Specifications

Model	TH-80BF1	TH-65BF1	TH-50BF1
Display panel			
Screen size (diagonal)	80-inch (2032 mm)	65-inch (1638 mm)	50-inch (1257 mm)
Panel type	LCD VA panel/E-LED		
Aspect ratio	16:9		
Effective display area (W x H)	1771 x 996 mm (69.7˝ x 39.2˝)	1428 x 803 mm (56.2˝ x 31.6˝)	1095 x 616 mm (43.1˝ x 24.2˝)
Number of pixels (H x V)	1920 x 1080		
Brightness	350 cd/m²		
Contrast ratio	5000:1	4000:1	5000:1
Dynamic contrast	50000:1		
Response time	4 ms (G to G)	6.5 ms (G to G)	6.5 ms (G to G)
Viewing angle (Horizontal/vertical)	176 °/176 ° (CR ≥ 10)	178 °/178 ° (CR ≥ 10)	176 °/176 ° (CR ≥ 10)
Touch panel			
Detection method	Infrared blocking detection method		
Touch operation	Up to 12-point multi-touch		
Connection terminal			
Video In	BNC x 1		
Audio In (L/R)	Stereo mini jack (M3) x 1 (Shared with COMPONENT/RGB IN)		
HDMI In	HDMI TYPE A connector x 2		
Component video/RGB In	BNC x 1 set		
Audio In (L/R)	Stereo mini jack (M3) x 1 (Shared with VIDEO IN)		
DVI-D In	DVI-D 24-pin x 1		
Audio In (L/R)	Stereo mini jack (M3) x 1 (Shared with PC IN)		
PC In	Mini D-sub 15-pin (female) x 1, Plug & Play (VESA DDC 2B)		
Audio In (L/R)	Stereo mini jack (M3) x 1 (Shared with DVI-D IN)		
Monitor Out (PC Out)	Mini D-sub 15-pin x 1		
USB memory	USB TYPE A connector x 1 (For Memory Viewer)		
PC connection	USB TYPE B connector x 1 (For Touch Panel)		
External speaker	8 Ω, 20 W [10 W + 10 W] (10 % THD)		
Serial	D-sub 9-pin (male) x 1 for external control (RS-232C compliant)		
DIGITAL LINK/LAN	RJ45 x 1 for network and DIGITAL LINK connection, compatible with PJLink™, 100BASE-TX		
Function slot	SLOT2.0 x 1 (Vacant)		
Audio			
Built-in speaker	20 W [10 W + 10 W]		
Electrical			
Power requirements	110–127 V AC, 50/60 Hz, 220–240 V AC, 50/60 Hz		
Power consumption	350 W	215 W	140 W
Power off condition	Approx. 0.3 W		
Standby condition	Approx. 0.5 W		
Mechanical			
Dimensions (W x H x D)	1868 x 1093 x 104 mm (73.6˝ x 43.1˝ x 4.1˝)	1517 x 892 x 108 mm (59.8˝ x 35.2˝ x 4.3˝)	1185 x 705 x 104 mm (46.7˝ x 27.8˝ x 4.1˝)
Bezel width	Approx. 43 mm (1.7˝)	Approx. 39 mm (1.53˝)	
Weight	81 kg (178.6 lbs)	58 kg (127.9 lbs)	34 kg (75.0 lbs)
Protective glass	Thickness: Approx. 3.3 mm (0.13˝) / Anti-glare	Thickness: Approx. 2.9 mm (0.11˝) / Anti-glare	Thickness: Approx. 2.9 mm (0.11˝) / Anti-glare
Cabinet material/color	Aluminum / Black		
Pitch for wall-hanging	VESA compliant 400 x 400 mm (15.8˝ x 15.8˝)	684 x 300 mm (27.0˝ x 11.9˝)	400 x 300 mm (15.8˝ x 11.9˝)
Installation orientation	Landscape/Portrait (When installing the display on portrait setting, be sure to install with the power indicator at the topside of the display.)		
Installation angle	0–20 degrees forward with landscape setting	Vertical setting only	0–20 degrees forward with landscape setting
Environment			
Operating environment	Temperature: 0 °C to 40 °C (32 °F to 104 °F) [for up to 1400 m altitude] / 0 °C to 35 °C (32 °F to 95 °F) [for between 1400 m and 2800 m altitude], Humidity: 20 % to 80 % (Non-condensation)		
Storage environment	Temperature: -20 °C to 60 °C (-4 °F to 140 °F) Humidity: 20 % to 80 % (Non-condensation)		
Continuous operation	18 hours		
Built-in wireless LAN function			
Standard	2.4 GHz: IEEE802.11b/g/n, 5.0 GHz: IEEE802.11a/n		
Infrastructure mode	WPA2-PSK (TKIP/AES), WPA-PSK (TKIP/AES), WEP (64-bit/128-bit), WPA-EAP/WPA2-EAP (PEAP [MS-CHAPv2/GTC]/EAP-FAST [MS-CHAPv2/GTC]/EAP-TTLS [MD5/MS-CHAPv2], 128-bit/64-bit)		
Included accessories	AC cord, remote control transmitter, batteries for the remote control transmitter (AA size x 2), software CD-ROM (Whiteboard Software / Wireless Manager Software / Operating Instruction) x 1, USB cable x 1, Touch Pen x 4 (TH-80BF1), Touch Pen x 2 (TH-65BF1/50BF1), Eraser x 1, Pen Stand, clamper x 1, screw x 2, washer x 2 (TH-80BF1)		

■ Optional Accessories

Mobile Stand	Wall-Hanging Bracket	Pedestal	Ceiling Bracket	DIGITAL LINK Switcher	Easy Wireless Stick
For 80-inch **TY-ST80LF70**	**For 80-inch** **TY-WK70PV50*¹**	**For 80-inch/65-inch** **TY-ST65P20*¹**	**For 50-inch** **TY-CE42PS20**	**ET-YFB200G*²**	**ET-UW100*³**
For 65-inch **TY-ST65PB2**	**For 65-inch** **TY-WK65PR20**	**For 50-inch** **TY-ST42P50*¹**		Digital Interface Box **ET-YFB100G**	
For 50-inch **TY-ST50PB2**	**For 50-inch** **TY-WK42PV20** **TY-WK42PR20**				Early Warning Software **ET-SWA100 Series*⁴**

■ Optional Function Board

DVI-D Terminal Board	HD-SDI Terminal Board with Audio	Dual Link HD-SDI Terminal Board with Audio
TY-FB11DD	**TY-FB10HD**	**TY-FB11DHD**

*1 Production discontinued (stock is limited).
*2 Long Reach Mode on ET-YFB200G is not supported.
*3 This product can be purchased in the U.S., Canada, Japan, Australia, and New Zealand.
*4 Part number suffix may differ depending on the license type.

Panasonic Professional Display and Projector Technical Support Website

PASS
Global Concierge for the Lifetime

PASS Website – **panasonic.net/prodisplays/pass**

Register your display to activate the upgrade kit and get what you need.

For more information about Panasonic professional displays, please visit:
Global Website – **panasonic.net/prodisplays**
YouTube – **www.youtube.com/PanasonicProDisplay**

All information included here is valid as of March 2016.

CT16-G01PF-BF1 Printed in Japan.

Panasonic®

Panasonic
BUSINESS

BF1 Series
Touch Screen LCD Display

80-inch TH-**80BF1**
65-inch TH-**65BF1**
50-inch TH-**50BF1**

Your Window on the Future
Interactive Display for Business and Education

Worldwide Olympic Partner

Worldwide Paralympic Partner

Connect. Create. Share. A Turnkey Display That Brings Out the Best in People.

Good communication is key in the office or classroom. The Panasonic BF1 Series puts the tools you need to achieve it at your fingertips. Start presenting instantly on the whiteboard, import and modify media wirelessly, brainstorm ideas with teams in remote locations, and email progress direct from the display. Do it all from an intuitive touchscreen with fewer cables and no need for a remote. The BF1 Series doesn't just save time and money: it's a complete end-to-end solution engineered for success at the highest level.

Touch Screen LCD Display
80-inch / 65-inch / 50-inch   BF1 Series

PRACTICAL APPLICATIONS

For Presentations
Switch on. Start work. Make notes, draw, add graphics, display documents, video, and more. Save as image files and email. Couldn't be simpler!

In the Classroom
Precise 12-point multi-touch control and user-friendly menu bar make it easier for students to understand any subject using the display's powerful features.

Video Conferences
The BF1 Series not only lets your teams videoconference*, it allows them to work on documents together in split-screen mode at the same time.

For Meetings
Media such as websites, documents, and PC desktops can be mirrored wirelessly* from compatible devices on the big screen.

* Additional equipment and subscription required for video- and web-conferencing system.

* Drawing on media transmitted via Mirroring Input (Intel® Pro WiDi, WiDi, and Miracast) is not supported.
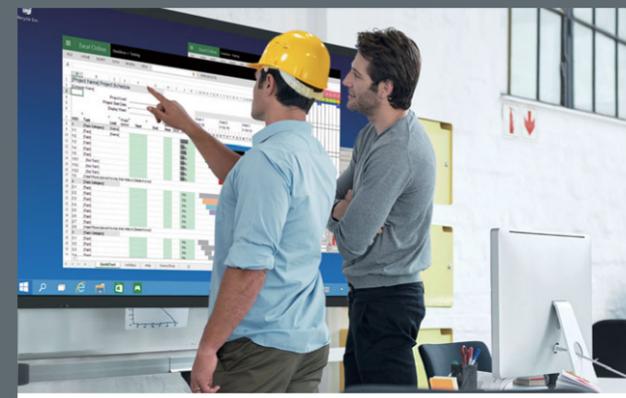
For Process Management
The BF1 Series has useful application in industry. Staff can manage production processes, scheduling, and share spreadsheet data on-screen.

For Public Information
Connected to appropriate PC software, the BF1 Series excels as an interactive touch-screen display for museums, exhibitions, and more.

USABILITY

Powerful and Intuitive
Quick-Start Whiteboard

On-screen Menu Bar Keeps You In Control

Don't lose the crowd—or your cool—in endless menus while you search for content or functions. With the BF1 Series, everything is to hand in a discreet menu bar at the bottom of the screen that offers instant access to source inputs, whiteboard tools, and other controls you use most frequently. Even when the pressure's on, you'll look like a pro.
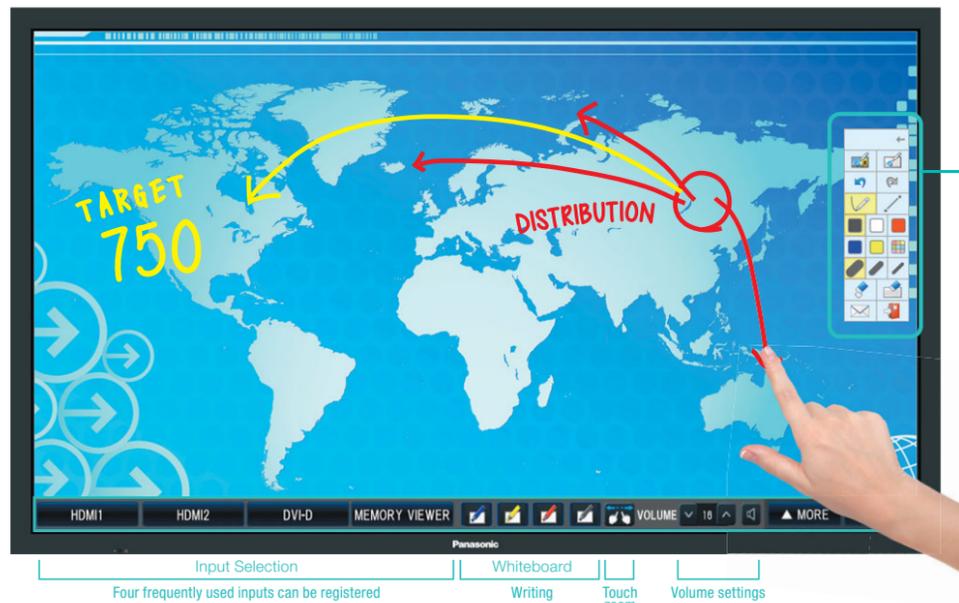
Colors Everyone Can See

Color Universal Design (CUD) ensures that colors are reproduced clearly and accurately for the many millions of people living with color-vision defects. The CUD setting is ON/OFF-selectable (default setting is OFF) according to user preference, and the display's power LED indicator color is also CUD-compliant.

What is Color Universal Design (CUD)?

Due to genetics or other vision disorders, some people can perceive colors differently. Individuals can have difficulty distinguishing between certain color combinations. CUD ensures that color information is accurately expressed for the comfort and convenience of all.

Note: CUD logo denotes product certification by Color Universal Design Organization in Japan.

Input Selection — Four frequently used inputs can be registered
Whiteboard — Writing — Touch zoom
Volume settings

User-Friendly Menu Bar

Frequently used functions such as input selection, pen tool, enlargement tool, and volume control can be found in the menu bar. Access detailed information or hide it for uninterrupted full-screen display.

Menu fully expanded   Menu minimized

Connect a Variety of Devices and Switch Sources Quickly

Up to four of your most frequently used inputs can be named and assigned to the menu bar for quick and easy switching. Smooth operation without a remote controller allows you to focus on making a creative presentation.

Document camera   PC   Digital camera   Video camera   USB memory   BD Player

Quick-Start Whiteboard

Start working on the built-in whiteboard right away—just switch on the display. Intuitive operation makes life easy for kids and less tech-savvy presenters.

Power On → Start Whiteboard

Makes Notes Fast

Use the tool palette to write text and draw freehand on your document. Save it to memory or email it direct from the display. Included stylus pens and eraser let you write large amounts of text just like a regular whiteboard.

Pen lines appear instantly on screen

Play USB Content Instantly

Playing Full HD video, still images, and digital documents from USB storage devices couldn't be easier. Just insert a thumb drive into the USB port and start presenting without needing to connect a PC. The Memory Viewer app enables image* (JPEG, BMP) and video* (WMV, AVI, MOV, MP4, MPG) selection from handy thumbnail previews.

* In some cases, files may not be viewable even if they are encoded in a supported format.

Write and Draw on Video and Still Images

You can write and draw on almost any media you like, including video and still images from external devices. These dynamic multi-media capabilities make it easy for teams to share information, contribute ideas, and solve problems.

Note: Drawing on media transmitted via Intel® Pro WiDi, WiDi, and Miracast is not supported.

BD Player   Document camera   USB memory
Windows   Android   Mac   iOS
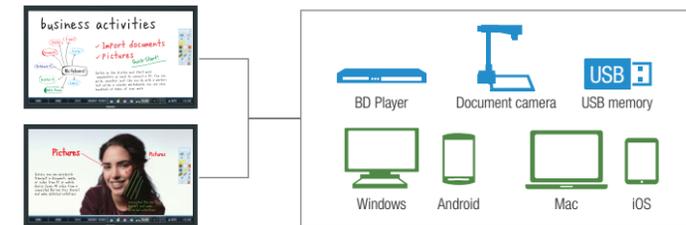
Easy to Save and Share

Produce up to 100 pages*[1] of work on the whiteboard and save them to the built-in memory*[2] or USB thumb drive as JPEG image files. You can also copy data stored on internal memory to a USB drive, or send your pages as image files directly from the screen via email*[3]. Keeping everyone in the loop is simple.

*[1] With built-in memory setting to ON. When individual file data size is large, the number of pages that can be saved may decrease. *[2] Built-in memory ON/OFF is included. When OFF is selected, only one whiteboard page can be created. *[3] Can be sent as JPEG format only.

Save to built-in memory — DISPLAY
Save to USB memory — USB
Send via email
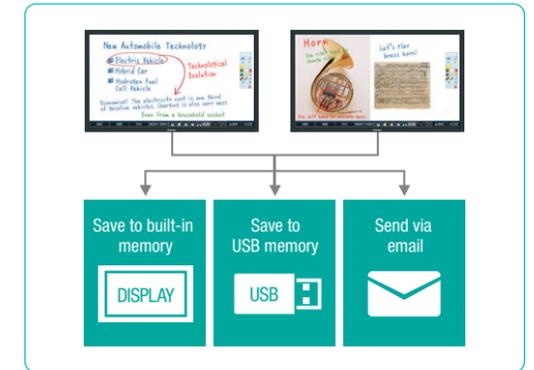
Whiteboard Software for PC Extends Your Capabilities

Whiteboard Software for PC offers deeper functionality for power users. As well as adding extra presentation tools and a PowerPoint® Link mode for easy import and modification of PowerPoint® files, the application's 12-point touch*[1] interface lets a group of people write and draw simultaneously.

Whiteboard Software Highlights

- Color Universal Design for clearly distinguishable color reproduction*[2]
- Three operation modes*[2] (Whiteboard Function, PowerPoint® Link Mode, and Desktop Operation)
- More presentation tools*[2] (Loupe, Spotlight, Shade, Fade-out Marker)
- Screen video recorder function*[2]
- Image capture
- Up to 12-point multi-touch function*[1]
- Image import (JPEG, PNG, BMP)
- Start-up from external memory*[2]

Whiteboard Software Version 5.2 for Windows Supported by Windows® 7, Windows® 8.1, and Windows® 10
Whiteboard Software Version 1.2 for Mac Supported by Mac OS X v10.11.2

HDMI or VGA Cable
USB Cable
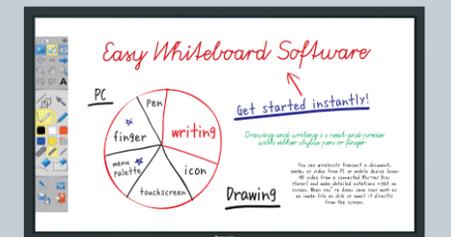
For the latest software, please visit our global website: http://panasonic.net/prodisplays/

Intuitive Operation with Precision 12-point Touch-Sensor*[1]

Twelve-point multi-touch functionality makes it simple to resize and move graphics around on your documents. Multiple people can also write simultaneously for smooth collaboration.

No Need to Install a PC*[2]

Whiteboard Software can run from an external USB memory device or SD Card. No need to install software, no cables, and less wasted time.

USB memory
SD card

Image and Video Capture*[2]

Any displayed image can be screen-capped and saved to memory. The process of writing and drawing can also be recorded as video. You can preserve the presentation as it happens and email it later to absent colleagues, clients, or students.

Modify and Update Meeting Documents*[2]

Make notes on PowerPoint® documents displayed on screen using your stylus pen and resave them in PowerPoint® format—this makes it easy to keep the whole team up to date, even those not present at the meeting.

Import Image Files

JPEG, PNG, and BMP files can be imported into the display. You can write and draw onto the image files directly.

*[1] Up to 12-point for Windows®, up to 4-point for Mac. *[2] For Windows® only.

NETWORK

Universal Wireless Support

Windows
Mac
BF1
Android™
iOS

Panasonic Wireless Solution

Intel® Pro WiDi supports secure high-bandwidth wireless transmission from compatible Windows® PCs. Panasonic apps for Windows®, Mac, iOS, and Android™ add a raft of extra easy-to-use functions including Multi-Live Mode in split-screen.

Intel® Pro WiDi*¹

Intel Pro WiDi Wireless Display
Windows

- Mirror video, documents, and websites from compatible Windows® PCs
- Fast and stable wireless transmission
- Managed Meeting Modes for secure or open presentations

Intel® Pro WiDi Includes Managed Meeting Modes

Managed Meeting modes allow only one presenter's device to share content, a presenter to curate content transmission from selectable devices, or free and open sharing from any participant's devices.

EXCLUSIVE
Connect only one device to prevent interruptions
x 1

INTERACTIVE
Up to 10 users can connect and take turns presenting
x 10
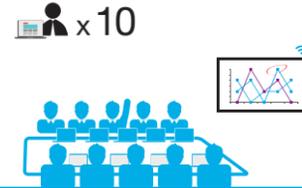
MODERATED
Chairperson controls display permissions from up to 10 participants
x 1 Chairperson   x 9 Presenter

Chairperson
Presenter
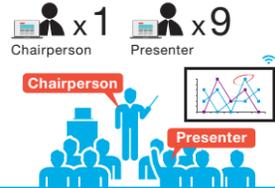
Enhanced Security and Quality

Prevents Mistakes
PIN entry prevents accidental projection for privacy and safety
PIN: 00000000
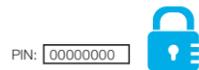
Smooth Video
Stutter-free media display, faster response times, and fewer dropouts

Selectable Channels
Selectable 2.4 GHz and 5 GHz* channels for areas with Wi-Fi® congestion
2.4GHz → 5GHz
* America/Europe/CIS only.

Compatible with Miracast™
Intel® Pro WiDi also supports transmission from Miracast™-compatible devices
Windows   Android™   WiFi ALLIANCE

Panasonic Wireless Manager

Windows
Mac OS
- Fast and stable wireless connection
- Connect 4 or 16 PCs in Multi-Live Mode

Download free from our global website at http://panasonic.net/prodisplays/

Quick 3-Step Connection

1. Launch App   2. Select Display   3. Click to Present

Easy connection

Panasonic Wireless Apps

Panasonic
Android™
iOS
- Dedicated wireless apps for iOS and Android™
- Fewer steps to connect
- Wide media compatibility and functionality

Download free via App Store (iOS) or Google Play (Android™).

Supported formats
PowerPoint® / Word / Excel / Keynote* / Pages* / Numbers* / Text* / Rich Text* / PDF / JPG** / PNG** / WEB* / Photo* / Camera* / Screen Shot

* iOS only.
** Android™ only.
Note: To display Keynote documents in page units, first convert them to PDF.

Marker Function
Pointer Function
In-browser Remote Control
One-Shot Display Function
Motion Capture
Cloud Document Support (iOS only)

Easy Wireless Stick ET-UW100*²

- Self-contained Easy Wireless Stick plugs into PC's USB
- Provides internet access while operating wirelessly

Multi-Live Mode

Apps for PC, iOS, Android™, and Easy Wireless Stick feature Multi-Live Mode. This function enables media display from up to 16 different devices in split-screen configuration (4 or 16 window). You can also transmit content from one PC to up to eight projectors or displays.

4-Window Index Style   16-Window Index Style*³


FLEXIBILITY

System Flexibility and Additional Features

Simplified DIGITAL LINK Connection

DIGITAL LINK transmits uncompressed Full HD video, audio, and control commands through a single CAT 5e or higher STP cable for up to 100 m (328 ft). Connect all your source devices to an optional DIGITAL LINK Switcher (ET-YFB200G)/Digital Interface Box (ET-YFB100G) and use just one cable to link your display. This simplifies installation and saves on cabling costs.

DIGITAL LINK™ SINGLE CABLE SOLUTION
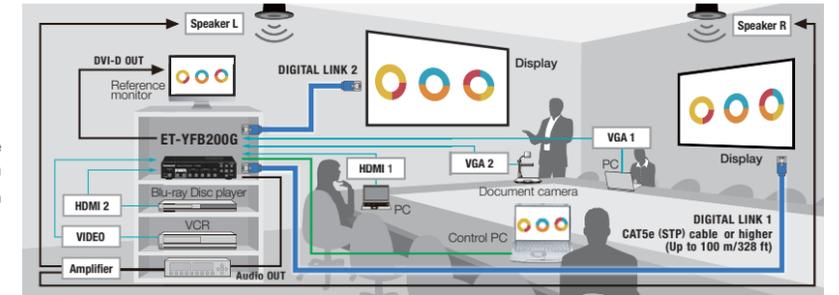
Note: Long Reach Mode on ET-YFB200G is not supported.

For more information, please visit our DIGITAL LINK website: panasonic.net/prodisplays/solutions/technology/digital_link/

Speaker L — DVI-D OUT — Reference monitor — DIGITAL LINK 2 — Display — Speaker R — VGA 1 — ET-YFB200G — HDMI 1 — VGA 2 — PC — Display — HDMI 2 — Blu-ray Disc player — Document camera — DIGITAL LINK 1 CAT5e (STP) cable or higher (Up to 100 m/328 ft) — VIDEO — VCR — PC — Control PC — Amplifier — Audio OUT

Connect a Second Display

Use a VGA cable to mirror content* on a second display or projector—even the notes you might add to documents, images, or video during your presentation. This dual-display capability makes the BF1 series ideal for use in larger venues. Supported inputs include HDMI, DVI, PC, Memory Viewer, and Whiteboard.

* Supports 1080/60p signal only.

Protective Glass and AG Screen Surface for Clear Visibility

Protective glass adds extra security against impact. This insurance is invaluable in high-traffic areas such as conference rooms, classrooms, and public spaces. An improved Anti-Glare (AG) screen treatment scatters reflected light from overhead illumination to reduce glare and improve all-round visibility.

Anti-Glare (AG) treatment
Ambient Light
Reduces glare by scattering reflected light

Expandable Connectivity with SLOT2.0

SLOT2.0 allows you to add the connection terminals needed for specific applications. Optional function boards can be inserted to support a customized content distribution system.

SLOT 2.0

Supports Crestron Connected™ Software

LAN terminal is compatible with Crestron Connected™ automation and control software. Monitor and control display devices in your network remotely from a single PC via Ethernet.

CRESTRON

Compliance with PJLink™

Compliance with PJLink™ Class 1 enables remote control and monitoring within a wider AV network of PJLink™-compatible components of any brand. Incorporating these displays into an existing system via the local network is seamless and cost effective.

PJLink™

Built-in Speakers

BF1 Series displays feature a pair of built-in 20 W [10 W + 10 W] speakers for clear and powerful audio playback.

Picture-in-Picture Capability

Picture-in-Picture functions offer the versatility to display images from two input sources on the same screen. Documents, videos, and stills can be displayed full-screen with a sub-window showing content from a different source.

Note: Writing and drawing on sub-screen in not available. Miracast™ and Memory Viewer do not support Picture-in-Picture capability. The following input combinations are not available:
- HDMI, DVI, DIGITAL LINK, Component, and PC
- Whiteboard and Panasonic Application

Picture-in-Picture Mode
Ideal for web conferencing, you can display meeting documents on the main screen and live video footage from a remote location in the sub-window.

Picture-in-Whiteboard Mode
Display media in a window on the whiteboard interface and make notes on the blank space surrounding it.