Advantech AE Technical Sharing Documentation

Date	2020 / 01 / 16	**Release Note**	□ Internal ■ External
Category	■ FAQ □ SOP	**Related OS**	N/A
Abstract	How to implement the COM port mode setting including bias and terminal resistors?		
Keyword	BIOS and Dip switch setting for COM port.		
Related Product	UNO-2372G-E, UNO-2372G-J		

■ Problem Description:

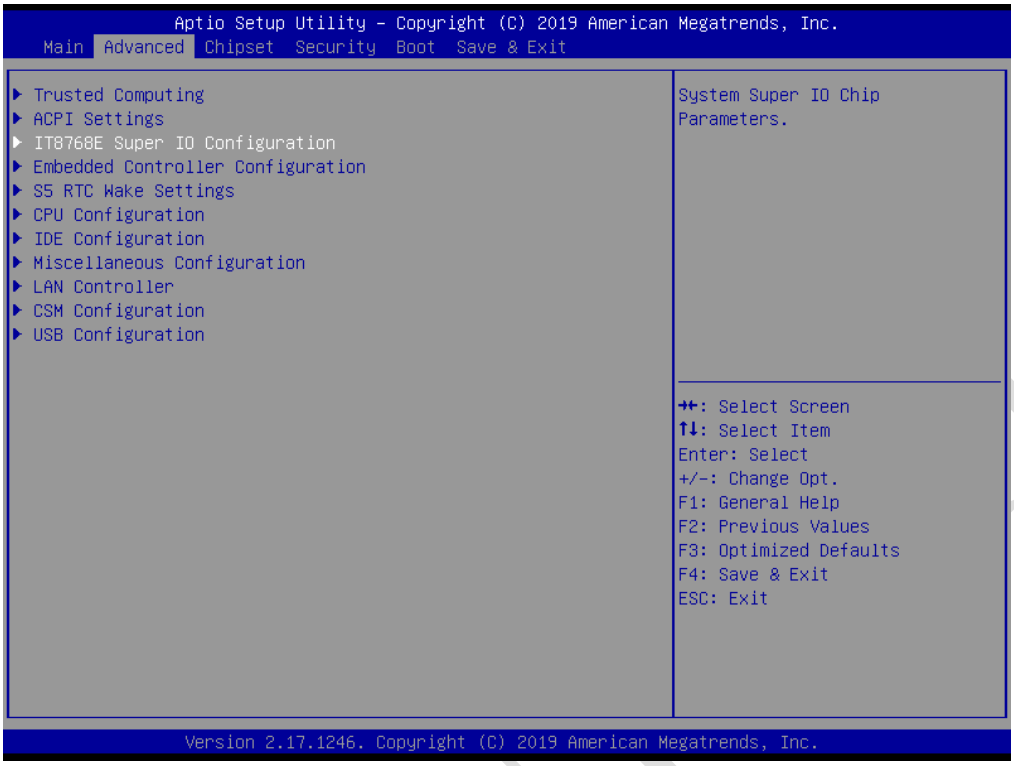
We have released an ECOM for changing motherboard to a new version.
There are 5 add-on switches designed on the new motherboard.
This FAQ is introducing more details for these switches.

■ Brief Introduction - Step by Step:

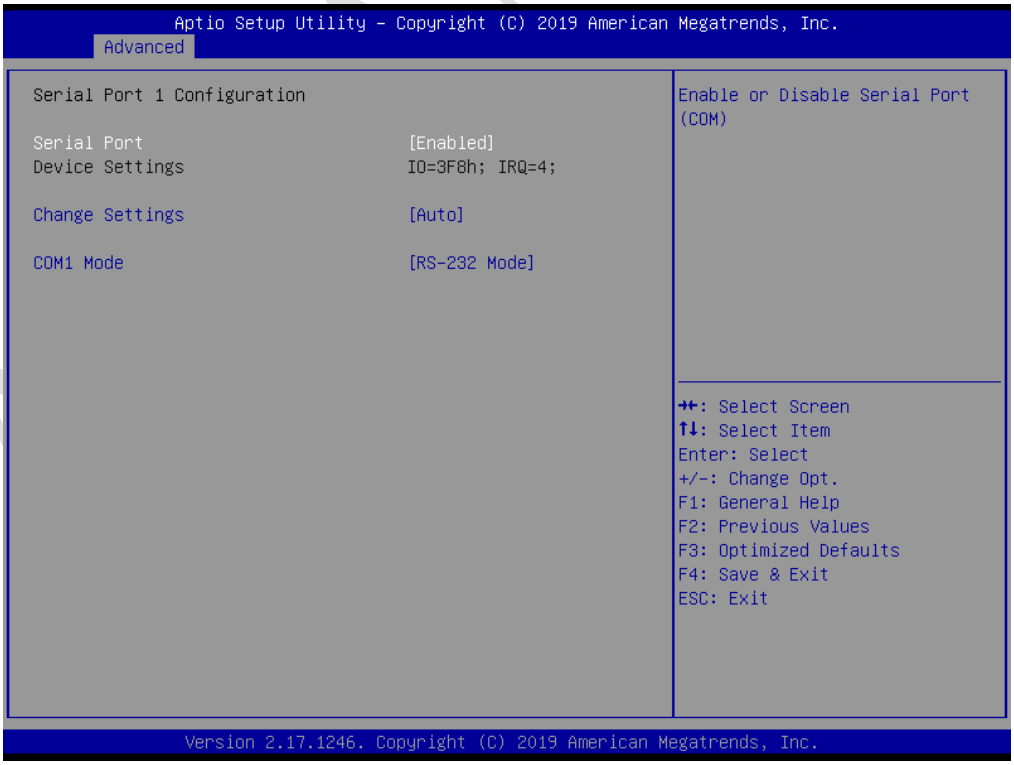
A. Set required COM mode in BIOS.

1. This is the main page of BIOS when you firstly enter it.

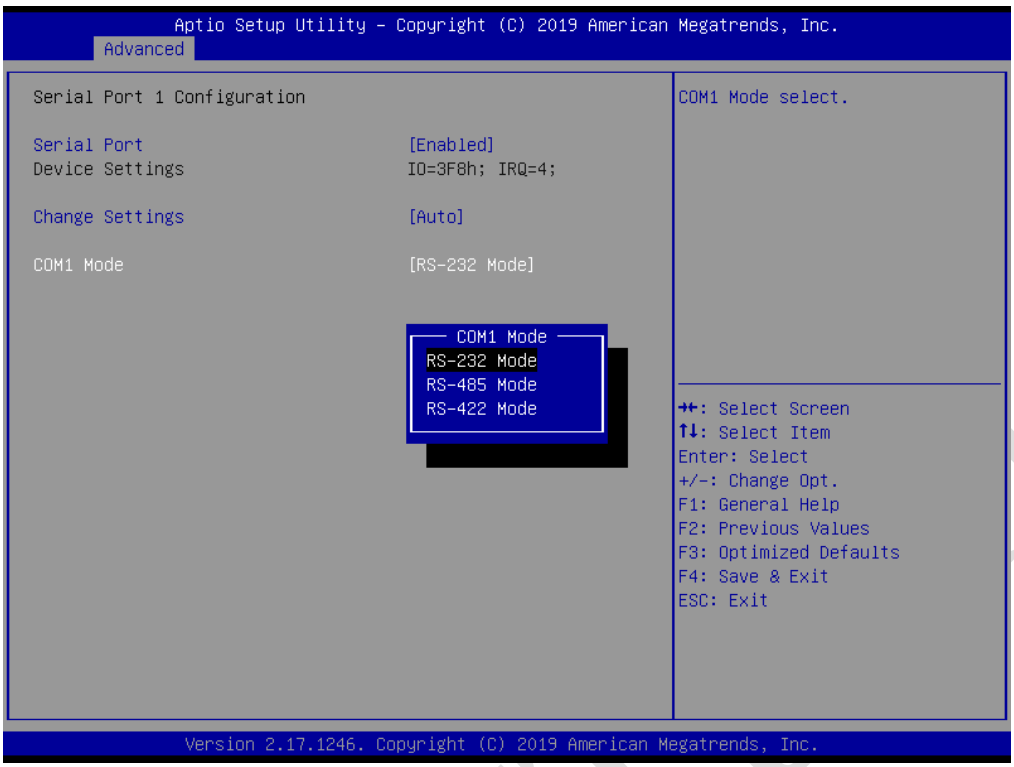
2. To set mode of COM port, switch to “Advanced” page.
   And then enter “Super IO Configuration”.



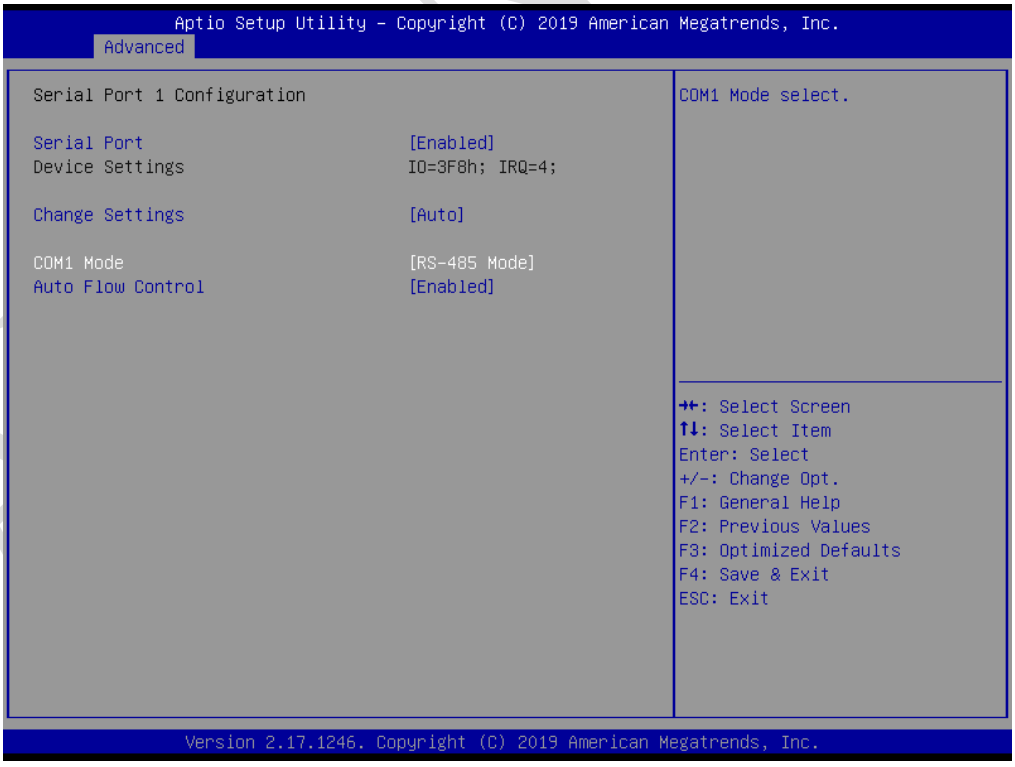
3. There are four COM ports on UNO-2372G; we take one of them for example.
   All of the COM ports are set to RS-232 by default as shown below.



4. We can switch COM mode to RS-485 or RS-422.

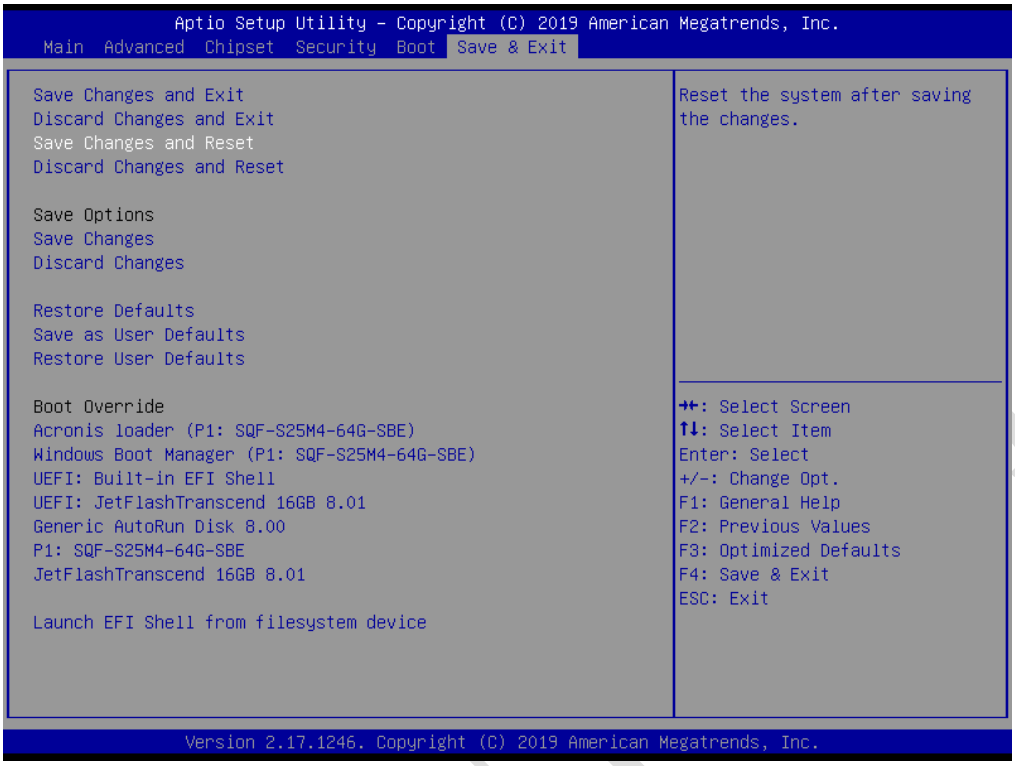


5. When the mode is set to RS-485, “auto flow control” will be automatically enabled. Users don’t need to change it additionally.



6. When the mode setting is completed, go to “save & exit” page.

   Then press “save changes and reset”, the UNO will reboot to take the new setting effective.



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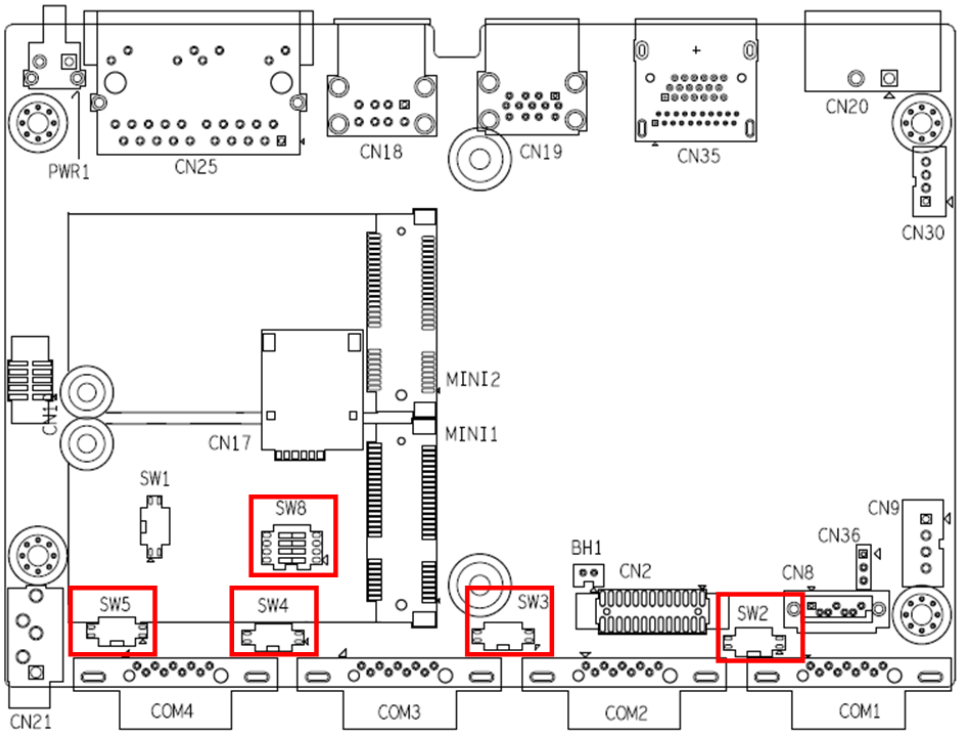
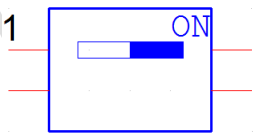
B. Set bias resistors and termination resistors by hardware switches.

1. Location of new Dip Switches:



2. Dip-switch for COM port:

Definitions of settings are as shown below.



Setting for “ON”

Setting for “OFF”

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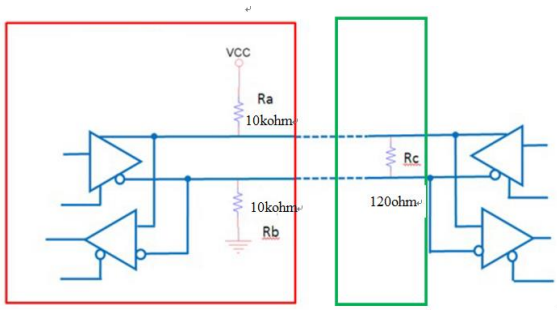
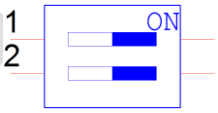
COM1 Bias Resistor setting for RS-422/485 mode (SW2):

Description:

When COM1 working in RS-232 mode, set bit1 and bit2 of SW2 to "off".

When COM1 working in RS-422/485 mode, set bit1 and bit2 of SW2 to "on".

Description	This dip-switch is used to select RS485/422 Bias Resistor **Ra,Rb** 	
RS232 Mode(Default)	Bit 1,2 off	
RS422/485 Mode	Bit 1,2 ON	

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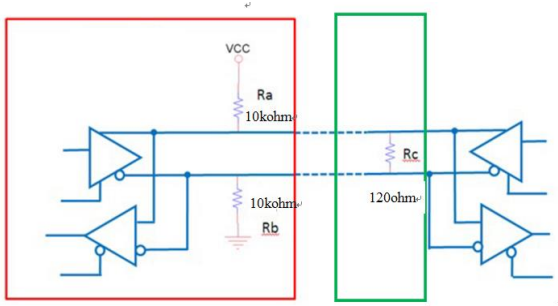
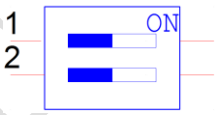
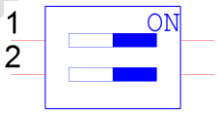
COM2 Bias Resistor setting for RS-422/485 mode (SW3):

Description:

When COM2 working in RS-232 mode, set bit1 and bit2 of SW3 to "off".

When COM2 working in RS-422/485 mode, set bit1 and bit2 of SW3 to "on".

Description	This dip-switch is used to select RS485/422 Bias Resistor **Ra,Rb** 	
RS232 Mode(Default)	Bit 1,2 off	
RS422/485 Mode	Bit 1,2 ON	

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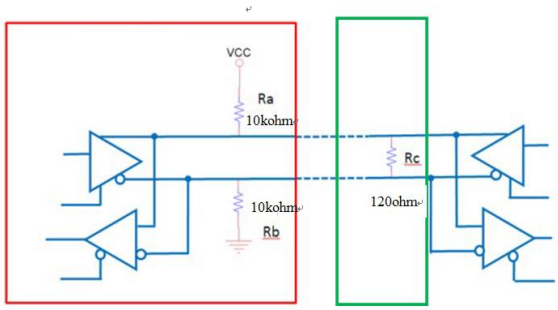
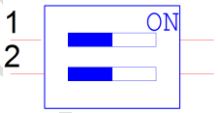
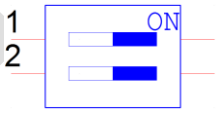
COM3 Bias Resistor setting for RS-422/485 mode (SW4):

Description:

When COM3 working in RS-232 mode, set bit1 and bit2 of SW4 to "off".

When COM3 working in RS-422/485 mode, set bit1 and bit2 of SW4 to "on".

<table>
<tr><td>Description</td><td colspan="2">This dip-switch is used to select RS485/422 Bias Resistor Ra,Rb
 
</td></tr>
<tr><td>RS232 Mode(Default)</td><td>Bit 1,2 off</td><td> 
</td></tr>
<tr><td>RS422/485 Mode</td><td>Bit 1,2 ON</td><td> 
</td></tr>
</table>

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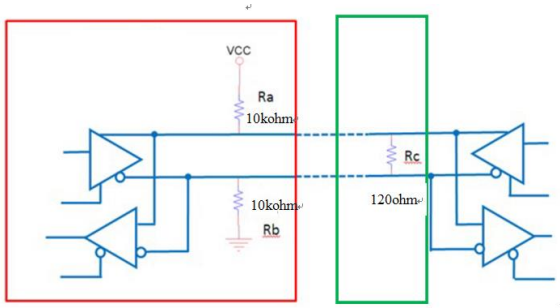
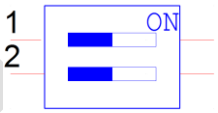
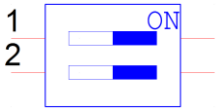
COM4 Bias Resistor setting for RS-422/485 mode (SW5):

Description:

When COM4 working in RS-232 mode, set bit1 and bit2 of SW5 to "off".

When COM4 working in RS-422/485 mode, set bit1 and bit2 of SW5 to "on".

Description	This dip-switch is used to select RS485/422 Bias Resistor **Ra,Rb** 	
RS232 Mode(Default)	Bit 1,2 off	
RS422/485 Mode	Bit 1,2 ON	

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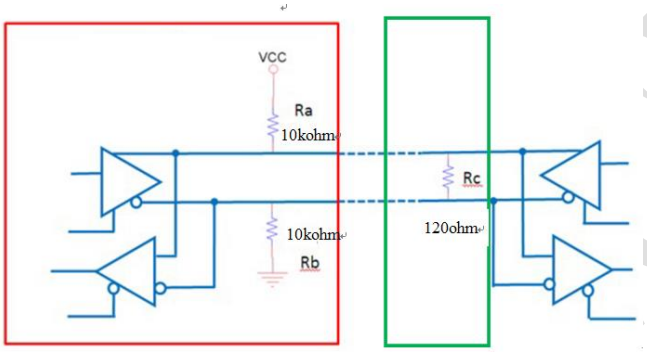
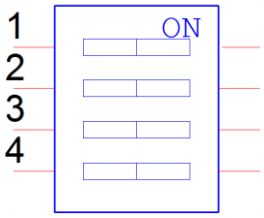
COM1/2/3/4 Termination Resistor setting for RS422 /485 mode (SW8)

Description:

Default setting for four COM ports is at "off" position.

When users encounter communication problem, usually in long distance, please consider enabling the terminal resistor for corresponding COM port.

<table>
<tr><td>Description</td><td colspan="2">This dip-switch is used to select Termination Resistor (Rc 120 ohm) for long distance transmission or device matching.
 
</td></tr>
<tr><td>Default setting</td><td colspan="2">Bit1~4 off</td></tr>
<tr><td>COM1</td><td>bit 1</td><td rowspan="4"> 
</td></tr>
<tr><td>COM2</td><td>bit 2</td></tr>
<tr><td>COM3</td><td>bit 3</td></tr>
<tr><td>COM4</td><td>bit 4</td></tr>
</table>

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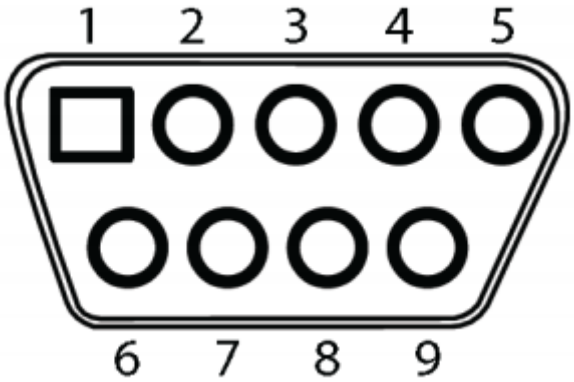
[Appendix]

Pin definition of DB9 Connector:

Pin	RS232	RS422	RS485
1	DCD	TX-	D-
2	RX	TX+	D+
3	TX	RX+	
4	DTR	RX-	
5	GND	GND	GND
6	DSR		
7	RTS		
8	CTS		
9	RI		



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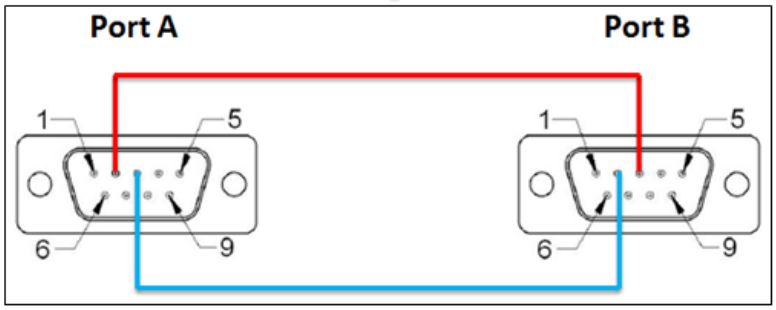
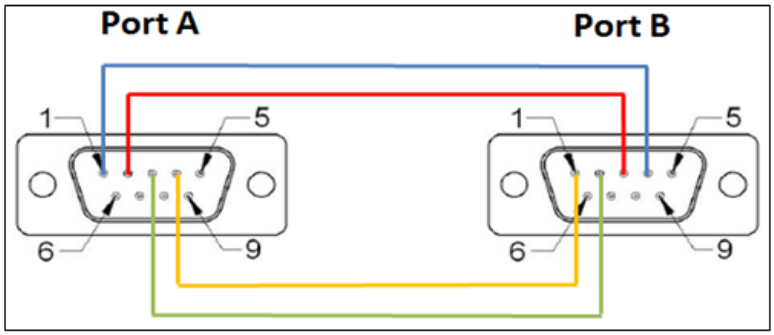
Connection of COM port test

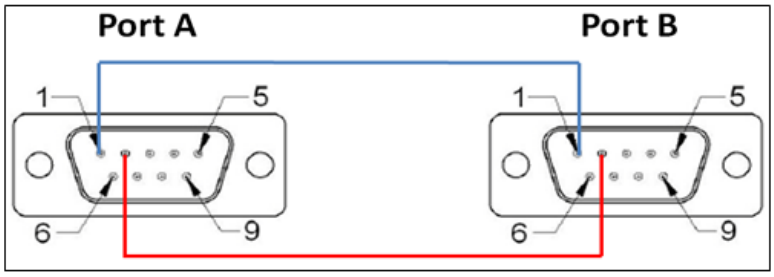
Pin	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI



Pin	RS-422
1	Tx-
2	Tx+
3	Rx+
4	Rx-
5	GND
6	RTS-
7	RTS+
8	CTS+
9	CTS-



Pin	RS-485
1	Data-
2	Data+
3	-
4	-
5	GND
6	-
7	-
8	-
9	-



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