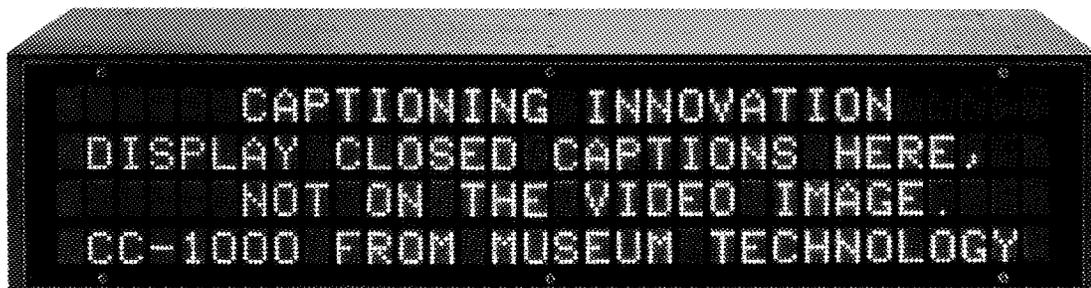


Instruction Manual

*Models CC-1000 and CC-2000
Closed Caption Display Board*



“See What You’re Missing”

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Technology
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Introduction:

The CC-1000 and CC-2000 are Caption Display Boards that decode and display television closed captions (CC) carried on Line 21 of the standard NTSC video signal. The text is displayed on four lines of green LEDs, each with 32 characters. The only difference between the models is the size. For the CC-1000, the characters are .7 inch high, suitable for viewing at distances up to approximately 35 feet. The CC-2000 employs 1.2 inch characters, suitable for viewing at a distance in the fifty to sixty foot range. Any differences (aside from size) *will be indicated by use of italics*. Low voltage remote control screw terminals are provided to turn the display on and off, or to switch between normal captioning (CC-1) and CC-3. CC-3 is typically used for a second language. With no connection to the remote terminals, the display will be on, displaying normal CC-1 captions. Hence, for most applications in order to blank the display, a switch connected to terminals 1 and 2 will cause the display to switch to CC-3 mode. Provided that there is nothing on CC-3, which is usually the case, the display will turn off. If, however, there is captioning on CC-3, it will be displayed. Note that several seconds may elapse between when the switch is closed and the display turning off. Likewise, when the switch is opened, there can be a delay while until a complete caption is received. This is to prevent the display from turning on in the middle of a captioning stream, with the resultant display of a partial caption.

Connections:

Please refer to the attached drawing for connections and their function

Electrically, the CC Board is installed as if it were a standard TV monitor. The video signal carrying the CC information connects to the CC-1000 using a BNC connector. A second BNC connector is provided as a loop-through. The input is not terminated. Although good practice, 75 ohm termination is not required in that the automatic gain control circuit in the CC- will operate correctly over a range of .5 to 2 volts.

The remote on/off function are accessed via a pluggable Euro-style terminal block. Selection of CC-1 or CC-3 is also made at this terminal block. The default, with no connections, has the display on, and CC-1 (Normal) selected.

Terminals 3 and 4, when connected together will cause a test message to appear on the display. This may be helpful in setting the brightness.

Power is provided by an external desk-top power supply which connects to the display with an attached 2.1 mm plug. AC power input to the supply is made with the supplied IEC power cord.

Installation:

Generally the CC- is mounted as close as possible to the bottom of the video screen. Frequently it is mounted flush in a cut out in the exhibit surface, supported in the back on a shelf or by brackets. *To assist in mounting the CC-1000, six holes on both the top and bottom are drilled and tapped to accept 8-32 screws. This is a common size for screw eyes,*

Setting Brightness:

A knob is provided on the rear panel to adjust the brightness. It is recommended that the maximum brightness setting only be used when ambient light conditions call for it. If desired, a temporary connection between pins 3 and 4 will cause a test message to appear on the display.

Remote On-Off

The CC- may be disabled by connecting a toggle switch across pins 1 and 2 of the rear panel terminal block. When the switch is open (no connection) the CC- functions normally. When the switch is closed (connection made) the display will switch to CC-3. Since CC-3 is only used in special instances, the effect will be to turn off the display. When the switch is next opened the display will be reactivated. There may be a pause of several seconds between turning the display back on and the appearance of text on the display. This is because the CC- will wait until a complete new caption is loaded prior to turning on the display. This is to prevent a partial caption from being displayed.

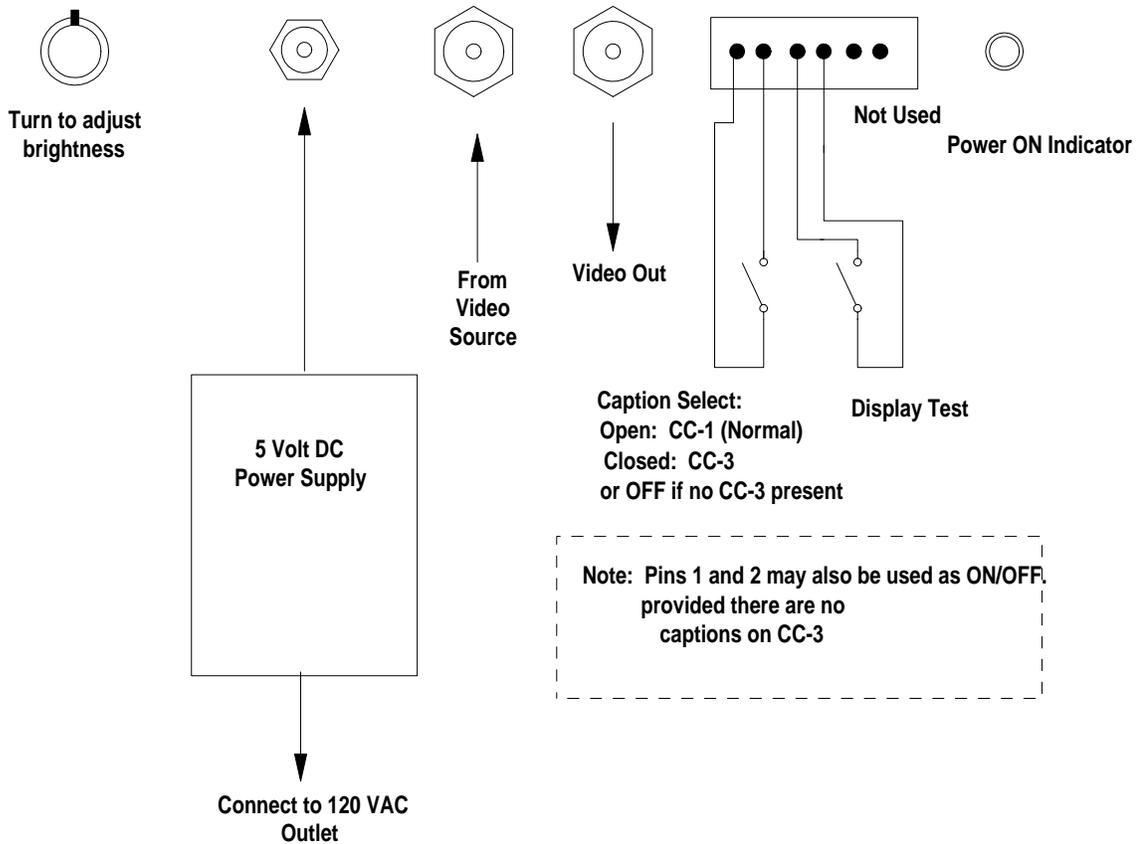
The voltage across the switch terminals is 5 volts DC, and the current is approximately 10 mA. The switch may be located some distance (200 feet) from the CC display board.

CLOSED CAPTION DISPLAY BOARD

MODEL	VERSION	DATE	SERIAL
CC-2000	2.20B	AUGUST 2007	W4A0398

Museum Technology Source Inc.
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 Wilmington Massachusetts 01887

BRIGHTNESS  MIN MAX	POWER IN 2.1 mm  + 5 VDC 4 AMP MAX	VIDEO NTSC VIDEO WITH LINE 21 CLOSED CAPTIONING <hr/> IN — LOOP — OUT UNTERMINATED	REMOTE CONTROL 1 & 2: ON-OFF / CC-3 SELECT 3 & 4: DISPLAY TEST 1 2 3 4 5 6	POWER ON 
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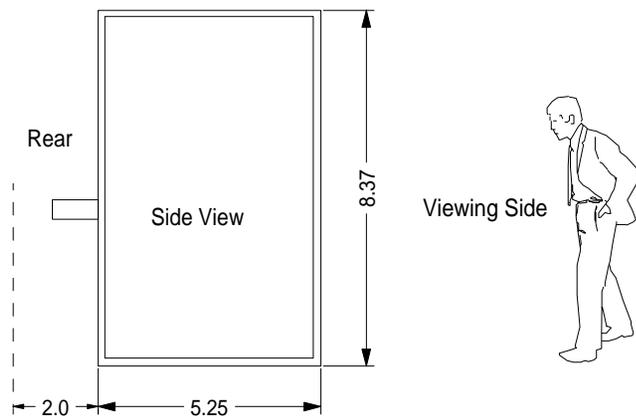
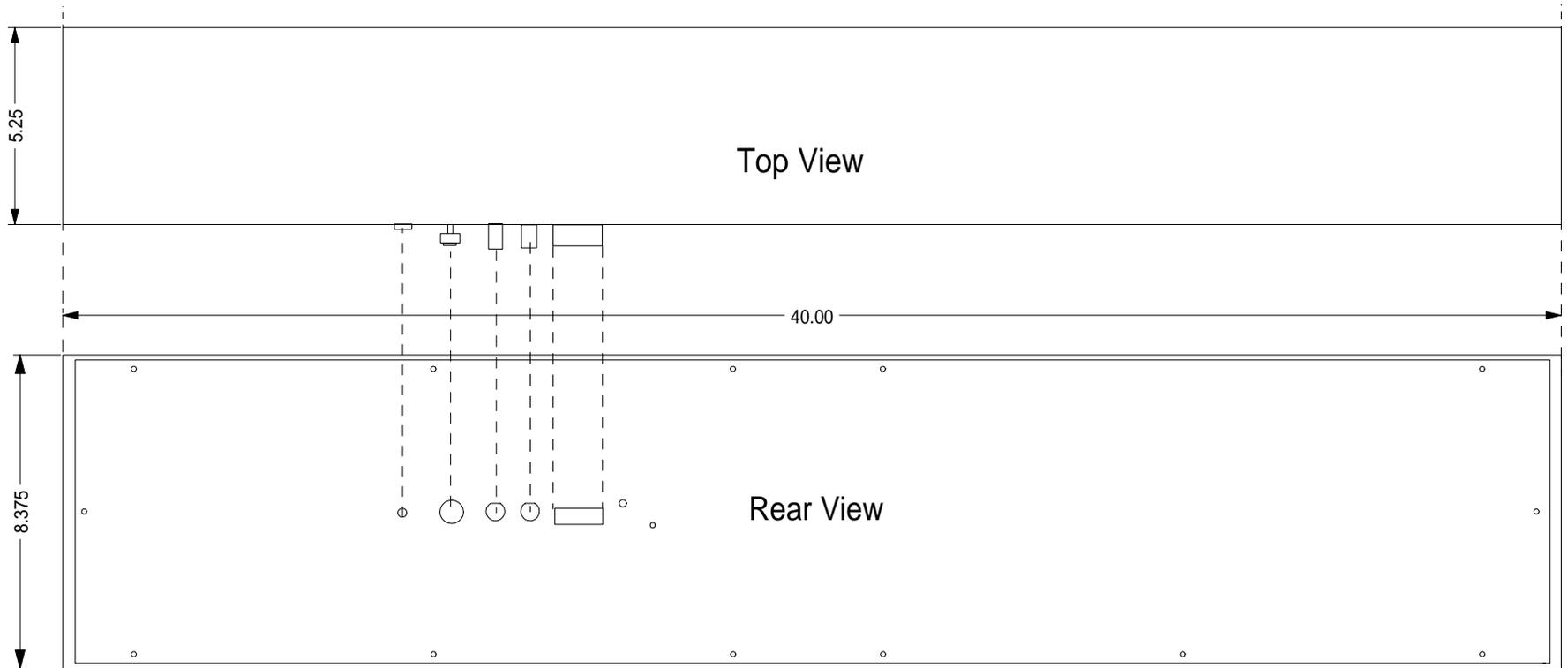


Closed Caption Display Board Connections

Museum Technology Source Inc.

2-1-2005
 Revised October 6 2006
 Revised December 2006
 Revised May 7 2007
 Revised August 13 2007

Serial Number W4A0380 and Higher
 VERSION 2.20B



Allow 2 Inches for Cable Clearance

MOUNTING DIMENSIONS
 CAPTION DISPLAY BOARD
 Model CC-2000 40 Inch

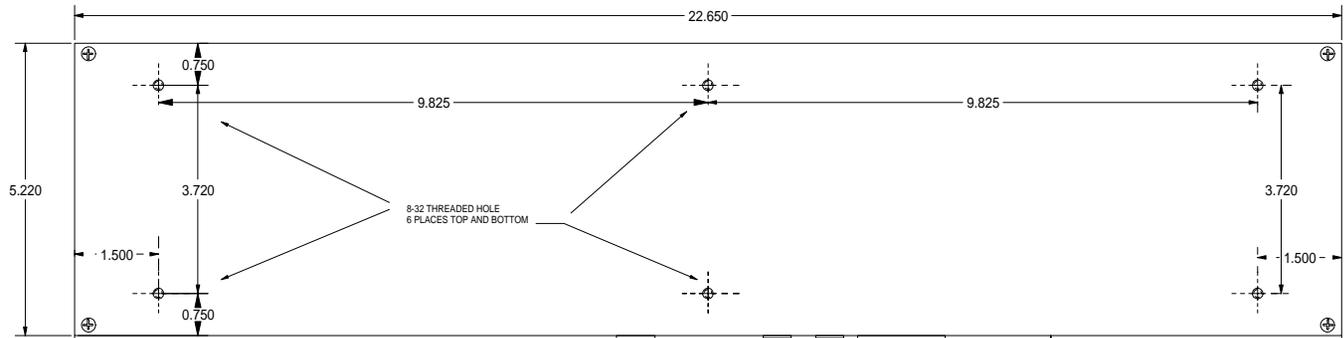
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 December 5 2003

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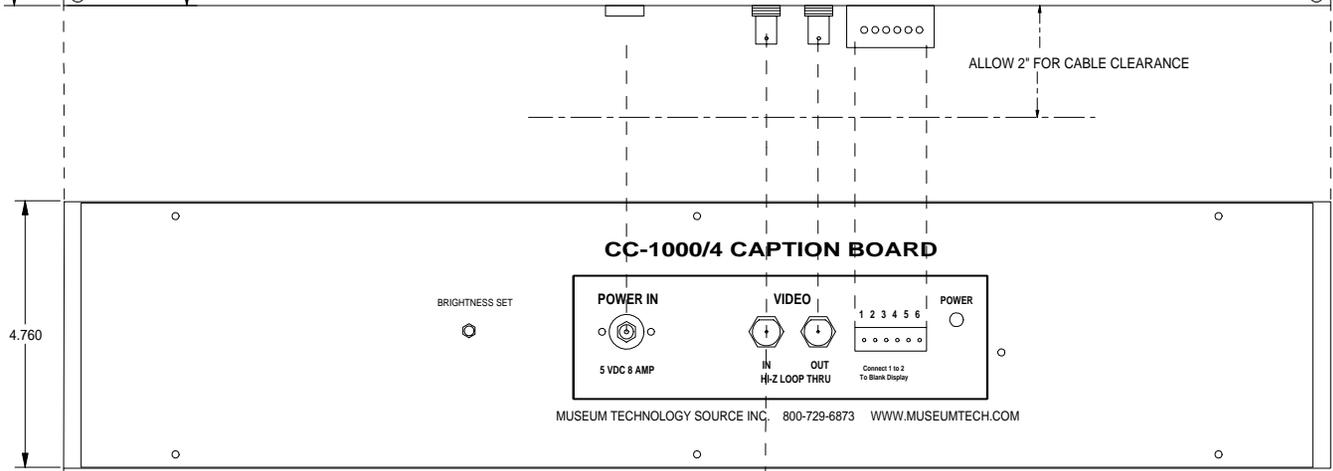
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Rev C July 27 2007
 Rev B June 21 2007

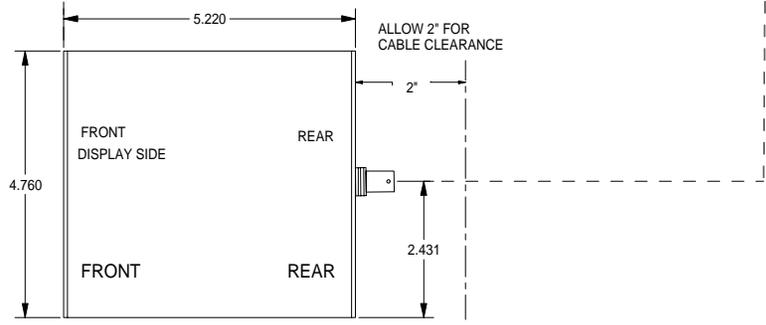
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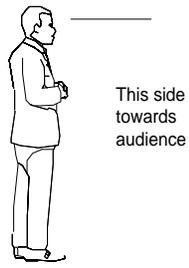
TOP VIEW



REAR VIEW



SIDE VIEW



This side towards audience

CC-1000 CLOSED CAPTION DISPLAY DIMENSIONS