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Category	■FAQ □ SOP	Related OS	N/A
Abstract	ADAM-4150, How to check the DI setting by reading Modbus address		
Keyword	DI channel setting, Modbus address, DI mode, keep counter last value		
Related Product	ADAM-4150		

■ **Problem Description:**

Customer want to keep counter last value but failed after a power cycle. Is there any way to check the DI channel setting by reading the Modbus address?

■ **Answer:**

All the setting should be done in INIT mode to make the setting remain the same after a power cycle, including "*keep last counter value when power off*" this option in Utility.

To check the DI channel setting, we provide several Modbus address for user in ADAM-4150. As shown in Figure 1, Modbus address 40079 to 40085 represent DI channel 0 to channel 6.

ADDR 4X	Channel	Item	Attribute	Memo
40079~40085	0~6	Reference	R/W	

Reference: II&0x07=00   DI Mode.
II&0x07=01   Counter Mode.
II&0x07=02   Low-->High Latch Mode.
II&0x07=03   High-->Low Latch Mode.
II&0x07=04   Frequency Mode.
II&0x20=20   DI Enable Counter record Function.
II&0x40=40   DI Enable Digital Filter Function.
II&0x80=80   DI Invert Mode

➤ Logic AND

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Figure 1 Modbus address for checking ADAM-4150 DI channel setting status

Take DI channel 0 for example. If user got the value of 0x80 from 40079, it means **the setting on DI channel 0 is set to DI mode with invert signal enable in INIT mode.**

This is because **the logic AND result** of the Modbus value 0x80 with 0x07 is equal to 00, and with 0x80 is equal to 80.

The calculation for getting above conclusion can be referred to below formula.

     100000000 = 0x80 (hex)

     000000**111** = 0x07(hex)

AND logic

     000000000=0x00(hex) → DI mode on DI channel 0

     100000000 = 0x80 (hex)

     100000000 = 0x07(hex)

AND logic

     100000000=0x80(hex) → DI invert mode DI channel 0

User can also check whether the "*keep last counter value when power off*" is set on DI channel 0 by using below calculation.

     100000000 = 0x80 (hex)

     000**1**00000 = 0x20(hex)

AND logic

     000000000 = 0x00(hex) → "No" DI enable counter record function DI channel 0

Then we can know that the keep last counter value function is not enabled for DI channel 0, that's why customer see the counter value lost after a power cycle.