

EMACHINES

flexible mediaserver FM4 MAX

OPERATING MANUAL

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Safety Notes

- ⚠ Do not remove screws, covers, or try to modify any of the installed components.
- ⚠ Refer servicing to service personnel qualified by XI-MACHINES.
- ⚠ If any problems occur, turn off the unit first and then unplug it from power.
- ⚠ Do not attempt to repair the unit yourself: Always consult XI-MACHINES authorized service personnel or your integrator.
- ⚠ Do not expose this unit to high moisture or spillover liquid of any kind. Should any form of liquid or a foreign object enter the unit, do not use it. Switch off the unit and then unplug it from power. Do not operate the unit again until the foreign object is removed and/or the liquid has completely dried and its residues fully cleaned up. If in doubt, please consult XI-MACHINES or your integrator.
- ⚠ Do not use harsh chemicals to clean the unit. Clean only with specialized cleaners for electronic equipment.
- ⚠ Never handle the power cables with wet hands!
- ⚠ Make sure the unit is switched off when plugging/ unplugging it to/ from your power source.
- ⚠ Connect all peripherals before powering the unit.
- ⚠ Avoid placing things like paper, plastic sheets or textiles covering the ventilation holes or using the unit in a narrow and/or poorly ventilated place which could affect its operation or the operation of other closely located components.
- ⚠ Do not install near any heat sources such as radiators, stoves, or other apparatus (including amplifiers) that produce heat.
- ⚠ Make sure, that there is sufficient air flow for adequate cooling of the unit.
- ⚠ Avoid exposing the unit to direct sunlight or heat from components like receivers or lighting machines and also vibration, dust and humidity.
- ⚠ Privacy, Security and other Windows Settings are set to optimize real-time performance and not enhance the overall data protection or security.
- ⚠ For most media server software to work best, the Microsoft Defender and Firewall are disabled! To avoid Malware infection, it is advised not to use the unit for internet browsing or similar activities.

- ⚠ WARNING: To turn off main power completely, be sure to remove the plug from your power outlet. Using the power button on the front will only – depending on configuration - activate the standby mode or shut down the system.
- ⚠ WARNING: Explosive hazard if on board battery is replaced with a different model!
- ⚠ WARNING: It is not allowed to throw batteries into normal waste! Batteries have to be brought to a certified battery recycling facility.
- ⚠ WARNING: This unit should only be operated below 2000 meters above sea level.
- ⚠ WARNING: This unit should not be operated in the tropics or subtropics without preventing moisture to enter the unit.



EMACHINES

Introduction

Thank you for purchasing our flexible mediaserver FM4.

This operating manual focuses on getting you familiar with your FM4 and getting it up and running.

About FM4

The “flexible mediaserver FM4” is our compact and exceptionally powerful media server in a 19” 4U form factor. FM4 has been specifically designed by us for the use in a variety of event, show, and media installation environments.

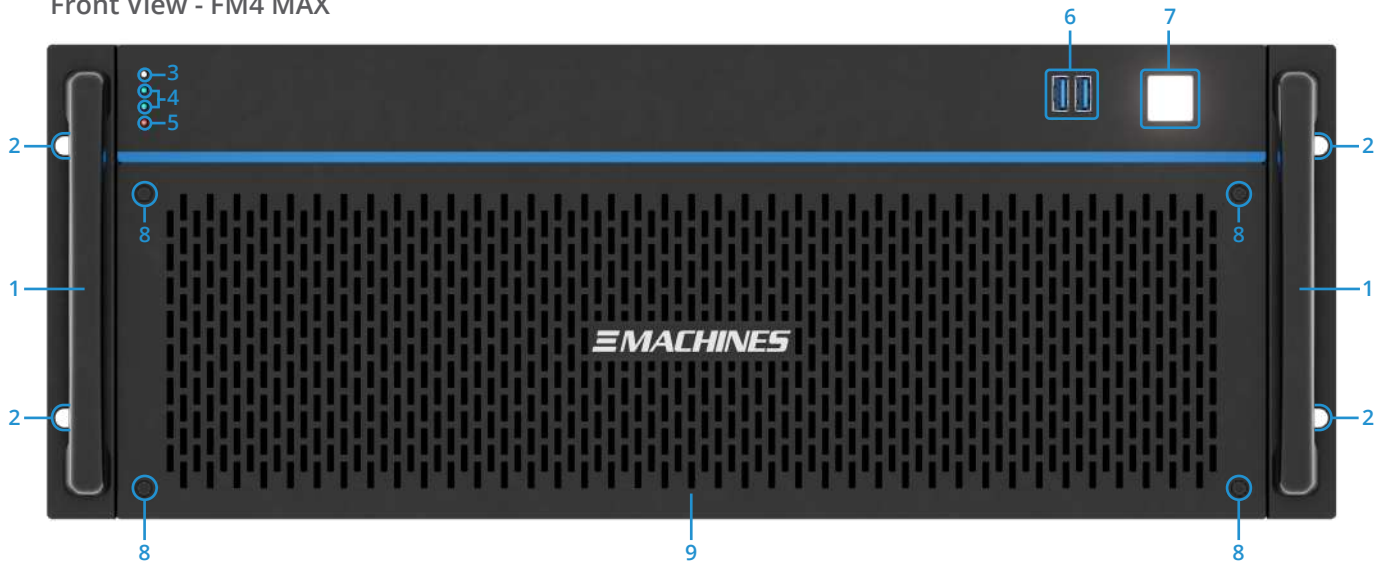
FM4 is the first product of our brand new “flexible mediaserver platform.” This platform represents true flexibility in terms of the software used and the intended area of application. FM4 is always tailored to you, your use case, and your preferred software. This is why our specialists validate FM4 for the use with a variety of professional applications (see “Media Server Software” section). Our flexible mediaserver FM4 is a fully configured, turnkey solution, including software licenses for the media server software of your choice (with an option to exclude licenses, if needed). This ensures maximum compatibility, optimal performance and seamless integration with your projects.

Our flexible approach gives you complete freedom in choosing your media server software and enables you to re-equip your FM4 for other applications without having to invest in new hardware each time. Our specialists are always just a phone call away to help you with the installation of different media server software, reset your FM4, or preparing it for an entirely different media use case. This makes our FM4 not only extremely practical and user-friendly but also sustainable.

By being able to adapt the FM4 to future technological developments and requirements, the lifespan of the FM4 is extended, costs and resources are saved, and electronic waste is reduced. Our flexible media server FM4 is therefore not only a flexible solution but also an environmentally friendly alternative to the manufacturer’s own media servers.

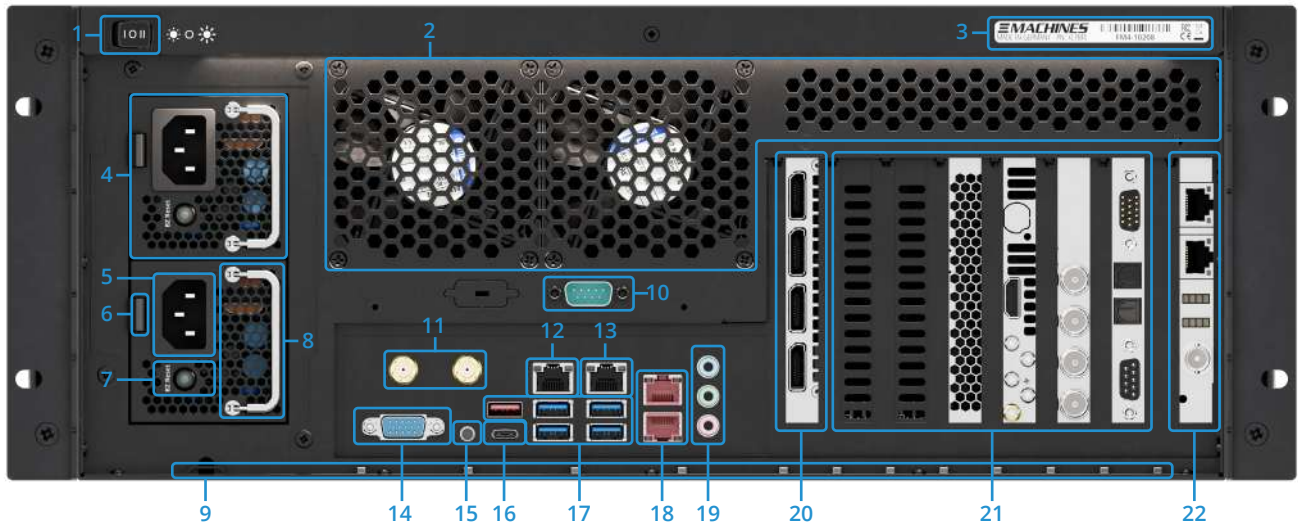
Overview & Connections

Front View - FM4 MAX



<p>1 Rack Handles Use these to handle your FM4. The rack handles can be removed if required.</p>	<p>2 Mounting holes for Rack Screws Use corresponding screws to secure your FM4 in a rack.</p>	<p>3 UID LED (Unit Identification) Helps locate a specific FM4 MAX server in a rack of many. LED lights up when the UID button on the back of your FM4 MAX is pushed.</p>
<p>4 Network Activity LED Shows working network connection and network activity of the two integrated 10Gbit/sec Ethernet ports of your FM4 MAX (flashing is normal).</p>	<p>5 Error LED Lights up in case of system error such as overheat, fan fail or similar. If the LED is lit, check the FM4 MAX for errors or consult your integrator and/or support technician.</p>	<p>6 USB 3.1 Type-A Ports Use these to connect USB Type-A devices to your FM4.</p>
<p>7 Illuminated Power Button Press Button once to start your FM4. Push and hold to force a shutdown.</p>	<p>8 Bezel Screws Loosen these to access the integrated dust filter for maintenance purposes.</p>	<p>9 Air Intake Fresh air supply for the FM4. Do not block! Regularly check the dust filter behind for dirt and clean if necessary.</p>

Rear View - FM4 MAX



<p>1 Rear Light Switch Controls the integrated rear LED lighting (I = Dimmed / O = Off / II = Bright)</p>	<p>2 Air Outlet Heated air from inside of the unit will exhaust from here. Do not block!</p>	<p>3 Nameplate Displays various information about your FM4, such as model number, serial number, etc.</p>
<p>4 Redundant Power Supply For increased reliability your FM4 is equipped with two PSUs. If one fails, your FM4 will still operate but sound alarm. Reset the alarm by pressing the reset button (7). The PSU is hot-pluggable during operation.</p>	<p>5 IEC Power Connector Use this to connect your FM4 to a power source. Important: Both power supplies must be connected to the power network, or an alarm will sound. (Different power circuits recommended!)</p>	<p>6 Power Supply Release Lever Gently push the lever towards the power connector, then use the power supply handle (8) to pull out the power supply.</p>
<p>7 Alarm Reset Button Pressing this button will silence the power supply alarm and disable the alarm LED.</p>	<p>8 Power Supply Handle Fold the handle 90° and gently pull out the power supply. Important: Press the power supply release lever (6) at the same time!</p>	<p>9 Strain Relief Rail To avoid accidental damage to your FM4, we recommend using cable ties to secure the wiring. Your FM4 features 13 dedicated holders for this. (Cable ties included)</p>
<p>10 Serial Port Use this to connect serial devices to your FM4. (9-Pin RS-232 COM connector)</p>	<p>11 WiFi Antenna Connectors Use these to connect your FM4 MAX to wireless networks. (WiFi antennas included)</p>	<p>12 1Gbit/sec Network Ports Use these to connect your FM4 MAX to a network via a RJ45 cable. Maximum speed 1Gbit/s Ethernet.</p>
<p>13 Dedicated Management Port Use this for remote management of your FM4 MAX. To access remote management, connect to a network via RJ45 cables.</p>	<p>14 VGA Port No function. Manufacturer use only.</p>	<p>15 UID Button (Unit Identification) Helps locate a specific FM4 MAX in a rack of many. Press this to illuminate the white UID LED on the front of your FM4 MAX.</p>
<p>16 USB 3.2 Type-C Ports Use these to connect USB Type-C devices to your FM4 MAX.</p>	<p>17 USB 3.2 Type-A Ports Use these to connect USB Type-A devices to your FM4 MAX.</p>	<p>18 10Gbit/sec Network Ports Use these to connect your FM4 MAX to a network via RJ45 cables. Maximum speed 10Gbit/s Ethernet.</p>
<p>19 Analog Audio Ports Use these to connect analog audio devices to your FM4 MAX. (3.5mm TRS Line Input, Line Output, Microphone)</p>	<p>20 Main Display Outputs (DP 1.4) Use these to connect your display devices to your FM4, e.g. projectors, LED wall controllers, displays.</p>	<p>21 Expansion Options Used for optional FM4 MAX expansion options. For information on all expansion options available for the FM4 MAX, please contact our sales team.</p>
<p>22 Synchronization-Option Dedicated slot for optional sync-module. Enables frame-accurate synchronization of multiple FM4 servers. Caution: Do not connect to LAN, risk of damage!</p>		

Starting-up

- ⚠ **IMPORTANT!** Depending on the time of year and the method of shipment, the your FM4 may be cold when it arrives. When setting it up for first use, please remove it from the packaging and, very important, let it heat up to room temperature before attaching the power cables.

To start-up your flexible mediaserver FM4, connect your setup to the appropriate ports on the back of the unit and press the power button on the front. The power button will illuminate and your FM4 will start up (See section "Overview and Connections" for further details).

Your flexible mediaserver FM4 will boot into a fully configured and optimized environment.

Media Server Software

Flexible mediaserver FM4 can be ordered as a turnkey solution for many applications such as:

- Pandoras Box
- Pixera
- Watchout
- Vertex
- Screenberry
- Resolume
- Ventuz
- Touch Designer
- vvvv
- Vioso
- Madrix
- Unreal Engine
- Unity Engine
- Notch
- vMix
- OBS
- POET
- Universe

If your flexible mediaserver FM4 was ordered as a turnkey solution with one or more of the above applications, the corresponding software is pre-installed, configured and optimized and the required license is included and activated. In addition, a multi-boot environment has been set up for you, allowing you to boot into the desired application environment conveniently by selection.

- ⚠ Installation and activation of the software is depending on the installation and license activation requirements of the corresponding software manufacturer. For example, prior user registration may be required in which case a pre-installation and/or pre-activation of the software might not be possible.
- ⚠ Your software is not listed here? For further Information on additional available software installations, please contact our sales team.

If your flexible mediaserver FM4 was delivered without a specific software license or optimization for a specific software, it will have received optimizations for a flexible use case. If you decide to use a certain media server software at a later point in time, our specialists will be happy to help you optimize your FM4 accordingly.

- ⚠ **IMPORTANT!** Every FM4 has an optimized media server installation based on a Windows operating system. It is recommended not to change any operating system settings without knowing exactly why and how to change them.

Pre-installed Software

In addition to any media server software that may have been pre-installed, every flexible mediaserver FM4 comes with a selection of useful and commonly used applications:

- 7zip
- Dante Virtual Soundcard (License optional. Talk to our sales team)
- Dante Control
- MediaInfo
- NDI Tools
- Notepad++
- VLC Player

This list may vary and software may be added or removed without further notice.

Display Setup

To set up and configure your display units, mosaic configurations, display synchronization, EDID management and many other features, please use the pre-installed Nvidia Control Panel. You can access this by clicking on the Nvidia icon found on the bottom right of the Windows Taskbar or by right-clicking the Windows Desktop and selecting the option "Nvidia Control Panel".

Within the Nvidia Control Panel, you can perform specific GPU related tasks such as:

- View a graphical representation of the displays and graphics accelerators installed in your FM4.
- Set up basic display configurations such as display resolution, refresh rate, and multiple display use.
- Configure the so called "Mosaic mode" to combine multiple displays into a larger virtual canvas.
- Synchronize your displays using frame sync or genlock technology.
- Load and unload EDID information.

If you need assistance in understanding the Nvidia Control Panel, please refer to the „Nvidia Control Panel User Guide“, located in "C:\XI-MACHINES Support\".

Storage Setup

In its default configuration, flexible mediaserver FM4 MAX is equipped with a "High-Speed Storage-Option" available in different capacities. This ultra fast storage configuration is based on a dedicated high-speed NVMe RAID solution allowing for playback of many compressed and uncompressed video files and/or image sequences. The supported video codecs vary depending on the media server software used. For detailed information on supported codecs, maximum playback performance or general questions about the installed storage configuration, our technical support will be happy to help you.

- ⚠ The storage configuration is preconfigured, optimized for maximum performance and is ready to be used. In most cases you will not need to change any storage related settings. Simply copy your content on the storage media and start programming your show. If for any reason you need to make changes to the RAID setup, or if the RAID configuration has degraded or stopped working, be sure to contact our support team for a quick solution to the problem (see section „Contacting XI-MACHINES“ for details).

Redundant Power Supply

For increased reliability your FM4 is equipped with a redundant power supply consisting of two individual power supply units operating at the same time. If one unit fails, the other unit will instantly take over the sole operation, hence your flexible mediaserver FM4 will still operate but sound alarm. Reset the acoustic alarm by pressing the red flashing alarm reset button on the back of the PSU (See section “Overview & Connections” for details).

In the rare case of a PSU failure, please contact our support team to get a replacement power supply unit as fast as possible. As soon as you have received the replacement PSU, disconnect the defective power supply unit from the mains, remove it from the chassis and replace it with the new one. Complete redundancy is thus restored.

- ⚠ The power supply unit is hot-pluggable during operation so there is no need to power down your flexible mediaserver FM4.
- ⚠ **IMPORTANT:** In order to consistently implement redundancy, each of the power supply units should be connected to its own power source. This not only protects you against the failure of the power supply hardware itself, but also against the failure of the actual power source.

Expansion Options

Your FM4 MAX offers remarkable expansion capabilities. In addition to the four primary display outputs, FM4 MAX can be equipped with up to 7 additional expansion options (6 + Synchronization Option). Available expansion options include:

- Video Input Options (HDMI, SDI, DisplayPort, etc.)
- Audio Options (analog, digital, MADI, Dante)
- Storage Options (up to 60TB NVMe)
- Network Options (100Gbit/sec, 25Gbit/sec, 10Gbit/sec, 1Gbit/sec Ethernet)
- Synchronization Option (Genlock/Framelock)

For a full list of suitable expansion options for your individual FM4 MAX, please contact our sales team.

Installing additional Hardware

In principle, it is possible to equip your flexible mediaserver FM4 with additional expansion cards. In order to guarantee continuous reliable operation of your FM4 and to not limit the comprehensive warranty and the associated product support, changes and/or expansions should always be carried out by XI-MACHINES itself or by a XI-MACHINES authorized partner.

- ⚠ **IMPORTANT!** Unauthorized changes to the delivered configuration are made at your own risk and are excluded from warranty and support. XI-MACHINES assumes no liability for damage caused by unauthorized expansions and/or changes to the configuration delivered in the first place.

Driver Updates

Every flexible mediaserver FM4 is delivered with hardware drivers validated for the ordered field of application.

⚠ We do not recommend updating hardware drivers just to be up to date!

Should for example a software that was installed at a later point in time require a newer or different driver version than the one installed, please contact our support team before installing it to check whether this driver version is approved for the use with your particular server or not. This is the only way we can ensure that your flexible mediaserver FM4 will continue to function correctly.

Operating System Updates

The operating system installation of your flexible mediaserver FM4 has been set to a fixed update status validated by our specialists. To avoid possible errors and malfunctions, we do not recommend to perform operating system updates unless absolutely necessary.

If required, the update services can be activated. Please navigate to the following location: "C:\XI-MACHINES Support\Windows Update Tweaks" and execute the following two files.

- "enable_WaaSMedicSvc.reg"
- "enable_wuanserv.reg"

Confirm all messages and restart your flexible mediaserver FM4. The update search will now work and updates may be downloaded and installed.

After updating we recommend to disable all update services again by executing the following two files.

- "disable_WaaSMedicSvc.reg"
- "disable_wuanserv.reg"

You do not have to restart your flexible mediaserver FM4 after disabling the update services.

Backup

We differentiate between the following:

FM4 Factory Defaults

- The Factory Defaults are an image backup of the system drives initial delivery state. It has been created by our technicians shortly before shipping the unit and is stored on a fast USB 3.1 stick supplied with your flexible mediaserver FM4.
- Use the USB stick to revert to factory defaults if need be. (See section “Reset to Factory Defaults” for details)

Backup or Data-Backup

- A Backup or Data-Backup is a copy of your data on a different storage unit which ideally is taken to a different location for safety. As we do not have your data at delivery, your data will need to be backed up by you or your client.
- There are a variety of backup software solutions on the market. We do not offer additional backup solutions as a part of our flexible mediaservers.

- ⚠ We recommend creating additional image backups of the final installation state of your FM4 when ready to be handed over to your client or when being installed in your venue.
- ⚠ We also recommend to regularly backup your data to physically separate media stored at another location to protect your data against theft, fire or water damage, lightning strikes or sudden voltage peaks, viruses, unintentional data deletion etc.
- ⚠ Any installed RAID array within your FM4 does NOT replace a real backup of crucial data.
- ⚠ XI-MACHINES is not responsible for any data loss after hardware or software crashes.

Reset to Factory Defaults

If the media server installation no longer works properly or a software or driver installation, system setting or similar has led to failures of the operating system, there is always the option of resetting the entire installation to our delivery status/factory defaults.

- ⚠ We recommend to always contact our support prior to doing so, to make sure a reset is really necessary and the problem can't be solved in any other way. Remember, a reset means that all additionally installed files and software are deleted from the system drive and all settings made to the installation are reset to factory default.

If our support recommends your flexible mediaserver FM4 to be reset, our technicians will guide you through the process. Alternatively you may also refer to the „FM4 Factory Reset Guide“, located in the following location: “C:\XI-MACHINES Support”.

- ⚠ Always keep in mind that a reset to factory defaults can only be done if the system drive is still functioning. If a hardware error has occurred, your mediaserver cannot be reset or restored! In this case, our technical support will recommend an appropriate course of action.

Cable Route & Display Adapters

After setting up your individual display scenario, should you experience image artifacts, unstable display signals, or even signal loss, these problems are rarely caused by the mediaserver hardware itself. As matter of fact, our project experience shows that most of the time, these are caused by using the wrong cables, too long cable runs and/or unsuitable adapters. These issues can usually be resolved by following the recommendations below:

Using HDMI:


- Normal HDMI cables (Type 2.0 and above) can be used reliably up to a total length of 15 meters (50 feet). After that, signal degradation may occur. Keep in mind that any cable that has the HDMI logo printed on it must be certified by the HDMI organization and can theoretically be used without problems. However, since there are many cheap imitations on the market, make sure to only use well-known brands.
- In order to be able to continue using HDMI with a cable length of more than 15 meters, the use of signal amplifiers is recommended.
- As an alternative to using normal copper-wired HDMI cables, HDMI to CAT converters can be used instead. When using CAT cables, lengths of up to 50 meters (164 feet) can be achieved without signal degradation.
- A method of extending HDMI signals over even longer distances is by using fiber optic cables. These have a practically infinite usable cable length, but can easily be damaged if handled carelessly.

Using DisplayPort:

- DisplayPort is a standard with lower operating voltages compared to HDMI and therefore can only be used for up to 5 meters (16.4 feet) of effective cable length before signal degradation or even signal loss may occur. Keep in mind that any cable that has the DP logo printed on it must be certified by the VESA organization and can theoretically be used without problems. However, since there are many cheap imitations on the market, make sure to only use well-known brands.
- In order to be able to continue using DisplayPort with a cable length of more than 5 meters (16.4 feet), the use of signal amplifiers is recommended.
- As an alternative to using normal copper-wired DisplayPort cables, DisplayPort to CAT converters can be used instead. When using CAT cables, lengths of up to 50 meters (164 feet) can be achieved without signal degradation.
- A method of extending DisplayPort signals over even longer distances is by using fiber optic cables. These have a practically infinite usable cable length, but can easily be damaged if handled carelessly.

Using Adapters:

- When using any sort of adapters, no matter the display standard they convert from or to, make sure to only use certified adapters from well-known brands.
- Make sure that the adapters used are certified for use with Nvidia graphics cards, as this can otherwise cause serious signal issues such as image artifacts, instable display signals, or even loss of signal.

 Be sure to always use so-called “active adapters”, as they have active electronic components inside them that actually convert one display standard to another and not just rewire the connectors.

Maintenance

Flexible mediaserver FM4 is a robust industrial solution with minimal maintenance requirements.

Cleaning the built-in dust filter

To keep the inside of your FM4 as clean as possible and therefore in optimal operating condition, your FM4 features an integrated dust filter. The dust filter is located behind the front bezel.

1. To access the dust filter, please unscrew the four Allen screws located in each corner of the front bezel (See section "Overview and Connections" for details).
2. Remove the front bezel and the dust filter behind.
3. The dust filter can now be cleaned with a vacuum cleaner or washed with tap water. We recommend using tap water.
4. Finally, re-attach the dust filter and front bezel and carefully screw the four Allen screws back in place.

- ⚠ **IMPORTANT!** Do not use compressed air or vacuum cleaners for cleaning inside the mediaserver. If you do this, the installed fans will start to spin fast, causing dynamo-like power to be generated which is then fed back to your FM4 potentially causing system damage.
- ⚠ **IMPORTANT!** If the dust filter was washed out, please make sure to let it completely dry before reinstalling it. A wet dust filter may cause electrical shortcuts or corrosion, due to possible moisture being sucked into the mediaserver.

Cleaning Interval

Depending on how much dust is present in a particular venue, the cleaning interval may vary. As a rule of thumb, we recommend cleaning the dust filter at least every 6 months.

- ⚠ **IMPORTANT!** If your FM4 is used in very dirty or dusty environments, we recommend regular deep cleaning of the unit. A deep cleaning may only be performed by XI-MACHINES authorized service personnel or by XI-MACHINES itself. Please contact XI-MACHINES or your Integrator for further information.



Warranty & Support

Your purchase entitles you to 2 years limited warranty on your XI-MACHINES flexible mediaserver FM4 as shipped (extended warranty for 3 / 4 / 5 years optional). The warranty becomes valid on the day of purchase.

During the warranty period you are entitled to free product support by phone (phone charges may apply on your end), email or via remote access.

Remote Support

Every flexible mediaserver FM4 is equipped with a remote support module. Should a possible problem not be solved via call or via email, it is possible for our technicians to access your FM4 using our pre-installed Quick Support Module. To do so, navigate to "C:\XI-MACHINES Support\" and start the Quick Support Module. After you have launched it and once you have confirmed the connection, our technicians can connect to your flexible mediaserver FM4 and start debugging.

Limitation on Warranty

Damage caused by the following is not covered by the warranty:

- Installation of additional or third-party components without prior consulting XI-MACHINES technical support.
- Damages caused by peripheral equipment.
- Inappropriate use or operator error.
- Repairs or improper maintenance performed by the customer or a third party without the authorization of XI-MACHINES.
- Product failure caused by interruption to the electrical supply, current leakage, lack of electromagnetically compatible cabling or similar causes.
- Accidents (including during transport), storms, lightning, fire, water or other liquids, or 'force majour' events.
- Non-authorized alterations to the unit such as BIOS or BMC settings, firmware updates or alike.
- Improper use of the mediaserver, as well as its placement or installation in unsuitable environments.

Liability Disclaimer

XI-MACHINES accepts no liability for damages (especially in the case of indirect or consequential damages). Liability is limited to the purchase value of the XI-MACHINES flexible mediaserver FM4.

Contacting XI-MACHINES

Support Department

Should you unexpectedly encounter problems with your flexible mediaserver FM4, we recommend to not take action yourself. Please contact us by telephone or email first. Together with our experienced technicians it is much easier to locate and fix a possible problem.

Telephone: +49 40 4666675-30
Email: support@xi-machines.com

Sales Department

For expansion options or any other upgrades or changes to your flexible mediaserver FM4, please feel free to contact our sales team.

Telephone: +49 40 4666675-10
Email: sales@xi-machines.com

Technical Specifications

Applications	Validated for ¹	Pandoras Box, Pixera, Watchout, Vertex, Screenberry, Resolume, Touch Designer, Ventuz, vvvv, Unreal, Unity, Notch, vMix, OBS, Vioso, Madrix, POET, Universe
	Software License	Included or excluded depending on project requirements
Display Output	Number and Type	4x DisplayPort 1.4
	Maximum Resolution @120Hz	4x 4096 × 2160
	Maximum Resolution @60Hz	4x 5120 x 2880 2x 7680 x 4320
	Color Depth Support	8bit 10bit 12bit
	EDID Management	Yes
	Synchronization (Framelock, Genlock)	optional
	Control Monitor Outputs (GUI)	optional
Video	Video Input	optional (SDI, HDMI, DisplayPort)
	NDI Support	Yes
Audio	Analog Audio	3x 3.5mm TRS (Line Input, Line Output, Microphone)
	Dante VS	pre-installed ²
Network	RJ45 Ports	2x 10Gbit/sec Ethernet 1x 1Gbit/sec Ethernet 1x 1Gbit/sec Ethernet (dedicated Management Port)
	WiFi	Integrated WiFi Module (WiFi 6E, 80211ax)
	Bluetooth	Integrated Bluetooth Module (BT 5.3)
Peripheral	USB Ports	2x USB 3.2 Gen 1 Type-A (Front) 5x USB 3.2 Gen 2 Type-A (Back) 1x USB 3.2 Gen 2 Type-C (Back)
	Serial Port	1x 9-Pin RS-232 COM Port
Storage	System	500GB NVMe Drive
	Content	4TB High Speed Storage (up to 27GB/sec)
Expansion Options	Maximum configurable number	6 + Synchronization Option (dedicated slot)
	Display Output Options	Nvidia RTX A5000 Nvidia RTX A6000
	Control Output Option	Additional Control Monitor Outputs (4x mini DisplayPort)
	Synchronization Option	Framelock/Genlock functionality
	Video Input Options	SDI HDMI SDI+HDMI DisplayPort
	Audio Options	Analog Dante AES
	Network Options	25Gbit/sec Ethernet 10Gbit/sec Ethernet 1Gbit/sec Ethernet
	Storage Options	High Speed Options 4TB, 8TB, 16TB (up to 28GB/sec) High Capacity Options 15TB (up to 6.6GB/sec), 30TB, 45TB, 60TB (up to 25GB/sec)

	Memory Option	128GB System Memory
	Silent Option ³	Low-noise optimization for use in noise-sensitive environments (Swap of redundant PSU with single silent PSU and other silent modifications)
Physical Specifications	Dimensions Unit (WxHxD)	430mm x 177mm x 399mm 16.93" x 6.97" x 15.71"
	Dimensions Unit+Handles ⁴ (WxHxD)	482mm x 177mm x 399mm 19.00" x 6.97" x 15.71"
	Rack Installation Depth (D)	395mm 15.55"
	Weight ⁵	17,7kg 39,02Lbs
	Redundant Power Supply	Redundant hot plug (2x 900W, 100-240V AC, 10-6A, 50-60Hz) Redundant hot plug (2x 1600W, 100-264V AC, 10-5A, 47-63Hz) ⁶
	Power Consumption ⁵ idle/typical/max	220W / 450W / 640W
	Heat Dissipation ⁵ idle/typical/max	751BTU/h / 1.535BTU/h / 2184BTU/h
	Noise Emission ^{5,7} idle/typical/max	43.4dB / 49.0dB / 50.7dB 34.1dB / 43.4dB / 46.4dB (when choosing the Silent Option ³)
	Operating Temperature	10°C - 36°C 50°F - 97°F
	Relative Humidity	10% to 90% non-condensing
Hardware Specifications	Hardware Platform	Enterprise-Class
	Certified for 24/7 Operation	Yes
	Cruise Ship optimized	Yes
	Hardware Security	Yes (TPM 2.0)
	Remote Management	Yes (dedicated Management Port)
	Illuminated Power Switch	Yes
	Integrated Rear LED lighting	Yes (2 Brightness Levels)
	Integrated Rear Strain Relief Bar	Yes
	Unit Identifier Button & LED	Yes
	Internal USB License Dongle Holder	Yes (2-Port)
	Processor	AMD Threadripper Pro (24 Cores / 48 Threads / max 4.5Ghz)
	Graphics Accelerator	Nvidia RTX A4000
	System Memory	64GB
	System Memory Channels	8 Channels (used simultaneously)
	System Memory ECC	Yes (integrated real time Error Correction)
	Operating System	Dedicated FM4 optimized Windows OS
	Bundled Accessories	Keyboard, Mouse, Power Cables, Cable Ties, Hardware Guide, Recovery USB Stick
Norms & Certifications	Norm	DIN 15781 (Entertainment technology - Media Server)
	Certifications	CE, FCC
Warranty & Support	Warranty	2 years (extended warranty for 3 / 4 / 5 years optional)
	Premium Support	Included (during warranty period)

¹ Your software not included? Talk to us!

² Software license required

³ Only selected Expansion Options available

⁴ Rack handles removable

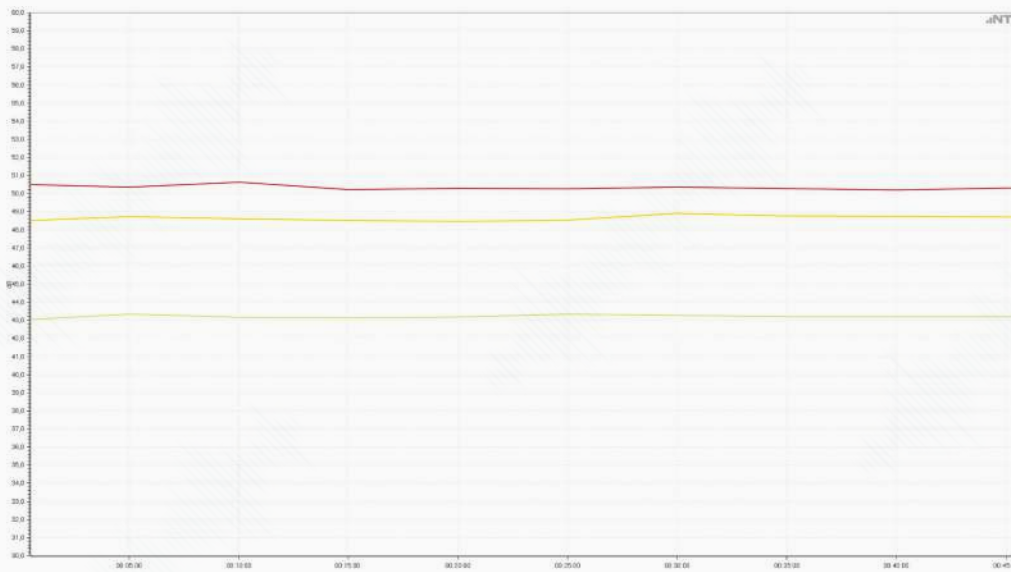
⁵ Based on base configuration - values vary depending on Expansion Options selected

⁶ 1600W only applicable in larger multi GPU-configurations

⁷ Measurements taken in sound lab at distance of 1m / 39.4"

NOISE EMISSION TEST REPORT

Test Environment	XI-MACHINES Test Lab
Measuring Device Info:	NTi Audio XL2, SNo. A2A-12830-E0, FW3.23
Microphone Type:	NTi Audio M2230, SNo. 6756, Factory adjusted
Microphone Sensitivity:	43.9 mV/Pa
Decibel Range:	0 - 100 dB
Ln based on:	LAFmax_dt+k1
Measurement Distance:	100cm
Tested Device	XI-MACHINES flexible mediaserver FM4 MAX
Device Configuration:	FM4 MAX base configuration (24-Core CPU, 64 GB System Memory, 500GB NVMe System Drive)
Expansion Options:	Display-Output 4 RT1 (Nvidia RTX A4000)
	Storage-Option HS-2



Test Results		
■	Device Status Max / LAFmax_dt+k1	50.7 dB
■	Device Status Typical / LAFmax_dt+k1	49.0 dB
■	Device Status Idle / LAFmax_dt+k1	43.4 dB

Hamburg, 22.08.2022

 XI-MACHINES HIGH-PERFORMANCE WORKSTATIONS




NOISE EMISSION TEST REPORT

Test Environment	XI-MACHINES Test Lab
Measuring Device Info:	NTi Audio XL2, SNo. A2A-12830-E0, FW3.23
Microphone Type:	NTi Audio M2230, SNo. 6756, Factory adjusted
Microphone Sensitivity:	43.9 mV/Pa
Decibel Range:	0 - 100 dB
Ln based on:	LAFmax_dt+k1
Measurement Distance:	100cm
Tested Device	XI-MACHINES flexible mediaserver FM4 MAX
Device Configuration:	FM4 MAX base configuration (24-Core CPU, 64 GB System Memory, 500GB NVMe System Drive)
Expansion Options:	Display-Output 4 RT1 (Nvidia RTX A4000)
	Storage-Option HS-2
	Silent Option



Test Results		
■	Device Status Max / LAFmax_dt+k1	46.4 dB
■	Device Status Typical / LAFmax_dt+k1	43.4 dB
■	Device Status Idle / LAFmax_dt+k1	34.1 dB

Hamburg, 22.08.2022





EU DECLARATION OF CONFORMITY

We, XI-MACHINES GmbH
(company name)

Lokstedter Steindamm 35, 22529 Hamburg, Germany
(address)

declare under our sole responsibility that as delivered the described product:

XI-MACHINES (brand name)	FM4 PRO, FM4 MAX (type or model)	flexible mediaserver FM4 (product description)
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to which this declaration relates is in conformity with the following harmonized standards:

Safety: EN 60950-1:2006+A11:2009+A1:2010+A12:2011+AC:2011+A2:2013

EMC: EN 55024:2010, EN 55032:2016-02

RoHS: EN IEC 63000:2018

20.02.2023
(date of issue)

Hamburg, Germany
(place of issue)

Jan Weber, head of compliance
(issued by, position / title)



(signature / stamp)



FCC DECLARATION OF CONFORMITY

We,

Manufacturer

XI-MACHINES GmbH
(company name)

Lokstedter Steindamm 35, 22529 Hamburg, Germany
(address)

Importer

(company name)

(address)

declare under our sole responsibility that as delivered the described product:

XI-MACHINES	FM4 PRO, FM4 MAX	flexible mediaserver FM4
(brand name)	(type or model)	(product description)

to which this declaration relates is in conformity with the following harmonized standards:

FCC Part 15, Subpart B, Class A. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Manufacturer

20.02.2023 **Hamburg, Germany**
(date of issue) (place of issue)

Jan Weber, head of compliance
(issued by, position / title)


(signature / stamp)

Importer

(date of issue) (place of issue) (issued by, position / title)

(signature / stamp)

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