Common Resources

Source of common resources used across the RemoteCOM w/ Wi-Fi documentation

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Tables

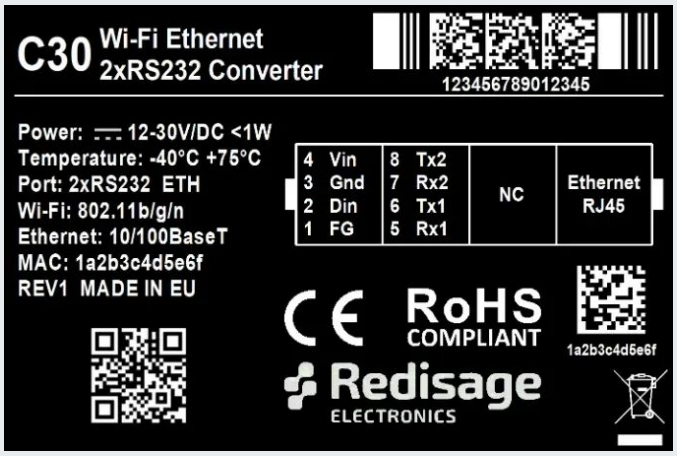
Specifications

Redisage PN		C30	C31	C32
Ports	RS232	2x	-	-
	RS485	-	1x	-
	RS232/RS485	-	-	2x
Microcontroller		ESP32		
WiFi		802.11b/g/n 150 Mbps / 2.4 GHz		
Power	Voltage	12-30 VDC		
	Power	< 1 W		
Frame ground connection		yes		
Baud rate		up to 115200 bps		
LED indicators		communication Tx, Rx and power		
RS485 termination		120 ohm manually enabled		
Connector	RS232/RS485	8-pin terminal block max. 2.5 mm^2 wire		
	Power	3-pin terminal block max. 2.5 mm^2 wire		
	Ethernet	RJ45		

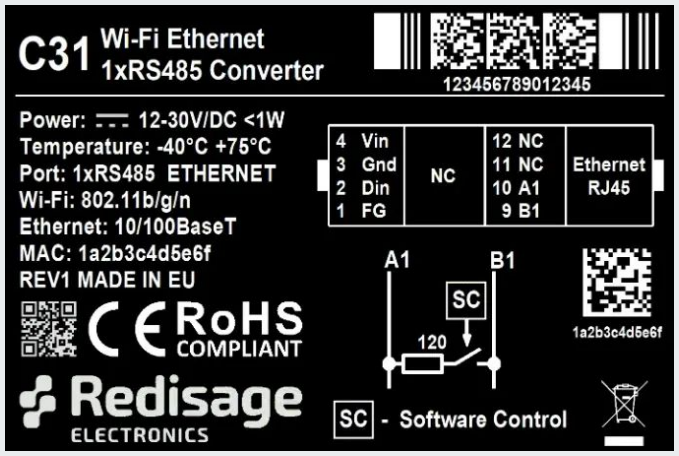
Redisage PN		C30	C31	C32
Transmission distance	RS485	max. 1,200 m at 9.6 kbps; max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change)		
Mounting and enclosure		DIN rail, plastic PA - UL 94 V0, black/green		
Temperatures		-40°C to +75°C operating and storage		
Humidity		10 - 90% RH, non-condensing		
ESD protection		±4 kV contact discharge / ±8 kV air discharge		
Certification		CE, RoHS, RED		
Norms		61000-6-2 – Immunity standard for industrial environments 61000-6-4 – Emission standard for industrial environments EN 300 328 – Data transmission equipment operating in the 2,4 GHz band		

Pin assignments

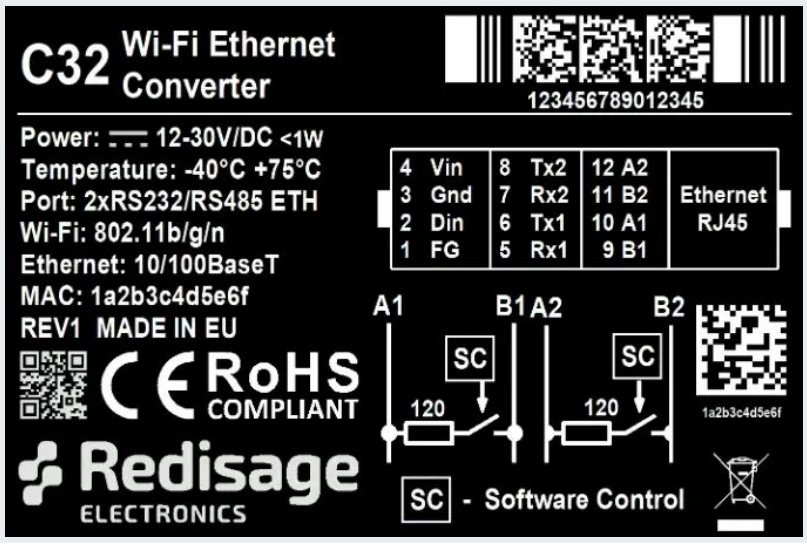
C30



C31



C32



Configuration by the Web Page

Ports page

Item		Description
Service	RemoteCOM	The RemoteCOM option lets to attach the port to a computer running the Redisage Configurator as if it would be physically present in the computer.
	TCP Socket	TCP/UDP Socket exposes this port as a regular network socket - connect to this socket with own software and write/read data to send/receive data over the serial port without any additional software or serial port handling.
	UDP Socket	
Port		The service number - the device has an “IP Address” by which it is identified and a couple of services running on it. It's required to tell the device which service should be in use by entering this device's IP address and the port number in the RemoteCOM client or user’s software.

Item	Description
Connection Timeout [s]	The time specifying how often (every how many seconds) the "keep alive" packet will be sent to check if the client is still connected. Value 0 means that the connection is kept permanently without any timeout.
Inactivity Time [ms]	The maximum allowed time in milliseconds during which there is no data transfer. When connection is inactive for the time longer or equal to the entered value, then it will be closed. Value 0 means there is no measure of the inactivity time at all.
Encryption	Determine how the data is protected 'in flight' over a network. It is available only with the RemoteCOM service. Once enabled, it is necessary to set the password.
Password	Protect the communication between the device and various clients - keep it secret! Same settings have to appear in clients - without the correct passwords, a client will not be able to connect at all.
Termination	Enable/disable termination on the RS line.
Baud Rate	Determine the port's transmission speed over the data channel.
Data Bits	Determine the number of data bits in the port's message frame.
Parity	Enable/disable parity check in the port's message frame.
Stop Bits	Determine the number of stop bits in the port's message frame.
Notes	These notes are for information only - feel free to write down anything related to this port (device it connects to, etc.). They're also shown in the Configurator during the device discovery - in the other words, they're public.

Network page

Item	Description

Configuration Method	Enable/disable the DHCP server. If the DHCP server is disabled, the IP address of the device has to be set manually.
IP Address	IP address of the device.
Netmask	Netmask associated with the IP address.
Gateway	Gateway address currently used by the device.
MAC Settings	Allow setting the default MAC address or typing it manually.
MAC Address	Allow changing the physical address of the device.

Item	Description
HTTP Port	Determine the port of the control panel.
Telnet Port	Allow connection with the device via Telnet.
Broadcasts	Notify RemoteCOM clients in the same network about this device's existence. With this enabled, the Configurator will automatically set most of the settings correctly after picking the correct port.
Hostname	Label that is assigned to the device.
DNS Address 1 (Primary)	Primary Domain Name System used by the device.
DNS Address 2	Domain Name System used by the device.

Device page

Item	Description
Firmware Update	Update firmware.
Factory Reset	Restore default ports settings and default network configuration.
Reboot	Reboot the device.

Configuration by the Serial Console

List of all commands

Command	Description
help	Print the help.
conn	Print active TCP connections.
eth_mac	Print or change MAC address.
exit	Close current CLI session.
http_port	Print or change default http port.
ipconfig	Print or change the network configuration.
net_stat	Print lwIP statistics.
ping	Check internet connection with the desired host.
restart	Restart the system.
reboot	Same as restart.
sys_heap_usage	Print current heap usage.
telnet_port	Print or change default telnet port.
uart	Print or change uart configuration.
uart_service	Print or change uart_service configuration.
user	Print or change user configuration.
wificonf	Print or change the Wi-Fi configuration
wifi_mac	Print or change Wi-Fi MAC address.

List of commands in the service mode

Command	Description
help	Print the help.
credits	Print current credits value for this device.
dev_ident	Print the device identification value.
restart	Restart the system.
serial_num	Print the serial number of this device.
version	Display the bootloader version.
xmodem	Download image to the internal flash using xmodem.
defaults	Reset application variables to defaults.
ipconfig	Print or change the network configuration.
flash_read	Read bytes from flash memory.

Command	Description
md	Read bytes from memory address.

> In the service mode, the “ipconfig” command can only show a last static IP address.

Commands

Ports configuration commands

In terms of ports configuration it is possible to change parameters like: service, baud rate, data bits, parity, stop bits and so on. UART commands are provided below.

- **uart**
  - **uart help**
    Print the help message.

  - **uart list**
    List available uarts in the system.

    Example:
    uart list
    0: baud: 9600 bits: 8 stop_bits: 1 parity: none (service console)
    1: baud: 115200 bits: 8 stop_bits: 2 parity: odd (covered by cons.)
    2: baud: 9600 bits: 8 stop_bits: 1 parity: none
    3: baud: 1200 bits: 8 stop_bits: 2 parity: even termination: ON (R-COM)
    3: baud: 38400 bits: 8 stop_bits: 2 parity: none termination: OFF

  - **uart PORT_NUMBER baud BAUD**
    Set PORT_NUMBER baudrate to BAUD. BAUD value can be one of the following:
    2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200.

    Example:
    uart 1 baud 9600

    WARNING: UART covered by console. Changes will take place after the reset.

  - **uart PORT_NUMBER bits BITS**
    Set bit length to BITS. BITS value can be one only 8.

    Example:
    uart 2 bits 8

- **uart PORT_NUMBER stop_bits STOP_BITS**
  Set stop_bits length to STOP_BITS. STOP_BITS value can be only 1 or 2.

  Example:
  uart 2 stop_bits 1

- **uart PORT_NUMBER parity PARITY**
  Set uart parity to PARITY. PARITY value can be one of the following: none, odd, even.

  Example:
  uart 3 parity even

- **uart PORT_NUMBER termination STATE**
  Set uart termination to new STATE. STATE can be only ON or OFF.

  Example:
  uart 3 termination ON

- **uart_service**
  - **uart_service help**
    Print the help message.

  - **uart_service list**
    List of uarts services status.

    Example:
    uart_service list
    1 state: ON service: Remote COM port: 1504 enc: YES
    2 state: OFF service: TCP Socket port: 1510
    3 state: OFF service: UDP Socket port: 1510

  - **uart_service UART_NUMBER state STATE**
    Set UART_NUMBER state to STATE. STATE value can be only ON or OFF.

    Example:
    uart_service 1 state ON

  - **uart_service UART_NUMBER service SERVICE**
    Set UART_NUMBER service to SERVICE. SERVICE value can be one of the following: Remote COM, TCP Socket, UDP Socket.

    Example:
    uart_service 1 service TCP Socket

  - **uart_service UART_NUMBER port PORT_NUMBER**
    Set UART_NUMBER port to PORT_NUMBER. PORT_NUMBER value can be any in

the range: 1-65535.

Example:
uart_service 1 port 1501

- **uart_service UART_NUMBER enc ENC_STATE**
  Set UART_NUMBER encryption to ENC_STATE. ENC_STATE can be only YES or NO.

  Example:
  uart_service 1 enc YES

  If ENC_STATE is YES then it will ask for a new password for encryption.

Network settings

The following commands might be helpful to change network settings according to target LAN parameters.

- **ipconfig**
  - **ipconfig addr ADDRESS**
    Set IP address to ADDRESS.

    Example:
    ipconfig addr 192.168.0.10

  - **ipconfig mask NETMASK**
    Set subnet mask to NETMASK (in dot-decimal format).

    Example:
    ipconfig mask 255.255.255.0

  - **ipconfig mask BIT_COUNT**
    Set subnet mask to BIT_COUNT bits.

    Example:
    ipconfig mask 24

  - **ipconfig gateway GATEWAY_IP**
    Set network gateway to GATEWAY_IP.

    Example:
    ipconfig gateway 192.168.0.1

- **ipconfig dhcp enable/disable**
  Enable or disable DHCP client.

  Example:
  ipconfig dhcp enable

- **ipconfig dns1 ADDRESS**
  Set primary DNS to ADDRESS, disable getting DNS from DHCP if enabled.

  Example:
  ipconfig dns1 192.168.100.1

- **ipconfig dns2 ADDRESS**
  Set secondary DNS to ADDRESS, disable getting DNS from DHCP if enabled.

  Example:
  ipconfig dns2 1.1.1.1

- **ipconfig -w**
  Show information about Wi-Fi connection

- **eth_mac**
  - **eth_mac help**
    Print the help message.

  - **eth_mac default**
    Set device’s MAC address to factory-default one.

  - **eth_mac set MAC_ADDR**
    Set device’s MAC address to MAC_ADDR. Accepts both dash and colon-separated formats.

    Example:
    eth_mac set 01-02-03-04-05-06

    Example:
    eth_mac set 01:02:03:04:05:06

- **http_port**
  - **http_port help**
    Print the help message.

  - **http_port PORT_NUMBER**
    Set http port to PORT_NUMBER. A PORT_NUMBER value must be in range: 1-65535.

    Example:

http_port 80

- **http_port status**
  Print current http port.

  Example:
  http_port status
  A current http port is 80

- **telnet_port**
  - **telnet_port help**
    Print the help message.

  - **telnet_port PORT_NUMBER**
    Set Telnet port to PORT_NUMBER. A PORT_NUMBER value must be in range: 1-65535.

    Example:
    telnet_port 23

  - **telnet_port status**
    Print current Telnet port.

    Example:
    telnet_port status
    A current telnet port is 23

- **wificonf**
  - **wificonf help**
    Print the help message
  - **wificonf ssid SSID**
    Type SSID of target access point

    Example:
    wificonf ssid SSID

  - **wificonf password PASSWORD**
    Type password of target AP.

    Example:
    wificonf password PASSWORD

  - **wificonf connect**
    Try to connect to the configured Access Point. A result of the connection can be checked by '**wificonf status**'.

    - **wificonf disconnect**
      Disconnect from the AP.
    - **wificonf status**
      Show the current connection status.

    - **wificonf scan**
      Scan Wi-Fi networks.

- **wifi_mac**
    - **wifi_mac help**
      Print the help message
    - **wifi_mac default**
      Set device's MAC address to factory-default one.

    - **wifi_mac set MAC_ADDR**
      Set device's MAC address to MAC_ADDR. Accepts both dash- and colon-separated formats.

      Example:
      wifi_mac set 01-02-03-04-05-06

    - without any parameter print current MAC state

Changing username or password

To change username or password, use user command. Available commands:

- **user help**
  Print the help message.

- **user mod_name USER_NAME NEW_NAME**
  Change the user name to NEW_NAME. It fails if the name is used by another user.

  Example:
  user mod_name admin john

- **user passwd USER_NAME**
  Change USER_NAME's password.

  Example:
  user passwd admin
  ****** <- here is entered password, but '*' appears instead

  Note: Everyone can change the password for themselves.

Procedures

Configuration by the Serial Console

Procedure to enter serial console mode on C30 - C32

- Turn off the power of the device.
- Connect Ethernet converter to the dedicated USB/UART converter via the microUSB port.
- Connect USB/UART converter to the PC.
- Open the serial console (default baud rate is 115200 bps).
- Short the FG and GND ports.
- Turn on the power.
- Wait until the ST indicator (orange LED) lights up (it should light up after red light - service mode).
- Open the the DI and GND ports.
- Login using user’s personal credentials or default login details.
- If the process is successful, configuration commands can be typed into the terminal.

Redisage Configurator

Configuration procedure

- Change the device port service to the RemoteCOM.
- Set up a port number.
- Enable or disable encryption.
- If encryption is enabled create a password.
- In the Redisage Configurator click add the device and then set the COM number and the service port.
- If encryption is enabled enter a password.
- Click save changes.
- Connect to the configured serial COM port via terminal software.

Service mode

Procedure to enter service mode for C30 - C32 converters

- Turn off the power of the device.
- Connect Ethernet converter to the dedicated USB/UART converter via the microUSB port.

- Connect the USB/UART converter to the PC.
- Open the serial console (default baud rate is 115200 bps).
- Short the DI and GND ports.
- Turn on the power.
- Wait until the ST indicator (red LED) lights up.
- Open the the DI and GND ports.
- If the process is successful, service commands can be typed into the terminal.

Introduction

Serial Port Server w/ Wi-Fi® (C30 - C32)

Serial Port Server is a complete hardware and software solution for creating remote communication ports. The software part can be uploaded to any of the Redisage C30 - C32 Ethernet Converters. It provides a communication between a LAN host and a device equipped with RS232/RS485 serial interfaces. A dedicated app makes it easy and fast to configure and deploy. There is a possibility to create virtual COM ports with the Redisage Configurator to minimize number of cables. Onboard Wi-Fi module makes it even more versatile and independent solution.