

# Transportation System



**New**



Model Name		IKARPC-07A-BT	AFOKAR-08A-RK39	IKARPC-W10A-BT
Chassis	Color	Black C + Silver	Black C + Silver	Blue C + Black C
	Dimensions (WxDxH) (mm)	210 x 154 x 28	210 x 154 x 33.9	277 x 186 x 27
	System Fan	Fanless		
	Chassis Construction	PC + ABS plastic	PC + ABS plastic front, Metal rear	PC + ABS plastic
Display	Size	7"	8"	10.1"
	Resolution	1024 x 3 (RGB) x 600	800(RGB) x 1280	1280 x 800
	Brightness (cd/m <sup>2</sup> )	500	500	350
	Contrast Ratio	700:1	800 : 1	800:1
	Pixel Pitch (mm)	0.05 (W) x 0.15 (H)	0.13455(H) x 0.13455(V)	0.0565 (W) x 0.1695 (H)
	Viewing Angle (H/V)	130° (H) / 140° (V)	85/85/85/85 Deg.	150° (H)/145° (V)
	Touchscreen	Projected capacitive touch with USB interface	Projected capacitive with AG coating	Projected capacitive touch with USB interface
Motherboard	CPU	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)	Rockchip RK3399 (Dual-core Cortex-A72 up to 1.8GHz + Quad-core Cortex-A53 up to 1.5GHz)	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)
	Chipset	SoC		
	System Memory	On-board 2 GB SDRAM	On-board 2GB LPDDR3-1866	On-board 2 GB DDR3L
Storage	Hard Drive	N/A	N/A	1 x 2.5" SATA 3Gb/s HDD/SSD drive bay
	SD card	1 x microSD slot (supports SD 2.0, max. 32 GB)	1 x Micro SD slot	1 x SD slot (supports SD 2.0, max. 32 GB)
	Flash	N/A	On-board 16GB eMMC NAND FLASH	N/A
	mSATA	1 x mSATA (SATA 3Gb/s) optional	N/A	N/A
Communication	WLAN	PCIe Mini Wi-Fi 802.11a/b/g/n/ac (optional)	On-board 802.11 a/b/g/n/ac	PCIe Mini Wi-Fi 802.11a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)	Bluetooth V4.1	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini LTE (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	RFID	N/A	13.56 MHz ISO14443 A/B, read-write capable, ISO 14443A (MIFARE), ISO 14443B (FeliCa)	N/A
	GPS	On-board GPS		
I/O Interfaces	20-pin Connector	1 x GbE LAN, 1 x OBD-II/J1939, 1 x USB 2.0	1 x OBD-II/J1939 1 x USB 2.0	N/A
	24-pin Connector	1 x Audio line-out(R+L) 1 x Audio line-in 1 x RS-232	1 x Audio out 1 x RS-232 1 x RS-485	N/A
	USB 3.1 Gen 1	4-bit digital I/O (2-bit input, 2-bit output)		
	USB 2.0	1	1	1
	Ethernet	N/A	20-pin connector	1
	COM Port	N/A	N/A	1 x RJ-45 PCIe GbE by Realtek 8111E
	Digital I/O	N/A	24-pin connector	2 x DB-9 RS-232
	CAN-Bus/OBD-II	N/A	24-pin connector	8-bit digital I/O (4-bit input, 4-bit output)
	Display	N/A	20-pin connector	1 x DB-9 OBD-II/J1939
	SIM	2 x on-board SIM card slot	1 x HDMI	1 x DB-9 OBD-II/J1939
Expansions	Antenna	2 x on-board SIM card slot		
	PCle Mini	1 x Full-size PCIe Mini (reserved for mSATA module), 1 x Full-size PCIe Mini (reserved for WWAN module), 1 x Half-size PCIe Mini (reserved for WLAN module)	1 x Full-size PCIe Mini (reserved for WWAN)	1 x Full-size PCIe Mini (reserved for WWAN module), 1 x Full-size PCIe Mini (reserved for WLAN module)
Multimedia	Speaker	1 x Speaker (2 W)		
	Camera	2-megapixel CMOS	5-megapixel CMOS	2-megapixel CMOS
Power	Power Input	Cigarette lighter power cable, DC 9 V~30 V		
	Power Consumption	12V @ 1.25 A	12V @ 1.2A	12 V @ 1.73 A
Reliability	Mounting	VESA 75	VESA 75	VESA 100
	Operating Temperature	-20°C ~ 60°C with air flow	-10°C ~ 50°C with air flow	-20°C ~ 60°C with air flow
	Weight (Net/Gross)	0.9 kg/2.1 kg	0.77 kg	1.3 kg/2.8 kg
	Safety/EMC	CE/FCC/E-Mark/IP 54 compliant front panel	CE/FCC (Class A)/E-mak/IP54 front panel compliant	CE/FCC/E-Mark/IP 64 compliant front panel
OS	Supported OS	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E	Android 7.1	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E

# Transportation System



Model Name		IVS-300	IVS-200-ULT2	IVS-110-AL
Chassis	Color	Blue C	Blue C	Black
	Dimensions (WxDxH) (mm)	255 x185 x80	255 x 150 x 63	261 x 60 x 170
	System Fan	Fanless	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloy	Extruded aluminum alloy
Motherboard	CPU	Intel® Celeron® J1900 processor (quad-core 2GHz, 10W TDP) or Intel® Core™ i5-6300U processor (dual-core, 2.4 GHz, 15W TDP)	Intel® Core™ i5-5350U processor (dual-core, 1.8 GHz, 15W TDP) or Intel® Celeron® 3765U processor (dual-core, 1.9 GHz, 15W TDP)	Intel® Atom™ x7 E3950 processor (quad-core, 2.0GHz, 12W TDP)
	Chipset	SoC	SoC	SoC
	System Memory	IVS-300-BT: 2 x 204-pin DDR3L SO-DIMM. 4GB pre-installed (system max. 8 GB) IVS-300-ULT3: 2 x 260-pin DDR4 SO-DIMM, 4GB pre-installed (system max. 32 GB)	2 x 204-pin DDR3L SO-DIMM slot 4 GB Pre-installed (system max. 16 GB)	2 x 204-pin DDR3L SO-DIMM. 4GB pre-installed (system max. 8GB)
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD removable drive bay	1 x 2.5" SATA 6Gb/s HDD/SSD removable drive bay	1 x 2.5" SATA 6Gb/s HDD/SSD drive bay
	SD Card	N/A	N/A	N/A
	Flash	N/A	N/A	1 x eMMC 5.0 8GB (reserved)
	mSATA	N/A	1 x mSATA (SATA 6Gb/s)	1 x mSATA (PCIe Mini Slot) 1 x eMMC 5.0 8G (reserved)
Communication	WLAN	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)	PCIe Mini Wi-Fi 802.11b/g/n (optional)	PCIe Mini Wi-Fi 802.11 a/b/g/n/ac (optional)
	Bluetooth	BT 4.0/3.0+HS (combo with WLAN optional module)	Bluetooth 2.1 (combined with WWAN optional module)	BT 4.0/3.0+HS (combo with WLAN optional module)
	WWAN	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)	PCIe Mini WCDMA/HSDPA/HSUPA (optional)
	RFID	N/A	N/A	N/A
	GPS	On board GPS	N/A	On board GPS
I/O Interfaces	USB 3.1 Gen 1	2	2	4
	USB 2.0	N/A	2	N/A
	Ethernet	4 x RJ-45 PCIe GbE by Intel® i210-AT Support PoE IEEE802.3af (Each port max 15.4W)	4 x RJ-45 connector LAN1: PCIe GbE by Intel® I218 LAN2: PCIe GbE by Intel® I211 LAN3: PCIe GbE by Intel® I211 LAN4: PCIe GbE by Intel® I211	1 x RJ-45 PCIe GbE by Intel® I210-IT
	COM Port	2 x DB-9 RS-232 1 x DB-15 (with isolation) RS-422/485	2 x DB-9 RS-232/422/485 4 x DB-9 RS-232 (optional)	1 x DB-9 RS-232/422/485 (BIOS configuration)
	Digital I/O	(with isolation) 8-bit digital I/O (4-bit input / 4-bit output)	8-bit digital I/O (4-bit input / 4-bit output) (optional)	1 x Printer port 16-bit digital I/O (8-bit input / 8-bit output)
	CAN-bus/OBD-II	1 x DB9 OBD-II/J1939	N/A	1 x DB9 OBD-II/J1939
	Display	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI	1 x VGA, 1 x HDMI
	Resolution	VGA : Up to 1920 x 1080 @60 Hz HDMI : Up to 1920 x 1080 @60 Hz	VGA: up to 2560 x 1600 @60 Hz HDMI: up to 3840 x 2160 @60 Hz	VGA : Up to 1920 x 1600 @60 Hz HDMI : Up to 3840 x 2160 @30 Hz
	Audio	1 x Line out, 1 x Mic in	1 x Line out, 1 x Mic in	1 x Line out
	SIM	2 x on-board SIM card slot	1 x on-board SIM card slot	2 x on-board SIM card slot
Expansions	Antenna	1 x 3G, 1 x GPS, 1 x BT, 1 x Wi-Fi	1 x 3G, 1 x BT, 1 x Wi-Fi	1 x 3G, 1 x GPS, 1 x BT, 1 x Wi-Fi
	PCI	N/A	N/A	N/A
Power	Power Input	Cigarette lighter power cable : DC 9 V~30 V	DC jack : 9 V~36 V DC	Cigarette lighter power cable : 9 V~ 36 V DC
	Power Consumption	12 V @ 14A (Intel® i5-6300U with 4 GB DDR4 memory + 4 PoE)	12 V @ 2.1 A (Intel® i5-5350U with 4 GB DDR3 memory)	12V @ 5A (Intel® Atom™ x7 E3950 with 8 GB DDR3 memory)
Reliability	Mounting	Wall mount	VESA 100	Wall mount / VESA 100
	Operating Temperature	-20°C ~60°C with air flow	-20°C ~ 60°C with air flow (SSD)	-30°C ~ 70°C with air flow
	Weight (Net/Gross)	3 kg / 4.5 kg	2.2 kg / 3 kg	2.4kg / 3.8kg
	Safety/EMC	CE/FCC/E-Mark	CE/FCC/E-Mark	CE/FCC/E-Mark/ IP rating : IP 4X compliant
OS	Supported OS	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E	Microsoft® Windows Embedded 8, Microsoft® Windows Embedded Standard 7 E	Microsoft® Windows 10 IoT Enterprise

# Transportation System



Model Name		IRS-100-ULT3	SBX-100-QM87
Chassis	Color	Blue C	Black
	Dimensions (WxDxH) (mm)	290 x 225 x 69	290 x 225 x 75
	System Fan	Fanless	Fanless
	Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloy
Motherboard	CPU	Intel® Core™ i5-6300U processor (dual-core, 2.4 GHz, 15W TDP)	Intel® mobile Core™ i5-4400E (2.7 GHz, 37W)
	Chipset	SoC	Intel® QM87
	System Memory	2 x 260-pin DDR4 SO-DIMM 4GB pre-installed (system max. 32 GB)	2 x 204-pin DDR3 SO-DIMM slot (system max. 16 GB) Pre-installed 4 GB DDR3 SO-DIMM
IPMI	IRIS Solution	N/A	1 x iRIS-2400
Storage	Hard Drive	2 x 2.5" SATA 6Gb/s HDD/SSD drive bay	2 x 2.5" SATA 6Gb/s SSD bay with RAID 0/1 function
	CFast/CF Card	1 x CFast	1 x CFast
	Flash	N/A	N/A
	mSATA	1 x mSATA	N/A
I/O Interfaces	PS/2 (KB/MS)	N/A	1
	USB 3.1 Gen 1	2	2
	USB 2.0	1 (M12 connector)	2
	Ethernet	2 x M12 connector PCIe GbE by Intel® I211	2 x RJ-45 with teaming support 1 x PCIe GbE by Intel® I217LM 1 x PCIe GbE by Intel® I210-AT (2 with 2 kV isolation)
	COM Port	2 x DB-9 RS-232/422/485 (with 1.5 kV isolation)	1 x DB-9 (non-isolated) 4 x RS-232/422/485 (with 2.5 kV isolation)
	Digital I/O	1 x Terminal block 8-bit digital I/O (4-bit input / 4-bit output, 1.5 kV isolation)	N/A
	CAN-bus/OBD-II	N/A	2 x CAN-bus (with 2.5 kV isolation)
	Display	1 x VGA, 1 x DVI-D	1 x VGA, 1 x DVI-D, 1 x HDMI
	Resolution	VGA : Up to 1920 x 1200 @60Hz DVI-D : Up to 1920 x 1200 @60Hz	VGA: Up to 1920 x 1200 @ 60 Hz HDMI: Up to 2500 x 1600 @ 60 Hz DVI-D: Up to 2500 x 1600 @ 60 Hz
	Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Line-in, 1 x Mic-in
	TPM	N/A	N/A
	SIM	2 x SIM card slot	N/A
	Antenna	1 x 3G, 1 x BT, 2 x Wi-Fi	2 x Antenna SMA hole (reserved)
Expansions	PCIe Mini	2 x Full-size PCIe Mini (for WWAN / WLAN module)	2 x Full size
Power	Power Input	M12 connector: Typical: 24V / 110V DC input	Terminal block: Isolated 24V DC (18~31.2 V DC)
	Power Consumption	24V @ 2A (Intel® i5-6300U with 4 GB DDR4 memory)	100 W (Intel® mobile Core™ i5-4400E with 4 GB DDR3 memory)
Reliability	Mounting	Wall mount	Wall mount
	Operating Temperature	-40°C ~ 70°C with air flow (with industrial SSD/CF), compliant with EN 50155	*-15°C ~ 55°C (5°F ~ 131°F) with air flow (SSD)
	Weight (Net/Gross)	3.9 kg / 5.1 kg	4.08 kg / 6.03 kg
OS	Supported OS	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E	Microsoft® Windows® Embedded 8, Microsoft® Windows® Embedded Standard 7 E
		CE/FCC Compliance with EN50155, EN50121	EMC/CE/FCC/DNV, IEC 60945 4th, IACS-E10, IEC 61174 compliant IP rating: IP22 compliant rear cover