L Stuart

ElectroData | DIVISION OF BURROUGHS CORPORATION

DATATRON 220 Alphanumeric codes

SYMBOL		CODE								
			Paper Tape							
			Channel							
DATATRON	046	Computer and Magnetic Tape	X	0	Check	8	4	2	1	Punched Card
(Space)	(Space)	00			✓					(Blank)
.	.	03	X	0		8		2	1	12 8-3
⊞	⊞	04	X	0	✓	8	4			12 8-4
&	&	10	X	0	✓					12
$	$	13	X		✓	8		2	1	11 8-3
*	*	14	X			8	4			11 8-4
—	—	20	X							11
/	/	21		0	✓				1	0 1
.	.	23		0	✓	8		2	1	0 8-3
%	%	24		0		8	4			0 8-4
#	#	33				8		2	1	8-3
@	@	34			✓	8	4			8-4
A	A	41	X	0					1	12 1
B	B	42	X	0				2		12 2
C	C	43	X	0	✓			2	1	12 3
D	D	44	X	0			4			12 4
E	E	45	X	0	✓		4		1	12 5
F	F	46	X	0	✓		4	2		12 6
G	G	47	X	0			4	2	1	12 7
H	H	48	X	0		8				12 8
I	I	49	X	0	✓	8			1	12 9
J	J	51	X		✓				1	11 1
K	K	52	X		✓			2		11 2
L	L	53	X					2	1	11 3
M	M	54	X		✓		4			11 4
N	N	55	X				4		1	11 5
O	O	56	X				4	2		11 6
P	P	57	X		✓		4	2	1	11 7
Q	Q	58	X		✓	8				11 8
R	R	59	X			8			1	11 9
S	S	62		0	✓			2		0 2
T	T	63		0				2	1	0 3
U	U	64		0	✓		4			0 4
V	V	65		0			4		1	0 5
W	W	66		0			4	2		0 6
X	X	67		0	✓		4	2	1	0 7
Y	Y	68		0	✓	8				0 8
Z	Z	69		0		8			1	0 9
0 (Zero)	0 (Zero)	80		0						0
1	1	81							1	1
2	2	82						2		2
3	3	83			✓			2	1	3
4	4	84					4			4
5	5	85			✓		4		1	5
6	6	86			✓		4	2		6
7	7	87					4	2	1	7
8	8	88				8				8
9	9	89			✓	8			1	9
TAB	SKIP	26		0	✓	8	4	2		0 8-6
CARRIAGE RETURN	CR	16	X		✓	8	4	2		11 8-6
FORM OUT	PI 6	15	X		✓	8	4		1	11 8-5
END-OF-WORD	PI 7	35				8	4		1	8-5
BLANK	SP 1	02	X	0	✓	8		2		12 8-2
TAPE FEED	TAPE FEED	*	X	0	✓	8	4	2	1	12 8-7
↑	END CARD 1	36				8	4	2		8-6
	END CARD 2	27		0		8	4	2	1	0 8-7
	CORRECT TAB	37			✓	8	4	2	1	8-7
Not	ERROR	17	X			8	4	2	1	11 8-7
assigned	PI 1	32			✓	8		2		8-2
	PI 2	12	X			8		2		11 8-2
	PI 3	22		0		8		2		0 8-2
	PI 4	25		0	✓	8	4		1	0 8-5
	PI 5	05	X	0		8	4		1	12 8-5
↓	SP 2	06	X	0		8	4	2		12 8-6

*Not represented.

LaFan Stuart

DATATRON 220

▽ MAGNETIC TAPE

± 1234 56 7890	ABR	NAME
0 uhh0 50 aaaa	MTS	MAGNETIC-TAPE SEARCH
4 uhh0 50 aaaa	MFS	MAGNETIC-TAPE FIELD SEARCH
± uhh4 50 iiii	MLS	MAGNETIC-TAPE LANE SELECT
± uhh8 50 iiii	MRW	MAGNETIC-TAPE REWIND
± uhh9 50 iiii	MDA	MAGNETIC-TAPE REWIND, DE-ACTIVATE
0 uhhk 51 aaaa	MTC	MAGNETIC-TAPE SCAN
4 uhhk 51 aaaa	MFC	MAGNETIC-TAPE FIELD SCAN
± univ 52 aaaa	MRD	MAGNETIC-TAPE READ
± univ 53 aaaa	MRR	MAGNETIC-TAPE READ, RECORD
± unkk 54 aaaa	MIW	MAGNETIC-TAPE INITIAL WRITE
± unii 55 aaaa	MIR	MAGNETIC-TAPE INITIAL WRITE, RECORD
± unkk 56 aaaa	MOW	MAGNETIC-TAPE OVERWRITE
± unii 57 aaaa	MOR	MAGNETIC-TAPE OVERWRITE, RECORD
± uni0 58 iiii	MPF	MAGNETIC-TAPE POSITION FORWARD
± uni1 58 iiii	MPB	MAGNETIC-TAPE POSITION BACKWARD
± uii2 58 iiii	MPE	MAGNETIC-TAPE POSITION AT END OF INFORMATION
± uii0 59 aaaa	MIB	MAGNETIC-TAPE INTERROGATE, BRANCH
± uii1 59 aaaa	MIE	MAGNETIC-TAPE INTERROGATE END OF TAPE, BRANCH

▽ PAPER TAPE

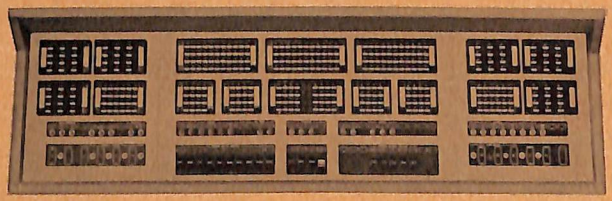
± unnv 03 aaaa	PRD	PAPER-TAPE READ
± uiiv 04 aaaa	PRB	PAPER-TAPE READ, BRANCH
± unnv 05 aaaa	PRI	PAPER-TAPE READ, INVERSE FORMAT
± unni 06 aaaa	PWR	PAPER-TAPE WRITE
± uiii 07 aaaa	PWI	PAPER-TAPE WRITE INTERROGATE, BRANCH

▽ CARDATRON

± uiir 60 aaaa	CRD	CARD READ
± uicf 61 aaaa	CWR	CARD WRITE
± uiif 62 aaaa	CRF	CARD READ, FORMAT LOAD
± uiif 63 aaaa	CWF	CARD WRITE, FORMAT LOAD
± uiii 64 aaaa	CRI	CARD READ INTERROGATE, BRANCH
± uiii 65 aaaa	CWI	CARD WRITE INTERROGATE, BRANCH

▽ CONTROL CONSOLE

± iiii 08 iiii	KAD	KEYBOARD ADD
± inni 09 aaaa	SPO	SUPERVISORY PRINT-OUT



ElectroData

DIVISION OF BURROUGHS CORPORATION

460 SIERRA MADRE VILLA, PASADENA, CALIFORNIA

DATATRON 220

A Summary of Operations in Alphabetic Order

Instruction Format	OPERATION	
± 1234 56 7890	ABR	NAME
± iii0 12 aaaa	ADD	ADD
± iii1 12 aaaa	ADA	ADD ABSOLUTE
± iii1 19 aaaa	ADL	ADD TO LOCATION
± iii0 35 aaaa	BCE	BRANCH, COMPARISON EQUAL
± iii0 34 aaaa	BCH	BRANCH, COMPARISON HIGH
± iii1 34 aaaa	BCL	BRANCH, COMPARISON LOW
± iii1 35 aaaa	BCU	BRANCH, COMPARISON UNEQUAL
± uiii 38 aaaa	BCS	BRANCH, CONTROL SWITCH
± sLnn 36 aaaa	BFA	BRANCH, FIELD A
± sLnn 37 aaaa	BFR	BRANCH, FIELD R
± iii1 31 aaaa	BOF	BRANCH, OVERFLOW
± iii1 32 aaaa	BRP	BRANCH, REPEAT
± iiin 33 aaaa	BSA	BRANCH, SIGN A
± iii1 30 aaaa	BUN	BRANCH, UNCONDITIONALLY
± uiir 60 aaaa	CRD	CARD READ
± uiif 62 aaaa	CRF	CARD READ, FORMAT LOAD
± uiii 64 aaaa	CRI	CARD READ INTERROGATE, BRANCH
± uicf 61 aaaa	CWR	CARD WRITE
± uiif 63 aaaa	CWF	CARD WRITE, FORMAT LOAD
± uiii 65 aaaa	CWI	CARD WRITE INTERROGATE, BRANCH
± iii1 45 iii1	CLA	CLEAR A
± iii5 45 iii1	CAB	CLEAR A, B
± iii0 10 aaaa	CAD	CLEAR, ADD
± iii1 10 aaaa	CAA	CLEAR, ADD ABSOLUTE
± iii3 45 iii1	CAR	CLEAR A, R
± iii7 45 iii1	CLT	CLEAR A, R, B
± iii4 45 iii1	CLB	CLEAR B
± iii1 46 aaaa	CLL	CLEAR LOCATION
± iii2 45 iii1	CLR	CLEAR R
± iii6 45 iii1	CRB	CLEAR R, B
± iii0 11 aaaa	CSU	CLEAR, SUBTRACT
± iii1 11 aaaa	CSA	CLEAR, SUBTRACT ABSOLUTE
± sLf0 18 aaaa	CFA	COMPARE FIELD A
± sLf1 18 aaaa	CFR	COMPARE FIELD R
± nnnn 21 aaaa	DBB	DECREASE B, BRANCH
± sLnn 27 aaaa	DFL	DECREASE FIELD LOCATION
± sLnn 28 aaaa	DLB	DECREASE FIELD LOCATION, LOAD B
± iii1 15 aaaa	DIV	DIVIDE
± iii1 17 aaaa	EXT	EXTRACT
± iii0 22 aaaa	FAD	FLOATING ADD
± iii1 22 aaaa	FAA	FLOATING ADD ABSOLUTE
± iii1 25 aaaa	FDV	FLOATING DIVIDE
± iii1 24 aaaa	FMU	FLOATING MULTIPLY
± iii0 23 aaaa	FSU	FLOATING SUBTRACT
± iii1 23 aaaa	FSA	FLOATING SUBTRACT ABSOLUTE
± nnnn 20 aaaa	IBB	INCREASE B, BRANCH
± sLnn 26 aaaa	IFL	INCREASE FIELD LOCATION
± iii1 00 iii1	HLT	HALT
± iii1 08 iii1	KAD	KEYBOARD ADD
± iii0 42 aaaa	LDB	LOAD B
± iii1 42 aaaa	LBC	LOAD B COMPLEMENT
± iii1 41 aaaa	LDR	LOAD R
± iiin 43 iii1	LSA	LOAD SIGN A
4 uhhk 51 aaaa	MFC	MAGNETIC-TAPE FIELD SCAN
4 uhh0 50 aaaa	MFS	MAGNETIC-TAPE FIELD SEARCH
± unkk 54 aaaa	MIW	MAGNETIC-TAPE INITIAL WRITE
± unii 55 aaaa	MIR	MAGNETIC-TAPE INITIAL WRITE, RECORD
± uii0 59 aaaa	MIB	MAGNETIC-TAPE INTERROGATE, BRANCH
± uii1 59 aaaa	MIE	MAGNETIC-TAPE INTERROGATE END OF TAPE, BRANCH
± uhh4 50 iii1	MLS	MAGNETIC-TAPE LANE SELECT
± unkk 56 aaaa	MOW	MAGNETIC-TAPE OVERWRITE
± unii 57 aaaa	MOR	MAGNETIC-TAPE OVERWRITE, RECORD
± uii2 58 iii1	MPE	MAGNETIC-TAPE POSITION AT END OF INFORMATION
± uni1 58 iii1	MPB	MAGNETIC-TAPE POSITION BACKWARD
± uni0 58 iii1	MPF	MAGNETIC-TAPE POSITION FORWARD
± univ 52 aaaa	MRD	MAGNETIC-TAPE READ
± univ 53 aaaa	MRR	MAGNETIC-TAPE READ, RECORD
± uhh8 50 iii1	MRW	MAGNETIC-TAPE REWIND
± uhh9 50 iii1	MDA	MAGNETIC-TAPE REWIND, DE-ACTIVATE
0 uhhk 51 aaaa	MTC	MAGNETIC-TAPE SCAN
0 uhh0 50 aaaa	MTS	MAGNETIC-TAPE SEARCH
± iii1 14 aaaa	MUL	MULTIPLY
± iii1 01 iii1	NOP	NO OPERATION
± unnv 03 aaaa	PRD	PAPER-TAPE READ
± uiiv 04 aaaa	PRB	PAPER-TAPE READ, BRANCH
± unnv 05 aaaa	PRI	PAPER-TAPE READ, INVERSE FORMAT
± unni 06 aaaa	PWR	PAPER-TAPE WRITE
± uiii 07 aaaa	PWI	PAPER-TAPE WRITE INTERROGATE, BRANCH
± inni 29 aaaa	RTF	RECORD TRANSFER
± iii1 16 iii1	RND	ROUND
± iii0 49 iinn	SLA	SHIFT LEFT A
± iii1 49 iinn	SLT	SHIFT LEFT A AND R
± iii2 49 iinn	SLS	SHIFT LEFT A WITH SIGN
± iii0 48 iinn	SRA	SHIFT RIGHT A
± iii1 48 iinn	SRT	SHIFT RIGHT A AND R
± iii2 48 iinn	SRS	SHIFT RIGHT A WITH SIGN
± sLf0 40 aaaa	STA	STORE A
± sLf2 40 aaaa	STB	STORE B
± iii1 44 aaaa	STP	STORE P
± sLf1 40 aaaa	STR	STORE R
± iii0 13 aaaa	SUB	SUBTRACT
± iii1 13 aaaa	SUA	SUBTRACT ABSOLUTE
± inni 09 aaaa	SPO	SUPERVISORY PRINT-OUT

ElectroData | DIVISION OF BURROUGHS CORPORATION

DATATRON 220

A Summary of Operations in Function Order

▽ ARITHMETIC

± 1234 56 7890	ABR	NAME
± iii0 10 aaaa	CAD	CLEAR, ADD
± iii1 10 aaaa	CAA	CLEAR, ADD ABSOLUTE
± iii0 11 aaaa	CSU	CLEAR, SUBTRACT
± iii1 11 aaaa	CSA	CLEAR, SUBTRACT ABSOLUTE
± iii0 12 aaaa	ADD	ADD
± iii1 12 aaaa	ADA	ADD ABSOLUTE
± iii0 13 aaaa	SUB	SUBTRACT
± iii1 13 aaaa	SUA	SUBTRACT ABSOLUTE
± iii1 14 aaaa	MUL	MULTIPLY
± iii1 15 aaaa	DIV	DIVIDE
± iii1 16 iii1	RND	ROUND
± iii1 19 aaaa	ADL	ADD TO LOCATION
± iii0 22 aaaa	FAD	FLOATING ADD
± iii1 22 aaaa	FAA	FLOATING ADD ABSOLUTE
± iii0 23 aaaa	FSU	FLOATING SUBTRACT
± iii1 23 aaaa	FSA	FLOATING SUBTRACT ABSOLUTE
± iii1 24 aaaa	FMU	FLOATING MULTIPLY
± iii1 25 aaaa	FDV	FLOATING DIVIDE

▽ MANIPULATION AND TRANSFER OF INFORMATION

± iii1 17 aaaa	EXT	EXTRACT
± inni 29 aaaa	RTF	RECORD TRANSFER
± sLf0 40 aaaa	STA	STORE A
± sLf1 40 aaaa	STR	STORE R
± sLf2 40 aaaa	STB	STORE B
± iii1 41 aaaa	LDR	LOAD R
± iii0 42 aaaa	LDB	LOAD B
± iii1 42 aaaa	LBC	LOAD B COMPLEMENT
± iiin 43 iii1	LSA	LOAD SIGN A
± iii1 44 aaaa	STP	STORE P
± iii1 45 iii1	CLA	CLEAR A
± iii2 45 iii1	CLR	CLEAR R
± iii3 45 iii1	CAR	CLEAR A, R
± iii4 45 iii1	CLB	CLEAR B
± iii5 45 iii1	CAB	CLEAR A, B
± iii6 45 iii1	CRB	CLEAR R, B
± iii7 45 iii1	CLT	CLEAR A, R, B
± iii1 46 aaaa	CLL	CLEAR LOCATION
± iii0 48 iinn	SRA	SHIFT RIGHT A
± iii1 48 iinn	SRT	SHIFT RIGHT A AND R
± iii2 48 iinn	SRS	SHIFT RIGHT A WITH SIGN
± iii0 49 iinn	SLA	SHIFT LEFT A
± iii1 49 iinn	SLT	SHIFT LEFT A AND R
± iii2 49 iinn	SLS	SHIFT LEFT A WITH SIGN

▽ DECISION AND BRANCHING

± sLf0 18 aaaa	CFA	COMPARE FIELD A
± sLf1 18 aaaa	CFR	COMPARE FIELD R
± iii1 30 aaaa	BUN	BRANCH, UNCONDITIONALLY
± iii1 31 aaaa	BOF	BRANCH, OVERFLOW
± iii1 32 aaaa	BRP	BRANCH, REPEAT
± iiin 33 aaaa	BSA	BRANCH, SIGN A
± iii0 34 aaaa	BCH	BRANCH, COMPARISON HIGH
± iii1 34 aaaa	BCL	BRANCH, COMPARISON LOW
± iii0 35 aaaa	BCE	BRANCH, COMPARISON EQUAL
± iii1 35 aaaa	BCU	BRANCH, COMPARISON UNEQUAL
± sLnn 36 aaaa	BFA	BRANCH, FIELD A
± sLnn 37 aaaa	BFR	BRANCH, FIELD R
± uiii 38 aaaa	BCS	BRANCH, CONTROL SWITCH

▽ CONTROL

± iii1 00 iii1	HLT	HALT
± iii1 01 iii1	NOP	NO OPERATION

▽ INSTRUCTION MODIFICATION AND TALLYING

± nnnn 20 aaaa	IBB	INCREASE B, BRANCH
± nnnn 21 aaaa	DBB	DECREASE B, BRANCH
± sLnn 26 aaaa	IFL	INCREASE FIELD LOCATION
± sLnn 27 aaaa	DFL	DECREASE FIELD LOCATION
± sLnn 28 aaaa	DLB	DECREASE FIELD LOCATION, LOAD B