
4.3" GEMmodule™

MK-480272C

Data Sheet

Introduction:

The MK-480272C is a fully integrated 4.3" WQVGA production color display module to support a variety of embedded control interface applications. Compatible with GEMstudio™ for quick and easy GUI design, these production-ready units support GIF, JPEG, PNG, and more graphic formats in 24-bit color, plus 8-bit alpha blending (transparency channel) found in high-end consumer electronic products.

Features:

- 480x272 TFT LCD - 16:9 (wide aspect ratio) display
- White LED backlight
- Integrated resistive touch panel
- Amulet GEM Graphical OS Chip™
- 24 Pin Interconnector
- Royalty-FREE Graphical Operating System
- On-Board memory - 32megabit Serial Flash for storing GUI pages
- Touch Panel Controller - Built into Graphical OS Chip™
- Color Supported - Up to 24bit + 8bit Alpha
- Graphics Supported - GIF, JPEG, PNG
- Backlight can be controlled via the touch panel or HTML command
- Supports Unicode - Foreign language character sets
- Font Converter - Built-in

General Specification

ITEM	STANDARD VALUE	UNIT
Pixels (Resolution)	480 x 272	dots
Outline dimension	105.5(H) x 67.2 (V) x4.0D	mm
Active area	95.04(H) x 53.856(V)	mm
Dot Pitch	0.198 x 0.198	mm
Luminance	350 Typ.	Cd/m ²
Operation Temp.	70 - 20	C
View Direction	6 o'clock	
Display Mode	TN / Transmissive / Normally White	
Backlight	10 White LED	
Backlight Control	PWM	
Data Flash	32 Megabit	
Interface	USB / RS232 / UART	

Electrical Characteristic

Recommended Operating Conditions

5V	5V Recommended
5V Current	300mA Min

DC Characteristics

V core Supply Current	22mA @1.2V
V input Low Level	-0.3 to 0.8V
V input High Level	2V to (V _{cc} + 0.3V)
Pull Up Resistors	70K to 175KOhms
IO Output Current	8mA
Static Current Excluding Power on Reset V core = 1.2V	600uA
Static Current Logic cells consumption, including Power on Reset and all input drivers V core = 1.2V	30uA

Pin Descriptions

Pin Type

I = Input

O = Output

P = Power Supply

Pin #	Signal	Type	Description
1	5V	P	5V @ 300mA
2	5V	P	5V @ 300mA
3	GND	P	Ground
4	GND	P	Ground
5	SCL	O	Serial Clock
6	SDA	O	Serial Data
7	COMMU RXD	I	CommU RXD UART
8	COMMU TXD	O	CommU TXD UART
9	PWM 1	O	Programmable Clock 1
10	PWM 2	O	Programmable Clock 2
11	Prog M	I	Program Mode - Float = Prog / GND = Run Note:1
12	PWM 0	O	Programmable Clock 0
13	RS232 TXD	O	TXD from RS232 Transceiver
14	T_CAL	I	Touch Panel Cal. - Float = Cal / GND = Normal Note:1
15	PROGU RXD	I	PROGU RXD UART
16	PROGU TXD	O	PROGU TXD UART
17	SPI C3	O	SPI Chip Select 3
18	RS232 RXD	I	RXD from RS232 Transceiver
19	SPI C2	O	SPI Chip Select 2
20			
21	MISO	O	SPI DATA In
22	SCLK	O	SPI Clock
23	RESET	O	System Reset by driving pin low
24	MOSI	O	SPI DATA Out

Note:1 Internally pulled up. Only pull to ground

Table 1. Header J3 24pin, 2mm, Hirose DF-11-24DP-2DSA

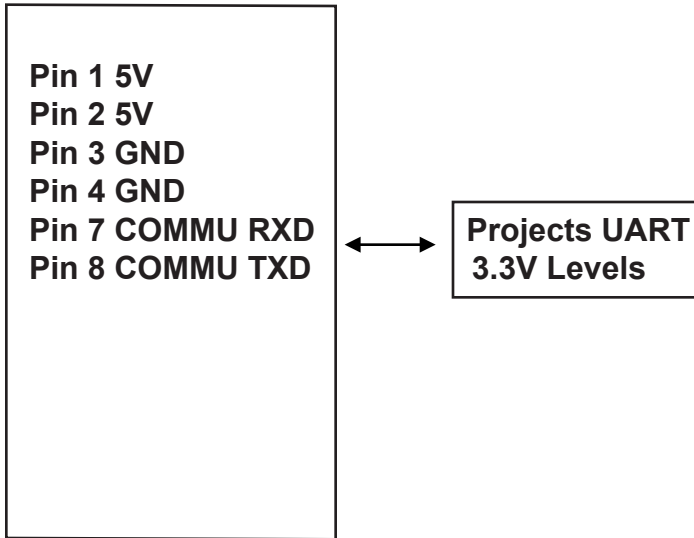
Mating Connectors

Hirose DF11-24DS-2R26 Straight
 DF11-24DS-2C Right Angle
 DF11-24DS-2DSA Board

JST PHDR-24VS

J3 Wiring

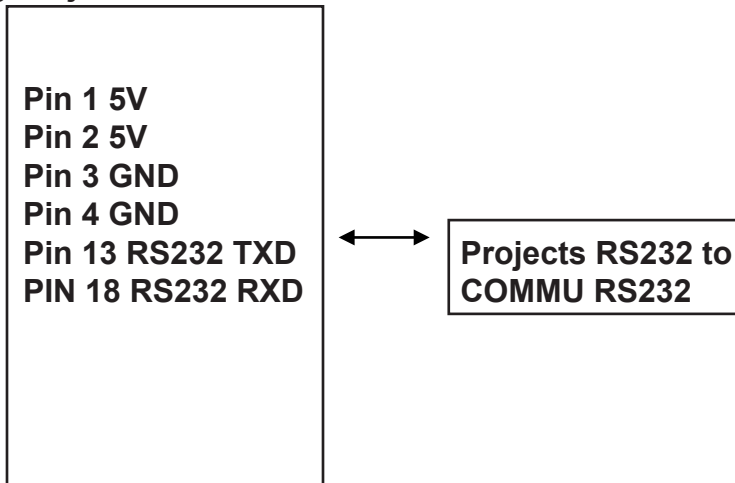
Connecting Project via UART



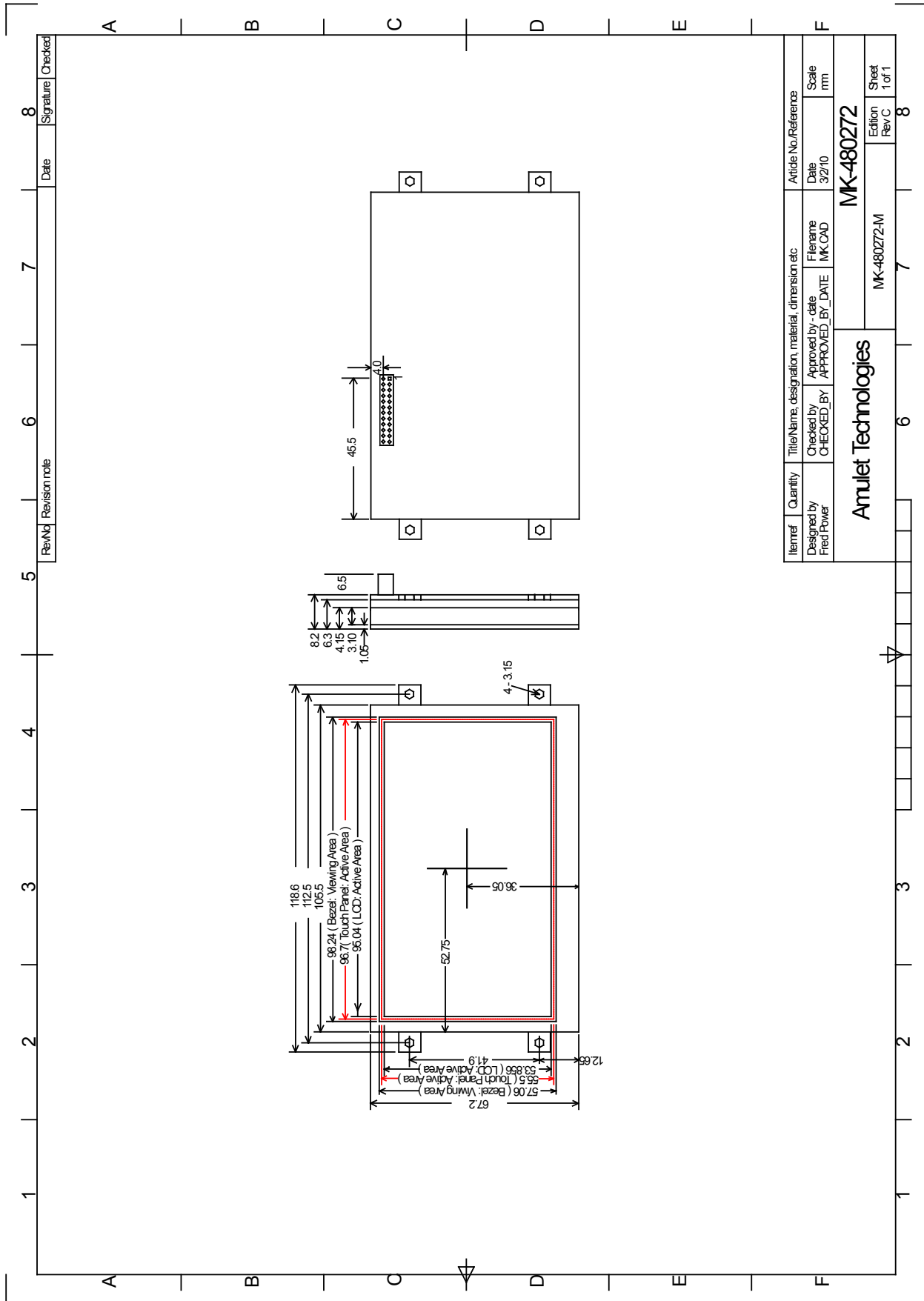
J3

Note: Cut Trace across SD and Jumper “D” side to C38 “8” side GND to take the RS232 Transceiver out of circuit.

Connecting Project via RS232



J3



Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by Fred Power	Checked by APPROVED BY	Approved by - date MK.OAD	Date 3/2/10
Amulet Technologies		File name MK.OAD	Scale mm
		MK-480272-M	MK-480272
		Revision Rev C	Sheet 1 of 1

Notes:

Communication and Program UARTs can be used for programming as well as for communication with the application's host processor.

If you wish to program via UART make sure you can get to the Reset and the Program Mode pins. These will only be needed if a serious programming issue occurs.

Pass-Through Programming information is available at our website under Field Update Utilities: <http://www.amulettechnologies.com/support/downloads/fieldupdates.html>.

Momentarily grounding reset with an open collector device or momentary switch will cause a reset. Reset must be applied after the Program Mode pin is changed for us to see it.



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