Matrix Orbital Product Guide 2012

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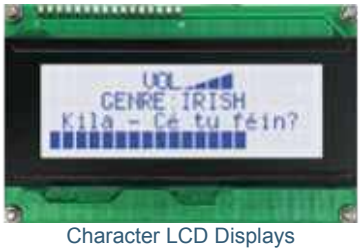
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About Matrix Orbital

From modest beginnings in 1995, Matrix Orbital has grown into a world-renowned communication interface display solution provider. By recognizing the need for an advanced and easy-to-use display, Matrix Orbital designed a revolutionary intelligent interface for LCD's and VFD's that has been used in defence, aerospace and advanced technology industries. Since then, through creativity, imagination and determination, our product line has grown dramatically to accommodate the needs of you, our customer.

Our dependable, flexible and easy-to-program RS232 / TTL, RS422, I²C and USB displays are highly suitable for applications ranging from short-run prototyping to large-volume production runs. To remain competitive in the marketplace, Matrix Orbital continues to add to its selection of high-quality displays.

At Matrix Orbital, we strive to offer the most comprehensive technical support in the industry. Through innovation and willingness to listen to our customers, Matrix Orbital can provide solutions that the competition cannot. By identifying the needs of our customers we meet and exceed expectations. Our team is ready to work with you.



Character LCD Displays


Graphic LCD Displays



Character VFD Displays

To learn more about Matrix Orbital and the people behind it, please visit :

www.matrixorbital.ca - click on people
www.facebook.com/matrixorbital
www.twitter.com/matrixorbital

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www.matrixorbital.com **www.matrixorbital.ca** **www.lcdforums.com**

GTT Series

TFT'S Simplified



GTT480272A

Matrix Orbital, the world leader in intelligent interface, introduces its most innovative product yet: the full color touch capable GTT series! Matrix Orbital's GTT is a feature rich intelligent display which combines top of the line TFT LCD's with integrated touch screens, on-board memory for custom fonts, graphics and animations, a piezo buzzer for audio feedback, and much more! These top of the line displays combine Matrix Orbital's years of experience in the serial interface field with a dazzling full color display using our familiar and easy to use intelligent interface.

Bring your project to life with an abundance of colors, controllable with an easy to use touch screen. With our extensive selection of interface options communicating will always be easy! Start creating gorgeous interfaces that can be controlled with the tip of your finger.

Part Number	Pixels	Interface	Module Size L x W x T (mm)	Display Size L x W (mm)
GTT480272A	480 x 272	RS232	133.00 x 78.00 x 21.70	97.60 x 56.40
GTT480272A-USB	480 x 272	USB	133.00 x 78.00 x 21.70	97.60 x 56.40
GTT480272A-I2C	480 x 272	I²C	133.00 x 78.00 x 21.70	97.60 x 56.40

:: Many other sizes are available on request, as well as custom designs.


EXTMUSB3FT

ESCCPC5V

Part Number	Interface	Length	Description
ESCCPC5V	RS232	2ft	external power communication and power cable with flow control
EXTMUSB3FT	USB	3ft	external A to B mini USB cable
INTMUSB3FT	USB	3ft	internal mini USB cable



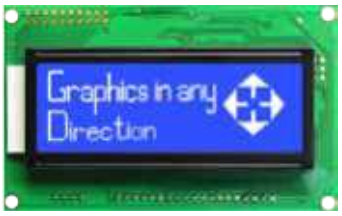
GTT480272A

- TFT Touch Screen with bright, vivid 16-bit color
- 1 GB of on board memory for fonts, graphics and animations
- Programmable to display any language.
- Interfaces available: RS232, USB, I²C
- Piezo Buzzer to provide audio feedback
- Field upgradable firmware to keep your device current
- Hardware flow control
- Fast and easy development
- One year warranty
- Full technical support available including sample code

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Graphic LCD Displays



GLK12232-25-WB

The most versatile of our displays can be programmed to display any font, in any size, and in any language. With graphic displays you can easily add multi-language support to any application that uses a display. Allow your creativity to flourish with photos and graphics! We also have -1U displays which conveniently fit into any 1U application, allowing you add graphics to even a limited space.

Part Number	Pixels	Interface	Keypad	GPOs	Module Size L x W x T (mm)	Display Size L x W (mm)	Color Options						Options							
							*XX	WB	FGW	YG	TCI	**XX	-E	-V	-LV	-VPT	-VE	-LVE	-VPT-E	
GLK12232-25-SM	122 x 32	RS232, I²C	25	2	86.00 x 35.00 x 14.40	60.20 x 18.00		✓			✓		✓	✓		✓				
GLK12232-25-SM-USB	122 x 32	USB	25	2	86.00 x 35.00 x 14.40	60.20 x 18.00		✓			✓		✓	✓			✓			
GLK12232-25	122 x 32	RS232, I²C	25	2	98.00 x 60.00 x 13.50	76.00 x 25.20		✓	✓				✓							
GLK12232-25-USB	122 x 32	USB	25	2	98.00 x 60.00 x 13.50	76.00 x 25.20		✓	✓				✓							
GLK19264-7T-1U	192 x 64	RS232, I²C	7	6	144.00 x 38.00 x 33.00	82.00 x 28.40		✓	✓	✓			✓		✓			✓		
GLK19264-7T-1U-USB	192 x 64	USB	7	6	144.00 x 38.00 x 33.00	82.00 x 28.40		✓	✓	✓			✓							
GLK240128-25	240 x 128	RS232, I²C	25	0	144.00 x 104.00 x 15.00	114.00 x 64.00	✓	✓	✓				✓			✓			✓	
GLK240128-25-422	240 x 128	RS422	25	0	144.00 x 104.00 x 15.00	114.00 x 64.00	✓	✓	✓				✓			✓			✓	
GLK240128-25-USB	240 x 128	USB	25	0	144.00 x 104.00 x 15.00	114.00 x 64.00	✓	✓	✓				✓			✓			✓	
GLK24064-25	240 x 64	RS232, I²C	25	6	180.00 x 65.00 x 29.10	132.00 x 39.00	✓	✓	✓				✓			✓			✓	
GLK24064-25-422	240 x 64	RS422	25	6	180.00 x 65.00 x 29.10	132.00 x 39.00	✓	✓	✓				✓			✓			✓	
GLK24064-25-USB	240 x 64	USB	25	6	180.00 x 65.00 x 29.10	132.00 x 39.00	✓	✓	✓				✓							
GLK24064R-25-1U	240 x 64	RS232	25	0	144.00 x 38.00 x 20.50	112.00 x 28.00		✓	✓		✓		✓			✓			✓	
GLK24064R-25-1U-422	240 x 64	RS422	25	0	144.00 x 38.00 x 20.50	112.00 x 28.00		✓	✓		✓		✓			✓			✓	
GLK24064R-25-1U-USB	240 x 64	USB	25	0	144.00 x 38.00 x 20.50	112.00 x 28.00		✓	✓		✓		✓			✓			✓	

:: Many other sizes are available on request, as well as custom designs.

Available Options

-E Extended Temperature
LCD -20° to +70° VFD -40° to +85°

-LV Low Voltage
3.3 Vdc

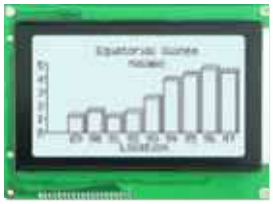
-V Extended Voltage
9-15 Vdc

-VPT Voltage Regulator
9-35 Vdc

Color Extensions

Extension	*XX	WB	FGW	YG	TCI	**XX
Text	Black	White	Black	Black	Tri Color	Blue
Background	Yellow/Green	Blue	Grey/White	Yellow/Green	Black	White

***** **XX** No Extension ****** **XX** No Extension


GLK240128-25-FGW



GLK24064-25-1U-TCI


GLK12232-25-SM-WB


GLK24064-25

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Touch Screens



GLT240128-WB

Touch screen graphic LCDs display graphics and text in any font, style, justification and language, all with the convenience of a touch screen. Beautiful, easy and fun to use interfaces, all without the need of a keypad. When the touch screen is pressed, you can have the X and Y location sent, or have the on-screen keyboard displayed and touched keys are sent through the serial port. A great looking user interface in no time at all!

Part Number	Pixels	Interface	Keypad	GPOs	Module Size L x W x T (mm)	Display Size L x W (mm)	Color Options *XX	WB	FGW	TCI	Options -E	-V	-VPT
GLT24064	240 x 64	RS232, TTL, I²C	Touch	0	180.00 x 65.00 x 29.10	132.00 x 39.00	✓	✓	✓				✓
GLT24064-USB	240 x 64	USB	Touch	6	180.00 x 65.00 x 29.10	132.00 x 39.00	✓	✓	✓				
GLT24064-422	240 x 64	RS422	Touch	6	180.00 x 65.00 x 29.10	132.00 x 39.00	✓	✓	✓				✓
GLT24064R-1U	240 x 64	RS232, TTL, I²C	Touch	6	112.00 x 38.00 x 28.90	98.00 x 28.40		✓	✓	✓			
GLT24064R-1U-USB	240 x 64	USB	Touch	6	112.00 x 38.00 x 28.90	98.00 x 28.40		✓	✓	✓			
GLT24064R-1U-422	240 x 64	RS422	Touch	6	112.00 x 38.00 x 28.90	98.00 x 28.40		✓	✓	✓			
GLT240128	240 x 128	RS232, TTL, I²C	Touch	0	144.00 x 104.00 x 27.80	114.00 x 64.00	✓	✓	✓				✓
GLT240128-USB	240 x 128	USB	Touch	0	144.00 x 104.00 x 27.80	114.00 x 64.00	✓	✓	✓				
GLT240128-422	240 x 128	RS422	Touch	0	144.00 x 104.00 x 27.80	114.00 x 64.00	✓	✓	✓				✓

:: Many other sizes are available on request, as well as custom designs.

Available Options

-V Extended Voltage
9-15 Vdc

-VPT Voltage Regulator
9-35 Vdc

Color Extensions

Extension	*XX	WB	FGW	TCI
Text	Black	White	Black	Tri Color
Background	Yellow/Green	Blue	Grey/White	Black

* **XX** No Extension



GLT240128-FGW



GLT24064

:: Our Graphic LCD Touch Panel provides you with a cost effective user interface solution for that great product/project you are developing
:: Full touch screen, no keypad needed
:: RS232, TTL, RS422, I²C or USB interface available
:: On board memory for Fonts and Bitmaps

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Character LCD Displays



LK204-7T-1U-TCI

Covering the most popular liquid crystal display configurations, control of the modules has been simplified to a set of commands delivered via RS232, RS422, I²C and USB. Meant to save time and money, we have worked to ensure that the tedious timing and special conditions typical of display controllers have been eliminated from our interface to help get your project to market faster.

Part Number	Characters x Lines	Interface	Keypad	GPOs	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)	Color Options									Options						
								*XX	GW	WB	IY	R	FA	FB	FG	FW	TCI	-E	-V	-LV	-VPT	-V-E	-LV-E	-VPT-E
LCD0821	8 x 2	RS232, I²C	N/A	1	58.00 x 32.00 x 25.00	2.96 x 5.56	38.00 x 16.00	✓	✓	✓	✓	✓						✓	✓			✓		
LCD2041	20 x 4	RS232, I²C	N/A	3	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓						✓			✓			✓
LK162-12	16 x 2	RS232, I²C	12	7	80.00 x 36.00 x 27.50	2.95 x 5.55	64.50 x 5.50	✓	✓	✓	✓	✓						✓						
LK202-25	20 x 2	RS232, I²C	25	6	116.00 x 37.00 x 25.73	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓						
LK202-25-USB	20 x 2	USB	25	6	116.00 x 37.00 x 25.73	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓						
LK204-25	20 x 4	RS232, I²C	25	6	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓						✓			✓			✓
LK204-25-USB	20 X 4	USB	25	6	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓						✓						
LK204-25-422	20 x 4	RS422	25	6	98.00 x 60.00 x 30.63	3.20 x 5.55	76.30 x 25.00	✓	✓	✓	✓	✓						✓			✓			✓
LK204-7T-1U*	20 x 4	RS232, I²C	7	9	140.20 x 38.00 x 29.00	3.90 x 5.20	82.00 x 28.40	✓	✓	✓						✓		✓		✓		✓		
LK204-7T-1U-USB*	20 x 4	USB	7	9	140.20 x 38.00 x 29.00	3.90 x 5.20	82.00 x 28.40	✓	✓	✓						✓		✓						
LK402-25	40 x 2	RS232, I²C	25	6	182.00 x 33.50 x 21.00	3.20 x 5.55	154.50 x 17.00	✓										✓			✓			✓
LK402-25-USB	40 x 2	USB	25	6	182.00 x 33.50 x 21.00	3.20 x 5.55	154.50 x 17.00	✓										✓						
LK402-25-422	40 X 2	RS422	25	6	182.00 x 33.50 x 21.00	3.20 x 5.55	154.50 x 17.00	✓										✓	✓		✓			
LK404-25	40 X 4	RS232, I²C	25	6	190.00 x 54.00 x 27.00	2.78 x 4.89	148.00 x 30.30	✓										✓			✓			✓

*Has 3 dual color LED indicator lights: Yellow, Green and Red :: Many other sizes are available on request, as well as custom designs.

Available Options

-E Extended Temperature
LCD -20° to +70° VFD -40° to +85°

-LV Low Voltage
3.3 Vdc

-V Extended Voltage
9-15 Vdc

-VPT Voltage Regulator
9-35 Vdc

Color Extensions

Extension	*XX	GW	WB	IY	R	FA	FB	FG	FW	FY	TCI
Text	Black	Light Blue	White	Yellow	Red	Amber	Blue	Green	White	Yellow	Tri Color
Background	Yellow/Green	Grey/White	Blue	Black	Black	Black	Black	Black	Black	Black	Black

* **XX** No Extension



LK204-25

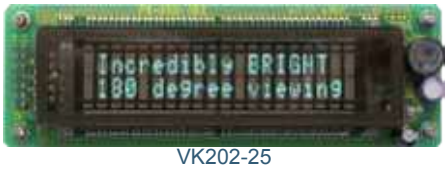


LK202-25-FW

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Character VFD Displays



VK202-25

Our Vacuum Fluorescent Displays (VFDs) have a longer life and are the brightest of displays. They do not suffer from performance effects due to varying temperature and they deliver a higher viewing angle. Control of modules has been simplified to a set of commands delivered via RS232, RS422, I²C or USB communication. Optional VFD Filters available to customize your display to coordinate with your application.

Part Number	Characters x Lines	Interface	Keypad	GPOs	Module Size L x W xT (mm)	Character Size L x W (mm)	Display Size L x W (mm)	Options -E	-V	-LV	-VPT	-V-E	-VPT-E
VFD2041	20 x 4	RS232, I²C	N/A	3	98.00 x 60.00 x 24.40	2.40 x 4.70	70.80 x 20.90	✓			✓		✓
VK162-12	16 x 2	RS232, I²C	12	7	80.00 x 36.00 x 27.67	2.46 x 4.76	51.36 x 11.40						
VK202-25	20 x 2	RS232, I²C	25	6	116.00 x 37.00 x 29.48	2.40 x 4.70	89.75 x 11.50	✓					
VK202-25-USB	20 x 2	USB	25	6	116.00 x 37.00 x 29.48	2.40 x 4.70	70.80 x 11.50	✓					
VK204-25	20 x4	RS232, I²C	25	6	98.00 x 60.00 x 24.40	2.40 x 4.70	70.80 x 20.90	✓			✓		✓
VK204-25-USB	20 x 4	USB	25	6	98.00 x 60.00 x 24.40	2.40 x 4.70	70.80 x 20.90	✓					
VK204-25-422	20 x 4	RS422	25	6	98.00 x 60.00 x 24.40	2.40 x 4.70	70.80 x 20.90				✓		

Available Options

-E Extended Temperature
LCD -20° to +70° VFD -40° to +85°

-LV Low Voltage
3.3 Vdc

-V Extended Voltage
9-15 Vdc

-VPT Voltage Regulator
9-35 Vdc

20x2 VFD Filters

Part Number	Description	Text Displays	Background Display
BLU202	Blue 20x2 VFD Filter	Blue	Dark Blue
GRN202	Green 20x2 VFD Filter	Green	Dark Green
GRY202	Grey 20x2 VFD Filter	Blue/Green	Dark Grey
RED202	Red 20x2 VFD Filter	White	Dark Red

20x4 VFD Filters

Part Number	Description	Text Displays	Background Display
BLU204	Blue 20x4 VFD Filter	Blue	Dark Blue
GRN204	Green 20x4 VFD Filter	Green	Dark Green
GRY204	Grey 20x4 VFD Filter	Blue/Green	Dark Grey
RED204	Red 20x4 VFD Filter	White	Dark Red



BLU202
GRN202
GRY202
RED202



BLU204
GRN204
GRY204
RED204

:: VFD Filters are available in 20x2 and 20x4 in Blue, Grey, Green and Red
:: Custom filters are available upon request

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Economy Series

Matrix Orbital's economy line of Liquid Crystal (LCD) and Vacuum Fluorescent displays (VFD) allow the ease of RS232 / TTL, I²C or USB Communication designed for high volume projects requiring a low cost, high value display. Features include software controlled backlight and contrast, 3 GPOs and the Martrix Orbital intelligence and ease of use we are famous for.

Character LCD Displays



MOU-AL202C-WB3SE

Matrix Orbital offers Liquid Crystal Displays in a variety of sizes and colors to suit any project. Is yours a high volume project and want to offer options? This is the display for you.

Part Number	Characters x Lines	Interface	GPOs	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)	Color Options YX	BW	WB	XY	XR	FA	FB	FG	FW
MOS-AL162A	16 X 2	RS232 / TTL	3	80.00 x 36.00 x 25.60	2.96 x 5.55	64.50 x 15.50	✓	✓	✓	✓	✓				
MOS-AL162F	16 X 2	RS232 / TTL	3	69.00 x 21.50 x 23.65	2.56 x 4.90	47.56 x 11.00	✓								
MOS-AL202C	20x 2	RS232 / TTL	3	116.00 x 37.00 x 26.75	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	
MOS-AL204B	20x 4	RS232 / TTL	3	146.00 x 62.50 x 25.60	4.84 x 9.22	123.50 x 43.00	✓								
MOS-AL242A	24x 2	RS232 / TTL	3	118.00 x 36.00 x 27.50	3.20 x 5.55	88.30 x 11.50	✓								
MOI-AL162A	16 x 2	I²C	3	80.00 x 36.00 x 25.60	2.95 x 5.55	64.50 x 15.50	✓	✓	✓	✓	✓				
MOI-AL202C	20 x 2	I²C	3	116.00 x 37.00 x 26.75	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	
MOI-AL204B	20x 4	I²C	3	146.00 x 62.50 x 25.60	4.84 x 9.22	123.50 x 43.00	✓								
MOI-AL242A	24x 2	I²C	3	118.00 x 36.00 x 27.50	3.20 x 5.55	88.30 x 11.50	✓								
MOU-AL162A	16 X 2	USB	3	80.00 x 36.00 x 25.60	2.96 x 5.55	64.50 x 15.50	✓	✓	✓	✓	✓				
MOU-AL202C	20 x 2	USB	3	116.00 x 37.00 x 26.75	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	
MOU-AL204B	20x 4	USB	3	146.00 x 62.50 x 25.60	4.84 x 9.22	123.50 x 43.00	✓								
MOU-AL242A	24x 2	USB	3	118.00 x 36.00 x 27.50	3.20 x 5.55	88.30 x 11.50	✓								

:: Many other sizes are available on request, as well as custom designs. * Please ask sales for the complete part number of your display to order.

Color Extensions

Extension	YX	BW	WB	XY	XR	FA	FB	FG	FW
Text	Black	White	Light Blue	Yellow	Red	Amber	Blue	Green	White
Background	Yellow/Green	Blue	Grey/White	Black	Black	Black	Black	Black	Black

Character VFD Displays



MOS-AV162A-NT3SE

Vacuum Fluorescent Displays (VFD's) can be easily configured to display a wide variety of customized messages. VFDs also have the advantage of being very robust, and are able to function normally in a variety of environments. Optional VFD Filters available to customize your display to coordinate with your application.

Part Number	Characters x Lines	Interface	GPOs	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)
MOS-AV162A-NT3SE	16 x 2	RS232 / TTL	3	80.00 x 36.00 x 27.03	2.46 x 4.76	51.36 x 11.40
MOS-AV202C-NT3SE	20 x 2	RS232 / TTL	3	116.00 x 37.00 x 27.50	2.40 x 4.70	70.80 x 11.50
MOI-AV162A-NT3IE	16 x 2	I²C	3	80.00 x 36.00 x 27.03	2.46 x 4.76	51.36 x 11.40
MOI-AV202C-NT3IE	20 x 2	I²C	3	116.00 x 37.00 x 27.50	2.40 x 4.70	70.80 x 11.50
MOU-AV162C-NT3SJ	16 x 2	USB	3	80.00 x 36.00 x 27.03	2.46 x 4.76	51.36 x 11.40
MOU-AV202C-NT3SJ	20 x 2	USB	3	116.00 x 37.00 x 27.50	2.40 x 4.70	70.80 x 11.50

* VFD Filters are available for 20x2 and 40x2 :: Custom filters are available upon request

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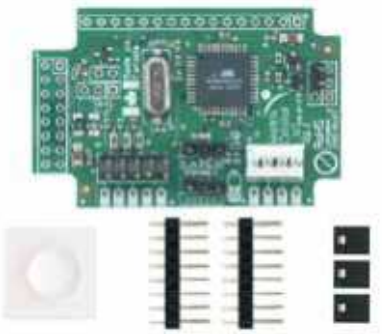
Interface Module

The X-Board is the simple solution for an economical interface board. Add Matrix Orbital's intelligence to your existing parallel character LCD or VFD for quick and easy prototyping. Features include Matrix Orbital's industry standard intelligence, 3 GPO's, software controlled back light and contrast, and supports a variety of interfaces. Use the S-Series for serial and TTL, the I-Series for I²C or the U-Series for USB.

X-Board S-Series / I-Series

The S-Series allows industry standard and proven RS232 or TTL communication at 9600 or 19,200 Kbps.

Part Number	Interface	GPOs	Module Size L x W xT (mm)
X-Board S-Series	RS232 / TTL	3	55.88 x 36.00 x 20.82
X-Board I-Series	I²C	3	55.88 x 36.00 x 20.82



X-Board S-Series

The I-Series allows up to 8 displays to be daisy chained for multiple displays on a single communication line.

X-Board U-Series

The U-Series is the simplest X-Board to use, as it uses a single cable for data and power. Under windows,this X-Board creates a virtual comport for simple USB communication.

Part Number	Interface	GPOs	Module Size L x W xT (mm)
X-Board U-Series	USB	3	55.88 x 36.00 x 20.82



X-Board U-Series

Features

- 8 user definable custom characters
- S-Series is RS232 or TTL Compatible (Jumper Selectable)
- I-Series is I²C compatible and allows up to 8 units
- U-Series is standard USB
- Ability to add a customized splash / startup screen
- 4 levels of software controlled brightness for a VFD display
- 32 levels of software controlled contrast for a LCD display
- 3 general purpose outputs for a variety of applications
- Horizontal or vertical bar graphs
- Medium digit capability on applicable displays
- Large digit capability on applicable displays (a display that consists of 4 rows)

Characters x Lines

8 x 1
8 x 2
16 x 1
16 x 2
20 x 2
24 x 2
20 x 4

Our X-Boards are compatible with most of these display sizes

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Parallel Series

Matrix Orbital MOP-Series consists of a multitude of parallel display options to enhance your product. With our large variety of colors and our ability to produce custom displays we are committed to helping you succeed to get your product noticed. We offer competitive pricing on all our parallel modules and have the lowest lead times in the industry to save you time and money!

Character LCD Displays



MOP-AL162A-BYFY

Our high quality alphanumeric parallel displays feature industry compatible HD44780 4/8 bit controller.

Part Number	Characters x Lines	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)	Color Options: BYFY	BBTW	BGFW	BTTY	BBTR	BFTA	BFTB	BFTG	BFTW	BYRN
MOP-AL082B	8 x 2	58.00 x 32.00 x 14.0	2.96 x 5.56	38.00 x 16.00	✓	✓	✓	✓	✓					
MOP-AL162A	16 x 2	80.00 x 36.00 x 14.00	2.95 x 5.55	64.50 x 15.50	✓	✓	✓	✓	✓				✓	
MOP-AL202C	20 x 2	116.00 x 37.00 x 14.50	3.20 x 5.55	83.00 x 18.60	✓	✓	✓		✓	✓	✓	✓	✓	
MOP-AL204A	20 x 4	98.00 x 60.00 x 15.00	4.75 x 2.95	25.20 x 76.00	✓	✓	✓	✓	✓					
MOP-AL204B	20 x 4	146.00 x 62.50 x 13.00	4.84 x 9.22	123.50 x 43.00	✓									
MOP-AL242A	20 x 4	118.00 x 36.00 x 14.00	3.20 x 5.55	93.50 x 16.00	✓									
MOP-AL402A	40 x 2	182.00 x 33.50 x 13.00	3.20 x 5.55	154.50 x 17.00	✓									
MOP-AL404C	40x 4	190.00 x 54.00 x 14.00	4.89 x 2.78	148.00 x 30.30	✓									

:: Many other sizes are available on request, as well as custom designs.
* Please ask sales for the complete part number of your display to order

Color Extensions

Extension	BYFY	BBTW	BGFW	BTTY	BBTR	BFTA	BFTB	BFTG	BFTW	BYRN
Text	Black	White	Light Blue	Yellow/Green	Red	Amber	Blue	Green	White	Black
Background	Yellow/Green	Blue	Grey/White	Black	Black	Black	Black	Black	Black	N / A

Character VFD Displays



MOP-AV204A-BNNN

Our high quality alphanumeric parallel displays feature industry compatible HD44780 4/8 bit controller. Combine it with our X-board S-series to get your project off the ground faster..

Part Number	Characters x Lines	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)
MOP-AV162A-BNNN	16 x 2	80.00 x 30.00 x 11.68	4.70 x 2.40	70.80 x 11.50
MOP-AV202C-BNNN	20 x 2	116.00 x 37.00 x 15.00	5.40 x 2.40	70.80 x 11.50
MOP-AV204A-BNNN	40 x 2	98.00 x 60.00 x 12.80	4.70 x 2.40	70.80 x 20.90

* VFD Filters are available for 20x2 and 40x2
:: Custom filters are available upon request * Please ask sales for the complete part number of your display to order

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Parallel Series

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Graphic LCD Displays



MOP-GL24064A-BBTW

Part Number	Characters x Lines	Module Size L x W x T (mm)	Display Size L x W (mm)	Color Options BYFY	BBTW	BGFW	BWFW	BBFB	BSSX
MOP-GL12232B	32 x 122	84.00 x 44.00 x 10.00	80.00 x 36.00			✓			
MOP-GL12232D	32 x 122	65.80 x 27.00 x 12.00	60.20 x 18.00		✓	✓			
MOP-GL12864F	64x 128	75.00 x 52.70 x 8.00	60.00 x 32.60		✓				
MOP-GL240128D	128 x 240	144.00 x 104.00 x 16.00	114.00 x 64.00	✓	✓		✓		
MOP-GL24064A	64 x 240	180.00 x 65.00 x 16.00	132.20 x 39.20	✓		✓		✓	
MOP-GL24064R	64 x 240	144.00 x 144.00 x 16.00	93.00 x 24.00				✓	✓	✓

:: Many other sizes are available on request, as well as custom designs.
* Please ask sales for the complete part number of your display to order

Color Extensions

Extension	BYFY	BBTW	BGFW	BWFW	BBFB	BSSX
Text	Black	White	Light Blue	Blue	White	Multiple
Background	Yellow/Green	Blue	Grey/White	Grey	Blue	Black

Graphic Touchscreen


MOP-GLT240128D-BGFW

Touch screen graphic LCDs display graphics and text in any font, style, justification and language, all with the convenience of a touch screen. Beautiful, easy and fun to use interfaces, all without the need of a keypad. When the touch screen is pressed, you can have the X and Y location sent, or have the on-screen keyboard displayed and touched keys are sent through the serial port. A great looking user interface in no time at all!

Our high quality graphic parallel displays feature industry compatible T6963 8 bit controller.

Part Number	Characters x Lines	Module Size L x W x T (mm)	Display Size L x W (mm)	Display Color (Text / Background)
MOP-GLT240128D-BBTW	128 x 240	144.00 x 104.00 x 16.00	114.00 x 11.50	White / Blue
MOP-GLT240128D-BGFW	128 x 240	144.00 x 104.00 x 16.00	70.80 x 11.50	Light Blue / Grey/White
MOP-GLT240128D-BYFY	128 x 240	144.00 x 104.00 x 16.00	70.80 x 20.90	Black / Yellow/Green

- Our Graphic LCD Touch Panel provides you with a cost effective user interface solution for that great product/project you are developing.
- Full touch screen, no keypad needed
- RS232, RS422,I2C or USB interface available
- On board memory for Fonts and Bitmaps

:: Many sizes are available on request, as well as custom designs

* Please ask sales for the complete part number of your display to order

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Accessories

Take your project to the next level with Matrix Orbital's easy to use accessories. Complete your display package quickly and effectively with a wide range of accessory options. Custom cables available to order on demand. We are happy to help create a custom cable to help you overcome any design obstacles you may encounter during your project development.

Communication | Power Cables



EXTMUSB3FT

Communication and Power

Part Number	Description
SCCPC5V	Serial Communication/ Power 5V Compatible with any MOS or LK/ VK Display, LCD/VFD Series, GLK12232-25/ GLK12232-25-SM, GLK19264-7T-XX Rev.1.1
ESCCPC5V	External communication and power cable with flow control, 2ft long Compatible with GTT, GLT/GLK24064, GLT/GLK240128, GLT / GLK24064R-XX-1U

Power

Part Number	Description
PC12V	Power Cable 12V
PC5V	Power Cable 5V
PCS	Power Cable Standard
PCUSB	Power Cable USB

Communication

Part Number	Description
BBC	Breadboard Cable
BBPDC	Breadboard Parallel Development Cable
CCS1FT	Serial 1ft Cable
CCS4FT	Serial 4ft Cable
EXTMUSB3FT	External A - B 3ft Mini USB Cable
INTMUSB3FT	Internal Mini USB 3ft Cable

VFD Filters



VK202-25 with RED202

VFD Filters are available in 20x2 and 20x4 in Blue, Grey, Green and Red for greater readability in a variety of lighting conditions, and to coordinate with your application.

20x2 VFD Filters

Part Number	Description	Text Displays	Background Display
BLU202	Blue 20x2 VFD Filter	Blue	Dark Blue
GRN202	Green 20x2 VFD Filter	Green	Dark Green
GRY202	Grey 20x2 VFD Filter	Blue/Green	Dark Grey
RED202	Red 20x2 VFD Filter	White	Dark Red

20x4 VFD Filters

Part Number	Description	Text Displays	Background Display
BLU204	Blue 20x4 VFD Filter	Blue	Dark Blue
GRN204	Green 20x4 VFD Filter	Green	Dark Green
GRY204	Grey 20x4 VFD Filter	Blue/Green	Dark Grey
RED204	Red 20x4 VFD Filter	White	Dark Red



BLU202



GRY202



GRN202



RED202



BLU204



GRY204



GRN204



RED204

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Accessories

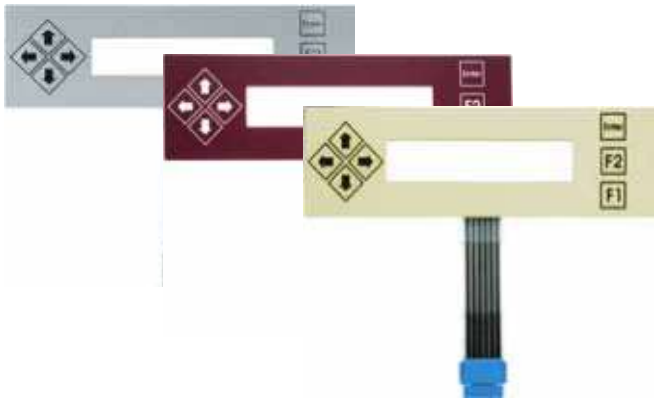
Take your project to the next level with Matrix Orbital's easy to use accessories. Complete your display package quickly and effectively with a wide range of accessory options.

Keypad

Keypad overlays can be combined with a variety of displays to add programmable buttons to your project



KPP202A-BK



Keypad

Part Number	Description
KPP202A	Beige 7 Button Keypad Overlay for use with LK/VK202
KPP202A-BK	Black 7 Button Keypad Overlay for use with LK/VK202
KPP202A-DR	Dark Red 7 Button Keypad Overlay for use with LK/VK202
KPP202A-SK	Silver 7 Button Keypad Overlay for use with LK/VK202
KPP204A	Beige 15 Button Keypad Overlay for use with LK/VK204
KPP204A-BK	Black 15 Button Keypad Overlay for use with LK/VK204
KPP4X4	Black 4x4 Keypad compatible with most displays

Mounting | Overlay

We offer sleek and durable coated rust-resistant steel mounting brackets in a variety of colors with mounting screws and washers. Mounting overlays come in an easy to use package including everything you require: self-adhesive overlay, adhesive cut and drill guide and all necessary screws, nuts, spacers and washers.


B19264-BK

Mounting Bracket

Part Number	Description
B19264-BK	Black Steel Mounting Bracket for use with GLK19264-7T-1U and LK204-7T-1U
B2021-AL	Brushed Aluminum Mounting Bracket for use with LK/VK202-25
B2021-BK	Black Vinyl Mounting Bracket for use with LK/VK202-25
B2021-BL	Black Aluminum Mounting Bracket for use with LK/VK202-25
B202A	Steel Mounting Bracket With Beige Keypad Overlay for use with LK/VK202-25
B202A-BK	Steel Mounting Bracket With Black Keypad Overlay for use with LK/VK202-25
B202A-DR	Steel Mounting Bracket With Dark Red Keypad Overlay for use with LK/VK202-25
B202A-SK	Steel Mounting Bracket With Silver Keypad Overlay for use with LK/VK202-25
B2041	Beige Mounting Bracket for use with LK/VK204-25, LCD2041, GLK12232-25
B2041-AL	Brushed Aluminum Mounting Bracket for use with LK/VK204-25, LCD2041, GLK12232-25
B2041-BK	Black Vinyl Mounting Bracket for use with LK/VK204-25, LCD2041, GLK12232-25
B2041-BL	Black Aluminum Mounting Bracket for use with LK/VK204-25, LCD2041, GLK12232-25
B24064-BK	Black Steel Mounting Bracket for use with GLK24064R-25-1U-XX
B204A	Beige Vinyl Mounting Bracket for use with LK/VK204-25, LK/VK204-25-USB, GLK12232-25
B204A-BK	Black Vinyl Mounting Bracket for use with LK/VK204-25, LK/VK204-25-USB, GLK12232-25

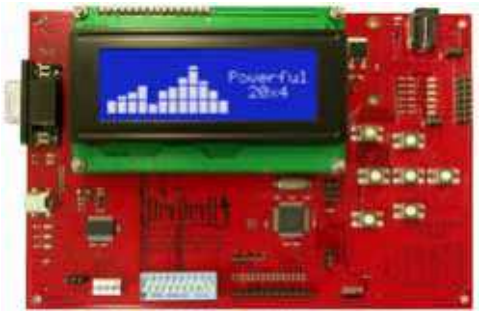
Mounting Overlay

Part Number	Description
MK2021	Beige Vinyl Overlay
MK2021-AL	Brushed Aluminum Overlay
MK2021-BK	Black Vinyl Overlay
MK2021-BL	Black Aluminum Overlay
MK2041	Beige Vinyl Overlay
MK2041-AL	Brushed Aluminum Overlay
MK2041-BK	Black Vinyl Overlay
MK2041-BL	Black Aluminum Overlay

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DevDevil Development Board



DD-DB1-AL204A-WB

Development Made Easy! The Matrix Orbital DevDevil is a product development board which provides all of the functionality of an alphanumeric display in a project development friendly package. A variety of color options are offered for both the 20 characters by 2 lines and 20 characters by 4 lines display models. The DevDevil opens the door to a world of exciting display possibilities!

Package includes:

- One 20x2 or 20x4 LCD or VFD display
- Mini-USB onboard connector with USB cable
- 6 general purpose outputs (GPOs) or 6 LEDs
- Dallas one wire support
- 7 physical buttons
- 5 x 5 keypad matrix input found on their production counterparts

:: RS232, USB, TTL, and I²C protocols offered through a dynamic switch block, standard headers for all protocols are offered on the board, as well as a variety of input power options.
:: Powering up the DevDevil can be as easy as connecting to the mini-USB connector on board. Alternate power options include an AC adapter, power through the DB9 header, and 4 pin data/power input.

Part Number	Characters x Lines	Display Type	Display Size L x W (mm)	Module Size L x W (mm)	Color Options	
					Background	Text
DD-DB1-AL202C	20 x 2	LCD	83.0 x 18.6	167.64 x 117.76 x 25.73	Yellow/Green	Black
DD-DB1-AL202C-GW	20 x 2	LCD	83.0 x 18.6	167.64 x 117.76 x 25.73	White	Grey
DD-DB1-AL202C-WB	20 x 2	LCD	83.0 x 18.6	167.64 x 117.76 x 25.73	Blue	White
DD-DB1-AL202C-FW	20 x 2	LCD	83.0 x 18.6	167.64 x 117.76 x 25.73	Black	White
DD-DB1-AL202C-FB	20 x 2	LCD	83.0 x 18.6	167.64 x 117.76 x 25.73	Black	Blue
DD-DB1-AL202C-IR	20 x 2	LCD	83.0 x 18.6	167.64 x 117.76 x 25.73	Black	Red
DD-DB1-AL204A	20 x 4	LCD	76.0 x 25.2	167.64 x 117.76 x 27.50	Yellow/Green	Black
DD-DB1-AL204A-WB	20 x 4	LCD	76.0 x 25.2	167.64 x 117.76 x 27.50	Blue	White
DD-DB1-AL204A-GW	20 x 4	LCD	76.0 x 25.2	167.64 x 117.76 x 27.50	White	Grey
DD-DB1-AL204A-IY	20 x 4	LCD	76.0 x 25.2	167.64 x 117.76 x 27.50	Black	Yellow
DD-DB1-AV202C	20 x 2	VFD	83.0 x 18.6	167.64 x 117.76 x 27.50	Black	Blue/Green
DD-DB1-AV204A	20 x 4	VFD	76.0 x 25.2	167.64 x 117.76 x 27.50	Black	Blue/Green

Accessories

:: DevDevil Cable Kit DD-PASC-PKG includes AC Power Adapter and 4ft Serial Cable.
:: VFD Filters are available in 20x2 and 20x4 in Blue, Grey, Green and Red. Increase readability in a variety of lighting conditions and coordinate with your application.

:: Optional accessories available to purchase for use in specific applications.

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PC Bay Inserts Series

Character LCDs PC Bay Inserts



BLC2041-BK-XX

Matrix Orbital is the original manufacturer of PC Bay Inserts for PC's. We have developed a 5¼" PC drive bay insert with display in response to customer demand for an effortless way to mount our serial displays in PCs. The inserts were designed as a light weight, high quality product. Using coated rust-resistant steel for the mounting bracket and a Lexan face plate, these inserts will stand up to everyday wear-and-tear. Our PC inserts are available in two sizes: single 5¼" drive bay size with keypad overlay and a double 5¼" drive bay size as well as in black, brushed aluminum, or beige!

Part Number	Characters x Lines	Interface	Keypad	GPOs	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)	Color Options									Options			
								*XX	GW	WB	IY	R	FA	FB	FG	FW	TCI	-E	-V	-LV	-LV-E
BLC2021-AL -BK -BL	20 x 2	RS232, I²C	25	6	116.00 x 37.00 x 25.73	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			
BLC2021-AL-USB -BK-USB -BL-USB	20 x 2	USB	25	6	116.00 x 37.00 x 25.73	3.20 x 5.55	83.00 x 18.60	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			
BLC2041-XX -AL -BK -BL	20 x 4	RS232, I²C	25	6	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓							✓			
BLC2041-XX-USB -AL-USB -BK-USB -BL-USB	20 x 4	USB	25	6	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓						✓				
BLK202A-XX -S -BK	20 x 2	RS232, I²C	7	6	116.00 x 37.00 x27.50	3.20 x 5.55	82.20 x 18.20	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			
BLK202A-XX-UBS -S-USB -BK-USB	20 x 2	USB	25	6	116.00 x 37.00 x27.50	3.20 x 5.55	82.20 x 18.20	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			
BLK204A-XX -BK	20 x 4	RS232, I²C	14	6	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓							✓			
BLK204A-XX-USB -BK-USB	20 x 4	USB	25	6	98.00 x 60.00 x 27.50	2.95 x 4.75	76.00 x 25.20	✓	✓	✓	✓	✓							✓			
BLK204-7T-1U-BK*	20 x 4	RS232, I²C	7	6	140.20 x 38.00 x 29.00	3.90 X 5.20	82.00 x 28.40	✓	✓	✓							✓		✓		✓	✓
BLK204-7T-1U-BK-USB*	20 x 4	USB	7	6	140.20 x 38.00 x 29.00	3.90 X 5.20	82.00 x 28.40	✓	✓	✓							✓		✓			

*Has 3 dual color LED indicator lights: Yellow, Green and Red * Please ask sales for the complete part number of your display to order

Available Options

-E Extended Temperature
LCD -20° to +70° VFD -40° to +85°

-LV Low Voltage
3.3 Vdc

-V Extended Voltage
9-15 Vdc

-VPT Voltage Regulator
9-35 Vdc

Mounting Bracket Extensions

Extension	*XX	AL	BK	BL	S
Type	Beige Viny	Brushed Aluminum	Black Vinyl	Black Aluminum	Silver Vinyl

* **XX** No Extension

Color Extensions

Extension	*XX	GW	WB	IY	R	FA	FB	FG	FW	FY	TCI
Text	Black	Light Blue	White	Yellow	Red	Amber	Blue	Green	White	Yellow	Tri Color
Background	Yellow/Green	Grey/White	Blue	Black	Black	Black	Black	Black	Black	Black	Black

* **XX** No Extension

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PC Bay Inserts Series

Character VFDs PC Bay Inserts

Matrix Orbital providescomplete Drive Bay mounting kits. In one of these kits you receive the following: VFD Module , PC Bay Insert , A Wide Voltage unit , Screws, Serial and Power Cable When you order the PC Drive Bay Insert kit, it does come pre-assembled so you only need a Philips screw driver to put it inside your computer.



BVK202A-BK-XX

Part Number	Characters x Lines	Interface	Keypad	GPOs	Module Size L x W x T (mm)	Character Size L x W (mm)	Display Size L x W (mm)	Background Color x Text	Options -E	-V	-LV	-LV-E
BVC2021-AL -BK	20 x 2	RS232, I²C	25	6	116.00 x 37.00 x 27.50	3.20 x 5.55	82.20 x 18.20	Black x Blue/Green		✓		
BVK202A-XX -BK -S	20 x 2	RS232, I²C	25	6	116.00 x 37.00 x 25.73	3.20 x 5.55	82.20 x 18.20	Black x Blue/Green		✓		

: Many other sizes are available on request. as well as custom designs. *Please ask sales for the complete part number of your display to order

Graphic LCDs PC Bay Inserts

Matrix Orbital providescomplete Drive Bay mounting kits. In one of these kits you receive the following: LCD Module , PC Bay Insert , A Wide Voltage unit , Screws , Serial and Power Cable When you order the PC Drive Bay Insert kit, it does come pre-assembled so you only need a Philips screw driver to put it inside your computer



BGK19264-BK-XX

Part Number	Pixels	Interface	Keypad	GPOs	Module Size L x W x T (mm)	Display Size L x W (mm)	Color Options *XX	FGW	WB	Options -E	-V	-LV	-VPT	-LV-E	-LV-E	-VPT-E
BGK19264-BK	192 x 64	RS232, I²C	7	6	144.00 x 38.00 x 33.00	82.00 x 28.40	✓	✓	✓	✓		✓			✓		
BGK19264-BK-USB	192 x 64	USB	7	6	144.00 x 38.00 x 33.00	82.00 x 28.40	✓	✓	✓	✓							
BGK24064R-BK	240 x 64	RS232, I²C	25	6	116.00 x 37.00 x 25.73	83.00 x 18.60			✓	✓	✓	✓	✓	✓	✓	✓	✓

*Has 3 dual color LED indicator lights: Yellow, Green and Red * Please ask sales for the complete part number of your display to order

Available Options

-E Extended Temperature
LCD -20° to +70° VFD -40° to +85°

-LV Low Voltage
3.3 Vdc

-V Extended Voltage
9-15 Vdc

-VPT Voltage Regulator
9-35 Vdc

Mounting Bracket Extensions

Extension	*XX	AL	BK	BL	S
Type	Beige Viny	Brushed Aluminum	Black Vinyl	Black Aluminum	Silver Vinyl

* **XX** No Extension

Color Extensions

Extension	*XX	GW	WB	IY	R	FA	FB	FG	FW	FY	TCI
Text	Black	Light Blue	White	Yellow	Red	Amber	Blue	Green	White	Yellow	Tri Color
Background	Yellow/Green	Grey/White	Blue	Black	Black	Black	Black	Black	Black	Black	Black

* **XX** No Extension

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