



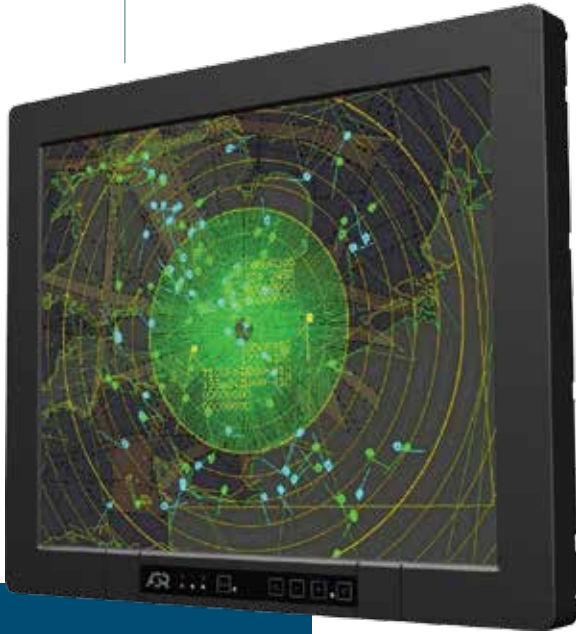
# AIRBORNE



RUGGED PANEL PC

A3R SERIES

## 19" A3R 6819 SX



19"

### Key Features

- IP68/NEMA 6P waterproof
- RTCA DO-160 qualified
- NVIS capability
- Multiple I/O & reconfigurable pin-out
- High connectivity with flexible positioning of the connectors
- Optional USB front connector
- Performing CPU & GPU up to Intel Core™ i7
- ROHS compliant

**IRTS 6819SX** is a 19" smart panel from A3R Family, a comprehensive range of 17" to 24" rugged and ultra rugged flat panel workstations.

Its specific design, advanced processing, graphic display and video capabilities meet the evolving and operational needs of modern Armed Forces and cope with the toughest environments.

**A3R Technology**, based on mechanical and electronic common architecture, generates modular and flexible configurations. It allows selecting screen sizes (17", 19", 20", 21"W, 24" & 24"W), brightness level, processors performance, as well as military specs ruggedization according to random vibrations levels: level I up to 3 G RMS (SK1 serie) and level II up to 6 G RMS (SK2 serie).

Tightly coupled with client hardware and software - control, command, communication (C4I) and sensor systems - open-ended electronic architecture and easy mounting make it the choice of prime system integrators as a reliable, configurable, upgradeable, best cost and lead time MOTS (Military Off The Shelf) equipment in operational use today.

See also the other smart panels in the A3R series specifically designed for your Army, Industry or Navy applications, as well as the displays of the A3RD series.

## PRODUCT SPECIFICATIONS

Display Module	
Size	19"
Resolution	1280 x 1024 (SXGA)
Brightness	300 Cd/m <sup>2</sup>
Dot pitch	0.264 (H) x 0.264 (V) mm
Viewing angles	85°-85° (H) / 80°-80° (V)
Response Time	10 ms (Tr+Tf) White to Black
Contrast Ratio	1000 : 1
Display Color	16.7 M (Dithering)
Backlight	LED Technology
Dimming ratio	up to 10 Cd/m <sup>2</sup>
Touch screen characteristics	Resistive (Capacitive in option)
Controls	
Remote control	Backlight, blackout and On/Off control in front
Additional control capability	3 free programmable function keys
Integrated Computer	
Microprocessor	Intel® Core™ i3-6100U (6th Generation)
Memory	4 GB, up to 16 GB DDR4 SO-DIMM
Graphic controller	Integrated GPU
Serial Ports	4 x Serial multiprotocol V11/V24 Soft. Conf.
Digital I/O	4 x opto-isolated (Input / Output)
Audio	1 x Out stereo, 1 x In stereo
USB 2.0	1 x External
Ethernet	3 x 10/100/1000 Mbits
CAN	2 x CAN 2.0B
DVI	1 x DVI Out
Extension slots	1 x mini PCIe + 2 x XMC
Disk	SSD 32 GB SATA (iSLC), up to 512 GB
Operating system	Windows Seven Embedded 64bits or Linux Xubuntu 16.04 64 bits
Security Feature	TPM 2.0
BITE	Unit Management Software
Electrical Features	
Power supply DC	Power 18/36 VDC with galvanic isolation
LiPo-DC	Internal LiPo battery option for Power 18/36 VDC
PLD-DC	Power Line Disturbance optional module for Power 18/36 VDC
Power supply AC	Power 90-264 VAC with galvanic isolation
Power consumption	50 W normal environment cond. 80 W max in cold environment
Physical Features	
Dimensions (mm)	448.5 x 373 x 80.7 mm
Weight	10.5 Kg
Mechanical fixing	430,5 x 355
Packaging / color	Aluminum / GAM C BLACK 36X3 (Other colors available)
Connectors Type & Position	
Connectors position / orientation	DOWN / HORIZONTAL (Other configurations available - see below)
Connectors type	MIL-DTL-38999 III (Black Zinc Nickel) size 11, 13 & 15
Options	
CPU	Intel Core™ i7-6600U (6th generation)
Composite Video	1 x Coaxial composite PAL/NTSC (BNC)
Front USB Connector	1 x Fischer DBPLU serie 102 on front panel
Optical bonding	LCD panel bonding
Connecteur Caps	Standard on front, optional on the others connectors
Fastening	See configurator below
Warranty	
	Two-year limited warranty (parts and labor)
	Additional coverage and customized service plans available on request

## CONFIGURATOR FOR FINAL PRODUCT

Various combinations are available according to fastening and to orientation and positioning of connectors.

Commercial reference	6819SX	.....	.....	.....
Fastening	F (Front)			
	R (Rear)			
Orientation of connectors	H (Horizontal)			
	V (Vertical)			
Position of connectors	U (Up)			
	D (Down)			



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RUGGED ELECTRONICS, COMPUTERS & DISPLAYS

## RANGE OF DISPLAYS

A3R offers a wide range of smart panels whose 6 monitor's screen sizes and 2 brightness levels will meet your needs for your indoor and outdoor applications. IRTS can design additional A3R panels that could meet your specific needs.



A3R LCD DISPLAYS	17"	19"	20"	24" W	21"5 W	24" W
	SXGA	SXGA	UXGA	WUXGA	Full HD	
A3R Series	A3R17 SX	A3R19 SX	A3R20 UX	A3R24 WU	A3R21 HD	A3R24 HD
Screen Ratio	5/4	5/4	4/3	16/10	16/9	
Resolution	1280 x 1024	1280 x 1024	1600 x 1200	1920 X 1200	1920 x 1080	
A3R Standard Luminance cd/m <sup>2</sup>	300	300	250	300	250	250
Viewing Angles	80°/80°/60°/80°	85°/85°/80°/80°	85°/85°/85°/85°	89°/89°/89°/89°	89°/89°/89°/89°	89°/89°/89°/89°
A3R Outdoor Luminance cd/m <sup>2</sup> (option)	800	800	550	On customer request		
Viewing Angles	80°/80°/60°/80°	85°/85°/80°/80°	85°/85°/85°/85°			
Sunlight readability (option)	IRTS bonding technology (applicable to standard & outdoor versions)		IRTS bonding technology (applicable to standard & outdoor versions)		IRTS bonding technology (applicable to standard & outdoor versions)	

## PRODUCT RANGE & ENVIRONMENTAL CONDITIONS

Depending on the application, our range offers products that will comply with your size, ruggedization and environmental conditions requirements.

A3R for Airborne			A3R Range	
			SKU 1	SKU 2
Display Size	A3R Series		Rugged Model	Ultra Rugged Model
17"	17" SXGA (1280 x 1024)	<b>A3R17 SX</b>	6817 SX SK1	6817 SX SK2
19"	19" SXGA (1280 x 1024)	<b>A3R19 SX</b>	6819 SX SK1	6819 SX SK2
20"	20" UXGA (1600 x 1200)	<b>A3R20 UX</b>	6820 UX SK1	On customer request
21"	21" FHD (1920 x 1080)	<b>A3R21 HD</b>	6821 HD SK1	
24"	24"5 FHD (1920 x 1080)	<b>A3R24 HD</b>	6824 HD SK1	
	24" WUXGA (1920 x 1200)	<b>A3R24 WU</b>	6824 WU SK1	
<b>Power Supply Characteristics</b>			<b>18-36 VDC AIR 2021E &amp; RTCA DO160</b>	
DC Power Supply			85/265 VAC 50-400 Hz AIR 2021E & RTCA DO160	
AC Power Supply				
<b>2 Ruggedization Levels</b>			<b>Operating Environmental Conditions</b>	
<b>Temperature range</b>			<b>Level I</b>	<b>Level II</b>
Operating			-15°C to +55°C	-20°C to +55°C
Storage			-32°C to +70°C	
Humidity			T= +40°C, HR = 5 to 95%	T= +55°C, HR = 5 to 95%
<b>Operating pression</b>			<b>Level I</b>	<b>Level II</b>
Altitude			50,000 ft	50,000 ft
Decompression			8,000 ft to 50,000 ft in 15 secondes	8,000 ft to 50,000 ft in 15 secondes
<b>Mechanical</b>			<b>Level I</b>	<b>Level II</b>
Random vibrations			up to 2.2g RMS	up to 5.95g RMS
Sinus vibrations			up to 1.5g	up to 3g
Shocks/Operating			6g 11msec DSPF	15g 11msec DSPF
Shocks/Crash			20g 11msec half sine	30g 11msec half sine
<b>EMC/EMI</b>			<b>Level I</b>	<b>Level II</b>
RTCA DO-160E			Categories B (sect 16), R (sect 20), L (sect 21)	Categories A (sect 16), Y (sect 20), M (sect 21)



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## ENVIRONMENTAL CONDITIONS

The table below shows our benchmark for environmental standards.

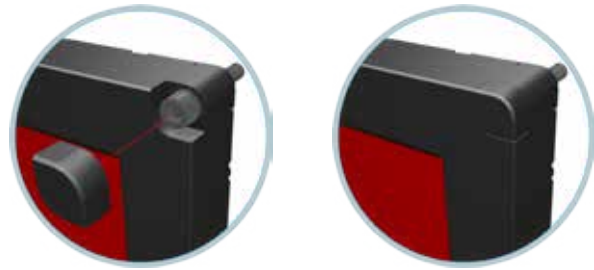
Qualification Standards			
A3R		Fixed Wings	Rotary Wings
		SK1	SK2
Random vibrations	RTCA DO-160E Section 8 Cat.R Zone 2		RTCA DO-160E Section 8 Cat.U2
	Curve B4	Curve C1	STANAG 4370 Method 401 Figure D-2 (except sinus lines)
Sinus vibrations	RTCA DO-160E Section 8 Cat.R Zone 2		
	Curve M	Curve L	
Shocks	RTCA DO-160E Section 7 category B		
DC Power Input	RTCA DO-160E Section 16		
	Cat. B	Cat. A	Cat. A
Emission	RTCA DO-160E Section 21.3 & 21.4		
	Cat. L	Cat. M	Cat. M
Susceptibility	RTCA DO-160E Section 18, Cat. Z & Section 19 Cat. ZN		
	RTCA DO-160E Section 20		
Operating temperature	CS Cat. W & RS Cat. R	CS & RS Cat. Y	CS & RS Cat. Y
	RTCA DO-160D Section 4.5.2 & 4.5.4		
Humidity	Cat. A1	Cat. B1	Cat. B1
	RTCA DO-160E: Section 6 HR = 5 to 95%		
Altitude	Cat. A - T=40°C	Cat. C - T=55°C	Cat. C - T=55°C
Decompression	RTCA DO-160E Section 4.6.1 Cat. D1		
Waterproofness	RTCA DO-160E Section 4.6.2		
	IP 68 / NEMA 6P, immersion 1 meter		

## PRODUCT MOUNTING

Basically, the back side of the A3R packaging offers threaded holes for four M8-screws, that can be operable or not. Note that this mounting is invariant whatever the size of display. Customer has to choose between front or rear mounting.

### STANDARD FRONT MOUNTING

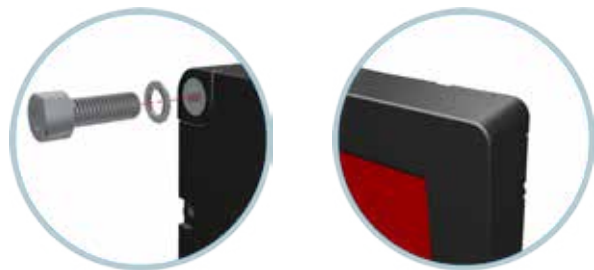
Standard front mounting is realized by fastening of 4 x M8-captive screws positioned at each front corner of the product, finished with trim screws (example for 6821SX-FHD).



FRONT MOUNTING

### OPTIONNAL REAR MOUNTING

Optionnal rear mounting can be realized by using the 4 threaded holes for M8-screws positioned at each rear corner of the product (example for 6821SX-RHD).



REAR MOUNTING



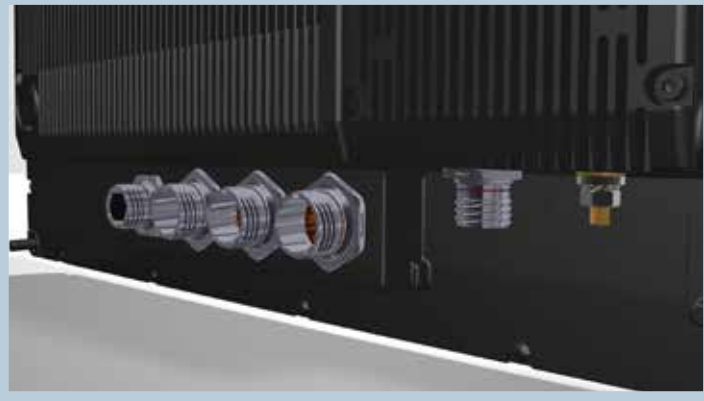
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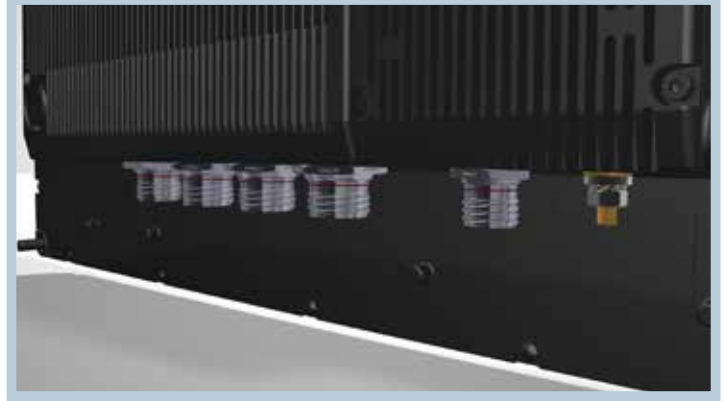
## CONNECTORS POSITIONS AND ORIENTATIONS

## DOWN POSITIONING

Standard orientation : Horizontal  
(6824WU-RHD or 6824WU-FHD)



Optional orientation : Vertical (with Minimum Order Quantity)  
(6824WU-RVD or 6824WU-FVD)

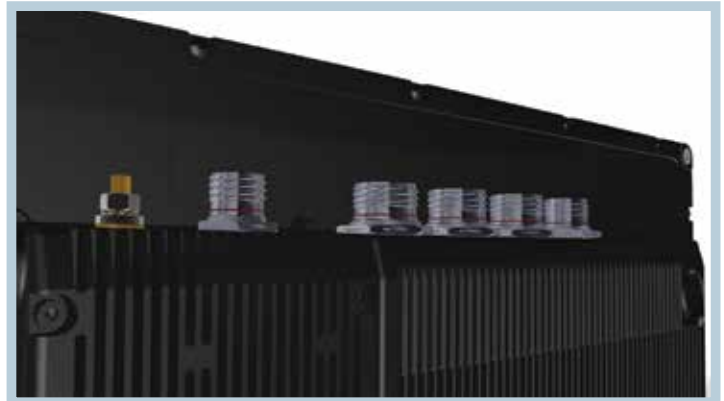


## UP POSITIONING

Standard orientation : Horizontal  
(6824WU-RHU or 6824WU-FHU)



Optional orientation : Vertical (with Minimum Order Quantity)  
(6824WU-RVU or 6824WU-FVU)



## COLOR PRODUCT

Standard color is black (GAM C Black 36X3).  
Other colors can be proposed on request with Minimum Order Quantity.



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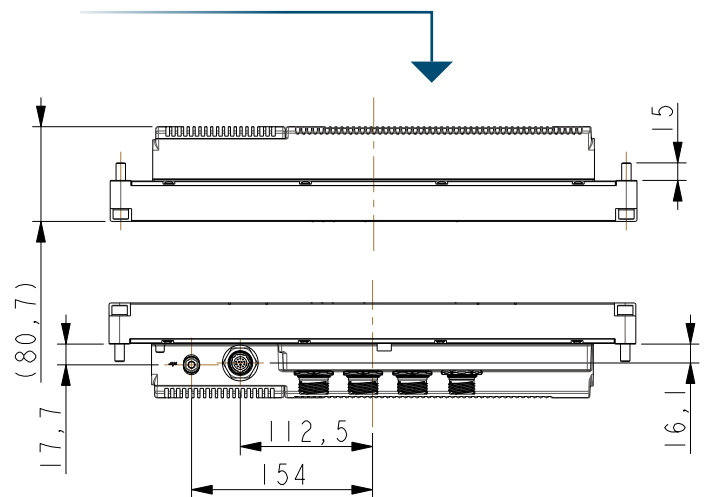
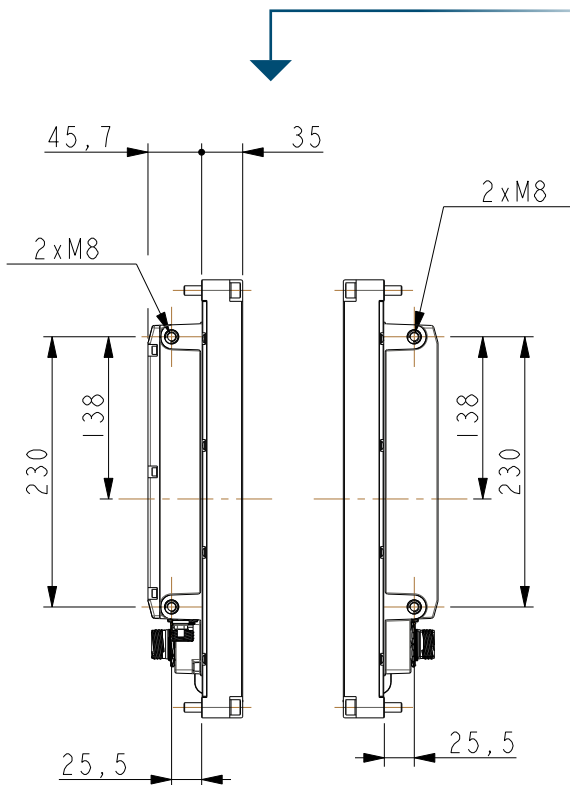
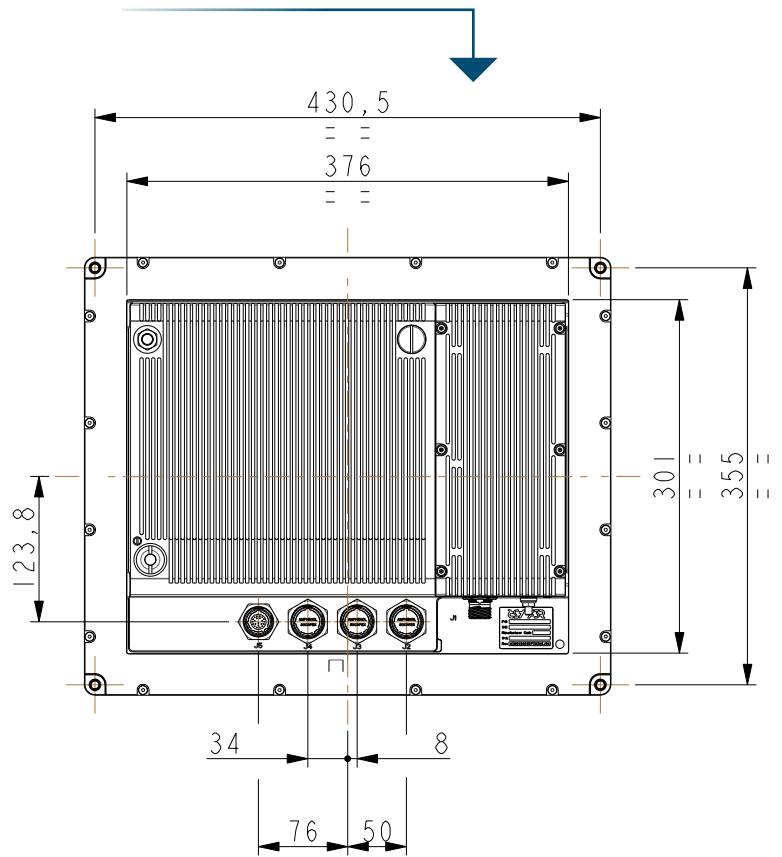
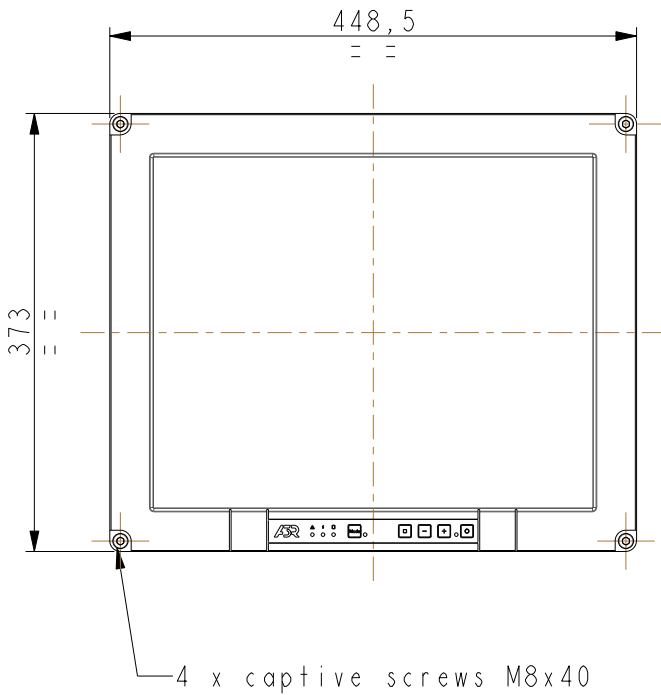
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# TECHNICAL LAYOUT

Dimensions are in millimeters (mm).



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