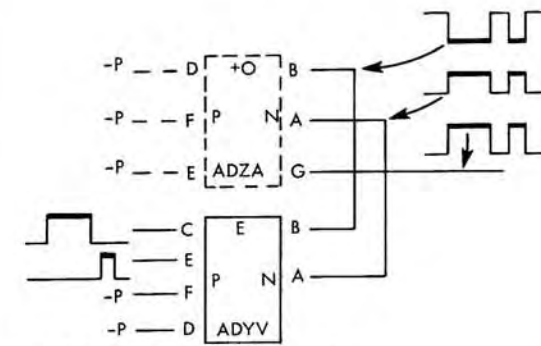
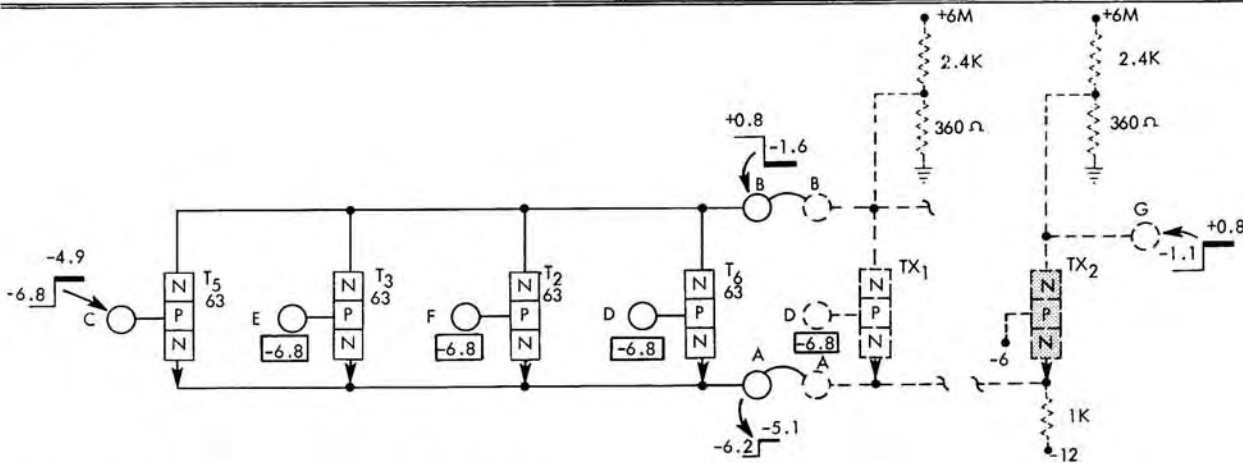


2-Way and 4-Way OR-Block Extenders



Typical Application of a 4-Way Extender



Card Code	Part No. 37-----	No. of Inputs	Circuit Used as	Input Levels		In \emptyset Output		Out \emptyset Output		Ma. Output		usec Delay Per			
				Min.	Max.	Min.	Max.	Min.	Max.	In \emptyset	Out \emptyset	Block	100uu Load	Driven Base	
ADYV	1237	4	OR-Block Extender	-5.6	See driver for max. Output Levels	+0.4	+1.2	+0.4	+1.2	Min.	4.82	5.31	.03	.02	.03
ADYW	1236	2		Nom.	6.0	7.6	.06	.025	.035						
				Max.	7.3	10.2*	.1	.03	.04						

*Plus the number of inputs times .044 ms
Note: The above specifications are those of the OR-Block and extender combination

Current Mode Two-Way and Four-Way OR Block Extenders

This type of extender card is used in combination with an OR circuit to increase the number of input legs to the OR. As shown above, a three-way OR is increased to a seven-way OR by using the four-way extender ADYV. Had the two-way extender ADYW been used, the three-way OR would be increased to a five-way OR. In its logic, the circuit above works as a seven-way OR: the +OR function is satisfied when any of seven inputs is positive. As in any +OR circuit, the in-phase output (G) follows the sign of the function and is positive when any input is positive. If the -AND function is desired, the in-phase output is negative when all inputs are negative.

Circuit Description

The extender increases the number of inputs by connecting additional input transistors in parallel with the input transistors of the OR circuit. In the circuit above back panel wiring A-A and B-B connects T5, T3, T2, and T6 in parallel with TX1 of the OR circuit card ADZA. When

all inputs are at a -P as shown, the emitter line attempts to fall to the -P level. When the emitter of tx2 falls below -6v it becomes forward-biased and clamps to its base potential of -6v. Output G is at a -N level of -1.1v because of current flow (6ma) through tx2 into its coupling network. Output B is at a +N level of +0.8v because of divider current through its coupling network.

When any input rises above -6v (see input C) the emitter line follows it and tx2 is reverse biased and cuts off. In this state, output G rises to a +N level because of divider current through its coupling network, and output B falls to a -N level of -1.6v because of current flow (7.6ma) through an input transistor into its coupling network.

Application

Extenders are used as +OR block extenders or -AND block extenders.