User Guide

MULTI-MONITOR DIRECTOR

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Notes, cautions and warnings[1]

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Index

Multi Monitor Director

Xyberis Multi-Monitor Director (MMD) provides a significant improvement over standard Windows™ Display Settings for managing multimonitor setups, offering notable benefits for both users and IT administrators.

Users frequently move between different workstations in modern, flexible office environments. Each workstation is typically equipped with a smart monitor (Master) featuring built-in docking station functionality such as USB upstream, video out, and Ethernet connection, often paired with secondary monitors (Companion) to create an extended display. Each time a user connects to a new setup, Windows™ recognizes it as a new configuration, resulting in cloned displays and requiring manual adjustments to restore the desired setup. This process is time-consuming and frustrating.

MMD transforms the multi-monitor experience by seamlessly applying the user's established preferences to various monitors and locations, assuming they are designated as "Validated Displays." This functionality enhances the connection experience by intuitively adjusting display settings, thus avoiding screen replication and guaranteeing consistent performance each time the user connects to a new monitor arrangement. This method is in sync with the evolving trends of adaptable work environments and is rapidly becoming a norm. Monitors from Dell Technologies® often gain an extra edge, as their unique naming conventions typically ensure they are instantly recognized and integrated by MMD upon connection.

For IT administrators, MMD simplifies the management of monitor settings. Instead of dealing with numerous support requests from users struggling with their display configurations, IT admins can pre-configure a common setup that takes effect from the first connection. This not only saves time and resources but also ensures a uniform and efficient multimonitor setup for every user in the organization.

In summary, MMD eliminates the need for repeated manual configurations, providing a smooth and efficient multimonitor experience for both users and IT administrators. This intelligent approach to monitor setup is well-suited to the evolving needs of today's flexible work environments.

Advantages for Users

- Easy configuration: MMD offers 38 built-in presets that can be applied with just a few mouse clicks, eliminating the need to manually drag monitors into position and locate hard-to-find options.
- Automatic Configuration: MMD applies your preferred settings automatically, eliminating the need for manual adjustments.
- Flexibility: Use the "free configuration" mode for specific needs, or switch to MMD for any of the built-in presets.

Advantages for IT Administrators

- Pre-configured Setups: Pre-create common setups that apply from the first connection.
- Reduced Support Requests: Simplify the support process by ensuring consistent configurations.
- Enhanced User Satisfaction: Provide a seamless and efficient multimonitor experience.

Installation of Xyberis Multi-Monitor Director (MMD)

Xyberis Multi-Monitor Director (MMD) is distributed with two main files: `Setup.exe` and `MultiMonitorDirector.msi`. This guide will walk you through both local and centralized installation methods.

Local Installation

1. Download Files:
   - Download `Setup.exe` and ` MultiMonitorDirector.msi `, then copy them into a folder of your choice to begin the installation.

2. Run Setup.exe:
   - Double-click `Setup.exe` to launch the installer.

3. Installation Path:
   - The application will install by default in `C:\Program Files\Xyberis\Multi-Monitor Director`. We recommend using the default installation directory.

4. Configuration Folders:
   - During installation, a folder named `\Xyberis\MMD` will be created to store the `mmd.lic` license file, '\Xyberis\MMD\Wallpaper', '\Xyberis\MMD\Images' and the '\Xyberis\MMD\Logs for various graphic and log files. The configuration file for MMD, `mmd-config.ini`, will be created upon launching the application in the `AppData\Multi-Monitor Director` folder of the user.

5. Installing for all users
   - By default, the application installs for everyone, enabling the autostart mechanism for Multi-Monitor Director to function for all users, including those yet to be created. If this behavior is not desired, opting for the "Just Me" installation is recommended.

6. Complete Installation:
   - Follow the on-screen instructions to complete the installation.

Centralized Deployment

For larger organizations, MMD supports centralized deployments using the MSI file. This method includes options for silent installation, making it easier for IT departments to manage and deploy across multiple machines. Additionally, with Preset 2 enabled by default, a simple reboot will automatically configure two and three monitor alignments from left to right, without any manual setup. Users can utilize the MMD User tool to choose from any of the four presets, adjust the position, vertical alignment, and primary display. There is also an option to browse for a wallpaper and select either fill or span mode. To disable automatic configuration, run mmd-stop.exe after the installation. This will remove the mmd-engine from the startup folder.

1. Download MSI File:
   - Obtain the MSI version of the installer.

2. Silent Installation:
   - Use the following command to perform a silent installation:
   - msiexec /i MultiMonitorDirector.msi /quiet /qn

3. Installation Path:
- The application will install by default in `C:\Program Files\Xyberis\Multi-Monitor Director`.

4. Configuration Folder:
- During installation, a folder named `C:\Xyberis\MMD` will be created to store the `mmd.lic` license file, 'C:\Xyberis\MMD\Wallpaper', 'C:\Xyberis\MMD\Images' and the 'C:\Xyberis\MMD\Logs for various graphic and log files. The configuration file for MMD, `mmd-config.ini`, will be created upon launching the application in the `AppData\Multi-Monitor Director` folder of the user.

Summary

By following these steps, you will successfully install MMD either locally or through a centralized deployment. The license file should be correctly placed in the `C:\Xyberis\MMD` folder to ensure proper operation of the application.

Using the Xyberis Multi-Monitor Director

The Xyberis Multi-Monitor Director (MMD) application will auto-arrange the monitor setup in a modern configuration with a docking monitor (‘master’) and a daisy-chained monitor (‘companion’). MMD supports both two as well as a three monitor setup. In a three monitor setup, the laptop would be third monitor. To be able to distinguish the “master” from the “companion”, the monitor names are listed in the central configuration file. Many monitors from Dell Technologies® are recognized automatically, because of their naming convention and subsequently added to the configuration file as a master or companion monitor.

After installation, Multi-Monitor Director will start automatically upon restart because a shortcut to the MMD Engine (mmd-engine.exe) is placed in the startup folder. To prevent this, remove the shortcut by running mmd-stop.exe located in the \Program Files\Xyberis\Multi-Monitor Director folder.

Figure 1: The default alignment is from left to right

The default profile is ‘Preset 2’ which is a two or three monitor alignment with the laptop placed on the left of the external monitors. The monitors align from left to right. It does not matter if there is only one external monitor connected to the laptop or when only two external monitors are used. The Preset works for three setups the same, because it will align the laptop left from the ‘master’ screen and the ‘master’ screen left from the companion. When the monitors are aligned at the top, the top edges of all monitors are at the same level. If one monitor is shorter in height than the others, its bottom edge will be higher off the desk or mounting surface compared to the taller monitors. This means that the bottom of the shorter monitor will not reach as low as the bottom of the taller monitors. Essentially, the shorter monitor’s bottom edge will be positioned higher than the bottom edge of the next monitor in the alignment. The option “Align bottom” in the MMD User application will align the monitors at the bottom instead.

The MMD application works mainly in the background, not interfering with the activities of the user. It is intended to set the multi monitor configuration to align with the current profile, every time the user connects to a dual monitor or triple monitor setup which is new to the laptop. Normally this will result in cloned displays, but the MMD Engine will immediately take over if the current configuration is not according to the settings in the MMD configuration file. The default setup involves actively monitoring any changes in display settings. This means that whenever the laptop's display settings change (such as when docking or undocking), the MMD Engine will verify that all settings match the central configuration file.

When fully automated is not desired, the IT admin should change the Mode in Settings in the Configuration file and change it to "2". This will stop the MMD Agent from actively monitoring any changes in settings (when a laptop is undocked/docked). If also an initial launch of the settings at boot is undesired, run MMD Stop to disable the startup of the MMD Engine (in Startup) and to close the MMD Agent and MMD Monitor application. This makes the MMD configuration passive and awaiting when the user will click on the MMD Refresh when connecting to a new setup.

Multi-Monitor Director functions as an overlay to Windows Display Settings. Once configured, Windows will remember the setup and apply these settings in the future. Consequently, MMD will primarily monitor the settings rather than actively applying them, as most of them will have been correctly set over time.

User scenario # 1 – Automatic settings

After the installation of the Xyberis MMD, it has been fully setup to perform active monitoring of any change in display settings. The default profile is Preset 2 aligned at the top, but this can be easily changed by the user or directly by the IT Admin in the configuration file, where under [Settings], "Mode" is set to "1".

User scenario # 2 – Automatic settings after startup

To ensure that settings are only applied after a start or restart of the computer, set the "Mode" under [Settings] in the configuration file to "2". This will prevent active monitoring of changes in display settings and apply the settings just once.

User scenario # 3 – Apply settings only when using MMD Refresh or MMD User

To fully control the behavior of the MMD application, the autostart of the MMD Engine must be disabled. This can be done by launching the MMD Stop application once. After this, when the laptop starts up with a new monitor configuration, the user will need to launch either MMD Refresh (to apply the Preset) or MMD User (to launch the MMD Engine, optionally edit the configuration, and apply the new settings).

MMD User

To enable the user to make changes to the default Preset 2, there is a simplified user interface where the user is offered three choices.

1. The Preset that fits their requirements
    a. Including the vertical alignment (top/bottom) and reversing the external monitors
2. Which monitor should become the Primary monitor
3. What wallpaper should be used and in which mode

Through the configuration file, it is possible to remove the sections of the wallpaper, the primary monitor, and the options “Reverse Master/Companion” and “Align bottom.” This restricts the user to choosing from four presets only. The external displays are positioned with the docking monitor on the left and the daisy-chained monitor on the right, with vertical alignment at the top, unless the configuration file is modified directly.

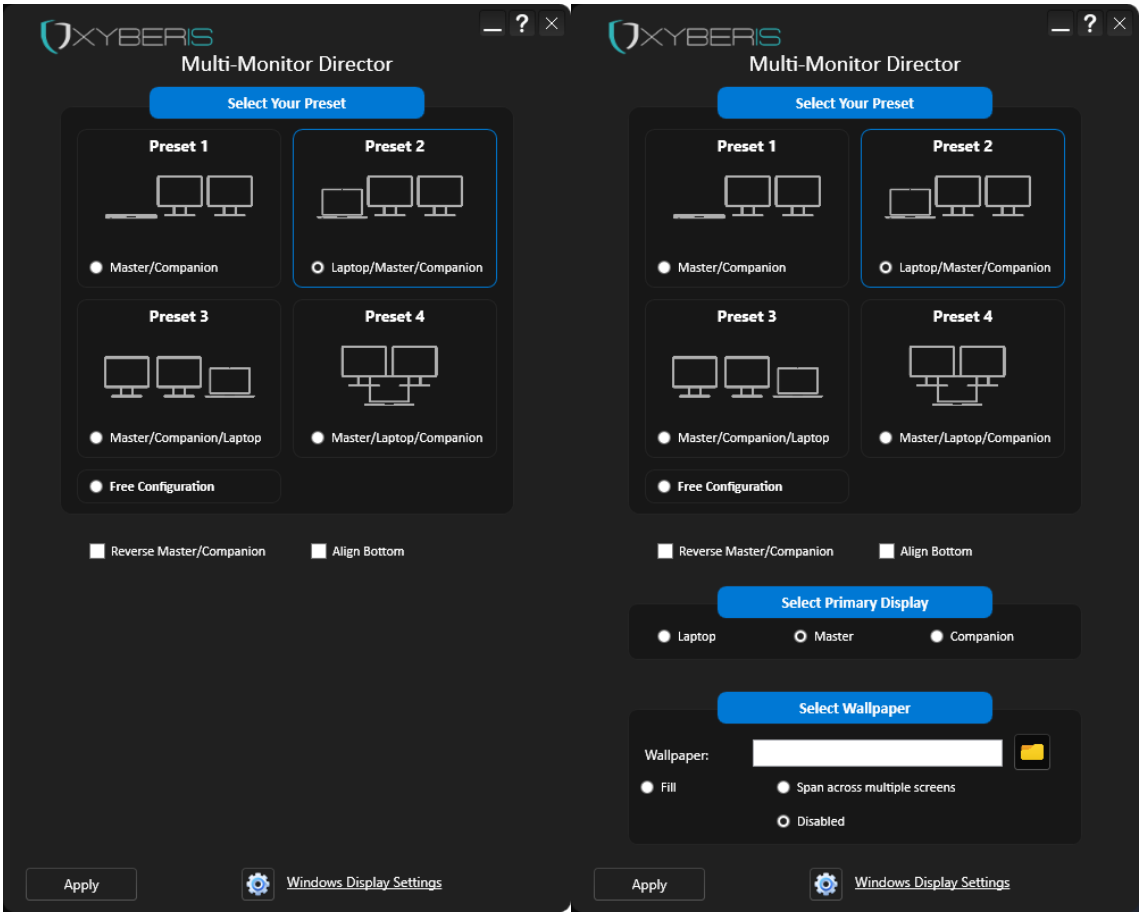


Figure 2: The images illustrate configurations where the position of the laptop is crucial. The user interface can be minimized to Presets only, as shown on the left.

Preset 1

This preset utilizes two external monitors with the laptop lid closed. When the lid is opened, the application automatically switches to Preset 2. The monitors are aligned from left to right, with the left monitor serving as the 'Master' monitor to which the laptop is connected. If the right monitor is to be the 'Master,' the "Reverse Master/Companion" option needs to be selected.

With Preset 1, only the external displays are used

Preset 2

Preset 2 is the default setting, utilizing the laptop screen on the left side along with two external monitors. When the laptop lid is closed, the MMD automatically switches to Preset 1. The monitors are aligned from left to right, with the laptop as the leftmost screen and the 'Master' monitor in the middle. The laptop connects to the 'Master' monitor via a USB Type-C cable. If the 'Master' monitor is on the right side, the "Reverse Master/Companion" option needs to be selected.

With Preset 2, the laptop is positioned on the left side

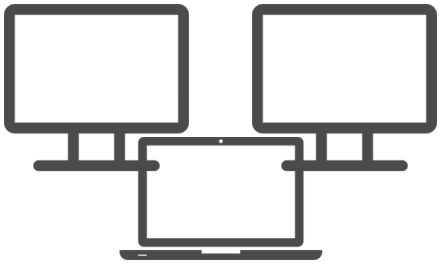
Preset 3

Preset 3 utilizes two external monitors, with the laptop screen positioned on the right side. When the lid is closed, the application automatically switches to Preset 1. The monitors are aligned from left to right, with the 'Master' monitor being the leftmost screen. The laptop is connected to the 'Master' via a USB Type-C cable. If the 'Companion' monitor is on the leftmost side, the "Reverse Master/Companion" option needs to be selected.

With Preset 3, the laptop is positioned on the right

Preset 4

Preset 4 positions the laptop screen centered at the bottom, along with two external monitors. When the lid is closed, the application automatically switches to Preset 1. The external monitors are aligned from left to right, with the laptop screen added at the bottom. The laptop connects to the 'Master' monitor via a USB Type-C cable. If the 'Companion' monitor is on the leftmost side, the "Reverse Master/Companion" option needs to be selected.



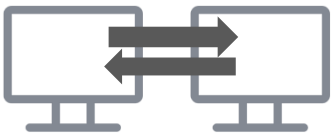
With Preset 4, the laptop is centrally positioned under the external displays

Free configuration

If a specific configuration is desired (temporarily) via the Windows™ settings, then choose 'free configuration'. This will cause Multi-Monitor Director to no longer apply active settings.

Reverse Master/Companion

The MMD application configures settings assuming the docking monitor is on the left side of the daisy-chained monitor. If this is not the case, the "Reverse Master/Companion" option should be selected.



Align bottom

The 'Align Bottom' option ensures that the monitors are aligned along the taskbar; otherwise, they align at the top.

Wallpaper section

When the wallpaper section is enabled in the configuration file, users can browse for a wallpaper and choose either 'fill' (for a per-monitor wallpaper) or 'span' (to display the wallpaper across all screens). If "Disabled" is selected, the wallpaper will not be applied, even if it is listed.

Understanding How Xyberis Multi-Monitor Director (MMD) Works

To grasp the functionality of Xyberis Multi-Monitor Director, it's essential to know the different components that work together:

MMD Engine (mmd-engine.exe):

- Core component that applies monitor settings based on the central configuration file.
- Sets the primary monitor, the alignment of the companion monitor, and the internal display of the laptop.

MMD User (mmd-user.exe):

- Provides an intuitive user interface for changing presets, selecting the primary monitor, and setting the wallpaper.
- Allows users to easily and quickly set the monitor settings in one go.
- The profile can be applied for a three-monitor setup, as well as for two monitors (laptop + master or master + companion).

MMD Agent (mmd-agent.exe):

- Monitors changes in display settings and ensures that the preset is reapplied if the current settings deviate from the configuration.

MMD Monitor (mmd-monitor.exe):

- Oversees the overall installation and enhances stability to ensure the application remains highly available.

MMD Stop (mmd-stop):

- Removes the MMD Engine from the startup folder and closes the MMD Agent and MMD Monitor applications.
- Halts the monitoring and automatic application of settings when launched.

Start MMD (start-mmd.exe):

- Used to start or restart the MMD application, ensuring that monitors are recognized and registered within the application.

Setting Up MMD

Xyberis Multi-Monitor Director (MMD) comes with 'Preset 2' by default upon installation, which aligns existing monitors in a dual and triple monitor setup from left to right, with the laptop or the 'Master' being the leftmost screen. Only if a change is desired, the mmd-config.ini file in the Multi-Monitor Director folder under the Application Data folder can be adjusted as needed.

[MonitorSetup]

Preset = {0, 1, 2, 3 or 4}

The Preset can be set via the GUI of the application or directly into the mmd-config.ini file.

Preset = 0 allows for **Free Configuration** and should be used when a user wants to set up a custom configuration using Windows Display Settings. If any other preset is selected, MMD will override the Windows Display Settings.

Preset = 1 assumes the use of two external monitors, a **Master/Companion** setup. By default, they are aligned from left to right, with the "Master" display (directly connected to the laptop) on the left and the "Companion" display (connected via DisplayPort MST from the "Master") on the right. Selecting "Reverse Master/Companion" will swap the "Companion" to the left side. If Preset 1 is selected and the laptop lid is opened, the configuration will automatically switch to Preset 2.

Preset = 2 is configured for a three-monitor setup, **Laptop/Master/Companion**, where the laptop's display is added as the leftmost monitor when the lid is opened. The "Master" display (directly connected to the laptop) is in the center, and the "Companion" display (connected via DisplayPort MST from the "Master") is on the right.

Preset = 3 is configured for a three-monitor setup, **Master/Companion/Laptop**, where the laptop's display is added as the rightmost monitor when the lid is opened. The "Master" display (directly connected to the laptop) is on the left, and the "Companion" display (connected via DisplayPort MST from the "Master") is in the center.

Preset = 4 is configured for a three-monitor setup, **Master/Laptop/Companion**, where the laptop's display is added below the two external monitors, centered between them. The "Master" display (directly connected to the laptop) is on the left, and the "Companion" display (connected via DisplayPort MST from the "Master") is on the right.

Primary = {L, M or C}

Sets the primary monitor. "L" designates the Laptop (internal display) as the primary monitor, "M" designates the Master monitor as primary, and "C" designates the Companion monitor as primary.

ReverseMC = {Yes or No}

ReverseMC will swap the positions of the Master and Companion monitors. By default, the Master is on the left and the Companion is on the right. When set to “yes,” the Companion will become the left monitor.

AlignBottom = {Yes or No}

Determines the alignment of the monitors. When set to "Yes," the monitors are aligned at the bottom. When set to "No," they are aligned at the top.

[Settings]

Mode = {1 or 2}

If Mode 1 is set, the MMD application will start actively monitoring any changes in the Display Settings. Multi-Monitor Director will stay active and automatically adjust the settings whenever they are changed. When Mode 2 is activated, the MMD Engine will only launch when the user initiates MMD Refresh or applies a preset through the Multi-Monitor Director GUI. If ‘MMD Stop’ has been initiated, it will disable the automatic startup of the ‘MMD Engine’ application and stop the active ‘MMD Agent’ and ‘MMD Monitor’ applications. Consequently, the application will not be active when the Windows computer starts up. Users will need to manually start it using ‘MMD Refresh’ or ‘MMD user’ when connecting to a new monitor setup.

Language = {EN, DE, FR, ES, IT, NL}

Sets the display language and interaction for the ‘MMD User’application to English (EN), German (DE), French (FR), Spanish (ES), Italian (IT), or Dutch (NL). By default, MMD will synchronize with the operating system's language.

AppName = {Name of the Application in the top center}

To rename the ‘Multi-Monitor Director’ application, modify the AppName option. This allows for a name that better aligns with company guidelines and helps users better understand the application’s purpose.

Timeout = {Milliseconds}

Sets the default timeout for the 'MMD Engine' application. Adjusting monitor settings takes time, so a default of 2 seconds (2000 milliseconds) is used to allow enough time for changes to be applied. If the device running MMD has reduced performance and is not quick enough to apply the changes, it is recommended to increase the timeout duration to ensure the system has sufficient time to complete the adjustments.

Logo = {logoname.ext}

The logo should be placed in the C:\Xyberis\MMD\Images folder, where the application will search for the correct image. The recommended size for the logo is 160px X 40px. The name of the logo is provided in the configuration file under 'Settings', 'Logo'.

ClearLog = {Yes or No}

When ClearLog is set to "yes", MMD will delete old log files and only retain daily versions. This is recommended because all display changes are logged, which can quickly result in a large file.

[Rename]

Master = {master name}

Companion = {companion name}

Laptop = {laptop name}

The Xyberis MMD application uses terms like "Laptop", "Master", and "Companion" which might not be intuitive for all end users. To address this, the ini config file allows you to change these names. However, please note that the new names are limited in size (number of characters).

[Visible]

DemoMessage = {Yes or No}

This setting controls the display of the Demo Message. When disabled (set to "No"), users will no longer see the demo message upon starting the 'MMD User' application. However, references to demo licenses will still appear in the log files. Additionally, 10 days prior to the end date of the demo license, users will receive a message indicating that they are using demo software, regardless of the Demo Message setting.

SetPrimary = {Yes or No}

When SetPrimary = Yes is set, users can choose whether the Laptop, Master, or Companion will become their primary monitor. Setting a primary monitor in Windows means that this monitor will display the main desktop, taskbar, and start menu. It is the default screen where new windows and applications open, providing a central workspace for the user. If SetPrimary is not enabled, the entire section for selecting a primary monitor will not be visible in the 'MMD User' application.

Wallpaper = { Yes or No}

When Wallpaper = Yes is set, users can browse folders for a wallpaper and apply it using the modes 'fill' and 'span'. The 'fill' mode resizes the image to fit the screen while maintaining the aspect ratio, which may crop parts of the image. The 'span' mode stretches a single image across multiple monitors, creating a panoramic effect. If Wallpaper is set to No, the entire wallpaper section will not be visible in the 'MMD User' application.

WindowsDisplaySettings = {Yes or No}

This setting determines whether the Windows Display Settings can be started from the user interface. Without this setting enabled, users cannot start Windows Display Settings directly from the MMD application. Having quick access to the display settings is very handy because it allows users to make additional adjustments to their display configuration. The Windows settings will show what the Multi-Monitor Director has set up so far, enabling users to see how the settings in MMD affect the Windows Display Settings. This is particularly useful as MMD acts like an overlay application for the Windows Display Settings, providing a seamless experience for optimizing and troubleshooting display setups.

ReverseMC = {Yes or No}

This setting determines whether the Reverse Master and Companion option is enabled. Without this setting enabled, users cannot reverse the monitors unless they manually edit the mmd-config.ini file using a text editor.

AlignBottom = {Yes or No}

This setting determines whether the Align Bottom option is enabled. Without this setting enabled, users cannot align the monitors at the bottom.

[ValidatedDisplays]

AutoDell = {Yes or No}

Masters = {master display1, master display2, …}

Companions = {companion display1, companion display2, …}

This section is critical to the application as it uses these names to recognize which monitor is which and how to position them as a master, companion, or other monitor.

When using monitors from Dell Technologies®, many of them will be recognized automatically because of their naming convention, where “master displays” typically have an “E” or “EB” at the end. By default, the option AutoDell = is set to “Yes” to accommodate this. If this is undesired, change the setting to “No”. This will mean the monitors have to be added manually. Monitor names need to be separated by a comma and can be found in the mmd-engine log file, where they are listed as either Monitor 1:, Monitor 2:, or Monitor 3:. The laptop monitor (Internal Display) should not be added.

An example of a monitor listing could look like this:

[ValidatedDisplays]

AutoDell = Yes

Masters = DELL C2722DE, DELL U2724DE, DELL U3421WE

Companions = DELL U2722D, DELL U2724D

Typically, the monitors mentioned above would be added automatically.

[Colors] (experimental)

FontMMD = {#HEXVALUE}
FontWindow = {#HEXVALUE}
TopWindow = {#HEXVALUE}
BottomWindow = {#HEXVALUE}
FontLabel = {#HEXVALUE}
TopLabel = {#HEXVALUE}
BottomLabel = {#HEXVALUE}
TopField = {#HEXVALUE}
BottomField = {#HEXVALUE}
Border = {#HEXVALUE}
BorderInlay = {#HEXVALUE}

To enhance the application's customization, you can modify various elements:

- Title color (FontMMD)
- Overall font (FontWindow)
- Window gradient (top to bottom, TopWindow/BottomWindow)
- Label gradient (top to bottom, TopLabel/BottomLabel)
- Label font (FontLabel)
- Fields (presets, primary monitor, and wallpaper in a gradient from top to bottom)
- Overall border (Border)
- Selection border (BorderInlay)

All colors should be specified as a 6-character Hex value (e.g., FFFFFF = White). Entries with fewer than six characters will be ignored. Optionally, you can add two additional Hex values before the color to define opacity, where "00" is fully transparent and "FF" is fully opaque.

Support:

For any inquiries or assistance regarding Xyberis Multi-Monitor Director (MMD), please feel free to contact our support team at support@xyberis.com. Whether you have questions about configuration, usage, or encountering issues with the application, our team is here to help and provide the necessary support.

General Contact Information:

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