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SECTION FOUR
FIXED POINT
SIMULATORS

SIMULATE MPY USING RANDOM VALUES

	45300		ORG	19136	
	45300	B	HED		
45300	-0774 00 4	45301	SECT4	AXC **1,4	SET
45301	0634 00 4	00101	SXA	A\$SVXR4,4	SEQUENCE
45302	0020 00 0	45304	TRA	MPY	CHECKER
45303	444770606060		BCD	1MPY	
45304	0074 00 4	45701	MPY	TSX RANSR,4	GENERATE RANDOM VALUES
45305	0534 00 1	56723	LXA	EINS,1	FOR THE CORRECT
45306	0634 00 1	56671	SXA	RIVUN,1	ROUTINE RETURN
45307	1 77774 4	45723	TXI	RELOD+1,4,-4	SAVE MULTIPLIER-LOAD ACC
45310	0074 00 4	45722	MPY1	TSX RELOD,4	RESTORE REGISTERS
45311	0200 00 0	56650	MPY	CAND	EXECUTE INSTRUCTION
45312	0074 00 4	45745	TSX	STORE,4	SAVE PRODUCT
45313	0074 00 4	45733	TSX	PRSYN,4	DETERMINE PRODUCT SIGN
45314	0074 00 4	45763	TSX	IF,4	CHECK IF SR VALUE ZERO
45315	0020 00 0	45412	TRA	FIX	SR VALUE ZERO
45316	0774 00 1	00044	AXT	36,1	44 IN XRA
45317	0560 00 0	56665	LDQ	MQ	MULTIPLIER TO MQ
45320	-0754 00 0	00000	PXD		CLEAR ALL ACC
45321	0765 00 0	00000	LRS	0	AND MQ SIGN
45322	0020 00 0	45412	TRA	FIX	SAVE REGISTERS
45323	0074 00 4	45773	LOAD	TSX LOAD2,4	SET UP FOR ITERATION
45324	3 00001 1	45335	TXH	BITS,1,1	TRA IF XRA NOT 1
45325	0056 00	000001	RNT	1	CHECK FOR MQ 35 BIT
45326	0020 00 0	45332	TRA	**4	BIT NOT PRESENT
45327	0520 00 0	56667	ZET	STRNG	CHECK FOR STRING BIT
45330	0020 00 0	45361	TRA	X2+2	PERFORM 2X ITERATION
45331	0020 00 0	45401	TRA	X1+5	PERFORM 1X ITERATION
45332	0520 00 0	56667	ZET	STRNG	CHECK FOR STRING BIT
45333	0020 00 0	45377	TRA	X1+3	PERFORM 1X ITERATION
45334	0020 00 0	45405	TRA	X+2	PERFORM X ITERATION

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45335	0056	00	000003	BITS	RNT 3	CHECK FOR BITS IN MQ 34, 35
45336	0020	00	0 45340		TRA **2	BITS NOT PRESENT
45337	0020	00	0 45346		TRA SUBIX	BITS PRESENT
45340	0056	00	000002		RNT 2	CHECK FOR BIT IN MQ 34
45341	0020	00	0 45343		TRA **2	BIT NOT PRESENT
45342	0020	00	0 45357		TRA X2	BIT PRESENT
45343	0056	00	000001		RNT 1	CHECK FOR BIT IN MQ 35
45344	0020	00	0 45403		TRA X	BIT NOT PRESENT
45345	0020	00	0 45374		TRA X1	BIT PRESENT
45346	0520	00	0 56667	SUBIX	ZET STRNG	CHECK FOR STRING BIT
45347	0074	00	2 45405		TSX X+2,2	STRING BIT PRESENT
45350	0760	00	0 00006		COM	2-S COMPLEMENT
45351	0401	00	0 56703		ADM ONE	OF THE SR
45352	0520	00	0 56667		ZET STRNG	CHECK FOR STRING BIT
45353	0074	00	4 46001		TSX QP,4	SIMULATE -1X CONDITION
45354	0074	00	4 46005		TSX CYCLE,4	PERFORM ITERATION
45355	0634	00	1 56667		SXA STRNG,1	SET STRING BIT
45356	0020	00	0 45412		TRA FIX	AND PROCEED
45357	0520	00	0 56667	X2	ZET STRNG	CHECK FOR STRING BIT
45360	0020	00	0 45350		TRA SUBIX+2	STRING BIT PRESENT
45361	0767	00	0 00001		ALS 1	SHIFT SR LEFT 1
45362	0074	00	4 46005		TSX CYCLE,4	PERFORM ITERATION
45363	-0520	00	0 56667		NZT STRNG	CHECK FOR STRING BIT
45364	0020	00	0 45412		TRA FIX	BIT NOT PRESENT
45365	0401	00	0 56706		ADM TO	SIMULATE
45366	-3 00000	1	45370		TXL **2,1,0	-1X
45367	0401	00	0 56705		ADM VUN	CONDITION
45370	0767	00	0 00002		ALS 2	DISCARD
45371	0771	00	0 00002		ARS 2	P AND Q
45372	0600	00	0 56667		STZ STRNG	CLEAR STRING BIT
45373	0020	00	0 45412		TRA FIX	AND PROCEED

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45374	0520	00	0	56667	X1	ZET STRNG	CHECK FOR STRING BIT
45375	0020	00	0	45361		TRA X2+2	STRING BIT PRESENT
45376	0020	00	0	45401		TRA **3	STRING BIT OFF
45377	0074	00	4	46001		TSX QP,4	SIMULATE -1X CONDITION
45400	0600	00	0	56667		STZ STRNG	CLEAR STRING BIT
45401	0074	00	4	46005		TSX CYCLE,4	PERFORM ITERATION
45402	0020	00	0	45412		TRA FIX	AND PROCEED
45403	0520	00	0	56667	X	ZET STRNG	CHECK FOR STRING BIT
45404	0020	00	0	45377		TRA X1+3	STRING BIT PRESENT
45405	--0754	00	0	00000		PXD	CLEAR ACCUMULATOR
45406	-3 00000	2		45410		TXL **2,2,0	TRA IF XRB ZERO
45407	0074	00	4	46001		TSX QP,4	SIMULATE -1X CONDITION
45410	0074	00	4	46005		TSX CYCLE,4	PERFORM ITERATION
45411	3 00000	2		45355		TXH X2-2,2,0	TRA IF XRB NOT ZERO
45412	0601	00	0	56664	FIX	STO ACC	SAVE THE
45413	--0600	00	0	56665		STQ MQ	REGISTERS
45414	2 00001	1		45323		TIX LOAD,1,1	PERFORM ALL ITERATIONS
45415	0020	00	0	46025		TRA MPYD	CHECK PRODUCT RESULT
45416	0760	00	0	00161	SWT1	SWT 1	TEST SENSE SWITCH 1
45417	0020	00	0	45421		TRA **2	PROCEED
45420	0020	00	0	45310		TRA MPY1	REPEAT WITH SAME VALUES
45421	0074	00	4	46017		TSX SUMOR,4	CHECK FOR MORE MPY
45422	0074	00	4	00106		TSX OK,4	TO CHECK
45423	0020	00	0	45304		TRA MPY	SEQUENCE

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SIMULATE VLM USING RANDOM VALUES

45424	654344606060		BCD 1VLM	
45425	0074 00 4 45701	VLM	TSX RANSR ₀₄	GENERATE RANDOM SR AND MQ
45426	0534 00 1 56724		LXA ZWEI ₀₁	FOR THE CORRECT
45427	0634 00 1 56671		SXA RIVUN ₀₁	ROUTINE RETURN
45430	0600 00 0 56660		STZ CTO	CLEAR
45431	0600 00 0 56661		STZ EVEN	LOCATIONS
45432	-0763 00 0 00006		LGL 6	GET
45433	0074 00 4 45730		TSX ODD ₀₄	CHECK FOR EVEN OR ODD COUNT
45434	0734 00 1 00000		PAX 0 ₀₁	COUNT
45435	-3 00057 1 45437		TXL **2 ₀₁₀₄₇	OF
45436	1 77760 1 45441		TXI **3 ₀₁₀₋₁₆	57
45437	3 00000 1 45441		TXH **2 ₀₁₀₀	OR
45440	-0625 00 0 56660		STL CTO	LESS
45441	0634 00 1 56655		SXA THECT ₀₁	AND
45442	0441 00 0 45475		LDI VLM2	INSERT
45443	-0057 00 000077		RIL 77	COUNT
45444	-0754 00 1 00000		PXD 0 ₀₁	IN
45445	0043 00 0 00000		OAI	VLM
45446	0604 00 0 45475		STI VLM2	INSTRUCTION
45447	0074 00 4 45722	VLM1	TSX RELOD ₀₄	RESTORE REGISTERS
45450	-0520 00 0 56660		NZT CTO	IS COUNT ZERO
45451	0020 00 0 45475		TRA VLM2	NO
45452	0600 00 0 56677		STZ ACSIN	CLEAR
45453	0600 00 0 56700		STZ MQSIN	LOCATIONS
45454	0120 00 0 45456		TPL **2	AND
45455	-0625 00 0 56677		STL ACSIN	INDICATE
45456	0162 00 0 45460		TQP **2	SIGNS
45457	-0625 00 0 56700		STL MQSIN	AND
45460	0601 00 0 56664		STO ACC	SAVE
45461	-0600 00 0 56665		STQ MQ	THE
45462	0600 00 0 56645		STZ PBIT1	ACC
45463	0600 00 0 56644		STZ QBIT1	AND
45464	-0760 00 0 00001		PBT	THE
45465	0020 00 0 45467		TRA **2	MQ
45466	-0625 00 0 56645		STL PBIT1	REGISTERS
45467	-0765 00 0 00001		LGR 1	FOR
45470	-0760 00 0 00001		PBT	CHECKING
45471	0020 00 0 45473		TRA **2	AFTER
45472	-0625 00 0 56644		STL QBIT1	VLM
45473	-0763 00 0 00001		LGL 1	INSTRUCTION
45474	0560 00 0 56647		LDQ PLIER	EXECUTION

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45475	0204 00 0	56650	VLM2	VLM CAND	EXECUTE INSTRUCTION
45476	0074 00 4	45745		TSX STORE,4	SAVE PRODUCT
45477	0520 00 0	56660		ZET CTO	IS COUNT ZERO
45500	1 77774 4	45771		TXI IF+6,4,-4	YES
45501	0074 00 4	45733		TSX PRSYN,4	DETERMINE PRODUCT SIGN
45502	0074 00 4	45763		TSX IF,4	CHECK IF SR VALUE ZERO
45503	0020 00 0	45611		TRA FIX1	SR ZERO OR NO COUNT
45504	1 00001 1	45505		TXI *+1,1,1	INCREMENT XRA 1
45505	0560 00 0	56665		LDQ MQ	MULTIPLIER TO MQ
45506	-0754 00 0	00000		PXD	CLEAR ALL ACC
45507	0765 00 0	00000		LRS 0	AND MQ SIGN
45510	0020 00 0	45613		TRA FIX1+2	SAVE REGISTERS
45511	0074 00 4	45773	LOAD1	TSX LOAD2,4	SET UP FOR ITERATION
45512	3 00001 1	45527		TXH BINS,1,1	TRA IF XRA NOT 1
45513	-0760 00 0	00142		SLT 2	IS SENSE LIGHT 2 ON
45514	0020 00 0	45517		TRA *+3	NO
45515	0760 00 0	00142		SLN 2	TURN ON SENSE LIGHT 2
45516	0020 00 0	45575		TRA T1+3	PERFORM ITERATION
45517	0056 00	000001		RNT 1	CHECK FOR MQ 35 BIT
45520	0020 00 0	45524		TRA *+4	BIT NOT PRESENT
45521	0520 00 0	56667		ZET STRNG	CHECK STRING BIT INDICATION
45522	0020 00 0	45557		TRA T2+2	PERFORM 2X ITERATION
45523	0020 00 0	45577		TRA T1+5	PERFORM 1X ITERATION
45524	0520 00 0	56667		ZET STRNG	CHECK STRING BIT INDICATION
45525	0020 00 0	45575		TRA T1+3	PERFORM 1X ITERATION
45526	0020 00 0	45603		TRA T+2	PERFORM X ITERATION
45527	0056 00	000003	BINS	RNT 3	CHECK MQ 34 AND 35 FOR BITS
45530	0020 00 0	45532		TRA *+2	BITS NOT IN BOTH POSITIONS
45531	0020 00 0	45540		TRA TUBIX	BITS IN BOTH POSITIONS
45532	0056 00	000002		RNT 2	CHECK FOR BIT IN MQ 34
45533	0020 00 0	45535		TRA *+2	BIT NOT IN MQ 34
45534	0020 00 0	45555		TRA T2	BIT IN MQ 34
45535	0056 00	000001		RNT 1	CHECK FOR BIT IN MQ 35
45536	0020 00 0	45601		TRA T	BIT NOT IN MQ 35
45537	0020 00 0	45572		TRA T1	BIT IN MQ 35

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45540	0520	00	0	56667	TUBIX	ZET STRNG	CHECK STRING BIT INDICATION
45541	0074	00	2	45603	TSX T+2,2	STRING BIT PRESENT	
45542	0760	00	0	00006	COM	2-S COMPLEMENT	
45543	0401	00	0	56703	ADM ONE	OF SR VALUE	
45544	0520	00	0	56667	ZET STRNG	CHECK STRING BIT INDICATION	
45545	0074	00	4	46001	TSX QP,4	SIMULATE -1X OPERATION	
45546	0074	00	4	46005	TSX CYCLE,4	PERFORM ITERATION	
45547	0520	00	0	56661	NZT EVEN	IS COUNT EVEN	
45550	0020	00	0	45553	TRA **3	NO	
45551	3 00001	1		45553	TXH **2,1,1	TRA IF XRA NOT 1	
45552	0760	00	0	00142	SLN 2	TURN ON SENSE LIGHT 2	
45553	0634	00	1	56667	SXA STRNG,1	SET STRING BIT INDICATION	
45554	0020	00	0	45613	TRA FIX1+2	AND PROCEED	
45555	0520	00	0	56667	T2	ZET STRNG	CHECK STRING BIT INDICATION
45556	0020	00	0	45542	TRA TUBIX+2	STRING BIT PRESENT	
45557	0767	00	0	00001	ALS 1	SHIFT SR VALUE LEFT 1	
45560	0074	00	4	46005	TSX CYCLE,4	PERFORM ITERATION	
45561	0520	00	0	56667	NZT STRNG	CHECK STRING BIT INDICATION	
45562	0020	00	0	45613	TRA FIX1+2	PROCEED	
45563	0401	00	0	56706	ADM TO	SIMULATE	
45564	3 00000	1		45566	TXL **2,1,0	-1X	
45565	0401	00	0	56705	ADM VUN	OPERATION	
45566	0767	00	0	00002	ALS 2	DISCARD	
45567	0771	00	0	00002	ARS 2	P AND Q	
45570	0600	00	0	56667	STZ STRNG	CLEAR STRING BIT INDICATION	
45571	0020	00	0	45613	TRA FIX1+2	PROCEED	
45572	0520	00	0	56667	T1	ZET STRNG	CHECK STRING BIT INDICATION
45573	0020	00	0	45557	TRA T2+2	STRING BIT PRESENT	
45574	0020	00	0	45577	TRA **3	STRING BIT NOT PRESENT	
45575	0074	00	4	46001	TSX QP,4	SIMULATE -1X OPERATION	
45576	0600	00	0	56667	STZ STRNG	CLEAR STRING BIT INDICATION	
45577	0074	00	4	46005	TSX CYCLE,4	PERFORM ITERATION	
45600	0020	00	0	45613	TRA FIX1+2	PROCEED	

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45601	0520	00	0	56667	T	ZET STRNG	CHECK STRING BIT INDICATION
45602	0020	00	0	45575		TRA T1+3	STRING BIT PRESENT
45603	-0754	00	0	00000		PXD	CLEAR ACCUMULATOR
45604	-3	00000	2	45606		TXL *+2,2,0	TRA IF XRB ZERO
45605	0074	00	4	46001		TSX QP,4	SIMULATE -IX CONDITION
45606	0074	00	4	46005		TSX CYCLE,4	PERFORM ITERATION
45607	3	00000	2	45547		TXH T2-6,2,0	TRA IF XRB NOT ZERO
45610	0020	00	0	45613		TRA FIX1+2	PROCEED
45611	0520	00	0	56660	FIX1	ZET CTO	IS COUNT ZERO
45612	0020	00	0	46077		TRA NOMPY	YES
45613	0601	00	0	56664		STO ACC	SAVE THE
45614	-0600	00	0	56665		STQ MQ	REGISTERS
45615	2	00001	1	45511		TIX LOAD1,1,1	PERFORM ALL ITERATIONS
45616	-0760	00	0	00142		SLT 2	IS SENSE LIGHT 2 ON
45617	0020	00	0	45622		TRA *+3	NO
45620	0760	00	0	00142		SLN 2	TURN ON SENSE LIGHT 2
45621	0020	00	0	45511		TRA LOAD1	PERFORM LAST ITERATION
45622	0020	00	0	46025		TRA MPYD	CHECK PRODUCT RESULT
45623	0760	00	0	00161	SWT1A	SWT 1	TEST SENSE SWITCH 1
45624	0020	00	0	45627		TRA *+3	PROCEED
45625	0534	00	1	56655		LXA THECT,1	RESTORE THE COUNT
45626	0020	00	0	45447		TRA VLM1	REPEAT WITH SAME VALUES
45627	0074	00	4	46017		TSX SUMOR,4	CHECK FOR MORE VLM
45630	0074	00	4	00106		TSX OK,4	TO CHECK
45631	0020	00	0	45425		TRA VLM	SEQUENCE

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SIMULATE DVP USING RANDOM VALUES

45632	246547606060		BCD 1DVP	
45633	0074 00 4 45677	DVP	TSX RANSR-2,4	GENERATE RANDOM VALUES
45634	0534 00 1 56725		LXA DREI,1	FOR THE CORRECT
45635	0634 00 1 56671		SXA RIVUN,1	ROUTINE RETURN
45636	0534 00 1 46451		LXA DIVDE,1	SET
45637	3 00000 1 46377		TXH DUN,1,0	UP
45640	0774 00 1 56727		AXT PLAIN,1	FOR
45641	0634 00 1 46451		SXA DIVDE,1	DVP
45642	0600 00 0 56676		STZ VAR	INSTRUCTION
45643	0020 00 0 46377		TRA DUN	EXECUTION
45644	0760 00 0 00161	SWT1B	SWT 1	TEST SENSE SWITCH 1
45645	0020 00 0 45650		TRA *+3	PROCEED
45646	0760 00 0 00140		SLF	SENSE LIGHTS OFF
45647	0020 00 0 46442		TRA DIV	REPEAT WITH SAME VALUES
45650	0074 00 4 46017		TSX SUMOR,4	CHECK FOR MORE DVP
45651	0074 00 4 00106		TSX OK,4	TO CHECK
45652	0020 00 0 45633		TRA DVP	SEQUENCE

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SIMULATE VDP USING RANDOM VALUES

45653	652447606060	BCD 1VDP	
45654	0074 00 4 45677	VDP TSX RANSR-2,4	GENERATE RANDOM VALUES
45655	0534 00 1 56726	LXA FIER,1	FOR THE CORRECT
45656	0634 00 1 56671	SXA RIVUN,1	ROUTINE RETURN
45657	0534 00 1 46451	LXA DIVDE,1	SET
45660	3 00000 1 46377	TXH DUN,1,0	UP
45661	0774 00 1 56730	AXT VARIA,1	FOR
45662	0634 00 1 46451	SXA DIVDE,1	VDP
45663	-0625 00 0 56676	STL VAR	INSTRUCTION
45664	0020 00 0 46377	TRA DUN	EXECUTION
45665	0760 00 0 00161	SWTIC SWT 1	TEST SENSE SWITCH 1
45666	0020 00 0 45672	TRA *+4	PROCEED
45667	0534 00 1 56655	LXA THECT,1	RESTORE THE COUNT
45670	0760 00 0 00140	SLF	SENSE LIGHTS OFF
45671	0020 00 0 46442	TRA DIV	REPEAT WITH SAME VALUES
45672	0074 00 4 46017	TSX SUMOR,4	CHECK FOR MORE VDP
45673	0074 00 4 00106	TSX OK,4	TO CHECK
45674	0020 00 0 45654	TRA VDP	SEQUENCE
45675	0761 00 0 00000	NOP	
45676	0020 00 0 47363	TRA A\$RELT	

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SUBROUTINES

45677	0774	00	1	00000		AXT 0,1	INITIALIZE
45700	0634	00	1	46451		SXA DIVDE,1	LOCATION
45701	0774	00	1	00061	RANSR	AXT 49,1	61 IN XRA
45702	0636	00	4	56670		SCA INDEX,4	SAVE ROUTINE LOCATION
45703	0634	00	1	56672		SXA TIMES,1	SAVE VALUE IN XRA
45704	0760	00	0	00140		SLF	SENSE LIGHTS OFF
45705	0760	00	0	00144		SLN 4	TURN ON SENSE LIGHT 4
45706	0400	00	0	56662		ADD RAN	GENERATE
45707	-0520	00	0	56653		NZT ACPR	ANOTHER
45710	0361	00	0	47303		ACL PRI+1	NUMBER
45711	0361	00	0	56653		ACL ACPR	FOR
45712	0602	00	0	56650		SLW CAND	THE
45713	0602	00	0	56662		SLW RAN	SR
45714	-0765	00	0	00044		LGR 36	AND
45715	-0773	00	0	00004		RQL 4	A
45716	-0600	00	0	56647		STQ PLIER	MQ
45717	-3 00060	1		45721		TXL *+2,1,48	VALUE
45720	0020	00	4	00001		TRA 1,4	RETURN AS PER
45721	0020	00	4	00003		TRA 3,4	VALUE IN XRA
45722	0560	00	0	56647	RELOD	LDQ PLIER	RESTORE
45723	0500	00	0	56650		CLA CAND	SR
45724	0601	00	0	56663		STO SR	AND
45725	-0600	00	0	56665		STQ MQ	MQ
45726	0767	00	0	00003		ALS 3	PERHAPS BITS IN ACC Q AND P
45727	0020	00	4	00001		TRA 1,4	RETURN
45730	0760	00	0	00001	ODD	LBT	INDICATE
45731	-0625	00	0	56661		STL EVEN	EVEN
45732	0020	00	4	00001		TRA 1,4	COUNT
45733	-0500	00	0	56650	PRSYN	CAL CAND	DETERMINE
45734	0560	00	0	56701		LDQ MZE	THE
45735	0322	00	0	56647		ERA PLIER	SIGN
45736	-0760	00	0	00001		PBT	OF
45737	-0773	00	0	00001		RQL 1	ACC
45740	-0754	00	0	00000		PXD	AND
45741	0600	00	0	56666		STZ SIGN	THE
45742	-0763	00	0	00001		LGL 1	MQ
45743	0601	00	0	56666		STO SIGN	PRODUCT
45744	0020	00	4	00001		TRA 1,4	RETURN

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45745	0760	00	0	00140	STORE SLF	SENSE LIGHTS OFF
45746	0760	00	0	00144	SLN 4	TURN ON SENSE LIGHT 4
45747	0601	00	0	56653	STO ACPR	SAVE MQ AND
45750	-0600	00	0	56654	STQ MQPR	ACC PRODUCT
45751	0600	00	0	56652	STZ PBIT	CLEAR
45752	0600	00	0	56651	STZ QBIT	LOCATIONS
45753	-0760	00	0	00001	PBT	AND
45754	0020	00	0	45756	TRA *+2	INDICATE
45755	-0625	00	0	56652	STL PBIT	P
45756	0771	00	0	00001	ARS 1	AND
45757	-0760	00	0	00001	PBT	Q
45760	0020	00	4	00001	TRA 1,4	BITS
45761	-0625	00	0	56651	STL QBIT	IF
45762	0020	00	4	00001	TRA 1,4	PRESENT
45763	0600	00	0	56667	IF STZ STRNG	CLEAR LOCATION
45764	0774	00	2	00000	AXT 0,2	CLEAR XRB
45765	0520	00	0	56663	ZET SR	IS SR VALUE ZERO
45766	0020	00	4	00002	TRA 2,4	NO
45767	-0754	00	0	00000	PXD	CLEAR ACC
45770	-0765	00	0	00044	LGR 36	AND THE MQ
45771	0774	00	1	00000	AXT 0,1	CLEAR XRA
45772	0020	00	4	00001	TRA 1,4	COMPARE WITH 7094 RESULT
45773	0774	00	2	00000	LOAD2 AXT 0,2	CLEAR XRB
45774	0500	00	0	56663	CLA SR	MULTIPLICAND TO ACC
45775	0120	00	0	45777	TPL *+2	SET THE ACC
45776	0760	00	0	00003	SSP	SIGN PLUS
45777	0441	00	0	56665	LDI MQ	MQ VALUE TO INDICATORS
46000	0020	00	4	00001	TRA 1,4	RETURN
46001	-0765	00	0	00002	QP LGR 2	SIMULATE
46002	0401	00	0	56707	ADM TRE	A
46003	-0763	00	0	00002	LGL 2	-IX
46004	0020	00	4	00001	TRA 1,4	CONDITION
46005	0560	00	0	56665	CYCLE LDQ MQ	PERFORM
46006	0401	00	0	56664	ADM ACC	ITERATION
46007	-0760	00	0	00142	SLT 2	RETURN WITH
46010	0020	00	0	46012	TRA *+2	SENSE LIGHT
46011	0020	00	4	00001	TRA 1,4	2 ON
46012	-3 00001	1	46014	TXL *+2,1,1	PERFORM	
46013	0765	00	0	00001	LRS 1	RIGHT
46014	1 77777	1	46015	TXI *+1,1,0-1	SHIFTS	
46015	0765	00	0	00001	LRS 1	AS
46016	0020	00	4	00001	TRA 1,4	REQUIRED
46017	-0520	00	0	56672	SUMOR NZT TIMES	CHECK
46020	0020	00	4	00001	TRA 1,4	TO
46021	0534	00	1	56672	LXA TIMES,1	REPEAT
46022	1 77777	1	46023	TXI *+1,1,0-1	THE	
46023	0535	00	4	56670	LAC INDEX,4	INSTRUCTION
46024	0020	00	0	45703	TRA RANSR+2	AGAIN

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46025	0760	00	0	00001	MPYD	PBT	CHECK FOR P BIT IN
46026	0020	00	0	46030		TRA *+2	SIMULATION RESULT
46027	0000	60	0	56671		HTR* RIVUN	SIMULATOR WENT BEZERK
46030	0765	00	0	00001		LGR Y	ACC RIGHT 1
46031	0760	00	0	00001		PBT	CHECK FOR Q BIT IN
46032	0020	00	0	46034		TRA *+2	SIMULATION RESULT
46033	0000	60	0	56671		HTR* RIVUN	SIMULATOR WENT BEZERK
46034	0763	00	0	00001		LGL 1	RESTORE THE
46035	0560	00	0	56665		LDQ MQ	ACC AND MQ
46036	0774	00	4	00000		AXT 0,4	CLEAR XRC
46037	0520	00	0	56652		ZET PBIT	CHECK
46040	0074	00	4	46057		TSX MPY2,4	P
46041	0520	00	0	56651		ZET QBIT	AND
46042	0074	00	4	46057		TSX MPY2,4	Q
46043	0760	00	0	00003		SSP	ADJUST
46044	0520	00	0	56666		ZET SIGN	FOR
46045	0760	00	0	00003		SSM	CORRECT
46046	0765	00	0	00000		LRS 0	SIGN
46047	0340	00	0	56653		CAS ACPR	COMPARE
46050	0074	00	4	46057		TSX MPY2,4	MPY
46051	0020	00	0	46053		TRA *+2	AND
46052	0074	00	4	46057		TSX MPY2,4	SIMULATE
46053	0131	00	0	00000		XCA	RESULTS
46054	0340	00	0	56654		CAS MQPR	FOR
46055	0020	00	0	46057		TRA MPY2	AN
46056	0020	60	0	56671		TRA* RIVUN	ERROR
46057	0760	00	0	00162	MPY2	SWT 2	TEST SENSE SWITCH 2
46060	0020	00	0	46062		TRA *+2	INDICATE ERROR
46061	0020	60	0	56671		TRA* RIVUN	BYPASS ERROR
46062	0760	00	0	00163		SWT 3	TEST SENSE SWITCH 3
46063	0074	00	1	46142		TSX IMGES,1	PRINT ERROR
46064	3 00000	4	4	46066		TXH *+2,4,0	RESTORE REGISTERS
46065	0131	00	0	00000		XCA	IF NECESSARY
46066	0534	00	4	56670		LXA INDEX,4	ROUTINE LOCATION IN XRC
46067	0000	60	0	56671		HTR* RIVUN	DISPLAY AND COMPARE

DISPLAY LOCATIONS FOR RANDOM SR AND MQ VALUES AND
COMPARE MACHINE RESULT WITH THE SIMULATED RESULT

46070	0000	00	0	56647	HTR PLIER	DISPLAY MULTIPLIER
46071	0000	00	0	56650	HTR CAND	DISPLAY MULTIPLICAND

MACHINE EXECUTED PRODUCT

46072	0000	00	0	56651	HTR QBIT	NOT ZERO INDICATES Q BIT
46073	0000	00	0	56652	HTR PBIT	NOT ZERO INDICATES P BIT
46074	0000	00	0	56653	HTR ACPR	ACC AND MQ PRODUCT
46075	0000	00	0	56654	HTR MQPR	AS EXECUTED BY 7094

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FOR VLM INSTRUCTION

46076	0000 00 0 56655	HTR THECT	DISPLAY COUNT FOR VLM
46077	0500 00 0 56645	NOMPY CAL PBIT1	SIMULATION
46100	0520 00 0 56645	ZET PBIT1	AND
46101	0020 00 0 46105	TRA **4	MACHINE
46102	0322 00 0 56652	ERA PBIT	EXECUTION
46103	0100 00 0 46130	TNZ BACK	COMPARE
46104	0020 00 0 46107	TRA **3	OF
46105	0520 00 0 56652	NZT PBIT	P
46106	0020 00 0 46130	TRA BACK	BIT
46107	-0500 00 0 56644	CAL QBIT1	SIMULATION
46110	0520 00 0 56644	ZET QBIT1	AND
46111	0020 00 0 46115	TRA **4	MACHINE
46112	0322 00 0 56651	ERA QBIT	EXECUTION
46113	-0100 00 0 46130	TNZ BACK	COMPARE
46114	0020 00 0 46117	TRA **3	OF
46115	-0520 00 0 56651	NZT QBIT	Q
46116	0020 00 0 46130	TRA BACK	BIT
46117	0500 00 0 56664	CLA ACC	SIMULATION
46120	0340 00 0 56653	CAS ACPR	AND
46121	0020 00 0 46130	TRA BACK	MACHINE
46122	0020 00 0 46124	TRA **2	EXECUTION
46123	0020 00 0 46130	TRA BACK	COMPARE
46124	0500 00 0 56665	CLA MQ	OF
46125	0340 00 0 56654	CAS MQPR	ACC
46126	0020 00 0 46130	TRA BACK	MQ
46127	0020 60 0 56671	TRA* RIVUN	REGISTERS
46130	0560 00 0 56664	BACK LDQ ACC	RESTORE
46131	-0754 00 0 00000	PXD	THE
46132	0520 00 0 56644	ZET QBIT1	ACC
46133	-0501 00 0 56703	ORA ONE	AND
46134	0767 00 0 00001	ALS 1	MQ
46135	0520 00 0 56645	ZET PBIT1	PRIOR
46136	-0501 00 0 56703	ORA ONE	TO
46137	0763 00 0 00043	LLS 35	INDICATING
46140	0560 00 0 56665	LDQ MQ	THE
46141	0074 00 4 46057	TSX MPY2,4	ERROR

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46142	-3	00000	4	46144	IMGES	TXL	++2,4,0	RESTORE REGISTERS
46143	0131	00	0	00000		XCA		IF NECESSARY
46144	0120	00	0	46146		TPL	++2	MAKE THE MQ
46145	0760	00	0	00003		SSP		PRODUCT PLUS
46146	0074	00	4	74302		TSX	PX,4	CONVERT TO OCTAL
46147	0601	00	0	47300		STO	PRO+8	INSERT IN THE
46150	-0600	00	0	47301		STQ	PRO+9	PRINT IMAGE
46151	0534	00	2	56670		LXA	INDEX,2	SET
46152	0500	00	0	56664		CLA	ACC	
46153	0120	00	0	46155		TPL	++2	
46154	0760	00	0	00003		SSP		
46155	0074	00	4	74302		TSX	PX,4	
46156	0601	00	0	47275		STO	PRO+5	SIMULATED
46157	-0600	00	0	47276		STQ	PRO+6	
46160	0560	00	0	56704		LDQ	TWNTY	
46161	0500	00	0	56704		CLA	TWNTY	
46162	0441	00	0	47277		LDI	PRO+7	
46163	0057	00		000077		RIR	77	ACC
46164	-3	45424	2	46172		TXL	++6,2,VLM-1	
46165	-0520	00	0	56660		NZT	CTO	
46166	0020	00	0	46172		TRA	++4	
46167	0520	00	0	56700		ZET	MQSIN	
46170	0020	00	0	46173		TRA	++3	AND
46171	0020	00	0	46174		TRA	++3	
46172	0520	00	0	56666		ZET	SIGN	
46173	0767	00	0	00001		ALS	1	
46174	0043	00	0	00000		OAI		
46175	0604	00	0	47277		STI	PRO+7	MQ
46176	-0773	00	0	00030		RQL	24	
46177	0131	00	0	00000		XCA		
46200	0441	00	0	47274		LDI	PRO+4	
46201	-0057	00		007700		RIL	7700	INTO
46202	-3	45424	2	46210		TXL	++6,2,VLM-1	
46203	-0520	00	0	56660		NZT	CTO	
46204	0020	00	0	46210		TRA	++4	
46205	0520	00	0	56677		ZET	ACSIN	
46206	0020	00	0	46211		TRA	++3	PRINT
46207	0020	00	0	46212		TRA	++3	
46210	0520	00	0	56666		ZET	SIGN	
46211	0767	00	0	00001		ALS	1	
46212	0043	00	0	00000		OAI		IMAGE
46213	0057	00		010100		RIR	10100	SET
46214	-3	45424	2	46223		TXL	++7,2,VLM-1	ACC
46215	-0520	00	0	56660		NZT	CTO	Q
46216	0020	00	0	46223		TRA	++5	AND
46217	0520	00	0	56645		ZET	PBIT1	P
46220	0055	00		000100		SIR	100	VALUE
46221	0520	00	0	56644		ZET	QBIT1	IN
46222	0055	00		010000		SIR	10000	PRINT
46223	0604	00	0	47274		STI	PRO+4	IMAGE

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46224	0500	00	0	56654	CLA MQPR	CONVERT
46225	0120	00	0	46227	TPL *+2	MACHINE
46226	0760	00	0	00003	SSP	EXECUTED
46227	0074	00	4	74302	TSX PX,4	MQ
46230	0601	00	0	47312	STO PR1+8	PRODUCT
46231	0600	00	0	47313	STQ PR1+9	INTO
46232	0441	00	0	47311	LDI PR1+7	OCTAL
46233	0057	00		000077	RIR 77	AND
46234	0560	00	0	56654	LDQ MQPR	INSERT
46235	0500	00	0	56704	CLA TWNTY	IT
46236	0162	00	0	46240	TQP *+2	INTO
46237	0767	00	0	00001	ALS 1	THE
46240	0043	00	0	00000	OAI	PRINT
46241	0604	00	0	47311	STI PR1+7	IMAGE
46242	0500	00	0	56653	CLA ACPR	CONVERT
46243	0120	00	0	46245	TPL *+2	THE
46244	0760	00	0	00003	SSP	MACHINE
46245	0074	00	4	74302	TSX PX,4	EXECUTED
46246	0601	00	0	47307	STO PR1+5	ACC
46247	0600	00	0	47310	STQ PR1+6	PRODUCT
46250	0441	00	0	47306	LDI PR1+4	INTO
46251	0057	00		007700	RIL 7700	OCTAL
46252	0057	00		777700	RIR 777700	AND
46253	0500	00	0	56653	CLA ACPR	INSERT
46254	0560	00	0	56704	LDQ TWNTY	THE
46255	0773	00	0	00030	RQL 24	VALUE
46256	0131	00	0	00000	XCA	INTO
46257	0162	00	0	46261	TQP *+2	THE
46260	0767	00	0	00001	ALS 1	PRINT
46261	0043	00	0	00000	OAI	IMAGE
46262	0520	00	0	56652	ZET PBIT	Q
46263	0055	00		000100	SIR 100	AND
46264	0520	00	0	56651	ZET QBIT	P
46265	0055	00		010000	SIR 10000	INTO
46266	0604	00	0	47306	STI PR1+4	IMAGE
46267	0500	00	0	56650	CLA CAND	CONVERT
46270	0120	00	0	46272	TPL *+2	THE
46271	0760	00	0	00003	SSP	SR
46272	0074	00	4	74302	TSX PX,4	VALUE
46273	0601	00	0	47261	STO PR+4	TO
46274	0600	00	0	47262	STQ PR+5	OCTAL
46275	0441	00	0	47260	LDI PR+3	AND
46276	0057	00		000077	RIR 77	INSERT
46277	0560	00	0	56650	LDQ CAND	THE
46300	0500	00	0	56704	CLA TWNTY	VALUE
46301	0162	00	0	46303	TQP *+2	INTO
46302	0767	00	0	00001	ALS 1	THE
46303	0043	00	0	00000	OAI	PRINT
46304	0604	00	0	47260	STI PR+3	IMAGE

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46305 0500 00 0 56647
46306 0120 00 0 46310
46307 0760 00 0 00003
46310 0074 00 4 74302
46311 0601 00 0 47264
46312 0600 00 0 47265
46313 0441 00 0 47263
46314 0057 00 000077
46315 0560 00 0 56647
46316 0500 00 0 56704
46317 0162 00 0 46321
46320 0767 00 0 00001
46321 0043 00 0 00000
46322 0604 00 0 47263

CLA PLIER
TPL *+2
SSP
TSX PX,4
STO PR+7
STQ PR+8
LDI PR+6
RIR 77
LDQ PLIER
CLA TWNTY
TQP *+2
ALS 1
OAI
STI PR+6
CONVERT
THE
MQ
VALUE
TO
OCTAL
AND
INSERT
THE
VALUE
INTO
THE
PRINT
IMAGE

46323 0441 00 0 47256
46324 0057 00 777777
46325 3 45304 2 46334
46326 0442 00 0 56710
46327 0604 00 0 47256

MPYPR LDI PR+1
RIR 777777
TXH VLMPR,2
OSI INMPY
STI PR+1
INSERT
MPY
MPY INSTRUCTION
IN
IMAGE

46330 0441 00 0 56714
46331 0604 00 0 47266
46332 0604 00 0 47267
46333 0020 00 0 46354

LDI BLNK
STI PR+9
STI PR+10
TRA ERLOC
BLANK
OUT
COUNT
GO PRINT

46334 0442 00 0 56711
46335 0604 00 0 47256
46336 0500 00 0 56715
46337 0601 00 0 47266
46340 0441 00 0 56716
46341 0057 00 777700
46342 0500 00 0 56655
46343 0734 00 2 00000
46344 0074 00 4 74302
46345 0761 00 0 00000
46346 0130 00 0 00000
46347 0767 00 0 00006
46350 0043 00 0 00000
46351 3 00007 2 46353
46352 0055 00 600000
46353 0604 00 0 47267

VLMPR OSI INVLM
STI PR+1
CLA VLMIN
STO PR+9
LDI VLMIN+1
RIR 777700
CLA THECT
PAX 0,2
TSX PX,4
NOP
XCL
ALS 6
OAI
TXH *+2,2,7
SIR 600000
STI PR+10
INSERT
COUNT
IN
IMAGE

46354 0500 00 0 56670
46355 0074 00 4 74302
46356 0761 00 0 00000
46357 0441 00 0 47254
46360 0057 00 007777
46361 0057 00 777777
46362 0131 00 0 00000
46363 0043 00 0 00000
46364 0604 00 0 47254
46365 0074 02 4 74305
46366 0 00000 0 47250
46367 -3 31054 1 47170

ERLOC CLA INDEX
TSX PX,4
NOP
LDI RULOC+4
RIL 7777
RIR 777777
XCA
OAI
STI RULOC+4
TSX SPLAX,4,2
PZE RULOC
TXL DIVY,1,0-TSTY GO
CONVERT
THE
ROUTINE
LOCATION
AND
INSERT
IN
THE
PRINT
AND
GO

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46370	0074 00 4	74305	TSX	SPLAX,4	
46371	0 00000 0	47255	PZE	PR	THE
46372	0074 00 4	74305	TSX	SPLAX,4	
46373	0 00000 0	47270	PZE	PRO	FOR
46374	0074 00 4	74305	TSX	SPLAX,4	
46375	0 00000 0	47302	PZE	PR1	INDICATION
46376	0020 00 1	77776	TRA	-2,1	RETURN
46377	0600 00 0	56660	DUN	STZ CTO	CLEAR LOCATION
46400	-0520 00 0	56676	NZT	VAR	WILL VDP BE SIMULATED
46401	0020 00 0	46421	TRA	BALNS	NO
46402	-0754 00 0	00000	PXD		CLEAR ACCUMULATOR
46403	-0763 00 0	00006	LGL	6	RANDOM
46404	0734 00 1	00000	PAX	0,1	COUNT
46405	-0765 00 0	00006	LGR	6	TO XRA
46406	-3 00057 1	46410	TXL	**2,1,47	REDUCE COUNT IF
46407	1 77760 1	46412	TXI	**3,1,16	GREATER THAN 57
46410	3 00000 1	46412	TXH	**2,1,0	INDICATE IF
46411	-0625 00 0	56660	STL	CTO	COUNT ZERO
46412	0634 00 1	56655	SXA	THECT,1	SAVE THE COUNT
46413	0441 00 0	56730	LDI	VARIA	INSERT
46414	-0057 00 0	000077	RIL	77	COUNT
46415	-0754 00 1	00000	PXD	0,1	IN
46416	0043 00 0	00000	OAI		VDP
46417	0604 00 0	56730	STI	VARIA	INSTRUCTION
46420	0771 00 1	00057	ARS	47,1	GENERATE
46421	-0773 00 0	00022	BALNS	RQL 18	RANDOM
46422	0763 00 0	00043		LLS 35	ACCUMULATOR
46423	0601 00 0	56646	STO	ACCU	SAVE ACC S, 1-35
46424	0600 00 0	56645	STZ	PBIT1	CLEAR
46425	0600 00 0	56644	STZ	QBIT1	THESE
46426	0600 00 0	56673	STZ	NOP	LOCATIONS
46427	-0760 00 0	00001	PBT		INDICATE
46430	0020 00 0	46433	TRA	**3	IF
46431	-0625 00 0	56645	STL	PBIT1	P
46432	-0625 00 0	56673	STL	NOP	AND
46433	-0765 00 0	00001	LGR	1	Q
46434	-0760 00 0	00001	PBT		BITS
46435	0020 00 0	46440	TRA	**3	ARE
46436	-0625 00 0	56644	STL	QBIT1	PRESENT
46437	-0625 00 0	56673	STL	NOP	IN
46440	-0763 00 0	00001	LGL	1	ACCUMULATOR
46441	0074 00 1	47203	TSX	LODUP,1	RESTORE MQ DIVIDEND

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46442	0074	00	1	47204	DIV	TSX LODUP+1,1	RESTORE REGISTERS
46443	0760	00	0	00144		SLN 4	SENSE LIGHT 4 ON
46444	0760	00	0	00012		DCT	INDICATOR
46445	0761	00	0	00000		NOP	OFF IF ON
46446	0600	00	0	56674		STZ NREND	CLEAR
46447	0600	00	0	56675		STZ ERSIN	LOCATIONS
46450	0774	00	2	00000		AXT 0,2	CLEAR XRB
46451	0522	00	0	00000	DIVDE	XEC	EXECUTE DIVIDE INSTRUCTION
46452	0074	00	4	45747		TSX STORE+2,4	SAVE DIVIDE RESULTS
46453	0520	00	0	56676		ZET VAR	CHECK
46454	-0520	00	0	56660		NZT CT0	IF
46455	0020	00	0	46457		TRA **2	DIVISION
46456	1 00001	2		46463		TXI DIV1,2,1	POSSIBLE
46457	-0520	00	0	56650		NZT CAND	FOR
46460	1 00001	2		46463		TXI DIV1,2,1	THE
46461	0520	00	0	56673		ZET NOP	INSTRUCTION
46462	0774	00	2	00001		AXT 1,2	EXECUTING
46463	-0774	00	4	46465	DIV1	AXC **2,4	DETERMINE
46464	0600	00	0	56666		STZ SIGN	
46465	0074	00	1	47204		TSX LODUP+1,1	
46466	3 00000	2		46502		TXH DIV2,2,0	IF
46467	0120	00	0	46472		TPL **3	
46470	-0625	00	0	56666		STL SIGN	
46471	0760	00	0	00003		SSP	
46472	0760	00	0	00006		COM	ACC
46473	0020	00	4	00007		TRA 7,4	
46474	0401	00	0	56650		ADM CAND	
46475	0771	00	0	00001		ARS 1	GREATER
46476	-0760	00	0	00001		PBT	
46477	0074	00	4	46464		TSX DIV1+1,4	
46500	0774	00	2	00001		AXT 1,2	
46501	0074	00	1	47204		TSX LODUP+1,1	THAN
46502	0600	00	0	56666	DIV2	STZ SIGN	
46503	0162	00	0	46505		TQP **2	
46504	-0625	00	0	56666		STL SIGN	
46505	0020	00	0	46567		TRA DIV7-1	SR
46506	0774	00	4	00000		AXT 0,4	COMPARE
46507	0560	00	0	56650		LDQ CAND	ACCUMULATOR
46510	0520	00	0	56666		ZET SIGN	AND
46511	1 00001	4		46512		TXI **1,4,1	STORAGE
46512	0600	00	0	56666		STZ SIGN	REGISTER
46513	0162	00	0	46515		TQP **2	SIGNS
46514	1 00001	4		46515		TXI **1,4,1	TO
46515	-3 00000	4		46520		TXL DIV3,4,0	DETERMINE
46516	3 00001	4		46520		TXH DIV3,4,1	QUOTIENT
46517	-0625	00	0	56666		STL SIGN	SIGN

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S E C T I O N F O U R
F I X E D P O I N T
S I M U L A T O R S

46520	-0520	00 0	56676	DIV3	NZT VAR	SET
46521	0020	00 0	46524		TRA **3	XRA
46522	0534	00 1	56655		LXA THECT,1	FOR
46523	1 00001	1 1	46525		TXI **2,1,1	THE
46524	0774	00 1	00044		AXT 36,1	INSTRUCTION
46525	0441	00 0	56647		LDI PLIER	SHIFT
46526	-0051	00 200000			IIL 200000	COMPLEMENTED
46527	0604	00 0	56665		STI MQ	MQ 1
46530	0560	00 0	56665		LDQ MQ	POSITION
46531	0765	00 0	00000		LRS	TO
46532	0763	00 0	00001		LLS 1	ACCUMULATOR
46533	0020	00 0	46570		TRA DIV7	35
46534	0401	00 0	56650	DIV4	ADM CAND	ATTEMPT
46535	-0765	00 0	00001		LGR 1	A
46536	-0760	00 0	00001		PBT	REDUCTION
46537	0020	00 0	46544		TRA **5	AND
46540	-0763	00 0	00001		LGL 1	CHECK
46541	0441	00 0	56665		LDI MQ	FOR
46542	0055	00 000001			SIR 1	Q
46543	0020	00 0	46557		TRA DIV6+1	CARRY
46544	0074	00 4	47221		TSX RGBK+2,4	RESTORE ACCUMULATOR
46545	0020	00 0	46556		TRA DIV6	AND CONTINUE
46546	-0625	00 0	56674	DIV5	STL NREND	SET SC 0 SWITCH
46547	0560	00 0	56665		LDQ MQ	RESTORE MQ VALUE
46550	0765	00 0	00001		LRS 1	ADJUST
46551	0602	00 0	56664		SLW ACC	THE
46552	-0500	00 0	56701		CAL MZE	QUOTIENT
46553	0767	00 0	00001		ALS 1	AND
46554	0361	00 0	56664		ACL ACC	THE
46555	-0600	00 0	56665		STQ MQ	REMAINDER
46556	0441	00 0	56665	DIV6	LDI MQ	MQ VALUE TO INDICATORS
46557	-0051	00 200000			IIL 200000	ADJUST
46560	0604	00 0	56665		STI MQ	MQ POSITION
46561	0560	00 0	56665		LDQ MQ	1 AFTER EACH
46562	-0520	00 0	56674		NZT NREND	REDUCTION
46563	0763	00 0	00001		LLS 1	ATTEMPT AND
46564	0020	00 0	46570		TRA DIV7	WITH SC ZERO

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46565	0560	00	0	56665	LDQ MQ	RESTORE MQ
46566	0760	00	0	00006	COM	COMPLEMENT ACC
46567	0774	00	1	00000	AXT 0,1	MAKE XRA 0
46570	-0600	00	0	56665	DIV7 STQ MQ	SAVE
46571	0601	00	0	56664	STO ACC	THE
46572	0600	00	0	56656	STZ QBIT2	ACC
46573	0600	00	0	56657	STZ PBIT2	AND
46574	-0760	00	0	00001	PBT	MQ
46575	0020	00	0	46577	TRA **2	AND
46576	-0625	00	0	56657	STL PBIT2	INDICATE
46577	-0765	00	0	00001	LGR 1	A
46600	-0760	00	0	00001	PBT	Q
46601	0020	00	0	46603	TRA **2	AND
46602	-0625	00	0	56656	STL QBIT2	P
46603	-0763	00	0	00001	LGL 1	BIT
46604	2 00001	1		46534	TIX DIV4,1,1	PERFORM
46605	-0520	00	0	56674	NZT NREND	EACH
46606	2 00000	1		46546	TIX DIV5,1,0	DIVIDE
46607	2 00000	1		46565	TIX DIV7-3,1,0	ITERATION
46610	0520	00	0	56676	ZET VAR	WAS VDP SIMULATED
46611	-0520	00	0	56660	NZT CTO	WAS COUNT ZERO
46612	0020	00	0	46620	TRA DIV8	NO
46613	0760	00	0	00012	DCT	ERROR
46614	0020	00	0	46616	TRA **2	IF
46615	0020	00	0	46625	TRA DIV9	DCT
46616	0760	00	0	00143	SLN 3	INDICATOR
46617	0020	00	0	46716	TRA TST2+1	ON
46620	-3 00000	2		46657	DIV8 TXL DIV10,2,0	TRA IF XRB ZERO
46621	0760	00	0	00012	DCT	OK IF
46622	0020	00	0	46625	TRA DIV9	THE DCT
46623	0760	00	0	00142	SLN 2	INDICATOR
46624	0020	00	0	46716	TRA TST2+1	IS ON
46625	-0500	00	0	56657	DIV9 CAL PBIT2	SIMULATION
46626	0520	00	0	56657	ZET PBIT2	AND
46627	0020	00	0	46633	TRA **4	MACHINE
46630	0322	00	0	56652	ERA PBIT	EXECUTION
46631	-0100	00	0	46717	TNZ TST2+2	COMPARE
46632	0020	00	0	46635	TRA **3	OF
46633	-0520	00	0	56652	NZT PBIT	P
46634	0020	00	0	46717	TRA TST2+2	BIT
46635	-0500	00	0	56656	CAL QBIT2	SIMULATION
46636	0520	00	0	56656	ZET QBIT2	AND
46637	0020	00	0	46643	TRA **4	MACHINE
46640	0322	00	0	56651	ERA QBIT	EXECUTION
46641	-0100	00	0	46717	TNZ TST2+2	COMPARE
46642	0020	00	0	46645	TRA **3	OF
46643	-0520	00	0	56651	NZT QBIT	Q
46644	0020	00	0	46717	TRA TST2+2	BIT

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46645	0500	00	0	56664	CLA ACC	SIMULATION
46646	0340	00	0	56653	CAS ACPR	AND
46647	0020	00	0	46651	TRA **2	MACHINE
46650	0020	00	0	46652	TRA **2	EXECUTION
46651	0020	00	0	46717	TRA TST2+2	COMPARE
46652	0500	00	0	56665	CLA MQ	OF
46653	0340	00	0	56654	CAS MQPR	ACC
46654	0020	00	0	46656	TRA **2	AND
46655	0020	60	0	56671	TRA* RIVUN	MQ
46656	0020	00	0	46717	TRA TST2+2	REGISTERS
46657	0520	00	0	56656	DIV10 ZET QBIT2	CHECK FOR Q IN REMAINDER
46660	0000	60	0	56671	HTR* RIVUN	SIMULATOR WENT BEZERR
46661	0520	00	0	56657	ZET PBIT2	CHECK FOR P IN REMAINDER
46662	0000	60	0	56671	HTR* RIVUN	SIMULATOR WENT BEZERR
46663	0760	00	0	00012	DCT	ERROR
46664	0020	00	0	46666	TRA **2	IF
46665	0020	00	0	46670	TRA **3	INDICATOR
46666	0760	00	0	00143	SLN 3	IS
46667	0020	00	0	46713	TRA TST2-2	ON
46670	0520	00	0	56651	ZET QBIT	CHECK
46671	0020	00	0	46713	TRA TST2-2	Q
46672	0520	00	0	56652	ZET PBIT	AND
46673	0020	00	0	46713	TRA TST2-2	P
46674	0560	00	0	56646	LDQ ACCU	ADJUST
46675	0162	00	0	46677	TQP **2	ACC
46676	-0760	00	0	00003	SSM	SIGN
46677	0340	00	0	56653	CAS ACPR	MACHINE
46700	0020	00	0	46711	TRA DIV11	EXECUTION
46701	0020	00	0	46703	TRA **2	AND
46702	0020	00	0	46711	TRA DIV11	SIMULATION
46703	0500	00	0	56665	CLA MQ	COMPARE
46704	0520	00	0	56666	ZET SIGN	FOR
46705	-0760	00	0	00003	SSM	ACC
46706	0340	00	0	56654	CAS MQPR	AND
46707	0020	00	0	46711	TRA **2	THE
46710	0020	60	0	56671	TRA* RIVUN	MQ
46711	-0625	00	0	56675	DIV11 STL ERSIN	REGISTER
46712	0020	00	0	46717	TRA TST2+2	VALUES
46713	-0625	00	0	56675	STL ERSIN	TO FIX
46714	0020	00	0	46716	TRA **2	SIGNS
46715	0074	00	4	47220	TST2 TSX RGBK+1,4	RESTORE ACC ONLY
46716	0074	00	4	47217	TSX RGBK,4	RESTORE MQ ONLY
46717	0074	00	4	47222	TSX RGBK+3,4	RESTORE ACC AND MQ
46720	0760	00	0	00162	SWT 2	TEST SENSE SWITCH 2
46721	0020	00	0	46723	TRA **2	INDICATE ERROR
46722	0020	60	0	56671	TRA* RIVUN	BYPASS ERROR
46723	0760	00	0	00163	SWT 3	TEST SENSE SWITCH 3
46724	0074	00	1	46741	TSTY TSX GOPR,1	PRINT ERROR
46725	0534	00	4	56670	LXA INDEX,4	ROUTINE LOCATION TO XRC
46726	0000	60	0	56671	HTR* RIVUN	DISPLAY AND COMPARE

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DISPLAY LOCATIONS FOR RANDOM SR, ACC AND MQ VALUES AND
COMPARE MACHINE RESULT WITH SIMULATED RESULT

46727	0000	00	0	56644	HTR QBIT1	NOT ZERO INDICATES BITS
46730	0000	00	0	56645	HTR PBIT1	IN ACC Q AND/OR P DIVIDEND
46731	0000	00	0	56646	HTR ACCU	DISPLAY ACC S, 1-35 DIVIDEND
46732	0000	00	0	56647	HTR PLIER	DISPLAY MQ DIVIDEND
46733	0000	00	0	56650	HTR CAND	DISPLAY DIVISOR

MACHINE EXECUTED QUOTIENT AND REMAINDER

46734	0000	00	0	56651	HTR QBIT	NOT ZERO INDICATES Q AND/
46735	0000	00	0	56652	HTR PBIT	OR P BIT IN THE REMAINDER
46736	0000	00	0	56653	HTR ACPR	S, 1-35 REMAINDER
46737	0000	00	0	56654	HTR MQPR	S, 1-35 QUOTIENT

SENSE LIGHT 2 OR 3 ON INDICATES THE DCT INDICATOR IS ON IN ERROR
FOR VDP INSTRUCTION

46740	0000	00	0	56655	HTR THECT	
46741	-0754	00	0	00000	GOPR PXD	CONVERT
46742	0401	00	0	56665	ADM MQ	THE
46743	0074	00	4	74302	TSX PX, 4	MQ
46744	0601	00	0	47343	STO PR3+8	TO
46745	-0600	00	0	47344	STQ PR3+9	OCTAL
46746	0500	00	0	56704	CLA TWNTY	AND
46747	0441	00	0	47342	LDI PR3+7	INSERT
46750	0057	00		000077	RIR 77	VALUE
46751	0520	00	0	56666	ZET SIGN	IN
46752	0767	00	0	00001	ALS 1	THE
46753	0043	00	0	00000	OAI	PRINT
46754	0604	00	0	47342	STI PR3+7	IMAGE
46755	-0754	00	0	00000	PXD	CONVERT
46756	0401	00	0	56664	ADM ACC	THE
46757	0074	00	4	74302	TSX PX, 4	ACC
46760	0601	00	0	47340	STO PR3+5	TO
46761	-0600	00	0	47341	STQ PR3+6	OCTAL
46762	0560	00	0	56704	LDQ TWNTY	AND
46763	-0773	00	0	00030	RQL 24	INSERT
46764	0131	00	0	00000	XCA	THE
46765	0441	00	0	47337	LDI PR3+4	CONVERTED
46766	-0057	00		006000	RIL 6000	VALUE
46767	0560	00	0	56646	LDQ ACCU	INTO
46770	0162	00	0	46772	TQP *+2	THE
46771	0767	00	0	00001	ALS 1	PRINT
46772	0043	00	0	00000	OAI	IMAGE

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46773	0057	00	616100	RIR 616100	INSERT
46774	0520	00	0 56656	ZET QBIT2	Q
46775	0055	00	010000	SIR 10000	AND
46776	0520	00	0 56657	ZET PBIT2	P
46777	0055	00	000100	SIR 100	INTO
47000	0604	00	0 47337	STI PR3+4	IMAGE
47001	0520	00	0 56676	ZET VAR	INSERT
47002	0520	00	0 56660	NZT CTO	STATUS
47003	3 00000	2	47006	TXH *+3,2,0	OF
47004	0560	00	0 56721	LDQ OFF	DCT
47005	0020	00	0 47007	TRA *+2	INDICATOR
47006	0560	00	0 56722	LDQ ON	
47007	0600	00	0 47346	STQ PR3+11	
47010	0754	00	0 00000	PXD	CONVERT
47011	0401	00	0 56654	ADM MQPR	THE
47012	0074	00	4 74302	TSX PX,4	MQ
47013	0601	00	0 47357	STO PR4+8	TO
47014	0600	00	0 47360	STQ PR4+9	OCTAL
47015	0500	00	0 56704	CLA TWNTY	AND
47016	0441	00	0 47356	LDI PR4+7	INSERT
47017	0057	00	000077	RIR 77	THE
47020	0560	00	0 56654	LDQ MQPR	VALUE
47021	0162	00	0 47023	TQP *+2	IN
47022	0767	00	0 00001	ALS 1	THE
47023	0043	00	0 00000	OAI	PRINT
47024	0604	00	0 47356	STI PR4+7	IMAGE
47025	0754	00	0 00000	PXD	CONVERT
47026	0401	00	0 56653	ADM ACPR	THE
47027	0074	00	4 74302	TSX PX,4	ACC
47030	0601	00	0 47354	STO PR4+5	TO
47031	0600	00	0 47355	STQ PR4+6	OCTAL
47032	0560	00	0 56704	LDQ TWNTY	AND
47033	0773	00	0 00030	RQL 24	INSERT
47034	0131	00	0 00000	XCA	THE
47035	0441	00	0 47353	LDI PR4+4	CONVERTED
47036	0057	00	006000	RIL 6000	VALUE
47037	0560	00	0 56653	LDQ ACPR	INTO
47040	0162	00	0 47042	TQP *+2	THE
47041	0767	00	0 00001	ALS 1	PRINT
47042	0043	00	0 00000	OAI	IMAGE
47043	0057	00	616100	RIR 616100	INSERT
47044	0520	00	0 56651	ZET QBIT	Q
47045	0055	00	010000	SIR 10000	AND
47046	0520	00	0 56652	ZET PBIT	P
47047	0055	00	000100	SIR 100	INTO
47050	0604	00	0 47353	STI PR4+4	IMAGE

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47051 -0520 00 0 56676	NZT VAR	INSERT
47052 0020 00 0 47055	TRA **3	
47053 0520 00 0 56660	ZET CTO	
47054 0020 00 0 47062	TRA **6	DCT
47055 -3 00000 2 47062	TXL **5,2,0	
47056 0560 00 0 56721	LDQ OFF	
47057 -0760 00 0 00142	SLT 2	INDICATOR
47060 0560 00 0 56722	LDQ ON	
47061 0020 00 0 47065	TRA **4	
47062 0560 00 0 56722	LDQ ON	IN
47063 -0760 00 0 00143	SLT 3	
47064 0560 00 0 56721	LDQ OFF	
47065 -0600 00 0 47362	STQ PR4+11	IMAGE
47066 0520 00 0 56676	ZET VAR	INSERT
47067 0020 00 0 47073	TRA **4	
47070 0500 00 0 56712	CLA INDVP	
47071 0601 00 0 47315	STO PR2+1	INSTRUCTION
47072 0020 00 0 47112	TRA DIVX	
47073 0500 00 0 56713	CLA INVDP	
47074 0601 00 0 47315	STO PR2+1	AND
47075 0500 00 0 56717	CLA GETCT	
47076 0601 00 0 47331	STO PR2A+1	
47077 0534 00 2 56655	LXA THECT,2	COUNT
47100 0754 00 2 00000	PXA 0,2	
47101 0074 00 4 74302	TSX PX,4	
47102 0761 00 0 00000	NOP	FOR
47103 0131 00 0 00000	XCA	
47104 0441 00 0 56720	LDI GETCT+1	
47105 0057 00 007777	RIR 7777	
47106 0043 00 0 00000	OAI	VDP
47107 3 00007 2 47111	TXH **2,2,7	
47110 0055 00 006000	SIR 6000	
47111 0604 00 0 47332	STI PR2A+2	INSTRUCTION
47112 -0754 00 0 00000	DIVX PXD	INSERT
47113 0401 00 0 56650	ADM CAND	
47114 0074 00 4 74302	TSX PX,4	
47115 0601 00 0 47326	STO PR2+10	SR
47116 -0600 00 0 47327	STQ PR2+11	
47117 0441 00 0 47325	LDI PR2+9	
47120 0057 00 000077	RIR 77	VALUE
47121 0560 00 0 56650	LDQ CAND	
47122 0500 00 0 56704	CLA TWNTY	
47123 0162 00 0 47125	TQP **2	IN
47124 0767 00 0 00001	ALS 1	
47125 0043 00 0 00000	OAI	
47126 0604 00 0 47325	STI PR2+9	IMAGE

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47127	-0754	00	0	00000	PXD	INSERT
47130	0401	00	0	56647	ADM PLIER	
47131	0074	00	4	74302	TSX PX,4	
47132	0601	00	0	47323	STO PR2+7	MQ
47133	-0600	00	0	47324	STQ PR2+8	
47134	0441	00	0	47322	LDI PR2+6	
47135	0057	00		000077	RIR 77	VALUE
47136	0560	00	0	56647	LDQ PLIER	
47137	0500	00	0	56704	CLA TWNTY	
47140	0162	00	0	47142	TQP **2	IN
47141	0767	00	0	00001	ALS 1	
47142	0043	00	0	00000	OAI	
47143	0604	00	0	47322	STI PR2+6	IMAGE
47144	-0754	00	0	00000	PXD	INSERT
47145	0401	00	0	56646	ADM ACCU	
47146	0074	00	4	74302	TSX PX,4	
47147	0601	00	0	47320	STO PR2+4	
47150	-0600	00	0	47321	STQ PR2+5	
47151	0441	00	0	47317	LDI PR2+3	ACC
47152	-0057	00		000077	RIL 77	
47153	0057	00		777700	RIR 777700	
47154	0520	00	0	56645	ZET PBITI	
47155	0055	00		000100	SIR 100	
47156	0520	00	0	56644	ZET QBITI	VALUE
47157	0055	00		010000	SIR 10000	
47160	0500	00	0	56704	CLA TWNTY	
47161	0767	00	0	00022	ALS 18	
47162	0560	00	0	56646	LDQ ACCU	IN
47163	0162	00	0	47165	TQP **2	
47164	0767	00	0	00001	ALS 1	
47165	0043	00	0	00000	OAI	
47166	0604	00	0	47317	STI PR2+3	IMAGE
47167	0020	00	0	46354	TRA ERLOC	GET ROUTINE LOCATION
47170	0074	00	4	74305	TSX SPLAX,4	PRINT
47171	0 00000	0		47314	PZE PR2	
47172	-0520	00	0	56676	NZT VAR	
47173	0020	00	0	47176	TRA **3	VALUES
47174	0074	00	4	74305	TSX SPLAX,4	
47175	0 00000	0		47330	PZE PR2A	
47176	0074	00	4	74305	TSX SPLAX,4	FOR
47177	0 00000	0		47333	PZE PR3	
47200	0074	00	4	74305	TSX SPLAX,4	
47201	0 00000	0		47347	PZE PR4	ERROR
47202	0020	00	1	77776	TRA -2,1	RETURN

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47203	1 77776	1	47215	LODUP	TXI **10,1,-2	RELOAD	
47204	0560	00 0	56646		LDQ	ACCU	
47205	-0754	00 0	00000		PXD		
47206	0520	00 0	56644		ZET	QBIT1	
47207	-0501	00 0	56703		ORA	ONE	
47210	0767	00 0	00001		ALS	1	NECESSARY
47211	0520	00 0	56645		ZET	PBIT1	
47212	-0501	00 0	56703		ORA	ONE	
47213	0763	00 0	00043		LLS	35	
47214	-0760	00 0	00141		SLT	1	
47215	0560	00 0	56647		LDQ	PLIER	
47216	0020	00 1	00001		TRA	1,1	REGISTERS
47217	1 77777	4	47231	RGBK	TXI **10,4,-1	RELOAD	
47220	1 77776	4	47222		TXI **2,4,-2		
47221	0760	00 0	00141		SLN	1	
47222	0560	00 0	56664		LDQ	ACC	
47223	0520	00 0	56656		ZET	QBIT2	
47224	-0501	00 0	56703		ORA	ONE	
47225	0767	00 0	00001		ALS	1	
47226	0520	00 0	56657		ZET	PBIT2	
47227	-0501	00 0	56703		ORA	ONE	
47230	0763	00 0	00043		LLS	35	
47231	0520	00 0	56675		ZET	ERSIN	
47232	0020	00 0	47236		TRA	**4	
47233	-0760	00 0	00141		SLT	1	NECESSARY
47234	0560	00 0	56665		LDQ	MQ	
47235	0020	00 4	00001		TRA	1,4	
47236	0441	00 0	56665		LDI	MQ	
47237	0520	00 0	56666		ZET	SIGN	
47240	-0055	00	400000		SIL	400000	
47241	0604	00 0	56665		STI	MQ	
47242	0441	00 0	56646		LDI	ACCU	
47243	-0054	00	400000		LFT	400000	
47244	-0760	00 0	00003		SSM		
47245	0600	00 0	56675		STZ	ERSIN	
47246	0601	00 0	56664		STO	ACC	
47247	0020	00 0	47231		TRA	*-14	REGISTERS

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PRINT IMAGES

47250	0 00004 0 00004	RULOC	PZE 4,0,4	SPLAT CONTROL WORD	
47251	514664633145		BCD 4	ROUTINE LOCATION	
47252	256043462321				
47253	633146456060				
47254	606060606060				
47255	0 00001 0 00012	PR	PZE 10,0,1	SPLAT CONTROL WORD	
47256	606060606060		BCD 6	VALUES SR	MQ
47257	606521436425				
47260	626062516060				
47261	606060606060				
47262	606060606060				
47263	606044506060				
47264	606060606060		BCD 4		
47265	606060606060				
47266	606060606060				
47267	606060606060				
47270	0 00004 0 00011	PRO	PZE 9,0,4	SPLAT CONTROL WORD	
47271	623144644321		BCD 6	SIMULATE ANS ACC 00	
47272	632560214562				
47273	606060212323				
47274	606060000060				
47275	606060606060				
47276	606060606060				
47277	606044506060		BCD 3	MQ	
47300	606060606060				
47301	606060606060				
47302	0 00004 0 00011	PR1	PZE 9,0,4	SPLAT CONTROL WORD	
47303	633025600700		BCD 6	THE 7094 ANS ACC	
47304	110460214562				
47305	606060212323				
47306	606060606060				
47307	606060606060				
47310	606060606060				
47311	606044506060		BCD 3	MQ	
47312	606060606060				
47313	606060606060				
47314	0 00004 0 00013	PR2	PZE 11,0,4	SPLAT CONTROL WORD	
47315	606060606060		BCD 6	LUES AC	MQ
47316	436425626021				
47317	236060606060				
47320	606060606060				
47321	606060606060				
47322	606044506060				
47323	606060606060		BCD 5	SR	
47324	606060606060				
47325	606062516060				
47326	606060606060				
47327	606060606060				

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47330	0 00034 0 00002	PR2A	PZE 2,0,28	SPLAT CONTROL WORD
47331	606060606060		BCD 2	
47332	606060606060			

47333	0 00004 0 00013	PR3	PZE 11,0,4	SPLAT CONTROL WORD
47334	623144644321		BCD 6SIMULATE	ANS ACC
47335	632560214562			
47336	606060212323			
47337	606060606060			
47340	606060606060			
47341	606060606060			
47342	606044506060		BCD 5 MQ	DCT
47343	606060606060			
47344	606060606060			
47345	606024236360			
47346	606060606060			

47347	0 00004 0 00013	PR4	PZE 11,0,4	SPLAT CONTROL WORD
47350	633025600700		BCD 6THE 7094	ANS ACC
47351	110460214562			
47352	606060212323			
47353	606060606060			
47354	606060606060			
47355	606060606060			
47356	606044506060		BCD 5 MQ	DCT
47357	606060606060			
47360	606060606060			
47361	606024236360			
47362	606060606060			

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47363	-0774 00 4	47404	A	HED		
47363	0634 00 4	00101	REL T	AXC	GOAT,4	SET SEQUENCE
47365	0500 00 0	47453		SXA	SVXR4,4	CHECKER
47366	0601 00 0	00203		CLA	TX9+2	
47367	0760 00 0	00016		STO	OKAY+6	
47370	0774 00 1	00144		LMTM		
47371	0560 00 0	47404		AXT	100,1	144 TO XRA
47372	-0773 00 0	00001		LDQ	GOAT	
47373	-0200 00 0	47405		RQL	1	
47374	0361 00 0	47404		MPR	GOAT+1	
47375	0602 00 0	47404		ACL	GOAT	
47376	-0765 00 0	00003		SLW	GOAT	
47377	-0600 00 0	47405		LGR	3	
47400	-0600 00 1	56601		STQ	GOAT+1	
47401	2 00001	47371		STQ	RAN+100,1	
47402	0074 00 4	52725		TIX	*-8,1,1	
47403	0020 00 0	47407		TSX	ALBIT,4	RELOAD INDEX REGS.
				TRA	**4	
47404	+000000000027		GOAT	DEC	23	
47405	+000000000027			DEC	23	

TEST TIX AND TNX WITH C DECREMENT EQUAL TO C XR

47406	633167634567		BCD	1TIXTNX	
47407	0600 00 0	56236	TX1	STZ	TEMP
47410	-0500 00 0	56236		CAL	TEMP
47411	0400 00 0	56230		ADD	TAG
47412	0601 00 0	56236		STO	TEMP
47413	-0734 00 1	00000		PDX	,1
47414	3 00000	1 47464		TXH	TXB,1,0
					TERMINATE
					AFTER XRG TEST
47415	0625 00 0	47434		STT	TX2
47416	0625 00 0	47435		STT	TX3
47417	0625 00 0	47436		STT	TX4
47420	0625 00 0	47437		STT	TX5
47421	0625 00 0	47445		STT	TX6
47422	0625 00 0	47446		STT	TX7
47423	0625 00 0	47450		STT	TX8
47424	0625 00 0	47451		STT	TX9
					SET TAGS
47425	-0500 00 0	56246		CAL	DECR
47426	0602 00 0	56237	TXA	SLW	TEMP+1
47427	0622 00 0	47435		STD	TX3
47430	0622 00 0	47446		STD	TX7
47431	0760 00 0	00006		COM	
47432	0622 00 0	47436		STD	TX4
47433	0622 00 0	47450		STD	TX8
					SET DECREMENTS

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47434	-0534	00	0	56237	TX2	LXD	TEMP+1,**	LOAD XR
47435	2	00000	0	47440	TX3	TIX	**3,**,**	SHOULD NOT TRANSFER
47436	1	00000	0	47437	TX4	TXI	**1,**,**	ADD ONES COMP
47437	3	77776	0	47442	TX5	TXH	**3,**,-2	SHOULD TRANSFER
47440	0074	00	4	00104		TSX	ERROR-1,4	INDICATE ERROR
47441	0761	00	0	47407		NOP	TX1	
47442	0760	00	0	00161		SWT	1	TEST SWITCH ONE
47443	0020	00	0	47445		TRA	TX6	GO ON
47444	0020	00	0	47434		TRA	TX2	GO BACK
47445	-0534	00	0	56237	TX6	LXD	TEMP+1,**	LOAD XR
47446	-2	00000	0	47450	TX7	TNX	**2,**,**	SHOULD TRANSFER
47447	0020	00	0	47452		TRA	**3	
47450	1	00000	0	47451	TX8	TXI	**1,**,**	ADD ONES COMP
47451	3	77776	0	47454	TX9	TXH	**3,**,-2	SHOULD TRANSFER
47452	0074	00	4	00104		TSX	ERROR-1,4	INDICATE ERROR
47453	0761	00	0	47407		NOP	TX1	
47454	0760	00	0	00161		SWT	1	TEST SWITCH ONE
47455	0020	00	0	47457		TRA	**2	GO ON
47456	0020	00	0	47445		TRA	TX6	GO BACK
47457	-0500	00	0	56237		CAL	TEMP+1	
47460	0767	00	0	00001		ALS	1	SHIFT LEFT ONCE
47461	-0534	00	1	56237		LXD	TEMP+1,1	
47462	3	00000	1	47426		TXH	TXA,1,0	
47463	0020	00	0	47410		TRA	TX1+1	STEP TO NEXT TAG
47464	0074	00	4	52725	TXB	TSX	ALBIT,4	
47465	0074	00	4	00106		TSX	OK,4	
47466	0020	00	0	47407		TRA	TX1	

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TEST RQL INSTRUCTION WITH RANDOM DATA AND RANDOM NUMBER OF SHIFTS

47467	515043606060	BCD	1RQL	
47470	0774 00 2 00144	AXT	100,2	144 TO XRB
47471	0020 00 0 47473	TRA	++2	
47472	515043606060	BCD	1RQL	
47473	-0500 00 2 56601	RRQL	CAL RAN+100,2	RANDOM NUMBER TO ACC
47474	-0765 00 0 00012	LGR	10	
47475	-0734 00 1 00000	PDX	,1	NUMBER OF SHIFTS TO XRA
47476	0634 00 1 47501	SXA	RRQL1,1	
47477	-0634 00 1 47503	SXD	++4,1	
47500	-0765 00 0 00032	LGR	26	RANDOM NUMBER TO MQ
47501	-0773 00 0 00000	RRQL1	RQL **	SHIFT N TIMES
47502	0774 00 1 00440	AXT	288,1	
47503	2 00000 1 47504	TIX	++1,1,**	
47504	2 00044 1 47505	TIX	++1,1,36	
47505	0634 00 1 47506	SXA	++1,1	
47506	-0773 00 0 00000	RQL	**	RESTORE MQ
47507	-0130 00 0 00000	XCL		
47510	-0340 00 2 56601	LAS	RAN+100,2	SHOULD COMPARE EQUAL
47511	0020 00 0 47513	TRA	++2	
47512	0020 00 0 47516	TRA	++4	OK
47513	0560 00 2 56601	LDQ	RAN+100,2	
47514	0074 00 4 00104	TSX	ERROR-1,4	
47515	0020 00 0 47473	TRA	RRQL	
47516	0760 00 0 00161	SWT	1	
47517	0020 00 0 47521	TRA	++2	
47520	0020 00 0 47473	TRA	RRQL	
47521	2 00002 2 47473	TIX	RRQL,2,2	
47522	0074 00 4 52725	TSX	ALBIT,4	RELOAD INDEX REGS.
47523	0074 00 4 00106	TSX	OK,4	
47524	0020 00 0 47470	TRA	RRQL-3	REPEAT THIS TEST

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TEST CAQ INSTRUCTION WITH RANDOM NUMBER OF E CYCLES
AND RANDOM NUMBER IN MQ

47525	232150606060		BCD	1CAQ	
47526	0774 00 2 00144	CAQA	AXT	100.2	144 TO XRB
47527	0020 00 0 47531		TRA	**2	
47530	232150606060		BCD	1CAQ	
47531	0441 00 2 56600	CAQB	LDI	RAN+99.2	
47532	0057 00 777777		RIR	777777	RESET INDICATOR REGISTER
47533	-0057 00 777400		RIL	777400	EXCEPT FOR COLUMNS 10-17
47534	0440 00 047542		IIS	CAQC	
47535	0604 00 0 47542		STI	CAQC	
47536	0020 00 0 47540		TRA	**2	
47537	232150606060		BCD	1CAQ	
47540	0560 00 2 56601		LDQ	RAN+100.2	
47541	-0754 00 0 00000		PXD	00	CLEAR ACC
47542	-0114 00 0 56251	CAQC	CAQ	CFLD.00**	CONVERT
47543	0601 00 0 56234		STO	T1	SAVE SUM
47544	0760 00 0 00016		LMTM		
47545	-0534 00 7 47542		LXD	CAQC.7	FIND VALUE OF
47546	1 66400 7 47547		TXI	*+1.7.4864	CAQ COUNT FIELD
47547	2 00006 7 47547		TIX	*.7.6	MODULO SIX
47550	0774 00 6 00006		AXT	6.6	
47551	0761 00 0 00000		NOP		
47552	-0634 00 7 47553		SXD	*+1.7	
47553	2 00000 6 47554		TIX	*+1.6.00**	
47554	-0773 00 0 00006		RQL	6	
47555	2 00001 6 47554		TIX	*-1.6.01	
47556	-0130 00 0 00000		XCL		
47557	-0340 00 2 56601		LAS	RAN+100.2	SHOULD COMPARE EQUAL
47560	0020 00 0 47562		TRA	**2	
47561	0020 00 0 47565		TRA	CAQD	
47562	0560 00 2 56601		LDQ	RAN+100.2	
47563	0074 00 4 00104		TSX	ERROR-1.4	
47564	0020 00 0 47540		TRA	CAQC-2	
47565	0600 00 0 56235	CAQD	STZ	T2	
47566	0774 00 1 00006		AXT	6.1	
47567	0560 00 2 56601		LDQ	RAN+100.2	
47570	-0754 00 0 00000		PXD	00	MOVE EACH BYTE
47571	-0763 00 0 00006		LGL	6	OF MQ DATA TO A
47572	0601 00 1 56244		STO	TEMP+6.1	SEPARATE MEMORY
47573	2 00001 1 47570		TIX	*-3.1.1	LOCATION

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TEST FOR CORRECT ACC CONTENTS AFTER PERFORMING CAQ INSTRUCTION

47574	-0534	00	7	47542	LXD	CAQC,7	CAQ DECREMENT TO XRG
47575	0534	00	6	47542	LXA	CAQC,6	CAQ ADDRESS TO XRF
47576	0774	00	5	00006	AXT	6,5	
47577	-0500	00	5	56244	CAQE CAL	TEMP+6,5	
47600	0737	00	1	30201	PAC	1-*,1	BYTE COMPLEMENT TO XRA
47601	0761	00	0	00000	NOP		
47602	0634	00	6	47603	SXA	**1,6	
47603	-0500	00	1	00000	CAL	**,1	
47604	0734	00	6	30176	PAX	2-*,6	NEXT ADDRESS TO XRF
47605	-3	11400	7	47613	TXL	CAQF,7,4864	TERMINATE LOOP
47606	0400	00	0	56235	ADD	T2	
47607	0601	00	0	56235	STO	T2	
47610	1	77777	7	47611	TXI	**1,7,-1	STEP COUNTER DOWN
47611	2	00001	5	47577	TIX	CAQE,5,1	
47612	1	00005	5	47577	TXI	CAQE,5,5	
47613	-0500	00	0	56234	CAQF CAL	T1	
47614	-0340	00	0	56235	LAS	T2	SHOULD COMPARE EQUAL
47615	0020	00	0	47617	TRA	**2	
47616	0020	00	0	47622	TRA	CAQG	
47617	0560	00	0	56235	LDQ	T2	
47620	0074	00	4	00104	TSX	ERROR-1,4	
47621	0020	00	0	47540	TRA	CAQC-2	
47622	0760	00	0	00161	CAQG SWT	1	
47623	0020	00	0	47625	TRA	**2	
47624	0020	00	0	47540	TRA	CAQC-2	
47625	2	00020	2	47531	TIX	CAQB,2,16	
47626	0074	00	4	52725	TSX	ALBIT,4	RELOAD INDEX REGS.
47627	0074	00	4	00106	TSX	OK,4	
47630	0020	00	0	47526	TRA	CAQA	REPEAT THIS TEST

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TEST CVR WITH RANDOM COUNT FIELD AND RANDOM NUMBER IN ACCUMULATOR

47631	236551606060		BCD 1CVR	
47632	0774 00 2 00144	CVR	AXT 100,2	144 TO XRB
47633	0020 00 0 47635		TRA **2	
47634	236551606060		BCD 1CVR	
47635	0441 00 2 56600	CVRA	LDI RAN+99,2	
47636	-0057 00 777400		RIL 777400	RESET INDICATOR REGISTER
47637	0057 00 777777		RIR 777777	EXCEPT FOR COLUMNS 10-17
47640	0440 00 047645		IIS CVRB	
47641	0604 00 0 47645		STI CVRB	
47642	0020 00 0 47644		TRA **2	
47643	236551606060		BCD 1CVR	
47644	-0500 00 2 56601		CAL RAN+100,2	
47645	0114 00 0 56251	CVRB	CVR CFLD,0**	CONVERT
47646	0602 00 0 56234		SLW T1	SAVE FOR COMPARISON
47647	0760 00 0 00016		LMTM	
47650	0774 00 1 00006		AXT 6,1	
47651	0560 00 2 56601		LDQ RAN+100,2	EACH BYTE TO
47652	-0754 00 0 00000		PXD 0,0	SEPARATE
47653	-0763 00 0 00006		LGL 6	ADDRESS
47654	0601 00 1 56244		STO TEMP+6,1	
47655	2 00001 1 47652		TIX *-3,1,1	
47656	-0534 00 7 47645		LXD CVRB,7	CVR DECREMENT TO XRG
47657	0534 00 6 47645		LXA CVRB,6	CVR ADDRESS TO XRF
47660	0774 00 5 00001		AXT 1,5	
47661	-0500 00 5 56244	CVRC	CAL TEMP+6,5	
47662	0737 00 1 47662		PAC *,1	COMPLEMENT OF BYTE TO XRA
47663	0634 00 6 47664		SXA **1,6	
47664	0560 00 1 00000		LDQ **,1	
47665	-0754 00 0 00000		PXD **,1	CLEAR ACCUMULATOR

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47666	-0763	00	0	00006	LGL	6	
47667	-3	11400	7	47677	TXL	CVRD,7,4864	TERMINATE LOOP
47670	0601	00	5	56244	STO	TEMP+6,5	
47671	-0763	00	0	00036	LGL	30	
47672	0734	00	6	47672	PAX	*,6	
47673	1	77777	7	47674	TXI	**+1,7,-1	STEP SHIFT COUNTER DOWN
47674	1	00001	5	47675	TXI	**+1,5,1	
47675	-3	00006	5	47661	TXL	CVRC,5,6	
47676	2	00006	5	47661	TIX	CVRC,5,6	
47677	0774	00	1	00006	CVRD	AXT	6,1
47700	0500	00	5	56244	CLA	TEMP+6,5	
47701	-0765	00	0	00006	LGR	6	
47702	1	00001	5	47703	TXI	**+1,5,1	
47703	-3	00006	5	47705	TXL	**+2,5,6	
47704	0774	00	5	00001	AXT	1,5	
47705	2	00001	1	47700	TIX	CVRD+1,1,1	
47706	-0600	00	0	56235	STQ	T2	
47707	-0500	00	0	56234	CAL	T1	
47710	-0340	00	0	56235	LAS	T2	SHOULD COMPARE EQUAL
47711	0020	00	0	47713	TRA	**+2	
47712	0020	00	0	47715	TRA	**+3	
47713	0074	00	4	00104	TSX	ERROR-1,4	
47714	0020	00	0	47644	TRA	CVRB-1	
47715	0760	00	0	00161	SWT	1	
47716	0020	00	0	47720	TRA	**+2	
47717	0020	00	0	47644	TRA	CVRB-1	
47720	2	00020	2	47635	TIX	CVRA,2,16	
47721	0074	00	4	52725	TSX	ALBIT,4	RELOAD INDEX REGS.
47722	0074	00	4	00106	TSX	OK,4	
47723	0020	00	0	47632	TRA	CVR	

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TEST MPY AND DIVIDE WITH EACH NUMBER IN RANDOM FIELD

47724	444770246547		BCD	1MPYDVP	
47725	0774 00 2 00144	DVM	AXT	100,2	144 TO XRB
47726	0020 00 0 47730		TRA	**2	
47727	444770246547		BCD	1MPYDVP	
47730	0760 00 0 00012	DVMA	DCT		RESET DIVIDE
47731	0761 00 0 00000		NOP		CHECK INDICATOR
47732	0560 00 2 56601		LDQ	RAN+100,2	MULTIPLY AND DIVIDE
47733	0200 00 2 56601		MPY	RAN+100,2	CONTENTS OF EACH
47734	0221 00 2 56601		DVP	RAN+100,2	LOCATION IN RANDOM FIELD
47735	0131 00 0 00000		XCA		QUOTIENT TO ACCUMULATOR
47736	-0600 00 0 56236		STQ	TEMP	SAVE REMAINDER
47737	0520 00 2 56601		ZET	RAN+100,2	WAS NUMBER USED + ZERO
47740	0020 00 0 47745		TRA	**5	NO
47741	0340 00 0 56225		CAS	PZE	IS QUOTIENT ZERO
47742	0020 00 0 47750		TRA	**6	ERROR
47743	0020 00 0 47753		TRA	**8	
47744	0020 00 0 47750		TRA	**4	ERROR
47745	0340 00 2 56601		CAS	RAN+100,2	CHECK RESULT
47746	0020 00 0 47750		TRA	**2	ERROR
47747	0020 00 0 47753		TRA	**4	MPY AND DVP EXECUTED OK
47750	0560 00 2 56601		LDQ	RAN+100,2	
47751	0074 00 4 00104		TSX	ERROR-1,4	INDICATE ERROR
47752	0020 00 0 47730		TRA	DVMA	
47753	-0500 00 0 56236		CAL	TEMP	REMAINDER TO ACCUMULATOR
47754	0100 00 0 47760		TZE	**4	OK IF ZERO
47755	0560 00 0 56225		LDQ	PZE	CORRECT REMAINDER TO MQ
47756	0074 00 4 00104		TSX	ERROR-1,4	INDICATE ERROR
47757	0020 00 0 47730		TRA	DVMA	
47760	0520 00 2 56601		ZET	RAN+100,2	WAS NUMBER ZERO
47761	0760 00 0 00012		DCT		DID MACHINE DIVIDE CHECK
47762	0760 00 0 00012		DCT		
47763	0020 00 0 47770		TRA	**5	OK
47764	0771 00 0 00045		ARS	37	CLEAR ACCUMULATOR
47765	0560 00 2 56601		LDQ	RAN+100,2	
47766	0074 00 4 00104		TSX	ERROR-1,4	INDICATE ERROR
47767	0020 00 0 47730		TRA	DVMA	
47770	0760 00 0 00161		SWT	1	
47771	0020 00 0 47773		TRA	**2	
47772	0020 00 0 47730		TRA	DVMA	
47773	2 00002 2 47730		TIX	DVMA,2,2	
47774	0074 00 4 52725		TSX	ALBIT,4	RELOAD INDEX REGS.
47775	0074 00 4 00106		TSX	OK,4	
47776	0020 00 0 47725		TRA	DVM	

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MULTIPLY AND DIVIDE WITH EUCLIDEAN ALGORITHM

47777	444770243165		BCD	IMPYDIV	
50000	0774 00 2 00143	MDA	AXT	99,2	143 TO XRB
50001	0020 00 0 50003		TRA	*+2	
50002	444770243165		BCD	IMPYDIV	
50003	0500 00 2 56601	MD1	CLA	RAN+100,2	
50004	0560 00 2 56600		LDQ	RAN+99,2	
50005	0601 00 0 56234		STO	T1	FIND GREATEST COMMON
50006	-0754 00 0 00000		PXD	0,	DIVISOR OF TWO
					RANDOM
50007	0221 00 0 56234		DVP	T1	NUMBERS
50010	0560 00 0 56234		LDQ	T1	
50011	-0100 00 0 50005		TNZ	MD1+2	
50012	0500 00 2 56601		CLA	RAN+100,2	
50013	0765 00 0 00043		LRS	35	
50014	0221 00 0 56234		DVP	T1	REMAINDER SHOULD
50015	-0600 00 0 56236		STQ	TEMP	BE ZERO
50016	0100 00 0 50022		TZE	MD2	
50017	0560 00 0 56225		LDQ	PZE	
50020	0074 00 4 00104		TSX	ERROR-1,4	
50021	0020 00 0 50003		TRA	MD1	
50022	0500 00 2 56600	MD2	CLA	RAN+99,2	
50023	0765 00 0 00043		LRS	35	
50024	0221 00 0 56234		DVP	T1	REMAINDER SHOULD
50025	-0600 00 0 56237		STQ	TEMP+1	BE ZERO
50026	0100 00 0 50032		TZE	MD3	
50027	0560 00 0 56225		LDQ	PZE	
50030	0074 00 4 00104		TSX	ERROR-1,4	
50031	0020 00 0 50003		TRA	MD1	
50032	0560 00 0 56234	MD3	LDQ	T1	SQUARE GREATEST
50033	0200 00 0 56234		MPY	T1	COMMON DIVISOR
50034	0601 00 0 56240		STO	TEMP+2	AND SAVE
50035	0600 00 0 56241		STQ	TEMP+3	PRODUCT
50036	0560 00 0 56236		LDQ	TEMP	
50037	0200 00 0 56237		MPY	TEMP+1	

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50040	0601	00	0	56242	STO	TEMP+4	
50041	-0600	00	0	56243	STQ	TEMP+5	
50042	0560	00	0	56240	LDQ	TEMP+2	
50043	0200	00	0	56243	MPY	TEMP+5	
50044	-0600	00	0	56235	STQ	T2	
50045	0560	00	0	56242	LDQ	TEMP+4	PERFORM
50046	0200	00	0	56241	MPY	TEMP+3	
50047	0131	00	0	00000	XCA		DOUBLE-PRECISION
50050	0400	00	0	56235	ADD	T2	
50051	0601	00	0	56235	STO	T2	FIXED POINT
50052	0560	00	0	56241	LDQ	TEMP+3	MULTIPLY
50053	0200	00	0	56243	MPY	TEMP+5	
50054	0400	00	0	56235	ADD	T2	
50055	0601	00	0	56235	STO	T2	
50056	-0600	00	0	56234	STQ	T1	
50057	0560	00	2	56601	LDQ	RAN+100,2	MULTIPLY ORIGINAL
50060	0200	00	2	56600	MPY	RAN+99,2	TWO RANDOM NUMBERS
50061	-0600	00	0	56236	STQ	TEMP	
50062	0340	00	0	56235	CAS	T2	SHOULD COMPARE EQUAL
50063	0020	00	0	50065	TRA	++2	
50064	0020	00	0	50071	TRA	MD4	
50065	0560	00	0	56235	LDQ	T2	
50066	0131	00	0	00000	XCA		
50067	0074	00	4	00104	TSX	ERROR-1,4	
50070	0020	00	0	50003	TRA	MD1	
50071	0500	00	0	56234	MD4	CLA	T1
50072	0340	00	0	56236	CAS	TEMP	SHOULD COMPARE EQUAL
50073	0020	00	0	50075	TRA	++2	
50074	0020	00	0	50100	TRA	MD5	OK
50075	0560	00	0	56236	LDQ	TEMP	
50076	0074	00	4	00104	TSX	ERROR-1,4	INDICATE ERROR
50077	0020	00	0	50003	TRA	MD1	
50100	0760	00	0	00161	MD5	SWT	1
50101	0020	00	0	50103	TRA	++2	
50102	0020	00	0	50003	TRA	MD1	
50103	2 00002	2	50003	TIX	MD1,2,2		RELOAD INDEX REGS.
50104	0074	00	4	52725	TSX	ALBIT,4	
50105	0074	00	4	00106	TSX	OK,4	
50106	0020	00	0	50000	TRA	MDA	REPEAT THIS TEST

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RELIABILITY TEST - JUGGLE BITS IN ACCUMULATOR AND INDICATORS

50107	512543606060		BCD IREL	
50110	0774 00 2 00143	FERA	AXT 99,2	143 TO XRB
50111	0020 00 0 50113		TRA **2	
50112	512543606060		BCD IREL	
50113	-0500 00 2 56600	FERA1	CAL RAN+99,2	
50114	0322 00 2 56601		ERA RAN+100,2	EXCLUSIVE OR TO ACC
50115	0044 00 0 00000		PAI	
50116	0442 60 0 50114		OSI* *-2	OR TO INDICATORS
50117	0041 00 0 56234		IIA T1	
50120	0604 60 0 50117		STI* *-1	AND TO STORAGE
50121	-0500 00 2 56600		CAL RAN+99,2	
50122	0760 00 0 00006		COM	
50123	0044 00 2 56601		PAI RAN+100,2	
50124	0445 60 0 50123		RIS* *-1	NOT OR TO INDICATORS
50125	-0046 00 0 00000		PIA	
50126	0760 00 0 00006		COM	OR TO ACCUMULATOR
50127	0322 00 0 56234		ERA T1	EXCLUSIVE OR TO ACC
50130	0322 00 2 56601		ERA RAN+100,2	
50131	0322 00 2 56600		ERA RAN+99,2	ZERO TO ACCUMULATOR
50132	0100 00 0 50136		TZE **4	
50133	0560 00 0 56225		LDQ PZE	
50134	0074 00 4 00104		TSX ERROR-1,4	
50135	0020 00 0 50113		TRA FERA1	
50136	0760 00 0 00161		SWT 1	
50137	0020 00 0 50141		TRA **2	
50140	0020 00 0 50113		TRA FERA1	
50141	2 00002 2 50113		TIX FERA1,2,2	GET TWO MORE
50142	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50143	0074 00 4 00106		TSX OK,4	
50144	0020 00 0 50110		TRA FERA	

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CHECK CAS WITH ACCUMULATOR EQUAL TO STORAGE

50145	232162606060		BCD 1CAS	
50146	0534 00 1 56354	CAS	LXA INDEX,1	
50147	0020 00 0 50151		TRA **2	PROCEED
50150	232162606060		BCD 1CAS	
50151	0500 00 1 77777	CASA	CLA -1,1	CHECK CAS WITH VARIOUS
50152	0340 00 1 77777		CAS -1,1	STORAGE LOCATIONS
50153	0020 00 0 50155		TRA **2	ERROR
50154	0020 00 0 50160		TRA **4	CAS EXECUTED OK
50155	0560 00 1 77777		LDQ -1,1	COMPARED WORD TO MQ
50156	0074 00 4 00104		TSX ERROR-1,4	INDICATE
50157	0020 00 0 50151		TRA CASA	ERROR
50160	0760 00 0 00161		SWT 1	
50161	0020 00 0 50163		TRA **2	
50162	0020 00 0 50151		TRA CASA	
50163	1 77470 1 50164		TXI **1,1,-200	
50164	3 00310 1 50151		TXH CASA,1,200	
50165	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50166	0074 00 4 00106		TSX OK,4	
50167	0020 00 0 50146		TRA CAS	

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CHECK SUCCESSIVE CAS INSTRUCTIONS WITH ACCUMULATOR EQUAL TO STORAGE

50170	232162606060		BCD 1CAS	
50171	0760 00 0 00016		LMTM	SET SEVEN INDEX REG MODE
50172	0534 00 5 56354	XCAS	LXA INDEX,5	
50173	0020 00 0 50175		TRA *+2	PROCEED

50174	232162606060		BCD 1CAS	
50175	0774 00 2 00000	XCAS1	AXT 0,2	CLEAR XRB
50176	0500 00 5 77777		CLA -1,5	VALUE IN STG LOCATION TO AC
50177	0340 00 5 77777		CAS -1,5	CHECK
50200	1 50200 2 50207		TXI XCAS2,2,*	COMPARISON
50201	0340 00 5 77777		CAS -1,5	EQUAL
50202	1 50202 2 50207		TXI XCAS2,2,*	WITH
50203	0340 00 5 77777		CAS -1,5	3
50204	1 50204 2 50207		TXI XCAS2,2,*	SUCCESSIVE
50205	0020 00 0 50212		TRA *+5	CAS
50206	1 50206 2 50207		TXI XCAS2,2,*	INSTRUCTIONS

ON AN ERROR, XRB CONTAINS ERROR SKIP LOCATION

50207	0560 00 5 77777	XCAS2	LDQ -1,5	COMPARED STG
50210	0074 00 4 00104		TSX ERROR-1,4	WORD IN MQ
50211	0020 00 0 50175		TRA XCAS1	
50212	0760 00 0 00161		SWT 1	
50213	0020 00 0 50215		TRA *+2	
50214	0020 00 0 50175		TRA XCAS1	
50215	1 77470 5 50216		TXI *+1,5,-200	
50216	3 00310 5 50175		TXH XCAS1,5,200	
50217	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50220	0074 00 4 00106		TSX OK,4	
50221	0020 00 0 50171		TRA XCAS-1	

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CHECK SUCCESSIVE IA CAS INSTRUCTIONS WITH ACC EQUAL TO STG

50222	232162603121		BCD ICAS IA	
50223	0534 00 6 56354	ICAS	LXA INDEX,6	
50224	0020 60 0 50242		TRA* ICAS2+2	PROCEED
50225	232162603121		BCD ICAS IA	
50226	0774 00 2 00000	ICAS1	AXT 0,2	CLEAR XRB
50227	0500 00 6 77777		CLA -1,6	VALUE IN STG LOC TO ACC
50230	0340 60 0 50240		CAS* ICAS2	CHECK
50231	1 50231 2 50240		TXI ICAS2,2,*	COMPARISON
50232	0340 60 0 50227		CAS* ICAS1+1	EQUAL
50233	1 50233 2 50240		TXI ICAS2,2,*	WITH
50234	0340 60 0 50240		CAS* ICAS2	3
50235	1 50235 2 50240		TXI ICAS2,2,*	SUCCESSIVE
50236	0020 00 0 50243		TRA **5	CAS
50237	1 50237 2 50240		TXI ICAS2,2,*	INSTRUCTIONS

ON AN ERROR, XRB CONTAINS CAS ERROR SKIP LOCATION

50240	0560 00 6 77777	ICAS2	LDQ -1,6	COMPARED STG
50241	0074 00 4 00104		TSX ERROR-1,4	WORD IN MQ
50242	0020 00 0 50226		TRA ICAS1	
50243	0760 00 0 00161		SWT 1	
50244	0020 00 0 50246		TRA **2	
50245	0020 00 0 50226		TRA ICAS1	
50246	1 77470 6 50247		TXI **1,6,-200	
50247	3 00310 6 50224		TXH ICAS+1,6,200	
50250	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50251	0074 00 4 00106		TSX OK,4	
50252	0020 00 0 50223		TRA ICAS	

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CHECK CAS WITH ACCUMULATOR GREATER THAN STORAGE

50253	232162606060		BCD 1CAS	
50254	0534 00 7 56354	CAS1	LXA INDEX,7	
50255	0020 00 0 50257		TRA **2	PROCEED
50256	232162606060		BCD 1CAS	
50257	0500 00 0 56226	CAS1A	CLA ONE	MAKE ACCUMULATOR
50260	0401 00 7 77777		ADM -1,7	
50261	0340 00 7 77777		CAS -1,7	
50262	0020 00 0 50267		TRA **5	CAS EXECUTED OK
50263	0761 00 0 00000		NOP	ERROR
50264	0560 00 7 77777		LDQ -1,7	
50265	0074 00 4 00104		TSX ERROR-1,4	INDICATE
50266	0020 00 0 50257		TRA CAS1A	ERROR
50267	0760 00 0 00161		SWT 1	
50270	0020 00 0 50272		TRA **2	
50271	0020 00 0 50257		TRA CAS1A	
50272	1 77470 7 50273		TXI **1,7,-200	
50273	3 00310 7 50257		TXH CAS1A,7,200	
50274	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50275	0074 00 4 00106		TSX OK,4	
50276	0020 00 0 50254		TRA CAS1	

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CHECK CAS WITH ACCUMULATOR LESS THAN STORAGE

50277	232162606060		BCD 1CAS	
50300	0534 00 1 56354	CAS2	LXA INDEX,1	
50301	0020 00 0 50303		TRA **2	PROCEED
50302	232162606060		BCD 1CAS	
50303	0500 00 1 77777	CAS2A	CLA -1,1	MAKE ACCUMULATOR
50304	0402 00 0 56226		SUB ONE	LESS THAN STORAGE
50305	0340 00 1 77777		CAS -1,1	CHECK CAS
50306	0020 00 0 50311		TRA **3	ERROR
50307	0020 00 0 50311		TRA **2	ERROR
50310	0020 00 0 50314		TRA **4	CAS EXECUTED OK
50311	0560 00 1 77777		LDQ -1,1	COMPARED WORD TO MQ
50312	0074 00 4 00104		TSX ERROR-1,4	INDICATE
50313	0020 00 0 50303		TRA CAS2A	ERROR
50314	0760 00 0 00161		SWT 1	
50315	0020 00 0 50317		TRA **2	
50316	0020 00 0 50303		TRA CAS2A	
50317	1 77470 1 50320		TXI **1,1,-200	
50320	3 00310 1 50303		TXH CAS2A,1,200	
50321	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50322	0074 00 4 00106		TSX OK,4	
50323	0020 00 0 50300		TRA CAS2	

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CHECK SUCCESSIVE CAS INSTRUCTIONS WITH ACCUMULATOR LESS THAN STORAGE

50324	232162606060		BCD 1CAS	
50325	0534 00 5 56354	XCAS3	LXA INDEX,5	
50326	0020 00 0 50330		TRA **2	PROCEED
50327	232162606060		BCD 1CAS	
50330	0774 00 2 00000	XCAS4	AXT 0,2	CLEAR XRB
50331	0500 00 5 77777		CLA -1,5	VALUE IN STG LOC TO ACC
50332	0402 00 0 56226		SUB ONE	CHECK
50333	0340 00 5 77777		CAS -1,5	ACCUMULATOR
50334	1 50334 2 50345		TXI XCAS5,2,*	COMPARISON
50335	1 50335 2 50345		TXI XCAS5,2,*	LESS
50336	0340 00 5 77777		CAS -1,5	THAN
50337	1 50337 2 50345		TXI XCAS5,2,*	STORAGE
50340	1 50340 2 50345		TXI XCAS5,2,*	WITH
50341	0340 00 5 77777		CAS -1,5	3
50342	1 50342 2 50345		TXI XCAS5,2,*	SUCCESSIVE
50343	1 50343 2 50345		TXI XCAS5,2,*	CAS
50344	0020 00 0 50350		TRA **4	INSTRUCTIONS

ON AN ERROR, XRB CONTAINS CAS ERROR SKIP LOCATION

50345	0560 00 5 77777	XCAS5	LDQ -1,5	COMPARED STG
50346	0074 00 4 00104		TSX ERROR-1,4	WORD IN MQ
50347	0020 00 0 50330		TRA XCAS4	
50350	0760 00 0 00161		SWT 1	
50351	0020 00 0 50353		TRA **2	
50352	0020 00 0 50330		TRA XCAS4	
50353	1 77470 5 50354		TXI **1,5,-200	
50354	3 00310 5 50330		TXH XCAS4,5,200	
50355	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50356	0074 00 4 00106		TSX OK,4	
50357	0020 00 0 50325		TRA XCAS3	

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CHECK SUCCESSIVE IA CAS INSTRUCTIONS WITH ACC LESS THAN STG

50360	232162603121		BCD ICAS IA
50361	0534 00 6 56354	ICAS3	LXA INDEX,6
50362	0020 60 0 50403		TRA* ICAS5+2 PROCEED
50363	232162603121		BCD ICAS IA
50364	0774 00 2 00000	ICAS4	AXT 0,2 CLEAR XRB
50365	0500 00 6 77777		CLA -1,6 VALUE IN STG LOC TO ACC
50366	0402 00 0 56226		SUB ONE CHECK
50367	0340 60 0 50401		CAS* ICAS5 ACCUMULATOR
50370	1 50370 2 50401		TXI ICAS5,2,* COMPARISON
50371	1 50371 2 50401		TXI ICAS5,2,* LESS
50372	0340 60 0 50401		CAS* ICAS5 THAN
50373	1 50373 2 50401		TXI ICAS5,2,* STORAGE
50374	1 50374 2 50401		TXI ICAS5,2,* WITH
50375	0340 60 0 50365		CAS* ICAS4+1 3
50376	1 50376 2 50401		TXI ICAS5,2,* SUCCESSIVE
50377	1 50377 2 50401		TXI ICAS5,2,* CAS
50400	0020 00 0 50404		TRA **4 INSTRUCTIONS

ON AN ERROR, XRB CONTAINS CAS ERROR SKIP LOCATION

50401	0560 00 6 77777	ICAS5	LDQ -1,6 COMPARED STG
50402	0074 00 4 00104		TSX ERROR-1,4 WORD IN MQ
50403	0020 00 0 50364		TRA ICAS4
50404	0760 00 0 00161		SWT 1
50405	0020 00 0 50407		TRA **2
50406	0020 00 0 50364		TRA ICAS4
50407	1 77470 6 50410		TXI **1,6,-200
50410	3 00310 6 50362		TXH ICAS3+1,6,200
50411	0074 00 4 52725		TSX ALBIT,4 RELOAD INDEX REGS.
50412	0074 00 4 00106		TSX OK,4
50413	0020 00 0 50361		TRA ICAS3

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CHECK LAS WITH ACCUMULATOR EQUAL TO STORAGE

50414	432162606060		BCD 1LAS	
50415	0534 00 7 56354	LAS	LXA INDEX,7	
50416	0020 00 0 50420		TRA **2	PROCEED
50417	432162606060		BCD 1LAS	
50420	-0500 00 7 77777	LASA	CAL -1,7	CHECK LAS WITH EACH
50421	-0340 00 7 77777		LAS -1,7	LOCATION OF STORAGE
50422	0020 00 0 50424		TRA **2	ERROR
50423	0020 00 0 50427		TRA **4	LAS EXECUTED OK
50424	0560 00 7 77777		LDQ -1,7	COMPARED WORD TO MQ
50425	0074 00 4 00104		TSX ERROR-1,4	INDICATE
50426	0020 00 0 50420		TRA LASA	ERROR
50427	0760 00 0 00161		SWT 1	
50430	0020 00 0 50432		TRA **2	
50431	0020 00 0 50420		TRA LASA	
50432	1 77470 7 50433		TXI **1,7,-200	
50433	3 00310 7 50420		TXH LASA,7,200	
50434	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50435	0074 00 4 00106		TSX OK,4	
50436	0020 00 0 50415		TRA LAS	

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CHECK SUCCESSIVE LAS INSTRUCTIONS WITH ACCUMULATOR EQUAL TO STORAGE

50437	432162606060		BCD 1LAS	
50440	0534 00 1 56354	XLAS	LXA INDEX,1	
50441	0020 00 0 50443		TRA **2	PROCEED
50442	432162606060		BCD 1LAS	
50443	0774 00 2 00000	XLAS1	AXT 0,2	CLEAR XRB
50444	-0500 00 1 77777		CAL -1,1	VALUE IN STG LOC TO ACC
50445	-0340 00 1 77777		LAS -1,1	CHECK
50446	1 50446 2 50455		TXI XLAS2,2,*	COMPARISON
50447	-0340 00 1 77777		LAS -1,1	EQUAL
50450	1 50450 2 50455		TXI XLAS2,2,*	WITH
50451	-0340 00 1 77777		LAS -1,1	3
50452	1 50452 2 50455		TXI XLAS2,2,*	SUCCESSIVE
50453	0020 00 0 50460		TRA **5	LAS
50454	1 50454 2 50455		TXI XLAS2,2,*	INSTRUCTIONS

ON AN ERROR, XRB CONTAINS CAS ERROR SKIP LOCATION

50455	0560 00 1 77777	XLAS2	LDQ -1,1	COMPARED STG
50456	0074 00 4 00104		TSX ERROR-1,4	WORD IN MQ
50457	0020 00 0 50443		TRA XLAS1	
50460	0760 00 0 00161		SWT 1	
50461	0020 00 0 50463		TRA **2	
50462	0020 00 0 50443		TRA XLAS1	
50463	1 77470 1 50464		TXI **1,1,-200	
50464	3 00310 1 50443		TXH XLAS1,1,200	
50465	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50466	0074 00 4 00106		TSX OK,4	
50467	0020 00 0 50440		TRA XLAS	

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CHECK SUCCESSIVE IA LAS INSTRUCTIONS WITH ACC EQUAL TO STG

50470	432162603121		BCD ILAS IA
50471	0534 00 5 56354	ILAS	LXA INDEX ₅
50472	0020 60 0 50510		TRA* ILAS2+2 PROCEED
50473	432162603121		BCD ILAS IA
50474	0774 00 2 00000	ILAS1	AXT 0 ₂ CLEAR XRB
50475	-0500 00 5 77777		CAL -1 ₅ VALUE IN STG LOC TO ACC
50476	-0340 60 0 50475		LAS* ILAS1+1 CHECK
50477	1 50477 2 50506		TXI ILAS2 ₂ * COMPARE
50500	-0340 60 0 50506		LAS* ILAS2 EQUAL
50501	1 50501 2 50506		TXI ILAS2 ₂ * WITH
50502	-0340 60 0 50475		LAS* ILAS1+1 3
50503	1 50503 2 50506		TXI ILAS2 ₂ * SUCCESSIVE
50504	0020 00 0 50511		TRA **5 LAS
50505	1 50505 2 50506		TXI ILAS2 ₂ * INSTRUCTIONS

ON AN ERROR, XRB CONTAINS LAS ERROR SKIP LOCATION

50506	0560 00 5 77777	ILAS2	LDQ -1 ₅ COMPARED STG
50507	0074 00 4 00104		TSX ERROR-1 ₄ WORD IN MQ
50510	0020 00 0 50474		TRA ILAS1
50511	0760 00 0 00161		SWT 1
50512	0020 00 0 50514		TRA **2
50513	0020 00 0 50474		TRA ILAS1
50514	1 77470 5 50515		TXI **1 ₅ -200
50515	3 00310 5 50472		TXH ILAS+1 ₅ ,200
50516	0074 00 4 52725		TSX ALBIT ₄ RELOAD INDEX REGS.
50517	0074 00 4 00106		TSX OK ₄
50520	0020 00 0 50471		TRA ILAS

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CHECK IA ORA WITH VARIOUS LOCATIONS OF STORAGE

50521	465121603121		BCD IORA IA	
50522	0534 00 6 56354	IORA	LXA INDEX,6	
50523	0020 60 0 50540		TRA* IORA2	PROCEED
50524	465121603121		BCD IORA IA	
50525	0500 60 0 51146	IORA1	CLA* MPDV+9	CLEAR ACCUMULATOR
50526	-0501 60 0 50536		ORA* IORA2-2	CHECK ORA* WITH EACH
50527	-0340 00 6 77777		LAS -1,6	LOCATION OF STORAGE
50530	0020 00 0 50532		TRA **2	ERROR
50531	0020 00 0 50535		TRA **4	OK
50532	0560 00 6 77777		LDQ -1,6	CORRECT WORD
50533	0074 00 4 00104		TSX ERROR-1,4	TO THE MQ
50534	0020 00 0 50525		TRA IORA1	
50535	0120 00 0 50541		TPL **4	CHECK ACC SIGN CLEAR
50536	0560 00 6 77777		LDQ -1,6	CORRECT WORD
50537	0074 00 4 00104		TSX ERROR-1,4	TOT THE MQ
50540	0020 00 0 50525	IORA2	TRA IORA1	
50541	0760 00 0 00161		SWT 1	
50542	0020 00 0 50544		TRA **2	
50543	0020 00 0 50525		TRA IORA1	
50544	1 77470 6 50545		TXI **1,6,-200	
50545	3 00310 6 50523		TXH IORA+1,6,200	
50546	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50547	0074 00 4 00106		TSX OK,4	
50550	0020 00 0 50522		TRA IORA	

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CHECK IA ORS WITH EACH LOCATION OF STORAGE

50551	465162603121		BCD 10RS IA	
50552	0534 00 7 56354	IORS	LXA INDEX,7	
50553	0020 60 0 50566		TRA* IORS2	PROCEED
50554	465162603121		BCD 10RS IA	
50555	0600 60 0 50560	IORS1	STZ* ++3	CLEAR LOCATION
50556	-0500 60 0 50564		CAL* IORS2-2	CHECK ORS* WITH VARIOUS
50557	-0602 60 0 50560		ORS* IORS1+3	LOCATION OF STORAGE
50560	-0500 00 0 56236		CAL TEMP	CHECK ORS*
50561	-0340 60 0 50564		LAS* IORS2-2	EXECUTION
50562	0020 00 0 50564		TRA ++2	ERROR
50563	0020 00 0 50567		TRA ++4	OK
50564	0560 00 7 77777		LDQ -1,7	CORRECT WORD
50565	0074 00 4 00104		TSX ERROR-1,4	TO THE MQ
50566	0020 00 0 50555	IORS2	TRA IORS1	
50567	0760 00 0 00161		SWT 1	
50570	0020 00 0 50572		TRA ++2	
50571	0020 00 0 50555		TRA IORS1	
50572	1 77470 7 50573		TXI ++1,7,-200	
50573	3 00310 7 50553		TXH IORS+1,7,200	
50574	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50575	0074 00 4 00106		TSX OK,4	
50576	0020 00 0 50552		TRA IORS	

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CHECK IA ANA WITH EACH LOCATION OF STORAGE

50577	214521603121		BCD IANA IA	
50600	0534 00 5 56354	IANA	LXA INDEX,5	
50601	0020 60 0 50612		TRA* IANA2	PROCEED
50602	214521603121		BCD IANA IA	
50603	-0500 60 0 50656	IANA1	CAL* ERAA	ONES TO ACC P-35
50604	-0320 60 0 50610		ANA* IANA2-2	CHECK ANA*
50605	-0340 60 0 50610		LAS* IANA2-2	
50606	0020 00 0 50610		TRA **2	ERROR
50607	0020 00 0 50613		TRA **4	OK
50610	0560 00 5 77777		LDQ -1,5	CORRECT WORD
50611	0074 00 4 00104		TSX ERROR-1,4	TO THE MQ
50612	0020 00 0 50603	IANA2	TRA IANA1	
50613	0760 00 0 00161		SWT 1	
50614	0020 00 0 50616		TRA **2	
50615	0020 00 0 50603		TRA IANA1	
50616	1 77470 5 50617		TXI **1,5,-200	
50617	3 00310 5 50601		TXH IANA+1,5,200	
50620	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50621	0074 00 4 00106		TSX OK,4	
50622	0020 00 0 50600		TRA IANA	

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CHECK IA ANS WITH EACH LOCATION OF STORAGE

50623	214562603121		BCD IANS IA	
50624	0534 00 6 56354	IANS	LXA INDEX,6	
50625	0020 60 0 50641		TRA* IANS2	PROCEED
50626	214562603121		BCD IANS IA	
50627	-0500 60 0 50656	IANS1	CAL* ERAA	GET ONES IN
50630	0602 60 0 50633		SLW* IANS1+4	STORAGE LOCATION
50631	-0500 60 0 50637		CAL* IANS2-2	CHECK
50632	0320 60 0 50633		ANS* IANS1+4	
50633	-0500 00 0 56236		CAL TEMP	ANS
50634	-0340 60 0 50637		LAS* IANS2-2	
50635	0020 00 0 50637		TRA **2	ERROR
50636	0020 00 0 50642		TRA **4	OK
50637	0560 00 6 77777		LDQ -1,6	CORRECT WORD
50640	0074 00 4 00104		TSX ERROR-1,4	TO THE MQ
50641	0020 00 0 50627	IANS2	TRA IANS1	
50642	0760 00 0 00161		SMT 1	
50643	0020 00 0 50645		TRA **2	
50644	0020 00 0 50627		TRA IANS1	
50645	1 77470 6 50646		TXI **1,6,-200	
50646	3 00310 6 50625		TXH IANS+1,6,200	
50647	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50650	0074 00 4 00106		TSX OK,4	
50651	0020 00 0 50624		TRA IANS	

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CHECK ERA WITH EACH LOCATION IN STORAGE

50652	255121606060		BCD 1ERA	
50653	0534 00 7 56354	ERA	LXA INDEX,7	
50654	0020 00 0 50656		TRA **2	PROCEED
50655	255121606060		BCD 1ERA	
50656	-0500 00 0 56233	ERAA	CAL ONES	BITS TO ACC P-35
50657	0760 00 0 00006		COM	ACCUMULATOR NOW HAS
50660	-0760 00 0 00003		SSM	BITS IN S AND Q
50661	-0501 00 7 77777		ORA -1,7	CHECK ERA WITH EACH
50662	0322 00 7 77777		ERA -1,7	LOCATION OF STORAGE
50663	0340 00 0 56225		CAS PZE	CHECK ACCUMULATOR CLEAR
50664	0020 00 0 50666		TRA **2	ERROR
50665	0020 00 0 50671		TRA **4	ERA EXECUTED OK
50666	0560 00 7 77777		LDQ -1,7	WORD BEING CHECKED TO MQ
50667	0074 00 4 00104		TSX ERROR-1,4	INDICATE
50670	0020 00 0 50656		TRA ERAA	ERROR
50671	0760 00 0 00161		SWT 1	
50672	0020 00 0 50674		TRA **2	
50673	0020 00 0 50656		TRA ERAA	
50674	1 77470 7 50675		TXI **1,7,-200	
50675	3 00310 7 50656		TXH ERAA,7,200	
50676	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50677	0074 00 4 00106		TSX OK,4	
50700	0020 00 0 50653		TRA ERA	

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CHECK ERA WITH EACH LOCATION IN STORAGE

50701	255121606060		BCD 1ERA	
50702	0534 00 1 56354	ERA1	LXA INDEX,1	
50703	0020 00 0 50705		TRA **2	PROCEED
50704	255121606060		BCD 1ERA	
50705	-0500 00 1 77777	ERA1A	CAL -1,1	L WORD TESTING
50706	0760 00 0 00006		COM	INVERT BITS IN ACCUMULATOR
50707	0322 00 0 56233		ERA ONES	CHECK ERA WITH EACH
50710	-0340 00 1 77777		LAS -1,1	LOCATION OF STORAGE
50711	0020 00 0 50713		TRA **2	ERROR
50712	0020 00 0 50716		TRA **4	ERA EXECUTED OK
50713	0560 00 1 77777		LDQ -1,1	WORD BEING CHECKED TO MQ
50714	0074 00 4 00104		TSX ERROR-1,4	INDICATE
50715	0020 00 0 50705		TRA ERA1A	ERROR
50716	0760 00 0 00161		SWT 1	
50717	0020 00 0 50721		TRA **2	
50720	0020 00 0 50705		TRA ERA1A	
50721	1 77470 1 50722		TXI **1,1,-200	
50722	3 00310 1 50705		TXH ERA1A,1,200	
50723	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
50724	0074 00 4 00106		TSX OK,4	
50725	0020 00 0 50702		TRA ERA1	

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CHECK ERA AND IIS WITH EACH LOCATION IN STORAGE

50726	255121313162		BCD	IERAIIS	
50727	0560 00 0 56225	ERAB	LDQ	PZE	CLEAR MQ
50730	0534 00 1 56354		LXA	INDEX,1	
50731	0020 00 0 50733		TRA	*+2	PROCEED
50732	255121313162		BCD	IERAIIS	
50733	0441 00 1 77776	ERAB1	LDI	-2,1	
50734	-0500 00 1 77776		CAL	-2,1	
50735	0440 00 177777		IIS	-1,1	
50736	0322 00 1 77777		ERA	-1,1	C INDS AND AC SHOULD MATCH
50737	0621 00 0 50766		STA	ERAT	SET UP
50740	0625 00 0 50766		STT	ERAT	INDICATOR
50741	0760 00 0 00006		COM		TEST TABLE
50742	0621 00 0 50767		STA	ERAT+1	
50743	0625 00 0 50767		STT	ERAT+1	
50744	0760 00 0 00006		COM		
50745	-0765 00 0 00022		LGR	18	
50746	0621 00 0 50770		STA	ERAT+2	
50747	0625 00 0 50770		STT	ERAT+2	
50750	0760 00 0 00006		COM		
50751	0621 00 0 50771		STA	ERAT+3	
50752	0625 00 0 50771		STT	ERAT+3	
50753	0760 00 0 00006		COM		
50754	-0763 00 0 00022		LGL	18	
50755	0774 00 2 00004		AXT	4,2	
50756	0522 00 2 50772		XEC	ERAT+4,2	SHOULD SKIP
50757	0020 00 0 50764		TRA	ERABR	NO GOOD
50760	2 00001 2 50756		TIX	*-2,2,1	
50761	0041 00 0 00000		IIA		SHOULD CLEAR INDICATORS
50762	-0046 00 0 00000		PIA		
50763	0100 00 0 50772		TZE	ERABK	
50764	0074 00 4 00104	ERABR	TSX	ERROR-1,4	
50765	0020 00 0 50733		TRA	ERAB1	
50766	0056 00 000000	ERAT	RNT	**	
50767	0054 00 000000		RFT	**	EXECUTE TABLE
50770	-0056 00 000000		LNT	**	
50771	-0054 00 000000		LFT	**	
50772	0760 00 0 00161	ERABK	SWT	1	
50773	0020 00 0 50775		TRA	*+2	
50774	0020 00 0 50733		TRA	ERAB1	
50775	1 77470 1 50776		TXI	*+1,1,-200	
50776	3 00310 1 50733		TXH	ERAB1,1,200	
50777	0074 00 4 52725		TSX	ALBIT,4	RELOAD INDEX REGS.
51000	0074 00 4 00106		TSX	OK,4	
51001	0020 00 0 50727		TRA	ERAB	REPEAT THIS TEST

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CHECK IA ERA WITH EACH LOCATION OF STORAGE

51002	255121603121		BCD IERA IA	
51003	0534 00 5 56354	IERA	LXA INDEX,5	
51004	0020 60 0 51017		TRA* IERA2	PROCEED
51005	255121603121		BCD IERA IA	
51006	-0500 60 0 51146	IERA1	CAL* MPDV+9	CLEAR ACCUMULATOR
51007	-0760 00 0 00003		SSM	BIT IN S
51010	-0501 60 0 51015		ORA* IERA2-2	CHECK ERA* WITH EACH
51011	0322 60 0 51015		ERA* IERA2-2	LOCATION OF STORAGE
51012	0340 00 0 56225		CAS PZE	CHECK ERA* EXECUTION
51013	0020 00 0 51015		TRA *+2	ERROR
51014	0020 00 0 51020		TRA *+4	OK
51015	0560 00 5 77777		LDQ -1,5	WORD BEING CHECKED TO MQ
51016	0074 00 4 00104		TSX ERROR-1,4	INDICATE
51017	0020 00 0 51006	IERA2	TRA IERA1	ERROR
51020	0760 00 0 00161		SWT 1	
51021	0020 00 0 51023		TRA *+2	
51022	0020 00 0 51006		TRA IERA1	
51023	1 77470 5 51024		TXI *+1,5,-200	
51024	3 00310 5 51004		TXH IERA+1,5,200	
51025	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51026	0074 00 4 00106		TSX OK,4	
51027	0020 00 0 51003		TRA IERA	

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EXERCISE SHIFT COUNTER USING RQL WITH EACH LOCATION IN STORAGE

51030	515043606060		BCD 1RQL	
51031	0774 00 2 00440	RQL	AXT 288,2	440 IN XRB
51032	0534 00 1 56354		LXA INDEX,1	
51033	0020 60 0 51045		TRA* RQL2	PROCEED
51034	515043606060		BCD 1RQL	
51035	0560 60 0 51043	RQL1	LDQ* RQL2-2	CHECK RQL WITH EACH
51036	-0773 00 2 00040		RQL 32,2	LOCATION OF STORAGE
51037	0131 00 0 00000		XCA	RQL RESULT TO ACC
51040	0340 60 0 51043		CAS* RQL2-2	CHECK RQL EXECUTION
51041	0020 00 0 51043		TRA *+2	ERROR
51042	0020 00 0 51046		TRA *+4	RQL EXECUTED OK
51043	0560 00 1 77777		LDQ -1,1	CORRECT RESULT AFTER SHIFTS
51044	0074 00 4 00104		TSX ERROR-1,4	INDICATE
51045	0020 00 0 51035	RQL2	TRA RQL1	ERROR
51046	0760 00 0 00161		SWT 1	
51047	0020 00 0 51051		TRA *+2	
51050	0020 00 0 51035		TRA RQL1	
51051	1 77470 1 51052		TXI *+1,1,-200	
51052	3 00310 1 51033		TXH RQL+2,1,200	
51053	2 00044 2 51032		TIX RQL+1,2,36	
51054	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51055	0074 00 4 00106		TSX OK,4	
51056	0020 00 0 51031		TRA RQL	

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CHECK ADD AND SUB WITH EACH LOCATION IN STORAGE

51057	212424626422		BCD 1ADDSUB	
51060	0534 00 1 56354	ADSUB	LXA INDEX,1	
51061	0020 00 0 51063		TRA **2	PROCEED
51062	212424626422		BCD 1ADDSUB	
51063	0500 00 1 77777	ADSU	CLA -1,1	ADD AND SUBTRACT
51064	0400 00 1 77777		ADD -1,1	CONTENTS OF EACH
51065	0402 00 1 77777		SUB -1,1	LOCATION OF STORAGE
51066	0340 00 1 77777		CAS -1,1	CHECK RESULT
51067	0020 00 0 51071		TRA **2	ERROR
51070	0020 00 0 51074		TRA **4	ADD AND SUBTRACT EXECUTED OK
51071	0560 00 1 77777		LDQ -1,1	NUMBER USED TO MQ
51072	0074 00 4 00104		TSX ERROR-1,4	INDICATE
51073	0020 00 0 51063		TRA ADSU	ERROR
51074	0760 00 0 00161		SWT 1	
51075	0020 00 0 51077		TRA **2	
51076	0020 00 0 51063		TRA ADSU	
51077	1 77470 1 51100		TXI **1,1,-200	
51100	3 00310 1 51063		TXH ADSU,1,200	
51101	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51102	0074 00 4 00106		TSX OK,4	
51103	0020 00 0 51060		TRA ADSUB	

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CHECK IA ADD AND SUB WITH EACH LOCATION IN STORAGE

51104	542124626422		BCD 1*ADSUB	
51105	0534 00 6 56354	IADS	LXA INDEX,6	
51106	0020 60 0 51120		TRA* IADS2	PROCEED
51107	542124626422		BCD 1*ADSUB	
51110	0500 60 0 51116	IADS1	CLA* IADS2-2	ADD AND SUBTRACT
51111	0400 60 0 51116		ADD* IADS2-2	CONTENTS OF EACH
51112	0402 60 0 51116		SUB* IADS2-2	LOCATION OF STORAGE
51113	0340 60 0 51116		CAS* IADS2-2	CHECK ADD AND SUB EXECUTION
51114	0020 00 0 51116		TRA *+2	ERROR
51115	0020 00 0 51121		TRA *+4	OK
51116	0560 00 6 77777		LDQ -1,6	NUMBER USED TO MQ
51117	0074 00 4 00104		TSX ERROR-1,4	INDICATE
51120	0020 00 0 51110	IADS2	TRA IADS1	ERROR
51121	0760 00 0 00161		SWT 1	
51122	0020 00 0 51124		TRA *+2	
51123	0020 00 0 51110		TRA IADS1	
51124	1 77470 6 51125		TXI *+1,6,-200	
51125	3 00310 6 51106		TXH IADS+1,6,200	
51126	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51127	0074 00 4 00106		TSX OK,4	
51130	0020 00 0 51105		TRA IADS	

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CHECK MPY AND DVP WITH EACH LOCATION IN STORAGE

51131	444770246547	BCD 1MPYDVP	
51132	0534 00 1 56354	MPYDV LXA INDEX, 1	
51133	0020 00 0 51135	TRA **2	PROCEED
51134	444770246547	BCD 1MPYDVP	
51135	0760 00 0 00012	MPDV DCT	TURN OFF
51136	0761 00 0 00000	NOP	INDICATOR
51137	0560 00 1 77777	LDQ -1, 1	MULTIPLY AND DIVIDE
51140	0200 00 1 77777	MPY -1, 1	CONTENTS OF EACH
51141	0221 00 1 77777	DVP -1, 1	LOCATION OF STORAGE
51142	0131 00 0 00000	XCA	QUOTIENT TO ACCUMULATOR
51143	-0600 00 0 56236	STQ TEMP	SAVE REMAINDER
51144	0520 00 1 77777	ZET -1, 1	WAS NUMBER USED ZERO
51145	0020 00 0 51152	TRA **5	NO
51146	0340 00 0 56225	CAS PZE	IS QUOTIENT +0
51147	0020 00 0 51155	TRA **6	NO, ERROR
51150	0020 00 0 51160	TRA **8	YES, OK
51151	0020 00 0 51155	TRA **4	NO, ERROR
51152	0340 00 1 77777	CAS -1, 1	CHECK RESULT
51153	0020 00 0 51155	TRA **2	ERROR
51154	0020 00 0 51160	TRA **4	MPY AND DVP EXECUTED OK
51155	0560 00 1 77777	LDQ -1, 1	NUMBER USED TO MQ
51156	0074 00 4 00104	TSX ERROR-1, 4	INDICATE
51157	0020 00 0 51135	TRA MPDV	ERROR
51160	-0500 00 0 56236	CAL TEMP	REMAINDER TO ACCUMULATOR
51161	0100 00 0 51165	TZE **4	OK IF ZERO
51162	0560 00 0 56225	LDQ PZE	CORRECT REMAINDER TO MQ
51163	0074 00 4 00104	TSX ERROR-1, 4	INDICATE
51164	0020 00 0 51135	TRA MPDV	ERROR

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51165	0760	00	0	00012	DCT	DCT
51166	0020	00	0	51170	TRA **2	INDICATOR
51167	0020	00	0	51173	TRA **4	ON
						IF
51170	-0520	00	1	77777	NZT -1,1	NUMBER
51171	0020	00	0	51201	TRA **8	IN
51172	0020	00	0	51175	TRA **3	STORAGE
						IS
51173	0520	00	1	77777	ZET -1,1	A
51174	0020	00	0	51201	TRA **5	ZERO
51175	0771	00	0	00045	ARS 37	CLEAR ACCUMULATOR
51176	0560	00	1	77777	LDQ -1,1	NUMBER USED TO MQ
51177	0074	00	4	00104	TSX ERROR-1,4	INDICATE
51200	0020	00	0	51135	TRA MPDV	ERROR
51201	0760	00	0	00161	SWT 1	
51202	0020	00	0	51204	TRA **2	
51203	0020	00	0	51135	TRA MPDV	
51204	1 77470	1		51205	TXI **1,1,-200	
51205	3 00310	1		51135	TXH MPDV,1,200	
51206	0074	00	4	52725	TSX ALBIT,4	RELOAD INDEX REGS.
51207	0074	00	4	00106	TSX OK,4	
51210	0020	00	0	51132	TRA MPYDV	

CHECK IA MPY AND DVP WITH EACH LOCATION OF STORAGE

51211	544447702465		BCD 1*MPYDV
51212	0534	00 7 56354	IMPD LXA INDEX,7
51213	0020	60 0 51260	TRA* IMPD2 PROCEED
51214	544447702465		BCD 1*MPYDV
51215	0760	00 0 00012	IMPD1 DCT
51216	0761	00 0 00000	NOP
51217	0560	60 0 51256	LDQ* IMPD2-2
51220	0200	60 0 51256	MPY* IMPD2-2
51221	0221	60 0 51256	DVP* IMPD2-2
51222	0131	00 0 00000	XCA
51223	-0600	00 0 56236	STQ TEMP
			TURN OFF
			INDICATOR
			MULTIPLY AND DIVIDE
			CONTENTS OF EACH
			LOCATION OF STORAGE
			QUOTIENT TO ACCUMULATOR
			SAVE REMAINDER
51224	0520	60 0 51256	ZET* IMPD2-2
51225	0020	00 0 51232	TRA **5
51226	0340	00 0 56225	CAS PZE
51227	0020	00 0 51235	TRA **6
51230	0020	00 0 51240	TRA **8
51231	0020	00 0 51235	TRA **4
			WAS NUMBER USED ZERO
			NO
			IS QUOTIENT +0
			NO
			YES
			NO

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51232	0340	60	0	51256	CAS* IMPD2-2	CHECK RESULT
51233	0020	00	0	51235	TRA **2	ERROR
51234	0020	00	0	51240	TRA **4	OK
51235	0560	60	0	51256	LDQ* IMPD2-2	NUMBER USED TO MQ
51236	0074	00	4	00104	TSX ERROR-1,4	INDICATE
51237	0020	00	0	51215	TRA IMPD1	ERROR
51240	-0500	00	0	56236	CAL TEMP	REMAINDER TO ACCUMULATOR
51241	0100	00	0	51245	TZE **4	OK IF ZERO
51242	0560	00	0	56225	LDQ PZE	CORRECT REMAINDER TO MQ
51243	0074	00	4	00104	TSX ERROR-1,4	INDICATE
51244	0020	00	0	51215	TRA IMPD1	ERROR
51245	0760	00	0	00012	DCT	DCT
51246	0020	00	0	51250	TRA **2	INDICATOR
51247	0020	00	0	51253	TRA **4	ON
51250	-0520	60	0	51256	NZT* IMPD2-2	IF
51251	0020	00	0	51261	TRA **8	NUMBER
51252	0020	00	0	51255	TRA **3	IN
51253	0520	60	0	51256	ZET* IMPD2-2	STORAGE
51254	0020	00	0	51261	TRA **5	ZERO
51255	-0754	00	0	00000	PXD	CLEAR ACCUMULATOR
51256	0560	00	7	77777	LDQ -1,7	NUMBER USED TO MQ
51257	0074	00	4	00104	TSX ERROR-1,4	INDICATE ERROR
51260	0020	00	0	51215	IMPD2 TRA IMPD1	
51261	0760	00	0	00161	SWT 1	
51262	0020	00	0	51264	TRA **2	
51263	0020	00	0	51215	TRA IMPD1	
51264	1 77470	7	51265	TXI **1,7,-200		
51265	3 00310	7	51213	TXH IMPD+1,7,200		
51266	0074	00	4	52725	TSX ALBIT,4	RELOAD INDEX REGS.
51267	0074	00	4	00106	TSX OK,4	
51270	0020	00	0	51212	TRA IMPD	

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CHECK STP IN UPPER STORAGE USING CONTENTS OF EACH LOCATION IN STORAGE

51271	626347606060		BCD 1STP	
51272	0534 00 1 56354	STP	LXA INDEX, 1	
51273	-0500 00 0 56245		CAL PREF	TO
51274	0602 00 0 56236		SLW TEMP	PREFIX
51275	0020 00 0 51277		TRA *+2	PROCEED
51276	626347606060		BCD 1STP	
51277	0600 00 0 77777	STP1	STZ -1	CLEAR LOCATION
51300	-0500 00 1 77777		CAL -1, 1	CHECK STP WITH EACH
51301	0630 00 0 77777		STP -1	STORAGE LOCATION
51302	-0320 00 0 56236		ANA TEMP	SAVE ONLY PREFIX
51303	-0340 00 0 77777		LAS -1	CHECK RESULT
51304	0020 00 0 51306		TRA *+2	ERROR
51305	0020 00 0 51312		TRA *+5	STP EXECUTED OK
51306	0560 00 0 77777		LDQ -1	ERROR RESULT IN ACCUMULATOR
51307	-0130 00 0 00000		XCL	CORRECT RESULT IN MQ
51310	0074 00 4 00104		TSX ERROR-1, 4	INDICATE
51311	0020 00 0 51277		TRA STP1	ERROR
51312	0760 00 0 00161		SWT 1	
51313	0020 00 0 51315		TRA *+2	
51314	0020 00 0 51277		TRA STP1	
51315	1 77470 1 51316		TXI *+1, 1, -200	
51316	3 00310 1 51277		TXH STP1, 1, 200	
51317	0074 00 4 52725		TSX ALBIT, 4	RELOAD INDEX REGS.
51320	0074 00 4 00106		TSX OK, 4	
51321	0020 00 0 51272		TRA STP	

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CHECK STD IN UPPER STORAGE USING CONTENTS OF EACH LOCATION IN STORAGE

51322	626324606060		BCD 1STD	
51323	0534 00 1 56354	STD	LXA INDEX, 1	
51324	0500 00 0 56246		CLA DECR	TO SAVE
51325	0601 00 0 56236		STO TEMP	DECREMENT
51326	0020 00 0 51330		TRA *+2	PROCEED
51327	626324606060		BCD 1STD	
51330	0600 00 0 77777	STD1	STZ -1	CLEAR LOCATION
51331	-0500 00 1 77777		CAL -1, 1	CHECK STD WITH EACH
51332	0622 00 0 77777		STD -1	STORAGE LOCATION
51333	-0320 00 0 56236		ANA TEMP	SAVE ONLY DECREMENT
51334	-0340 00 0 77777		LAS -1	CHECK RESULT
51335	0020 00 0 51337		TRA *+2	ERROR
51336	0020 00 0 51343		TRA *+5	STD EXECUTED OK
51337	0560 00 0 77777		LDQ -1	ERROR RESULT IN ACCUMULATOR
51340	-0130 00 0 00000		XCL	CORRECT RESULT IN MQ
51341	0074 00 4 00104		TSX ERROR-1, 4	INDICATE
51342	0020 00 0 51330		TRA STD1	ERROR
51343	0760 00 0 00161		SWT 1	
51344	0020 00 0 51346		TRA *+2	
51345	0020 00 0 51330		TRA STD1	
51346	1 77470 1 51347		TXI *+1, 1, -200	
51347	3 00310 1 51330		TXH STD1, 1, 200	
51350	0074 00 4 52725		TSX ALBIT, 4	RELOAD INDEX REGS.
51351	0074 00 4 00106		TSX OK, 4	
51352	0020 00 0 51323		TRA STD	

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CHECK STT IN UPPER STORAGE USING CONTENTS OF EACH LOCATION IN STORAGE

51353	626363606060		BCD 1STT	
51354	0534 00 3 56354	STT	LXA INDEX,3	
51355	0500 00 0 56247		CLA TAGR	TO SAVE
51356	0601 00 0 56236		STO TEMP	TAG
51357	0020 00 0 51361		TRA **2	PROCEED
51360	626363606060		BCD 1STT	
51361	0600 00 0 77777	STT1	STZ -1	CLEAR LOCATION
51362	-0500 00 3 77777		CAL -1,3	CHECK STT WITH EACH
51363	0625 00 0 77777		STT -1	STORAGE LOCATION
51364	-0320 00 0 56236		ANA TEMP	SAVE ONLY TAG
51365	-0340 00 0 77777		LAS -1	CHECK RESULT
51366	0020 00 0 51370		TRA **2	ERROR
51367	0020 00 0 51374		TRA **5	STT EXECUTED OK
51370	0560 00 0 77777		LDQ -1	ERROR IN ACC
51371	-0130 00 0 00000		XCL	CORRECT IN MQ
51372	0074 00 4 00104		TSX ERROR-1,4	INDICATE ERROR
51373	0020 00 0 51361		TRA STT1	
51374	0760 00 0 00161		SWT 1	
51375	0020 00 0 51377		TRA **2	
51376	0020 00 0 51361		TRA STT1	
51377	1 77470 3 51400		TXI **1,3,-200	
51400	3 00310 3 51361		TXH STT1,3,200	
51401	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51402	0074 00 4 00106		TSX OK,4	
51403	0020 00 0 51354		TRA STT	

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CHECK STA IN UPPER STORAGE USING CONTENTS OF EACH LOCATION IN STORAGE

51404	626321606060		BCD 1STA	
51405	0534 00 1 56354	STA	LXA INDEX,1	
51406	0500 00 0 56250		CLA ADDR	TO SAVE
51407	0601 00 0 56236		STO TEMP	ADDRESS
51410	0020 00 0 51412		TRA **2	PROCEED
51411	626321606060		BCD 1STA	
51412	0600 00 0 77777	STA1	STZ -1	CLEAR LOCATION
51413	-0500 00 1 77777		CAL -1,1	CHECK STA WITH EACH
51414	0621 00 0 77777		STA -1	STORAGE LOCATION
51415	-0320 00 0 56236		ANA TEMP	SAVE ONLY ADDRESS
51416	-0340 00 0 77777		LAS -1	CHECK RESULT
51417	0020 00 0 51421		TRA **2	ERROR
51420	0020 00 0 51425		TRA **5	STA EXECUTED OK
51421	0560 00 0 77777		LDQ -1	ERROR RESULT IN ACCUMULATOR
51422	-0130 00 0 00000		XCL	CORRECT RESULT IN MQ
51423	0074 00 4 00104		TSX ERROR-1,4	INDICATE
51424	0020 00 0 51412		TRA STA1	ERROR
51425	0760 00 0 00161		SWT 1	
51426	0020 00 0 51430		TRA **2	
51427	0020 00 0 51412		TRA STA1	
51430	1 77470 1 51431		TXI **1,1,-200	
51431	3 00310 1 51412		TXH STA1,1,200	
51432	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51433	0074 00 4 00106		TSX OK,4	
51434	0020 00 0 51405		TRA STA	

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TRY PLACE AND STORE INDEX INSTRUCTIONS WITH VARIOUS NUMBERS IN THE INDEX REGISTERS

51435	476721622324		BCD	IPXASCD	
51436	0057 00 700000	MX	RIR	700000	SET FOR ZERO TAG
51437	0600 00 0 56236		STZ	TEMP	
51440	0600 00 0 56237		STZ	TEMP+1	CLEAR
51441	0600 00 0 56240		STZ	TEMP+2	TEMPORARY
51442	0600 00 0 56241		STZ	TEMP+3	STORAGE
51443	0600 00 0 56242		STZ	TEMP+4	AREA
51444	0760 00 0 00016		LMTM		BE SURE 7 XRS AVAILABLE
51445	0056 00 200000	MXN	RNT	200000	
51446	0020 00 0 51452		TRA	**4	TAG
51447	0054 00 100000		RFT	100000	STEPPING ROUTINE
51450	0051 00 700000		IIR	700000	
51451	0051 00 200000		IIR	200000	
51452	0051 00 300000		IIR	300000	
51453	-0046 00 0 00000		PIA		
51454	0625 00 0 51474		STT	MXA	
51455	0625 00 0 51475		STT	MXB	
51456	0625 00 0 51477		STT	MXC	STORE
51457	0625 00 0 51500		STT	MXD	THE
51460	0625 00 0 51501		STT	MXE	TAGS
51461	0625 00 0 51503		STT	MXF	
51462	0625 00 0 51504		STT	MXG	
51463	0625 00 0 51506		STT	MXH	
51464	0625 00 0 51507		STT	MXI	
51465	-0500 00 0 56354		CAL	INDEX	
51466	0760 00 0 00006		COM		
51467	0621 00 0 56236		STA	TEMP	SET
51470	0767 00 0 00022		ALS	18	STARTING
51471	0760 00 0 00006		COM		VALUES
51472	0401 00 0 56226		ADM	ONE	
51473	0622 00 0 56236		STD	TEMP	TWOS COMP IN DECREMENT
51474	0534 00 0 56236	MXA	LXA	TEMP,**	
51475	0754 00 0 00000	MXB	PXA	,**	
51476	0621 00 0 56237		STA	TEMP+1	
51477	-0636 00 0 56237	MXC	SCD	TEMP+1,**	
51500	-0754 00 0 00000	MXD	PXD	,**	
51501	0636 00 0 56240	MXE	SCA	TEMP+2,**	
51502	0622 00 0 56240		STD	TEMP+2	
51503	-0634 00 0 56241	MXF	SXD	TEMP+3,**	
51504	0756 00 0 00000	MXG	PCA	,**	
51505	0621 00 0 56241		STA	TEMP+3	
51506	-0756 00 0 00000	MXH	PCD	,**	
51507	0634 00 0 56242	MXI	SXA	TEMP+4	
51510	0622 00 0 56242		STD	TEMP+4	
51511	0560 00 0 56236		LDQ	TEMP	
51512	-0500 00 0 56237		CAL	TEMP+1	
51513	-0340 00 0 56236		LAS	TEMP	SHOULD COMPARE EQUAL

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51514 0020 00 0 51516
51515 0020 00 0 51520
51516 0074 00 4 00104
51517 0761 00 0 51436

TRA **2
TRA **3
TSX ERROR-1,4 ERROR IN PXA - SCD
NOP MX

51520 -0500 00 0 56242
51521 -0340 00 0 56236
51522 0020 00 0 51524
51523 0020 00 0 51526
51524 0074 00 4 00104
51525 0761 00 0 51550

CAL TEMP+4
LAS TEMP SHOULD COMPARE EQUAL
TRA **2
TRA **3
TSX ERROR-1,4 ERROR IN SXA - PCD
NOP MXBCD+1

51526 -0773 00 0 00022
51527 -0600 00 0 56243
51530 -0500 00 0 56240
51531 -0340 00 0 56243
51532 0020 00 0 51534
51533 0020 00 0 51536
51534 0074 00 4 00104
51535 0761 00 0 51551

RQL 18
STQ TEMP+5
CAL TEMP+2
LAS TEMP+5 SHOULD COMPARE EQUAL
TRA **2
TRA **3
TSX ERROR-1,4 ERROR IN PCA - SXD
NOP MXBCD+2

51536 -0500 00 0 56241
51537 -0340 00 0 56243
51540 0020 00 0 51542
51541 0020 00 0 51544
51542 0074 00 4 00104
51543 0761 00 0 51552

CAL TEMP+3
LAS TEMP+5 SHOULD COMPARE EQUAL
TRA **2
TRA **3
TSX ERROR-1,4 ERROR IN SXA - PCD
NOP MXBCD+3

51544 0760 00 0 00161
51545 0020 00 0 51553
51546 0020 00 0 51474
51547 622321476724
51550 472321626724
51551 626721472324
51552 0 00307 7 77470

MXBCD
SWT 1 TEST SWITCH ONE
TRA **6 GO ON
TRA MXA GO BACK
BCD 1SCAPXD BCD WORDS
BCD 1PCASXD FOR ERROR
BCD 1SXAPXD PRINTOUT
PZE -200,7,199

51553 0500 00 0 56236
51554 0402 00 0 51552
51555 0621 00 0 56236
51556 0622 00 0 56236
51557 0120 00 0 51474

CLA TEMP
SUB *-2
STA TEMP
STD TEMP
TPL MXA

51560 0054 00 200000
51561 0054 00 500000
51562 0020 00 0 51445
51563 0074 00 4 52725
51564 0074 00 4 00106
51565 0020 00 0 51436

RFT 200000
RFT 500000
TRA MXN
TSX ALBIT,4
TSX OK,4
TRA MX

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FIXED POINT SQUARE ROOT

51566	514646636060		BCD 1ROOT	
51567	0774 00 1 00144	ROOT	AXT 100,1	
51570	0020 60 0 51650		TRA* ROOT2	
51571	514646636060		BCD 1ROOT	
51572	0774 00 2 00043	ROOT1	AXT 35,2	
51573	0560 00 1 56601		LDQ RAN+100,1	PICK A NUMBER
51574	0200 00 1 56601		MPY RAN+100,1	SQUARE IT
51575	0601 00 0 56241	FOOT	STO TEMP+3	STORE HIGH AND
51576	-0600 00 0 56242	GOOT	STQ TEMP+4	LOW ORDER
51577	0600 00 0 56237	BOOT	STZ TEMP+1	
51600	0600 00 0 56236	AOOT	STZ TEMP	
51601	0560 60 0 51575		LDQ* FOOT	HIGH ORDER RADICAND
51602	0500 60 0 51577	IOOT	CLA* BOOT	SET
51603	0767 00 0 00002		ALS 2	UP
51604	-0501 00 0 56226	EOOT	ORA ONE	TRIAL
51605	0601 00 0 56240	COOT	STO TEMP+2	SUBTRACTOR
51606	0057 00 000001		RIR 1	RESET IND REG 35
51607	0500 60 0 51600		CLA* AOOT	
51610	0763 00 0 00002	HOOT	LLS 2	GET TWO HIGH ORDER BITS
51611	0340 60 0 51605		CAS* COOT	COMPARE TO TRIAL SUB.
51612	0761 00 0 77777		NOP -1	IF LESS
51613	0055 00 000001		SIR 1	TURN ON IND REG 35
51614	0054 00 000001	DOOT	RFT 1	IF GREATER
51615	0402 60 0 51605		SUB* COOT	SUBTRACT TRIAL SUBTRACTOR
51616	0601 60 0 51600		STO* AOOT	ANYWAY STORE IN TEMP
51617	0500 60 0 51577		CLA* BOOT	DOUBLE
51620	0767 00 0 00001		ALS 1	PARTIAL ROOT
51621	0522 00 0 51614		XEC DOOT	
51622	0522 00 0 51604		XEC EOOT	AND ADD ONE
51623	0601 60 0 51577		STO* BOOT	
51624	0500 60 0 51575		CLA* FOOT	
51625	0560 60 0 51576		LDQ* GOOT	
51626	0522 00 0 51610		XEC HOOT	
51627	0522 00 0 51576		XEC GOOT	
51630	0522 00 0 51575		XEC FOOT	
51631	0765 00 0 00043		LRS 35	CLEAR ACC
51632	2 00001 2 51602		TIX IOOT,2,1	

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51633 -0520 60 0 51600
51634 0020 00 0 51641
51635 -0500 60 0 51600
51636 0560 00 0 56225
51637 0074 00 4 00104
51640 0020 00 0 51572
51641 0500 60 0 51573
51642 0322 60 0 51577
51643 0100 00 0 51651

NZT* AOOT
TRA **5
CAL* AOOT
LDQ PZE
TSX ERROR-1,4
TRA ROOT1
CLA* ROOT1+1
ERA* BOOT
TZE **6

REMAINDER SHOULD BE ZERO
OK-CHECK ANSWER
INDICATE
ERROR

COMPARE ORIGINAL AGAINST
CALCULATED
OK-GET ANOTHER

51644 0500 60 0 51573
51645 -0130 00 0 00000
51646 0500 60 0 51577
51647 0074 00 4 00104
51650 0020 00 0 51572

CLA* ROOT1+1
XCL
CLA* BOOT
TSX ERROR-1,4
ROOT2 TRA ROOT1

INDICATE
ERROR

51651 0760 00 0 00161
51652 0020 00 0 51654
51653 0020 00 0 51572
51654 2 00002 1 51570
51655 0074 00 4 52725
51656 0074 00 4 00106
51657 0020 00 0 51567

SWT 1
TRA **2
TRA ROOT1
TIX ROOT+1,1,2
TSX ALBIT,4 RELOAD INDEX REGS.
TSX OK,4
TRA ROOT

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PSEUDO MULTIPLY TEST

51660	462663212424	BCD 10FTADD	
51661	0760 00 0 00012	OFTAD DCT	RESET DIVIDE
51662	0761 00 0 00000	NOP	CHECK INDICATOR
51663	0534 00 6 56354	LXA INDEX,6	
51664	0020 00 0 51666	TRA **2	
51665	462663212424	BCD 10FTADD	
51666	0774 00 1 00001	OFTAE AXT 1,1	
51667	0500 00 6 00001	CLA 1,6	
51670	0765 00 0 00111	LGR 73	CLEAR ACC AND MQ
51671	0441 00 6 00000	LDI ,6	PSEUDO MULTIPLIER TO IND
51672	0444 00 1 56644	OFT B1+35,1	
51673	0400 00 6 00001	ADD 1,6	FORM PARTIAL PRODUCT
51674	0765 00 0 00001	LRS 1	SHIFT PARTIAL PRODUCT
51675	3 00042 1 51677	TXH **2,1,34	TERMINATE WHEN XR1 IS 43
51676	1 00001 1 51672	TXI *-4,1,1	
51677	-0054 00 400000	LFT 400000	
51700	0760 00 0 00002	CHS	SET PRODUCT SIGN
51701	0221 00 6 00000	DVP ,6	
51702	0131 00 0 00000	XCA	QUOTIENT TO ACC
51703	-0520 00 6 00000	NZT ,6	
51704	0020 00 0 51707	TRA **3	
51705	0340 00 6 00001	CAS 1,6	SHOULD COMPARE EQUAL
51706	0020 00 0 51710	TRA **2	ERROR
51707	0020 00 0 51715	TRA **6	OK
51710	-0600 00 0 77777	STQ -1	ERROR
51711	0560 00 6 00001	LDQ 1,6	CORRECT QUOTIENT TO MQ
51712	0074 00 4 00104	TSX ERROR-1,4	INDICATE ERROR
51713	0020 00 0 51666	TRA OFTAE	
51714	0560 00 0 77777	LDQ -1	RESTORE MQ
51715	0131 00 0 00000	XCA	REMAINDER TO ACC
51716	0100 00 0 51722	TZE **4	SHOULD TRANSFER
51717	0560 00 0 56225	LDQ PZE	
51720	0074 00 4 00104	TSX ERROR-1,4	INDICATE ERROR
51721	0020 00 0 51666	TRA OFTAE	
51722	-0520 00 6 00000	NZT ,6	DIVIDE CHECK INDICATOR
51723	0760 00 0 00012	DCT	SHOULD BE ON IF AND ONLY
51724	0760 00 0 00012	DCT	IF DIVISOR WAS ZERO
51725	0074 00 4 00104	TSX ERROR-1,4	
51726	0761 00 0 51666	NOP OFTAE	
51727	0760 00 0 00161	SWT 1	
51730	0020 00 0 51732	TRA **2	
51731	0020 00 0 51666	TRA OFTAE	
51732	1 77470 6 51733	TXI **1,6,-200	
51733	3 00310 6 51666	TXH OFTAE,6,200	
51734	0074 00 4 52725	TSX ALBIT,4	RELOAD INDEX REGS.
51735	0074 00 4 00106	TSX OK,4	
51736	0020 00 0 51661	TRA OFTAD	REPEAT THIS TEST

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EXERCISE INDICATORS

51737	314524706060		BCD 1INDY	
51740	0534 00 7 56354	IND1	LXA INDEX,7	
51741	0020 00 0 51743		TRA **2	
51742	314524706060		BCD 1INDY	
51743	-0500 00 7 00000	IND2	CAL ,7	BINARY WORD TO ACC
51744	0771 60 0 00001		ARS* 1	
51745	0322 60 0 51743		ERA* *-2	GREY CODE EQUIV TO ACC
51746	-0130 60 7 51746		XCL* *,7	GREY CODE EQUIV TO MQ
51747	0774 60 5 00044		AXT* 36,5	
51750	-0754 60 0 00000		PXD* ,,	
51751	0441 60 0 51743		LDI* *-6	BINARY WORD TO INDS
51752	-0763 60 0 00001		LGL* 1	INVERT INDS WITH
51753	0041 60 7 51753		IIA* *,7	BINARY EQUIV OF GREY
51754	2 00001 5 51752		TIX *-2,5,1	CODE WORD
51755	-0046 60 7 51755		PIA* *,7	SHOULD CLEAR ACCUMULATOR
51756	0100 00 0 51762		TZE **4	SHOULD TRANSFER
51757	0560 00 0 56225		LDQ PZE	
51760	0074 00 4 00104		TSX ERROR-1,4	INDICATE ERROR
51761	0020 00 0 51743		TRA IND2	
51762	0760 00 0 00161		SWT 1	
51763	0020 00 0 51765		TRA **2	
51764	0020 00 0 51743		TRA IND2	
51765	2 00310 7 51743		TIX IND2,7,200	
51766	0074 00 4 52725		TSX ALBIT,4	RELOAD INDEX REGS.
51767	0074 00 4 00106		TSX OK,4	
51770	0020 00 0 51740		TRA IND1	

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TRY SEVEN DIVIDES IN SUCCESSION

51771	072465470760		BCD	17DVP7	
51772	0774 00 2 00143	DVP7A	AXT	99,2	
51773	0020 00 0 51775		TRA	DVP7B	
51774	072465470760		BCD	17DVP7	
51775	0560 00 2 56601	DVP7B	LDQ	RAN+100,2	DIVIDEND TO MQ
51776	0760 00 0 00000		CLM		
51777	0763 00 0 00000		LLS	0	SET ACC SIGN IF MQ MINUS
52000	0760 00 0 00012		DCT		RESET DIVIDE CHECK IND
52001	0761 00 0 00000		NOP		
52002	0221 00 2 56600		DVP	RAN+99,2	
52003	0221 00 2 56600		DVP	RAN+99,2	
52004	0221 00 2 56600		DVP	RAN+99,2	
52005	0221 00 2 56600		DVP	RAN+99,2	
52006	0221 00 2 56600		DVP	RAN+99,2	
52007	0221 60 0 52005		DVP	*-2	
52010	0221 00 2 56600		DVP	RAN+99,2	
52011	0520 00 2 56600		ZET	RAN+99,2	DIVIDE CHECK
52012	0760 00 0 00012		DCT		OK IF DIVISOR
52013	0760 00 0 00012		DCT		WAS ZERO
52014	0020 00 0 52017		TRA	*+3	
52015	0074 00 4 00104		TSX	ERROR-1,4	
52016	0020 00 0 51775		TRA	DVP7B	
52017	-0520 00 2 56600		NZT	RAN+99,2	BYPASS RESTORATION
52020	0020 00 0 52053		TRA	DVP7D	IF DIVISOR WAS ZERO
52021	0774 00 1 00007		AXT	7,1	
52022	0601 00 0 56236	DVP7C	STO	TEMP	SAVE REMAINDER
52023	0200 00 2 56600		MPY	RAN+99,2	MULTIPLY DIVISOR
52024	0131 00 0 00000		XCA		AND QUOTIENT
52025	0441 00 0 56236		LDI	TEMP	REMAINDER TO INDICATORS
52026	0120 00 0 52030		TPL	*+2	ADD MAGNITUDES
52027	-0051 00 400000		IIL	400000	OF REMAINDER
52030	-0056 00 400000		LNT	400000	AND PRODUCT
52031	0400 00 0 56236		ADD	TEMP	TO PRODUCE DIVIDEND
52032	-0054 00 400000		LFT	400000	
52033	0402 00 0 56236		SUB	TEMP	

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52034	-0600	00	0	56236	STQ	TEMP	ADD POSSIBLE LOW ORDER
52035	0765	00	0	00043	LRS	35	DIVIDEND OVERFLOW TO
52036	0400	00	0	56236	ADD	TEMP	HIGH ORDER DIVIDEND
52037	2 00001	1	52022	TIX	DVP7C,1,1		ONE DIVIDEND RESTORED
52040	0100	00	0	52044	TZE	++4	HIGH ORDER OF
52041	0560	00	0	56225	LDQ	PZE	ORIGINAL DIVIDEND WAS 0
52042	0074	00	4	00104	TSX	ERROR-1,4	
52043	0020	00	0	51775	TRA	DVP7B	
52044	0131	00	0	00000	XCA		
52045	0560	00	2	56601	LDQ	RAN+100,2	
52046	0340	00	2	56601	CAS	RAN+100,2	SHOULD COMPARE EQUAL
52047	0020	00	0	52051	TRA	++2	NG
52050	0020	00	0	52053	TRA	++3	
52051	0074	00	4	00104	TSX	ERROR-1,4	
52052	0020	00	0	51775	TRA	DVP7B	
52053	0760	00	0	00161	DVP7D	SWT 1	
52054	0020	00	0	52056	TRA	++2	
52055	0020	00	0	51775	TRA	DVP7B	
52056	2 00002	2	51775	TIX	DVP7B,2,2		
52057	0074	00	4	00106	TSX	OK,4	
52060	0020	00	0	51772	TRA	DVP7A	

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TRY SEVEN MULTIPLICATIONS IN SUCCESSION

52061	074447700760		BCD 17MPY7	
52062	0774 00 2 00000	MPY7A	AXT ,2	RESET XRB
52063	0020 00 0 52065		TRA **2	
52064	074447700760		BCD 17MPY7	
52065	0560 00 2 56435	MPY7B	LDQ RAN,2	LOAD MULTIPLIER
52066	0200 00 2 56436		MPY RAN+1,2	MULTIPLY
52067	0200 00 2 56437		MPY RAN+2,2	MULTIPLY
52070	0200 00 2 56440		MPY RAN+3,2	MULTIPLY
52071	0200 00 2 56441		MPY RAN+4,2	MULTIPLY
52072	0200 00 2 56442		MPY RAN+5,2	MULTIPLY
52073	0200 00 2 56443		MPY RAN+6,2	MULTIPLY
52074	0200 00 2 56444		MPY RAN+7,2	MULTIPLY
52075	0774 00 4 00007		AXT 7,4	
52076	0601 00 0 56237		STO TEMP+1	SAVE
52077	-0600 00 0 56240		STQ TEMP+2	RESULTS
52100	0560 00 2 56435		LDQ RAN,2	
52101	-0600 00 0 56236	MPY7C	STQ TEMP	START SIMULATED
52102	0500 60 4 52075		CLA* MPY7B+8,4	MULTIPLY LOOP
52103	0760 00 0 00000		CLM	
52104	0441 00 0 56236		LDI TEMP	MULTIPLIER TO INDS
52105	0774 00 1 00001		AXT 1,1	SET XRA FOR BIT 35
52106	0444 00 1 56644		OFT B1+35,1	
52107	0400 60 4 52075		ADD* MPY7B+8,4	ADD AND
52110	0765 00 0 00001		LRS 1	SHIFT
52111	1 00001 1 52112		TXI **1,1,1	STEP XRA FOR NEXT BIT
52112	-3 00043 1 52106		TXL *-4,1,35	LOOP BACK
52113	-0054 00 400000		LFT 400000	TEST MULTIPLIER SIGN
52114	0760 00 0 00002		CHS	SET PRODUCT SIGN
52115	0765 00 0 00000		LRS 0	ADJUST HQ SIGN
52116	2 00001 4 52101		TIX MPY7C,4,1	
52117	-0600 00 0 56236		STQ TEMP	

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52120	0340	00	0	56237	CAS	TEMP+1	SHOULD COMPARE EQUAL
52121	0020	00	0	52123	TRA	**2	NG
52122	0020	00	0	52127	TRA	**5	OK
52123	0560	00	0	56237	LDQ	TEMP+1	GOOD WORD TO MQ
52124	0074	00	4	00104	TSX	ERROR-1,4	ERROR IN HIGH ORDER BITS
52125	0020	00	0	52065	TRA	MPY7B	OF PRODUCT
52126	0560	00	0	56236	LDQ	TEMP	
52127	0131	00	0	00000	XCA		
52130	0340	00	0	56240	CAS	TEMP+2	SHOULD COMPARE EQUAL
52131	0020	00	0	52133	TRA	**2	NG
52132	0020	00	0	52136	TRA	**4	OK
52133	0560	00	0	56240	LDQ	TEMP+2	GOOD WORD TO MQ
52134	0074	00	4	00104	TSX	ERROR-1,4	ERROR IN LOW ORDER BITS
52135	0020	00	0	52065	TRA	MPY7B	OF PRODUCT
52136	0760	00	0	00161	SWT	1	
52137	0020	00	0	52141	TRA	**2	
52140	0020	00	0	52065	TRA	MPY7B	
52141	1 77776	2		52142	TXI	**1,2,-2	
52142	3 77644	2		52065	TXH	MPY7B,2,-92	
52143	0074	00	4	00106	TSX	OK,4	
52144	0020	00	0	52062	TRA	MPY7A	

TRY A LOGICAL CHECKSUM ROUTINE

52145	233042626444			BCD	1CHKSUM	
52146	0774	00	3	00144	CHKS0	AXT 100,3
52147	0774	00	5	00144		AXT 100,5
52150	0754	00	0	00000	PXA	,,
52151	0361	00	5	56601	ACL	RAN+100,5
52152	2 00001	5		52151	TIX	*-1,5,1
52153	0760	00	0	00006	COM	
52154	0602	00	0	56234	CHKS1	SLW T1
52155	0602	00	0	56235	CHKS2	SLW T2
52156	-0500	00	3	56601	CAL	RAN+100,3
52157	-0602	60	0	52155	ORS*	CHKS2
52160	-0320	60	0	52154	ANA*	CHKS1
52161	0361	60	0	52155	ACL*	CHKS2
52162	2 00001	3		52154	TIX	CHKS1,3,1
52163	-0320	00	0	56233	ANA	ONES
52164	0322	00	0	56233	ERA	ONES
52165	0100	00	0	52170	TZE	**3
52166	0560	00	0	56225	LDQ	PZE
52167	0074	00	4	00105	TSX	ERROR,4
52170	0074	00	4	00106	TSX	OK,4
52171	0020	00	0	52146	TRA	CHKS0

CLEAR ACC
CHECKSUM RANDOM
NUMBER FIELD
COMPLIMENT CHECKSUM
SAVE
IT
PICK A NUMBER
OR IT TO CHECKSUM
AND TO CHECKSUM
ADD THEM TOGETHER
AND GET ANOTHER
IS RESULT
ZERO
NO--
IT SHOULD BE

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CONVERT A BLOCK OF 24 WORDS FROM ROW BINARY TO COLUMN BINARY AND
RECONSTRUCT FROM THIS ORIGINAL ROW BINARY BLOCK. CHECK.

52172	234643223145		BCD 1COLBIN	
52173	0774 00 5 00147	BINA	AXT 103,5	
52174	0020 00 0 52263		TRA BIND	
52175	-0760 00 0 00016	BINB	EMTM	SET THREE XR MODE
52176	0774 00 4 00030		AXT 24,4	BLOCK OF 24 WORDS
52177	0774 00 1 00001		AXT 1,1	SET XRA FOR LEFT SIDE
52200	-0500 00 0 56701		CAL B\$MZE	P BIT TO ACCUMULATOR
52201	0560 00 4 56405		LDQ POT+24,4	ROW BINARY WORD TO MQ
52202	0600 00 4 56405		STZ POT+24,4	CLEAR FOR RECONSTRUCT
52203	0634 00 4 52215		SXA **10,4	SAVE XRC
52204	0774 00 2 00003		AXT 3,2	THREE COLUMNS PER WORD
52205	0774 00 4 00002		AXT 2,4	SET FOR TWELVE ROW
52206	0162 00 0 52210		TQP **2	ZERO FOR ZERO
52207	-0602 00 5 56436		ORS POT+49,5	ONE FOR ONE
52210	-0773 00 0 00001		RQL 1	POSITION NEXT BIT
52211	3 00026 4 52213		TXH **2,4,22	TEST FOR NINE ROW
52212	1 00002 4 52206		TXI *-4,4,2	STEP FOR NEXT ROW
52213	0771 00 0 00001		ARS 1	SHIFT C ACC FOR NEXT COL
52214	2 00001 2 52205		TIX *-7,2,1	
52215	0774 00 4 00000		AXT **,4	
52216	0100 00 0 52220		TZE **2	TIME FOR NEW MASK
52217	2 00001 4 52201		TIX *-14,4,1	LOOP BACK FOR NEXT WORD
52220	-3 00000 1 52223		TXL **3,1,0	COL BIN BLOCK COMPLETED
52221	-0501 60 0 52200		ORA* BINB+3	SET ACCUMULATOR P
52222	1 77777 1 52217		TXI *-3,1,-1	SET FOR RIGHT SIDE
52223	0774 00 4 00030		AXT 24,4	START BACK
52224	0774 00 2 00003		AXT 3,2	THREE COLUMNS PER WORD
52225	0774 00 1 00002		AXT 2,1	SET FOR TWELVE ROW
52226	-0500 00 1 56435	BINC	CAL POT+48,1	EXTRACT
52227	0560 00 1 56436		LDQ POT+49,1	LEFTMOST
52230	-0763 00 0 00001		LGL 1	BIT AND
52231	0602 00 1 56435		SLW POT+48,1	SAVE THE
52232	-0600 00 1 56436		SIQ POT+49,1	REST
52233	0771 00 0 00044		ARS 36	LEFTMOST BIT TO ACC 35
52234	-0501 60 0 52236		ORA* **2	PLUG IT IN
52235	0767 00 0 00001		ALS 1	LEAVE ROOM FOR NEXT BIT
52236	0602 00 4 56405		SLW POT+24,4	
52237	3 00026 1 52241		TXH **2,1,22	TEST FOR NINE ROW
52240	1 00002 1 52226		TXI BINC,1,2	STEP FOR NEXT ROW
52241	2 00001 2 52225		TIX BINC-1,2,1	STEP TO NEXT COLUMN
52242	0771 00 0 00001		ARS 1	ADJUST COMPLETED WORD
52243	0602 00 4 56405		SLW POT+24,4	SAVE IT
52244	2 00001 4 52224		TIX BINC-2,4,1	START NEXT WORD
52245	0760 00 0 00016		LMTM	SET SEVEN XR MODE
52246	0754 00 5 00000		PXA ,5	
52247	0734 00 1 00000		PAX ,1	

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52250	0774	00	2	00030	AXT	24,2	
52251	-0500	00	2	56405	CAL	POT+24,2	RECONSTRUCTED WORD
52252	-0340	00	1	56601	LAS	RAN+100,1	SHOULD COMPARE EQUAL
52253	0020	00	0	52255	TRA	**2	NO GOOD
52254	0020	00	0	52260	TRA	**4	OKAY
52255	0560	00	1	56601	LDQ	RAN+100,1	ORIGINAL WORD TO MQ
52256	0074	00	4	00104	TSX	ERROR-1,4	INDICATE ERROR
52257	0761	00	0	52173	NOP	BINA	
52260	2 00001	1		52261	TIX	*+1,1,1	SET XRS FOR NEXT
52261	2 00001	2		52251	TIX	*-8,2,1	COMPARE, IF ANY
52262	0760	00	0	00161	SWT	1	REPEAT WITH SAME DATA
52263	1 77742	5		52264	TXI	*+1,5,-30	SET FOR ANOTHER BLOCK
52264	0754	00	5	00000	PXA	,5	
52265	0734	00	6	00000	PAX	,6	
52266	0774	00	7	00030	AXT	24,7	
52267	-0500	00	6	56601	CAL	RAN+100,6	MOVE
52270	0600	00	7	56435	STZ	POT+48,7	IT TO
52271	0602	00	7	56405	SLW	POT+24,7	TEMPORARY
52272	-2 00001	7		52175	TNX	BINB,7,1	STORAGE
52273	2 00001	6		52267	TIX	*-4,6,1	
52274	0074	00	4	52725	TSX	ALBIT,4	
52275	0074	00	4	00106	TSX	OK,4	
52276	0020	00	0	52173	TRA	BINA	

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TEST ACL WITH NO CARRIES

52277	212343606060		BCD	1ACL	
52300	-0754 00 0 00000	RACL	PXD		CLEAR ACC
52301	-0760 00 0 00003		SSM		
52302	0601 00 0 56236	RACA	STO	TEMP	
52303	-0500 00 0 56236		CAL	TEMP	
52304	0760 00 0 00006		COM		ALL BITS BUT ONE TO ACC
52305	0361 00 0 56236		ACL	TEMP	ADD THAT ONE
52306	0760 00 0 00006		COM		
52307	0100 00 0 52313		TZE	*+4	SHOULD TRANSFER
52310	0560 00 0 56225		LDQ	PZE	ZERO TO MQ
52311	0074 00 4 00104		TSX	ERROR-1,4	
52312	0020 00 0 52300		TRA	RACL	
52313	-0500 00 0 56236		CAL	TEMP	
52314	0760 00 0 00001		LBT		TERMINATE IF ACC 35
52315	0020 00 0 52317		TRA	*+2	IS A ONE
52316	0020 00 0 52321		TRA	*+3	
52317	0771 00 0 00001		ARS	1	
52320	0020 00 0 52302		TRA	RACA	
52321	0074 00 4 00106		TSX	OK,4	
52322	0020 00 0 52300		TRA	RACL	LOOP THIS ROUTINE

CHECK THAT INDEXED SHIFT ENDS OP PROPERLY

52323	215162730160		BCD	1ARS,1
52324	-0500 00 0 56701	ARS	CAL	B\$MZE
52325	-0774 00 1 00037		AXC	31,1
52326	0771 00 1 00004		ARS	4,1
52327	0760 00 0 00001		LBT	
52330	0074 00 4 00105		TSX	ERROR,4
52331	0074 00 4 00106		TSX	OK,4
52332	0020 00 0 52324		TRA	ARS
52333	0761 00 0 52725		NOP	21973
52334	0020 00 0 52734		TRA	ALT

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ALTER LOCATION *INDEX* AND CHECK FOR EXTENDED RELIABILITY

52725				ORG	21973	
52725	0774	00	1 00000	ALBIT	AXT	0,1
52726	0774	00	2 00000		AXT	0,2
52727	0774	00	3 00000		AXT	0,3
52730	0774	00	5 00000		AXT	0,5
52731	0774	00	6 00000		AXT	0,6
52732	0774	00	7 00000		AXT	0,7
52733	0020	00	4 00001		TRA	1,4
52734	0534	00	1 56354	ALT	LXA	INDEX,1
52735	1 00001	1	52736		TXI	++1,1,1
52736	-3 00000	1	52741		TXL	++3,1,0
52737	0634	00	1 56354		SXA	INDEX,1
52740	0020	00	0 52743		TRA	++3
52741	1 77470	1	52742		TXI	++1,1,-200
52742	0634	00	1 56354		SXA	INDEX,1
52743	0600	00	0 00112		STZ	RELTY
52744	0500	00	0 56231		CLA	IX3
52745	0601	00	0 00203		STO	OKAY+6
52746	0760	00	0 00164		SWT	4
52747	0020	00	0 52752		TRA	++3
52750	0020	00	0 52753		TRA	++3
52751	0 00000	0	00004		PZE	4
52752	0074	00	4 00111		TSX	LOOP,4
52753	-0625	00	0 00112		STL	RELTY
52754	-0774	00	4 52755		AXC	++1,4
52755	0634	00	4 00101		SXA	SVXR4,4
52756	0020	00	0 52760		TRA	SXA

RESTORE
MONITOR
EXTENDED RELIABILITY
NO
YES

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RELIABILITY

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TEST SXA CHECKING EACH POSITION OF INDEX REGISTERS

52757	626721606060		BCD 1SXA	
52760	0441 00 0 56225	SXA	LDI PZE	SET UP
52761	0055 00 100000		SIR 100000	FOR XRA
52762	-0046 00 0 00000		PIA	INDICATORS TO ACC
52763	0140 00 0 52764		TOV *+1	OVERFLOW LIGHT OFF
52764	0600 60 0 53004		STZ* SXA1-1	CLEAR LOCATION
52765	0601 60 0 53067		STO* SXA4A+6	SAVE XR TESTING
52766	0625 60 0 53005		STT* SXA1	INSERT TAG FOR
52767	0625 00 0 53010		STT SXA2+1	THE XR TESTING
52770	0441 00 0 56232		LDI PONES	+377777700000
52771	0057 00 077777		RIR 77777	TO STORAGE
52772	0604 60 0 53061		STI* SXA4A	LOCATION
52773	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
52774	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
52775	0774 00 1 00000		AXT 0,1	CLEAR
52776	0774 00 2 00000		AXT 0,2	EACH
52777	0774 00 3 00000		AXT 0,3	OF
53000	0774 00 4 00000		AXT 0,4	THE
53001	0774 00 5 00000		AXT 0,5	7
53002	0774 00 6 00000		AXT 0,6	INDEX
53003	0774 00 7 00000		AXT 0,7	REGISTERS
53004	0621 00 0 56235		STA T2	STORE THE
53005	0621 00 0 53007	SXA1	STA SXA2	ACC ADDRESS
53006	0600 60 0 53011		STZ* SXA2+2	CLEAR LOCATION
53007	0774 00 0 00000	SXA2	AXT	LOAD XR TESTING
53010	0634 00 0 56234		SXA T1	SAVE VALUE IN XR
53011	0500 00 0 56234		CLA T1	CHECK SXA
53012	0340 00 0 56235		CAS T2	EXECUTION
53013	0020 00 0 53015		TRA *+2	ERROR
53014	0020 00 0 53024		TRA SXA3	OK
53015	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
53016	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
53017	0420 00 0 00000		HPR	COMPARE ACC AND MQ CONTENTS
53020	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
53021	0020 00 0 53024		TRA SXA3	PROCEED
53022	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
53023	0020 00 0 53005		TRA SXA1	TO REPEAT

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CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

53024	0500 60 0	53067	SXA3	CLA* SXA4A+6	
53025	0402 00 0	56230		SUB TAG	
53026	0100 00 0	53030		TZE *+2	
53027	3 00000 1	53053		TXH SXA4,1,0	
53030	0402 00 0	56230		SUB TAG	
53031	0100 00 0	53033		TZE *+2	
53032	3 00000 2	53053		TXH SXA4,2,0	
53033	0402 00 0	56230		SUB TAG	
53034	0100 00 0	53036		TZE *+2	
53035	3 00000 3	53053		TXH SXA4,3,0	
53036	0402 00 0	56230		SUB TAG	
53037	0100 00 0	53041		TZE *+2	
53040	3 00000 4	53053		TXH SXA4,4,0	
53041	0402 00 0	56230		SUB TAG	
53042	0100 00 0	53044		TZE *+2	
53043	3 00000 5	53053		TXH SXA4,5,0	
53044	0402 00 0	56230		SUB TAG	
53045	0100 00 0	53047		TZE *+2	
53046	3 00000 6	53053		TXH SXA4,6,0	
53047	0402 00 0	56230		SUB TAG	
53050	0100 00 0	53052		TZE *+2	
53051	3 00000 7	53053		TXH SXA4,7,0	
53052	0020 60 0	52772		TRA* SXA+10	
53053	0760 00 0	00162	SXA4	SWT 2	TEST SENSE SWITCH 2
53054	0420 00 0	00000		HPR	MORE THAN 1 XR LOADED
53055	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
53056	0020 00 0	53061		TRA *+3	PROCEED
53057	0500 00 0	56237		CLA TEMP+1	RESTORE VALUE
53060	0020 00 0	52774		TRA SXA1-9	TO REPEAT
53061	0500 00 0	56237	SXA4A	CLA TEMP+1	GET ANOTHER XR
53062	0400 00 0	56226		ADD ONE	VALUE UNTIL
53063	-0140 00 0	53074		TNO SXA5	ALL XR TESTED
53064	0522 60 0	53077		XEC* SXA6+1	SET
53065	0522 00 0	52761		XEC SXA+1	UP
53066	-0046 00 0	00000		PIA	THE
53067	0400 00 0	56236		ADD TEMP	NEXT
53070	0044 00 0	00000		PAI	XR
53071	-0054 00	000001		LFT 1	HAVE ALL XRS BEEN TESTED
53072	0020 00 0	53076		TRA SXA6	YES
53073	0020 00 0	52762		TRA SXA+2	CHECK NEXT XR
53074	0601 60 0	53061	SXA5	STO* SXA4A	SET UP TO TEST
53075	0020 00 0	53004		TRA SXA1-1	NEXT POSITION
53076	0074 00 4	00106	SXA6	TSX OK,4	
53077	0020 00 0	52760		TRA SXA	

S E C T I O N F O U R
E X T E N D E D
R E L I A B I L I T Y

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TEST SCA CHECKING EACH POSITION OF INDEX REGISTERS

53100	622321606060		BCD 1SCA	
53101	0441 00 0 56225	SCA	LDI PZE	SET UP
53102	0055 00 100000		SIR 100000	FOR XRA
53103	-0046 00 0 00000		PIA	INDICATORS TO ACC
53104	0140 00 0 53105		TOV **1	OVERFLOW LIGHT OFF
53105	0600 60 0 53130		STZ* SCA1+3	CLEAR LOCATION
53106	0601 60 0 53212		STO* SCA4A+6	SAVE XR TESTING
53107	0625 00 0 53132		STT SCA2	INSERT TAG FOR
53110	0625 00 0 53133		STT SCA2+1	XR TESTING
53111	0441 00 0 56232		LDI PONES	+377777700000
53112	0057 00 077777		RIR 77777	TO STORAGE
53113	0604 60 0 53204		STI* SCA4A	LOCATION
53114	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
53115	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
53116	0774 00 1 00000		AXT 0,1	CLEAR
53117	0774 00 2 00000		AXT 0,2	EACH
53120	0774 00 3 00000		AXT 0,3	OF
53121	0774 00 4 00000		AXT 0,4	THE
53122	0774 00 5 00000		AXT 0,5	7
53123	0774 00 6 00000		AXT 0,6	INDEX
53124	0774 00 7 00000		AXT 0,7	REGISTERS
53125	0621 00 0 53132	SCA1	STA SCA2	VALUE FOR XR
53126	0760 00 0 00006		COM	VALUE
53127	0400 00 0 56226		ADD ONE	FOR XR
53130	0621 00 0 56235		STA T2	COMPARISON
53131	0600 60 0 53134		STZ* SCA2+2	CLEAR LOCATION
53132	0774 00 0 00000	SCA2	AXT	LOAD XR TESTING
53133	0636 00 0 56234		SCA T1	EXECUTE SCA
53134	0500 00 0 56234		CLA T1	CHECK SCA
53135	0340 00 0 56235		CAS T2	EXECUTION
53136	0020 00 0 53140		TRA **2	ERROR
53137	0020 00 0 53147		TRA SCA3	OK
53140	0560 00 0 56235		LDQ T2	CORRECT STORED VALUE IN MQ
53141	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
53142	0420 00 0 00000		HPR	COMPARE ACC AND MQ
53143	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
53144	0020 00 0 53147		TRA SCA3	PROCEED
53145	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
53146	0020 00 0 53125		TRA SCA1	TO REPEAT

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CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

53147	0500	60	0	53212	SCA3	CLA* SCA4A+6	
53150	0402	00	0	56230		SUB TAG	
53151	0100	00	0	53153		TZE **2	
53152	3 00000	1		53176		TXH SCA4,1,0	
53153	0402	00	0	56230		SUB TAG	
53154	0100	00	0	53156		TZE **2	
53155	3 00000	2		53176		TXH SCA4,2,0	
53156	0402	00	0	56230		SUB TAG	
53157	0100	00	0	53161		TZE **2	
53160	3 00000	3		53176		TXH SCA4,3,0	
53161	0402	00	0	56230		SUB TAG	
53162	0100	00	0	53164		TZE **2	
53163	3 00000	4		53176		TXH SCA4,4,0	
53164	0402	00	0	56230		SUB TAG	
53165	0100	00	0	53167		TZE **2	
53166	3 00000	5		53176		TXH SCA4,5,0	
53167	0402	00	0	56230		SUB TAG	
53170	0100	00	0	53172		TZE **2	
53171	3 00000	6		53176		TXH SCA4,6,0	
53172	0402	00	0	56230		SUB TAG	
53173	0100	00	0	53175		TZE **2	
53174	3 00000	7		53176		TXH SCA4,7,0	
53175	0020	00	0	53204		TRA SCA4A	
53176	0760	00	0	00162	SCA4	SWT 2	TEST SENSE SWITCH 2
53177	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
53200	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
53201	0020	00	0	53204		TRA SCA4A	PROCEED
53202	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
53203	0020	00	0	53115		TRA SCA1-8	TO REPEAT
53204	0500	00	0	56237	SCA4A	CLA TEMP+1	GET ANOTHER XR
53205	0400	00	0	56226		ADD ONE	VALUE UNTIL
53206	-0140	00	0	53217		TNO SCA5	ALL XR TESTED
53207	0522	60	0	53222		XEC* SCA6+1	SET
53210	0522	00	0	53102		XEC SCA+1	UP
53211	-0046	00	0	00000		PIA	THE
53212	0400	00	0	56236		ADD TEMP	NEXT
53213	0044	00	0	00000		PAI	XR
53214	-0054	00	0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
53215	0020	00	0	53221		TRA SCA6	YES
53216	0020	00	0	53103		TRA SCA+2	CHECK NEXT XR
53217	0601	60	0	53204	SCA5	STO* SCA4A	SET UP TO TEST
53220	0020	00	0	53125		TRA SCA1	NEXT POSITION
53221	0074	00	4	00106	SCA6	TSX OK,4	
53222	0020	00	0	53101		TRA SCA	

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TEST SXD CHECKING EACH POSITION OF INDEX REGISTERS

53223	626724606060		BCD 1SXD	
53224	0441 00 0 56225	SXD	LDI PZE	SET UP
53225	0055 00 100000		SIR 100000	FOR XRA
53226	-0046 00 0 00000		PIA	INDICATORS TO ACC
53227	0140 00 0 53230		TOV *+1	OVERFLOW LIGHT OFF
53230	0600 60 0 53251		STZ* SXD1+1	CLEAR LOCATION
53231	0601 60 0 53333		STO* SXD4A+6	SAVE XR TESTING
53232	0625 60 0 53250		STT* SXD1	INSERT TAG FOR
53233	0625 00 0 53254		STT SXD2+1	THE XR TESTING
53234	0522 00 0 53224		XEC SXD	+300000000000
53235	-0055 00 300000		SIL 300000	TO STORAGE
53236	0604 60 0 53325		STI* SXD4A	LOCATION
53237	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
53240	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
53241	0774 00 1 00000		AXT 0,1	CLEAR
53242	0774 00 2 00000		AXT 0,2	EACH
53243	0774 00 3 00000		AXT 0,3	OF
53244	0774 00 4 00000		AXT 0,4	THE
53245	0774 00 5 00000		AXT 0,5	7
53246	0774 00 6 00000		AXT 0,6	INDEX
53247	0774 00 7 00000		AXT 0,7	REGISTERS
53250	0621 00 0 53253	SXD1	STA SXD2	STORE THE
53251	0622 00 0 56235		STD T2	ACC VALUES
53252	0600 60 0 53255		STZ* SXD2+2	CLEAR LOCATION
53253	0774 00 0 00000	SXD2	AXT	LOAD XR TESTING
53254	-0634 00 0 56234		SXD T1	SAVE VALUE IN XR
53255	0500 00 0 56234		CLA T1	CHECK SXD
53256	0340 00 0 56235		CAS T2	EXECUTION
53257	0020 00 0 53261		TRA *+2	ERROR
53260	0020 00 0 53270		TRA SXD3	OK
53261	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
53262	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
53263	0420 00 0 00000		HPR	COMPARE ACC AND MQ CONTENTS
53264	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
53265	0020 00 0 53270		TRA SXD3	PROCEED
53266	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
53267	0020 00 0 53250		TRA SXD1	TO REPEAT

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53270	0500	60	0	53333	SXD3	CLA* SXD4A+6	
53271	0402	00	0	56230		SUB TAG	
53272	0100	00	0	53274		TZE **2	
53273	3 00000	1		53317		TXH SXD4,1,0	
53274	0402	00	0	56230		SUB TAG	
53275	0100	00	0	53277		TZE **2	
53276	3 00000	2		53317		TXH SXD4,2,0	
53277	0402	00	0	56230		SUB TAG	
53300	0100	00	0	53302		TZE **2	
53301	3 00000	3		53317		TXH SXD4,3,0	
53302	0402	00	0	56230		SUB TAG	
53303	0100	00	0	53305		TZE **2	
53304	3 00000	4		53317		TXH SXD4,4,0	
53305	0402	00	0	56230		SUB TAG	
53306	0100	00	0	53310		TZE **2	
53307	3 00000	5		53317		TXH SXD4,5,0	
53310	0402	00	0	56230		SUB TAG	
53311	0100	00	0	53313		TZE **2	
53312	3 00000	6		53317		TXH SXD4,6,0	
53313	0402	00	0	56230		SUB TAG	
53314	0100	00	0	53316		TZE **2	
53315	3 00000	7		53317		TXH SXD4,7,0	
53316	0020	00	0	53325		TRA SXD4A	
53317	0760	00	0	00162	SXD4	SWT 2	TEST SENSE SWITCH 2
53320	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
53321	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
53322	0020	00	0	53325		TRA **3	PROCEED
53323	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
53324	0020	00	0	53240		TRA SXD1-8	TO REPEAT
53325	0500	00	0	56237	SXD4A	CLA TEMP+1	GET ANOTHER XR
53326	0400	00	0	56227		ADD DEC1	VALUE UNTIL
53327	-0140	00	0	53340		TNO SXD5-1	ALL XR TESTED
53330	0522	60	0	53344		XEC* SXD6+1	SET
53331	0522	00	0	53225		XEC SXD+1	UP
53332	-0046	00	0	00000		PIA	FOR
53333	0400	00	0	56236		ADD TEMP	NEXT
53334	0044	00	0	00000		PAI	XR
53335	-0054	00	0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
53336	0020	00	0	53343		TRA SXD6	YES
53337	0020	00	0	53226		TRA SXD+2	CHECK NEXT XR
53340	0400	00	0	56226		ADD ONE	SET UP TO
53341	0601	60	0	53325	SXD5	STO* SXD4A	TEST NEXT
53342	0020	00	0	53250		TRA SXD1	POSITION
53343	0074	00	4	00106	SXD6	TSX OK,4	
53344	0020	00	0	53224		TRA SXD	

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TEST SCD CHECKING EACH POSITION OF INDEX REGISTERS

53345	622324606060		BCD 1SCD	
53346	0441 00 0 56225	SCD	LDI PZE	SET UP
53347	0055 00 100000		SIR 100000	FOR XRA
53350	-0046 00 0 00000		PIA	INDICATORS TO ACC
53351	0140 00 0 53352		TOV *+1	OVERFLOW LIGHT OFF
53352	0600 60 0 53375		STZ* SCD1+3	CLEAR LOCATION
53353	0601 60 0 53457		STO* SCD4A+6	SAVE XR TESTING
53354	0625 00 0 53377		STT SCD2	INSERT TAG FOR
53355	0625 00 0 53400		STT SCD2+1	XR TESTING
53356	0522 00 0 53346		XEC SCD	+300000000000
53357	-0055 00 300000		SIL 300000	TO STORAGE
53360	0604 60 0 53451		STI* SCD4A	LOCATION
53361	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
53362	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
53363	0774 00 1 00000		AXT 0,1	CLEAR
53364	0774 00 2 00000		AXT 0,2	EACH
53365	0774 00 3 00000		AXT 0,3	OF
53366	0774 00 4 00000		AXT 0,4	THE
53367	0774 00 5 00000		AXT 0,5	7
53370	0774 00 6 00000		AXT 0,6	INDEX
53371	0774 00 7 00000		AXT 0,7	REGISTERS
53372	0621 00 0 53377	SCD1	STA SCD2	VALUE FOR XR
53373	0760 00 0 00006		COM	VALUE
53374	0400 00 0 56227		ADD DEC1	FOR XR
53375	0622 00 0 56235		STD T2	COMPARISON
53376	0600 60 0 53401		STZ* SCD2+2	CLEAR LOCATION
53377	0774 00 0 00000	SCD2	AXT	LOAD XR TESTING
53400	-0636 00 0 56234		SCD T1	EXECUTE SCD
53401	0500 00 0 56234		CLA T1	CHECK SCD
53402	0340 00 0 56235		CAS T2	EXECUTION
53403	0020 00 0 53405		TRA *+2	ERROR
53404	0020 00 0 53414		TRA SCD3	OK
53405	0560 00 0 56235		LDQ T2	CORRECT VALUE IN MQ
53406	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
53407	0420 00 0 00000		HPR	COMPARE ACC AND MQ
53410	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
53411	0020 00 0 53414		TRA SCD3	PROCEED
53412	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
53413	0020 00 0 53372		TRA SCD1	TO REPEAT

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53414	0500	60	0	53457	SCD3	CLA*	SCD4A+6	
53415	0402	00	0	56230		SUB	TAG	
53416	0100	00	0	53420		TZE	*+2	
53417	3	00000	1	53443		TXH	SCD4,1,0	
53420	0402	00	0	56230		SUB	TAG	
53421	0100	00	0	53423		TZE	*+2	
53422	3	00000	2	53443		TXH	SCD4,2,0	
53423	0402	00	0	56230		SUB	TAG	
53424	0100	00	0	53426		TZE	*+2	
53425	3	00000	3	53443		TXH	SCD4,3,0	
53426	0402	00	0	56230		SUB	TAG	
53427	0100	00	0	53431		TZE	*+2	
53430	3	00000	4	53443		TXH	SCD4,4,0	
53431	0402	00	0	56230		SUB	TAG	
53432	0100	00	0	53434		TZE	*+2	
53433	3	00000	5	53443		TXH	SCD4,5,0	
53434	0402	00	0	56230		SUB	TAG	
53435	0100	00	0	53437		TZE	*+2	
53436	3	00000	6	53443		TXH	SCD4,6,0	
53437	0402	00	0	56230		SUB	TAG	
53440	0100	00	0	53442		TZE	*+2	
53441	3	00000	7	53443		TXH	SCD4,7,0	
53442	0020	00	0	53451		TRA	SCD4A	
53443	0760	00	0	00162	SCD4	SWT	2	TEST SENSE SWITCH 2
53444	0420	00	0	00000		HPR		MORE THAN 1 XR LOADED
53445	0760	00	0	00161		SWT	1	TEST SENSE SWITCH 1
53446	0020	00	0	53451		TRA	SCD4A	PROCEED
53447	0500	00	0	56237		CLA	TEMP+1	RESTORE VALUE
53450	0020	00	0	53362		TRA	SCD1-8	TO REPEAT
53451	0500	00	0	56237	SCD4A	CLA	TEMP+1	GET ANOTHER XR
53452	0400	00	0	56227		ADD	DEC1	VALUE UNTIL
53453	-0140	00	0	53464		TNO	SCD5-1	ALL XR TESTED
53454	0522	60	0	53470		XEC*	SCD6+1	SET
53455	0522	00	0	53347		XEC	SCD+1	UP
53456	-0046	00	0	00000		PIA		THE
53457	0400	00	0	56236		ADD	TEMP	NEXT
53460	0044	00	0	00000		PAI		XR
53461	-0054	00	0	000001		LFT	1	HAVE ALL XRS BEEN TESTED
53462	0020	00	0	53467		TRA	SCD6	YES
53463	0020	00	0	53350		TRA	SCD+2	CHECK NEXT XR
53464	0400	00	0	56226		ADD	ONE	SET UP TO
53465	0601	60	0	53451	SCD5	STO*	SCD4A	TEST NEXT
53466	0020	00	0	53372		TRA	SCD1	POSITION
53467	0074	00	4	00106	SCD6	TSX	OK,4	
53470	0020	00	0	53346		TRA	SCD	

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TEST LXA CHECKING EACH POSITION OF INDEX REGISTERS

53471	436721606060		BCD 1LXA	
53472	0441 00 0 56225	LXA	LDI PZE	SET UP
53473	0055 00 100000		SIR 100000	FOR XRA
53474	0046 00 0 00000		PIA	INDICATORS TO ACC
53475	0140 00 0 53476		TOV *+1	OVERFLOW LIGHT OFF
53476	0600 60 0 53516		STZ* LXA1-1	CLEAR LOCATION
53477	0601 60 0 53577		STO* LXA4A+6	SAVE XR TESTING
53500	0625 00 0 53520		STT LXA2	INSERT TAG FOR
53501	0625 00 0 53521		STT LXA2+1	THE XR TESTING
53502	0441 00 0 56232		LDI PONES	+377777700000
53503	0057 00 077777		RIR 77777	TO STORAGE
53504	0604 60 0 53571		STI* LXA4A	LOCATION
53505	0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
53506	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
53507	0774 00 1 00000		AXT 0,1	CLEAR
53510	0774 00 2 00000		AXT 0,2	EACH
53511	0774 00 3 00000		AXT 0,3	OF
53512	0774 00 4 00000		AXT 0,4	THE
53513	0774 00 5 00000		AXT 0,5	7
53514	0774 00 6 00000		AXT 0,6	INDEX
53515	0774 00 7 00000		AXT 0,7	REGISTERS
53516	0621 00 0 56235		STA T2	STORE ACC ADR
53517	0600 60 0 53522	LXA1	STZ* LXA2+2	CLEAR LOCATION
53520	0534 00 0 56237	LXA2	LXA TEMP+1	LOAD XR TESTING
53521	0634 00 0 56234		SXA T1	CHECK
53522	0500 00 0 56234		CLA T1	LXA
53523	0340 00 0 56235		CAS T2	EXECUTION
53524	0020 00 0 53526		TRA *+2	ERROR
53525	0020 00 0 53534		TRA LXA3	OK
53526	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
53527	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
53530	0420 00 0 00000		HPR	COMPARE ACC AND MQ CONTENTS
53531	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
53532	0020 00 0 53534		TRA LXA3	PROCEED
53533	0020 00 0 53517		TRA LXA1	REPEAT

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53534	0500	60	0	53577	LXA3	CLA* LXA4A+6	
53535	0402	00	0	56230		SUB TAG	
53536	0100	00	0	53540		TZE **2	
53537	3	00000	1	53563		TXH LXA4,1,0	
53540	0402	00	0	56230		SUB TAG	
53541	0100	00	0	53543		TZE **2	
53542	3	00000	2	53563		TXH LXA4,2,0	
53543	0402	00	0	56230		SUB TAG	
53544	0100	00	0	53546		TZE **2	
53545	3	00000	3	53563		TXH LXA4,3,0	
53546	0402	00	0	56230		SUB TAG	
53547	0100	00	0	53551		TZE **2	
53550	3	00000	4	53563		TXH LXA4,4,0	
53551	0402	00	0	56230		SUB TAG	
53552	0100	00	0	53554		TZE **2	
53553	3	00000	5	53563		TXH LXA4,5,0	
53554	0402	00	0	56230		SUB TAG	
53555	0100	00	0	53557		TZE **2	
53556	3	00000	6	53563		TXH LXA4,6,0	
53557	0402	00	0	56230		SUB TAG	
53560	0100	00	0	53562		TZE **2	
53561	3	00000	7	53563		TXH LXA4,7,0	
53562	0020	00	0	53571		TRA LXA4A	
53563	0760	00	0	00162	LXA4	SWT 2	TEST SENSE SWITCH 2
53564	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
53565	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
53566	0020	00	0	53571		TRA LXA4A	PROCEED
53567	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
53570	0020	00	0	53506		TRA LXA1-9	TO REPEAT
53571	0500	00	0	56237	LXA4A	CLA TEMP+1	GET ANOTHER XR
53572	0400	00	0	56226		ADD ONE	VALUE UNTIL
53573	0140	00	0	53604		TNO LXA5	ALL XR TESTED
53574	0522	60	0	53607		XEC* LXA6+1	SET
53575	0522	00	0	53473		XEC LXA+1	UP
53576	0046	00	0	00000		PIA	THE
53577	0400	00	0	56236		ADD TEMP	NEXT
53600	0044	00	0	00000		PAI	XR
53601	0054	00	0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
53602	0020	00	0	53606		TRA LXA6	YES
53603	0020	00	0	53474		TRA LXA+2	CHECK NEXT XR
53604	0601	60	0	53571	LXA5	STO* LXA4A	PROCEED TO TEST
53605	0020	00	0	53516		TRA LXA1-1	NEXT POSITION
53606	0074	00	4	00106	LXA6	TSX OK,4	
53607	0020	00	0	53472		TRA LXA	

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TEST LXD CHECKING EACH POSITION OF INDEX REGISTERS

53610	436724606060		BCD 1LXD	
53611	0441 00 0 56225	LXD	LDI PZE	SET UP
53612	0055 00 100000		SIR 100000	FOR XRA
53613	-0046 00 0 00000		PIA	INDICATORS TO ACC
53614	0140 00 0 53615		TOV *+1	OVERFLOW LIGHT OFF
53615	0600 60 0 53635		STZ* LXD1-1	CLEAR LOCATION
53616	0601 60 0 53716		STO* LXD4A+6	SAVE XR TESTING
53617	0625 00 0 53637		STT LXD2	INSERT TAG FOR
53620	0625 00 0 53640		STT LXD2+1	THE XR TESTING
53621	0522 00 0 53611		XEC LXD	+300000000000
53622	-0055 00 300000		SIL 300000	TO STORAGE
53623	0604 60 0 53710		STI* LXD4A	LOCATION
53624	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
53625	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
53626	0774 00 1 00000		AXT 0,1	CLEAR
53627	0774 00 2 00000		AXT 0,2	EACH
53630	0774 00 3 00000		AXT 0,3	OF
53631	0774 00 4 00000		AXT 0,4	THE
53632	0774 00 5 00000		AXT 0,5	7
53633	0774 00 6 00000		AXT 0,6	INDEX
53634	0774 00 7 00000		AXT 0,7	REGISTERS
53635	0622 00 0 56235		STD T2	STORE ACC DECREMENT
53636	0600 60 0 53641	LXD1	STZ* LXD2+2	CLEAR LOCATION
53637	-0534 00 0 56237	LXD2	LXD TEMP+1	LOAD XR TESTING
53640	-0634 00 0 56234		SXD T1	CHECK
53641	0500 00 0 56234		CLA T1	LXD
53642	0340 00 0 56235		CAS T2	EXECUTION
53643	0020 00 0 53645		TRA *+2	ERROR
53644	0020 00 0 53653		TRA LXD3	OK
53645	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
53646	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
53647	0420 00 0 00000		HPR	COMPARE ACC AND MQ CONTENTS
53650	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
53651	0020 00 0 53653		TRA LXD3	PROCEED
53652	0020 00 0 53636		TRA LXD1	REPEAT

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53653	0500	60	0	53716	LXD3	CLA* LXD4A+6	
53654	0402	00	0	56230		SUB TAG	
53655	0100	00	0	53657		TZE **2	
53656	3 00000	1		53702		TXH LXD4,1,0	
53657	0402	00	0	56230		SUB TAG	
53660	0100	00	0	53662		TZE **2	
53661	3 00000	2		53702		TXH LXD4,2,0	
53662	0402	00	0	56230		SUB TAG	
53663	0100	00	0	53665		TZE **2	
53664	3 00000	3		53702		TXH LXD4,3,0	
53665	0402	00	0	56230		SUB TAG	
53666	0100	00	0	53670		TZE **2	
53667	3 00000	4		53702		TXH LXD4,4,0	
53670	0402	00	0	56230		SUB TAG	
53671	0100	00	0	53673		TZE **2	
53672	3 00000	5		53702		TXH LXD4,5,0	
53673	0402	00	0	56230		SUB TAG	
53674	0100	00	0	53676		TZE **2	
53675	3 00000	6		53702		TXH LXD4,6,0	
53676	0402	00	0	56230		SUB TAG	
53677	0100	00	0	53701		TZE **2	
53700	3 00000	7		53702		TXH LXD4,7,0	
53701	0020	00	0	53710		TRA LXD4A	
53702	0760	00	0	00162	LXD4	SWT 2	TEST SENSE SWITCH 2
53703	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
53704	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
53705	0020	00	0	53710		TRA LXD4A	PROCEED
53706	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
53707	0020	00	0	53625		TRA LXD1-9	TO REPEAT
53710	0500	00	0	56237	LXD4A	CLA TEMP+1	GET ANOTHER XR
53711	0400	00	0	56227		ADD DEC1	VALUE UNTIL
53712	-0140	00	0	53723		TNO LXD5	ALL XR TESTED
53713	0522	60	0	53726		XEC* LXD6+1	SET
53714	0522	00	0	53612		XEC LXD+1	UP
53715	-0046	00	0	00000		PIA	THE
53716	0400	00	0	56236		ADD TEMP	NEXT
53717	0044	00	0	00000		PAI	XR
53720	-0054	00		000001		LFT 1	HAVE ALL XRS BEEN TESTED
53721	0020	00	0	53725		TRA LXD6	YES
53722	0020	00	0	53613		TRA LXD+2	CHECK NEXT XR
53723	0601	60	0	53710	LXD5	STO* LXD4A	PROCEED TO TEST
53724	0020	00	0	53635		TRA LXD1-1	NEXT POSITION
53725	0074	00	4	00106	LXD6	TSX OK,4	
53726	0020	00	0	53611		TRA LXD	

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TEST LAC CHECKING EACH POSITION OF INDEX REGISTERS

53727 432123606060

BCD 1LAC

53730	0441	00	0	56225	LAC	LDI PZE	SET UP
53731	0055	00		100000		SIR 100000	FOR XRA
53732	-0046	00	0	00000		PIA	INDICATORS TO ACCUMULATOR
53733	0140	00	0	53734		TOV **1	OVERFLOW LIGHT OFF
53734	0600	60	0	53756		STZ* LAC1+2	CLEAR LOCATION
53735	0601	60	0	54037		STO* LAC4A+6	SAVE XR TESTING
53736	0625	00	0	53760		STT LAC2	INSERT TAG FOR
53737	0625	00	0	53761		STT LAC2+1	THE XR TESTING
53740	0441	00	0	56232		LDI PONES	+377777700000
53741	0057	00		077777		RIR 77777	IN STORAGE
53742	0604	60	0	54031		STI* LAC4A	LOCATION
53743	-0046	00	0	00000		PIA	INDICATORS TO ACCUMULATOR
53744	0760	00	0	00016		LMTM	LEAVE MULTIPLE TAG MODE
53745	0774	00	1	00000		AXT 0,1	CLEAR
53746	0774	00	2	00000		AXT 0,2	EACH
53747	0774	00	3	00000		AXT 0,3	OF
53750	0774	00	4	00000		AXT 0,4	THE
53751	0774	00	5	00000		AXT 0,5	7
53752	0774	00	6	00000		AXT 0,6	INDEX
53753	0774	00	7	00000		AXT 0,7	REGISTERS
53754	0760	00	0	00006	LAC1	COM	VALUE
53755	0400	00	0	56226		ADD ONE	FOR XR
53756	0621	00	0	56235		STA T2	COMPARISON
53757	0600	60	0	53762		STZ* LAC2+2	CLEAR LOCATION
53760	0535	00	0	56237	LAC2	LAC TEMP+1	LOAD XR TESTING
53761	0634	00	0	56234		SXA T1	CHECK
53762	0500	00	0	56234		CLA T1	LAC
53763	0340	00	0	56235		CAS T2	EXECUTION
53764	0020	00	0	53766		TRA **2	ERROR
53765	0020	00	0	53774		TRA LAC3	OK
53766	0560	00	0	56235		LDQ T2	CORRECT VALUE IN MQ
53767	0760	00	0	00162		SWT 2	TEST SENSE SWITCH 2
53770	0420	00	0	00000		HPR	COMPARE ACC AND MQ CONTENTS
53771	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
53772	0020	00	0	53774		TRA LAC3	PROCEED
53773	0020	00	0	53757		TRA LAC1+3	REPEAT

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CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

53774	0500 60 0	54037	LAC3	CLA* LAC4A+6	
53775	0402 00 0	56230		SUB TAG	
53776	0100 00 0	54000		TZE *+2	
53777	3 00000 1	54023		TXH LAC4,1,0	
54000	0402 00 0	56230		SUB TAG	
54001	0100 00 0	54003		TZE *+2	
54002	3 00000 2	54023		TXH LAC4,2,0	
54003	0402 00 0	56230		SUB TAG	
54004	0100 00 0	54006		TZE *+2	
54005	3 00000 3	54023		TXH LAC4,3,0	
54006	0402 00 0	56230		SUB TAG	
54007	0100 00 0	54011		TZE *+2	
54010	3 00000 4	54023		TXH LAC4,4,0	
54011	0402 00 0	56230		SUB TAG	
54012	0100 00 0	54014		TZE *+2	
54013	3 00000 5	54023		TXH LAC4,5,0	
54014	0402 00 0	56230		SUB TAG	
54015	0100 00 0	54017		TZE *+2	
54016	3 00000 6	54023		TXH LAC4,6,0	
54017	0402 00 0	56230		SUB TAG	
54020	0100 00 0	54022		TZE *+2	
54021	3 00000 7	54023		TXH LAC4,7,0	
54022	0020 00 0	54031		TRA LAC4A	
54023	0760 00 0	00162	LAC4	SWT 2	TEST SENSE SWITCH 2
54024	0420 00 0	00000		HPR	MORE THAN 1 XR LOADED
54025	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
54026	0020 00 0	54031		TRA LAC4A	PROCEED
54027	0500 00 0	56237		CLA TEMP+1	RESTORE VALUE
54030	0020 00 0	53744		TRA LAC1-8	TO REPEAT
54031	0500 00 0	56237	LAC4A	CLA TEMP+1	GET ANOTHER XR
54032	0400 00 0	56226		ADD ONE	VALUE UNTIL
54033	-0140 00 0	54044		TNO LAC5	ALL XR TESTED
54034	0522 60 0	54047		XEC* LAC6+1	SET
54035	0522 00 0	53731		XEC LAC+1	UP
54036	-0046 00 0	00000		PIA	THE
54037	0400 00 0	56236		ADD TEMP	NEXT
54040	0044 00 0	00000		PAI	XR
54041	-0054 00 0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
54042	0020 00 0	54046		TRA LAC6	YES
54043	0020 00 0	53732		TRA LAC+2	CHECK NEXT XR
54044	0601 60 0	54031	LAC5	STO* LAC4A	PROCEED TO TEST
54045	0020 00 0	53754		TRA LAC1	NEXT POSITION
54046	0074 00 4	00106	LAC6	TSX OK,4	
54047	0020 00 0	53730		TRA LAC	

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TEST LDC CHECKING EACH POSITION OF INDEX REGISTERS

54050	432423606060		BCD 1LDC	
54051	0441 00 0 56225	LDC	LDI PZE	SET UP
54052	0055 00 100000		SIR 100000	FOR XRA
54053	-0046 00 0 00000		PIA	INDICATORS TO ACC
54054	0140 00 0 54055		TOV *+1	OVERFLOW LIGHT OFF
54055	0600 60 0 54077		STZ* LDC1+2	CLEAR LOCATION
54056	0601 60 0 54160		STO* LDC4A+6	SAVE XR TESTING
54057	0625 00 0 54101		STT LDC2	INSERT TAG FOR
54060	0625 00 0 54102		STT LDC2+1	THE XR TESTING
54061	0522 00 0 54051		XEC LDC	+300000000000
54062	-0055 00 300000		SIL 300000	TO STORAGE
54063	0604 60 0 54152		STI* LDC4A	LOCATION
54064	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
54065	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
54066	0774 00 1 00000		AXT 0,1	CLEAR
54067	0774 00 2 00000		AXT 0,2	EACH
54070	0774 00 3 00000		AXT 0,3	OF
54071	0774 00 4 00000		AXT 0,4	THE
54072	0774 00 5 00000		AXT 0,5	7
54073	0774 00 6 00000		AXT 0,6	INDEX
54074	0774 00 7 00000		AXT 0,7	REGISTERS
54075	0760 00 0 00006	LDC1	COM	VALUE
54076	0400 00 0 56227		ADD DEC1	FOR XR
54077	0622 00 0 56235		STD T2	COMPARISON
54100	0600 60 0 54103		STZ* LDC2+2	CLEAR LOCATION
54101	-0535 00 0 56237	LDC2	LDC TEMP+1	LOAD XR TESTING
54102	-0634 00 0 56234		SXD T1	CHECK
54103	0500 00 0 56234		CLA T1	LDC
54104	0340 00 0 56235		CAS T2	EXECUTION
54105	0020 00 0 54107		TRA *+2	ERROR
54106	0020 00 0 54115		TRA LDC3	OK
54107	0560 00 0 56235		LDQ T2	CORRECT VALUE IN MQ
54110	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
54111	0420 00 0 00000		HPR	COMPARE ACC AND MQ CONTENTS
54112	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
54113	0020 00 0 54115		TRA LDC3	PROCEED
54114	0020 00 0 54100		TRA LDC1+3	REPEAT

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R E L I A B I L I T Y

CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

54115	0500	60	0	54160	LDC3	CLA* LDC4A+6	
54116	0402	00	0	56230		SUB TAG	
54117	0100	00	0	54121		TZE **2	
54120	3	00000	1	54144		TXH LDC4,1,0	
54121	0402	00	0	56230		SUB TAG	
54122	0100	00	0	54124		TZE **2	
54123	3	00000	2	54144		TXH LDC4,2,0	
54124	0402	00	0	56230		SUB TAG	
54125	0100	00	0	54127		TZE **2	
54126	3	00000	3	54144		TXH LDC4,3,0	
54127	0402	00	0	56230		SUB TAG	
54130	0100	00	0	54132		TZE **2	
54131	3	00000	4	54144		TXH LDC4,4,0	
54132	0402	00	0	56230		SUB TAG	
54133	0100	00	0	54135		TZE **2	
54134	3	00000	5	54144		TXH LDC4,5,0	
54135	0402	00	0	56230		SUB TAG	
54136	0100	00	0	54140		TZE **2	
54137	3	00000	6	54144		TXH LDC4,6,0	
54140	0402	00	0	56230		SUB TAG	
54141	0100	00	0	54143		TZE **2	
54142	3	00000	7	54144		TXH LDC4,7,0	
54143	0020	00	0	54152		TRA LDC4A	
54144	0760	00	0	00162	LDC4	SWT 2	TEST SENSE SWITCH 2
54145	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
54146	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
54147	0020	00	0	54152		TRA LDC4A	PROCEED
54150	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
54151	0020	00	0	54065		TRA LDC1-8	TO REPEAT
54152	0500	00	0	56237	LDC4A	CLA TEMP+1	GET ANOTHER XR
54153	0400	00	0	56227		ADD DEC1	VALUE UNTIL
54154	-0140	00	0	54165		TNO LDC5	ALL XR TESTED
54155	0522	60	0	54170		XEC* LDC6+1	SET
54156	0522	00	0	54052		XEC LDC+1	UP
54157	-0046	00	0	00000		PIA	THE
54160	0400	00	0	56236		ADD TEMP	NEXT
54161	0044	00	0	00000		PAI	XR
54162	-0054	00	000001			LFT 1	HAVE ALL XRS BEEN TESTED
54163	0020	00	0	54167		TRA LDC6	YES
54164	0020	00	0	54053		TRA LDC+2	CHECK NEXT XR
54165	0601	60	0	54152	LDC5	STO* LDC4A	PROCEED TO TEST
54166	0020	00	0	54075		TRA LDC1	NEXT POSITION
54167	0074	00	4	00106	LDC6	TSX OK,4	
54170	0020	00	0	54051		TRA LDC	

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TEST PAX CHECKING EACH POSITION OF INDEX REGISTERS

54171	472167606060		BCD 1PAX	
54172	0441 00 0 56225	PAX	LDI PZE	SET UP
54173	0055 00 100000		SIR 100000	FOR XRA
54174	-0046 00 0 00000		PIA	INDICATORS TO ACC
54175	0140 00 0 54176		TOV **1	OVERFLOW LIGHT OFF
54176	0600 60 0 54216		STZ* PAX1	CLEAR LOCATION
54177	0601 60 0 54300		STO* PAX4A+6	SAVE XR TESTING
54200	0625 00 0 54220		STT PAX2	INSERT TAG FOR
54201	0625 00 0 54221		STT PAX2+1	THE XR TESTING
54202	0441 00 0 56232		LDI PONES	+377777700000
54203	0057 00 077777		RIR 77777	TO STORAGE
54204	0604 60 0 54272		STI* PAX4A	LOCATION
54205	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
54206	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
54207	0774 00 1 00000		AXT 0,1	CLEAR
54210	0774 00 2 00000		AXT 0,2	EACH
54211	0774 00 3 00000		AXT 0,3	OF
54212	0774 00 4 00000		AXT 0,4	THE
54213	0774 00 5 00000		AXT 0,5	7
54214	0774 00 6 00000		AXT 0,6	INDEX
54215	0774 00 7 00000		AXT 0,7	REGISTERS
54216	0621 00 0 56235	PAX1	STA T2	SAVE ADDRESS
54217	0600 60 0 54222		STZ* PAX2+2	CLEAR LOCATION
54220	0734 00 0 00000	PAX2	PAX	LOAD XR TESTING
54221	0634 00 0 56234		SXA T1	SAVE VALUE IN XR
54222	0500 00 0 56234		CLA T1	CHECK PAX
54223	0340 00 0 56235		CAS T2	EXECUTION
54224	0020 00 0 54226		TRA **2	ERROR
54225	0020 00 0 54235		TRA PAX3	OK
54226	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
54227	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
54230	0420 00 0 00000		HPR	COMPARE ACC AND MQ VALUE
54231	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
54232	0020 00 0 54235		TRA PAX3	PROCEED
54233	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
54234	0020 00 0 54217		TRA PAX1+1	TO REPEAT

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R E L I A B I L I T Y

CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

54235	0500	60	0	54300	PAX3	CLA* PAX4A+6	
54236	0402	00	0	56230		SUB TAG	
54237	0100	00	0	54241		TZE **2	
54240	3 00000	1	54264		TXH	PAX4,1,0	
54241	0402	00	0	56230		SUB TAG	
54242	0100	00	0	54244		TZE **2	
54243	3 00000	2	54264		TXH	PAX4,2,0	
54244	0402	00	0	56230		SUB TAG	
54245	0100	00	0	54247		TZE **2	
54246	3 00000	3	54264		TXH	PAX4,3,0	
54247	0402	00	0	56230		SUB TAG	
54250	0100	00	0	54252		TZE **2	
54251	3 00000	4	54264		TXH	PAX4,4,0	
54252	0402	00	0	56230		SUB TAG	
54253	0100	00	0	54255		TZE **2	
54254	3 00000	5	54264		TXH	PAX4,5,0	
54255	0402	00	0	56230		SUB TAG	
54256	0100	00	0	54260		TZE **2	
54257	3 00000	6	54264		TXH	PAX4,6,0	
54260	0402	00	0	56230		SUB TAG	
54261	0100	00	0	54263		TZE **2	
54262	3 00000	7	54264		TXH	PAX4,7,0	
54263	0020	00	0	54272		TRA PAX4A	
54264	0760	00	0	00162	PAX4	SWT 2	TEST SENSE SWITCH 2
54265	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
54266	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
54267	0020	00	0	54272		TRA PAX4A	PROCEED
54270	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
54271	0020	00	0	54206		TRA PAX1-8	TO REPEAT
54272	0500	00	0	56237	PAX4A	CLA TEMP+1	GET ANOTHER XR
54273	0400	00	0	56226		ADD ONE	VALUE UNTIL
54274	-0140	00	0	54305		TNO PAX5	ALL XR TESTED
54275	0522	60	0	54310		XEC* PAX6+1	SET
54276	0522	00	0	54173		XEC PAX+1	UP
54277	-0046	00	0	00000		PIA	THE
54300	0400	00	0	56236		ADD TEMP	NEXT
54301	0044	00	0	00000		PAI	XR
54302	-0054	00	0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
54303	0020	00	0	54307		TRA PAX6	YES
54304	0020	00	0	54174		TRA PAX+2	CHECK NEXT XR
54305	0601	60	0	54272	PAX5	STO* PAX4A	SET UP TO TEST
54306	0020	00	0	54216		TRA PAX1	NEXT POSITION
54307	0074	00	4	00106	PAX6	TSX OK,4	
54310	0020	00	0	54172		TRA PAX	

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TEST PDX CHECKING EACH POSITION OF INDEX REGISTERS

54311	472467606060		BCD 1PDX	
54312	0441 00 0 56225	PDX	LDI PZE	SET UP
54313	0055 00 100000		SIR 100000	FOR XRA
54314	-0046 00 0 00000		PIA	INDICATORS TO ACC
54315	0140 00 0 54316		TOV ++1	OVERFLOW LIGHT OFF
54316	0600 60 0 54336		STZ* PDX1	CLEAR LOCATION
54317	0601 60 0 54420		STO* PDX4A+6	SAVE XR TESTING
54320	0625 00 0 54340		STT PDX2	INSERT TAG FOR
54321	0625 00 0 54341		STT PDX2+1	THE XR TESTING
54322	0522 00 0 54312		XEC PDX	+300000000000
54323	-0055 00 300000		SIL 300000	TO STORAGE
54324	0604 60 0 54412		STI* PDX4A	LOCATION
54325	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
54326	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
54327	0774 00 1 00000		AXT 0,1	CLEAR
54330	0774 00 2 00000		AXT 0,2	EACH
54331	0774 00 3 00000		AXT 0,3	OF
54332	0774 00 4 00000		AXT 0,4	THE
54333	0774 00 5 00000		AXT 0,5	7
54334	0774 00 6 00000		AXT 0,6	INDEX
54335	0774 00 7 00000		AXT 0,7	REGISTERS
54336	0622 00 0 56235	PDX1	STD T2	SAVE DECREMENT
54337	0600 60 0 54342		STZ* PDX2+2	CLEAR LOCATION
54340	-0734 00 0 00000	PDX2	PDX	LOAD XR TESTING
54341	-0634 00 0 56234		SXD T1	SAVE VALUE IN XR
54342	0500 00 0 56234		CLA T1	CHECK PDX
54343	0340 00 0 56235		CAS T2	EXECUTION
54344	0020 00 0 54346		TRA ++2	ERROR
54345	0020 00 0 54355		TRA PDX3	OK
54346	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
54347	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 1
54350	0420 00 0 00000		HPR	COMPARE ACC AND MQ VALUE
54351	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 2
54352	0020 00 0 54355		TRA PDX3	PROCEED
54353	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
54354	0020 00 0 54337		TRA PDX1+1	TO REPEAT

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CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

54355	0500 60 0	54420	PDX3	CLA* PDX4A+6	
54356	0402 00 0	56230		SUB TAG	
54357	0100 00 0	54361		TZE **2	
54360	3 00000 1	54404		TXH PDX4,1,0	
54361	0402 00 0	56230		SUB TAG	
54362	0100 00 0	54364		TZE **2	
54363	3 00000 2	54404		TXH PDX4,2,0	
54364	0402 00 0	56230		SUB TAG	
54365	0100 00 0	54367		TZE **2	
54366	3 00000 3	54404		TXH PDX4,3,0	
54367	0402 00 0	56230		SUB TAG	
54370	0100 00 0	54372		TZE **2	
54371	3 00000 4	54404		TXH PDX4,4,0	
54372	0402 00 0	56230		SUB TAG	
54373	0100 00 0	54375		TZE **2	
54374	3 00000 5	54404		TXH PDX4,5,0	
54375	0402 00 0	56230		SUB TAG	
54376	0100 00 0	54400		TZE **2	
54377	3 00000 6	54404		TXH PDX4,6,0	
54400	0402 00 0	56230		SUB TAG	
54401	0100 00 0	54403		TZE **2	
54402	3 00000 7	54404		TXH PDX4,7,0	
54403	0020 00 0	54412		TRA PDX4A	
54404	0760 00 0	00162	PDX4	SWT 2	TEST SENSE SWITCH 2
54405	0420 00 0	00000		HPR	MORE THAN 1 XR LOADED
54406	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
54407	0020 00 0	54412		TRA PDX4A	PROCEED
54410	0500 00 0	56237		CLA TEMP+1	RESTORE VALUE
54411	0020 00 0	54326		TRA PDX1-8	TO REPEAT
54412	0500 00 0	56237	PDX4A	CLA TEMP+1	GET ANOTHER XR
54413	0400 00 0	56227		ADD DEC1	VALUE UNTIL
54414	-0140 00 0	54425		TNO PDX5	ALL XR TESTED
54415	0522 60 0	54430		XEC* PDX6+1	SET
54416	0522 00 0	54313		XEC PDX+1	UP
54417	-0046 00 0	00000		PIA	THE
54420	0400 00 0	56236		ADD TEMP	NEXT
54421	0044 00 0	00000		PAI	XR
54422	-0054 00 0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
54423	0020 00 0	54427		TRA PDX6	YES
54424	0020 00 0	54314		TRA PDX+2	CHECK NEXT XR
54425	0601 60 0	54412	PDX5	STO* PDX4A	SET UP TO TEST
54426	0020 00 0	54336		TRA PDX1	NEXT POSITION
54427	0074 00 4	00106	PDX6	TSX OK,4	
54430	0020 00 0	54312		TRA PDX	

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TEST PAC CHECKING EACH POSITION OF INDEX REGISTERS

54431	472123606060		BCD 1PAC	
54432	0441 00 0 56225	PAC	LDI PZE	SET UP
54433	0055 00 100000		SIR 100000	FOR XRA
54434	-0046 00 0 00000		PIA	INDICATORS TO ACC
54435	0140 00 0 54436		TOV *+1	OVERFLOW LIGHT OFF
54436	0600 60 0 54460		STZ* PAC1+2	CLEAR LOCATION
54437	0601 60 0 54542		STO* PAC4A+6	SAVE XR TESTING
54440	0625 00 0 54463		STT PAC2	INSERT TAG FOR
54441	0625 00 0 54464		STT PAC2+1	THE XR TESTING
54442	0441 00 0 56232		LDI PONES	+377777700000
54443	0057 00 077777		RIR 77777	IN STORAGE
54444	0604 60 0 54534		STI* PAC4A	LOCATION
54445	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
54446	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
54447	0774 00 1 00000		AXT 0,1	CLEAR
54450	0774 00 2 00000		AXT 0,2	EACH
54451	0774 00 3 00000		AXT 0,3	OF
54452	0774 00 4 00000		AXT 0,4	THE
54453	0774 00 5 00000		AXT 0,5	SEVEN
54454	0774 00 6 00000		AXT 0,6	INDEX
54455	0774 00 7 00000		AXT 0,7	REGISTERS
54456	0760 00 0 00006	PAC1	COM	VALUE
54457	0400 00 0 56226		ADD ONE	FOR XR
54460	0621 00 0 56235		STA T2	COMPARISON
54461	0500 00 0 56237		CLA TEMP+1	VALUE FOR XR
54462	0600 60 0 54465		STZ* PAC2+2	CLEAR LOCATION
54463	0737 00 0 00000	PAC2	PAC	LOAD XR TESTING
54464	0634 00 0 56234		SXA T1	SAVE VALUE IN XR
54465	0500 00 0 56234		CLA T1	CHECK PAC
54466	0340 00 0 56235		CAS T2	EXECUTION
54467	0020 00 0 54471		TRA *+2	ERROR
54470	0020 00 0 54477		TRA PAC3	OK
54471	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
54472	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
54473	0420 00 0 00000		HPR	COMPARE ACC AND MQ VALUE
54474	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
54475	0020 00 0 54477		TRA PAC3	PROCEED
54476	0020 00 0 54461		TRA PAC1+3	REPEAT

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54477	0500 60 0	54542	PAC3	CLA* PAC4A+6	
54500	0402 00 0	56230		SUB TAG	
54501	0100 00 0	54503		TZE **2	
54502	3 00000 1	54526		TXH PAC4,1,0	
54503	0402 00 0	56230		SUB TAG	
54504	0100 00 0	54506		TZE **2	
54505	3 00000 2	54526		TXH PAC4,2,0	
54506	0402 00 0	56230		SUB TAG	
54507	0100 00 0	54511		TZE **2	
54510	3 00000 3	54526		TXH PAC4,3,0	
54511	0402 00 0	56230		SUB TAG	
54512	0100 00 0	54514		TZE **2	
54513	3 00000 4	54526		TXH PAC4,4,0	
54514	0402 00 0	56230		SUB TAG	
54515	0100 00 0	54517		TZE **2	
54516	3 00000 5	54526		TXH PAC4,5,0	
54517	0402 00 0	56230		SUB TAG	
54520	0100 00 0	54522		TZE **2	
54521	3 00000 6	54526		TXH PAC4,6,0	
54522	0402 00 0	56230		SUB TAG	
54523	0100 00 0	54525		TZE **2	
54524	3 00000 7	54526		TXH PAC4,7,0	
54525	0020 00 0	54534		TRA PAC4A	
54526	0760 00 0	00162	PAC4	SWT 2	TEST SENSE SWITCH 2
54527	0420 00 0	00000		HPR	MORE THAN 1 XR LOADED
54530	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
54531	0020 00 0	54534		TRA PAC4A	PROCEED
54532	0500 00 0	56237		CLA TEMP+1	RESTORE VALUE
54533	0020 00 0	54446		TRA PAC1-8	TO REPEAT
54534	0500 00 0	56237	PAC4A	CLA TEMP+1	GET ANOTHER XR
54535	0400 00 0	56226		ADD ONE	VALUE UNTIL
54536	-0140 00 0	54547		TNO PAC5	ALL XR TESTED
54537	0522 60 0	54552		XEC* PAC6+1	SET
54540	0522 00 0	54433		XEC PAC+1	UP
54541	-0046 00 0	00000		PIA	THE
54542	0400 00 0	56236		ADD TEMP	NEXT
54543	0044 00 0	00000		PAI	XR
54544	-0054 00 0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
54545	0020 00 0	54551		TRA PAC6	YES
54546	0020 00 0	54434		TRA PAC+2	CHECK NEXT XR
54547	0601 60 0	54534	PAC5	STO* PAC4A	SET UP TO TEST
54550	0020 00 0	54456		TRA PAC1	NEXT POSITION
54551	0074 00 4	00106	PAC6	TSX OK,4	
54552	0020 00 0	54432		TRA PAC	

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TEST PDC CHECKING EACH POSITION OF INDEX REGISTERS

54553	472423606060		BCD 1PDC	
54554	0441 00 0 56225	PDC	LDI PZE	SET UP
54555	0055 00 100000		SIR 100000	FOR XRA
54556	-0046 00 0 00000		PIA	INDICATORS TO ACC
54557	0140 00 0 54560		TOV **1	OVERFLOW LIGHT OFF
54560	0600 60 0 54602		STZ* PDC1+2	CLEAR LOCATION
54561	0601 60 0 54664		STO* PDC4A+6	SAVE XR TESTING
54562	0625 00 0 54605		STT PDC2	INSERT TAG FOR
54563	0625 00 0 54606		STT PDC2+1	THE XR TESTING
54564	0522 00 0 54554		XEC PDC	+300000000000
54565	-0055 00 300000		SIL 300000	IN STORAGE
54566	0604 60 0 54656		STI* PDC4A	LOCATION
54567	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
54570	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
54571	0774 00 1 00000		AXT 0,1	CLEAR
54572	0774 00 2 00000		AXT 0,2	EACH
54573	0774 00 3 00000		AXT 0,3	OF
54574	0774 00 4 00000		AXT 0,4	THE
54575	0774 00 5 00000		AXT 0,5	7
54576	0774 00 6 00000		AXT 0,6	INDEX
54577	0774 00 7 00000		AXT 0,7	REGISTERS
54600	0740 00 0 00006	PDC1	COM	VALUE
54601	0400 00 0 56227		ADD DEC1	FOR XR
54602	0622 00 0 56235		STD T2	COMPARISON
54603	0500 00 0 56237		CLA TEMP+1	VALUE FOR XR
54604	0600 60 0 54607		STZ* PDC2+2	CLEAR LOCATION
54605	-0737 00 0 00000	PDC2	PDC	LOAD XR TESTING
54606	-0634 00 0 56234		SXD T1	SAVE VALUE IN XR
54607	0500 00 0 56234		CLA T1	CHECK PDC
54610	0340 00 0 56235		CAS T2	EXECUTION
54611	0020 00 0 54613		TRA **2	ERROR
54612	0020 00 0 54621		TRA PDC3	OK
54613	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
54614	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
54615	0420 00 0 00000		HPR	COMPARE ACC AND MQ VALUE
54616	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
54617	0020 00 0 54621		TRA PDC3	PROCEED
54620	0020 00 0 54603		TRA PDC1+3	REPEAT

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54621	0500	60	0	54664	PDC3	CLA*	PDC4A+6	
54622	0402	00	0	56230		SUB	TAG	
54623	0100	00	0	54625		TZE	*+2	
54624	3	00000	1	54650		TXH	PDC4,1,0	
54625	0402	00	0	56230		SUB	TAG	
54626	0100	00	0	54630		TZE	*+2	
54627	3	00000	2	54650		TXH	PDC4,2,0	
54630	0402	00	0	56230		SUB	TAG	
54631	0100	00	0	54633		TZE	*+2	
54632	3	00000	3	54650		TXH	PDC4,3,0	
54633	0402	00	0	56230		SUB	TAG	
54634	0100	00	0	54636		TZE	*+2	
54635	3	00000	4	54650		TXH	PDC4,4,0	
54636	0402	00	0	56230		SUB	TAG	
54637	0100	00	0	54641		TZE	*+2	
54640	3	00000	5	54650		TXH	PDC4,5,0	
54641	0402	00	0	56230		SUB	TAG	
54642	0100	00	0	54644		TZE	*+2	
54643	3	00000	6	54650		TXH	PDC4,6,0	
54644	0402	00	0	56230		SUB	TAG	
54645	0100	00	0	54647		TZE	*+2	
54646	3	00000	7	54650		TXH	PDC4,7,0	
54647	0020	00	0	54656		TRA	PDC4A	
54650	0760	00	0	00162	PDC4	SWT	2	TEST SENSE SWITCH 2
54651	0420	00	0	00000		HPR		MORE THAN 1 XR LOADED
54652	0760	00	0	00161		SWT	1	TEST SENSE SWITCH 1
54653	0020	00	0	54656		TRA	PDC4A	PROCEED
54654	0500	00	0	56237		CLA	TEMP+1	RESTORE VALUE
54655	0020	00	0	54570		TRA	PDC1-8	TO REPEAT
54656	0500	00	0	56237	PDC4A	CLA	TEMP+1	GET ANOTHER XR
54657	0400	00	0	56227		ADD	DEC1	VALUE UNTIL
54660	-0140	00	0	54671		TNO	PDC5	ALL XR TESTED
54661	0522	60	0	54674		XEC*	PDC6+1	SET
54662	0522	00	0	54555		XEC	PDC+1	UP
54663	-0046	00	0	00000		PIA		THE
54664	0400	00	0	56236		ADD	TEMP	NEXT
54665	0044	00	0	00000		PAI		XR
54666	-0054	00	0	000001		LFT	1	HAVE ALL XRS BEEN TESTED
54667	0020	00	0	54673		TRA	PDC6	YES
54670	0020	00	0	54556		TRA	PDC+2	CHECK NEXT XR
54671	0601	60	0	54656	PDC5	STO*	PDC4A	SET UP TO TEST
54672	0020	00	0	54600		TRA	PDC1	NEXT POSITION
54673	0074	00	4	00106	PDC6	TSX	OK,4	
54674	0020	00	0	54554		TRA	PDC	

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TEST PXA CHECKING EACH POSITION OF INDEX REGISTERS

54675 476721606060

BCD 1PXA

54676	0441	00	0	56225	PXA	LDI PZE	SET UP
54677	0055	00		100000		SIR 100000	FOR XRA
54700	-0046	00	0	00000		PIA	INDICATORS TO ACC
54701	0140	00	0	54702		TOV **1	OVERFLOW LIGHT OFF
54702	0600	60	0	54722		STZ* PXA1	CLEAR LOCATION
54703	0601	60	0	55001		STO* PXA4A+6	SAVE XR TESTING
54704	0625	00	0	54723		STT PXA2	INSERT TAG FOR
54705	0625	00	0	54724		STT PXA2+1	THE XR TESTING
54706	0441	00	0	56232		LDI PONES	+377777700000
54707	0057	00		077777		RIR 77777	TO STORAGE
54710	0604	60	0	54773		STI* PXA4A	LOCATION
54711	-0046	00	0	00000		PIA	INDICATORS TO ACCUMULATOR
54712	0760	00	0	00016		LMTM	LEAVE MULTIPLE TAG MODE
54713	0774	00	1	00000		AXT 0,1	CLEAR
54714	0774	00	2	00000		AXT 0,2	EACH
54715	0774	00	3	00000		AXT 0,3	OF
54716	0774	00	4	00000		AXT 0,4	THE
54717	0774	00	5	00000		AXT 0,5	7
54720	0774	00	6	00000		AXT 0,6	INDEX
54721	0774	00	7	00000		AXT 0,7	REGISTERS
54722	0621	00	0	56235	PXA1	STA T2	SAVE ADDRESS
54723	0534	00	0	56237	PXA2	LXA TEMP+1	LOAD XR TESTING
54724	0754	00	0	00000		PXA	CHECK PXA
54725	0340	00	0	56235		CAS T2	EXECUTION
54726	0020	00	0	54730		TRA **2	ERROR
54727	0020	00	0	54736		TRA PXA3	OK
54730	0560	00	0	56235		LDQ T2	CORRECT VALUE IN MQ
54731	0760	00	0	00162		SWT 2	TEST SENSE SWITCH 2
54732	0420	00	0	00000		HPR	COMPARE ACC AND MQ VALUE
54733	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
54734	0020	00	0	54736		TRA PXA3	PROCEED
54735	0020	00	0	54723		TRA PXA2	REPEAT

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54736	0500	60	0	55001	PXA3	CLA* PXA4A+6	
54737	0402	00	0	56230		SUB TAG	
54740	0100	00	0	54742		TZE **2	
54741	3	00000	1	54765		TXH PXA4,1,0	
54742	0402	00	0	56230		SUB TAG	
54743	0100	00	0	54745		TZE **2	
54744	3	00000	2	54765		TXH PXA4,2,0	
54745	0402	00	0	56230		SUB TAG	
54746	0100	00	0	54750		TZE **2	
54747	3	00000	3	54765		TXH PXA4,3,0	
54750	0402	00	0	56230		SUB TAG	
54751	0100	00	0	54753		TZE **2	
54752	3	00000	4	54765		TXH PXA4,4,0	
54753	0402	00	0	56230		SUB TAG	
54754	0100	00	0	54756		TZE **2	
54755	3	00000	5	54765		TXH PXA4,5,0	
54756	0402	00	0	56230		SUB TAG	
54757	0100	00	0	54761		TZE **2	
54760	3	00000	6	54765		TXH PXA4,6,0	
54761	0402	00	0	56230		SUB TAG	
54762	0100	00	0	54764		TZE **2	
54763	3	00000	7	54765		TXH PXA4,7,0	
54764	0020	00	0	54773		TRA PXA4A	
54765	0760	00	0	00162	PXA4	SWT 2	TEST SENSE SWITCH 2
54766	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
54767	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
54770	0020	00	0	54773		TRA PXA4A	PROCEED
54771	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
54772	0020	00	0	54712		TRA PXA1-8	TO REPEAT
54773	0500	00	0	56237	PXA4A	CLA TEMP+1	GET ANOTHER XR
54774	0400	00	0	56226		ADD ONE	VALUE UNTIL
54775	-0140	00	0	55006		TNO PXA5	ALL XR TESTED
54776	0522	60	0	55011		XEC* PXA6+1	SET
54777	0522	00	0	54677		XEC PXA+1	UP
55000	-0046	00	0	00000		PIA	THE
55001	0400	00	0	56236		ADD TEMP	NEXT
55002	0044	00	0	00000		PAI	XR
55003	-0054	00	0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
55004	0020	00	0	55010		TRA PXA6	YES
55005	0020	00	0	54700		TRA PXA+2	CHECK NEXT XR
55006	0601	60	0	54773	PXA5	STO* PXA4A	SET UP TO TEST
55007	0020	00	0	54722		TRA PXA1	NEXT POSITION
55010	0074	00	4	00106	PXA6	TSX OK,4	
55011	0020	00	0	54676		TRA PXA	

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TEST PCA CHECKING EACH POSITION OF INDEX REGISTERS

55012	472321606060		BCD 1PCA	
55013	0441 00 0 56225	PCA	LDI PZE	SET UP
55014	0055 00 100000		SIR 100000	FOR XRA
55015	0046 00 0 00000		PIA	INDICATORS TO ACC
55016	0140 00 0 55017		TOV **1	OVERFLOW LIGHT OFF
55017	0600 60 0 55041		STZ* PCA1+2	CLEAR LOCATION
55020	0601 60 0 55120		STO* PCA4A+6	SAVE XR TESTING
55021	0625 00 0 55042		STT PCA2	INSERT TAG FOR
55022	0625 00 0 55043		STT PCA2+1	XR TESTING
55023	0441 00 0 56232		LDI PONES	+377777700000
55024	0057 00 077777		RIR 77777	IN STORAGE
55025	0604 60 0 55112		STI* PCA4A	LOCATION
55026	0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
55027	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
55030	0774 00 1 00000		AXT 0,1	CLEAR
55031	0774 00 2 00000		AXT 0,2	EACH
55032	0774 00 3 00000		AXT 0,3	OF
55033	0774 00 4 00000		AXT 0,4	THE
55034	0774 00 5 00000		AXT 0,5	7
55035	0774 00 6 00000		AXT 0,6	INDEX
55036	0774 00 7 00000		AXT 0,7	REGISTERS
55037	0760 00 0 00006	PCA1	COM	VALUE
55040	0400 00 0 56226		ADD ONE	FOR XR
55041	0621 00 0 56235		STA T2	COMPARISON
55042	0534 00 0 56237	PCA2	LXA TEMP+1	LOAD XR TESTING
55043	0756 00 0 00000		PCA	CHECK PCA
55044	0340 00 0 56235		CAS T2	EXECUTION
55045	0020 00 0 55047		TRA **2	ERROR
55046	0020 00 0 55055		TRA PCA3	OK
55047	0560 00 0 56235		LDQ T2	CORRECT VALUE TO MQ
55050	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
55051	0420 00 0 00000		HPR	COMPARE ACC AND MQ
55052	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
55053	0020 00 0 55055		TRA PCA3	PROCEED
55054	0020 00 0 55042		TRA PCA2	REPEAT

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55055	0500	60	0	55120	PCA3	CLA* PCA4A+6	
55056	0402	00	0	56230		SUB TAG	
55057	0100	00	0	55061		TZE **2	
55060	3 00000		1	55104		TXH PCA4,1,0	
55061	0402	00	0	56230		SUB TAG	
55062	0100	00	0	55064		TZE **2	
55063	3 00000		2	55104		TXH PCA4,2,0	
55064	0402	00	0	56230		SUB TAG	
55065	0100	00	0	55067		TZE **2	
55066	3 00000		3	55104		TXH PCA4,3,0	
55067	0402	00	0	56230		SUB TAG	
55070	0100	00	0	55072		TZE **2	
55071	3 00000		4	55104		TXH PCA4,4,0	
55072	0402	00	0	56230		SUB TAG	
55073	0100	00	0	55075		TZE **2	
55074	3 00000		5	55104		TXH PCA4,5,0	
55075	0402	00	0	56230		SUB TAG	
55076	0100	00	0	55100		TZE **2	
55077	3 00000		6	55104		TXH PCA4,6,0	
55100	0402	00	0	56230		SUB TAG	
55101	0100	00	0	55103		TZE **2	
55102	3 00000		7	55104		TXH PCA4,7,0	
55103	0020	00	0	55112		TRA PCA4A	
55104	0760	00	0	00162	PCA4	SWT 2	TEST SENSE SWITCH 2
55105	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
55106	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
55107	0020	00	0	55112		TRA PCA4A	PROCEED
55110	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
55111	0020	00	0	55027		TRA PCA1-8	TO REPEAT
55112	0500	00	0	56237	PCA4A	CLA TEMP+1	GET ANOTHER XR
55113	0400	00	0	56226		ADD ONE	VALUE UNTIL
55114	-0140	00	0	55125		TNO PCA5	ALL XR TESTED
55115	0522	60	0	55130		XEC* PCA6+1	SET
55116	0522	00	0	55014		XEC PCA+1	UP
55117	-0046	00	0	00000		PIA	THE
55120	0400	00	0	56236		ADD TEMP	NEXT
55121	0044	00	0	00000		PAI	XR
55122	-0054	00	000001			LFT 1	HAVE ALL XRS BEEN TESTED
55123	0020	00	0	55127		TRA PCA6	YES
55124	0020	00	0	55015		TRA PCA+2	CHECK NEXT XR
55125	0601	60	0	55112	PCA5	STO* PCA4A	SET UP TO TEST
55126	0020	00	0	55037		TRA PCA1	NEXT POSITION
55127	0074	00	4	00106	PCA6	TSX OK,4	
55130	0020	00	0	55013		TRA PCA	

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TEST PXD CHECKING EACH POSITION OF INDEX REGISTERS

55131	476724606060		BCD 1PXD	
55132	0441 00 0 56225	PXD	LDI PZE	SET UP
55133	0055 00 100000		SIR 100000	FOR XRA
55134	-0046 00 0 00000		PIA	INDICATORS TO ACC
55135	0140 00 0 55136		TOV *+1	OVERFLOW LIGHT OFF
55136	0600 60 0 55156		STZ* PXD1	CLEAR LOCATION
55137	0601 60 0 55235		STO* PXD4A+6	SAVE XR TESTING
55140	0625 00 0 55157		STT PXD2	INSERT TAG FOR
55141	0625 00 0 55160		STT PXD2+1	THE XR TESTING
55142	0522 00 0 55132		XEC PXD	+300000000000
55143	-0055 00 300000		SIL 300000	TO STORAGE
55144	0604 60 0 55227		STI* PXD4A	LOCATION
55145	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
55146	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
55147	0774 00 1 00000		AXT 0,1	CLEAR
55150	0774 00 2 00000		AXT 0,2	EACH
55151	0774 00 3 00000		AXT 0,3	OF
55152	0774 00 4 00000		AXT 0,4	THE
55153	0774 00 5 00000		AXT 0,5	7
55154	0774 00 6 00000		AXT 0,6	INDEX
55155	0774 00 7 00000		AXT 0,7	REGISTERS
55156	0622 00 0 56235	PXD1	STD T2	SAVE DECREMENT
55157	-0534 00 0 56237	PXD2	LXD TEMP+1	LOAD XR TESTING
55160	-0754 00 0 00000		PXD	CHECK PXD
55161	0340 00 0 56235		CAS T2	EXECUTION
55162	0020 00 0 55164		TRA *+2	ERROR
55163	0020 00 0 55172		TRA PXD3	OK
55164	0560 00 0 56235		LDQ T2	CORRECT VALUE IN MQ
55165	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
55166	0420 00 0 00000		HPR	COMPARE ACC AND MQ VALUE
55167	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
55170	0020 00 0 55172		TRA PXD3	PROCEED
55171	0020 00 0 55157		TRA PXD2	REPEAT

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CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

55172	0500 60 0	55235	PXD3	CLA* PXD4A+6	
55173	0402 00 0	56230		SUB TAG	
55174	0100 00 0	55176		TZE *+2	
55175	3 00000 1	55221		TXH PXD4,1,0	
55176	0402 00 0	56230		SUB TAG	
55177	0100 00 0	55201		TZE *+2	
55200	3 00000 2	55221		TXH PXD4,2,0	
55201	0402 00 0	56230		SUB TAG	
55202	0100 00 0	55204		TZE *+2	
55203	3 00000 3	55221		TXH PXD4,3,0	
55204	0402 00 0	56230		SUB TAG	
55205	0100 00 0	55207		TZE *+2	
55206	3 00000 4	55221		TXH PXD4,4,0	
55207	0402 00 0	56230		SUB TAG	
55210	0100 00 0	55212		TZE *+2	
55211	3 00000 5	55221		TXH PXD4,5,0	
55212	0402 00 0	56230		SUB TAG	
55213	0100 00 0	55215		TZE *+2	
55214	3 00000 6	55221		TXH PXD4,6,0	
55215	0402 00 0	56230		SUB TAG	
55216	0100 00 0	55220		TZE *+2	
55217	3 00000 7	55221		TXH PXD4,7,0	
55220	0020 00 0	55227		TRA PXD4A	
55221	0760 00 0	00162	PXD4	SWT 2	TEST SENSE SWITCH 2
55222	0420 00 0	00000		HPR	MORE THAN 1 XR LOADED
55223	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
55224	0020 00 0	55227		TRA PXD4A	PROCEED
55225	0500 00 0	56237		CLA TEMP+1	RESTORE VALUE
55226	0020 00 0	55146		TRA PXD1-8	TO REPEAT
55227	0500 00 0	56237	PXD4A	CLA TEMP+1	GET ANOTHER
55230	0400 00 0	56227		ADD DEC1	VALUE UNTIL
55231	-0140 00 0	55242		TNO PXD5	ALL XR TESTED
55232	0522 60 0	55245		XEC* PXD6+1	SET
55233	0522 00 0	55133		XEC PXD+1	UP
55234	-0046 00 0	00000		PIA	THE
55235	0400 00 0	56236		ADD TEMP	NEXT
55236	0044 00 0	00000		PAI	XR
55237	-0054 00	000001		LFT 1	HAVE ALL XRS BEEN TESTED
55240	0020 00 0	55244		TRA PXD6	YES
55241	0020 00 0	55134		TRA PXD+2	CHECK NEXT XR
55242	0601 60 0	55227	PXD5	STO* PXD4A	SET UP TO TEST
55243	0020 00 0	55156		TRA PXD1	NEXT POSITION
55244	0074 00 4	00106	PXD6	TSX OK,4	
55245	0020 00 0	55132		TRA PXD	

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TEST PCD CHECKING EACH POSITION OF INDEX REGISTERS

55246	472324606060		BCD 1PCD	
55247	0441 00 0 56225	PCD	LDI PZE	SET UP
55250	0055 00 100000		SIR 100000	FOR XRA
55251	-0046 00 0 00000		PIA	INDICATORS TO ACC
55252	0140 00 0 55253		TOV *+1	OVERFLOW LIGHT OFF
55253	0600 60 0 55275		STZ* PCD1+2	CLEAR LOCATION
55254	0601 60 0 55354		STO* PCD4A+6	SAVE XR TESTING
55255	0625 00 0 55276		STT PCD2	INSERT TAG FOR
55256	0625 00 0 55277		STT PCD2+1	XR TESTING
55257	0522 00 0 55013		XEC PCA	+300000000000
55260	-0055 00 300000		SIL 300000	IN STORAGE
55261	0604 60 0 55346		STI* PCD4A	LOCATION
55262	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
55263	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
55264	0774 00 1 00000		AXT 0,1	CLEAR
55265	0774 00 2 00000		AXT 0,2	EACH
55266	0774 00 3 00000		AXT 0,3	OF
55267	0774 00 4 00000		AXT 0,4	THE
55270	0774 00 5 00000		AXT 0,5	7
55271	0774 00 6 00000		AXT 0,6	INDEX
55272	0774 00 7 00000		AXT 0,7	REGISTERS
55273	0760 00 0 00006	PCD1	COM	VALUE
55274	0400 00 0 56227		ADD DEC1	FOR XR
55275	0622 00 0 56235		STD T2	COMPARISON
55276	-0534 00 0 56237	PCD2	LXD TEMP+1	LOAD XR TESTING
55277	-0756 00 0 00000		PCD	CHECK PCD
55300	0340 00 0 56235		CAS T2	EXECUTION
55301	0020 00 0 55303		TRA *+2	ERROR
55302	0020 00 0 55311		TRA PCD3	OK
55303	0560 00 0 56235		LDQ T2	CORRECT VALUE TO MQ
55304	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
55305	0420 00 0 00000		HPR	COMPARE ACC AND MQ
55306	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
55307	0020 00 0 55311		TRA PCD3	PROCEED
55310	0020 00 0 55276		TRA PCD2	REPEAT

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CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

55311	0500 60 0	55354	PCD3	CLA* PCD4A+6	
55312	0402 00 0	56230		SUB TAG	
55313	0100 00 0	55315		TZE *+2	
55314	3 00000 1	55340		TXH PCD4,1,0	
55315	0402 00 0	56230		SUB TAG	
55316	0100 00 0	55320		TZE *+2	
55317	3 00000 2	55340		TXH PCD4,2,0	
55320	0402 00 0	56230		SUB TAG	
55321	0100 00 0	55323		TZE *+2	
55322	3 00000 3	55340		TXH PCD4,3,0	
55323	0402 00 0	56230		SUB TAG	
55324	0100 00 0	55326		TZE *+2	
55325	3 00000 4	55340		TXH PCD4,4,0	
55326	0402 00 0	56230		SUB TAG	
55327	0100 00 0	55331		TZE *+2	
55330	3 00000 5	55340		TXH PCD4,5,0	
55331	0402 00 0	56230		SUB TAG	
55332	0100 00 0	55334		TZE *+2	
55333	3 00000 6	55340		TXH PCD4,6,0	
55334	0402 00 0	56230		SUB TAG	
55335	0100 00 0	55337		TZE *+2	
55336	3 00000 7	55340		TXH PCD4,7,0	
55337	0020 00 0	55346		TRA PCD4A	
55340	0760 00 0	00162	PCD4	SWT 2	TEST SENSE SWITCH 2
55341	0420 00 0	00000		HPR	MORE THAN 1 XR LOADED
55342	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
55343	0020 00 0	55346		TRA PCD4A	PROCEED
55344	0500 00 0	56237		CLA TEMP+1	RESTORE VALUE
55345	0020 00 0	55263		TRA PCD1-8	TO REPEAT
55346	0500 00 0	56237	PCD4A	CLA TEMP+1	GET ANOTHER XR
55347	0400 00 0	56227		ADD DEC1	VALUE UNTIL
55350	-0140 00 0	55361		TNO PCD5	ALL XR TESTED
55351	0522 60 0	55364		XEC* PCD6+1	SET
55352	0522 00 0	55250		XEC PCD+1	UP
55353	-0046 00 0	00000		PIA	THE
55354	0400 00 0	56236		ADD TEMP	NEXT
55355	0044 00 0	00000		PAI	XR
55356	-0054 00 0	000001		LFT 1	HAVE ALL XRS BEEN TESTED
55357	0020 00 0	55363		TRA PCD6	YES
55360	0020 00 0	55251		TRA PCD+2	CHECK NEXT XR
55361	0601 60 0	55346	PCD5	STO* PCD4A	SET UP TO TEST
55362	0020 00 0	55273		TRA PCD1	NEXT POSITION
55363	0074 00 4	00106	PCD6	TSX OK,4	
55364	0020 00 0	55247		TRA PCD	

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TEST AXC CHECKING EACH POSITION OF NDEX REGISTERS

55365	216723606060		BCD 1AXC	
55366	0441 00 0 56225	AXC	LDI PZE	SET UP
55367	0055 00 100000		SIR 100000	FOR XRA
55370	-0046 00 0 00000		PIA	INDICATORS TO ACC
55371	0140 00 0 55372		TOV *+1	OVERFLOW LIGHT OFF
55372	0600 60 0 55415		STZ* AXC1+3	CLEAR LOCATION
55373	0601 60 0 55477		STO* AXC4A+6	SAVE XR TESTING
55374	0625 00 0 55417		STT AXC2	INSERT TAG FOR
55375	0625 00 0 55420		STT AXC2+1	THE XR TESTING
55376	0441 00 0 56232		LDI PONES	+377777700000
55377	0057 00 077777		RIR 77777	IN STORAGE
55400	0604 60 0 55471		STI* AXC4A	LOCATION
55401	-0046 00 0 00000		PIA	INDICATORS TO ACCUMULATOR
55402	0760 00 0 00016		LMTM	LEAVE MULTIPLE TAG MODE
55403	0774 00 1 00000		AXT 0,1	CLEAR
55404	0774 00 2 00000		AXT 0,2	EACH
55405	0774 00 3 00000		AXT 0,3	OF
55406	0774 00 4 00000		AXT 0,4	THE
55407	0774 00 5 00000		AXT 0,5	7
55410	0774 00 6 00000		AXT 0,6	INDEX
55411	0774 00 7 00000		AXT 0,7	REGISTERS
55412	0621 00 0 55417	AXC1	STA AXC2	VALUE FOR XR
55413	0760 00 0 00006		COM	VALUE
55414	0400 00 0 56226		ADD ONE	FOR XR
55415	0621 00 0 56235		STA T2	COMPARISON
55416	0600 60 0 55421		STZ* AXC2+2	CLEAR LOCATION
55417	-0774 00 0 00000	AXC2	AXC	LOAD XR TESTING
55420	0634 00 0 56234		SXA T1	SAVE VALUE IN XR
55421	0500 00 0 56234		CLA T1	CHECK AXC
55422	0340 00 0 56235		CAS T2	EXECUTION
55423	0020 00 0 55425		TRA *+2	ERROR
55424	0020 00 0 55434		TRA AXC3	OK
55425	0560 00 0 56235		LDQ T2	CORRECT XR VALUE IN MQ
55426	0760 00 0 00162		SWT 2	TEST SENSE SWITCH 2
55427	0420 00 0 00000		HPR	COMPARE ACC AND MQ VALUE
55430	0760 00 0 00161		SWT 1	TEST SENSE SWITCH 1
55431	0020 00 0 55434		TRA AXC3	PROCEED
55432	0500 00 0 56237		CLA TEMP+1	RESTORE VALUE
55433	0020 00 0 55412		TRA AXC1	TO REPEAT

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55434	0500	60	0	55477	AXC3	CLA* AXC4A+6	
55435	0402	00	0	56230		SUB TAG	
55436	0100	00	0	55440		TZE **2	
55437	3 00000	1		55463		TXH AXC4,1,0	
55440	0402	00	0	56230		SUB TAG	
55441	0100	00	0	55443		TZE **2	
55442	3 00000	2		55463		TXH AXC4,2,0	
55443	0402	00	0	56230		SUB TAG	
55444	0100	00	0	55446		TZE **2	
55445	3 00000	3		55463		TXH AXC4,3,0	
55446	0402	00	0	56230		SUB TAG	
55447	0100	00	0	55451		TZE **2	
55450	3 00000	4		55463		TXH AXC4,4,0	
55451	0402	00	0	56230		SUB TAG	
55452	0100	00	0	55454		TZE **2	
55453	3 00000	5		55463		TXH AXC4,5,0	
55454	0402	00	0	56230		SUB TAG	
55455	0100	00	0	55457		TZE **2	
55456	3 00000	6		55463		TXH AXC4,6,0	
55457	0402	00	0	56230		SUB TAG	
55460	0100	00	0	55462		TZE **2	
55461	3 00000	7		55463		TXH AXC4,7,0	
55462	0020	00	0	55471		TRA AXC4A	
55463	0760	00	0	00162	AXC4	SWT 2	TEST SENSE SWITCH 2
55464	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
55465	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
55466	0020	00	0	55504		TRA AXC5	PROCEED
55467	0500	00	0	56237		CLA TEMP+1	RESTORE VALUE
55470	0020	00	0	55402		TRA AXC1-8	TO REPEAT
55471	0500	00	0	56237	AXC4A	CLA TEMP+1	GET ANOTHER XR
55472	0400	00	0	56226		ADD ONE	VALUE UNTIL
55473	-0140	00	0	55504		TNO AXC5	ALL XR TESTED
55474	0522	60	0	55507		XEC* AXC6+1	SET
55475	0522	00	0	55367		XEC AXC+1	UP
55476	-0046	00	0	00000		PIA	THE
55477	0400	00	0	56236		ADD TEMP	NEXT
55500	0044	00	0	00000		PAI	XR
55501	-0054	00		000001		LFT 1	HAVE ALL XRS BEEN TESTED
55502	0020	00	0	55506		TRA AXC6	YES
55503	0020	00	0	55370		TRA AXC+2	CHECK NEXT XR
55504	0601	60	0	55471	AXC5	STO* AXC4A	SET UP TO TEST
55505	0020	00	0	55412		TRA AXC1	NEXT POSITION
55506	0074	00	4	00106	AXC6	TSX OK,4	
55507	0020	00	0	55366		TRA AXC	

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CHECK TIX COUNT DOWN WITH EVERY DECREMENT VALUE IN ALL INDEX REGISTERS

55510	633167606060		BCD 1TIX	
55511	0441 00 0	56225	TIX LDI PZE	SET UP
55512	0055 00	100000	SIR 100000	FOR XRA
55513	-0046 00 0	00000	PIA	INDICATORS TO ACC
55514	0600 60 0	55562	STZ* TIX2-2	CLEAR LOCATION
55515	0600 60 0	55527	STZ* TIX1+2	
55516	0601 60 0	55665	STO* TIX4B	SAVE XR TESTING
55517	0625 00 0	55525	STT TIX1	INSERT
55520	0625 00 0	55564	STT TIX2	TAG
55521	0625 00 0	55565	STT TIX2+1	IN
55522	0625 00 0	55603	STT TIX3-2	NECESSARY
55523	0625 00 0	55644	STT TIX4A-4	INSTRUCTIONS
55524	0500 00 0	56227	CLA DEC1	+1 IN ACC
55525	0774 00 0	77777	TIX1 AXT -1	77777 IN XR TESTING
55526	0622 00 0	55564	STD TIX2	DECREMENT FOR TIX INSTR
55527	0622 00 0	56237	STD TEMP+1	SAVE DECREMENT USING
55530	0760 00 0	00006	COM	COMPLEMENT ACC
55531	0131 00 0	00000	XCA	SAVE ACCUMULATOR CONTENTS

CLEAR ALL INDEX REGISTERS EXCEPT THE INDEX REGISTER BEING TESTED

55532	0760 00 0	00016	LMTM	LEAVE MULTIPLE TAG MODE
55533	0500 60 0	55665	CLA* TIX4B	
55534	0402 00 0	56230	SUB TAG	
55535	0100 00 0	55537	TZE **2	
55536	0774 00 1	00000	AXT 0,1	
55537	0402 00 0	56230	SUB TAG	
55540	0100 00 0	55542	TZE **2	
55541	0774 00 2	00000	AXT 0,2	
55542	0402 00 0	56230	SUB TAG	
55543	0100 00 0	55545	TZE **2	
55544	0774 00 3	00000	AXT 0,3	
55545	0402 00 0	56230	SUB TAG	
55546	0100 00 0	55550	TZE **2	
55547	0774 00 4	00000	AXT 0,4	
55550	0402 00 0	56230	SUB TAG	
55551	0100 00 0	55553	TZE **2	
55552	0774 00 5	00000	AXT 0,5	
55553	0402 00 0	56230	SUB TAG	
55554	0100 00 0	55556	TZE **2	
55555	0774 00 6	00000	AXT 0,6	
55556	0402 00 0	56230	SUB TAG	
55557	0100 00 0	55561	TZE **2	
55560	0774 00 7	00000	AXT 0,7	
55561	0131 00 0	00000	XCA	RESTORE SAVED ACCUMULATOR
55562	0622 00 0	56235	STD T2	SAVE ACC DEC FOR COMPARISON
55563	0600 60 0	55566	STZ* TIX2+2	CLEAR LOCATION

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55564	2 00000 0	55565	TIX2	TIX **1	COUNT DOWN INDEX REGISTER
55565	--0634 00 0	56234		SXD T1	CHECK
55566	0500 00 0	56234		CLA T1	TIX
55567	0340 00 0	56235		CAS T2	EXECUTION
55570	0020 00 0	55372		TRA **2	ERROR
55571	0020 00 0	55605		TRA TIX3	OK
55572	0560 00 0	56235		LDQ T2	CORRECT XR VALUE TO MQ
55573	0760 00 0	00162		SWT 2	TEST SENSE SWITCH 2
55574	0420 00 0	00000		HPR	COMPARE ACC AND MQ
55575	0760 00 0	00161		SWT 1	TEST SENSE SWITCH 1
55576	0020 00 0	55605		TRA TIX3	PROCEED
55577	0500 00 0	56235		CLA T2	RESTORE
55600	0400 00 0	56237		ADD TEMP+1	THE
55601	0771 00 0	00022		ARS 18	INDEX
55602	0621 00 0	55603		STA **1	REGISTER
55603	0774 00 0	00000		AXT	TO
55604	0020 00 0	55563		TRA TIX2-1	REPEAT

CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

55605	0500 60 0	55665	TIX3	CLA* TIX4B	
55606	0402 00 0	56230		SUB TAG	
55607	0100 00 0	55611		TZE **2	
55610	3 00000 1	55634		TXH TIX4,1,0	
55611	0402 00 0	56230		SUB TAG	
55612	0100 00 0	55614		TZE **2	
55613	3 00000 2	55634		TXH TIX4,2,0	
55614	0402 00 0	56230		SUB TAG	
55615	0100 00 0	55617		TZE **2	
55616	3 00000 3	55634		TXH TIX4,3,0	
55617	0402 00 0	56230		SUB TAG	
55620	0100 00 0	55622		TZE **2	
55621	3 00000 4	55634		TXH TIX4,4,0	
55622	0402 00 0	56230		SUB TAG	
55623	0100 00 0	55625		TZE **2	
55624	3 00000 5	55634		TXH TIX4,5,0	
55625	0402 00 0	56230		SUB TAG	
55626	0100 00 0	55630		TZE **2	
55627	3 00000 6	55634		TXH TIX4,6,0	
55630	0402 00 0	56230		SUB TAG	
55631	0100 00 0	55633		TZE **2	
55632	3 00000 7	55634		TXH TIX4,7,0	
55633	0020 00 0	55650		TRA TIX4A	

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55634	0760	00	0	00162	TIX4	SWT 2	TEST SENSE SWITCH 2
55635	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
55636	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
55637	0020	00	0	55650		TRA TIX4A	PROCEED
55640	0500	00	0	56235		CLA T2	RESTORE
55641	0400	00	0	56237		ADD TEMP+1	THE
55642	0771	00	0	00022		ARS 18	INDEX
55643	0621	00	0	55644		STA *+1	REGISTER
55644	0774	00	0	00000		AXT	IN
55645	0767	00	0	00022		ALS 18	ORDER
55646	0402	00	0	56237		SUB TEMP+1	TO
55647	0020	00	0	55531		TRA TIX1+4	REPEAT
55650	0500	00	0	56235	TIX4A	CLA T2	CHECK
55651	0402	00	0	56237		SUB TEMP+1	THE
55652	0340	00	0	56237		CAS TEMP+1	TIX
55653	0020	00	0	55562		TRA TIX2-2	COUNT
55654	0761	00	0	00000		NOP	DOWN
55655	0500	00	0	56237		CLA TEMP+1	IN
55656	0400	00	0	56227		ADD DEC1	EACH
55657	0044	00	0	00000		PAI	XR
55660	-0056	00		077777		LNT 77777	WITH
55661	0020	00	0	55525		TRA TIX1	ALL
55662	0522	60	0	55673		XEC* TIX6+1	DECREMENT
55663	0522	00	0	55512		XEC TIX+1	VALUES
55664	-0046	00	0	00000		PIA	IN
55665	0400	00	0	56236	TIX4B	ADD TEMP	TIX
55666	0044	00	0	00000		PAI	INSTRUCTION
55667	-0054	00		000001		LFT 1	HAVE ALL XRS BEEN TESTED
55670	0020	00	0	55672		TRA TIX6	YES
55671	0020	00	0	55513		TRA TIX+2	CHECK NEXT XR
55672	0074	00	4	00106	TIX6	TSX OK,4	
55673	0020	00	0	55511		TRA TIX	

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CHECK TXI COUNT UP WITH EVERY DECREMENT VALUE IN ALL INDEX REGISTERS

55674	636731606060		BCD 1TXI	
55675	0441 00 0 56225	TXI	LDI PZE	SET UP
55676	0055 00 100000		SIR 100000	FOR XRA
55677	-0046 00 0 00000		PIA	INDICATORS TO ACC
55700	0601 60 0 56047		STO* TXI5A	SAVE XR TESTING
55701	0625 00 0 55714		STT TXI1	INSERT
55702	0625 00 0 55752		STT TXI2	TAG
55703	0625 00 0 55753		STT TXI2+1	IN
55704	0625 00 0 55771		STT TXI3-2	THE
55705	0625 00 0 56033		STT TXI4A-2	INSTRUCTIONS
55706	0140 00 0 55707		TOV **1	OVERFLOW LIGHT OFF
55707	0500 00 0 56227		CLA DEC1	+000001000000 IN ACC
55710	0522 00 0 55675		XEC TXI	+30000000000000
55711	-0055 00 300000		SIL 300000	TO STORAGE
55712	0604 60 0 55716		STI* TXI1+2	LOCATION
55713	0600 60 0 55750		STZ* TXI2-2	CLEAR LOCATION
55714	0774 00 0 00000	TXI1	AXT 0	CLEAR XR TESTING
55715	0622 00 0 55752		STD TXI2	DECREMENT TO TXI INSTR
55716	0622 00 0 56237		STD TEMP+1	SAVE DECREMENT USING

CLEAR ALL INDEX REGISTERS EXCEPT THE INDEX REGISTER BEING TESTED

55717	0760 00 0 00016	LMTM	LEAVE MULTIPLE TAG MODE
55720	0500 60 0 56047	CLA* TXI5A	
55721	0402 00 0 56230	SUB TAG	
55722	0100 00 0 55724	TZE **2	
55723	0774 00 1 00000	AXT 0,1	
55724	0402 00 0 56230	SUB TAG	
55725	0100 00 0 55727	TZE **2	
55726	0774 00 2 00000	AXT 0,2	
55727	0402 00 0 56230	SUB TAG	
55730	0100 00 0 55732	TZE **2	
55731	0774 00 3 00000	AXT 0,3	
55732	0402 00 0 56230	SUB TAG	
55733	0100 00 0 55735	TZE **2	
55734	0774 00 4 00000	AXT 0,4	
55735	0402 00 0 56230	SUB TAG	
55736	0100 00 0 55740	TZE **2	
55737	0774 00 5 00000	AXT 0,5	
55740	0402 00 0 56230	SUB TAG	
55741	0100 00 0 55743	TZE **2	
55742	0774 00 6 00000	AXT 0,6	
55743	0402 00 0 56230	SUB TAG	
55744	0100 00 0 55746	TZE **2	
55745	0774 00 7 00000	AXT 0,7	

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55746	0500	00	0	56235	CLA T2	SET UP
55747	0400	00	0	56237	ADD TEMP+1	VALUE FOR
55750	0622	00	0	56235	STD T2	COMPARISON
55751	0600	60	0	55754	STZ* TXI2+2	CLEAR LOCATION
55752	1 00000	0	55753	TXI2 TXI **+1	COUNT UP INDEX REGISTER	
55753	-0634	00	0	56234	SXD T1	CHECK
55754	0500	00	0	56234	CLA T1	TXI
55755	0340	00	0	56235	CAS T2	EXECUTION
55756	0020	00	0	55760	TRA **+2	ERROR
55757	0020	00	0	55773	TRA TXI3	OK
55760	0560	00	0	56235	LDQ T2	CORRECT XR VALUE TO MQ
55761	0760	00	0	00162	SWT 2	TEST SENSE SWITCH 2
55762	0420	00	0	00000	HPR	COMPARE ACC AND MQ
55763	0760	00	0	00161	SWT 1	TEST SENSE SWITCH 1
55764	0020	00	0	55773	TRA TXI3	PROCEED
55765	0500	00	0	56235	CLA T2	RESTORE
55766	0402	00	0	56237	SUB TEMP+1	INDEX
55767	0771	00	0	00022	ARS 18	REGISTER
55770	0621	00	0	55771	STA **+1	VALUE
55771	0774	00	0	00000	AXT	TO
55772	0020	00	0	55751	TRA TXI2-1	REPEAT

CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

55773	0500	60	0	56047	TXI3 CLA* TXI5A
55774	0402	00	0	56230	SUB TAG
55775	0100	00	0	55777	TZE **+2
55776	3 00000	1	56022	TXH TXI4,1,0	
55777	0402	00	0	56230	SUB TAG
56000	0100	00	0	56002	TZE **+2
56001	3 00000	2	56022	TXH TXI4,2,0	
56002	0402	00	0	56230	SUB TAG
56003	0100	00	0	56005	TZE **+2
56004	3 00000	3	56022	TXH TXI4,3,0	
56005	0402	00	0	56230	SUB TAG
56006	0100	00	0	56010	TZE **+2
56007	3 00000	4	56022	TXH TXI4,4,0	
56010	0402	00	0	56230	SUB TAG
56011	0100	00	0	56013	TZE **+2
56012	3 00000	5	56022	TXH TXI4,5,0	
56013	0402	00	0	56230	SUB TAG
56014	0100	00	0	56016	TZE **+2
56015	3 00000	6	56022	TXH TXI4,6,0	
56016	0402	00	0	56230	SUB TAG
56017	0100	00	0	56021	TZE **+2
56020	3 00000	7	56022	TXH TXI4,7,0	
56021	0020	00	0	56035	TRA TXI4A

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SECTION FOUR
EXTENDED
RELIABILITY

56022	0760	00	0	00162	TXI4	SWT 2	TEST SENSE SWITCH 2
56023	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
56024	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
56025	0020	00	0	56035		TRA TXI4A	PROCEED
56026	0500	00	0	56235		CLA T2	RESTORE
56027	0402	00	0	56237		SUB TEMP+1	INDEX
56030	0622	00	0	56235		STD T2	REGISTER
56031	0771	00	0	00022		ARS 18	IN
56032	0621	00	0	56033		STA *+1	ORDER
56033	0774	00	0	00000		AXT	TO
56034	0020	00	0	55717		TRA TXI1+3	REPEAT
56035	0140	00	0	56037	TXI4A	TOV TXI5	COUNT UP THE XR
56036	0020	00	0	55746		TRA TXI2-4	UNTIL OVERFLOW
56037	0500	00	0	55752	TXI5	CLA TXI2	CHECK
56040	0400	00	0	56227		ADD DEC1	TXI
56041	0044	00	0	00000		PAI	COUNT
56042	-0054	00		077777		LFT 77777	UP
56043	0020	00	0	55710		TRA TXI1-4	WITH
56044	0522	60	0	56055		XEC* TXI6+1	ALL
56045	0522	00	0	55676		XEC TXI+1	DECREMENTS
56046	-0046	00	0	00000		PIA	WITH
56047	0400	00	0	56236	TXI5A	ADD TEMP	TXI
56050	0044	00	0	00000		PAI	INSTRUCTION
56051	-0054	00		000001		LFT 1	HAVE ALL XRS BEEN TESTED
56052	0020	00	0	56054		TRA TXI6	YES
56053	0020	00	0	55677		TRA TXI+2	CHECK ANOTHER XR
56054	0074	00	4	00106	TXI6	TSX OK,4	
56055	0020	00	0	55675		TRA TXI	

CHECK TSX IN ALL LOCATIONS EXCEPT FOR WORKING AREA LOCATIONS OF ROUTINE

56056	636267606060					BCD 1TSX	
56057	0441	00	0	56225	TSX	LDI PZE	SET UP
56060	0055	00		100000		SIR 100000	FOR XRA
56061	-0046	00	0	00000		PIA	INDICATORS TO ACC
56062	0601	60	0	56214		STO* TSX5	SAVE XR TESTING
56063	0600	60	0	56076		STZ* TSX1+1	CLEAR
56064	0600	60	0	56077		STZ* TSX1+2	THESE
56065	0600	00	0	56123		STZ TSX3+5	LOCATION
56066	0625	00	0	56116		STT TSX3	INSERT TAG IN
56067	0625	00	0	56124		STT TSX3A	INSTRUCTION
56070	0560	00	0	56225		LDQ PZE	CLEAR MQ AND
56071	0441	60	0	56070		LDI* *-1	INDICATORS
56072	-0055	00		000002		SIL 2	SET A BIT IN
56073	-0046	00	0	00000		PIA	ACCUMULATOR
56074	3 21640	0		56075	TSXA	TXH *+1,0,-1-TSX4	DUMMY INSTRUCTION

AN * IN COMMENT FIELD INDICATES NO TSX INSTRUCTION CHECK AT LOCATIONS

56075	-0763	00	0	00020	TSX1	LGL 16	ADJUST INSTRUCTION	*
56076	0602	00	0	56122		SLW TSX3+4	SAVE ACCUMULATOR	*

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56077	0622	00	0	56121	STD TSX3+3	SAVE ACC DECREMENT	*
56100	0621	60	0	56104	STA* TSX2A-2	STORE ADDRESS IN LOCATION	*
56101	0500	00	0	00000	TSX2 CLA	SAVE INSTRUCTION	*
56102	0601	00	0	56117	STO TSX3+1	IN LOCATION	*
56103	0500	00	0	56116	CLA TSX3	AND INSERT THE	
56104	0601	60	0	56101	STO* TSX2	TSX INSTRUCTION	*
56105	0760	00	0	00016	LMTM	LEAVE MULTIPLE TAG MODE	*
56106	0774	00	1	00000	TSX2A AXT 0,1	CLEAR	*
56107	0774	00	2	00000	AXT 0,2	EACH	*
56110	0774	00	3	00000	AXT 0,3	OF	*
56111	0774	00	4	00000	AXT 0,4	THE	*
56112	0774	00	5	00000	AXT 0,5	7	*
56113	0774	00	6	00000	AXT 0,6	INDEX	*
56114	0774	00	7	00000	AXT 0,7	REGISTERS	*
56115	0020	60	0	56101	TRA* TSX2	EXECUTE TSX INSTRUCTION	*

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56116	0074	00	0	56124	TSX3	TSX TSX3A	TSX TEST INSTRUCTION	*
56117	0000	00	0	00000		HTR	SAVE LOC CONTENTS HERE	*
56120	0000	00	0	00043		HTR TSX4-TSXA		*
56121	0000	00	0	00000		HTR	TEMPORARY	*
56122	0000	00	0	00000		HTR	STORAGE	*
56123	0000	00	0	00000		HTR	LOCATIONS	*
56124	-0754	00	0	00000	TSX3A	PXD	CHECK TSX	*
56125	0340	60	0	56077		CAS* TSX1+2	EXECUTION	*
56126	0020	00	0	56130		TRA **2	ERROR	*
56127	0020	00	0	56136		TRA TSX4-1	OK	*
56130	0560	00	0	56121		LDQ TSX3+3	CORRECT XR VALUE TO MQ	*
56131	0760	00	0	00162		SWT 2	TEST SENSE SWITCH 2	*
56132	0420	00	0	00000		HPR	COMPARE ACC AND MQ	*
56133	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1	*
56134	0020	00	0	56136		TRA TSX4-1	PROCEED	*
56135	0020	00	0	56115		TRA TSX3-1	REPEAT	*
56136	-0500	60	0	56102		CAL* TSX2+1	RESTORE SAVED WORD	*
56137	0602	60	0	56101	TSX4	SLW* TSX2	IN THE LOCATION	*
56140	0044	00	0	00000		PAI	SAVE ACC IN INDICATORS	

CHECK EACH INDEX REGISTER NOT USED TO INSURE IT IS NOT LOADED

56141	0500	60	0	56214		CLA* TSX5	
56142	0402	00	0	56230		SUB TAG	
56143	0100	00	0	56145		TZE **2	
56144	3 00000	1	56170		TXH TSX3C,1,0		
56145	0402	00	0	56230		SUB TAG	
56146	0100	00	0	56150		TZE **2	
56147	3 00000	2	56170		TXH TSX3C,2,0		
56150	0402	00	0	56230		SUB TAG	
56151	0100	00	0	56153		TZE **2	
56152	3 00000	3	56170		TXH TSX3C,3,0		
56153	0402	00	0	56230		SUB TAG	
56154	0100	00	0	56156		TZE **2	
56155	3 00000	4	56170		TXH TSX3C,4,0		
56156	0402	00	0	56230		SUB TAG	
56157	0100	00	0	56161		TZE **2	
56160	3 00000	5	56170		TXH TSX3C,5,0		
56161	0402	00	0	56230		SUB TAG	
56162	0100	00	0	56164		TZE **2	
56163	3 00000	6	56170		TXH TSX3C,6,0		
56164	0402	00	0	56230		SUB TAG	
56165	0100	00	0	56167		TZE **2	
56166	3 00000	7	56170		TXH TSX3C,7,0		
56167	0020	00	0	56175		TRA TSX3B	

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56170	0760	00	0	00162	TSX3C	SWT 2	TEST SENSE SWITCH 2
56171	0420	00	0	00000		HPR	MORE THAN 1 XR LOADED
56172	0760	00	0	00161		SWT 1	TEST SENSE SWITCH 1
56173	0020	00	0	56175		TRA TSX3B	PROCEED
56174	0020	00	0	56105		TRA TSX2A-1	REPEAT
56175	-0046	00	0	00000	TSX3B	PIA	BYPASS
56176	0322	00	0	56074		ERA TSXA	TESTING
56177	-0100	00	0	56203		TNZ TSX4A	TSX
56200	-0046	00	0	00000		PIA	IN
56201	0400	00	0	56120		ADD TSX3+2	*
56202	0020	00	0	56207		TRA TSX4B	LOCATIONS
56203	0441	60	0	56057	TSX4A	LDI* TSX	SET
56204	-0055	00		777777		SIL 777777	UP
56205	-0046	00	0	00000		PIA	THE
56206	0361	60	0	56076		ACL* TSX1+1	NEXT
56207	-0765	00	0	00020	TSX4B	LGR 16	XR
56210	0162	00	0	56075		TQP TSX1	POSITION
56211	0522	60	0	56222		XEC* TSX6+1	CHECK
56212	0522	00	0	56060		XEC TSX+1	EACH
56213	-0046	00	0	00000		PIA	XR
56214	0400	00	0	56236	TSX5	ADD TEMP	WITH
56215	0044	00	0	00000		PAI	TSX
56216	-0054	00		000001		LFT 1	HAVE ALL XRS BEEN CHECKED
56217	0020	00	0	56221		TRA TSX6	YES
56220	0020	00	0	56061		TRA TSX+2	CHECK ANOTHER XR
56221	0074	00	4	00106	TSX6	TSX OK,4	
56222	0020	00	0	56057		TRA TSX	
56223	0	00000	0	00004		PZE 4	
56224	0074	00	4	00111		TSX LOOP,4	

SECTION FOUR
CONSTANTS

56225	0 00000 0 00000	PZE	PZE
56226	0000 00 0 00001	ONE	HTR 1
56227	0000 01 0 00000	DEC1	HTR 0,0,1
56230	0000 00 1 00000	TAG	HTR 0,1,0
56231	0535 00 3 00101	IX3	LAC SVXR4,3
56232	3 77777 7 77777	PONES	TXH -1,7,-1
56233	-3 77777 7 77777	ONES	TXL -1,7,-1
56234	0000 00 0 00000	T1	HTR
56235	0000 00 0 00000	T2	HTR
56236	0000 00 0 00000	TEMP	HTR
56237	0000 00 0 00000		HTR
56240	0000 00 0 00000		HTR
56241	0000 00 0 00000		HTR
56242	0000 00 0 00000		HTR
56243	0000 00 0 00000		HTR
56244	0000 00 0 00000		HTR
56245	-300000000000	PREF	OCT 700000000000
56246	+077777000000	DECR	OCT 077777000000
56247	+000000700000	TAGR	OCT 000000700000
56250	+000000077777	ADDR	OCT 000000077777
56251	010000056252	CFLD	VFD 06/01,30/CFLD+1
56252	020000056253		VFD 06/02,30/CFLD+2
56253	030000056254		VFD 06/03,30/CFLD+3
56254	040000056251		VFD 06/04,30/CFLD
56255	050000056252		VFD 06/05,30/CFLD+1
56256	060000056253		VFD 06/06,30/CFLD+2
56257	070000056254		VFD 06/07,30/CFLD+3
56260	100000056251		VFD 06/10,30/CFLD
56261	110000056252		VFD 06/11,30/CFLD+1
56262	120000056253		VFD 06/12,30/CFLD+2
56263	130000056254		VFD 06/13,30/CFLD+3
56264	140000056251		VFD 06/14,30/CFLD
56265	150000056252		VFD 06/15,30/CFLD+1
56266	160000056253		VFD 06/16,30/CFLD+2
56267	170000056254		VFD 06/17,30/CFLD+3
56270	200000056251		VFD 06/20,30/CFLD
56271	210000056252		VFD 06/21,30/CFLD+1
56272	220000056253		VFD 06/22,30/CFLD+2
56273	230000056254		VFD 06/23,30/CFLD+3
56274	240000056251		VFD 06/24,30/CFLD
56275	250000056252		VFD 06/25,30/CFLD+1
56276	260000056253		VFD 06/26,30/CFLD+2
56277	270000056254		VFD 06/27,30/CFLD+3
56300	300000056251		VFD 06/30,30/CFLD
56301	310000056252		VFD 06/31,30/CFLD+1
56302	320000056253		VFD 06/32,30/CFLD+2
56303	330000056254		VFD 06/33,30/CFLD+3
56304	340000056251		VFD 06/34,30/CFLD
56305	350000056252		VFD 06/35,30/CFLD+1
56306	360000056253		VFD 06/36,30/CFLD+2
56307	370000056254		VFD 06/37,30/CFLD+3

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56310	400000056251	VFD 06/40 ₀ 30/CFLD
56311	410000056252	VFD 06/41 ₀ 30/CFLD+1
56312	420000056253	VFD 06/42 ₀ 30/CFLD+2
56313	430000056254	VFD 06/43 ₀ 30/CFLD+3
56314	440000056251	VFD 06/44 ₀ 30/CFLD
56315	450000056252	VFD 06/45 ₀ 30/CFLD+1
56316	460000056253	VFD 06/46 ₀ 30/CFLD+2
56317	470000056254	VFD 06/47 ₀ 30/CFLD+3
56320	500000056251	VFD 06/50 ₀ 30/CFLD
56321	510000056252	VFD 06/51 ₀ 30/CFLD+1
56322	520000056253	VFD 06/52 ₀ 30/CFLD+2
56323	530000056254	VFD 06/53 ₀ 30/CFLD+3
56324	540000056251	VFD 06/54 ₀ 30/CFLD
56325	550000056252	VFD 06/55 ₀ 30/CFLD+1
56326	560000056253	VFD 06/56 ₀ 30/CFLD+2
56327	570000056254	VFD 06/57 ₀ 30/CFLD+3
56330	600000056251	VFD 06/60 ₀ 30/CFLD
56331	610000056252	VFD 06/61 ₀ 30/CFLD+1
56332	620000056253	VFD 06/62 ₀ 30/CFLD+2
56333	630000056254	VFD 06/63 ₀ 30/CFLD+3
56334	640000056251	VFD 06/64 ₀ 30/CFLD
56335	650000056252	VFD 06/65 ₀ 30/CFLD+1
56336	660000056253	VFD 06/66 ₀ 30/CFLD+2
56337	670000056254	VFD 06/67 ₀ 30/CFLD+3
56340	700000056251	VFD 06/70 ₀ 30/CFLD
56341	710000056252	VFD 06/71 ₀ 30/CFLD+1
56342	720000056253	VFD 06/72 ₀ 30/CFLD+2
56343	730000056254	VFD 06/73 ₀ 30/CFLD+3
56344	740000056251	VFD 06/74 ₀ 30/CFLD
56345	750000056252	VFD 06/75 ₀ 30/CFLD+1
56346	760000056253	VFD 06/76 ₀ 30/CFLD+2
56347	770000056254	VFD 06/77 ₀ 30/CFLD+3
56350	000000056251	VFD 06/00 ₀ 30/CFLD
56351	010000056252	VFD 06/01 ₀ 30/CFLD+1
56352	020000056253	VFD 06/02 ₀ 30/CFLD+2
56353	030000056254	VFD 06/03 ₀ 30/CFLD+3
56354	0 77470 0 77470	INDEX PZE -200 ₀ -200
56355	0 00000 0 00000	POT PZE
56356	0 00000 0 00000	PZE
56357	0 00000 0 00000	PZE
56360	0 00000 0 00000	PZE
56361	0 00000 0 00000	PZE
56362	0 00000 0 00000	PZE
56363	0 00000 0 00000	PZE
56364	0 00000 0 00000	PZE
56365	0 00000 0 00000	PZE
56366	0 00000 0 00000	PZE
56367	0 00000 0 00000	PZE
56370	0 00000 0 00000	PZE
56371	0 00000 0 00000	PZE

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56372	0	00000	0	00000	PZE
56373	0	00000	0	00000	PZE
56374	0	00000	0	00000	PZE
56375	0	00000	0	00000	PZE
56376	0	00000	0	00000	PZE
56377	0	00000	0	00000	PZE
56400	0	00000	0	00000	PZE
56401	0	00000	0	00000	PZE
56402	0	00000	0	00000	PZE
56403	0	00000	0	00000	PZE
56404	0	00000	0	00000	PZE
56405	0	00000	0	00000	PZE
56406	0	00000	0	00000	PZE
56407	0	00000	0	00000	PZE
56410	0	00000	0	00000	PZE
56411	0	00000	0	00000	PZE
56412	0	00000	0	00000	PZE
56413	0	00000	0	00000	PZE
56414	0	00000	0	00000	PZE
56415	0	00000	0	00000	PZE
56416	0	00000	0	00000	PZE
56417	0	00000	0	00000	PZE
56420	0	00000	0	00000	PZE
56421	0	00000	0	00000	PZE
56422	0	00000	0	00000	PZE
56423	0	00000	0	00000	PZE
56424	0	00000	0	00000	PZE
56425	0	00000	0	00000	PZE
56426	0	00000	0	00000	PZE
56427	0	00000	0	00000	PZE
56430	0	00000	0	00000	PZE
56431	0	00000	0	00000	PZE
56432	0	00000	0	00000	PZE
56433	0	00000	0	00000	PZE
56434	0	00000	0	00000	PZE

56435 RAN BSS 100

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56601	2	00000	0	00000	B1	PTW	
56602	1	00000	0	00000		PON	
56603	0	40000	0	00000		PZE	9,16384
56604	0	20000	0	00000		PZE	9,8192
56605	0	10000	0	00000		PZE	9,4096
56606	0	04000	0	00000		PZE	9,2048
56607	0	02000	0	00000		PZE	9,1024
56610	0	01000	0	00000		PZE	9,512
56611	0	00400	0	00000		PZE	9,256
56612	0	00200	0	00000		PZE	9,128
56613	0	00100	0	00000		PZE	9,64
56614	0	00040	0	00000		PZE	9,32
56615	0	00020	0	00000		PZE	9,16
56616	0	00010	0	00000		PZE	9,8
56617	0	00004	0	00000		PZE	9,4
56620	0	00002	0	00000		PZE	9,2
56621	0	00001	0	00000		PZE	9,1
56622	0	00000	4	00000		PZE	9,4
56623	0	00000	2	00000		PZE	9,2
56624	0	00000	1	00000		PZE	9,1
56625	0	00000	0	40000		PZE	16384
56626	0	00000	0	20000		PZE	8192
56627	0	00000	0	10000		PZE	4096
56630	0	00000	0	04000		PZE	2048
56631	0	00000	0	02000		PZE	1024
56632	0	00000	0	01000		PZE	512
56633	0	00000	0	00400		PZE	256
56634	0	00000	0	00200		PZE	128
56635	0	00000	0	00100		PZE	64
56636	0	00000	0	00040		PZE	32
56637	0	00000	0	00020		PZE	16
56640	0	00000	0	00010		PZE	8
56641	0	00000	0	00004		PZE	4
56642	0	00000	0	00002		PZE	2
56643	0	00000	0	00001		PZE	1

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TEMPORARY STORAGE

56644 B HED

56644	+000000000000	QBIT1	OCT
56645	+000000000000	PBIT1	OCT
56646	+000000000000	ACCU	OCT
56647	+000000000000	PLIER	OCT
56650	+000000000000	CAND	OCT
56651	+000000000000	QBIT	OCT
56652	+000000000000	PBIT	OCT
56653	+000000000000	ACPR	OCT
56654	+000000000000	MQPR	OCT
56655	+000000000000	THECT	OCT
56656	+000000000000	QBIT2	OCT
56657	+000000000000	PBIT2	OCT
56660	+000000000000	CTO	OCT
56661	+000000000000	EVEN	OCT
56662	+000000000000	RAN	OCT
56663	+000000000000	SR	OCT
56664	+000000000000	ACC	OCT
56665	+000000000000	MQ	OCT
56666	+000000000000	SIGN	OCT
56667	+000000000000	STRNG	OCT
56670	+000000000000	INDEX	OCT
56671	+000000000000	RIVUN	OCT
56672	+000000000000	TIMES	OCT
56673	+000000000000	NOP	OCT
56674	+000000000000	NREND	OCT
56675	+000000000000	ERSIN	OCT
56676	+000000000000	VAR	OCT
56677	+000000000000	ACSIN	OCT
56700	+000000000000	MQSIN	OCT

S E C T I O N F O U R
C O N S T A N T S

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CONSTANTS

56701	- 0 00000 0 00000	MZE	MZE
56702	0 00000 0 00000	PZE	PZE
56703	+000000000001	ONE	OCT 1
56704	+000000000020	TWNTY	OCT 20
56705	+100000000000	VUN	OCT 100000000000
56706	+200000000000	TO	OCT 200000000000
56707	+300000000000	TRE	OCT 300000000000
56710	000000444770	INMPY	BCD 1000MPY
56711	000000654344	INVLM	BCD 1000VLM
56712	246547606521	INDVP	BCD 1DVP VA
56713	652447606521	INVDP	BCD 1VDP VA
56714	606060606060	BLNK	BCD 1
56715	606023466445	VLMIN	BCD 2 COUNT
56716	636060606060		
56717	606060602346	GETCT	BCD 2 COUNT
56720	644563606060		
56721	462626606060	OFF	BCD 1OFF
56722	464560606060	ON	BCD 1ON
56723	0000 00 0 45416	EINS	HTR SWT1
56724	0000 00 0 45623	ZWEI	HTR SWT1A
56725	0000 00 0 45644	DREI	HTR SWT1B
56726	0000 00 0 45665	FIER	HTR SWT1C
56727	0221 00 0 56650	PLAIN	DVP CAND
56730	0225 00 0 56650	VARIA	VDP CAND