



CCpilot V700 NEXT GENERATION IMX8X BASED DISPLAY

The **CCpilot V700** is based on an i.MX 8DualXPlus processor which features a very powerful GPU with much higher graphics performance than earlier generations of ARM processors. The V700's 7" high brightness, optically bonded, screen uses IPS type technology which offers best in class viewing angles and contrast for visibility in all conditions without the risk of fogging. It comes with a multi-touch PCAP touch screen for intuitive user interaction also with gloves. Wired interfaces include Ethernet, CAN and high-speed USB and the display platform offers an option to add Bluetooth and Wi-Fi for wireless connectivity.

The CCpilot V700 is available with LinX, our open and modular software platform. It includes firmware and OS support, pre-packaged application toolchains for Qt and CODESYS, and application modules for commonly required functionality. System

designers can choose the level, configuration and development tools that fit their needs and can therefore work with, not against, the expertise and resources they already have. With the open platform approach, customers can base their solution on a robust and secure base while keeping the flexibility to use inhouse or 3rd party development resources, work with alternative toolchains or easily deploy existing inhouse or 3rd party applications.

The platform on which the CCpilot V700 is based supports rapidly emerging technologies like multiple digital camera streams, stream stitching to create panoramic views, object detection and classification as well as speech recognition.

With its vast software capabilities and state-of-the-art hardware, the CCpilot V700 is a future ready platform for machine intelligence.

Turn for technical specifications »

CCpilot V700 PRODUCT SPECIFICATIONS

COMPUTING CORE	
OVERVIEW	IMX 8DualXPlus, dual core CPU, integrated GPU & Co-processor. IMX8X is designed to meet automotive requirements for safety & reliability.
CPU	2 x Cortex A35 @ 1.2 GHz
GPU	Vivante GC7000lite high performance graphics processing unit for 3D, 2D & vector graphics. With 1600 Mpixels/s and 52 GFLOP it delivers 2-3X the performance compared to the IMX6's Vivante GC2000.
STORAGE	4 GB eMMC in robust pseudoSLC mode
RAM	1 GB 32 bit LPDDR4 @ 1200MHz

DISPLAY	
TYPE	IPS Type with >88 degree viewing angles
COVER LENS	Tempered glass with AG coating
OPTICAL BONDING	Yes, IPS screen and cover lens optically bonded to achieve sunlight readability.
SIZE AND RESOLUTION	7" WVGA, 800x480 pixels
COLOR DEPTH	24 bit
CONTRAST RATIO*	1000:1
BRIGHTNESS*	800 cd/m²
DIMMING	Yes, in steps, 1-100%
AMBIENT LIGHT SENSOR	Yes, enabling automatic dimming

HMI	
TOUCH SCREEN	Projective Capacitive with up to 10-point multi-touch. Calibrated to support interaction with gloves and is in-sensitive to water drops from rain etc. Sensitivity is also adjustable based on operating conditions and application.
STATUS LED	RGB LED
BUZZER	Yes, Configurable frequency and volume. Max 75dB @ 10cm from front.

INTERFACES	
CAN	2 x CAN ports, physical layer ISO 11898 2.0B. Configurable bit rate.
USB	1 x USB 2.0 high speed
ETHERNET	1 x 10/100Base-T
WIRELESS	Possibility to integrate Bluetooth@chip, version 5.
POWER SUPPLY	9-36 VDC, CPU and communication operational down to 6 VDC
KEY SWITCH	1 Key switch input, for start-up/suspend/resume/shutdown

MECHANICAL	
HOUSING MATERIAL	Valox 357x
INSTALLATION	Panel mounted or 3 point RAM mount
CONNECTORS	8 pin DIN M12 for power and CAN ports 4 pin DIN M12 for Ethernet 5 pin DIN M12 for USB
DIMENSIONS (mm)	201 W x 135 H x 40 H
WEIGHT (g)	650

ENVIRONMENTAL SPECIFICATIONS	
IP CLASS	IP65, IP66 and IP67
EMC CONFORMITY	2014/30/EU, ISO 14982:2009, ISO 13766-1:2018, EN12895:2015, EN ISO 13766-2:2018
VIBRATIONS	IEC 60068-2-64. Random, 0.02g²/Hz 5-2000Hz 3x3h

SHOCK	IEC 60068-2-27.±25g /6ms±3 x3, 15000 total shocks
TEMPERATURE RANGE (°C)	Operating: -30 to +70, Storage: -40 to +85

OPERATING SYSTEM	
SYSTEM	Custom Linux system based on Yocto 3.0 or newer
KERNEL	5.4 (Long Term Support)
BSP	Yocto 3.0 or newer
COMPUTING AND GRAPHICS APIs	Support for advanced UX and computing tasks: OpenGL ES 3.1, Vulkan, OpenCL 1.2, OpenVG 1.1
BOOTUP TIME	Configurable. Cold boot with EGLFS: 6-7 sec, with Weston: 8-9 sec

SOFTWARE FRAMEWORKS & TOOLS	
DEVELOPMENT ENVIRONMET	Virtual machine or Native Linux.
PROGRAMMING	Supported languages include C++, C, QML, JavaScript, Python, HTML5, IEC61131-3.
GCC COMPILER	aarch64-poky-linux-GCC 8.3.0 C++17 or newer
UI FRAMEWORKS	Supports 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.
ISOBUS	Universal Terminal, Task Controller and guidance.
TELEMATICS	Enterprise Connect, including configurable soft telematics controller and backend web solution.
SMART DEVICE INTEGRATION	Smart Connect, framework for building apps and integrating smart phones and tablets (Service tool, secondary HMI).
REMOTE APPLICATION ACCESS	VNC server and client, web browser and server.
SOFT PLC	CODESYS 3.5
DIGITAL VIDEO	Ready-made solution for displaying digital camera streams over Ethernet. RTP, MPEG4, MJPEG, H.264 (4Kp30) and H.265.

PLATFORM SUPPORT
Below you find specifications of features for which the product platform has inherent hardware support. These are not currently available in the standard product specified above but may be added over time in the generic evolution of the product, or added for a specific, larger customer program.

TOUCH SCREEN SENSITIVITY	Option to have touch controller calibrated for special use cases.
SECURITY	RSA/AES, elliptic-curve cryptography, key storage, secure boot-up, signed applications, docker. Hardware level virtualization for multi OS systems.
QT AUTOMOTIVE	Supports Qt Automotive, featuring e.g. safe rendering and IVI applications.
ANDROID	Supports Android
OS IN CO-PROCESSOR	Supports use of an RTOS in the integrated Cortex-M4F companion microcontroller (co-processor).

* Typical values

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