

KS-KH Series

CM238

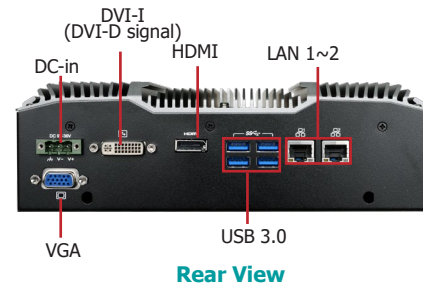
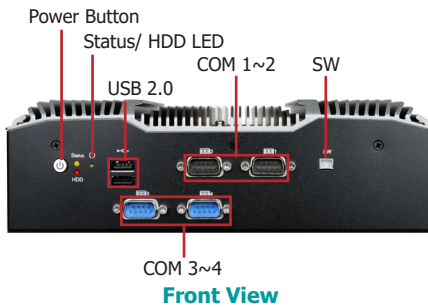


► Features

- 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



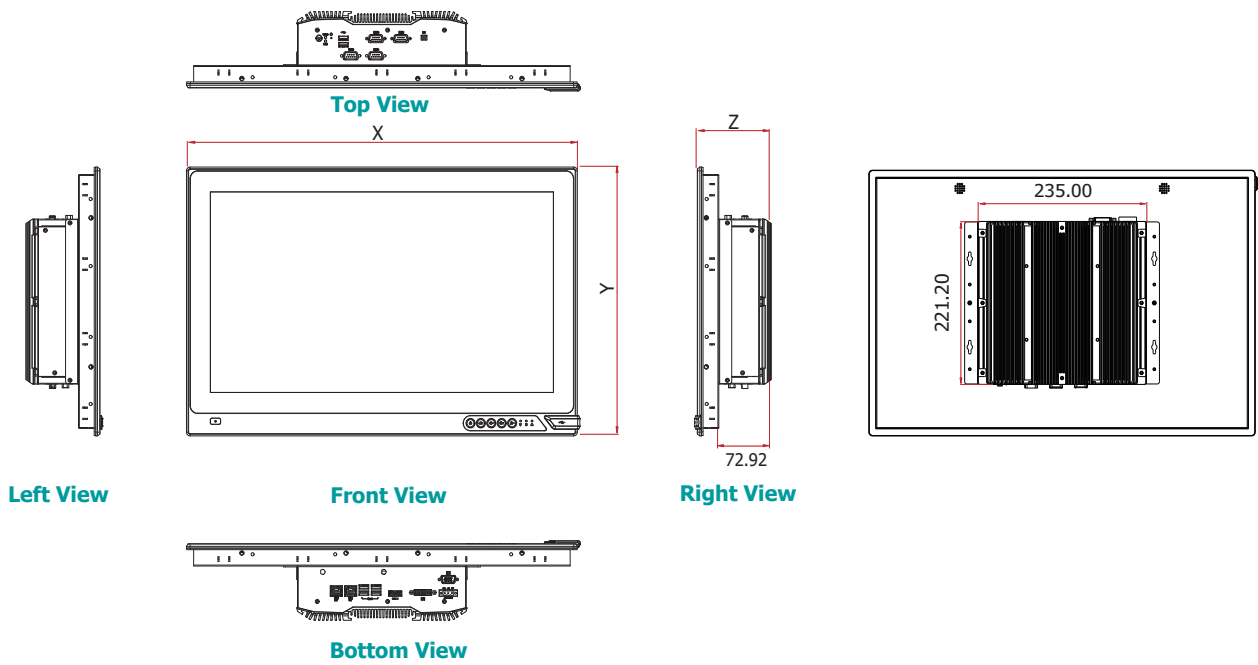
► Panel Specifications

Model Name		KS150-KH	KS190-KH	KS215-KH
Display & Touch Screen	Display Type	15" TFT LCD Panel	19" TFT LCD Panel	21.5" TFT LCD Panel
	Max. Resolution	1024 x 768	1280 x 1024	1920 x 1080
	Brightness (cd/m²)	300	350	250
	Touch Type	Projected Capacitive / 5-wire Resistive	Projected Capacitive / 5-wire Resistive	Projected Capacitive / 5-wire Resistive
	Backlight Lifetime (hours)	70,000	70,000	30,000
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		
	Storage Temperature	-30 to 70°C	-30 to 70°C	-30 to 70°C
	Relative Humidity	5 to 90% RH (non-condensing)		

System Specifications

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	
	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	
	Dimensions (W x H x D)	KS150-KH: 403 x 330 x 102.32mm KS190-KH: 484 x 412 x 102.32mm KS215-KH: 553.4 x 365.2 x 102.72mm	
	Weight	TBD	
ENVIRONMENT	Operating Temperature	-20 to 50°C (SSD or mSATA-mini or CFast card, with 0.7m/s air flow)	
	Storage Temperature	-30 to 70°C	
	Relative Humidity	5 to 95% RH (non-condensing)	
STANDARDS AND CERTIFICATIONS	Shock	Half sine wave 3G, 11ms, 3 shock per axis	
	Vibration	IEC68-2-64	
	Certification	CE, FCC	

► Dimensions



	System Dimensions		
Display Type	X1	Y1	Z1
15" XGA LCD	387	320	102.32
19" SXGA LCD	467	400	102.32
21.5" FHD LCD	544.2	360.63	102.72

▶ 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	671-116001-000G	Power Adapter 160W , 19V/8.4A Level 5, RoHS
	671-116003-000G	Power Adapter 160W , 19V/8.4A Level 6, RoHS
Panel Mount Kits	761-P15002-000G	Panel Mount Kit for PMKS150 RoHS
	761-P19003-000G	Panel Mount Kit for PMKS190 RoHS

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

▶ Packing List

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