

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  $\mu$ sec., linear rise of current to 600 ma at the end of 2  $\mu$ sec. and fall time of .3 to .5  $\mu$ 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  $\mu$ sec. with the pulse length variable up to about 10  $\mu$ 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/tl

Drawings Attached:

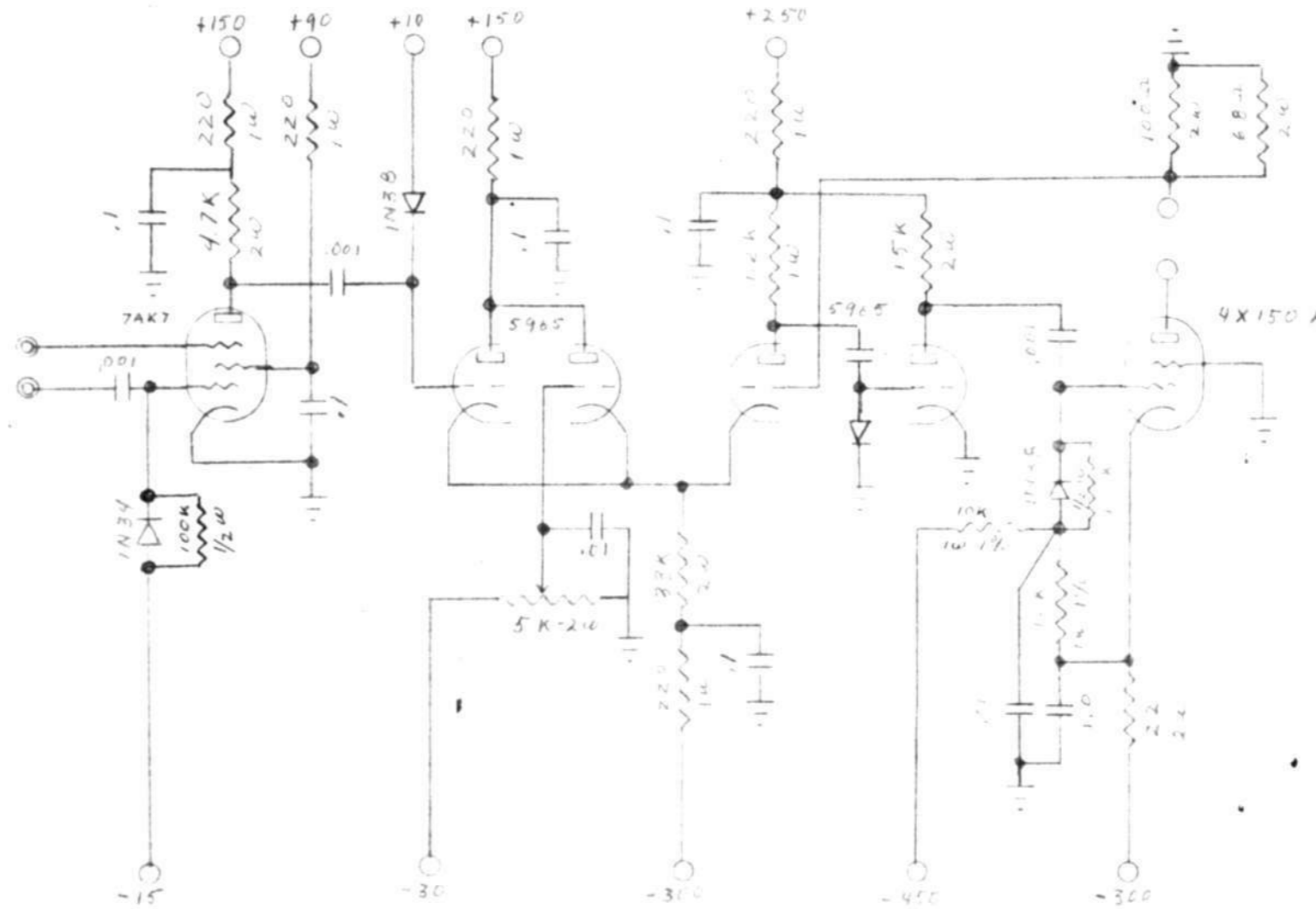
SB-55238  
239

Signed: David Shansky  
David Shansky

Approved: R L Best  
Richard L. Best

Approved: Norman H. Taylor  
Norman H. Taylor

SB-55239



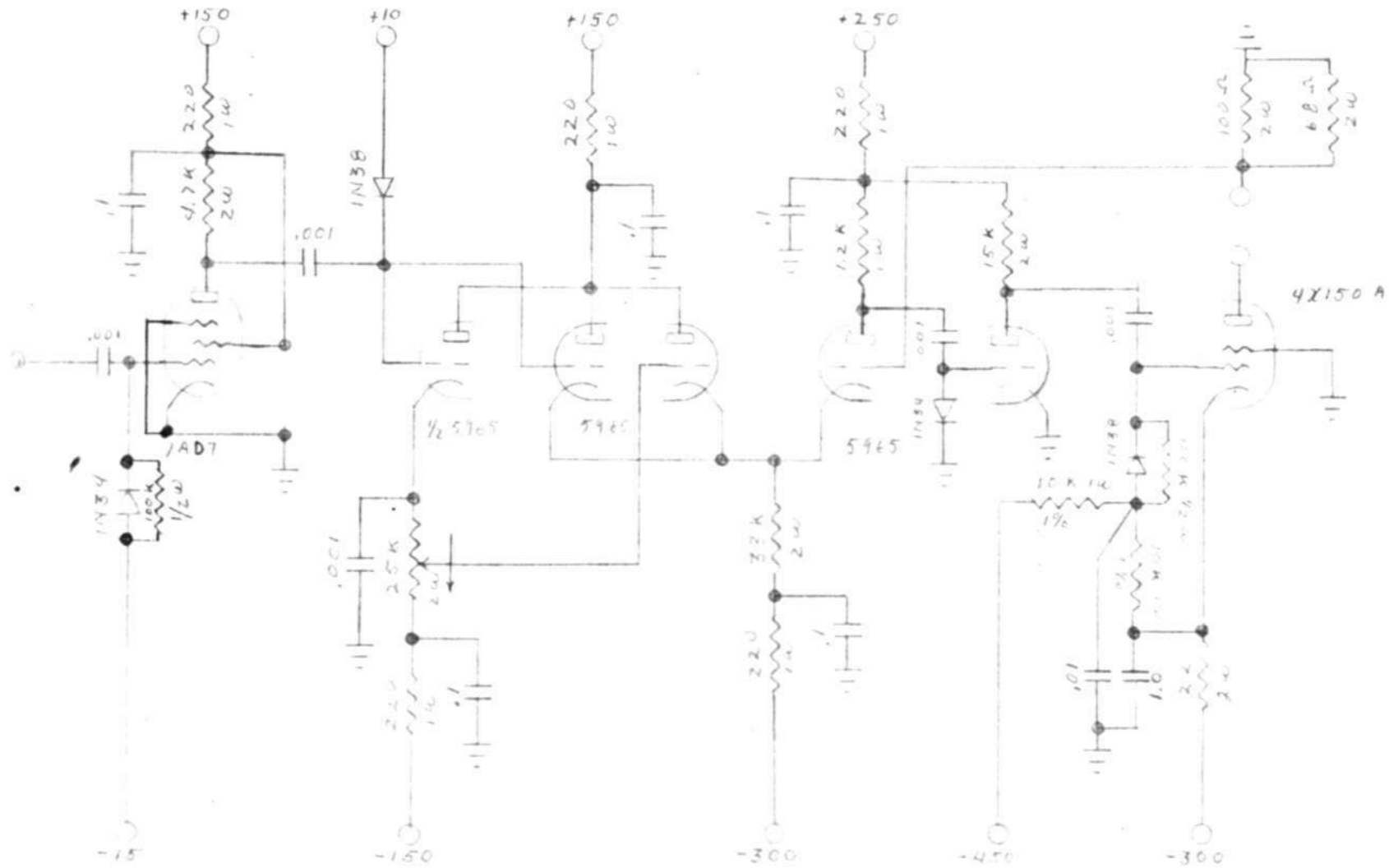
Driver consists of 2 similar channels with common decoupling circuits.

CHG.	CN#	DATE	APPD.
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MASSACHUSETTS INSTITUTE OF TECHNOLOGY DIGITAL COMPUTER LABORATORY DEPT. OF ELECTRICAL ENGINEERING - D. I. C. PROJECT NO.		
MAGNETIC CORE MATRIX SWITCH DRIVER (BIAS WINDING)		
SCALE:	DR. D. Shansky	
ENG. D. Shansky	CK.	APPD.

SB-55239

SB-55238



*Similar circuit to a similar chain is with a new de-coupling circuit*

		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			
		-10		(SET AND RESET WINDING)			
		-9		SCALE:		DR. D. Shorley	
		-8		ENG. D. Shorley		APPD.	
		-7		CK.		SB-55238	
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