

SN75ALS193 Test

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October 7, 2009

This document contains the comparison between the SN75ALS193J, installed in the interim correlator (Taiwan 9222DF / X5 Interim Corr. Schematics, Pag1/5), and the SN75ALS193N (spare, 9CAF0LM). Both chips were fabricated by Texas Instruments.

Fig. 1.a. shows the pin distribution of the SN75ALS193 – Quadruple Differential Line Receiver. Fig. 1.b. is the function table included in the datasheet.

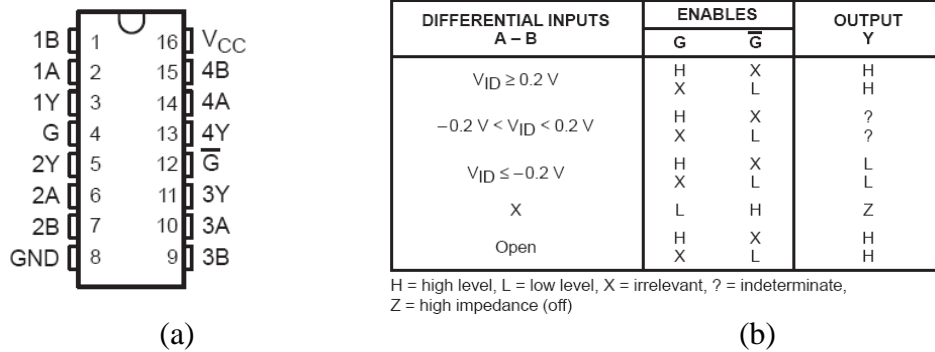


Figure 1. SN75ALS193, (a) Connection diagram, (b) Function table - datasheet

Test conditions:

$V_{cc} = 5.00\text{V}$, $G = \text{GND}$ (low level), $\overline{G} = \text{GND}$ (low level)

$V_{AB} \geq 0.2$ condition: $V_A = 5.00\text{V}$, $V_B = 2.48\text{V}$ (voltage divider, no load, 2 x 1k Ω)

$V_{AB} \leq -0.2$ condition: $V_A = 2.48\text{V}$, $V_B = 5.00\text{V}$

$> -0.2, < 0.2$ condition: $V_A = 5.00\text{V}$, $V_B = 5.00\text{V}$

Open, 120 Ω condition: 120 Ω resistor connected between 1A and 1B

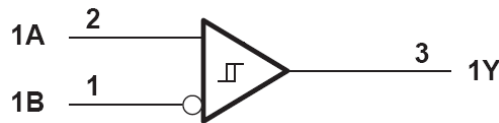


Figure 2. SN75ALS193, Receiver 1

Table 1. Function table of the SN75ALS193, receiver 1.

SN75ALS193{D, J, N} Datasheet		SN75ALS193J Interim Correlator		SN75ALS193N Spare Part	
V_{AB} (V)	Output	V_{AB} (V)	Output (V)	V_{AB} (V)	Output (V)
≥ 0.2	H	0.90	4.07	2.40	4.14
≤ -0.2	L	-0.59	0.11	-2.38	0.09
$> -0.2, < 0.2$?	0.00	0.11	0.00	4.17
Open, 120 Ω	H	0.007	0.11	0.001	4.25

H: High level, L: Low level, ?: Indeterminate

$V_{AB}(\text{open}) = 5\text{V} (0.12/600.12) \approx 0.001\text{V}$; A/B input, 300k Ω pull-up/pull-down, resp.