

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
	ADD (32)	AR	1A	RR	C IF	7-25
	ADD (32)	A	5A	RX-a	C A IF B2	7-26
	ADD (short BFP)	AEBR	B30A	RRE	C 7,9 Db Xi Xo Xu Xx	19-15
	ADD (long BFP)	ADBR	B31A	RRE	C 7,9 Db Xi Xo Xu Xx	19-15
	ADD (extended BFP)	AXBR	B34A	RRE	C 7,9 SP Db Xi Xo Xu Xx	19-15
	ADD (short BFP)	AEB	ED0A	RXE	C 7,9 A Db Xi Xo Xu Xx B2	19-15
	ADD (long BFP)	ADB	ED1A	RXE	C 7,9 A Db Xi Xo Xu Xx B2	19-15
	ADD DECIMAL	AP	FA	SS-b	C 9 A Dg DF ST B1 B2	8-6
	ADD HALFWORD (32 <- 16)	AH	4A	RX-a	C A IF B2	7-28
	ADD HALFWORD IMMEDIATE (32 <- 16)	AHI	A70A	RI-a	C IF	7-28
	ADD LOGICAL (32)	ALR	1E	RR	C	7-29
	ADD LOGICAL (32)	AL	5E	RX-a	C A B2	7-29
	ADD NORMALIZED (long HFP)	ADR	2A	RR	C 7,9 Da EU EO LS	18-8
	ADD NORMALIZED (extended HFP)	AXR	36	RR	C 7,9 SP Da EU EO LS	18-8
	ADD NORMALIZED (short HFP)	AER	3A	RR	C 7,9 Da EU EO LS	18-8
	ADD NORMALIZED (long HFP)	AD	6A	RX-a	C 7,9 A Da EU EO LS B2	18-8
	ADD NORMALIZED (short HFP)	AE	7A	RX-a	C 7,9 A Da EU EO LS B2	18-8
	ADD UNNORMALIZED (long HFP)	AWR	2E	RR	C 7,9 Da EO LS	18-9
	ADD UNNORMALIZED (short HFP)	AUR	3E	RR	C 7,9 Da EO LS	18-9
	ADD UNNORMALIZED (long HFP)	AW	6E	RX-a	C 7,9 A Da EO LS B2	18-9
	ADD UNNORMALIZED (short HFP)	AU	7E	RX-a	C 7,9 A Da EO LS B2	18-9
	AND (32)	NR	14	RR	C	7-32
	AND (32)	N	54	RX-a	C A B2	7-33
	AND (immediate)	NI	94	SI	C A 2 ST B1	7-33
	AND (character)	NC	D4	SS-a	C 9 A ST B1 B2	7-33
	BRANCH AND LINK	BALR	05	RR	2,9 T B	7-35
	BRANCH AND LINK	BAL	45	RX-a	9 B	7-35
	BRANCH AND SAVE	BASR	0D	RR	2,9 T B	7-36
	BRANCH AND SAVE	BAS	4D	RX-a	9 B	7-36
	BRANCH AND SAVE AND SET MODE	BASSM	0C	RR	2,3,9 T B	7-36
	BRANCH AND SET AUTHORITY	BSA	B25A	RRE	Q A1 * SO T B	10-7
	BRANCH AND SET MODE	BSM	0B	RR	3,9 T B	7-38
	BRANCH AND STACK	BAKR	B240	RRE	1 A1 * Z5 T B ST	10-11
	BRANCH IN SUBSPACE GROUP	BSG	B258	RRE	1 A1 * SO T B R2	10-13
	BRANCH ON CONDITION	BCR	07	RR	9 1 B	7-40
	BRANCH ON CONDITION	BC	47	RX-b	9 B	7-40
	BRANCH ON COUNT (32)	BCTR	06	RR	9 B	7-41
	BRANCH ON COUNT (32)	BCT	46	RX-a	9 B	7-41
	BRANCH ON INDEX HIGH (32)	BXH	86	RS-a	9 B	7-41
	BRANCH ON INDEX LOW OR EQUAL (32)	BXLE	87	RS-a	9 B	7-41
	BRANCH RELATIVE AND SAVE	BRAS	A705	RI-b	9 B	7-45
	BRANCH RELATIVE ON CONDITION	BRC	A704	RI-c	10 B	7-46
	BRANCH RELATIVE ON COUNT (32)	BRCT	A706	RI-b	9 B	7-47
	BRANCH RELATIVE ON INDEX HIGH (32)	BRXH	84	RSI	9 B	7-48
	BRANCH RELATIVE ON INDEX LOW OR EQ. (32)	BRXLE	85	RSI	9 B	7-48
	CANCEL SUBCHANNEL	XSCH	B276	S	C P OP 4 GS	14-3
	CHECKSUM	CKSM	B241	RRE	C 9 A SP IC R2	7-49
	CLEAR SUBCHANNEL	CSCH	B230	S	C P OP 4 GS	14-5
	COMPARE (32)	CR	19	RR	C	7-136
	COMPARE (long HFP)	CDR	29	RR	C 7,9 Da	18-10
	COMPARE (short HFP)	CER	39	RR	C 7,9 Da	18-10
	COMPARE (32)	C	59	RX-a	C A B2	7-136
	COMPARE (long HFP)	CD	69	RX-a	C 7,9 A Da B2	18-10
	COMPARE (short HFP)	CE	79	RX-a	C 7,9 A Da B2	18-10

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	COMPARE (short BFP)	CEBR	B309	RRE	C 7,9 Db Xi	19-17
	COMPARE (long BFP)	CDBR	B319	RRE	C 7,9 Db Xi	19-17
	COMPARE (extended BFP)	CXBR	B349	RRE	C 7,9 SP Db Xi	19-17
	COMPARE (extended HFP)	CXR	B369	RRE	C 7,9 SP Da	18-10
	COMPARE (short BFP)	CEB	ED09	RXE	C 7,9 A Db Xi B2	19-17
	COMPARE (long BFP)	CDB	ED19	RXE	C 7,9 A Db Xi B2	19-17
	COMPARE AND FORM CODEWORD	CFC	B21A	S	C 9 A SP II GM I1	7-138
	COMPARE AND SIGNAL (short BFP)	KEBR	B308	RRE	C 7,9 Db Xi	19-18
	COMPARE AND SIGNAL (long BFP)	KDBR	B318	RRE	C 7,9 Db Xi	19-18
	COMPARE AND SIGNAL (extended BFP)	KXBR	B348	RRE	C 7,9 SP Db Xi	19-18
	COMPARE AND SIGNAL (short BFP)	KEB	ED08	RXE	C 7,9 A Db Xi B2	19-18
	COMPARE AND SIGNAL (long BFP)	KDB	ED18	RXE	C 7,9 A Db Xi B2	19-18
	COMPARE AND SWAP (32)	CS	BA	RS-a	C 9 A SP \$ ST B2	7-145
	COMPARE AND SWAP AND PURGE (32)	CSP	B250	RRE	C P A1 SP \$ ST R2	10-21
	COMPARE DECIMAL	CP	F9	SS-b	C 9 A Dg B1 B2	8-7
	COMPARE DOUBLE AND SWAP (32)	CDS	BB	RS-a	C 9 A SP \$ ST B2	7-145
	COMPARE HALFWORD (32 <- 16)	CH	49	RX-a	C A B2	7-151
	COMPARE HALFWORD IMMEDIATE (32 <- 16)	CHI	A70E	RI-a	C	7-151
	COMPARE LOGICAL (32)	CLR	15	RR	C	7-153
	COMPARE LOGICAL (32)	CL	55	RX-a	C A B2	7-153
	COMPARE LOGICAL (immediate)	CLI	95	SI	C A B1	7-153
	COMPARE LOGICAL (character)	CLC	D5	SS-a	C 9 A B1 B2	7-153
	COMPARE LOGICAL CHAR. UNDER MASK (low)	CLM	BD	RS-b	C A B2	7-158
	COMPARE LOGICAL LONG	CLCL	0F	RR	C 9 A SP II R1 R2	7-159
	COMPARE LOGICAL LONG EXTENDED	CLCLE	A9	RS-a	C 9 A SP IC R1 R3	7-161
	COMPARE LOGICAL STRING	CLST	B25D	RRE	C 9 A SP IC G0 R1 R2	7-167
	COMPARE UNTIL SUBSTRING EQUAL	CUSE	B257	RRE	C 9 A SP II GM R1 R2	7-168
	COMPRESSION CALL	CMpsc	B263	RRE	C 5,9 A SP II Dg GM ST R1 R2	7-171
	CONVERT BFP TO HFP (short to long)	THDER	B358	RRE	C 7,9 Da	9-27
	CONVERT BFP TO HFP (long)	THDR	B359	RRE	C 7,9 Da	9-27
	CONVERT FROM FIXED (32 to short HFP)	CEFR	B3B4	RRE	7,9 Da	18-11
	CONVERT FROM FIXED (32 to long HFP)	CDFR	B3B5	RRE	7,9 Da	18-11
	CONVERT FROM FIXED (32 to extended HFP)	CXFR	B3B6	RRE	7,9 SP Da	18-11
	CONVERT HFP TO BFP (long to short)	TBEDR	B350	RRF-e	C 7,9 SP Da	9-29
	CONVERT HFP TO BFP (long)	TBDR	B351	RRF-e	C 7,9 SP Da	9-29
	CONVERT TO BINARY (32)	CVB	4F	RX-a	9 A Dg IK B2	7-232
	CONVERT TO DECIMAL (32)	CVD	4E	RX-a	9 A ST B2	7-233
	CONVERT TO FIXED (short HFP to 32)	CFER	B3B8	RRF-e	C 7,9 SP Da	18-11
	CONVERT TO FIXED (long HFP to 32)	CFDR	B3B9	RRF-e	C 7,9 SP Da	18-11
	CONVERT TO FIXED (extended HFP to 32)	CFXR	B3BA	RRF-e	C 7,9 SP Da	18-11
	CONVERT UTF-16 TO UTF-8	CU21	B2A6	RRF-c	C 5,9 A SP IC ST R1 R2	7-237
	CONVERT UTF-8 TO UTF-16	CU12	B2A7	RRF-c	C 5,9 A SP IC ST R1 R2	7-247
	COPY ACCESS	CPYA	B24D	RRE	6 U1 U2	7-255
	DIAGNOSE	---	83	---	DM P DM MD	10-24
	DIVIDE (32 <- 64)	DR	1D	RR	9 SP IK	7-255
	DIVIDE (long HFP)	DDR	2D	RR	7,9 Da EU E0 FK	18-12
	DIVIDE (short HFP)	DER	3D	RR	7,9 Da EU E0 FK	18-12
	DIVIDE (32 <- 64)	D	5D	RX-a	9 A SP IK B2	7-255
	DIVIDE (long HFP)	DD	6D	RX-a	7,9 A Da EU E0 FK B2	18-12
	DIVIDE (short HFP)	DE	7D	RX-a	7,9 A Da EU E0 FK B2	18-12
	DIVIDE (extended HFP)	DXR	B22D	RRE	7,9 SP Da EU E0 FK	18-12
	DIVIDE (short BFP)	DEBR	B30D	RRE	7,9 Db Xi Xz Xo Xu Xx	19-27
	DIVIDE (long BFP)	DDBR	B31D	RRE	7,9 Db Xi Xz Xo Xu Xx	19-27
	DIVIDE (extended BFP)	DXBR	B34D	RRE	7,9 SP Db Xi Xz Xo Xu Xx	19-27

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
	DIVIDE (short BFP)	DEB	ED0D	RXE	7,9 A Db Xi Xz Xo Xu Xx B2	19-27
	DIVIDE (long BFP)	DDB	ED1D	RXE	7,9 A Db Xi Xz Xo Xu Xx B2	19-27
	DIVIDE DECIMAL	DP	FD	SS-b	9 A SP Dg DK ST B1 B2	8-7
	DIVIDE TO INTEGER (short BFP)	DIEBR	B353	RRF-b	C 7,9 SP Db Xi Xu Xx	19-28
	DIVIDE TO INTEGER (long BFP)	DIDBR	B35B	RRF-b	C 7,9 SP Db Xi Xu Xx	19-28
	EDIT	ED	DE	SS-a	C 9 A Dg ST B1 B2	8-8
	EDIT AND MARK	EDMK	DF	SS-a	C 9 A Dg G1 ST B1 B2	8-11
	EXCLUSIVE OR (32)	XR	17	RR	C	7-257
	EXCLUSIVE OR (32)	X	57	RX-a	C A B2	7-257
	EXCLUSIVE OR (immediate)	XI	97	SI	C A ST B1	7-258
	EXCLUSIVE OR (character)	XC	D7	SS-a	C 9 A ST B1 B2	7-258
	EXECUTE	EX	44	RX-a	9 AI SP EX	7-259
	EXTRACT ACCESS	EAR	B24F	RRE	U2	7-260
	EXTRACT FPC	EFPC	B38C	RRE	7,9 Db	9-30
	EXTRACT PRIMARY ASN	EPAR	B226	RRE	Q S0	10-24
	EXTRACT SECONDARY ASN	ESAR	B227	RRE	Q S0	10-25
	EXTRACT STACKED REGISTERS (32)	EREG	B249	RRE	1 A1 * SE U1 U2	10-26
	EXTRACT STACKED STATE	ESTA	B24A	RRE	C 1 A1 * SP SE	10-27
	HALT SUBCHANNEL	HSCH	B231	S	C P OP  GS	14-6
	HALVE (long HFP)	HDR	24	RR	7,9 Da EU	18-13
	HALVE (short HFP)	HER	34	RR	7,9 Da EU	18-13
	INSERT ADDRESS SPACE CONTROL	IAC	B224	RRE	C Q S0	10-29
	INSERT CHARACTER	IC	43	RX-a	A B2	7-265
	INSERT CHARACTERS UNDER MASK (low)	ICM	BF	RS-b	C A B2	7-265
	INSERT PROGRAM MASK	IPM	B222	RRE		7-267
	INSERT PSW KEY	IPK	B20B	S	Q G2	10-30
	INSERT STORAGE KEY EXTENDED	ISKE	B229	RRE	P A1 * S0	10-31
	INSERT VIRTUAL STORAGE KEY	IVSK	B223	RRE	Q A1 * S0 R2	10-31
	INVALIDATE PAGE TABLE ENTRY	IPTE	B221	RRF-a	P A1 SP II 	10-38
	LOAD (32)	LR	18	RR		7-267
	LOAD (long)	LDR	28	RR	7,9 Da	9-31
	LOAD (short)	LER	38	RR	7,9 Da	9-31
	LOAD (32)	L	58	RX-a	A B2	7-267
	LOAD (long)	LD	68	RX-a	7,9 A Da B2	9-31
	LOAD (short)	LE	78	RX-a	7,9 A Da B2	9-31
	LOAD (extended)	LXR	B365	RRE	7,9 SP Da	9-31
	LOAD ACCESS MULTIPLE	LAM	9A	RS-a	6 A SP UB	7-268
	LOAD ADDRESS	LA	41	RX-a		7-269
	LOAD ADDRESS EXTENDED	LAE	51	RX-a	6 U1 BP	7-269
	LOAD ADDRESS SPACE PARAMETERS	LASP	E500	SSE	C P A1 SP S0 B1	10-42
	LOAD AND TEST (32)	LTR	12	RR	C	7-273
	LOAD AND TEST (long HFP)	LTDR	22	RR	C 7,9 Da	18-13
	LOAD AND TEST (short HFP)	LTER	32	RR	C 7,9 Da	18-13
	LOAD AND TEST (short BFP)	LTEBR	B302	RRE	C 7,9 Db Xi	19-31
	LOAD AND TEST (long BFP)	LTDBR	B312	RRE	C 7,9 Db Xi	19-31
	LOAD AND TEST (extended BFP)	LTXBR	B342	RRE	C 7,9 SP Db Xi	19-31
	LOAD AND TEST (extended HFP)	LTXR	B362	RRE	C 7,9 SP Da	18-14
	LOAD COMPLEMENT (32)	LCR	13	RR	C IF	7-275
	LOAD COMPLEMENT (long HFP)	LCDR	23	RR	C 7,9 Da	18-14
	LOAD COMPLEMENT (short HFP)	LCER	33	RR	C 7,9 Da	18-14
	LOAD COMPLEMENT (short BFP)	LCEBR	B303	RRE	C 7,9 Db	19-31
	LOAD COMPLEMENT (long BFP)	LCDBR	B313	RRE	C 7,9 Db	19-31
	LOAD COMPLEMENT (extended BFP)	LCXBR	B343	RRE	C 7,9 SP Db	19-31
	LOAD COMPLEMENT (extended HFP)	LCXR	B363	RRE	C 7,9 SP Da	18-14

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	LOAD CONTROL (32)	LCTL	B7	RS-a	P A SP B2	10-51
	LOAD FP INTEGER (extended HFP)	FIXR	B367	RRE	⌘7,9 SP Da	18-15
	LOAD FP INTEGER (short HFP)	FIER	B377	RRE	⌘7,9 Da	18-15
	LOAD FP INTEGER (long HFP)	FIDR	B37F	RRE	⌘7,9 Da	18-15
	LOAD FPC	LFPC	B29D	S	⌘7,9 A SP Db B2	9-31
	LOAD HALFWORD (32 <- 16)	LH	48	RX-a	A B2	7-278
	LOAD HALFWORD IMMEDIATE (32) <- 16	LHI	A708	RI-a		7-279
	LOAD LENGTHENED (short to long BFP)	LDEBR	B304	RRE	⌘7,9 Db Xi	19-33
	LOAD LENGTHENED (long to extended BFP)	LXDBR	B305	RRE	⌘7,9 SP Db Xi	19-33
	LOAD LENGTHENED (short to extended BFP)	LXEBR	B306	RRE	⌘7,9 SP Db Xi	19-33
	LOAD LENGTHENED (short to long HFP)	LDER	B324	RRE	⌘7,9 Da	18-15
	LOAD LENGTHENED (long to extended HFP)	LXDR	B325	RRE	⌘7,9 SP Da	18-15
	LOAD LENGTHENED (short to extended HFP)	LXER	B326	RRE	⌘7,9 SP Da	18-15
	LOAD LENGTHENED (short to long BFP)	LDEB	ED04	RXE	⌘7,9 A Db Xi B2	19-34
	LOAD LENGTHENED (long to extended BFP)	LXDB	ED05	RXE	⌘7,9 A SP Db Xi B2	19-34
	LOAD LENGTHENED (short to extended BFP)	LXEB	ED06	RXE	⌘7,9 A SP Db Xi B2	19-34
	LOAD LENGTHENED (short to long HFP)	LDE	ED24	RXE	⌘7,9 A Da B2	18-15
	LOAD LENGTHENED (long to extended HFP)	LXD	ED25	RXE	⌘7,9 A SP Da B2	18-15
	LOAD LENGTHENED (short to extended HFP)	LXE	ED26	RXE	⌘7,9 A SP Da B2	18-15
	LOAD MULTIPLE (32)	LM	98	RS-a	A B2	7-285
	LOAD NEGATIVE (32)	LNR	11	RR	C	7-286
	LOAD NEGATIVE (long HFP)	LNDR	21	RR	C ⌘7,9 Da	18-16
	LOAD NEGATIVE (short HFP)	LNER	31	RR	C ⌘7,9 Da	18-16
	LOAD NEGATIVE (short BFP)	LNEBR	B301	RRE	C ⌘7,9 Db	19-34
	LOAD NEGATIVE (long BFP)	LNDBR	B311	RRE	C ⌘7,9 Db	19-34
	LOAD NEGATIVE (extended BFP)	LNDBR	B311	RRE	C ⌘7,9 Db	19-34
	LOAD NEGATIVE (extended HFP)	LNDBR	B311	RRE	C ⌘7,9 Db	19-34
	LOAD NEGATIVE (extended HFP)	LNXR	B361	RRE	C ⌘7,9 SP Da	18-16
	LOAD POSITIVE (32)	LPR	10	RR	C IF	7-289
	LOAD POSITIVE (long HFP)	LPDR	20	RR	C ⌘7,9 Da	18-16
	LOAD POSITIVE (short HFP)	LPER	30	RR	C ⌘7,9 Da	18-16
	LOAD POSITIVE (short BFP)	LPEBR	B300	RRE	C ⌘7,9 Db	19-35
	LOAD POSITIVE (long BFP)	LPDBR	B310	RRE	C ⌘7,9 Db	19-35
	LOAD POSITIVE (extended BFP)	LPXBR	B340	RRE	C ⌘7,9 SP Db	19-35
	LOAD POSITIVE (extended HFP)	LPXR	B360	RRE	C ⌘7,9 SP Da	18-16
	LOAD PSW	LPSW	82	SI	L P A SP SO ⌘ B2	10-56
	LOAD REAL ADDRESS (32)	LRA	B1	RX-a	C P A1 * SO BP	10-58
	LOAD ROUNDED (extended to long HFP)	LDXR	25	RR	⌘7,9 SP Da EO	18-17
	LOAD ROUNDED (long to short HFP)	LEDR	35	RR	⌘7,9 Da EO	18-17
	LOAD ROUNDED (extended to short HFP)	LEXR	B366	RRE	⌘7,9 SP Da EO	18-17
	LOAD USING REAL ADDRESS (32)	LURA	B24B	RRE	P A1 SP	10-62
	LOAD ZERO (short)	LZER	B374	RRE	⌘7,9 Da	9-35
	LOAD ZERO (long)	LZDR	B375	RRE	⌘7,9 Da	9-35
	LOAD ZERO (extended)	LZXR	B376	RRE	⌘7,9 SP Da	9-35
	MODIFY STACKED STATE	MSTA	B247	RRE	⌘1 A1 * SP SE ST	10-63
	MODIFY SUBCHANNEL	MSCH	B232	S	C P A SP OP ⌘ GS B2	14-7
	MONITOR CALL	MC	AF	SI	⌘4,8,9 SP ME	7-291
	MOVE (immediate)	MVI	92	SI	A ST B1	7-292
	MOVE (character)	MVC	D2	SS-a	⌘9 A ST B1 B2	7-292
	MOVE INVERSE	MVCIN	E8	SS-a	⌘9 A ST B1 B2	7-292
	MOVE LONG	MVCL	0E	RR	C ⌘9 A SP II ST R1 R2	7-293
	MOVE LONG EXTENDED	MVCLE	A8	RS-a	C ⌘9 A SP IC ST R1 R3	7-297
	MOVE NUMERICS	MVN	D1	SS-a	⌘9 A ST B1 B2	7-303
	MOVE PAGE	MVPG	B254	RRE	C Q A SP SO OP ⌘4 G0 K ST R1 R2	10-64
	MOVE STRING	MVST	B255	RRE	C ⌘9 A SP IC G0 ST R1 R2	7-305

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	MOVE TO PRIMARY	MVCP	DA	SS-d	C Q A S0 ¢ ST	10-67
	MOVE TO SECONDARY	MVCS	DB	SS-d	C Q A S0 ¢ ST	10-67
	MOVE WITH DESTINATION KEY	MVCDK	E50F	SSE	Q A S0 GM ST B1 B2	10-69
	MOVE WITH KEY	MVCK	D9	SS-d	C Q A S0 ST B1 B2	10-70
	MOVE WITH OFFSET	MVO	F1	SS-b	9 A ST B1 B2	7-306
	MOVE WITH SOURCE KEY	MVCSK	E50E	SSE	Q A S0 GM ST B1 B2	10-75
	MOVE ZONES	MVZ	D3	SS-a	9 A ST B1 B2	7-307
	MULTIPLY (64 <- 32)	MR	1C	RR	SP	7-307
	MULTIPLY (extended HFP)	MXR	26	RR	7,9 SP Da EU EO	18-17
	MULTIPLY (long to extended HFP)	MXDR	27	RR	7,9 SP Da EU EO	18-17
	MULTIPLY (long HFP)	MDR	2C	RR	7,9 Da EU EO	18-17
	MULTIPLY (short to long HFP)	MDER	3C	RR	7,9 Da EU EO	18-17
	MULTIPLY (64 <- 32)	M	5C	RX-a	A SP B2	7-307
	MULTIPLY (long to extended HFP)	MXD	67	RX-a	7,9 A SP Da EU EO B2	18-18
	MULTIPLY (long HFP)	MD	6C	RX-a	7,9 A Da EU EO B2	18-18
	MULTIPLY (short to long HFP)	MDE	7C	RX-a	7,9 A Da EU EO B2	18-18
	MULTIPLY (long to extended BFP)	MXDBR	B307	RRE	7,9 SP Db Xi	19-37
	MULTIPLY (short to long BFP)	MDEBR	B30C	RRE	7,9 Db Xi	19-37
	MULTIPLY (short BFP)	MEEBR	B317	RRE	7,9 Db Xi Xo Xu Xx	19-37
	MULTIPLY (long BFP)	MDBR	B31C	RRE	7,9 Db Xi Xo Xu Xx	19-37
	MULTIPLY (short HFP)	MEER	B337	RRE	7,9 Da EU EO	18-17
	MULTIPLY (extended BFP)	MXBR	B34C	RRE	7,9 SP Db Xi Xo Xu Xx	19-37
	MULTIPLY (long to extended BFP)	MXDB	ED07	RXE	7,9 A SP Db Xi B2	19-37
	MULTIPLY (short to long BFP)	MDEB	ED0C	RXE	7,9 A Db Xi B2	19-37
	MULTIPLY (short BFP)	MEEB	ED17	RXE	7,9 A Db Xi Xo Xu Xx B2	19-37
	MULTIPLY (long BFP)	MDB	ED1C	RXE	7,9 A Db Xi Xo Xu Xx B2	19-37
	MULTIPLY (short HFP)	MEE	ED37	RXE	7,9 A Da EU EO B2	18-18
	MULTIPLY AND ADD (short BFP)	MAEBR	B30E	RRD	7,9 Db Xi Xo Xu Xx	19-38
	MULTIPLY AND ADD (long BFP)	MADBR	B31E	RRD	7,9 Db Xi Xo Xu Xx	19-38
	MULTIPLY AND ADD (short BFP)	MAEB	ED0E	RXF	7,9 A Db Xi Xo Xu Xx B2	19-38
	MULTIPLY AND ADD (long BFP)	MADB	ED1E	RXF	7,9 A Db Xi Xo Xu Xx B2	19-38
	MULTIPLY AND SUBTRACT (short BFP)	MSEBR	B30F	RRD	7,9 Db Xi Xo Xu Xx	19-38
	MULTIPLY AND SUBTRACT (long BFP)	MSDBR	B31F	RRD	7,9 Db Xi Xo Xu Xx	19-38
	MULTIPLY AND SUBTRACT (short BFP)	MSEB	ED0F	RXF	7,9 A Db Xi Xo Xu Xx B2	19-38
	MULTIPLY AND SUBTRACT (long BFP)	MSDB	ED1F	RXF	7,9 A Db Xi Xo Xu Xx B2	19-38
	MULTIPLY DECIMAL	MP	FC	SS-b	9 A SP Dg ST B1 B2	8-12
	MULTIPLY HALFWORD (32 <- 16)	MH	4C	RX-a	A B2	7-308
	MULTIPLY HALFWORD IMMEDIATE (32 <- 16)	MHI	A70C	RI-a		7-309
	MULTIPLY SINGLE (32)	MS	71	RX-a	A B2	7-310
	MULTIPLY SINGLE (32)	MSR	B252	RRE		7-310
	OR (32)	OR	16	RR	C	7-315
	OR (32)	O	56	RX-a	C A B2	7-315
	OR (immediate)	OI	96	SI	C A ST B1	7-315
	OR (character)	OC	D6	SS-a	C 9 A ST B1 B2	7-316
	PACK	PACK	F2	SS-b	9 A ST B1 B2	7-317
	PERFORM LOCKED OPERATION	PLO	EE	SS-e	C 1 A SP \$ GM ST FC	7-340
	PROGRAM CALL	PC	B218	S	Q A1 * Z1 T ¢ GM B ST	10-97
	PROGRAM RETURN	PR	0101	E	L 1 A1 * SP Z4 T ¢2 B ST	10-110
	PROGRAM TRANSFER	PT	B228	RRE	Q A1 * SP Z2 T ¢ B	10-114
	PURGE ALB	PALB	B248	RRE	P \$	10-123
	PURGE TLB	PTLB	B20D	S	P \$	10-123
	RESET CHANNEL PATH	RCHP	B23B	S	C P	14-9
	RESET REFERENCE BIT EXTENDED	RRBE	B22A	RRE	C P A1 * S0	10-126
	RESUME PROGRAM	RP	B277	S	L Q A SP WE T B B2	10-127

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
	RESUME SUBCHANNEL	RSCH	B238	S	C P OP ¢ GS	14-10
	SEARCH STRING	SRST	B25E	RRE	C ¤9 A SP IC G0 R2	7-377
	SET ACCESS	SAR	B24E	RRE	¤6 U1	7-381
	SET ADDRESS LIMIT	SAL	B237	S	P OP ¢ G1	14-12
	SET ADDRESS SPACE CONTROL	SAC	B219	S	Q SP SW ¢	10-130
	SET ADDRESS SPACE CONTROL FAST	SACF	B279	S	Q SP SW	10-130
	SET BFP ROUNDING MODE (2 bit)	SRNM	B299	S	¤7,9 Db	9-47
	SET CHANNEL MONITOR	SCHM	B23C	S	P OP ¢ GM	14-13
	SET CLOCK	SCK	B204	S	C P A SP B2	10-131
	SET CLOCK COMPARATOR	SCKC	B206	S	P A SP B2	10-132
	SET CLOCK PROGRAMMABLE FIELD	SCKPF	0107	E	P SP G0	10-133
	SET CPU TIMER	SPT	B208	S	P A SP B2	10-133
	SET FPC	SFPC	B384	RRE	¤7,9 SP Db	9-47
	SET PREFIX	SPX	B210	S	P A SP \$ B2	10-133
	SET PROGRAM MASK	SPM	04	RR	L	7-382
	SET PSW KEY FROM ADDRESS	SPKA	B20A	S	Q SO	10-134
	SET SECONDARY ASN	SSAR	B225	RRE	¤1 A1 * Z3 T ¢	10-135
	SET STORAGE KEY EXTENDED	SSKE	B22B	RRF-c	C1 P A1 * IS ¢ K	10-140
	SET SYSTEM MASK	SSM	80	SI	P A SP SO B2	10-143
	SHIFT AND ROUND DECIMAL	SRP	F0	SS-c	C ¤9 A Dg DF ST B1 B2	8-12
	SHIFT LEFT DOUBLE (64)	SLDA	8F	RS-a	C SP IF	7-382
	SHIFT LEFT DOUBLE LOGICAL (64)	SLDL	8D	RS-a	SP	7-383
	SHIFT LEFT SINGLE (32)	SLA	8B	RS-a	C IF	7-383
	SHIFT LEFT SINGLE LOGICAL (32)	SLL	89	RS-a		7-384
	SHIFT RIGHT DOUBLE (64)	SRDA	8E	RS-a	C SP	7-385
	SHIFT RIGHT DOUBLE LOGICAL (64)	SRDL	8C	RS-a	SP	7-386
	SHIFT RIGHT SINGLE (32)	SRA	8A	RS-a	C	7-386
	SHIFT RIGHT SINGLE LOGICAL (32)	SRL	88	RS-a		7-387
	SIGNAL PROCESSOR	SIGP	AE	RS-a	C P \$	10-143
	SQUARE ROOT (long HFP)	SQDR	B244	RRE	¤7,9 Da SQ	18-23
	SQUARE ROOT (short HFP)	SQER	B245	RRE	¤7,9 Da SQ	18-23
	SQUARE ROOT (short BFP)	SQEBR	B314	RRE	¤7,9 Db Xi Xx	19-40
	SQUARE ROOT (long BFP)	SQDBR	B315	RRE	¤7,9 Db Xi Xx	19-40
	SQUARE ROOT (extended BFP)	SQXBR	B316	RRE	¤7,9 SP Db Xi Xx	19-40
	SQUARE ROOT (extended HFP)	SQXR	B336	RRE	¤7,9 SP Da SQ	18-23
	SQUARE ROOT (short BFP)	SQEB	ED14	RXE	¤7,9 A Db Xi Xx B2	19-40
	SQUARE ROOT (long BFP)	SQDB	ED15	RXE	¤7,9 A Db Xi Xx B2	19-40
	SQUARE ROOT (short HFP)	SQE	ED34	RXE	¤7,9 A Da SQ B2	18-23
	SQUARE ROOT (long HFP)	SQD	ED35	RXE	¤7,9 A Da SQ B2	18-23
	START SUBCHANNEL	SSCH	B233	S	C P A SP OP ¢ GS B2	14-15
	STORE (32)	ST	50	RX-a	A ST B2	7-388
	STORE (long)	STD	60	RX-a	¤7,9 A Da ST B2	9-48
	STORE (short)	STE	70	RX-a	¤7,9 A Da ST B2	9-48
	STORE ACCESS MULTIPLE	STAM	9B	RS-a	A SP ST UB	7-389
	STORE CHANNEL PATH STATUS	STCPS	B23A	S	P A SP ¢ ST B2	14-16
	STORE CHANNEL REPORT WORD	STCRW	B239	S	C P A SP ¢ ST B2	14-17
	STORE CHARACTER	STC	42	RX-a	A ST B2	7-389
	STORE CHARACTERS UNDER MASK (low)	STCM	BE	RS-b	A ST B2	7-390
	STORE CLOCK	STCK	B205	S	C ¤8,9 A \$ ST B2	7-391
	STORE CLOCK COMPARATOR	STCKC	B207	S	P A SP ST B2	10-146
	STORE CLOCK EXTENDED	STCKE	B278	S	C ¤8,9 A \$ ST B2	7-392
	STORE CONTROL (32)	STCTL	B6	RS-a	P A SP ST B2	10-146
	STORE CPU ADDRESS	STAP	B212	S	P A SP ST B2	10-146
	STORE CPU ID	STIDP	B202	S	P A SP ST B2	10-147

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
	STORE CPU TIMER	STPT	B209	S	P A SP ST B2	10-149
	STORE FPC	STFPC	B29C	S	7,9 A Db ST B2	9-49
	STORE HALFWORD (16)	STH	40	RX-a	A ST B2	7-395
	STORE MULTIPLE (32)	STM	90	RS-a	A ST B2	7-396
	STORE PREFIX	STPX	B211	S	P A SP ST B2	10-149
	STORE SUBCHANNEL	STSCH	B234	S	C P A SP OP  GS ST B2	14-18
	STORE SYSTEM INFORMATION	STSI	B27D	S	C P A SP GM ST B2	10-151
	STORE THEN AND SYSTEM MASK	STNSM	AC	SI	P A ST B1	10-175
	STORE THEN OR SYSTEM MASK	STOSM	AD	SI	P A SP ST B1	10-175
	STORE USING REAL ADDRESS (32)	STURA	B246	RRE	P A1 SP SU	10-176
	SUBTRACT (32)	SR	1B	RR	C IF	7-399
	SUBTRACT (32)	S	5B	RX-a	C A IF B2	7-399
	SUBTRACT (short BFP)	SEBR	B30B	RRE	C 7,9 Db Xi Xo Xu Xx	19-40
	SUBTRACT (long BFP)	SDBR	B31B	RRE	C 7,9 Db Xi Xo Xu Xx	19-40
	SUBTRACT (extended BFP)	SXBR	B34B	RRE	C 7,9 SP Db Xi Xo Xu Xx	19-40
	SUBTRACT (short BFP)	SEB	ED0B	RXE	C 7,9 A Db Xi Xo Xu Xx B2	19-40
	SUBTRACT (long BFP)	SDB	ED1B	RXE	C 7,9 A Db Xi Xo Xu Xx B2	19-40
	SUBTRACT DECIMAL	SP	FB	SS-b	C 9 A Dg DF ST B1 B2	8-13
	SUBTRACT HALFWORD (32 <- 16)	SH	4B	RX-a	C A IF B2	7-400
	SUBTRACT LOGICAL (32)	SLR	1F	RR	C	7-401
	SUBTRACT LOGICAL (32)	SL	5F	RX-a	C A B2	7-401
	SUBTRACT NORMALIZED (long HFP)	SDR	2B	RR	C 7,9 Da EU E0 LS	18-24
	SUBTRACT NORMALIZED (extended HFP)	SXR	37	RR	C 7,9 SP Da EU E0 LS	18-24
	SUBTRACT NORMALIZED (short HFP)	SER	3B	RR	C 7,9 Da EU E0 LS	18-24
	SUBTRACT NORMALIZED (long HFP)	SD	6B	RX-a	C 7,9 A Da EU E0 LS B2	18-24
	SUBTRACT NORMALIZED (short HFP)	SE	7B	RX-a	C 7,9 A Da EU E0 LS B2	18-24
	SUBTRACT UNNORMALIZED (long HFP)	SWR	2F	RR	C 7,9 Da E0 LS	18-25
	SUBTRACT UNNORMALIZED (short HFP)	SUR	3F	RR	C 7,9 Da E0 LS	18-25
	SUBTRACT UNNORMALIZED (long HFP)	SW	6F	RX-a	C 7,9 A Da E0 LS B2	18-25
	SUBTRACT UNNORMALIZED (short HFP)	SU	7F	RX-a	C 7,9 A Da E0 LS B2	18-25
	SUPERVISOR CALL	SVC	0A	I	1 	7-403
	TEST ACCESS	TAR	B24C	RRE	C 1 A1 * U1	10-176
	TEST AND SET	TS	93	SI	C 9 A \$ ST B2	7-404
	TEST BLOCK	TB	B22C	RRE	C P A1 * II \$ G0 K	10-179
	TEST DATA CLASS (short BFP)	TCEB	ED10	RXE	C 7,9 Db	19-41
	TEST DATA CLASS (long BFP)	TCDB	ED11	RXE	C 7,9 Db	19-41
	TEST DATA CLASS (extended BFP)	TCXB	ED12	RXE	C 7,9 SP Db	19-41
	TEST PENDING INTERRUPTION	TPI	B236	S	C P A1 * SP  ST B2	14-19
	TEST PROTECTION	TPROT	E501	SSE	C P A1 * S0 B1	10-181
	TEST SUBCHANNEL	TSCH	B235	S	C P A SP OP  GS ST B2	14-21
	TEST UNDER MASK	TM	91	SI	C A B1	7-404
	TEST UNDER MASK (low high)	TMLH	A700	RI-a	C	7-404
	TEST UNDER MASK (low low)	TMLL	A701	RI-a	C	7-404
	TRACE (32)	TRACE	99	RS-a	P A SP T  B2	10-184
	TRANSLATE	TR	DC	SS-a	9 A ST B1 B2	7-413
	TRANSLATE AND TEST	TRT	DD	SS-a	C 9 A GM B1 B2	7-414
	TRANSLATE EXTENDED	TRE	B2A5	RRE	C 9 A SP IC ST R1 R2	7-420
	TRAP	TRAP2	01FF	E	1 A* S0 T B ST	10-186
	TRAP	TRAP4	B2FF	S	1 A* S0 T B ST	10-186
	UNPACK	UNPK	F3	SS-b	9 A ST B1 B2	7-427
	UPDATE TREE	UPT	0102	E	C 9 A SP II GM I4 ST	7-430
	ZERO AND ADD	ZAP	F8	SS-b	C 9 A Dg DF ST B1 B2	8-14

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
N3	ADD LOGICAL WITH CARRY (32)	ALCR	B998	RRE	C	7-30
N3	ADD LOGICAL WITH CARRY (32)	ALC	E398	RXY-a	C A B2	7-31
N3	BRANCH RELATIVE AND SAVE LONG	BRASL	C005	RIL-b	9 B	7-45
N3	BRANCH RELATIVE ON CONDITION LONG	BRCL	C004	RIL-c	10 B	7-46
N3	DIVIDE LOGICAL (32 <- 64)	DLR	B997	RRE	9 SP IK	7-256
N3	DIVIDE LOGICAL (32 <- 64)	DL	E397	RXY-a	9 A SP IK B2	7-256
N3	EXTRACT PSW	EPSW	B98D	RRE	8,9	7-264
N3	LOAD ADDRESS RELATIVE LONG	LARL	C000	RIL-b		7-270
N3	LOAD REVERSED (32)	LRVR	B91F	RRE		7-290
N3	LOAD REVERSED (32)	LRV	E31E	RXY-a	A B2	7-290
N3	LOAD REVERSED (16)	LRVH	E31F	RXY-a	A B2	7-290
N3	MULTIPLY LOGICAL (64 <- 32)	MLR	B996	RRE	SP	7-309
N3	MULTIPLY LOGICAL (64 <- 32)	ML	E396	RXY-a	A SP B2	7-309
N3	ROTATE LEFT SINGLE LOGICAL (32)	RLL	EB1D	RSY-a		7-371
N3	SET ADDRESSING MODE (24)	SAM24	010C	E	3,9 SP T	7-381
N3	SET ADDRESSING MODE (31)	SAM31	010D	E	3,9 SP T	7-381
N3	STORE FACILITY LIST	STFL	B2B1	S	P	10-149
N3	STORE REVERSED (32)	STRV	E33E	RXY-a	A ST B2	7-398
N3	STORE REVERSED (16)	STRVH	E33F	RXY-a	A ST B2	7-398
N3	SUBTRACT LOGICAL WITH BORROW (32)	SLBR	B999	RRE	C	7-402
N3	SUBTRACT LOGICAL WITH BORROW (32)	SLB	E399	RXY-a	C A B2	7-402
N3	TEST ADDRESSING MODE	TAM	010B	E	C 9	7-403

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
DE	COMPARE AND SWAP AND PURGE (64)	CSPG	B98A	RRE	C P A1 SP \$ ST R2	10-21
DE	INVALIDATE DAT TABLE ENTRY	IDTE	B98E	RRF-b	U P A1 SP \$	10-33

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
RA	EXTRACT PRIMARY ASN AND INSTANCE	EPAIR	B99A	RRE	Q S0	10-24
RA	EXTRACT SECONDARY ASN AND INSTANCE	ESAIR	B99B	RRE	Q S0	10-25
RA	PROGRAM TRANSFER WITH INSTANCE	PTI	B99E	RRE	Q A1 * SP Z6 T ¢ B	10-114
RA	SET SECONDARY ASN WITH INSTANCE	SSAIR	B99F	RRE	¸1 A1 * Z7 T ¢	10-135

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
FL	STORE FACILITY LIST EXTENDED	STFLE	B2B0	S	C 01 A SP G0 ST B2	7-394

ED1 : 008 Enhanced-DAT Facility 1

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
ED1	PERFORM FRAME MANAGEMENT FUNCTION	PFMF	B9AF	RRE	P A1 SP IS 3 K	10-84

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
CT	PERFORM TOPOLOGY FUNCTION	PTF	B9A2	RRE	C P SP	10-96

Fac	Name...	Assm	OpCd	IFmt	Attributes...								Ref	
E2	COMPARE LOGICAL LONG UNICODE	CLCLU	EB8F	RSY-a	C	ø9	A	SP	IC	R1	R2			7-164
E2	MOVE LONG UNICODE	MVCLU	EB8E	RSY-a	C	ø9	A	SP	IC	ST	R1	R3		7-300
E2	PACK ASCII	PKA	E9	SS-f		ø9	A	SP	ST	B1	B2			7-318
E2	PACK UNICODE	PKU	E1	SS-f		ø9	A	SP	ST	B1	B2			7-319
E2	TEST DECIMAL	TP	EBC0	RSL-a	C	ø9	A	B1	B2					8-14
E2	TRANSLATE ONE TO ONE	TROO	B993	RRF-c	C	ø9	A	SP	IC	GM	ST	RM	R2	7-422
E2	TRANSLATE ONE TO TWO	TROT	B992	RRF-c	C	ø9	A	SP	IC	GM	ST	RM	R2	7-422
E2	TRANSLATE TWO TO ONE	TRTO	B991	RRF-c	C	ø9	A	SP	IC	GM	ST	RM	R2	7-422
E2	TRANSLATE TWO TO TWO	TRTT	B990	RRF-c	C	ø9	A	SP	IC	GM	ST	RM	R2	7-423
E2	UNPACK ASCII	UNPKA	EA	SS-a	C	ø9	A	SP	ST	B1	B2			7-428
E2	UNPACK UNICODE	UNPKU	E2	SS-a	C	ø9	A	SP	ST	B1	B2			7-429

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
MS	CIPHER MESSAGE	KM	B92E	RRE	C 05,9 A SP IC GM I1 ST R1 R2	7-53
MS	CIPHER MESSAGE WITH CHAINING	KMC	B92F	RRE	C 05,9 A SP IC GM I1 ST R1 R2	7-53
MS	COMPUTE INTERMEDIATE MESSAGE DIGEST	KIMD	B93E	RRE	C 05,9 A SP IC GM I1 ST R2	7-189
MS	COMPUTE LAST MESSAGE DIGEST	KLMD	B93F	RRE	C 05,9 A SP IC GM I1 ST R2	7-202
MS	COMPUTE MESSAGE AUTHENTICATION CODE	KMAC	B91E	RRE	C 05,9 A SP IC GM I1 ST R2	7-221

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
LD	ADD (32)	AY	E35A	RXY-a	C A IF B2	7-26
LD	ADD HALFWORD (32 <- 16)	AHY	E37A	RXY-a	C A IF B2	7-28
LD	ADD LOGICAL (32)	ALY	E35E	RXY-a	C A B2	7-29
LD	AND (32)	NY	E354	RXY-a	C A B2	7-33
LD	AND (immediate)	NIY	EB54	SIY	C A £2 ST B1	7-33
LD	COMPARE (32)	CY	E359	RXY-a	C A B2	7-136
LD	COMPARE AND SWAP (32)	CSY	EB14	RSY-a	C ¤9 A SP \$ ST B2	7-145
LD	COMPARE DOUBLE AND SWAP (32)	CDSY	EB31	RSY-a	C ¤9 A SP \$ ST B2	7-145
LD	COMPARE HALFWORD (32 <- 16)	CHY	E379	RXY-a	C A B2	7-151
LD	COMPARE LOGICAL (32)	CLY	E355	RXY-a	C A B2	7-153
LD	COMPARE LOGICAL (immediate)	CLIY	EB55	SIY	C A B1	7-153
LD	COMPARE LOGICAL CHAR. UNDER MASK (low)	CLMY	EB21	RSY-b	C A B2	7-158
LD	CONVERT TO BINARY (32)	CVBY	E306	RXY-a	¤9 A Dg IK B2	7-232
LD	CONVERT TO DECIMAL (32)	CVDY	E326	RXY-a	¤9 A ST B2	7-233
LD	EXCLUSIVE OR (32)	XY	E357	RXY-a	C A B2	7-257
LD	EXCLUSIVE OR (immediate)	XIY	EB57	SIY	C A ST B1	7-258
LD	INSERT CHARACTER	ICY	E373	RXY-a	A B2	7-265
LD	INSERT CHARACTERS UNDER MASK (low)	ICMY	EB81	RSY-b	C A B2	7-265
LD	LOAD (32)	LY	E358	RXY-a	A B2	7-267
LD	LOAD (short)	LEY	ED64	RXY-a	¤7,9 A Da B2	9-31
LD	LOAD (long)	LDY	ED65	RXY-a	¤7,9 A Da B2	9-31
LD	LOAD ACCESS MULTIPLE	LAMY	EB9A	RSY-a	¤6 A SP UB	7-268
LD	LOAD ADDRESS	LAY	E371	RXY-a	A	7-269
LD	LOAD BYTE (32 <- 8)	LB	E376	RXY-a	A	7-275
LD	LOAD BYTE (64 <- 8)	LGB	E377	RXY-a	A	7-275
LD	LOAD HALFWORD (32 <- 16)	LHY	E378	RXY-a	A B2	7-278
LD	LOAD MULTIPLE (32)	LMY	EB98	RSY-a	A B2	7-285
LD	LOAD REAL ADDRESS (32)	LRAY	E313	RXY-a	C P A1 * SO BP	10-58
LD	MOVE (immediate)	MVIY	EB52	SIY	A ST B1	7-292
LD	MULTIPLY SINGLE (32)	MSY	E351	RXY-a	A B2	7-310
LD	OR (32)	OY	E356	RXY-a	C A B2	7-315
LD	OR (immediate)	OIY	EB56	SIY	C A ST B1	7-315
LD	STORE (32)	STY	E350	RXY-a	A ST B2	7-388
LD	STORE (short)	STEY	ED66	RXY-a	¤7,9 A Da ST B2	9-49
LD	STORE (long)	STDY	ED67	RXY-a	¤7,9 A Da ST B2	9-49
LD	STORE ACCESS MULTIPLE	STAMY	EB9B	RSY-a	A SP ST UB	7-389
LD	STORE CHARACTER	STCY	E372	RXY-a	A ST B2	7-389
LD	STORE CHARACTERS UNDER MASK (low)	STCMY	EB2D	RSY-b	A ST B2	7-390
LD	STORE HALFWORD (16)	STHY	E370	RXY-a	A ST B2	7-395
LD	STORE MULTIPLE (32)	STMY	EB90	RSY-a	A ST B2	7-396
LD	SUBTRACT (32)	SY	E35B	RXY-a	C A IF B2	7-399
LD	SUBTRACT HALFWORD (32 <- 16)	SHY	E37B	RXY-a	C A IF B2	7-400
LD	SUBTRACT LOGICAL (32)	SLY	E35F	RXY-a	C A B2	7-401
LD	TEST UNDER MASK	TMY	EB51	SIY	C A B1	7-404

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
HM	MULTIPLY AND ADD (short HFP)	MAER	B32E	RRD	⌘7,9 Da EU E0	18-19
HM	MULTIPLY AND ADD (long HFP)	MADR	B33E	RRD	⌘7,9 Da EU E0	18-19
HM	MULTIPLY AND ADD (short HFP)	MAE	ED2E	RXF	⌘7,9 A Da EU E0 B2	18-19
HM	MULTIPLY AND ADD (long HFP)	MAD	ED3E	RXF	⌘7,9 A Da EU E0 B2	18-19
HM	MULTIPLY AND SUBTRACT (short HFP)	MSER	B32F	RRD	⌘7,9 Da EU E0	18-19
HM	MULTIPLY AND SUBTRACT (long HFP)	MSDR	B33F	RRD	⌘7,9 Da EU E0	18-19
HM	MULTIPLY AND SUBTRACT (short HFP)	MSE	ED2F	RXF	⌘7,9 A Da EU E0 B2	18-19
HM	MULTIPLY AND SUBTRACT (long HFP)	MSD	ED3F	RXF	⌘7,9 A Da EU E0 B2	18-19

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
EI	ADD IMMEDIATE (64 <- 32)	AGFI	C208	RIL-a	C IF	7-26
EI	ADD IMMEDIATE (32)	AFI	C209	RIL-a	C IF	7-26
EI	ADD LOGICAL IMMEDIATE (64 <- 32)	ALGFI	C20A	RIL-a	C	7-30
EI	ADD LOGICAL IMMEDIATE (32)	ALFI	C20B	RIL-a	C	7-30
EI	AND IMMEDIATE (high)	NIHF	C00A	RIL-a	C	7-34
EI	AND IMMEDIATE (low)	NILF	C00B	RIL-a	C	7-34
EI	COMPARE IMMEDIATE (64 <- 32)	CGFI	C20C	RIL-a	C	7-136
EI	COMPARE IMMEDIATE (32)	CFI	C20D	RIL-a	C	7-136
EI	COMPARE LOGICAL IMMEDIATE (64 <- 32)	CLGFI	C20E	RIL-a	C	7-153
EI	COMPARE LOGICAL IMMEDIATE (32)	CLFI	C20F	RIL-a	C	7-153
EI	EXCLUSIVE OR IMMEDIATE (high)	XIHF	C006	RIL-a	C	7-259
EI	EXCLUSIVE OR IMMEDIATE (low)	XILF	C007	RIL-a	C	7-259
EI	FIND LEFTMOST ONE	FLOGR	B983	RRE	C SP	7-265
EI	INSERT IMMEDIATE (high)	IIHF	C008	RIL-a		7-266
EI	INSERT IMMEDIATE (low)	IILF	C009	RIL-a		7-266
EI	LOAD AND TEST (64)	LTG	E302	RXY-a	C A B2	7-273
EI	LOAD AND TEST (32)	LT	E312	RXY-a	C A B2	7-273
EI	LOAD BYTE (64 <- 8)	LGBR	B906	RRE		7-275
EI	LOAD BYTE (32 <- 8)	LBR	B926	RRE		7-275
EI	LOAD HALFWORD (64 <- 16)	LGHR	B907	RRE		7-278
EI	LOAD HALFWORD (32 <- 16)	LHR	B927	RRE		7-278
EI	LOAD IMMEDIATE (64 <- 32)	LGFI	C001	RIL-a		7-267
EI	LOAD LOGICAL CHARACTER (64 <- 8)	LLGCR	B984	RRE		7-282
EI	LOAD LOGICAL CHARACTER (32 <- 8)	LLCR	B994	RRE		7-282
EI	LOAD LOGICAL CHARACTER (32 <- 8)	LLC	E394	RXY-a	A B2	7-282
EI	LOAD LOGICAL HALFWORD (64 <- 16)	LLGHR	B985	RRE		7-283
EI	LOAD LOGICAL HALFWORD (32 <- 16)	LLHR	B995	RRE		7-283
EI	LOAD LOGICAL HALFWORD (32 <- 16)	LLH	E395	RXY-a	A B2	7-283
EI	LOAD LOGICAL IMMEDIATE (high)	LLIHF	C00E	RIL-a		7-284
EI	LOAD LOGICAL IMMEDIATE (low)	LLILF	C00F	RIL-a		7-284
EI	OR IMMEDIATE (high)	OIHF	C00C	RIL-a	C	7-316
EI	OR IMMEDIATE (low)	OILF	C00D	RIL-a	C	7-316
EI	SUBTRACT LOGICAL IMMEDIATE (64 <- 32)	SLGFI	C204	RIL-a	C	7-401
EI	SUBTRACT LOGICAL IMMEDIATE (32)	SLFI	C205	RIL-a	C	7-401

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
E3	CONVERT UTF-16 TO UTF-32	CU24	B9B1	RRF-c	C 5,9 A SP IC ST R1 R2	7-234
E3	CONVERT UTF-32 TO UTF-16	CU42	B9B3	RRE	C 5,9 A SP IC ST R1 R2	7-241
E3	CONVERT UTF-32 TO UTF-8	CU41	B9B2	RRE	C 5,9 A SP IC ST R1 R2	7-244
E3	CONVERT UTF-8 TO UTF-32	CU14	B9B0	RRF-c	C 5,9 A SP IC ST R1 R2	7-251
E3	SEARCH STRING UNICODE	SRSTU	B9BE	RRE	C 9 A SP IC G0 R1 R2	7-378
E3	TRANSLATE AND TEST REVERSE	TRTR	D0	SS-a	C 9 A GM B1 B2	7-419

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
UE	MULTIPLY & ADD UNNORMALIZED (long to ext. HFP)	MAYR	B33A	RRD	⌘7,9 Da	18-20
UE	MULTIPLY & ADD UNNORMALIZED (long to ext. HFP)	MAY	ED3A	RXF	⌘7,9 A Da B2	18-20
UE	MULTIPLY AND ADD UNNRM. (long to ext. low HFP)	MAYLR	B338	RRD	⌘7,9 Da	18-20
UE	MULTIPLY AND ADD UNNRM. (long to ext. high HFP)	MAYHR	B33C	RRD	⌘7,9 Da	18-20
UE	MULTIPLY AND ADD UNNRM. (long to ext. low HFP)	MAYL	ED38	RXF	⌘7,9 A Da B2	18-20
UE	MULTIPLY AND ADD UNNRM. (long to ext. high HFP)	MAYH	ED3C	RXF	⌘7,9 A Da B2	18-20
UE	MULTIPLY UNNORM. (long to ext. low HFP)	MYLR	B339	RRD	⌘7,9 Da	18-22
UE	MULTIPLY UNNORM. (long to ext. high HFP)	MYHR	B33D	RRD	⌘7,9 Da	18-22
UE	MULTIPLY UNNORM. (long to ext. low HFP)	MYL	ED39	RXF	⌘7,9 A Da B2	18-22
UE	MULTIPLY UNNORM. (long to ext. high HFP)	MYH	ED3D	RXF	⌘7,9 A Da B2	18-22
UE	MULTIPLY UNNORMALIZED (long to ext. HFP)	MYR	B33B	RRD	⌘7,9 SP Da	18-22
UE	MULTIPLY UNNORMALIZED (long to ext. HFP)	MY	ED3B	RXF	⌘7,9 A SP Da B2	18-22

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
SC	STORE CLOCK FAST	STCKF	B27C	S	C 8,9 A ST B2	7-391

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
PE	TRANSLATE AND TEST EXTENDED	TRTE	B9BF	RRF-c	C 89 A SP IC ST RM	7-415
PE	TRANSLATE AND TEST REVERSE EXTENDED	TRTRE	B9BD	RRF-c	C 89 A SP IC ST RM	7-415

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
M0	MOVE WITH OPTIONAL SPECIFICATIONS	MVCOS	C800	SSF	C Q A S0 G0 ST B+ B‡	10-72

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
TS	PERFORM TIMING FACILITY FUNCTION	PTFF	0104	E	C Q A SP GM ST	10-87

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
ET	EXTRACT CPU TIME	ECTG	C801	SSF	⌘8,9 A GM R3 B1 B2	7-263

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
CS	COMPARE AND SWAP AND STORE	CSST	C802	SSF	C 01 A SP \$ GM ST B1 B2	7-147

Fac	Name...	Assm	OpCd	IFmt	Attributes...						Ref
GE	ADD IMMEDIATE (32 <- 8)	ASI	EB6A	SIY	C	A	IF	£1	ST	B1	7-26
GE	ADD IMMEDIATE (64 <- 8)	AGSI	EB7A	SIY	C	A	IF	£1	ST	B1	7-26
GE	ADD LOGICAL WITH SIGNED IMMEDIATE (32 <- 8)	ALSI	EB6E	SIY	C	A	£1	ST	B1		7-31
GE	ADD LOGICAL WITH SIGNED IMMEDIATE (64 <- 8)	ALGSI	EB7E	SIY	C	A	£1	ST	B1		7-31
GE	COMPARE AND BRANCH (64)	CGRB	ECE4	RRS			¤9	B			7-137
GE	COMPARE AND BRANCH (32)	CRB	ECF6	RRS			¤9	B			7-137
GE	COMPARE AND BRANCH RELATIVE (64)	CGRJ	EC64	RIE-b			¤10	B			7-137
GE	COMPARE AND BRANCH RELATIVE (32)	CRJ	EC76	RIE-b			¤10	B			7-137
GE	COMPARE AND TRAP (64)	CGRT	B960	RRF-c			Dc				7-150
GE	COMPARE AND TRAP (32)	CRT	B972	RRF-c			Dc				7-150
GE	COMPARE HALFWORD (64 <- 16)	CGH	E334	RXY-a	C	A	B2				7-151
GE	COMPARE HALFWORD IMMEDIATE (16 <- 16)	CHHSI	E554	SIL	C	A	B1				7-151
GE	COMPARE HALFWORD IMMEDIATE (64 <- 16)	CGHSI	E558	SIL	C	A	B1				7-151
GE	COMPARE HALFWORD IMMEDIATE (32 <- 16)	CHSI	E55C	SIL	C	A	B1				7-151
GE	COMPARE HALFWORD RELATIVE LONG (64 <- 16)	CGHRL	C604	RIL-b	C	A*					7-151
GE	COMPARE HALFWORD RELATIVE LONG (32 <- 16)	CHRL	C605	RIL-b	C	A*					7-151
GE	COMPARE IMMEDIATE AND BRANCH (64 <- 8)	CGIB	ECFC	RIS			¤9	B			7-137
GE	COMPARE IMMEDIATE AND BRANCH (32 <- 8)	CIB	ECFE	RIS			¤9	B			7-137
GE	COMPARE IMMEDIATE AND BRANCH RELATIVE (64 <- 8)	CGIJ	EC7C	RIE-c			¤10	B			7-137
GE	COMPARE IMMEDIATE AND BRANCH RELATIVE (32 <- 8)	CIJ	EC7E	RIE-c			¤10	B			7-137
GE	COMPARE IMMEDIATE AND TRAP (64 <- 16)	CGIT	EC70	RIE-a			Dc				7-150
GE	COMPARE IMMEDIATE AND TRAP (32 <- 16)	CIT	EC72	RIE-a			Dc				7-150
GE	COMPARE LOGICAL AND BRANCH (64)	CLGRB	ECE5	RRS			¤9	B			7-155
GE	COMPARE LOGICAL AND BRANCH (32)	CLRB	ECF7	RRS			¤9	B			7-155
GE	COMPARE LOGICAL AND BRANCH RELATIVE (64)	CLGRJ	EC65	RIE-b			¤10	B			7-155
GE	COMPARE LOGICAL AND BRANCH RELATIVE (32)	CLRJ	EC77	RIE-b			¤10	B			7-155
GE	COMPARE LOGICAL AND TRAP (64)	CLGRT	B961	RRF-c			Dc				7-156
GE	COMPARE LOGICAL AND TRAP (32)	CLRT	B973	RRF-c			Dc				7-156
GE	COMPARE LOGICAL IMMEDIATE (16 <- 16)	CLHHSI	E555	SIL	C	A	B1				7-153
GE	COMPARE LOGICAL IMMEDIATE (64 <- 16)	CLGHSI	E559	SIL	C	A	B1				7-153
GE	COMPARE LOGICAL IMMEDIATE (32 <- 16)	CLFHSI	E55D	SIL	C	A	B1				7-153
GE	COMPARE LOGICAL IMMEDIATE AND BRANCH (64 <- 8)	CLGIB	ECFD	RIS			¤9	B			7-155
GE	COMPARE LOGICAL IMMEDIATE AND BRANCH (32 <- 8)	CLIB	ECFF	RIS			¤9	B			7-155
GE	COMPARE LOGICAL IMMEDIATE AND BRANCH RELATIVE (64 <- 8)	CLGIJ	EC7D	RIE-c			¤10	B			7-155
GE	COMPARE LOGICAL IMMEDIATE AND BRANCH RELATIVE (32 <- 8)	CLIJ	EC7F	RIE-c			¤10	B			7-155
GE	COMPARE LOGICAL IMMEDIATE AND TRAP (64 <- 16)	CLGIT	EC71	RIE-a			Dc				7-157
GE	COMPARE LOGICAL IMMEDIATE AND TRAP (32 <- 16)	CLFIT	EC73	RIE-a			Dc				7-157
GE	COMPARE LOGICAL RELATIVE LONG (64 <- 16)	CLGHRL	C606	RIL-b	C	A*					7-154
GE	COMPARE LOGICAL RELATIVE LONG (32 <- 16)	CLHRL	C607	RIL-b	C	A*					7-154
GE	COMPARE LOGICAL RELATIVE LONG (64)	CLGRL	C60A	RIL-b	C	A*	SP				7-154
GE	COMPARE LOGICAL RELATIVE LONG (64 <- 32)	CLGFRL	C60E	RIL-b	C	A*	SP				7-154
GE	COMPARE LOGICAL RELATIVE LONG (32)	CLRL	C60F	RIL-b	C	A*	SP				7-154
GE	COMPARE RELATIVE LONG (64)	CGRL	C608	RIL-b	C	A*	SP				7-136
GE	COMPARE RELATIVE LONG (64 <- 32)	CGFRL	C60C	RIL-b	C	A*	SP				7-136
GE	COMPARE RELATIVE LONG (32)	CRL	C60D	RIL-b	C	A*	SP				7-136
GE	EXTRACT CPU ATTRIBUTE	ECAG	EB4C	RSY-a			¤9				7-260
GE	LOAD ADDRESS EXTENDED	LAEY	E375	RXY-a			¤6	U1	BP		7-269
GE	LOAD AND TEST (64 <- 32)	LTGF	E332	RXY-a	C	A	B2				7-274
GE	LOAD HALFWORD RELATIVE LONG (64 <- 16)	LGHRL	C404	RIL-b			A*				7-279
GE	LOAD HALFWORD RELATIVE LONG (32 <- 16)	LHRL	C405	RIL-b			A*				7-279
GE	LOAD LOGICAL HALFWORD RELATIVE LONG (32 <- 16)	LLHRL	C402	RIL-b			A*				7-283
GE	LOAD LOGICAL HALFWORD RELATIVE LONG (64 <- 16)	LLGHRL	C406	RIL-b			A*				7-283
GE	LOAD LOGICAL RELATIVE LONG (64 <- 32)	LLGFRL	C40E	RIL-b			A*	SP			7-281
GE	LOAD RELATIVE LONG (64)	LGRL	C408	RIL-b			A*	SP			7-267

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
GE	LOAD RELATIVE LONG (64 <- 32)	LGFR	C40C	RIL-b	A* SP	7-267
GE	LOAD RELATIVE LONG (32)	LRL	C40D	RIL-b	A SP	7-267
GE	MOVE (16 <- 16)	MVHHI	E544	SIL	A ST B1	7-292
GE	MOVE (64 <- 16)	MVGHI	E548	SIL	A ST B1	7-292
GE	MOVE (32 <- 16)	MVHI	E54C	SIL	A ST B1	7-292
GE	MULTIPLY (64 <- 32)	MFY	E35C	RXY-a	A SP B2	7-307
GE	MULTIPLY HALFWORD (32 <- 16)	MHY	E37C	RXY-a	A B2	7-308
GE	MULTIPLY SINGLE IMMEDIATE (64 <- 32)	MSGFI	C200	RIL-a		7-311
GE	MULTIPLY SINGLE IMMEDIATE (32)	MSFI	C201	RIL-a		7-311
GE	PREFETCH DATA	PFD	E336	RXY-b	æ9,11 B2	7-370
GE	PREFETCH DATA RELATIVE LONG	PFDR	C602	RIL-c	æ9,11	7-370
GE	ROTATE THEN AND SELECTED BITS (64)	RNSBG	EC54	RIE-f	C	7-372
GE	ROTATE THEN EXCLUSIVE OR SELECT. BITS (64)	RXSBG	EC57	RIE-f	C	7-372
GE	ROTATE THEN INSERT SELECTED BITS (64)	RISBG	EC55	RIE-f	C	7-374
GE	ROTATE THEN OR SELECTED BITS (64)	ROSBG	EC56	RIE-f	C	7-372
GE	STORE HALFWORD RELATIVE LONG (16)	STHRL	C407	RIL-b	A* ST	7-395
GE	STORE RELATIVE LONG (64)	STGRL	C40B	RIL-b	A* SP ST	7-388
GE	STORE RELATIVE LONG (32)	STR	C40F	RIL-b	A* SP ST	7-388

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
XX	EXECUTE RELATIVE LONG	EXRL	C600	RIL-b	æ9 AI* EX	7-259

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
F	CONVERT FROM FIXED (32 to long DFP)	CDFTR	B951	RRF-e	7,9 Dt	20-24
F	CONVERT FROM FIXED (32 to extended DFP)	CXFTR	B959	RRF-e	7,9 SP Dt	20-24
F	CONVERT FROM LOGICAL (32 to short BFP)	CELFBR	B390	RRF-e	7,9 SP Db Xx	19-21
F	CONVERT FROM LOGICAL (32 to long BFP)	CDLFBR	B391	RRF-e	7,9 SP Db	19-21
F	CONVERT FROM LOGICAL (32 to extended BFP)	CXLFBR	B392	RRF-e	7,9 SP Db	19-21
F	CONVERT FROM LOGICAL (64 to short BFP)	CELGBR	B3A0	RRF-e	7,9 SP Db Xx	19-21
F	CONVERT FROM LOGICAL (64 to long BFP)	CDLGBR	B3A1	RRF-e	7,9 SP Db Xx	19-21
F	CONVERT FROM LOGICAL (64 to extended BFP)	CXLGBR	B3A2	RRF-e	7,9 SP Db	19-21
F	CONVERT FROM LOGICAL (64 to long DFP)	CDLGTR	B952	RRF-e	7,9 Dt Xx Xq	20-25
F	CONVERT FROM LOGICAL (32 to long DFP)	CDLFTR	B953	RRF-e	7,9 Dt	20-25
F	CONVERT FROM LOGICAL (64 to extended DFP)	CXLGTR	B95A	RRF-e	7,9 SP Dt	20-25
F	CONVERT FROM LOGICAL (32 to extended DFP)	CXLFTR	B95B	RRF-e	7,9 SP Dt	20-25
F	CONVERT TO FIXED (long DFP to 32)	CFDTR	B941	RRF-e	C 7,9 Dt Xi Xx	20-30
F	CONVERT TO FIXED (extended DFP to 32)	CFXTR	B949	RRF-e	C 7,9 SP Dt Xi Xx	20-30
F	CONVERT TO LOGICAL (short BFP to 32)	CLFEBR	B39C	RRF-e	C 7,9 SP Db Xi Xx	19-25
F	CONVERT TO LOGICAL (long BFP to 32)	CLFDBR	B39D	RRF-e	C 7,9 SP Db Xi Xx	19-25
F	CONVERT TO LOGICAL (extended BFP to 32)	CLFXBR	B39E	RRF-e	C 7,9 SP Db Xi Xx	19-25
F	CONVERT TO LOGICAL (short BFP to 64)	CLGEBR	B3AC	RRF-e	C 7,9 SP Db Xi Xx	19-25
F	CONVERT TO LOGICAL (long BFP to 64)	CLGDBR	B3AD	RRF-e	C 7,9 SP Db Xi Xx	19-25
F	CONVERT TO LOGICAL (extended BFP to 64)	CLGXBR	B3AE	RRF-e	C 7,9 SP Db Xi Xx	19-25
F	CONVERT TO LOGICAL (long DFP to 64)	CLGDTR	B942	RRF-e	C 7,9 Dt Xi Xx	20-32
F	CONVERT TO LOGICAL (long DFP to 32)	CLFDTR	B943	RRF-e	C 7,9 Dt Xi Xx	20-32
F	CONVERT TO LOGICAL (extended DFP to 64)	CLGXTR	B94A	RRF-e	C 7,9 SP Dt Xi Xx	20-32
F	CONVERT TO LOGICAL (extended DFP to 32)	CLFXTR	B94B	RRF-e	C 7,9 SP Dt Xi Xx	20-32
F	SET BFP ROUNDING MODE (3 bit)	SRNMB	B2B8	S	7,9 SP Db	9-47

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
LPP	LOAD PROGRAM PARAMETER	LPP	B280	S	?? ??	1-1

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
TR	SET DFP ROUNDING MODE	SRNMT	B2B9	S	æ7,9 Dt	9-47

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
FG	LOAD FPR FROM GR (64 to long)	LDGR	B3C1	RRE	æ7,9 Da	9-34
FG	LOAD GR FROM FPR (long to 64)	LGDR	B3CD	RRE	æ7,9 Da	9-34

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
FS	COPY SIGN (long)	CPSDR	B372	RRF-b	æ7,9 Da	9-30
FS	LOAD COMPLEMENT (long)	LCDFR	B373	RRE	æ7,9 Da	9-31
FS	LOAD NEGATIVE (long)	LNDFR	B371	RRE	æ7,9 Da	9-34
FS	LOAD POSITIVE (long)	LPDFR	B370	RRE	æ7,9 Da	9-34

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
XF	LOAD FPC AND SIGNAL	LFAS	B2BD	S	æ7,9 A SP Dt Xg B2	9-32
XF	SET FPC AND SIGNAL	SFASR	B385	RRE	æ7,9 SP Dt Xg	9-48

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
TF	ADD (long DFP)	ADTRA	B3D2	RRF-a	C 7,9 Dt Xi Xo Xu Xx Xq	20-19
TF	ADD (extended DFP)	AXTRA	B3DA	RRF-a	C 7,9 SP Dt Xi Xo Xu Xx Xq	20-19
TF	COMPARE (long DFP)	CDTR	B3E4	RRE	C 7,9 Dt Xi	20-22
TF	COMPARE (extended DFP)	CXTR	B3EC	RRE	C 7,9 SP Dt Xi	20-22
TF	COMPARE AND SIGNAL (long DFP)	KDTR	B3E0	RRE	C 7,9 Dt Xi	20-23
TF	COMPARE AND SIGNAL (extended DFP)	KXTR	B3E8	RRE	C 7,9 SP Dt Xi	20-23
TF	COMPARE BIASED EXPONENT (long DFP)	CDTR	B3F4	RRE	C 7,9 Dt	20-23
TF	COMPARE BIASED EXPONENT (extended DFP)	CEXTR	B3FC	RRE	C 7,9 SP Dt	20-23
TF	CONVERT FROM FIXED (64 to long DFP)	CDGTRA	B3F1	RRF-e	7,9 Dt Xx Xq	20-24
TF	CONVERT FROM FIXED (64 to extended DFP)	CXGTRA	B3F9	RRF-e	7,9 SP Dt	20-24
TF	CONVERT FROM SIGNED PACKED (64 to long DFP)	CDSTR	B3F3	RRE	7,9 Dt Dg	20-28
TF	CONVERT FROM SIGNED PACKED (128 to extended DFP)	CXSTR	B3FB	RRE	7,9 SP Dt Dg	20-28
TF	CONVERT FROM UNSIGNED PACKED (64 to long DFP)	CDUTR	B3F2	RRE	7,9 Dt Dg	20-28
TF	CONVERT FROM UNSIGNED PACKED (128 to ext. DFP)	CXUTR	B3FA	RRE	7,9 SP Dt Dg	20-28
TF	CONVERT TO FIXED (long DFP to 64)	CGDTRA	B3E1	RRF-e	C 7,9 Dt Xi Xx	20-30
TF	CONVERT TO FIXED (extended DFP to 64)	CGXTRA	B3E9	RRF-e	C 7,9 SP Dt Xi Xx	20-30
TF	CONVERT TO SIGNED PACKED (long DFP to 64)	CSDTR	B3E3	RRF-d	7,9 Dt	20-35
TF	CONVERT TO SIGNED PACKED (extended DFP to 128)	CSXTR	B3EB	RRF-d	7,9 SP Dt	20-35
TF	CONVERT TO UNSIGNED PACKED (long DFP to 64)	CUDTR	B3E2	RRE	7,9 Dt	20-35
TF	CONVERT TO UNSIGNED PACKED (extended DFP to 128)	CUXTR	B3EA	RRE	7,9 SP Dt	20-35
TF	DIVIDE (long DFP)	DDTRA	B3D1	RRF-a	7,9 Dt Xi Xz Xo Xu Xx Xq	20-37
TF	DIVIDE (extended DFP)	DXTRA	B3D9	RRF-a	7,9 SP Dt Xi Xz Xo Xu Xx Xq	20-37
TF	EXTRACT BIASED EXPONENT (long DFP to 64)	EEDTR	B3E5	RRE	7,9 Dt	20-39
TF	EXTRACT BIASED EXPONENT (extended DFP to 64)	EEXTR	B3ED	RRE	7,9 SP Dt	20-39
TF	EXTRACT SIGNIFICANCE (long DFP to 64)	ESDTR	B3E7	RRE	7,9 Dt	20-39
TF	EXTRACT SIGNIFICANCE (extended DFP to 64)	ESXTR	B3EF	RRE	7,9 SP Dt	20-39
TF	INSERT BIASED EXPONENT (64 to long DFP)	IEDTR	B3F6	RRF-b	7,9 Dt	20-40
TF	INSERT BIASED EXPONENT (64 to extended DFP)	IEXTR	B3FE	RRF-b	7,9 SP Dt	20-40
TF	LOAD AND TEST (long DFP)	LTDTR	B3D6	RRE	C 7,9 Dt Xi	20-41
TF	LOAD AND TEST (extended DFP)	LTXTR	B3DE	RRE	C 7,9 SP Dt Xi	20-41
TF	LOAD FP INTEGER (long DFP)	FIDTR	B3D7	RRF-e	7,9 Dt Xi Xx Xq	20-42
TF	LOAD FP INTEGER (extended DFP)	FIXTR	B3DF	RRF-e	7,9 SP Dt Xi Xx Xq	20-42
TF	LOAD LENGTHENED (short to long DFP)	LDETR	B3D4	RRF-d	7,9 Dt Xi	20-45
TF	LOAD LENGTHENED (long to extended DFP)	LXDTR	B3DC	RRF-d	7,9 SP Dt Xi	20-45
TF	LOAD ROUNDED (long to short DFP)	LEDTR	B3D5	RRF-e	7,9 Dt Xi Xo Xu Xx Xq	20-46
TF	LOAD ROUNDED (extended to long DFP)	LDXTR	B3DD	RRF-e	7,9 SP Dt Xi Xo Xu Xx Xq	20-46
TF	MULTIPLY (long DFP)	MDTRA	B3D0	RRF-a	7,9 Dt Xi Xo Xu Xx Xq	20-48
TF	MULTIPLY (extended DFP)	MXTRA	B3D8	RRF-a	7,9 SP Dt Xi Xo Xu Xx Xq	20-48
TF	QUANTIZE (long DFP)	QADTR	B3F5	RRF-b	7,9 Dt Xi Xx Xq	20-49
TF	QUANTIZE (extended DFP)	QAXTR	B3FD	RRF-b	7,9 SP Dt Xi Xx Xq	20-49
TF	REROUND (long DFP)	RRDTR	B3F7	RRF-b	7,9 Dt Xi Xx Xq	20-52
TF	REROUND (extended DFP)	RRXTR	B3FF	RRF-b	7,9 SP Dt Xi Xx Xq	20-52
TF	SHIFT SIGNIFICAND LEFT (long DFP)	SLDT	ED40	RXF	7,9 Dt	20-54
TF	SHIFT SIGNIFICAND LEFT (extended DFP)	SLXT	ED48	RXF	7,9 SP Dt	20-54
TF	SHIFT SIGNIFICAND RIGHT (long DFP)	SRDT	ED41	RXF	7,9 Dt	20-54
TF	SHIFT SIGNIFICAND RIGHT (extended DFP)	SRXT	ED49	RXF	7,9 SP Dt	20-54
TF	SUBTRACT (long DFP)	SDTRA	B3D3	RRF-a	C 7,9 Dt Xi Xo Xu Xx Xq	20-55
TF	SUBTRACT (extended DFP)	SXTRA	B3DB	RRF-a	C 7,9 SP Dt Xi Xo Xu Xx Xq	20-55
TF	TEST DATA CLASS (short DFP)	TDCET	ED50	RXE	C 7,9 Dt	20-56
TF	TEST DATA CLASS (long DFP)	TDCDT	ED54	RXE	C 7,9 Dt	20-56
TF	TEST DATA CLASS (extended DFP)	TDCXT	ED58	RXE	C 7,9 SP Dt	20-56
TF	TEST DATA GROUP (short DFP)	TDGET	ED51	RXE	C 7,9 Dt	20-57
TF	TEST DATA GROUP (long DFP)	TDGDT	ED55	RXE	C 7,9 Dt	20-57
TF	TEST DATA GROUP (extended DFP)	TDGXT	ED59	RXE	C 7,9 SP Dt	20-57

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
PF	PERFORM FLOATING-POINT OPERATION	PFPO	010A	E	æ7-9 SP Da Xi X0 GM Xu Xx Xq	9-35

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
DO	ADD (64)	AGRK	B9E8	RRF-a	C IF	7-26
DO	ADD (32)	ARK	B9F8	RRF-a	C IF	7-26
DO	ADD IMMEDIATE (32 <- 16)	AHIK	ECD8	RIE-d	C IF	7-26
DO	ADD IMMEDIATE (64 <- 16)	AGHIK	ECD9	RIE-d	C IF	7-26
DO	ADD LOGICAL (64)	ALGRK	B9EA	RRF-a	C	7-29
DO	ADD LOGICAL (32)	ALRK	B9FA	RRF-a	C	7-29
DO	ADD LOGICAL WITH SIGNED IMMEDIATE (32 <- 16)	ALHSIK	ECDA	RIE-d	C	7-31
DO	ADD LOGICAL WITH SIGNED IMMEDIATE (64 <- 16)	ALGHSIK	ECDB	RIE-d	C	7-31
DO	AND (64)	NGRK	B9E4	RRF-a	C	7-33
DO	AND (32)	NRK	B9F4	RRF-a	C	7-33
DO	EXCLUSIVE OR (64)	XGRK	B9E7	RRF-a	C	7-257
DO	EXCLUSIVE OR (32)	XRK	B9F7	RRF-a	C	7-257
DO	OR (64)	OGRK	B9E6	RRF-a	C	7-315
DO	OR (32)	ORK	B9F6	RRF-a	C	7-315
DO	SHIFT LEFT SINGLE (32)	SLAK	EBDD	RSY-a	C IF	7-383
DO	SHIFT LEFT SINGLE LOGICAL (32)	SLLK	EBDF	RSY-a	C	7-384
DO	SHIFT RIGHT SINGLE (32)	SRAK	EBDC	RSY-a	C	7-386
DO	SHIFT RIGHT SINGLE LOGICAL (32)	SRLK	EBDE	RSY-a	C	7-387
DO	SUBTRACT (64)	SGRK	B9E9	RRF-a	C IF	7-399
DO	SUBTRACT (32)	SRK	B9F9	RRF-a	C IF	7-399
DO	SUBTRACT LOGICAL (64)	SLGRK	B9EB	RRF-a	C	7-401
DO	SUBTRACT LOGICAL (32)	SLRK	B9FB	RRF-a	C	7-401

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
HW	ADD HIGH (32)	AHHR	B9C8	RRF-a	C IF	7-28
HW	ADD HIGH (32)	AHHLR	B9D8	RRF-a	C IF	7-28
HW	ADD IMMEDIATE HIGH (32)	AIH	CC08	RIL-a	C IF	7-29
HW	ADD LOGICAL HIGH (32)	ALHHR	B9CA	RRF-a	C	7-30
HW	ADD LOGICAL HIGH (32)	ALHLR	B9DA	RRF-a	C	7-30
HW	ADD LOGICAL WITH SIGNED IMMEDIATE HIGH (32)	ALSIH	CC0A	RIL-a	C	7-32
HW	ADD LOGICAL WITH SIGNED IMMEDIATE HIGH (32)	ALSIHN	CC0B	RIL-a	C	7-32
HW	BRANCH RELATIVE ON COUNT HIGH (32)	BRCTH	CC06	RIL-b	89 B	7-47
HW	COMPARE HIGH (32)	CHHR	B9CD	RRE	C	7-152
HW	COMPARE HIGH (32)	CHLR	B9DD	RRE	C	7-152
HW	COMPARE HIGH (32)	CHF	E3CD	RXY-a	C A B2	7-152
HW	COMPARE IMMEDIATE HIGH (32)	CIH	CC0D	RIL-a	C	7-152
HW	COMPARE LOGICAL HIGH (32)	CLHHR	B9CF	RRE	C	7-158
HW	COMPARE LOGICAL HIGH (32)	CLHLR	B9DF	RRE	C	7-158
HW	COMPARE LOGICAL HIGH (32)	CLHF	E3CF	RXY-a	C A B2	7-158
HW	COMPARE LOGICAL IMMEDIATE HIGH (32)	CLIH	CC0F	RIL-a	C	7-159
HW	LOAD BYTE HIGH (32 <- 8)	LBH	E3C0	RXY-a	A B2	7-275
HW	LOAD HALFWORD HIGH (32 <- 16)	LHH	E3C4	RXY-a	A B2	7-279
HW	LOAD HIGH (32)	LFH	E3CA	RXY-a	A B2	7-280
HW	LOAD LOGICAL CHARACTER HIGH (32 <- 8)	LLCH	E3C2	RXY-a	A B2	7-282
HW	LOAD LOGICAL HALFWORD HIGH (32 <- 16)	LLHH	E3C6	RXY-a	A B2	7-283
HW	ROTATE THEN INSERT SELECTED BITS HIGH (64)	RISBHG	EC5D	RIE-f		7-375
HW	ROTATE THEN INSERT SELECTED BITS LOW (64)	RISBLG	EC51	RIE-f		7-375
HW	STORE CHARACTER HIGH (8)	STCH	E3C3	RXY-a	A ST B2	7-389
HW	STORE HALFWORD HIGH (16)	STHH	E3C7	RXY-a	A ST B2	7-396
HW	STORE HIGH (32)	STFH	E3CB	RXY-a	A ST B2	7-396
HW	SUBTRACT HIGH (32)	SHHR	B9C9	RRF-a	C IF	7-400
HW	SUBTRACT HIGH (32)	SHHLR	B9D9	RRF-a	C IF	7-400
HW	SUBTRACT LOGICAL HIGH (32)	SLHHR	B9CB	RRF-a	C	7-402
HW	SUBTRACT LOGICAL HIGH (32)	SLHLR	B9DB	RRF-a	C	7-402

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
IA	LOAD AND ADD (64)	LAAG	EBE8	RSY-a	C 09 A SP IF £ ST B2	7-270
IA	LOAD AND ADD (32)	LAA	EBF8	RSY-a	C 09 A SP IF £ ST B2	7-270
IA	LOAD AND ADD LOGICAL (64)	LAALG	EBEA	RSY-a	C 09 A SP £ ST B2	7-271
IA	LOAD AND ADD LOGICAL (32)	LAAL	EBFA	RSY-a	C 09 A SP £ ST B2	7-271
IA	LOAD AND AND (64)	LANG	EBE4	RSY-a	C 09 A SP £ ST B2	7-272
IA	LOAD AND AND (32)	LAN	EBF4	RSY-a	C 09 A SP £ ST B2	7-272
IA	LOAD AND EXCLUSIVE OR (64)	LAXG	EBE7	RSY-a	C 09 A SP £ ST B2	7-272
IA	LOAD AND EXCLUSIVE OR (32)	LAX	EBF7	RSY-a	C 09 A SP £ ST B2	7-272
IA	LOAD AND OR (64)	LAOG	EBE6	RSY-a	C 09 A SP £ ST B2	7-273
IA	LOAD AND OR (32)	LAO	EBF6	RSY-a	C 09 A SP £ ST B2	7-273
IA	LOAD PAIR DISJOINT (32)	LPD	C804	SSF	C 09 A SP B1 B2	7-288
IA	LOAD PAIR DISJOINT (64)	LPDG	C805	SSF	C 09 A SP B1 B2	7-288

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
L1	LOAD ON CONDITION (64)	LOCGR	B9E2	RRF-c		7-287
L1	LOAD ON CONDITION (32)	LOCR	B9F2	RRF-c		7-287
L1	LOAD ON CONDITION (64)	LOGC	EBE2	RSY-b	A B2	7-287
L1	LOAD ON CONDITION (32)	LOC	EBF2	RSY-b	A B2	7-287
L1	STORE ON CONDITION (64)	STOCG	EBE3	RSY-b	A ST B2	7-397
L1	STORE ON CONDITION (32)	STOC	EBF3	RSY-b	A ST B2	7-397

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
PK	POPULATION COUNT	POPCNT	B9E1	RRF-c	C	7-369

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
ZF	CONVERT FROM ZONED (to long DFP)	CDZT	EDAA	RSL-b	ø7,9 A SP Dt Dg B2	20-29
ZF	CONVERT FROM ZONED (to extended DFP)	CXZT	EDAB	RSL-b	ø7,9 A SP Dt Dg B2	20-29
ZF	CONVERT TO ZONED (from long DFP)	CZDT	EDA8	RSL-b C	ø7,9 A SP ST B2	20-36
ZF	CONVERT TO ZONED (from extended DFP)	CZXT	EDA9	RSL-b C	ø7,9 A SP ST B2	20-36

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
EH	BRANCH PREDICTION PRELOAD	BPP	C7	SMI	꜠9	7-42
EH	BRANCH PREDICTION RELATIVE PRELOAD	BPRP	C5	MII	꜠9	7-42
EH	NEXT INSTRUCTION ACCESS INTENT	NIAI	B2FA	IE		7-312

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
LT	LOAD AND TRAP (64)	LGAT	E385	RXY-a	A Dc B2	7-274
LT	LOAD AND TRAP (32L <- 32)	LAT	E39F	RXY-a	A Dc B2	7-274
LT	LOAD HIGH AND TRAP (32H <- 32)	LFHAT	E3C8	RXY-a	A Dc B2	7-281
LT	LOAD LOGICAL AND TRAP (64 <- 32)	LLGFAT	E39D	RXY-a	A Dc B2	7-281
LT	LOAD LOGICAL THIRTY ONE BITS AND TRAP (64 <- 31)	LLGTAT	E39C	RXY-a	A Dc B2	7-284

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
MI1	COMPARE LOGICAL AND TRAP (32)	CLT	EB23	RSY-b	A Dc B2	7-156
MI1	COMPARE LOGICAL AND TRAP (64)	CLGT	EB2B	RSY-b	A Dc B2	7-156
MI1	ROTATE THEN INSERT SELECTED BITS (64)	RISBGN	EC59	RIE-f		7-374

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
PA	PERFORM PROCESSOR ASSIST	PPA	B2E8	RRF-c	æ1	7-355

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
CX	TRANSACTION BEGIN (constrained)	TBEGINC	E561	SIL	C 89 SP SO \$ EX	7-410

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
LZ	LOAD AND ZERO RIGHTMOST BYTE (64)	LZRG	E32A	RXY-a	A B2	7-274
LZ	LOAD AND ZERO RIGHTMOST BYTE (32)	LZRF	E33B	RXY-a	A B2	7-274
LZ	LOAD LOGICAL AND ZERO RIGHTMOST BYTE (64 <- 32)	LLZRGF	E33A	RXY-a	A B2	7-282

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
L2	LOAD HALFWORD HIGH IMMEDIATE ON CONDITION (32 <- 16)	LOCHHI	EC4E	RIE-g		7-280
L2	LOAD HALFWORD IMMEDIATE ON CONDITION (32 <- 16)	LOCHI	EC42	RIE-g		7-280
L2	LOAD HALFWORD IMMEDIATE ON CONDITION (64 <- 16)	LOCGHI	EC46	RIE-g		7-280
L2	LOAD HIGH ON CONDITION (32)	LOCFHR	B9E0	RRF-c		7-287
L2	LOAD HIGH ON CONDITION (32)	LOCFH	EBE0	RSY-b	A B2	7-287
L2	STORE HIGH ON CONDITION	STOCFH	EBE1	RSY-b	A ST B2	7-397

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
M5	PERFORM RANDOM NUMBER OPERATION	PRNO	B93C	RRE	C 05,9 A SP IC Dg GM I1 ST R1 R2	7-355

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
MI2	ADD HALFWORD (64 <- 16)	AGH	E338	RXY-a	C A IF B2	7-28
MI2	BRANCH INDIRECT ON CONDITION	BIC	E347	RXY-b	ø9 A B B2	7-39
MI2	MULTIPLY (128 <- 64)	MGRK	B9EC	RRF-a	SP	7-307
MI2	MULTIPLY (128 <- 64)	MG	E384	RXY-a	A SP B2	7-307
MI2	MULTIPLY HALFWORD (64 <- 16)	MGH	E33C	RXY-a	A B2	7-308
MI2	MULTIPLY SINGLE (64)	MSGKRC	B9ED	RRF-a	C IF	7-310
MI2	MULTIPLY SINGLE (32)	MSRKC	B9FD	RRF-a	C IF	7-310
MI2	MULTIPLY SINGLE (32)	MSC	E353	RXY-a	C A IF B2	7-310
MI2	MULTIPLY SINGLE (64)	MSGC	E383	RXY-a	C A IF B2	7-310
MI2	SUBTRACT HALFWORD (64 <- 16)	SGH	E339	RXY-a	C A IF B2	7-400

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
MI3	AND WITH COMPLEMENT(64)	NCGRK	B9E5	RRF-a	C	7-34
MI3	AND WITH COMPLEMENT(32)	NCRK	B9F5	RRF-a	C	7-34
MI3	MOVE RIGHT TO LEFT	MVCRL	E50A	SSE	æ9 A G0 ST B1 B2	7-304
MI3	NAND (64)	NNGRK	B964	RRF-a	C	7-312
MI3	NAND (32)	NNRK	B974	RRF-a	C	7-312
MI3	NOR (64)	NOGRK	B966	RRF-a	C	7-314
MI3	NOR (32)	NORK	B976	RRF-a	C	7-314
MI3	NOT EXCLUSIVE OR (64)	NXGRK	B967	RRF-a	C	7-315
MI3	NOT EXCLUSIVE OR (32)	NXRK	B977	RRF-a	C	7-315
MI3	OR WITH COMPLEMENT (64)	OCGRK	B965	RRF-a	C	7-317
MI3	OR WITH COMPLEMENT (32)	OCRK	B975	RRF-a	C	7-317
MI3	SELECT (64)	SELGR	B9E3	RRF-a		7-380
MI3	SELECT (32)	SELR	B9F0	RRF-a		7-380
MI3	SELECT HIGH (32)	SELFHR	B9C0	RRF-a		7-380

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
RB	RESET REFERENCE BITS MULTIPLE	RRBM	B9AE	RRE	P A1 *	10-127

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
CMC	EXTRACT COPROCESSOR-GROUP ADDRESS	ECPGA	B2ED	RRE	C ?? ??	2-25
CMC	EXTRACT CPU COUNTER	ECCTR	B2E4	RRE	C ?? ??	2-25
CMC	EXTRACT PERIPHERAL COUNTER	EPCTR	B2E5	RRE	C ?? ??	2-25
CMC	LOAD CPU-COUNTER-SET CONTROLS	LCCTL	B284	S	C ?? ??	2-26
CMC	LOAD PERIPHERAL-COUNTER-SET CONTROLS	LPCTL	B285	S	C ?? ??	2-27
CMC	QUERY COUNTER INFORMATION	QCTRI	B28E	S	?? ??	2-29
CMC	SET CPU COUNTER	SCCTR	B2E0	RRE	C ?? ??	2-32
CMC	SET PERIPHERAL COUNTER	SPCTR	B2E1	RRE	C ?? ??	2-32

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
CMS	LOAD SAMPLING CONTROLS	LSCTL	B287	S	C ?? ??	2-28
CMS	QUERY SAMPLING INFORMATION	QSI	B286	S	?? ??	2-31

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
TX	EXTRACT TRANSACTION NESTING DEPTH	ETND	B2EC	RRE	9 SO	7-264
TX	NONTRANSACTIONAL STORE (64)	NTSTG	E325	RXY-a	9 A SP ST B2	7-314
TX	TRANSACTION ABORT	TABORT	B2FC	S	9 SP SO \$ EX	7-405
TX	TRANSACTION BEGIN (nonconstrained)	TBEGIN	E560	SIL	C 9 A SP SO \$ EX ST	7-406
TX	TRANSACTION END	TEND	B2F8	S	C SO \$ EX	7-412

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
M3	PERFORM CRYPTOGRAPHIC KEY MGMT. OPERATIONS	PCKMO	B928	RRE	P A SP GM ST	10-78

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
M4	CIPHER MESSAGE WITH CIPHER FEEDBACK	KMF	B92A	RRE	C 85,9 A SP IC GM I1 ST R1 R2	7-92
M4	CIPHER MESSAGE WITH COUNTER	KMCTR	B92D	RRF-b	C 85,9 A SP IC GM I1 ST R1 ,R2 ,R3	7-108
M4	CIPHER MESSAGE WITH OUTPUT FEEDBACK	KMO	B92B	RRE	C 85,9 A SP IC GM I1 ST R1 R2	7-121
M4	PERFORM CRYPTOGRAPHIC COMPUTATION	PCC	B92C	RRE	C 85,9 A SP IC GM I1 ST	7-320

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
ED2	COMPARE AND REPLACE DAT TABLE ENTRY	CRDTE	B98F	RRF-b	P A1 SP \$	10-18

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
PC	CONVERT FROM PACKED (to long DFP)	CDPT	EDAE	RSL-b	ø7,9 A SP Dt Dg B2	20-26
PC	CONVERT FROM PACKED (to extended DFP)	CXPT	EDAF	RSL-b	ø7,9 A SP Dt Dg B2	20-26
PC	CONVERT TO PACKED (from long DFP)	CPDT	EDAC	RSL-b C	ø7,9 A SP Dt DF ST B2	20-33
PC	CONVERT TO PACKED (from extended DFP)	CPXT	EDAD	RSL-b C	ø7,9 A SP Dt DF ST B2	20-33

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
VF	LOAD COUNT TO BLOCK BOUNDARY	LCBB	E727	RXE	C SP	7-276
VF	VECTOR ADD	VA	E7F3	VRR-c	7,9 SP Dv	22-3
VF	VECTOR ADD COMPUTE CARRY	VACC	E7F1	VRR-c	7,9 SP Dv	22-4
VF	VECTOR ADD WITH CARRY	VAC	E7BB	VRR-d	7,9 SP Dv	22-4
VF	VECTOR ADD WITH CARRY COMPUTE CARRY	VACCC	E7B9	VRR-d	7,9 SP Dv	22-5
VF	VECTOR AND	VN	E768	VRR-c	7,9 Dv	22-5
VF	VECTOR AND WITH COMPLEMENT	VNC	E769	VRR-c	7,9 Dv	22-5
VF	VECTOR AVERAGE	VAVG	E7F2	VRR-c	7,9 SP Dv	22-6
VF	VECTOR AVERAGE LOGICAL	VAVGL	E7F0	VRR-c	7,9 SP Dv	22-6
VF	VECTOR CHECKSUM	VCKSM	E766	VRR-c	7,9 Dv	22-6
VF	VECTOR COMPARE EQUAL	VCEQ	E7F8	VRR-b	C* 7,9 SP Dv	22-7
VF	VECTOR COMPARE HIGH	VCH	E7FB	VRR-b	C* 7,9 SP Dv	22-8
VF	VECTOR COMPARE HIGH LOGICAL	VCHL	E7F9	VRR-b	C* 7,9 SP Dv	22-9
VF	VECTOR COUNT LEADING ZEROS	VCLZ	E753	VRR-a	7,9 SP Dv	22-10
VF	VECTOR COUNT TRAILING ZEROS	VCTZ	E752	VRR-a	7,9 SP Dv	22-10
VF	VECTOR ELEMENT COMPARE	VEC	E7DB	VRR-a	C 7,9 SP Dv	22-7
VF	VECTOR ELEMENT COMPARE LOGICAL	VECL	E7D9	VRR-a	C 7,9 SP Dv	22-7
VF	VECTOR ELEMENT ROTATE AND INSERT UNDER MASK	VERIM	E772	VRI-d	7,9 SP Dv	22-22
VF	VECTOR ELEMENT ROTATE LEFT LOGICAL	VERLL	E733	VRS-a	7,9 SP Dv	22-21
VF	VECTOR ELEMENT ROTATE LEFT LOGICAL	VERLLV	E773	VRR-c	7,9 SP Dv	22-21
VF	VECTOR ELEMENT SHIFT LEFT	VESL	E730	VRS-a	7,9 SP Dv	22-23
VF	VECTOR ELEMENT SHIFT LEFT	VESLV	E770	VRR-c	7,9 SP Dv	22-23
VF	VECTOR ELEMENT SHIFT RIGHT ARITHMETIC	VESRA	E73A	VRS-a	7,9 SP Dv	22-23
VF	VECTOR ELEMENT SHIFT RIGHT ARITHMETIC	VESRAV	E77A	VRR-c	7,9 SP Dv	22-23
VF	VECTOR ELEMENT SHIFT RIGHT LOGICAL	VESRL	E738	VRS-a	7,9 SP Dv	22-24
VF	VECTOR ELEMENT SHIFT RIGHT LOGICAL	VESRLV	E778	VRR-c	7,9 SP Dv	22-24
VF	VECTOR EXCLUSIVE OR	VX	E76D	VRR-c	7,9 Dv	22-11
VF	VECTOR FIND ANY ELEMENT EQUAL	VFAE	E782	VRR-b	C* 7,9 SP Dv	23-2
VF	VECTOR FIND ELEMENT EQUAL	VFEE	E780	VRR-b	C* 7,9 SP Dv	23-3
VF	VECTOR FIND ELEMENT NOT EQUAL	VFENE	E781	VRR-b	C* 7,9 SP Dv	23-4
VF	VECTOR FP ADD	VFA	E7E3	VRR-c	7,9 SP Dv Xi Xo Xu Xx	24-4
VF	VECTOR FP COMPARE AND SIGNAL SCALAR	WFK	E7CA	VRR-a	C 7,9 SP Dv Xi	24-8
VF	VECTOR FP COMPARE EQUAL	VFCE	E7E8	VRR-c	C* 7,9 SP Dv Xi	24-9
VF	VECTOR FP COMPARE HIGH	VFCH	E7EB	VRR-c	C* 7,9 SP Dv Xi	24-11
VF	VECTOR FP COMPARE HIGH OR EQUAL	VFCHE	E7EA	VRR-c	C* 7,9 SP Dv Xi	24-13
VF	VECTOR FP COMPARE SCALAR	WFC	E7CB	VRR-a	C 7,9 SP Dv Xi	24-7
VF	VECTOR FP DIVIDE	VFD	E7E5	VRR-c	7,9 SP Dv Xi Xz Xo Xu Xx	24-22
VF	VECTOR FP LOAD LENGTHENED	VFLL	E7C4	VRR-a	7,9 SP Dv Xi	24-26
VF	VECTOR FP LOAD ROUNDED	VFLR	E7C5	VRR-a	7,9 SP Dv Xi Xo Xu Xx	24-27
VF	VECTOR FP MULTIPLY	VFM	E7E7	VRR-c	7,9 SP Dv Xi Xo Xu Xx	24-40
VF	VECTOR FP MULTIPLY AND ADD	VFMA	E78F	VRR-e	7,9 SP Dv Xi Xo Xu Xx	24-42
VF	VECTOR FP MULTIPLY AND SUBTRACT	VFMS	E78E	VRR-e	7,9 SP Dv Xi Xo Xu Xx	24-42
VF	VECTOR FP PERFORM SIGN OPERATION	VFPSO	E7CC	VRR-a	7,9 SP Dv	24-44
VF	VECTOR FP SQUARE ROOT	VFSQ	E7CE	VRR-a	7,9 SP Dv Xi Xx	24-45
VF	VECTOR FP SUBTRACT	VFS	E7E2	VRR-c	7,9 SP Dv Xi Xo Xu Xx	24-46
VF	VECTOR FP TEST DATA CLASS IMMEDIATE	VFTCI	E74A	VRI-e	C 7,9 SP Dv	24-47
VF	VECTOR GALOIS FIELD MULTIPLY SUM	VGFM	E7B4	VRR-c	7,9 SP Dv	22-11
VF	VECTOR GALOIS FIELD MULTIPLY SUM AND ACCUMULATE	VGFMA	E7BC	VRR-d	7,9 SP Dv	22-12
VF	VECTOR GATHER ELEMENT (64)	VGEG	E712	VRV	7,9 A SP Dv B2	21-5
VF	VECTOR GATHER ELEMENT (32)	VGEF	E713	VRV	7,9 A SP Dv B2	21-5
VF	VECTOR GENERATE BYTE MASK	VGBM	E744	VRI-a	7,9 Dv	21-5
VF	VECTOR GENERATE MASK	VGM	E746	VRI-b	7,9 SP Dv	21-6
VF	VECTOR ISOLATE STRING	VISTR	E75C	VRR-a	C* 7,9 SP Dv	23-5
VF	VECTOR LOAD	VL	E706	VRX	7,9 A Dv B2	21-6

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
VF	VECTOR LOAD	VLR	E756	VRR-a	⌘7,9 Dv	21-6
VF	VECTOR LOAD AND REPLICATE	VLREP	E705	VRX	⌘7,9 A SP Dv B2	21-7
VF	VECTOR LOAD COMPLEMENT	VLC	E7DE	VRR-a	⌘7,9 SP Dv	22-12
VF	VECTOR LOAD ELEMENT (8)	VLEB	E700	VRX	⌘7,9 A SP Dv B2	21-9
VF	VECTOR LOAD ELEMENT (16)	VLEH	E701	VRX	⌘7,9 A SP Dv B2	21-9
VF	VECTOR LOAD ELEMENT (64)	VLEG	E702	VRX	⌘7,9 A SP Dv B2	21-9
VF	VECTOR LOAD ELEMENT (32)	VLEF	E703	VRX	⌘7,9 A SP Dv B2	21-9
VF	VECTOR LOAD ELEMENT IMMEDIATE (8)	VLEIB	E740	VRI-a	⌘7,9 SP Dv	21-10
VF	VECTOR LOAD ELEMENT IMMEDIATE (16)	VLEIH	E741	VRI-a	⌘7,9 SP Dv	21-10
VF	VECTOR LOAD ELEMENT IMMEDIATE (64)	VLEIG	E742	VRI-a	⌘7,9 SP Dv	21-10
VF	VECTOR LOAD ELEMENT IMMEDIATE (32)	VLEIF	E743	VRI-a	⌘7,9 SP Dv	21-10
VF	VECTOR LOAD FP INTEGER	VFI	E7C7	VRR-a	⌘7,9 SP Dv Xi Xx	24-24
VF	VECTOR LOAD GR FROM VR ELEMENT	VLGV	E721	VRS-c	⌘7,9 SP Dv	21-11
VF	VECTOR LOAD LOGICAL ELEMENT AND ZERO	VLLEZ	E704	VRX	⌘7,9 A SP Dv B2	21-12
VF	VECTOR LOAD MULTIPLE	VLM	E736	VRS-a	⌘7,9 A SP Dv B2	21-12
VF	VECTOR LOAD POSITIVE	VLP	E7DF	VRR-a	⌘7,9 SP Dv	22-12
VF	VECTOR LOAD TO BLOCK BOUNDARY	VLBB	E707	VRX	⌘7,9 A SP Dv B2	21-14
VF	VECTOR LOAD VR ELEMENT FROM GR	VLVG	E722	VRS-b	⌘7,9 SP Dv	21-14
VF	VECTOR LOAD VR FROM GRS DISJOINT	VLVGP	E762	VRR-f	⌘7,9 Dv	21-15
VF	VECTOR LOAD WITH LENGTH	VLL	E737	VRS-b	⌘7,9 A Dv B2	21-15
VF	VECTOR MAXIMUM	VMX	E7FF	VRR-c	⌘7,9 SP Dv	22-13
VF	VECTOR MAXIMUM LOGICAL	VMXL	E7FD	VRR-c	⌘7,9 SP Dv	22-13
VF	VECTOR MERGE HIGH	VMRH	E761	VRR-c	⌘7,9 SP Dv	21-15
VF	VECTOR MERGE LOW	VMRL	E760	VRR-c	⌘7,9 SP Dv	21-16
VF	VECTOR MINIMUM	VMN	E7FE	VRR-c	⌘7,9 SP Dv	22-13
VF	VECTOR MINIMUM LOGICAL	VMNL	E7FC	VRR-c	⌘7,9 SP Dv	22-14
VF	VECTOR MULTIPLY AND ADD EVEN	VMAE	E7AE	VRR-d	⌘7,9 SP Dv	22-15
VF	VECTOR MULTIPLY AND ADD HIGH	VMAH	E7AB	VRR-d	⌘7,9 SP Dv	22-15
VF	VECTOR MULTIPLY AND ADD LOGICAL EVEN	VMALE	E7AC	VRR-d	⌘7,9 SP Dv	22-15
VF	VECTOR MULTIPLY AND ADD LOGICAL HIGH	VMAH	E7A9	VRR-d	⌘7,9 SP Dv	22-15
VF	VECTOR MULTIPLY AND ADD LOGICAL ODD	VMALO	E7AD	VRR-d	⌘7,9 SP Dv	22-16
VF	VECTOR MULTIPLY AND ADD LOW	VMAL	E7AA	VRR-d	⌘7,9 SP Dv	22-14
VF	VECTOR MULTIPLY AND ADD ODD	VMAO	E7AF	VRR-d	⌘7,9 SP Dv	22-16
VF	VECTOR MULTIPLY EVEN	VME	E7A6	VRR-c	⌘7,9 SP Dv	22-18
VF	VECTOR MULTIPLY HIGH	VMH	E7A3	VRR-c	⌘7,9 SP Dv	22-16
VF	VECTOR MULTIPLY LOGICAL EVEN	VMLE	E7A4	VRR-c	⌘7,9 SP Dv	22-18
VF	VECTOR MULTIPLY LOGICAL HIGH	VMLH	E7A1	VRR-c	⌘7,9 SP Dv	22-17
VF	VECTOR MULTIPLY LOGICAL ODD	VMLO	E7A5	VRR-c	⌘7,9 SP Dv	22-18
VF	VECTOR MULTIPLY LOW	VML	E7A2	VRR-c	⌘7,9 SP Dv	22-17
VF	VECTOR MULTIPLY ODD	VMO	E7A7	VRR-c	⌘7,9 SP Dv	22-18
VF	VECTOR NOR	VNO	E76B	VRR-c	⌘7,9 Dv	22-20
VF	VECTOR OR	VO	E76A	VRR-c	⌘7,9 Dv	22-20
VF	VECTOR PACK	VPK	E794	VRR-c	⌘7,9 SP Dv	21-16
VF	VECTOR PACK LOGICAL SATURATE	VPKLS	E795	VRR-b	C* ⌘7,9 SP Dv	21-18
VF	VECTOR PACK SATURATE	VPKS	E797	VRR-b	C* ⌘7,9 SP Dv	21-17
VF	VECTOR PERMUTE	VPERM	E78C	VRR-e	⌘7,9 Dv	21-18
VF	VECTOR PERMUTE DOUBLEWORD IMMEDIATE	VPDI	E784	VRR-c	⌘7,9 Dv	21-19
VF	VECTOR POPULATION COUNT	VPOPCT	E750	VRR-a	⌘7,9 SP Dv	22-21
VF	VECTOR REPLICATE	VREP	E74D	VRI-c	⌘7,9 SP Dv	21-19
VF	VECTOR REPLICATE IMMEDIATE	VREPI	E745	VRI-a	⌘7,9 SP Dv	21-20
VF	VECTOR SCATTER ELEMENT (64)	VSCEG	E71A	VRV	⌘7,9 A SP Dv ST B2	21-20
VF	VECTOR SCATTER ELEMENT (32)	VSCEF	E71B	VRV	⌘7,9 A SP Dv ST B2	21-20
VF	VECTOR SELECT	VSEL	E78D	VRR-e	⌘7,9 Dv	21-21
VF	VECTOR SHIFT LEFT	VSL	E774	VRR-c	⌘7,9 Dv	22-25

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
VF	VECTOR SHIFT LEFT BY BYTE	VSLB	E775	VRR-c	⌘7,9 Dv	22-25
VF	VECTOR SHIFT LEFT DOUBLE BY BYTE	VSLDB	E777	VRI-d	⌘7,9 Dv	22-26
VF	VECTOR SHIFT RIGHT ARITHMETIC	VSRA	E77E	VRR-c	⌘7,9 Dv	22-26
VF	VECTOR SHIFT RIGHT ARITHMETIC BY BYTE	VSRA B	E77F	VRR-c	⌘7,9 Dv	22-26
VF	VECTOR SHIFT RIGHT LOGICAL	VSRL	E77C	VRR-c	⌘7,9 Dv	22-27
VF	VECTOR SHIFT RIGHT LOGICAL BY BYTE	VSRL B	E77D	VRR-c	⌘7,9 Dv	22-27
VF	VECTOR SIGN EXTEND TO DOUBLEWORD	VSEG	E75F	VRR-a	⌘7,9 SP Dv	21-21
VF	VECTOR STORE	VST	E70E	VRX	⌘7,9 A Dv ST B2	21-21
VF	VECTOR STORE ELEMENT (8)	VSTEB	E708	VRX	⌘7,9 A SP Dv ST B2	21-23
VF	VECTOR STORE ELEMENT (16)	VSTEH	E709	VRX	⌘7,9 A SP Dv ST B2	21-23
VF	VECTOR STORE ELEMENT (64)	VSTEG	E70A	VRX	⌘7,9 A SP Dv ST B2	21-23
VF	VECTOR STORE ELEMENT (32)	VSTEF	E70B	VRX	⌘7,9 A SP Dv ST B2	21-23
VF	VECTOR STORE MULTIPLE	VSTM	E73E	VRS-a	⌘7,9 A SP Dv ST B2	21-24
VF	VECTOR STORE WITH LENGTH	VSTL	E73F	VRS-b	⌘7,9 A Dv ST B2	21-26
VF	VECTOR STRING RANGE COMPARE	VSTRC	E78A	VRR-d	C* ⌘7,9 SP Dv	23-6
VF	VECTOR SUBTRACT	VS	E7F7	VRR-c	⌘7,9 SP Dv	22-27
VF	VECTOR SUBTRACT COMPUTE BORROW INDICATION	VSCBI	E7F5	VRR-c	⌘7,9 SP Dv	22-28
VF	VECTOR SUBTRACT WITH BORROW COMPUTE BORROW INDICATION	VSBCBI	E7BD	VRR-d	⌘7,9 SP Dv	22-29
VF	VECTOR SUBTRACT WITH BORROW INDICATION	VSBI	E7BF	VRR-d	⌘7,9 SP Dv	22-28
VF	VECTOR SUM ACROSS DOUBLEWORD	VSUMG	E765	VRR-c	⌘7,9 SP Dv	22-29
VF	VECTOR SUM ACROSS QUADWORD	VSUMQ	E767	VRR-c	⌘7,9 SP Dv	22-30
VF	VECTOR SUM ACROSS WORD	VSUM	E764	VRR-c	⌘7,9 SP Dv	22-30
VF	VECTOR TEST UNDER MASK	VTM	E7D8	VRR-a	C ⌘7,9 Dv	22-31
VF	VECTOR UNPACK HIGH	VUPH	E7D7	VRR-a	⌘7,9 SP Dv	21-26
VF	VECTOR UNPACK LOGICAL HIGH	VUPLH	E7D5	VRR-a	⌘7,9 SP Dv	21-26
VF	VECTOR UNPACK LOGICAL LOW	VUPLL	E7D4	VRR-a	⌘7,9 SP Dv	21-27
VF	VECTOR UNPACK LOW	VUPL	E7D6	VRR-a	⌘7,9 SP Dv	21-27

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
GF	LOAD GUARDED (64)	LGG	E34C	RXY-a	ø12 A SP B ST B2	7-276
GF	LOAD GUARDED STORAGE CONTROLS	LGSC	E34D	RXY-a	ø1 A SO B2	7-278
GF	LOAD LOGICAL AND SHIFT GUARDED (64 <- 32)	LLGFSG	E348	RXY-a	ø12 A SP B ST B2	7-276
GF	STORE GUARDED STORAGE CONTROLS	STGSC	E349	RXY-a	ø1 A SO ST B2	7-395

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
VD	VECTOR ADD DECIMAL	VAP	E671	VRI-f	C* 7,9 SP Dv Dg DF*	25-6
VD	VECTOR COMPARE DECIMAL	VCP	E677	VRR-h	C 7,9 Dv Dg	25-7
VD	VECTOR CONVERT TO BINARY	VCVB	E650	VRR-i	C* 7,9 Dv Dg IF*	25-8
VD	VECTOR CONVERT TO BINARY	VCVBG	E652	VRR-i	C* 7,9 Dv Dg IF*	25-8
VD	VECTOR CONVERT TO DECIMAL	VCVD	E658	VRI-i	C* 7,9 SP Dv DF*	25-10
VD	VECTOR CONVERT TO DECIMAL	VCVDG	E65A	VRI-i	C* 7,9 SP Dv DF*	25-10
VD	VECTOR DIVIDE DECIMAL	VDP	E67A	VRI-f	C* 7,9 SP Dv Dg DF* DK	25-12
VD	VECTOR LOAD IMMEDIATE DECIMAL	VLIP	E649	VRI-h	7,9 Dv Dg	25-14
VD	VECTOR LOAD RIGHTMOST WITH LENGTH	VLRL	E635	VSI	7,9 A SP Dv B2	21-13
VD	VECTOR LOAD RIGHTMOST WITH LENGTH	VLRLR	E637	VRS-d	7,9 A Dv B2	21-13
VD	VECTOR MULTIPLY AND SHIFT DECIMAL	VMSP	E679	VRI-f	C* 7,9 SP Dv Dg DF*	25-16
VD	VECTOR MULTIPLY DECIMAL	VMP	E678	VRI-f	C* 7,9 SP Dv Dg DF*	25-14
VD	VECTOR PACK ZONED	VPKZ	E634	VSI	7,9 A SP Dv B2	25-17
VD	VECTOR PERFORM SIGN OPERATION DECIMAL	VPSOP	E65B	VRI-g	C* 7,9 SP Dv Dg DF*	25-19
VD	VECTOR REMAINDER DECIMAL	VRP	E67B	VRI-f	C* 7,9 SP Dv Dg DF* DK	25-22
VD	VECTOR SHIFT AND DIVIDE DECIMAL	VSDP	E67E	VRI-f	C* 7,9 SP Dv Dg DF* DK	25-23
VD	VECTOR SHIFT AND ROUND DECIMAL	VSRP	E659	VRI-g	C* 7,9 SP Dv Dg DF*	25-24
VD	VECTOR STORE RIGHTMOST WITH LENGTH	VSTRL	E63D	VSI	7,9 A SP Dv ST B2	21-25
VD	VECTOR STORE RIGHTMOST WITH LENGTH	VSTRLR	E63F	VRS-d	7,9 A Dv ST B2	21-25
VD	VECTOR SUBTRACT DECIMAL	VSP	E673	VRI-f	C* 7,9 SP Dv Dg DF*	25-28
VD	VECTOR TEST DECIMAL	VTP	E65F	VRR-g	C 7,9 Dv	25-29
VD	VECTOR UNPACK ZONED	VUPKZ	E63C	VSI	7,9 A SP Dv ST B2	25-30

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
V1	VECTOR BIT PERMUTE	VBPERM	E785	VRR-c	æ7,9 Dv	21-4
V1	VECTOR FP MAXIMUM	VFMAX	E7EF	VRR-c	æ7,9 SP Dv Xi	24-28
V1	VECTOR FP MINIMUM	VFMIN	E7EE	VRR-c	æ7,9 SP Dv Xi	24-34
V1	VECTOR FP NEGATIVE MULTIPLY AND ADD	VFNMA	E79F	VRR-e	æ7,9 SP Dv Xi Xo Xu Xx	24-42
V1	VECTOR FP NEGATIVE MULTIPLY AND SUBTRACT	VFNMS	E79E	VRR-e	æ7,9 SP Dv Xi Xo Xu Xx	24-42
V1	VECTOR MULTIPLY SUM LOGICAL	VMSL	E7B8	VRR-d	æ7,9 SP Dv	22-19
V1	VECTOR NAND	VNN	E76E	VRR-c	æ7,9 DV	22-20
V1	VECTOR NOT EXCLUSIVE OR	VNX	E76C	VRR-c	æ7,9 Dv	22-20
V1	VECTOR OR WITH COMPLEMENT	VOC	E76F	VRR-c	æ7,9 Dv	22-21

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
SCM	STORE CPU COUNTER MULTIPLE	STCCTM	EB17	RSY-b	C ?? ??	2-33

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
TE	TEST PENDING EXTERNAL INTERRUPTION	TPEI	B9A1	RRE	C P	10-181

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
IM	INSERT REFERENCE BITS MULTIPLE	IRBM	B9AC	RRE	P A1 *	10-30

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
M8	CIPHER MESSAGE WITH AUTHENTICATION	KMA	B929	RRF-b	C 85,9 A SP IC GM I1 ST R1 R2 R3	7-78

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
V2	VECTOR FP CONVERT FROM FIXED	VCFPS	E7C3	VRR-a	⌘ 7,9 SP Dv Xx	24-15
V2	VECTOR FP CONVERT FROM LOGICAL	VCFPL	E7C1	VRR-a	⌘ 7,9 SP Dv Xx	24-17
V2	VECTOR FP CONVERT TO FIXED	VCSFP	E7C2	VRR-a	⌘ 7,9 SP Dv Xi Xx	24-18
V2	VECTOR FP CONVERT TO LOGICAL	VCLFP	E7C0	VRR-a	⌘ 7,9 SP Dv Xi Xx	24-20
V2	VECTOR LOAD BYTE REVERSED ELEMENT (16)	VLEBRH	E601	VRX	⌘7,9 A SP Dv B2	21-7
V2	VECTOR LOAD BYTE REVERSED ELEMENT (64)	VLEBRG	E602	VRX	⌘7,9 A SP Dv B2	21-7
V2	VECTOR LOAD BYTE REVERSED ELEMENT (32)	VLEBRF	E603	VRX	⌘7,9 A SP Dv B2	21-7
V2	VECTOR LOAD BYTE REVERSED ELEMENT AND REPLICATE	VLBRREP	E605	VRX	⌘7,9 A SP Dv B2	21-8
V2	VECTOR LOAD BYTE REVERSED ELEMENT AND ZERO	VLLEBRZ	E604	VRX	⌘7,9 A SP Dv B2	21-8
V2	VECTOR LOAD BYTE REVERSED ELEMENTS	VLBR	E606	VRX	⌘7,9 A SP Dv B2	21-9
V2	VECTOR LOAD ELEMENTS REVERSED	VLER	E607	VRX	⌘7,9 A SP Dv B2	21-10
V2	VECTOR SHIFT LEFT DOUBLE BY BIT	VSLD	E786	VRI-d	⌘7,9 SP Dv	22-25
V2	VECTOR SHIFT RIGHT DOUBLE BY BIT	VSRD	E787	VRI-d	⌘7,9 SP Dv	22-26
V2	VECTOR STORE BYTE REVERSED ELEMENT (16)	VSTEBRH	E609	VRX	⌘7,9 A SP Dv ST B2	21-22
V2	VECTOR STORE BYTE REVERSED ELEMENT (64)	VSTEBRG	E60A	VRX	⌘7,9 A SP Dv ST B2	21-22
V2	VECTOR STORE BYTE REVERSED ELEMENT (32)	VSTEBRF	E60B	VRX	⌘7,9 A SP Dv ST B2	21-22
V2	VECTOR STORE BYTE REVERSED ELEMENTS	VSTBR	E60E	VRX	⌘7,9 A SP Dv ST B2	21-22
V2	VECTOR STORE ELEMENTS REVERSED	VSTER	E60F	VRX	⌘7,9 A SP Dv ST B2	21-24
V2	VECTOR STRING SEARCH	VSTRS	E78B	VRR-d C	⌘7,9 SP Dv	23-8

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
SL	SORT LISTS	SORTL	B938	RRE	C 85,9 A SP IC Dg GM I1 ST R1 R2	26-96

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
GZ	DEFLATE CONVERSION CALL	DFLTCC	B939	RRF-a	C 85,9 A SP IC GM I1 ST R1 R2 R3	26-17

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
M9	COMPUTE DIGITAL SIGNATURE AUTHENTICATION	KDSA	B93A	RRE	C 85,9 A SP IC GM I1 ST R2	26-2

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
NN	NEURAL NETWORK PROCESSING ASSIST	NNPA	B93B	RRE	C 5,9 A SP IC Dg GM I1 ST	26-61
NN	VECTOR FP CONVERT AND LENGTHEN FROM NNP HIGH	VCLFNH	E656	VRR-a	7,9 Dv Xi Xx	26-121
NN	VECTOR FP CONVERT AND LENGTHEN FROM NNP LOW	VCLFNL	E65E	VRR-a	7,9 Dv Xi Xx	26-122
NN	VECTOR FP CONVERT AND ROUND TO NNP	VCRNF	E675	VRR-c	7,9 Dv Xi Xo Xu Xx	26-123
NN	VECTOR FP CONVERT FROM NNP	VCFN	E65D	VRR-a	7,9 Dv Xi Xo Xu Xx	26-123
NN	VECTOR FP CONVERT TO NNP	VCNF	E655	VRR-a	7,9 Dv Xi Xu Xx	26-124

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
VD2	DECIMAL SCALE AND CONVERT AND SPLIT TO HFP	VSCSHP	E67C	VRR-b	7,9 Dv Dg	25-4
VD2	DECIMAL SCALE AND CONVERT TO HFP	VSCHP	E674	VRR-b	7,9 SP Dv Dg	25-5
VD2	VECTOR CONVERT HFP TO SCALED DECIMAL	VCSPH	E67D	VRR-j	7,9 Dv	25-11
VD2	VECTOR COUNT LEADING ZERO DIGITS	VCLZDP	E651	VRR-k	C* 7,9 Dv Dg	25-11
VD2	VECTOR PACK ZONED REGISTER	VPKZR	E670	VRI-f	C* 7,9 SP Dv Dg DF*	25-18
VD2	VECTOR SHIFT AND ROUND DECIMAL REGISTER	VSRPR	E672	VRI-f	C* 7,9 SP Dv Dg DF*	25-26
VD2	VECTOR UNPACK ZONED HIGH	VUPKZH	E654	VRR-k	7,9 Dv Dg	25-30
VD2	VECTOR UNPACK ZONED LOW	VUPKZL	E65C	VRR-k	7,9 Dv Dg	25-31

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
BE	LOAD BEAR	LBEAR	B200	S	P A SP B2	10-51
BE	LOAD PSW EXTENDED	LPSWEY	EB71	SIY	L P A SP SO \$ B2	10-57
BE	STORE BEAR	STBEAR	B201	S	P A SP ST B2	10-145

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
DP	RESET DAT PROTECTION	RDP	B98B	RRF-b	P A1 \$	10-124

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
PI	QUERY PROCESSOR ACTIVITY COUNTER INFORMATION	QPACI	B28F	S	C P A G0 ST B2	10-123

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
BFP	CONVERT FROM FIXED (32 to short BFP)	CEFBRA	B394	RRF-e	7,9 SP Db Xx	19-19
BFP	CONVERT FROM FIXED (32 to long BFP)	CDFBRA	B395	RRF-e	7,9 SP Db	19-19
BFP	CONVERT FROM FIXED (32 to extended BFP)	CXFBRA	B396	RRF-e	7,9 SP Db	19-19
BFP	CONVERT FROM FIXED (64 to short BFP)	CEGBRA	B3A4	RRF-e	7,9 SP Db Xx	19-19
BFP	CONVERT FROM FIXED (64 to long BFP)	CDGBRA	B3A5	RRF-e	7,9 SP Db Xx	19-19
BFP	CONVERT FROM FIXED (64 to extended BFP)	CXGBRA	B3A6	RRF-e	7,9 SP Db	19-19
BFP	CONVERT TO FIXED (short BFP to 32)	CFEBRA	B398	RRF-e	C 7,9 SP Db Xi Xx	19-22
BFP	CONVERT TO FIXED (long BFP to 32)	CFDBRA	B399	RRF-e	C 7,9 SP Db Xi Xx	19-22
BFP	CONVERT TO FIXED (extended BFP to 32)	CFXBRA	B39A	RRF-e	C 7,9 SP Db Xi Xx	19-22
BFP	CONVERT TO FIXED (short BFP to 64)	CGEBRA	B3A8	RRF-e	C 7,9 SP Db Xi Xx	19-22
BFP	CONVERT TO FIXED (long BFP to 64)	CGDBRA	B3A9	RRF-e	C 7,9 SP Db Xi Xx	19-22
BFP	CONVERT TO FIXED (extended BFP to 64)	CGXBRA	B3AA	RRF-e	C 7,9 SP Db Xi Xx	19-22
BFP	LOAD FP INTEGER (extended BFP)	FIXBRA	B347	RRF-e	7,9 SP Db Xi Xx	19-32
BFP	LOAD FP INTEGER (short BFP)	FIEBRA	B357	RRF-e	7,9 SP Db Xi Xx	19-32
BFP	LOAD FP INTEGER (long BFP)	FIDBRA	B35F	RRF-e	7,9 SP Db Xi Xx	19-32
BFP	LOAD ROUNDED (long to short BFP)	LEDBRA	B344	RRF-e	7,9 SP Db Xi Xo Xu Xx	19-35
BFP	LOAD ROUNDED (extended to long BFP)	LDXBRA	B345	RRF-e	7,9 SP Db Xi Xo Xu Xx	19-35
BFP	LOAD ROUNDED (extended to short BFP)	LEXBRA	B346	RRF-e	7,9 SP Db Xi Xo Xu Xx	19-35

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
D2	LOAD PAGE TABLE ENTRY ADDRESS	LPTEA	B9AA	RRF-b	C P A1 * SP SO R2	10-52

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
ES	PAGE IN	PGIN	B22E	RRE	C P A1 ¢	10-76
ES	PAGE OUT	PGOUT	B22F	RRE	C P A1 ¢	10-77

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
N	ADD (64)	AGR	B908	RRE	C IF	7-26
N	ADD (64 <- 32)	AGFR	B918	RRE	C IF	7-26
N	ADD (64)	AG	E308	RXY-a	C A IF B2	7-26
N	ADD (64 <- 32)	AGF	E318	RXY-a	C A IF B2	7-26
N	ADD HALFWORD IMMEDIATE (64 <- 16)	AGHI	A70B	RI-a	C IF	7-28
N	ADD LOGICAL (64)	ALGR	B90A	RRE	C	7-29
N	ADD LOGICAL (64 <- 32)	ALGFR	B91A	RRE	C	7-29
N	ADD LOGICAL (64)	ALG	E30A	RXY-a	C A B2	7-29
N	ADD LOGICAL (64 <- 32)	ALGF	E31A	RXY-a	C A B2	7-29
N	ADD LOGICAL WITH CARRY (64)	ALCGR	B988	RRE	C	7-30
N	ADD LOGICAL WITH CARRY (64)	ALCG	E388	RXY-a	C A B2	7-31
N	AND (64)	NGR	B980	RRE	C	7-33
N	AND (64)	NG	E380	RXY-a	C A B2	7-33
N	AND IMMEDIATE (high high)	NIHH	A504	RI-a	C	7-34
N	AND IMMEDIATE (high low)	NIHL	A505	RI-a	C	7-34
N	AND IMMEDIATE (low high)	NILH	A506	RI-a	C	7-34
N	AND IMMEDIATE (low low)	NILL	A507	RI-a	C	7-34
N	BRANCH ON COUNT (64)	BCTGR	B946	RRE	9 B	7-41
N	BRANCH ON COUNT (64)	BCTG	E346	RXY-a	9 B	7-41
N	BRANCH ON INDEX HIGH (64)	BXHG	EB44	RSY-a	9 B	7-41
N	BRANCH ON INDEX LOW OR EQUAL (64)	BXLEG	EB45	RSY-a	9 B	7-41
N	BRANCH RELATIVE ON COUNT (64)	BRCTG	A707	RI-b	9 B	7-47
N	BRANCH RELATIVE ON INDEX HIGH (64)	BRXHG	EC44	RIE-e	9 B	7-48
N	BRANCH RELATIVE ON INDEX LOW OR EQ. (64)	BRXLG	EC45	RIE-e	9 B	7-48
N	COMPARE (64)	CGR	B920	RRE	C	7-136
N	COMPARE (64 <- 32)	CGFR	B930	RRE	C	7-136
N	COMPARE (64)	CG	E320	RXY-a	C A B2	7-136
N	COMPARE (64 <- 32)	CGF	E330	RXY-a	C A B2	7-136
N	COMPARE AND SWAP (64)	CSG	EB30	RSY-a	C 9 A SP \$ ST B2	7-145
N	COMPARE DOUBLE AND SWAP (64)	CDSG	EB3E	RSY-a	C 9 A SP \$ ST B2	7-145
N	COMPARE HALFWORD IMMEDIATE (64 <- 16)	CGHI	A70F	RI-a	C	7-151
N	COMPARE LOGICAL (64)	CLGR	B921	RRE	C	7-153
N	COMPARE LOGICAL (64 <- 32)	CLGFR	B931	RRE	C	7-153
N	COMPARE LOGICAL (64)	CLG	E321	RXY-a	C A B2	7-153
N	COMPARE LOGICAL (64 <- 32)	CLGF	E331	RXY-a	C A B2	7-153
N	COMPARE LOGICAL CHAR. UNDER MASK (high)	CLMH	EB20	RSY-b	C A B2	7-158
N	CONVERT FROM FIXED (64 to short HFP)	CEGR	B3C4	RRE	7,9 Da	18-11
N	CONVERT FROM FIXED (64 to long HFP)	CDGR	B3C5	RRE	7,9 Da	18-11
N	CONVERT FROM FIXED (64 to extended HFP)	CXGR	B3C6	RRE	7,9 SP Da	18-11
N	CONVERT TO BINARY (64)	CVBG	E30E	RXY-a	9 A Dg IK B2	7-232
N	CONVERT TO DECIMAL (64)	CVDG	E32E	RXY-a	9 A ST B2	7-233
N	CONVERT TO FIXED (short HFP to 64)	CGER	B3C8	RRF-e	C 7,9 SP Da	18-11
N	CONVERT TO FIXED (long HFP to 64)	CGDR	B3C9	RRF-e	C 7,9 SP Da	18-11
N	CONVERT TO FIXED (extended HFP to 64)	CGXR	B3CA	RRF-e	C 7,9 SP Da	18-11
N	DIVIDE LOGICAL (64 <- 128)	DLGR	B987	RRE	9 SP IK	7-256
N	DIVIDE LOGICAL (64 <- 128)	DLG	E387	RXY-a	9 A SP IK B2	7-256
N	DIVIDE SINGLE (64)	DSGR	B90D	RRE	9 SP IK	7-257
N	DIVIDE SINGLE (64 <- 32)	DSGFR	B91D	RRE	9 SP IK	7-257
N	DIVIDE SINGLE (64)	DSG	E30D	RXY-a	9 A SP IK B2	7-257
N	DIVIDE SINGLE (64 <- 32)	DSGF	E31D	RXY-a	9 A SP IK B2	7-257
N	EXCLUSIVE OR (64)	XGR	B982	RRE	C	7-257
N	EXCLUSIVE OR (64)	XG	E382	RXY-a	C A B2	7-257
N	EXTRACT AND SET EXTENDED AUTHORITY	ESEA	B99D	RRE	P	10-24
N	EXTRACT STACKED REGISTERS (64)	EREGG	B90E	RRE	1 A1 * SE U1 U2	10-26

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
N	INSERT CHARACTERS UNDER MASK (high)	ICMH	EB80	RSY-b	C A B2	7-265
N	INSERT IMMEDIATE (high high)	IIHH	A500	RI-a		7-266
N	INSERT IMMEDIATE (high low)	IIHL	A501	RI-a		7-266
N	INSERT IMMEDIATE (low high)	IILH	A502	RI-a		7-266
N	INSERT IMMEDIATE (low low)	IILL	A503	RI-a		7-266
N	LOAD (64)	LGR	B904	RRE		7-267
N	LOAD (64 <- 32)	LGFR	B914	RRE		7-267
N	LOAD (64)	LG	E304	RXY-a	A B2	7-267
N	LOAD (64 <- 32)	LGf	E314	RXY-a	A B2	7-267
N	LOAD AND TEST (64)	LTGR	B902	RRE	C	7-273
N	LOAD AND TEST (64 <- 32)	LTGFR	B912	RRE	C	7-273
N	LOAD COMPLEMENT (64)	LCGR	B903	RRE	C IF	7-275
N	LOAD COMPLEMENT (64 <- 32)	LCGFR	B913	RRE	C	7-275
N	LOAD CONTROL (64)	LCTLG	EB2F	RSY-a	P A SP B2	10-51
N	LOAD HALFWORD (64 <- 16)	LGH	E315	RXY-a	A B2	7-279
N	LOAD HALFWORD IMMEDIATE (64 <- 16)	LGHI	A709	RI-a		7-279
N	LOAD LOGICAL (64 <- 32)	LLGFR	B916	RRE		7-281
N	LOAD LOGICAL (64 <- 32)	LLGF	E316	RXY-a	A B2	7-281
N	LOAD LOGICAL CHARACTER (64 <- 8)	LLGC	E390	RXY-a	A B2	7-282
N	LOAD LOGICAL HALFWORD (64 <- 16)	LLGH	E391	RXY-a	A B2	7-283
N	LOAD LOGICAL IMMEDIATE (high high)	LLIHH	A50C	RI-a		7-284
N	LOAD LOGICAL IMMEDIATE (high low)	LLIHL	A50D	RI-a		7-284
N	LOAD LOGICAL IMMEDIATE (low high)	LLILH	A50E	RI-a		7-284
N	LOAD LOGICAL IMMEDIATE (low low)	LLILL	A50F	RI-a		7-284
N	LOAD LOGICAL THIRTY ONE BITS (64 <- 31)	LLGTR	B917	RRE		7-284
N	LOAD LOGICAL THIRTY ONE BITS (64 <- 31)	LLGT	E317	RXY-a	A B2	7-284
N	LOAD MULTIPLE (64)	LMG	EB04	RSY-a	A B2	7-285
N	LOAD MULTIPLE DISJOINT (64 <- 32&32)	LMD	EF	SS-e	9 A B2 B4	7-285
N	LOAD MULTIPLE HIGH (32)	LMH	EB96	RSY-a	A B2	7-286
N	LOAD NEGATIVE (64)	LNGR	B901	RRE	C	7-286
N	LOAD NEGATIVE (64 <- 32)	LNGFR	B911	RRE	C	7-286
N	LOAD PAIR FROM QUADWORD (64&64 <- 128)	LPQ	E38F	RXY-a	9 A SP B2	7-289
N	LOAD POSITIVE (64)	LPGR	B900	RRE	C IF	7-289
N	LOAD POSITIVE (64 <- 32)	LPGFR	B910	RRE	C	7-289
N	LOAD PSW EXTENDED	LPSWE	B2B2	S	L P A SP SO 4 B2	10-57
N	LOAD REAL ADDRESS (64)	LRAG	E303	RXY-a	C P A1 * BP	10-58
N	LOAD REVERSED (64)	LRVGR	B90F	RRE		7-290
N	LOAD REVERSED (64)	LRVG	E30F	RXY-a	A B2	7-290
N	LOAD USING REAL ADDRESS (64)	LURAG	B905	RRE	P A1 SP	10-63
N	MULTIPLY HALFWORD IMMEDIATE (64 <- 16)	MGHI	A70D	RI-a		7-309
N	MULTIPLY LOGICAL (128 <- 64)	MLGR	B986	RRE	SP	7-309
N	MULTIPLY LOGICAL (128 <- 64)	MLG	E386	RXY-a	A SP B2	7-310
N	MULTIPLY SINGLE (64)	MSGR	B90C	RRE		7-310
N	MULTIPLY SINGLE (64 <- 32)	MSGFR	B91C	RRE		7-310
N	MULTIPLY SINGLE (64)	MSG	E30C	RXY-a	A B2	7-310
N	MULTIPLY SINGLE (64 <- 32)	MSGF	E31C	RXY-a	A B2	7-311
N	OR (64)	OGR	B981	RRE	C	7-315
N	OR (64)	OG	E381	RXY-a	C A B2	7-315
N	OR IMMEDIATE (high high)	OIHH	A508	RI-a	C	7-316
N	OR IMMEDIATE (high low)	OIHL	A509	RI-a	C	7-316
N	OR IMMEDIATE (low high)	OILH	A50A	RI-a	C	7-317
N	OR IMMEDIATE (low low)	OILL	A50B	RI-a	C	7-317
N	ROTATE LEFT SINGLE LOGICAL (64)	RLLG	EB1C	RSY-a		7-372
N	SET ADDRESSING MODE (64)	SAM64	010E	E	9,9 T	7-381

Fac	Name...	Assm	OpCd	IFmt	Attributes...	Ref
N	SHIFT LEFT SINGLE (64)	SLAG	EB0B	RSY-a	C IF	7-383
N	SHIFT LEFT SINGLE LOGICAL (64)	SLLG	EB0D	RSY-a		7-385
N	SHIFT RIGHT SINGLE (64)	SRAG	EB0A	RSY-a	C	7-386
N	SHIFT RIGHT SINGLE LOGICAL (64)	SRLG	EB0C	RSY-a		7-387
N	STORE (64)	STG	E324	RXY-a	A ST B2	7-388
N	STORE CHARACTERS UNDER MASK (high)	STCMH	EB2C	RSY-b	ø9,11 A ST B2	7-390
N	STORE CONTROL (64)	STCTG	EB25	RSY-a	P A SP ST B2	10-146
N	STORE MULTIPLE (64)	STMG	EB24	RSY-a	A ST B2	7-396
N	STORE MULTIPLE HIGH (32)	STMH	EB26	RSY-a	A ST B2	7-397
N	STORE PAIR TO QUADWORD	STPQ	E38E	RXY-a	ø9 A SP ST B2	7-398
N	STORE REAL ADDRESS	STRAG	E502	SSE	P A1 SP ST B1 BP	10-150
N	STORE REVERSED (64)	STRVG	E32F	RXY-a	A ST B2	7-398
N	STORE USING REAL ADDRESS (64)	STURG	B925	RRE	P A1 SP SU	10-176
N	SUBTRACT (64)	SGR	B909	RRE	C IF	7-399
N	SUBTRACT (64 <- 32)	SGFR	B919	RRE	C IF	7-399
N	SUBTRACT (64)	SG	E309	RXY-a	C A IF B2	7-399
N	SUBTRACT (64 <- 32)	SGF	E319	RXY-a	C A IF B2	7-399
N	SUBTRACT LOGICAL (64)	SLGR	B90B	RRE	C	7-401
N	SUBTRACT LOGICAL (64 <- 32)	SLGFR	B91B	RRE	C	7-401
N	SUBTRACT LOGICAL (64)	SLG	E30B	RXY-a	C A B2	7-401
N	SUBTRACT LOGICAL (64 <- 32)	SLGF	E31B	RXY-a	C A B2	7-401
N	SUBTRACT LOGICAL WITH BORROW (64)	SLBGR	B989	RRE	C	7-402
N	SUBTRACT LOGICAL WITH BORROW (64)	SLBG	E389	RXY-a	C A B2	7-402
N	TEST UNDER MASK (high high)	TMHH	A702	RI-a	C	7-404
N	TEST UNDER MASK (high low)	TMHL	A703	RI-a	C	7-404
N	TRACE (64)	TRACG	EB0F	RSY-a	P A SP T ¢ B2	10-184