

## LCC-USB-DVI



### FCC/CE Statement

#### **FCC Statement:**

This equipment has been tested and found to comply with the regulations for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this Quick Installation Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case, the user will be required to correct the interference at his/her own expense.

#### **CE Statement:**

This is a Class A product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



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### Introduction

Thank you for purchasing the 2-port Local Console Controller LCC-USB-DVI. With our highly reliable and quality product, users can enjoy countless benefits from using it.

LCC-USB-DVI is a 2-port Local Console Controller with 10 User-preset OSD Image Banks. Users can upload a maximum of 10 user-configurable On-Screen Display (OSD) images either remotely over the network from virtual media or locally from a USB flash drive, using any of its two USB (UPGRADE) ports at console 2. The priority of the console 2 (C2) port is defined as higher than that of the console 1 (C1) port. The unit is operable under two modes (C2 Active-only Mode and C1/C2 Sharing

Mode). In C2 Active-only Mode, the C1 K/M access is blocked. C2 user can select a preferred OSD image from the OSD image banks to be displayed on C1 monitor. In C1/C2 Sharing Mode, both C1 and C2 can access the connected PC, which is also the default operation mode.

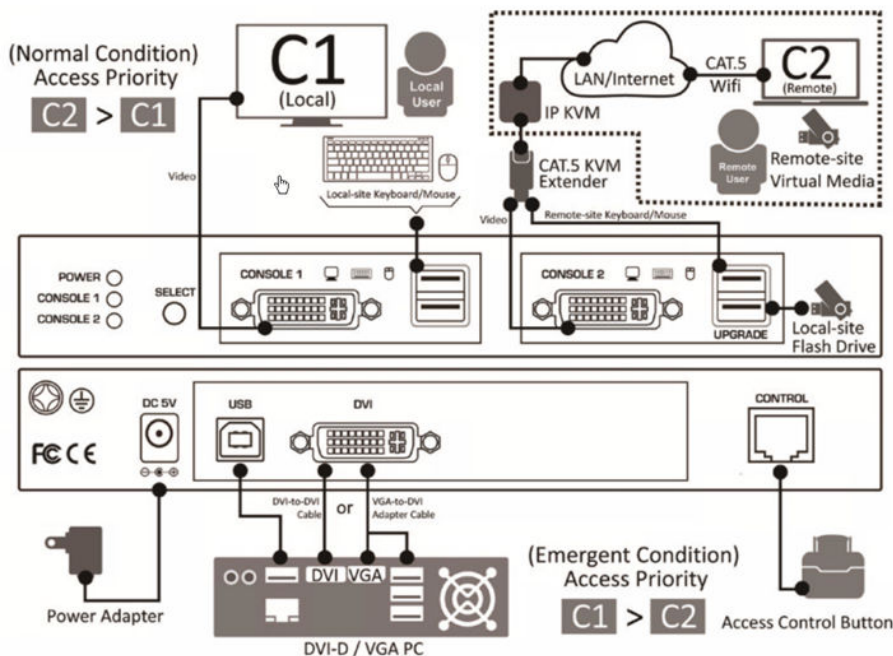
LCC-USB-DVI further provides an emergent maintenance operation activated at local-site Console 1. It can be activated by pressing the front-panel SELECT button or pressing the external Access Control Button connected to unit's IOIO connector. Under this operation, C2 K/M access will be blocked temporarily. The C1 user can again press the SELECT button or Access Control Button to terminate this emergent operation and return to its previous operation mode.

## Package Contents

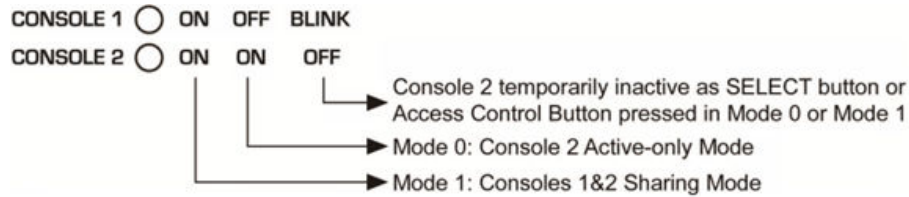
- LCC-USB-DVI unit x 1
- DC 5V/4A Power Adapter x 1
- USB-A to USB-B Cable x 1
- DVI to DVI Cable x 1 (for DVI PC only)
- VGA to DVI Adapter Cable x 1 (for VGA PC)
- DVI to VGA adapter for console x 2

## Connection Diagram

The diagram illustrated below is an example, the actual application may vary. All illustrated computer, accessories and monitors are not included in the package, it is for reference only. Make sure all the devices and peripherals are connected appropriately before using this unit.

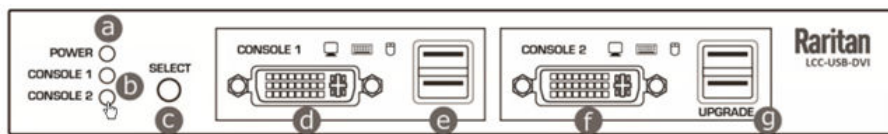


### Console LED indicators vs. Operation Modes



### Front and Rear Panel Overview

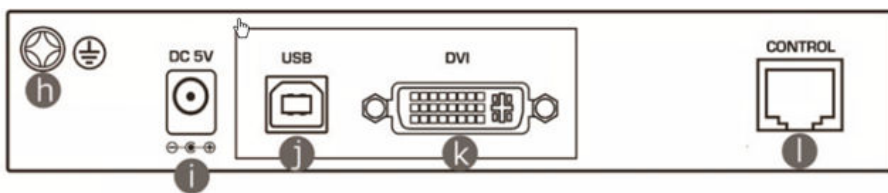
#### Front Panel




#### Front Panel Marking (Console 1 / Console 2)

<b>a</b>	Power LED Indicator
<b>b</b>	Console 1 (C1) / Console 2 (C2) Active LED Indicator
<b>c</b>	Emergency button to toggle* off/on Console 2 K/M access *press and hold 3 seconds
<b>d</b>	DVI-I (Digital/Analog) output (to C1 monitor)
<b>e</b>	C1 Keyboard/Mouse
<b>f</b>	DVI-I (Digital/Analog) output (to C2 monitor)
<b>g</b>	C2 Local-site Flash drive upgrade or Remote-site Virtual Media. Upgrade/ Firmware Upgrade/Keyboard/Mouse

#### Rear Panel



Rear Panel Marking (PC)

h	Grounding terminal
i	5V DC Power Jack
j	USB Type-B Socket (connected to PC via an USB A-to-B cable)
k	DVI-D digital video input (connected to PC DVI-D output). Control Port (for External Push Button)
l	Pin 1(White-orange)/2(Orange): for connecting the External Push Button; Pin 3/4/5/6/7/8: Reserved  

Installation

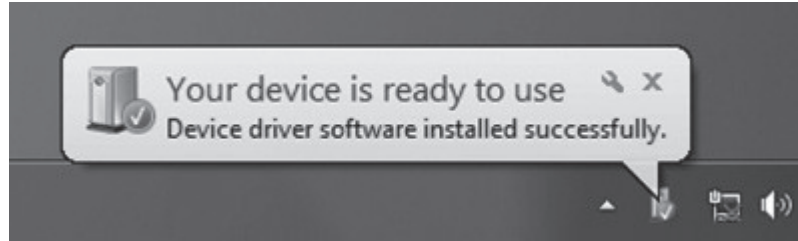
1. Power on your LCC-USB-DVI by connecting the power adapter to (i).
2. Connect (j), (k) to a computer using USB and DVI cables. When using an Access Control Button, connect its two wires to the [NO] position of the terminal block connector on the rear panel as shown in the connection diagram.
3. In Console 1 (to Local-site) section on the front panel, respectively connect a set of a monitor, a keyboard and a mouse to (d) and (e).
4. In Console 2 (to Remote-site) section on the front panel, repeat similar process as above to connect (f) and (g) to another set of monitor/keyboard/mouse.

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Note: The step 4 can also be substituted with the following procedure if the console 2 is to be operated over LAN/Internet: Connect a video input and an USB input of a CAT.5 KVM Extender to (f) and (g) respectively. Next, connect the RJ-45 port of the CAT.5 KVM Extender to a CAT. 5 IP KVM.

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1. At last, power on the computer linked to (j) and (k). the monitor at the Console 1 will prompt a plug-and-play message as below. The connected KVM peripherals are ready to use. Input the Operation Mode Selection hotkey <ScrLk>, <ScrLk>,<M>, <0/1> to select a preferred operation mode.



2. Now you can enjoy using the LCC-USB-DVI unit.

## Operations

You may operate this Local Console Controller as below.

## Front-Panel SELECT Button Operation

The front-panel SELECT button allows you to toggle 3 seconds to off/on the Console 2 K/M access both in two operation modes (Mode 0: C2 Active-only Mode / Mode 1: C1/C2 Sharing Mode). The "C1/C2 Sharing Mode" is the factory default mode. See more details in [7. Quick Reference Sheet] section at the next page for the SELECT button operation.

## Keyboard Hotkeys Operation

You may use various keyboard hotkeys to operate the LCC-USB-DVI unit. Each keyboard hotkey includes at least three (some include four) consecutive keystrokes. The leading two keystrokes are hotkey preceding sequence. Note that a hotkey preceding sequence should be pressed within 2 seconds. Otherwise, the input hotkey preceding sequence will be taken as an invalid one. See more details in [7. Quick Reference Sheet] section at the next page for available keyboard hotkeys.

## Operation Mode Introduction

[Mode 0]: C2 Active-only Mode | <ScrLk>, <ScrLk>, <M>, <0> When entering this mode, the Console 2 user can overlay a preferred OSD image on the Console 1 monitor from unit's 10 builtin OSD image banks. According to the applications, the selected OSD image can be further configured as "Not Displayed", "Displayed", or "Blinking". Note that during this mode, the PC access of the Console 1 will be permanently disabled. On the monitors of both consoles, their upper left corners will display a Text Prompt to indicate the status of the Console 1 OSD display, such as C1-OSD (OFF), C1-OSD (ON), or C1OSD (Blink).

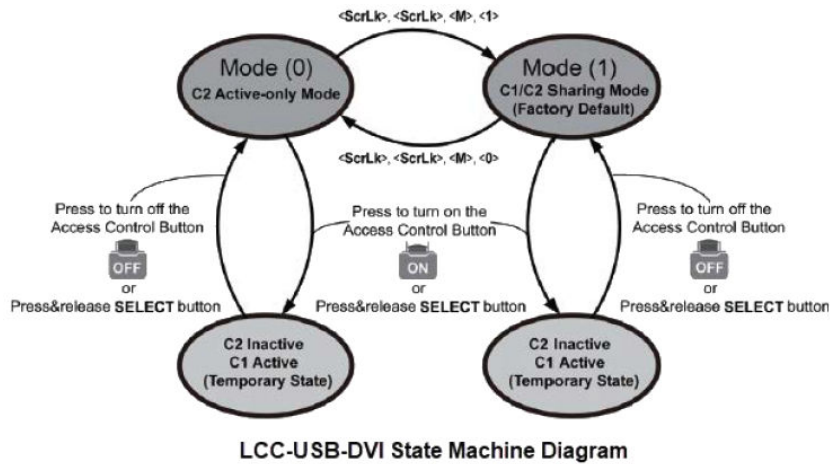
[Mode 1]: C1/C2 Sharing Mode | <ScrLk>, <ScrLk>, <M>, <1>

When entering this mode, both the Console 1 and Console 2 users are allowed to access the connected PC. A configurable Token Delay Time setting defines the time delay between Console 2 stopping the operation of its keyboard/mouse and allowing Console 1 to operate its keyboard/mouse. Note that even the Token Delay Time is provided for Consoles 1 and 2, the Console 2 still have a higher K/M access priority than the Console 1. That is, Console 2 user can begin using his keyboard/mouse any time, even if the Token Delay Time hasn't yet elapsed its set time.

### **Emergent Maintenance by C1 either in Mode 0 or Mode 1:**

When the operation is either in Mode 0 or Mode 1, the Console

1 user at the local site can emergently press the external Access Control Button connected to the IOIO connector of the LCC-USB-DVI unit, to temporarily disable Console 2's PC access. After the emergent condition is cleared, the Console 1 user can again press the Access Control Button, going back to its previous Console 1/2 Sharing Mode or Console 2 Active-only Mode.



### Quick Reference Sheet

Functions	Keyboard Hotkeys	Panel Button Operation	Description
Operation Mode Selection	<ScrLk>, <ScrLk>, <M>, <w> w w= 0~1 0= Mode 0: C2 Active-only Mode. 1= Mode 1: C1/C2 Sharing Mode (default) Mode Rotation Sequence: 1(default)->0->1->0.....	---	Select Operation Modes: Input the corresponding hotkey to enter Mode 0 or Mode 1. Mode Definition: Mode 0 = C2 Active-only Mode: Console 1 will be inactive in this mode. The LED indicator CONSOLE 2 will light up and LED indicator CONSOLE 1 will extinguish. Mode 1 = C1/C2 Sharing Mode (default): Console 1 and Console 2 are both active in this mode. Both CONSOLE 1 and CONSOLE 2 LED indicators will light up.
Sharing Mode Token Delay Time Setting	<ScrLk>, <ScrLk>, <D>, <x> x = 0~9 delay time seconds 0 = 0 second (default) 1~9 = delay 1~9 seconds	---	Set a delay time from the last active time of the Console 2 to the current active time of the Console 1. It ranges from 0 to 9 seconds. To enable both Consoles working actively at the same time, set delay time to 0 second. * Even in C1/C2 Sharing Mode, C2 has been designed with higher K/M access priority than C1. Therefore, when this delay time hasn't elapsed, the Console 2 user can still get back the K/M access at any time.

Load an OSD Image from 10 OSD Image Banks to display on C1 monitor in C2 Active-only Mode	<ScrLk>, <ScrLk>, <F1>~ <F10>	---	Select a preferred image stored in an OSD Image Bank to be displayed on Console 1 monitor in C2 Active-only Mode.  There are 10 available OSD Image Banks to store 24-bit 960x540 bitmap image files (*.bmp) uploaded from any USB port of the unit.  *As an OSD Image Bank unoccupied by an image is selected, a default white background image will be displayed over the top of the C1 monitor.  *Refer to the below [10. Technical Tips] section about the OSD Image Uploading Procedure. -
Console 1 OSD Display Setting	<ScrLk>, <ScrLk>, <O>, <y> y = 0~2 0= OFF; 1 = ON (default); 2 = Blink	---	When operated in Console 2 Active-only Mode, the Display Setting of the OSD Image overlaid on Console 1 monitor can be configured as any of the following operations:  (0) C1-OSD (OFF): Hide the OSD Image; (1) C1-OSD (ON): Show the OSD Image (default) (2) C1-OSD (Blink): Show/Hide the OSD Image cyclically.
Display Control of the Text Prompts on C1 and C2 monitors	<ScrLk>, <ScrLk>, <P>, <z> z = 0~1 0= OFF (default); 1 = ON	---	Enable/Disable  1. the display of the Text Prompt "C1-OSD (OFF)", "C1-OSD (ON)", or "C1-OSD (Blink)" on both monitors, indicating C1 monitor's OSD status in Mode 0.  2. the display of the Text Prompt "Sharing Mode" on both C1 and C2 monitors in Mode 1.
Emergent Maintenance to Disable C2 Temporarily by C1	---	Press & release the SELECT Button to enter/cancel this temporary operation	Either in Mode 0 or Mode 1, pressing & releasing the SELECT button allows the C1 user to perform emergent PC maintenance at local (PC) site, which disables Console 2's K/M access temporarily.  This operation acts the same as pressing on the external Access Control Button connected to the IOIO connector of the unit.  As this operation is activated, a Text Prompt "C1 Maintaining" will be displayed both at the upper-left corners of the C1 and C2 monitors.
Resume the unit to factory default settings	---	Press & hold on the SELECT Button for 10 seconds.	Press and hold on the SELECT button for 10 seconds, then release it after hearing 2 beeps.  The unit will then start to resume to factory default, in which the complete procedure should be finished less than 3 minutes.
Open the Embedded Chatroom	<ScrLk>, <ScrLk>, <l>	---	The allowed characters used in the chatroom boxes on both consoles include uppercase and lowercase letters, numbers, and symbols.  The embedded chatroom comprises a total of 64 pages, with each page containing 16 lines, and each line having 32 characters.  When the typed text exceeds this limit, it is necessary to doubleclick the <Del> key to forcibly clear the chatroom content. Otherwise, any keystrokes will be ineffective. To close the chatroom boxes, simply press the <Esc> key.

## Specifications

Model.	LCC-USB-DVI
PC Connector	DVI-D Female 1 x USB Type-B Female
Console Connector	2 x DVI-I 24+5 pin Female (Console 1/2:Analog + Digital) 4x USB Type A Female (Console 1/2:Keyboard/Mouse; Console 2: additionally Firmware Upgrading / OSD Image Uploading) 1 x RJ45 (External I/O)
Console Selection	1 x Tact Switch
Max. Input Video Resolution	1920x1080@60Hz
Power Supply	DC 5V/4A Power Adapter
Temp. Limits	Operation: 0~55°C; Storage: -20~60°C
Humidity Limits	Storage/ Operation: 0~90% RH, Non-Condensing
Size	Desktop-type
Housing Material	Metal
Dimension (LxWxH)	221x 105.3 x 26 mm
Weight	630 g
Housing Material	Metal
Color	Black
Safety/ Emission	FCC, CE, RoHS, WEEE

## Video Resolution and OSD Size

Supported Input Video Resolutions
1920 x 1080
1680 x 1050
1440 x 900
1280 x 1024
1280 x 720



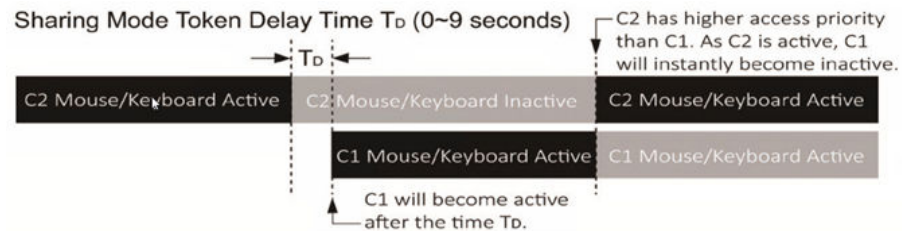
1024 x 768
800 x 600
640 x 480

OSD Display Resolutions*	OSD Image Size Format
1920 x 1080	960 x 540   bmp
1600 x 1200	800 x 600   bmp
1280 x 1024	640 x 512   bmp
1024 x 768	512 x 384   bmp
800 x 600	400 x 300   bmp

- \*OSD Display Resolutions are recommended for full-screen OSD image on your monitor.
- Some old display drivers may not support those listed resolutions.

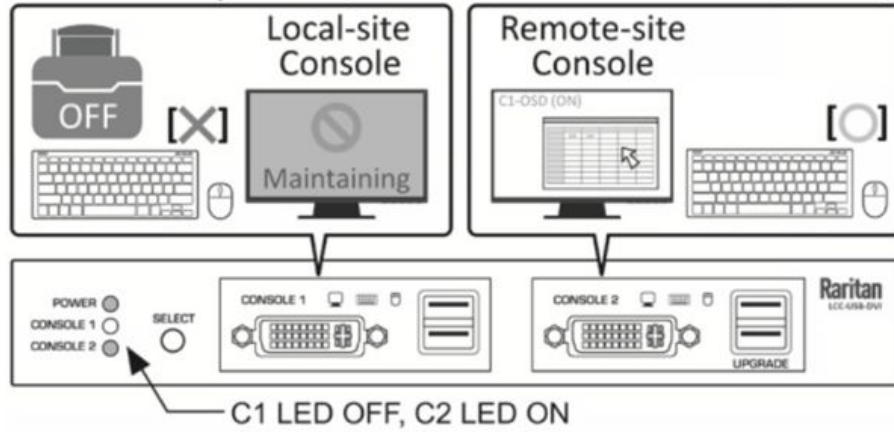
### Technical Tips

- Since the LCC-USB-DVI acquires EDID information to apply to both C1 and C2 video connectors from the C1 video connector, users need to ensure that the maximum display resolution of the monitor on the C2 side is higher than that of the monitor on the C1 side. Otherwise, the monitor on the C2 side might display incorrectly.
- The Sharing Mode Token Delay Time TD between the time the Console 2 keyboard/ mouse stops operation and the time the Console 1 keyboard/mouse starts operation. The operational relationship between both consoles is illustrated as below:

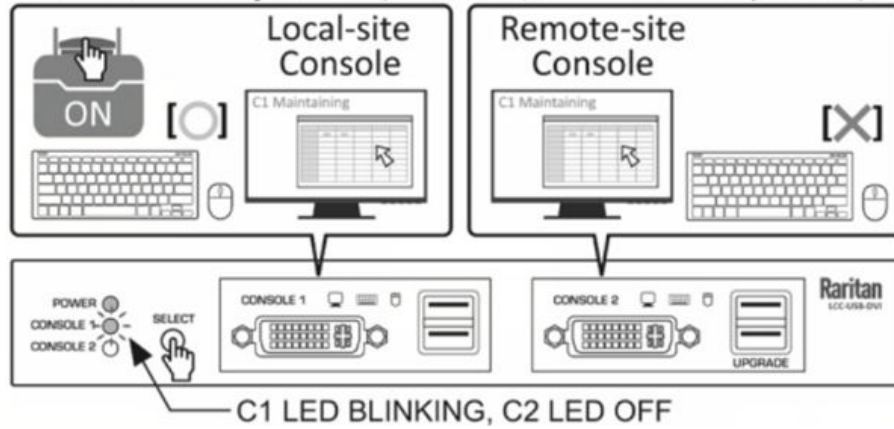


- The status of LED Indicators CONSOLE 1/CONSOLE 2 and the C1/C2 Monitor Display in C2 Active-only Mode and C1/C2 Sharing Mode are illustrated as follows:

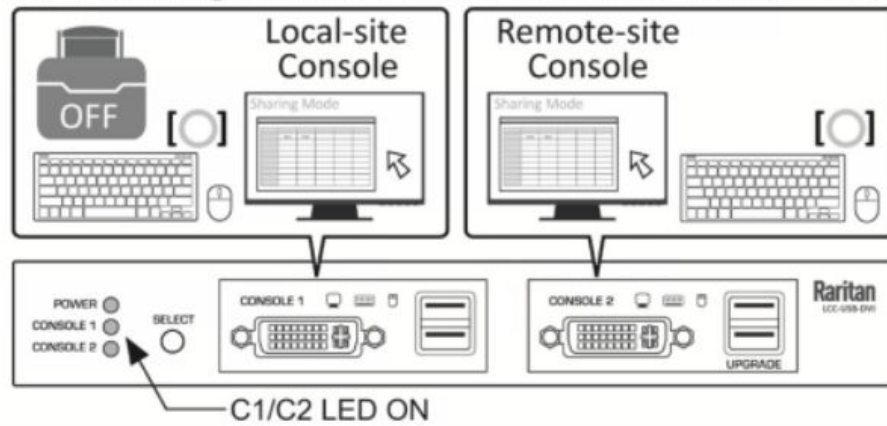
**C2 Active-only Mode (A.C.B OFF / SELECT button not pressed)**



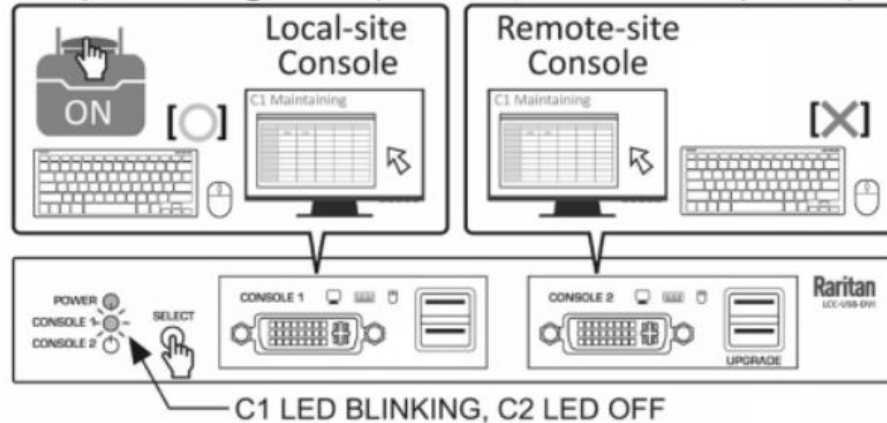
**C2 Active-only Mode (A.C.B ON / SELECT button pressed)**



**C1/C2 Sharing Mode (A.C.B OFF / SELECT button not pressed)**



**C1/C2 Sharing Mode (A.C.B ON / SELECT button pressed)**



- To update the content of the 10 built-in OSD Image Banks, please prepare a FAT32/ exFAT-formatted USB flash drive (\*NTFS format is not supported). Next, copy the prepared files to its root directory with the following naming convention, such as image1. bmp, image2.bmp, ..., and image10.bmp. Insert this flash drive into any of the two USB (UPGRADE) ports at the console 2 of the LCC-USB-DVI unit. The OSD Image Uploading Procedure will start automatically. A typical time to complete 10 image files uploading should be within 3 minutes. Following is the factory default OSD image used in the C2 Active-only Mode when the unit is powered on for its first time:

