INSANE IMPACT

# MAX 169
# Owners Manuals

## General Overview

MAX Mobile LED is a line of outdoor LED video screen products that are equipped with an on-board generator and offer comprehensive production capabilities. This guide includes the fundamental specifications of this product line.

| Model | Pixel Pitch | Trailer Size | Power Option | Weight (lbs) |
|---|---|---|---|---|
| MAX 169 | 6.67mm | 21'x8'x12' | Generator | 6,000 |

## Specifications

**Screen Pitch:** 6.67mm
**Screen Resolution:** 720 x 432p
**Aspect Ratio:** 16:9
**Video Inputs:** HDMI, SDI
**Weight:** 6,000 lbs
**Power Outputs:** 12kw

## Features

- Adjustable height
- 360* Swivel rotation
- Weatherproof*
- Power included (generator)
- Contained production box

## Generator

- Powertech 12k Quiet Diesel • 30k watts, 120/240V • Super quiet • Runs up to 30 hours on 30 gal of fuel. • 49.625” L x 27” W x 33”H

## Battery

- Lorem Ipsum

## Production box overview

The production box installed on-board comprises of essential components that enable the seamless display of media files, live TV broadcasts, and other feeds featuring HDMI or SDI outputs. The production box also accommodates the required hardware for audio playback and speaker system operation.

## Turn on production box components.

1. **Cooling Fan:** AC infinity CloudPlate X7
2. **Laptop drawer:** Contains Dell Inspiron 13 5000 laptop with Windows 10
3. **Power strip/surge protector:** CyberPower Systems Power Surge Protector: includes 10 outlets
4. **Controller:** Novastar VX1000
5. **HDMI Switch:** KanexPro 4x1 HDMI Switcher with 4K Support & Audio Output
6. **Storage drawer:** Contains 6 ft. HDMI cord and owner's manuals
7. **Patch panel:** Includes 2 HDMI connections, 1 SDI connection, and 1 looping SDI connections
8. **Mixer:** CRolls RM169 Professional Bluetooth Audio Mixer
9. **Amp:** Dynacord 3600


*TIP: Please reference user manuals for above components for more detailed information and advanced operating instructions.*

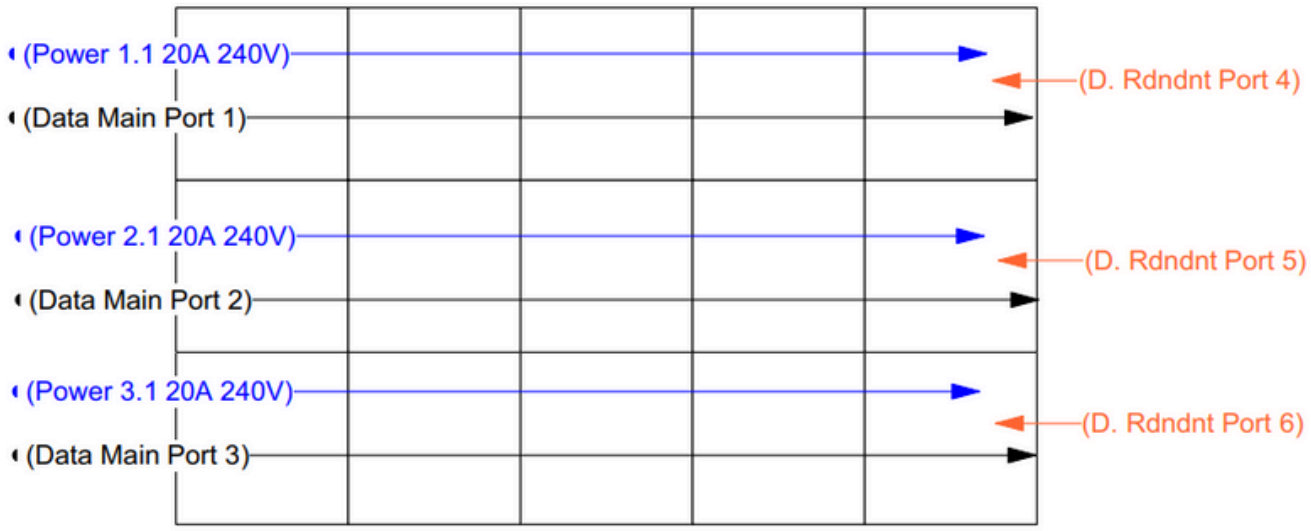
| Components | Details |
|---|---|
| Laptop drawer | Contains Dell Inspiron 13 5000 Laptop w/ Windows 10 |
| Power strip/surge protector | CyberPower Systems Power Surge Protector w/ 10 outlets |
| Controller | Novastar V1000 |
| HDMI switch | Orei Ultra HD HDMI 4x1 Switcher |
| Storage drawer | Contains two HDMI cable and owner's manual |
| Patch panel | Includes two HDMI connections, one SDI connection, and one looping SDI connection |
| Mixer | Rolls RM169 Professional Bluetooth Audio Mixer |
| Amp | Dynacord 3600 |

## LED Screen Basics

The LED screen is comprised of 30 individual panels or cabinets, which are securely locked in place. These panels feature a resolution of 144x144 pixels and consist of four modules (72x48), one receiving card, and one power supply all integrated into a single hub. Each panel is connected to one another through a power and data connection (or jumper). For additional information pertaining to the components and troubleshooting of individual panels, please refer below.

To display media on the screen, a data (CAT6) feed is transmitted from the respective NovaStar processor to the receiving card located in the first panel within a series of connected panels. The data is then relayed from one cabinet to the next through the data connections (jumpers) or until it has reached every panel within the system. Similarly, power is transmitted through power jumpers, with three distinct power lines originating from the generator. For additional details regarding how power and data are "jumped" throughout the entire screen, kindly refer to the diagram below.

**MAX Power and Data Mapping (Rear View)**



# Getting Started

## Positioning trailer and screen

1. **Unlock Hitch**
    - Remove pin from hitch lock and release ball tightening mechanism.
    - Disconnect trailer wiring from vehicle input (7-pin round blade connector)
    - Unhook trailer safety chains.
    - Unhook trailer brake cable.
    - Release trailer jack and raise it until the trailer hitch completely lifts above the ball.
2. **Lower Stabilizer Legs**
    - Remove cotter pin from bottom.
    - Let the leg drop as far as possible.
    - Replace pins in outriggers.
    - Lower legs to desired height.
3. **Raise the screen to desired height using the hydraulic lift controls.**
4. **Rotate screen as needed**

*Tip: When positioning a trailer on any surface, it is advisable to use the provided wheel chocks to prevent the trailer from rolling.*

## Start generator

1. Press the "Run" button to initiate the power supply.
2. Activate the 60 amp breaker located in the breaker panel.
3. Proceed to activate the remaining breakers

## Turn on production box components.

1. Utilize the keys provided to unlock the production box.
2. Proceed to power on the power strip/surge protector.
3. Power on the LED Video Controller.
4. Power on any additional components of the production box required for operation.

## Computer operating procedures

The MAX production box comes with a Windows 11 laptop computer, which includes pre-installed NovaLCT and ViPlex programs. The desktop of the laptop features icons for both programs, which are also pinned to the taskbar for easy accessibility.

## Computer display setup

1. Start the computer and access the display settings by right-clicking on the desktop and selecting "Display Settings."
2. In the "Display Settings" window, locate the "Multiple Displays" section and select "Extended" from the dropdown menu.
3. Click the "Keep Changes" button to save the new display settings.
4. Navigate to the box labeled "2" and click on it. This will let you control the display settings sent to the Novastar controller and ultimately the LED screen.
5. Select "100%" from the "Change the size of text, apps, and other items" dropdown menu.
6. Set the "Resolution" dropdown menu to "1920x1080."
7. Click "Keep Changes" to save the new display settings.
8. If necessary, change the "Orientation" dropdown menu to "Landscape." Be sure to click "Keep Changes" to save this setting.
9. Close the "Display Settings" window to complete the setup process.

## NovaLCT Setup

NovaLCT is a cutting-edge software designed for LED display control. The software features a comprehensive range of functions, including data transmission and reception between the sending and receiving cards, monitoring card information, brightness and power control, LED error detection, screen calibration, and hardware monitoring. By providing a unified platform for these critical screen management functions on a laptop computer, the user can efficiently monitorand control essential screen information in a streamlined and simplified manner.

### Receiving card and data configuration setup

The proper configuration of the LED screen is set up prior to delivery. Bypass the following directions if the screen is working properly.

1. Connect the USB cable, which runs through the back of the laptop drawer, to the laptop.
2. Launch NovaLCT software.
3. Click the "User (U)" dropdown tab and select "Advanced User Login (A)" option.
4. Provide the password "admin" and click "Log in" to access advanced features.
5. Select the "Screen Configuration" tab.
6. Ensure that the USB port connected is the current operation and the "Configure Screen" box is checked. If yes,
7. Click the "Receiving Card" tab.
8. Select the "Load from File" option.
9. Locate the file named "Receiving Card" in the "Tech Files" folder on the desktop and click "Open."
10. Select the "Send to Receiving Cards" option.

11. Verify that the “All Receiving Cards” box is checked in the new window that appears and click “Send.”
12. Save the changes by clicking “Save” at the bottom.
13. Select the “Screen Connection” tab.
14. Select “Load from File” option.
15. Locate the file named “Mapping” in the “Tech Files” folder on the desktop and click “Open.”
16. Click “Send to HW” to send the correct data configuration to the LED screen.

*Tip: Please refer to the NovaLCT User Manual for more detailed setup instructions and advanced display options*

## Controller (VX1000) Operating Procedures

The VX100 is a professional LED display controller. Besides the function of display control, it also features powerful front-end processing, so an external scalar is no longer needed. With integrated professional interfaces, VX1000, with excellent image quality and flexible image control, greatly meets the needs of the broadcast industry. It's friendly in user-interface. so that the display to work has never been as easier and more enjoyable as with VX1000.

## Basic Setup

Follow the directions below for controller setup when using ViPlex software:

1. Press the HDMI button on the front panel of the controller so that it turns red.
2. Press the SCALE button on the front panel of the controller so it is disabled.

### Change brightness

1. Return to main menu interface.
2. Press the Knob to select the corresponding value of brightness.
3. Rotate the Knob to adjust value.
4. Press Knob again to send new brightness value to screen.

*Tip: Brightness will vary based on the event being indoor or outdoor as well as cloud coverage and time of day. This may need to be changed multiple times depending on duration of event.*

### Test modes

1. Start at main menu interface.
2. Press the knob and scroll to Display Control.
3. Press the knob and scroll to test pattern.
4. Scroll through the 8 different test patterns.
5. To go back to normal mode press ESC and scroll back up to Normal.

### Disable scaling

1. Check if the Scale 1 button is lit up red.
2. If so, Press that button again.
3. Display should say auto scaling disabled.

*Tip: See the VX4S user manual to set custom scaling when using other modes of display*

### Blackout screen

1. Press knob and scroll to Display Control.
2. Press knob again and scroll to black out.
3. Press knob again and screen should go black.
4. Another way is to press the Take button on the far right of the VX4S.

## Home screen

On the front of the controller there is a home screen that enables you to quickly identify what information is being sent to the LED screen and help identify potential problems issues.

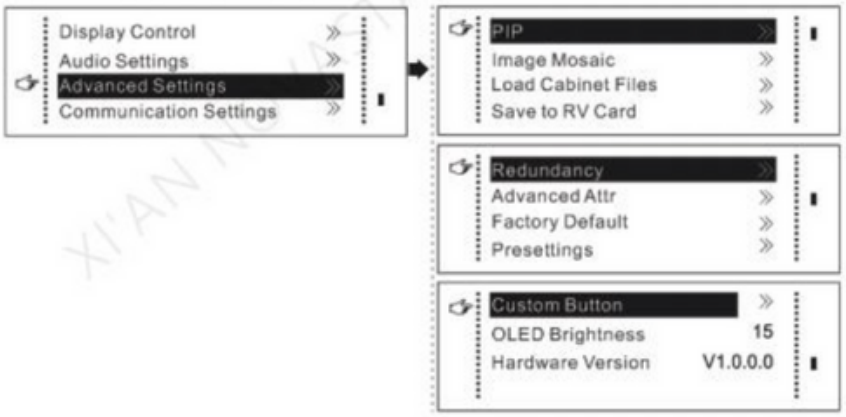
Figure 4-1 Home screen

| Icon | Description |
| --- | --- |
| VX1000 | The device name |
| 192.168.0.10 | The device IP address |
| • Main<br>• PIP 1<br>• PIP 2 | The layer input source and resolution |
| Screen | The current screen resolution |
| ☀ | The screen brightness, 0% (black) to 100% (brightest) |
| Port | The Ethernet port number and port status<br>• : The Ethernet port is connected and serves as the primary output port.<br>• : The Ethernet port is not connected.<br>• : The Ethernet port is connected and serves as the backup output port.<br>When at the bottom right flashes, there is data transmission on the port. |
| Synchronization | The sync status and sync source<br>• SDI: The sync function is enabled and the synchronization succeeded.<br>Sync source: SDI<br>• SDI: The sync function is enabled and the synchronization is in progress. |

| Icon | Description |
| --- | --- |
| | Sync source: SDI<br>• SDI: The sync function is enabled but the synchronization failed.<br>Sync source: SDI<br>• SDI: The sync function is not enabled. SDI indicates the sync source you used last time. |
| Display control | The output image status<br>• : The output image is displayed.<br>• : The output is black.<br>• FRZ: The output image is frozen.<br>• : The test pattern is shown. |
| Connection method | • : The device is connected to the control PC via an Ethernet port.<br>• : The device is not connected to the control PC.<br>• : The device is connected to the control PC via a USB port.<br>• : The device is in cascading mode via a USB port. |

## Advanced settings

Several setting options of main functions are included in advanced settings, as shown in the figure below, Operation of each function will be detailed for users in the following text.




**Picture-In-Picture (PIP)**

1. Press knob and scroll to Advanced Settings.
2. Click on PIP.
3. Press knob to enable PIP.
4. Scroll down to Main Source.
5. Press knob and scroll to choose your main source.
6. Repeat step 5 regarding PIP Source.
7. Scroll down and set PIP display settings following outline below.

Horizontal Res: Horizontal offset of PIP
Vertical Res: Vertical offset of PIP
Horizontal X: Horizontal width of PIP
Vertical Y: Vertical height of PIP

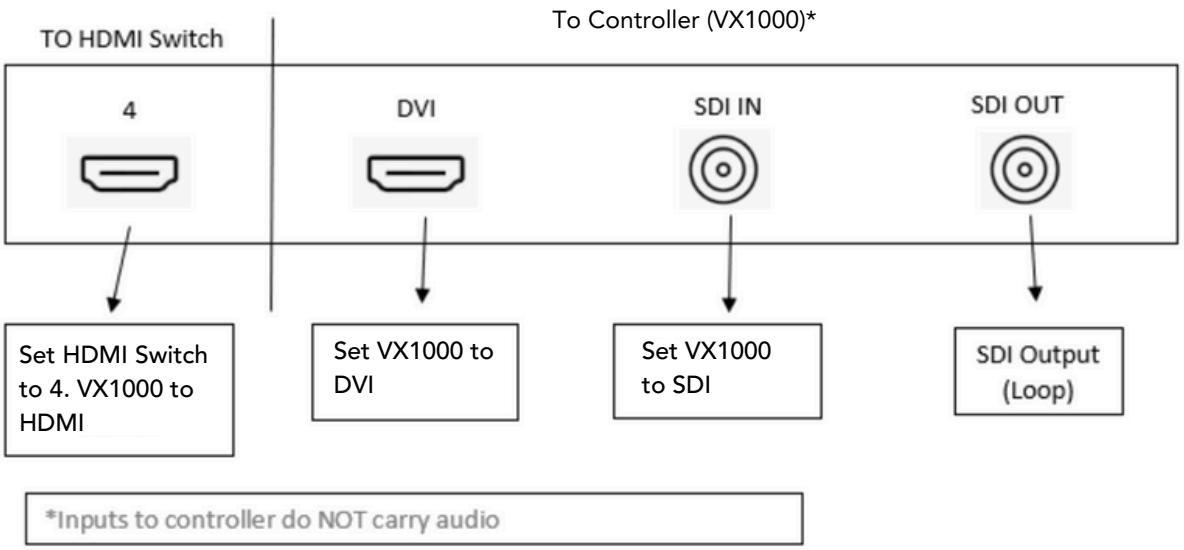
*Tip: Once PIP settings are set you can simply press the PIP button on the front of the controller to switch in and out of PIP modes*

## Using alternate modes of display

The patch panel on the frontal side of the production box will allow you to establish connectivity between various modes of display and the screen via HDMI and SDI inputs.

### Patch panel inputs

Use the diagram below and corresponding display instructions when using alternate modes of display.




## Using full screen computer display (duplicating primary screen)

- Access the settings menu on your computer.
- Click on the System option, which pertains to Display, Sound, Notification, and Power Settings.
- The Display subheading will automatically appear at the top of the list.
- Scroll down the list until you see the option for Extended Displays.
- Toggle the setting to Duplicate Displays. This will ensure that whatever is displayed on your laptop screen will be mirrored on the LED screen.
- Open Google Chrome and navigate to the desired webpage.
- Enter Full Screen mode by selecting the appropriate option within the browser.

## Proper production box component operations

Briefly discuss production box components other than computer, vx4s, and reciever

## Spare parts for LED screen

Each unit comes with a supply of spare parts consisting of 5% of the total screen assembly.
Included:

- 6 interchangable spare modules
- 2 hubs
- 2 power jumpers
- 2 data jumpers

## Replacing a power jumper

- Unhook the power jumpers from both directions to ensure the power supply has no electrical charge.
- Undo the three latches on the right side of the rear access door and open the door to expose the hardware.
- Disconnect the red and black wires coming from the defective power jumper.
- Pull up on the jumper to remove the wires from the inside of the panel.
- Insert the wires of the new jumper into the hub, and screw them into their respective positions.
- Close the rear access door and fasten the three latches to secure.

## Replacing a module

- Identify which module needs to be replaced.
- Rotate the four clips on the backside of the module into the vertical position.
- Apply pressure on the back of the module to push it out of the cabinet.
- Retrieve a new module from the provided spare parts tote.
- Place the new module into the cabinet and apply pressure to set in place.
- Turn the four clips on the backside of the modules into the horizontal position.

## Replacing a HUB

- Undo the three latches on the right side of the rear access door and open the door to expose the hardware.
- Disconnect all wires going into the hub. This includes CAT-6 and power wires.
- Remove the receiving card from the defective hub.
- Unscrew and remove the hub from the cabinet.
- Retrieve a new hub from the provided spare parts tote.
- Insert the receiving card into the new hub.
- Insert the new hub into proper position and fasten into place.
- Reconnect the CAT-6 and power wires into their respective positions on the hub.
- Close the rear access door and fasten the three latches to secure.

## Troubleshooting LED screen

- Refer to Quick Guide on computer.
- Refer to owner's manual on computer.
- Call Customer Support 515-349-7708.

# Spare Parts Replacement Tutorials

### DP 2-10 Power Supply Removal

How to remove and replace a power supply on a Dioplex panel.

DP 2-10 Pwr Spply Removal

### Hub Board Removal & Replacement

How to remove and replace hub boards on a Dioplex LED panel.

DP 2-10 Hub Removal

### Module Removal & Replacement Front Access

How to remove and replace a mod on a Dioplex panel from the front.

DP 2-10 Mod Replacement

### Viusite Hub Replacement

How to remove and replace a hub board on a Viusite panel.

Viusite Hub replacement

### DP 2-10 Recieving Card Removal

How to remove and replace a receiving card on a Dioplex panel.

DP 2-10 Rec Card Removal

### DP 2-10 Module Replacement

How to remove and replace a Dioplex panel from the back.

DP 2-10 Mod Replacement