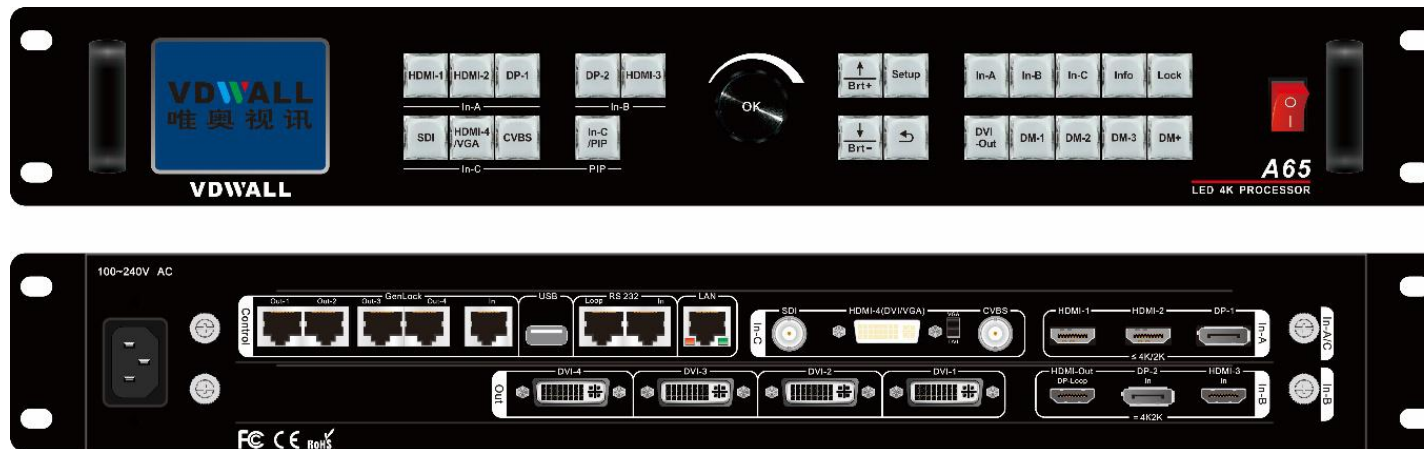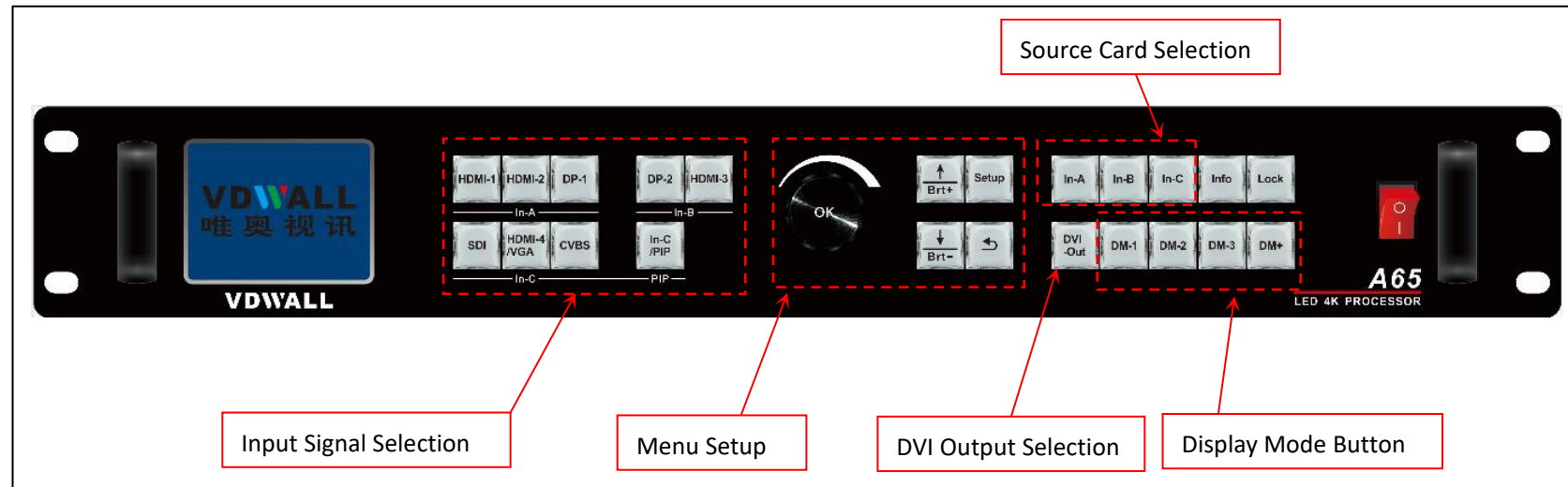# A65 User Quick Setup Guide

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2020.04

1. Front Panel Button

Category	Button	Description
Input Signal Selection Button	**HDMI1**、**HDMI2**、**DP-1**、**DP-2**、**HDMI-3**、**SDI**、**HDMI-7**、**CVBS**	**A65** built in 3 input cards，identified as：In-A、In-B、In-C. In-A can access in 4K or 2K signal，In-B only support 4K2K signal，In-C support 2K signal. Press signal button directly to select signal channel for each input card, if selected signal is valid, button indicator will light up, or else flicker. Press **VGA** button of In-C to automatically calibrate VGA signal.
	In-C/PIP	In-C provides PIP/POP dual image display. Press this button, button indicator light up, PIP/POP function will be activated，henceforth select sub-Image source
Source Card Selection Button	**In-A**、 **In-B**、 **In-C**	Source card selection button. Press this button to switch **A65** signal source card, corresponding button indicator will light up.
DVI Output Port Switch Button	**DVI-Out**	In menu setup, press this button to switch DVI output port. When **A65** in Cascading mode, If slave A65 Genlock signal locked, button indicator light up, or else flicker.
Lock Info Button	**Lock**	Button lock. Press this button directly, button indicator will light up, all button on front panel will be invalid, except **Lock** button itself, so as to avert misoperation. Press this button 3 times continually to exit button lock mode, button indicator will light off.
	Info	Information button，press this button to check **A65** setup information and firmware version, press continually to turn page

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3

Category	Button	Description
Menu Setup Button	**Setup**	Menu setup button. **A65** in **operation mode**, press this button to enter menu setup
	Ok	**Knob** or **OK** button, rotate this button to adjust setup value, press this button to save or apply configuration
	↓ Brt− ↑ Brt+	Up and Down selection button. **A65** in **configuration mode**, press this button to select menu item. In **operation mode**, press this button directly to adjust output image brightness
	↵	Return or Exit button. Press this button to exit present setup and return to previous setup menu, until **A65** enter **operation mode**
Display Mode Selection Button	**DM-1**、 **DM-2**、 **DM-3**	Display mode selection button. Display mode can preset size&position of input and output signal. Press **DM-1**、 **DM-2**、 **DM-3** directly to recall different display mode; in menu setup, press **DM-1**、 **DM-2**、 **DM-3** to select target display mode for parameter saving
	DM+	More display mode selection button. **A65** provides 16 preset display mode，identified as：DM1、DM2、DM3、 DM4、DM5、DM6、DM7、 DM8、DM9、DM10、DM11、DM12、DM13、DM14、DM15、DM16. the last 3 display mode for backup usage, can't be modified or recalled directly. Press ↑ 、↓ button to select different display mode，press **OK** button to confirm and apply

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4

2. Rear Panel Port Description
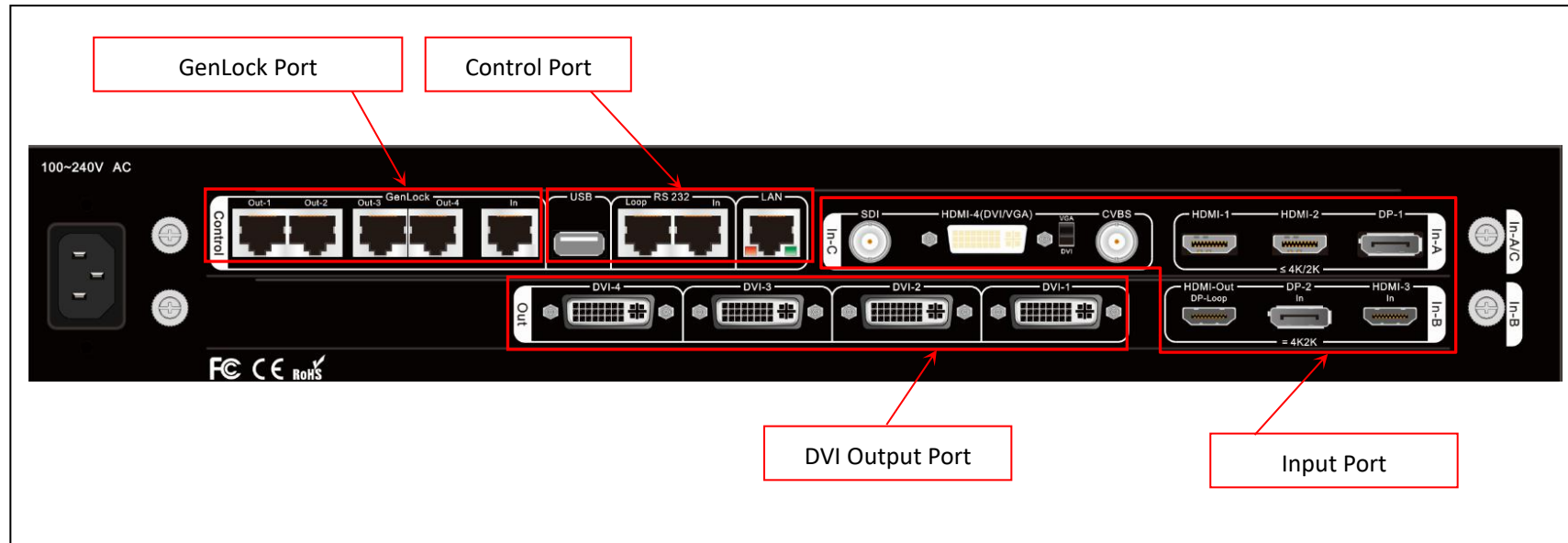
1） **Input Signal Port**

A65 provides 3 input card：

➢ In-A is 4K input card，provides HDMI2.0×2 and DP1.2×1，can access in 4K2K_60Hz UHD signal or 2K HD signal

➢ In-B is also 4K input card，offers HDMI2.0×1 and DP1.2×1，only support 3840*2160_60/50/30/25/24 Hz UHD signal

➢ In-C is 2K input card，including CVBS×1、3G-SDI×1、HDMI（DVI / VGA）×1 ，HDMI version is HDMI1.3. HDMI port compatible with DVI and VGA signal，when plug in VGA signal，set the DIP switcher to VGA side

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5

2）**DVI Output Port**

➢ **A65** built in 1 output card，allow 4 DVI splicing. Default output resolution is 1920*1080_60Hz，user defined output resolution available

3）**Communication Control Port**

➢ LAN：TCP / IP network control

➢ USB and RS232 control

4）**GenLock Cascading Port**

➢ **A65** provides multiple device cascading，so as to extend input and output resolution

➢ When **A65** operating as slave processor, GenLock In port receive command signal from master **A65** GenLock Out port，
so forth realize completely synchronized splicing

➢ Single **A65** offers Out-1、Out-2、Out-3、Out-4 total 4 GenLock output port，support 5 **A65** cascading

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6

3. A65 Image Processing Procedure

S1: Input signal selection

S2: Source selection

Output processing：Genuine 4k2K_60Hz

3840

HDMI-1
HDMI-2
DP-1

4K input
In-A

1 from 3

3:1

HDMI-3
DP-2
DP-Loop

4K input
In-B

1 from 2

1 from 3

2160

SDI-1
HDMI-1
CVBS-1

2K input
In-C

1 from 3
2 from 3
Via PIP

S3: Image cropping of input signal

S4: Output image setup

DVI-1

- - - - - - -

DVI-4

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7

Description：

1） **A63 image processing procedure is divided into 4 main steps:**

    S1：Input signal selection

    S2：Source card selection

    S3：Image cropping of input signal

    S4：Output image size&position setup

2） **Input signal selection（S1）**

    2.1） **A65** built in 3 input cards，including：

        4K input card：In-A

        4K direct input card：In-B

        2K input card：In-C

    2.2） In-A support 4K or 2K signal，select signal channel from HDMI-1、HDMI-2 or DP-1

    2.3） In-B is 4K direct input card，can only access in 3840×2160_60Hz/50 Hz/30 Hz/25Hz/24Hz/23Hz standard 4K signal. Select signal channel from HDMI-3 or DP-2

    2.4） In-C is 2K input card，select signal from SDI-1、HDMI-6 or CVBS-1. On condition PIP-C function activated, user can select the other sub image source

    2.5） Press front panel button directly to select signal channel for each input card

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8

3）Source card selection（S2）

3.1） **A65** select signal source from In-A、In-B or In-C card

3.2） Press **In-A**、**In-B** or **In-C** button to select source card，button indicator will light up

4）Image cropping of input signal （S3）

4.1） **A65** offers 4 DVI output

4.2） Each DVI can display whole or partial 3840×2160 image，as S3 show，the image in dotted frame

5）Output image size&position setup（S4）

5.1） Each DVI can display cropped content (Finished in step 4.2) in any size and position

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9

4. Adjustment And Setup

Step1：Input And Output Connection

1.1） Plug input signal cable to **A65**

1.2） Connect DVI output to sending card or LCD

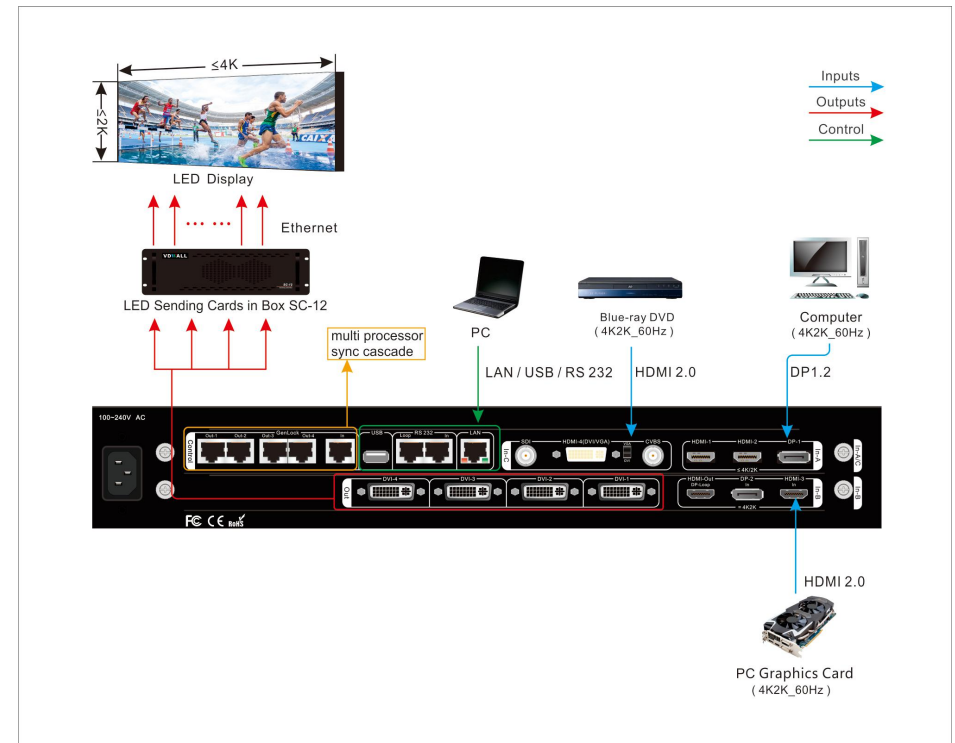1.3） Usually，solution diagram as Figure 4-1：

Figure 4-1

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10

Step2：Power On、Set Output Resolution

2.1） **A65** power on，wait for boot up

2.2） As Figure4-3，LCD boot up interface

2.3） In-A select HDMI1 input

In-B select HDMI3 input

In-C PIP activated, main image source HDMI4，sub-image SDI

If selected signal valid, button indicator on, or else flicker

2.4） Source card is In-C

2.5） Current display mode DM1

2.6） In operation mode，press **Setup** enter **A65** menu setup，

Press ↑、↓ and **OK** button，enter menu" *5.1　Out Res.*"，

rotate **Knob** to select target output resolution. Press ↓

button，select"*5.2　Init Data*"，press **OK** to confirm and apply，

A65 will automatically reboot and apply the new output resolution

```
In-A: HDMI1
In-B: HDMI3
In-C: HDMI4              PIP: SDI
------------------------------------
Output Mode:      DM1
Input Source:     In-C
Out Port:         DVI4
In Pos.&Size:     (0,3840,0,2160)
Out Pos.&Size:    (0,1920,0,1080)
```

Figure 4-2

```
5. System
------------------------------------
5.1 Output Res.      1920×1080_60 Hz
5.2 Init Data        Press <OK> to apply
------------------------------------
```
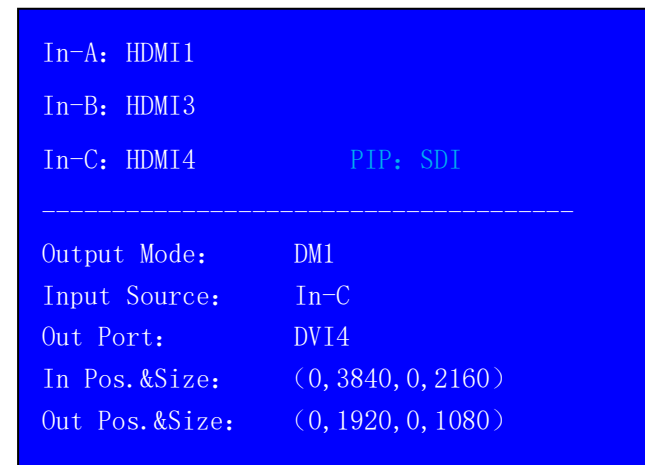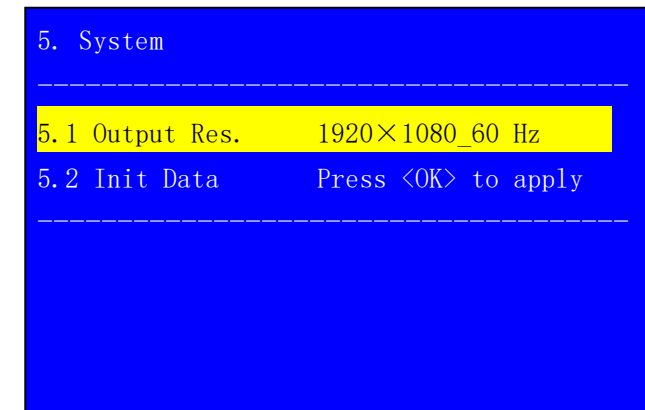
Figure 4-3

Step3 ：Select Signal Channel For Each Input Card

3.1）Press front panel button to select input signal

3.2）If selected signal is valid, button indicator light up, or else flicker

3.3）As Figure4-4，**A65** LCD shows source card In-C

3.4）Press **In-C/PIP** button to activate In-C PIP/POP function，hence select the other sub-image source

Step4：Select Source Card

4.1）In operation mode，press **In-A**、**In-B** or **In-C** to select source card，
button indicator will light up

4.2）**A65** only display one source card image at one time,
LCD interface as Figure4-4

```
In-A: HDMI1

In-B: HDMI3

In-C: HDMI4                PIP: SDI
_____
Output Mode:       DM1
Input Source:      In-C          Source Card
Out Port:          DVI4
In Pos.&Size:      (0,3840,0,2160)
Out Pos.&Size:     (0,1920,0,1080)
```

Figure 4-4

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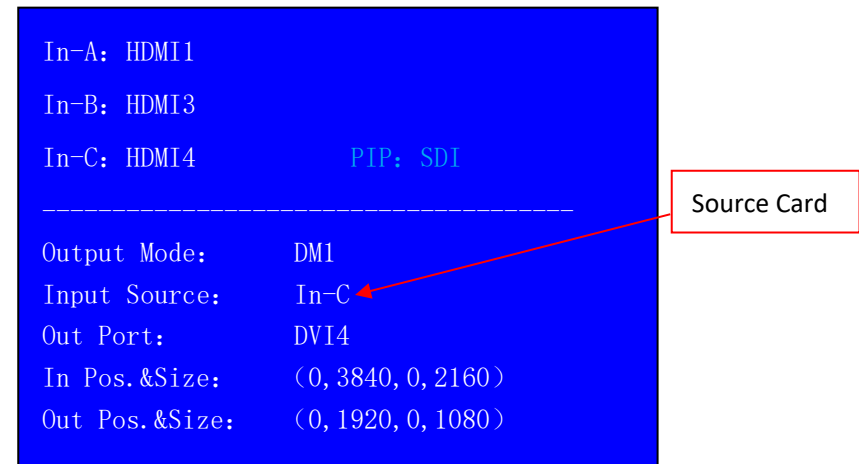Nanshan District, Shenzhen, China   **TEL**: 0755-26750210

12

Step5：Input Source Image Cropping

5.1） **A65** provides 4 DVI splicing，each DVI support random size&position cropping of input 3840*2160 image. As Figure 4-5, DVI-1 display cropped image in red dotted frame, DVI 4 display cropped image in blue dotted frame

5.2） The size&position of cropped image is defined by the following 4 parameters
Input width 　　　　　（In_Width）
Input horizontal start 　（In_H_Start）
Input height 　　　　　（In_Height）
Input vertical start 　　（In_V_Start）

5.3）Enter menu "3.2　Manual Mosaic"：

　5.3.1）Select display mode for parameter saving, press **DM1**、**DM2**、**DM3** or **DM+** to select target display mode

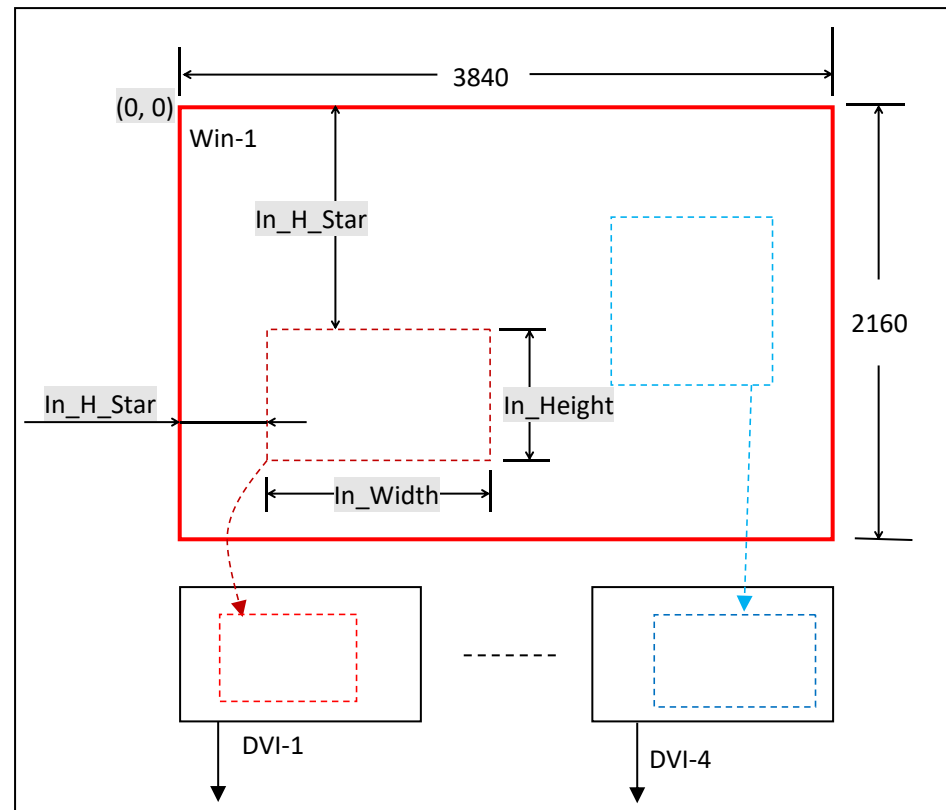　5.3.2）Select DVI output port that need configure, press **DVI-Out** button to shift DVI output

Figure 4-5

As Figure 4-6：In DM1, DVI1 Manual Mosaic parameters

5.3.3）The cropped image displayed by DVI 1 is defined by the following
      parameters：

" 3.2.1   In Width "

" 3.2.2   In H_Start "

" 3.2.3   In Height "

" 3.2.4   In V_Start "

Press ↑ 、↓ button select item，rotate **Knob** to adjust value，

press **OK** button to save and apply

5.4）Please refer to《Appendix 1》for detailed description of manual mosaic

```
3.2 Manual Mosaic                    DM1/DVI1
——————————————————————————————————————————————
3.2.1 In Width        3840         3840
3.2.2 In H_Start      0            0
3.2.3 In Height       2160         2160
3.2.4 In V_Start      0            0
3.2.5 Out Width       1920         1920
3.2.6 Out H_Start     0            0
3.2.7 Out Height      1080         1080
3.2.8 Out V_Start     0            0
——————————————————————————————————————————————
```

Figure 4-6

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14

Step6：Set Size&Position Of Output Image

6.1）**A65** 4 DVI output ports can randomly size
and position image within output resolution.
For instance, output resolution is 1920×1080@60Hz，
user can assign output image at any size&position in
range of 1920×1080

6.2）Refer to Figure 4-7, the picture in red dotted frame
is DVI-1 output image，defined by the following
4 parameters：

Output width 　　　　（Out_Width）
Output horizontal start（Out_H_Start）
Output height 　　　　（Out_Height）
Output vertical start 　（Out_V_Start）

6.3）Enter menu "*3.2　Manual Mosaic*"：

6.3.1）Select display mode for parameter saving

Press **DM1**、**DM2**、**DM3** or **DM+** to select target

display mode

6.3.2）Press **DVI-Out** button to select target DVI output port

Figure 4-7

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15

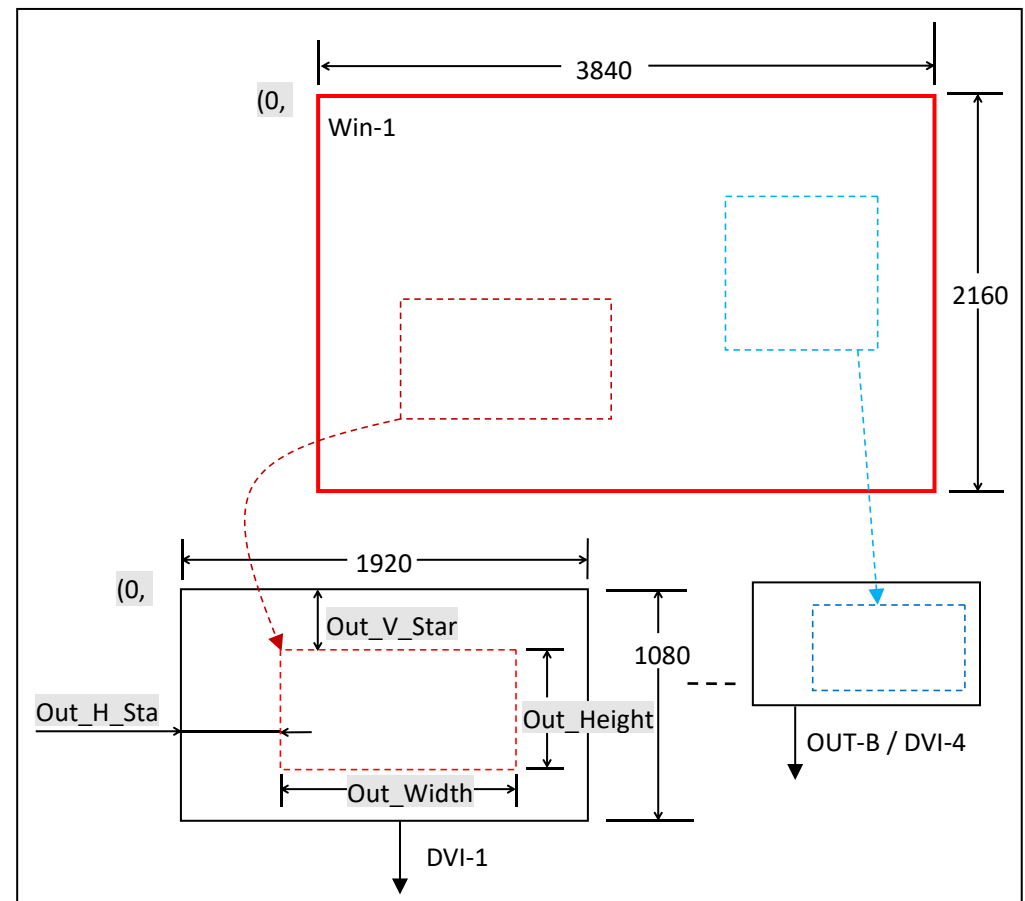As Figure 4-8：Set DVI-1 output image size&position in DM1

6.3.3）Selected DVI output image size&position is defined by the following 4 parameters：

" 3.2.5　Out Width "

" 3.2.6　Out H_Start "

" 3.2.7　Out Height "

" 3.2.8　Out V_Start "

Press ↑ 、↓ select menu item，rotate **Knob** to adjust value, press **OK** to save and apply parameters

6.4）Usually the sending card default start point(x,y) is (0,0)

So processor default output start point：

Out H_Start = 0

Output V_Start = 0

Output Width = LED actual pixels in horizontal

Output Height = LED actual pixels in vertical

3.2 Manual Mosaic   DM1/DVI1
———————————————————————————————

3.2.1 In Width	3840	3840
3.2.2 In H_Start	0	0
3.2.3 In Height	2160	2160
3.2.4 In V_Start	0	0
3.2.5 Out Width	1920	1920
3.2.6 Out H_Start	0	0
3.2.7 Out Height	1080	1080
3.2.8 Out V_Start	0	0

———————————————————————————————

Figure 4-8

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16

Fast Mosaic

1）Fast Mosaic is calculation added splicing method. Compare to Manual Mosaic
Fast Mosaic more intuitive and convenient

2）As figure 4-9，the LED is composed of 4 unit screen，each unit screen
resolution as following table

LED1	1728×1056	LED2	1824×1056
LED3	1728×960	LED4	1824×960

LED total resolution：3552×2016

3552

1728　　　　　　　1824

(0,0)	(1728,0)
LED1= 1824×1056	LED2 = 1728×1056
(0,960)	(1728,960)
LED3 = 1824×960	LED4 = 1728×960

1056

2016

960
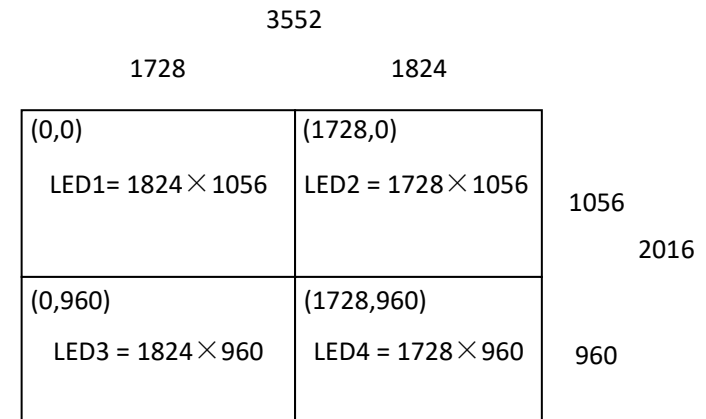
Figure 4-9

3）Use **A65** 4 DVI output to drive 4 unit screen, connection as following table：

DVI-1	LED1	DVI-2	LED2
DVI-3	LED3	DVI-4	LED4

4）Enter menu" *3.1   Fast Mosaic*"，configure each DVI accordingly，as Figure 4-10 、Figure 4-11 、Figure 4-12 、4-13

5）In Fast Mosaic setup，the top left coordinate is(0,0), calculate each unit screen coordinate accordingly

6）After configure menu item 3.1.1---3.1.7，press ↓ button to "3.*18   Auto Calculation*" , press **OK** to apply，then
press **DVI-Out** button to shift DVI output port

7）After fast mosaic, if need fine tuning of mosaic parameters, enter menu "*3.2   Manual Mosaic*"

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17

```
3.1 Fast Mosaic              DM1/DVI1
_____
3.1.1 LED Panel         Panel
3.1.2 LED Total Width    3552
3.1.3 LED Total Height   2016
3.1.4 Unit Width         1728
3.1.5 Unit Height        1056
3.1.6 Unit H_Start       0
3.1.7 Unit V_Start       0
3.1.8 Auto Calculation   OK To  Apply
_____
```

Figure 4-10

```
3.1 Fast Mosaic              DM1/DVI2
_____
3.1.1 LED Panel         Panel
3.1.2 LED Total Width    3552
3.1.3 LED Total Height   2016
3.1.4 Unit Width         1824
3.1.5 Unit Height        1056
3.1.6 Unit H_Start       1728
3.1.7 Unit V_Start       0
3.1.8 Auto Calculation   OK To  Apply
_____
```

Figure 4-11

```
3.1 Fast Mosaic              DM1/DVI3
_____
3.1.1 LED Panel         Panel
3.1.2 LED Total Width    3552
3.1.3 LED Total Height   2016
3.1.4 Unit Width         1728
3.1.5 Unit Height        960
3.1.6 Unit H_Start       0
3.1.7 Unit V_Start       1056
3.1.8 Auto Calculation   OK To  Apply
_____
```

Figure 4-12

```
3.1 Fast Mosaic              DM1/DVI4
_____
3.1.1 LED Panel         Panel
3.1.2 LED Total Width    3552
3.1.3 LED Total Height   2016
3.1.4 Unit Width         1824
3.1.5 Unit Height        960
3.1.6 Unit H_Start       1728
3.1.7 Unit V_Start       1056
3.1.8 Auto Calculation   OK To  Apply
_____
```

Figure 4-13

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18

Appendix 1：How To Manually Calculate Mosaic Parameters

Ap1.1）As Figure Ap1-1, need **A65** display AP1-1 image on AP1-2 LED, **A65** 4 DVI output jointly drive the screen

Ap1.2） Calculate each DVI input and output parameters correctly, so as to guarantee display effect

Ap1.3） **A65** " *3.1   Fast Mosaic*" can conveniently calculate input and output parameters

Ap1.4） On some special occasions, we may use " *3.2 Manual Mosaic* " to calculate mosaic parameters.

As the below formula

$$\frac{Y1}{1056} = \frac{2160}{2016}$$

so：Y1=(2160×1056)÷2016=1131

similarly：

$$\frac{X1}{1728} = \frac{3840}{3552}$$

then：X1=(3840×1728)÷3552=1868

Finally we secure the parameters as below：
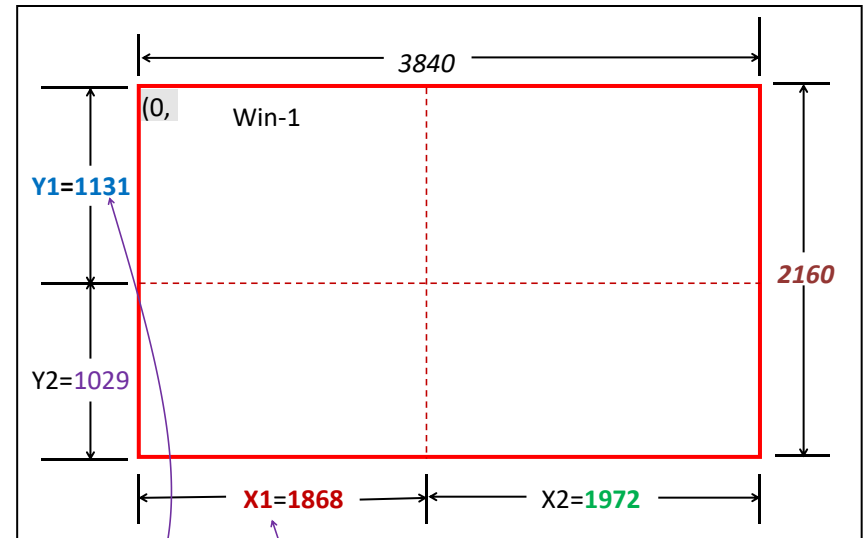
Y1=1131   Y2=2019

X1=1868   X2=1972

Figure AP1-1
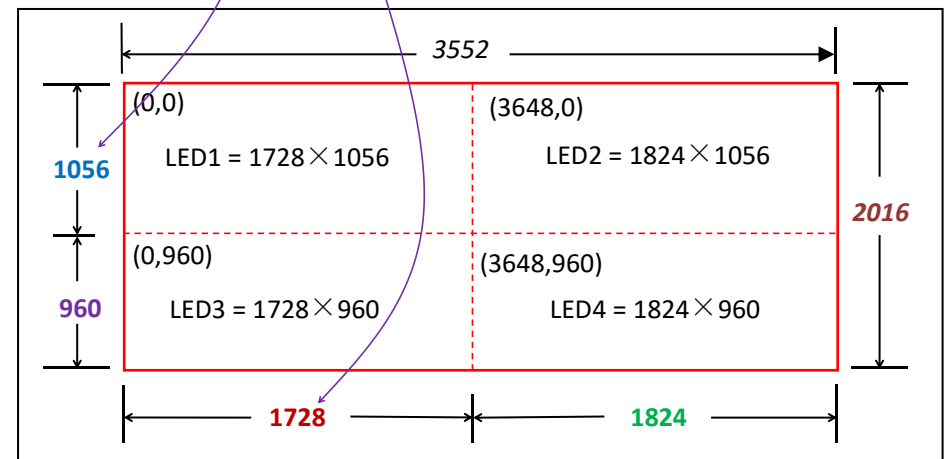
Figure AP1-2

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19

Ap1.5）Finally，we obtain the manual mosaic parameters as following table：

	DVI-1	DVI-2	DVI-3	DVI-4
	LED1	LED2	LED3	LED4
3.2.1 In Width	1868	1972	1868	1972
3.2.2 In H_Start	0	1868	0	1868
3.2.3 In Height	1131	1131	1029	1029
3.2.4 In V_Start	0	0	1131	1131
3.2.5 Out Width	1728	1728	1824	1824
3.2.6 Out H_Start	0	0	0	0
3.2.7 Out Height	1056	1056	960	960
3.2.8 Out V_Start	0	0	0	0

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20