Amulet Technologies

7” GEMmodule™

MK-070R

Data Sheet

PRELIMINARY

Introduction:
The MK-070R is a fully integrated 7” WVGA production color display module to support a variety of embedded control interface applications. Featuring the Amulet GEM Graphical OS Chip™ for color displays, the module can be easily programmed using GEMstudio™, the easiest GUI design tool in the embedded space.

Features:
- 800x480 WVGA TFT LCD
- White LED backlight
- Integrated resistive touch panel
- Amulet GEM Graphical OS Chip™
- 24 Pin Interconnector
- Royalty-free Graphical Operating System™
- On-Board memory - 64Mb Serial Flash for storing GUI pages
- Touch Panel Controller - Built into Graphical OS Chip™
- Color Supported - Palettized 8bit (1-bit alpha)
- Backlight can be controlled via the touch panel or external command
- Supports Unicode - Foreign language character sets
- Font Converter - Built-in

General Specification

ITEM	STANDARD VALUE	UNIT
Pixels (Resolution)	800 X 480	dots
Outline dimension	164.9(H) x 100(V) x TBD(D)	mm
Active area	154.8(H) x 85.92(V)	mm
Pixel Size	0.1929 x 0.179	mm
Luminance	350 Typ.	Cd/m2
Operation Temp.	70 - 20	C

View Angle	12 O'Clock
Display Mode	TM, NW
Backlight	24 White LED
Backlight Control	PWM
Data Flash	64 Megabit
Interface	USB / RS232 / UART

Electrical Characteristic

Recommended Operating Conditions

5V	5V Recommended
5V Current	TBD 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

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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

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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

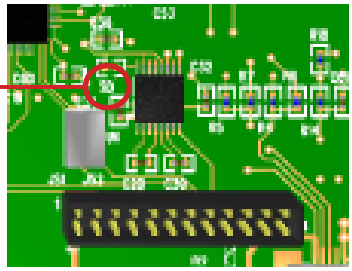
J3 Wiring

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

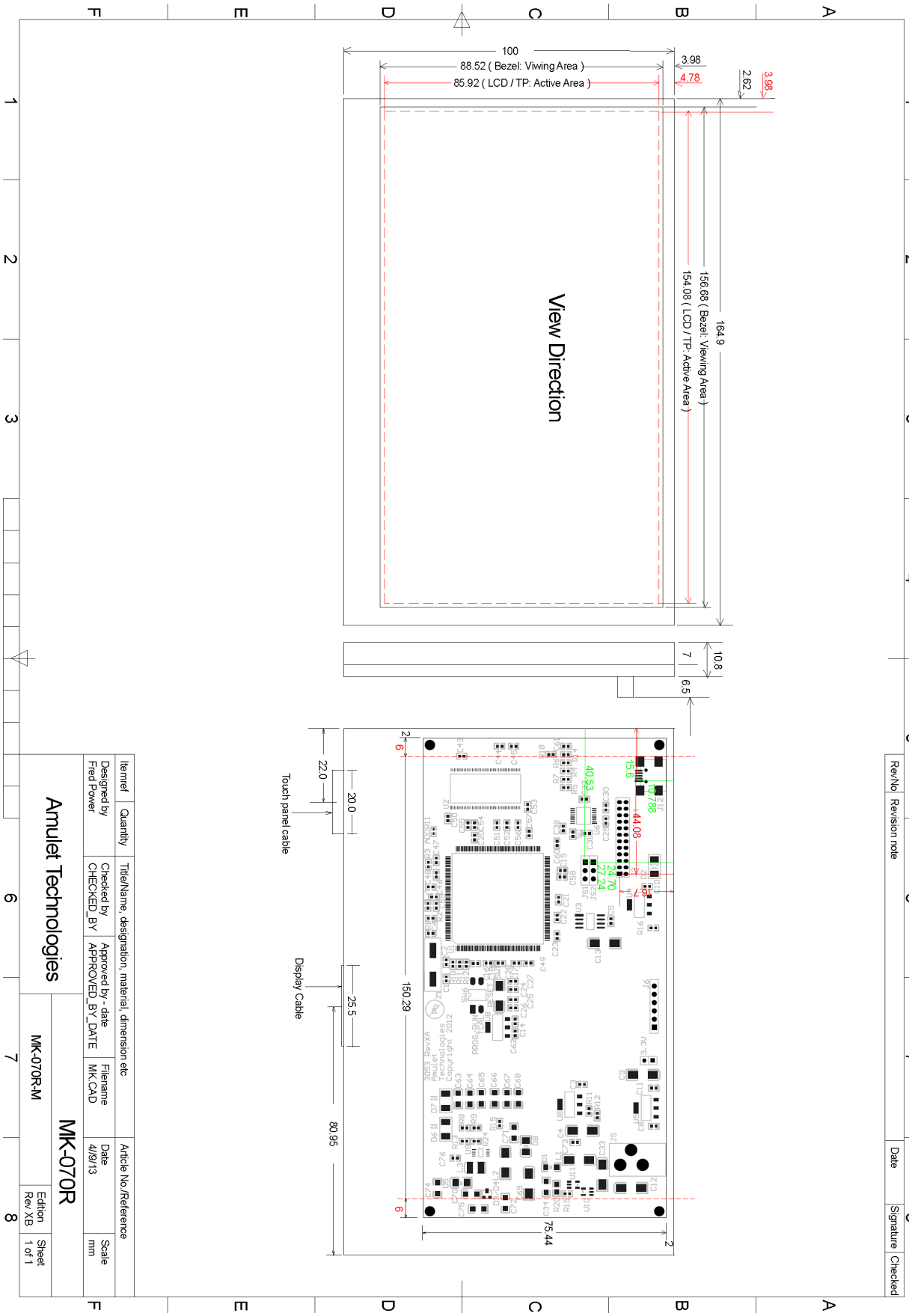
Pin 1 5V
Pin 2 5V
Pin 3 GND
Pin 4 GND
Pin 13 RS232 TXD
PIN 18 RS232 RXD

↔

Projects RS232 to
COMMU RS232

J3

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100
88.52 (Bezel: Viwing Area)
85.92 (LCD / TP: Active Area)
3.98
4.78
2.62
3.98
View Direction
164.9
156.68 (Bezel: Viewing Area)
154.08 (LCD / TP: Active Area)
10.8
7
6.5
22.0
20.0
Touch panel cable
Display Cable
25.5
80.95
150.29
75.44
40.53
44.08
24.70
27.24
Amulet Technologies
MK-070R
MK-070R-M
Item/ref
Quantity
Title/Name, designation, material, dimension etc
Article No./Reference
Designed by Fred Power
Checked by CHECKED_BY
Approved by - date APPROVED_BY_DATE
Filename MK.CAD
Date 4/9/13
Scale mm
Edition Rev XB
Sheet 1 of 1
Rev.No
Revision note
Date
Signature
Checked

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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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Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
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Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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