



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-794  
LED Videowall Setup Guide

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# VP-794

## LED Videowall Setup Guide



Version K-1.5



# Contents

Introduction	2
The Basic System	3
Flexible Connectivity	4
Control	5
Control via Web Browser	5
Set Scaler Functions	7
Check loaded firmware is set to LED	7
Set Processor Output Resolution	7
Set Output Frame Rate	7
Set Output Lock Mode	7
Set Display Window Size	8
Set Picture Format	9
Additional output Settings	10
Output Config	11
Input Characteristics	11
Input Adjustments	12
Pan Tilt Zoom	13
Image grab	13
Flexible PIP	13
Back up settings and personal Test Patterns	14

## Introduction

VP-794 has three modes:-

1. Projector, **the default mode is for Projection**

Projector mode for projection scaling, soft edge blending and picture warp

Menu>Output>Display Type>Display>Projector

To set up soft edge blending and warping refer to the two guides for blending on either a flat screen or a curved screen

2. LED, the default mode is for LED Videowalls

Menu>Output>Display Type>Display>LED

3. LCD mode for scaling only. This mode is optimised for clean fast switching.

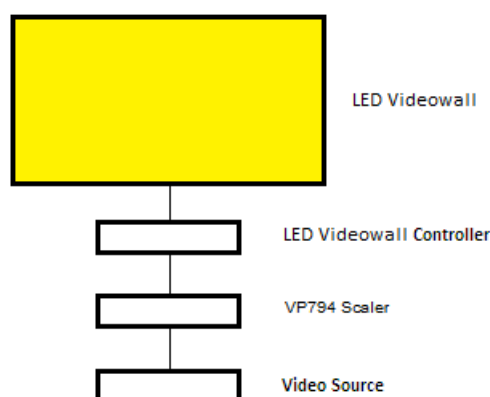
Menu>Output>Display Type>Display>LCD/Plasma

### To use this guide with a VP-794 it must be in LED mode

This guide is a non-technical introduction to scaling for an LED videowall using the Kramer VP-794.

The guide describes how to set up, scale and fit the image quickly and simply onto the LED videowall, how to adjust for the best pictures and how to back-up your settings to a PC.

This guide does not replace the product user manual and covers only the essential functions to get started



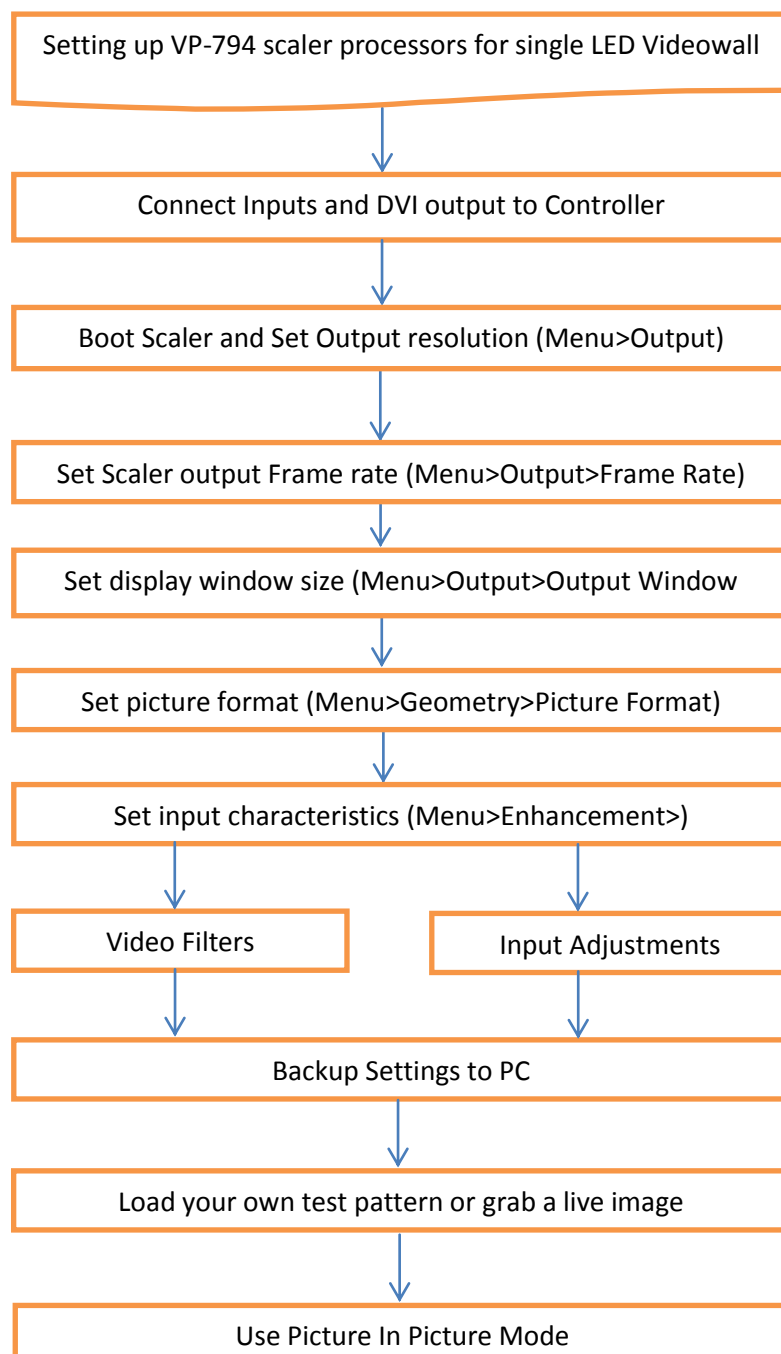
## VP-794



## The Basic Setup

Kramer VP794 processors are a single channel device, you need to use one processor for each LED videowall you have. The VP-794 is a high quality image scaler it does not replace your existing LED videowall controller or matrix but designed to work with it.

The flowchart below represents the basic setup, additional information can be found further in this guide.



## Flexible Connectivity

The VP-794 can be used as a routing switcher and universal interface for connecting LED videowall to:-

HD-SDI, 3G-SDI\*, HDMI, DVI, VGA Analog, Component YPbPr, RGB or RGBS, Composite & S-Video inputs with signal compatibility up to 1080p & WUXGA

The DVI input can also be set to Analog input so 2 x VGA can be connected if needed

Available outputs are HDMI/DVI, 3G-SDI\* & VGA Analog.

- You can connect SD-SDI, HD-SDI and 3G-SDI

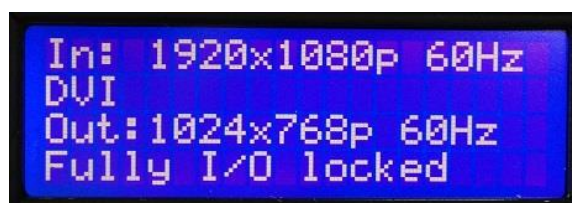
VP-794



## Control

VP-794 can be controlled via the built in LCD menu, an on screen display (OSD) menu or you can use the built in Web browser on a Computer, Laptop or Wi-fi enabled Smartphone.

VP794 has front panel LCD menu panel



The menu format is the same in all menu methods.

## Control Via Web Browser

Units are set to DHCP as default.

Use the discovery tool to find and connect VP794 processor on your network. You can download this software from our Website [www.kramerelectronics.com](http://www.kramerelectronics.com)

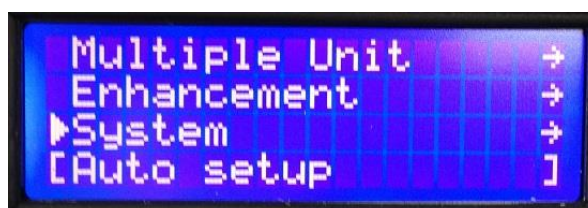
Or

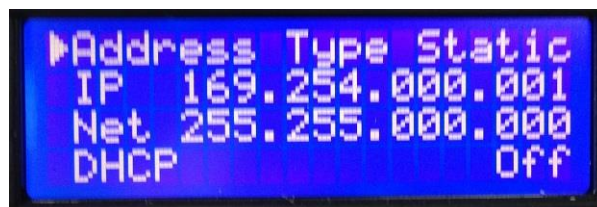
Use a static address

Factory default address will be IP 169.254.000.001 Mask 255.255.000.000

Use this or manually set an address of your choice.

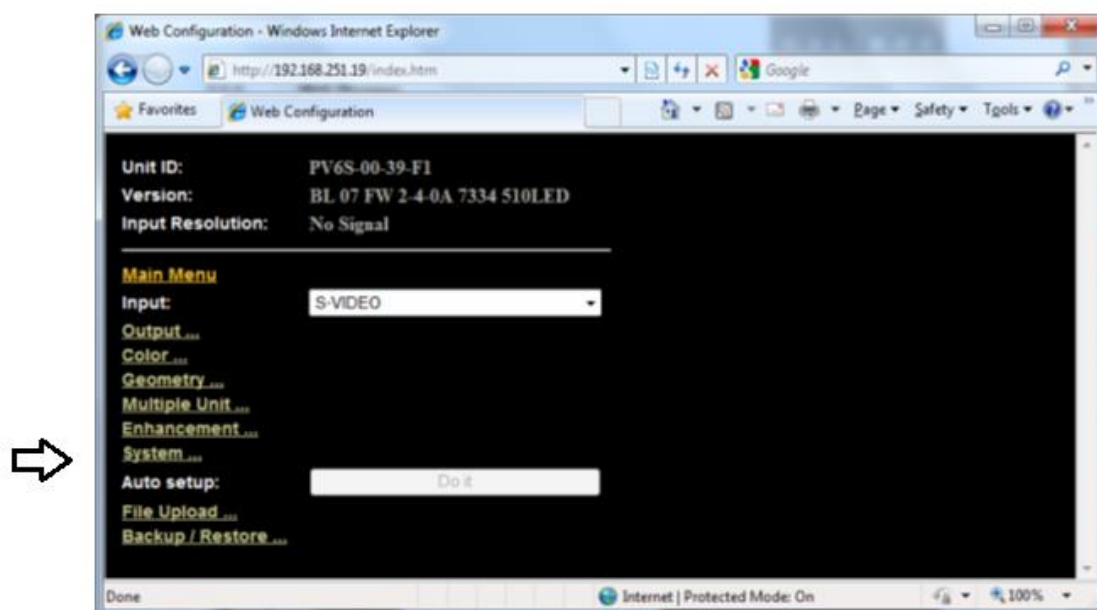
Network settings are in Menu>System>Network settings





If you choose to use a static address turn DHCP to Static and then cycle the power on the processor.

This is the top menu screen when you open the internal browser menu



The menu structure in the browser is the same as the on screen display and front panel menu with very few exceptions

Where the structure is the same reference has been made throughout the document to the LCD menu

Where the menu structure differs for the upload of patterns and the file back-up and restore functions reference is made to the browser menu.





## Set Scaler Functions

Set the 'menu time out function' to 'infinite' (time out function is disabled) to give more time to operate the processors and read these notes.

This can be done from the top menu select 'System' then select 'Menu Settings' then select 'Menu Display Time' and then select 'Infinite'.

Input on the latest firmware defaults to the ASPECT test pattern. If your unit has been set to something else set the 'input' to 'test pattern'

## Check loaded firmware is set to LED

Menu>Output>Display Type>Display

Set 'output>display type' to LED

## Set Processor Output Resolution

Set the processor output resolution to a resolution equal or greater than the native resolution of your display.

Menu>Output>Display Type>Output Mode

Note that on some 'low cost' LED displays the LED videowall controller cannot successfully display some resolutions. If interference to the displayed image is noticed, try using a higher output resolution on the VP-794 and reset the Display Window size

Also note that the symbol of a BNC connector with a red cross denotes resolutions that are not part of the "SDI Standard" and these resolutions will not appear on the SDI output.

## Set Output Frame Rate

This allows the processor to be set to give either 50HZ or 60Hz vertical refresh. This is particularly important for installations where live cameras will be shown in shot. Also note that movement in recorded playback material may look smoother if played out at its native refresh rate.

Menu>Output>Frame Rate

Note that some LED walls will not work at 50HZ

The default frame rate on the VP-794 is set at Auto

## Set Output Lock Mode

The default is set to Auto

In this mode the internal clocks of the processor and therefore the output will lock to either the external genlock signal if it is present or they will lock to the selected input.



In Genlock mode the vertical refresh clocks will lock to the external reference.  
In Source lock (Input/Output) mode the clocks will lock to the selected output.  
In OFF mode the internal clocks are free running, this allows switching between inputs to be faster as the clocks do not have to be retimed for each switching transition.

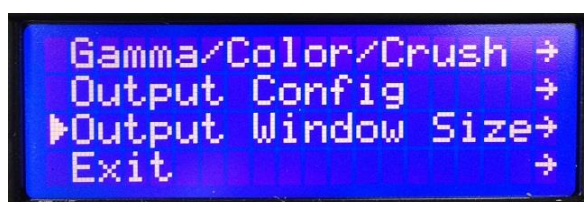
Please refer to the user manual for more detailed information.

## Set Display Window Size

This section allows the quick and convenient setting of the area of interest to fit the LED videowall with pixel-accurate output scaling to accurately match the actual size of the screen you are using.

Menu>Output>Output Window Size

In the Output menu select Output Window Size



Set window Size Enable to ON



Set the four edges of the picture to fit the edges of your screen  
In the browser menu actual numbers can be entered



Note that if you are using the browser menu this allows actual numbers of pixels to be entered – click outside the box to register the entered number.

## Set Picture Format

Picture Format allows a user to select the displayed aspect ratio where the signal input is different to the display's natural aspect ratio.

There is a separate memory for each type of signal you use. You will need to make this setting the first time you use a new signal type. Next time you use that signal type the processor will recognise it and use the setting you chose last time.

Choose between Standard, Full Screen, Crop, Anamorphic or Theatrescope

Select the input channel that has your picture. There is a choice of display modes as described below

Menu>Geometry>Picture Format



In main menu Geometry select Picture Format



Choose between Standard, Full Screen, Crop, Anamorphic or Theatrescope



a. **Standard** displays your input signal pixel for pixel, it preserves the size and aspect ratio of the incoming image. Areas of the display that are un-used are displayed black (letterboxed).

b. **Full Screen** scales the image to the size of the display without preservation of the aspect ratio. Note that some signals have black borders which will be displayed as black.



c. **Crop** preserves the aspect ratio of the image and scales the image to fill the screen. The smaller axis of the image will fill the space available. The larger axis will be cropped. The result is that either the top and bottom or right and left areas of the image are cropped.

d. **Anamorphic** scales the input image to display the whole picture in a 16:9 aspect ratio. Areas of the display that are un-used are displayed black

e. **Theatrescope** scales the input image to display the whole picture only for use with a projector which has a special anamorphic lens that optically stretches the 16:9 back to 2.35:1 at the screen. The integer scaling fraction is 1080/817.

Note some signals have some black pixels added to make up the pixel count to conform to a particular standard e.g. 702 pixels horizontal are normally made up to 720 by adding 18 black pixels (should be 9 either side, but not always, depends on original sync timings). These pictures will be shown with the black borders. Such inputs require the use of the Pan/Tilt/Zoom functions to display full screen.

## Additional Output Settings

The Output Menu provides comprehensive separate adjustments for the output of the processor to match the display.

Note the VP-794 processor output adjustments are quite separate to the adjustments provided for each input channel, internal test patterns should be used to adjust the output.

### Color Balance

Menu>Output>Gamma Color Crush>Native Color Temp

This allows the processor to be set to give the best color suitable for your LED videowall application. Use the internal test patterns when setting these characteristics (Using an input signal could lead to confusion)  
There are pre-set color balance selections for your convenience

### Gamma

Menu>Output>Gamma Color Crush>Output Gamma

In this section you can choose the Output Gamma to match the specification of your LED videowall.

### Black Crush

Menu>Output>Gamma Color Crush>Gamma Color Crush

The LED firmware features a black crush feature. This is for suppressing sparkles on the LED videowall caused by noise in the signal.

Note: This is quite separate from the Brightness function.

## Output Config

Output configuration contains a range of options to tailor the output characteristics which default to the most commonly found requirements. Refer to the user manual if you wish to modify these settings

Menu>Output>Output Config>

## Set Input Characteristics

### Input Filters

Each input of the Kramer VP-794 processor has a dedicated memory. This allows the input characteristics to be set for each channel without affecting the output calibration.

*Our menu system is contextual therefore some filters will be greyed out if they are not applicable to that input*

In the main menu select Enhancement



- **LTI** filter enhances the sharpness of the luminance (B&W) signal.
- **CTI** filter enhances the color signal by increasing the steepness of color edges.
- **TRNR** (Temporal Recursive Noise Reduction) and **MNR** (Mosquito Noise Reduction) are available for SD input signals only. These filters reduce spatial and temporal noise as well as block artifacts.
- **CCS** is a filter to reduce luminance to chrominance cross talk of composite video signals (only) which appears as a coarse rainbow pattern or random colors in regions of fine details.

## Input Adjustments

The VP-794 processor provides comprehensive separate adjustments for each input channel. The active adjustments are for which ever input is currently selected.

### Color

From the main menu select Color

**Black level offset** is '0' for European tv signals and '7.5' for NTSC or USA originated signals

**Black Level** is like the brightness control on a domestic tv

**Contrast** is the intensity of the white level gain



**Saturation** is the intensity of the color

**Hue** is the color correction available for NTSC originated signals. It is available to PAL type signals for situations where the transfer from NTSC to PAL signal was done with a poor hue balance

#### **RGB Values**

A full Process Amplifier is available for setting the individual gain and black level of each of the RGB values of the selected input

Color Balance gives pre-set color balances

Input Gamma gives a pre-set gamma curves to allow you to match with your input signal

## Addition Input Adjustments

### Input Config

Menu>System>Input Config

**VGA Set-up** when VGA input is selected this allows manual override to the timing of this input

**DVI/HDMI Setup** provides choices for these two input ports. Refer to the user manual for a full explanation of each function.

- **DVI-I Port** defaults to a digital input port. It can be switched to be an analog port allowing it to be used as a second VGA input
- **HDCP Input** function allows the HDCP compliance to be turned off. This is for use with MAC computers; if the whole of your system is not HDCP compliant, by making our processor appear non-compliant the MAC does not unnecessarily encrypt its output allowing material to be shown in non-compliant systems  
Note: playing licence restricted material will always be encrypted

System>Input Config>DVI HDMI Setup>HDCP Input



**SDI Setup** allows the SDI stream standard to be set and the audio channel routing to be set.

**Component Setup** allows the analog BNC inputs to be configured for YUV or RGB

**Test Pattern Setup** allows you to pre-select which pattern you wish to display when Test Pattern is selected as the input.

This is often used to display an end user uploaded test pattern which can be your company logo.

**Switching Transition** allows selection of how the unit switches between inputs. Select from a freeze of the last input to be switched when the timing of the next input has been accommodated, or choose a fade via black.



## Pan/Tilt/Zoom

Additional positional adjustments can be made using PAN/Tilt/Zoom.

Menu>Geometry>Pan/Tilt/Zoom

Useful when running more than one wall from a single picture source if the videowalls are different shapes. It enables an important area of interest to be selected to avoid squashing the image or losing the important areas within the picture.

Also useful when material has black borders in the picture content as a result of copying procedures. Note this function incurs a penalty of additional latency. One additional progressive frame is added to the processing time.

## Additional System Functions

### Image Grab

A live image can be grabbed and stored in one of four Custom test pattern memory slots.

This function is accessed in Menu>System>Input Config>Test Pattern Setup>Screengrab.

This is useful to be able to switch to a relevant scene or logo for intermissions or should a source fail.

### Picture in Picture (PIP)

By default the processor is in Multiple Unit mode which allows the unit to be used to select portions of the picture if multiple screens are being used to create a larger LED videowall.

The processor can be re-booted into Single Unit mode in which PIP is available. This mode is accessible in Menu>System>Operation

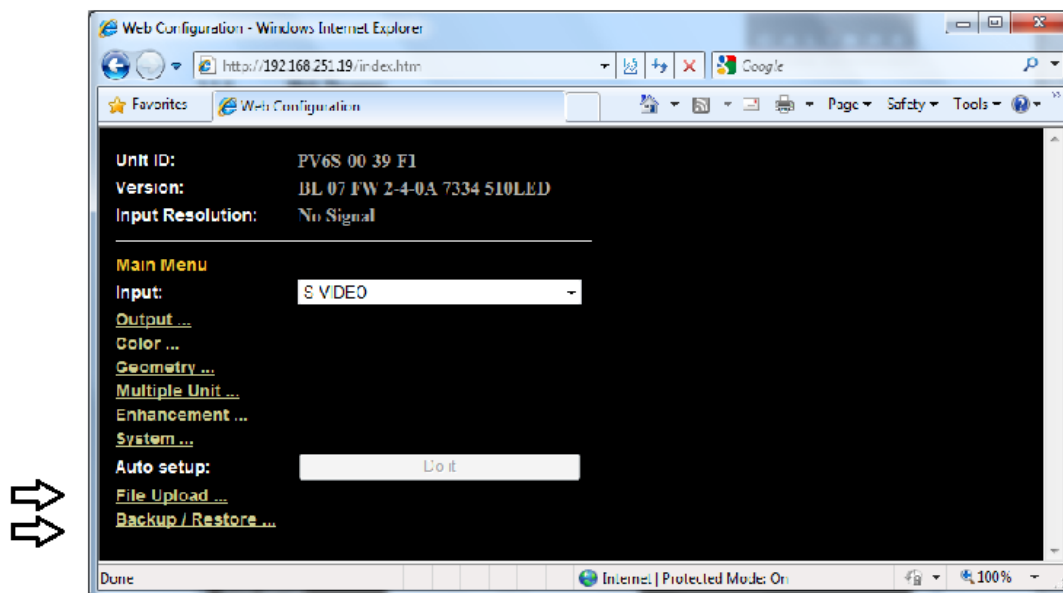
**PIP** mode allows both pre-set and freeform inserted window sizes and positions and is useful to create a score board for sports events.

The PIP image can be set to appear or disappear as a switch or a fade in and out

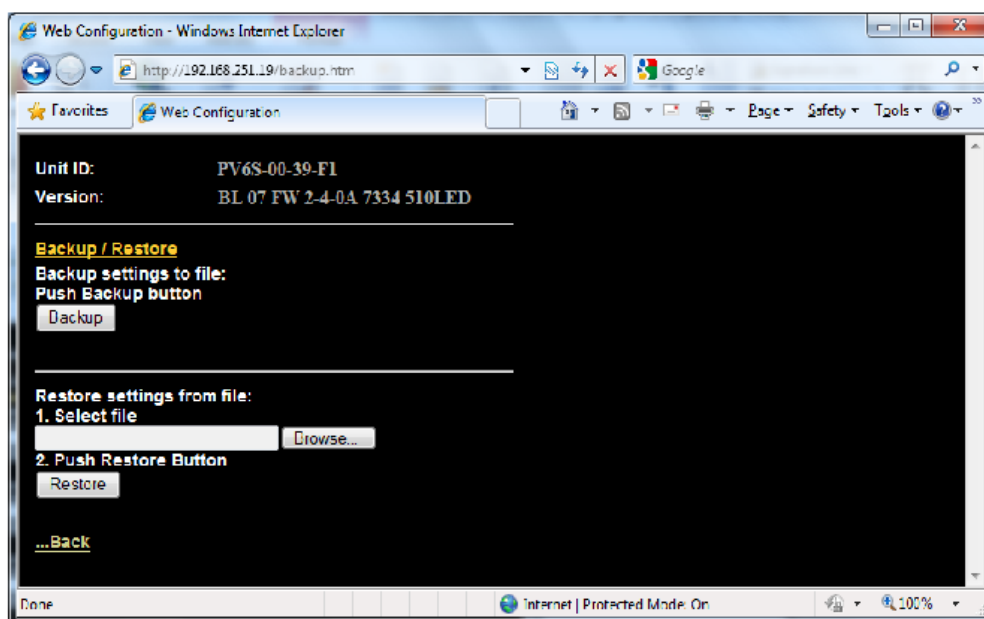
## Back-up your settings and Upload your own Test Patterns

These functions can only be accessed through the browser menu. They are additional items that cannot be found on either the LCD or ON Screen menus.

You can upload four patterns or logo pictures of your choice.



You can also backup your settings to your laptop. You can use this function to load multiple units with expert settings.







For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

**We welcome your questions, comments, and feedback.**

Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

E-mail: [info@kramerel.com](mailto:info@kramerel.com)



**SAFETY WARNING**  
Disconnect the unit from the power supply before opening and servicing