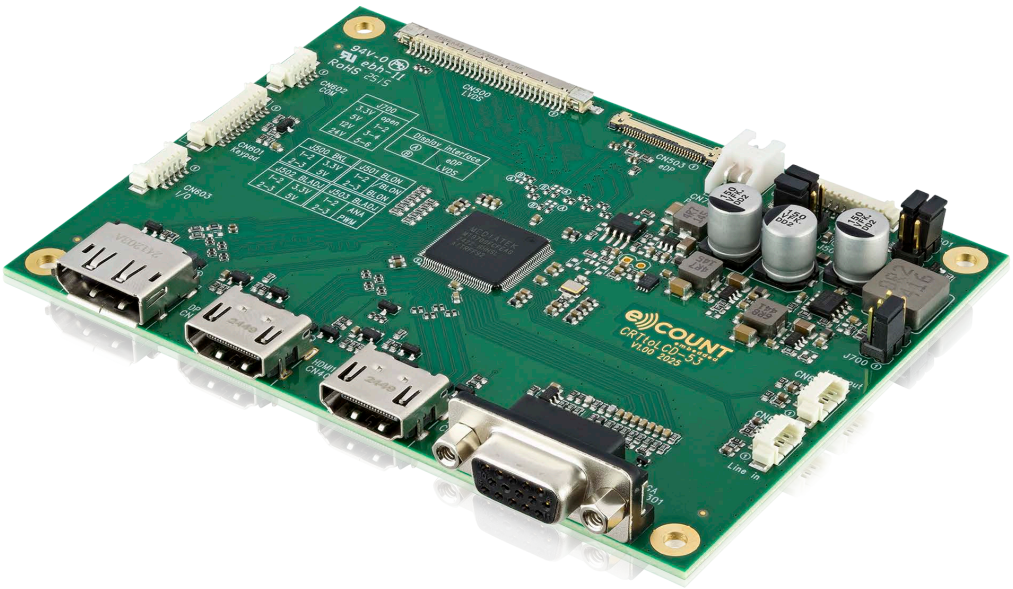
FHD-LCD-Controller for LVDS and eDP Displays

CRT*to*LCD-53



- Wide-Range Power-Input (5V to 32V)
- Video-Inputs
  - 1x DisplayPort
  - 2x HDMI
  - 1x Analog VGA
- Flexible Display support: 640x480 up to 1920x1200
- Sound-Input/Output: Stereo / Line-Level
- Scripting Engine to customize and enhance functionality
- Firmware Update via DVI/HDMI and DisplayPort (SmartISP)
- Fully supports MCCS via DDC/CI
- GPIO's, ADC-Inputs and I²C for Add-On sensor modules
- Hour Meter and Temperature Sensor
- Powerful software tools including Timing-Editor, Serial-OSD, Serial-API, Script Compiler and Logo converter

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Description

CRTtoLCD-53 is an LCD-Controller that interfaces standard Analog RGB (VGA), HDMI and DisplayPort sources to an LCD.

From a single 5V to 32V power supply, the **CRTtoLCD-53** generates all needed supply voltages, display power sequencing as well as power and control signals for Backlight-Driver. PWM and voltage controlled dimming is supported.

Line-Level Stereo-Sound-Output can be used to drive active speaker systems.
Stereo Sound-Source can be selected from Analog-Input(Line-Level), DisplayPort and HDMI.

With the powerful software tool **Configuration Workbench**, display timing, mode table as well various configuration like customizing OSD menu or implementing own logo can easily be done.

CRTtoLCD-53 has built-in Scripting-Engine that extends functionality without changing firmware. It also applies access to GPIO's, ADC's and I²C for external sensor modules.

SmartISP let you update Firmware by using digital video input (DisplayPort or HDMI).

All adjusters and parameters are accessible via **Scripting**, **Serial-API** and **DDC/CI**.

Typical Verticals

Point of Sales (POS)	Check-in terminals
Point of Information (POI)	Public displays
Industrial Automation & Medical	Panel-PCs, Industrial monitors
Test & Measurement	Smart displays
Transportation	Rugged displays
Gaming Machines	Casino slot machines Lottery systems

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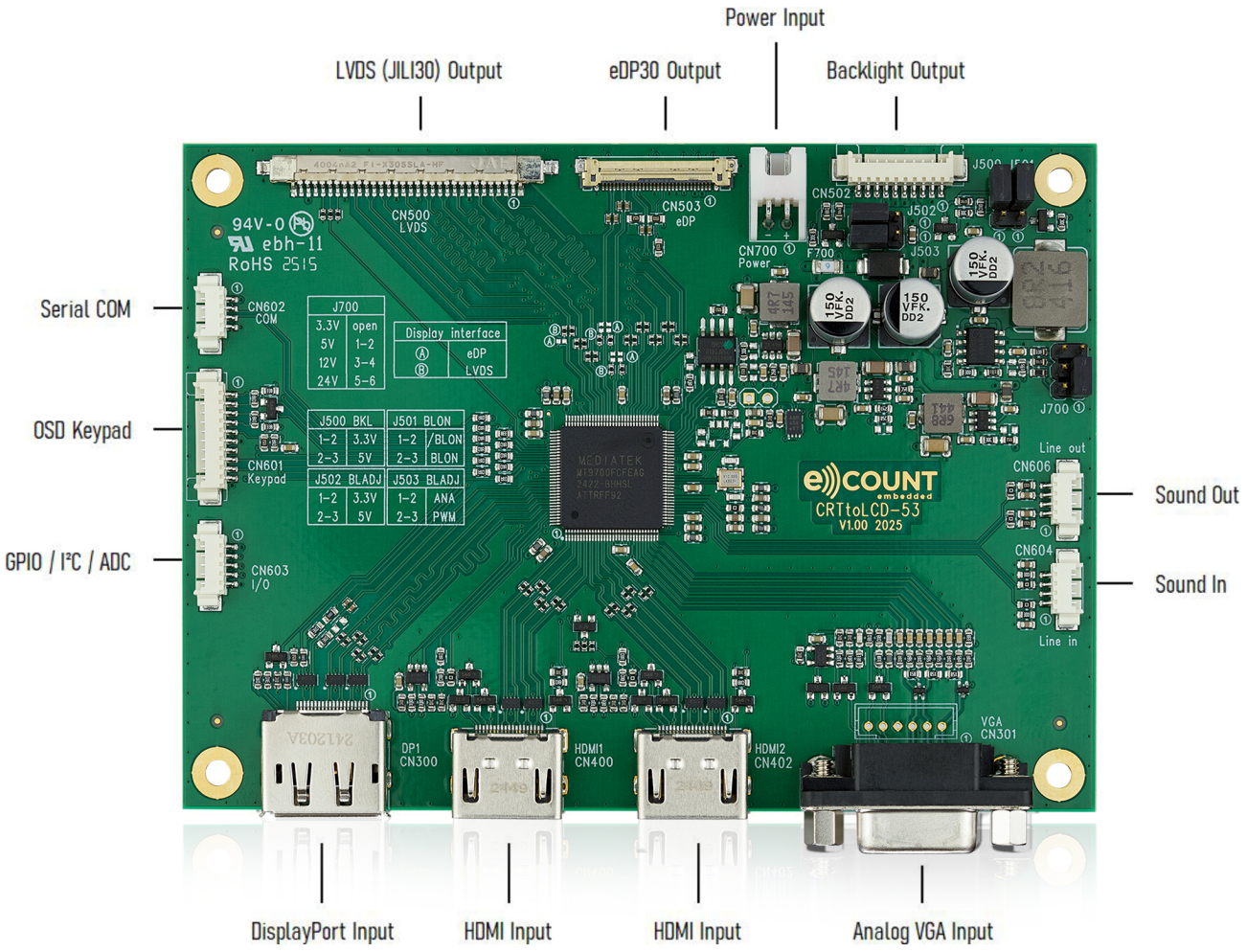
Functional Overview



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Technical Information

Scaler	MT9700FCFEAG High-quality scaling engine (1:1 / Aspect / Full) Variable sharpness control Peaking & coring functions for sharpness enhancement and noise reduction. Programmable 10-bit gamma correction Support for sRGB and xvYCC color space Interlaced inputs supported
HDMI Inputs	Resolution up to 1920x1200@60Hz DVI 1.0 / HDMI 2.0 compliant receiver with HDCP 2.2 Supports HDMI 8/10/12-bit color depth
DisplayPort Input	Resolution up to 1920x1200@60Hz DP1.4 compliant receiver with HDCP1.4 4 lanes (1.6Gbps / 2.7Gbps per lane) 18 and 24-bit color depth
LVDS Output	Resolution up to 1920x1200@60Hz Single/Dual-Channel with 18/24-bit color depth VESA/JEIDA color mapping Swapping of channel polarity, pairs and Odd/Even Display-Power up to 2.5A
eDP Output	Resolution up to 1920x1200@60Hz 2 lanes (1.6Gbps / 2.7Gbps per lane) Backlight-Power and control Display-Power up to 2A, Backlight-Power up to 3A
Sound Input (Stereo)	HDMI / DP / Analog (Line Level)
Sound Output (Stereo)	Analog (Line Level)
Backlight	Analog or PWM dimming Flexible backlight adjustment by programmable LUT Backlight-Power up to 3A Dimming by Ambien Light Sensor(ALS) module
Peripheries	3 configurable multi-purpose IO-Pin's(sharing functions): 2x ADC (8-bit resolution) 3x GPIO 1x I²C for sensor modules
OSD	5 Button OSD with customizable keys and function OSD-Menu customizable by software
Specials	On-Board Hour Meter On-Board Temperature Sensor Configuration Workbench for firmware update and configuration Scripting Engine to extend functionality Serial API to provide access to adjusters and data Serial OSD for remote configuration via COM-port Supports MCCS via DDC2B/2Bi/2B+/CI
Power Input	Wide-Range (5V/DC to 32V/DC)
Dimensions of Module (PCB)	125 mm x 90 mm x 16.3 mm (L/W/H)

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Ordering Information

CRTtoLCD-53	21039E-00-01-01	FHD LCD-Controller for LVDS and eDP interface
OSD-Keypad-5S	22013E-00-01-01	5 button keypad with mechanical switches Multi-color LED (red/green/amber) for status Cable length 200mm Molex PicoBlade 10-Pin (1.25mm pitch)
OSD-Touch-Keypad-5S	22023E-00-01-01	5 button keypad with capacitive touch keys Multi-color LED (red/green/amber) for status I²C interface Cable length 200mm Molex PicoBlade 5-Pin (1.25mm pitch)
ADAPT-ALS-VEML7700	60008E-00-01-01	Ambient light sensor module with Vishey VEML7700 I²C interface Cable length 200mm Molex PicoBlade 5-Pin (1.25mm pitch)
ADAPT-COM-USB	61023E-00-01-01	USB to UART converter (USB to COM-TTL) Programming adapter for firmware update/configuration USB-Type-A Connector Molex PicoBlade 4-Pin(1.25mm pitch) Cable length 200m
KAB-COMtoTTL (obsolete)	61021E	RS232 to TTL level converter for firmware update and configuration. Can be used for all products with TTL-COM-Port Length 200mm

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