

Memorandum M-2215

Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

SUBJECT: MAGNETIC-CORE MATRIX SWITCH DRIVER (X & Y PLANE DRIVER). PB 18

To: N. H. Taylor, R. A. Nelson, Group 62 Section Chiefs, and N. P. Edwards at I.B.M. via A. Kromer.

From: D. Shansky

Date: 5 June 1953

Abstract: This memo offers preliminary specifications for a magnetic-core matrix switch driver and offers tentative schematic diagrams.

It is proposed that a magnetic-core matrix switch be utilized to perform the functions of selection and memory-plane driving. It has been determined that the switch will deliver properly shaped current pulses when the switch itself is driven with a specially shaped current pulse. The Magnetic Core Matrix Switch Driver (set and reset winding), Drawing #SB 55238, will deliver this current pulse into the set and reset windings of a magnetic core switch.

Tentative specifications on the current pulse shape are:

Initial rise time to 400 ma -- .3 μ sec., linear rise of current to 600 ma at the end of 2 μ sec. and fall time of .3 to .5 μ sec. A total of 2 such drivers are necessary to drive the WWII memory.

The Magnetic-Core Matrix Switch Driver (bias winding), Drawing #SB 55239, was designed to deliver a rectangular pulse of current with a nominal amplitude of 500 ma, and rise and fall times of .3 μ sec. with the pulse length variable up to about 10 μ sec. The total number of these drivers required for WWII would be 12.

No change in the original time schedule for X & Y plane drivers is deemed necessary at this time.

DS/t1

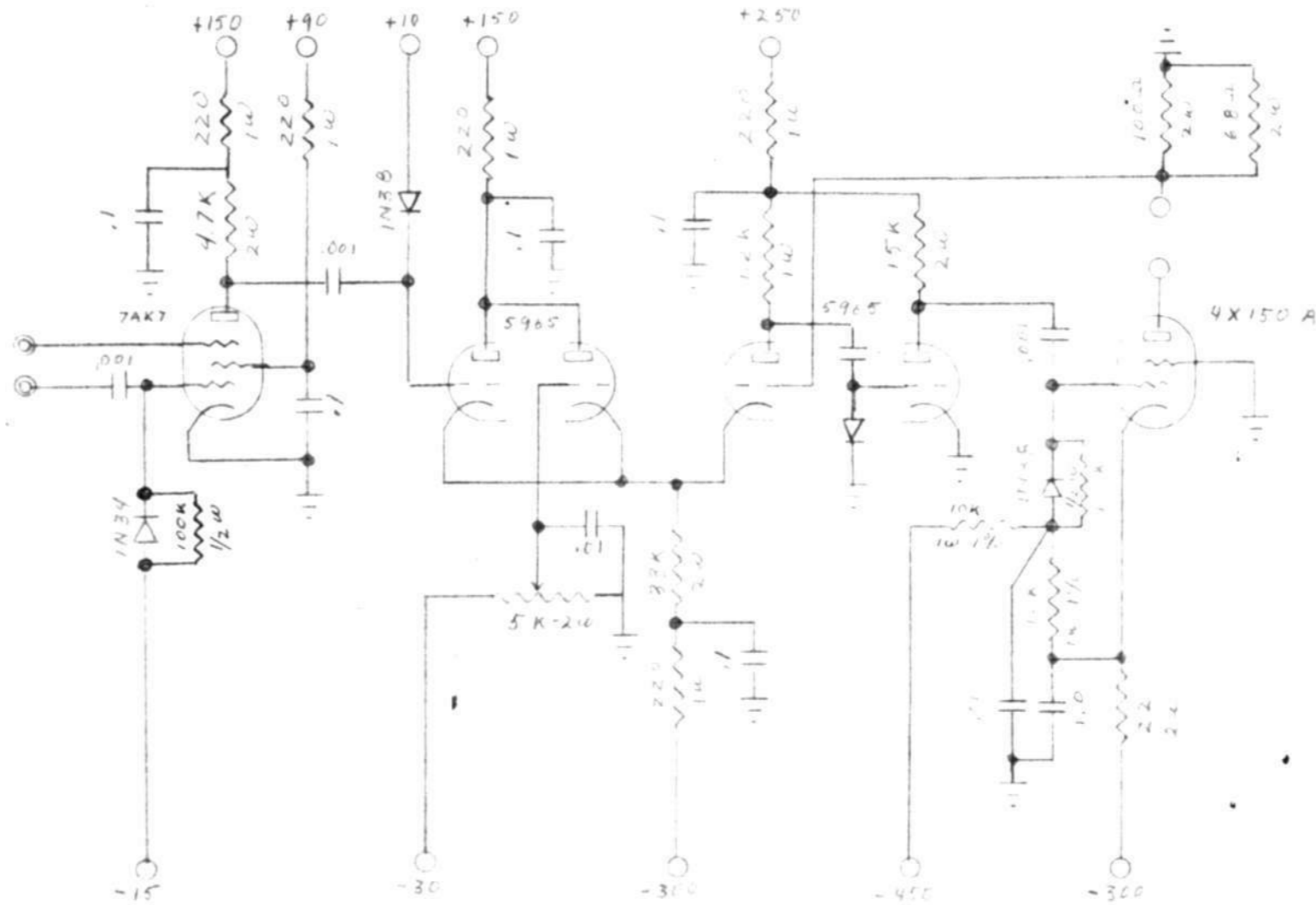
Drawings Attached:
SB-55238
239

Signed: David Shansky
David Shansky

Approved: R L Best
Richard L. Best

Approved: Norman H. Taylor
Norman H. Taylor

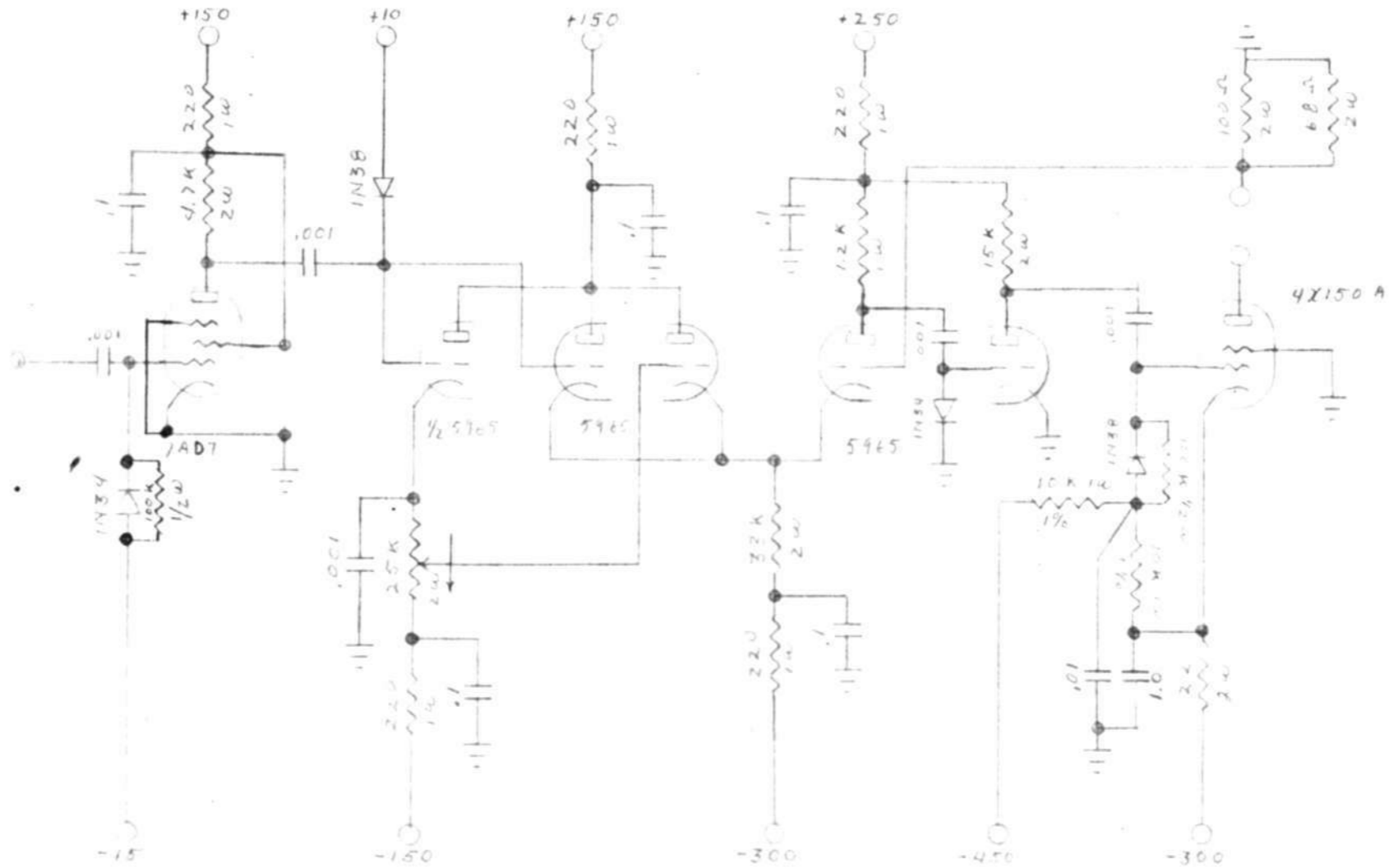
SB-55239



Driver consists of 2 similar channels with common decoupling circuits.

		APPD.		MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
		DATE		DIGITAL COMPUTER LABORATORY	
		CN#		DEPT. OF ELECTRICAL ENGINEERING - D. I. C. PROJECT NO.	
		CHG.		MAGNETIC CORE MATRIX SWITCH DRIVER	
		ENG.		(BIAS WINDING)	
		CK.		SCALE: DR. D. Shansky	
		APPD.		SB-55239	
-10	-9	-8	-7	-6	-5
-4	-3	-2	-1		

SB-55238



Similar circuit to a similar chain is with a more complex driver circuit.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY DIGITAL COMPUTER LABORATORY DEPT. OF ELECTRICAL ENGINEERING - D. I. C. PROJECT NO.				
MAGNETIC CORE MATRIX SWITCH DRIVER (SET AND RESET WINDING)				
CHG.	CN#	DATE	APPD.	SCALE:
-10				
-9				
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-4				
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				DR. D. Shonky
				APPD.

SB-55238