



Value-Add Display Modules

Displays that arrive ready to integrate: controller, firmware, interface and software support already done, so you ship sooner.

CONTACT SALES

sales@crystallfontz.com

509-892-1200 · www.crystallfontz.com



THREE PRODUCT FAMILIES

01

Intelligent Display Modules

Character, graphic and color TFT modules with optional keypad and LEDs, driven by simple commands over USB, serial, I2C or SPI.

9 families · 72 SKUs

02

EVE Accelerated TFTs

Bridgetek EVE graphics engine on the module. Smooth touchscreen GUIs from low-cost MCUs over SPI or QSPI.

2.4" to 7.0" · 21 modules + kits

03

Compute Module Displays

Display and Raspberry Pi CM4 / CM5 carrier in one. The CM runs the product, with full Pi I/O free for the application.

5" portrait · 7" bar coming

Engineered in the USA

Designed and supported in Spokane Valley, WA

Customizable

Custom firmware, hardware and cabling

Ready-to-run software

Free tools and open example code to speed up integration

Built to last

Long-life LCDs and 1M-press keypads

Long-term supply

Long product lifecycles with advance change notices

01 • INTELLIGENT DISPLAY MODULES

A complete front panel in one module.

Display, optional keypad and LEDs, and system monitoring behind a simple command protocol. The host sends text and commands; the module handles the rest.


9

product families

72

orderable SKUs

5

host interfaces

1U

rack-height fit

Key features

Simple commands, any interface

Documented command protocols over USB, RS232, logic UART, I2C or SPI. Packet-based models share one command set, so host code moves between them.

System monitoring and control

ATX power and reset control, hardware watchdog, GPIO with PWM, up to 32 temperature sensors and PWM fan control.

Works out of the box

Supported by AIDA64, LCD Smartie and LCDproc. Free CFA LCD Utilities for Windows and Linux, plus open-source examples.

Keypad and LEDs where you need them

Backlit 4- or 6-key keypads with press and release reporting, and red/green or RGB status LEDs on select models. No keypad needed? The CFA632 and CFA634 are display-only, and the CFA039B keeps 8 RGB LEDs.

Character or true graphics

Seven character families with custom-character support. The CFA835 (244x68 LCD) and CFA039A / B (480x128 color TFT) add full graphics and video playback, and the CFA039A / B have a screen designer for complete GUIs.

Enclosed option

XES635 puts a CFA635 in a steel USB enclosure for desktop and external use.

Where it sells

Servers and network appliances

Industrial control

Test and measurement

Medical and lab equipment

Kiosks and POS

Why customers choose it

A front panel project, solved

No interface board to design and no LCD, keypad or LED code to write. Hosts without spare GPIO just send commands.

Software that carries forward

Step up from CFA533 to CFA633 or CFA635 to CFA835 in the same footprint. New modules only add commands.

Feature matrix

Feature	CFA631	CFA632	CFA533	CFA633	CFA634	CFA635	CFA735	CFA835	CFA039A	CFA039B
DISPLAY										
Type	Char	Char	Char	Char	Char	Char	Char	Graphic	Color TFT	Color TFT
Format	20x2	16x2	16x2	16x2	20x4	20x4	20x4	244x68	480x128	480x128
Size (diagonal)	2.53"	3.01"	2.26"	2.26"	3.92"	3.19"	3.19"	3.26"	3.9"	3.9"
Custom characters	●	●	●	●	●	●	●	●	●	●
Full graphics	—	—	—	—	—	—	—	●	●	●
Capacitive touch	—	—	—	—	—	—	—	—	○	○
HOST INTERFACE										
USB	●	●	●	●	●	●	●	●	●	●
RS232	—	●	●	●	●	●	●	●	—	—
Logic-level UART	—	●	●	—	●	●	●	●	●	●
I2C	—	●	●	—	●	—	—	●	●	●
SPI	—	●	—	—	●	—	—	●	●	●
USER I/O AND MONITORING										
Backlit keypad	4 keys	—	6 keys	6 keys	—	6 keys	6 keys	6 keys	6 RGB	—
Status LEDs	—	—	—	—	—	4 R/G	4 R/G	4 R/G	4 RGB	8 RGB
GPIO (with PWM)	5	—	5	5	—	5	5	13	13	13
ATX power / reset	●	—	●	●	—	●	●	●	●	●
Fan control	○	—	—	4 fans	○	○	○	○	○	○
Temp sensors	○	—	up to 32	up to 32	○	○	○	○	○	○
microSD storage	—	—	—	—	—	—	—	●	●	●
ELECTRICAL AND ENVIRONMENTAL										
Supply voltage (V)	5	5	3.3 to 5	5	2.5 to 5.5	3.0 to 5.5	3.3 to 5.5	3.3 to 5.5	2.5 to 5.5	2.5 to 5.5
Operating temp (°C)	0 to +50	-20 to +70								

● Standard ○ Optional / via accessory — Not offered

○ via add-on board: SCAB on CFA631; FBSCAB (4 fans, 16 sensors) on CFA634, CFA635, CFA735, CFA835 and CFA039A / B. CFA633 GPIO are shared with ATX and sensor functions. CFA533-KU (USB) is 5 V only. CFA632 / CFA634 RS232 versions also accept 9 to 15 V.

Which module fits?

If you need	Recommend
1U server panel with fan control and watchdog	CFA633
Lower-cost CFA633 drop-in when fans are not needed	CFA533
20x4 with keypad and status LEDs	CFA635
Display only, pick from six host interfaces	CFA632 / CFA634
Graphics and custom screens, monochrome	CFA835
Full color, optional touch (keypad / no keypad)	CFA039A / CFA039B
Plug-in USB unit for desktop or external use	XES635

Complete part number list with color and interface options available on request.

Add to the order

FBSCAB fan / sensor board
Adds 4 fans and 16 temp sensors to CFA634, CFA635, CFA735, CFA835 and CFA039A / B.

Temperature probes
DS18B20 one-wire probes for CFA533, CFA633 and FBSCAB-equipped modules.

Interface cables
USB, RS232 and logic-level cable sets in standard lengths.

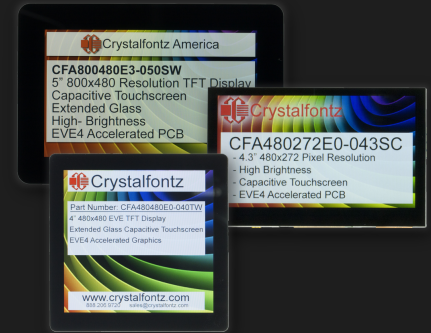
Custom options
Custom firmware, splash screens, keypad legends and cable lengths.



02 • EVE ACCELERATED TFT MODULES

Smartphone-class GUIs from an 8-bit MCU.

All your MCU needs is an SPI port. Load images, fonts and video once, then call them by command. EVE renders the screen, reads touch, plays audio and dims the backlight on its own.



2.4 to 7"

display sizes

1024x600

max resolution

1,000

nits max brightness

21

ready-to-run dev kits

Key features

No frame buffer on the host

EVE takes high-level display lists, so low-cost MCUs drive high-resolution TFTs without external RAM.

Load once, play by command

Load images, fonts and video once, then show them with one command.

Touch handled on the module

Capacitive (up to 5-point), resistive or no touch, all read over the same SPI bus.

Set it and forget it

Set a brightness and the module handles PWM dimming. SPI is the only link needed.

Bright IPS panels

Wide-view IPS on most models, up to 1,000 nits. Rated -20 to +70 °C.

Dev kits that run on day one

Each kit ships with the display, CFA10098 breakout and a Seeeduino loaded with demo code. Open-source code on GitHub.

Where it sells

Industrial HMI

Medical devices

Appliances and home

Instrumentation

Outdoor and sunlight-readable

Why customers choose it

Smartphone-style GUIs, small MCU

EVE draws the screen, so an MCU with a SPI port drives up to 1024x600 with no frame buffer or RGB interface.

One host design, every size

The same 30-pin pinout from 2.4" to 7" lets one host board scale across sizes, and BT817 runs FT81x code.

Product matrix

Part number	Size	Pixels	EVE IC	Nits	No touch	Res. touch	Cap. touch	Overhang glass	Colors
SMALL FORMAT · 2.4" TO 3.9"									
CFA240320E0-024SN	2.4"	240x320	FT811	850	●	—	—	—	262K
CFA240320E0-024SC	2.4"	240x320	FT811	730	—	—	●	●	262K
CFA240400E1-030TN	3.0"	240x400	FT811	400	●	—	—	—	262K
CFA240400E1-030TC	3.0"	240x400	FT811	400	—	—	●	—	262K
CFAF320240F-035T-A1-1	3.5"	320x240	FT810	200	●	—	—	—	262K
CFAF320240F-035T-TS-A1-1	3.5"	320x240	FT810	330	—	●	—	—	262K
CFAF480128A0-039TN-A1-1	3.9"	480x128	FT811	500	●	—	—	—	262K
CFA480128E0-039TC	3.9"	480x128	FT811	400	—	—	●	—	262K
MID FORMAT · 4.0" TO 4.3"									
CFA480480E0-040TN	4.0"	480x480	BT817	350	●	—	—	—	16.7M
CFA480480E0-040TW	4.0"	480x480	BT817	300	—	—	●	●	16.7M
CFA480272E0-043SN	4.3"	480x272	BT817	1,000	●	—	—	—	16.7M
CFA480272E0-043SR	4.3"	480x272	BT817	740	—	●	—	—	16.7M
CFA480272E0-043SC	4.3"	480x272	BT817	850	—	—	●	—	16.7M
CFA800480E0-043SN	4.3"	800x480	BT817	1,000	●	—	—	—	16.7M
CFA800480E0-043SR	4.3"	800x480	BT817	740	—	●	—	—	16.7M
CFA800480E0-043SC	4.3"	800x480	BT817	850	—	—	●	—	16.7M
LARGE FORMAT · 5.0" TO 7.0"									
CFA800480E3-050SN	5.0"	800x480	BT817	1,000	●	—	—	—	16.7M
CFA800480E3-050SR	5.0"	800x480	BT817	850	—	●	—	—	16.7M
CFA800480E3-050SC	5.0"	800x480	BT817	800	—	—	●	—	16.7M
CFA800480E3-050SW	5.0"	800x480	BT817	800	—	—	●	●	16.7M
CFAF1024600B0-070SC-A1	7.0"	1024x600	BT817	850	—	—	●	—	16.7M

● Offered — Not offered

All modules: 30-pin FFC, single or Quad SPI host interface, mono audio output, -20 to +70 °C operating, -30 to +80 °C storage. Every module has a matching development kit (add -KIT or -A1-2).

Accessories

CFA10098
EVE breakout: 30-pin ZIF to 0.1" header, speaker connection

CFA10112
microSD reader breakout for loading EVE graphic assets

WR-FFC-Y50 / Y51
30-pin FFC cables, 6" and 12"



03 • COMPUTE MODULE DISPLAYS

Finished Raspberry Pi HMI. Just add the CM.

A family of displays with a Compute Module carrier built in. The CM4 or CM5 runs the product, so every interface the Pi offers is available to the application.



CM4 + CM5

all official variants

5" + 7"

portrait and bar formats

Full Pi I/O

USB, Ethernet, HDMI, PCIe

-20/+70

°C operating

Key features

Native Raspberry Pi OS support

Display overlay is in the official Raspberry Pi kernel. Ready-to-run images, guides and 3D models free on GitHub.

Every Pi interface is yours

The display is driven internally, so USB, Ethernet, HDMI, PCIe, SPI, I2C, UART and GPIO all stay free for the application.

One platform, multiple formats

5" portrait today, with a 7" bar-type display next. Touch and no-touch options, same software across the family.

Product-grade extras

Battery-backed RTC, extra GPIO via I/O expander and software-controlled backlight. 40-pin HAT header on 5" models.

Flexible 5 V power

Barrel jack, Micro USB or PCB header input.

Wide temperature range

-20 to +70 °C operating, -30 to +80 °C storage.

Where it sells

Industrial control panels

Building automation

Kiosks and signage

Edge gateways

Lab and test fixtures

Why customers choose it

A finished HMI, not a carrier project

Display, carrier and power arrive as one tested unit, so there is no high-speed board to design. Add a CM4 or CM5.

Prototype to production on one board

Prototype with familiar Pi tools, then ship the same hardware, with no redesign from pilot to production.

Family matrix

Feature	CFA050A0-PI-MBxT 5" portrait	[7" bar P/N] Coming soon
DISPLAY		
Size and format	5.0" portrait	7" bar
Resolution	720x1280	280x1424
Panel technology	IPS	All-view TFT
Brightness	300 cd/m ²	700 cd/m ² (panel)
Capacitive touch	○	○
Software backlight control	●	●
COMPUTE MODULE		
Raspberry Pi CM4	●	●
Raspberry Pi CM5	●	●
Wireless	Via CM	Via CM
I/O AVAILABLE TO THE APPLICATION (FROM THE CM)		
40-pin HAT header (GPIO, SPI, I2C, UART)	●	—
USB	●	●
Ethernet	●	●
HDMI	●	●
PCIe	●	●
Extra GPIO via I/O expander	6	[TBD]
Battery-backed RTC	●	●
POWER AND MECHANICAL		
Power input	5 V: barrel jack, Micro USB or header	[TBD]
Operating temp	-20 to +70 °C	[TBD]
Dimensions (mm)	66.1 x 120.4 x 18.4	[TBD]
Weight	71.7 g	[TBD]

● Offered ○ Optional — Not offered

The display is driven internally by the CM, so every host interface stays free for the application. USB, Ethernet, HDMI and PCIe are routed to the expansion header.

Common to the family

Raspberry Pi OS support with the display overlay in the official kernel. Prebuilt OS images, setup guides and STEP models on GitHub.

Coming next: 7" bar display

1424x280 All-view TFT, 700 cd/m², in cap touch and no-touch versions. Same CM4 / CM5 platform and Pi OS support as the 5". Contact sales for samples and timing.