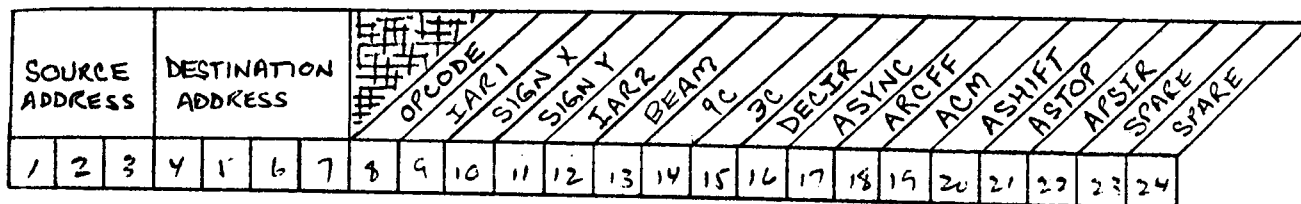


516-63
JVC
1/19/72

DISPLAY CONTROLLER (GLANCE G)

- M1 = List memory (RAM); 1024 16 bit words
- M2 = Character memory (RAM/ROM); 1024 16 bit words
includes look-up table of 128 words
- M3 = Control memory (ROM); 96 words, as follows:
Addresses 00₍₈₎ through 77₍₈₎ = 24 bit words
Addresses 100₍₈₎ through 137₍₈₎ = 16 bit words
- AR1 = 12 bit address field for M1 (10 bits used for prototype).
- AR2 = 12 bit address field for M2 (10 bits used for prototype).
- AR3 (Program Counter) = 7 bit address field for M3.
- DR = 16 bit display register
- IR = 12 bit index register
- SVG = Short vector generator
- IXR = Incrementing X register
- IYR = Incrementing Y register
- PR = 12 bit parameter register
- K = ASCII keyboard

MEMORY 3 WORD FORMAT



Source Addresses (select to bus) (Bits 1 through 3)

- SNOP = No op
- SN = Select node
- SM1 = Select memory 1
- SM2 = Select memory 2
- SM3 = Select memory 3
- SK = Select keyboard

Destination Addresses (source to destination) (Bits 4 through 7)

- DNOP = No op
- DNOP1 = No op (change state of "CHAR F/F", (MSC/LSC))
- DNOP2 = No op (increment AR1 when LSC true)
- DNOP3 = No op (set "BEAM" F/F)
- DAR1 = Load address register for M1
- DAR2 = Load address register for M2
- DPC = Load program counter (address register for M3)
- DN = Load node register
- DDR = Load or shift display register
- DVG = Short vector mode
- DIR = Load index register
- DXR = Load or step X register
- DYR = Load or step Y register
- DPR = Load parameter register
- DM1 = Load memory 1
- DM2 = Load memory 2

MICROCODING (BITS 8 THROUGH 24)

<u>BIT</u>	<u>M3</u>	<u>FUNCTION</u>
8	OPCODE	= Go to address specified in OPCODE of selected memory @ C1 time.
9	IAR1	= Increment M1 address register @ C2 time.
10	SIGN X	= Set "SIGN X" F/F if sign bit is true.
11	SIGN Y	= Set "SIGN Y" F/F if sign bit is true.
*	12 - IAR2	= Increment M2 address register @ C2 time.
	13 - BEAM	= Set "BEAM" F/F if beam bit is true.
	14 - 9C	= Increment program counter @ C9 time.
	15 - 3C	= Increment program counter @ C3 time.
	16 - DECIR	= { Decrement index register @ C1 time. Reset clock @ C2 time.
	17 - A SYNC	= Wait for 60 Hz refresh command to continue (or restart) list processing.
	18 - ARCFE	= Reset "CHAR" F/F to MSC @ C4 time.
	19 - ACM	= Character mode; load M2 address register with ASCII characters.
**	20 - ASHIFT	= Display mode; shift display register @ C1 time
	21 - ASTOP	= Stop and reset clock @ C3 time.
	22 - APSIR	= Preset index register to 7 @ C1 time.
	23 - SPARE	= Not used.
	24 - SPARE	= Not used.

* These 7 bits are also used as an OPCODE (JUMP) instruction for the program counter (M3 address register).

** These 8 bits are locked off the bus when program counter addressing equals $40_{(8)}$ to $137_{(8)}$ inclusive.