

Mode: All

Left file: D:\Source\github\CSS422_Hardware\Disassembler\UnitTests\Test_002.X68

Right file: D:\Source\github\CSS422_Hardware\Disassembler\Output.txt

```
*=====
» =====
» =====
* Title      : Test_002
* Written by : CSS 422 Best Group
*
*   The CSS 422 Best Group is:
*   - Howie Catlin
*   - Kyle Dukart
*   - Colton Sellers
*
*
* Date       : 10-Nov-2019
*
* Description:
*   Test input file used to perform software v
» erification
*   and validation (i.e.: validation that the
» disassembler
*   is capable of converting hexadecimal to En
» glish,
*   verification that the the strings being tr
» anslated are
*   in fact correct).
*
*   First parts of this file attempt to prove
» that each
*   operation code is capable of being transla
» ted. The
*   registers D0, D7, A0, & A7 and hex values
» '0', '1', '5',
*   'A', and 'F' as edge cases most likely to
» uncover early
*   programming errors. This method exercises
» all opcodes,
*   but performs less addressing.
*
*   Later in the file, a brute-force matrix of
» every-register
*   to-every-register is employed to verify th
» e Effective
*   Addressing code paths. This method uses fe
» wer op codes,
*   but performs more addressing.
*
*   Refer to the Test Plan and test matrix for
» more
*   information.
*=====
» =====
» =====
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(continued)

TESTIO

* -----

» -----

*** BCLR**

* -----

» -----

```

BCLR      D0,D7
BCLR      D7,(A7)
BCLR      D0,(A0)+
BCLR      D7,-(A7)
BCLR      D0,$FFFF
BCLR      D7,$55555

```

```

111112 BCLR      D0, D7
111114 BCLR      D7, (A7)
111116 BCLR      D0, (A0)+
111118 BCLR      D7, -(A7)
11111A BCLR      D0, $FFFF
111120 BCLR      D7, $55555

```

* -----

» -----

*** ORI**

* -----

» -----

```

ORI.W      #$1111,D0
ORI.W      $AAAA,(A0)+
ORI.W      $0000,-(A0)
ORI.L      $FFFFFF,D0
ORI.L      $55555,(A0)+
ORI.L      $AAAAA,-(A0)

```

```

111126 ORI.W      #$1111, D0
11112A ORI.W      $AAAA, (A0)+
11112E ORI.W      $0000, -(A0)
111132 ORI.L      $FFFFFF, D0
111138 ORI.L      $55555, (A0)+
11113E ORI.L      $AAAAA, -(A0)

```

* -----

» -----

*** CMPI**

* -----

» -----

```

CMPI.W      #$1111,D0
CMPI.W      $AAAA,(A0)+
CMPI.W      $0000,-(A0)
CMPI.L      $FFFFFF,D0
CMPI.L      $55555,(A0)+
CMPI.L      $AAAAA,-(A0)

```

```

111144 CMPI.W      #$1111, D0
111148 CMPI.W      $AAAA, (A0)+
11114C CMPI.W      $0000, -(A0)
111150 CMPI.L      $FFFFFF, D0
111156 CMPI.L      $55555, (A0)+
11115C CMPI.L      $AAAAA, -(A0)

```

* -----

» -----

*** MOVE.B**

* -----

» -----

```

MOVE.B      #$0F,D0
MOVE.B      D7,(A7)
MOVE.B      D7,(A0)+
MOVE.B      D0,-(A7)
MOVE.B      $1000,D0
MOVE.B      $10000,D0

```

```

111162 MOVE.B      #F, D0
111166 MOVE.B      D7, (A7)
111168 MOVE.B      D7, (A0)+
11116A MOVE.B      D0, -(A7)
11116C MOVE.B      $1000, D0
111170 MOVE.B      $10000, D0

```

```

MOVE.W      $AA,D0
MOVE.W      D7,A0
MOVE.W      D7,(A7)
MOVE.W      D0,(A0)+
MOVE.W      D7,-(A7)

```

```

111176 MOVE.W      $AA, D0
11117A MOVE.W      D7, A0
11117C MOVE.W      D7, (A7)
11117E MOVE.W      D0, (A0)+
111180 MOVE.W      D7, -(A7)

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```

MOVE.W    $5555,D0
MOVE.W    $AAAAA,D0
MOVE.L    #AA,D0
MOVE.L    D0,A0
MOVE.L    D0,(A0)
MOVE.L    D0,(A0)+
MOVE.L    D0,-(A0)
MOVE.L    $1000,D0
MOVE.L    $10000,D0

```

```

* -----
» -----
* MOVEA.W
* -----
» -----

```

```

MOVEA.W    D7,A0
MOVEA.W    (A0),A7
MOVEA.W    (A0)+,A7
MOVEA.W    -(A7),A0
MOVEA.W    $AAAA,A0
MOVEA.W    $55555,A0
MOVEA.L    D0,A0
MOVEA.L    D7,A0
MOVEA.L    (A7),A0
MOVEA.L    (A0)+,A7
MOVEA.L    -(A7),A0
MOVEA.L    $FFAA,A7
MOVEA.L    $FFAA5,A0

```

```

* -----
» -----
* NOP, RTS, ILLEGAL
* -----
» -----
NOP

```

RTS

ILLEGAL

```

* -----
» -----
* LEA
* -----
» -----
LEA        (A7),A0
LEA        $FFAA,A0
LEA        $AA551,A7

```

```

* -----
» -----

```

```

111182 MOVE.W    $5555, D0
111186 MOVE.W    $AAAAA, D0
11118C MOVE.L    #AA, D0
111192 MOVEA.L    D0, A0
111194 MOVE.L    D0, (A0)
111196 MOVE.L    D0, (A0)+
111198 MOVE.L    D0, -(A0)
11119A MOVE.L    $1000, D0
11119E MOVE.L    $10000, D0

```

```

1111A4 MOVEA.W    D7, A0
1111A6 MOVEA.W    (A0), A7
1111A8 MOVEA.W    (A0)+, A7
1111AA MOVEA.W    -(A7), A0
1111AC MOVEA.W    $AAAA, A0
1111B2 MOVEA.W    $55555, A0
1111B8 MOVEA.L    D0, A0
1111BA MOVEA.L    D7, A0
1111BC MOVEA.L    (A7), A0
1111BE MOVEA.L    (A0)+, A7
1111C0 MOVEA.L    -(A7), A0
1111C2 MOVEA.L    $FFAA, A7
1111C8 MOVEA.L    $FFAA5, A0
1111CE NOP
1111D0 RTS

```

1111D2 ILLEGAL

```

1111D4 LEA        (A7), A0
1111D6 LEA        $FFAA, A0
1111DC LEA        $AA551, A7
1111E2 NEG.W      D0

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* NEG

* -----

» -----

NEG	D0
NEG	(A6)
NEG	(A0)+
NEG	-(A1)
NEG	\$AAFF
NEG	\$55FAA

* -----

» -----

* JSR

* -----

» -----

JSR	(A6)
JSR	\$AAFF
JSR	\$55FAA

* -----

» -----

* MOVEM

* -----

» -----

* -----

» -----

* SUBQ.x

* -----

» -----

SUBQ.B	#1,D0
SUBQ.B	#3,(A7)
SUBQ.B	#4,(A0)+
SUBQ.B	#5,-(A0)
SUBQ.B	#6,\$AAFF
SUBQ.B	#7,\$AFAF5

SUBQ.W	#1,D0
SUBQ.W	#3,(A7)
SUBQ.W	#4,(A0)+
SUBQ.W	#5,-(A0)
SUBQ.W	#6,\$AAFF
SUBQ.W	#7,\$AFAF5
SUBQ.L	#1,D0
SUBQ.L	#3,(A7)
SUBQ.L	#4,(A0)+
SUBQ.L	#5,-(A0)
SUBQ.L	#6,\$AAFF
SUBQ.L	#7,\$AFAF5

* -----

» -----

* DIVS

* -----

1111E4	NEG.W	(A6)
1111E6	NEG.W	(A0)+
1111E8	NEG.W	-(A1)
1111EA	NEG.W	\$AAFF
1111F0	NEG.W	\$55FAA

1111F6	JSR	(A6)
1111F8	JSR	\$AAFF
1111FE	JSR	\$55FAA

111204	SUBQ.B	#1, D0
111206	SUBQ.B	#3, (A7)
111208	SUBQ.B	#4, (A0)+
11120A	SUBQ.B	#5, -(A0)
11120C	SUBQ.B	#6, \$AAFF
111212	SUBQ.B	#7, \$AFAF5

111218	SUBQ.W	#1, D0
11121A	SUBQ.W	#3, (A7)
11121C	SUBQ.W	#4, (A0)+
11121E	SUBQ.W	#5, -(A0)
111220	SUBQ.W	#6, \$AAFF
111226	SUBQ.W	#7, \$AFAF5
11122C	SUBQ.L	#1, D0
11122E	SUBQ.L	#3, (A7)
111230	SUBQ.L	#4, (A0)+
111232	SUBQ.L	#5, -(A0)
111234	SUBQ.L	#6, \$AAFF
11123A	SUBQ.L	#7, \$AFAF5

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```

» -----
    DIVS      D0,D1
    DIVS      (A1)+,D1
    DIVS      -(A2),D2
    DIVS      #01,D1
    DIVS      $AAFF,D1
    DIVS      $FFAA5,D2

```

```

* -----

```

```

» -----

```

```

* OR

```

```

* -----

```

```

» -----

```

```

    OR        D0,D1
    OR        (A0),D0
    OR        (A0)+,D7
    OR        -(A7),D0
    OR        #02,D1

```

```

* -----

```

```

» -----

```

```

* SUB

```

```

* -----

```

```

» -----

```

```

    SUB       D0,D1
    SUB       A0,D0
    SUB       (A0),D0
    SUB       (A0)+,D0
    SUB       -(A7),D1
    SUB       #02,D1
    SUB       $AAFF,D0
    SUB       $AFAF5,D1

```

```

* -----

```

```

» -----

```

```

* CMP

```

```

* -----

```

```

» -----

```

```

    CMP       D0,D1
    CMP       A0,D0
    CMP       (A0),D0
    CMP       (A0)+,D0
    CMP       -(A7),D1
    CMP       #02,D1
    CMP       $AAFF,D0
    CMP       $AFAF5,D1

```

```

* -----

```

```

» -----

```

```

* EOR

```

```

* -----

```

```

» -----

```

```

    EOR       D0,D1
    EOR       D0,(A0)
    EOR       D0,(A0)+

```

```

111240 DIVS      D0, D1
111242 DIVS      (A1)+, D1
111244 DIVS      -(A2), D2
111246 DIVS      #1, D1
11124A DIVS      $AAFF, D1
111250 DIVS      $FFAA5, D2

```

```

111256 OR.W      D0, D1
111258 OR.W      (A0), D0
11125A OR.W      (A0)+, D7
11125C OR.W      -(A7), D0

```

```

11125E OR.W      #$2, D1

```

```

111262 SUB.W     D0, D1
111264 SUB.W     A0, D0
111266 SUB.W     (A0), D0
111268 SUB.W     (A0)+, D0
11126A SUB.W     -(A7), D1
11126C SUBQ.W    #2, D1
11126E SUB.W     $AAFF, D0
111274 SUB.W     $AFAF5, D1

```

```

11127A CMP.W     D0, D1
11127C CMP.W     A0, D0
11127E CMP.W     (A0), D0
111280 CMP.W     (A0)+, D0
111282 CMP.W     -(A7), D1
111284 CMP.W     #$2, D1
111288 CMP.W     $AAFF, D0
11128E CMP.W     $AFAF5, D1

```

```

111294 EOR.W     D0, D1
111296 EOR.W     D0, (A0)
111298 EOR.W     D0, (A0)+

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(continued)

```

EOR      D0, -(A7)
EOR.W    #0xAFF,D0
EOR.L    #0xAFAF5,D1

* -----
» -----
* MULS
* -----
» -----
MULS     D0,D1
MULS     (A0),D0
MULS     (A0)+,D0
MULS     -(A7),D1
MULS     #02,D1
MULS     $AAFF,D0
MULS     $AFAF5,D1

* -----
» -----
* ADD
* -----
» -----
ADD       D0,D1
ADD       D0,A0
ADD       (A0),D0
ADD       (A0)+,D0
ADD       -(A7),D1
ADD       #02,D1
ADD       $AAFF,D0
ADD       $AFAF5,D1

* -----
» -----
* ADDA
* -----
» -----
ADDA      D0,A0
ADDA      D0,A0
ADDA      (A0),A0
ADDA      (A0)+,A0
ADDA      -(A7),A1
ADDA      #02,A1
ADDA      $AAFF,A0
ADDA      $AFAF5,A7

* -----
» -----
* ASR
* -----
» -----
ASR       (A0)
ASR       (A7)+
ASR       -(A0)
ASR       $AFAF
ASR       $FFAA550

```

```

11129A EOR.W    D0, -(A7)
11129C EORI.W   #0xAFF, D0
1112A0 BCLR     #0xA, D1
1112A4 DATA    FAF5

1112A6 MULS     D0, D1
1112A8 MULS     (A0), D0
1112AA MULS     (A0)+, D0
1112AC MULS     -(A7), D1
1112AE MULS     #02, D1
1112B2 MULS     $AAFF, D0
1112B8 MULS     $AFAF5, D1

1112BE ADD.W     D0, D1
1112C0 ADDA.W    D0, A0
1112C2 ADD.W     (A0), D0
1112C4 ADD.W     (A0)+, D0
1112C6 ADD.W     -(A7), D1
1112C8 ADDQ.W    #2, D1
1112CA ADD.W     $AAFF, D0
1112D0 ADD.W     $AFAF5, D1

1112D6 ADDA.W    D0, A0
1112D8 ADDA.W    D0, A0
1112DA ADDA.W    (A0), A0
1112DC ADDA.W    (A0)+, A0
1112DE ADDA.W    -(A7), A1
1112E0 ADDQ.W    #2, A1
1112E2 ADDA.W    $AAFF, A0
1112E8 ADDA.W    $AFAF5, A7

1112EE ASR       (A0)
1112F0 ASR       (A7)+
1112F2 ASR       -(A0)
1112F4 ASR       $AFAF
1112FA ASR       $FFAA550

```

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```

* -----
» -----
* ASL
* -----
» -----
    ASL      (A0)
    ASL      (A7)+
    ASL      -(A0)
    ASL      $AF AF
    ASL      $FF AA 55 0

* -----
» -----
* LSR
* -----
» -----
    LSR      (A0)
    LSR      (A7)+
    LSR      -(A0)
    LSR      $AF AF
    LSR      $FF AA 55 0

* -----
» -----
* LSL
* -----
» -----
    LSL      (A0)
    LSL      (A7)+
    LSL      -(A0)
    LSL      $AF AF
    LSL      $FF AA 55 0

* -----
» -----
* ROL
* -----
» -----
    ROL      (A0)
    ROL      (A7)+
    ROL      -(A0)
    ROL      $AF AF
    ROL      $FF AA 55 0

* -----
» -----
* ROR
* -----
» -----
    ROR      (A0)
    ROR      (A7)+
    ROR      -(A0)
    ROR      $AF AF
    ROR      $FF AA 55 0

* -----

```

```

111300 ASL      (A0)
111302 ASL      (A7)+
111304 ASL      -(A0)
111306 ASL      $AF AF
11130C ASL      $FF AA 55 0

```

```

111312 LSR      (A0)
111314 LSR      (A7)+
111316 LSR      -(A0)
111318 LSR      $AF AF
11131E LSR      $FF AA 55 0

```

```

111324 LSL      (A0)
111326 LSL      (A7)+
111328 LSL      -(A0)
11132A LSL      $AF AF
111330 LSL      $FF AA 55 0

```

```

111336 ROL      (A0)
111338 ROL      (A7)+
11133A ROL      -(A0)
11133C ROL      $AF AF
111342 ROL      $FF AA 55 0

```

```

111348 ROR      (A0)
11134A ROR      (A7)+
11134C ROR      -(A0)
11134E ROR      $AF AF
111354 ROR      $FF AA 55 0

```

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» -----

* BRUTE-FORCE VERIFICATION

* -----

» -----

; D0 to all other data registers

```
ADD    D0,D0
ADD    D0,D1
ADD    D0,D2
ADD    D0,D3
ADD    D0,D4
ADD    D0,D5
ADD    D0,D6
ADD    D0,D7
```

; D1 to all other data registers

```
ADD    D1,D0
ADD    D1,D1
ADD    D1,D2
ADD    D1,D3
ADD    D1,D4
ADD    D1,D5
ADD    D1,D6
ADD    D1,D7
```

; D2 to all other data registers

```
ADD    D2,D0
ADD    D2,D1
ADD    D2,D2
ADD    D2,D3
ADD    D2,D4
ADD    D2,D5
ADD    D2,D6
ADD    D2,D7
```

; D3 to all other data registers

```
ADD    D3,D0
ADD    D3,D1
ADD    D3,D2
ADD    D3,D3
ADD    D3,D4
ADD    D3,D5
ADD    D3,D6
ADD    D3,D7
```

; D4 to all other data registers

```
ADD    D4,D0
ADD    D4,D1
ADD    D4,D2
ADD    D4,D3
ADD    D4,D4
ADD    D4,D5
ADD    D4,D6
ADD    D4,D7
```

; D5 to all other data registers

```
ADD    D5,D0
ADD    D5,D1
```

```
11135A ADD.W    D0, D0
11135C ADD.W    D0, D1
11135E ADD.W    D0, D2
111360 ADD.W    D0, D3
111362 ADD.W    D0, D4
111364 ADD.W    D0, D5
111366 ADD.W    D0, D6
111368 ADD.W    D0, D7
```

```
11136A ADD.W    D1, D0
11136C ADD.W    D1, D1
11136E ADD.W    D1, D2
111370 ADD.W    D1, D3
111372 ADD.W    D1, D4
111374 ADD.W    D1, D5
111376 ADD.W    D1, D6
111378 ADD.W    D1, D7
```

```
11137A ADD.W    D2, D0
11137C ADD.W    D2, D1
11137E ADD.W    D2, D2
111380 ADD.W    D2, D3
111382 ADD.W    D2, D4
111384 ADD.W    D2, D5
111386 ADD.W    D2, D6
111388 ADD.W    D2, D7
```

```
11138A ADD.W    D3, D0
11138C ADD.W    D3, D1
11138E ADD.W    D3, D2
111390 ADD.W    D3, D3
111392 ADD.W    D3, D4
111394 ADD.W    D3, D5
111396 ADD.W    D3, D6
111398 ADD.W    D3, D7
```

```
11139A ADD.W    D4, D0
11139C ADD.W    D4, D1
11139E ADD.W    D4, D2
1113A0 ADD.W    D4, D3
1113A2 ADD.W    D4, D4
1113A4 ADD.W    D4, D5
1113A6 ADD.W    D4, D6
1113A8 ADD.W    D4, D7
```

```
1113AA ADD.W    D5, D0
1113AC ADD.W    D5, D1
```


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ADD D5,D2	1113AE ADD.W D5, D2
ADD D5,D3	1113B0 ADD.W D5, D3
ADD D5,D4	1113B2 ADD.W D5, D4
ADD D5,D5	1113B4 ADD.W D5, D5
ADD D5,D6	1113B6 ADD.W D5, D6
ADD D5,D7	1113B8 ADD.W D5, D7
; D6 to all other data registers	
ADD D6,D0	1113BA ADD.W D6, D0
ADD D6,D1	1113BC ADD.W D6, D1
ADD D6,D2	1113BE ADD.W D6, D2
ADD D6,D3	1113C0 ADD.W D6, D3
ADD D6,D4	1113C2 ADD.W D6, D4
ADD D6,D5	1113C4 ADD.W D6, D5
ADD D6,D6	1113C6 ADD.W D6, D6
ADD D6,D7	1113C8 ADD.W D6, D7
; D7 to all other data registers	
ADD D7,D0	1113CA ADD.W D7, D0
ADD D7,D1	1113CC ADD.W D7, D1
ADD D7,D2	1113CE ADD.W D7, D2
ADD D7,D3	1113D0 ADD.W D7, D3
ADD D7,D4	1113D2 ADD.W D7, D4
ADD D7,D5	1113D4 ADD.W D7, D5
ADD D7,D6	1113D6 ADD.W D7, D6
ADD D7,D7	1113D8 ADD.W D7, D7
; D0 to all other address registers	
ADD D0,A0	1113DA ADDA.W D0, A0
ADD D0,A1	1113DC ADDA.W D0, A1
ADD D0,A2	1113DE ADDA.W D0, A2
ADD D0,A3	1113E0 ADDA.W D0, A3
ADD D0,A4	1113E2 ADDA.W D0, A4
ADD D0,A5	1113E4 ADDA.W D0, A5
ADD D0,A6	1113E6 ADDA.W D0, A6
ADD D0,A7	1113E8 ADDA.W D0, A7
; D1 to all other address registers	
ADD D1,A0	1113EA ADDA.W D1, A0
ADD D1,A1	1113EC ADDA.W D1, A1
ADD D1,A2	1113EE ADDA.W D1, A2
ADD D1,A3	1113F0 ADDA.W D1, A3
ADD D1,A4	1113F2 ADDA.W D1, A4
ADD D1,A5	1113F4 ADDA.W D1, A5
ADD D1,A6	1113F6 ADDA.W D1, A6
ADD D1,A7	1113F8 ADDA.W D1, A7
; D2 to all other address registers	
ADD D2,A0	1113FA ADDA.W D2, A0
ADD D2,A1	1113FC ADDA.W D2, A1
ADD D2,A2	1113FE ADDA.W D2, A2
ADD D2,A3	111400 ADDA.W D2, A3
ADD D2,A4	111402 ADDA.W D2, A4
ADD D2,A5	111404 ADDA.W D2, A5
ADD D2,A6	111406 ADDA.W D2, A6

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(continued)

ADD D2,A7	111408 ADDA.W D2, A7
; D3 to all other address registers	
ADD D3,A0	11140A ADDA.W D3, A0
ADD D3,A1	11140C ADDA.W D3, A1
ADD D3,A2	11140E ADDA.W D3, A2
ADD D3,A3	111410 ADDA.W D3, A3
ADD D3,A4	111412 ADDA.W D3, A4
ADD D3,A5	111414 ADDA.W D3, A5
ADD D3,A6	111416 ADDA.W D3, A6
ADD D3,A7	111418 ADDA.W D3, A7
; D4 to all other address registers	
ADD D4,A0	11141A ADDA.W D4, A0
ADD D4,A1	11141C ADDA.W D4, A1
ADD D4,A2	11141E ADDA.W D4, A2
ADD D4,A3	111420 ADDA.W D4, A3
ADD D4,A4	111422 ADDA.W D4, A4
ADD D4,A5	111424 ADDA.W D4, A5
ADD D4,A6	111426 ADDA.W D4, A6
ADD D4,A7	111428 ADDA.W D4, A7
; D5 to all other address registers	
ADD D5,A0	11142A ADDA.W D5, A0
ADD D5,A1	11142C ADDA.W D5, A1
ADD D5,A2	11142E ADDA.W D5, A2
ADD D5,A3	111430 ADDA.W D5, A3
ADD D5,A4	111432 ADDA.W D5, A4
ADD D5,A5	111434 ADDA.W D5, A5
ADD D5,A6	111436 ADDA.W D5, A6
ADD D5,A7	111438 ADDA.W D5, A7
; D6 to all other address registers	
ADD D6,A0	11143A ADDA.W D6, A0
ADD D6,A1	11143C ADDA.W D6, A1
ADD D6,A2	11143E ADDA.W D6, A2
ADD D6,A3	111440 ADDA.W D6, A3
ADD D6,A4	111442 ADDA.W D6, A4
ADD D6,A5	111444 ADDA.W D6, A5
ADD D6,A6	111446 ADDA.W D6, A6
ADD D6,A7	111448 ADDA.W D6, A7
; D7 to all other address registers	
ADD D7,A0	11144A ADDA.W D7, A0
ADD D7,A1	11144C ADDA.W D7, A1
ADD D7,A2	11144E ADDA.W D7, A2
ADD D7,A3	111450 ADDA.W D7, A3
ADD D7,A4	111452 ADDA.W D7, A4
ADD D7,A5	111454 ADDA.W D7, A5
ADD D7,A6	111456 ADDA.W D7, A6
ADD D7,A7	111458 ADDA.W D7, A7
; values from all address registers to	
» A0	
ADD (A0),A0	11145A ADDA.W (A0), A0
ADD (A1),A0	11145C ADDA.W (A1), A0
ADD (A2),A0	11145E ADDA.W (A2), A0

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(continued)

```

    ADD      (A3),A0
    ADD      (A4),A0
    ADD      (A5),A0
    ADD      (A6),A0
    ADD      (A7),A0
; values from all address registers to
»  A1
    ADD      (A0),A1
    ADD      (A1),A1
    ADD      (A2),A1
    ADD      (A3),A1
    ADD      (A4),A1
    ADD      (A5),A1
    ADD      (A6),A1
    ADD      (A7),A1
; values from all address registers to
»  A2
    ADD      (A0),A2
    ADD      (A1),A2
    ADD      (A2),A2
    ADD      (A3),A2
    ADD      (A4),A2
    ADD      (A5),A2
    ADD      (A6),A2
    ADD      (A7),A2
; values from all address registers to
»  A3
    ADD      (A0),A3
    ADD      (A1),A3
    ADD      (A2),A3
    ADD      (A3),A3
    ADD      (A4),A3
    ADD      (A5),A3
    ADD      (A6),A3
    ADD      (A7),A3
; values from all address registers
»  to A4
    ADD      (A0),A4
    ADD      (A1),A4
    ADD      (A2),A4
    ADD      (A3),A4
    ADD      (A4),A4
    ADD      (A5),A4
    ADD      (A6),A4
    ADD      (A7),A4
; values from all address registers to
»  A5
    ADD      (A0),A5
    ADD      (A1),A5

```

```

111460 ADDA.W (A3), A0
111462 ADDA.W (A4), A0
111464 ADDA.W (A5), A0
111466 ADDA.W (A6), A0
111468 ADDA.W (A7), A0
11146A ADDA.W (A0), A1
11146C ADDA.W (A1), A1
11146E ADDA.W (A2), A1
111470 ADDA.W (A3), A1
111472 ADDA.W (A4), A1
111474 ADDA.W (A5), A1
111476 ADDA.W (A6), A1
111478 ADDA.W (A7), A1
11147A ADDA.W (A0), A2
11147C ADDA.W (A1), A2
11147E ADDA.W (A2), A2
111480 ADDA.W (A3), A2
111482 ADDA.W (A4), A2
111484 ADDA.W (A5), A2
111486 ADDA.W (A6), A2
111488 ADDA.W (A7), A2
11148A ADDA.W (A0), A3
11148C ADDA.W (A1), A3
11148E ADDA.W (A2), A3
111490 ADDA.W (A3), A3
111492 ADDA.W (A4), A3
111494 ADDA.W (A5), A3
111496 ADDA.W (A6), A3
111498 ADDA.W (A7), A3
11149A ADDA.W (A0), A4
11149C ADDA.W (A1), A4
11149E ADDA.W (A2), A4
1114A0 ADDA.W (A3), A4
1114A2 ADDA.W (A4), A4
1114A4 ADDA.W (A5), A4
1114A6 ADDA.W (A6), A4
1114A8 ADDA.W (A7), A4
1114AA ADDA.W (A0), A5
1114AC ADDA.W (A1), A5

```

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(continued)

ADD (A2),A5	1114AE ADDA.W (A2), A5
ADD (A3),A5	1114B0 ADDA.W (A3), A5
ADD (A4),A5	1114B2 ADDA.W (A4), A5
ADD (A5),A5	1114B4 ADDA.W (A5), A5
ADD (A6),A5	1114B6 ADDA.W (A6), A5
ADD (A7),A5	1114B8 ADDA.W (A7), A5
; values from all address registers to	
» A6	
ADD (A0),A6	1114BA ADDA.W (A0), A6
ADD (A1),A6	1114BC ADDA.W (A1), A6
ADD (A2),A6	1114BE ADDA.W (A2), A6
ADD (A3),A6	1114C0 ADDA.W (A3), A6
ADD (A4),A6	1114C2 ADDA.W (A4), A6
ADD (A5),A6	1114C4 ADDA.W (A5), A6
ADD (A6),A6	1114C6 ADDA.W (A6), A6
ADD (A7),A6	1114C8 ADDA.W (A7), A6
; values from all address registers to	
» A7	
ADD (A0),A7	1114CA ADDA.W (A0), A7
ADD (A1),A7	1114CC ADDA.W (A1), A7
ADD (A2),A7	1114CE ADDA.W (A2), A7
ADD (A3),A7	1114D0 ADDA.W (A3), A7
ADD (A4),A7	1114D2 ADDA.W (A4), A7
ADD (A5),A7	1114D4 ADDA.W (A5), A7
ADD (A6),A7	1114D6 ADDA.W (A6), A7
ADD (A7),A7	1114D8 ADDA.W (A7), A7
; post-increment from all address regi	
» sters to A0	
ADD (A0)+,A0	1114DA ADDA.W (A0)+, A0
ADD (A1)+,A0	1114DC ADDA.W (A1)+, A0
ADD (A2)+,A0	1114DE ADDA.W (A2)+, A0
ADD (A3)+,A0	1114E0 ADDA.W (A3)+, A0
ADD (A4)+,A0	1114E2 ADDA.W (A4)+, A0
ADD (A5)+,A0	1114E4 ADDA.W (A5)+, A0
ADD (A6)+,A0	1114E6 ADDA.W (A6)+, A0
ADD (A7)+,A0	1114E8 ADDA.W (A7)+, A0
; post-increment from all address regi	
» sters to A1	
ADD (A0)+,A1	1114EA ADDA.W (A0)+, A1
ADD (A1)+,A1	1114EC ADDA.W (A1)+, A1
ADD (A2)+,A1	1114EE ADDA.W (A2)+, A1
ADD (A3)+,A1	1114F0 ADDA.W (A3)+, A1
ADD (A4)+,A1	1114F2 ADDA.W (A4)+, A1
ADD (A5)+,A1	1114F4 ADDA.W (A5)+, A1
ADD (A6)+,A1	1114F6 ADDA.W (A6)+, A1
ADD (A7)+,A1	1114F8 ADDA.W (A7)+, A1
; post-increment from all address regi	

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(continued)

» sters to A2

```

ADD      (A0)+,A2
ADD      (A1)+,A2
ADD      (A2)+,A2
ADD      (A3)+,A2
ADD      (A4)+,A2
ADD      (A5)+,A2
ADD      (A6)+,A2
ADD      (A7)+,A2

```

; post-increment from all address regi

» sters to A3

```

ADD      (A0)+,A3
ADD      (A1)+,A3
ADD      (A2)+,A3
ADD      (A3)+,A3
ADD      (A4)+,A3
ADD      (A5)+,A3
ADD      (A6)+,A3
ADD      (A7)+,A3

```

; post-increment from all address regi

» sters to A4

```

ADD      (A0)+,A4
ADD      (A1)+,A4
ADD      (A2)+,A4
ADD      (A3)+,A4
ADD      (A4)+,A4
ADD      (A5)+,A4
ADD      (A6)+,A4
ADD      (A7)+,A4

```

; post-increment from all address regi

» sters to A5

```

ADD      (A0)+,A5
ADD      (A1)+,A5
ADD      (A2)+,A5
ADD      (A3)+,A5
ADD      (A4)+,A5
ADD      (A5)+,A5
ADD      (A6)+,A5
ADD      (A7)+,A5

```

; post-increment from all address regi

» sters to A6

```

ADD      (A0)+,A6
ADD      (A1)+,A6
ADD      (A2)+,A6
ADD      (A3)+,A6
ADD      (A4)+,A6
ADD      (A5)+,A6
ADD      (A6)+,A6

```

```

1114FA  ADDA.W  (A0)+, A2
1114FC  ADDA.W  (A1)+, A2
1114FE  ADDA.W  (A2)+, A2
111500  ADDA.W  (A3)+, A2
111502  ADDA.W  (A4)+, A2
111504  ADDA.W  (A5)+, A2
111506  ADDA.W  (A6)+, A2
111508  ADDA.W  (A7)+, A2

```

```

11150A  ADDA.W  (A0)+, A3
11150C  ADDA.W  (A1)+, A3
11150E  ADDA.W  (A2)+, A3
111510  ADDA.W  (A3)+, A3
111512  ADDA.W  (A4)+, A3
111514  ADDA.W  (A5)+, A3
111516  ADDA.W  (A6)+, A3
111518  ADDA.W  (A7)+, A3

```

```

11151A  ADDA.W  (A0)+, A4
11151C  ADDA.W  (A1)+, A4
11151E  ADDA.W  (A2)+, A4
111520  ADDA.W  (A3)+, A4
111522  ADDA.W  (A4)+, A4
111524  ADDA.W  (A5)+, A4
111526  ADDA.W  (A6)+, A4
111528  ADDA.W  (A7)+, A4

```

```

11152A  ADDA.W  (A0)+, A5
11152C  ADDA.W  (A1)+, A5
11152E  ADDA.W  (A2)+, A5
111530  ADDA.W  (A3)+, A5
111532  ADDA.W  (A4)+, A5
111534  ADDA.W  (A5)+, A5
111536  ADDA.W  (A6)+, A5
111538  ADDA.W  (A7)+, A5

```

```

11153A  ADDA.W  (A0)+, A6
11153C  ADDA.W  (A1)+, A6
11153E  ADDA.W  (A2)+, A6
111540  ADDA.W  (A3)+, A6
111542  ADDA.W  (A4)+, A6
111544  ADDA.W  (A5)+, A6
111546  ADDA.W  (A6)+, A6

```

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(continued)

```

ADD      (A7)+,A6

; post-increment from all address reg
» isters to A7
ADD      (A0)+,A7
ADD      (A1)+,A7
ADD      (A2)+,A7
ADD      (A3)+,A7
ADD      (A4)+,A7
ADD      (A5)+,A7
ADD      (A6)+,A7
ADD      (A7)+,A7

; pre-decrement from all address regis
» ters to A0
ADD      -(A0),A0
ADD      -(A1),A0
ADD      -(A2),A0
ADD      -(A3),A0
ADD      -(A4),A0
ADD      -(A5),A0
ADD      -(A6),A0
ADD      -(A7),A0

; pre-decrement from all address regis
» ters to A1
ADD      -(A0),A1
ADD      -(A1),A1
ADD      -(A2),A1
ADD      -(A3),A1
ADD      -(A4),A1
ADD      -(A5),A1
ADD      -(A6),A1
ADD      -(A7),A1

; pre-decrement from all address regis
» ters to A2
ADD      -(A0),A2
ADD      -(A1),A2
ADD      -(A2),A2
ADD      -(A3),A2
ADD      -(A4),A2
ADD      -(A5),A2
ADD      -(A6),A2
ADD      -(A7),A2

; pre-decrement from all address regis
» ters to A3
ADD      -(A0),A3
ADD      -(A1),A3
ADD      -(A2),A3
ADD      -(A3),A3

```

```

111548 ADDA.W (A7)+, A6

11154A ADDA.W (A0)+, A7
11154C ADDA.W (A1)+, A7
11154E ADDA.W (A2)+, A7
111550 ADDA.W (A3)+, A7
111552 ADDA.W (A4)+, A7
111554 ADDA.W (A5)+, A7
111556 ADDA.W (A6)+, A7
111558 ADDA.W (A7)+, A7

11155A ADDA.W -(A0), A0
11155C ADDA.W -(A1), A0
11155E ADDA.W -(A2), A0
111560 ADDA.W -(A3), A0
111562 ADDA.W -(A4), A0
111564 ADDA.W -(A5), A0
111566 ADDA.W -(A6), A0
111568 ADDA.W -(A7), A0

11156A ADDA.W -(A0), A1
11156C ADDA.W -(A1), A1
11156E ADDA.W -(A2), A1
111570 ADDA.W -(A3), A1
111572 ADDA.W -(A4), A1
111574 ADDA.W -(A5), A1
111576 ADDA.W -(A6), A1
111578 ADDA.W -(A7), A1

11157A ADDA.W -(A0), A2
11157C ADDA.W -(A1), A2
11157E ADDA.W -(A2), A2
111580 ADDA.W -(A3), A2
111582 ADDA.W -(A4), A2
111584 ADDA.W -(A5), A2
111586 ADDA.W -(A6), A2
111588 ADDA.W -(A7), A2

11158A ADDA.W -(A0), A3
11158C ADDA.W -(A1), A3
11158E ADDA.W -(A2), A3
111590 ADDA.W -(A3), A3

```

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(continued)

ADD	-(A4),A3	111592	ADDA.W	-(A4), A3
ADD	-(A5),A3	111594	ADDA.W	-(A5), A3
ADD	-(A6),A3	111596	ADDA.W	-(A6), A3
ADD	-(A7),A3	111598	ADDA.W	-(A7), A3
; pre-decrement from all address regis				
» ters to A4				
ADD	-(A0),A4	11159A	ADDA.W	-(A0), A4
ADD	-(A1),A4	11159C	ADDA.W	-(A1), A4
ADD	-(A2),A4	11159E	ADDA.W	-(A2), A4
ADD	-(A3),A4	1115A0	ADDA.W	-(A3), A4
ADD	-(A4),A4	1115A2	ADDA.W	-(A4), A4
ADD	-(A5),A4	1115A4	ADDA.W	-(A5), A4
ADD	-(A6),A4	1115A6	ADDA.W	-(A6), A4
ADD	-(A7),A4	1115A8	ADDA.W	-(A7), A4
; pre-decrement from all address regis				
» ters to A5				
ADD	-(A0),A5	1115AA	ADDA.W	-(A0), A5
ADD	-(A1),A5	1115AC	ADDA.W	-(A1), A5
ADD	-(A2),A5	1115AE	ADDA.W	-(A2), A5
ADD	-(A3),A5	1115B0	ADDA.W	-(A3), A5
ADD	-(A4),A5	1115B2	ADDA.W	-(A4), A5
ADD	-(A5),A5	1115B4	ADDA.W	-(A5), A5
ADD	-(A6),A5	1115B6	ADDA.W	-(A6), A5
ADD	-(A7),A5	1115B8	ADDA.W	-(A7), A5
; pre-decrement from all address regis				
» ters to A6				
ADD	-(A0),A6	1115BA	ADDA.W	-(A0), A6
ADD	-(A1),A6	1115BC	ADDA.W	-(A1), A6
ADD	-(A2),A6	1115BE	ADDA.W	-(A2), A6
ADD	-(A3),A6	1115C0	ADDA.W	-(A3), A6
ADD	-(A4),A6	1115C2	ADDA.W	-(A4), A6
ADD	-(A5),A6	1115C4	ADDA.W	-(A5), A6
ADD	-(A6),A6	1115C6	ADDA.W	-(A6), A6
ADD	-(A7),A6	1115C8	ADDA.W	-(A7), A6
; pre-decrement from all address regis				
» ters to A7				
ADD	-(A0),A7	1115CA	ADDA.W	-(A0), A7
ADD	-(A1),A7	1115CC	ADDA.W	-(A1), A7
ADD	-(A2),A7	1115CE	ADDA.W	-(A2), A7
ADD	-(A3),A7	1115D0	ADDA.W	-(A3), A7
ADD	-(A4),A7	1115D2	ADDA.W	-(A4), A7
ADD	-(A5),A7	1115D4	ADDA.W	-(A5), A7
ADD	-(A6),A7	1115D6	ADDA.W	-(A6), A7
ADD	-(A7),A7	1115D8	ADDA.W	-(A7), A7
; immediate to all data registers				
ADD	#01,D0	1115DA	ADDQ.W	#1, D0
ADD	#01,D1	1115DC	ADDQ.W	#1, D1

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(continued)

```

ADD      #01,D2
ADD      #01,D3
ADD      #01,D4
ADD      #01,D5
ADD      #01,D6
ADD      #01,D7
      ; immediate to all address register
ADD      #01,A0
ADD      #01,A1
ADD      #01,A2
ADD      #01,A3
ADD      #01,A4
ADD      #01,A5
ADD      #01,A6
ADD      #01,A7
      ; immediate to all address register va
» lues
ADD      #01,(A0)
ADD      #01,(A1)
ADD      #01,(A2)
ADD      #01,(A3)
ADD      #01,(A4)
ADD      #01,(A5)
ADD      #01,(A6)
ADD      #01,(A7)
      ; immediate to all address register wi
» th post increment
ADD      #01,(A0)+
ADD      #01,(A1)+
ADD      #01,(A2)+
ADD      #01,(A3)+
ADD      #01,(A4)+
ADD      #01,(A5)+
ADD      #01,(A6)+
ADD      #01,(A7)+
      ; immediate to all address register wi
» th pre-decrement
ADD      #01,-(A0)
ADD      #01,-(A1)
ADD      #01,-(A2)
ADD      #01,-(A3)
ADD      #01,-(A4)
ADD      #01,-(A5)
ADD      #01,-(A6)
ADD      #01,-(A7)
      ; absolute short to all data registers
ADD      $01,D0
ADD      $01,D1
ADD      $01,D2
ADD      $01,D3
ADD      $01,D4
ADD      $01,D5

```

```

1115DE  ADDQ.W  #1, D2
1115E0  ADDQ.W  #1, D3
1115E2  ADDQ.W  #1, D4
1115E4  ADDQ.W  #1, D5
1115E6  ADDQ.W  #1, D6
1115E8  ADDQ.W  #1, D7

1115EA  ADDQ.W  #1, A0
1115EC  ADDQ.W  #1, A1
1115EE  ADDQ.W  #1, A2
1115F0  ADDQ.W  #1, A3
1115F2  ADDQ.W  #1, A4
1115F4  ADDQ.W  #1, A5
1115F6  ADDQ.W  #1, A6
1115F8  ADDQ.W  #1, A7

1115FA  ADDQ.W  #1, (A0)
1115FC  ADDQ.W  #1, (A1)
1115FE  ADDQ.W  #1, (A2)
111600  ADDQ.W  #1, (A3)
111602  ADDQ.W  #1, (A4)
111604  ADDQ.W  #1, (A5)
111606  ADDQ.W  #1, (A6)
111608  ADDQ.W  #1, (A7)

11160A  ADDQ.W  #1, (A0)+
11160C  ADDQ.W  #1, (A1)+
11160E  ADDQ.W  #1, (A2)+
111610  ADDQ.W  #1, (A3)+
111612  ADDQ.W  #1, (A4)+
111614  ADDQ.W  #1, (A5)+
111616  ADDQ.W  #1, (A6)+
111618  ADDQ.W  #1, (A7)+

11161A  ADDQ.W  #1, -(A0)
11161C  ADDQ.W  #1, -(A1)
11161E  ADDQ.W  #1, -(A2)
111620  ADDQ.W  #1, -(A3)
111622  ADDQ.W  #1, -(A4)
111624  ADDQ.W  #1, -(A5)
111626  ADDQ.W  #1, -(A6)
111628  ADDQ.W  #1, -(A7)

11162A  ADD.W    $1, D0
11162E  ADD.W    $1, D1
111632  ADD.W    $1, D2
111636  ADD.W    $1, D3
11163A  ADD.W    $1, D4
11163E  ADD.W    $1, D5

```


Left file: D:\Source\github\CSS422_Hardware\Disassembler\UnitTests\Test_002.X68

Right file: D:\Source\github\CSS422_Hardware\Disassembler\Output.txt

(continued)

ADD	\$01,D6	111642	ADD.W	\$1, D6
ADD	\$01,D7	111646	ADD.W	\$1, D7
; absolute long to all data registers				
ADD	\$0A05,A0	11164A	ADDA.W	\$A05, A0
ADD	\$0A05,A1	11164E	ADDA.W	\$A05, A1
ADD	\$0A05,A2	111652	ADDA.W	\$A05, A2
ADD	\$0A05,A3	111656	ADDA.W	\$A05, A3
ADD	\$0A05,A4	11165A	ADDA.W	\$A05, A4
ADD	\$0A05,A5	11165E	ADDA.W	\$A05, A5
ADD	\$0A05,A6	111662	ADDA.W	\$A05, A6
ADD	\$0A05,A7	111666	ADDA.W	\$A05, A7
		11166A	SIMHALT	
		11166C	SIMHALT	
		11166E	SIMHALT	
		111670	SIMHALT	
*~Font name~Courier New~				
*~Font size~10~				
*~Tab type~1~				
*~Tab size~4~				