

Determination of ICs Used in the HDSP-211X Displays



Application Brief D-006

Description

The original IC (IC1) was produced using a faster CMOS process compared to the second generation IC (IC2). The speed difference between these two processes caused some customers to experience abnormal behavior of the displays. The customers would most often see extra pixels lighting up randomly. Other times, a ghosting effect was observed. Most customers were able to use the IC2 Display by placing a capacitor between the V_{DD} and GND (Supply) at each of the displays. (A 47 μ F capacitor works well).

Electrical Test

There are a few easy ways to electrically test to see if the display contains IC1 or IC2.

A. Reset Method:

1. Set the Address lines and Data lines to put a character into any one of the character positions.

2. Leave the Address lines and Data lines in the same position and set the /CE and /WR lines low (the character should appear).
3. While leaving the /CE and /WR lines low bring the /RST line low then back high again (toggle).
4. If the character reappears after toggling the reset line, it is an IC1 display. Otherwise it is an IC2 display.

B. Address line method:

1. Set the Address lines and Data lines to put a character into any one of the character positions.
2. Set the /CE and /WR lines low (the character should appear).
3. While keeping the Data lines in the same position and leaving the /CE and /WR lines low, change the Address lines. If the character appears in the character positions set by the new address line position, then it is an IC1 Display. If only the original character remains, it is an IC2 Display.

Date Codes:

Date Code	Type of Display
9223 or before	IC1
9236 to 9303	Mixed IC1 and IC2. "X" on package denotes X stackable package, no indication of which IC.
9304 and after	All IC2 displays to be marked with a "C", All IC1 displays to be marked with an "L".

Markings: (Located after part number)

Marking	Display
None	Could be either. Check Date Code Chart.
X	Could be either. "X" denotes X stackable
C	IC2 Display
L	IC1 Display

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