



R-EA-WR-ID500-DES-ET
13.56 MHz RFID Device
Hardware Description

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1 Introduction

1.1 Function

This RFID device contains the OEM-DES-M900-TTL Core Module. It uses the DESFire Family Communication Protocol.

1.2 Reference Documents

Communication Protocol: OEM-DES devices Communication Protocol_x.yy_EN.pdf

1.3 Additional Command for Relay Control

Command code: 0x03

Command format

50	00 05	03	FF 08	08/00	XX XX	ZZ
ACK	Length	CMD	fixed	Relay control	Relay control time	XOR

Segment description

ACK	Fixed as 0x50
Length	Fixed as 0x0005
CMD	Fixed as 0x03
0xFF08	Fixed parameter
Relay control	0x08: relay ON, 0x00: relay OFF
Relay control time in ms	Range from 0x0000~0xFFFF when it is 0x0000, that means time infinitely long
ZZ	XOR, check byte

Examples

Relay ON: >> 50 00 05 03 FF 08 08 00 00 A9
 << 50 00 00 03 53 – confirmation reply

Relay OFF: >> 50 00 05 03 FF 08 00 00 00 A1
 << 50 00 00 03 53 – confirmation reply

Relay ON for 256 ms: >> 50 00 05 03 FF 08 08 01 00 A8
 << 50 00 00 03 53 – confirmation reply

2 Network Setup

Factory default IP address is: DHCP
Factory default Port is: 8000

Important Note

Do not connect any device to your network before it has been configured. Before connecting it your network, check that the desired IP address has been set. A device may have any factory-set IP address. A device with the wrong settings may impede the functioning of your network.

2.1 Connecting with The Device

HF READER V4.0

SYSTEM MODE SELECT HELP EXIT

SYSTEM ISO14443A ULTRALIGHT CPU ISO14443

CONNECTIVITY

CONNECTION ☐ COMPORT ☒ TCP IP

COMPORT COM1 BAUDRATE 9600

DEVICE ADDR 00

IP 192.168.1.10

Port 8000

SEARCH BAUD

SEARCH IP

IP MODIFY

CONNECT

INFORMATION

SW VERSION: HF DEMO-V4.0

HW VERSION: IDT527E-V5.0

DEVICE S/N: FF FF FF FF FF FF FF FF

Checkmark TCP IP first.

In case you don't know the IP address of the device, use the [search] function. This will take some time, so please be patient. This will only work in the same subnet, so set your service PC according in the suitable network address range.

If the IP address is known, simply type it in.

Tip: Use copy & paste to reuse IP addresses from a text file.

When the IP address is shown press [connect]. Now the software should connect to the device and show a brief version information gathered from the device:

2.2 Network Settings

Use [IP Modify] to open this dialog. Change the values as desired for your application.

IP MODIFY

NETWORK SETTINGS

☒ Use the Following IP address
☐ Get IP address from DHCP Server

IP Address 192.168.1.10

Subnet Mask 255.255.255.0

Gateway 192.168.1.1

DNS Server 208.67.222.222

Socket Type TCP Server

Remote Host 192.168.1.201

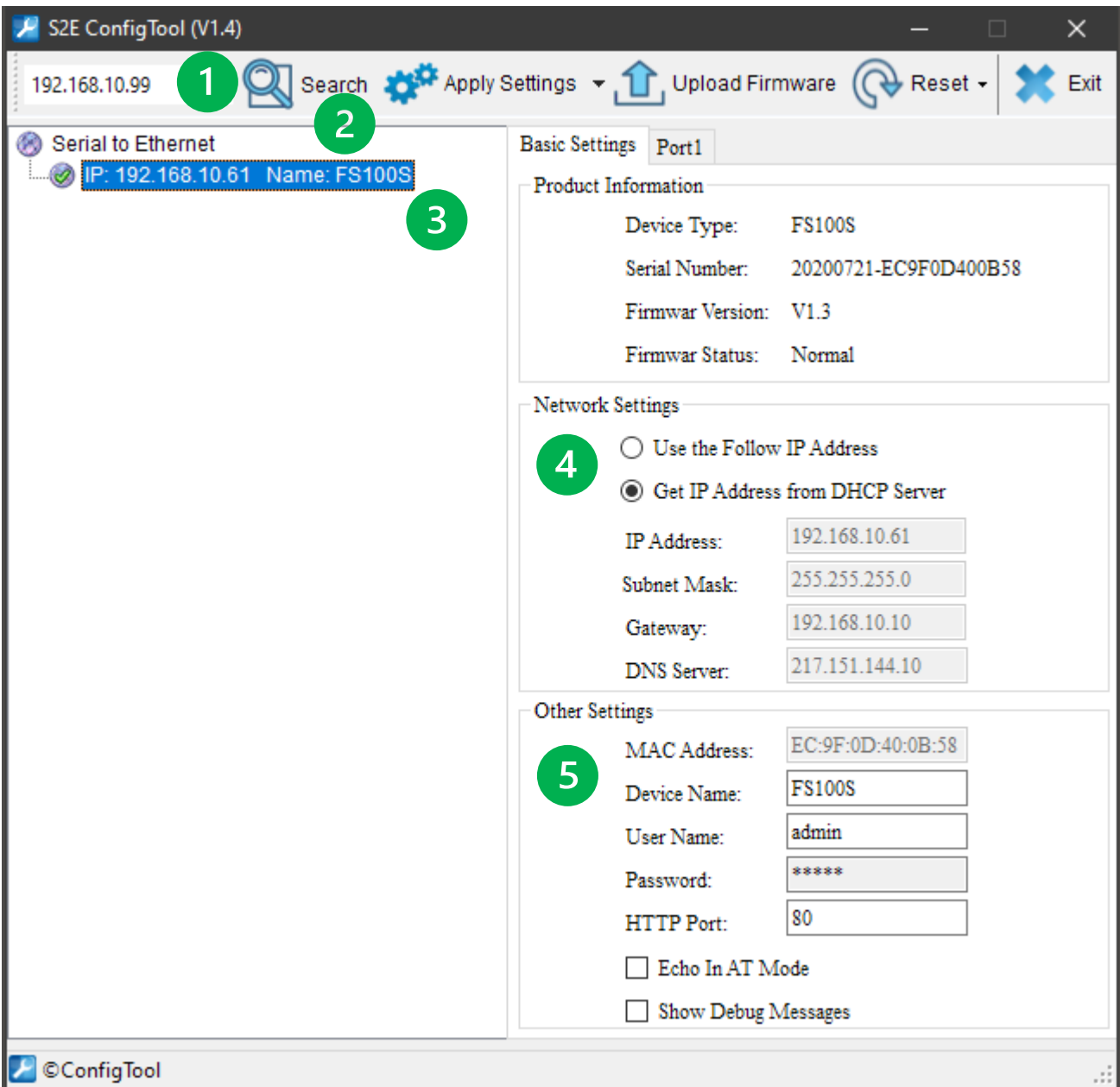
Remote Port 8234

Local Port 8000

Apply Settings

2.3 Using “S2E ConfigTool_V1.4”

Tab “Basic Settings”



- 1: Select the desired network interface of your PC from the drop-down menu.
- 2: Click on [Search], now the device you want to set should be listed.
- 3: Select the desired device to set.
- 4: Leave the device set to DHCP or set the desired Ethernet parameters of the device.
- 5: Device Name: Here you can give the device a name that is helpful to you.
User Name/Password: this is the user name and password for access via the web interface. You can use this to block access. In addition, you can disguise access to the web interface with an HTTP port that differs from the standard.
- 6: Please do not forget to save changed settings with [Apply Settings].

Tab "Port 1"

S2E ConfigTool (V1.4)

192.168.10.99 Search Apply Settings Upload Firmware Reset Exit

Serial to Ethernet

IP: 192.168.10.61 Name: FS100S

Basic Settings Port1

Baud Rate: 115200

Data/Stop/Parity: 8 1 NONE

Flow Control: NONE

Socket Type: TCP Server

Modbus TCP to: NONE

Remote Host: 192.168.10.201

Remote Port: 8234

Local Port: 8898

Data Packing Time: 50 ms (0~60000)

Data Packing Size: 0 byte (0~2048)

Inactivity Time: 60000 ms (0~60000)

Reconnection Time: 0 ms (0~60000)

Keep Alive Time: 0 5s (0~255)

Connect TCP Server when 0. Power On

Auto Message (The First Data Packet from Device): 0. No message

☐ Request Admin Password

☒ Clear Data Buffer when TCP Connected

© ConfigTool

The screenshot shows factory settings. Normally you should not need to change anything here.

In case you need to change settings, please do not forget to save changed settings with [Apply Settings].

Important Note!

Please do not change the values "Baud Rate", "Data/Stop/Parity", "Flow Control", "Socket Type", "Modbus TCP to".

2.4 Using the Web Interface

Die Weboberfläche ist unter der gleichen IP-Adresse erreichbar, wie sie im „S2E ConfigTool_V1.4“ sichtbar ist.

2.4.1 Login Information

By factory default user and password is: admin

2.4.2 Menu “Device View”

This gives an overview of the current settings. The settings cannot be changed here.

Firmwar Version: 1.4		
Device View	Product Information	Help
Basic Settings	Device Name: DES-R845-SMP-V2 Device Type: FS100S Serial Number: 20210125-EC9F0D4018B1 Run Time: 180 seconds Serial Rx: 0 Serial Tx: 0	<ul style="list-style-type: none"> • Run time: run time means the minutes since latest reboot. • TX/RX Count: TX/RX count give us a calculation of the total byte we have been.
Advanced Options		
Management		
	Network Information DHCP: ON IP Address: 192.168.10.102 Subnet Mask: 255.255.255.0 Gateway: 192.168.10.10 DNS Server: 217.151.144.10	
	Socket Information Mode: TCP Server Local Port: 8898 Remote Host: 192.168.1.201 Remote Port: 8234	
	UART Information Baud Rate: 115200 Date Bit: 8 Parity: NONE Stop Bit: 1 Flow Control: NONE	

2.4.3 Menu “Basic Settings”

Firmwar Version: 1.4		
Device View	Network Setting	Help
Basic Settings	MAC Address: EC:9F:0D:40:18:B1 1 Use DHCP: <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • RIP type: StaticIP or DHCP. • IP Address: Module's IP. • Subnet Mask: Usually 255.255.255.0 • Gateway: Usually router's ip address • Load Port: 1~65535. when TCP Client, set this to 0 means use random local port. • Remote Port: 1~65535
Advanced Options	IP Address: 192.168.10.102 Subnet Mask: 255.255.255.0 Gateway: 192.168.10.10 DNS Server: 217.151.144.10	
Management	Socket Setting Socket Type: TCP Server Remote Host: 192.168.1.201 Remote Port: 8234 2 Local Port: 8898 Modbus TCP to: NONE	
	UART Setting Baud Rate: 115200 Date Bit: 8 Parity: NONE Stop Bit: 1 Flow Control: NONE	
	3 Save Settings Reset	

Note

The factory settings are framed in green. Normally you should not need to change anything here.

- 1: Keep DHCP or set the desired IP address for the device.
- 2: Set „Local Port“ to the desired listening port number.
- 3: Make sure to press [Save Settings] to save the settings permanently.

Important hint!

Do not change the settings „Socket Type“, „Modbus TCP to“ in section „Socket Setting“.
Do not change the settings in section „UART Setting“.

2.4.4 Menu “Advanced Options”

Firmwar Version: 1.4		
Device View	Parameter Setting	Help
Basic Settings	<div>1</div> <div>Device Name: <input type="text" value="DES-R845-SMP-V2"/></div> <div>User Name: <input type="text" value="admin"/></div> <div>HTTP Port: <input type="text" value="80"/></div> <div>2</div>	<ul style="list-style-type: none"> • Device Name: max length is 15 char. • User Name: max length is 5 char. • HTTP Port: Default 80. • Reset: Click to make your config take effect.
Advanced Options	<div>Data Packing Size(byte): <input type="text" value="0"/></div> <div>Data Packing Time(ms): <input type="text" value="50"/></div> <div>Reconnection Time(ms): <input type="text" value="0"/></div> <div>Inactivity Time(ms): <input type="text" value="60000"/></div> <div>Keep Alive Time(5s): <input type="text" value="0"/></div>	<ul style="list-style-type: none"> • Data packing size Default 0(0~2048). • Data packing time Default 0(0~60000). • Reconnection time: Default 0 (0~60000). • Inactivity time: Default 0 (0~60000).
Management	<div>Verify the Connection: <input type="text" value="No"/></div> <div>Send Hello Message: <input type="text" value="None"/></div> <div>Connection Condition: <input type="text" value="Connect Socket after Power On"/></div> <div>Clear Buffer if Connect: <input checked="" type="checkbox"/></div> <div>Debug Message Enable: <input type="checkbox"/></div> <div>AT Echo Enable: <input type="checkbox"/></div> <div>3</div> <div>Save Settings</div> <div>Reset</div>	

Note

The factory settings are framed in green. Normally you should not need to change anything here.

- 1: When useful put a „Device Name“ for your own interest.
- 2: „User Name“ is the user name for the web interface.
The password settings are done in the site „Management“.
You can change the web server port to any other port.
- 3: Make sure to press [Save Settings] to save the settings permanently.

Important hint!

Do not change any other settings here.

2.4.5 Menu “Management”

Firmwar Version: 1.4		
Device View	Password Setting Old Password: <input type="text"/>	Help <ul style="list-style-type: none"> • Password: Max length is 5 char. • Logout: Click to make quit the web page. • Reset: Click to make restart the module. • Default: Click to make module restore factory setting.
Basic Settings	New Password: <input type="text"/>	
Advanced Options	Confirm Password: <input type="text"/> <input type="button" value="Set"/>	
Management	Management Logout: <input type="button" value="Logout"/>	
	Reset Device: <input type="button" value="Reset"/>	
	Factory Default: <input type="button" value="Default"/>	

- 1: You can change the current password to a new password. The factory default password is „admin“. To change the password type in your current password in „Old Password“ and type in the new password in „New Password“. Confirm the new password in the field „Confirm Password“. Make sure to press [Save Settings] to save the new password permanently.
- 2: For security reasons you should logout after changing the password by pressing [Logout].

3 Communication Test

In this simple communication test the command code 04 is used to request the firmware information string. The device uses a binary communication protocol, so all interpretations are as hexadecimal numbers.

