Amulet Technologies

Amulet Capacitive 4.3” GEMmodule™

MK-CY-043

Data Sheet

Preliminary

Introduction:

The MK-CY-043 is a 4.3” fully integrated, production ready color module with smartphone-like features. Using Cypress TrueTouch© technology, this capacitive touch panel supports multi-touch gestures and is easily programmed using GEMstudio™ software. A cover glass up to 6mm thick can be added to customize virtually any application. Featuring the Amulet GEM Graphical OS Chip™, the module supports a variety of embedded control interface applications and supports graphic formats including GIF, JPEG and PNG up to 24-bit color, plus 8-bit alpha (transparency channel).

Features:

•480x272 TFT LCD module with projected capacitive touch (Cypress TrueTouch© Controller)
•Amulet GEM Graphical OS Chip™ with Royalty-free Graphical Operating System™
•Quick and flexible GUI design with GEMstudio™ software development tool
•On-Board Memory - 32megabit serial flash for storing GUI pages
•Backlight – White LED can be controlled via the touch panel or serial command
•Color Supported- up to 24 bit plus 8 bit alpha channel
•Graphics Supported Include- GIF, JPEG, PNG, BMP, and more
•Supports Unicode - Foreign language character sets
•Touch panel supports multitouch gestures
•Customizable cover glass up to 6mm thick to support virtually any application

General Specifications

ITEM	STANDARD VALUE	UNIT
Pixels (Resolution)	480 x 272	dots
Outline Dimension	111(H) x 78.4 (V) x17D	mm
Active rea	95.04(H) x 53.856(V)	mm
Dot Pitch	0.198 x 0.198	mm
Luminance	350 Typ.	Cd/m2
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 Characteristics

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 (Vcc + 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	no connection		
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

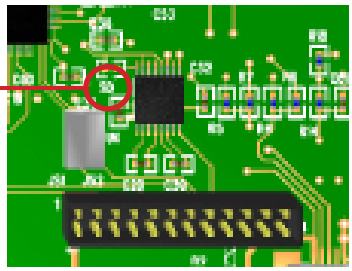
J3 Wiring

Connecting Project via UART

Pin 1 5V
Pin 2 5V
Pin 3 GND
Pin 4 GND
Pin 7 COMMU RXD
Pin 8 COMMU TXD

↔

Projects UART
3.3V Levels



J3

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

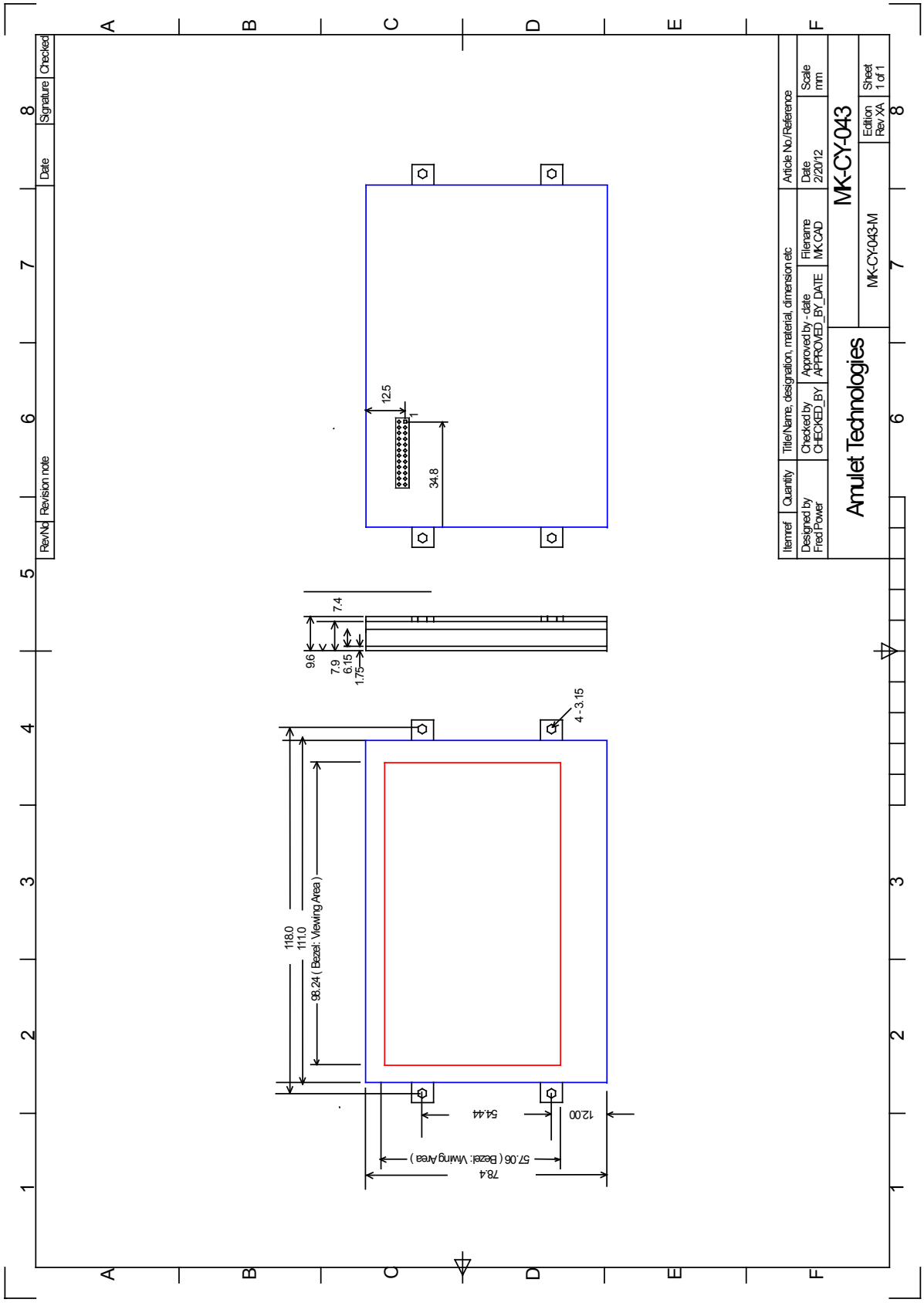
Connecting Project via RS232

Pin 1 5V
Pin 2 5V
Pin 3 GND
Pin 4 GND
Pin 13 RS232 TXD
PIN 18 RS232 RXD

↔

Projects RS232 to
COMMU RS232

J3


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MK-CY-043
MK-CY-043-M
Designed by Fred Power
Checked by CHECKED_BY
Approved by - date APPROVED_BY_DATE
Filename MK.CAD
Date 2/20/12
Scale mm
Edition Rev XA
Sheet 1 of 1
12.5
1
34.8
7.4
9.6
7.9
6.15
1.75
4 - 3.15
118.0
111.0
98.24 (Bezel: Viewing Area)
54.44
12.00
57.06 (Bezel: Viewing Area)
78.4

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.

To switch the module into Program Mode, reset must be applied after the DIP switch has been toggled.



Tel (408) 374-4956
Fax (408) 374-4941
http://www.AmuletTechnologies.com
Sales@AmuletTechnologies.com
Support@AmuletTechnologies.com
1475 S. Bascom Ave., Suite 111
Campbell, CA 95008 USA

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Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9