



LAND



SEA



AIR

SKY15-P20

DUAL VISION MODE MILITARY DISPLAY
WITH PROGRAMMABLE FUNCTION KEYS



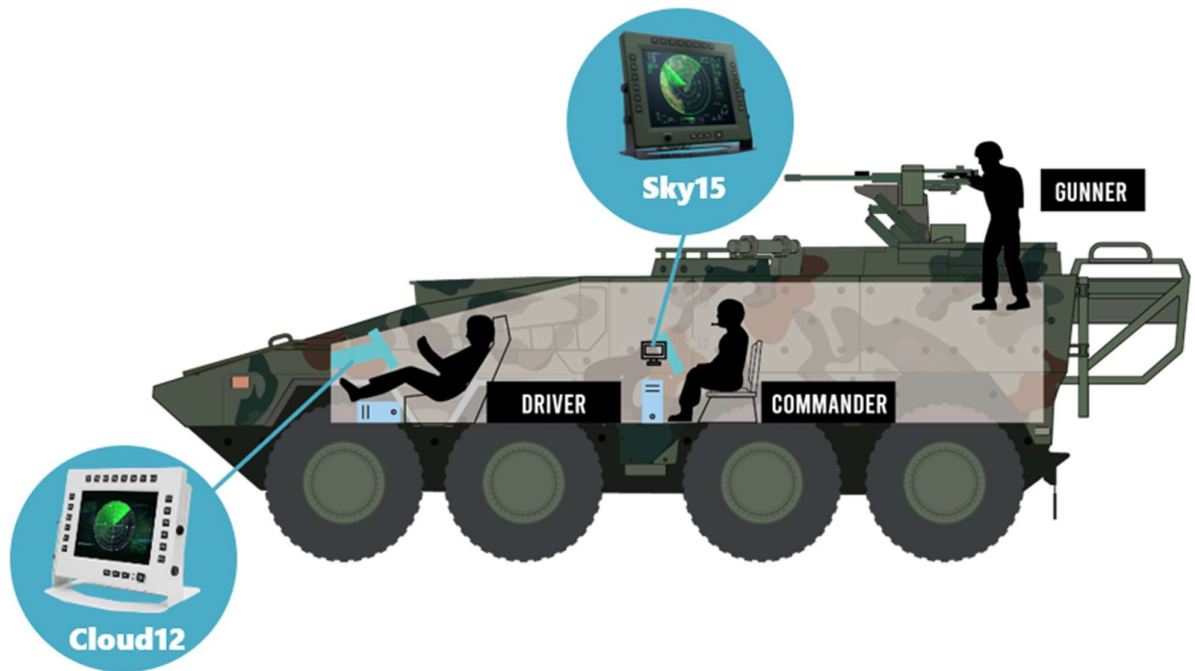
RUGGED SMART DISPLAY

- 15" Glass-Film-Glass Touch panel
- 20 user Programmable function keys
- Heavy-duty fully IP65 Rugged aluminum chassis with MIL-DTL-38999 connectors
- 1000 (up to 1400) ~ <1 nits
- Sunlight Readable and NVIS supported
- 1 x DVI, 1 x VGA, 1 x Audio, 2 x USB
- MIL-STD 1275/461 18V~36V DC



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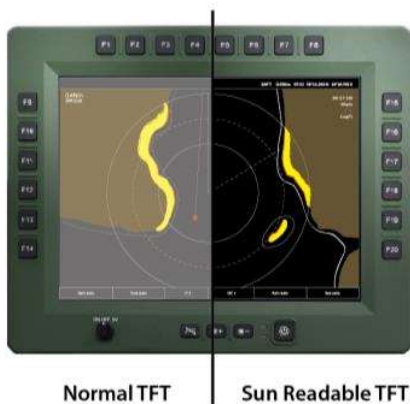
1. Introduction & Key Features

Introduction

SKY15-P20 rugged smart display which are featuring brightness up to 1400 nits and night vision image system (NVIS) under 1% nits, bonding of protective glass (GFG), touch screens, **SKY15-P20** also provide optional feature such as EMI filtering / EMI mesh shielding, anti-reflection/anti-glare (AR/AG) coatings depend on customized requirement. 7 soft touch button /w programmable function keys, the rugged display also designed with IP-65 waterproof and dust proof all-aluminum housings, support extended operating temperature range from -40°C to 70°C and flexibly support MIL-STD 461/1275 power input range from 18V to 36V.

● Description of Key Features

(1) Sunlight Readable Up to 1400 nits



SKY15-P20 ruggedized smart display can support sunlight-readable to meet high ambient light conditions such as direct sunlight, it also adopt our excellent optic bonding technical process, when bonded together the light passes through the bonded layers and is absorbed somewhat into the screen. Optical bonding is therefore important in making screens sunlight readable.

(2) Night Vision Mode Support

When system at night mode, the operator can adjust brightness by hard key to turn it to darker, the display brightness down to under 1% nits or other customized night vision mode immediately, and the display gets ready at low brightness right away once its trigger and protect the usage of night vision devices at once.



(3) MIL-DTL 38999



MIL-DTL-38999 is a high-performance cylindrical connector family designed to withstand the extreme shock, exposure and vibration that are commonplace in Defense and aerospace applications. Made with

Amphenol® removable crimp or fixed hermetic solder contacts, these connectors provide high-vibration characteristics and are suitable for severe wind and moisture problem areas.

(4) G.F.G. Resistive Touch Screen

GFG touch screens are operable with fingers, pens and gloves. The glass surfaces makes the glass-film-glass sensor very durable and scratch resistant (7H).



(5) Soft Touch Buttons



SKY15-P20 equipped up to 20 programmable function keys, 3 OSD keys, 1 triple knob, 1 power button by rubber-tooling made, each key pad dimension at 16 x 16 mm even the operator access function keys with wearing MOPP levels gloves.

(6) IP65 Certified



SKY15-P20 has complete resistance to dust and water; which is ruggedized and reliable for constrained military, ground army and defense.

(7) MIL-STD 810G Compliance



SKY15-P20 compliances of MIL-STD-810 for shocks, vibration etc; **SKY15-P20** is rigorously field-tested to meet or exceed MIL-STD810G a for extremely high & low temp. humidity, shock, and vibration.

(8) MIL-461/1275 EMI Filter

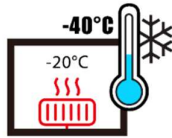


SKY15-P20 is designed with MIL-STD-1275/704, protecting against vehicle/aircrafts voltage surges, spikes and transients, and even electromagnetic interference. This characteristic is well suited for the strictest military requirement and deliver optimal performance in harsh conditions.

2.Optional Features

(1) Intelligent Heater

Due to consider boot up in extreme cold environment -40 degree, **SKY15-P20** is designed /w intelligent heater to control temperature automatically.



(2) Waterproof Valve

SKY15-P20 has completely waterproof to balance atmospheric pressure to meet different altitude environment.



(3) EMI Shielding Cable Kits

Electromagnetic Interference (EMI) is prevalent throughout the anywhere. The main purpose of effective EMC Shielding is to prevent electromagnetic interference (EMI) or radio frequency interference (RFI) from impacting sensitive electronics. This is achieved by using a metallic screen to absorb the electromagnetic interference that is being transmitted through the air. The shield effect is based on a principle used in a Faraday cage – the metallic screen completely surrounds either the sensitive electronics or the transmitting electronics. The screen absorbs the transmitted signals, and causes a current within the body of the screen. This current is absorbed by a ground connection, or a virtual ground plane. By absorbing these transmitted signals before they reach the sensitive circuitry, the protected signal is kept clean of electromagnetic interference, maximizing shielding effectiveness.



Figure : EMI Shielding Cable Kit

3.MIL-STD-1275/461

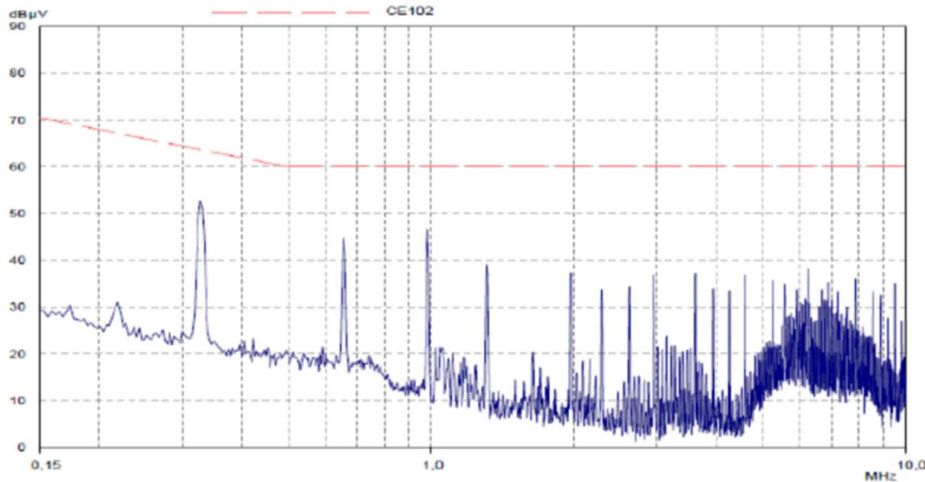
- MIL-STD-1275/704 Power supply with Voltage transient protections**

To enhance reliability, HORUS200 is designed for rugged extremes. durable metal casing with an isolated MIL-STD-1275, MIL-STD 704 and DO-160 power supply in an IP50 (dustproof) ultra durable metal /aluminum chassis that protects against vehicle/aircraft voltage surges, spikes and transients is well suited for the strictest military requirement and deliver optimal performance in harsh conditions.

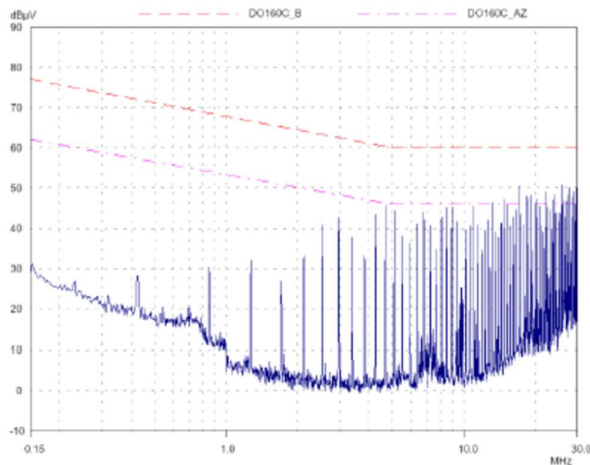
The GAIA Hi-Rel DC/DC CONVERTER it also provides Undervoltage Lockout (UVLO), Output Over Current Protection (OCP), Output Overvoltage Protection (OVP) and Over Temperature Protection (OTP) to made stability and safty.



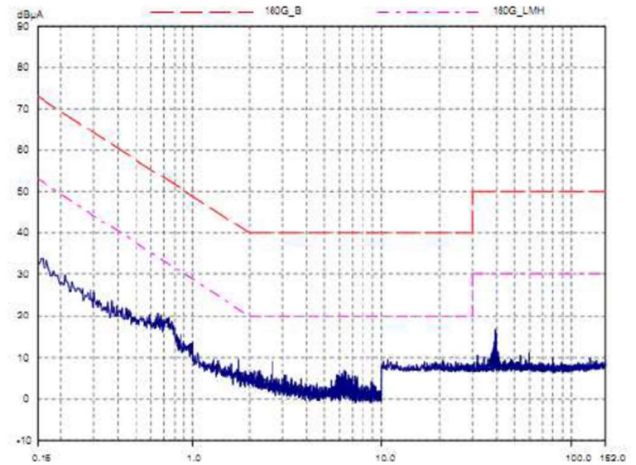
Module Compliance with MIL-STD-461C/D/E Standards



MIL-STD-461E : MGDS-15x-H-J with FGDS-10A-50V



DO-160G : MGDS-15x-H-J with FGDS-10A-50V



4. Specifications

15" TFT LCD DISPLAY & RESISTOR TOUCH SCREEN

Resolution	1024x768 XGA	Brightness	1000 nits(Up to 1400 Nits)
Aspect Ratio	4:3	Contrast Ratio	900
Touch Panel	Glass-Film-Glass 5-Wire resistor touch panel (Optional)		

SYSTEM SPEC

Triple Mode	Day Mode: Ultra-Brightness 1000 nits; Night Mode: NVIS (Down to 1.7 Nits) Invisible Mode: Backlight off
OSD	Backlight+ Backlight- Function key backlight On/Off
Function Keys	Programmable Function Keys (F1~F20)
DC-IN	18V ~ 36 V, 28Vdc Optional:12V~40V DC-IN (150W max) MIL-STD-461, MIL-STD-1275,

CONNECTORS

DC-IN	Amphenol TV07RW-11-54P
IO Ports	X1:VGA+Audio (Amphenol TV07RW-13-35S); X2:DVI (Amphenol TV07RW-13-35S); X3:2xUSB (Amphenol TV07RW-13-98S)

APPLICATIONS

Applications	Marine, Naval, Ground and Airborne environment.
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PHYSICAL

Dimension	412 x 59 x 336mm (16.22" x 2.32" x 13.23")		
Weight	12.35kg(27.23lbs)	Finish	Anodic aluminum oxide
Chassis	Aluminum Alloy, Corrosion Resistant.	Ingress Protection	IP65 Dust /water Proof

MIL COMPLIANCE

MIL-STD-810G (OPERATION TEST)

Low Temp.	Method 502.5 Procedure 2	Exposure(24h x 3 cycle) at -10°C min.
High Temp.	Method 501.5 Procedure 2	60°C for 2 hrs after temperature stabilization.
Humidity	Method 507.5 Procedure 2	RH -95%. Test cycles: ten 24-hrs , functional test after 5th and 10th cycles
Vibration	Method 514.6 Category 20	10-500Hz 1.04Grms Test duration: 1 hr x 3 axis (total 3 hrs)
Shock	Method 516.6 Procedure 1	20G, 11mSec, 3 per axis

MIL-STD-810G (NON-OPERATING TESTS)

Low Temp.	Method 502.5	Exposure(24h x 7 cycle) at -20°C min.
High Temp.	Method 501.5 Procedure 1	71°C for 2 hrs after temperature stabilization.
Vibration	Method 514.6 Category 24	200 to 2000Hz Test duration: 1hr per axis; rms = 7.7 gs
Shock	Method 516.6 Procedure 1	20G, 11mSec, 3 per axis

MIL-STD-461 E

CE102 Basic curve, 10kHz - 30 MHz

RE102-4, (1.5 MHz) (1.5 MHz) -30 MHz - 5 GHz

RS103 1.5 MHz - 5 GHz, 50 V/m equal for all frequencies EN 61000-4-2: Air discharge: 8 kV,

ENVIRONMENTAL QUALIFICATIONS

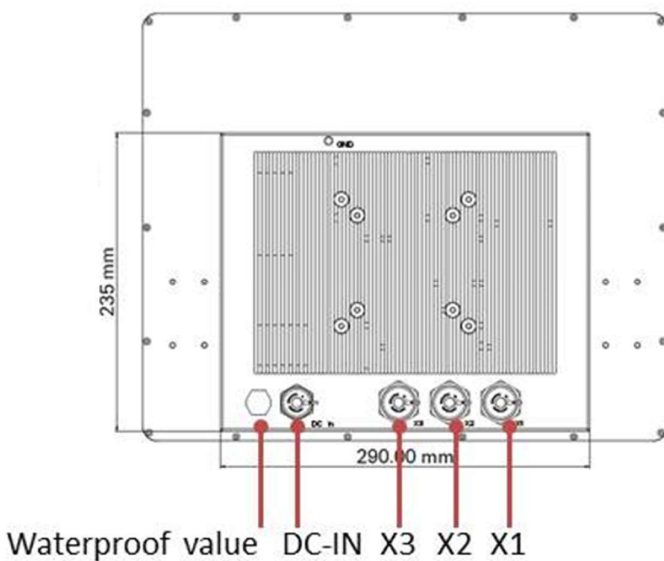
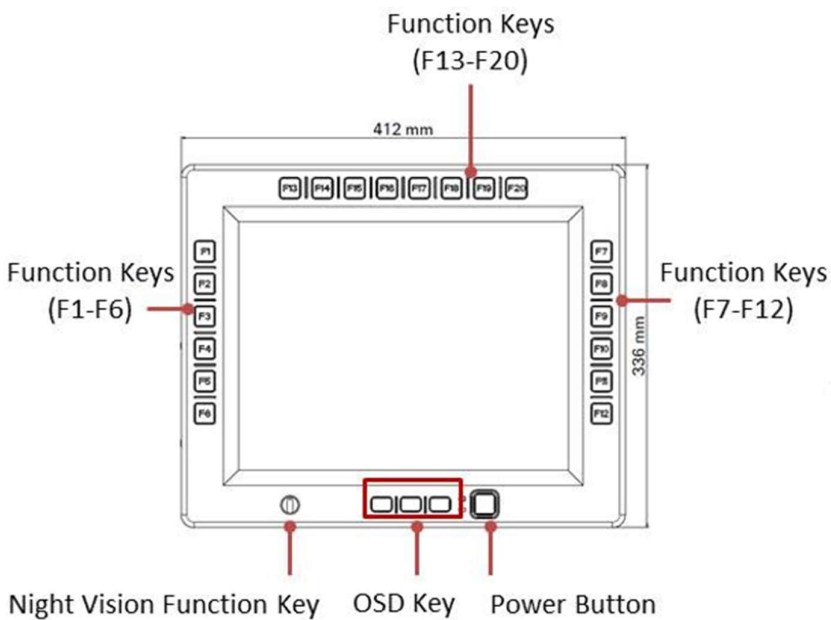
Regulatory CE , FCC Compliance

Operation Temp. -40°C~60°C (ambient with air flow)

Storage Temp. -40~+85 °C

Green Product RoHS, WEEE compliance

Dimension



5. Ordering Information

15" Rugged Smart Display with MIL-DTL-38999 connectors, 20 user programmable function keys, NVIS supported

Model	Description
SKY15-P20	15" Rugged Smart Display with 4 x MIL-DTL-38999 connectors, 20 Soft button /w programmable function keys, Night Vision Mode & Super High Brightness 1000 (up to 1400 Nits Support) , Operation Temperature -40~+60°C



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