

## **C-8B**

## **Multi-Format 8 Buttons Controller**

# **User Manual**



## Introduction

The VitBest C-8B is multi-format 8 buttons controller with 2 x Rs-232, 2 x Relay,1 IR and LAN. As one of the Multi Video Plus series C-8B support webserver and IP control for buttons controller programming, it also support IR learning. The controller has Europe and US standard front panel.

## **Panel Description**

Front panel



All the buttons can be programed to control each Rs-232, relay, IR, timer, and IP control. The cover of each buttons can be take out easily for labelling.

## Rear panel



- 1. Power: DC Power Input; 12-24V DC input
- 2. Relay 1: An electrically operated switch;
- 3. IR output power jump: left 2 pin jump for output 5V, right 2 pin jump for output 10V;
- 4. Relay2: An electrically operated switch;
- 5. IR: Infrared radiation digitaldata output;
- 6. Rs-232\_2: Rs-232 data output;
- 7. Rs-232\_1: Rs-232 data output;
- 8. LAN( PoE): LAN port with PoE power and wed server control.

## Top Panel



1. IR reader: Learning IR sensor. Frequency is 38K.

#### Initialization configure

Before first use, user need to initial C-8B configuration. Keep pressing first, third and fifth button, the light of the buttons will be off, after that the red light one by one. Pressing the buttons until all the buttons become red and flash to green. The process as below. This method also can restore factory settings.



Web Server

The factory default IP: 192.168.2.10

To access to the product we server, user could direct connect the PC LAN port to the C-8B LAN port with the straight RJ45 cable. After making the connection, got to network connection of the PC and revised the IP property to static IP as below. Once done, open a web brower and enter the 192.168.2.10 to access to the web server.

nternet Protocol Version 4 (TCP/IPv4) I	Properties ? X
General	
You can get IP settings assigned autom this capability. Otherwise, you need to for the appropriate IP settings.	atically if your network supports ask your network administrator
Obtain an IP address automaticall	y
Use the following IP address:	
IP address:	192 . 168 . 2 . 178
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192.168.2.1
Obtain DNS server address autom	atically
• Use the following DNS server add	esses:
Preferred DNS server:	
<u>A</u> lternate DNS server:	• • •
Validate settings upon exit	Ad <u>v</u> anced
<u></u>	OK Cancel

For the C-8B connected to the local area network, please update the C-8B product IP to match the LAN network setting from the web server.

For example if the LAN IP is set as 192.168.88.XXX, then please revise the product to 192.168.88.1XX. Once the IP is set, then you could access to the device from the PC in the same network.

The factory default: IP: 192.168.2.10 User ID: user Password: 132456

Once access to the C-8B web server, the factory default the user ID is **user** and the password is **123456**.

#### Setting Menu

After login to web server, at **Setting** Menu there are IR, Lan and Rs-232 parameter setting.

IR\_Learning Please go to IR Event chapters to learn detail info.

Lan \_Control

User could set DHCP, IP Address, Net Mask, Gateway, Tcp Server or Client and Host IP TCP Port info in the Net Control Menu.

System hardware, boot loader and software version info is listed in Version information Menu.

vet Control			
Use DHCP:	○ On	• Off	
IP Address:	192.168.2.10		
Net Mask:	255.255.255.0		
Gateway:	192.168.2.1		
TCP Protocol:	Server	© Client	
Host IP:	192.168.2.67		
TCP Port:	1001		
		Apply	
Version Infor	mation		
System Softwar	e:	V2.0	
System Hardwa	are:	V2.0	
Bootloader Soft	ware:	V2.0	

## **Rs-232 Setting**

User can set Rs-232\_1 and Rs-232\_2 Baud Rate, Data Bits, Stop bit and Parity. The factory default as blow.

#### Rs232 Setting

Rs232_1		Rs	232_2
Baud rate:	115200 🔻	Baud rate:	115200 🔻
Data bits:	8 •	Data bits:	8
Stop bits:	1 •	Stop bits:	1 •
Parity bits:	None •	Parity bits:	None v

## Virtual Keypad Menu

User could click Virtual Keypad to toggle real button function on web page.



#### Articles Menu

Articles Menu is for button function setting. There are 8 button inside, each button support 2 Mode,6 Action, timer control between each Action, and 11 Events selection of each Action.

Virtual Keypad	Mode									St	andard 🔻
Articles											
Button 1 4	Action	Event		Time(s)	Command Data	IR		Hex			
Button 2			_		[						
Button 3	1	None	v	0			Ÿ				
Button 4	2	None	×	0			Ŧ				0
Button 5											
Button 6	3	None	٠	0			Ŧ				•
Button 7	4	None	•	0			Ŧ				0
Button 8											
Setting	5	None	۲	0			Ŧ				•
	6	None	٣	0			٣				0
		Submit				Init Led:			۲	0	•

## Mode Selection

Button function of C-8B support Standard and Toggle Mode. When button is in Standard Mode, each time of press execute the same action. Toggle Mode support 2 different action in 1 button, it could be execution alternately when user press it. We call it Release and Latch. User could define Led color to distinct the working mode. It is widely use in turning on and off application.

ode								Sta	andard
Action	Event	Time(s)	Command Data	IR		Hex			
1	None •	0							
2	None •	0			Ŧ				
3	None •	0			Ŧ				
4	None •	0			Ŧ				
5	None •	0			Ŧ				
6	None •	0			T				
1	Submit			Init Led:		<	۲	0	0

#### Standard Mode

Mode	Latch •						Tog	igle 🔻
Action	Event	Time(s)	Command Data	IR	Hex			
1	None •	0		<b>v</b>				
2	None •	0		<b>v</b>				
3	None •	0		¥				
4	None •	0		▼				
5	None •	0		<b>T</b>				
6	None •	0		<b>v</b>				
	Submit			Init Led:		۲	0	

Toggle Mode

## **Event Selection**

Note: Introduction is base on Standard Mode as Toggle Mode is same operation.

#### C-8B support 11 events

Event	
Event	None: Do nothing
None T	IR: Sent out IR code
None	IP_Send: Sent data to TCP Server by LAN
IR	IP_Ack: Get data from TCP Client by LAN
IP_Send	Led: Led color control
IP_Ack	Relay1 NO: Trigger Relay1
Led	Relav2 NO:Trigger Relav2
Relay1_NO Relay2_NO	Rs232 1: Sent data to RS232 Port 1
Relay2_NO Rs232_1	Rs232 2: Sent data to RS232 Port 2
Rs232_2	Rs232 1Ack: Get data From RS232 Port 1
Rs232_1Ack	Dc222_2Ack: Cot data from DC222 Port 2
Rs232 2Ack	RSZSZ_ZACK. GEL UALA ITOM RSZSZ POLLZ

## None Event

Both at Standard and Toggle Mode, none event do nothing and will clear all the Command Data

						Sta	indard 🔻
Event	Time(s)	Command Data	IR	Hex			
None •	0		T				
Latch V						-	-1
					-	Tog	gie •
Event	Time(s)	Command Data	IR	Hex			
None •	0		<b>.</b>				
	Event Latch Event None V	Event     Time(s)       None     0       Latch     •       Event     Time(s)       None     •       None     •	Event     Time(s)     Command Data       None     0	Event Time(s) Command Data IR   None 0 • •   Latch • • •   Event Time(s) Command Data IR   None • •	Event Time(s) Command Data IR Hex   None 0 • • •     Event Time(s) Command Data IR Hex   None • • • •	Event       Time(s)       Command Data       IR       Hex       IR         None       0       ••••••••••••••••••••••••••••••••••••	Event       Time(s)       Command Data       IR       Hex       IR         None       0       IR       IR

### IR Event

User should learned IR code before using the IR code sent function. Go to Setting\IR Learning menu.

	System support 10 IR code storage.
Virtual Keypad	1. input the name of IR code(use underscore to replace
Articles	space bar) 2. click IR Learning
	3. click Save, "INFRARED MODULE IS LEARNING" will
Setting	display on the State Frame
IR_Learning <	4. present an IR signal to the IR receiver port within 30 seconds
Lan_Control	5. "INFRARED MODULE STUDY COMPLETED" display on
De 232 Sot	the State Frame mean learning is finish
RS232_Set	6. If IR receiver did not get IR signal input within 30 seconds, it will close the learning action and display



## **IR Learning**



IR L	earning						
N	Label	State	Learning	Ν	Label	State	Learning
1	IR_text_1	Learning over time		6			
2				7			
3				8			
4				9			
5				10			
						Save	

## IR code sending

Connect IR transmitter to system and select the IR code in the IR pull-down menu and click Submit button.

Mode							Sta	andard 🔻
Action	Event	Time(s)	Command Data	IR	Hex			
1	IR	• 0		IR_text_1	•			
2	None	-			T			
3	None	▼ 0		3	T			
4	None	• 0			<b>v</b>			
5	None	•			•			
6	None	▼ 0		$\nearrow$				
	Submit			Init Led:		۲		

User also could input IR code directly into the Command Data area

Mode							Sta	andard 🔻
Action	Event T	īme(s)	Command Data		IR	Hex		
1	IR •	089168310870	05500F011000D9168311	IR_text_1	•			

## IP\_Send Event

IP Send Event could sent ASII or HEX to IP address. Format: IP address\*Port\*Data Example: Sent 123456789 to 192.168.2.51, the format is 192.168.2.51\*1001\*123456789, ASII

so do not click Hex.

Mode						S	tandard 🔻
Action	Event	Time(s)	Command Data	IR	Hex		
1	IP_Send ▼	0	192.168.2.51*1001*123456789	Ţ			

## IP\_Ack Event

IP Ack Event is for the IP controller get the feedback of device and compare with predefine data to decide the action continue or stop. If controller did not get feedback, it will auto resend data 5 times again. If there are many IP\_Send event in the system, IP address and port of IP\_Ack event will relate to the previous IP\_Send evnt. Make Sure there is a IP\_Send event before IP\_Ack event.

Mode						St	andard 🔻
Action	Event	Time(s)	Command Data	IR	Hex		
1	IP_Send •	0	192.168.2.51*1001*123456789		•		
2	IP_Ack •	0	helloworld		•		

## IP Button Trigger Command >BtnX<cr>

IP command is a command for many Button Controllers work together. It could trigger Button Controller to execute a button event. >BtnX<cr> X is button number in 1-8, <cr> is HEX 0D Example: Sent IP command ">Btn3<cr> " to trigger IP address 192.2.168.2.100 ,Port 1001 button controller Button 3 event. 1. Select IP\_Send event 2. Input 192.2.168.2.100\*1001\* 3E 42 74 6E 33 0D at Command Data area and click Hex (3E 42 74 6E 33 0D is the Hex code of >Btn3<cr>) 3. Click Submit Button

IP\_Send/ IP\_Ack Event and IP Button Trigger Command is a main feature of IP control, user could build up flexible IP control application by making good use of them.

LED Event

LED Event is for changing button LED color, system offer LED off, LED Green and LED Red function. User could select LED Event than input button number at the Command Data area and select the color.

Mode						St	andard 🔻
Action	Event	Time(s)	Command Data	IR	Hex		
1	Led •	0	12345678	Ŧ		۲	

## Relay1\_NO/Relay2\_NO Event

Connect Button controller relay port with power supply (Up to DC 24V) and the device user want to control (or other relay to control high voltage). The relay contact of button controller is normally open. Select Relay and press Submit, shows as below. Once press button, Relay is closed and will open when press it again.

Mode								Sta	andard 🔻
Action	Event	Time(s)	Command Data	IR		Hex			
1	Relay1_NO ▼	0			٣				
2	None •	0			Ŧ				
3	None •	0			Ŧ				
4	None •	0			Ŧ				
5	None •	0			Ŧ				
6	None •	0			Ŧ				
	Submit		2	Init Led:	_		۲	0	0

### Rs232\_1/Rs232\_2 Event

User can choose RS232\_1 or RS232\_2 port to send data, the factory settings: Baud rate 115200, Data bits 8, Stop bits 1 and none Parity bits.

Standard Mode:

In this Mode and Event, when press the button the button controller will send command data through Rs232 port showed below.

Mode						S	tandard	"
Action	Event	Time(s)	Command Data	IR	Hex			
1	Rs232_1 •	0	Welcome to use MVP-8BC	T				

•	CommUart Assistant (V3.8)	( ×
COMSettings	COM port data receive	
PortNum COM6 🖃	Welcome to use MVP-8BC	
BaudR 115200 💌		
DPaity NONE 🖃		
DataB 8 💌		
StopB 1		
Close		
Recv Options		
🔲 Receive to file		
🗖 Show timestamp		
🗌 Receive as hex		
🗖 Receive pause		
<u>Save</u> <u>Clear</u>		
Send Options		
🗌 Data from file		
🗌 Auto checksum		
Auto clear input		
Send as hex		
Send cyclic	<u></u>	
Interval 1000 ms		
Load Clear		Send
💣 COMSettings	Send: 0 Recv: 1080	Reset

							Sta	andard 🔻
Event	Time(s)	Command Data	IR		Hex			
Rs232_1 •	0	48 45 4c 4c 4f		v				
None •	0			v				
None •	0			v		1		
None •	0			v		0		
None V	0			٣		4		
None v	0			T		•		
Submit		3	Init Led:			۲	•	0
	Event Rs232_1  None  None  None  None  None  Submit	Event         Time(s)           Rs232_1         0           None         0	Event         Time(s)         Command Data           Rs232_1         0         48 45 4c 4c 4f           None         0	Event         Time(s)         Command Data         IR           Rs232_1         0         48 45 4c 4c 4f	Event         Time(s)         Command Data         IR           Rs232_1 •         0         48 45 4c 4c 4f         •         •         •           None •         0         • <td< td=""><td>Event         Time(s)         Command Data         IR         Hex           Rs232_1 •         0         48 45 4c 4c 4f         •&lt;</td><td>Event     Time(s)     Command Data     IR     Hex       Rs232_1 •     0     48 45 4c 4c 4f     •     •     •       None •     0     •     •     •     •       Submit     3     Init Led:     •</td><td>Event     Time(s)     Command Data     IR     Hex       Rs232_1     0     48454c4c4f     •     •       None     0     •     •     •       Submit     3     Init Led:     •</td></td<>	Event         Time(s)         Command Data         IR         Hex           Rs232_1 •         0         48 45 4c 4c 4f         •<	Event     Time(s)     Command Data     IR     Hex       Rs232_1 •     0     48 45 4c 4c 4f     •     •     •       None •     0     •     •     •     •       Submit     3     Init Led:     •	Event     Time(s)     Command Data     IR     Hex       Rs232_1     0     48454c4c4f     •     •       None     0     •     •     •       Submit     3     Init Led:     •

Hex: When click Hex, user can type Hex data in Command Data the Button Controller will send Hex data through Rs232 port.



Note: Same operation is in the Toggle Mode.

Mode	Latch •						То	ggle 🔻
Action	Event	Time(s)	Command Data	IR		Hex		
1	Rs232 1 🔻	0	Welcome to use MVP-8BC		٣			
2	Rs232_2 V	0	Welcome to use MVP-8BC		۳			

#### Rs232\_1Ack and Rs232\_2Ack Event

Rs232\_1Ack and Rs232\_2Ack Event is for the button controller get the feedback of Rs232 device and compare with predefine data to decide the action continue or stop. If controller did not get feedback, it will auto resend data 5 times again. Make Sure there is a Rs232 event before Rs232\_Ack event.

Mode							Sta	indard 🔻
Action	Event	Time(s)	Command Data	IR	Hex			
1	Rs232_1 •	0	123456789	Ţ				
2	Rs232 1Ack V	0	helloworld					
3	None •	0		<b>.</b>				
4	None •	0		<b>T</b>				
5	None •	0		<b>.</b>				
6	None •	0		<b>T</b>				
	Submit			Init Led:		۲	•	

#### IP pass through RS232 Command

IP pass through RS232 command is for user sent data from IP to RS232 or opposite. It mean Button controller act as a control repeater.

>CSNUMTXMsg<CR>

NUM: 0 LAN 1:Rs232 port 1 2:Rs232 port 2

MSG: Data for pass through

<CR> is 0D of HEX

Example:

Hello from RS232 to LAN

3E 43 53 30 54 58 48 65 6C 6C 6F OD

>CS0TXHello<CR>

≻CSOTXHello

Hello from LAN to RS232 port 1

3E 43 53 31 54 58 77 6F 72 6C 64 0D

>CS1TXworld<CR>

>CS1TXworld

## Time(S) application

Each button could execute 6 events in maximum. Time(S) is the time space between 2 events.

Mode								Sta	andard 🔻
Action	Event	Time(s)	Command Data	IR		Hex			
1	Rs232_1 •	5	Hello World		Ŧ				
2	Led 🔻	5	123456		Ŧ		0	0	۲
3	Relay1_NO ▼	5			Ŧ				
4	Relay2_NO ▼	5			Ŧ				
5	IP_Send ▼	5	192.168.2.51*1001*IP_Send		Ŧ				
6	Led v	5	123456		Ŧ		۲	$\odot$	0
	Submit			Init Led:			۲	0	•

### **Update Firmware**

Connect the Button controller with the PC with a network cable.

Press the first and the last button then connect the Button controller with power suply. The Button controller will get into bootloader mode and the LED will flash grreen from first button to last button.

1	SW5
SW2	SW6
SW3	SW7
SW4	8

Open Boot Loader software, type the IP address and TCP Port of the Button Controller as below.

🕡 Boot Loader			×
Local Host IP: 192.168.2.10	Local Host Port: 100		Close Application
Device Name	Card Name	Hardware Version	Software Version
Buttoncontroller	Main	V0.0.0	V0.0.0
File Load:	<b>(</b>	Upgrade	
Successful connection !Binding Po	rtsTCPClient Receiv	ved Data from IP:192.168.2.10	),Port:1001 .::

Click the Button Controller and select the file, after that click Upgrade. Waiting for few seconds for upgrading.

Restore factory settings with hold the first, third and fifth buttons at the same time. Upgrade succeed.