



# TinkerForge Sensors and Communication

File: KehrMan\_SensorData.py

## Description of Master Module

- The Master module is the hub of all communication between tinkerforge sensors. The following points describe how it was configured and used.
  - Install Brick Daemon and Brick Viewer software from tinkerforge website.
  - Start brick viewer and connect master via usb cable. Flash the device, which will then automatically load the firmware.
  - Now a tab will appear in the Brick Viewer software with the name of the master brick module.



Fig:1 Master Brick

## WiFi Brick

- Connect Wifi Brick on top stack of Master brick and configure IP address, DNS, and Gateway from the wifi brick tab.
  - After connection was established, data from sensor bricklets were sent to the server using the wifi network.



Fig:2 Wifi Brick

## Distance Measurement - US Bricklet

- The US bricklet is an ultrasound based proximity sensor which gives a numeric output value. The numeric value is dependant on the voltage input to the MasterBrick i.e. for higher voltage (not exceeding 5V) the range of the output increases as well.
  - A python function was written to convert the numeric value to distance in mm.



Fig 3: Distance US bricklet