CCpilot X1200 LAPTOP FUNCTIONALITY AND PERFORMANCE FOR THE CABIN

The **CCpilot X1200** is designed to meet tough environmental requirements and excel even in demanding applications. Based on efficient Intel Atom® quad-core performance the X1200 is a truly multipurpose on-board computer for business logic and advanced HMIs with Intel® UHD Graphics.

With its optically bonded 12" widescreen IPS-type display it provides plenty of GUI real estate, enabling concurrent visualization of multiple applications.

The widely supported x86 architecture and the X1200 offer the choice of a Linux or Windows 10 operating system. This means that system developers can utilize all the powerful toolchains, software components, and 3rd party applications available in either the Windows or Linux domains.

The CCpilot X1200 fully supports modern, and next-generation, graphics APIs and frameworks, making it possible to realize advanced systems without the limitations or restrictions due to leaner hardware. Plus, the display provides an accessible CFAST storage slot for in-field expandability, video recording, encryption, and storage upgrades. It can also integrate 3rd party peripherals over USB.

With its vast software capabilities and state-of-the-art hardware, the CCpilot X1200 brings the power and flexibility of a complete PC platform to the cab of mobile machinery.

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CCpilot X1200 PRODUCT SPECIFICATIONS

COMPUTING CORE	
OVERVIEW	Intel® Atom® X6413E Elkhart Lake CPU, with powerful integrated GPU
CPU	Intel® X6413E, 4 cores x 1.50 GHz, (boost to 3,0 GHz), 4 threads
GPU	Intel® UHD Graphics for hardware acceleration of 2D, 3D & vector graphics, 200 GFlops.
STORAGE	eMMC: 42GB pseudo-SLC CFast: 64GB CFast for Windows (available as an option for Linux systems)
RAM	8GB DDR4 RAM

DISPLAY	
TYPE	IPS type with >88 degree viewing angle from all directions
COVER LENS	Chemically hardened AG-treated glass
OPTICAL BONDING	Yes. IPS screen, cover lens and touch screen optically bonded to achieve sunlight readability.
SIZE AND RESOLUTION	12.1" 16:10 WXGA, 1280 x 800 pixels
COLOR DEPTH	24 bit
CONTRAST RATIO*	1000:1
BRIGHTNESS*	1000 cd/m²
DIMMING	Yes, in steps, 1-100%
AMBIENT LIGHT SENSOR	Yes

HMI	
TOUCH SCREEN	Projective Capacitive with multi-touch. Calibrated to support interaction with gloves and is in-sensitive to water drops.
STATUS LED	RGB LED
SOUND	Speaker with configurable volume.
SOFT KEYS	3 configurable buttons on the front of the display. Default function On/Off and Brightness Up/Down

INTERFACES	
CAN	2 x CAN-FD ports, 4 x CAN-FD available as an option, physical layer ISO 11898 2.0B. SAE J2284-1 to SAE J2284-5, Configurable bit rate.
USB	5 x USB 2.0 high speed
ETHERNET	2 x Ethernet. 10/100 Base-T
SERIAL	1 x RS232, 2 pin, Rx and Tx
AUDIO	1 x Stereo Line Out
POWER SUPPLY	12 or 24 VDC Nominal Voltage. Voltage range 10-34 VDC. CPU and communication operational down to 6 VDC
KEY SWITCH	1 input, for start-up/suspend/resume/ shutdown
WIRELESS	Optional Bluetooth and Wi-Fi with antenna connector

MECHANICAL	
HOUSING MATERIAL	Aluminium
INSTALLATION	Vesa 75 bracket
CONNECTORS	3 x 5 pin DIN M12 for power and CAN ports 2 x 4 pin DIN M12 for Ethernet 2 x M12 microUSB 1 x 8 pin DIN M12 Auxiliary connection and serial port 1 x Mini SMA antenna connector
DIMENSIONS (mm)	W 355 x H 230 x D 60
WEIGHT (g)	3500

ENVIRONMENTAL SPECIFICATIONS	
IP CLASS	IP65
EMC CONFORMITY	EN ISO 14982:2009, EN ISO 13766-1:2018
VIBRATIONS	IEC 60068-2-64, 0.01g²/Hz 5-200Hz
SHOCK	IEC 60068-2-27, 30g/6ms
TEMPERATURE RANGE (°C)	Operating: -25 to +70, Storage: -40 to +80

OPERATING SYSTEM	
SYSTEM	Windows 10 IoT CCLinux
COMPUTING AND GRAPHICS APIs	Support for advanced UX and computing tasks: OpenGL 4.5, Vulkan, OpenCL 1.2, OpenVG 1.1
LINUX KERNEL	5.15

SOFTWARE FRAMEWORKS & TOOLS	
DEVELOPMENT ENVIRONMENT	Windows: PC/Windows tools, e.g. Visual Studio Linux: Native Linux or Virtual machine
PROGRAMMING	Support for Windows and Linux tools and languages including C++, C, QML, .net, JavaScript, Python, HTML5
GCC COMPILER	x86_64-poky-linux-gcc (GCC) 11.3.0 or newer
UI FRAMEWORKS	Support for Qt6 and Qt5. Qt Commercial is optional, enables closing access to the system. Support for Web frameworks.
WINDOWING	Weston, Qt Wayland. Direct EGLFS is available if windowing is not required.

APPLICATION PLATFORM
LinX Software Suite, open and modular platform based on Qt, common for all CCpilot products. Examples of modules and components listed below.

GUI DESIGN	UX Designer, a pre-built virtual machine with Qt Creator, compilers, libraries, graphical components and templates.
CAN NETWORKING	Fieldbus Access, easy configuration of J1939 and CANopen networks.
REMOTE APPLICATION ACCESS VNC	Server and client, web browser and server.
DIGITAL VIDEO	Ready-made solution for displaying digital camera streams over Ethernet. RTP, MPEG4, MJPEG, H.264 (4Kp30) and H.265.

INHERENT PLATFORM SUPPORT Customizations offered on request for large programs.	
INCREASE STORAGE	Up to 128GB
INCREASE RAM	Up to 16GB DDR4
SOFT PLC	CODESYS 3.5

* Typical values

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