



# Crystalfontz America, Incorporated

## CFA735 family of intelligent modules product announcement

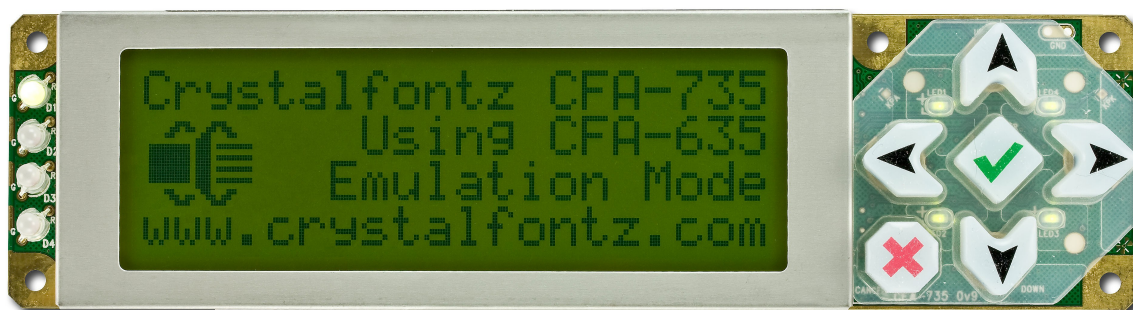
Crystalfontz America Inc. is proud to announce the release of the CFA735 family of intelligent modules. The CFA735 family represents the first of a new generation of our serial and USB interface modules as part of our continuous improvement process. Designed as a replacement for the CFA635 family of modules, the CFA735 family is a significant improvement in capability, capacity, flexibility and useability.



CFA735-TKF-Kx



CFA735-TML-Kx



CFA735-YYK-Kx

### Highlights of the CFA735 family include:

- The CFA735 is powered by a 32 bit STM32F® series ARM based Micro-controller
- Wide temperature -20° to +70° operational range , and -30° to +80°C storage temperature range
- Wider range of operating voltages
- Support for 3.3v logic levels
- In CFA635 Emulation Mode the CFA735 should work in CFA635 based applications without modification of the host software
- USB interface utilizes an industry standard micro-B USB female header
- Same physical dimensions and mounting points as the CFA635 family of modules



- Supports the familiar 6 button keypad found on the CFA635 family
- Supports USB and serial interfaces simultaneously
- Improved backlight
- CFA735 + FBSCAB can be used to replace an existing CFA635 + SCAB in most applications

The initial release of the CFA735 is CFA635 Emulation Mode. Our goal is to allow our customers that have integrated the CFA635 into their systems the ability to migrate to the CFA735 with the least amount of interruption.

PART NUMBER CHANGES – Migrating from CFA635 family to CFA735 family		
VARIANT DESCRIPTION (LISTED BY DISPLAY COLOR)	CFA635 Family	CFA735 Family
Base part numbers		
Black (dark) pixels on white (light) background	CFA635-TFE-KL	CFA735-TFK-KR
	CFA635-TFE-KS	CFA735-TFK-KT
	CFA635-TFE-KU	CFA735-TFK-KR <b>or</b> CFA735-TFK-KT
White (light) pixels on blue background	CFA635-TMF-KL	CFA735-TML-KR
	CFA635-TMF-KS	CFA735-TML-KT
	CFA635-TMF-KU	CFA735-TML-KR <b>or</b> CFA735-TML-KT
Black (dark) pixel on yellow-green background	CFA635-YYE-KL	CFA735-YYK-KR
	CFA635-YYE-KS	CFA735-YYK-KT
	CFA635-YYE-KU	CFA735-YYK-KR <b>or</b> CFA735-YYK-KT



## CABLE PART NUMBERS – Migrating from CFA635 family to CFA735 family

Interface	CFA635 Family	CFA735 Family
USB – to external USB-A	WRUSBY03	<b>WRUSBY27</b>
USB - to internal system board header	WRUSBY11	<b>WRUSBY34</b>
USB – to internal system board header	WRUSBY33	<b>WRUSBY34</b>
Serial (full swing RS-232) - to external DB9	WR232Y08	WR232Y08
Serial (full swing RS-232) – to internal 0.100" 10 pin	WR232Y22	WR232Y22
H1 Power	WRPWRY24	WRPWRY24
ATX Functionality (Power on / off / reset)	WRPWRY25	WRPWRY25
SCAB / FBSCAB connectivity - long	WREXTY15	<b>WREXTY37</b>
SCAB / FBSCAB connectivity – short	WREXTY19	<b>WREXTY37</b>
Fan connectivity / extension	WRFANX01 <sup>1.</sup>	WRFANX01 <sup>2.</sup>
DOW temperature probes	WRDOWY17 <sup>3.</sup>	WRDOWY17 <sup>4.</sup>
ATX Functionality with SCAB / FBSCAB	WRPWRY14 <sup>5.</sup>	<b>WRPWRY25 <sup>5.</sup></b>

### Notes:

Cable part numbers in bold indicate new cable utilized

- Up to 3 fans for Serial (suffix -KL or -KS) or up to 4 fans for USB (suffix -KU)
- Up to 4 fans for all interfaces (suffix -KT or -KR)
- Up to 32 in series
- Up to 16 in series
- When using the CFA735 with an FBSCAB and ATX functionality, the ATX control is directly from the CFA735 and not the FBSCAB. There is no GPIO pass through to the FBSCAB – H1 on the CFA735 is utilized for GPIO connectivity.



## CFA635 / CFA735 COMPARISON

Mechanical Specifications	CFA635 Family	CFA735 Family
Pixel Size	0.600 (W) x 0.650 (H) mm	0.300 (W) x 0.325 (H) mm
Pixel Pitch	0.65 (W) x 0.70 (H) mm	0.325 (W) x 0.350 (H) mm
Viewing Area	82.95 (W) x 27.5 (H) mm	83.10 (W) x 27.54 (H) mm
Active Area	77.95 (W) x 22.35 (H) mm	79.27 (W) x 23.78 (H) mm
LEDs in edge-lit LED Backlight	8 LEDs, 4 per side	12 LEDs, 6 per side
Connectors	Two connectors: <ul style="list-style-type: none"> <li>H1 – 16 pin</li> <li>H2 – 18 pin</li> </ul>	Two connectors: <ul style="list-style-type: none"> <li>H1 – 16 pin</li> <li>FBSCAB – 4 pin</li> </ul>
Electrical Specifications	CFA635 Family	CFA735 Family
Interfaces:	One interface per module	Two interfaces may be used simultaneously
	-KL = “Logic Level” Serial	“Logic Level” Serial and USB
	-KS = “Full Swing” RS-232 Serial	“Full Swing” RS-232 Serial and USB
	-KU = USB	“Logic Level” Serial and USB - or - “Full Swing” RS-232 Serial and USB
Absolute Maximum Ratings:		
Temperature Range	Standard: Operating temperature 0°C to 50°C Storage temperature -10°C to 60°C	Wide: Operating temperature -20°C to 70°C Storage temperature -30°C to 80°C
Additional Electrical Criteria:		
Backlight Control	PWM Frequency: 300 Hz nominal	Module has a DAC (Digital-to-Analog Converter) driver.
Accessories		
Bracket, SLED, and Overlay	For KU (USB) only	All interfaces supported
System Cooling Accessory Board	<a href="#">SCAB</a> and <a href="#">UBERSCAB</a>	FBSCAB support available



## CFA735 FAMILY FW 1v0 FIRMWARE COMMAND CHANGES

Command 0 (0x00): Ping Command	
<b>CFA735 Family</b>	valid data_length is 0 to 255
CFA635 Family	valid data_length is 0 to 16
Command 1 (0x01): Get Hardware & Firmware Version	
<b>CFA735 Family</b>	Example uses current CFA735 version numbers with extended data bytes available for manufacturing information.
CFA635 Family	Example used CFA635 version numbers.
Command 5 (0x05): Reset Functions	
<b>CFA735 Family</b>	Command offers a different set of choices: Reload Boot Settings, Reset Host, Power Off Host, CFA735 Soft Reboot, or CFA735 Soft Reboot and Settings Reset.
CFA635 Family	Reboot CFA635, Reset Host, or Power Off Host.
Command 28 (0x1C): Set ATX Power Switch Functionality	
<b>CFA735 Family</b>	Function 4: Added AUTO_POLARITY (0x01). LEDs can be configured to follow host power state (0x08), Slight adjustment on description of pulse timing (data[1]).
CFA635 Family	Function 4: AUTO_POLARITY and LEDS_FOLLOW_MODULE_LOOK not supported.
Command 28 (0x1C): Set ATX Power Switch Functionality, Command 34 (0x22): Set or Set and Configure GPIO Pin, and Command 35 (0x23): Read GPIO Pin Levels and Configuration State	
<b>CFA735 Family</b>	Omitted "slow" mode. All GPIO transitions are considered "fast".
CFA635 Family	Distinction is made between "fast" and "slow" modes.

### Availability:

Q1 2012 – Initial run of CFA735 family available. Limited Quantities.

Q2 2012 – Production level shipments of CFA735 family.

Q3 2012 - CFA735 fully replaces CFA635.

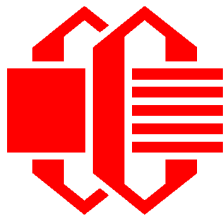
### FAQ:

**Q:** Will I need to re-write my application to support the CFA735?

A: For standard firmware installations, you should not need to rewrite your code. To preserve your resource investment in your CFA635 application code, the CFA735 supports all the functionality of the CFA635 while in CFA635 Emulation Mode.

**Q:** Will I need to re-tool my chassis to support the CFA735

A: No. Great care was taken when designing the CFA735 to not only be a code compatible replacement for the CFA635, but a physical replacement as well.



**Q:** *Will I need to use different cables to communicate with the CFA735?*

A: Yes. For CFA735 to USB-A ports, you will need to utilize the WRUSBY27 – or any other compatible micro-USB male to USB-A male cable. For CFA735 to system board connectivity, you will need to utilize the WRUSBY34.

**Q:** *Will I need to use a different cable to connect to the FBSCAB?*

A: Yes. The FB SCAB communicates to the CFA735 via a four wire cable, the WREXTY37.

**Q:** *Will I need to utilize a different cable for ATX Power On / Off / Reset functionality?*

A: Yes and No. If you are currently utilizing the CFA635 with ATX functionality with out the SCAB, then you can continue to use the WRPWRY25, or cable you have designed for your application. If you are utilizing the CFA635 and SCAB with ATX functionality then you will need to utilize the WRPWRY25 directly from the CFA735 and not the FBSCAB.

**Q:** *I order the CFA635 in a drive bay kit, will this be available for the CFA735?*

A: Yes. The CFA735 will be available in both the drive bay bracket and the SLED in any supported interface.

For additional information, see [Tech Bulletin #10377](#) CFA635 to CFA735 Migration.