

## Get/Set DIO Information Using CGI.

You can create control button of Digital output on the web page of FlexWATCH and control Digital output from the web page. This tech note guide you how to create Digital output button on the web page of FlexWATCH.

### ◆ DIO CGI Request Format

/cgi-bin/dio.cgi?MessageID=aa&MessageType=bb&MessageParam=cc&MessageData=dd

\* aa, bb, cc, dd : Decimal number string.

### ◆ DIO CGI Response Format ( 12 characters String )

**AA:BB:CC:DD**

AA : Message ID

BB : Message Type

CC : Message Mode( Param.)

DD : Message Data

\* AA, BB, CC and DD is Hexadecimal Character String . ( ex 08, 40, 3F )

### ◆ Message ID

- Message ID means Categories of Message

REQ( request ) or RESP ( response ) or IND ( indication )

- COMMAND REQ , QUERY REQ and QUEY RESP is used during the GCI application.

The others are used during the socket API application.

DIO Message ID	AA(Hexadecimal)	aa(Decimal)_
DIO_INPUT_IND	01	1
DIO_OPEN_REQ	02	2
DIO_CLOSE_REQ	04	4
DIO_COMMAND_REQ	08	8
DIO_QUERY_REQ	10	16
DIO_QUERY_RESP	20	32
DIO_ACT_IND	40	64
DIO_ACT_RESP	80	128

### ◆ Message Type

- Define the type of Query or Command. ( MODE, INPUT, OUTPUT )

- When Message ID = COMMAND REQ

Type = MODE SET or OUTPUT SET

- When Message ID = QUERY REQ or QUERY RESP

Type = MODE QUERY , INPUT QUERY or OUTPUT QUERY.

DIO Message Type	BB( Hexadecimal )	bb(decimal.)
DIO_MODESET	01	1
DIO_OUTPUTSET	02	2
DIO_MODEQUERY	04	4

DIO_INPUTQUERY	08	8
DIO_OUTPUTQUERY	10	16

◆ **Message Mode**

- Define the types of Mode , when Message Type is MODE QUERY, or MODESET

DIO Message Mode	CC(Hexadecimal)	cc(decimal)
DIO_DEFAULTSTATUS	01	1
DIO_INPUTMASK	02	2
DIO_OUTPUTMASK	04	4
DIO_NETWORKMASK	08	8
DIO_AUTORUNMASK	10	16

◆ **Message Data Format**

- Message Data is only valid when  
 Message ID = COMMAND REQ and Type = OUTPUT SET  
 Message ID = QUERY RESP and Type = OUTPUT QUERY, MODE QUERY, INPUT QUERY.
- First Convert String DD to Integer Value in you code ( ex. using atoi() function ).
- Let's assume that value HH : HH = atoi( DD )
- Lowest bit of Converted Value( HH:0) is means the DI port 1  
 and Highest bit ( HH:5 ) is DI port 6.

◆ **Example of CGI Query and Response**

1. Set DO Port 3 to ON

Query : /cgi-bin/dio.cgi?MessageID=8&MessageType=2&MessageParam=0&MessageData=4  
 8 = COMMAND REQ    2 = OUTPUT SET    0 = meaningless    4 = DO Port 3  
 Response : 08:02:00:04  
 ( just looped value of query, it has no meaning )

2. Get DI Port's Status

Query : /cgi-bin/dio.cgi?MessageID=16&MessageType=8&MessageParam=0&MessageData=0  
 QUERY REQ = 16    OUTPUT QUERY = 8    MODE = Don't Care    DATA = Don't Care  
 Response : 20:08:00:3E  
 20 = QUERY RESPONSE    08 = INPUT QUERY    00 = meaningless  
 3E = DI6,DI5,DI4,DI3,DI2 is OPEN, DI1 is CLOSED