



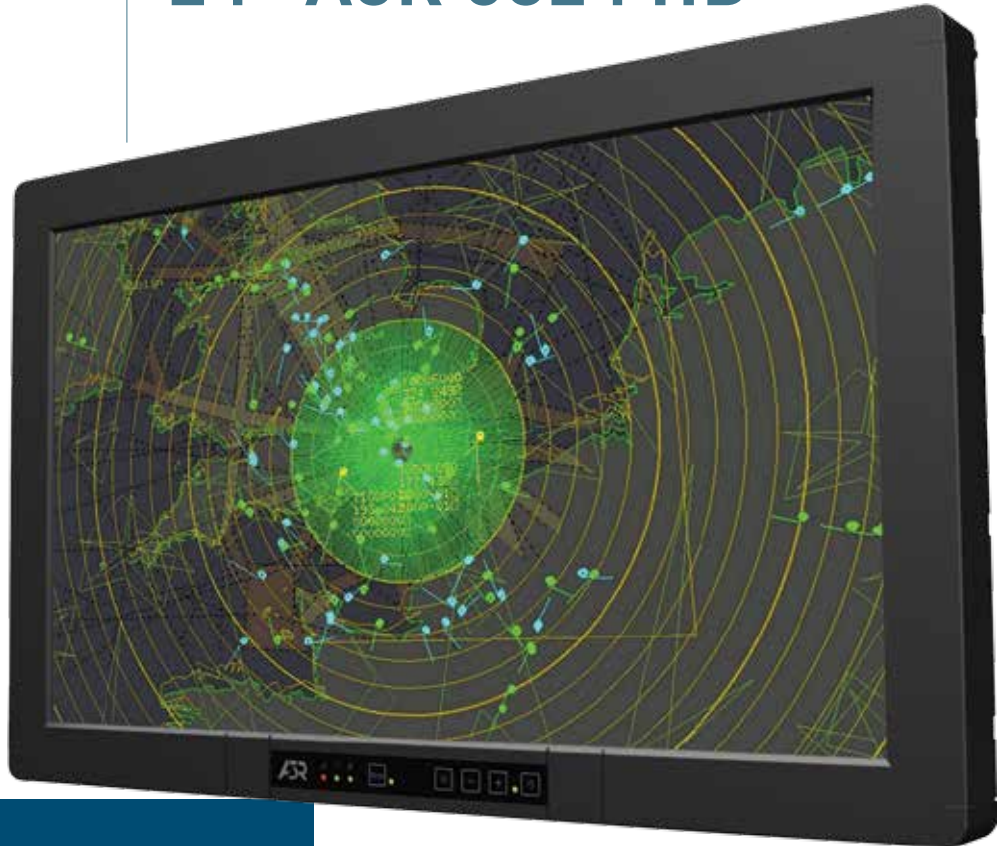
AIRBORNE



RUGGED PANEL PC

A3R SERIES

24" A3R 6824 HD



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 6824HD is a 24" 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 | 24" |
| Resolution | 1920 x 1080 (Full HD) |
| Brightness | 250 Cd/m ² |
| Dot pitch | 0.270 (H) x 0.270 (V) mm |
| Viewing angles | 89°-89° (H) / 89°-89° (V) |
| Response Time | 25 ms (Tr+Tf) White to Black |
| Contrast Ratio | 3000 : 1 |
| Display Color | 16.7 M (Dithering) |
| Backlight | LED Technology |
| Dimming ratio | up to 10 Cd/m ² |
| 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) | 605.5 x 373 x 86.2 mm |
| Weight | 12 Kg |
| Mechanical fixing | 587,5 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 configator 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 | 6824HD | | | |
| Fastening | F (Front) R (Rear) | | | |
| Orientation of connectors | H (Horizontal) V (Vertical) | | | |
| Position of connectors | U (Up) D (Down) | | | |



IRTS

639 Boulevard des Armaris ■ 83100 Toulon ■ France

Tel.: +33 (0)4 94 20 78 00 ■ Fax : +33 (0)4 94 20 78 01

IRTS NATO CODE : FAAJ7

Contact : sales@irts.fr ■ www.irts.fr

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 | 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 | 16/9 |
| Resolution | 1280 x 1024 | | 1600 x 1200 | 1920 X 1200 | 1920 x 1080 | 1920 x 1080 |
| A3R Standard Luminance cd/m ² | 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 ² (option) | 800 | 800 | 550 | On customer request | | 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) |

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) | A3R17 SX | 6817 SX SK1 | 6817 SX SK2 |
| 19" | 19" SXGA (1280 x 1024) | A3R19 SX | 6819 SX SK1 | 6819 SX SK2 |
| 20" | 20" UXGA (1600 x 1200) | A3R20 UX | 6820 UX SK1 | On customer request |
| 21" | 21" FHD (1920 x 1080) | A3R21 HD | 6821 HD SK1 | |
| 24" | 24"5 FHD (1920 x 1080) | A3R24 HD | 6824 HD SK1 | |
| | 24" WUXGA (1920 x 1200) | A3R24 WU | 6824 WU SK1 | |
| Power Supply Characteristics | | | 18-36 VDC AIR 2021E & RTCA DO160 | |
| DC Power Supply | | | 85/265 VAC 50-400 Hz AIR 2021E & RTCA DO160 | |
| AC Power Supply | | | | |
| 2 Ruggedization Levels | | | Operating Environmental Conditions | |
| Temperature range | | | Level I | Level II |
| 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% |
| Operating pression | | | Level I | Level II |
| 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 |
| Mechanical | | | Level I | Level II |
| 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 |
| EMC/EMI | | | Level I | Level II |
| RTCA DO-160E | | | Categories B (sect 16), R (sect 20), L (sect 21) | Categories A (sect 16), Y (sect 20), M (sect 21) |



IRTS

639 Boulevard des Armaris ■ 83100 Toulon ■ France

Tel.: +33 (0)4 94 20 78 00 ■ Fax : +33 (0)4 94 20 78 01

IRTS NATO CODE : FAAJ7

Contact : sales@irts.fr ■ www.irts.fr

RUGGED ELECTRONICS, COMPUTERS & DISPLAYS

ENVIRONMENTAL CONDITIONS

The table below shows our benchmark for environmental standards.

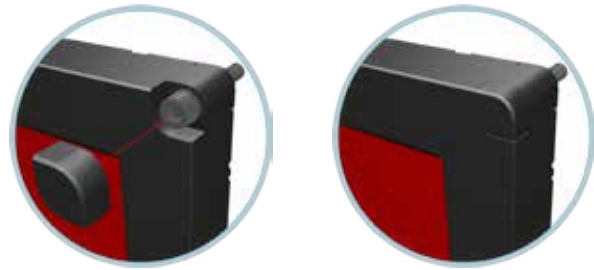
| Qualification Standards | | | |
|-------------------------|--|-----------------|--|
| A3R | | Fixed Wings | Rotary Wings |
| | | SK1 | SK2 |
| Random vibrations | RTCA DO-160E Section 8 Cat.R Zone 2 | | RTCA DO-160E Section 8 Cat.U2 |
| | Curve B4 | Curve C1 | STANAG 4370 Method 401 Figure D-2 (except 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

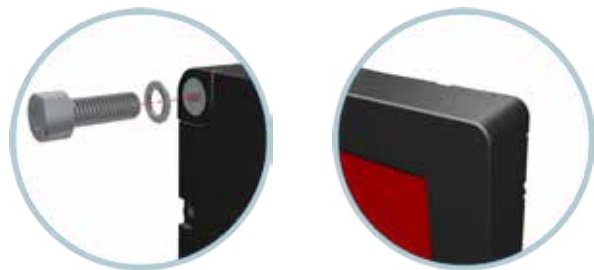
Standard front mounting is realized by fastening of 4 x M8-captive screws positioned at each front corner of the product, finished with trim screws (example for 6821SX-FHD).



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



IRTS
 639 Boulevard des Armaris ■ 83100 Toulon ■ France
 Tel.: +33 (0)4 94 20 78 00 ■ Fax : +33 (0)4 94 20 78 01
 IRTS NATO CODE : FAAJ7
 Contact : sales@irts.fr ■ www.irts.fr

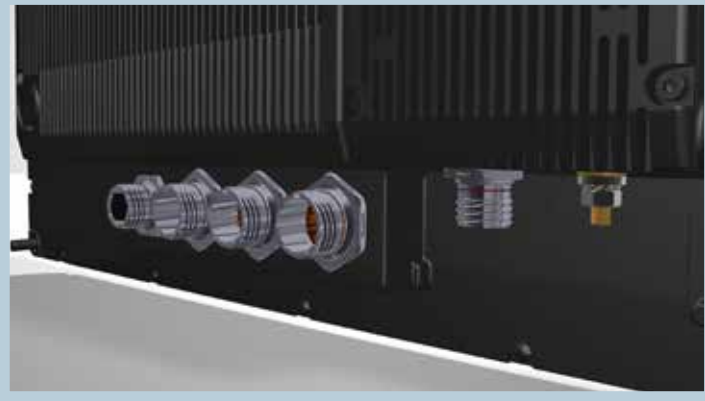
RUGGED ELECTRONICS, COMPUTERS & DISPLAYS

CONNECTORS POSITIONS AND ORIENTATIONS

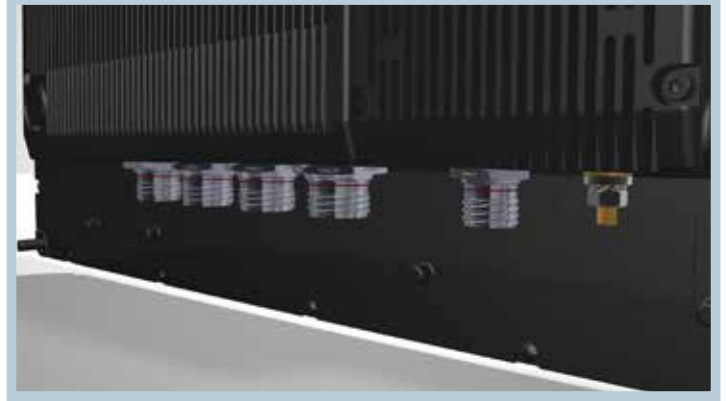


DOWN POSITIONING

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

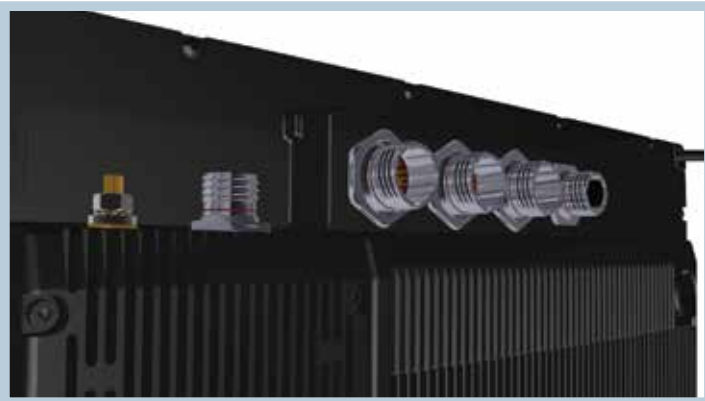


Optional orientation : Vertical (with Minimum Order Quantity)
(6824WU-RVD or 6824WU-FVD)

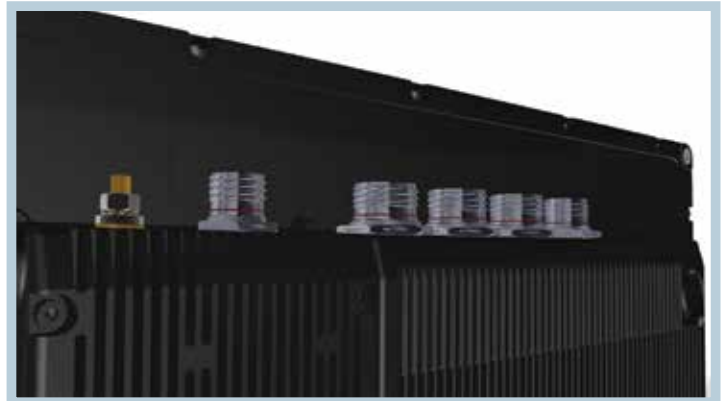


UP POSITIONING

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.



IRTS

639 Boulevard des Armaris ■ 83100 Toulon ■ France

Tel.: +33 (0)4 94 20 78 00 ■ Fax : +33 (0)4 94 20 78 01

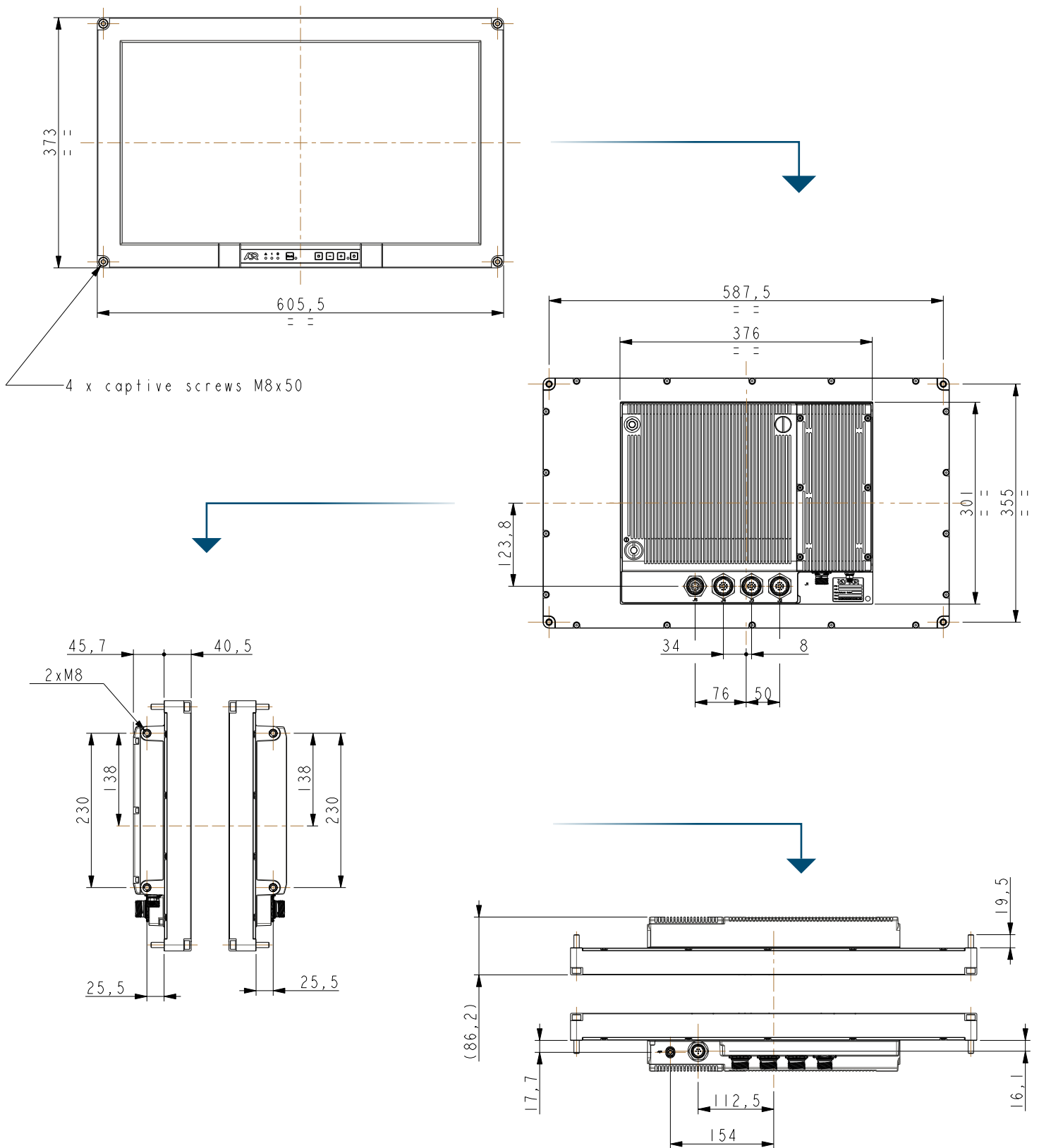
IRTS NATO CODE : FAAJ7

Contact : sales@irts.fr ■ www.irts.fr

RUGGED ELECTRONICS, COMPUTERS & DISPLAYS

TECHNICAL LAYOUT

Dimensions are in millimeters (mm).



IRTS
 639 Boulevard des Armaris ■ 83100 Toulon ■ France
 Tel.: +33 (0)4 94 20 78 00 ■ Fax : +33 (0)4 94 20 78 01
 IRTS NATO CODE : FAAJ7
 Contact : sales@irts.fr ■ www.irts.fr

RUGGED ELECTRONICS, COMPUTERS & DISPLAYS