Product Change Notification

PCN No: 2010-10-08-01
Report Date: October 8, 2010
Subject: GLK24064-25 PCB Rev 4.0 New Board Revision Release

List of New Products:

GLK24064-25 PCB 4.0 including all applicable extensions and combinations

-WB, -FGW, -YG (display colour)
-VPT, -V, -E (power and temperature options)

Reason for Change:

The GLK24064-25 Matrix Orbital graphic module series have been upgraded to PCB Rev 4.0 to be able to unify display modules and offer new features and benefits.

Product Change:

The following list of hardware and firmware changes is all effective on all the variants of the GLK24064-25 as stated under 'List of New Products'. The old PCB 2.0 is now superseded by PCB Rev 4.0, and the old firmware version v6.0 is now superseded by v8.0. The changes are stated to compare the old and the new PCB revision.

Schedule of Change:

November 1, 2010

Hardware Changes:

1) Six general purpose outputs (GPOs) are offered by PCB Rev 4.0. PCB 2.0 does not offer any general purpose outputs.

2) The 'Protocol Select Jumpers' now come with USB and RS422 selections, allowing for the creations of -USB and -422 only units.

3) The 'Legacy Connector Jumper' (please see the PCB Rev 2.0 manual for details) offered on PCB Rev 2.0 has been eliminated on PCB Rev 4.0

4) A power LED is added to the PCB Rev 4.0 to indicate power through the display, which is good for troubleshooting and evaluation purposes.

5) A single Dallas 1-Wire connection is now offered on PCB Rev 4.0

6) An additional, alternate manual override header is now offered on PCB Rev 4.0 (R5 and C1 are still manual override)

7) An Alternate Serial Header may be populated for an added charge as part of a custom order.

8) Better ESD protection is offered on PCB Rev 4.0 by having extra optional ground jumps

9) Quadrupled EEPROM capacity is offered on PCB Rev 4.0. This means more fonts and bitmaps can be uploaded (from 16KB on PCB Rev 2.0, we now have 64KB capacity)

10) Added piezo buzzer that can be run at specified frequency and duration.

11) PCB Rev 4.0 now utilizes a new microcontroller running at higher frequency which results to a faster response time from the display; PCB Rev 2.0 offered 180ms time drawing a single 240x64 bitmap from external memory; the new PCB Rev 4.0 offers 26.8ms time to draw a single 240x64 bitmap from external memory. A jump of 600%

12) Optional CTS / RTS (hardware flow control) connection are added to the 4-pin data / communication connector (pins 5 and 6 respectively).

13) Brighter backlight for the YG displays, as we now use better components for the backlight circuitry.

14) There are minor changes on the PCB itself; the new PCB Rev 4.0 is slightly bigger, with minor connector location changes:

PCB Rev 2.0

PCB Rev 4.0
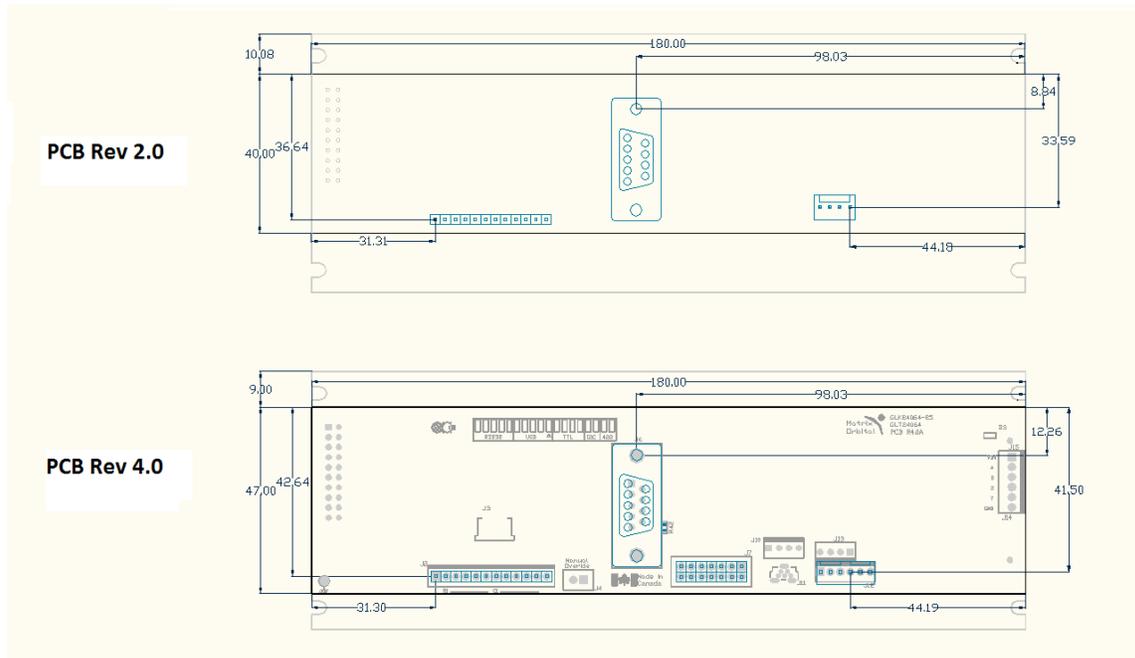
Please refer to
http://www.matrixorbital.ca/manuals/GLK_series/GLK24064-25
for the GLK24064-25 PCB 4.0 manual.

Firmware Changes:
Firmware version v8.0 (released October 15, 2010):

1) For display verification, a new command is added:
   Read Screen Command: 254 / 184
   This will make the display reply 1920 bytes (30 bytes per row, 64 rows)
   of data that defines the current image displayed on the screen. If a host
   application is written such that it will accept the replied data, the host
   application can then draw what is written on the screen.

2) For use of the piezo buzzer, a new command is added :
   Set Piezo Buzzer Command: 254 / 187 / <freq> / <time>
   Piezo buzzer will resonate at <freq> and for <time> specified.

3) For protocol flexibility, new commands are added / modified:
   Set Flow Control: 254 / 63 / <mode>
   where <mode>:
   0 - No flow control
   1 - Software flow control (associated cmds 254/60, 254/59, 254/58)
   2 - Hardware flow control (associated cmd 254/62)
   Set Flow Control Value Command: 254 / 60 / <On Value> / <Off Value>
   This command opens up the capability of Xon/Xoff flow control, which
   are values 0x011 / 0x13. Default is still the 0xFF, 0xFE.
   Set Hardware Flow Control Trigger Level: 254 / 62 / trigger level
   When hardware flow control is in effect, the trigger level can be set up on
   the microcontroller such that the trigger level determine how many
   receiver UART FIFO characters must be written before an interrupt
   request is activated. When the receiver FIFO level reaches the
   programmed trigger level, RTS is de-asserted (high) signaling the host to
   stop sending data.
   There are 4 options for the trigger level:
    0 - 1 character trigger level
    1 - 4 character trigger level
    2 - 8 character trigger level
    3 - 14 character trigger level (default value)

4) For use of the Dallas 1-wire connections, the following commands are

added:

Search for Dallas 1-Wire Devices: 254 / 200 / 2

Dallas 1-Wire Transaction: 254 / 200 / 1 / <transaction>

The preceding commands can be used to determine Dallas 1-Wire (non-parasitic) slave devices connected on the bus (cmd 200 / 2); and send device specific commands (cmd 200 / 1)

5) For ease of upgrades and necessary bug fixes, we now offer field upgradeable firmware.

6) List of New (or Changed) Commands:

Display Screen Control Command:

184: Read Screen

- new command, as described in item #1 under Firmware Changes

Piezo Buzzer Related Command:

187: Set Piezo Buzzer   - new command, as described in item #2

Protocol Related Command:

63: Set Flow Control Mode

60: Set Flow Control Value Command

62: Set Hardware Flow Control Trigger Level

- new commands, as described in item #3

Dallas 1-Wire Related Commands:

200 / 1: Search for Devices   - new command, as described in item #4

200 / 2: 1-Wire Transaction   - new command, as described in item #4

Please see the manual for in depth details.

Documentation Revision

Revision	Changes	Date	Author
1.0	Initial Release	10/08/10	R Malinis
1.1	Added mechanical drawing	01/04/10	R Malinis

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Reference Documents/Attachments:

Location: http://www.matrixorbital.ca/manuals/

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