



# 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	
<b>OVERVIEW</b>	i.MX 8DualXPlus, dual core CPU, integrated GPU & Co-processor. IMX8X is designed to meet automotive requirements for safety & reliability.
<b>CPU</b>	2 x Cortex A35 @ 1.2 GHz
<b>GPU</b>	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.
<b>STORAGE</b>	4 GB eMMC in robust pseudoSLC mode
<b>RAM</b>	1 GB 32 bit LPDDR4 @ 1200MHz

DISPLAY	
<b>TYPE</b>	IPS Type with >88 degree viewing angles
<b>COVER LENS</b>	Tempered glass with AG coating
<b>OPTICAL BONDING</b>	Yes. IPS screen and cover lens optically bonded to achieve sunlight readability.
<b>SIZE AND RESOLUTION</b>	7" WVGA, 800x480 pixels
<b>COLOR DEPTH</b>	24 bit
<b>CONTRAST RATIO*</b>	1000:1
<b>BRIGHTNESS*</b>	800 cd/m <sup>2</sup>
<b>DIMMING</b>	Yes, in steps, 1-100%
<b>AMBIENT LIGHT SENSOR</b>	Yes, enabling automatic dimming

HMI	
<b>TOUCH SCREEN</b>	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.
<b>STATUS LED</b>	RGB LED
<b>BUZZER</b>	Yes, Configurable frequency and volume. Max 75dB @ 10cm from front.

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

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

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

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

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

SOFTWARE FRAMEWORKS & TOOLS	
<b>DEVELOPMENT ENVIRONMENT</b>	Virtual machine or Native Linux.
<b>PROGRAMMING</b>	Supported languages include C++, C, QML, JavaScript, Python, HTML5, IEC61131-3.
<b>GCC COMPILER</b>	aarch64-poky-linux-GCC 8.3.0 C++17 or newer
<b>UI FRAMEWORKS</b>	Supports Qt6 and Qt5. Qt Commercial is optional, enables closing access to the system. Support for Web frameworks.
<b>WINDOWING</b>	Weston, Qt Wayland. Direct EGLFS is available if windowing is not required.

**APPLICATION PLATFORM**  
Open and modular platform based on Qt, common for all CCpilot products. Examples of modules and components listed below.

<b>GUI DESIGN</b>	UX Designer, a pre-built virtual machine with Qt Creator, compilers, libraries, graphical components and templates.
<b>CAN NETWORKING</b>	Fieldbus Access, easy configuration of J1939 and CANopen networks.
<b>ISOBUS</b>	Universal Terminal, Task Controller and guidance.
<b>TELEMATICS</b>	Enterprise Connect, including configurable soft telematics controller and backend web solution.
<b>SMART DEVICE INTEGRATION</b>	Smart Connect, framework for building apps and integrating smart phones and tablets (Service tool, secondary HMI).
<b>REMOTE APPLICATION ACCESS</b>	VNC server and client, web browser and server.
<b>SOFT PLC</b>	CODESYS 3.5
<b>DIGITAL VIDEO</b>	Ready-made solution for displaying digital camera streams over Ethernet. RTP/RTSP, MPEG4, MJPEG 1080p, 1080p H.264 enc/dec, 4K H.265 dec.

**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.

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

\* Typical values

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