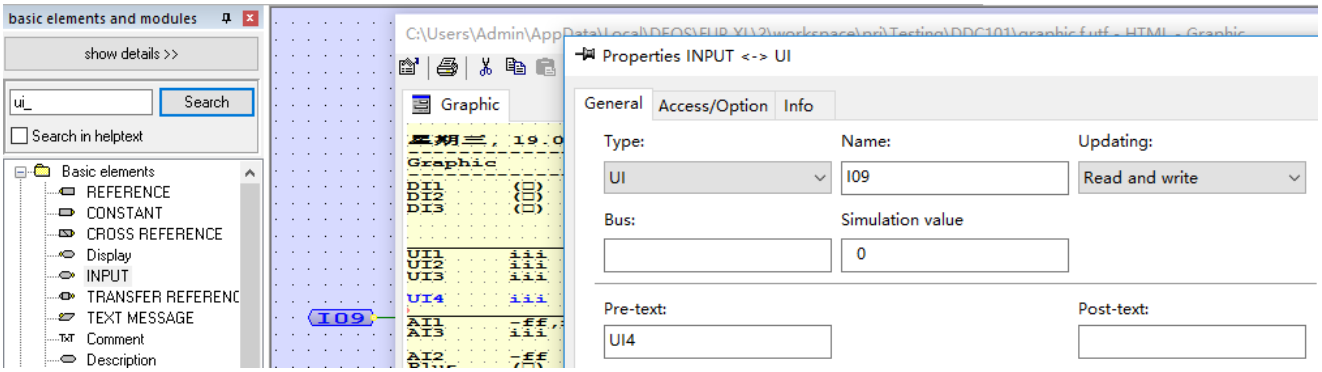
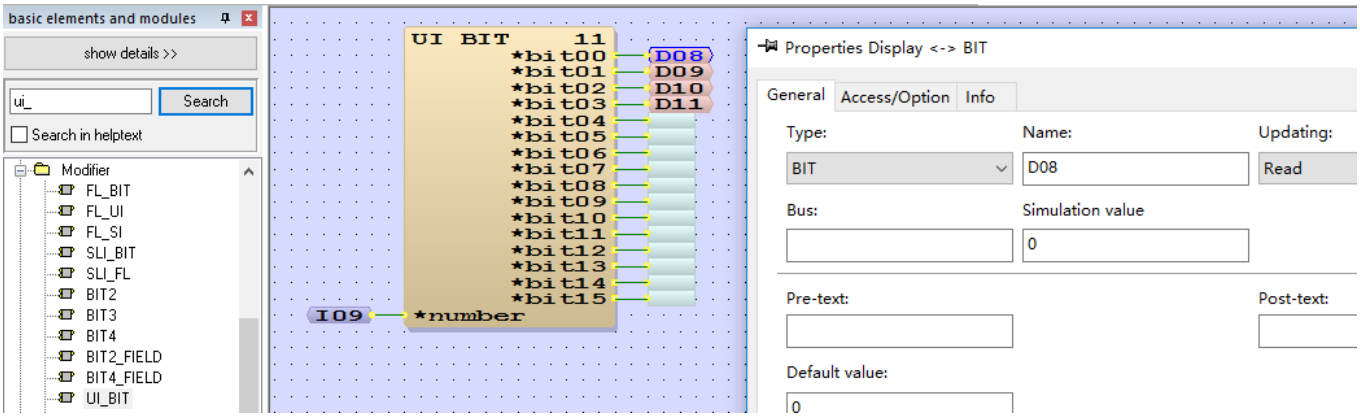
TT190703 – FUP - Convert UI to Bit

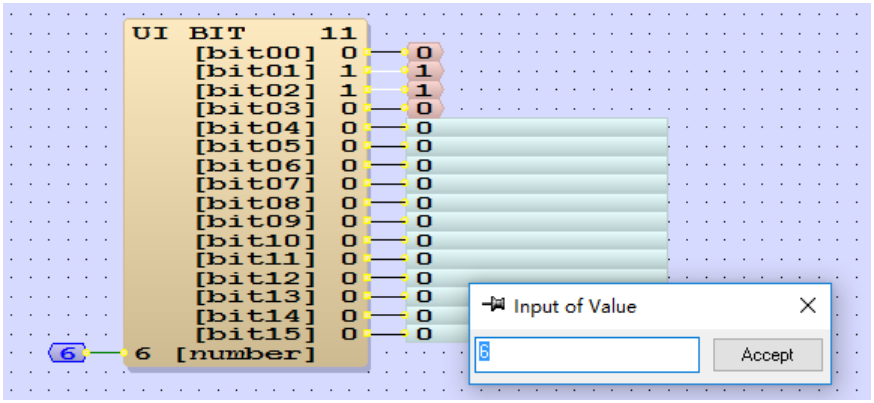
1. Sometimes we need to extract the “bit” from an analog point (16 bits UI) and use it in your logic and/or display in your graphic, e.g. for Modbus devices. First, we create an “Input” as type “UI”



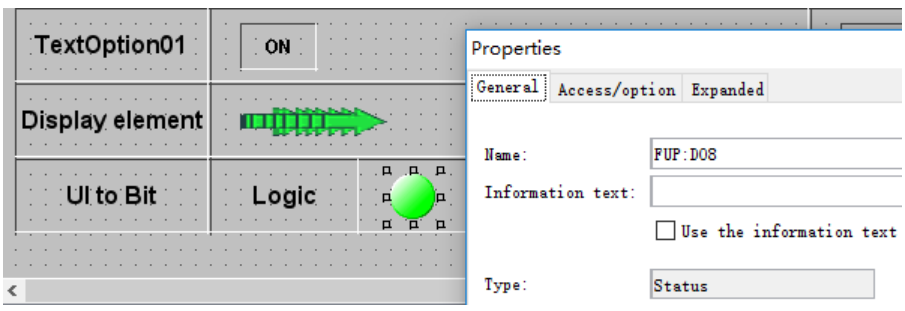
2. To convert it into “Bit” and use it in your FUP program (e.g. alarm message), we use the “UI_BIT” module under “Modifier”



3. You can use “SIM” button to test it. Please note that this method is for digital input only (e.g. on/off status, alarm), and you cannot control it.



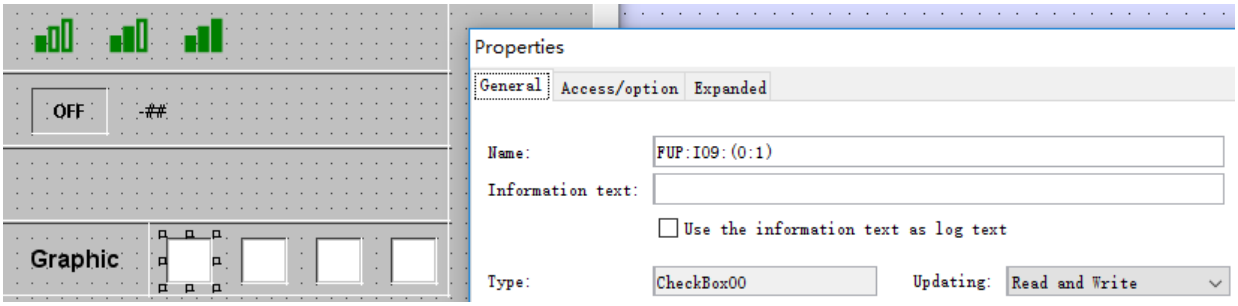
4. In graphic, we can use graphic element “Status” to show the point status



5. If it is a digital output point and you need to command it in graphic, we can use this way

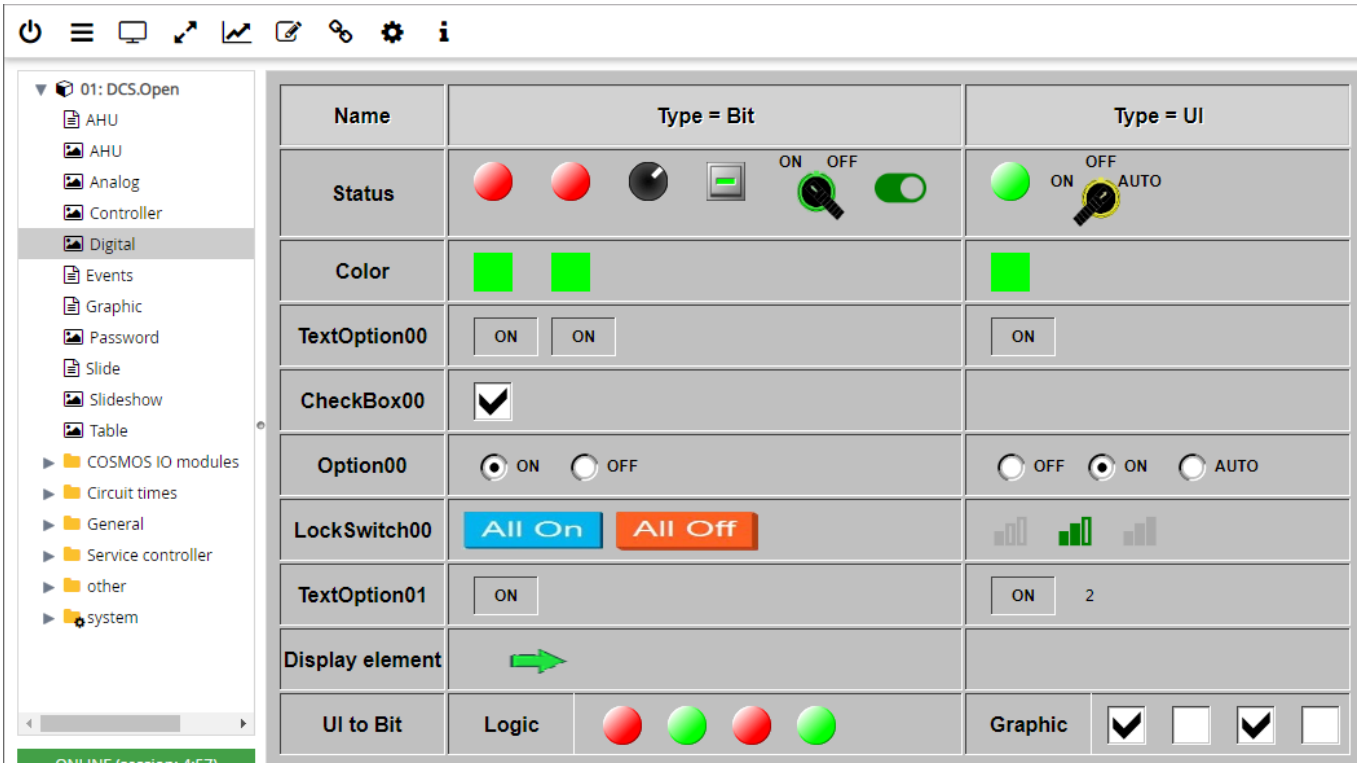
   Behind every address assignment it is possible to state the bit offset and bit count in round brackets separated by a colon. If using it then it is mandatory to state the bit offset **and** bit count.

6. We create a “CheckBox00” in graphic, and link it to the UI “Input”. Then we type in “:(0:1)” behind it, meaning that we read the UI “Input” from Bit 0 for 1 bit. For the others, use “:(1:1)”, “:(2:1)” and “:(3:1)”, etc.



7. Now you can test it in simulation, by using the checkbox to command it, and see the UI value change, as well as the LED color change

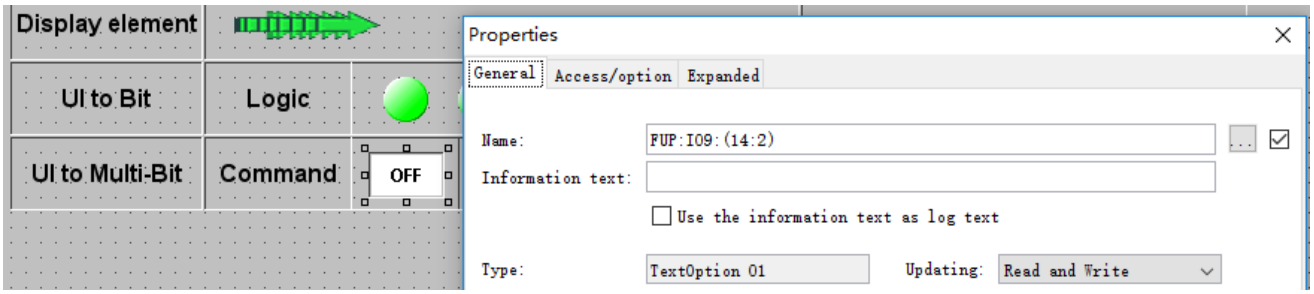
8. If everything OK, you can now compile and upload to your controller



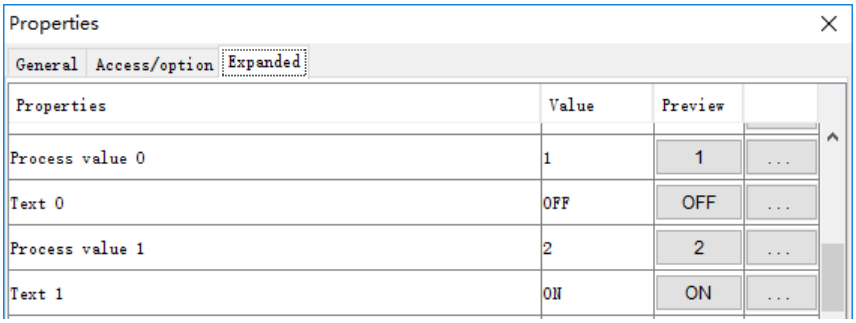
9. We can do complicate conversion using the above method, e.g.

bit15	FCU Start	1=OFF 2=ON
bit14		
bit13	FCU Mode	1=Cooling 2=Dehumid 4=Fan 8=Heating 9=Floor Heating 10= Intelligent Heating 16=Auto
bit12		
bit11		
bit10		
bit9		
bit8	Fan Speed	1=Low 2=Middle 4=High 8=Auto
bit7		
bit6		
bit5		
bit4	Setpoint	0-30 (31 is invalid) Setpoint = Value + 15
bit3		
bit2		
bit1		
bit0		

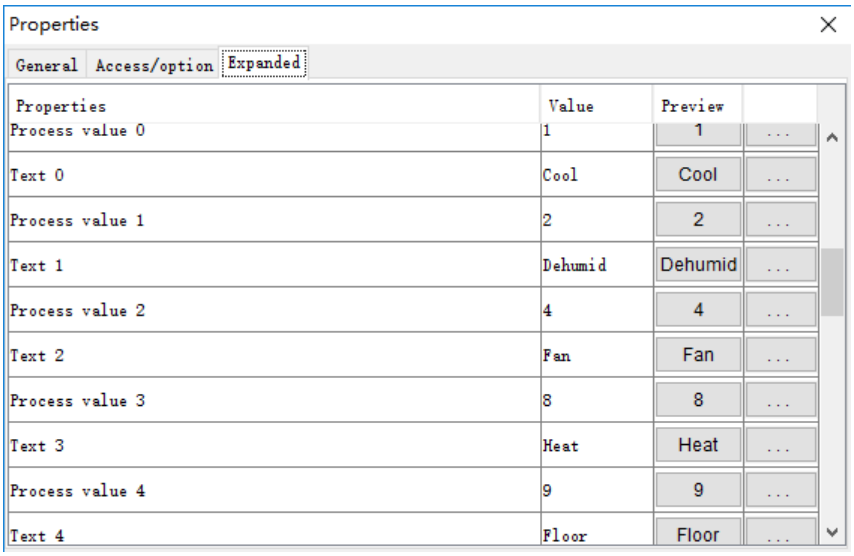
10. For “FCU Start”, we use “TextOption01”, add “:(14:2)” to the end of the “Name”



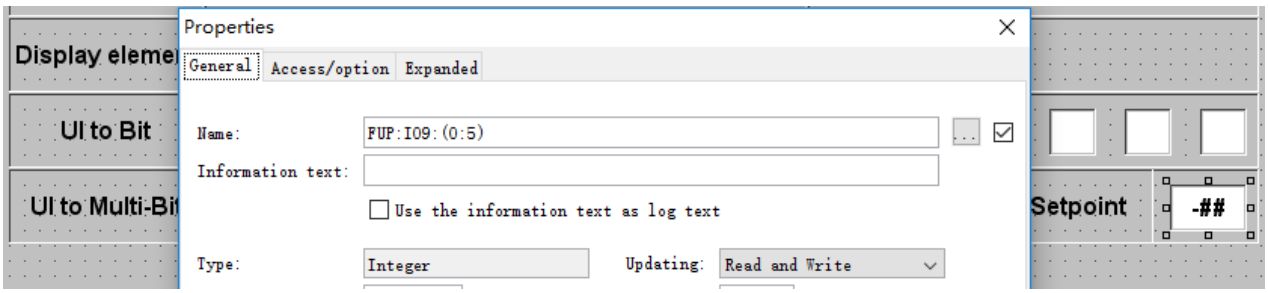
11. In the “Expanded” tab, set the “Process Value” and “Text” like this



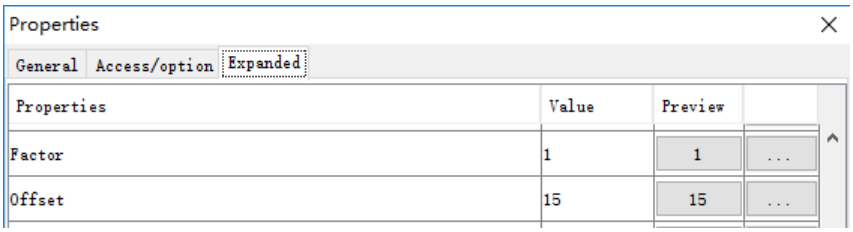
12. Same for the “Mode”, use “:(9:5)” and it’s properties like this



13. Do the same for “Fan Speed”, using “:(5:4)”
14. For the setpoint, we use “Integer”, add “:(0:5)” to the end of the “Name”



15. In the “Expanded” tab, change the “Offset” to 15



16. Now you can try it using simulation