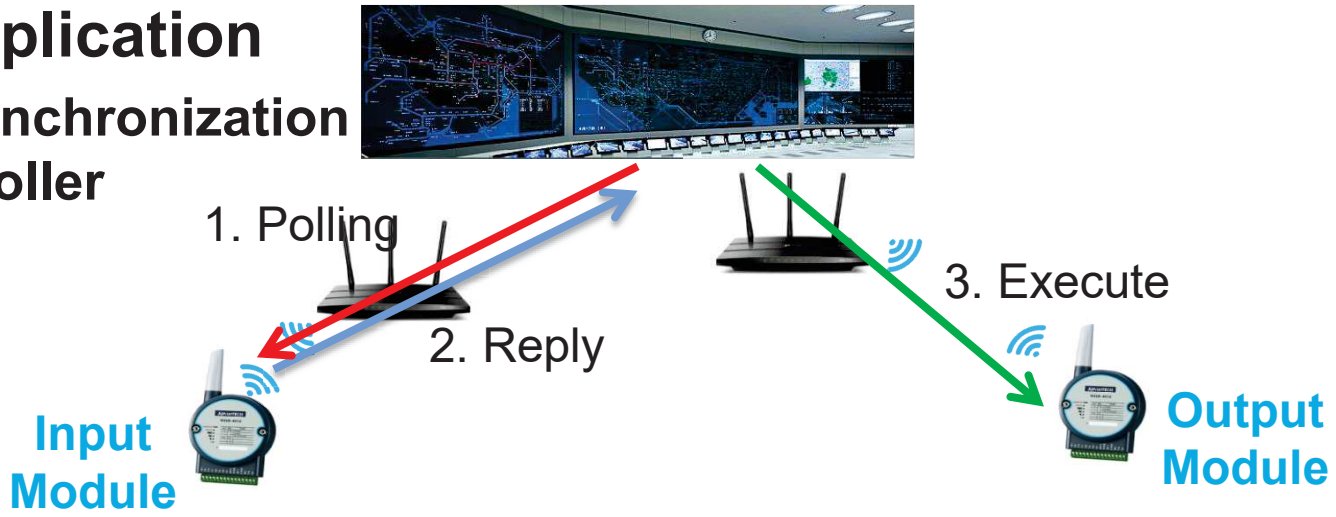
What is P2P?

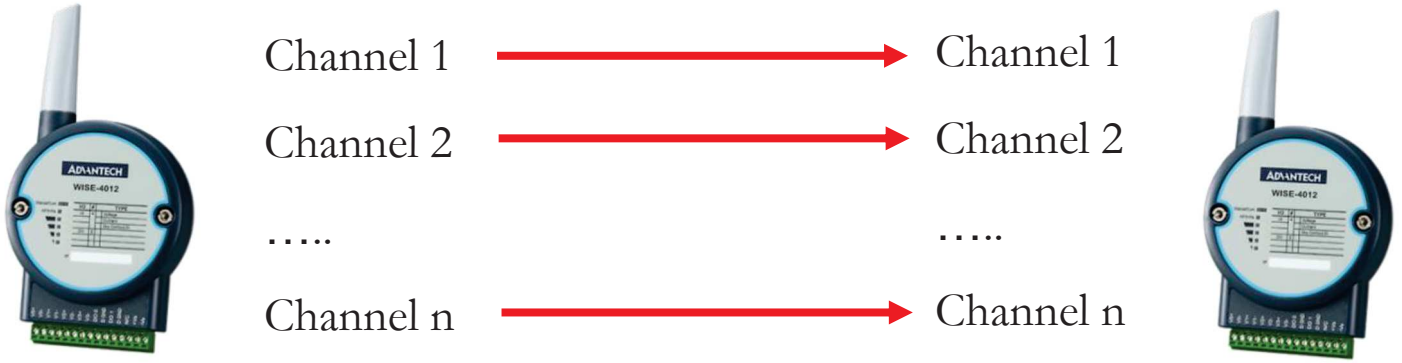
- **Typical Application**
  - **Signal Synchronization via Controller**



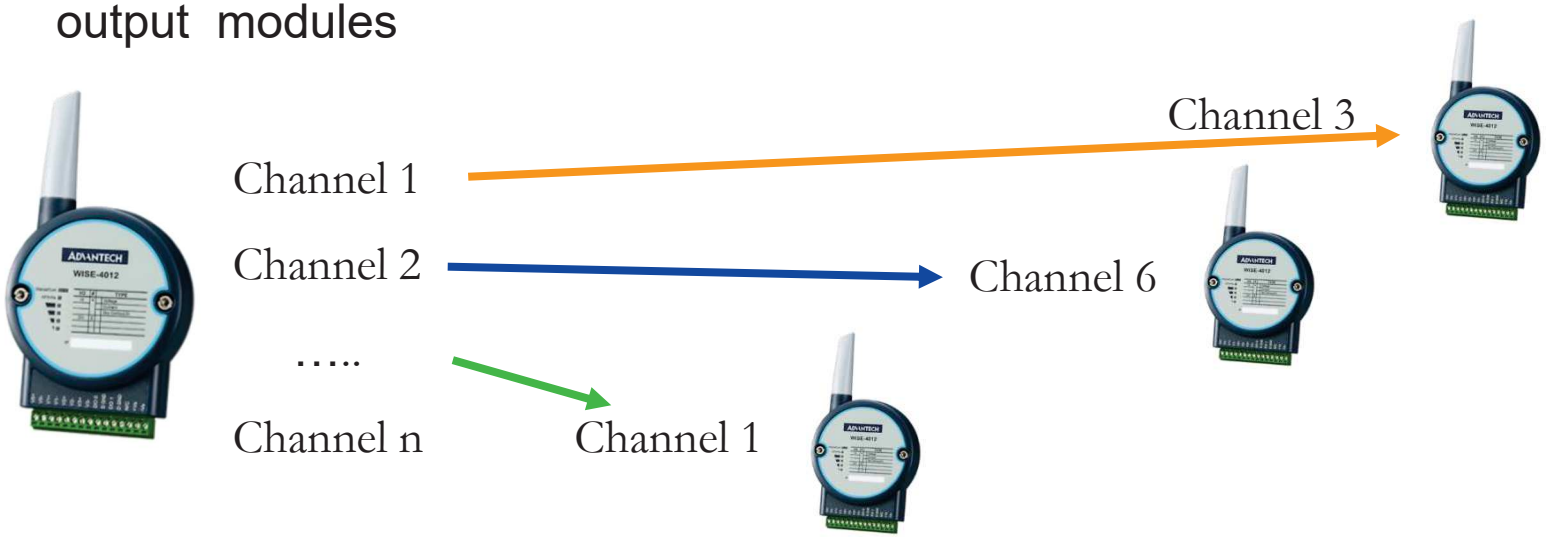
- **Peer-to-peer (P2P),** is a computing or networking distributed application architecture that partitions tasks or workloads among peers
  - Define a mapping between input module and output module
  - DI channels to DO channels(i.e. Logic Status)

Modes of P2P Function

- **Basic Mode:** One to one module & Identical Channel # mapping

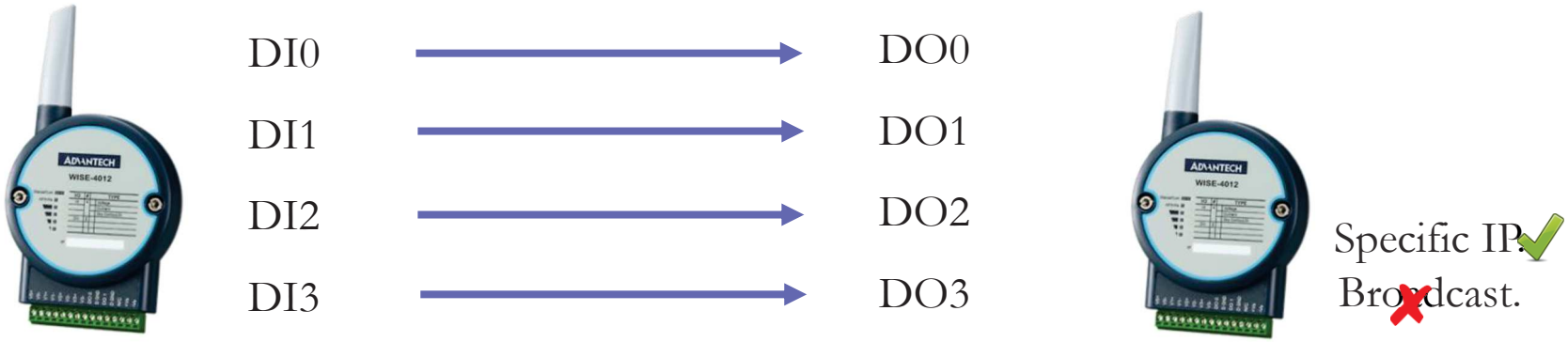


- **Advanced Mode:** Different channel # mapping between different input and output modules

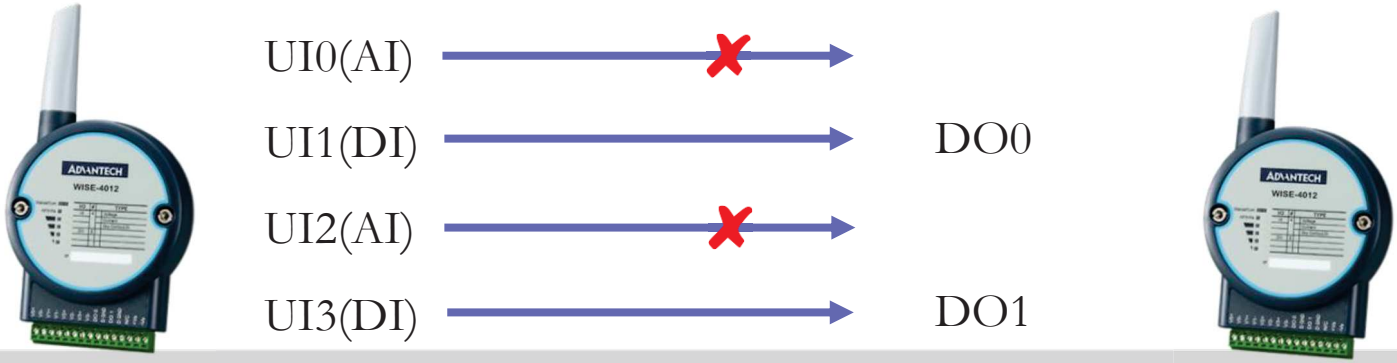


Basic mode

- DI can only control DO; AI can not control DO.
  - Channel # need to be matching, too.
- Digital input module map to remote module

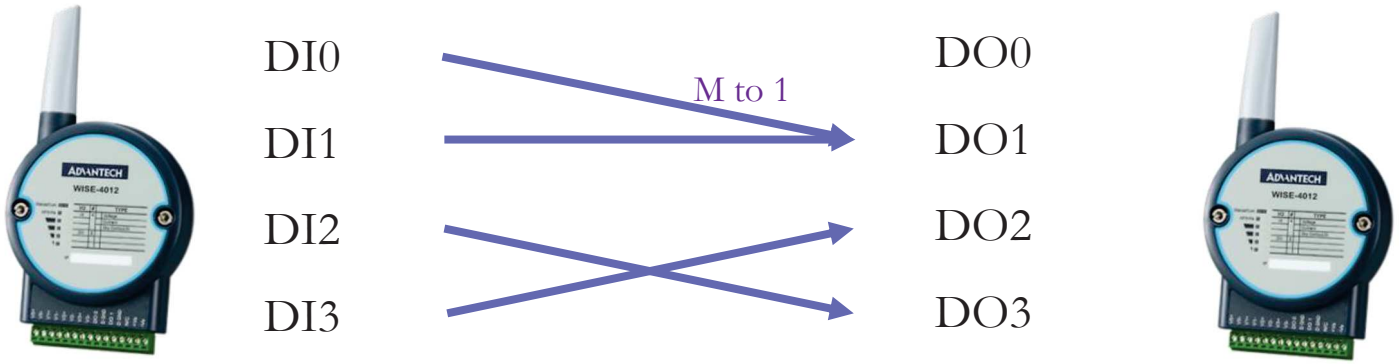


- Universal input module map to remote module

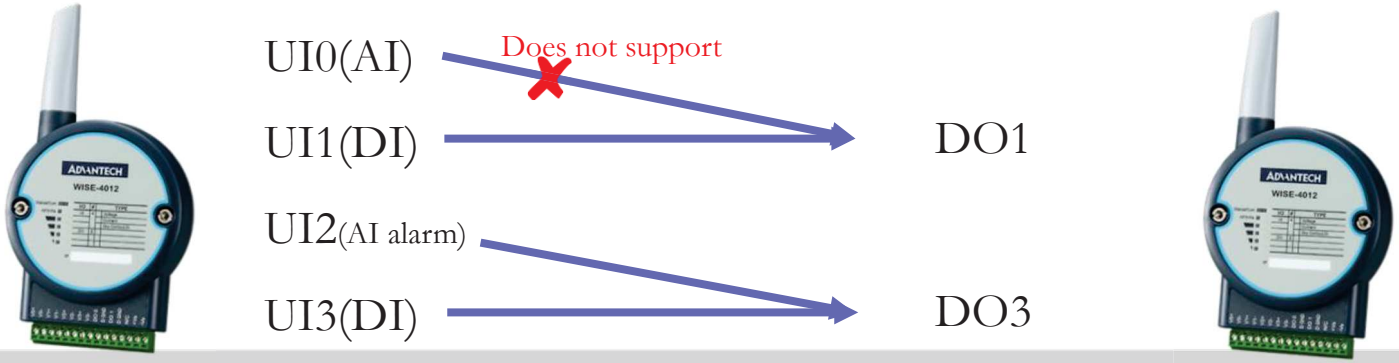


Advanced mode

- DI can control DO; AI can also control DO.
  - No need to match the Channel #.
- Digital input module map to DO module



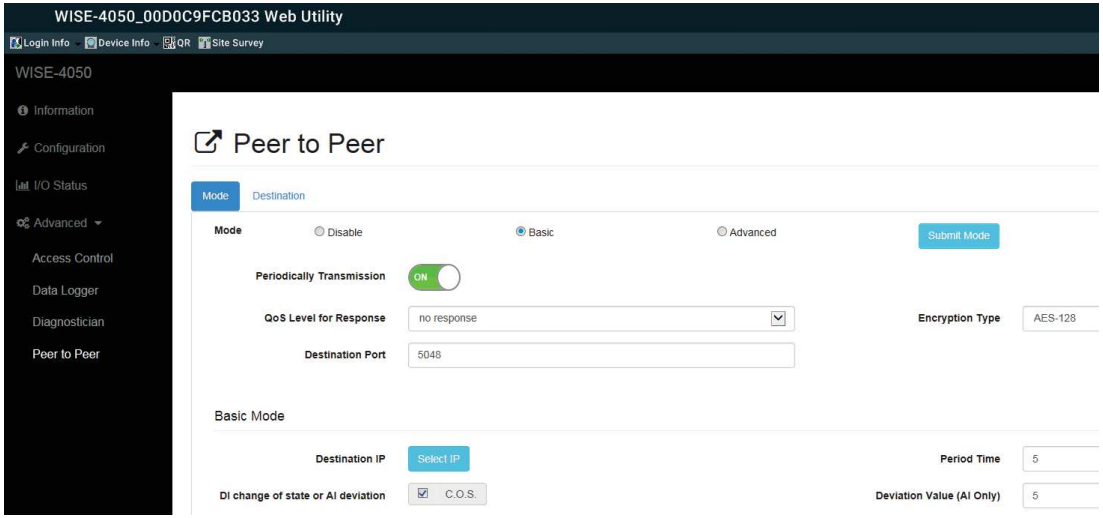
- Universal input module map to remote module



P2P Configuration in Web Utility

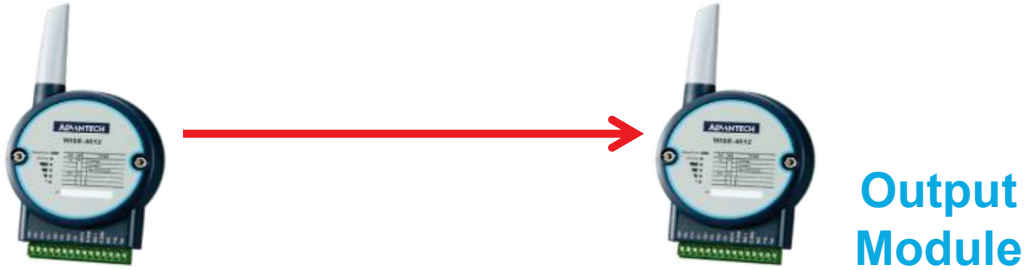
- P2P command send in every 1 second(i.e. by default)
- Instead of sending data periodically, you can also send based on the following:
  - **Change of State(COS)**: Digital Input Module, send P2P command when DI logic status changed
  - **Deviation Value**: Analog Input Module, send P2P command when change over deviation value

- Setting steps:
  - Choose mode
  - Setting period
  - Setting event
  - Assign IP
  - Setting individual Channel
  - Apply list

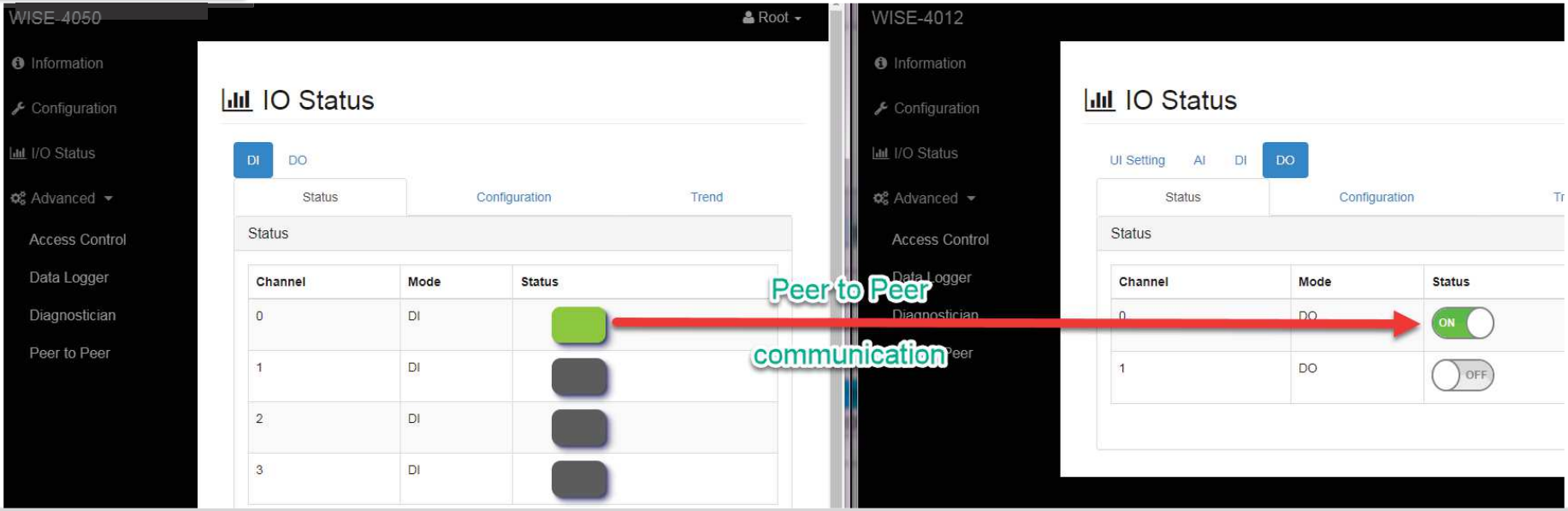


Peer to peer hands-on demo (Basic mode)

Topology:

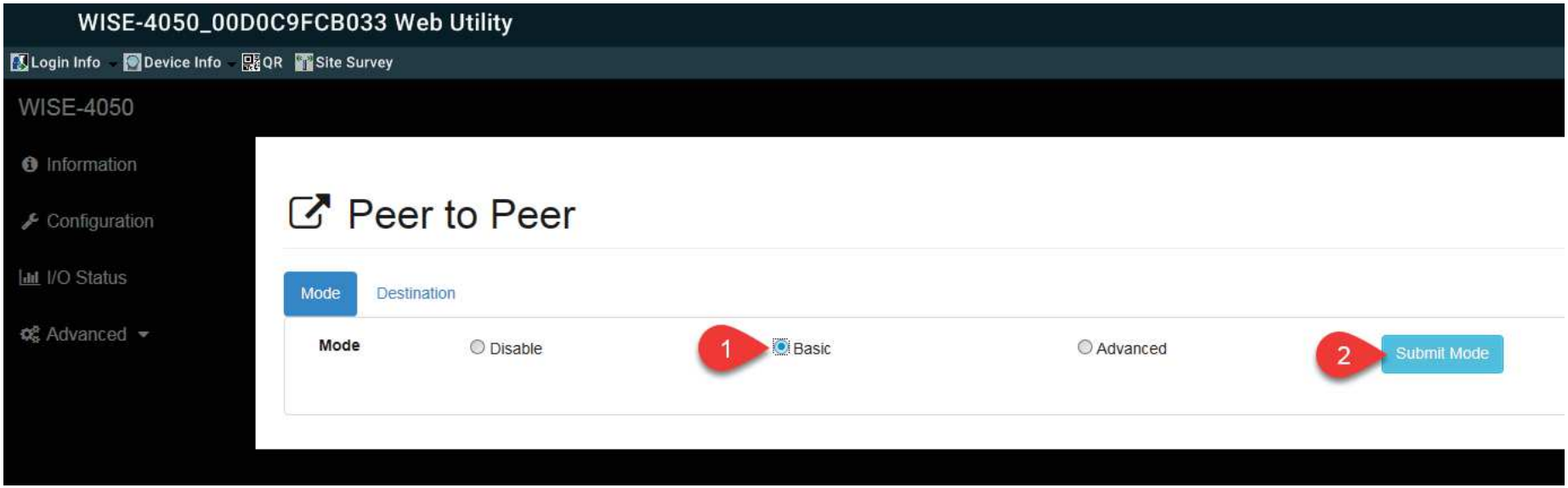


Result:



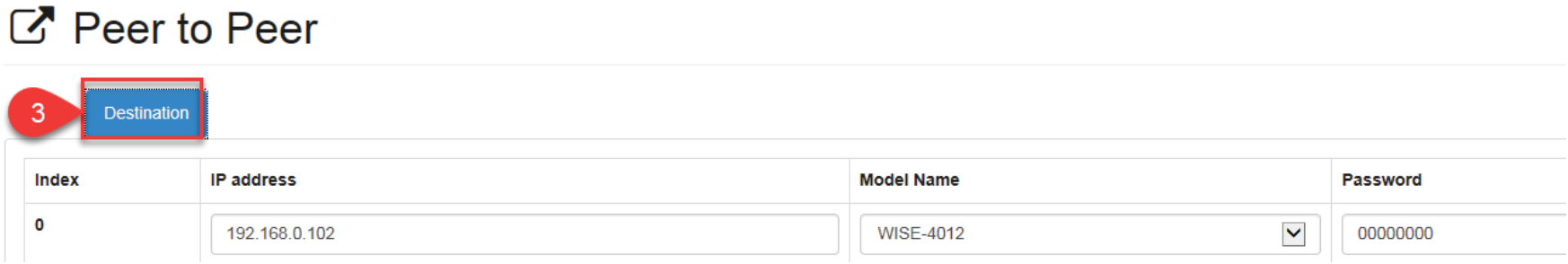
Peer to peer hands-on steps (Basic mode)

1. Set P2P in Basic mode on input module.
   - (WISE-4050, 192.168.0.100)
2. Click “Submit Mode” to choose basic operating mode.

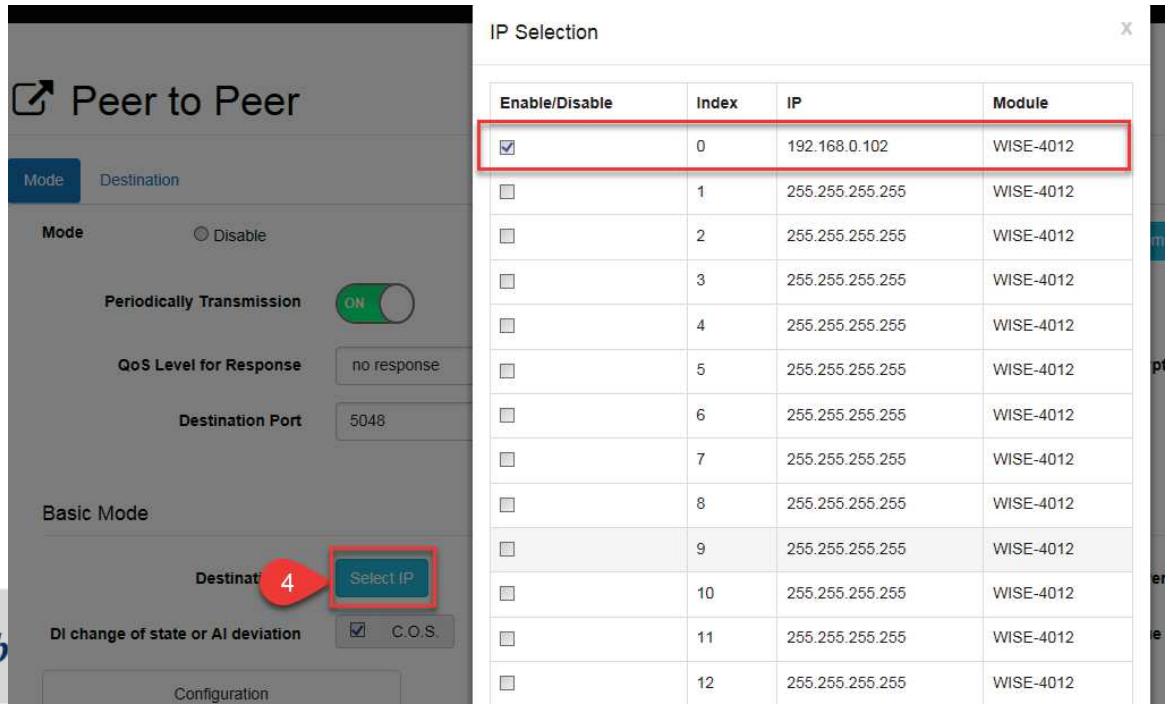


Peer to peer hands-on steps (Basic mode)

3. Change to “Destination” tab and type-in the destination module IP and password. (WISE-4012, 192.168.0.102)

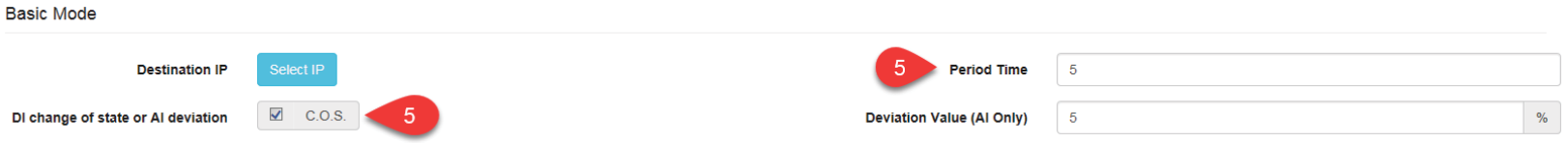


4. Select output module IP address

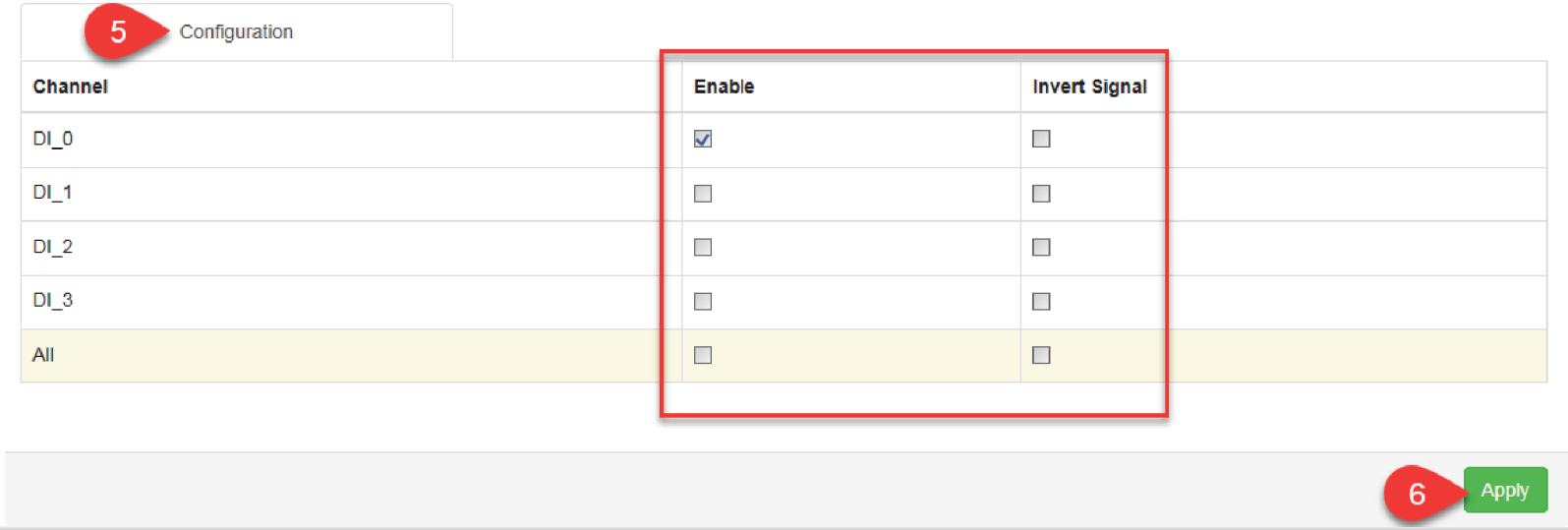


Peer to peer hands-on steps (Basic mode)

5. Set period time or C.O.S.
   - If a user is using AI module, “Deviation Value” should not be 0%.

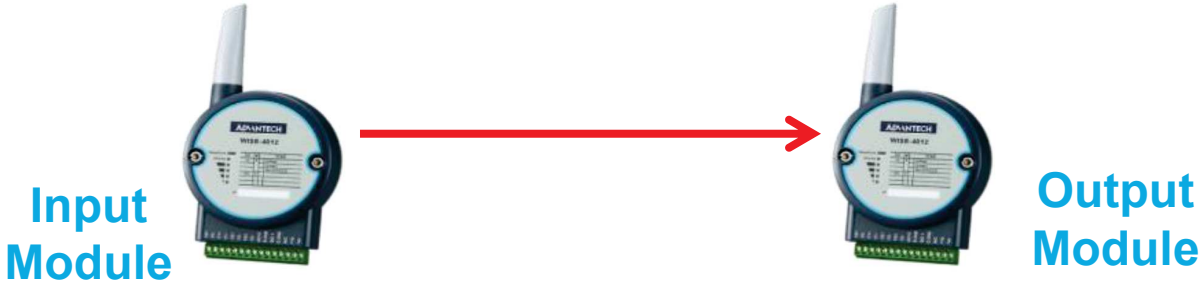


6. Select the channel to use P2P function
7. Click “Apply” to finish P2P setting



Peer to peer hands-on steps (Advanced mode)

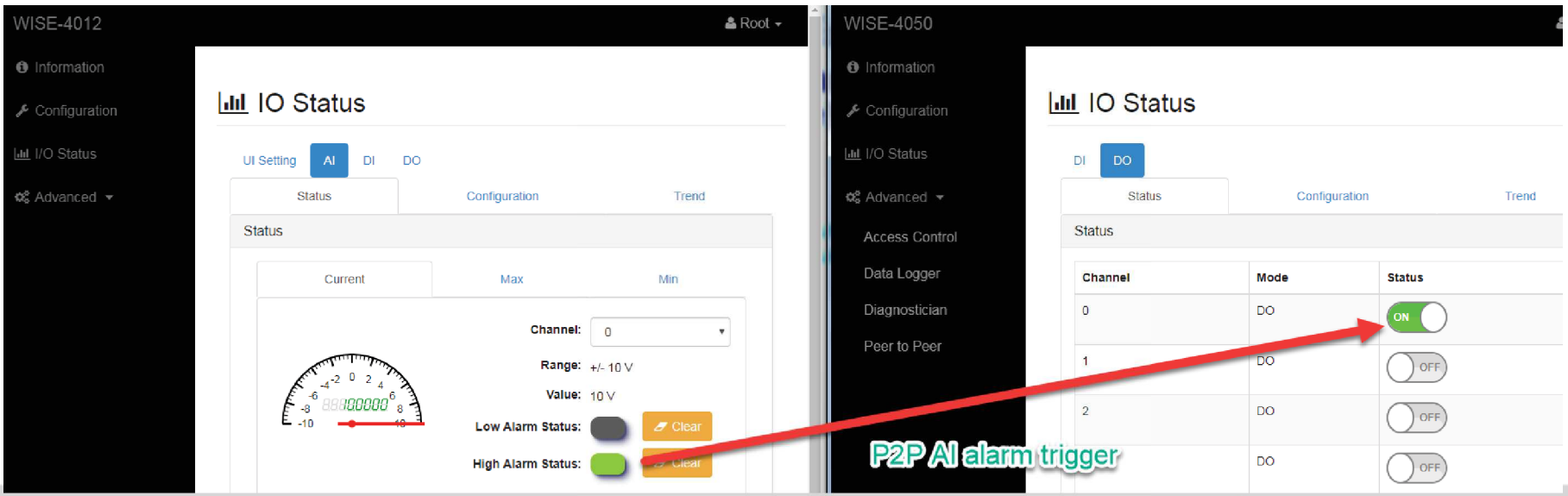
Topology:



WISE-4012
AI high alarm
192.168.0.107

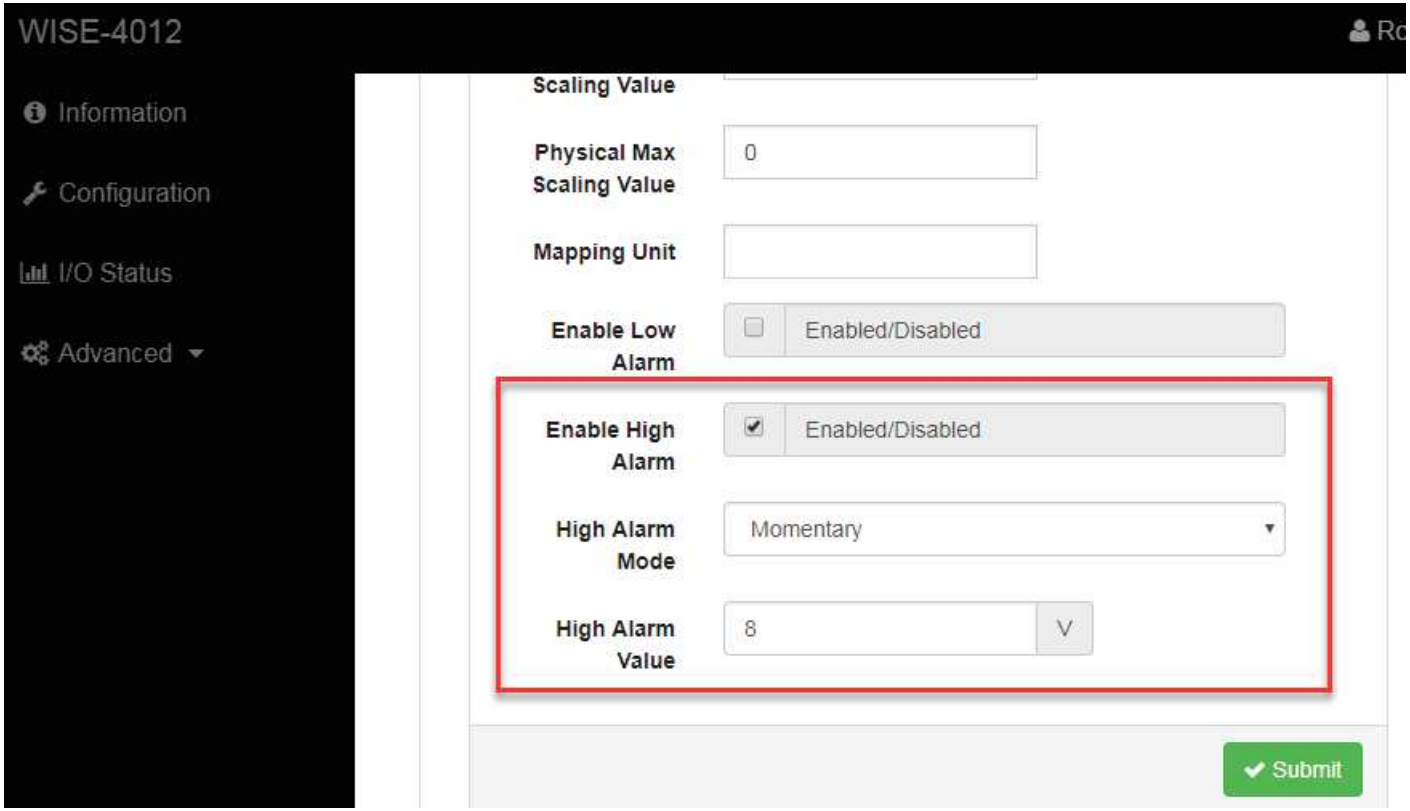
WISE-4050
DO
192.168.0.100

Result:



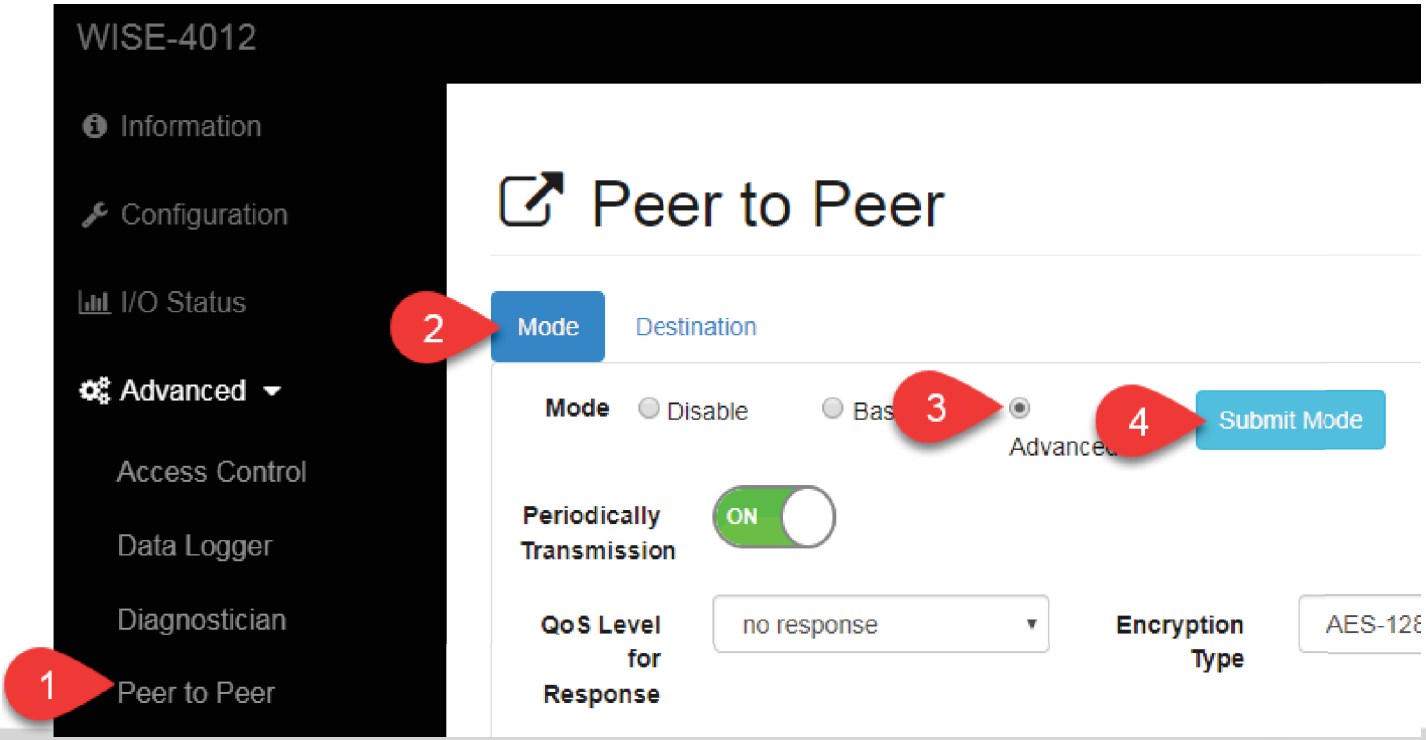
Peer to peer hands-on steps (Advanced mode)

1. **Set AI high alarm threshold.**
   - **High alarm: 8V**



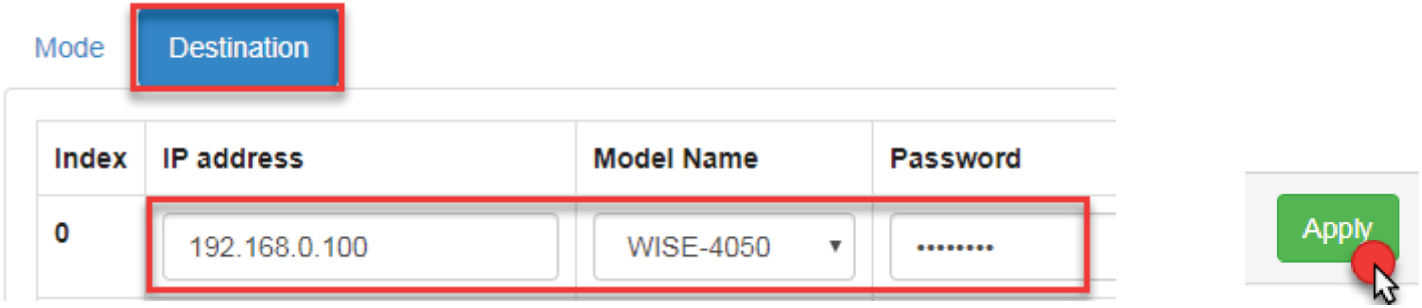
Peer to peer hands-on steps (Advanced mode)

2. Set P2P in Basic mode on input module.
   - (WISE-4012, 192.168.0.107)
3. Click “Submit Mode” to choose advanced operating mode.



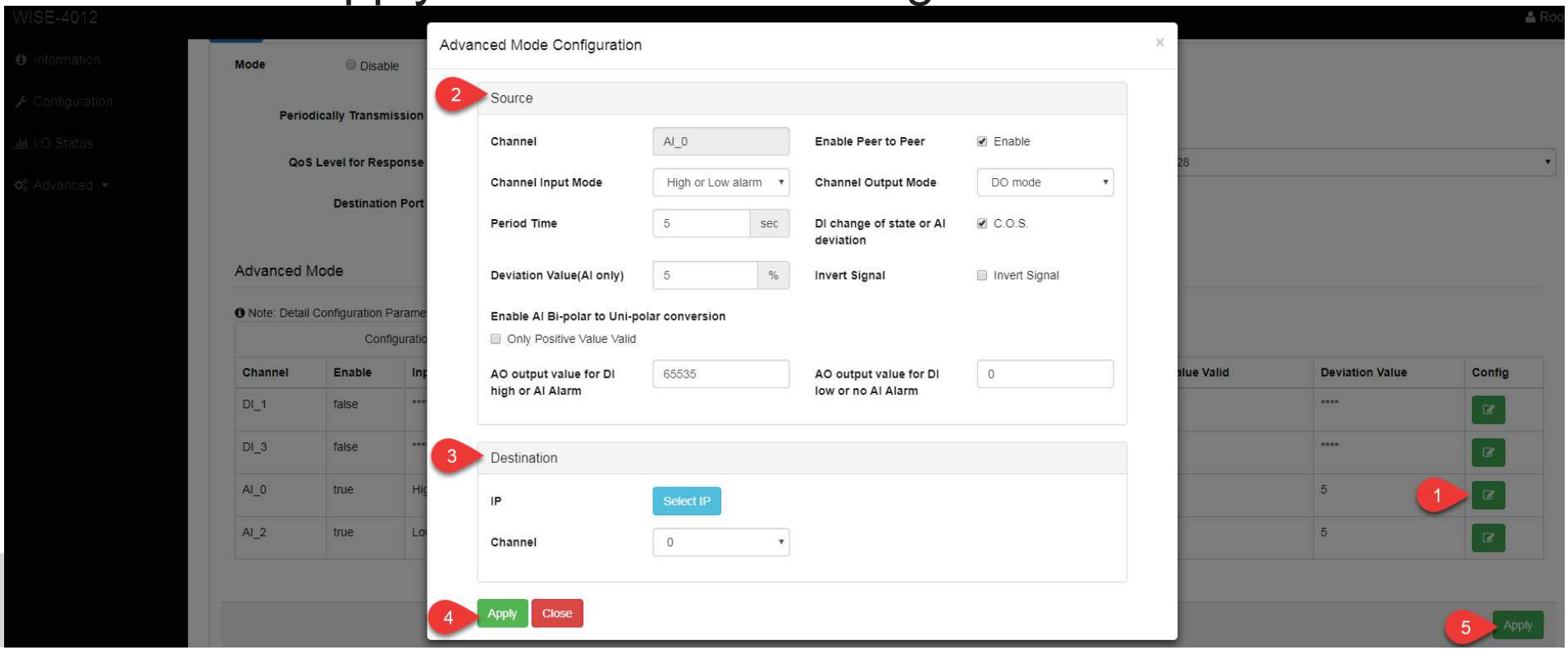
Peer to peer hands-on steps (Advanced mode)

4. Change to “Destination” tab and type-in the destination module IP and password. Then click on “Apply”.
   – (WISE-4050, 192.168.0.100)



Peer to peer hands-on steps (Advanced mode)

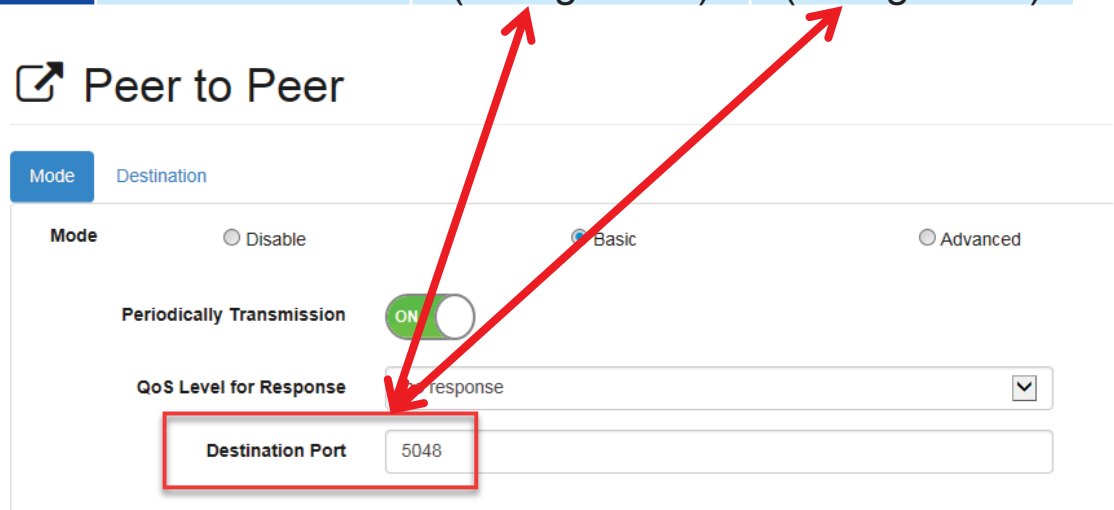
5. Set up the source and the destination, then click on “apply”.
   - In this example, AI “high alarm” is used.
   - Will trigger DO of WISE-4050 (according to the destination IP).
6. Click “Apply” to finish P2P setting



Port

- The port #of WISE and the destination port # is 5048.
  - Range: 1~65534
- This port # is not configurable.

Protocol	Protocol	WISE Port #	Destination Port #
P2P	UDP	5048 (configurable)	5048 (configurable)



- FAQ: What are the protocols and corresponded port number of WISE-4000 series?
  - http://forum.adamcommunity.com/viewthread.php?tid=96468

Packet format

- Protocol: UDP
- Port: 5048 (configurable)
- P2P packet to remote module
  - Header

bit	7	6	5	4	3	2	1	0
Byte 1	Packet flag	Version		QoS level		0	Encryption type	
Byte 2	ACK flag	Compact	0	0	0	0	Message info	

  - P2P message Payload

Length	Description
1 Byte	Payload length (no include of header and payload length)
1 Byte	Checksum (Sequence number + PW + message)
2 Byte	Sequence number
8 Byte	Root password for target module
n Byte	P2P message

Troubleshooting

- **P2P configuration**