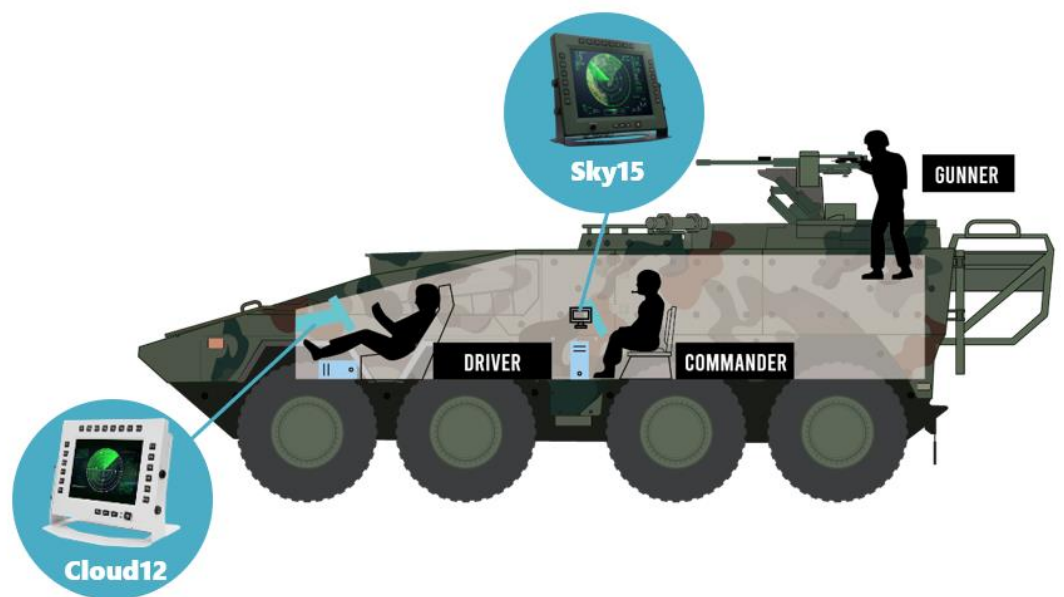# CLOUD12-P06

12'' RUGGED PANEL COMPUTER

- Intel® Kabylake-U SoC 14nm Core™ i7/i5/i3 BGA Type
- NVIDIA GeForce GTX950M
- 12" Glass-Film-Glass Touch panel
- 1300 nits, compatible with Sunlight Readable
- 18V~36V DC-IN, or 12V-40V DC-IN
- MIL-STD-1275/704 compliant Power Supply (optional)

Content

1. Dual Vision Mode

Operating in outdoor or hazardous environments can pose many challenges, whether there are blistering hot or freezing cold temperatures, high exposure to dust and water, or potentially explosive atmospheres. In the battle field, For soldiers, it's very important to clearly visualize their targets under these kinds of situations, thus, intelligent rugged display is needed.

7STARLAKE Cloud12-P06 ruggedized panel computer equipped dual LED backlight control systems, can support sunlight readable high bright and exceptional low nits readable with night vision goggles. By switching the hardware key, the operator can select standard mode or night vision mode in case of misuse and damage night vision optical devices.

Sunlight Readable Up to 1300 nits

Normal TFT   Sun Readable TFT

CLOUD12-P06 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.

Night Vision Mode Support

When system at night mode, the operator can adjust brightness by hard key to turn it from 1000 nits to 1. 7 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.

2. High Performance Supercomputing CPU

7th Gen Intel® Core™ processors utilize a power efficient microarchitecture, advanced process technology, and silicon optimizations to deliver faster performance than previous generation processors. On processors with Intel Turbo Boost 2.0 Technology, performance and power is dynamically controlled – for cores and graphics – boosting performance precisely when it is needed, and saving energy when it counts.

Increased Performance and Reliability

Intel® Kaby Lake platform utilizes a power-efficient microarchitecture, advanced process technology and silicon optimizations to deliver double-digit performance gains over the previous generation processors.

Stunning Visual Performance

The 7th Gen Intel® Core™ processors come with incredible upgrades by integrating with Intel® HD and Intel® Iris Plus Graphics, transforming the viewing experience with 4K UHD movies and TV shows. Meanwhile, with power-efficient VP9 and HEVC 10-bit hardware acceleration, the 4K viewing experience is offered with an improved battery life and lower power consumption.

Enhanced Security

The 7th Gen Intel® Core™ processors deliver advanced security with two-factor authentication built into the silicon.

Extended Battery Life

Dedicated hardware acceleration reduces power consumption dramatically, enabling a longer battery life.

Driven by Intel® Kabylake-U SoC 14nm Core™ i7/i5/i3 BGA Type processor soldering onboard, providing dual cores 3.2GHz clock speed while consuming low power consumption 9.5W. With outstanding CPU and graphic performance supported by Kabylake-U processor, plus OXY5362A's possible extra function installation such as CAN BUS module and video capture card, Cloud12 - P06 is launched as a competitive panel computer for C4ISR application. 7STARLAKE CLOUD12 – P06 is an ideal solution for both land and naval battle. Through multi-connection with calculate computer, sensor, and control system, receiving information from image processing computer connecting with surveillance devices, Cloud12 - P06 brings its superiority into full play on surveillance and critical mission assistance.

3. Introduction & Key Features

Introduction:

7STARLAKE Cloud12 - P06 rugged mission-critical panel computer, retaining exceptional features of SKY12-P20, with LCD super brightness up to 1300 nits and night vision (NVIS) under 1% nits, optical bonding of protective glass (GFG) touch screens, EMI filtering / EMI mesh shielding, and anti-reflection/anti-glare (AR/AG) coatings, possess also built-in CPU module OXY5362A. The rugged panel computer is designed with IP-65 waterproof and dust proof all-aluminum housings, supporting extended operating temperature range from -30 to 65°C and flexibly support extended DC power input range from 16V to 50V.

Description of Key Features:

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

(2) 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 (7H).

(3) Soft Touch Buttons

CLOUD12-P06 equipped up to 28 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.

(4) IP65 Certified

CLOUD12-P06 has complete resistance to dust and water; which is ruggedized and reliable for constrained military, ground army and defense.

(5) MIL-STD 810G Compliance

CLOUD12-P06 is rigorously field-tested to meet or exceed MIL-STD810G for extremely high & low temp, humidity, shock, and vibration.
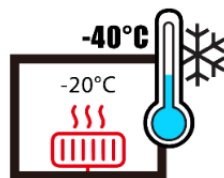
(6) MIL-461/1275 EMI Filter

CLOUD12-P06 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.

4. Optional Features

(1) Intelligent Heater

Due to consider boot up in extreme cold environment -40 degree, CLOUD12-P06 is designed with intelligent heater to control temperature automatically.

(2) Waterproof Valve

CLOUD12-P06 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

5. MIL-STD-1275/461

To enhance reliability, CLOUD12-P06 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.
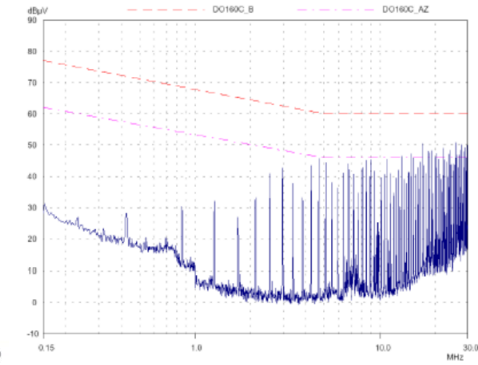
The GAIA Hi-Rel DC/DC CONVERTER it also provides Undervoltage Lockout (UVLO), Output Over Current Protection (OCP), Output Overvoltage Protection (OVP) and Over Temperature Protection (OTP) to made robust and safe to use.
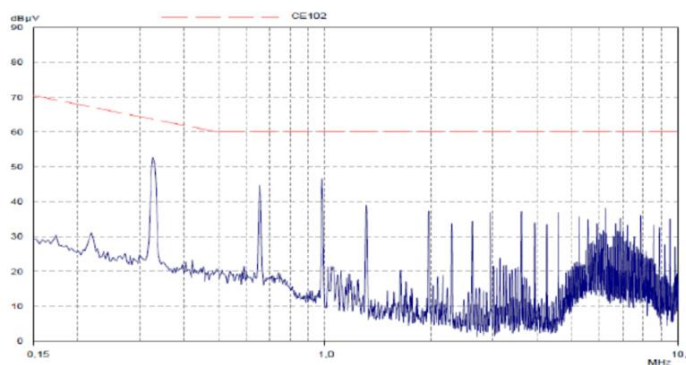
6. Specifications

System

CPU	Intel® Kabylake-U SoC 14nm Core™ i7/i5/i3 BGA Type
	Intel® Core™ i7-7600U Processor (2C, 4M Cache, up to 3.9GHz)
	Intel® Core™ i5-7300U Processor (2C, 3M Cache, up to 3.5GHz)
	Intel® Core™ i3-7100U Processor (2C, 3M Cache, 2.4GHz)
Memory type	2 x DDR4 up to 32GB ECC memory
Storage	1 x mSATA Solid State Disk (SSD) - up to 512GB Capacity
	1 x 2.5'' SSD up to 2TB
	Rugged Industrial NAND Flash Storage -40 to 85oC High Capacity
I/O Connectors	MIL-STD-D38999 Amphenol connectors
	LAN x 2, DVI x 1, USB x 1, COM x 2, DC-IN x 1
Power Input	18 V~ 36V DC-IN
	Optional: 12 V ~ 40V DC-IN, MIL-STD-1275, MIL-STD-704 and DO-160 power supply(150W max)
GPU	NVIDIA GeForce GTX950M

Display

LCD Panel	12" TFT LCD
USB	2 x USB 2.0
Resolution	1024x768 XGA
Aspect Ratio	4:3
Brightness	Ultra Brightness 1000 nits
Max. Colors	16.7M/262k
Viewing Angle	80° (H) /70° (V)
Response Time	11ms (TYP.)
Contrast Ratio	1000 (TYP.)
Touch Pane	Glass-Film-Glass 5-Wire resistor touch panel
Function key	6 user function keys
Display Control	Power On/Off
	LCD Brightness +/-
	Function key backlight On/Off
	Display mode Select (On/Off)

7STARLAKE
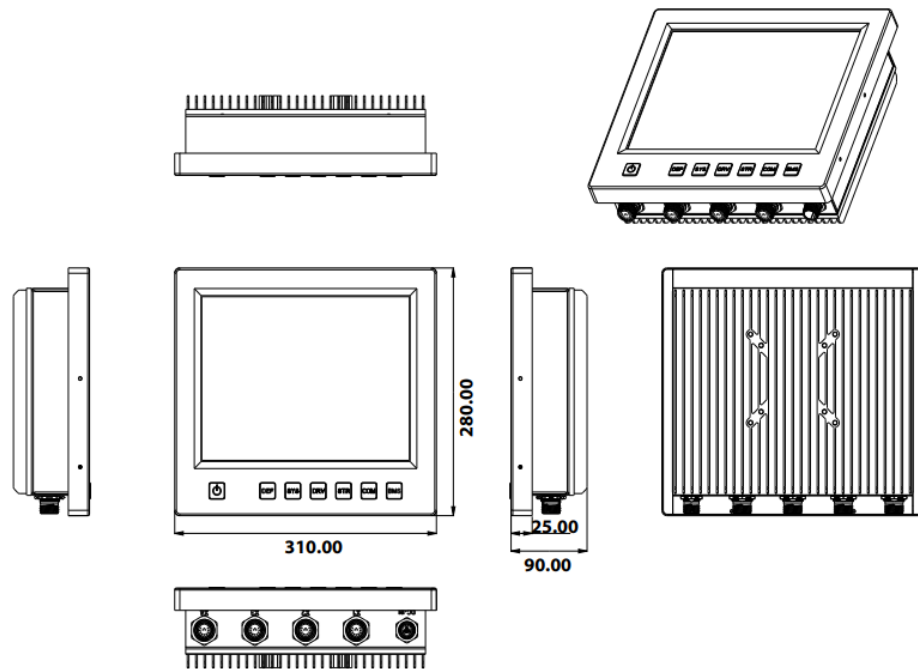
Physical

Dimension (W x H x D)	310 x 90 x 280mm (w/o Stand)
Chassis	Anodic aluminum oxide
Ingress Protection	IP65 Dust /water Proof

Environmental

Compliance	MIL-STD-461E : CE102 basic curve, 10kHz – 30MHz RE102-4, (1.5MHz) – 30MHz – 5GHz RS103, 1.5MHz – 5GHz, 50 V/m equal for all MIL-STD-1275E : 5.1.2 Starting operation 5.1.3.1.2 Emitted voltage spikes 5.1.3.2.2 Voltage surges 5.1.3.1.1 Voltage spikes 5.1.3.2.1 Voltage surges 5.1.1.2 Voltage ripple MIL-STD-810G : Harsh Temperature, Shock, Vibration, Altitude and Dust
Operating System	Windows 10 64bit Ubuntu16.04, Ubuntu14.04, Fedora 28
Reliability	No Moving Parts; Passive Cooling. Designed & Manufactured using ISO 9001/2000 Certified Quality Program.
EMI/EMC	CE ,FCC , MIL-STD-810G, MIL-STD-1275, MIL-SD-461E compliance
Green Product	RoHS, WEEE compliance

7STARLAKE

7. Dimension

8. Ordering Information

12" Rugged Smart Display with MIL-DTL-38999 connectors, 28 user programmable function keys, NVIS supported

Model	Description
CLOUD12-P06	12" Rugged Panel Computer, Intel® Kabylake-U SoC 14nm Core™ i7/i5/i3 BGA Type, MIL-DTL-38999 connectors, 6 Function Keys.