# DroidBus/TCP

User Manual

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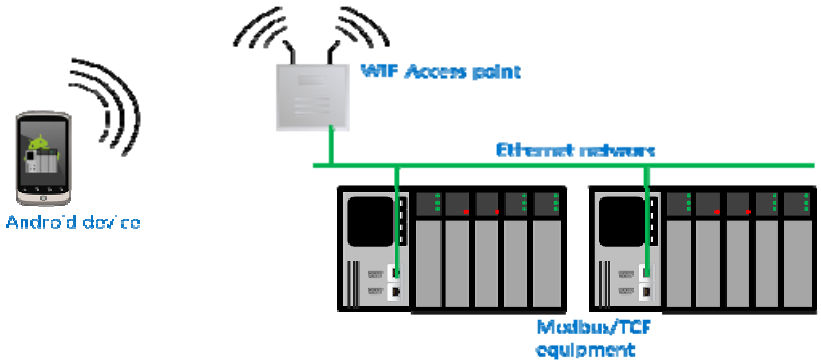
## Overview

DroidBus/TCP is a Modbus-TCP master (client) designed primarily for testing, training or learning Modbus-TCP industrial protocol. This application runs in Android devices such as smart phones and tablets, and may be used to read and modify data points stored in a Modbus-TCP slave (server).



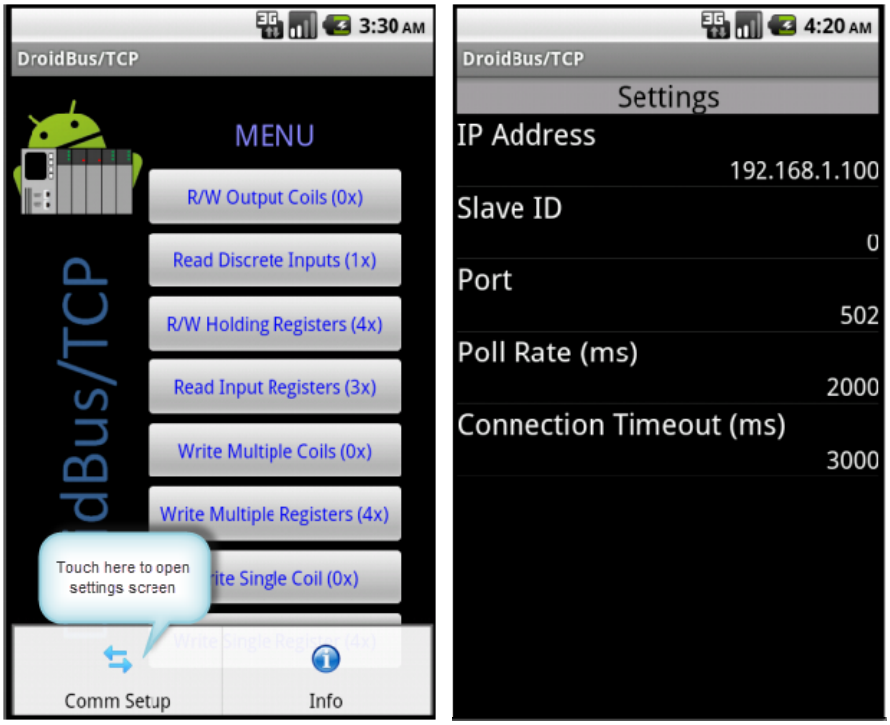
DroidBus/TCP supports the following features:

- Modbus/TCP industrial protocol.
- Read output coils, discrete inputs, input registers and holding registers through automatic polling with user-configurable poll rate.
- Write output coils and holding registers.
- Modbus functions: 01h, 02h, 03h, 04h, 05h, 06h, 0Fh, 10h.
- Poll status indication.
- Display Modbus exceptions
- Register display formats :
    - WORDS: signed, unsigned, hex.
    - DOUBLE WORDS: long, long inverse, float, float inverse, unsigned long.

# Application Main Menu

The main menu is displayed few seconds after starting DroidBus/TCP. This is the screen from which all the Modbus functions can be accessed. The screenshot below shows a brief description of all the options in the menu (each option is further discussed in the subsequent sections).

# Communication Settings




**IP Address**: Remote server IP address.

**Slave ID**: Modbus slave address (when the slave is being address via a bridge or gateway).

**Port**: Remote server Modbus TCP listening port.

**Poll Rate (ms)**: Time between successive Modbus messages for functions 01, 02, 03 and 04. Default value is 2000 ms (2 seconds).

**Connection Timeout (ms)**: Timeout in making the connection. Default value is 3000 ms (3 seconds).

# Read/Write Output Coils

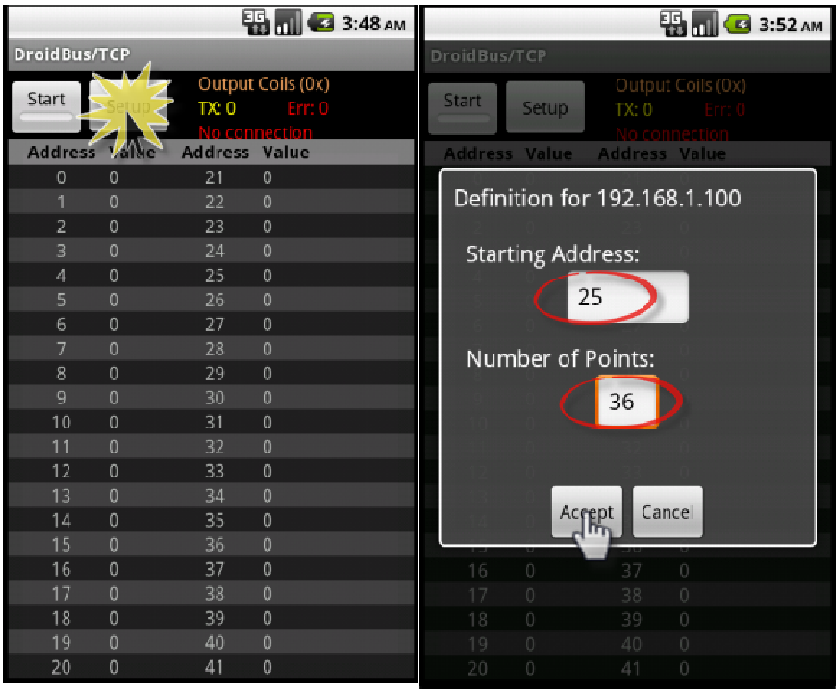
- Read up to 42 output coils (0000) using Modbus function 01h.
- Poll interval from 1 to 10 seconds.
- Touch an individual output value to write a new value (Modbus function 05h or 15h).
- Communication status, successful message counter, error message counter.

## Procedure:

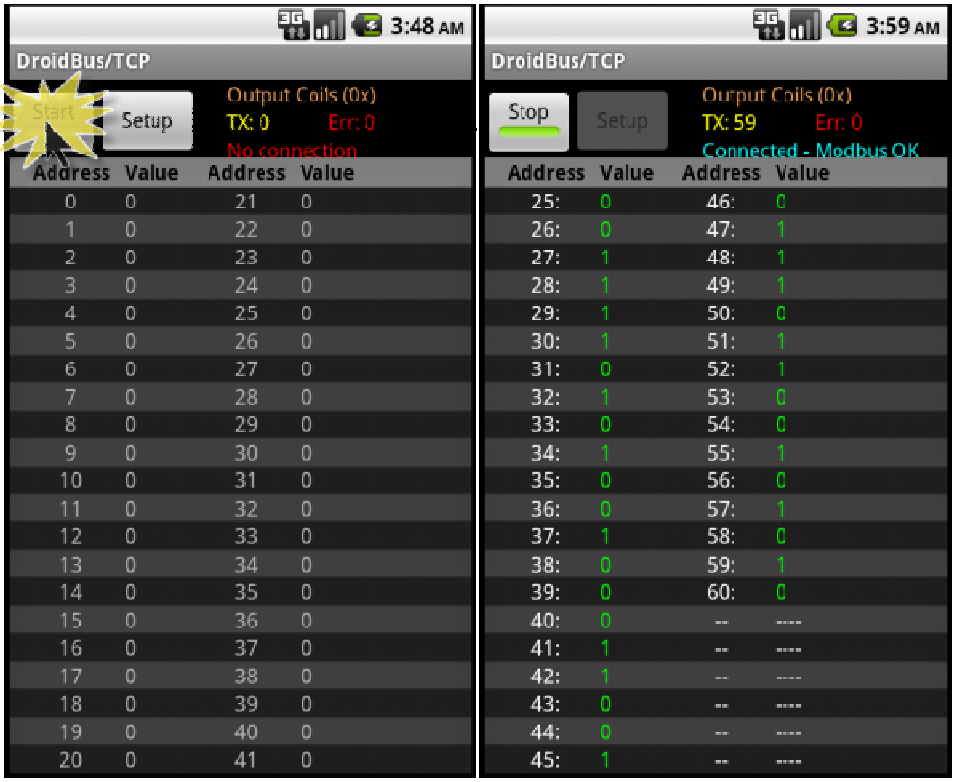
Step 1- Configure remote server IP address.

Step 2- In the main menu, select Read/Write Output Coils option.

Step 3- Open Setup and configure starting address and quantity of coils:

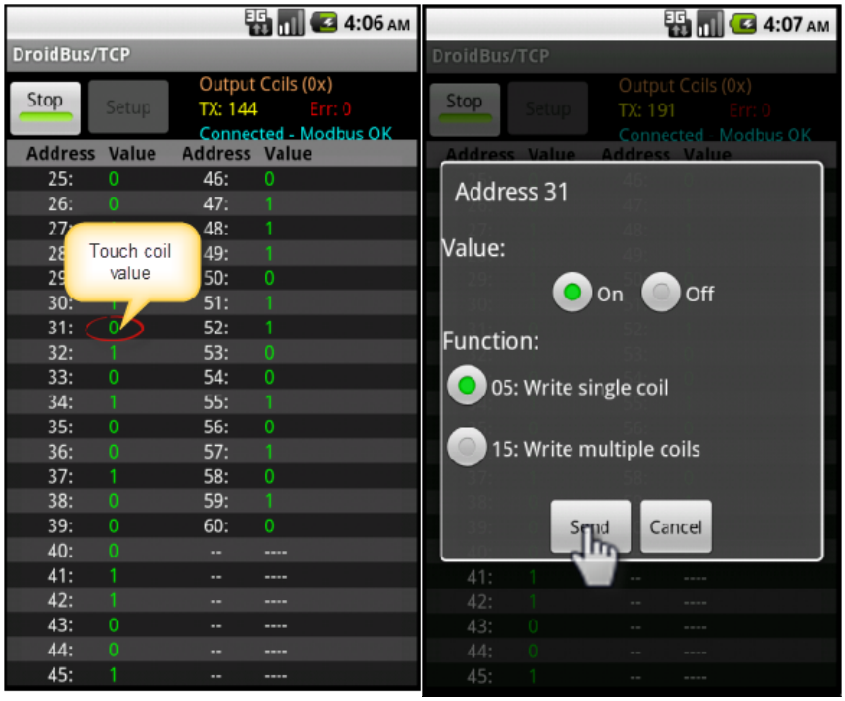



Step 4- Press Start button to start sending polling messages:

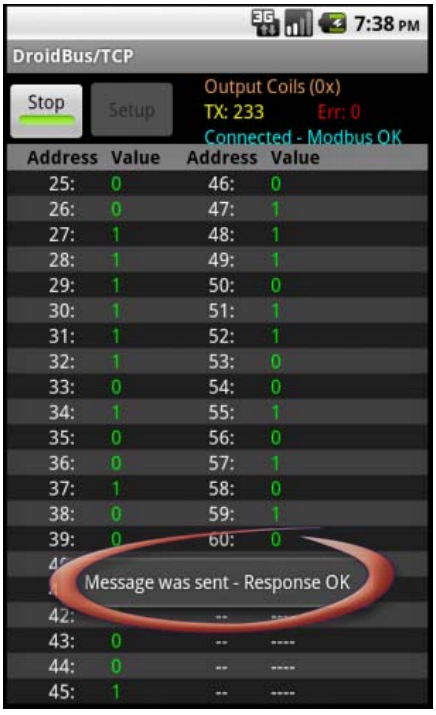


## Forcing coils

Once Droidbus/TCP has established connection and is polling the remote server, you can force individual coils by touching the coil value:




Verify the “Response OK ” confirmation:



# Read Discrete Inputs

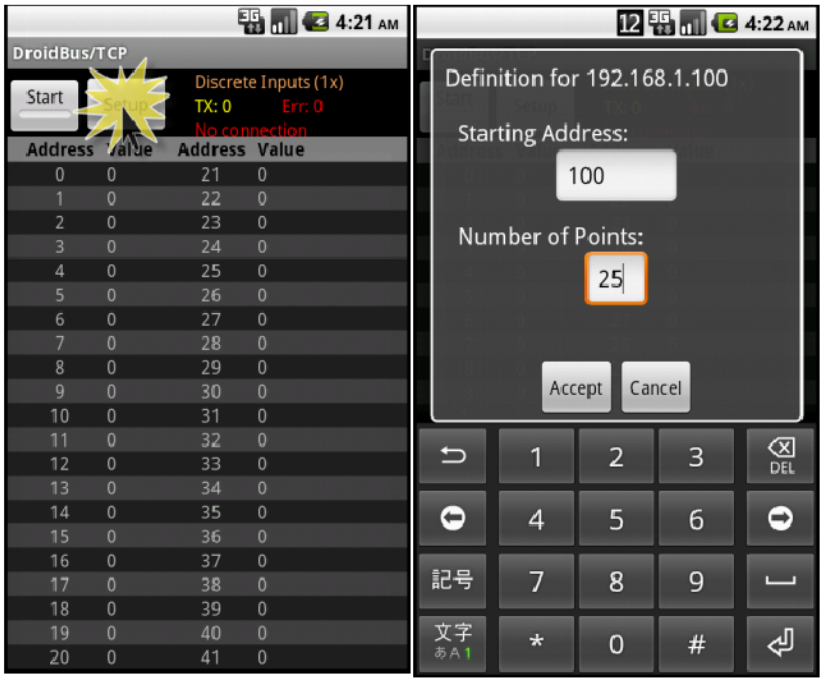
- Read up to 42 discrete inputs using Modbus function 02h.
- Poll interval from 1 to 10 seconds.
- Communication status, successful message counter, error message counter.

## Procedure:

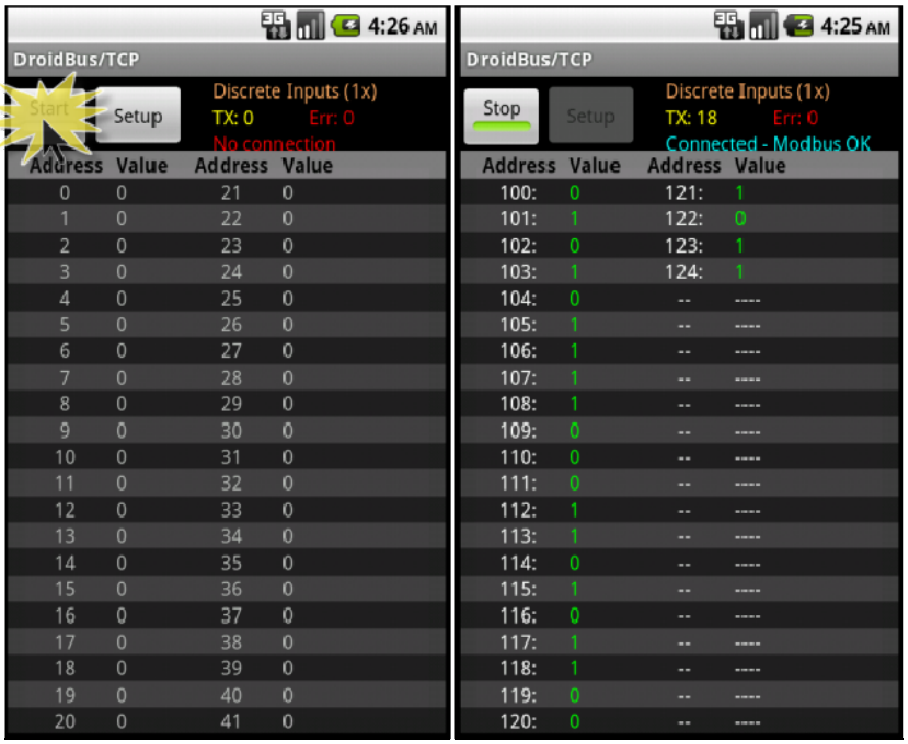
Step 1- Configure remote server IP address.

Step 2- In the main menu select Read Discrete Inputs option.

Step 3- Open Setup and configure starting address and quantity of inputs:




Step 4- Press Start button to start sending polling messages:



# Read/Write Holding Registers

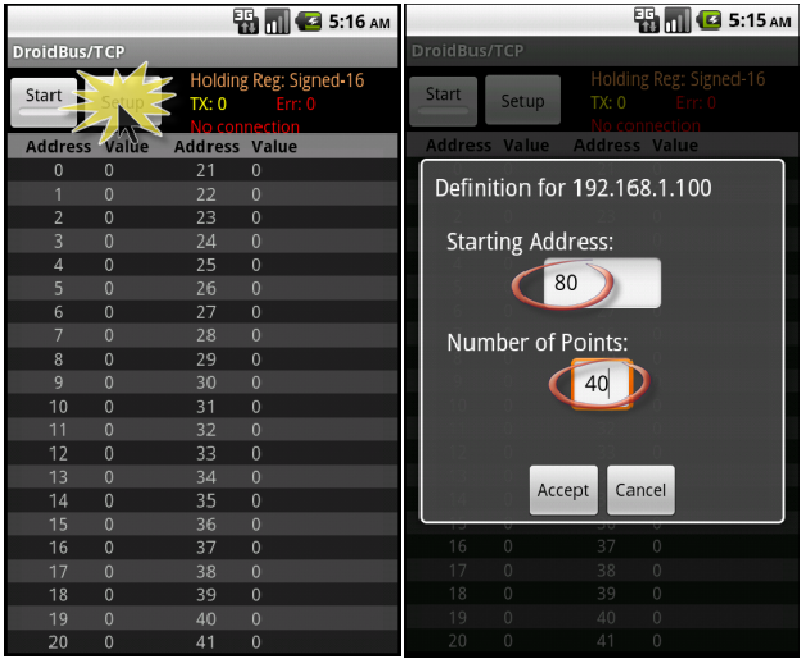
- Read up to 42 holding registers using Modbus function 03h.
- Poll interval from 1 to 10 seconds.
- Touch an individual register value to write a new value (Modbus function 06h or 16h).
- Communication status, successful message counter, error message counter.

## Procedure:

Step 1- Configure remote server IP address.

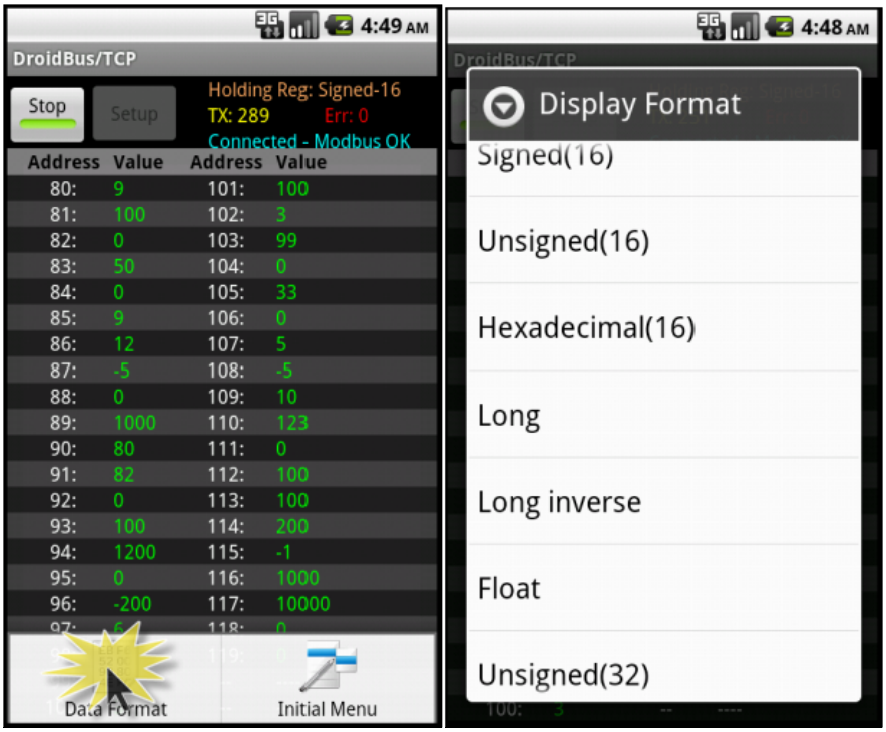
Step 2- In the main menu, select the Open Read/Write Holding Registers option.

Step 3- Open Setup and configure starting address and quantity of registers:



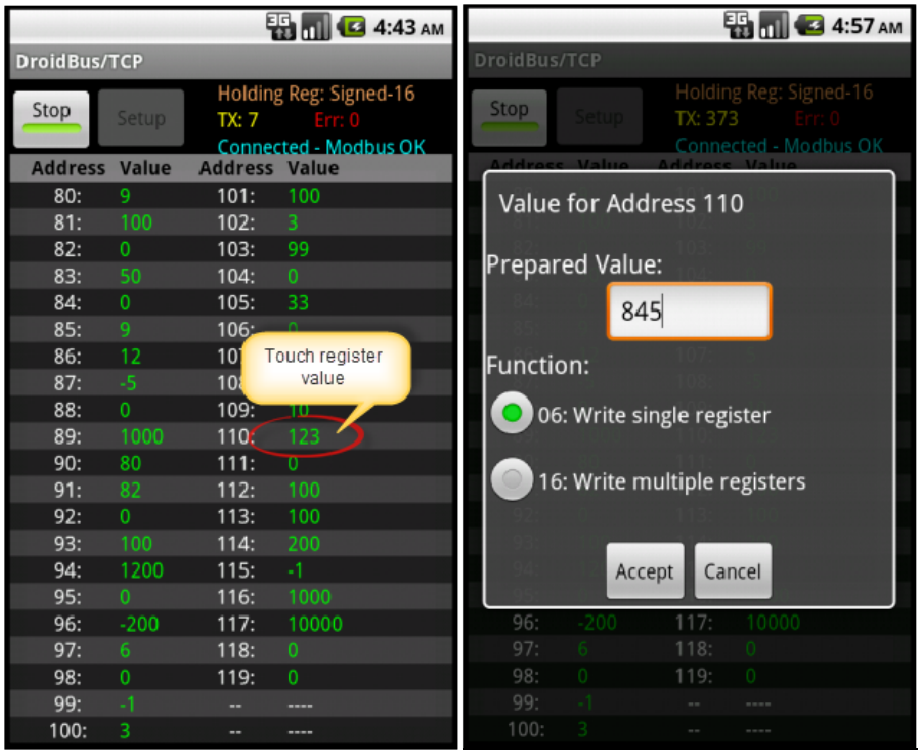

Step 4- Press Start button to start sending polling messages:

Step 4- Select display format:



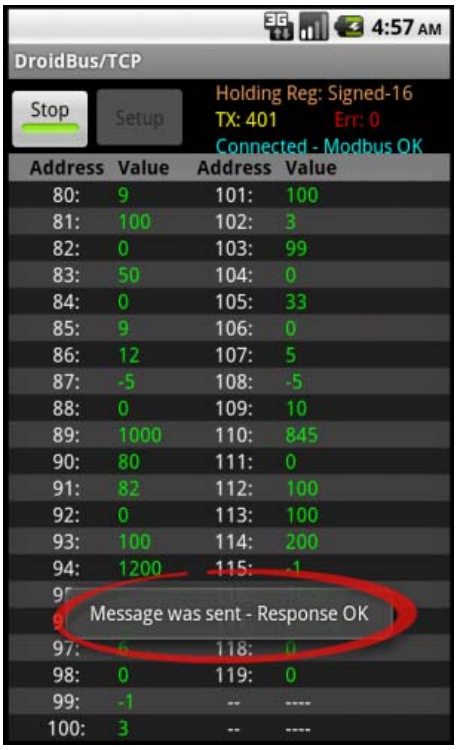
## Forcing coils

Once Droidbus/TCP has established connection and is polling the remote server, you can force individual holding registers by touching the register value:




The prepared value must be entered in the same format as the value is being displayed. For example, if the values are being displayed in hexadecimal format, the prepared value should be entered in hexadecimal.

Verify the “Response OK ” confirmation:



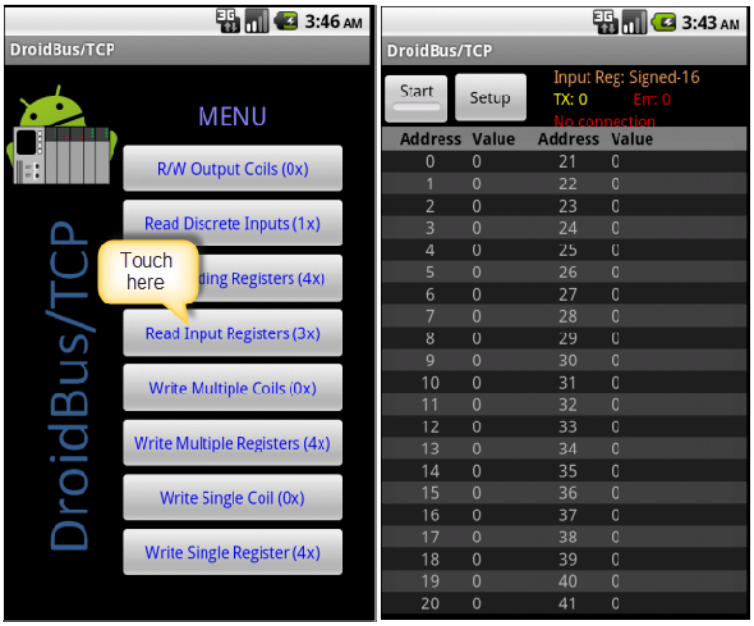
# Read Input Registers

- Read up to 42 input registers using Modbus function 04h.
- Poll interval from 1 to 10 seconds.
- Communication status, successful message counter, error message counter.

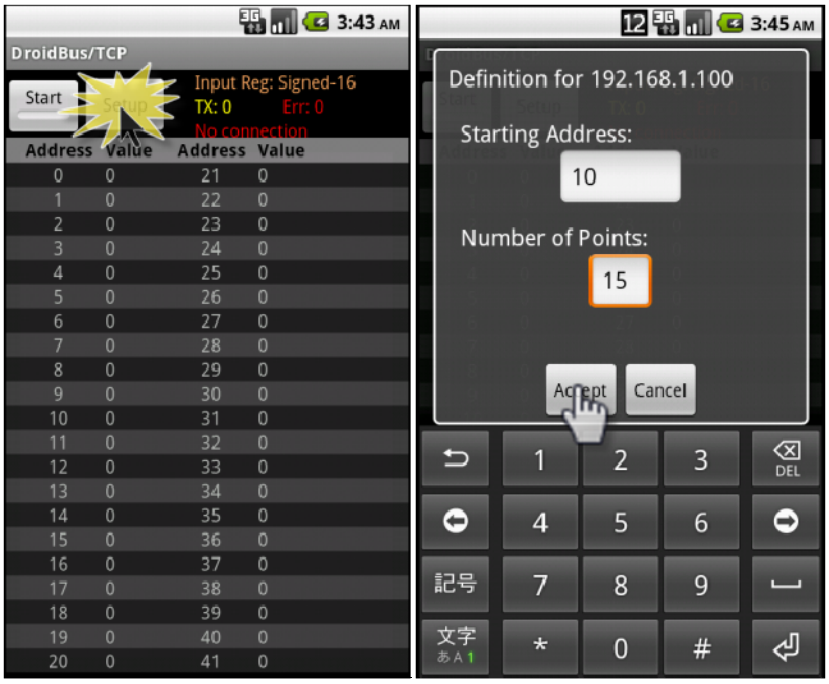
## Procedure:

Step 1- Configure remote server IP address.

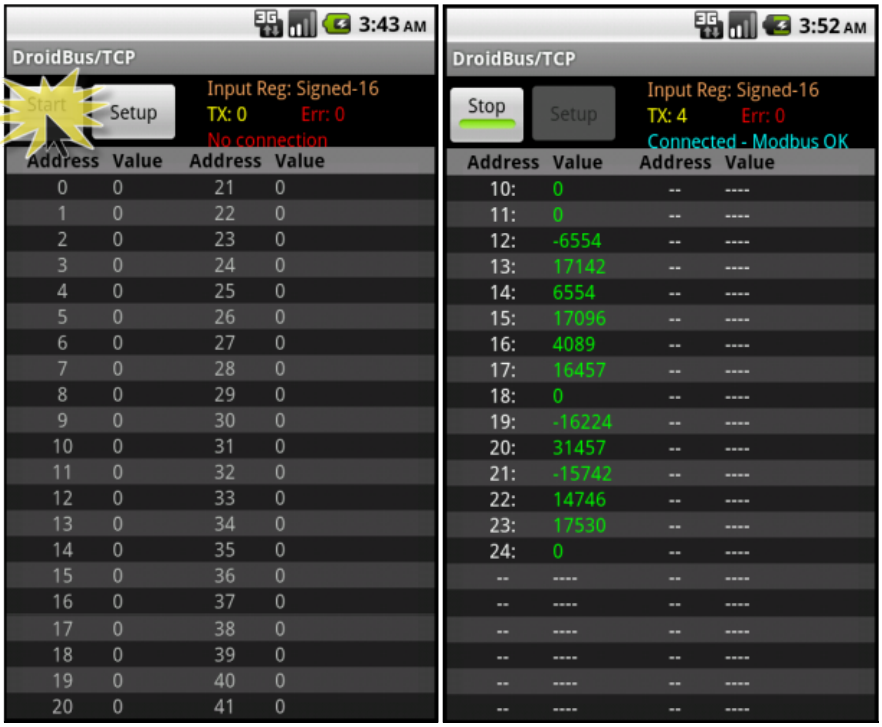
Step 2- In the main menu, select Read Input Registers option.



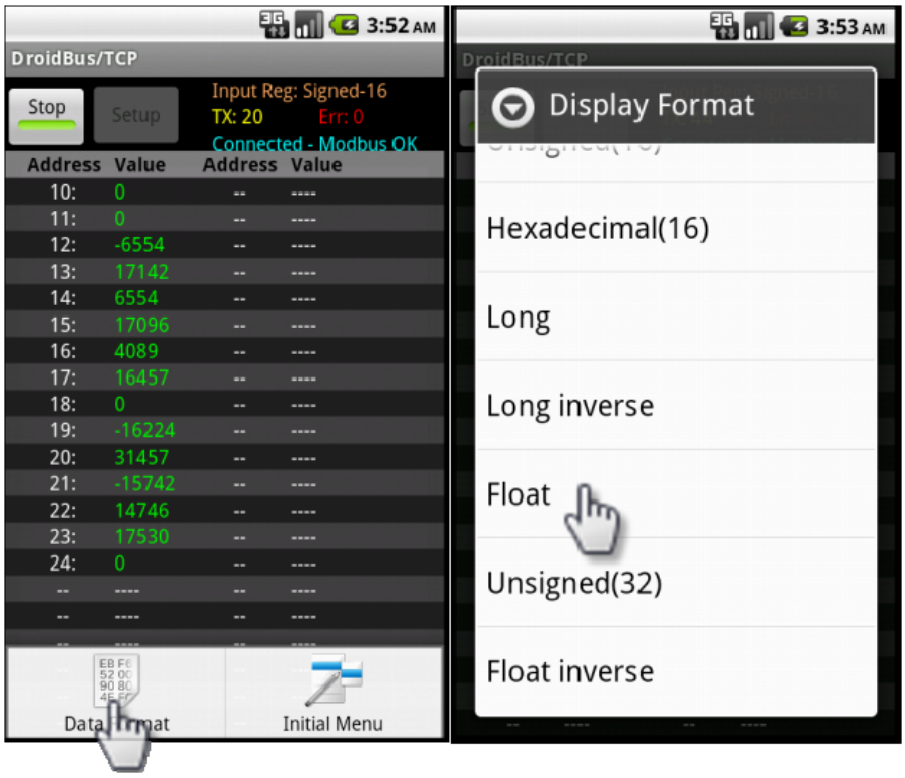
Step 3- Open Setup and configure starting address and quantity of coils:




Step 4- Press Start button to start sending polling messages:



Step 4- Select display format:



# Write Multiple Coils

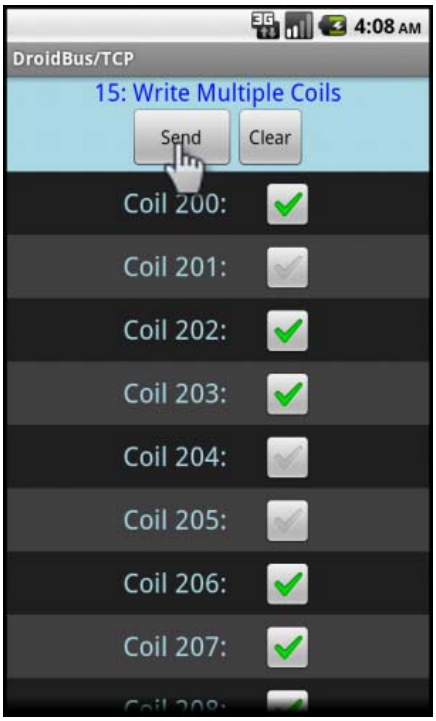
- Write up to 99 output coils using Modbus function 0Fh (15).

## Procedure:

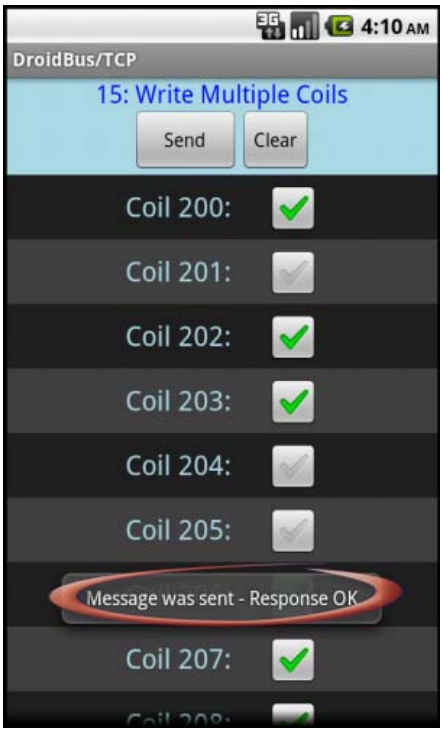
Step 1- Configure remote server IP address.

Step 2- In the main menu, select Write Multiple Coils option. Enter the starting address and number of coils.

Step 3- Select the value for each coil (checked=ON, unchecked=OFF) and press Send button.




Step 4 – Verify “Response OK” message.



# Write Multiple Registers

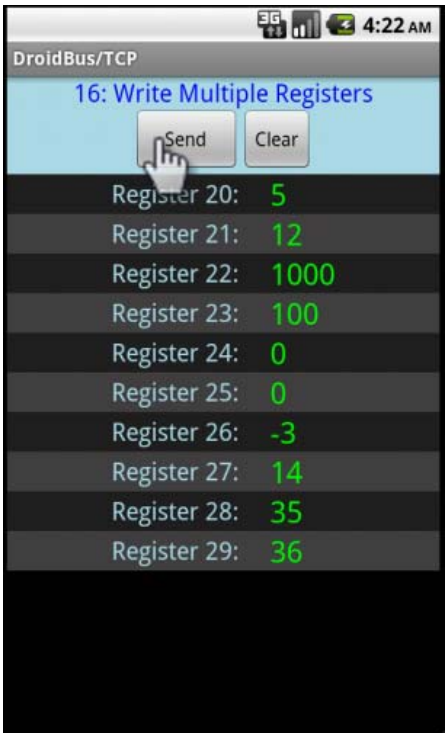
- Write up to 99 holding registers using Modbus function 10h (16).

## Procedure:

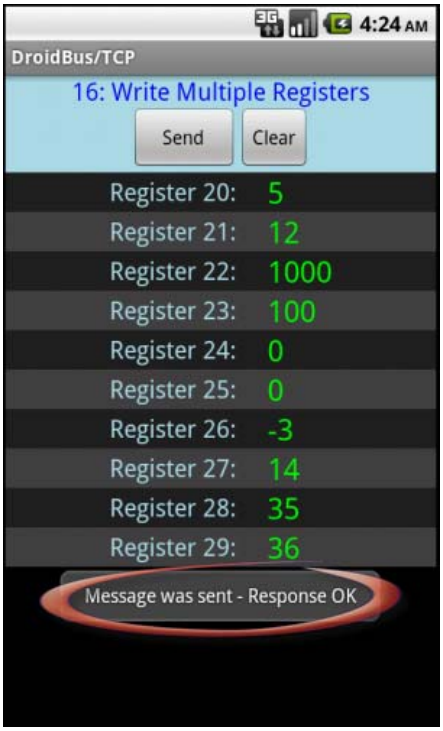
Step 1- Configure remote server IP address.

Step 2- In the main menu, select Write Multiple Registers option. Enter the starting address, number of registers and select format data type (signed, unsigned, hex).

Step 3- Enter the value for each register and press Send button.




Step 4 – Verify “Response OK” message.



# Write Single Coil

- Write an individual output coil using Modbus function 05h.

## Procedure:

Step 1- Configure remote server IP address.

Step 2- In the main menu, select Write Single Coil option. Enter the coil address and value to write (ON or OFF). Press Send button.

Step 3 – Verify “Response OK” message.

# Write Single Register

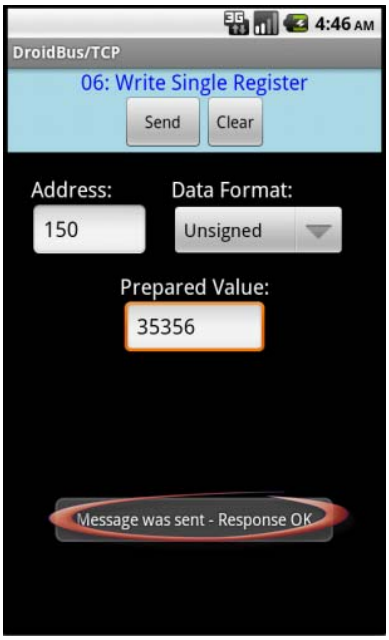
- Write an individual holding register using Modbus function 06h.

## Procedure:

Step 1- Configure remote server IP address.

Step 2- In the main menu, select Write Single Register option. Enter the address, format data type (signed, unsigned, hex) and prepared value. Press Send button to write the value.

Step 3 – Verify “Response OK” message.



# Contact Information

Please send your comments to CubacApps@gmail.com