WAVETRONIX Click 421 Serial to Bluetooth Installation Guide

Click 421 Serial to Bluetooth
INSTALLATION QUICK START GUIDE

The Click 421 converts half-duplex serial communications to Bluetooth and vice versa. For more information about this product, visit **wavetronix.com**.

Contents

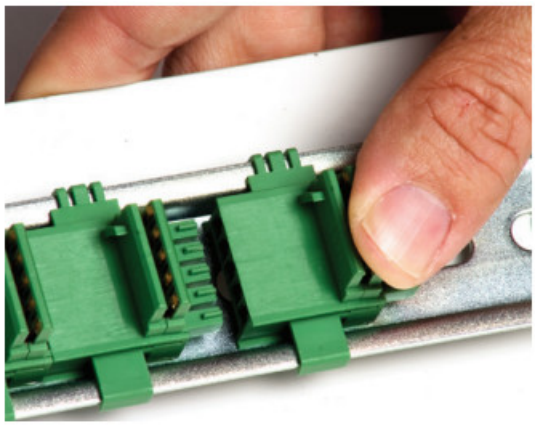
Mount the device

The Click 421 mounts over a T-bus for power and communication:

1. If the Click 421 was shipped with the T-bus connector attached, remove the connector from the module.
2. Snap the connector onto the DIN rail by positioning it over the rail with the male connector pointing to the right. Hook one arm over the edge of the DIN rail and press down on the other arm until it snaps into place.
3. Connect the T-bus connector to the rest of the T-bus by sliding them together until you hear them snap into

place.

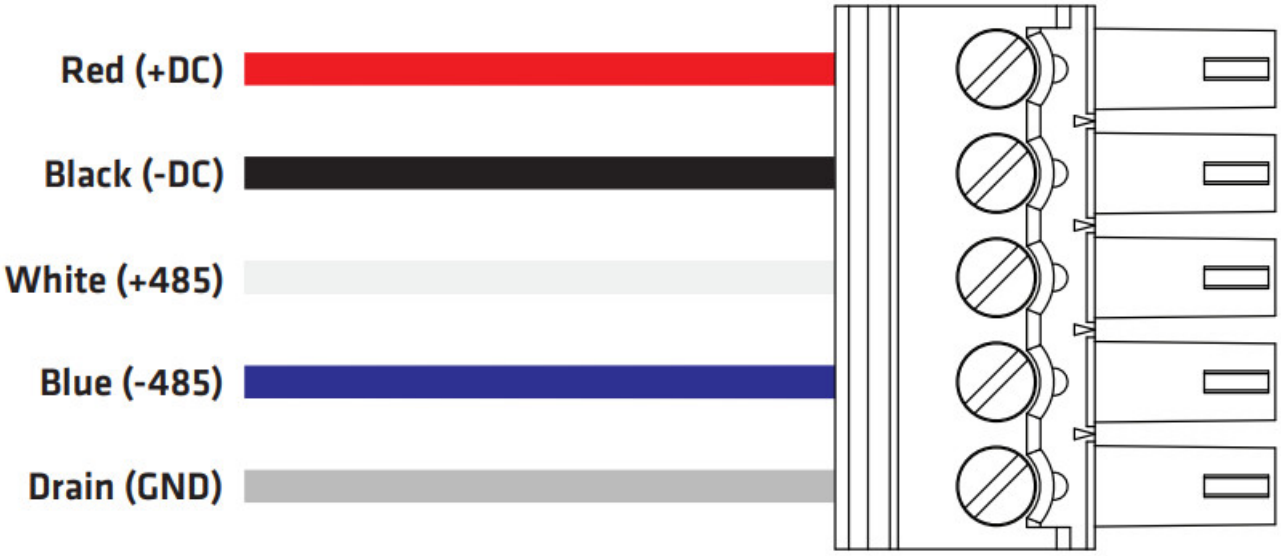
4. Mount the Click 421 onto the DIN rail: position it properly over the T-bus connector, hook the lip over the lower edge of the DIN rail, and use a rocking motion to snap the module into place.



Wire power and communication

If you are using a Click 200 surge protector with the Click 421, power and communication are provided to the Click 421 through the T-bus (see the Click 200 Quick Start Guide). If you don't have a Click 200 surge protector, use the following steps to wire power and communication into the Click 421:

1. Plug a T-bus 5-screw terminal block into the first T-bus connector.
2. Wire DC power (9–28 V) from the power supply into the first screw terminal on the 5-screw terminal block; wire -DC into the second screw terminal.
3. Connect RS-485 communication (+485, -485, and GND) to either the remaining three screw terminals on the 5-screw terminal block or to the screw terminals in the pluggable screw terminal block on the top of the Click 421 (see labels for correct wiring).



The front of the Click 421 has one other communication port.
DB-9 connector – Connect a straight-through cable here for RS-232 communication.

Attach the antenna

The Click 421 has a reversed polarity SMA antenna connector. A whip antenna can be used inside the cabinet, though if it is inside a metal cabinet, the range will be diminished. An external antenna can also be mounted on the exterior of the traffic cabinet or up on a pole for maximum range. In that case, it is recommended you use a Click 250 wireless surge protector:

1. Connect the reversed polarity SMA connector of a coax cable to the Click 421 (antenna must be removed), and connect the N connector to the nonbulkhead end of the Click 250.
2. Connect the N connector of another coax cable to the bulkhead end of the Click 250, and connect the other end of the cable to the external antenna.
3. Attach a 12 AWG stranded copper grounding wire to the Click 250, then connect the grounding wire to earth ground.

Use on-device configuration features

Use the device's configuration features to make sure the Click 421 is wired and working properly. The Click 421 has four LEDs that monitor device activity and help you select operating modes, as well as a push-button, labeled Mode Switch, also used for operating modes.

1. Check LEDs to make sure the device has power.
2. Autobaud device to make sure it can talk to the sensor or other attached serial device (see table).

LED activity indicating functions:

	Red – Device has power
	Blue – A link is successfully made over Bluetooth to an external device
	Yellow – Device is transmitting data
	Green – Device is receiving data

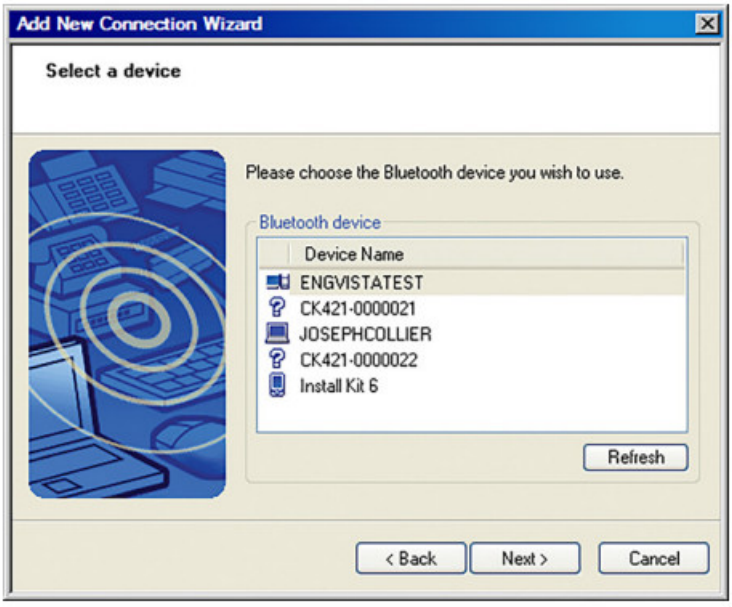
Hold the push-button to cycle through modes, then release when the desired mode is reached.

Selection	Operating mode	Running	Completed
	Autobaud – Release push-button when green LED is solid to autobaud to sensor		 failure  success
	Link Test (server) – Release push-button when blue LED is blinking to perform a link test. The link test is covered in step 10.		connection established  (LEDs on indefinitely)  connection not established
	Reset – Release push-button when red LED is blinking to reset to factory defaults.		

Connect via laptop or handheld computer

The Click 421 cannot initiate a connection; that must be done by a laptop or handheld computer with Bluetooth capabilities:

1. Open the Bluetooth Manager program on the laptop or handheld.
2. Discover available Bluetooth devices.
3. Select the Click 421 from the list. It will appear under the name “CK421xxxxxxx” where the string of x’s represents the device serial number. If you’d like to change the name of your Bluetooth device, that will be covered later in this document.



Note. Depending on your computer, you may be asked for a password during the connection process, even if you haven’t set one up; if so, use the password “default.”

Install Click Supervisor

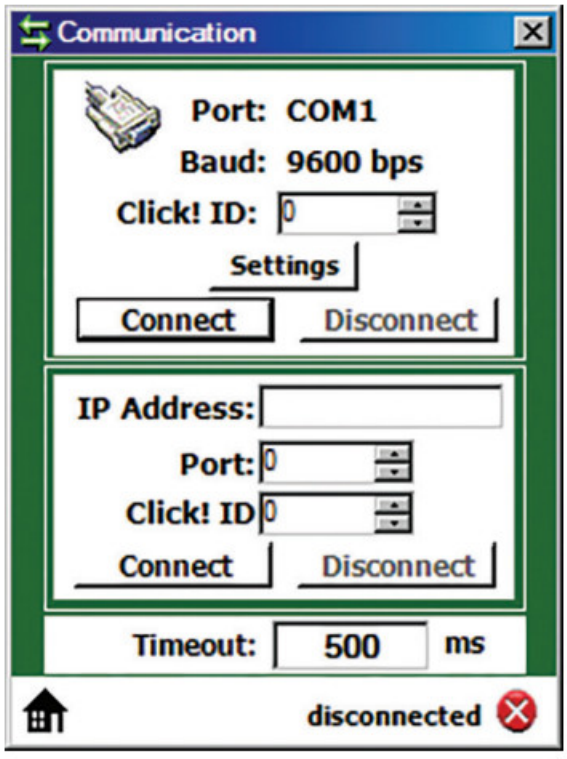
Note. Your Click 421 is now fully functional. If you don't wish to make any other changes to configuration, you don't need to follow parts 6–9. However, the Click 421 can be further configured using Click Supervisor software. Click Supervisor will enable you to change the Bluetooth device name and other settings.
Follow these steps if you want to install Click Supervisor:

1. Download the setup file from www.wavetronix.com (under Support).
2. Open the file to run the setup wizard. Follow the steps to install.

Make a connection

To make a connection to your Click 421:

1. Make sure there is a connection between the Click 421 and the computer that Click Supervisor is on. This link is available through the Bluetooth connection, but if for some reason the Bluetooth link is not available–for instance, the computer that Click Supervisor is on does not have a Bluetooth capabilities–this can be made through the DB-9 connector on the front of the module or through a DB-9 connector on another device that is also on the T-bus.
2. Run Click Supervisor and select Communication. This screen lets you pick the type of connection you want to make–serial or IP. In most cases, the Click 421 will be configured using serial communication.
3. Click Settings to make any necessary changes to the settings, such as the port or the baud rate. Click OK to return to the Communication screen, then click Connect. Keep the Click ID set to 0.
4. In the next screen, Click Supervisor will display all the devices it discovers. When the Click 421 appears, select it and click Select. Click Supervisor will connect to the device.



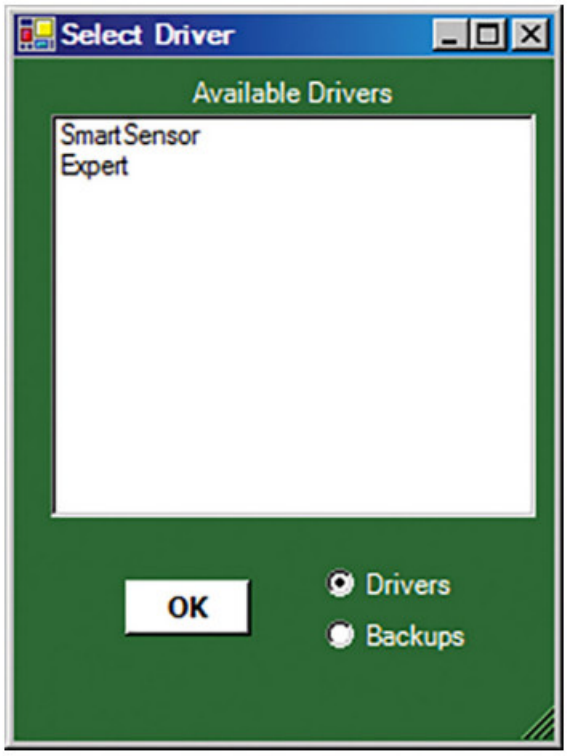
Select a driver

1. Select Setup Click on the main screen. You will see these drivers:

• Smart Sensor – This driver is used if you plan on connecting from a laptop to Click 421 to your sensor. It has basic configuration settings.

• Expert – This driver exposes all settings, most of which should be used only when instructed to by Wavetronix Technical Services. However, this driver lets you set a Bluetooth name, signal transmit power, and password.

2. Select the driver you want and click OK.



Configure the module

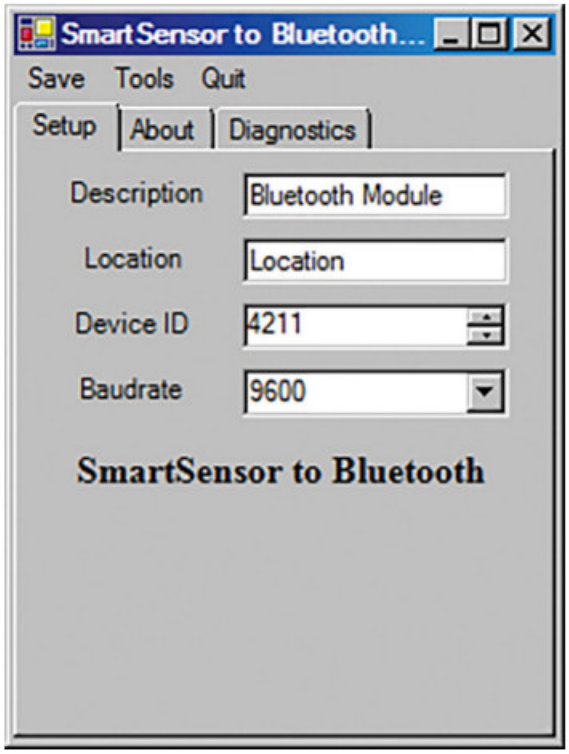
As mentioned in Part 5 of this guide, your Click 421 can function properly without any settings being changed in Click Supervisor. The settings listed below can be changed, but it is not necessary to do so.

SmartSensor Driver

- Description/Location – For informational/identification purposes.
- Device ID – Changes the device ID number
- Baud rate– If connecting to a sensor, this must match the sensor's baud rate.

Expert Driver (Bluetooth Tab)

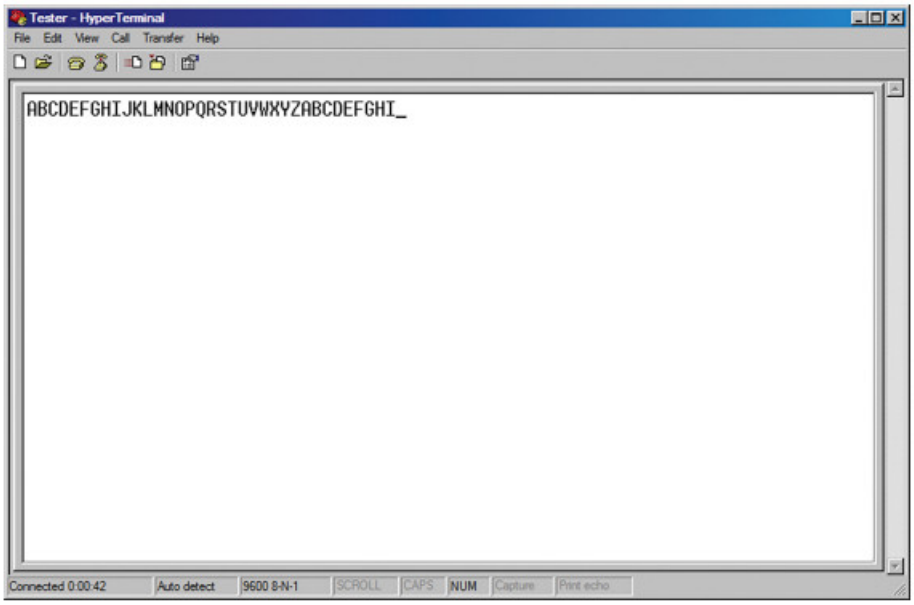
- Bluetooth Name – Changing this makes it easier to identify your Click 421 when connecting with an external device.
- Power Level – Changes the Bluetooth transmit power.
- Password – Lets you set a password to be used when making a Bluetooth connection to this device.



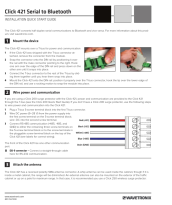
Verify the connection

For verifying the connection, see Part 3 of this guide or follow the steps below to perform a link test on the device.

1. Press the push-button on the faceplate of the device, then release when the blue LED blinks. While the link test is running, the red LED will glow solid and the green LED will blink.
2. Watch the LEDs. The blue LED will come on to indicate that there is a connection to the external Bluetooth device you connected to in Part 5. If the connection is no longer valid, the blue LED will never come on and the device LED will remain in the state outlined in step 1.
3. To check if the data is being pushed to the laptop or handheld is good, open a terminal emulation program such as HyperTerminal and connect to the Bluetooth device. Observe the data being received. It should be the alphabet repeated continuously; if nothing comes or any letters are missing, the data is not being received or is corrupted.
4. Once the test is complete, the devices must be taken out of Link Test mode in order to operate. Press and release the push-button to exit the mode.



Documents / Resources

	WAVETRONIX Click 421 Serial to Bluetooth [pdf] Installation Guide Click 421 Serial to Bluetooth, 421 Serial to Bluetooth, Serial to Bluetooth, Bluetooth

References

- Wavetronix
- Wavetronix