

USCEW10

RS232 to Wi-Fi Adapter

Datasheet



Overview

- ✧ **Reliable ARM Cortex-M4 core with Mbed operating system**
- ✧ **Support TCP/UDP/Telnet /Modbus TCP Protocol**
- ✧ **Support RS232 to Wi-Fi Conversion, Serial Speed Up to 230400 bps**
- ✧ **Support STA/AP/AP+STA Mode**
- ✧ **Software flow control (XON/XOFF)**
- ✧ **Support Easy Configuration Through Web Interface**
- ✧ **Security Protocols TLS/AES/DES3**
- ✧ **Support Webpage OTA Wirelss Upgrade**
- ✧ **Internal PCB Antenna**
- ✧ **DC Input 5~18VDC**
- ✧ **Size: 61 x 26 x 17.8 mm (L x W x H)**
- ✧ **FCC/CE/RRRC/IC Certificated**

1. PRODUCT OVERVIEW

1.1. General Description

The USCEW10 provides RS232 to Wi-Fi connectivity. The USCEW10 integrates a TCP/IP controller, memory, high-speed serial port and a full developed TCP/IP network stack with Mbed OS. The USCEW10 also supports remote parameter configuration.

The USCEW10 is using highly integrated hardware and software platforms, and it has been optimized for many types of applications in the industrial control, smart grid, personal medical application and remote control industries, including applications that has lower data rates, and transmit or receive data on an infrequent basis.

The USCEW10 integrates this serial to Wi-Fi functionality within a small 61 x 26 x 17.8mm enclosure.

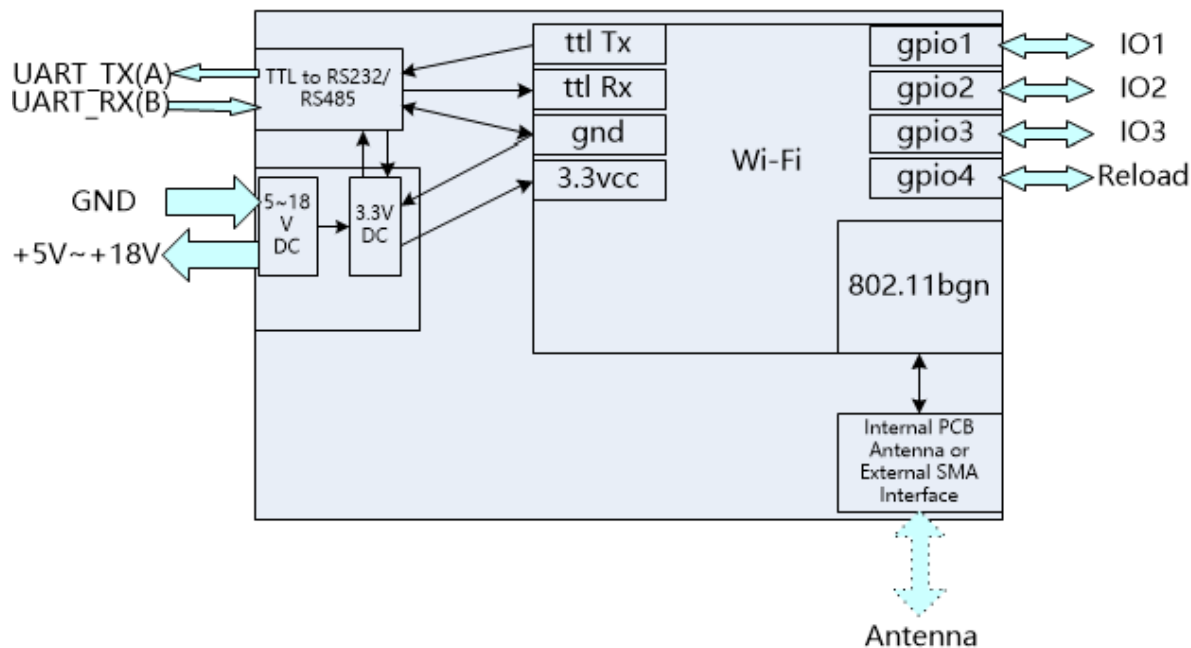


Figure 1. USCEW10 Internal Structure

Specifications

Item	Parameters
System Information	
Part number	USCEW10
Processor/Frequency	RDA5981 with ARM Cortex-M4 core, 160MHz, Mbed OS.
Flash/SDRAM	2MB/352KB
Operating System	Virtual COM software available for Windows 10, 8.1 / 8, 7, Vista (32/64-bit)
Wi-Fi Interface	
Network Protocol	IP, TCP server/client, UDP server/client, DHCP, DNS, HTTP Server/Client, Web socket, Telnetd, NTP, MQTT, Modbus TCP
Encryption	None, TLS, AES, DES3
Standard	802.11 b/g/n
Frequency	2.412GHz-2.484GHz
Network Mode	STA/AP/STA+AP
Number of network TCP sockets	max 5
Tx Power	802.11b: +18dBm (Max.) 802.11g: +16dBm (Max.) 802.11n: +15dBm (Max.)
Rx Sensitive	802.11b: -89dBm 802.11g: -81dBm 802.11n: -71dBm
Antenna	Internal:PCB
Serial Port	
Port Number	EE10:1 RS232
Data Bits	7,8
Stop Bit	1,2
Check Bit	None, Even, Odd
Baud Rate	TTL: 300 bps~230400 bps
Flow Control	No Flow Control Software Xon/ Xoff flow control (Hardware RTS/CTS NOT supported)
Misc.	
Web Pages	Http Web Configuration Customization of HTTP Web Pages
Configuration	Web CLI Telnet PC Software
Size	61 x 26 x 17.8 mm
Operating Temp.	-40 ~ 85°C
Storage Temp.	-45 ~ 105°C, 5 ~ 95% RH (no condensation)
Input Voltage	5~18VDC
Working Current	~200mA
Power	<700mW
Certificates	FCC/CE/SRRC/RoHS

Default parameters:

IP address: 10.10.100.254
Web login user name: admin
Web login password: admin
Port: 8899
TCP mode: Server
DHCP enabled
Network mode: AP
Telnet port: 23
Baud rate: 115200
Data bits: 8
Stop bits: 1
Parity: None

Important Notes:

Changing parameters:

After changing parameters through the web-admin panel simply click the Submit button to save the new setting.

Web-admin panel:

We highly recommend using [Firefox](#) web-browser, other web-browsers might not work properly with this converter.

Reset, Set and Clear buttons on web-admin panel:

The Reset button on each page resets settings back to what they were before they were changed as long as the Submit button has not been clicked.

The 'Set' button on the 'Others' page under 'Factory Settings' sets the current settings as factory settings. So after pressing the reset button for 5 seconds these settings will be set.

The 'Clear' button clears the 'new' factory settings back to original factory settings.

Reset button on interface cable:

The reset button on the interface cable resets the converter back to factory defaults by pressing it for more than 5 seconds.

Flow control:

'Flow Control' or 'Half Duplex' must be enabled for bi-directional communication to work.

2. HARDWARE INTRODUCTION

The USCEW10 unit is a complete solution for connecting serial devices to a network. This powerful device supports a reliable and proven operating system stored in flash memory, an embedded web server, a full TCP/IP protocol stack, and standard-based (AES) encryption.

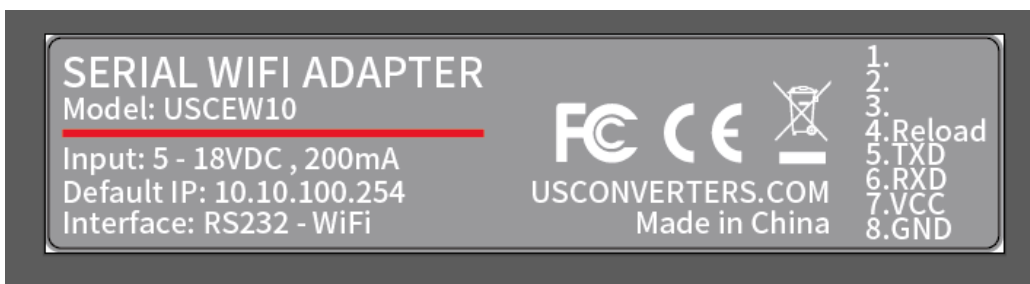


Figure 2. USCEW10 Appearance

2.1. USCEW10 Pin Definition

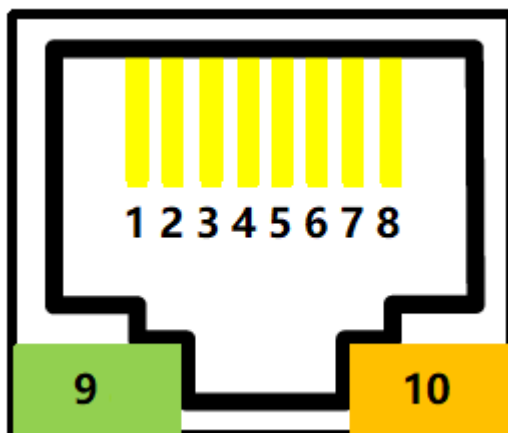


Figure 3. EW10 RJ45 Interface Pin

Table1. EW10 Interface Definition

Pin	Description	Net Name	Signal Type	Comment
1	GPIO	GPIO	IO	Reserved
2	GPIO	GPIO	IO	Reserved
3	GPIO	GPIO	IO	Reserved
4	Restore to Factory	nReload	I	Default pulled-high. Detailed functions see <Notes>
5	UART1_TXD	UART1_TXD	O	RS232 Voltage
6	UART1_RXD	UART1_RXD	I	RS232 Voltage
7	Power VCC	VCC	Power	5~18VDC
8	Power GND	GND	Power	
9	Green LED Net Status	Net	O	Boot On: Power is OK. 0.1s Off -> 0.1s On: SmartLink Config Mode 0.3s Off -> 3s On: STA mode connect to router or AP mode being connected by other STA. 0.3s Off ->0.3s On: No Wi-Fi Connection
10	Amber LED Data Transfer	Active	O	Off: No data transfer 0.3s Off -> 0.9s On: UART TX Output 0.3s Off -> 0.3s On: UART RX Receive On: UART bidirection.

<Notes>

I — Input; O — Output; I/O: Digital I/O; Power—Power Supply

nReload Pin (Button) function:

1. After module is powered up, short press this button (0.2< “Low” <1.5s) and release to make the module go into “SmartLink“ config mode, waiting for APP to set password and other information. (See Appendix to download SmartLink APP)

2. After module is powered up, long press this button ("Low" > 4s) and release to make the module recover to factory setting.

UART1 Debug :

1. Is used for debug log or firmware program. Baud Rate is 921600.

2.2. RS232 Interface

The RS232 interface does not support hardware flow control, it only supports software flow control (XON/XOFF). The physical voltage is about $\pm 7V$.

2.3. Mechanical Size

The dimensions of USCEW10 are defined as following picture (mm):

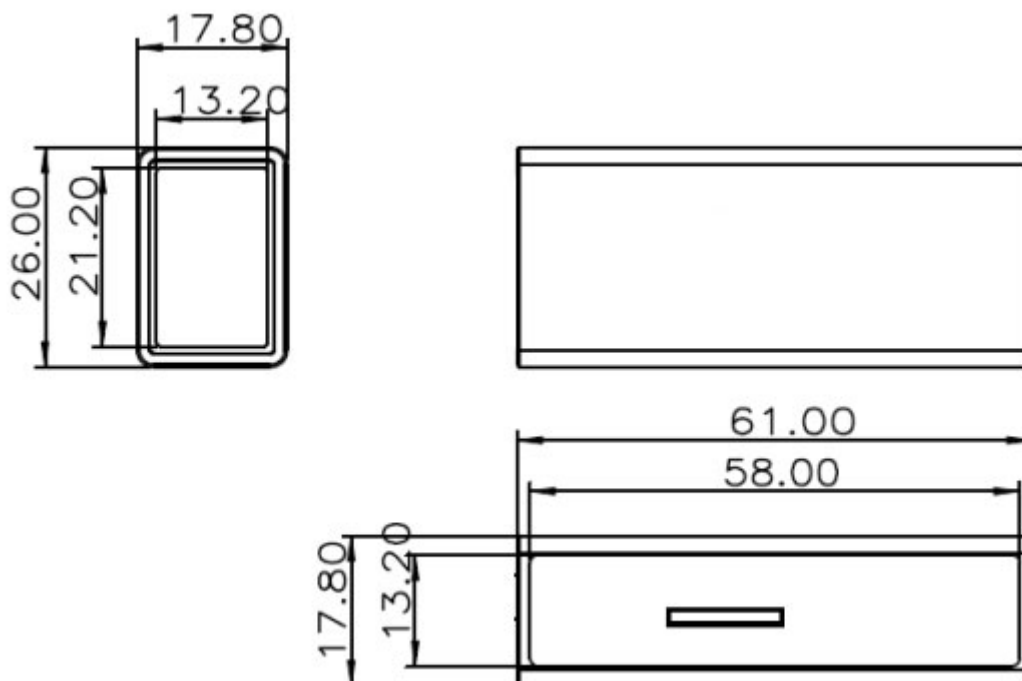


Figure 4. USCEW10 Mechanical Dimension

2.4. RJ45 8PIN Connector

RJ45 8PIN Connector Type Order: 10810001001



Figure 5. RJ45 8PIN Connector



Figure 6. EW10 +8PIN Connector

2.5. RJ45 4PIN Connector

RJ45 4PIN Connector Type Order: 10810001002



Figure 7. RJ45 4PIN Connector



Figure 8. EW10 +4PIN Connector

2.6. Interface Conversion Cable

Cable Type Order: 10A01SJ0008

Cable Specification: RJ45, DB9 female connector, 3-pin screw terminal header (A+/GND/B-), DC Adapter Interface (5.5mm x 2.1mm hole), 500mm length.



Figure 9. Interface Conversion Cable

2.7. Fixed Bracket

Bracket Type Order: 10810003001



Figure 10. Fixed Bracket

2.8. Rail Bracket

Bracket Type Order: 10703000003



Figure 11. Rail Bracket

2.9. Bracket

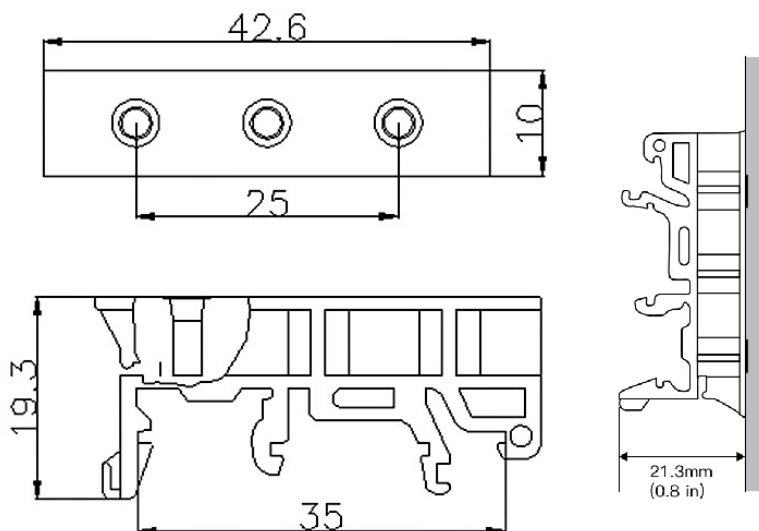
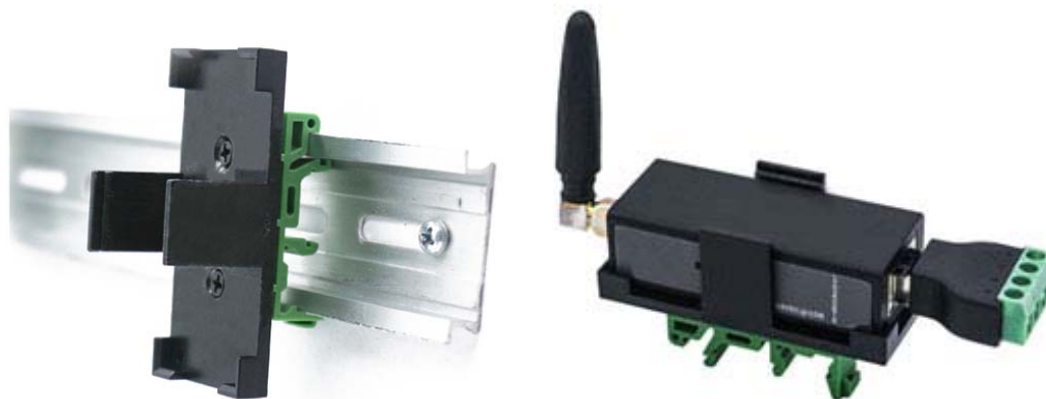


Figure 12. Bracket Size



2.10. Package

Converter module, one RJ45 Connector and one screw driver.



Figure 13. Package