



SKY15-P20

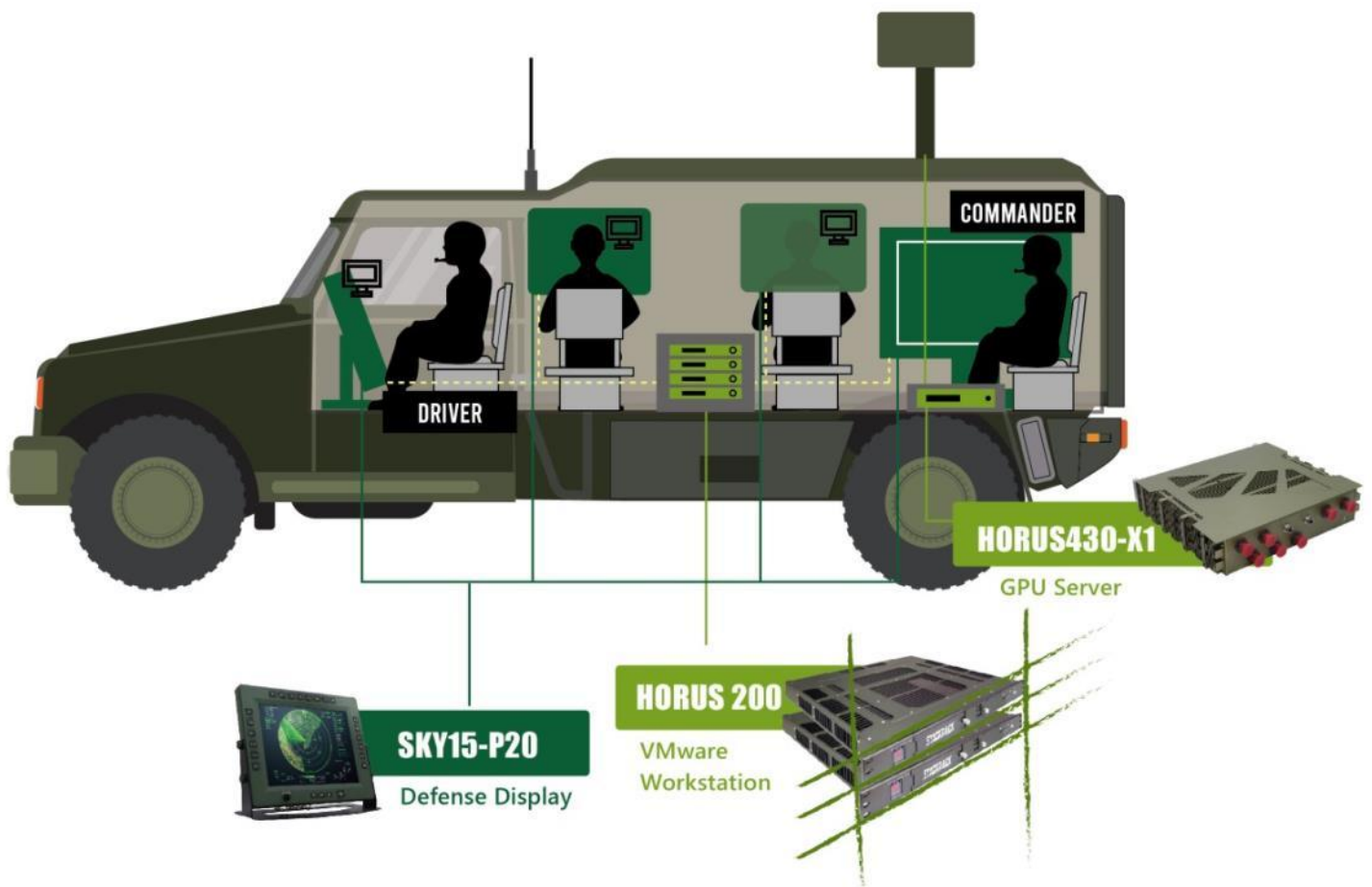
**RUGGED SMART DISPLAY WITH 20
PROGRAMMABLE FUNCTION KEYS**



- 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
- 1 x DVI , 1 x VGA , 1 x USB

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1. Introduction & Key Features

1-1. Introduction:

The SKY15-P20 rugged smart panel displays feature brightness up to 1000 nits, a night vision imaging system (NVIS) below 1% nits, bonded protective glass (GFG), and touch screens. SKY15-P20 also offers optional features such as EMI filtering / EMI mesh shielding and anti-reflection/anti-glare (AR/AG) coatings, depending on customized requirements. With 20 programmable function keys, the rugged panel displays are also built with IP65-rated waterproof and dustproof all-aluminum housings, supporting an extended operating temperature range from -40°C to 60°C and flexibly accommodating a wide DC power input range from 9V to 36V.

1-2 Description of Key Features

[1] Sunlight Readable up to 1000 Nits



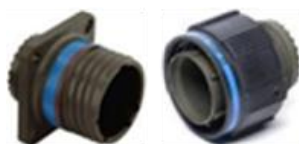
The **SKY15-P20** ruggedized smart display is sunlight-readable, designed to perform in high ambient light conditions such as direct sunlight. It adopts our advanced optical bonding process, which reduces internal reflections by allowing light to pass through bonded layers and be absorbed into the screen. This optical bonding is essential for enhancing sunlight readability.

[2] Night Vision Mode Support

When the system is in night mode, the operator can use a hard key to reduce the brightness, lowering it to under 1% nits or switching to another customized night vision mode immediately. The display adjusts to low brightness right away when triggered, ensuring compatibility with night vision devices.



[3] MIL-DTL 38999



Amphenol®

MIL-DTL-38999 is a high-performance cylindrical connector family engineered to withstand extreme shock, exposure, and

vibration common in defense and aerospace applications. Featuring removable crimp or fixed hermetic solder contacts, these connectors offer high-vibration resistance and are well-suited for areas with severe wind and moisture conditions.

[4] G.F.G. Resistive Touch Screen



GFG touch screens are compatible with fingers, pens, and gloves. Their glass surfaces make the glass-film-glass sensors highly durable and resistant to scratches.

[5] Soft Touch Buttons

The SKY15-P20 is equipped with up to 20 programmable function keys, 3 OSD keys, 1 triple knob, and 1 rubber-tooled power button. Each key pad measures 16 x 16 mm, allowing operators to access functions even while wearing MOPP-level gloves.

[6] IP65 Certified



The SKY15-P20 offers full dust and water resistance, making it rugged and reliable for demanding military, ground army, and defense applications.



[7] MIL-STD- 810 Compliance



The SKY15-P20 complies with MIL-STD-810 for shock, vibration, and more. It is rigorously field-tested to meet or exceed MIL-STD-810 standards for extreme temperatures, humidity, shock, and vibration.

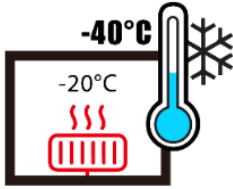
[8] MIL-461/ EMI Filter (optional)



The SKY15-P20 is designed to meet MIL-STD-461 standards, protecting against vehicle and aircraft voltage surges, spikes, transients, and electromagnetic interference. This makes it ideal for the strictest military requirements, delivering optimal performance in harsh environments.

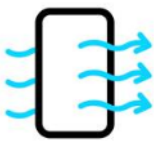
2. Optional Features

[1] Intelligent Heater



To ensure reliable boot-up in extreme cold environments, the SKY15-P20 is equipped with an intelligent heater that automatically controls the temperature.

[2] Waterproof Value



The SKY15-P20 is fully waterproof and designed to balance atmospheric pressure, ensuring reliable operation across varying altitude environments.

[3] EMI Shielding Cable Kits

Electromagnetic Interference (EMI) is prevalent everywhere. The main purpose of effective EMC shielding is to prevent electromagnetic interference (EMI) or radio frequency interference (RFI) from affecting sensitive electronics. This is achieved by using a metallic screen to absorb the electromagnetic interference transmitted through the air. The shielding effect is based on the principle of a Faraday cage—the metallic screen completely surrounds either the sensitive electronics or the transmitting electronics. The screen absorbs the transmitted signals and induces a current within its body. This current is then dissipated through a ground connection or a virtual ground plane. By absorbing these signals before they reach the sensitive circuitry, the protected signal remains free of electromagnetic interference, maximizing shielding effectiveness.



Figure : EMI Shielding Cable Kit

3. Specifications

15" TFT LCD DISPLAY & RESISTOR TOUCH SCREEN

Resolution	1024 x 768	Brightness	Up to 1000 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 (Dimmable under 1% Nits) Invisible Mode: Backlight off
Function key	Programmable Function Keys (F1~F20)
DC-IN	9V ~ 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] 1 x VGA with MIL-38999 (Amphenol TV07RW-13-35S)
	[X2] 1 x DVI with MIL-38999 (Amphenol TV07RW-13-35S)
	[X3] 1x USB2.0 with MIL-38999 (Amphenol TV07RW-13-35S) +Debug Port(optional)

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	12.35 kg (27.23lbs)	Finish	Anodic aluminum oxide
Chassis	Aluminum Alloy, Corrosion Resistant.	Ingress Protection	IP65 Dust /water Proof

MILITARY STANDARDS

MIL-STD-810 (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	10G, 11mSec, 3 per axis

MIL-STD-810 (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 = 2.24 gs

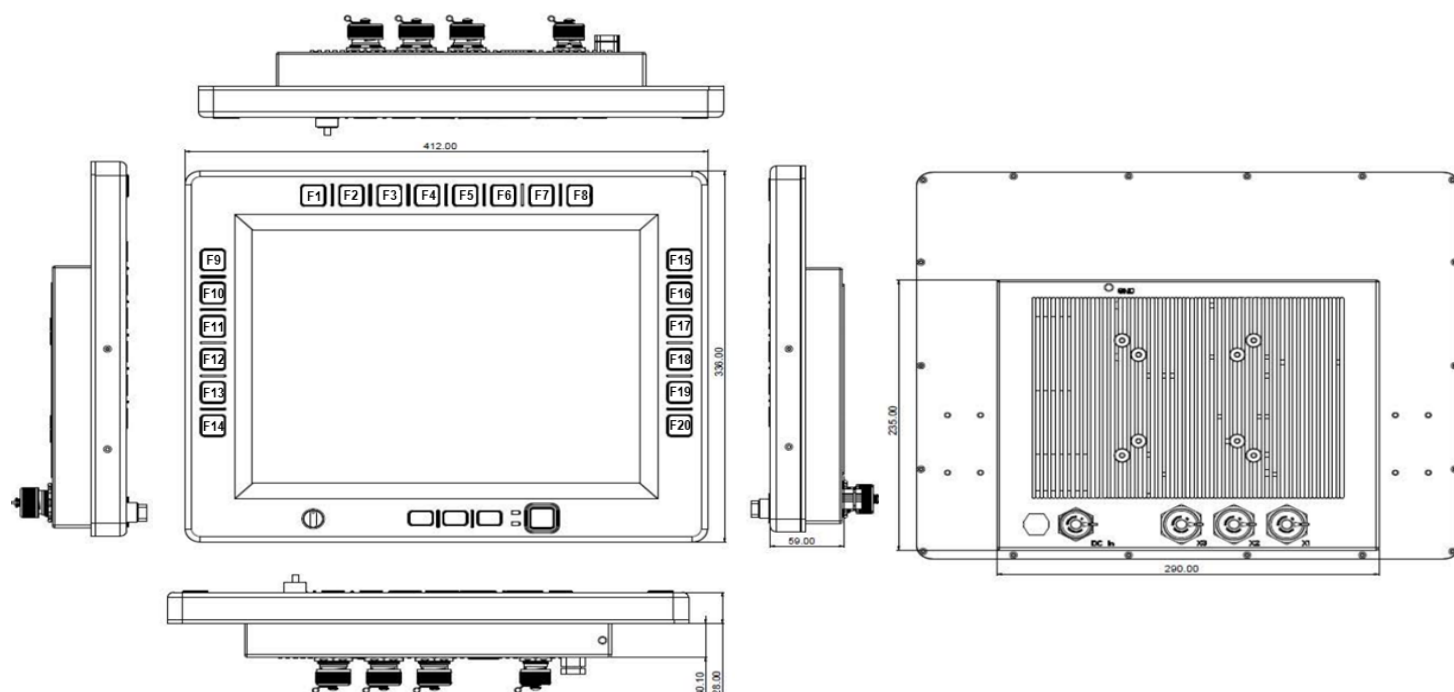
Shock

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** -20°C~60°C (without heater system)**Temp.** -40°C~60°C (with heater system inside (for optional)**Storage** -40~+85 °C**Temp.****Green** RoHS, WEEE compliance**Product**

4. Dimension



This datasheet is for marketing purposes only and does not constitute a warranty. All specifications, dimensions, and data are subject to change without notice. For the latest specifications and updates, please contact your 7STARLAKE representative.