



DFI KSM156-AL 15.6" Intel Atom/Celeron Modular-Designed Fanless Touch Panel PC

Key Features:

- Proprietary modular design – Adaptive display platform
- Front OSD & Accessible 2.5" SATA drive bay
- Multiple panel sizes 7", 10.1", 12.1", 15", 15.6", 17", 18.5", 19", 21.5"
- Resistive/Projective Capacitive touch screen
- Supports 24V / 9~48V power board module
- Fanless, Cableless design
- 12V / 24V / 48V Ignition power control
- 15-year CPU life cycle support until Q4'31 (Based on Intel IOTG Roadmap)

Description

The KSM-AL series is DFI's lineup of fanless panel PCs based on Intel Atom processors for Industrial automation, infotainment, selfservice, smart transportation and IoT applications. This series supports 7- to 21.5- inch LED backlight LCD panel with features such as PCAP or resistive touch, gloved finger touchscreen, auto-dimming and aluminum alloy front bezel plus IP65 rating for protection against dust and water ingress. The KSM-AL series offers the option of built-in power ignition management and two internal Mini PCIe slots suitable for in-vehicle applications and automatic guided vehicle market. With the extended power input from 9 to 48V DC and OVP/OCP/ESD surge protection, the system can power on and operate safely. The KSM-AL series also supports DFI's Adaptive Display Platform (ADP) Technology. It is an innovative panel PC solution that offers the flexibility of modularized integration of panel PC components for expedited product development and shortened time to market.

Website Specification

	KSM156-AL
Display Type	15.6" TFT LCD Panel
Aspect Ratio	16:9
Max. Resolution	1366 x 768
Brightness (cd/m2)	400
Touch Type	Projected Capacitive / 5-wire Resistive
Backlight Lifetime (hours)	50,000
USB (Opt)	1 x USB 2.0
OSD Keypad (Opt)	Backlight On-Off / Brightness Up / Brightness Down / Audio Up / Audio Down
LED Indicators (Opt)	Power LED / HDD LED / Alarm LED
Speaker (Opt)	2 x 1.5W Speaker
Auto Dimming (Opt)	Light Sensor
Operating Temperature	0 to 60°C
Storage Temperature	-20 to 60°C
Relative Humidity	5 to 90% RH (non-condensing)
Processor	Intel Atom® x5-E3940 Processor, Quad Core, 2M Cache, 1.6GHz (1.8GHz), 9.5W Intel® Celeron® Processor N3350, Dual Core, 2M Cache, 1.1GHz (2.4GHz), 6W
Memory	Single Channel DDR3L 1866MHz
BIOS	Insyde SPI 128Mbit (supports UEFI boot only)
Graphics Controller	Intel® HD Graphics
Graphics Feature	OpenGL 4.2, Direct X 11.1, OpenCL 1.2, OGL ES 3.0 HW Decode: H.264, MPEG2, VC1, VP8, H.265, MPEG4 HW Encode: H.264, MPEG2, MPEG4
Graphics Display	DP++: resolution up to 4096×2160 @ 60Hz VGA: resolution up to 2560×1600 @ 60Hz DVI-D: resolution up to 1920×1200 @ 60Hz
Triple Displays	Panel Module, DP++, VGA or DVI-D
External Storage	1 x mSATA (shared by Half-size Mini-PCle Socket)
Expansion Interface	1 x Full-size Mini PCIe (USB/PCle) 1 x Half-size Mini PCIe (USB/PCle/mSATA) 1 x SIM Slot
Audio Codec	Realtek ALC262
Controller	2 x Intel® I210IT PCIe (10/100/1000Mbps)
LED Indicators	1 x HDD LED
Serial	2 x RS-232/422/485 (available upon request)
Ethernet	Support Jumbo Frame, IEEE1588v2, WOL, PXE
DIO	4 x DI / 4 x DO (10-pin terminal block) (available upon request)

Buttons	1 x Power Button, 1 x Reset Switch
Wi-Fi Antennas	4 x Wi-Fi Module Antenna Hole
USB	2 x USB 2.0 (type A)
Display	1 x VGA or DVI-D (DVI-D available upon request)
Audio	1 x Mic-in
Switch	1 x Ignition Power On/Off Switch
Remote Power On/Off	1 x 2-pin Terminal Block
Watchdog Timer Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds
Ignition Power On/Off	Auto Detect Boot-up & Shut-down Voltage for Low Power Protection Support 12V/24V/48V DC Input I/O Switch Selectable Ignition Power On/Of
Watchdog Timer	System Reset, Programmable via Software from 1 to 255 Seconds
Antenna	4 x Antenna Hole
Power Type	9~48 VDC Input (available upon request)
Power Connector	3-pin Terminal Block
OS Support	Linux
Construction	Aluminum Front Bezel
IP Rating	IP65 Front Panel Protection
Mounting	Panel/VESA Mount
Dimensions	407.3 x 277.3 x 6.1
Weight	TBD
Shock	Non-op : 50G, 20ms, half sine wave, 1 time for $\pm X$, $\pm Y$, $\pm Z$ direction
Vibration	Non-op : 1.5G , 10~200 Hz random, x, y, z each axis/30 min
Certifications	CE / FCC Class A



**Intel Atom® / Celeron® Processor
Modular-Designed Industrial Panel PC**

KSM-AL Series



Features

- Support Adaptive Display Platform
- Multiple Panel Sizes with Resistive/P-Capacitive Touch Screen
- Front OSD & Auto Dimming
- Supports 24V / 9~48V Power Board Module
- Accessible 2.5" SATA Drive Bay
- IP65 Front Panel Protection
- 12V/24V/48V Ignition Power Control
- Wide Operating Temperature

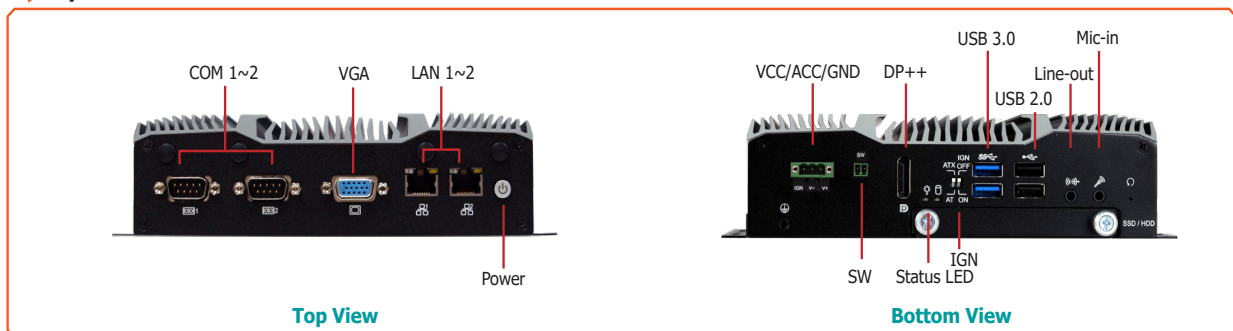


Overview

The KSM-AL series is DFI's lineup of fanless panel PCs based on Intel Atom® processors for Industrial automation, infotainment, self-service, smart transportation and IoT applications. This series supports 7- to 21.5- inch LED backlight LCD panel with features such as PCAP or resistive touch, gloved finger touchscreen, auto-dimming and aluminum alloy front bezel plus IP65 rating for protection against dust and water ingress. The KSM-AL series offers the option of built-in power ignition management and two internal Mini PCIe slots suitable for in-vehicle applications and automatic guided vehicle market. With the extended power input from 9 to 48V DC and OVP/OCP/ESD surge protection, the system can power on and operate safely.

The KSM-AL series also supports DFI's Adaptive Display Platform (ADP) Technology. It is an innovative panel PC solution that offers the flexibility of modularized integration of panel PC components for expedited product development and shortened time to market.

System





Standard Ratio Specifications

Model Name		KSM121-AL	KSM150-AL	KSM170-AL	KSM190-AL
Display & Touch Screen	Display Type	12.1" TFT LCD Panel	15" TFT LCD Panel	17" TFT LCD Panel	19" TFT LCD Panel
	Aspect Ratio	4 : 3	4 : 3	5 : 4	5 : 4
	Max. Resolution	1024 x 768	1024 x 768	1280 x 1024	1280 x 1024
	Brightness (cd/m²)	500	300	350	350
	Touch Type	Projected Capacitive / 5-wire Resistive			
	Backlight Lifetime (hours)	30,000	70,000	30,000	70,000
Front I/O	USB (Opt.)	1 x USB 2.0			
	OSD Keypad (Opt.)	Backlight On-Off / Brightness Up / Brightness Down / Audio Up / Audio Down			
	LED Indicators (Opt.)	Power LED / HDD LED / Alarm LED			
Audio	Speaker (Opt.)	2 x 1.5W Speaker			
Others	Auto Dimming (Opt.)	Light Sensor			
Environment	Operating Temperature	-20 to 70°C	-20 to 70°C	0 to 50°C	-20 to 70°C
	Storage Temperature	-40 to 80°C	-30 to 70°C	-20 to 60°C	-30 to 85°C
	Relative Humidity	5 to 90% RH (non-condensing)			
SYSTEM	Processor	Intel Atom® x5-E3940 Processor, Quad Core, 2M Cache, 1.6GHz (1.8GHz), 9.5W Intel® Celeron® Processor N3350, Dual Core, 2M Cache, 1.1GHz (2.4GHz), 6W			
	Memory	One 204-pin SODIMM up to 8GB Single Channel DDR3L 1866MHz			
	BIOS	Insyde SPI 128Mbit (supports UEFI boot only)			
GRAPHICS	Controller	Intel® HD Graphics			
	Feature	OpenGL 4.2, Direct X 11.1, OpenCL 1.2, OGL ES 3.0 HW Decode: H.264, MPEG2, VC1, VP8, H.265, MPEG4 HW Encode: H.264, MPEG2, MPEG4			
	Display	1 x DP++ 1 x VGA or DVI-D (DVI-D available upon request)		DP++: resolution up to 4096x2160 @ 60Hz VGA: resolution up to 2560x1600 @ 60Hz DVI-D: resolution up to 1920x1200 @ 60Hz	
	Triple Displays	Panel Module, DP++, VGA or DVI-D			
STORAGE EXPANSION	External	1 x 2.5" SATA 3.0 Drive Bay (accessible)		1 x mSATA (shared by Half-size Mini-PCIe Socket)	
	Interface	1 x Full-size Mini PCIe (USB/PCIe) 1 x Half-size Mini PCIe (USB/PCIe/mSATA) 1 x SIM Slot			
AUDIO	Audio Codec	Realtek ALC262			
ETHERNET	Controller	2 x Intel® I210IT PCIe (10/100/1000Mbps)			
LED	Indicators	1 x Power LED		1 x HDD LED	
I/O	Serial	2 x RS-232/422/485 (DB9) Support 5V/12V Power		2 x RS-232/422/485 (available upon request)	
	Ethernet	2 x GbE (RJ-45) (10/100/1000Mbps)		Support Jumbo Frame, IEEE1588v2, WOL, PXE 802.3 af PoE (PSE), Individual Port 15.4W (available upon request)	
	DIO	4 x DI / 4 x DO (10-pin terminal block) (available upon request)			
	Buttons	1 x Power Button		1 x Reset Switch	
	Wi-Fi Antennas	4 x Wi-Fi Module Antenna Hole			
	USB	2 x USB 3.0 (type A) 2 x USB 2.0 (available upon request)		2 x USB 2.0 (type A)	
	Display	1 x DP++		1 x VGA or DVI-D (DVI-D available upon request)	
	Audio	1 x Line-out		1 x Mic-in	
	Switch	1 x AT/ATX Switch		1 x Ignition Power On/Off Switch	
	Remote Power On/Off	1 x 2-pin Terminal Block			
	WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds		
OTHER FUNCTIONS	Ignition Power On/Off	Auto Detect Boot-up & Shut-down Voltage for Low Power Protection Support 12V/24V/48V DC Input 7-level Delay Time On/Off Configuration I/O Switch Selectable Ignition Power On/Off			
	Watchdog Timer	System Reset, Programmable via Software from 1 to 255 Seconds			
	Antenna	4 x Antenna Hole			
POWER	Type	24 VDC Input (available upon request)		9~48 VDC Input (available upon request)	
	Connector	3-pin Terminal Block			
OS SUPPORT		Windows 10 IoT Enterprise 64-bit		Linux	
MECHANISM	Construction	Aluminum Front Bezel			
	IP Rating	IP65 Front Panel Protection			
	Mounting	Panel/VESA Mount			
	Dimensions (W x H x D)	308 x 265.3 x 77.9	387 x 320 x 80.5	404 x 363.8 x 80.9	467 x 400 x 80.5
	Weight	TBD	5.3 kg	5.4 kg	7.6 kg
STANDARDS AND CERTIFICATIONS	Shock	Non-op : 200G, 2ms, half sine wave, 1 time for ± X, ± Y, ± Z direction	Non-op : 50G, 11ms, half sine wave, 1 time for ± X, ± Y, ± Z direction	Non-op : 50G, 20ms, half sine wave, 1 time for ± X, ± Y, ± Z direction	Non-op : 50G, 20ms, half sine wave, 1 time for ± X, ± Y, ± Z direction
	Vibration	Non-op: 1.5G, 10 ~ 300 Hz sine wave, 10 min/cycle, 3 cycles each X, Y, Z direction	Non-op: 1.5G, 10 ~ 300 Hz sine wave, 10 min/cycle, 3 cycles each X, Y, Z direction	Non-op : 1.5G, 10~200 Hz random, x, y, z each axis/30 min	Non-op : 1.5G, 10~200 Hz random, x, y, z each axis/30 min
	Certifications	CE / FCC Class A			
	Patent No. (Taiwan)	I670589			



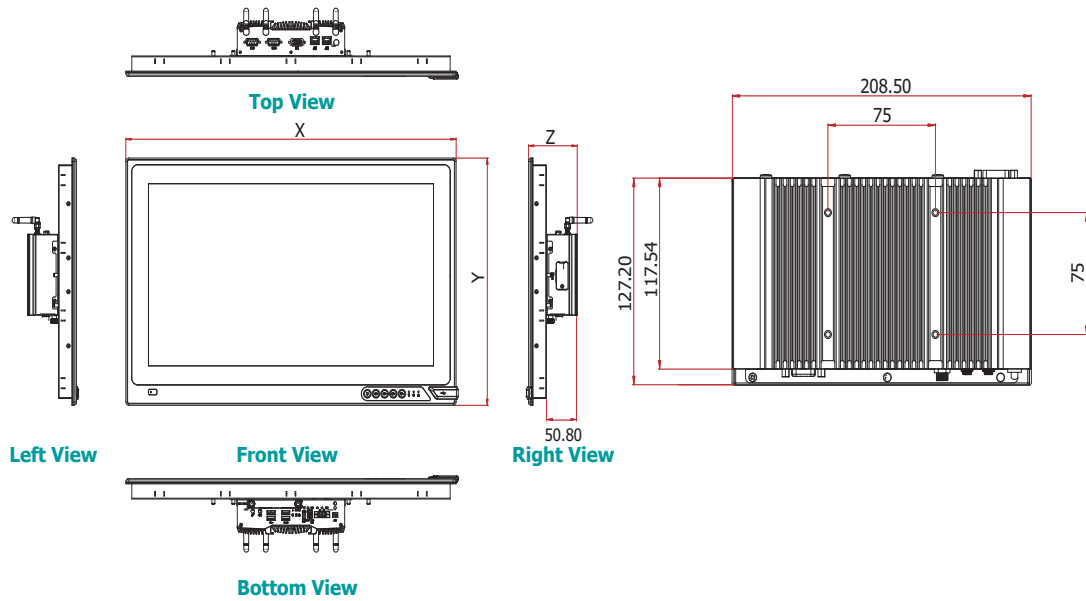
Widescreen Ratio Specifications

Model Name		KSM070-AL	KSM101-AL	KSM156-AL	KSM185-AL	KSM215-AL
Display & Touch Screen	Display Type	7" TFT LCD Panel	10.1" TFT LCD Panel	15.6" TFT LCD Panel	18.5" TFT LCD Panel	21.5" TFT LCD Panel
	Aspect Ratio	16 : 9	16 : 10	16 : 9	16 : 9	16 : 9
	Max. Resolution	800 x 480	1280 x 800	1366 x 768	1366 x 768	1920 x 1080
	Brightness (cd/m²)	500	350	400	450	300
	Touch Type	Projected Capacitive / 4-wire Resistive / Projected Capacitive / 5-wire Resistive				
	Backlight Lifetime (hours)	40,000	25,000	50,000		
Front I/O	USB (Opt.)	1 x USB 2.0				
	OSD Keypad (Opt.)	Backlight On-Off / Brightness Up / Brightness Down / Audio Up / Audio Down				
	LED Indicators (Opt.)	Power LED / HDD LED / Alarm LED				
Audio	Speaker (Opt.)	2 x 1.5W Speaker				
Others	Auto Dimming (Opt.)	Light Sensor				
Environment	Operating Temperature	-20 to 70°C	-20 to 70°C	0 to 60°C	0 to 60°C	0 to 60°C
	Storage Temperature	-30 to 80°C	-30 to 80°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
	Relative Humidity	5 to 90% RH (non-condensing)				
SYSTEM	Processor	Intel Atom® x5-E3940 Processor, Quad Core, 2M Cache, 1.6GHz (1.8GHz), 9.5W Intel® Celeron® Processor N3350, Dual Core, 2M Cache, 1.1GHz (2.4GHz), 6W				
	Memory	One 204-pin SODIMM up to 8GB / Single Channel DDR3L 1866MHz				
	BIOS	Insyde SPI 128Mbit (supports UEFI boot only)				
GRAPHICS	Controller	Intel® HD Graphics				
	Feature	OpenGL 4.2, Direct X 11.1, OpenCL 1.2, OGL ES 3.0 HW Decode: H.264, MPEG2, VC1, VP8, H.265, MPEG4 HW Encode: H.264, MPEG2, MPEG4				
	Display	1 x DP++ 1 x VGA or DVI-D (DVI-D available upon request)		DP++: resolution up to 4096x2160 @ 60Hz VGA: resolution up to 2560x1600 @ 60Hz DVI-D: resolution up to 1920x1200 @ 60Hz		
	Triple Displays	Panel Module, DP++, VGA or DVI-D				
STORAGE	External	1 x 2.5" SATA 3.0 Drive Bay (accessible)		1 x mSATA (shared by Half-size Mini-PCIe Socket)		
EXPANSION	Interface	1 x Full-size Mini PCIe (USB/PCIe) 1 x Half-size Mini PCIe (USB/PCIe/mSATA) 1 x SIM Slot				
	AUDIO	Audio Codec	Realtek ALC262			
ETHERNET	Controller	2 x Intel® I210IT PCIe (10/100/1000Mbps)				
LED	Indicators	1 x Power LED		1 x HDD LED		
I/O	Serial	2 x RS-232/422/485 (DB9) Support 5V/12V Power		2 x RS-232/422/485 (available upon request)		
	Ethernet	2 x GbE (RJ-45) (10/100/1000Mbps)		Support Jumbo Frame, IEEE1588v2, WOL, PXE 802.3 af PoE (PSE), Individual Port 15.4W (available upon request)		
	DIO	4 x DI / 4 x DO (10-pin terminal block) (available upon request)				
	Buttons	1 x Power Button, 1 x Reset Switch				
	Wi-Fi Antennas	4 x Wi-Fi Module Antenna Hole				
	USB	2 x USB 3.0 (type A) 2 x USB 2.0 (available upon request)		2 x USB 2.0 (type A)		
	Display	1 x DP++		1 x VGA or DVI-D (DVI-D available upon request)		
	Audio	1 x Line-out		1 x Mic-in		
	Switch	1 x AT/ATX Switch		1 x Ignition Power On/Off Switch		
	Remote Power On/Off	1 x 2-pin Terminal Block				
	WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds			
OTHER FUNCTIONS	Ignition Power On/Off	Auto Detect Boot-up & Shut-down Voltage for Low Power Protection Support 12V/24V/48V DC Input / 7-level Delay Time On/Off Configuration I/O Switch Selectable Ignition Power On/Off				
	Watchdog Timer	System Reset, Programmable via Software from 1 to 255 Seconds				
	Antenna	4 x Antenna Hole				
POWER	Type	24 VDC Input (available upon request)		9~48 VDC Input (available upon request)		
	Connector	3-pin Terminal Block				
OS SUPPORT		Windows 10 IoT Enterprise 64-bit		Linux		
MECHANISM	Construction	Aluminum Front Bezel				
	IP Rating	IP65 Front Panel Protection				
	Mounting	Panel/VESA Mount				
	Dimensions (W x H x D)	224 x 163.55 x 72.9	275 x 212.3 x 72.9	407.3 x 277.3 x 6.1	472.1 x 314.1 x 80.9	544.2 x 360.6 x 80.9
	Weight	2.2 kg	TBD	TBD	5.7 kg	7 kg
STANDARDS AND CERTIFICATIONS	Shock	TBD	Non-op : 240G, 2ms, half sine wave, 1 time for ± X, ± Y, ± Z direction	Non-op : 50G, 20ms, half sine wave, 1 time for ± X, ± Y, ± Z direction	Non-op : 50G, 20ms, half sine wave, 1 time for ± X, ± Y, ± Z direction	Non-op : 50G, 20ms, half sine wave, 1 time for ± X, ± Y, ± Z direction
	Vibration	Non-op: 1.5G, 10 ~ 300 Hz sine wave, 10 min/cycle, 3 cycles each X,Y, Z direction	Non-op: 1.5G, 10 ~ 300 Hz sine wave, 10 min/cycle, 3 cycles each X,Y, Z direction	Non-op : 1.5G, 10~200 Hz random, x, y, z each axis/30 min	Non-op : 1.5G, 10~200 Hz random, x, y, z each axis/30 min	Non-op : 1.5G, 10~200 Hz random, x, y, z each axis/30 min
	Certifications	CE / FCC Class A				
Patent No. (Taiwan)	I670589					



KSM-AL Series

Dimensions



Display Type	System Dimensions (mm)		
	X1	Y1	Z1
7" LCD	224	163.55	72.9
10.1" LCD	275	212.3	72.9
12.1" LCD	308	265.3	77.9
15" LCD	387	320	80.5
15.6" LCD	407.3	277.3	76.1
17" LCD	404	363.8	80.9
18.5" LCD	472.1	314.1	80.9
19" LCD	467	400	80.5
21.5" LCD	544.2	360.63	80.9



KSM-AL Series

Panel Mounting

Suggested cut out size

Display Type	System Dimensions (mm)	
	X1	Y1
PMKS070	206	145.6
PMKS101	257	194.3
PMKS121	290	247.5
PMKS150	367	300
PMKS156	389.3	259.3
PMKS170	386	346
PMKS185	454	296.1
PMKS190	447	380
PMKS215	526.2	342.6



KSM-AL Series

Ordering Information

Model Name	Part Number	Description
KSM070P-ALD24-N50	TBD	KSM070P-ALD24-N50: 7" TFT WVGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM070P-ALW48-N50	TBD	KSM070P-ALW48-N50: 7" TFT WVGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM070P-ALD24-E40	TBD	KSM070P-ALD24-E40: 7" TFT WVGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM070P-ALW48-E40	TBD	KSM070P-ALW48-E40: 7" TFT WVGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM070R-ALD24-N50	TBD	KSM070R-ALD24-N50: 7" TFT WVGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM070R-ALW48-N50	750-KS07R0-200G	KSM070R-ALW48-N50: 7" TFT WVGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM070R-ALD24-E40	TBD	KSM070R-ALD24-E40: 7" TFT WVGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM070R-ALW48-E40	TBD	KSM070R-ALW48-E40: 7" TFT WVGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM101P-ALD24-N50	TBD	KSM101P-ALD24-N50: 10.1" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM101P-ALW48-N50	TBD	KSM101P-ALW48-N50: 10.1" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM101P-ALD24-E40	TBD	KSM101P-ALD24-E40: 10.1" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM101P-ALW48-E40	750-KS1011-100G	KSM101P-ALW48-E40: 10.1" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM101R-ALD24-N50	TBD	KSM101R-ALD24-N50: 10.1" TFT WXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM101R-ALW48-N50	750-KS1011-000G	KSM101R-ALW48-N50: 10.1" TFT WXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM101R-ALD24-E40	TBD	KSM101R-ALD24-E40: 10.1" TFT WXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM101R-ALW48-E40	TBD	KSM101R-ALW48-E40: 10.1" TFT WXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM121P-ALD24-N50	TBD	KSM121P-ALD24-N50: 12.1" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM121P-ALW48-N50	TBD	KSM121P-ALW48-N50: 12.1" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM121P-ALD24-E40	TBD	KSM121P-ALD24-E40: 12.1" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM121P-ALW48-E40	750-KS1210-100G	KSM121P-ALW48-E40: 12.1" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM121R-ALD24-N50	TBD	KSM121R-ALD24-N50: 12.1" TFT XGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM121R-ALW48-N50	TBD	KSM121R-ALW48-N50: 12.1" TFT XGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM121R-ALD24-E40	TBD	KSM121R-ALD24-E40: 12.1" TFT XGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM121R-ALW48-E40	TBD	KSM121R-ALW48-E40: 12.1" TFT XGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS



KSM-AL Series

Ordering Information

Model Name	Part Number	Description
KSM150P-ALD24-N50	TBD	KSM150P-ALD24-N50: 15" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM150P-ALW48-N50	TBD	KSM150P-ALW48-N50: 15" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM150P-ALD24-E40	TBD	KSM150P-ALD24-E40: 15" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM150P-ALW48-E40	TBD	KSM150P-ALW48-E40: 15" TFT XGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM150R-ALD24-N50	TBD	KSM150R-ALD24-N50: 15" TFT XGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM150R-ALW48-N50	TBD	KSM150R-ALW48-N50: 15" TFT XGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM150R-ALD24-E40	TBD	KSM150R-ALD24-E40: 15" TFT XGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM150R-ALW48-E40	TBD	KSM150R-ALW48-E40: 15" TFT XGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM156P-ALD24-N50	TBD	KSM156P-ALD24-N50: 15.6" TFT HD Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM156P-ALW48-N50	TBD	KSM156P-ALW48-N50: 15.6" TFT HD Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM156P-ALD24-E40	TBD	KSM156P-ALD24-E40: 15.6" TFT HD Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM156P-ALW48-E40	TBD	KSM156P-ALW48-E40: 15.6" TFT HD Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM156R-ALD24-N50	TBD	KSM156R-ALD24-N50: 15.6" TFT HD Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM156R-ALW48-N50	750-K15603-000G	KSM156R-ALW48-N50: 15.6" TFT HD Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM156R-ALD24-E40	TBD	KSM156R-ALD24-E40: 15.6" TFT HD Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM156R-ALW48-E40	TBD	KSM156R-ALW48-E40: 15.6" TFT HD Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM170P-ALD24-N50	TBD	KSM170P-ALD24-N50: 17" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM170P-ALW48-N50	TBD	KSM170P-ALW48-N50: 17" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM170P-ALD24-E40	TBD	KSM170P-ALD24-E40: 17" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM170P-ALW48-E40	TBD	KSM170P-ALW48-E40: 17" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM170R-ALD24-N50	TBD	KSM170R-ALD24-N50: 17" TFT SXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM170R-ALW48-N50	TBD	KSM170R-ALW48-N50: 17" TFT SXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM170R-ALD24-E40	TBD	KSM170R-ALD24-E40: 17" TFT SXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM170R-ALW48-E40	TBD	KSM170R-ALW48-E40: 17" TFT SXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS



► **Ordering Information**

Model Name	Part Number	Description
KSM185P-ALD24-N50	TBD	KSM185P-ALD24-N50: 18.5" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM185P-ALW48-N50	TBD	KSM185P-ALW48-N50: 18.5" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM185P-ALD24-E40	TBD	KSM185P-ALD24-E40: 18.5" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM185P-ALW48-E40	TBD	KSM185P-ALW48-E40: 18.5" TFT WXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM185R-ALD24-N50	TBD	KSM185R-ALD24-N50: 18.5" TFT WXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM185R-ALW48-N50	TBD	KSM185R-ALW48-N50: 18.5" TFT WXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM185R-ALD24-E40	TBD	KSM185R-ALD24-E40: 18.5" TFT WXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM185R-ALW48-E40	TBD	KSM185R-ALW48-E40: 18.5" TFT WXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM190P-ALD24-N50	TBD	KSM190P-ALD24-N50: 19" TFT SXGA HD Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM190P-ALW48-N50	TBD	KSM190P-ALW48-N50: 19" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM190P-ALD24-E40	TBD	KSM190P-ALD24-E40: 19" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM190P-ALW48-E40	TBD	KSM190P-ALD24-E40: 19" TFT SXGA Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM190R-ALD24-N50	TBD	KSM190R-ALD24-N50: 19" TFT SXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM190R-ALW48-N50	TBD	KSM190R-ALW48-N50: 19" TFT SXGA Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM190R-ALD24-E40	TBD	KSM190R-ALD24-E40: 19" TFT SXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM190R-ALW48-E40	TBD	KSM190R-ALW48-E40: 19" TFT SXGA Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM215P-ALD24-N50	TBD	KSM215P-ALD24-N50: 21.5" TFT FHD Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM215P-ALW48-N50	TBD	KSM215P-ALW48-N50: 21.5" TFT FHD Panel PC with Projected Capacitive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM215P-ALD24-E40	TBD	KSM215P-ALD24-E40: 21.5" TFT FHD Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM215P-ALW48-E40	TBD	KSM215P-ALW48-E40: 21.5" TFT FHD Panel PC with Projected Capacitive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM215R-ALD24-N50	TBD	KSM215R-ALD24-N50: 21.5" TFT FHD Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM215R-ALW48-N50	TBD	KSM215R-ALW48-N50: 21.5" TFT FHD Panel PC with Resistive Touch, Intel® Celeron® N3350, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS
KSM215R-ALD24-E40	TBD	KSM215R-ALD24-E40: 21.5" TFT FHD Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 24V Terminal, F/G SYSTEM RoHS
KSM215R-ALW48-E40	TBD	KSM215R-ALW48-E40: 21.5" TFT FHD Panel PC with Resistive Touch, Intel® Atom® x5-E3940, VGA, DP, IGN, DC Input 9~48V Terminal, F/G SYSTEM RoHS



KSM-AL Series

► **Optional Items**

Optional Items	Part Number	Description
HDD	785-H25500G	2.5" SATA HDD, 500GB, RoHS
	785-H25320G	2.5" SATA HDD, 320GB, RoHS
	785-S25512G	2.5" SATA SSD, 512GB MLC, RoHS
	785-S25256G	2.5" SATA SSD, 256GB MLC, RoHS
	785-S25128G	2.5" SATA SSD, 128GB MLC, RoHS
	785-S25064G	2.5" SATA SSD, 64GB MLC, RoHS
	785-S25032G	2.5" SATA SSD, 32GB MLC, RoHS
mSATA	785-MS128GMF	mSATA mini, 128GB MLC, RoHS
	785-MS64GMF	mSATA mini, 64GB MLC, RoHS
	785-MS32GMF	mSATA mini, 32GB MLC, RoHS
	785-MS16GMF	mSATA mini, 16GB MLC, RoHS
Wi-Fi	761-110091-000G	Wi-Fi Kit, RoHS
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 Kit	761-KS0701-000G	KSM070-AL / KSM101-AL / KSM121-AL Panel Mount Kit RoHS
	761-P15002-000G	Panel Mount Kit for PMKS150 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
VESA 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**

		Panel Module								
		PMKS070	PMKS101	PMKS121	PMKS150	PMKS156	PMKS170	PMKS185	PMKS190	PMKS215
Box Module	BMAL	V	V	V	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
- 1 2 pin Terminal Block Connector
- 2 Mini PCIe screw
- 4 SATA screw

Images



Ordering Information

KSM070-AL	7", 500nit brightness, 16:9 aspect ratio, 800 x 480 resolution, 40,000 hours backlight lifetime
KSM101-AL	10.1", 350nit brightness, 16:10 aspect ratio, 1280 x 800 resolution, 25,000 hours backlight lifetime
KSM121-AL	12.1", 500nit brightness, 4:3 aspect ratio, 1024 x 768 resolution, 30,000 hours backlight lifetime
KSM150-AL	15", 300nit brightness, 4:3 aspect ratio, 1024 x 768 resolution, 70,000 hours backlight lifetime
KSM156-AL	15.6", 400nit brightness, 16:9 aspect ratio, 1366 x 768 resolution, 50,000 hours backlight lifetime
KSM170-AL	17", 350nit brightness, 5:4 aspect ratio, 1280 x 1024 resolution, 30,000 hours backlight lifetime
KSM185-AL	18.5", 450nit brightness, 16:9 aspect ratio, 1366 x 768 resolution, 50,000 hours backlight lifetime
KSM190-AL	19", 350nit brightness, 5:4 aspect ratio, 1280 x 1024 resolution, 70,000 hours backlight lifetime
KSM215-AL	21.5", 300nit brightness, 16:9 aspect ratio, 1920 x 1080 resolution, 50,000 hours backlight lifetime

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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