

# DIGI XCTU



## Configuration & Test Utility Software



← [Download link](#)



## Open it!

**XCTU Support Resources**


XCTU is a free multi-platform application designed to enable developers to interact with Digi RF modules through a simple-to-use graphical interface. It includes new tools that make it easy to set-up, configure and test XBee® RF modules.

 digi.com

**XCTU**

XCTU Working Modes Tools Help

Radio Modules

Click on  Add Discover radio module

2


Frames Generator	Alt+Shift+G
Frames Interpreter	Alt+Shift+I
XBee Recovery	Alt+Shift+X
Load Console Session	Alt+Shift+L
Range Test	Alt+Shift+R
Firmware Explorer	Alt+Shift+F
Serial Console	Alt+Shift+S
Spectrum Analyzer	Serial Console Tool
Throughput	Alt+Shift+T
MicroPython Terminal	
File System Manager	
Profile Editor	Alt+Shift+P

### Open the Serial Connection

1. **Tools** (on top bar)
2. **Serial Console**
3. look for **Open** then **Click it!**

### Short Key (Alternative)

- **Alt+Shift+S**

 Serial Console

### Serial Console

This tool allows you to communicate with your XBee devices without having to add them to the list of radio modules.

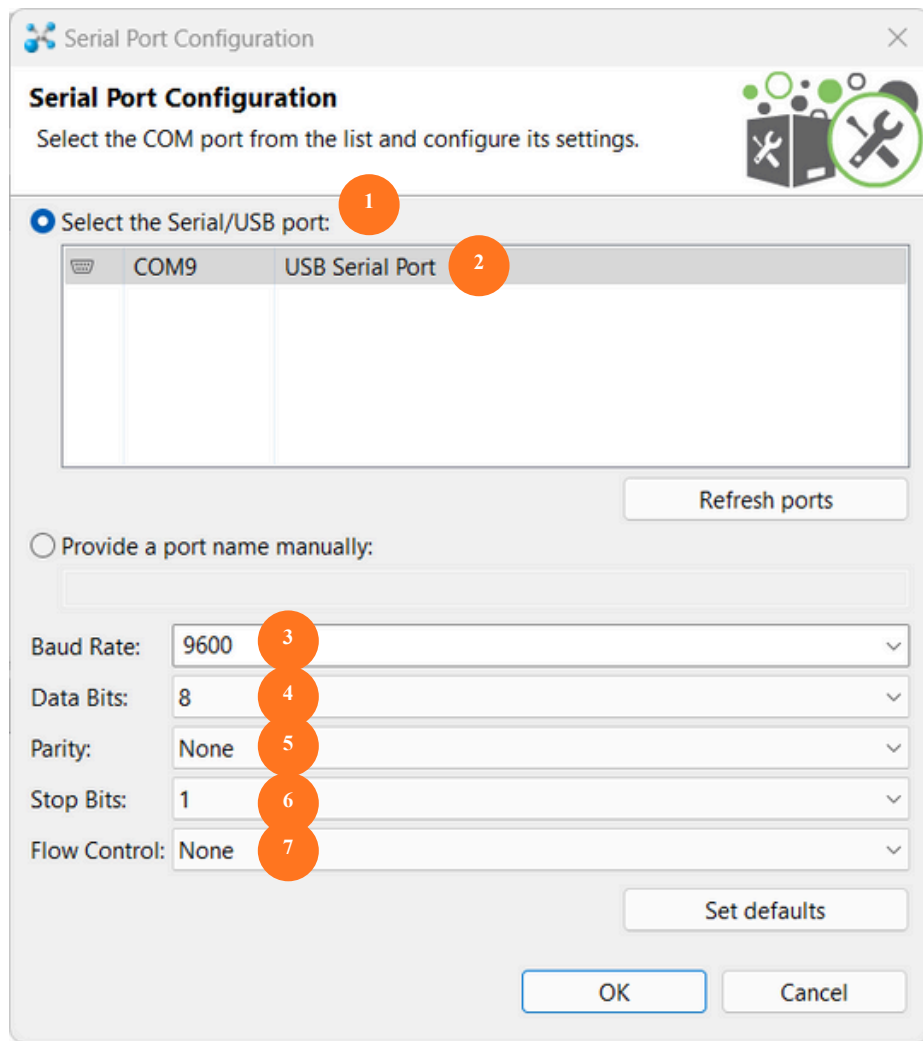
3

Open the serial connection with the radio module

Configure the port before opening the console.

CTS CD DSR DTR RTS BRK



## Serial Port Configuration

1. find Select the Serial/USB port

2. Select USB Serial Port for example COM9

3. Set Baud Rate: 9600

4. Set Data Bits: 8

5. Set Parity: None

6. Set Stop Bits: 1

7. Set Flow Control: None

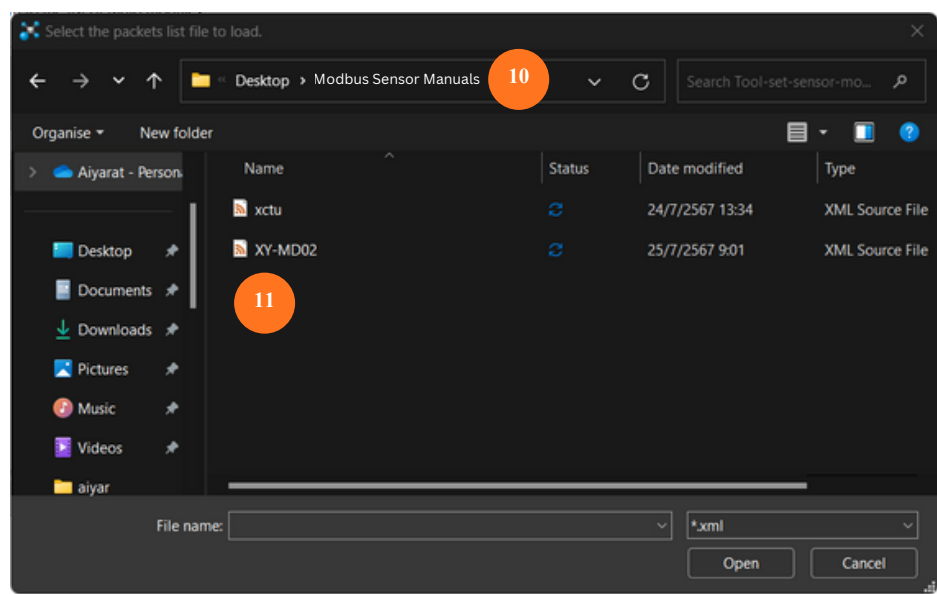
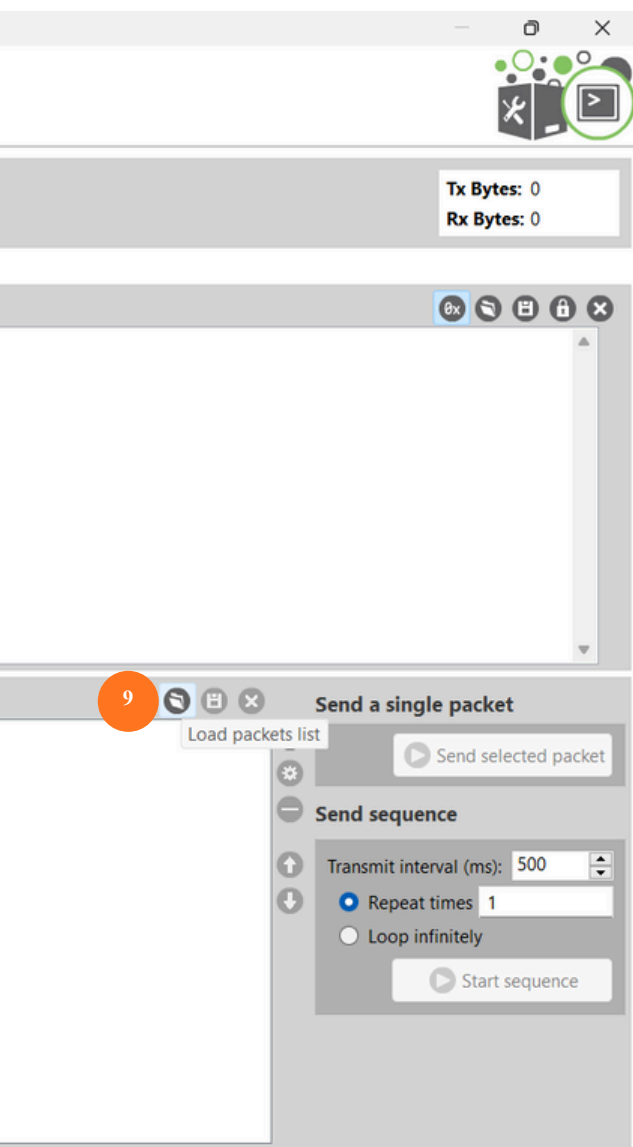
8. press OK

9. point mouse at Load packets list (a folder icon) then press it!

10. find a folder name

“Modbus Sensor Manuals”

11. Select the file with the same name as the sensor you want to set for example XY-MD02



# CRC Calculator

[Link](#)



https://crccalc.com

2 010400020001

1 Input: ☐ ASCII ☒ HEX Output: ☒ HEX ☐ DEC ☐ OCT ☐ BIN ☐ Show processed data (HEX)

CRC-8 CRC-16 CRC-32

## How to calculate CRC

1. find Input and Output then select HEX
2. Enter the hexadecimal number in the square box above to find the CRC.
3. Select CRC-16
4. Scroll down to find CRC-16/MODBUS

## Example for XY-MD02

01 04 00 02 00 01 which is (add) 04 00 02 00 01 (crc) (crc)

This function uses a command to read humidity values 04 00 02 00 01 at device address (add) 01, The calculated CRC value is 0x0A90

Algorithm	Result	Check	Poly	Init	RefIn	RefOut	XorOut
<a href="#">CRC-16/ARC</a>	0x1190	0xBB3D	0x8005	0x0000	true	true	0x0000
<a href="#">CRC-16/AUG-CCITT</a>	0x83D9	0xE5CC	0x1021	0x1D0F	false	false	0x0000
<a href="#">CRC-16/BUYPASS</a>	0x79CE	0xFEE8	0x8005	0x0000	false	false	0x0000
<a href="#">CRC-16/CCITT-FALSE</a>	0xBCF7	0x29B1	0x1021	0xFFFF	false	false	0x0000
<a href="#">CRC-16/CDMA2000</a>	0x2B8D	0x4C06	0xC867	0xFFFF	false	false	0x0000
<a href="#">CRC-16/DDS-110</a>	0x7B1E	0x9ECF	0x8005	0x800D	false	false	0x0000
<a href="#">CRC-16/DECT-R</a>	0x80CC	0x007E	0x0589	0x0000	false	false	0x0001
<a href="#">CRC-16/DECT-X</a>	0x80CD	0x007F	0x0589	0x0000	false	false	0x0000
<a href="#">CRC-16/DNP</a>	0xC32E	0xEA82	0x3D65	0x0000	true	true	0xFFFF
<a href="#">CRC-16/EN-13757</a>	0x4F3B	0xC2B7	0x3D65	0x0000	false	false	0xFFFF
<a href="#">CRC-16/GENIBUS</a>	0x4308	0xD64E	0x1021	0xFFFF	false	false	0xFFFF
<a href="#">CRC-16/KERMIT</a>	0x8D0A	0x2189	0x1021	0x0000	true	true	0x0000
<a href="#">CRC-16/MAXIM</a>	0xEE6F	0x44C2	0x8005	0x0000	true	true	0xFFFF
<a href="#">CRC-16/MCRF4XX</a>	0x857A	0x6F91	0x1021	0xFFFF	true	true	0x0000
<a href="#">CRC-16/MODBUS</a>	0x0A90	0x4B37	0x8005	0xFFFF	true	true	0x0000
<a href="#">CRC-16/RIELLO</a>	0xE932	0x63D0	0x1021	0xB2AA	true	true	0x0000

[CRC-16/MODBUS](#)

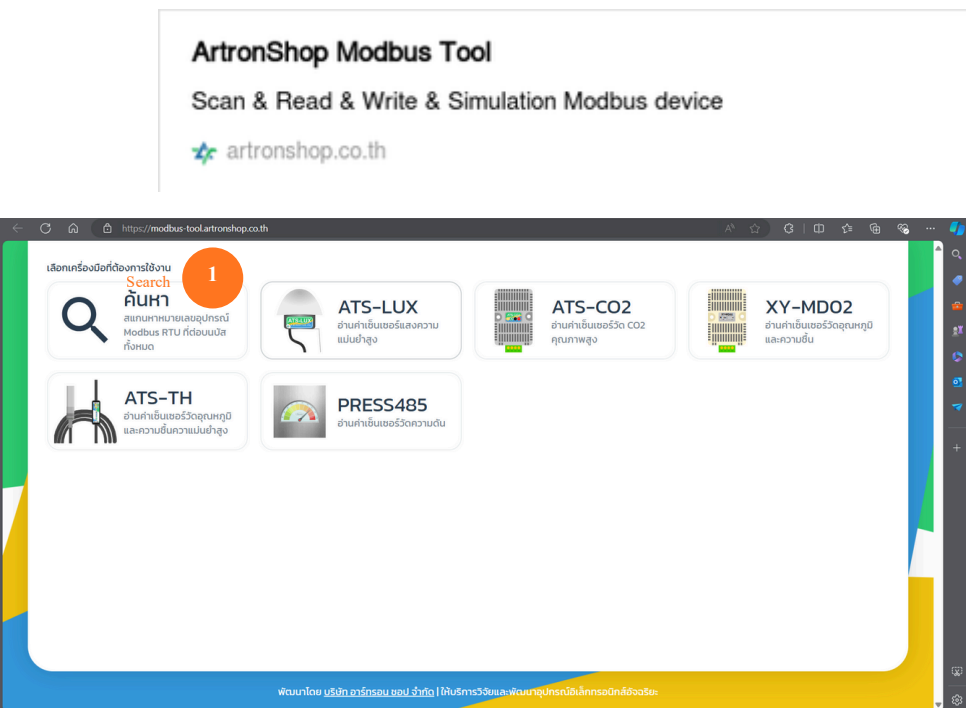
However, 0x0A90 cannot be used directly. We need to swap the bytes from 0x0A90, or 0A 90 to 90 0A, to get the result.

01 04 00 02 00 01 90 0A

Ready to be use NOW!

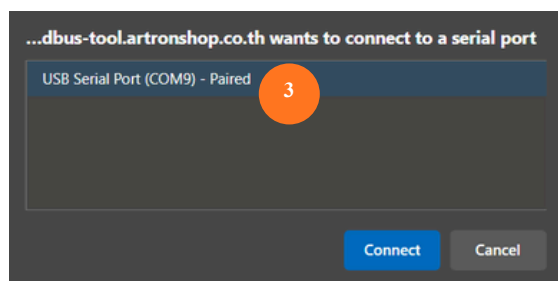
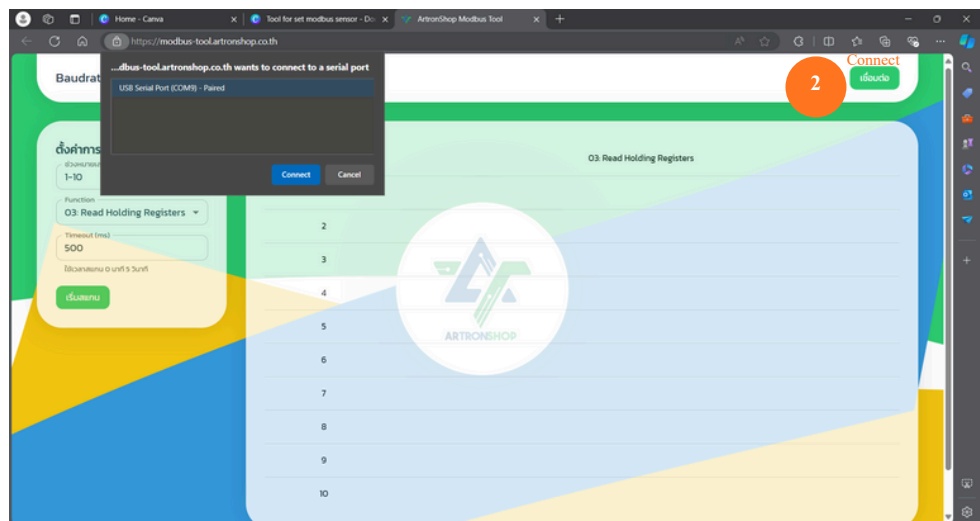
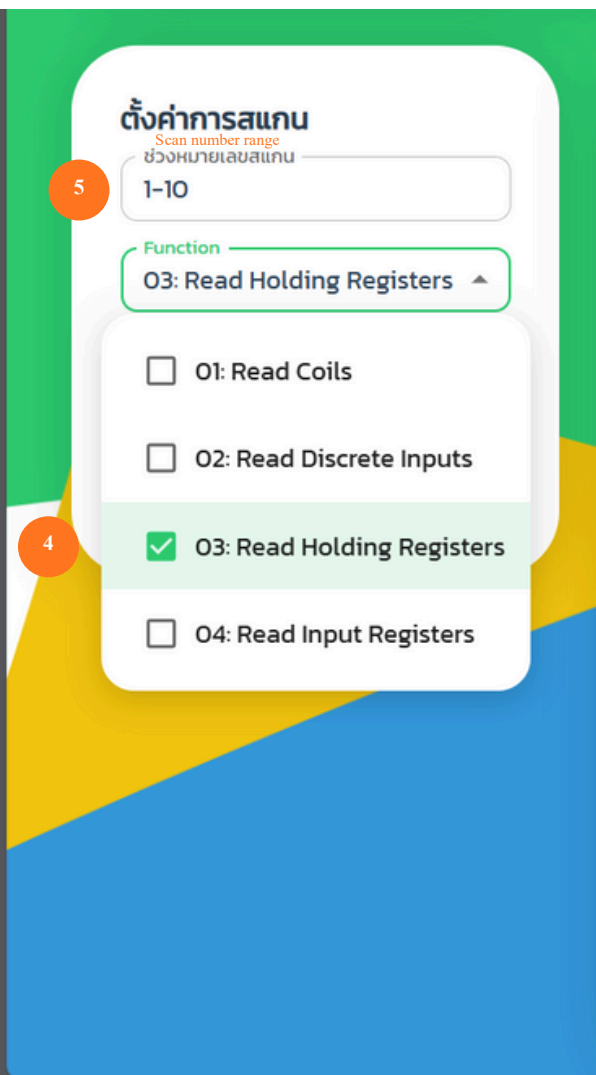
# Read Holding Register

[Link](#)



## How to use ArtronShop

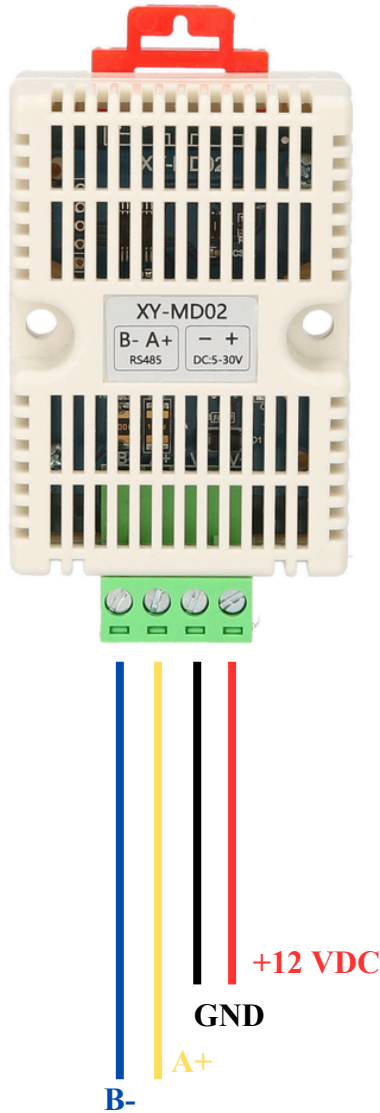
1. Select Search
2. Press Connect



## How to use ArtronShop

3. A pop-up window will appear, select the USB Serial Port. In this example is COM9.
4. At Function, select 03: Read Holding Registers.
5. Select the address range from the Scan number range. For example find the address 1 - 10.

# XY-MD02



## Read Temperature

(reg) 04 00 01 00 01 (crc) (crc)  
(reg) 04 02 01 (tem) (crc) (crc)

## Read Humidity

(reg) 04 00 02 00 01 (crc) (crc)  
(reg) 04 02 02 (hum) (crc) (crc)

## Read Temperature and Humidity

(reg) 04 00 01 00 02 (crc) (crc)  
(reg) 04 04 01 (tem) 02 (hum) (crc) (crc)

## Read Register

(reg) 03 01 01 00 01 (crc) (crc)  
(reg) 03 02 00 (reg) (crc) (crc)

## Modify Register

(reg) 06 01 01 00 (new) (crc) (crc)  
(reg) 06 01 01 00 (new) (crc) (crc)

## Modify Register and Baud Rate

(reg) 10 01 01 00 02 04 00 (new)  
(bud) (bud) (crc) (crc)  
(reg) 10 01 01 00 02 (crc) (crc)

## Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(reg)** is register or address of the sensor
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via [crccalc.com](http://crccalc.com).
- **(tem)** is temperature measured by sensor
- **(hum)** is humidity measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate (cannot set below 9600, change by convert to Hexa).

# RK900-09

## Read Value

(add) **03 00 00 00 05** (crc) (crc)

(add) **03 0A** (spd) (spd) (dir) (dir) (tem) (tem)  
(hum) (hum) (prs) (prs) (crc) (crc)

## Modify Register

**00 10** (new) (crc) (crc)

**00 10 00 7C**

## Read Address

**00 20 00 68**

**00 20** (add) (crc) (crc)



## Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via [crccalc.com](http://crccalc.com).
- **(spd)** is wind speed measured by the sensor.
- **(dir)** is wind direction measured by the sensor.
- **(tem)** is atmospheric temperature measured by sensor
- **(hum)** is atmospheric humidity measured by sensor
- **(prs)** is atmospheric pressure measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate (change by convert to Hexa)



# RK200-02



## Read Value

(add) **04 00 00 00 01** (crc) (crc)

(add) **04 02** (uvr) (uvr) (crc) (crc)

## Modify Address

(add) **06 00 42 00** (new) (crc) (crc)

(add) **06 00 42 00** (new) (crc) (crc)

## Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via [crccalc.com](http://crccalc.com).
- **(uvr)** is UV radiation measured by sensor
- **(new)** is the address you want to change of the device.

# CWT-TH02S

## Read Temperature and Humidity

(add) **03 00 00 00 04** (crc) (crc)

(add) **03 08 02 FF FF FF** (tem) (tem) (hum)  
(hum) (crc) (crc)

## Set ID

(add) **06 07 D0 00** (new) (crc) (crc)

(add) **06 07 D0 00** (new) (crc) (crc)

## Enquiry ID

**FF 03 07 D0 00 01 91 59**

**FF 03 02 00** (add) (crc) (crc)

## Set Baud Rate

(add) **06 07 D1 00** (bud) (crc) (crc)

(add) **06 07 D1 00** (bud) (crc) (crc)



## Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor (1-254)
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via [crccalc.com](http://crccalc.com).
- **(tem)** is temperature measured by sensor
- **(hum)** is humidity measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate {(0x00, 2400),(0x01, 4800),(0x02, 9600)}



# TH-EC-PH-NPK



## Read Everything

(add) **03 00 00 00 07** (crc) (crc)  
(add) **03 0E** (hum) (hum) (tem) (tem) (con)  
(con) (ph) (ph) (n) (n) (p) (p) (k) (k) (crc) (crc)

## Enquiry slave ID

**FF 03 07 D0 00 01 91 59**  
**FF 03 02 00** (add) (crc) (crc)

## Set Slave ID

(add) **06 07 D0 00** (new) (crc) (crc)  
(add) **06 07 D0 00** (new) (crc) (crc)

## Set baud rate

(add) **06 07 D1 00** (bud) (crc) (crc)  
(add) **06 07 D1 00** (bud) (crc) (crc)

## Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor (1-254)
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via [crccalc.com](http://crccalc.com).
- **(hum)** is soil humidity measured by sensor
- **(tem)** is soil temperature measured by sensor
- **(con)** is soil conductivity measured by sensor
- **(ph)** is soil pH measured by sensor
- **(n)** is soil nitrogen measured by sensor
- **(p)** is soil phosphorus measured by sensor
- **(k)** is soil potassium measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate {(0x00, 2400),(0x01, 4800),(0x02, 9600)}