

# SKYIS-P20

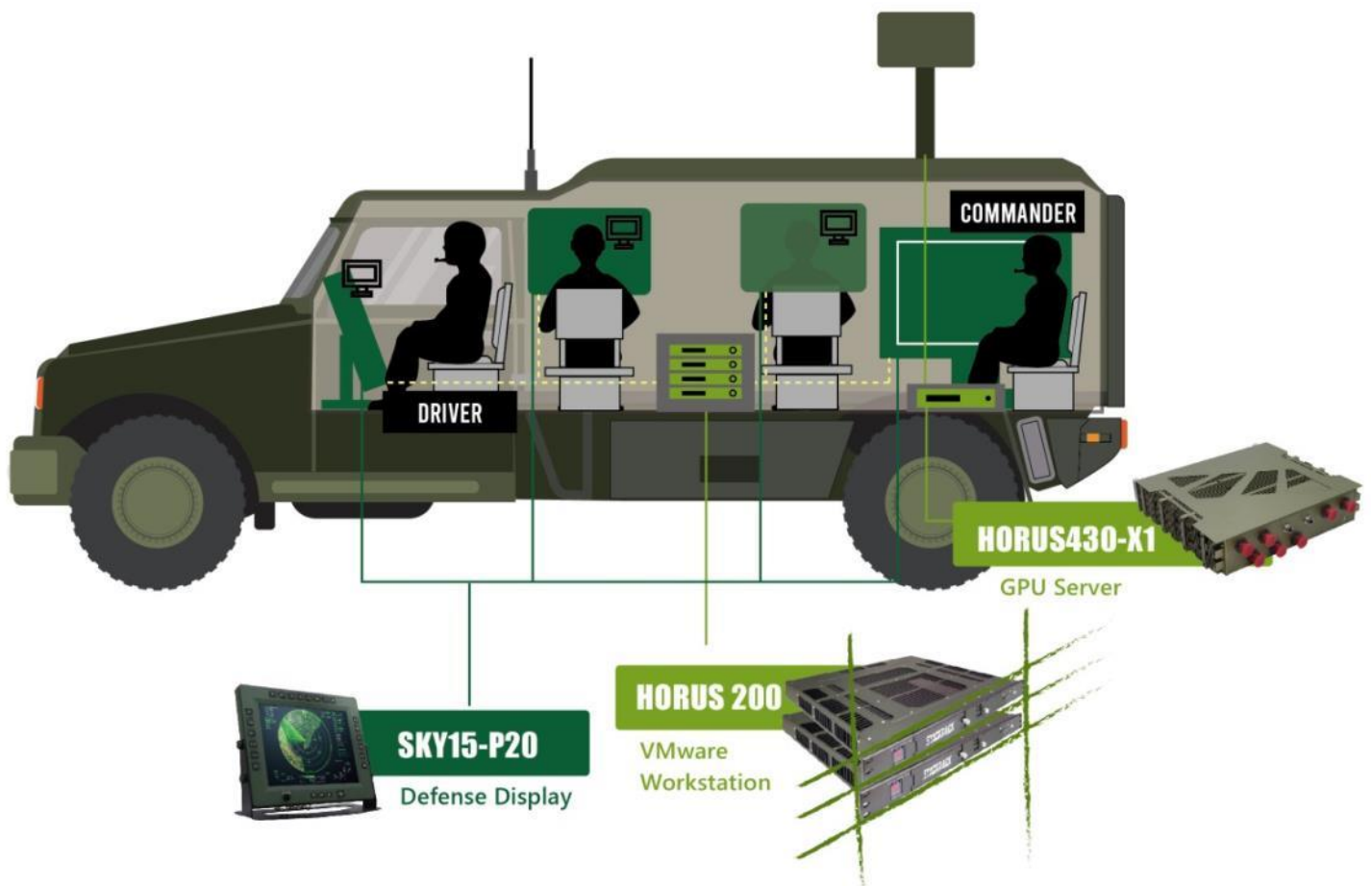
**Rugged Smart Display with 20 Programmable function keys**



- 15" Glass-Film-Glass Touch panel
- 20 user Programmable function keys
- Heavy-duty fully IP65 Rugged aluminum Chassis with MIL-DTL-38999 connectors
- 1000nits ~<1nits, compatible with Sunlight Readable and night vision mode
- 1x DVI , 1x VGA , 1x USB

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# 1. Introduction & Key Features

## 1-1. Introduction:

SKY15-P20 rugged smart panel displays which are featuring brightness up to 1000 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. 20 programmable function keys, the rugged panel displays also designed with IP-65 waterproof and dust proof all-aluminum housings, support extended operating temperature range from -40°C to 60°C and flexibly support extended DC power input range from 9V to 36V.

## 1-2 Description of Key Features

### [1] Sunlight Readable up to 1000 Nits



Normal TFT | Sun Readable TFT

**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



**Amphenol®**

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 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 make the glass-film-glass sensor very durable and scratch resistant .

### [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- 810 Compliance



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

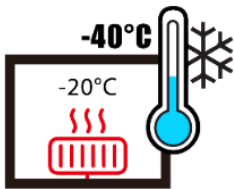
### [8] MIL-461/ EMI Filter (optional)



**SKY15-P20** is designed with MIL-STD-461 protecting against vehicle/aircrafts voltage surges, spikes and transients, and even electromagnetic interference. This characteristic is well suited for the strictest military requirement and delivers optimal performance in harsh conditions.

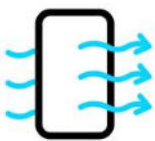
## 2. Optional Features

### [1] Intelligent Heater



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

### [2] Waterproof Value



**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. Specifications

## 15" TFT LCD Display & Resistor Touch screen

<b>Resolution</b>	1024x768	<b>Brightness</b>	Up to 1000 Nits
<b>Aspect Ratio</b>	4:3	<b>Contrast Ratio</b>	≥ 900
<b>Touch Panel</b>	Glass-Film-Glass 5-Wire resistor touch panel (Optional)		

## System SPEC

<b>Triple Mode</b>	Day Mode: Ultra-Brightness 1000 nits Night Mode: NVIS (Dimmable under 1% Nits) Invisible Mode: Backlight off		
<b>Function key</b>	Programmable Function Keys (F1~F20)		
<b>DC-IN</b>	9V ~ 36 V, 28Vdc Optional:12V~40V DC-IN (150W max) MIL-STD-461, MIL-STD-1275,		

## Connectors

<b>DC-IN</b>	Amphenol TV07RW-11-54P		
<b>IO Ports</b>	[X1]	1x VGA with MIL-38999 (Amphenol TV07RW-13-35S)	
	[X2]	1x DVI with MIL-38999 (Amphenol TV07RW-13-35S)	
	[X3]	1x USB2.0 with MIL-38999 (Amphenol TV07RW-13-35S) +Debug Port(optional)	

## Applications

<b>Applications</b>	Marine, Naval, Ground and Airborne environment.		
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## Physical

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

## MIL Compliance

<b>MIL-STD-810 (Operation Test)</b>			
<b>Low Temp.</b>	Method 502.5 Procedure 2	Exposure(24h x 3 cycle) at -10°C min.	
<b>High Temp.</b>	Method 501.5 Procedure 2	60°C for 2 hrs after temperature stabilization.	
<b>Humidity</b>	Method 507.5 Procedure 2	RH -95%. Test cycles: ten 24-hrs , functional test after 5th and 10th cycles	
<b>Vibration</b>	Method 514.6 Category 20	10 - 500Hz 1.04Grms Test duration: 1 hr x 3 axis (total 3 hrs)	
<b>Shock</b>	Method 516.6 Procedure 1	10G, 11mSec, 3 per axis	
<b>MIL-STD-810 (Non-Operating Tests)</b>			
<b>Low Temp.</b>	Method 502.5	Exposure(24h x 7 cycle) at -20°C min.	
<b>High Temp.</b>	Method 501.5 Procedure 1	71°C for 2 hrs after temperature stabilization.	
<b>Vibration</b>	Method 514.6 Category 24	200 to 2000Hz Test duration: 1hr per axis; rms = 2.24 gs	
<b>Shock</b>	Method 516.6 Procedure 1	20G, 11mSec, 3 per axis	

## MIL-STD-461

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. -20°C~60°C (without heater system)  
-40°C~60°C (with heater system inside (for optional))

Storage Temp. -40~+85 °C

Green Product RoHS, WEEE compliance

## 4. Ordering Information

### SKY15 -P20

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

## 5. Dimension

