivers automatically. After installing the USB driver you can open the Device Manager to check if the USB dongle has been installed correctly. A serial USB connection (COMX) should now be displayed under the port tab. If not, the FTDI FT232 USB Serial Converter driver has to be installed manually. This link below may help you install the driver:

<https://learn.sparkfun.com/tutorials/how-to-install-ftdi-drivers/windows---in-depth>.

Verify COM port is assigned to the Dongle from the Device Manager before proceeding to the next steps.

Software Installation

Copy the AMSYS Windows client software “AMSYS Desktop App.zip” to the PC and unzip it. Double click the .exe file in folder \bin\Release to run the AMSYS desktop app. The software user interface should display as below (*Figure 2*). The default units for pressure are “mbar” and “°C” for temperature. The “Auto Range” checkbox is also enabled by default. Some explanations can be found when moving the cursor over the labels, buttons and checkboxes. **Ensure the Port Name matches the COM port number from the Device Manager.**



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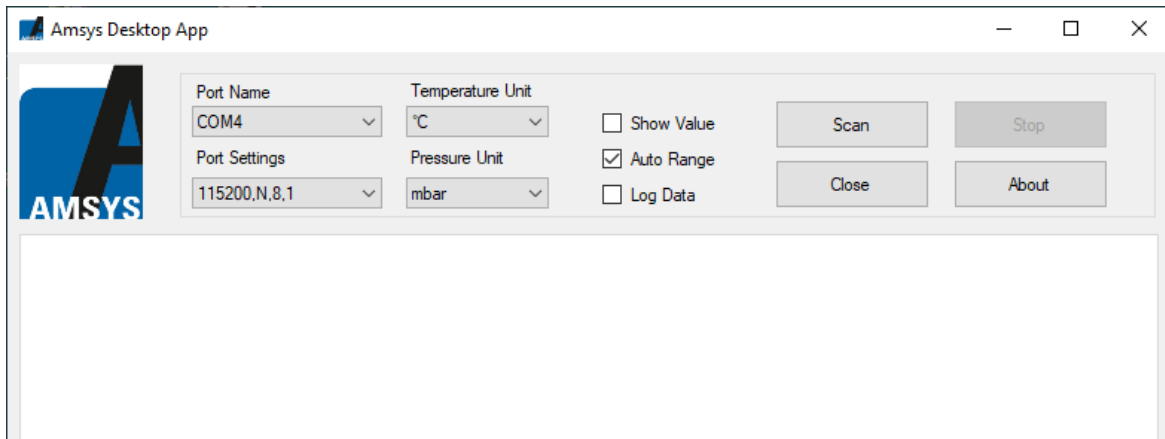


Figure 2: Main Window

Function Description

Click the “Scan” button to start scanning for advertising Bluetooth sensors. A “Scan” window will pop up and display the available Bluetooth sensors (*Figure 3*). The window shows the name, address, pressure range, pressure value, temperature value, signal strength (RSSI) and the battery level of the sensor.

To log the sensor data, the "Init Log" checkbox must first be enabled and then the desired sensors must be selected from the list. After selecting, the "Start Log" button must be clicked, which removes the checkmarks from the list and the scanning for Bluetooth sensors starts again. Now the application starts to log the selected sensors data with timestamp regarding pressure, temperature and battery level. The data will be saved in the (default: \\Amsys Desktop App\\Scanned Data) as a .dat file with the sensor name, address and a timestamp (*Figure 4*).

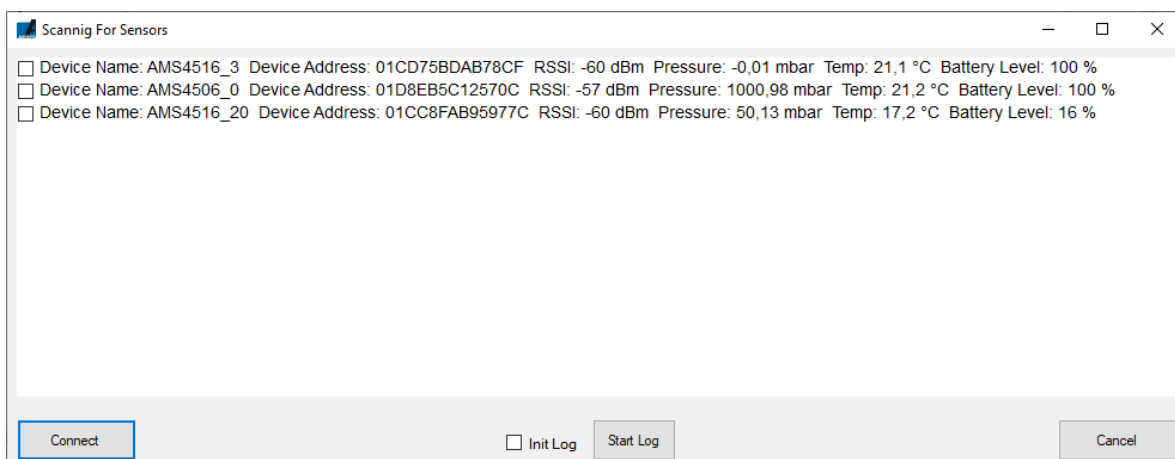


Figure 3: Scan Window



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Date Time	Sensor Name	MAC Address	Battery Level[%]	Temperature Value[°C]	Pressure Value[mbar]
16.09.2020 14:12:45	AMS4516_0	01D8EB5C12570C	100	26,1	-0,49
16.09.2020 14:12:46	AMS4516_0	01D8EB5C12570C	100	26,1	-0,44
16.09.2020 14:12:48	AMS4516_0	01D8EB5C12570C	100	26,1	-0,44
16.09.2020 14:12:50	AMS4516_0	01D8EB5C12570C	100	26,1	-0,49
16.09.2020 14:12:52	AMS4516_0	01D8EB5C12570C	100	26,1	-0,40

Figure 4: Scanned data log file

To connect and enable Bluetooth Notification choose max. 5 sensors from the list and click the “Connect” button. The application will start receiving data of the battery level, real-time pressure and temperature (Figure 5). Maximum 5 sensors can be connected at once. The initial connection time of each sensor takes about 30 sec. The different sensors can be viewed individually by clicking on the respective tab.

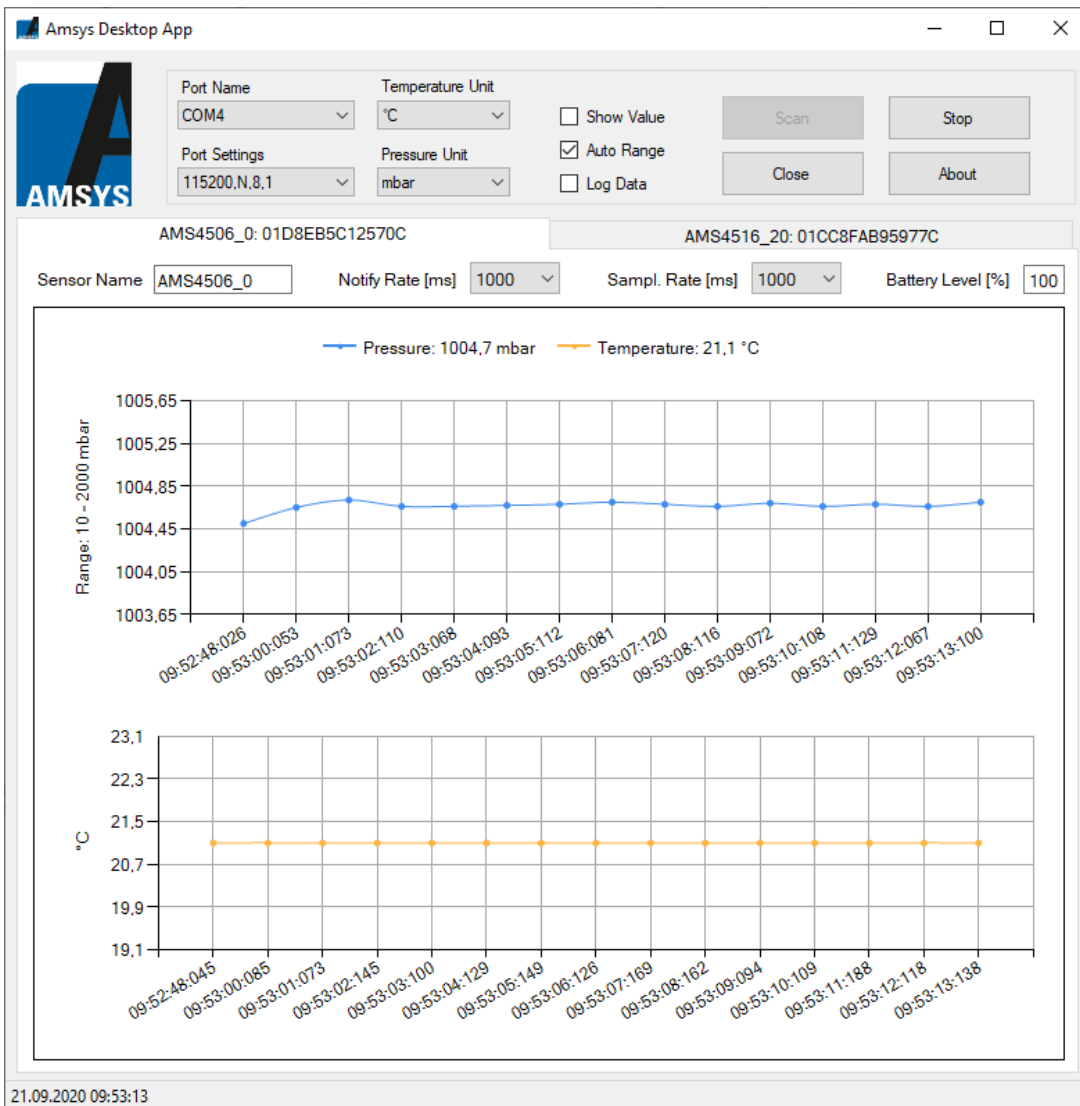


Figure 5: Bluetooth Connection Window



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Clicking the “Stop” button will stop the Bluetooth Notification and disconnect the sensor. In order to change the name of the sensor, enter the new name in the text box of the current name.

By clicking on the “Notify Rate” dropdown box, the sampling rate for the Bluetooth Notification can be adjusted (The default value is displayed after successful connection).

By clicking on the “Sampl. Rate” dropdown box, the sampling rate for advertising can be adjusted (The default value is displayed after successful connection).

When the “Data Log” Checkbox is enabled, the application starts to log the sensors data regarding pressure, temperature and battery level. A timestamp is also added by the operating system. The data will be saved in (default: \\Amsys Desktop App\\Bluetooth Notification Data) as a .dat file with the sensor name, address and a timestamp (*Figure 6*).

Date Time	Sensor Name	MAC Address	Battery Level[%]	Temperature Value[°C]	Pressure Value[mbar]
02.09.2020 14:38:26	AMS4516_0	01D8EB5C12570C	100	23,1	-0,63
02.09.2020 14:38:27	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:28	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:28	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:29	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:30	AMS4516_0	01D8EB5C12570C	100	23,1	-0,63
02.09.2020 14:38:31	AMS4516_0	01D8EB5C12570C	100	23,1	-0,58
02.09.2020 14:38:32	AMS4516_0	01D8EB5C12570C	100	23,1	-0,66
02.09.2020 14:38:33	AMS4516_0	01D8EB5C12570C	100	23,1	-0,58
02.09.2020 14:38:33	AMS4516_0	01D8EB5C12570C	100	23,1	-0,58
02.09.2020 14:38:34	AMS4516_0	01D8EB5C12570C	100	23,1	-0,66
02.09.2020 14:38:35	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:36	AMS4516_0	01D8EB5C12570C	100	23,1	-0,66
02.09.2020 14:38:37	AMS4516_0	01D8EB5C12570C	100	23,1	-0,63
02.09.2020 14:38:38	AMS4516_0	01D8EB5C12570C	100	23,1	-0,49
02.09.2020 14:38:38	AMS4516_0	01D8EB5C12570C	100	23,1	-0,49
02.09.2020 14:38:39	AMS4516_0	01D8EB5C12570C	100	23,1	-0,58
02.09.2020 14:38:40	AMS4516_0	01D8EB5C12570C	100	23,1	-0,63
02.09.2020 14:38:41	AMS4516_0	01D8EB5C12570C	100	23,1	-0,63
02.09.2020 14:38:42	AMS4516_0	01D8EB5C12570C	100	23,1	-0,58
02.09.2020 14:38:43	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:43	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:44	AMS4516_0	01D8EB5C12570C	100	23,1	-0,66
02.09.2020 14:38:45	AMS4516_0	01D8EB5C12570C	100	23,1	-0,58
02.09.2020 14:38:46	AMS4516_0	01D8EB5C12570C	100	23,1	-0,49
02.09.2020 14:38:47	AMS4516_0	01D8EB5C12570C	100	23,1	-0,63
02.09.2020 14:38:48	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53
02.09.2020 14:38:48	AMS4516_0	01D8EB5C12570C	100	23,1	-0,53

Figure 6: Bluetooth Notification log file

Summary

With the AMSYS desktop application, values measured by Bluetooth sensors can be saved, read out and displayed as a graphic. The AMSYS desktop app is an extension of the AMSYS mobile app; it establishes a connection to the customer’s own network and enables fast processing of measurements made by the wireless sensors. Certain sensor configurations can also be individually set using the desktop app.

AMSYS can customize the software on request.

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