# Tech Info Library

## Display Card 8•24: How to output NTSC without a converter

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Revised:        7/2/92
Security:       Everyone
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Display Card 8•24: How to output NTSC without a converter

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Article Created: 14 May 1991
Article Last Reviewed: 9 June 1992
Article Last Updated:

TOPIC -----------------------------------------------------------
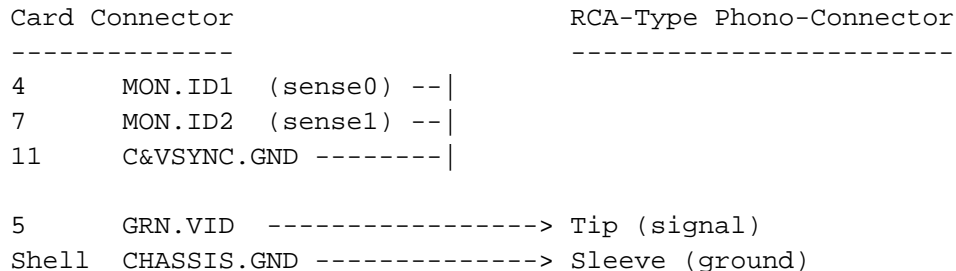
Can the Macintosh Display Card 8•24 be used to display images from the
Macintosh on a video display or a TV without an NTSC converter?

DISCUSSION ------------------------------------------------------

The Display Cards 8•24 and 8•24 GC do not use software for switching to the
NTSC interlaced mode.  To put the Display Card 8•24 into the NTSC mode, a
properly configured cable is all that is required. Most NTSC devices use an
RCA-type phono-connector, so this diagram uses that as a reference point.

Adjust the phono-connector side to whatever type of connector is used. "Tip" is
the pin in the center of the connector (the signal); the sleeve is flanged
around the outer edges of the connector (the chassis ground).

```
    Card Connector                      RCA-Type Phono-Connector
    --------------                      ------------------------
    4      MON.ID1  (sense0) --|
    7      MON.ID2  (sense1) --|
    11     C&VSYNC.GND --------|

    5      GRN.VID  -----------------> Tip (signal)
    Shell  CHASSIS.GND -------------> Sleeve (ground)
```

By grounding pin 4 and pin 7 to pin 11, the video cards are told that an
interlaced (NTSC) monitor is attached.  The actual black and white video signal
is on pin 5 and connects to the center (Tip) of the phono-plug.  The shell of
the card connector connects to the sleeve of the phono-plug.

To acquire a color NTSC signal from any Apple Macintosh display card, an

RGB-to-NTSC converter is required.

For more information, search under "NTSC video encoding".

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Tech Info Library Article Number:8256