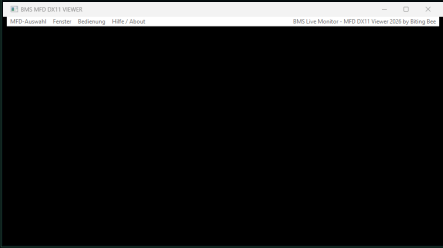
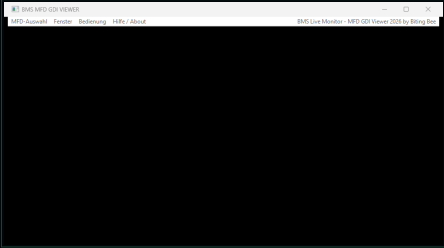


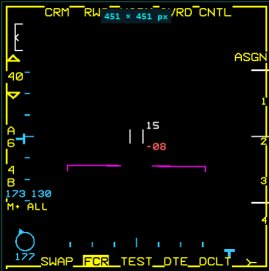
DX9 MAIN WINDOW



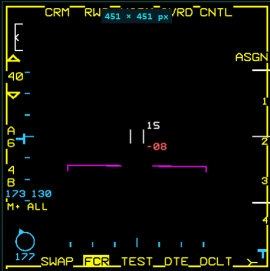
DX11 MAIN WINDOW



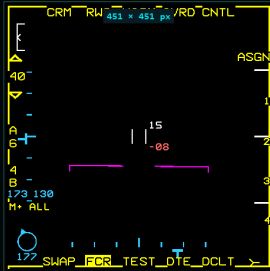
GDI MAIN WINDOW



DX9 DETACHED



DX11 DETACHED



GDI DETACHED

MISSION READY / FALCON BMS 4.38

YOUR MFDs. YOUR CHOICE.

User manual for the standalone BMS Live Monitor MFD Viewers

THREE RENDERERS - ONE CONTROL CONCEPT

DX9, DX11 and pure Win32 GDI share the same control contract. One standalone variant reads both Falcon RTT MFDs directly and locally, without server, Display Client or network.

Software release	DX9 / DX11 / GDI - Version 1.4.1
Target system	Windows x64 - Falcon BMS 4.38 - FlightData2 23
Operation	Select, detach, move and resize MFDs pixel by pixel

About this manual

DOCUMENTED RELEASE

This edition exclusively describes the three standalone MFD Viewers 1.4.1 for Falcon BMS 4.38. It does not replace or modify the normal BMS Live Monitor or the BMS Display Client.

The viewers are intended for cockpit monitors that should display the left MFD, the right MFD or both Falcon MFDs. They share the same controls and use separate position stores. The shared single-instance guard permits only one of the three standalone variants at a time.

Features shared by all three viewers

- Direct read access to `FalconSharedMemoryArea2` and `FalconTexturesSharedMemoryArea`.
- Left MFD, right MFD or both MFDs in the main window.
- Both MFDs can be detached independently as borderless windows.
- Left and right MFD use the same RTT update pass inside one viewer instance.
- Move a detached MFD by holding the left mouse button.
- Ctrl + mouse wheel changes the square size by exactly one pixel per notch.
- Position and size are saved and restored at the next start.
- System tray controls for showing, hiding and exiting the viewer.

Important boundary

The viewers do not send control commands to Falcon BMS. They open no TCP port and require neither a server nor a LAN connection. The normal BMS Live Monitor may remain open beside one standalone variant.

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1. Choosing the right viewer

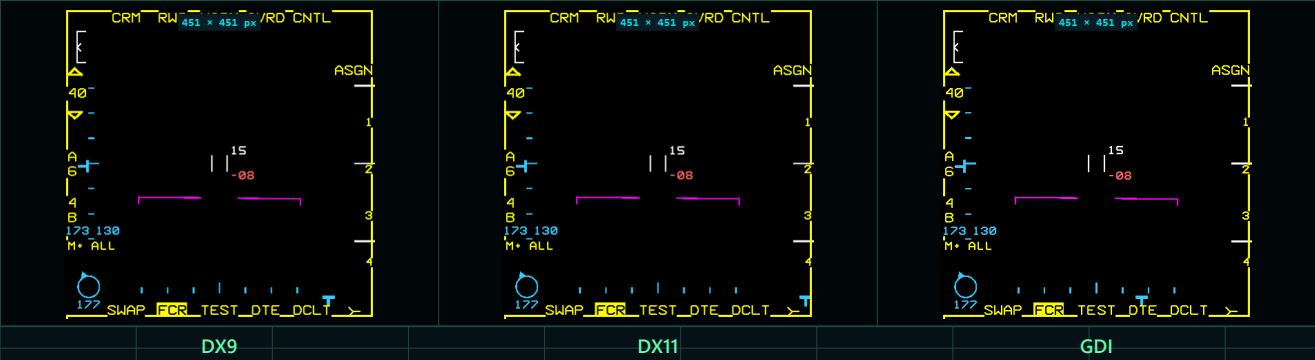
DX11	Recommended modern default with hardware-accelerated Direct3D 11 output and linear scaling.
DX9	Compatibility option for older graphics drivers or systems where DX11 causes unexpected problems.
GDI	Pure Win32 GDI output without DirectX or Vortice modules. Useful for diagnosis and maximum graphics API independence.

Recommended order

- 1 Start with DX11.
- 2 If graphics or driver problems occur, test DX9.
- 3 Use GDI when output must be completely independent of DirectX.

ONE VARIANT - TWO MFDs ON ONE UPDATE PATH

DX9, DX11 and GDI must not run in parallel. If one standalone variant is already active, a second exits after displaying a notice. Inside the active instance, left and right MFD may be detached together; both use the same Falcon RTT source and update cadence. BMS Live Monitor may remain open in parallel.



2. Requirements and installation

2.1 Requirements

- Windows 10 or Windows 11, 64-bit.
- Falcon BMS 4.38 with FlightData2 structure 23.
- Falcon RTT texture export enabled for the MFD images.
- An active 3D scene or cockpit so Falcon supplies valid RTT regions.

2.2 Final files

DX9	BMS-Live-Monitor-MFD-DX9-Viewer-1.4.1.exe
DX11	BMS-Live-Monitor-MFD-DX11-Viewer-1.4.1.exe
GDI	BMS-Live-Monitor-MFD-GDI-Viewer-1.4.1.exe

2.3 Start

- 1 Confirm that no other standalone variant remains hidden in the system tray. Then start the required DX11, DX9 or GDI EXE.
- 2 Start Falcon BMS 4.38 and load a flight or active 3D cockpit.
- 3 Enable RTT export. The viewer switches to LIVE automatically when both MFD regions become valid.
- 4 Use the MFD-Auswahl menu to select the left MFD, right MFD or both MFDs.

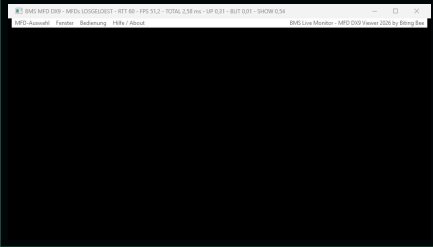
NO ADDITIONAL INSTALLATION

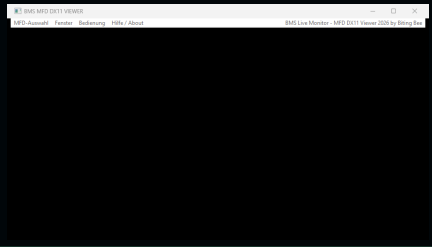
Each viewer is a self-contained Windows x64 single-file application. No separate .NET or viewer installation is required.

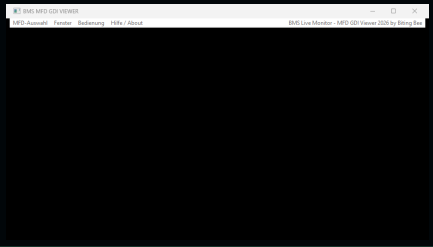
3. The three standalone programs

Every image in this manual shows the standalone MFD Viewer interface. In version 1.4.1 all three programs use the same controls and differ in their output path.

DX9 Viewer	Standalone EXE using Direct3D 9 output.
DX11 Viewer	Standalone EXE using Direct3D 11 output.
GDI Viewer	Standalone EXE using pure Win32 GDI output.







DX9 main window

DX11 main window

GDI main window

Direct local data path

1. Source	Falcon BMS 4.38 provides the MFD RTT regions in local Windows shared memory.
2. Viewer	The selected standalone EXE reads these regions directly and read-only.
3. Display	The left MFD, right MFD or both MFDs appear locally on the cockpit monitor.

None of the viewers is built into the server. There is no Display Client path, TCP port or LAN configuration.

NO AUTOMATIC SOURCE SWITCH

The standalone viewers support Falcon BMS 4.38 only. DCS is not detected or selected automatically.

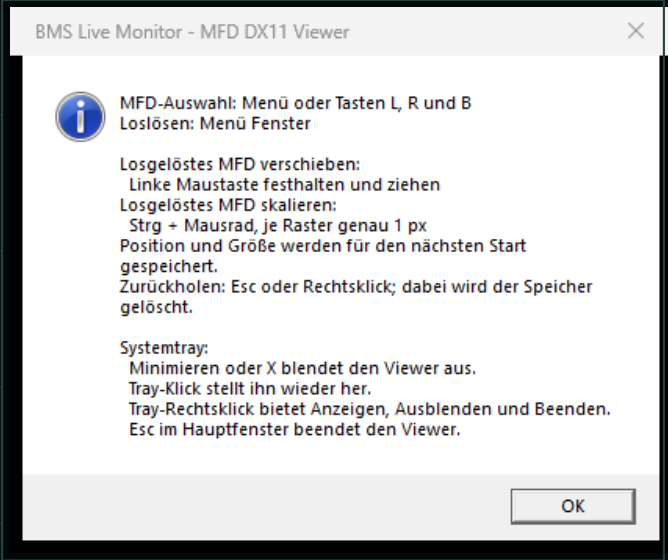
4. Operating the main window

4.1 Menu bar

MFD-Auswahl	Left MFD, right MFD or both MFDs. Keyboard shortcuts: L, R or B.
Fenster	Detach the left or right MFD. Once detached, the same menu entry changes to zurückholen (return).
Bedienung	Opens the quick guide for mouse, scaling and tray controls.
Hilfe / About	Shows version, license rights, support domain and the position store path.
Right menu area	BMS Live Monitor - MFD DX9/DX11/GDI Viewer 2026 by Biting Bee.

4.2 Resizing the main window

Resize the normal main window by dragging its border. MFD aspect ratio is preserved and unused areas remain black.



Actual quick-guide dialog from the shared standalone interface. The built-in application menus are currently German; DX9, DX11 and GDI use the same commands.

5. Detaching, moving and resizing MFDs

5.1 Detach

- 1 Open the Fenster menu and detach the left or right MFD.
- 2 The MFD appears as its own square, borderless window.
- 3 The menu now shows Linkes MFD zurückholen or Rechtes MFD zurückholen for returning it.
- 4 Both MFDs may be detached together inside the same viewer instance and follow the same RTT update pass.

5.2 Move

Click the detached MFD with the left mouse button, keep the button pressed and drag it to the required monitor.

5.3 Pixel-accurate scaling

Place the pointer over the detached MFD, hold Ctrl and rotate the mouse wheel. Every complete wheel notch changes width and height by exactly one pixel. The new size is shown briefly at the top of the MFD.



5.4 Return to the main window

- Esc inside a detached MFD returns that MFD to the main window.
- Right-click opens Zurück ins Hauptfenster (return to main window).
- Returning an MFD deletes its saved position entry.

6. Position storage and system tray

6.1 Automatic restoration

When the viewer exits normally, the position, monitor and square size of every detached MFD remain saved. At the next start, the viewer automatically opens those MFDs at their previous locations.

DX9	%LOCALAPPDATA%\BitingBee\BmsMfdD3D9Viewer\window-layout.json
DX11	%LOCALAPPDATA%\BitingBee\BmsMfdD3D11Viewer\window-layout.json
GDI	%LOCALAPPDATA%\BitingBee\BmsMfdGdiViewer\window-layout.json

6.2 System tray

- Minimize or close with X to hide the main window in the system tray.
- Left-click the tray icon to restore the main window.
- Right-click offers Viewer anzeigen (show), Viewer ausblenden (hide) and Viewer beenden (exit).
- Esc in the main window exits the viewer directly.

THE VIEWER IS STILL RUNNING

After minimizing or closing with X, the viewer continues running and blocks another standalone variant. Before switching between DX11, DX9 and GDI, exit the active viewer completely with Esc in the main window or Viewer beenden in the tray menu.

7. Status messages and troubleshooting

Start nicht möglich	A DX9, DX11 or GDI standalone viewer is already active. Exit it completely from the system tray, then start the required variant.
Warte auf Falcon BMS 4.38	The Falcon process is not active or has not yet been detected. Start Falcon BMS 4.38.
RTT-Export noch nicht verfügbar	RTT texture export is disabled or Falcon has not created the mapping yet.
RTT wartet auf aktives 3D-Cockpit	Load a flight and enter the active 3D cockpit.
RTT-Texturbeschreibung ungültig	Wait for mission initialization, then check RTT settings and the 32-bit texture format.
MFD-Bereiche noch ungültig	Falcon has not reported the MFD rectangles yet. Allow the cockpit to finish loading.
Version nicht unterstützt	Only Falcon BMS 4.38 with FlightData2 23 is supported.

If the image remains black

- 1 Confirm Falcon BMS 4.38 and an active 3D cockpit.
- 2 Check RTT export in Falcon.
- 3 Close the viewer and reopen it after mission start.
- 4 To switch output paths, exit the active viewer completely and then test DX11, DX9 or GDI individually.

NOT A NETWORK ERROR

The standalone viewers do not use TCP. Router, firewall and Display Client port 43860 do not affect their MFD output.

8. Release verification, license and support

8.1 Final files

DX9	BMS-Live-Monitor-MFD-DX9-Viewer-1.4.1.exe 71.752.760 Bytes 7F556CCC72C98E0CFB5FCE4126115C450C04580C9880DC2FE66F66BA49C28F8D
DX11	BMS-Live-Monitor-MFD-DX11-Viewer-1.4.1.exe 72.467.632 Bytes 94FBED0B907D1A6EE6D8ED582BEC14B87482EC76AC32D589018BF9C341153855
GDI	BMS-Live-Monitor-MFD-GDI-Viewer-1.4.1.exe 71.234.827 Bytes 3F2CA0A1195C5677C480C484BAECA1E15F3956E0E5BC47299396A26FC634A0CF

8.2 License rights

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Without prior explicit written permission, proprietary reader components may not be extracted, copied, redistributed, published, sold, modified, decompiled or used in other software.

8.3 Project and support

Project page	https://globalfleettrade.com/falcon-bms/
Product	BMS Live Monitor - Standalone MFD Viewer 1.4.1
Notice	Falcon BMS, its names, trademarks and associated rights remain with their respective owners. This private cockpit project is not an official Falcon BMS product.

BMS LIVE MONITOR

THREE RENDERERS. ONE MISSION.

MISSION READY

DX11 is the modern default, DX9 provides a compatibility path and GDI is the DirectX-free alternative. One standalone variant runs at a time; inside it, left and right MFD are updated from the same RTT source.

Version	1.4.1
Target	Falcon BMS 4.38 - Windows x64
Support	globalfleettrade.com/falcon-bms/

Private cockpit project - English documentation - Revision 29 August 2026