ADAM-6066 6-channel Power Relay Output with DI Module

The ADAM-6066 is a high-density I/O module built-in a 10/100 based-T interface for seamless Ethernet connectivity. Bonding with an Ethernet port and web page, the ADAM-6066 offers 6 high voltage power relay (form A) output and 6 digital input channels. It supports contact rating as AC 250V @ 5A, and DC 30V @ 5A. All of the Digital Input channels support input latch function for important signal handling. Mean while, these DI channels allows to be used as 1 KHz counter. Opposite to the intelligent DI functions, the Digital Output channels also support pulse output function.
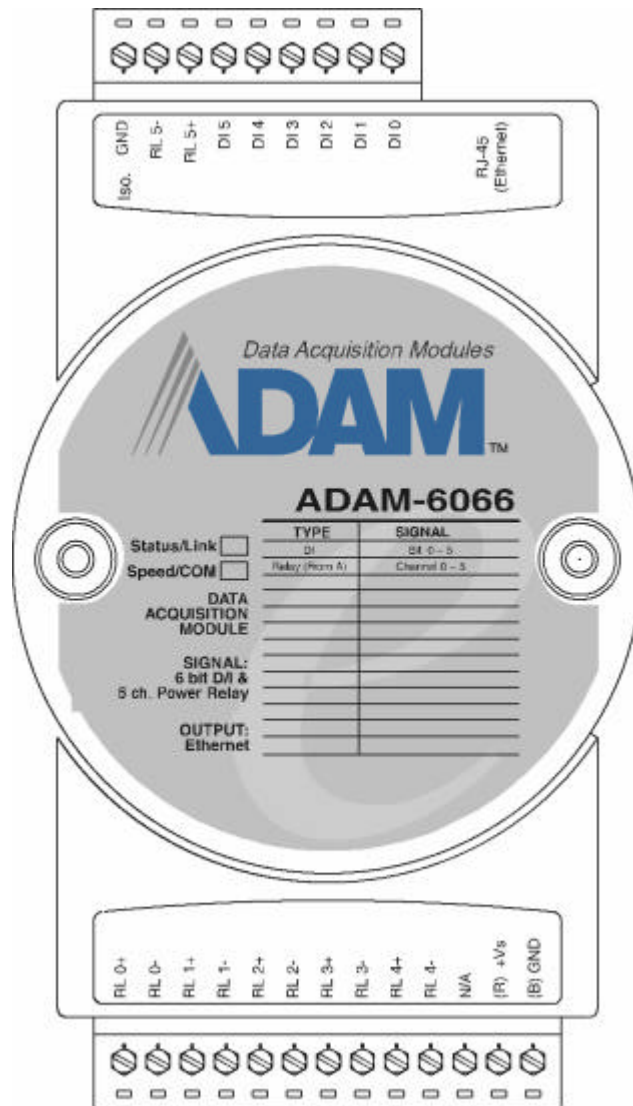
ADAM-6066

Figure 4-18: ADAM-6066 6-channel Relay Output w/DI Module

ADAM-6066 Specification

• **Channel:** 12

• **I/O type:** 6 Relay & 6 DI

• **Relay Output** (Form A)**:** Contact rating: AC: 250 V @ 5 A

DC: 30 V @ 5 A

Breakdown voltage: 500 V_{AC} (50/60 Hz)

Relay on time: 7 msec.

Relay off time: 3 msec.

Total switching time: 10 msec.

Insulation resistance: 1000 MW minimum at 500 V_{DC}

• **Digital Input:**

Dry Contact:

Logic level 0: Close to GND

Logic level 1: Open

Wet Contact:

Logic level 0: +3 V_{max}

Logic level 1: +10 to 30 V_{DC}

• **Optical Isolation:** 5000V_{RMS}

• **Power Consumption:** 2 W (Typical)
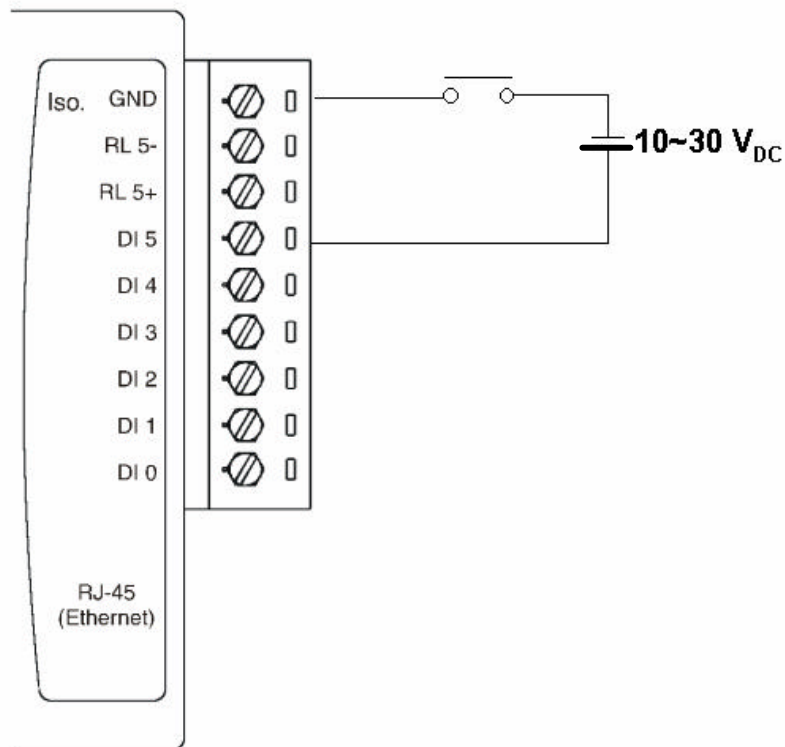
Application Wiring
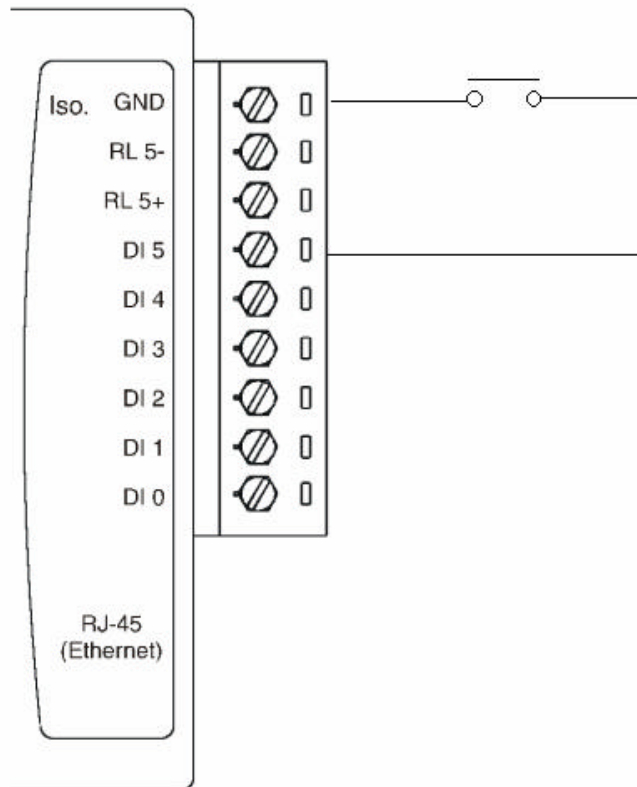

Figure 1: ADAM-6066 Digital Input (Wet Contact) Wiring

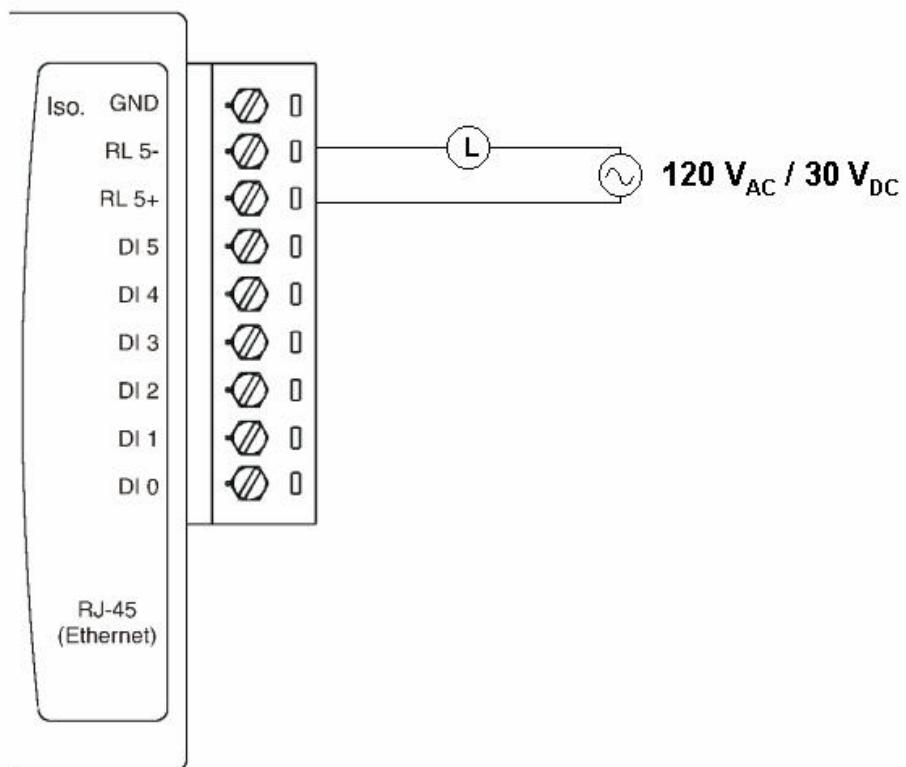**Figure 2:** ADAM-6066 Digital Input (Dry Contact) Wiring

Figure 3: ADAM-6066 Relay Output Wiring
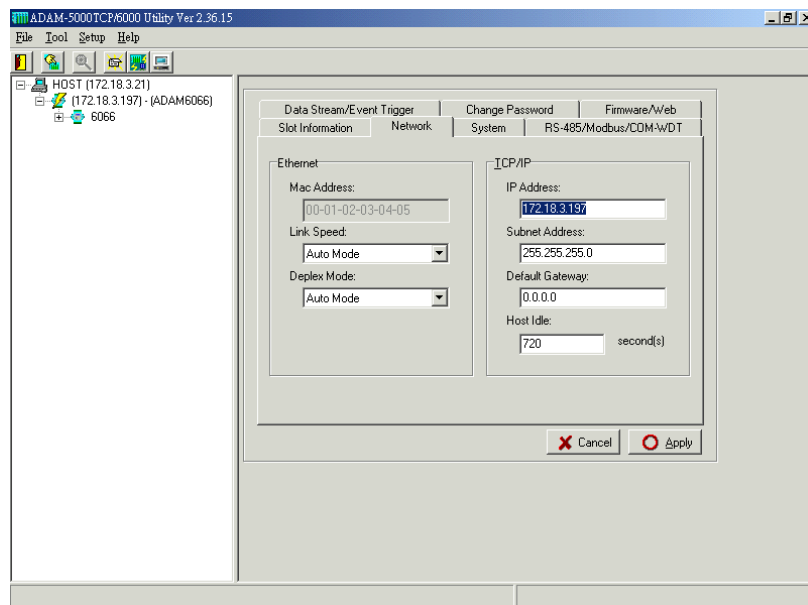
ADAM-6066 Configuration

Step 1 : Please change the IP address of the configuration PC as 10.0.0.XXX.

Step 2 : Please open the ADAM-5000TCP-6000 utility software

Step 3 : The utility software will automatically scan the ADAM-6000 modules. Please wait for the ADAM-6066 being found by utility software.
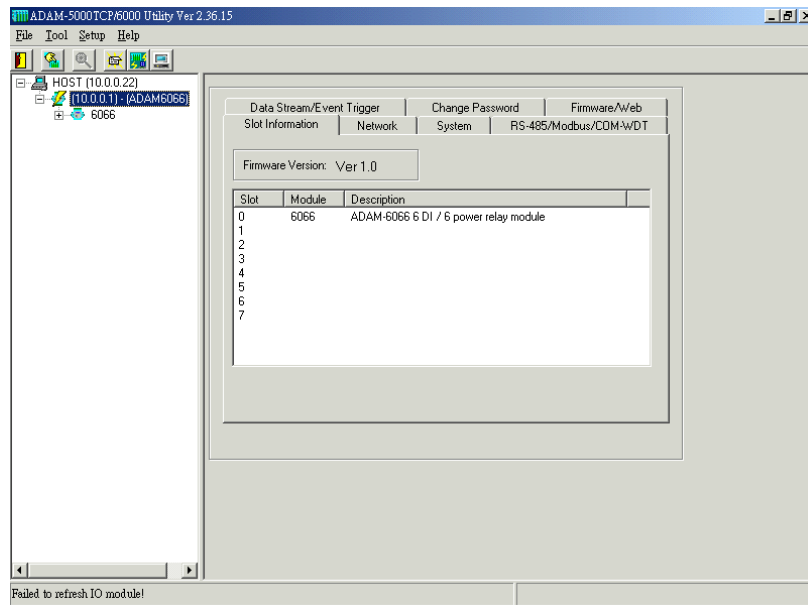

Step 4 : Please go the "Network" page to change the IP address of ADAM-6066 module to be compatible with user's existing network and set the host idle time out value (the ADAM-6000 module can only accept 8 connection from host station. Any host station doesn't request the communication with this ADAM-6000 module over the time out setting, the connection of this host station will be released for the other stations) then press "Apply" to download the new IP address to ADAM-6066 module (the default password for the changing configuration is "00000000").
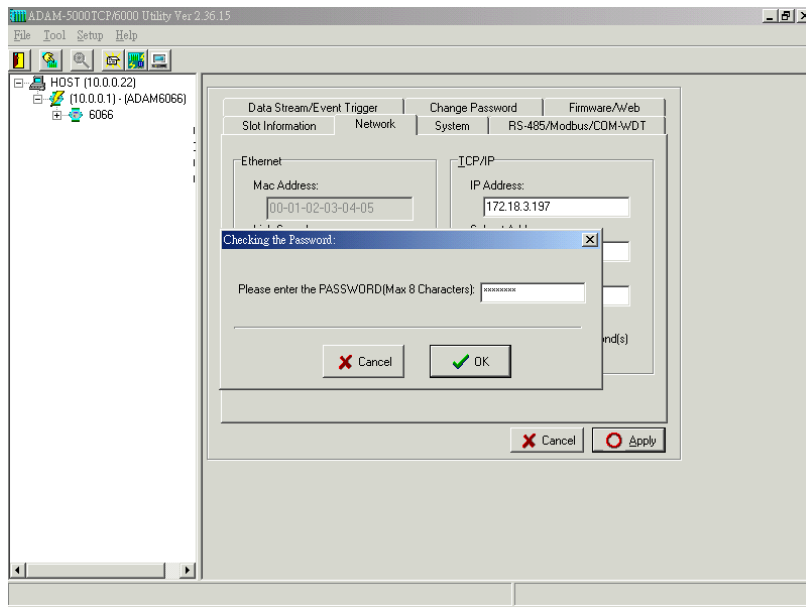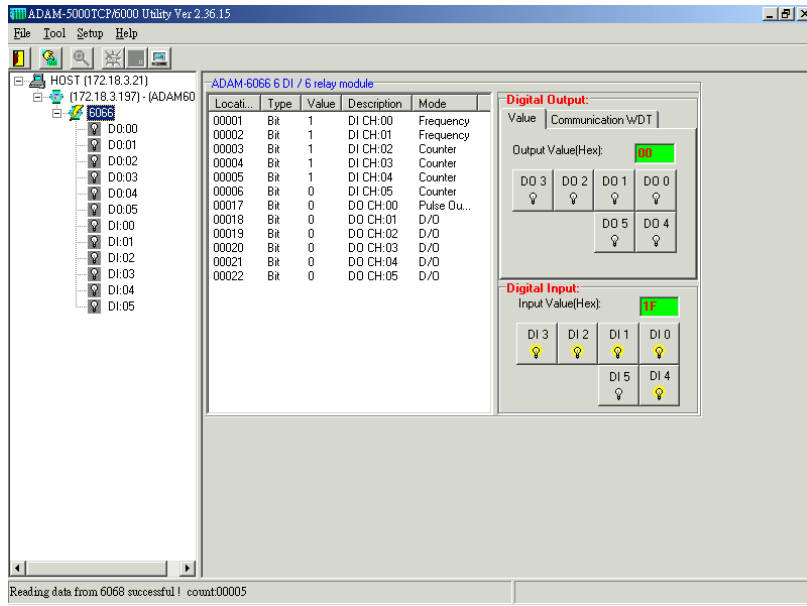
Step 5 : Re-configuring the IP address of the configuration PC to be the original setting (compatible with user's existing network) then re-start the utility software. The software will automatically search the ADAM-6066 module again.
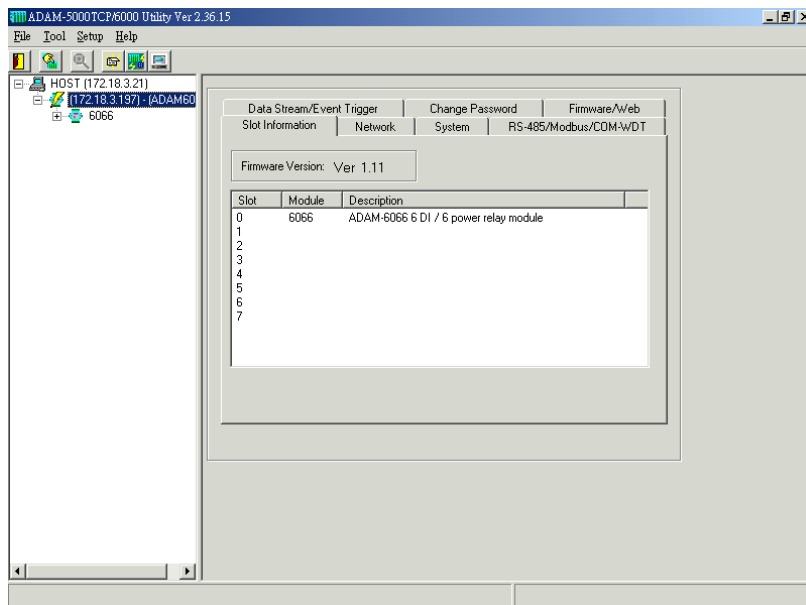
Step 6 : Please click on the "6066" to go to the ADAM-6066 configuration main page.


Step 7 : Please go to "Communication WDT" to set up the communication watchdog timer setting. This function is used for security protect, it means sometimes, noise or other reasons will cause the communication fail, and the host PC won' t control the modules anymore, but the modules will keep the latest output status, and this status may cause dangerous, so while this situation happen, the communication WDT will detect it till timeout then reset the module and set the output to safety value to prevent the dangerous, user can set the safety value by themselves.
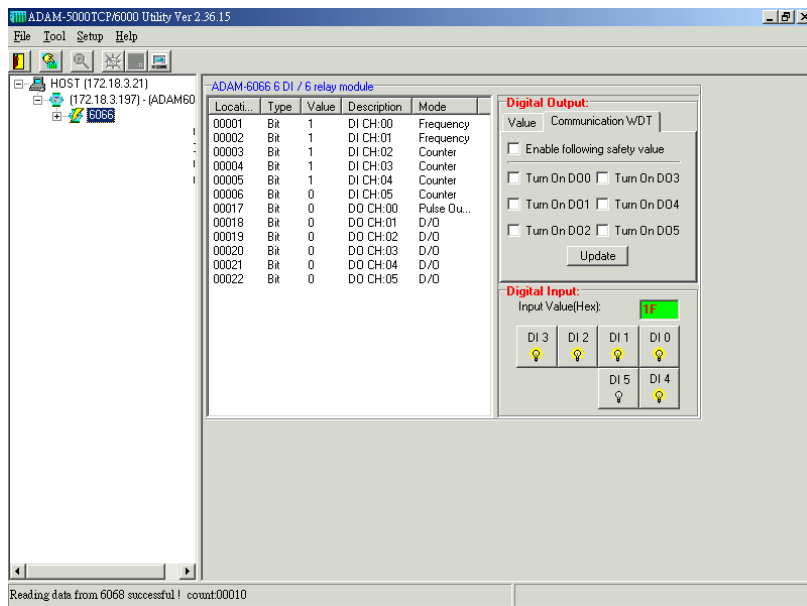
Step 8 : Please go to the left windows to click the "+" beside "6066 to extend the tree path of ADAM-6066 configuration then click on "DO:XX" to access the digital output channel configuration page. The digital output channel of ADAM-6066 can be configured as typical DO output, pulse output, DO with LO to Hi delay or DO with Hi to LO delay:
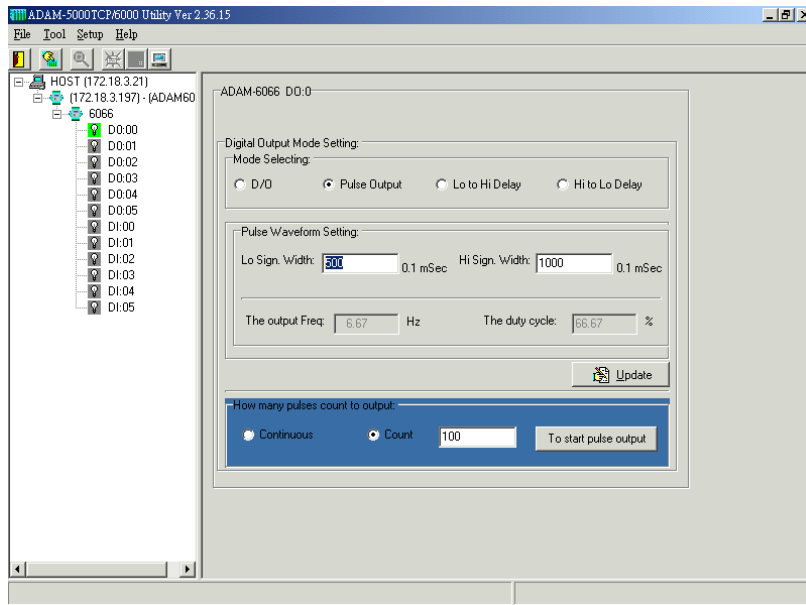
For typical DO setting :
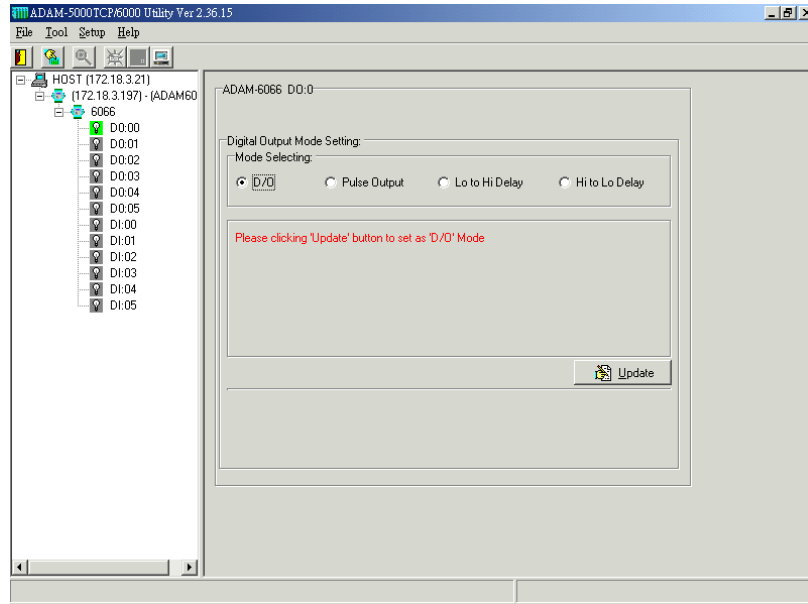

For Pulse Output setting :
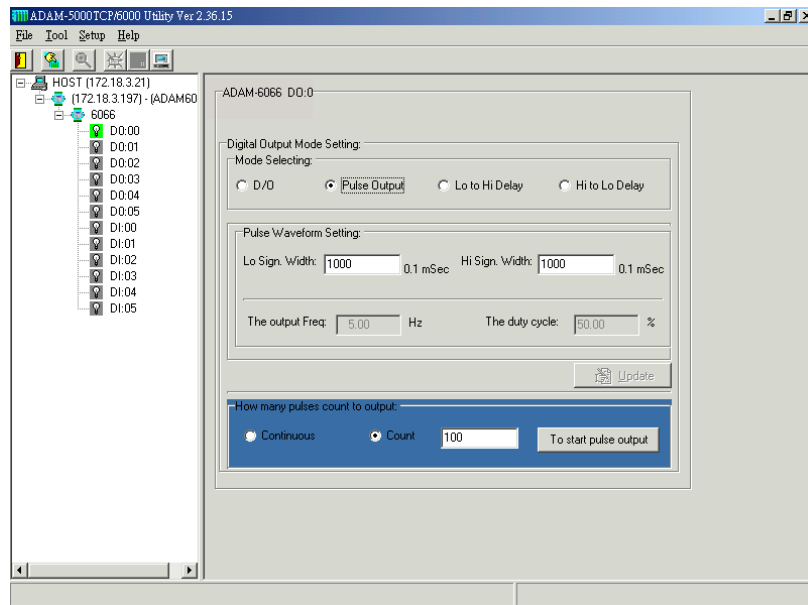
User can set the Lo/Hi sign width based on exact requirement. The ADAM-6066 pulse output also support the limited count and continuous pulse output (please select this function in the block of "How Many Pulse Count to Output".

Please click the "Update" to download the configuration into ADAM-6066 module then clicking the "To start pulse output" to initiate the pulse output action.

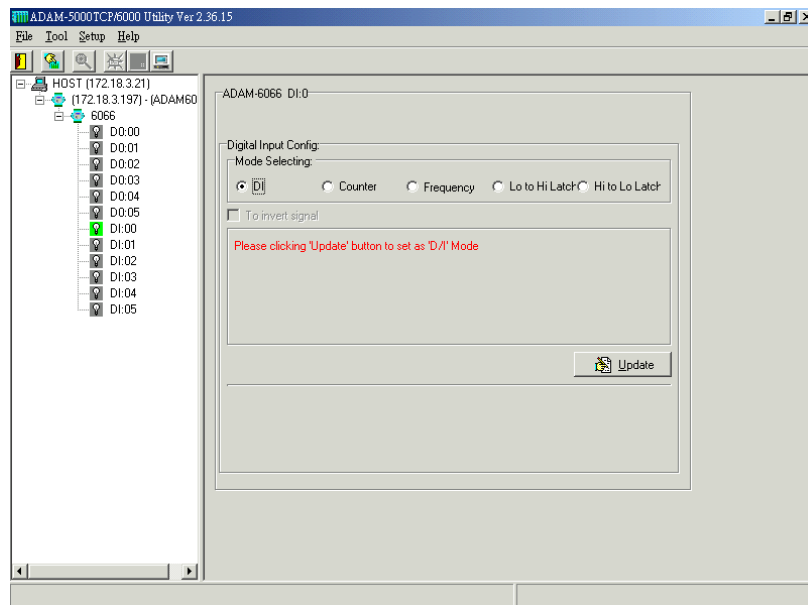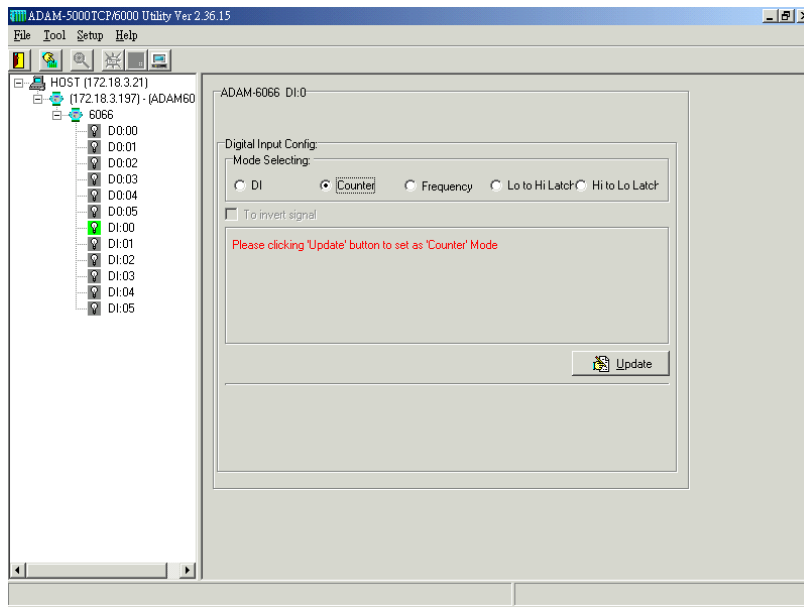**For "Lo to Hi delay" and "Hi to Lo delay" function :**
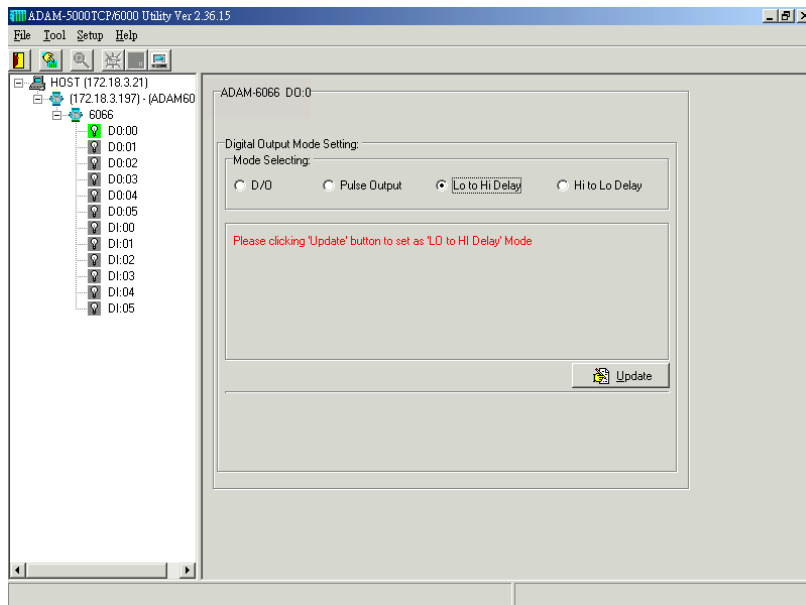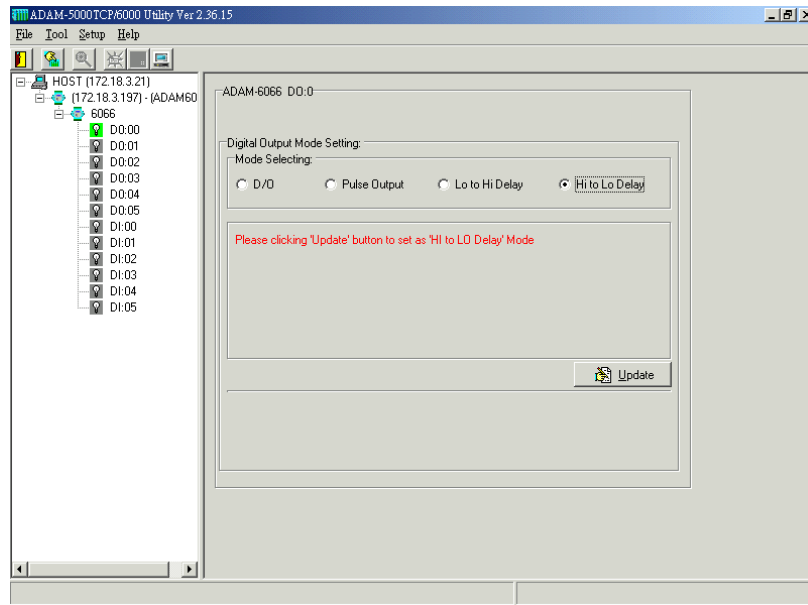
Step 9 : Please click on "DI:XX" to access the digital input configuration page. The digital input channel of ADAM-6066 supports typical DI, counter, frequency, Lo to Hi Latch and Hi to Lo Latch.
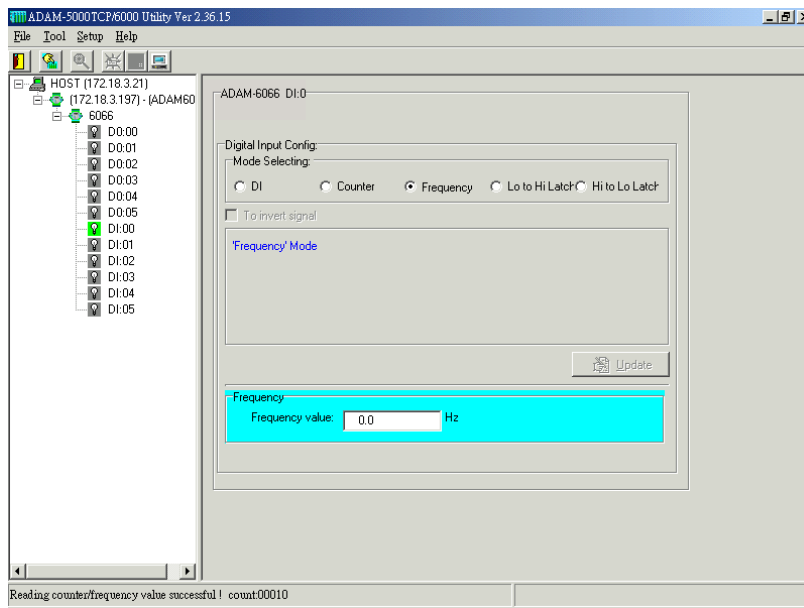
For typical DI setting :

For Counter setting :

For Frequency setting :

For "Lo to Hi Latch" and "Hi to Lo Latch" setting :
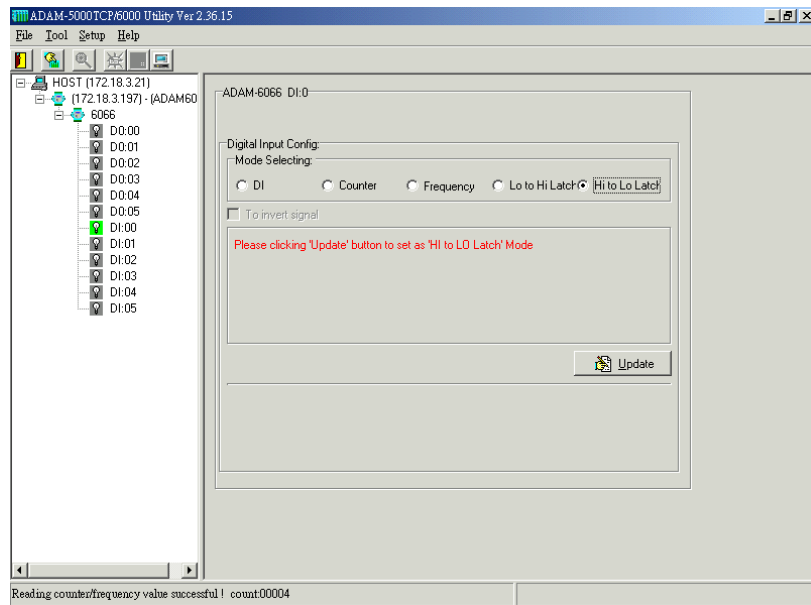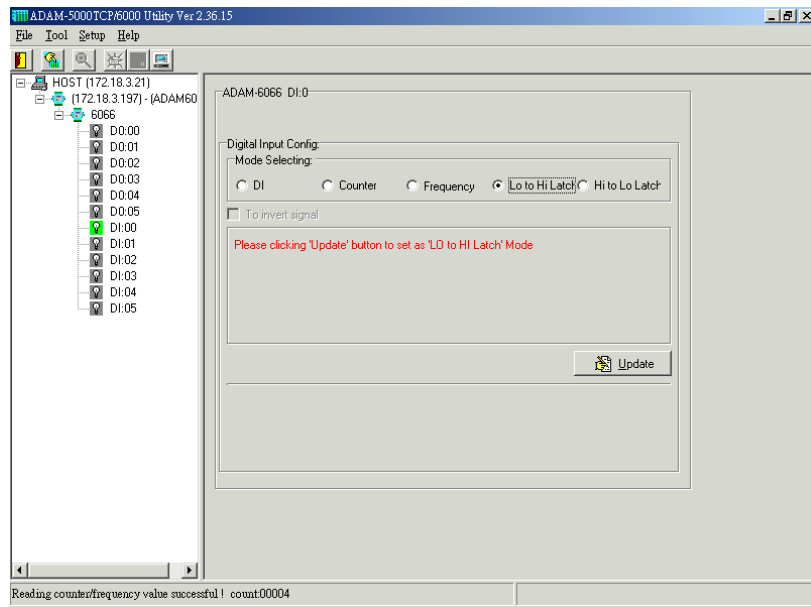
Data Stream

Data Stream Configuration

In addition to TCP/IP communication protocol, ADAM-6000 supports UDP communication
protocol to regularly broadcast data to specific host PCs.

Click the tab of Data Stream, then configure the broadcasting interval and the specific IP
addresses which need to receive data from the specific ADAM-6000 I/O module. This UDP Data
Stream function broadcasts up to 8 host PCs simultaneously, and the interval is user-defined
from 50ms to 7 Days.

Data Stream Monitoring

After finishing the configuration of Data Stream, you can select the item "Monitor Data Stream" in the function bar or click icon to call up operation display as below Figure.
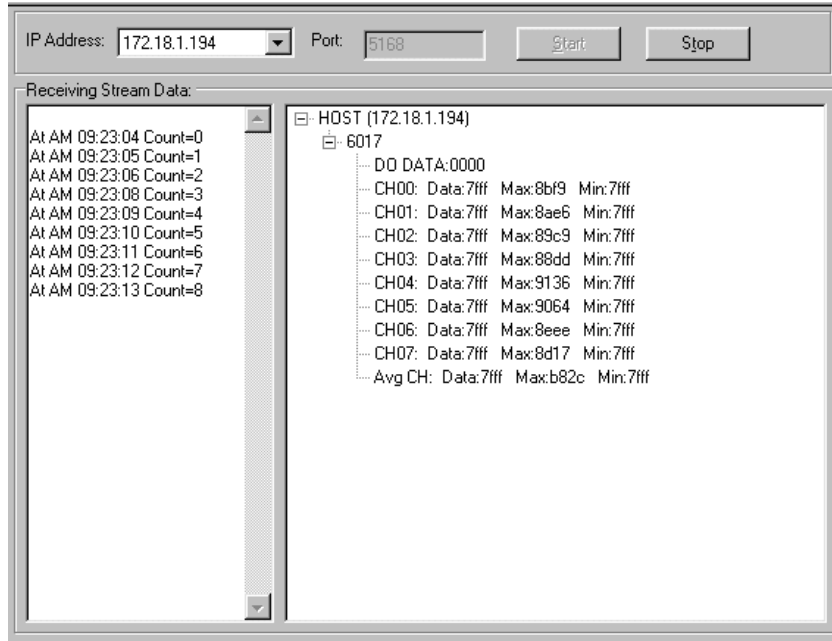
Select the IP address of the ADAM-6000 you want to read data, then click "Start" button. The Utility software will begin to receive the stream data on this operation display.

Firmware and Web Page Update

ADAM-6000 I/O modules are available to remote download firmware for customization web pages or new functions upgrade. Select the Firmware Upgrade tab and click the "Browsing" button to find the specific firmware (*.bin) for upgrade.

Click the upgrade button, then the new firmware will be downloaded into the specific ADAM-6000 module.

ADAM-6066 MODBUS Mapping Table

ADDR 0X	CH	ITEM	Attribute	ADDR 4X	CH	ITEM	Attribute
00001	0	DI	R	40001~40002	0	*Counter	R
00002	1	DI	R	40003~40004	1	*Counter	R
00003	2	DI	R	40005~40006	2	*Counter	R
00004	3	DI	R	40007~40008	3	*Counter	R
00005	4	DI	R	40009~40010	4	*Counter	R
00006	5	DI	R	40011~40012	5	*Counter	R
00017	0	DO	R/W	40013~40014	0	Pulse Output Low Level	R
00018	1	DO	R/W	40015~40016	1	Pulse Output Low Level	R
00019	2	DO	R/W	40017~40018	2	Pulse Output Low Level	R
00020	3	DO	R/W	40019~40020	3	Pulse Output Low Level	R
00021	4	DO	R/W	40021~40022	4	Pulse Output Low Level	R
00022	5	DO	R/W	40023~40024	5	Pulse Output Low Level	R
00033	0	Counter Start(1)/Stop(0)	R/W	40025~40026	0	Pulse Output High Level	R
00034	0	Clear Counter(1)	R/W	40027~40028	1	Pulse Output High Level	R
00035	0	Clear Overflow	R/W	40029~40030	2	Pulse Output High Level	R
00036	0	Latch Status/ Clear Status	R/W	40031~40032	3	Pulse Output High Level	R
00037	1	Counter Start(1)/Stop(0)	R/W	40033~40034	4	Pulse Output High Level	R
00038	1	Clear Counter(1)	R/W	40035~40036	5	Pulse Output High Level	R
00039	1	Clear Overflow	R/W				
00040	1	Latch Status/ Clear Status	R/W				
00041	2	Counter Start(1)/Stop(0)	R/W				
00042	2	Clear Counter(1)	R/W				
00043	2	Clear Overflow	R/W	40037~40038	0	Set Absolute Pulse	R

						(0=Continue Mode)	
00044	2	Latch Status/ Clear Status	R/W	40039~40040	1	Set Absolute Pulse (0=Continue Mode)	R
00045	3	Counter Start(1)/Stop(0)	R/W	40041~40042	2	Set Absolute Pulse (0=Continue Mode)	R
00046	3	Clear Counter(1)	R/W	40043~40044	3	Set Absolute Pulse (0=Continue Mode)	R
00047	3	Clear Overflow	R/W	40045~40046	4	Set Absolute Pulse (0=Continue Mode)	R
00048	3	Latch Status/ Clear Status	R/W	40047~40048	5	Set Absolute Pulse (0=Continue Mode)	R
00049	4	Counter Start(1)/Stop(0)	R/W				
00050	4	Clear Counter(1)	R/W				
00051	4	Clear Overflow	R/W	40049~40050	0	Set Incremental Pulse	R
00052	4	Latch Status/ Clear Status	R/W	40051~40052	1	Set Incremental Pulse	R
00053	5	Counter Start(1)/Stop(0)	R/W	40053~40054	2	Set Incremental Pulse	R
00054	5	Clear Counter(1)	R/W	40055~40056	3	Set Incremental Pulse	R
00055	5	Clear Overflow	R/W	40057~40058	4	Set Incremental Pulse	R
00056	5	Latch Status/ Clear Status	R/W	40059~40060	5	Set Incremental Pulse	R

Note : How to retrieve the counter/frequency value on Modbus address mapping

Example :

Counter(dec) = (value of 40002) x 65536 + (value of 40001)

Frequency(dec) = (value of 40001)/10   Hz