SKY12-P04

RUGGED SMART DISPLAY

- Up to 1000 nits, Sunlight Readable
- 12" Glass-Film-Glass Panel
- Touchscreen Display (optional)
- Resolution 1024 x 768; Aspect Ratio 4:3
- Heavy-duty Fully IP65 Rugged Aluminum Chassis with MIL-DTL-38999 Connectors
- 1 x USB, 1 x HDMI/DP (optional)
- MIL-STD-461 EMI Filter (optional)

Introduction

The SKY12-P04 Rugged Smart Panel Display is engineered for mission-critical performance in the most demanding field environments. The 12-inch sunlight-readable touchscreen delivers up to 1000nits of brightness with GFG-bonded protective glass for clear visibility. The EMI filtering, combined with anti-reflection/anti-glare (AR/AG) coatings, ensures signal integrity and screen clarity in high-interference zones.

The IP65-rated, all-aluminum chassis and MIL-DTL-38999 connectors provide robust protection against water, dust, and shock, enabling reliable operation in rugged or maritime environments. Supporting -20°C to 50°C operating temperatures and a wide 9V–36V DC input, the SKY12-P04 is an ideal command-and-control display for defense, surveillance, and shipboard systems including navigation, radar, and combat information centers.

Description of Key Features

(1) Sunlight Readable up to 1000 Nits
The SKY12-P04 ruggedized smart display features a sunlight-readable screen designed for high ambient light environments. It utilizes our advanced optical bonding technology, which eliminates the air gap between layers, allowing light to pass through more efficiently and reducing internal reflections. This process enhances visibility and contrast, making the display perfectly readable even under bright outdoor conditions.

[2] MIL-DTL 38999 Connectors
MIL-DTL-38999 connectors are high-performance cylindrical connectors engineered to withstand the extreme shock, vibration, and environmental exposure commonly encountered in defense and aerospace applications. Featuring removable crimp or fixed hermetic solder contacts, these connectors offer exceptional vibration resistance and reliable performance in harsh environments, including areas prone to severe wind, moisture and temperature fluctuations.

[3] G.F.G. Resistive Screen
GFG screens feature glass surfaces that make the glass-film-glass sensor highly durable and scratch-resistant.

[4] Soft Touch Buttons
The SKY12-P04 is equipped with up to three function keys, including two OSD keys and one power button, all constructed using rubber tooling for enhanced durability. Each key is large enough to allow

easy operation even when the user is wearing MOPP-level protective gloves.

[5] IP65 Certified
The SKY12-P04 offers complete resistance to dust and water, delivering a rugged and reliable solution for military, ground force, and defense applications.

[6] MIL-STD- 810 Standards
The SKY12-P04 complies with MIL-STD-810 standards for shock, vibration, and wide temperature ranges. It has been rigorously field-tested to meet or exceed MIL-STD-810 requirements for extreme temperatures, humidity, shock, and vibration, ensuring reliable performance in harsh environments.

[7] MIL-461 EMI Filter (optional)
The smart display is designed to meet MIL-STD-461, providing protection against vehicle and aircraft voltage surges, spikes, transients, and electromagnetic interference. This capability ensures compliance with the strictest military requirements while delivering reliable performance in harsh environments.

Optional Features

[1] Intelligent Heater
To ensure reliable boot-up in extreme cold environments, the SKY12-P04 can be optionally equipped with an intelligent heater that automatically regulates the internal temperature.

[2] EMI Shielding Cable Kits
Electromagnetic interference (EMI) is prevalent virtually everywhere. The primary purpose of effective EMC shielding is to prevent EMI or radio frequency interference (RFI) from affecting sensitive electronics. This is achieved using a metallic screen that absorbs electromagnetic signals 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 source. The screen absorbs the transmitted signals, inducing a current within its body. This current is then safely dissipated through a ground connection or a virtual ground plane. By absorbing these signals before they reach sensitive circuitry, the shield keeps the protected electronics free from interference, maximizing shielding effectiveness.

Specifications

DISPLAY

Resolution	1024 x 768
Brightness	Up to 1000 Nits
Aspect Ratio	4:3
Contrast Ratio	>2000:1
Touch Panel	Glass-Film-Glass panel (optional: Resistive Touch with EMI mesh)
Bonding	Optical bonding (optional)

SYSTEM

Function key	Power Button/ Brightness Up/ Brightness Down
DC-IN	9V ~ 36V DC-IN, 28Vdc Optional: 12V~40V DC-IN (150W max) MIL-STD-461 (optional)

CONNECTORS

Rear I/O Port	1 x GND screw [X1] 1 x DC-IN MIL-38999 [X2] 1 x HDMI/DP with MIL-38999 (optional) [X3] 1 x USB2.0 with MIL-38999 1x Waterproof Valve (optional)

APPLICATIONS

Applications	Marine, Naval, Ground and Airborne Environment

PHYSICAL

Dimensions	308 x 263 x 66.3 mm
Chassis	Aluminum Alloy, Corrosion Resistant.
Finish	Anodic Aluminum Oxide
Ingress Protection	IP65 Dust /Waterproof

ENVIRONMENTAL

Operation Temp.	-20°C~60°C -40°C~60°C (with heater system inside; optional)
Storage Temp.	-40°C~80°C
Green	RoHS, WEEE Compliance

Ordering Information
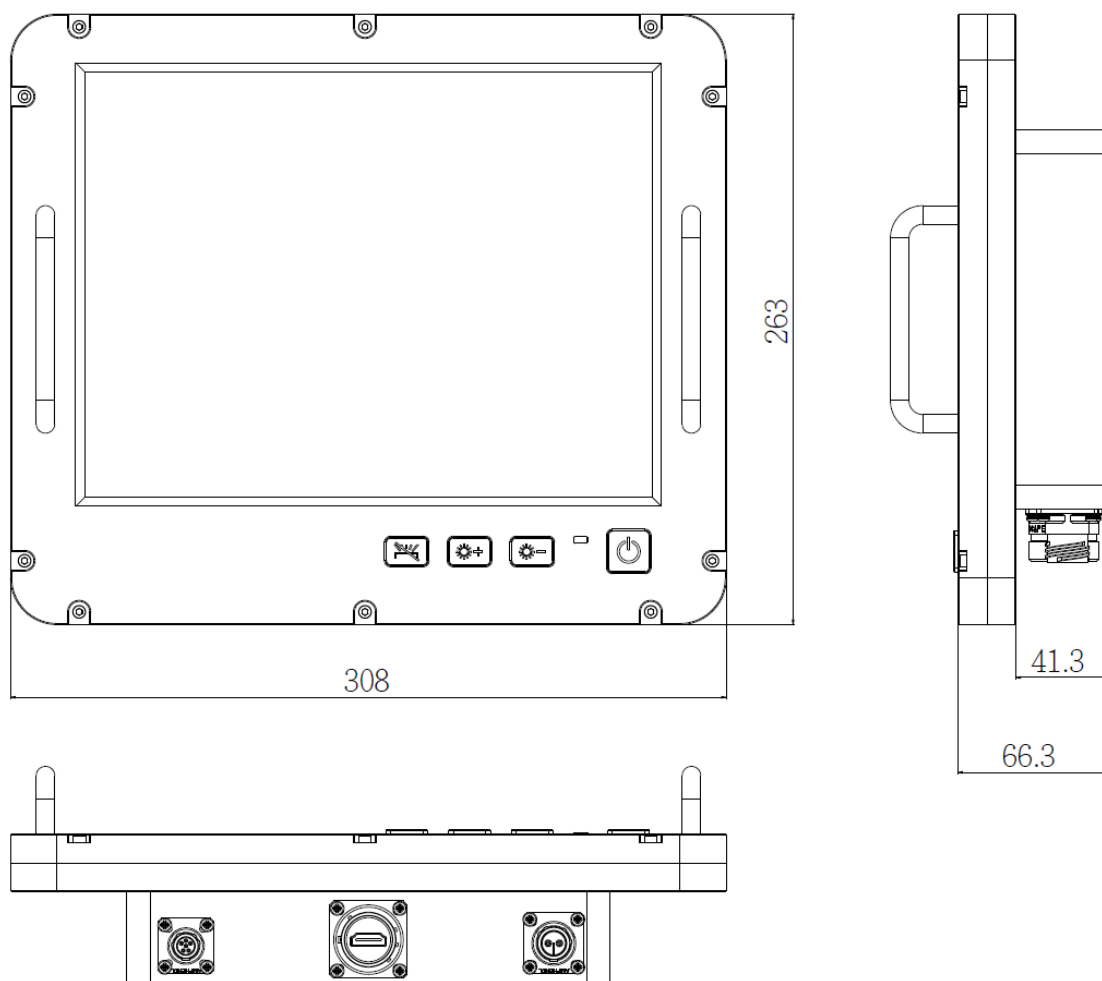
SKY12 -P04 series

12" Rugged Smart Display with MIL-DTL-38999 connectors, 3 function keys.

	SKY12-P04	SKY12-P04T	SKY12-P04E	SKY12-P04ET
TFT-LCD	12"	12"	12"	12"
Brightness	800-1000 Nits	800-1000 Nits	800-1000 Nits	800-1000 Nits
Power	18V~36V	18V~36V	18V~36V	18V~36V
EMI Filter	N/A	N/A	YES	YES
EMI Shielding	N/A	N/A	YES	YES
Intelligent Heater	N/A	**YES**	N/A	**YES**
MIL-STD 810	Compliance	Compliance	Compliance	Compliance
MIL-STD 461	N/A	N/A	**Design to Meet**	**Design to Meet**

Appearance

Dimensions

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 representatives.