



# **M1 OEM KIT**

## **Quick Start Guide**

February 2005

PN CA....  
Rev. 4

Former PN CA1250  
Videodriver: replaces RS4: replaces SKU 0101  
Comsonics: PN CA-----  
Jul. 20, 05

## OEM PINOUTS OVERVIEW

The board will operate with a 2.7V to 5.5V power supply (not included). Also, it can be powered by three 1.5V batteries (not included). The board is approximately 0.924 inches x 0.753 inches and weighs 3 grams.

The diagram shows the connections for video input and power for the module as well as the backlight connections. The display ribbon cable is placed in the connector J2 with the contacts up.

### Connector J1

1	Power In
2	Power Ground
3	Video In
4	Video Ground

### Connector J2

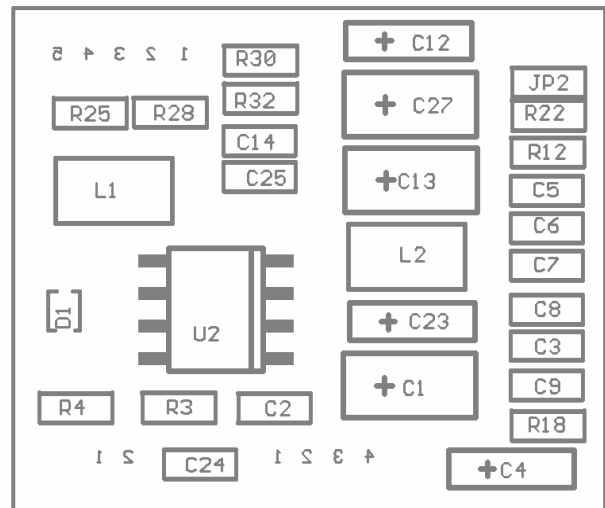
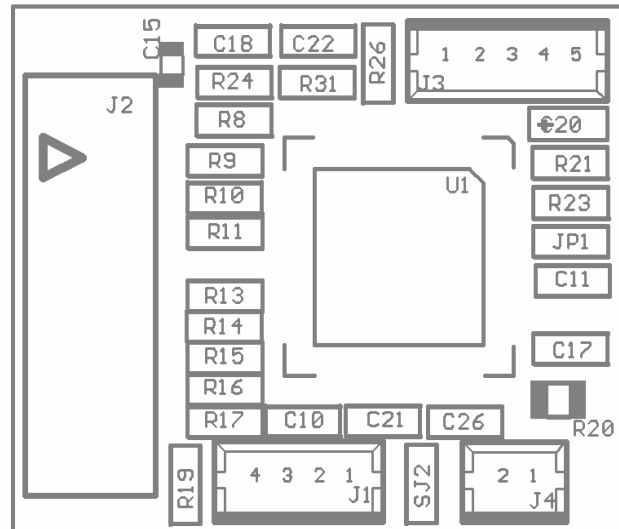
1	NC
2	PDRN
3	VIDHI
4	VCKN
5	VPLN
6	HODL
7	VBAT
8	VCOM
9	VEE
10	VDD
11	GND
12	VREF
13	HPLN
14	HCLKN
15	RENEN
16	RENON
17	VIDLO
18	GND
19	NC
20	NC

### Connector J3

1	Gamma Bias
2	Black Level
3	Gain
4	VCC
5	Ground

### Connector J4

1	Backlight Power
2	Backlight Ground





## **CyberDisplay 320 Monochrome with the OEM Module**

This module allows a developer to use the RS170 video source to drive a Kopin CyberDisplay 320M.

The board contains all the circuitry necessary to display the image onto the 320 x 240 (QVGA) display. Internal switching power supplies provide all the voltages necessary to operate the display from a single input voltage.

### **Video Source Format**

The board is sent out with the setting for RS170 video format in NTSC. The board can process RS170 video format in PAL. To make changes in video format, the solder bridge or resistor at JP2 must be removed.

### **Backlight Connections**

This connection passes the voltage to the backlight thru wires from the J4 connector. This connection provides high brightness to the backlight.

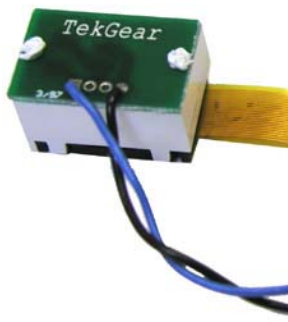
**NOTE: use extreme caution if soldering to connectors.**

Damage to the board's chips and connectors may result with excessive heat from iron.

Purchase parts to build a wire harness if not included. The part numbers for the Micro-Miniature 1.25mm connectors are:

- Connector – J4 - Molex part number 51021-0200 (Digi-Key part number WM1720-ND)
- Crimps – Molex part number 50058-8000 (Digi-Key part number WM 1775-ND).

### **Wiring to the board:**



- Make a connection from the blue wire of the backlight to pin 1 of J4 on the board.
- Make a connection from the black wire of the backlight to pin 2 of J4 on the board.
- Using crimps and connector.



### Power/Video Connections

The Power and Video inputs are at J1. Make a solder connection to the pins or parts can be purchased to build a wire harness.

The part numbers for the Micro-Miniature 1.25mm connectors are:

- Connector – J1 - Molex part number 51021-0400 (Digi-Key part number WM1722-ND)
- Crimps – Molex part number 50058-8000 (Digi-Key part number WM 1775-ND)

#### Connector J1

1	Power In
2	Power Ground
3	Video In
4	Video Ground

### Contrast Connections

The Contrast inputs are at J3. Make a solder connection to the pads or parts can be purchased to build a wire harness.

The part numbers for the Micro-Miniature 1.25mm connectors are:

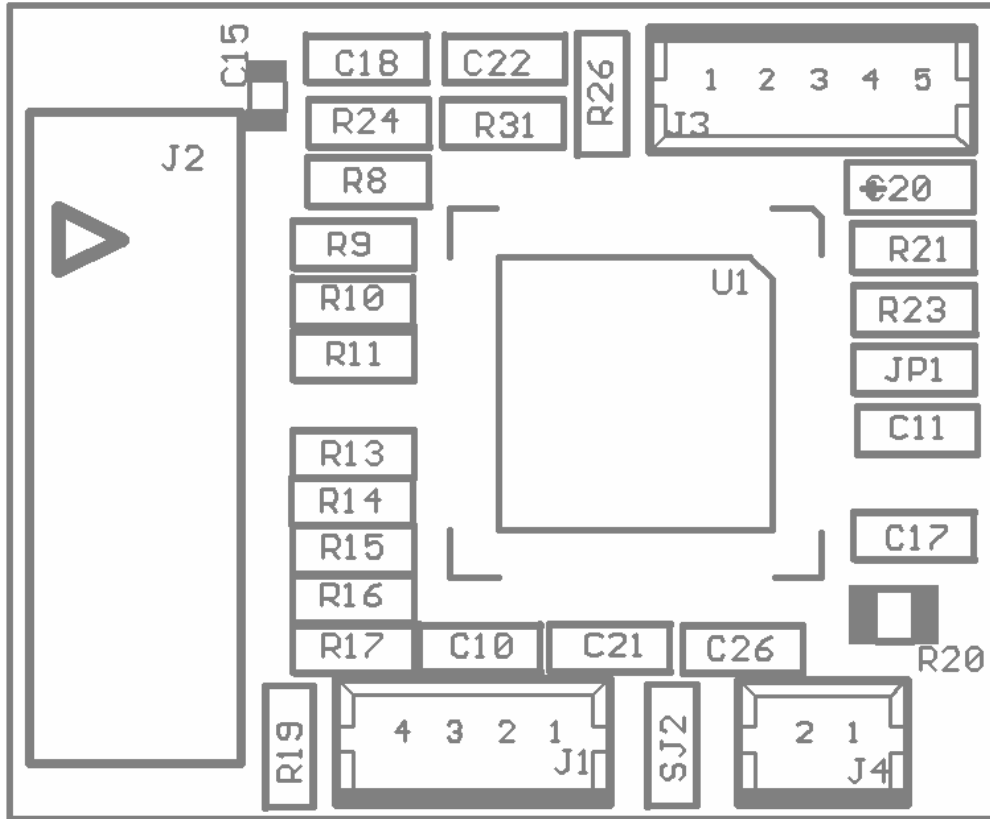
- Connector – J3 - Molex part number 51021-0500 (Digi-Key part number WM1723-ND)  
Or J3 - Molex part number 51021-0300 (Digi-Key part number WM1721-ND)
- Crimps – Molex part number 50058-8000 (Digi-Key part number WM 1775-ND)
- Flex cable – J3 – AMP Part (Digi-Key part number A9AAT-0502E)

#### Connector J3

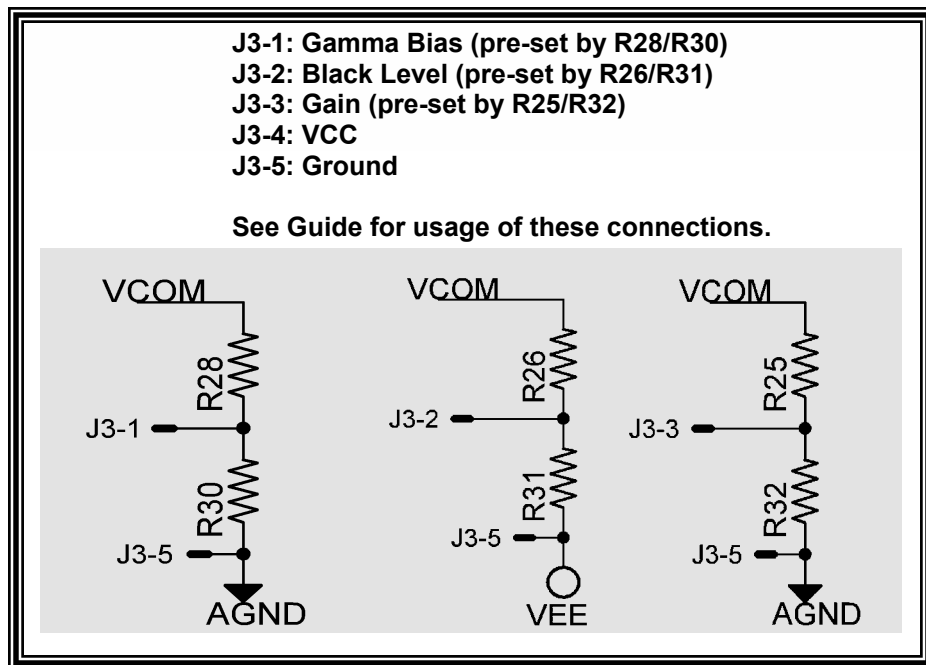
1	Gamma Bias
2	Black Level
3	Gain
4	VCC
5	Ground

Remove corresponding resistors R25, R26, and R28. These three resistors are connected to VCOM on the PCB. Add the pots at the connector J3 as required. You can use external mechanical potentiometers or use the DAB option. For mechanical potentiometers, R30, R31 and R32 may be required to be removed. Check the spec sheets for the Motorola MCVVQ111A for more information.

[http://www.freescale.com/files/timing\\_interconnect\\_access/doc/data\\_sheet/MCVVQ111A.pdf](http://www.freescale.com/files/timing_interconnect_access/doc/data_sheet/MCVVQ111A.pdf)



TOP PLACEMENT OF VIDEODRIVER



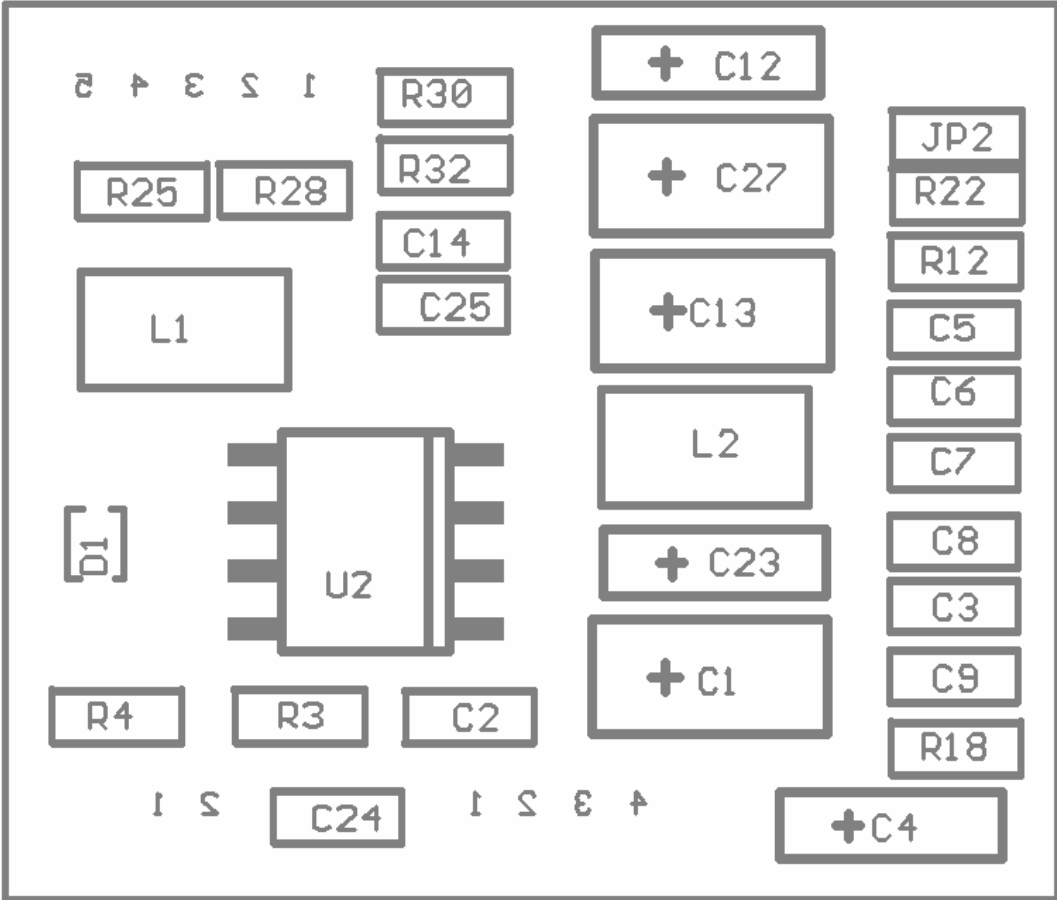
**SJ2: AGND/DGND**

**J4-1: backlight power**  
**J4-2: backlight ground**

**J1-1: Power in**  
**J1-2: Power ground**  
**J1-3: Video in**  
**J1-4: Video ground**

**JP1: Hold/Sel**

**J2: 320M display connection, top contacts**



BOTTOM PLACEMENT OF VIDEO DRIVER

**JP2: NTSC/PAL**



**NOTES:**