



KSM-KH Series

CM238

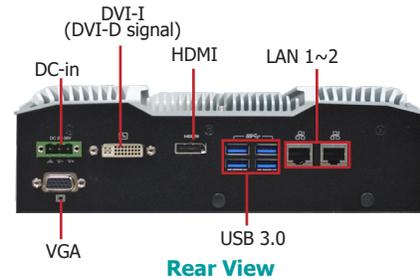
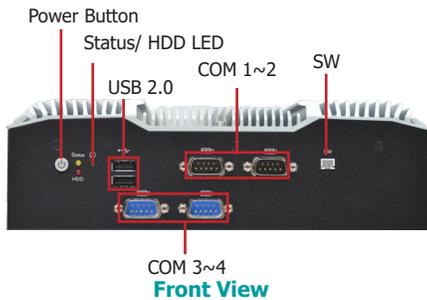


Features

- Support Adaptive Display Platform
- Multiple Panel Sizes with Resistive/P-Capacitive Touch Screen
- Intel® Core™ Processor with Fanless Design
- Supports 9~36V Power Input
- IP65 Front Panel Protection
- Operating Temperature: -20 to 50°C



System



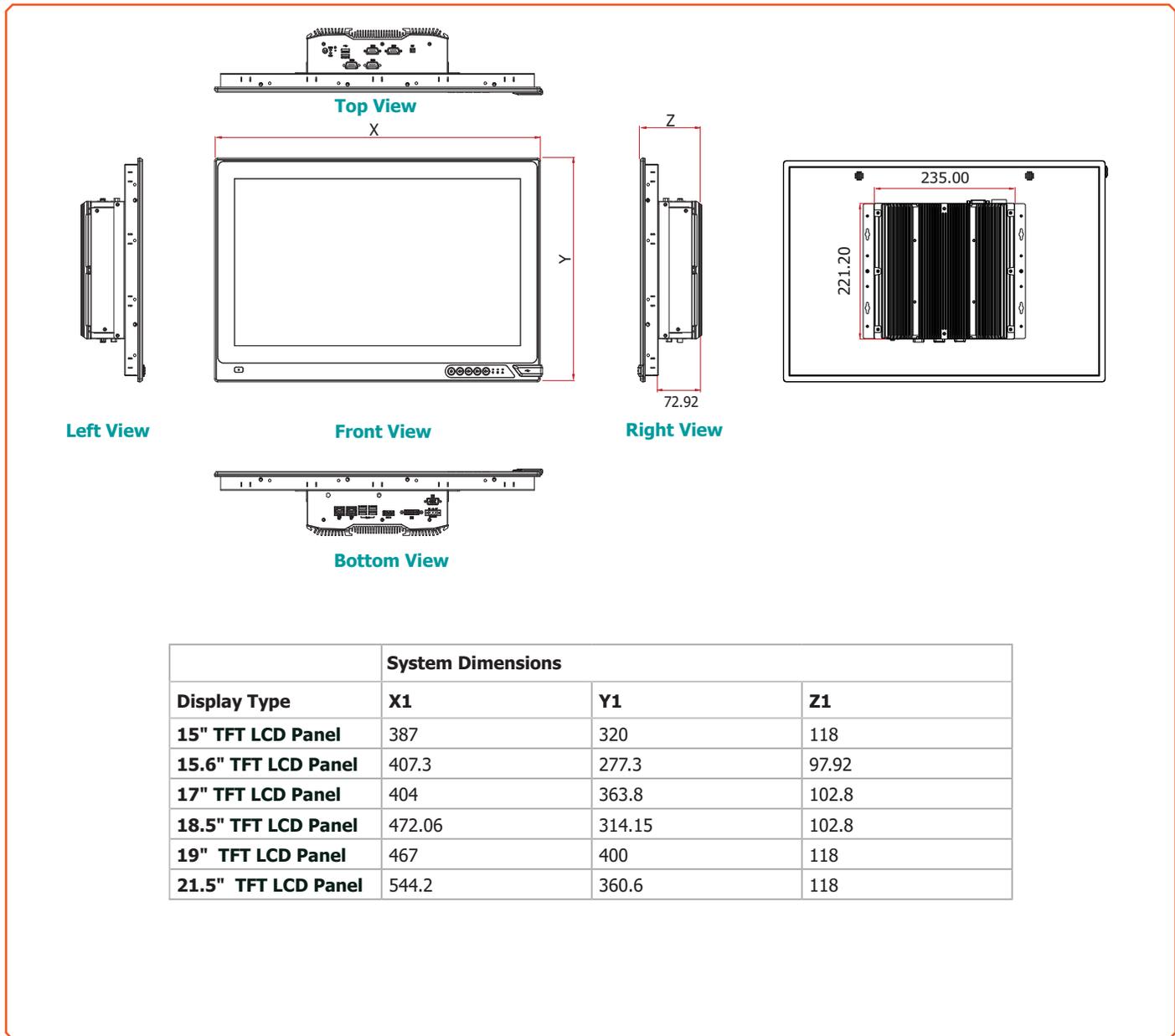
▶ Standard Ratio Specifications

| MODEL NAME | | KSM150-KH | KSM170-KH | KSM190-KH |
|-------------------------------------|--------------------------------------|--|--|---------------------------|
| DISPLAY & TOUCH SCREEN | Display Type | 15" TFT LCD Panel | 17" TFT LCD Pane | 19" TFT LCD Panel |
| | Max. Resolution | 1024 x 768 | 1280 x 1024 | 1280 x 1024 |
| | Brightness (cd/m²) | 300 | 350 | 350 |
| | Touch Type | Projected Capacitive / 5-wire Resistive | | |
| | Backlight Lifetime (hours) | 70,000 | 30,000 | 70,000 |
| FRONT I/O | USB (Optional) | 1 x USB 2.0 | | |
| | OSD (Optional) | Backlight On-Off / Brightness Up / Brightness Down / Audio Up / Audio Down | | |
| | LED Indicators (Optional) | Power LED / HDD LED / Alarm LED | | |
| OTHERS | Auto Dimming (Optional) | Light Sensor | | |
| ENVIRONMENT | Operating Temperature | -20 to 50°C | 0 to 45°C | -20 to 50°C |
| | Storage Temperature | -30 to 70°C | -30 to 70°C | -30 to 70°C |
| | Relative Humidity | 5 to 90% RH (non-condensing) | | |
| SYSTEM | Processor | 7th Generation Intel® Core™ Processors, BGA 1440 Intel® Xeon® Processor E3-1535M v6, Quad Core, 8M Cache, 3.1GHz (4.2GHz), 45W Intel® Core™ i7-7820EQ Processor, Quad Core, 8M Cache, 3.0GHz (3.7GHz), 45W Intel® Core™ i5-7440EQ Processor, Quad Core, 6M Cache, 2.9GHz (3.6GHz), 45W Intel® Core™ i5-7442EQ Processor, Quad Core, 6M Cache, 2.1GHz (2.9GHz), 25W Intel® Core™ i3-7100E Processor, Dual Core, 3M Cache, 2.9GHz, 35W Intel® Core™ i3-7102E Processor, Dual Core, 3M Cache, 2.1GHz, 25W | | |
| | Chipset | Intel® CM238 Chipset | Intel® QM175 Chipset | |
| | Memory | Two 260-pin SODIMM up to 32GB (CM238 supports ECC) | | Dual Channel DDR4 2400MHz |
| | BIOS | Insyde SPI 128Mbit | | |
| GRAPHICS | Controller | Intel® HD Graphics | | |
| | Feature | OpenGL up to 5.0, DirectX 11, OpenCL 2.1 HW Decode: HEVC/H.265, H.264, M/JPEG, MPEG2, VC1/WMV9, VP8 (8-bit), VP9 (10-bit) HW Encode: HEVC/H.265, M/JPEG, MPEG2, VP8 | | |
| | Display | 1 x VGA 1 x HDMI/DVI (DVI-D signal) (DVI available upon request) 1 x HDMI/DP++ (DP++ available upon request) | VGA: resolution up to 1920x1200 @ 60Hz DVI: resolution up to 2560x1600 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz DP++: resolution up to 4096x2304 @ 60Hz | |
| | Triple Displays | VGA + HDMI/DVI (DVI-D signal) + HDMI/DP++ | | |
| STORAGE | Internal | 1 x 2.5" SATA 3.0 Drive Bay | | |
| EXPANSION | Interface | 1 x Full-size Mini PCIe with micro SIM socket (PCIe/USB) 1 x Full-size Mini PCIe with micro SIM socket (USB) 1 x M.2 M Key 2280 (PCIe x4) | | |
| | ETHERNET | Controller | 1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM with iAMT11.0 PCIe (10/100/1000Mbps) (only Core i7/i5 supports iAMT) | |
| LED | Indicators | 1 x Power LED 1 x Status LED 1 x HDD LED | | |
| FRONT I/O | Serial | 2 x RS-232/422/485 (DB-9) (RS-232 with power) 2 x RS-232/422/485 (DB-9) | | |
| | USB | 2 x USB 2.0 (type A) | | |
| | Buttons | 1 x Power Button 1 x Reset Button | | |
| | Wi-Fi Antenna | 2 x Wi-Fi Module Antenna Hole | | |
| REAR I/O | Ethernet | 2 x GbE (RJ-45) | | |
| | USB | 4 x USB 3.0 (type A) | | |
| | Display | 1 x VGA 1 x HDMI/DVI (DVI-D signal) (DVI available upon request) 1 x HDMI/DP++ (DP++ available upon request) | | |
| | Audio | 1 x Line-out 1 x Mic-in (available upon request) | | |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | | |
| SECURITY | TPM | TPM 2.0 | | |
| POWER | Type | Wide Range 9~36V | | |
| | Connector | 3-pole Terminal Block | 2-pin Power Extension Switch Connector | |
| OS SUPPORT | | Windows 10 IoT Enterprise LTSB 64 Bit Linux (available upon request) | | |
| MECHANISM | Construction | Metal + Aluminum | | |
| | Mounting | Panel/VESA Mount 100 x 100 mm | | |
| | Dimensions (W x H x D) | 387 x 320 x 118 mm | 404 x 363.8 x 102.8 mm | 467 x 400 x 118mm |
| | Weight | 7.7 kg | 8.1 kg | 10 kg |
| STANDARDS AND CERTIFICATIONS | Shock | Half sine wave 3G, 11ms, 3 shock per axis | | |
| | Vibration | IEC68-2-64 | | |
| | Certification | CE, FCC, RoHS | | |

► Widescreen Ratio Specifications

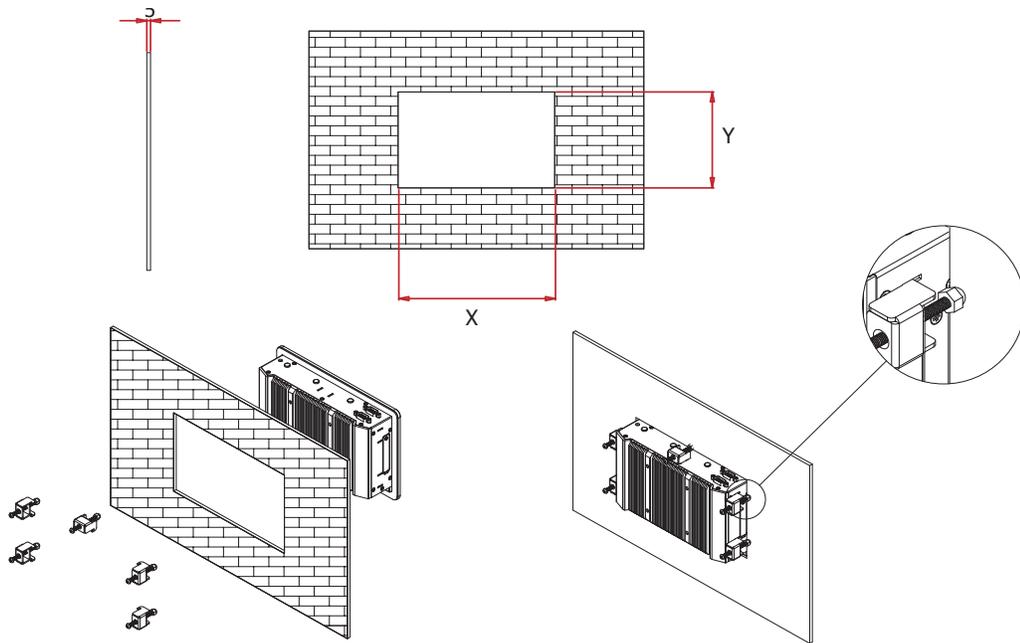
| MODEL NAME | | KSM156-KH | KSM185-KH | KSM215-KH | |
|-------------------------------------|---|--|--|-----------------------|-------------|
| DISPLAY & TOUCH SCREEN | Display Type | 15.6" TFT LCD Panel | 18.5" TFT LCD Pane | 21.5" TFT LCD Panel | |
| | Max. Resolution | 1366 x 768 | 1366 x 768 | 1920 x 1080 | |
| | Brightness (cd/m²) | 400 | 450 | 300 | |
| | Touch Type | Projected Capacitive / 5-wire Resistive | | | |
| | Backlight Lifetime (hours) | 50,000 | 50,000 | 50,000 | |
| FRONT I/O | USB (Optional) | 1 x USB 2.0 | | | |
| | OSD (Optional) | Backlight On-Off / Brightness Up / Brightness Down / Audio Up / Audio Down | | | |
| | LED Indicators (Optional) | Power LED / HDD LED / Alarm LED | | | |
| OTHERS | Auto Dimming (Optional) | Light Sensor | | | |
| | ENVIRONMENT | Operating Temperature | 0 to 50°C | 0 to 50°C | 0 to 50°C |
| | | Storage Temperature | -30 to 70°C | -30 to 70°C | -30 to 70°C |
| | | Relative Humidity | 5 to 90% RH (non-condensing) | | |
| SYSTEM | Processor | 7th Generation Intel® Core™ Processors, BGA 1440 Intel® Xeon® Processor E3-1535M v6, Quad Core, 8M Cache, 3.1GHz (4.2GHz), 45W Intel® Core™ i7-7820EQ Processor, Quad Core, 8M Cache, 3.0GHz (3.7GHz), 45W Intel® Core™ i5-7440EQ Processor, Quad Core, 6M Cache, 2.9GHz (3.6GHz), 45W Intel® Core™ i5-7442EQ Processor, Quad Core, 6M Cache, 2.1GHz (2.9GHz), 25W Intel® Core™ i3-7100E Processor, Dual Core, 3M Cache, 2.9GHz, 35W Intel® Core™ i3-7102E Processor, Dual Core, 3M Cache, 2.1GHz, 25W | | | |
| | Chipset | Intel® CM238 Chipset | Intel® QM175 Chipset | | |
| | Memory | Two 260-pin SODIMM up to 32GB (CM238 supports ECC) Dual Channel DDR4 2400MHz | | | |
| | BIOS | Insyde SPI 128Mbit | | | |
| | GRAPHICS | Controller | Intel® HD Graphics | | |
| Feature | | OpenGL up to 5.0, DirectX 11, OpenCL 2.1 HW Decode: HEVC/H.265, H.264, M/JPEG, MPEG2, VC1/WMV9, VP8 (8-bit), VP9 (10-bit) HW Encode: HEVC/H.265, M/JPEG, MPEG2, VP8 | | | |
| Display | | 1 x VGA 1 x HDMI/DVI (DVI-D signal) (DVI available upon request) 1 x HDMI/DP++ (DP++ available upon request) | VGA: resolution up to 1920x1200 @ 60Hz DVI: resolution up to 2560x1600 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz DP++: resolution up to 4096x2304 @ 60Hz | | |
| Triple Displays | | VGA + HDMI/DVI (DVI-D signal) + HDMI/DP++ | | | |
| STORAGE | Internal | 1 x 2.5" SATA 3.0 Drive Bay (RAID) | | | |
| EXPANSION | Interface | 1 x Full-size Mini PCIe with micro SIM socket (PCIe/USB) | | | |
| | | 1 x Full-size Mini PCIe with micro SIM socket (USB) | | | |
| | | 1 x M.2 M Key 2280 (PCIe x4) | | | |
| ETHERNET | Controller | 1 x Intel® I211AT PCIe (10/100/1000Mbps) | | | |
| | | 1 x Intel® I219LM with iAMT11.0 PCIe (10/100/1000Mbps) (only Core i7/i5 supports iAMT) | | | |
| LED | Indicators | 1 x Power LED | | | |
| | | 1 x Status LED | | | |
| | | 1 x HDD LED | | | |
| FRONT I/O | Serial | 2 x RS-232/422/485 (DB-9) (RS-232 with power) | | | |
| | | 2 x RS-232/422/485 (DB-9) | | | |
| | USB | 2 x USB 2.0 (type A) | | | |
| | Buttons | 1 x Power Button 1 x Reset Button | | | |
| REAR I/O | Wi-Fi Antenna | 2 x Wi-Fi Module Antenna Hole | | | |
| | Ethernet | 2 x GbE (RJ-45) | | | |
| | USB | 4 x USB 3.0 (type A) | | | |
| | Display | 1 x VGA | | | |
| | | 1 x HDMI/DVI (DVI-D signal) (DVI available upon request) 1 x HDMI/DP++ (DP++ available upon request) | | | |
| Audio | 1 x Line-out 1 x Mic-in (available upon request) | | | | |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | | | |
| SECURITY | TPM | TPM 2.0 | | | |
| POWER | Type | Wide Range 9~36V | | | |
| | Connector | 3-pole Terminal Block | 2-pin Power Extension Switch Connector | | |
| OS SUPPORT | Windows 10 IoT Enterprise LTSB 64 Bit | | | | |
| | Linux (available upon request) | | | | |
| MECHANISM | Construction | Metal + Aluminum | | | |
| | Mounting | Panel/VESA Mount 100 x 100 mm | | | |
| | Dimensions (W x H x D) | 407.3 x 277.3 x 97.92 mm | 472.06 x 314.15 x 102.8mm | 544.2 x 360.6 x 118mm | |
| | Weight | TBD | 8.1 kg | 9.4 kg | |
| STANDARDS AND CERTIFICATIONS | Shock | Half sine wave 3G, 11ms, 3 shock per axis | | | |
| | Vibration | IEC68-2-64 | | | |
| | Certification | CE, FCC, RoHS | | | |

► Dimensions



| Display Type | System Dimensions | | |
|---------------------|-------------------|--------|-------|
| | X1 | Y1 | Z1 |
| 15" TFT LCD Panel | 387 | 320 | 118 |
| 15.6" TFT LCD Panel | 407.3 | 277.3 | 97.92 |
| 17" TFT LCD Panel | 404 | 363.8 | 102.8 |
| 18.5" TFT LCD Panel | 472.06 | 314.15 | 102.8 |
| 19" TFT LCD Panel | 467 | 400 | 118 |
| 21.5" TFT LCD Panel | 544.2 | 360.6 | 118 |

Panel Mounting



Suggested cut out size



| Display Type | System Dimensions (mm) | |
|----------------|------------------------|-------|
| | X1 | Y1 |
| PMKS150 | 367 | 300 |
| PMKS156 | 389.3 | 259.3 |
| PMKS170 | 386 | 346 |
| PMKS185 | 454 | 296.1 |
| PMKS190 | 447 | 380 |
| PMKS215 | 526.2 | 342.6 |

Ordering Information

| Model Name | Part Number | Description |
|-----------------------------|-----------------|---|
| KSM150P-KHW36 | 750-K15003-100G | 15" TFT XGA Fanless Panel PC with Projected Capacitive Touch, Intel® 6th Core Processor, DC Input 9~36V Terminal, F/G SYSTEM RoHS |
| KSM150R-KHW36 | 750-K15003-200G | 15" TFT XGA Fanless Panel PC with Resistive Touch, Intel® 6th Core Processor, DC Input 9~36V Terminal, F/G SYSTEM RoHS |
| KSM150P-KHW36-i5-KLU | 750-K15003-300G | 15" TFT XGA Fanless Panel PC with Projected Capacitive Touch, OSD, Light Sensor, USB, Intel® 6th Core Processor, DC Input 9~36V Terminal, F/G SYSTEM RoHS |
| KSM190P-KHW36-i5 | 750-K19002-100G | 19" TFT XGA Fanless Panel PC with Projected Capacitive Touch, Intel® 7th Core Processor i5-7440EQ, DC Input 9~36V Terminal, F/G SYSTEM RoHS |
| KSM190R-KHW36-i5 | 750-K19002-200G | 19" TFT XGA Fanless Panel PC with Resistive Touch, Intel® 7th Core Processor i5-7440EQ, DC Input 9~36V Terminal, F/G SYSTEM RoHS |
| KSM190P-KHW36-i5-KLU | 750-K19002-300G | 19" TFT XGA Fanless Panel PC with Projected Capacitive Touch, OSD, Light Sensor, USB, Intel® 7th Core Processor i5-7440EQ, DC Input 9~36V Terminal, F/G SYSTEM RoHS |

► Optional Items

| Optional Items | Part Number | Description |
|-------------------------|-----------------|---|
| Memory | 138-540002-100G | 4GB DDR4 SODIMM RAM |
| | 138-580002-100G | 8GB DDR4 SODIMM RAM |
| | 138-5G0161-100G | 16GB DDR4 SODIMM RAM |
| HDD/SSD | 635-550092-050G | 2.5" SATA HDD, 500GB, RoHS |
| | 635-500100-200G | 2.5" SATA HDD, 1TB, RoHS |
| | 635-610002-110G | 2.5" SATA SSD, 1TB MLC, RoHS |
| | 635-605122-110G | 2.5" SATA SSD, 512GB MLC, RoHS |
| | 635-602562-120G | 2.5" SATA SSD, 256GB MLC, RoHS |
| | 635-601282-190G | 2.5" SATA SSD, 128GB MLC, RoHS |
| | 635-600642-150G | 2.5" SATA SSD, 064GB MLC, RoHS |
| Wi-Fi | 761-110091-000G | Wi-Fi Kit, SparKLAN, WPEA-121N, w/IPX cable & antenna |
| | 612-110050-300G | Wi-Fi module, SparKLAN, WPEA-252NI |
| Power Cord | 785-PWRD | Power Cord, Standards (USA/EUR/CH), 1.8m, RoHS |
| Power Adapter | 671-106013-000G | 60W: 12VDC/5A, DC Cord 5.5*2.5mm, Pitch 5mm, LV6, RoHS |
| | 671-112005-100G | 120W: 24VDC/5A, DC Cord 5.5*2.5mm, Pitch 5mm, LV6, RoHS |
| Panel Mount Kits | 761-P15002-000G | Panel Mount Kit for PMKS150 RoHS |
| | 761-P19003-000G | Panel Mount Kit for PMKS190 RoHS |
| | 761-P15002-000G | KSM150 Panel Mount Kit RoHS |
| | 761-P19003-000G | KSM170-AL / KSM190-AL Panel Mount Kit RoHS |
| | TBD | KSM185 Panel Mount Kit RoHS |
| | 761-KS2150-000G | KSM215-AL Panel Mount Kit RoHS |
| Wall Mount | 761-TPC000-000G | ACCESSORY WALL MOUNT KITS |

785-XXX is a group number instead of a unique part number. Please contact your regional sales representative if you need more information.

► Matrix List

| | | PMKS150 | PMKS156 | PMKS170 | PMKS185 | PMKS190 | PMKS215 |
|-------------------|------|---------|---------|---------|---------|---------|---------|
| Box Module | BMAL | V | V | V | V | V | V |
| | BMSD | V | V | V | V | V | V |
| | BMKH | V | V | V | V | V | V |

► Packing List

| |
|------------------------------------|
| • 1 Single Box |
| • 1 3 pin Terminal Block Connector |
| • 2 Mini PCIe Screw |
| • 1 SATA Screw |