# 8 x Interchangeable Display Modules for

## TPC-B300/B510/B520/B520L/B610 Computing Box

## Interchangeable Display Modules with 12" XGA / 15" XGA / 17" SXGA/ 19" SXGA / 15.6" FHD / 18.5" FHD / 21.5" FHD / 23.8" FHD



## Features

- Modular front display design in three application-based module categories, enabling flexible configurations
- Front panel module with P-CAP multi-touch sensor available in various sizes
- Industrial-grade LED LCD
- System status LED indicators in front panel
- IP66-rated front panel and panel mount
- Rear mounted computing box or monitor box module is compulsory to activate display module
- Sunlight readable w/ high luminance (available in 12", 15", 15.6" and 21.5")

## Introduction

Advantech's modular display series offers various display modules ranging between 12.1" and 23.8" inches in size to go with selections of computing boxes (TPC-B300/TPC-B510/TPC-B520/TPC-B520L/TPC-B610) for multiple configurations that can be flexibly adapted to various scenarios. Modular display series are equipped with industrial grade LCD and Projected Capacitive touch screens, providing the best user experience and reliable operation. The modular design ensures flexible configuration and easy maintenance/upgrades. Its robust enclosure is equipped with a die-cast aluminum alloy front bezel and IP66 rating for protection from dust and water ingress.

## Specifications

| Part Number for Cost Effective version | | FPM-D12T-CE | FPM-D15T-CE | FPM-D17T-CE | FPM-D19T-CE |
|---|---|---|---|---|---|
| LCD Panel | Display Size | 12" | 15" | 17" | 19" |
| | Display Type | XGA TFT LED LCD | XGA TFT LED LCD | SXGA TFT LED LCD | SXGA TFT LED LCD |
| | Aspect Ratio | 4:3 | | 5:4 | |
| | Max. Resolution | 1024 x 768 | 1024 x 768 | 1280 x 1024 | 1280 x 1024 |
| | Max. Color | 16.2M | 16.7M | 16.7M | 16.7M |
| | Luminance | 600 cd/m² | 300 cd/m² | 350 cd/m² | 350 cd/m² |
| | Viewing Angle (H/V) | 178°/178° | 176°/176° | 160°/140° | 170°/160° |
| | Backlight Life | 50,000 hr | 70,000 hr | 50,000 hr | 50,000hr |
| | Contrast Ratio | 1000:1 | 2000:1 | 800:1 | 1000:1 |
| Touchscreen | Type | PCAP | PCAP | PCAP | PCAP |
| | Light Transmission | Above 88% | Above 88% | Above 88% | Above 88% |
| | Anti-Glare Treatment | Yes | Yes | Yes | Yes |
| | Built-In iKey | N/A | N/A | N/A | N/A |
| Expandability | NFC Support on Front Panel | N/A | N/A | N/A | N/A |
| Environment | Operating Temperature | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) |
| | Storage Temperature | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) |
| | Ingress Protection | Font IP66 | Font IP66 | Font IP66 | Font IP66 |
| Housing Color | Panel Frame and Back Cover | Pantone 432C | Pantone 432C | Pantone 432C | Pantone 432C |

| Part Number for Cost Effective version | | FPM-D15W-FCE | FPM-D18W-FCE | FPM-D21W-CE | FPM-D24W-CE |
|---|---|---|---|---|---|
| LCD Panel | Display Size | 15.6" | 18.5" | 21.5" | 23.8" |
| | Display Type | FHD TFT LED LCD | FHD TFT LED LCD | FHD TFT LED LCD | FHD TFT LED LCD |
| | Aspect Ratio | 16:9 | | | |
| | Max. Resolution | 1920 x 1080 | 1920 x 1080 | 1920 x 1080 | 1920 x 1080 |
| | Max. Color | 16.7M | 16.7M | 16.7M | 16.7M |
| | Luminance | 450 cd/m² | 350 cd/m² | 250 cd/m² | 350 cd/m² |
| | Viewing Angle (H/V) | 170°/170° | 178°/178° | 178°/178° | 178°/178° |
| | Backlight Life | 50,000 hr | 50,000 hr | 50,000 hr | 30,000 hr |
| | Contrast Ratio | 800:1 | 1000:1 | 1000:1 | 1000:1 |
| Touchscreen | Type | PCAP | PCAP | PCAP | PCAP |
| | Light Transmission | Above 88% | Above 85% | Above 88% | 90% ± 3% |
| | Anti-Glare Treatment | Yes | Yes | Yes | Yes |
| | Built-In iKey | N/A | N/A | N/A | N/A |
| Expandability | NFC Support on Front Panel | N/A | N/A | N/A | N/A |
| Environment | Operating Temperature | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) | 0~55 °C (32~131 °F) | 0~55 °C (32~131 °F) |
| | Storage Temperature | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) |
| | Ingress Protection | Font IP66 | Font IP66 | Font IP66 | Font IP66 |
| Housing Color | Panel Frame and Back Cover | Pantone 432C | Pantone 432C | Pantone 432C | Pantone 432C |



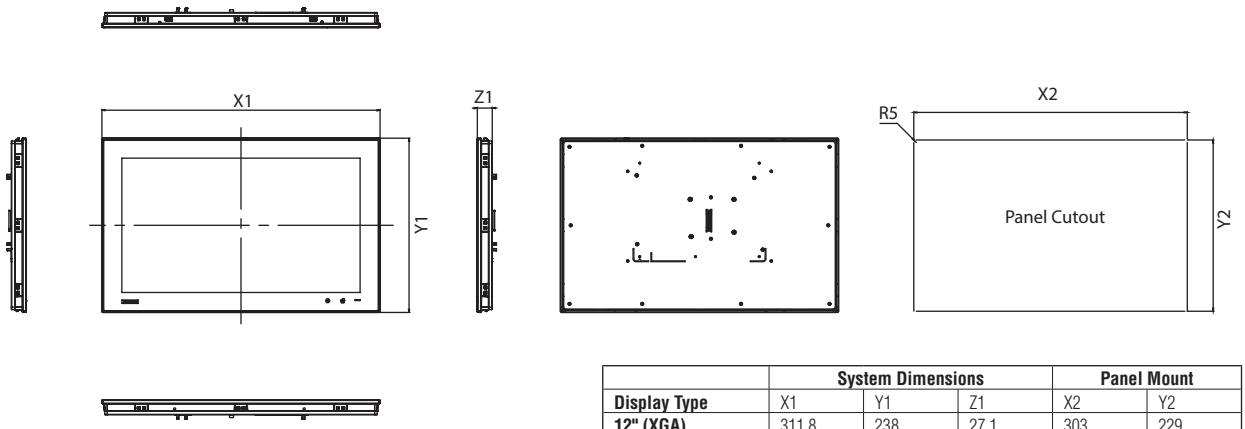
All product specifications are subject to change without notice.

## Specifications (Cont.)

| Part Number for High Brightness Version | | FPM-D12T-HE | FPM-D15T-HE | FPM-D15W-FHE | FPM-D21W-HE |
|---|---|---|---|---|---|
| LCD Panel | Display Size | 12" | 15" | 15.6" | 21.5" |
| | Display Type | XGA TFT LED LCD | XGA TFT LED LCD | FHD TFT LED LCD | FHD TFT LED LCD |
| | Aspect Ratio | 4:3 | | 16:9 | |
| | Max. Resolution | 1024 x 768 | 1024 x 768 | 1920 x 1080 | 1920 x 1080 |
| | Max. Color | 16.7M | 16.2M | 16.7M | 16.7M |
| | Luminance | 1000 cd/m² | 1,800 cd/m² | 1,200 cd/m² | 1,400 cd/m² |
| | Viewing Angle (H/V) | 178°/174° | 160°/150° | 178°/178° | 178°/178° |
| | Backlight Life | 50,000 hr | 50,000 hr | 50,000 hr | 50,000hr |
| | Contrast Ratio | 1000:1 | 800:1 | 800:1 | 1000:1 |
| Touchscreen | Type | PCAP | PCAP | PCAP | PCAP |
| | Light Transmission | Above 88% | Above 88% | Above 88% | Above 88% |
| | Anti-Glare Treatment | Yes | Yes | Yes | Yes |
| | Built-In iKey | N/A | N/A | N/A | N/A |
| Expandability | NFC Support on Front Panel | N/A | N/A | N/A | N/A |
| Environment | Operating Temperature | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) | -20~60 °C (-4~140 °F) |
| | Storage Temperature | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) | -30~70 °C (-22~158 °F) |
| | Ingress Protection | Font IP66 | Font IP66 | Font IP66 | Font IP66 |
| Housing Color | Panel Frame and Back Cover | Pantone 432C | Pantone 432C | Pantone 432C | Pantone 432C |

## Dimensions

Unit: mm




| | System Dimensions | | | Panel Mount | |
|---|---|---|---|---|---|
| Display Type | X1 | Y1 | Z1 | X2 | Y2 |
| 12" (XGA) | 311.8 | 238 | 27.1 | 303 | 229 |
| 15" (XGA) | 383.2 | 307.3 | 27.5 | 374.5 | 298.5 |
| 15.6" (FHD) | 419.7 | 269 | 30 | 412.4 | 261.7 |
| 17" (SXGA) | 410.4 | 343.4 | 28.3 | 401.3 | 334.8 |
| 18.5" (FHD) | 488 | 309 | 30.3 | 479.3 | 300.3 |
| 19" (SXGA) | 454 | 379.8 | 51.5 | 443.5 | 369.3 |
| 21.5" (FHD) | 558.4 | 349.8 | 30.3 | 550.3 | 341.8 |
| 23.8" (FHD) | 595.9 | 374.1 | 30.3 | 587 | 365.3 |

# Ordering Information

| Panel Module P/N | FPM-D12T-CE** | FPM-D15T-CE | FPM-D17T-CE | FPM-D19T-CE | FPM-D15W-FCE | FPM-D18W-FCE | FPM-D21W-CE | FPM-D24W-CE |
|---|---|---|---|---|---|---|---|---|
| Description | 12.1" XGA TFT LED LCD Standard | 15" XGA TFT LED LCD Standard | 17" SXGA TFT LED LCD Standard | 19" SXGA TFT LED LCD Standard | 15.6" FHD TFT LED LCD Standard | 18.5" FHD TFT LED LCD Standard | 21.5" FHD LED LCD Standard | 23.8" FHD TFT LED LCD Standard |

| Panel Module P/N | FPM-D12T-HE** | FPM-D15T-HE | FPM-D15W-FHE | FPM-D21W-HE |
|---|---|---|---|---|
| Description | 12.1" XGA TFT LED LCD High Brightness | 15" XGA TFT LED LCD High Brightness | 15.6" FHD TFT LED LCD High Brightness | 21.5" FHD LED LCD High Brightness |

Note: Display modules **cannot** work independently. A computing box (TPC-B200/B300/B510/B520/B520L/B610) is compulsory to operate the display module.
*High Brightness Display module only compatible w/ TPC-B300/B510/B520/B520L/B610.
**TPC-B610 does not support FPM-D12T-BE, -CE and -HE

### Configurable Rear Computing Box

| Box Module P/N | Description |
|---|---|
| TPC-B300-J20A | Intel® Celeron® J6412 2.6 GHz Processor (10W) |
| TPC-B300-E20A | Intel® Atom™ X6425E 3.0 GHz Processor (12W) |
| TPC-B510-833BE | Intel® Core™ i3-8145UE 2.20GHz Dual-core Processor, 8G DDR4 RAM |
| TPC-B510-853BE | Intel® Core™ i5-8365UE 1.60 GHz Quad-core Processor, 8G DDR4 RAM |
| TPC-B510-873BE | Intel® Core™ i7-8665UE 1.70GHz Quad-core Processor, 8G DDR4 RAM |
| TPC-B520L-C30A | Intel® Core™ i3-N305 1.80 GHz Octo-core Processor |
| TPC-B520-D50A | Intel® Core™ i5-1335UE 1.30 GHz Deca-core Processor |
| TPC-B520-D70A | Intel® Core™ i7-1365URE 1.70 GHz Deca-core Processor |
| TPC-B610H-A00A | Intel® 10th Gen. Core™ i CPU Socket (LGA1200), H420E, PCIex16, PCI |
| TPC-B610W-A00A | Intel® 10th Gen. Core™ i CPU Socket (LGA1200), W480E, PCIex16, PCIex4, NVMe, RAID 0/1, ECC |

# Optional Accessories

| Part Number | Description |
|---|---|
| 98R1B300V00* | TPC-B300 VESA mount kit for FPM-D Series |

*Note: 98R1B300V00 VESA mounting kit is only required for B300

# Packing List

### FPM-D12T-BE/CE/HE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1962055040 | CLAMPER PPC-55 M1632611 A2 | 8 |
| CLAMPER Screw | 1935042520 | Screw M4x25L R/S D=8.3 H=2.5 (2+) ST BZn | 8 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D15W-FBE/FCE/FHE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1960018986T000 | Clamper-bezel M5 for TPC-1770 A1 | 10 |
| CLAMPER Screw | 1935052000 | Screw M5x20L R/S D=9 H=3 (2+) ST N | 10 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D15T-BE/CE/HE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1962055040 | CLAMPER PPC-55 M1632611 A2 | 10 |
| CLAMPER Screw | 1935042520 | Screw M4x25L R/S D=8.3 H=2.5 (2+) ST BZn | 10 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D17T-BE/CE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1960018986T000 | Clamper-bezel M5 for TPC-1770 A1 | 10 |
| CLAMPER Screw | 1935052000 | Screw M5x20L R/S D=9 H=3 (2+) ST Ni | 10 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D18W-BE/FCE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1960018986T000 | Clamper-bezel M5 for TPC-1770 A1 | 12 |
| CLAMPER Screw | 1935052000 | Screw M5x20L R/S D=9 H=3 (2+) ST Ni | 12 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D19T-BE/CE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1960064704T000 | Clamper for PPC-3120 | 12 |
| CLAMPER Screw | 1930005598 | Screw SP/S M6*21L D=9 H=2+ ST BZn | 12 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D21W-BE/FCE/FHE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1960018986T000 | Clamper-bezel M5 for TPC-1770 A1 | 12 |
| CLAMPER Screw | 1935052000 | Screw M5x20L R/S D=9 H=3 (2+) ST Ni | 12 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

### FPM-D24W-BE/CE

| Item | Part No. | Depiction | Qty |
|---|---|---|---|
| CLAMPER | 1960018986T000 | Clamper-bezel M5 for TPC-1770 A1 | 14 |
| CLAMPER Screw | 1935052000 | Screw M5x20L R/S D=9 H=3 (2+) ST Ni | 14 |
| WARRANTY | 2190000902 | CARDBOARD-WARRANTY REV. A2 | 1 |

## FPM-DXXX-CE/HE Photo









*Note: Request to order TPC-B Series HMI computing module

Please note: If some optional modules are offered with the system, additional system certificates may be required in certain regions/countries.
Please contact Advantech for certificate compliance.