```
F5F0  2043          2210          XOP    R3,5            RESTORE R3-R0
F5F2  045B          2220          RT
                    2230   *
                    2240   * INSTRUCTION ' '
                    2250   *
F5F4  1601          2260   OPEN    JNE    OPEN00          JNE ON HEXIN FLAG
F5F6  C382          2270           MOV    R2,R14
F5F8  024E FFFF     2280   OPEN00  ANDI   R14,#FFFF       MAKE ADDRESS EVEN
F5FC  2C20 F622     2290   OPEN01  XOP    @PADDRC,0       PRINT ADDRESS AND CONTENTS
F600  06A0 F5AE     2300           BL     @HEXIN
F604  1602          2310           JNE    OPEN02          JNE ON HEXIN FLAG
F606  03A0          2320           WREN
F608  C782          2330           MOV    R2,*R14
F60A  0281 2000     2340   OPEN02  CI     R1,' '          LAST CHARACTER=" "?
F60F  1602          2350           JNE    OPEN03
F610  05CE          2360           INCT   R14
F612  10F4          2370           JMP    OPEN01
F614  0281 2D00     2380   OPEN03  CI     R1,'-'          LAST CHARACTER="-"?
F618  1602          2390           JNE    MONOOA
F61A  064E          2400           DECT   R14
F61C  10EF          2410           JMP    OPEN01
F61E  0460 F44E     2420   MONOOA  B      @MON00
                    2430   *
                    2440   *
F622  2CE0 F4AB     2450   PADDRC  XOP    @MESS03+1,3     PRINT INDENTATION
F626  C0BE          2460           MOV    R14,R2          PRINT ADDRESS
F628  06A0 F506     2470           BL     @HEXOUT0
F62C  C09E          2480           MOV    *R14,R2         PRINT CONTENTS OF ADDRESS
F62E  06A0 F502     2490           BL     @HEXOUT
F632  2CE0 F4B0     2500           XOP    @MESS03+6,3     PRINT " "
F636  2C40          2510           XOP    R0,1            RETURN
                    2520   *
                    2530   * INSTRUCTION /
                    2540   *
F638  1601          2550   CHAR    JNE    CHAR00          JNE ON HEXIN FLAG
F63A  C382          2560           MOV    R2,R14
F63C  0203 2F00     2570   CHAR00  LI     R3,'/'          SET START ADDRESS
F640  C10E          2580   CHAR01  MOV    R14,R4
F642  2C20 F622     2590           XOP    @PADDRC,0       PRINT ADDRESS AND CONTENTS
F646  2CC3          2600           XOP    R3,3            PRINT "/"
F648  2C81          2610           XOP    R1,2            GET CHARACTER
F64A  0281 0800     2620           CI     R1,#0800        BACKSPACE?
F64E  1605          2630           JNE    CHAR03
F650  8384          2640           C      R4,R14
F652  13FA          2650           JEQ    CHAR02
F654  2CC1          2660           XOP    R1,3            PRINT BACKSPACE
F656  060E          2670           DEC    R14
F658  10F7          2680           JMP    CHAR02
F65A  C041          2690   CHAR03  MOV    R1,R1
F65C  1303          2700           JEQ    CHAR04
F65E  0281 2000     2710           CI     R1,' '          IS CHARACTER CONTROL SHIFT @
F662  1AD0          2720           JL     MONOOA
F664  03A0          2730   CHAR04  WREN                   RETURN TO MONITOR
```

```
F666  DFB1            2740          MOVB   R1,*R14+
F668  1602            2750          JNE    CHAR05
F66A  0201 5F00       2760          LI     R1,'_'         UNDERSCORE
F66E  2CC1            2770          XOP    R1,3           PRINT CHARACTER
F670  27A0 F53E       2780          CZC    @MASK32,R14
F674  16E9            2790          JNE    CHAR02
F676  2CC3            2800          XOP    R3,3           PRINT "/"
F678  10E3            2810          JMP    CHAR01
                      2820   *
                      2830   *
                      2840   * INSTANT ASSEMBLER
                      2850   * TABLES
                      2860   *
                      2870   *
F67A  535A 4320 535A  2880   TYPE1  TEXT   'SZC SZCRS SB  C   CB  A   AB  '
F680  4342 5320 2020
F686  5342 2020 4320
F68C  2020 4342 2070
F692  4120 2020 4142
F698  2020
F69A  404F 5620 404F  2890   TYPE2  TEXT   'MOV MOVBSOC SOCB'
F6A0  5642 534F 4320
F6A6  534F 4342
F6AA  434F 4320 435A  2900   TYPE3  TEXT   'COC CZC XOR XOP LDCRSTCRMPY DIV '
F6B0  4320 584F 5220
F6B6  584F 5020 4C44
F6BC  4352 5354 4352
F6C2  4D50 5920 4449
F6C8  5620
F6CA  424C 5750 4220  2910   TYPE3  TEXT   'BLWPB X   CLR NEG INV INC INCT'
F6D0  2020 5820 2020
F6D6  434C 5220 4F45
F6DC  4720 494E 5670
F6E2  494E 4370 494E
F6E8  4354
F6EA  4445 4320 4445  2920          TEXT   'DEC DECTBL SWPBSETOARS ILL?ILL?'
F6F0  4354 424C 2020
F6F6  5357 5042 5345
F6FC  544F 4152 5320
F702  494C 4C3F 494C
F708  4C3F
F70A  4A4D 5020 4A4E  2930   TYPE4  TEXT   'JMP JLT JLE JEQ JHE JGE JNE JNC '
F710  5420 4A4C 4520
F716  4A45 5120 4A48
F71C  4520 4A47 4520
F722  4A4E 4520 4A4E
F728  4320
F72A  4A4F 4320 4A4E  2940   TYPE4  TEXT   'JOC JNO JL  JH  JOP SBO SBZ TB  '
F730  4F20 4A4C 2020
F736  4A48 2020 4A4F
F73C  5020 5342 4F20
F742  5342 5A20 5442
F748  2020
```

```
F74A  5352 4120 5352   2950 TYPE5   TEXT   'SRA SRL SLA SRC '
F750  4C20 534C 4120
F756  5352 4320
F75A  4C49 2020 4149   2960 TYPE6   TEXT   'LI  AI  ANDIORI CI  '
F760  2020 414E 4449
F766  4F52 4920 4349
F76C  2020
F76E  5354 5750 5354   2970 TYPE7   TEXT   'STWPSTST'
F774  5354
F776  4C57 5049 4C49   2980 TYPE8   TEXT   'LWPILIMI'
F77C  4D49
F77E  494C 4C3F 4944   2990 TYPE9   TEXT   'ILL?IDLERSETRTWPWRENCKOFLREX'
F784  4C45 5253 4554
F78A  5254 5750 5752
F790  454E 434B 4F46
F796  4C52 4558

F79A  F67A F6AA F6CA   3000 TYTAB   WORD   TYPE1,TYPE2,TYPE3,TYPE4,TYPE5
F7A0  F70A F74A
F7A4  F75A F76E F776   3010         WORD   TYPE6,TYPE7,TYPE8,TYPE9,TYTAB
F7AA  F77E F79A
F7AE  0A08 0406 0603   3020 TYSHIFT BYTE   10,8,4,6,6,3,3,3,0
F7B4  0303 0300
F7B8  4000 2000 0400   3030 TYBASE  WORD   #4000,#2000,#0400,#1000,#0800,#0200,#02A0,#02E0,#0320
F7BE  1000 0800 0200
F7C4  02A0 02E0 0320
F7CA  F898 F8AC F8CC   3040 TYSUB   WORD   T1,T2,T3,T4,T5,T6,T7,T8,T9
F7D0  F8D4 F904 F91A
F7D6  F92A F934 F860
F7DC  2E00             3050 DOT     WORD   '.'
                       3060 *
                       3070 * GET MNEMONIC AND PLACE IN R8,R9
                       3080 *
F7DE  1601             3090 INSTANT JNE    INST00            JNE ON HEXIN FLAG
F7E0  C382             3100         MOV    R2,R14
F7E2  02A0             3110 INST00  STWP   R0
F7E4  0220 0010        3120         AI     R0,2*8            R0->R8
F7E8  0208 2020        3130         LI     R8,'  '           INITIALISE R8,R9
F7EC  C248             3140         MOV    R8,R9
F7EE  2C20 F622        3150         XOP    @PADDRC,0         PRINT ADDRESS AND CONTENTS
F7F2  2CE0 F7DC        3160         XOP    @DOT,3            PRINT "."
F7F6  04C2             3170         CLR    R2                CHARACTER COUNT=0
F7F8  2C81             3180 INST01  XOP    R1,2              GET CHARACTER
F7FA  2CC1             3190         XOP    R1,3              PRINT CHARACTER
F7FC  0281 4100        3200         CI     R1,'A'            IN ['A'..'Z'] ?
F800  1A0B             3210         JL     INST02
F802  0281 5A00        3220         CI     R1,'Z'
F806  1B05             3230         JH     INST02
F808  DC01             3240         MOVB   R1,*R0~
F80A  0582             3250         INC    R2
F80C  0282 0005        3260         CI     R2,#5             GET AT MOST 5 CHARACTERS
F810  16F3             3270         JNE    INST01
F812  2CE2 F4AD        3280 INST02  XOP    @MFSS03+3(R2),3   PRINT REMAINING SPACES
F816  0281 2000        3290         CI     R1,'  '           CHECK LAST CHARACTER
```

```
                                                                    RETURN TO MONITOR

3300  FA1A  1B3B              JH    ERROR
3310  FA1C  1A2E              JL    INST10
3320                     *
3330                     * SEARCH FOR MNEMONIC IN TABLE
3340                     *
3350  FA1F  0207 F67A         LI    R7,TYPE1
3360  FA22  8217       INST03 C     *R7,R8
3370  FA24  1603              JNE   INST04
3380  FA26  8267 0002         C     @0002(R7),R9
3390  FA2A  1306              JEQ   INST05
3400  FA2C  0227 0004  INST04 AI    R7,4
3410  FA30  0287 F79A         CI    R7,TYTAB
3420  FA34  16F6              JNE   INST03
3430  FA36  102D              JMP   ERROR
3440                     *
3450                     * FIND MNEMONIC TYPE AND CALCULATE BASIC OPCODE
3460                     *
3470  FA38  04C4       INST05 CLR   R4                R4:=OPTYPE
3480  FA3A  0203 F79C         LI    R3,TYTAB+2
3490  FA3F  8CC7       INST06 C     R7,*R3+
3500  FA40  1A02              JL    INST07
3510  FA42  0584              INC   R4
3520  FA44  10FC              JMP   INST06
3530  FA46  61E3 FFFC  INST07 S     @-4(R3),R7
3540  FA4A  D024 F7AE         MOVB  @TYSHIFT(R4),R0
3550  FA4E  0980              SRL   R0,8
3560  FA50  0A07              SLA   R7,0              SHIFTS BY VALUE IN R0
3570  FA52  0A14              SLA   R4,1
3580  FA54  A1E4 F7B8         A     @TYBASE(R4),R7    R7:=BASIC OPCODE
3590  FA58  04CA              CLR   R10               NO OF WORDS IN INSTRUCTION
3600  FA5A  C024 F7CA         MOV   @TYSUB(R4),R0
3610  FA5E  0450              B     *R0
3620                     *
3630  FA60  2C81       T9     XOP   R1,2              GET CHARACTER
3640  FA62  2CC1       INST08 XOP   R1,3              PRINT LAST CHARACTER
3650  FA64  02A0              STWP  R0
3660  FA66  0220 000F         AI    R0,2*7            R0->R7
3670  FA6A  03A0              WREN
3680  FA6C  CFB0              MOV   *R0+,*R14+
3690  FA6E  060A              DEC   R10
3700  FA70  18FC              JOC   INST09
3710  FA72  0281 2000         CJ    R1,' '
3720  FA76  1B0D              JH    ERROR
3730  FA78  13B4              JEQ   INST00
3740  FA7A  0460 F44F  INST10 B     @MON00            RETURN TO MONITOR
3750                     *
3760  FA7E  0281 2C00  DELIM  CI    R1,','            CHECK CH IN [' ',',']
3770  FA82  1304              JEQ   DELIM00
3780  FA84  0281 2000         CI    R1,' '
3790  FA88  1B04              JH    ERROR
3800  FA8A  1AF7              JL    INST10
3810  FA8C  2CF0 F4C9  DELIM00 XOP  @COMMA,3          PRINT ","
3820  FA90  045B              RT
```

```
F892  2CE0 F4A6  3830  *                              PRINT " ?? "
F892  2CE0 F4A6  3840  ERROR   XOP  @MESS02,3
F896  10A5       3850          JMP  INST00
                 3860  *                              INSTRUCTION OF TYPE1
F898  06A0 F97C  3870  T1      BL   @SIX
F89C  06A0 F87E  3880          BL   @DELIM
F8A0  A1C0       3890          A    R0,R7
F8A2  06A0 F97C  3900          BL   @SIX
F8A6  0A60       3910  T100    SLA  R0,6
F8A8  A1C0       3920  T101    A    R0,R7
F8AA  10DB       3930          JMP  INST08
                 3940  *                              INSTRUCTION OF TYPE2
F8AC  06A0 F97C  3950  T2      BL   @SIX
F8B0  06A0 F87E  3960          BL   @DELIM
F8B4  A1C0       3970          A    R0,R7
F8B6  0287 2C00  3980          CI   R7,#2C00           CHECK IF XOP,LDCR OR STCR
F8BA  1A03       3990          JL   T200
F8BC  0287 3400  4000          CI   R7,#3400
F8C0  1A02       4010          JL   T201
F8C2  2CE0 F4D0  4020  T200    XOP  @RR,3              PRINT "R"
F8C6  06A0 F942  4030  T201    BL   @GETRC
F8CA  10ED       4040          JMP  T100
                 4050  *                              INSTRUCTION OF TYPE3
F8CC  06A0 F97C  4060  T3      BL   @SIX
F8D0  A1C0       4070          A    R0,R7
F8D2  10C7       4080          JMP  INST08
                 4090  *                              INSTRUCTION OF TYPE4
F8D4  2CE0 F4C7  4100  T4      XOP  @HASH,3
F8D8  06A0 F5AE  4110          BL   @HEXIN
F8DC  16C2       4120          JNE  INST08
F8DE  0287 1D00  4130          CI   R7,#1D00           DEFAULT FOR JUMP INSTRUCTIONS
F8E2  140B       4140          JHE  T400               IS INSTRUCTION SBO,SBZ,TB
F8E4  608E       4150          S    R14,R2             CALCULATE JUMP OFFSET
F8E6  0642       4160          DECT R2
F8E8  0B12       4170          SRA  R2,1
F8EA  0282 FF80  4180          CI   R2,-128
F8EE  1178       4190          JLT  ERR1
F8F0  0282 007F  4200          CI   R2,127
F8F4  1575       4210          JGT  ERR1
F8F6  0242 00FF  4220          ANDI R2,#00FF
F8FA  0282 00FF  4230  T400    CI   R2,#FF
F8FE  1B70       4240          JH   ERR1
F900  A1C2       4250          A    R2,R7
F902  10AF       4260          JMP  INST08
                 4270  *                              INSTRUCTION OF TYPE5
F904  2CE0 F4D0  4280  T5      XOP  @RR,3
F908  06A0 F942  4290          BL   @GETRC
F90C  06A0 F87E  4300          BL   @DELIM
F910  A1C0       4310          A    R0,R7
F912  06A0 F942  4320          BL   @GETRC
F916  0A40       4330          SLA  R0,4
F918  10C7       4340          JMP  T101
                 4350  *
```

```
                                                                INSTRUCTION OF TYPE 6
F91A  2CE0 F4D0   4360  T6       XOP   @RR,3
F91E  06A0 F942   4370           BL    @GETRC
F922  A1C0        4380           A     R0,R7
F924  06A0 F87E   4390           RL    @DELIM
F928  1005        4400           JMP   T8
                  4410  *                              INSTRUCTION OF TYPE7
F92A  2CE0 F4D0   4420  T7       XOP   @RR,3
F92E  06A0 F942   4430           BL    @GETRC
F932  10BA        4440           JMP   T101
                  4450  *                              INSTRUCTION OF TYPE8
F934  2CE0 F4C7   4460  T8       XOP   @HASH,3
F938  06A0 F5AE   4470           BL    @HEXIN
F93C  C202        4480           MOV   R2,R8
F93E  058A        4490           INC   R10
F940  1090        4500           JMP   INST08
                  4510  * GETRC                        OBTAINS REGISTER NO OR CONSTANT NUMBER
                  4520  *
                  4530  *
F942  02A6        4540  GETRC    STWP  R6              R6->R5
F944  0226 000A   4550           AI    R6,2*5
F946  0205 2020   4560           LI    R5,' '
F948  0202 0003   4570           LI    R2,3            AT MOST 3 CHARACTERS
F94C  2C81        4580  GETRC00  XOP   R1,2            GET CHARACTER
F950  0281 3000   4590           CI    R1,'0'          IN ('0'..'9') ?
F956  1A07        4600           JL    GETRC01
F958  0281 3900   4610           CI    R1,'9'
F95C  1B04        4620           JH    GETRC01
F95E  2CC1        4630           XOP   R1,*R6^         PRINT CHARACTER
F960  DD81        4640           MOVB  R1,*R6^
F962  0602        4650           DEC   R2
F964  16F5        4660           JNE   GETRC00
F966  0202 001E   4670  GETRC01  LI    R2,2*15         TEST IF VALID NUMBER
F96A  8162 F4E2   4680  GETRC02  C     @NUMTAB(R2),R5
F96E  1303        4690           JEQ   GETRC03
F970  0642        4700           DECT  R2
F972  1BFB        4710           JOC   GETRC02
F974  1035        4720           JMP   ERR1
F976  0912        4730  GETRC03  SRL   R2,1
F978  C002        4740           MOV   R2,R0           R0:=HEX EQUIVALENT OF DECIMAL NUMBER
F97A  045B        4750           RT
                  4760  *
                  4770  * SIX                          OBTAINS SIXBIT SOURCE/DESTINATION FIELD
                  4780  *
F97C  C30B        4790  SIX      MOV   R11,R12         SAVE RETURN ADDRESS
F97E  2C81        4800           XOP   R1,2            GET CHARACTER
F980  2CC1        4810           XOP   R1,3            PRINT CHARACTER
F982  0281 5200   4820           CI    R1,'R'          REGISTER ADDRESSING MODE
F986  1603        4830           JNE   SIX00
F988  06A0 F942   4840           RL    @GETRC
F98C  045C        4850           R     *R12            RETURN
F98E  0281 2A00   4860  SIX00    CI    R1,'*'          INDIRECT ADDRESSING MODE
F992  160E        4870           JNE   SIX03
F994  2CE0 F4D0   4880           XOP   @RR,3           PRINT "R"
```

```
F99A  06A0 F942   4890         BL   @GETRC
F99C  0220 0010   4900         AI   R0,#10      AMODE:=1
F9A0  0281 2B00   4910         CI   R1,'+'      AUTO INCREMENT REGISTER MODE
F9A4  1604        4920         JNE  SIX02
F9A6  2CC1        4930         XOP  R1,3         PRINT "+"
F9A8  0220 0020   4940         AI   R0,#20       AMODE:=3
F9AC  2C81        4950         XOP  R1,2         GET CHARACTER
F9AE  045C        4960         B    *R12         RETURN
F9B0  0281 4000   4970  SIX02  CI   R1,'@'       SYMBOLIC ADDRESSING MODE
F9B4  1615        4980         JNE  ERR1
F9B6  2CE0 F4C7   4990  SIX03  XOP  @HASH,3      PRINT "@"
F9BA  06A0 F5AE   5000         BL   @HEXIN
F9BE  C2BA        5010         MOV  R10,R10      TEST R10
F9C0  1602        5020         JNE  SIX04
F9C2  C202        5030         MOV  R2,R8
F9C4  1001        5040         JMP  SIX05
F9C6  C242        5050         MOV  R2,R9
F9C8  058A        5060  SIX04  INC  R10
F9CA  04C0        5070  SIX05  CLR  R0           INDEXED ADDRESSING MODE
F9CC  0281 2B00   5080         CI   R1,'('
F9D0  160B        5090         JNE  SIX07
F9D2  2CE0 F4D0   5100         XOP  @RR,3        PRINT "R"
F9D6  06A0 F942   5110         BL   @GETRC
F9DA  0281 2900   5120         CI   R1,')'
F9DE  1302        5130         JEQ  SIX06
F9E0  0460 F892   5140         B    @ERROR
F9E4  2CC1        5150  SIX06  XOP  R1,3         PRINT ")"
F9E6  2C81        5160         XOP  R1,2         GET CHARACTER
F9E8  0220 0020   5170  SIX07  AI   R0,#20       AMODE:=2
F9EC  045C        5180         B    *R12
                  5190  *
                  5200  * INSTRUCTION H
                  5210  *
F9EE  000A 0A     5230  SMESS0 BYTE CR,LF,LF
F9F1   20 2020 2020 5240        TEXT ' BP '-
F9F6  4250 2000
F9FA  2053 4554 2041 5250 SMESS1 TEXT ' SET AT'-
FA00  5400
                  5260         EVEN
FA02  0205 F3E0   5270  SETBP  LI   R5,INT1WP    R5->BP 1 (R4,R5,R6,R7)
FA06  0225 0008   5280         AI   R5,2*4
FA0A  0208 3100   5290         LI   R8,'1'
FA0E  2CE0 F9EF   5300 SETBP00 XOP  @SMESS0,3    PRINT " BP "
FA12  2CC8        5310         XOP  R8,3         PRINT BP NO.
FA14  2CE0 F9FA   5320         XOP  @SMESS1,3    PRINT "SET AT"
FA18  C0B5        5330         MOV  *R5+,R2      PRINT CONTENTS
FA1A  06A0 F5D2   5340         BL   @HEXOUT
FA1E  2CE0 F4B0   5350         XOP  @MESS03+6,3  PRINT " "
FA22  06A0 F5AE   5360         BL   @HEXIN       GET NEW CONTENTS(IF REQUIRED)
FA26  1602        5370         JNE  SETBP01      JNE ON HEXIN FLAG
FA2A  C947 FFFF   5380         MOV  R2,@-2(R5)
FA2C  0281 2000   5390 SETBP01 CI   R1,' '
```

```
FA30  1605            5400          .JNE    SETBP02
FA32  0228 0100       5410          AI      R8,#100
FA36  0288 3500       5420          CI      R8,'5'
FA3A  16E9            5430          .JNE    SETBP00
FA3C  0460 F44E       5440  SETBP02 B       @MON00
                      5450  *
                      5460  *  INSTRUCTION T
                      5470  *
FA40  0204 0020       5480  TRACE   LI      R4,#20
FA44  C804 F3F2       5490          MOV     R4,@2*9+INT1WP
FA48  04C4            5500          CLR     R4
FA4A  1005            5510          JMP     SETUP
                      5520  *
                      5530  *  INSTRUCTION X
                      5540  *
FA4C  0204 0002       5550  XCUTE   LI      R4,2
FA50  1002            5560          JMP     SETUP
                      5570  *
                      5580  *  INSTRUCTION S
                      5590  *
FA52  0204 0004       5600  STEP    LI      R4,4
                      5610  *
FA56  0360            5620  SETUP   RSET                       DISABLE INTERRUPTS
FA58  C804 F3F4       5630          MOV     R4,@2*10+INT1WP
FA5C  C0C3            5640          MOV     R3,R3              TEST HEXIN FLAG
FA5E  1602            5650          .JNE    SETUP00
FA60  C802 F3FC       5660          MOV     R2,@2*14+INT1WP    SET UP NEW START ADDRESS
FA64  02E0 F3E0       5670  SETUP00 LWPI    INT1WP             CHANGE WORKSPACE
FA68  C30E            5680          MOV     R14,R12            ADDRESS OF NEXT INSTRUCTION
FA6A  27E0 F540       5690          CZC     @MASK16,R15
FA6E  1601            5700          .JNE    SETUP01
FA70  058F            5710          INC     R15
FA72  03C0            5720  SETUP01 TRON                       TURN TRACE LOGIC ON
FA74  03A0            5730          RTWP                       RETURN TO PROGRAM BEING TRACED
                      5740  *
                      5750  *  INTERRUPT 1 HANDLER
                      5760  *
FA76  FA96 FAC0 FB02  5770  I1TAB   WORD    INT1AA,INT1CC,INT1GG  TRACE,XCUTE,STEP
FA7C  3D3E 00         5780  IMESS0  TEXT    '=>'-              CONTROL CHARACTERS TO POSITION CURSER
FA7F  20 2057 501D    5790  IMESS1  TEXT    ' WP='-
FA84  00
FA85  18 2C           5800  IMESS2  BYTE    #18,#2C
FA87  20 2053 543D    5810  IMESS3  TEXT    ' ST='-
FA8C  00
FA8D  00              5820          EVEN
FA8F  03E0            5830  INT1    TROFF                      RESET TRACE LOGIC
FA90  C02A FA76       5840          MOV     @I1TAB(R10),R0
FA94  0450            5850          B       *R0                JUMP TO APPROPRIATE HANDLER
                      5860  *
FA96  2660 F542       5870  INT1AA  CZC     @MASK8,R9
FA9A  1602            5880          .JNE    INT1BB
FA9C  2CE0 F4AB       5890          XOP     @MESS03+1,3        PRINT INDENTATION
FAA0  C0BC            5900  INT1BB  MOV     R12,R2             PRINT ADDRESS OF LAST INST.
```

```
5910  FAA2  06A0 F5D6         BL    @HEXOUT0
5920  FAA6  2CE0 FA7C         XOP   @IMESS0,3        PRINT "="
5930  FAAA  0609              DEC   R9
5940  FAAC  1609              JNE   INT1CC
5950  FAAE  04C1              CLR   R1
5960  FAB0  2CE0 F4A8         XOP   @IMESS02+2,3     PRINT "?"
5970  FAB4  2C81              XOP   R1,2             GET CHARACTER
5980  FAB6  0281 2000         CI    R1,' '
5990  FABA  161F              JNE   INT1FF
6000  FABC  0209 0020         LI    R9,#20
6010                      *
6020                      * SEARCH BREAKPOINT TABLE
6030                      *
6040  FAC0  0202 0004  INT1CC LI    R2,4
6050  FAC4  02A0              STWP  R0
6060  FAC6  0220 0008         AI    R0,2*4           R0->BP 1
6070  FACA  8330       INT1DD C     *R0+,R12         IS INSTRUCTION BREAKPOINTED?
6080  FACE  1305              JEQ   INT1EE
6090  FAD0  0602              DEC   R2
6100  FAD2  16FC              JNE   INT1DD
6110  FAD4  C30E              MOV   R14,R12          R12:=ADDRESS OF NEXT INSTRUCTION
6120  FAD6  03C0              TRON                   TURN TRACE LOGIC ON
6130  FAD6  0380              RTWP                   RETURN TO USER PROGRAM
6140                      *
6150  FAD8  2CE0 F9EE  INT1EE XOP   @SMESS0,3        PRINT INDENTATION+"   BP"
6160  FADC  2CE0 F9FF         XOP   @SMESS1+5.3      PRINT "AT"
6170  FAE0  C08C              MOV   R12,R2
6180  FAE2  06A0 F5D2         BL    @HEXOUT
6190  FAE6  2CE0 FA7F         XOP   @IMESS1,3        PRINT "WP="
6200  FAEA  C08D              MOV   R13,R2           PRINT USER WORKSPACE
6210  FAEC  06A0 F5D6         BL    @HEXOUT0
6220  FAF0  2CE0 FA87         XOP   @IMESS3.3        PRINT "ST="
6230  FAF4  C0BF              MOV   R15,R2           PRINT USER STATUS
6240  FAF6  06A0 F5D6         BL    @HEXOUT0
6250  FAFA  02E0 F3A0  INT1FF LWPI  WORKSP
6260  FAFE  0460 F44E         B     @MON00
6270                      *
6280  FB02  2D0B       INT1GG XOP   R11,4            SAVE R0-R11
6290  FB04  2C20 FBDA         XOP   @DISASM,0
6300  FB08  2D4B              XOP   R11,5            RESTORE R0-R11
6310  FB0A  2CE0 FAB5         XOP   @IMESS2,3        PRINT "ST="
6320  FB0E  C0BF              MOV   R15,R2           PRINT STATUS
6330  FB10  06A0 F5D6         BL    @HEXOUT0
6340  FB14  10F2              JMP   INT1FF           RETURN TO MONITOR
6350                      *
6360                      * INSTRUCTION R
6370                      *
6380  FB16  0204 F3FA  REGIST LI    R4,2*13+INT1WP   R4:=USER WORKSPACE BY DEFAULT
6390  FB1A  C114              MOV   *R4,R4           TEST HEXIN FLAG
6400  FB1C  C0C3              MOV   R3,R3
6410  FB1E  1601              JNE   REGIST0
6420  FB20  C102              MOV   R2,R4
6430  FB22  0244 FFFE  REGIST0 ANDI R4,#FFFE         MAKE ADDRESS EVEN
```

```
6440  FB26  2CE0 F4AA  REGIST1  XOP   @MESS03,3          PRINT INDENTATION
6450  FB2A  2CE0 FAB1           XOP   @MESS1+2,3         PRINT "WP="
6460  FB2E  C084                MOV   R4,R2              PRINT WORKSPACE ADDRESS
6470  FB30  06A0 F5D6           BL    @HEXOUT0
6480  FB34  04C5                CLR   R5
6490  FB36  04CA                CLR   R10
6500  FB3A  0209 0D0A  REGIST1  LI    R9,#0D0A           PRINT CR,LF
6510  FB3C  2CC9                XOP   R9,3
6520  FB3E  2CE0 F4CB  REGIST2  XOP   @R,3               PRINT "R"
6530  FB42  C765 F4E7           MOV   @NUMTAB(R5),R9     PRINT REGISTER NO
6540  FB46  2CC9                XOP   R9,3
6550  FB48  0209 203D           LI    R9,' ='
6560  FB4C  2CC9                XOP   R9,3
6570  FB4E  C0B4                MOV   *R4^,R2            PRINT REGISTER CONTENTS
6580  FB50  06A0 F5D2           BL    @HEXOUT
6590  FB54  05C5                INCT  R5
6600  FB56  0285 0020           CI    R5,#20
6610  FB5A  1315                JEQ   MON00B
6620  FB5C  2560 F544           CZC   @MASK3,R5
6630  FB60  13EB                JEQ   REGIST1
6640  FB62  10ED                JMP   REGIST2
6650                   *
6660                   * INSTRUCTION P
6670                   *
6680  FB64  C30F       PRINT    MOV   R15,R12            DEFAULT ACTION
6690  FB66  C0C3                MOV   R3,R3              TEST HEXIN FLAG
6700  FB68  1601                JNE   PRINT00
6710  FB6A  C302                MOV   R2,R12
6720  FB6C  024C FFFE  PRINT00  ANDI  R12,#FFFE          INSTRUCTION COUNT
6730  FB70  020D 0010           LI    R13,16
6740  FB74  2C20 FBDA  PRINT01  XOP   @DISASM,0          CALL DISASSEMBLER
6750  FB78  060D                DEC   R13                DECREMENT INSTRUCTION COUNT
6760  FB7A  16FC                JNE   PRINT01
6770  FB7C  05AD                INC   R13
6780  FB7E  2C81                XOP   R1,2               GET CHARACTER
6790  FB80  0281 2000           CI    R1,' '             MORE INSTRUCTIONS TO BE DISASSEMBLED ?
6800  FB84  13F7                JEQ   PRINT01
6810  FB86  0460 F44E  MON00B   B     @MON00
6820                   *
6830                   * DISASSEMBLER
6840                   *
6850                   * TABLES
6860                   *
6870  FB8A  FC70 FC70  COATAB   WORD  CODE00,CODE00,CODE02,CODE02,CODE04,CODE04,CODE04,CODE04
      FB90  FC7A FC94
      FB96  FC94 FC94
6880  FB9A  FCB0 FCB0  C2ATAB   WORD  CODE08,CODE08,CODE08,CODE08,CODE00,CODE00,CODE00,CODE00
      FBA0  FCB0 FC70
      FBA6  FC70 FC70
6890  FBAA  FCD8 FCD8  C02ATAB  WORD  DSIX,DSIX,DSIX,DSIX,KSIX,KSIX,DSIX,DSIX
      FBB0  FCEA FCEA
      FBB6  FCD8
6900  FBBA  FCF6 FCF6           WORD  IMMR,IMMR,IMMR,IMMR,IMMR,ONER,ONER,IMM
```