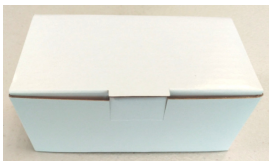
Bluetooth V2.1 Class1 SPP RS-232 Serial Adapter

Model: S2B2232E

1. Package content:

Bluetooth RS-232 adapter

White Box Dimension: 11 x 6 x 5 (cm)
Total Package Weight: 105 g

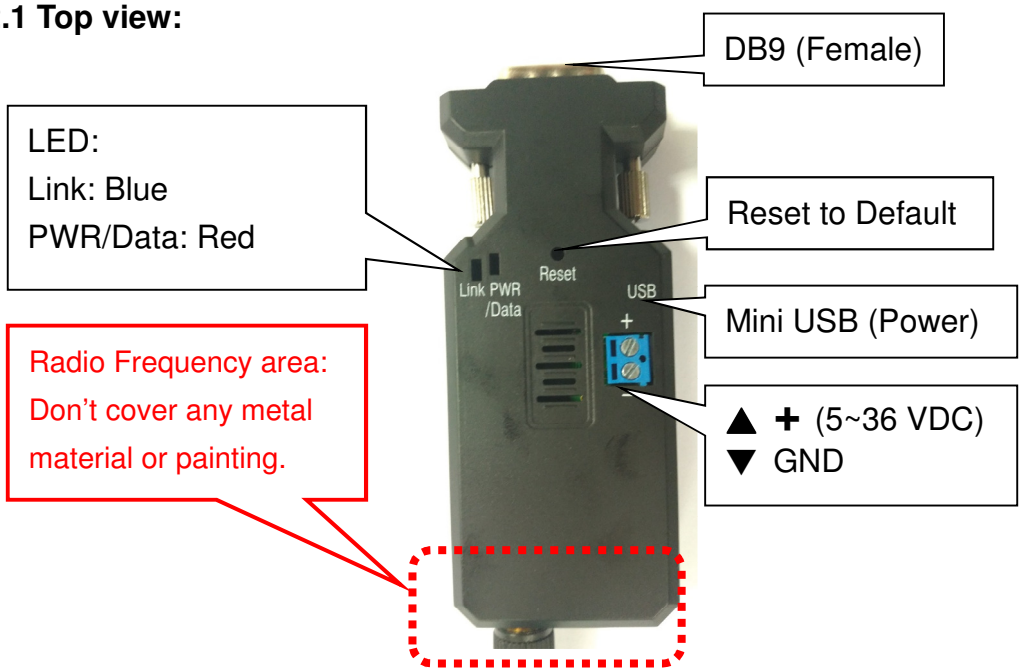


Package Contents:

- Bluetooth RS-232 adapter x 1
- A4 User manual x 1
- Mini USB Cable x 1

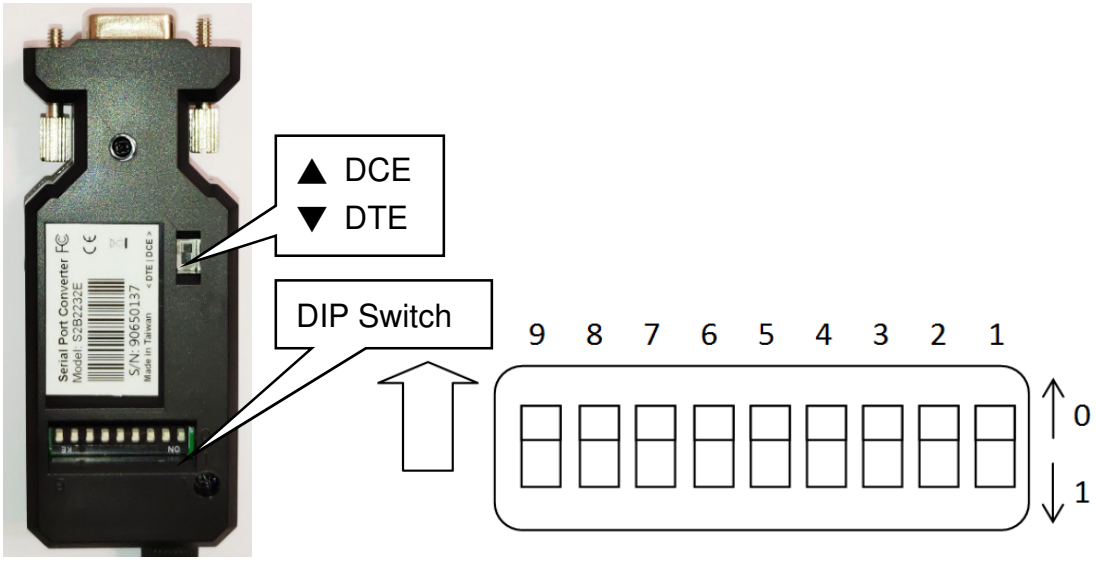
2. Profile:

2.1 Top view:



LED Status	Description
PWR LED solid on	Power On
Link LED solid on	Bluetooth Link
Link LED flash	Bluetooth not Link

2.2 Rear Side:



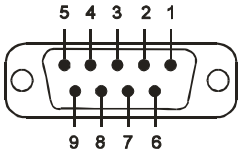
Switch configuration:

Setup	CTS/RTS	Stop Bit	Parity	Role	Baud Rate
9	8	7	6-5	4	3-2-1
0: DIP Switch 1: AT Command	**0: Disable** 1: Enable	**0: 1** 1: 2	**00: None** 01: Odd 10: Odd 11: Even	**0:Slave** 1:Master	110:2400 111:4800 **000:9600** 001:19200 010:38400 011:57600 100:115200 101:230400

Remark:

1. 000000000 by default, in **red bold** character
2. The default setting is by DIP switch. If the setting is not available on the above table, please check the AT command set as page 3 section 5.

2.3 DB9 connector (Female)



Pin	Signal	DTE Direction	DCE Direction	Description
1	CD	Input	Output	Not connected
2	TxD	Output	Input	Transmitted data
3	RxD	Input	Output	Received data
4	DSR	Input	Output	Contact manufacturer to set this
5	GND	N/A	N/A	Signal ground
6	DTR	Output	Input	Contact manufacturer to set this

7	CTS	Input	Output	Clear to send
8	RTS	Output	Input	Request to send (Default)
9	Vcc	Input	Input	Power supply (5VDC, 1.0 A)

3. Power supply:

3.1 Voltage: 5~36 VDC, **Don't exceed the limit.**

3.2 There're 3 ways to power the adapter: Mini USB, 2P Terminal Block (Blue) and pin9 of DB9, please choose one. **Don't power the adapter by more than one source.**

3.3 The mini USB to type A cable is inside the standard package.

4. Guide:

4.1 Default value:

- Baud rate: 9,600 bps
- Data bit: 8
- Parity: none
- Stop bit: 1
- Flow control: none
- Device Name: Serial Adapter
- Pin code:"1234" if necessary
- Mode: Default is "Slave", The adapter can be configured the "Master" by the command "role=m" or slide the DIP switch.

4.2 If the PC not built in the Bluetooth, please source the Bluetooth USB dongle or use the same adapter set as the "master". The built in Bluetooth of NB supports class 2 only, 10 meters. If you need 100 meters range, you will connect two adapters.

4.3 Slide Switch of "DTE/DCE"

Use the slide switch to swap the "TX/RX" and "CTS/RTS". By slide the switch, you can set the adaptor either as a DTE (towards antenna connector) or a DCE (towards DB9 connector). In most situation, switch to "DTE" if connect with the remote device.

4.4 Slave mode (default): Start the searching from the PC or smartphone and connect it.

4.5 Master mode: Set by the command "search=y" to find the Bluetooth slave devices and connect.

4.6 Reset Button: Pressed with a clip or pin into the hole on the top cover. Restore the factory settings (after over three seconds' press).

5. Setup Command set (Please type in all capital letter or all lowercase letter)

Command	Value	Description
<<<		Set the local adapter change the data mode into command mode. The command will be unavailable if the data pass through within 1 second when after set the command.
<<<		Switch the data mode to the command. The time interval between each character will be more than the time: [500ms] "<" [500ms] "<" [500ms] "<" [1500ms]
<<<=	?	Inquire the current setting.

(Default)	Y	Turn on the “<<<” command
	N	Turn off the “<<<” command
>>>		Set the remote adapter change the data mode into command mode from the local adapter in connecting status. The command is available after 500 ms when data transferring finished.
>>>		Switch the remote adapter from the data mode to the command. The time interval between each character will be more than the time: [1 sec] “<” [1 sec] “<” [1 sec] “<” [2 sec]
>>>=	?	Inquire the setting status of the “>>>” command.
(Default)	Y	Turn on the “>>>” command
	N	Turn off the “>>>” command
ADDRESS=		This command is used to display the Bluetooth address of the local adaptor.
	?	Inquire the Bluetooth address of the local adaptor.
AT		Check the connection status between control terminal and the RS-232 adapter. Response: “OK” when the connection is ok. Response: “ERROR” when the connection is not ok.
AT		Test the RS-232 status when first connect the adapter with the controller.
AUTO=		This command is used to enable/disable auto-connection feature. It is available only when the adaptor is in the master role. The command is available when DIP=N. The system will not re-start after change.
	Y	The Master role adapter will connect the latest paired Bluetooth device automatically.
(Default)	N	The user will connect the Bluetooth device manually.
	?	Inquire the current setting.
BAUD=		This command is used to specify the baud rate of COM port. The command will need 200 ms delay.
	1200	1200 bps
	2400	2400 bps
	4800	4800 bps
(Default)	9600	9600 bps
	19200	19200 bps
	38400	38400 bps
	57600	57600 bps
	115200	115200 bps
	230400	230400 bps
	460800	460800 bps
	921600	921600 bps
	R	Restore the default settings. (Baud rate =9,600 bps)
	?	Inquire the current baud rate.
CONNECT=		This command is used to establish a connection manually. It is available only when the adaptor is in the master role.
	DEVICE	Connect the adaptor to a specified Bluetooth device manually. It is available only when “DEVICE=xxxxxxxxxxxx” is executed.
	1~8	Connect the adaptor to a Bluetooth device in the neighborhood found

		through “SEARCH=?”
	xxxxxxxxxxxx	Connect the remote adapter by type the MAC address directly without searching.
	?	Display the MAC address of the latest paired device.
	Y	Recover the latest connection in the command mode.
	N	Disconnect the two adapters in the command mode
	P	Connect the previous connected adapter.
DEFAULT=		This command is used to restore the default settings and originate a warm start.
	Y	Restore the default settings (e.g. 9,600 bps). The command will re-start the system for 1 second.
DEVICE=		For security purpose, this command is used to specify a unique remote Bluetooth serial adaptor to be connected. In the master role, the adaptor pairs and connects with the designated remote slave address. If the adaptor is in the slave mode, this command is a filter condition to accept the inquiry of the master device.
	xxxxxxxxxxxx	“xxxxxxxxxxxx” is a string of 12 hexadecimal digits.
	R	Restore the status in which the adaptor can connect with any remote address.
	?	Inquiry the designated address that can be paired and connected.
DISCOVER=		This command is used to specify whether the adaptor can be discovered or connected by remote devices. This command is available only when the adaptor is in the slave role.
	N	The adaptor enters the undiscoverable mode. If a pair has been made, the original connection can be resumed. But other remote master device cannot discover this adaptor.
(Default)	Y	The adaptor enters the discoverable mode.
	?	Inquire the current setting.
ECHO=		This command is used to specify whether the adaptor echoes characters received from the UART back to the DTE/DCE.
	N	Command characters received from the UART are not echoed back to the DTE/DCE.
(Default)	Y	Command characters received from the UART are echoed back to the DTE/DCE.
	?	Inquire the current setting.
FLOW=		This command enable or disable flow control signals (CTS/RTS) of the UART port. Note, the setting is not affected by DEFAULT. The command will need 1 second delay.
(Default)	N	Disable flow control.
	Y	Enable flow control.
	?	Inquire the current setting
NAME=		This command is used to specify a name for the adaptor. You can specify a friendly name using 0 to 9, A to Z, a to z, space and –, which are all valid characters. Note that “first space or -, last space or – isn’t permitted”. The default name is “Serial Adaptor”.
(Default)	Serial Adaptor	Default device name
	xx….xx	“xx….xx” is a character string with the length from 2 to 30.

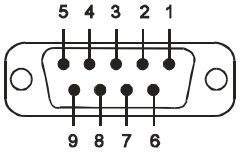
	R	Restore the default settings name=“Serial Adaptor”.
	?	Inquire the name of the local adaptor.
PARITY=		This command is used to specify parity bit setting of COM port. The command will need 200 ms delay.
(Default)	N	None parity bit
	O	Odd parity
	E	Even parity
	?	Inquire the current setting.
PIN=		This command is used to specify a PIN. The default PIN is “1234”. Paired adaptors should have a same PIN. This command is used to specify a PIN. The default PIN is “1234” and the length is not smaller than 4. Paired adaptors should have a same PIN. The PIN code includes the numeral and English characters.
(Default)	1234	
	xx….xx	“xx….xx” is a 4~16 digit string or English character (in capital or lower case)
	?	Inquire the current PIN.
PROMPT=		The command is used to decide whether result messages are prompted when Setup commands are executed. The result messages are: OK/ERROR for command execution, or CONNECT/DISCONNECT/Try Connect Device for connection status.
(Default)	Y	Prompt result messages.
	N	Not prompt result messages.
	?	Inquire the current setting.
RECONNECT=		The command is used to re-connect the lost link for the Master adapter.
	?	Inquire the current setting.
	Y	Re-connect is Enable
(Default)	N	Re-connect is disable
ROLE=		This command is used to specify whether the adaptor is in the master or slave role. If the device role is changed, the adaptor will reboot and all paired addresses will be cleared. The command is available when the adapter is in DIP=N status. The command will need 1 second delay.
	M	Set the adaptor to the master role.
(Default)	S	Set the adaptor to the slave role.
	?	Inquire the current role of the adaptor.
SEARCH=		This command is used to search for any Bluetooth device in the neighborhood within one minute. If any device is found, its name and its 12-digit-address will be listed. The search ends with a message “Inquiry ends. xx device(s) found.” This command is available only when the adaptor is in the master role by manual.
	?	Inquire Bluetooth devices in the neighborhood, listing 8 devices the maximum
STATUS=		Inquire all the current setting of the adapter.
	T	Inquire the inner temperature of the IC in centigrade
	?	Display the current setting of the adapter
STOP=		This command is used to specify one or two stop bits of COM port. The command will need 200ms delay.

(Default)	1	One stop bit.
	2	Two stop bits.
	?	Inquire the current setting.
VERSION=		This command is used to inquiry the firmware version.
	?	Inquire the version codes.

Remark: If you need to customize the command, please call.

6. RS232 Interface

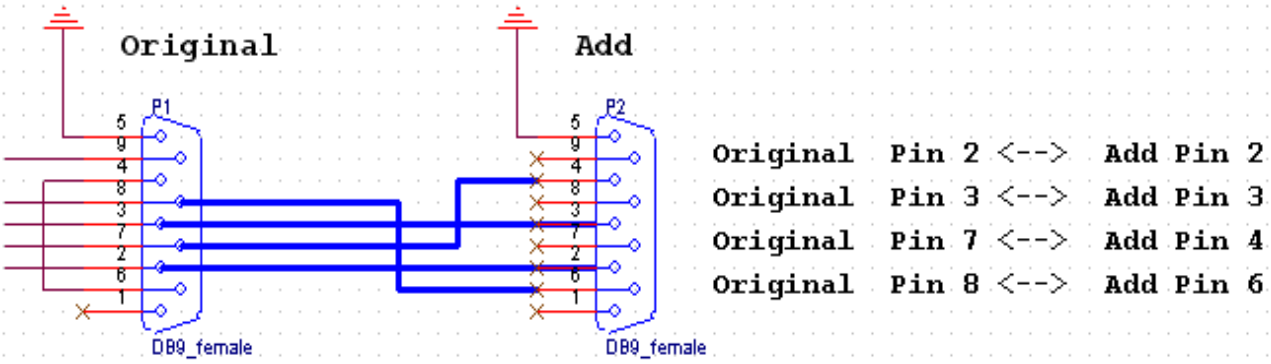
6.1 Pin-out:



6.2 Signals:

Pin	Signal	DTE Direction	DCE Direction	Description
1	CD	Input	Output	Not connected
2	TxD	Output	Input	Transmitted data
3	RxD	Input	Output	Received data
4	DSR	Input	Output	Contact manufacturer to set this
5	GND	N/A	N/A	Signal ground
6	DTR	Output	Input	Contact manufacturer to set this
7	CTS	Input	Output	Clear to send
8	RTS	Output	Input	Request to send (Default)
9	Vcc	Input	Input	Power supply (5VDC, 1.5A Max.)

7. DSR/DTR Connection:

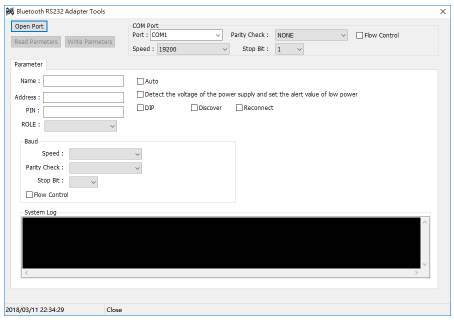


8. Auto link w/o searching or pairing: If you need more than two sets in the same space, please set the different PIN code for each pair. They will connect the paired units when the power on.

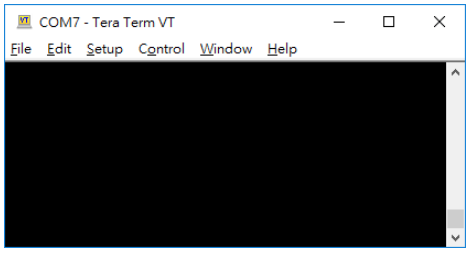
STEP1: Set slave part, PIN= “your password for pairing”
STEP2: Set master part, ROLE=M, PIN= “your password for pairing”, RECONNECT=Y, AUTO=Y
STEP3: Set slave part, DISCOVER=N if not to be discovered by other Bluetooth master.
STEP4: Power on both adapter and auto link.

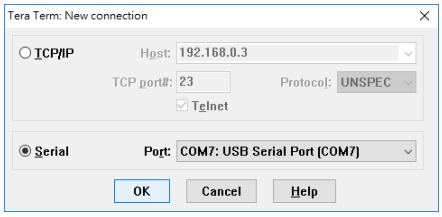
9. Configuration and test:

9.1 PC software: Please contact the supplier.



9.2 3rd party Terminal: Download the “Teraterm” software to set the AT command.



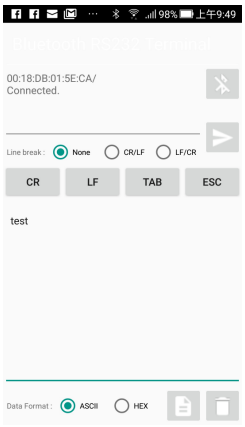


9.3 Smartphone: Not available for iOS. For test purpose only, not for configuration.

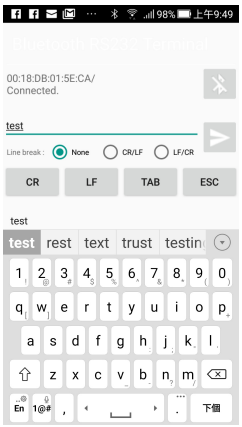
https://goo.gl/73ivu3

https://play.google.com/store/apps/details?id=com.ucconnect.ucbtadapter_hex

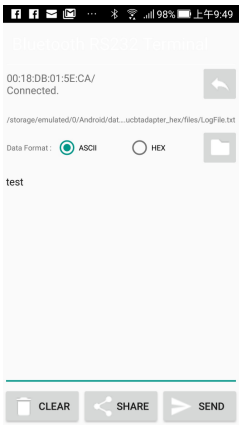
Pin code pairing



Receive data



Send data



Log content