



# Tech Info Library

## Macintosh IIci, IIsi, LC, and LC II: Video Pinouts

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### Article Change History

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- 02/03/93 - CORRECTED
    - The IIci and IIsi do support the Apple Portrait Display with built-in video.
  - 02/03/93 - UPDATED
    - Added information from article titled "Macintosh IIsi, IIci, LC: Monitor Compatibility"
  - 09/15/92 - REVISED
    - To clarify what monitors the IIci & IIsi video port supports.

### TOPIC -----

What are the differences between the Macintosh IIci on-board video pinouts and signals versus the Macintosh IIsi, Macintosh LC, and Macintosh LC II? What pin can I "sense" to see a 13-inch RGB monitor connected when there is none connected (that is, testing a projector connected but with no monitor attached)?

### DISCUSSION -----

#### Pinouts

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The Macintosh IIci, Macintosh IIsi, Macintosh LC, and Macintosh LC II have the same pinouts for their built-in video ports:

Pin	Function
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1	Red Video GND
2	Red Video
3	CSynch
4	Mon. ID 1
5	Green Video
6	Green Video GND
7	Mon. ID 2
8	N.C.

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9          Blue Video
10         Mon. ID 3
11         CSynch and VSynch GND
12         VSynch
13         Blue Video GND
14         HSynch GND
15         HSynch
Shell      Shield GND

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Sense Codes

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Sense Pins				Hor x Vert Pixels	Band- width (MHz)	Vert Refresh (Hz)	Horiz Scan (KHz)
10	7	4	Display				
0	0	1	Apple Portrait Display	640 x 870	57.2832	75	68.9
0	1	1	Apple Two-Page Mono Monitor	1152 x 870	100	75	68.7
0	0	0	Macintosh 21" Color Display	1152 x 870	100	75	68.7
1	1	0	12" Apple Monochrome Monitor	640 x 480	30.24	66.7	35.0
1	1	0	13" AppleColor RGB Monitor	640 x 480	30.24	66.7	35.0
0	1	0	12" AppleColor RGB Monitor	512 x 384	15.6672	60.15	24.48
1	0	0	Interlaced display	-	12.2727	-	15.7

0 - Grounded    1 - Not Connected

Extended Sense Codes

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Sense Pins				Hor x Vert Pixels	Band- width (MHz)	Vert Refresh (Hz)	Horiz Scan (KHz)
4-10	7		Display				
0	1		Macintosh 16" Color Display	832 x 624	57.63	75	49.7

0 - Tied Together    1 - Not Connected

Configurations

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	Macintosh LC/LC II	Macintosh IIsi	Macintosh IIci
12" RGB Display	X	X	X
12" Monochrome	X	X	X
High-Resolution RGB	X	X	X
Portrait Display	-	X	X
Two-Page Display	-	*	*
16" Color Display	-	*	*
21" Color Display	-	*	*

(X indicates compatibility, \* indicates the need for a NuBus interface)

In the case of the Macintosh IIsi, you need to install a NuBus Adapter Card first.

### VGA Compatibility

To connect a VGA monitor to the Macintosh LC or LC II video port, a cable with the following configuration is required. Third-party cable vendors should have these cables available for purchase.

#### Macintosh LC/LC II

DB-15

VGA Connector

2	-----	Red Video	-----	1
1	-----	Red Ground	-----	6
9	-----	Blue Video	-----	3
13	-----	Blue Ground	-----	8
5	-----	Green Video	-----	2
6	-----	Green Ground	-----	7
15	-----	Hsync	-----	13
12	-----	Vsync	-----	14
14	-----	Sync Ground	-----	10
10	-----			
7	-----		Connect 7 and 10 so the sense pin ID will equal VGA	

A few issues to remember when connecting VGA monitors to the Macintosh LC or LC II:

- VGA monitors may have variances when purchased from different VGA monitor vendors. It is suggested that a particular monitor be tested for compatibility with the Macintosh LC or LC II before making a purchase decision.
- VGA monitors from different vendors have different image quality specifications. There may be significant differences between the Apple logo monitors and the VGA monitors. A side-by-side review of the monitors should be done before deciding which monitor to buy.
- When a VGA monitor is connected as described above, the resolution is 640 x 480. The bit-depth supported depends on the amount of VRAM installed. If the Macintosh LC 256K VRAM SIMM is installed, 4-bit color (16 colors) is supported. With the Macintosh LC 512K VRAM SIMM installed, 8-bit color (256 colors) is supported.

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