



# ARMY



RUGGED PANEL PC

A3R SERIES

## 20" A3R 6820 UX



### Key Features

- IP68/NEMA 6P waterproof
- Full MIL specs 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 6820UX** is a 20" 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 Airborne, Industry or Navy applications, as well as the displays of the A3RD series.

## PRODUCT SPECIFICATIONS

Display Module	
Size	20"
Resolution	1600 x 1200 (UXGA)
Brightness	250 Cd/m <sup>2</sup>
Dot pitch	0.294 (H) x 0.294 (V) mm
Viewing angles	85°-85° (H) / 85°-85° (V)
Response Time	30 ms (Tr+Tf) White to Black
Contrast Ratio	1400 : 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)	480.5 x 379 x 84.2 mm
Weight	12 Kg
Mechanical fixing	462,5 x 361
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	6820UX	.....	.....	.....
Fastening	F (Front) R (Rear)			
Orientation of connectors	H (Horizontal) V (Vertical)			
Position of connectors	U (Up) D (Down)			



IRTS

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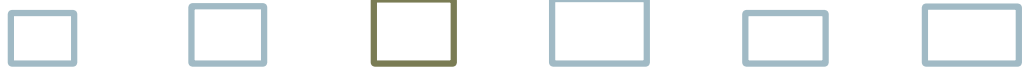
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RUGGED ELECTRONICS, COMPUTERS & DISPLAYS

## 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		UXGA	WUXGA	Full HD	
A3R Series	A3R17 SX	A3R19 SX	A3R20 UX	A3R24 WU	A3R21 HD	A3R24 HD
Screen Ratio	5/4		4/3	16/10	16/9	
Resolution	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

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

A3R for Army			A3R Range	
		A3R Series	SKU 1	SKU 2
Display Size			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	
Power Supply Characteristics			18-36 VDC MIL-STD 1275D	
DC Power Supply				
2 Ruggedization Levels			Operating Environmental conditions	
Temperature range			Level I	Level II
Operating			-20°C to +55°C	-32°C to +60°C
Storage			-32°C to +70°C	
Humidity			T= +40°C, HR = 5 to 95%	T= +60°C, HR = 5 to 95%
Mechanical			Level I	Level II
Random Vibrations			up to 3g RMS	up to 5,93g RMS
Bumps (x 1000)			25g 6msec half sine	40g 6msec half sine
Shocks			40g 11msec half sine	44g 13msec half sine
EMC/EMI MIL-STD 461E			Level I	Level II
MIL STD 461E			Ground applications - Army & Navy mobile	



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## ENVIRONMENTAL CONDITIONS

The table below shows our benchmark for environmental standards.

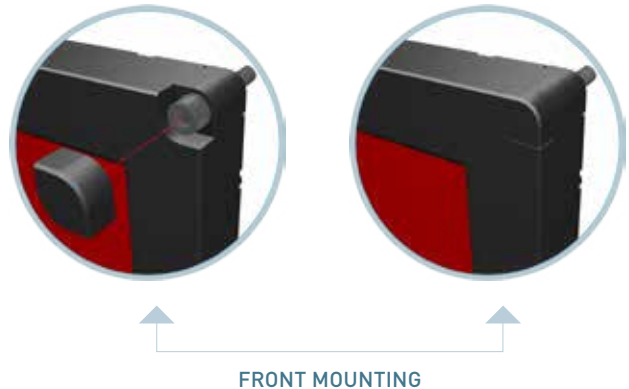
Qualification Standards		
A3R	SK1 (wheeled vehicles)	SK2 (Tracked vehicle & Artillery)
Random vibrations	STANAG 4370 AECTP400 : Method 401 (figure A2) DEF-STAN 0035 : TEST M1 (figure A19) MIL-STD 810G: Method 514.6C-3- Category 4	STANAG 4370 AECTP400 : Method 401 (figure B2) DEF-STAN 0035 : TEST M1 (figures A22 & A23) MIL-STD 810G: Method 514.6C-2 - Category 4
Bumps	DEF-STAN 0035 Test M12	
Shocks	STANAG 4370 AECTP400 Methode 403	
Emission	MIL-STD 461E: CE102 Basic Curve, RE102 Ground application (Army & Navy Mobile)	
Susceptibility	MIL-STD 461E: CS101, CS114, CS115, CS116, RS103	
Operating temperature	MIL-STD 810F, Method 501.4 et 502.4, Procedure II	
Humidity	MIL-STD-810F Method 507.4	
Waterproofness	IP 68, 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.

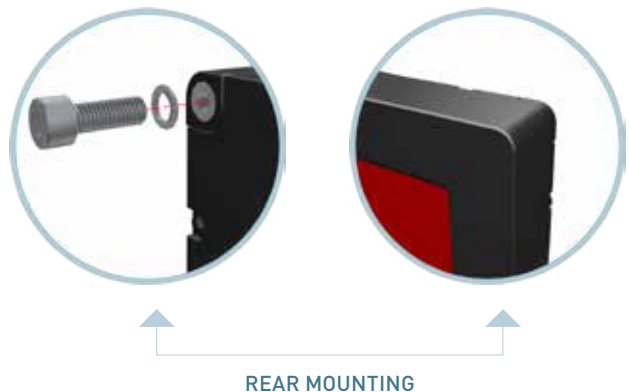
### STANDARD FRONT MOUNTING

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).



### 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).



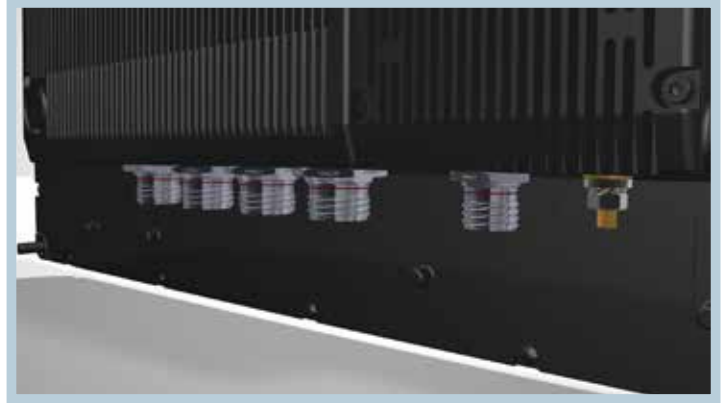
## CONNECTORS POSITIONS AND ORIENTATIONS

## DOWN POSITIONING

Standard orientation : Horizontal  
(6817SX-RHD or 6817SX-FHD)



Optional orientation : Vertical (with Minimum Order Quantity)  
(6817SX-RVD or 6817SX-FVD)

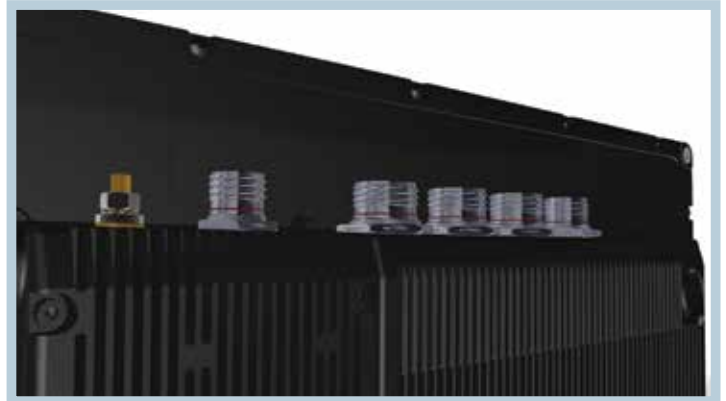


## UP POSITIONING

Standard orientation : Horizontal  
(6817SX-RHU or 6817SX-FHU)



Optional orientation : Vertical (with Minimum Order Quantity)  
(6817SX-RVU or 6817SX-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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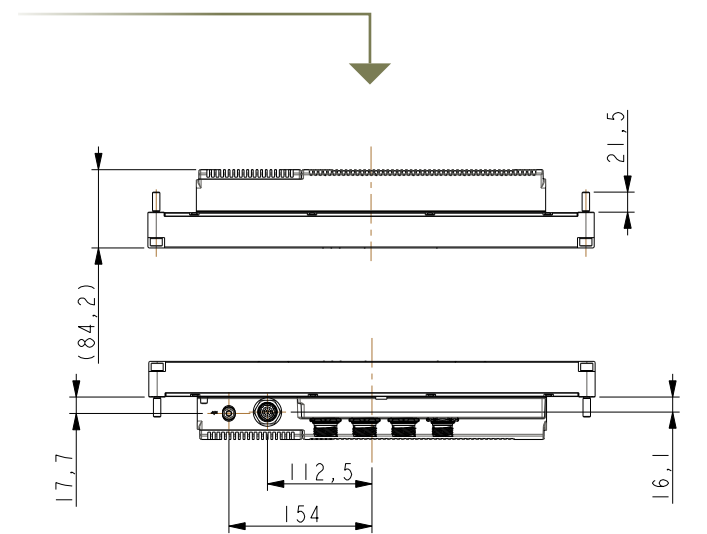
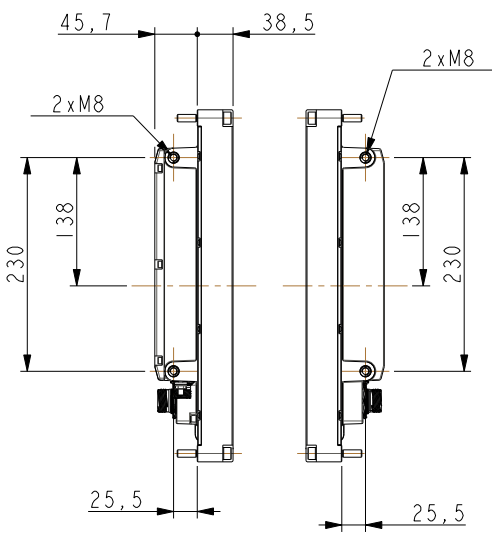
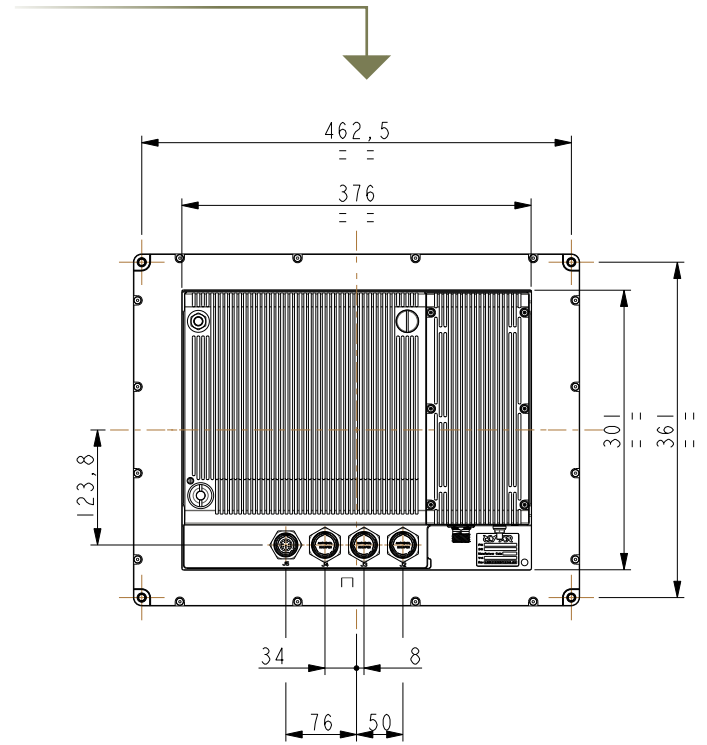
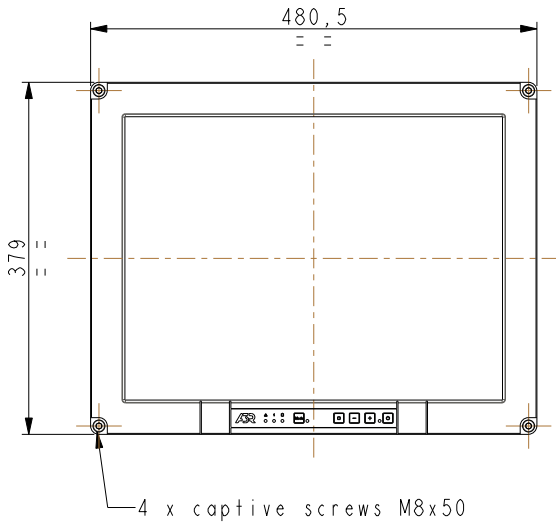
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# TECHNICAL LAYOUT

Dimensions are in millimeters (mm).



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