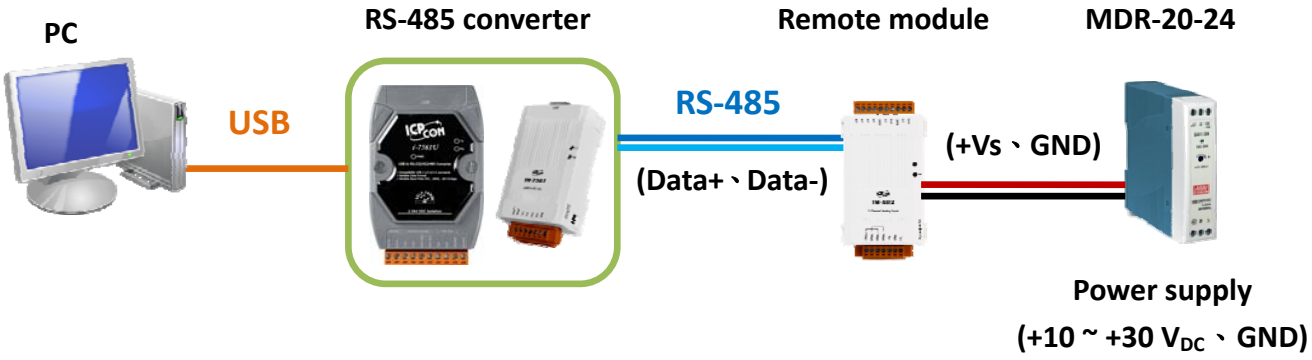
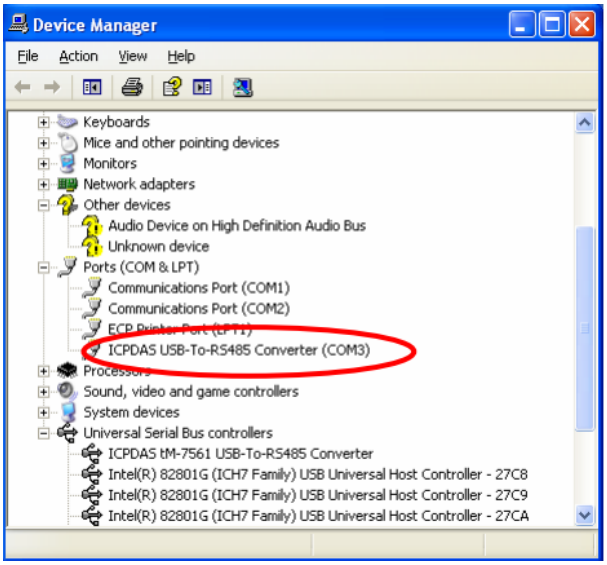
How to solve the problem that the RS-485 network cannot find the modules?

When encounter the failure of finding module in using DCON Utility Pro, follow steps as below.

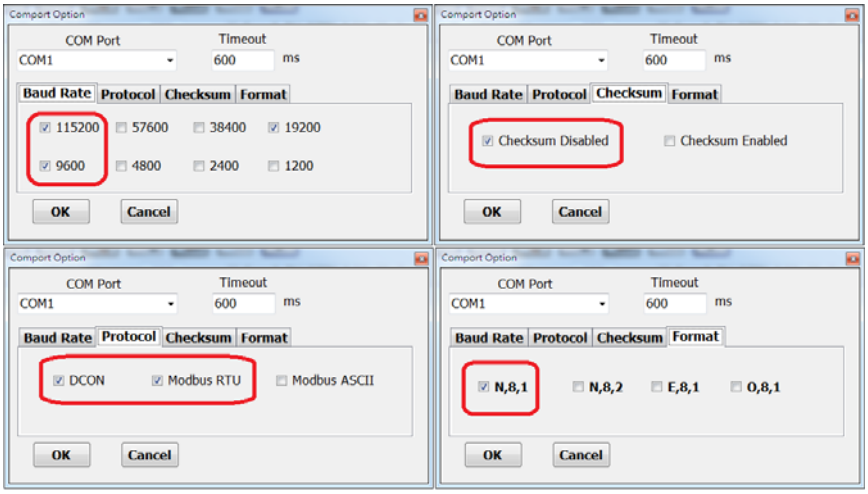
Step 1: Test with only one module and make sure to power on module in INIT* to GND state. Make sure the wiring is correct and the contacts are not loose.



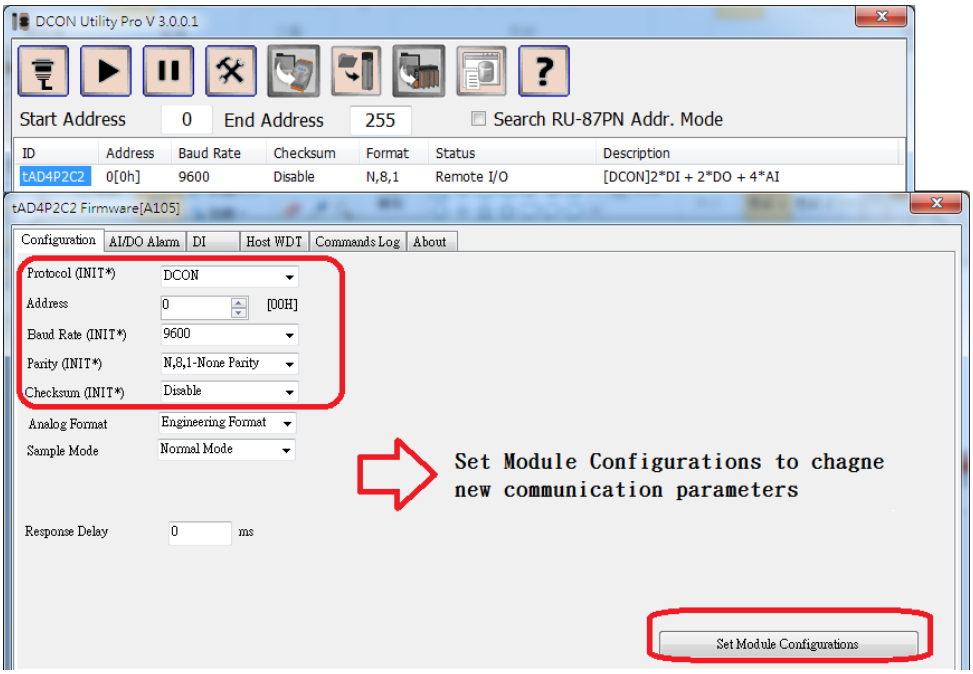
Step 2: Make sure the USB driver is correctly installed if use USB to RS-485 converter.



Step 3: Mare sure the search options of DCON Utility Pro as below.



Step 4: Search the module and change the new communication parameters



For most case, user can find the module by using steps as above, if still failed to found, the most is caused by the RS-485 bias issue, follow next section to verify and solve the problem.

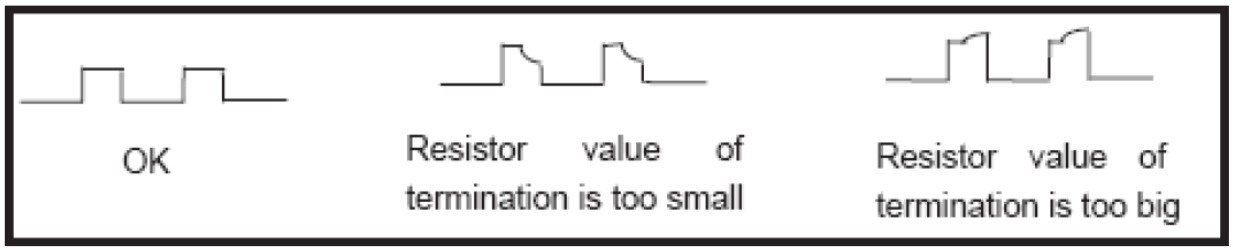
Problem phenomenon:

1. Communication failed with remote I/O modules/units.

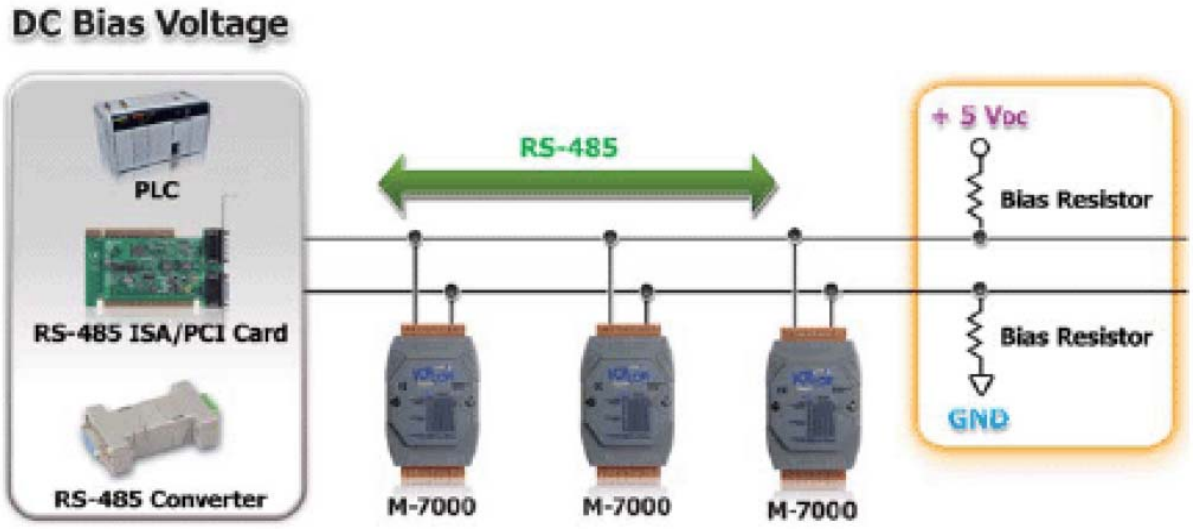
2. Using the other brand RS-485 converter (not ICP DAS converter).

3. Users' tools or programs sometimes meet communication problem such as failed to read data or timeout error.

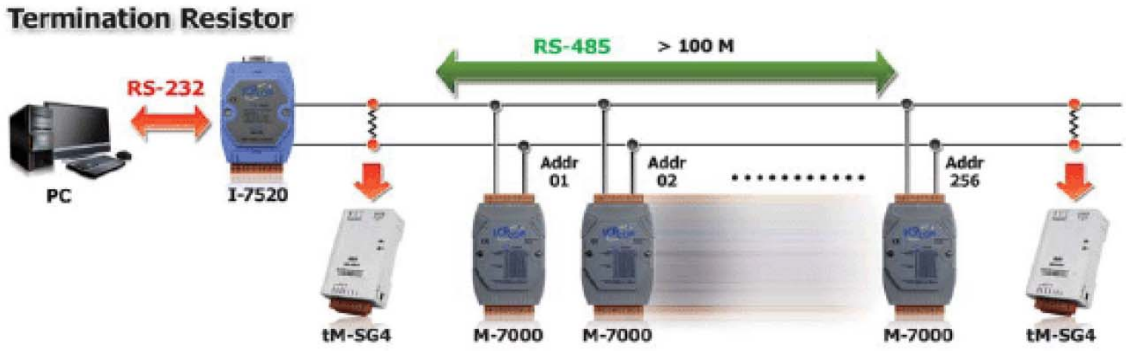
ICP DAS Remote I/O modules/units need pull high and pull low resistors for stable signal on the RS-485 network. If the impendence does not match with requirement, the signal on RS-485 may become unstable as below. It will cause communication problems.



Below are some suggestions to solve the problem:

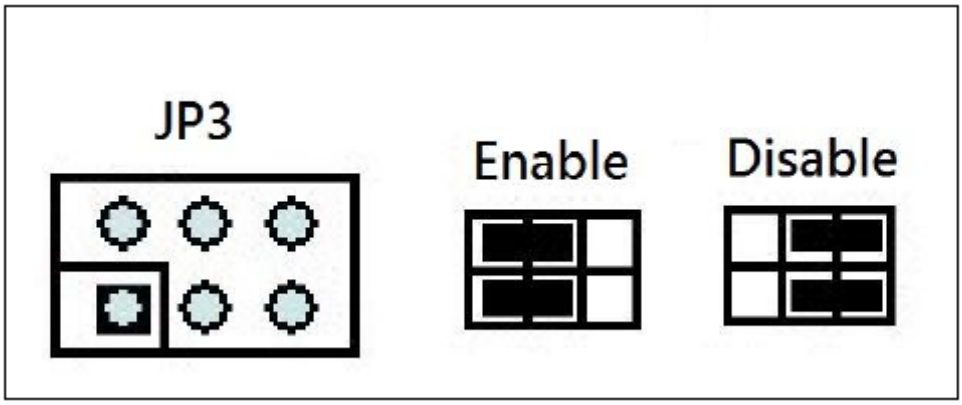


1. Use ICP DAS converter: ICP DAS converter comes with pull high and pull low resistors. It can stable the communication signal on RS-485 network. For more detailed information, please refer to http://www.icpdas.com/root/product/solutions/industrial_communication/industrial_communication_products.html#Converter
2. Add pull high and pull low resistors: Users can add pull high and pull low resistors on RS-485 network for stable communication signal
3. Add tM-SG4: tM-SG4 comes with pull high and pull low resistors. It also can stable communication signal on RS-485 network. For more detailed information, please go to http://www.icpdas.com/root/product/solutions/signal_conditioning_modules/sg-700/tm-sg4.html



For I-7K/M-7K modules also have pull high and pull low resistors jumper on PCB, for example I-7017 /M-7017 series ,The JP3 jumper is used to disable/enable the RS-485 bias and the settings for the JP3 jumper are as follows.

Note: To access the jumpers, the cover must be opened.



Below table show the pull high and pull low resistors jumper (Bias Jumper) for I-7K/M-7K I/O.

Module Name	Bias Jumper On PCB	PCB Version
M-7002	JP2	V3.01
M-7004	JP1	V1.10
I-7011/I-7012	JP1	V2.2
I-7017/I-7017F/M-7017	JP3	V7.10
I-7017C/M-7017C	JP3	V7.10
I-7017RC/M-7017RC	JP3	V5.20
I-7017R/M-7017R/I-7018R	JP3	V5.20
I-7017Z/M-7017Z	JP2	V3.00
I-7018/M-7018/I-7018P, I-7018BL	JP3	V4.70
M-7018-16	JP2	V1.10
I-7019R/M-7019R	JP2	V5.21
I-7021/I-7021P	JP2	V3.60
I-7022/M-7022	JP3	V3.40
M-7024U	JP2	V1.30
M-7026	JP1	V1.00
M-7028	JP4	V1.00
I-7042	JP1	V3.20
I-7043/M-7043	JP1	V2.10
I-7045/M-7045	JP5	V3.81
I-7050	JP1	V2.10
I-7051/M-7051	JP2	V1.81
I-7053_FG	JP1	V1.50
I-7055/M-7055	JP5	4.00
I-7058/M-7059	JP5	V3.70
I-7060/M-7060	JP1	V2.20
I-7063/M-7063	JP1	V2.60
I-7065/M-7065	JP2	V3.90
I-7067/M-7067	JP1	3.20
M-7068 / 7069	JP4	1.00