



# SKY15-P20B

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



- **15" Glass-Film-Glass panel**
- **20 user Programmable function keys**
- **Heavy-duty fully IP65 Rugged aluminum Chassis with MIL-DTL-38999 connectors**
- **Up to 1000nits, compatible with Sunlight Readable.**
- **1x USB , 1x HDMI**

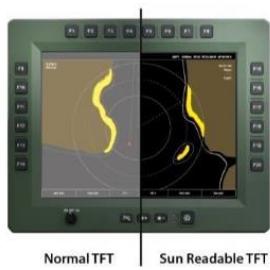
# 1. Introduction & Key Features

## 1-1. Introduction

SKY15-P20B rugged smart panel displays which are featuring brightness up to 1000 nits, bonding of protective glass (GFG), SKY15-P20B 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 -20°C to 60°C and flexibly support extended DC power input range from 9V to 36V.

## 2-1. Description of Key Features

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



SKY15-P20B 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] 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.

### [3] G.F.G. Resistive Screen



GFG screens. The glass surfaces make the glass-film-glass sensor very durable and scratch resistant.



### [4] Soft Touch Buttons

SKY15-P20B equipped up to 20 programmable function keys, 2 OSD keys, 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.

## [5] IP65 Certified

SKY15-P20B has complete resistance to dust and water; which is ruggedized and reliable for constrained military, ground army and defense.



## [6] MIL-STD- 810 Compliance

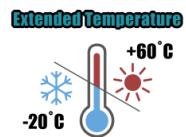


SKY15-P20B compliances of MIL-STD-810 for shocks, vibration etc; SKY15-P20B is rigorously field-tested to meet or exceed MIL-STD-810 for extremely high & low temperatures, humidity, shock, and vibration.

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



SKY15-P20B 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-P20B is designed /w intelligent heater to control temperature automatically.

### [2] Waterproof Value



SKY15-P20B 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.

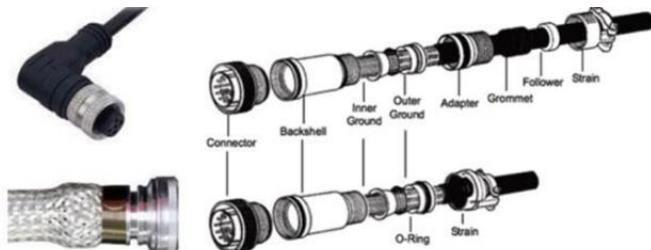


Figure : EMI Shielding Cable Kit

### 3. Specifications

#### 15" TFT LCD DISPLAY & RESISTOR TOUCH SCREEN

Resolution	1024x768
Brightness	Up to 1000 Nits
Aspect Ratio	4:3
Contrast Ratio	4000:1
Touch Panel	Glass-Film-Glass panel (Options: 5-Wire resistor touch)

#### SYSTEM SPEC

Function key	Programmable Function Keys (F1~F20)
DC-IN	9V ~ 36V DC-IN, 28Vdc Optional:12V~40V DC-IN (150W max) MIL-STD-461, MIL-STD-1275,

#### CONNECTORS

Rear I/O Port	1x Water Proof Valve [X1] 1x DC-IN MIL-38999 [X2] 1x HDMI with MIL-38999 [X3] 1x USB2.0 with MIL-38999 1x GND screw
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#### APPLICATIONS

Applications	Marine, Naval, Ground and Airborne environment.
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#### PHYSICAL

Dimension	442.5 x 72 x 370mm (17.42" x 2.84" x 14.57")
Weight	12.0kg(26.43lbs)
Finish	Trivalent chromium film treatment + fine weave flat gloss baking paint (Color Pale Brown)
Chassis	Aluminum Alloy, Corrosion Resistant.
Ingress Protection	IP65 Dust /water Proof

#### 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
<b>MIL-STD-810 (NON-OPERATING TESTS)</b>		
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) -30 MHz - 5 GHz
RS103	1.5MHz -5GHz, 50V/m equal for all frequencies EN 61000-4-2: Air discharge: 8 kV,

#### **ENVIRONMENTAL QUALIFICATIONS**

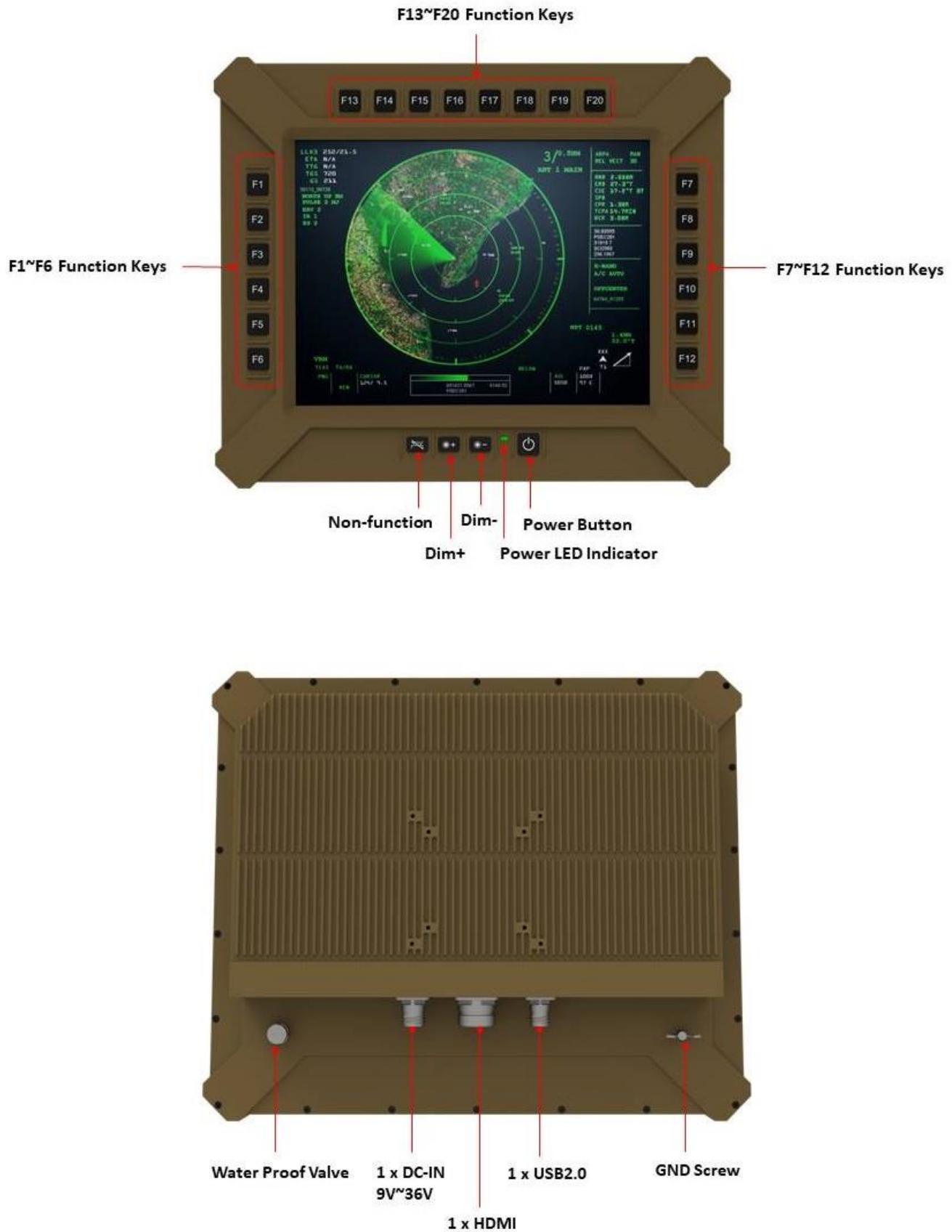
Regulatory	CE ,FCC Compliance
Operation Temp.	-20°C~60°C (without heater system) -40°C~60°C (with heater system inside (for optional))
Storage Temp.	-40~+85 °C
Green Product	RoHS, WEEE compliance

## **4. Ordering Information**

### **SKY15 -P20B**

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

## 5. Appearance



## 6. Dimension

