

# **IP Controller**

Model: IP-60v2

P/N: 416020610-3

# INSTRUCTIONS

# **Revision History**

| Date       | Rev No. | Page | Summary      |
|------------|---------|------|--------------|
| April 2015 | 1.10    | All  | First issued |
|            |         |      |              |
|            |         |      |              |



# **Table of Contents**

| 1 Introduction<br>1.1 Diagram for showing the board dimensions & connectors<br>1.2 IP Locator | 3<br>4<br>5 |
|---|-------------|
| 1.3 Entering Web Console  | 6           |
| 2 Web Console   | 7           |
| 2.1 Web Console Functional Menu   | 7           |
| 2.2 Home Page   | 8           |
| 2.3 Contact Us Page   | 8           |
| 2.4 Network Setting Page  | 9           |
| 2.5 Email Alert setting   | 10          |
| 2.5. Mail Alert message   | 11          |
| 2.6.1 Remote Control – Setup GPIO   | 12          |
| 2.6.2 Remote Control – Setup Temperature Sensors  | 13          |
| 2.6.3 Remote Control – Setup Fan  | 14          |
| 2.6.4 Remote Control – Setup Light Sensor   | 15          |
| 2.6.5 Remote Control – Monitor  | 16          |
| 3 Direct Mode Control   | 17          |
| 3.1 Enter to Configure Page   | 18          |
| 3.2 Example for Change Normal Back Light Level  | 20          |
| 3.3 Monitor the status from direct mode   | 24          |
| 4 Summary of Pin Outs   | 28          |
| 5 Contact Details   | 31          |





The IP-60v2 is a network device that allows you to communicate with RS-232 enabled devices over a TCP/IP based Ethernet and the Internet using a web browser.

#### WEB BROWSER

The IP-v2 features an embedded Web Console Program (WCP) that allows developers to change command settings from web browser.

#### **DIRECT COMMANDS**

The IP-60v2 also accepts direct commands using a terminal program or suitably programmed network device.

IP-60v2 Supports Temperature Sensors, Light Sensor and Fans.

#### Maximum Support items from IP-60v2

| Items               | Maximum Support from IP60v2 |  |  |
|---------------------|-----------------------------|--|--|
| Temperature Sensors | 3pcs                        |  |  |
| Light Sensor        | 1рс                         |  |  |
| Fans                | 4pcs                        |  |  |

It assumes that:

- The IP-60v2 has been correctly attached to:
  - o **R232**
  - $\circ$  Network
  - $\circ$  Power
- Update to the latest firmware and Web Console Program (.bin) for the IP-60v2





#### 1.1Diagram for showing the board dimensions & connectors:

#### Remark :

- Unit : mm [inch]
- The above diagram is not draw in scale

#### **Connector definitions:**

| Connector | Description                     |  |
|-----------|---------------------------------|--|
| CN1       | Reserved                        |  |
| CN8       | Second RS-232 serial control    |  |
| CN9       | Fan control                     |  |
| CN10      | Power and Fan sensor            |  |
| CN11      | GPIO connector                  |  |
| CN12      | Reserved                        |  |
| TEMP1     | Temperature sensor 1            |  |
| TEMP2     | Temperature sensor 2            |  |
| TEMP3     | Temperature sensor 3            |  |
| J1        | Ethernet for Network Connection |  |
| J2        | RS-232 Interface Connection     |  |
| J3        | Ambient light sensor connector  |  |
| JA2       | Alternative power input         |  |
|           | connector (5VDC)                |  |
| PP1       | Power input (Micro USB 5Vdc)    |  |
| SW1 & 6   | Reset Button                    |  |
| SW2       | Reserved                        |  |
| SW5       | Config Menu Button              |  |



# 1.2 IP Locator

1. Download and install the IP locator V1.02 program

IP Locator reports all the Digital View controllers and enabled devices connected within the same subnet. It shows the IP address, host name, MAC address & other info as shown below:





# **1.3 Entering Web Console**

IP Locator provides a direct path for entering Web Console\*.

1. Double click on the IP address in the IP Locator window to enter into the Web Console using web browser "Internet Explorer"

| P Locator V | V1.02<br>Devices                  |                   |                 | Exit |  |
|-------------|-----------------------------------|-------------------|-----------------|------|--|
| IP Address  | Host Name                         | MAC Address       | Other Info      |      |  |
| 10.1.0.157  |                                   | 00-05-62-03-0C-D5 | ;               |      |  |
|             |                                   |                   |                 |      |  |
|             |                                   |                   |                 |      |  |
| Double cli  | ck on the IP ad                   | ddress to ent     | er into the Web |      |  |
| Console ho  | Console hosted on the controller. |                   |                 |      |  |
|             |                                   |                   |                 |      |  |
|             |                                   |                   |                 |      |  |
|             |                                   |                   |                 |      |  |
|             |                                   |                   |                 |      |  |
|             |                                   |                   |                 |      |  |
|             |                                   |                   |                 |      |  |

2. The front page of the Web Console will be seen after double clicking the IP address of IP-60v2. Also, user can input the IP address of the IP controller that they want to access to the Web Browser (e.g. Internet Explorer), it will direct link to the web console Home page.



3. User can see the first page of Web Console hosted on the IP-60v2. The first screen will be shown as below.





# 2 Web Console

The Web Console can provide remote control function to the user for controlling and monitoring the GPIO, temperature Sensors, Fans and light sensor from IP-60v2.

# 2.1 Web Console Functional Menu

From the web page menu on the left of the screen, User can see the Web Console Functional Menu. It includes the below function:

• Main

-Home

-Contact Us

- Network
   -Setting
- Email Alert
   -Email Alert Setting
- Remote Control

   Setup GPIO
   Setup Temp Sensors
   Setup Fan
   Setup Light Sensor
   Monitor





# 2.2 Home Page

After input the IP address of IP-60v2 into the web browser, it will show the first page of the Web Console as below:



# 2.3 Contact Us Page

Select "Contact Us" page can click to visit Digital View Website or contact Digital View Sales

- 1. Website for Digital View : <u>http://www.digitalview.com/</u>
- 2. Contact Sales for Digital View





# 2.4 Network Setting Page

In network setting page, user can define the network setting

# Configure

- *Firmware Version*
- MAC Address
- Host Name
- DHCP
- IP Address
- Subnet Mask Address Subnet
- Default Gateway Address
- Primary DNS Address
- Firmware version of IP-60v2 MAC address of IP controller ID name without space (max. 15 character) DHCP client mode enable/disable IP address assigned by DHCP server Mask Address Network Gateway Address Network DNS Address

| DIGITALVIEW              | 0                                | Powered by Digitalview<br>www.digitalview.com |
|--------------------------|----------------------------------|---|
| Main -                   | <u>Network Configure</u>         |   |
| Contact Us               | Firmware Version                 | E7.02.0.0                                     |
| Setting<br>Email Alert • | MAC Address                      | 00:05:62:03:0C:D5                             |
| Remote Control >         | <u>Host Name</u> :               | (Max. 15 characters)                          |
|                          | DHCP:                            | ● On ○ Off                                    |
|                          | IP Address:                      | 10.1.0.158                                    |
|                          | Subnet Mask Address              | 255.255.255.0                                 |
|                          | <u>Default Gateway Address</u> : | 10.1.0.1                                      |
|                          | Primary DNS Address              | 202.130.97.66                                 |
|                          | Submit Refresh                   |   |
|                          |                                  |   |

# 2.5 Email Alert setting

- Email alert enable
- Gmail Server (Default setting)
  - SMTP Server
  - Use SSL (usually port 465)
  - SMTP Port
- Sender Email Account
- Sender Password:
- To Email
- Email Subject:

# DIGITALVIEW®

Email A\C for sender Password for sender's mail Recipient's mail A\C Subject of Alert mail

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| Main -<br>Home<br>Contact Us                             | Email Alert Configure       |   |  |
|--|-----------------------------|---|--|
| Network -<br>Setting                                     | Email Alert Enable:         | ● On ○ Off                                    |  |
| Email Alert -<br>Email Alert Setting<br>Remote Control - | SMTP Server:                | smtp.gmail.com                                | gmail T                                    |
| Setup GPIO   | Use SSL (usually port 465): | <b>v</b>                                      |  |
| Setup Fan  | SMTP Port:                  | 465   |  |
| Setup Light Sensor<br>Monitor                            | Sender Email Account:       | dvhktesting12@gmail.com                       |  |
|  | Sender Password:            |   |  |
|  | To Email:                   | dvhktesting12@gmail.com                       |  |
|  | Email Subject:              | Controller Alert                              |  |
|  | Submit Refresh              | EmailTest (If you have any update, please "Su | ubmit" first and then do the "Email Test") |



On/Off mail alert function



# 2.5.1 Mail Alert message

Mail alert message will be sent to user mail A\C to report the error if the IP60v2 detect error from system when

- Too high temperature (Higher than Warning Ref. Temperature )
- Too low fan speed (Lower than Warning Ref. Temperature )

The Alert report will be as below format:

| Controller Alert 收件匣 x                               |   |
|--|---|
| Controller Alert Emai<br>寄給 我                        | <pre>dvhktesting12@gmail.com&gt;</pre>  |
| Generated by device E                                | 7.02.0.0  |
| Error Code: 0x80                                     |   |
| Ref:50°C<br>T1:Off<br>T2:Off<br>T3:Off<br>Ref:600rpm | Warning ref. speed is set to 600rmp*<br>*User can set the warning ref. speed in<br>Remote control page –Setup Fan page. |
| Fan1:Off<br>Fan3:Off<br>Fan4:0rpm-Error              |   |
| Light:Off  |   |
|  | Error was detected because of the Fan 4 is stop.  |
|  | Fan4 speed=0rmp < warning ref. speed 600rmp   |



# 2.6.1 Remote Control – Setup GPIO

In remote control page, user can define the GPIO On/Off setting.

**GPIO** Configure

- GPIO1 :
- *GPIO2* :
- *GPIO3*:*GPIO4*:

On/Off Setting for *GPIO2* On/Off Setting for *GPIO3* 

On/Off Setting for GPIO1

On/Off Setting for GPIO4

• *GPIO5* :

On/Off Setting for GPIO5

Steps for changing GPIO setting:

- 1. Select GPIO On / Off.
- 2. Press "Submit" to update GPIO values.
- 3. Press "Refresh" to update GPIO settings from IP60v2.

| DIGITALVIE                                 | <b>₩</b> °            |            | Powered by Digitalview<br>www.digitalview.com |
|--|-----------------------|------------|---|
| Main >                                     | <u>GPIO Configure</u> |            |   |
| Network ><br>Email Alert >                 | <u>GPI01:</u>         | ○ On ⑧ Off |   |
| Setup GPIO<br>Setup Temp Sensors           | <u>GPIO2:</u>         | ○ On ● Off |   |
| Setup Fan<br>Setup Light Sensor<br>Monitor | <u>GPIO3:</u>         | ○ On ● Off |   |
| Monicol                                    | <u>GPIO4:</u>         | ○ On ● Off |   |
|  | <u>GPIO5:</u>         | ○ On ● Off |   |
|  | Submit Refresh        |            |   |
|  |                       |            |   |
|  |                       |            |   |
|  |                       |            |   |
|  |                       |            |   |



# 2.6.2 Remote Control – Setup Temperature Sensors

User can use this "Remote Control – Setup Temperature Sensors page" to turn ON / Off for the temperature sensors.

This page provide below function to change the setting of temperature sensors:

Temperature Sensors Configure

- Temperature Sensor 1 :
- Temperature Sensor 2 :
- Temperature Sensor 3 :

I

On/Off Setting for Temperature Sensor 1 On/Off Setting for Temperature Sensor 2

On/Off Setting for Temperature Sensor 3

Setup Temperature Sensors:

- 1. Select Temperature Sensor On / Off.
- 2. Press "Submit" to update Temperature sensor values.
- 3. Press "Refresh" to update Temperature settings from IP60v2.

| DIGITAL <b>VIE</b>                                   | W°                           |            | Powered by Digitalview<br>www.digitalview.com |
|--|------------------------------|------------|---|
| Main •   | Temperature Sensor Con       | figure     |   |
| Email Alert >  | <u>Temperature Sensor 1:</u> | ○ On ● Off |   |
| Remote Control -<br>Setup GPIO<br>Setup Temp Sensors | <u>Temperature Sensor 2:</u> | ○ On ⑧ Off |   |
| Setup Fan<br>Setup Light Sensor<br>Monitor           | Temperature Sensor 3:        | ○ On ● Off |   |
| Monicol  | Submit Refresh               |            |   |
|  |                              |            |   |



# 2.6.3 Remote Control – Setup Fan

User can use this "Remote Control – Setup Fan" to change the Fan setting. Configure

- Warning Ref. Speed
- Warning Ref. Temperature :
- Max Speed Ref. Temperature :
- High Speed Ref. Temperature :
- Fan 1 :
- Fan 2 :
- Fan 3 :
- Fan 4 :
- Fan 5 :

Revolution per minute (RPM) Degree Celsius ( °C ) Degree Celsius ( °C ) Degree Celsius ( °C ) On/Off Setting for Fan 1 On/Off Setting for Fan 2 On/Off Setting for Fan 3 On/Off Setting for Fan 4 On/Off Setting for Fan 5

## Setup Warning ref. for error message:

1. Warning Ref Speed.

When a fan is slower than this reference speed, IP60v2 should send an error message via RS-232.

2. Warning Ref Temperature.

When sensor temperature is higher than this reference value, IP60v2 should send and error message via RS-232.

# Setup Fan speed:

Max Speed Ref Temperature.

When temperature sensor reading is higher than this reference value, all fan on IP60v2 should be in full speed mode.

High Speed Ref Temperature

When temperature sensor reading is slower than this reference value, all fan on IP60v2 should be in normal speed mood.

Between High Speed Ref Temperature and Max Speed Ref Temperature.

When temperature sensor reading reference value is between High Speed Ref Temperature and Max Speed Ref Temperature, all fans on IP60v2 should be in high speed mood

|  | <b>V</b> *                          |  |     | Powered by Digitalview<br>www.digitalview.com |
|--|-------------------------------------|--|-----|---|
| Main >   | Fan Configure                       |  |     |   |
| Network •  |                                     |  |     |   |
| Email Alert 🕨  | Warning Ref. Speed:                 | 600  | RPM |   |
| Remote Control -<br>Setup GPIO<br>Setup Temp Sensors | Warning Ref. Temperature:           | 50   | ъ   |   |
| Setup Fan<br>Setup Light Sensor<br>Monitor           | Max Speed Ref. Temperature:         | 30   | 'C  |   |
|  | <u>High Speed Ref. Temperature:</u> | 20   | °C  |   |
|  | Fan 1 (PWM 1):                      | ⊖ On ⊛ Off   |     |   |
|  | Fan 2 (PWM 2):                      | $\odot \bigcirc_n \ \circledast \bigcirc_{\mathrm{ff}}$                  |     |   |
|  | Fan 3 (PWM 3):                      | $\odot \bigcirc_n \ \circledast \bigcirc \mathrm{ff}$                    |     |   |
|  | <u>Fan 4 (PWM 4):</u>               | ${\scriptstyle \circledast  \bigcirc n   \bigcirc  \bigcirc  {\rm off}}$ |     |   |
|  | Submit Refresh                      |  |     |   |



# 2.6.4 Remote Control – Setup Light Sensor

User can use this "Remote Control – Setup Light Sensor" to change the light sensor setting

Configure

- Brighter Ref. Value : Light sensor reference voltage for Brighter (mVolts)
- Darker Ref. Value : Light sensor reference voltage for Darker (mVolts)
- Max Back Light Level(0-64):
- Normal Back Light Level(0-64):
- Max backlight level for controller (Hex) Normal backlight level for controller (Hex)
- Min Back Light Level(0-64):
- Min backlight level for controller (Hex)

# Setup Light Sensor Ref. Value

## 1. Brighter Ref. Value:

When Light Sensor value is higher than this reference value, IP60v2 should send a message to controller via RS-232 to change panel backlight to *Max Back Light Level* (0-64).

## 2. Darker Ref. Value:

When Light Sensor value is lower than this reference value, IP60v2 should send a message to controller via RS-232 to change panel backlight to *Min Back Light Level* (0-64).

## 3. Between Darker Ref. Value and Brighter Ref. Value

When Light Sensor value is between Darker Ref. Value and Brighter Ref. Value, IP60v2 should send a message to controller via RS-232 to change panel backlight to *Normal Back Light Level (0-64)*.

|  | <b>V</b> °                           |          | Powered by Digitalview<br>www.digitalview.com |
|--|--------------------------------------|----------|---|
| Main >                                     | Light Configure                      |          |   |
| Email Alert >                              | Brighter Ref. Value:                 | 1500 mV  | olts  |
| Setup GPIO<br>Setup Temp Sensors           | Darker Ref. Value:                   | 800 mV   | olts  |
| Setup Fan<br>Setup Light Sensor<br>Monitor | <u> Max Back Light Level(HEX):</u>   | 01       |   |
|  | <u>Normal Back Light Level(HEX):</u> | 80       |   |
|  | <u>Min Back Light Level(HEX):</u>    | 00       |   |
|  | Light Sensor:                        | ⊙On ⊙Off |   |
|  | Submit Refresh                       |          |   |
|  |                                      |          |   |
|  |                                      |          |   |
|  |                                      |          |   |
|  |                                      |          |   |
|  |                                      |          |   |
|  |                                      |          |   |
|  |                                      |          |   |



# 2.6.5 Remote Control – Monitor

User can use this "Remote Control – Monitor" to view the status for Temperature Sensors, Fan, Light Sensor.

Monitoring present system status:

**Temperature Monitor** 

| • <i>TEMP1:</i> Show Temperature Sensors 1 Degree Celsius) |
|--|
|--|

- *TEMP2*:
- *TEMP3*:

Show Temperature Sensors 2 Degree Celsius) (°C) Show Temperature Sensors 3 Degree Celsius) (°C)

•

PWM Monitor

| • | PWM1: | Show Fan 1 Revolution per minute (RPM) |
|---|-------|--|
| • | PWM2: | Show Fan 2 Revolution per minute (RPM) |
| • | PWM3: | Show Fan 3 Revolution per minute (RPM) |
| • | PWM4: | Show Fan 4 Revolution per minute (RPM) |

## Light Monitor

• *LIGHT1:(0-2200)* 

Show light sensor reference voltage (mVolts)

The Page of Remote Control – "Monitor" will be refreshed every 5 Second and provide updated system information for the user.

|  | •                   |         | Powered by Digitalview<br>www.digitalview.com |
|--|---------------------|---------|---|
| Main >                                   | Temperature Monitor |         |   |
| mail Alert >                             | TEMP1:              | N/A C   |   |
| etup GPIO<br>etup Temp Sensors           | TEMP2:              | N/A C   |   |
| etup Fan<br>etup Light Sensor<br>Ionitor | TEMP3:              | N/A C   |   |
|  | PWM Monitor         |         |   |
|  | PWM1:               | N/A RP1 | h   |
|  | <u>PWIM2:</u>       | N/A RP1 | h   |
|  | <u>PWIM3:</u>       | N/A RP1 | Ъ   |
|  | <u>PWM4:</u>        | 0 RP1   | ľ   |
|  | Light Monitor       |         |   |
|  | LIGHT1:(0-2200)     | N/A mV  | olts  |
|  | Refresh             |         |   |
|  |                     |         |   |



# **3** Direct Mode Control

IP-60v2 supports direct mode and browser mode to control the controller. User can select either Direct Mode or Browser Mode to control the controller on each boot up

\* Switching control mode requires power cycle of the IP-60v2.\*

Direct mode control is to use a PC based application to control functions over the network.

The remote control function can be controlled through sending the RS-232 protocol. User might use program –AccessPort to control the setting from R232.

# AccessPort:

| 🚭 AccessPort - COM3(2400,N,8,1) Closed   |         |         |                 |
|--|---------|---------|-----------------|
| File Edit View Monitor Tools Operation Help                                    |         |         |                 |
| 🍓 🛛 🛃 🛒 💭  |         |         |                 |
| Terminal Monitor   |         |         |                 |
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|  |         |         |                 |
| Send> • Hex Char Plain Text V Red Time Send Clear Send DTR RTS Max Size < 64KB |         |         | ^               |
|  |         |         |                 |
|  |         |         |                 |
|  |         |         |                 |
|  |         |         | ~               |
| Ready  | TX 0 Ro | COM3(2) | 400,N,8,1) Clos |



# 3.1 Enter to Configure Page

1. Open the "AccessPort" RS-232 program. Tick "Port Switch" and then go to "Tool" → "Configuration" to follow the settings stated below to choose COM Port:

| AccessPo      | ort - ( | COM3   | (2400        | <mark>, N, 8, 1)</mark> О | pened           |   |  |  |
|---------------|---------|--------|--------------|---------------------------|-----------------|---|--|--|
| =ile Edit Vie | w Me    | onitor | Tools        | Operation                 | Help            |   |  |  |
| 6             |         | •      | ✔ Por<br>Tra | t Switch<br>nsfer File    | Ctrl+P<br>Alt+S |   |  |  |
| Terminal      |         | Мо     | Cor          | figuration                | F2              | _ |  |  |
| Hex 🛛         | ab 🖪    | 9 5    | Sta          | rt Debug                  |                 | ۲ |  |  |
|               |         |        | Sele<br>Bac  | ect Font<br>kground Cok   | or              |   |  |  |

| 🍓 Options  |                                 |           |                                 |    |                 |
|--|---------------------------------|-----------|---------------------------------|----|-----------------|
| General<br>Event Control                           | General                         |           |                                 |    |                 |
| Flow Control<br>Timeout Control<br>Monitor Control | Custom Baud Ra                  | ite       | 2400                            |    |                 |
|  | Serial Port Settin<br>Port:     | СОМЗ      | ~                               | ]← | Choose COM port |
|  | Baud Rate:                      | 2400      | ¥                               |    |                 |
|  | Parity Bit:                     | NONE      | <b>*</b>                        |    |                 |
|  | Data Bit:                       | 8         | *                               |    |                 |
|  | Stop Bit:                       | 1         | *                               |    |                 |
|  | Buffer Size:                    | 8192      | *                               |    |                 |
|  | Send display                    |           | Receive display                 |    |                 |
|  | <ul> <li>Char Format</li> </ul> |           | <ul> <li>Char Format</li> </ul> |    |                 |
|  | O Hex Format                    |           | O Hex Format                    |    |                 |
|  | Enable auto s                   | send      | Cycle 1000 ms                   |    |                 |
|  | Advanced<br>Auto open po        | rt when a | oplication start                |    |                 |
|  | Prompt for sa                   | ving when | application exit                |    |                 |
|  | Remind me w                     | hen upda  | te is available                 |    |                 |
| Cancel   |                                 |           |                                 |    |                 |



- 2. On AcessPort software, Please make sure it select
  - 1. Serial Port switch
  - 2. Display
  - 3. Character Format

3.Click the Config Menu Button SW5 at IP60v2 to enter Configure Page from Access Port: (Note: Click the SW1 to refresh and back to Web Console)

| AccessPort - COM3(2400,N,8,1) Opened File Edit View Monitor Tools Operation Help File Edit View Monitor Terminal Monitor Ferminal Bable AccessPort - COM3(2400,N,8,1) Opened Please dov  | Please Select<br>1. Serial Port switch<br>2. Display<br>3. Character Format |          |
|--|---|----------|
| Microchip TCP/IP Config Application (E6.02.0.1, Oct 23 2014)  1: Config MAC address: 000562030CD5 2: Change Baud Rate: 2400 3: Change static stateway address: 10.1.0.11 5: Change static stateway address: 10.1.0.11 6: Change static stateway address: 255.255.255.0 7: Change static subnet mask: 255.255.255.0 7: Change static subnet mask: 202.130.97.66 9: Disable DHCP & IP Cleaning: DHCP is currently et al. (Change Static Secondary DNS server: 202.76.4.18 0: Change static subnet mask: 200.130.97.66 9: Disable DHCP & IP Cleaning: DHCP is currently et al. (Change Static Secondary DNS server: 202.130.97.66 9: Disable DHCP & IP Cleaning: DHCP is currently et al. (Change Bramperature Sensor 2 ON V: (Toggle Temperature Sensor 2 ON V: (Toggle CHO Sensor 7 Sensor 2 ON V: (Toggle CHO Sensor 7 | Configure Pag   | je       |
| New Normal BackLight Level(HEQ):   |   |          |
| Send> O Hex O Dhar Plain Text V Real Time So   | I Clear Send DTR RTS    Max Size < 64KB                                     |          |
| Comm Status CTS DSB BING BISD (CD) CTS H/  | DSB Hold BLSD Hold XDEF Hold  | <u>×</u> |



# 3.2 Example for Change Normal Back Light Level

Step 1:

From config menu, user can see option from to control.

Eg. n: Change Normal Back Light Level 30

Step 2:

Enter a menu choice to control and monitor the IP60v2 from Access Port

Eg. Enter "n" to the AccessPort software and click "Send" button. Configure Page will show the word of your selected option - *"New Normal BackLight Level(HEX):"* 





Step 3: Input value to change the normal backlight level. Eg. 40 (Hex converse to ASCII form table is 34 30) Enter 34 30 0A0D and click "Send" Button to send out the command

Remark: After changing value, please Input "0A0D" before click "Send" button.

| AccessPort - COM3(2400,N,8,1) Opened   |  |                        |           |                                 |
|--|--|------------------------|-----------|---------------------------------|
| File Edit View Monitor Tools Operation Help  | Please download the newest version 1.97 Bi       | #H 1870                |           |                                 |
| Terminal Monitor   |  |                        |           |                                 |
| 🖬 🖩 Hex ab 🖾 🤮   |  |                        |           |                                 |
|  |  |                        |           |                                 |
| Microchip TCP/IP Config Application (E6.02.0.1, Oct 2:   | 3 2014)  |                        |           |                                 |
| 1: Config MAC address:<br>2: Change Baud Rate:<br>3: Change host name:   | 2400   |                        |           |                                 |
| 4: Change static IP address:<br>5: Change static gateway address:  | 10.1.0.110<br>10.1.0.1                           |                        |           |                                 |
| 6: Change static subnet mask:<br>7: Change static primary DNS server:<br>8: Change static secondary DNS server:      | 255.255.255.0<br>202.76.4.18<br>202.130.97.66    |                        |           |                                 |
| 9: Disable DHCP & IP Gleaning:<br>y: Refresh Temp Status (Degree Celsius)  | DHCP is currently enable<br>T1:0.0,T2:0.0,T3:0.0 |                        |           |                                 |
| x:Toggle Temperature Sensor 1<br>c:Toggle Temperature Sensor 2<br>v:Toggle Temperature Sensor 3                      | ON<br>ON<br>ON                                   |                        |           |                                 |
| a:Change Warning Temperature<br>s:Change Max Fan Speed Ref. Temperature  | 22<br>40   |                        |           |                                 |
| d:Change High Fan Speed Ref. Temperature<br>f:Change Brighter Sensor Ref. Value<br>g:Change Darker Sensor Ref. Value | 30<br>1500mV<br>600mV                            |                        |           |                                 |
| y: Refresh Light Sensor Status (0-2.2k)  | 0.0mV  |                        |           |                                 |
| n: Change Normal Back Light Level<br>m: Change Min Back Light Level<br>a.Toggle GPIO 1:                              | 30<br>20<br>ON                                   |                        |           |                                 |
| w.Toggle GPIO 2:<br>e.Toggle GPIO 3:   | ON<br>ON   |                        |           |                                 |
| r.Toggle GPIO 4:<br>t.Toggle GPIO 5:<br>v:Refresh Fan Status (RPM)   | ON<br>ON<br>1:0.2:0.3:0.4:0                      |                        |           |                                 |
| z:Change Fan Waring Ref. Speed   | 600RPM   |                        |           |                                 |
| U: Save & Quit.<br>Enter a menu choice: à20Ë   |  |                        |           |                                 |
| New Normal BackLight Level(HEX):   |  |                        |           |                                 |
|  |  |                        |           |                                 |
| Send> Olan Text  | Real Time Send Clear Send                        | TR RTS Max Size < 64KB |           |                                 |
| 00000000 34 30 0A 0D   | ;40  |                        |           |                                 |
|  |  | \                      |           |                                 |
|  |  |                        |           |                                 |
| Comm Status CTS DSR RING RLS   | SD (CD) CTS Hold DSR Hold RLSD                   | Hold Y XOFF Hold       |           | M                               |
| Ready  |  |                        | Tx 1      | 0 Rx 15742 COM3(2400,N,8,1) Ope |
|  |  |                        |           |                                 |
| Input "0   | A0D" after the                                   | Click "Ser             | d" hutton |                                 |
| digit to d   | change the                                       | GIER JEI               |           |                                 |
| value  | U  |                        |           |                                 |
|  |  | l                      |           |                                 |
|  |  |                        |           |                                 |
| Input the value ve   | want to change                                   |                        |           |                                 |
| Eg 10 (How convol  | rea to ASCII form 1                              | -abla is 24            |           |                                 |
| 129.40 (Hex Conver   |  | Ladie 15 54            |           |                                 |
| 303  |  |                        |           |                                 |
| Domoulu Disses and   | to the ACCII to II-                              | nwout tabl-            |           |                                 |
| kemark: Please refer t   | to the ASCII to Hex co                           | nvert table            |           |                                 |
| 5000   |  |                        |           |                                 |



## Hex to ASCII conversion table

| Hex  | ASCII | Hex  | ASCII | Hex  | ASCII | Hex  | ASCII |
|------|-------|------|-------|------|-------|------|-------|
| 0x30 | 0     | 0x41 | А     | 0x61 | а     | 0x2B | +     |
| 0x31 | 1     | 0x42 | В     | 0x62 | b     | 0x2D | -     |
| 0x32 | 2     | 0x43 | С     | 0x63 | С     | 0x3F | ?     |
| 0x33 | 3     | 0x44 | D     | 0x64 | d     |      |       |
| 0x34 | 4     | 0x45 | E     | 0x65 | е     |      |       |
| 0x35 | 5     | 0x46 | F     | 0x66 | f     |      |       |
| 0x36 | 6     | 0x47 | G     | 0x67 | g     |      |       |
| 0x37 | 7     | 0x48 | Н     | 0x68 | h     |      |       |
| 0x38 | 8     | 0x49 | 1     | 0x69 | i     |      |       |
| 0x39 | 9     | 0x4A | J     | 0x6A | j     |      |       |
|      |       | 0x4B | K     | 0x6B | k     |      |       |
|      |       | 0x4C | L     | 0x6C |       |      |       |
|      |       | 0x4D | Μ     | 0x6D | m     |      |       |
|      |       | 0x4E | N     | 0x6E | n     |      |       |
|      |       | 0x4F | 0     | 0x6F | 0     |      |       |
|      |       | 0x50 | Р     | 0x70 | р     |      |       |
|      |       | 0x51 | Q     | 0x71 | q     |      |       |
|      |       | 0x52 | R     | 0x72 | r     |      |       |
|      |       | 0x53 | S     | 0x73 | S     |      |       |
|      |       | 0x54 | Т     | 0x74 | t     |      |       |
|      |       | 0x55 | U     | 0x75 | u     |      |       |
|      |       | 0x56 | V     | 0x76 | V     |      |       |
|      |       | 0x57 | W     | 0x77 | W     |      |       |
|      |       | 0x58 | Х     | 0x78 | Х     |      |       |
|      |       | 0x59 | Υ     | 0x79 | у     |      |       |
|      |       | 0x5A | Z     | 0x7A | Z     |      |       |



Step 4

After finished above procedure, the normal backlight level has been changed to 40.

| File Edit Wew Monitor Tools Operation Help         Image: |                   |
|---|-------------------|
| 🚱 🕘 🔁 🗒 🏂 🥝 Please download the newest version 1.37 Build 1870  |                   |
|   |                   |
| Terminal Monitor  |                   |
|   |                   |
| y: Refresh Temp Status (Degree Celsius) T1:25.9,T2:27.0,T3:25.9   | ^                 |
| x-Toggle Temperature Sensor 1 ON  |                   |
| c.Toggle Temperature Sensor 2 ON  |                   |
| v-Toggle Temperature Sensor 3 ON  |                   |
| a Change Warning Temperature 22   |                   |
| s-Change Max Fan Speed Ref. Temperature 40  |                   |
| d-Change High Fan Speed Ref. Temperature 30   |                   |
| f:ChangeBrighter Sensor Ref. Value 1500mV   |                   |
| g:Change Darker Sensor Ref. Value 600mV   |                   |
| y: Refresh Light Sensor Status(0-2.2k) 485.1mV  |                   |
| b: Change Max Back Light Level 60 The Newwool De also is the second   |                   |
| n: Change NormalBack Light Level 40   |                   |
| m: Change MinBack Light Level 20 been changed to 40   |                   |
| q,Toggle GPI0 1: ON   |                   |
| w.Toggle GR0 2: ON  |                   |
| e.Toggle GPI0 3: ON   |                   |
| r.Toggle CPIO 4: ON   |                   |
| tToggle GRO 5: ON   |                   |
| y Refresh Fan Status (RPM) 1:0, 2:0, 3:0, 4:0   |                   |
| z Change Fan Waring Ref. Speed 600RPM   |                   |
| 0: Save & Quit  |                   |
| Enter a menu choice:  | ~                 |
| Send O Har O Char Pain Text V Real Time Send Clear Send DTR TS () Max Size < 64KB   |                   |
| 144   |                   |
|   |                   |
|   |                   |
|   | ~                 |
| Comm Status CTS DSR RING RLSD (CD) CTS Hold DSR Hold RLSD Hold X0FF Hold  | M3(2400.N.8.1) On |



# **3.3 Monitor the status from direct mode**

Click the Hex to monitor the status from direct mode.

| AccessPort - COM3(2400,N,8,1) Opened   | _ 7 🛛    |
|--|----------|
| File Edit View Monitor Tools Operation Fiels<br>Click the Hex to monitor the status of IP-<br>Click the Hex to monitor the status of IP-<br>60v2 |          |
|  |          |
| Status are reported from<br>IP-60v2  |          |
|  |          |
|  |          |
| Send> 📀 Hex 🔷 Char Plain Text 👻 Real Time Send Clear Send DTR RTS [] Max Size < 64KB   | <u>×</u> |
| 00000000:34 30 0A 0D ;40   | 2        |
| Comm Status CTS DSR RING RLSD (CD) CTS Hold DSR Hold RLSD Hold X0FF Hold   |          |



#### Status board error code

| Hex | Bin                     | Error caused from  |
|-----|-------------------------|--------------------|
| 01  | 0000000 <mark>1</mark>  | Fan 1              |
| 02  | 000000 <mark>1</mark> 0 | Fan 2              |
| 40  | 0 <mark>1</mark> 000000 | Fan 3              |
| 80  | <mark>1</mark> 0000000  | Fan 4              |
| 08  | 0000 <mark>1</mark> 000 | Temperature sensor |

## How to check the Combination error code

Example:

1.When you see the "CB" and "C3" error code in AcessPort status

| 122  | Acces | sPort   | - COMS    | 8(2400         | ,N,8,    | 1) 0  | pene | d |  |
|------|-------|---------|-----------|----------------|----------|-------|------|---|--|
| File | Edit  | View    | Monitor   | Tools          | Opera    | ation | Help |   |  |
| 0    | 0     | 0       | ⇒         |                | <b>*</b> |       | 2    |   |  |
|      | Termi | nal     | Mo        | nitor          |          |       |      |   |  |
|      | ₩.    | lex ab  | 🖸 🖾       | <mark>}</mark> |          |       |      |   |  |
| 0000 | 00000 | : CB EI | D 32 30 E | EO 33 3(       | СЗ       |       |      |   |  |

2. Using calculator of <u>Hex mode</u> to input "CB"



| 📕 Calcu   | Ilator |       |       |     |         |         |        |     |              |      |
|-----------|--------|-------|-------|-----|---------|---------|--------|-----|--------------|------|
| Edit Viev | v Help |       |       |     |         |         |        |     |              | CB   |
| ⊙ He>     | ODe    | c 🔿 C | lct 🔿 | Bin | 💿 Qword |         | word 🤇 | Wor | 1 <b>O</b> E | 3yte |
| 🗌 Inv     | H      | lур   |       |     | (       | Backspa | ace    | CE  |              | С    |
| Sta       | F-E    |       |       | MC  | 7       | 8       | 9      | 1   | Mod          | And  |
| Ave       | dms    | Exp   | In    | MR  | 4       | 5       | 6      | *   | Or           | Xor  |
| Sum       | sin    | х^у   | log   | MS  | 1       | 2       | 3      | ·   | Lsh          | Not  |
| s         | COS    | x^3   | nl    | M+  | 0       | +/-     | •      | +   | -            | Int  |
| Dat       | tan    | x^2   | 1/x   | pi  | A       | В       | С      | D   | E            | F    |

# 3.Changing Calculator to Bin Mode, You will see 11001011

| 📕 Calcu        | ılator |       |       |     |         |        |        |        |      |        |
|----------------|--------|-------|-------|-----|---------|--------|--------|--------|------|--------|
| Edit View Help |        |       |       |     |         |        |        |        |      |        |
|                |        |       |       |     |         |        |        |        | 11   | 001011 |
| OHex           | ODec   | : O 0 | ict 🧿 | Bin | 📀 Qword | OD     | word ( | 🔵 Word | () E | yte    |
| 🗌 Inv          | H      | lyp   |       |     |         | Backsp | ace    | CE     |      | С      |
| Sta            | F-E    |       |       | MC  | 7       | 8      | 9      | /      | Mod  | And    |
| Ave            | dms    | Ехр   | In    | MR  | 4       | 5      | 6      | *      | 0r   | Xor    |
| Sum            | sin    | x^y   | log   | MS  | ]       | 2      | 3      | ·      | Lsh  | Not    |
| \$             | cos    | x^3   | nl    | M+  | )       | +/-    | •      | +      | =    | Int    |
| Dat            | tan    | x^2   | 1/x   | pi  | Α       | В      | C      | D      | E    | F      |

# 4. Using calculator of <u>Hex mode</u> to input "C3"

| Calci     | llator |         |       |                           |         |        |      |     |     |
|-----------|--------|---------|-------|---------------------------|---------|--------|------|-----|-----|
| Edit Viev | w Help |         |       |                           |         |        |      |     |     |
|           |        |         |       |                           |         |        |      |     | C3  |
| 💿 Hex     | 🔿 Dec  | Oct     | 🔘 Bin | <ul> <li>Qword</li> </ul> | ODw     | vord 🤇 | Word | ОВ  | yte |
| 🗌 Inv     | 🗌 Нур  |         |       | E                         | Backspa |        | CE   |     | С   |
| Sta       | F-E    |         | ) MC  | 7                         | 8       | 9      | /    | Mod | And |
| Ave       | dms    | Exp     | n MR  | 4                         | 5       | 6      | *    | Or  | Xor |
| Sum       | sin    | k^y k   | og MS | 1                         | 2       | 3      | ·    | Lsh | Not |
| s         | cos 🛛  | (^3   r | il M+ | 0                         | +/-     |        | +    | =   | Int |
| Dat       | tan    | ć2 1    | /x pi | A                         | в       | С      | D    | E   | F   |
|           |        | •       |       |                           |         |        |      |     |     |

# 5.Changing Calculator to Bin Mode, You will see 11000011

| 📓 Calcı   | ılator |        |          |   |         |        |       |        |      |        |
|-----------|--------|--------|----------|---|---------|--------|-------|--------|------|--------|
| Edit Viev | v Help |        |          |   |         |        |       |        |      |        |
|           |        |        |          |   |         |        |       |        | 11   | 000011 |
| OHex      | ODec   | O Oct  | 💿 Bin    | 0 | 🖲 Qword | 0      | )word | O Word | () E | 3yte   |
| 🗖 Inv     | 🗌 Hy   | P      |          |   |         | Backsp | ace   | CE     |      | С      |
| Sta       | F-E    |        | M        | С | 7       | 8      | 9     | /      | Mod  | And    |
| Ave       | dms    | Exp 🚺  | n M      | R | 4       | 5      | 6     | *      | Or   | Xor    |
| Sum       | sin    | x^y lo | g M      | s | 1       | 2      | 3     | ·      | Lsh  | Not    |
| s         | cos    | x^3 r  | <u>м</u> | + | 0       | +/-    | )     | +      | =    | Int    |
| Dat       | tan    | x^2 1  | /x P     | i | A       | В      | ) [ C | D      | E    | F      |



6.According to the error code table, you will find the error part from position of digit.

| Hex | Bin                     | Error caused from  |
|-----|-------------------------|--------------------|
| 01  | 0000000 <mark>1</mark>  | Fan 1              |
| 02  | 000000 <mark>1</mark> 0 | Fan 2              |
| 40  | 0 <mark>1</mark> 000000 | Fan 3              |
| 80  | <mark>1</mark> 0000000  | Fan 4              |
| 08  | 0000 <mark>1</mark> 000 | Temperature sensor |

# "CB" error code is 11001011



Therefore, the errors are caused from Fan 1, Fan 2, Fan 3, Fan4 and Temperature sensor.

"C3" error code is 11000011



Therefore, the error are caused from Fan 1, Fan 2, Fan3 and Fan4







#### CN1 - Reserved: HRS DF13-6P-1.25DSA THR/STRI

| Pin | Symbol | Description                   |
|-----|--------|-------------------------------|
| 1   | /MCLR  | Reserved for programming used |
| 2   | PICVDD | 3.3V                          |
| 3   | GND    | Ground                        |
| 4   | PGD    | Reserved for programming used |
| 5   | PGC    | Reserved for programming used |
| 6   | NC     | No connection                 |

#### CN8 - Second RS-232 serial control: JS-1147A-06 (1.25mm)

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1   | SDA2   | I2C Data    |
| 2   | SCL2   | I2C Clock   |
| 3   | PICVDD | 3.3V        |
| 4   | ТХ     | RS-232 TX   |
| 5   | GND    | Ground      |
| 6   | RX     | RS-232 RX   |



#### CN9 – Fan control: JS-1147A-09

| Pin | Symbol  | Description           |
|-----|---------|-----------------------|
| 1   | TACH1IN | Tachometer IN of Fan1 |
| 2   | TACH2IN | Tachometer IN of Fan2 |
| 3   | TACH3IN | Tachometer IN of Fan3 |
| 4   | TACH4IN | Tachometer IN of Fan4 |
| 5   | PWM1    | PWM control for Fan1  |
| 6   | PWM2    | PWM control for Fan2  |
| 7   | PWM3    | PWM control for Fan3  |
| 8   | PWM4    | PWM control for Fan4  |
| 9   | GND     | Ground                |

# CN10 – Power and Fan sensor: HRS DF13-9P-1.25DSA THR/STRI

| Pin | Symbol  | Description           |
|-----|---------|-----------------------|
| 1   | GND     | Ground                |
| 2   | TACH1IN | Tachometer IN of Fan1 |
| 3   | GND     | Ground                |
| 4   | TACH2IN | Tachometer IN of Fan2 |
| 5   | GND     | Ground                |
| 6   | PS_V1IN | Reserved              |
| 7   | GND     | Ground                |
| 8   | PS_V2IN | Reserved              |
| 9   | AUX     | Reserved              |

#### CN11 - GPIO: HRS DF13-10P-1.25DSA THR/STRI

| Pin | Symbol | Description              |
|-----|--------|--------------------------|
| 1   | GPO_1  | General purpose Output 1 |
| 2   | GND    | Ground                   |
| 3   | GPO_2  | General purpose Output 2 |
| 4   | GND    | Ground                   |
| 5   | GPO_3  | General purpose Output 3 |
| 6   | GND    | Ground                   |
| 7   | GPO_4  | General purpose Output 4 |
| 8   | GND    | Ground                   |
| 9   | GPO_5  | General purpose Output 5 |
| 10  | GND    | Ground                   |

#### CN12 – Reserved: JST B4B-ZR

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1   | 5V     | 5V          |
| 2   | D-/RG3 | Reserved    |
| 3   | D+/RG2 | Reserved    |
| 4   | GND    | Ground      |



#### **Temp1 – Temperature sensor 1:** WAFER 3P 2.5mmP (JST XH COMPA)

| Pin | Symbol | Description                |
|-----|--------|----------------------------|
| 1   | GND    | Ground                     |
| 2   | PICVDD | 3.3V                       |
| 3   | TMP1   | Temperature Senor Output 1 |

#### Temp2 - Temperature sensor 2: WAFER 3P 2.5mmP (JST XH COMPA)

| Pin | Symbol | Description                |
|-----|--------|----------------------------|
| 1   | GND    | Ground                     |
| 2   | PICVDD | 3.3V                       |
| 3   | TMP2   | Temperature Senor Output 2 |

#### Temp3 - Temperature sensor 3: WAFER 3P 2.5mmP (JST XH COMPA)

| Pin | Symbol | Description                |
|-----|--------|----------------------------|
| 1   | GND    | Ground                     |
| 2   | PICVDD | 3.3V                       |
| 3   | TMP3   | Temperature Senor Output 3 |

#### JA2 – Alternative power input connector (5Vdc): WAFER 2P 2.5mmP (JST XH COMPA)

| Pin | Symbol | Description        |
|-----|--------|--------------------|
| 1   | 5V     | Alternate 5V input |
| 2   | GND    | Ground             |

#### J3 – Ambient light sensor connector: HRS DF13-2P-1.25DSA THR/STRI

| Pin | Symbol | Description        |
|-----|--------|--------------------|
| 1   | Sensor | Light Sensor Input |
| 2   | PICVDD | 3.3V               |

#### PP1 - Power input: Micro USB (5Vdc)

| Pin | Description      |
|-----|------------------|
| 1   | Micro USB - 5Vdc |
| 2   | NC               |
| 3   | NC               |
| 4   | NC               |
| 5   | Ground           |





- USA: Digital View Inc. 18440 Technology Drive Building 130 Morgan Hill, CA 95037 Tel: (1) 408-782 7773 Fax: (1) 408-782 7883 Sales: <u>ussales@digitalview.com</u>
- EUROPE: Digital View Ltd. The Lake House Knebworth Park Herts, SG3 6PY UK Tel: (44) (0)20 7631 2150 Fax : (44) (0)20 7631 2156 Sales :uksales@digitalview.com
  - ASIA: Digital View Ltd. 2/F Bamboos Centre 52 Hung To Road Kwun Tong Hong Kong Tel: (852) 28613615 Fax: (852) 25202987 Sales: <u>hksales@digitalview.com</u>

Specifications subject to change without notice

Application Note - Application note for Web Console

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