

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
				62 *****
				63 * TEST 1: AE/AD (Add Normalized)
				64 *****
00000250	92F1 0600		00000600	66 TEST1 MVI TESTNUM,X'F1'
00000254	9200 0601		00000601	67 MVI SUBTEST,0
				68 *
				69 * Add Normalized (AD, ADR, AE, AER, AXR)
				70 *
				71 * FPR6 contains
				72 * C3 08 21 00 00 00 00 00
				73 *
				74 * Storage location contains
				75 * 41 12 34 56 00 00 00 00
				76 *
				77 *
				78 * Machine Format
				79 *
				80 * Op Code R1 X2 B2 D2
				81 * 7A 6 0 D 000
				82 *
				83 *
				84 * Assembler Format
				85 *
				86 * Op Code R1,D2(X2,B2)
				87 * AE 6,0(0,13)
				88 *
				89 *
				90 * the result (left half of FPR6) is
				91 * C2 80 EC BB.
				92 *
				93 * The right half of FPR6 is unchanged.
				94 *
				95 * Condition code 1 is set (result less than zero).
				96 *
				97 * If the long-precision instruction 'AD' were used,
				98 * the result in FPR6 would be
				99 * C2 80 BC BA A0 00 00 00.
				100 *
00000258	6860 0350		00000350	101 LD FPR6,T1_FPR6
0000025C	7A60 0358		00000358	102 AE FPR6,T1_STRG
00000260	47B0 0230		00000230	103 BC B'1011',BADCC (not CC1)
00000264	6060 0360		00000360	104 STD FPR6,T1_GOT
00000268	D507 0360 0368	00000360	00000368	105 CLC T1_GOT,T1_WANT
0000026E	4770 0240		00000240	106 BNE BADGOT
00000272	07FE			107 BR R14

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
				109 *****
				110 * TEST 2: AU (Add Unnormalized)
				111 *****
00000274	92F2 0600		00000600	113 TEST2 MVI TESTNUM,X'F2'
00000278	9200 0601		00000601	114 MVI SUBTEST,0
				115 *
				116 * Add Unnormalized (AU, AUR, AW, AWR)
				117 *
				118 * using the the same operands as in the
				119 * previous ADD NORMALIZED example:
				120 *
				121 * FPR6 contains
				122 * C3 08 21 00 00 00 00 00
				123 *
				124 * Storage location contains
				125 * 41 12 34 56 00 00 00 00
				126 *
				127 *
				128 * Machine Format
				129 *
				130 * Op Code R1 X2 B2 D2
				131 * 7E 6 0 D 0000
				132 *
				133 *
				134 * Assembler Format
				135 *
				136 * Op Code R1,D2(X2,B2)
				137 * AU 6,0(0,13)
				138 *
				139 *
				140 * result in FPR6
				141 * C3 08 0E CB 00 00 00 00
				142 *
				143 * Condition code 1 is set (result less than zero).
				144 *
0000027C	6860 0370		00000370	145 LD FPR6,T2_FPR6
00000280	7E60 0378		00000378	146 AU FPR6,T2_STRG
00000284	47B0 0230		00000230	147 BC B'1011',BADCC (not CC1)
00000288	6060 0380		00000380	148 STD FPR6,T2_GOT
0000028C	D507 0380 0388	00000380	00000388	149 CLC T2_GOT,T2_WANT
00000292	4770 0240		00000240	150 BNE BADGOT
00000296	07FE			151 BR R14

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
				153 *****
				154 * TEST 3: CDR (Compare)
				155 *****
00000298	92F3 0600		00000600	157 TEST3 MVI TESTNUM,X'F3'
0000029C	9200 0601		00000601	158 MVI SUBTEST,0
				159 *
				160 * Compare (CD, CDR, CE, CER)
				161 *
				162 * FPR4 contains
				163 * 43 00 00 00 00 00 00 00 (zero)
				164 *
				165 * FPR6 contains
				166 * 35 12 34 56 78 9A BC DE (positive number).
				167 *
				168 *
				169 * Machine Format
				170 *
				171 * Op Code R1 R2
				172 * 29 4 6
				173 *
				174 *
				175 * Assembler Format
				176 *
				177 * Op Code R1,R2
				178 * CDR 4,6
				179 *
				180 *
				181 * Condition code 1 is set (FPR4 less than FPR6).
				182 *
				183 * If FPR6 instead contained
				184 * 34 12 34 56 78 9A BC DE
				185 *
				186 * Condition code 0 (equal) would instead be set.
				187 *
				188 * As another example
				189 * 41 00 12 34 56 78 9A BC
				190 *
				191 * compares equal to all numbers of the form:
				192 * 3F 12 34 56 78 9A BC 0X
				193 *
				194 * where X represents any hexadecimal digit.
				195 *
000002A0	6840 0390		00000390	196 LD FPR4,T3_FPR4
000002A4	6860 0398		00000398	197 LD FPR6,T3_FPR6
000002A8	2946			198 CDR FPR4,FPR6
000002AA	47B0 0230		00000230	199 BC B'1011',BADCC (not CC1)
000002AE	6860 03A0		000003A0	200 LD FPR6,T3_FPR6A
000002B2	2946			201 CDR FPR4,FPR6
000002B4	4770 0230		00000230	202 BC B'0111',BADCC (not CC0)
000002B8	6840 03A8		000003A8	203 LD FPR4,T3_FPR4A
000002BC	4110 03B0		000003B0	204 LA R1,T3_FPR6X
000002C0	4120 0010		00000010	205 LA R2,T3_NUMX
000002C4	6860 1000		00000000	206 T3_XLOOP LD FPR6,0(,R1)
000002C8	2946			207 CDR FPR4,FPR6
000002CA	4770 0230		00000230	208 BC B'0111',BADCC (not CC0)

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
				213 *****
				214 * TEST 4: DER (Divide)
				215 *****
000002D8	92F4 0600		00000600	217 TEST4 MVI TESTNUM,X'F4'
000002DC	9200 0601		00000601	218 MVI SUBTEST,0
				219 *
				220 * Divide (DD, DDR, DE, DER)
				221 *
				222 * first operand = dividend
				223 * second operand = divisor
				224 * resulting quotient = replaces first operand
				225 *
				226 *
				227 * Machine Format
				228 *
				229 * Op Code R1 R2
				230 * 3D 2 0
				231 *
				232 *
				233 * Assembler Format
				234 *
				235 * Op Code R1,R2
				236 * DER 2,0
				237 *
				238 *
				239 * Case FPR2 Before FPR0 FPR2 After
				240 * (Dividend) (Divisor) (Quotient)
				241 *
				242 * A -43 082100 +43 001234 -42 72522F
				243 * B +42 101010 +45 111111 +3D F0F0F0
				244 * C +48 30000F +41 400000 +47 C0003C
				245 * D +48 30000F +41 200000 +48 180007
				246 * E +48 180007 +41 200000 +47 C00038
				247 *
000002E0	4110 0430		00000430	248 LA R1,T4_A
000002E4	4120 0005		00000005	249 LA R2,T4_NUMT
000002E8	7820 1000		00000000	250 T4_LOOP LE FPR2,0(,R1)
000002EC	7800 1004		00000004	251 LE FPR0,4(,R1)
000002F0	3D20			252 DER FPR2,FPR0
000002F2	7020 046C		0000046C	253 STE FPR2,T4_GOT
000002F6	D503 046C 1008	0000046C	00000008	254 CLC T4_GOT,8(R1)
000002FC	4770 0240		00000240	255 BNE BADGOT
00000300	4110 100C		0000000C	256 LA R1,3*4(,R1)
00000304	4620 02E8		000002E8	257 BCT R2,T4_LOOP
00000308	07FE			258 BR R14

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
				332 *****
				333 * Working storage
				334 *****
0000034A				336 LTORG , Literals Pool
00000350				338 DC 0D'0'
00000350	C3082100	00000000		339 T1_FPR6 DC XL8'C3 08 21 00 00 00 00 00'
00000358	41123456	00000000		340 T1_STRG DC XL8'41 12 34 56 00 00 00 00'
00000360	00000000	00000000		341 T1_GOT DC XL8'00'
00000368	C280ECBB	00000000		342 T1_WANT DC XL8'C2 80 EC BB 00 00 00 00'
00000370	C3082100	00000000		344 T2_FPR6 DC XL8'C3 08 21 00 00 00 00 00'
00000378	41123456	00000000		345 T2_STRG DC XL8'41 12 34 56 00 00 00 00'
00000380	00000000	00000000		346 T2_GOT DC XL8'00'
00000388	C3080ECB	00000000		347 T2_WANT DC XL8'C3 08 0E CB 00 00 00 00'
00000390	43000000	00000000		349 T3_FPR4 DC XL8'43 00 00 00 00 00 00 00'
00000398	35123456	789ABCDE		350 T3_FPR6 DC XL8'35 12 34 56 78 9A BC DE'
000003A0	34123456	789ABCDE		351 T3_FPR6A DC XL8'34 12 34 56 78 9A BC DE'
000003A8	41001234	56789ABC		352 T3_FPR4A DC XL8'41 00 12 34 56 78 9A BC'
000003B0	3F123456	789ABC00		353 T3_FPR6X DC XL8'3F 12 34 56 78 9A BC 00'
000003B8	3F123456	789ABC01		354 DC XL8'3F 12 34 56 78 9A BC 01'
000003C0	3F123456	789ABC02		355 DC XL8'3F 12 34 56 78 9A BC 02'
000003C8	3F123456	789ABC03		356 DC XL8'3F 12 34 56 78 9A BC 03'
000003D0	3F123456	789ABC04		357 DC XL8'3F 12 34 56 78 9A BC 04'
000003D8	3F123456	789ABC05		358 DC XL8'3F 12 34 56 78 9A BC 05'
000003E0	3F123456	789ABC06		359 DC XL8'3F 12 34 56 78 9A BC 06'
000003E8	3F123456	789ABC07		360 DC XL8'3F 12 34 56 78 9A BC 07'
000003F0	3F123456	789ABC08		361 DC XL8'3F 12 34 56 78 9A BC 08'
000003F8	3F123456	789ABC09		362 DC XL8'3F 12 34 56 78 9A BC 09'
00000400	3F123456	789ABC0A		363 DC XL8'3F 12 34 56 78 9A BC 0A'
00000408	3F123456	789ABC0B		364 DC XL8'3F 12 34 56 78 9A BC 0B'
00000410	3F123456	789ABC0C		365 DC XL8'3F 12 34 56 78 9A BC 0C'
00000418	3F123456	789ABC0D		366 DC XL8'3F 12 34 56 78 9A BC 0D'
00000420	3F123456	789ABC0E		367 DC XL8'3F 12 34 56 78 9A BC 0E'
00000428	3F123456	789ABC0F		368 DC XL8'3F 12 34 56 78 9A BC 0F'
	00000010	00000001		369 T3_NUMX EQU (*-T3_FPR6X)/8

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
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396 *****

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397 *                               Register equates
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398 *****.

00000000	00000001	400 R0	EQU	0
----------	----------	--------	-----	---

00000001	00000001	401 R1	EQU	1
----------	----------	--------	-----	---

```
00000002  00000001  402 R2      EQU    2
```

00000003	00000001	403 R3	EQU	3
----------	----------	--------	-----	---

00000004	00000001	404 R4	EQU	4
----------	----------	--------	-----	---

00000005	00000001	405 R5	EQU	5
----------	----------	--------	-----	---

00000006	00000001	406 R6	EQU	6
----------	----------	--------	-----	---

00000007	00000001	407 R7	EQU	7
----------	----------	--------	-----	---

00000008	00000001	408 R8	EQU	8
----------	----------	--------	-----	---

00000009	00000001	409	R9	EQU	9
00000001	00000001	410	R10	EQU	1

00000000A	000000001	410 R10	EQU	10
00000000F	000000001	411 R11	EQU	10

0000000B	00000001	411	R11	EQU	11
00000000	00000001	410	R10	EQU	10

0000000C	00000001	412	R12	EQU	12
0000000D	00000001	412	R12	EQU	12

00000000D	000000001	413	R13	EQU	13
00000000F	000000001	414	R14	EQU	14

00000000E	000000001	414	R14	EQU	14
00000000F	000000001	415	R15	EQU	15

0000000F	00000001	415	R15	EQU	15
----------	----------	-----	-----	-----	----

```
00000000  00000001  417 FPR0      EQU    0
```

00000002	00000001	418	FPR2	EQU	2
----------	----------	-----	------	-----	---

00000004	00000001	419	FPR4	EQU	4
----------	----------	-----	------	-----	---

```
00000006  00000001  420 FPR6      EQU      6
```

```
00000000  422          END    TEST
```


SYMBOL	TYPE	VALUE	LENGTH	DEFN	REFERENCES										
T6_FPR2	X	000490	8	387	325										
T6_GOT	X	000498	8	388	327	328									
T6_WANT	X	0004A0	8	389	328										
TEST	J	000000	1538	22	25	29	37	391	23	422					
TEST1	I	000250	4	66	40										
TEST2	I	000274	4	113	41										
TEST3	I	000298	4	157	42										
TEST4	I	0002D8	4	217	43										
TEST5	I	00030A	4	264	44										
TEST6	I	000328	4	301	45										
TESTNUM	X	000600	1	393	47	66	113	157	217	264	301				

MACRO DEFN REFERENCES

No defined macros

DESC	SYMBOL	SIZE	POS	ADDR
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Entry: 0

Image	IMAGE	1538	000-601	000-601
Region		1538	000-601	000-601
CSECT	TEST	1538	000-601	000-601

STMT

FILE NAME

```
1 c:\Users\Fish\Documents\Visual Studio 2008\Projects\MyProjects\ASMA-0\float\float.asm
```

```

** NO ERRORS FOUND **

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