

bios.asm

BIOS-ROM des EC 1834

0100 55
 0101 AA
 0102 10EB
 0104 38 38 ASCII-Zeichen folgen

'EC1834...'

```

013D 2BC0               SUB           AX,AX
013F 8ED8               MOV           DS,AX
0141 FA                 CLI
0142 A14C00             MOV           AX,[004C]
0145 A30001             MOV           [0100],AX
0148 A14E00             MOV           AX,[004E]
014B A30201             MOV           [0102],AX
014E C7064C002202       MOV           WORD PTR [004C],0222
0154 8C0E4E00           MOV           [004E],CS
0158 C7063400F00F       MOV           WORD PTR [0034],0FF0
015E 8C0E3600           MOV           [0036],CS
0162 C70664004F01       MOV           WORD PTR [0064],014F
0168 8C0E6600           MOV           [0066],CS
016C C7060401B304       MOV           WORD PTR [0104],04B3
0172 8C0E0601           MOV           [0106],CS
0176 FB                 STI
0177 B84000             MOV           AX,0040
017A 8ED8               MOV           DS,AX
017C C606740000         MOV           BYTE PTR [0074],00
0181 C606750001         MOV           BYTE PTR [0075],01
0186 C606770000         MOV           BYTE PTR [0077],00
018B BA2203             MOV           DX,0322
018E B0F3               MOV           AL,F3
0190 EE                 OUT           DX,AL
0191 BA2603             MOV           DX,0326
0194 EE                 OUT           DX,AL
0195 BA2103             MOV           DX,0321
0198 B000               MOV           AL,00
019A A27600             MOV           [0076],AL
019D EE                 OUT           DX,AL
019E C7066C000000       MOV           WORD PTR [006C],0000
01A4 813E72003412       CMP           WORD PTR [0072],1234
01AA 7506               JNZ           01B2
01AC C7066C009A01       MOV           WORD PTR [006C],019A
01B2 FA                 CLI
01B3 E421               IN            AL,21
01B5 24FE               AND           AL,FE
01B7 E621               OUT           21,AL
01B9 FB                 STI
01BA BA8000             MOV           DX,0080
01BD B80010             MOV           AX,1000
01C0 CD13               INT           13
01C2 730B               JNB           01CF
01C4 813E6C00BE01       CMP           WORD PTR [006C],01BE
01CA 72F1               JB            01BD
01CC EB5A               JMP           0228
01CE 90                 NOP
01CF B80011             MOV           AX,1100
01D2 CD13               INT           13
01D4 7252               JB            0228
01D6 B80009             MOV           AX,0900
01D9 CD13               INT           13
01DB 724B               JB            0228
01DD C7066C009A01       MOV           WORD PTR [006C],019A
01E3 FEC2               INC           DL
01E5 FE067500           INC           BYTE PTR [0075]
01E9 80FA82             CMP           DL,82
01EC 7343               JNB           0231
    
```

bios.asm

Init-Einsprung

```

01EE B80010      MOV      AX,1000
01F1 CD13        INT      13
01F3 730B        JNB      0200
01F5 813E6C00BE01  CMP     WORD PTR [006C],01BE
01FB 72F1        JB       01EE
01FD EB32        JMP      0231
01FF 90          NOP
0200 B80011      MOV      AX,1100
0203 CD13        INT      13
0205 722A        JB       0231
0207 B80009      MOV      AX,0900
020A CD13        INT      13
020C 7223        JB       0231
020E EB0D        JMP      01DD

```

txt2: ' 1701-Fixed-Disk-Error',0d,0a,24h

```

0228 BD0F00      MOV      BP,000F ; 15 Byte
022B BE1001      MOV      SI,0110 ; ab txt2
022E E80D00      CALL     023E
0231 FE0E7500     DEC     BYTE PTR [0075]
0235 FA          CLI
0236 E421        IN      AL,21
0238 0C01        OR      AL,01
023A E621        OUT     21,AL
023C FB          STI
023D CB          RETF

```

```

023E B700      MOV      BH,00
0240 2E      CS:
0241 8A04      MOV      AL,[SI]
0243 3C24      CMP      AL,24
0245 7407      JZ       024E
0247 B40E      MOV      AH,0E
0249 CD10      INT      10
024B 46      INC     SI
024C EBF2      JMP      0240
024E C3      RET

```

```

024F 2BC0      SUB      AX,AX
0251 8ED8      MOV      DS,AX
0253 B4C0      MOV      AH,C0
0255 CD15      INT      15
0257 FA          CLI
0258 C7060401B304  MOV     WORD PTR [0104],04B3
025E 8C0E0601    MOV     [0106],CS
0262 730A      JNB      026E
0264 C70678001702  MOV     WORD PTR [0078],0217
026A 8C0E7A00    MOV     [007A],CS
026E FB          STI
026F 2BD2      SUB      DX,DX
0271 8EC2      MOV      ES,DX
0273 BB007C     MOV     BX,7C00
0276 FC          CLD
0277 33C0      XOR      AX,AX
0279 B90001      MOV     CX,0100
027C 8BFB      MOV     DI,BX
027E F3      REPZ
027F AB      STOSW
0280 B90400      MOV     CX,0004
0283 51      PUSH    CX

```

bios.asm

```

0284 2BC0      SUB     AX,AX
0286 CD13      INT     13
0288 7208      JB     0292
028A B80102     MOV     AX,0201
028D B90100     MOV     CX,0001
0290 CD13      INT     13
0292 59        POP     CX
0293 7309      JNB    029E
0295 80FC80    CMP     AH,80
0298 7422      JZ     02BC
029A E2E7      LOOP   0283
029C EB1E      JMP     02BC
029E 803E007C06 CMP     BYTE PTR [7C00],06
02A3 7249      JB     02EE
02A5 BF007C     MOV     DI,7C00
02A8 B90800     MOV     CX,0008
02AB A1007C     MOV     AX,[7C00]
02AE 83C702     ADD     DI,+02
02B1 3B05      CMP     AX,[DI]
02B3 E1F9      LOOPZ  02AE
02B5 7437      JZ     02EE
02B7 EA007C0000  JMP     0000:7C00

02BC B90400     MOV     CX,0004
02BF BA8000     MOV     DX,0080
02C2 2BC0      SUB     AX,AX
02C4 CD13      INT     13
02C6 7305      JNB    02CD
02C8 E2F8      LOOP   02C2
02CA EB22      JMP     02EE
02CC 90        NOP
02CD B90400     MOV     CX,0004
02D0 51        PUSH   CX
02D1 B90100     MOV     CX,0001
02D4 B80102     MOV     AX,0201
02D7 CD13      INT     13
02D9 730B      JNB    02E6
02DB 80FC11    CMP     AH,11
02DE 7406      JZ     02E6
02E0 59        POP     CX
02E1 E2ED      LOOP   02D0
02E3 EB09      JMP     02EE
02E5 90        NOP
02E6 813EFE7D55AA CMP     WORD PTR [7DFE],AA55
02EC 74C9      JZ     02B7
02EE BEF601     MOV     SI,01F6 ; ab txt3

02F1 E84AFF     CALL   023E
02F4 EBFE      JMP     02F4

```

txt3: '603_Boot_Error try soft-Reset',0a,0d,24h

```

0317 EF        OUT     DX,AX
0318 64        DB     64
0319 3202     XOR     AL,[BP+SI]
031B 092A     OR     [BP+SI],BP
031D FF50F6   CALL   [BX+SI-0A]
0320 250480    AND     AX,8004
0323 FA        CLI
0324 807305CD XOR     BYTE PTR [BP+DI+05],CD
0328 40        INC     AX
0329 CA0200    RETF  0002
;-----

```

INT 13H Einsprung

```

032C FB      STI
032D 0AE4    OR     AH,AH

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bios.asm

032F	7509	JNZ	033A
0331	CD40	INT	40
0333	2AE4	SUB	AH,AH
0335	80FA81	CMP	DL,81
0338	77EF	JA	0329
033A	1E	PUSH	DS
033B	50	PUSH	AX
033C	B84000	MOV	AX,0040
033F	8ED8	MOV	DS,AX
0341	58	POP	AX
0342	80FC08	CMP	AH,08
0345	7503	JNZ	034A
0347	E90C02	JMP	0556
034A	56	PUSH	SI
034B	57	PUSH	DI
034C	53	PUSH	BX
034D	80FC04	CMP	AH,04
0350	7411	JZ	0363
0352	E84E02	CALL	05A3
0355	BB0800	MOV	BX,0008
0358	E8250D	CALL	1080
035B	F6C340	TEST	BL,40
035E	BF0800	MOV	DI,0008
0361	7403	JZ	0366
0363	BF0100	MOV	DI,0001
0366	5B	POP	BX
0367	53	PUSH	BX
0368	51	PUSH	CX
0369	52	PUSH	DX
036A	06	PUSH	ES
036B	E87800	CALL	03E6
036E	07	POP	ES
036F	5A	POP	DX
0370	59	POP	CX
0371	5B	POP	BX
0372	50	PUSH	AX
0373	A07400	MOV	AL,[0074]
0376	0AC0	OR	AL,AL
0378	7423	JZ	039D
037A	3C11	CMP	AL,11
037C	741F	JZ	039D
037E	3C09	CMP	AL,09
0380	741B	JZ	039D
0382	3C01	CMP	AL,01
0384	7417	JZ	039D
0386	52	PUSH	DX
0387	BA2203	MOV	DX,0322
038A	B0E3	MOV	AL,E3
038C	EE	OUT	DX,AL
038D	EE	OUT	DX,AL
038E	EE	OUT	DX,AL
038F	0C10	OR	AL,10
0391	EE	OUT	DX,AL
0392	BA2603	MOV	DX,0326
0395	EE	OUT	DX,AL
0396	5A	POP	DX
0397	58	POP	AX
0398	4F	DEC	DI
0399	75CC	JNZ	0367
039B	EB01	JMP	039E
039D	58	POP	AX
039E	5F	POP	DI
039F	5E	POP	SI
03A0	52	PUSH	DX
03A1	50	PUSH	AX
03A2	BA2103	MOV	DX,0321
03A5	80267600E7	AND	BYTE PTR [0076],E7
03AA	A07600	MOV	AL,[0076]

bios.asm

```

03AD EE          OUT          DX,AL
03AE 58          POP          AX
03AF 8A267400   MOV          AH,[0074]
03B3 80FC01     CMP          AH,01
03B6 F5          CMC
03B7 5A          POP          DX
03B8 1F          POP          DS
03B9 CA0200     RETF 0002
;-----
; Sprung-Tabelle
03BC 8203AD     ADD          BYTE PTR [BP+DI],AD
03BF 03B603D7   ADD          SI,[BP+D703]
03C3 03F5     ADD          SI,BP
03C5 0303     ADD          AX,[BP+DI]
03C7 0403     ADD          AL,03
03C9 0403     ADD          AL,03
03CB 0456     ADD          AL,56
03CD 04B4     ADD          AL,B4
03CF 05B603   ADD          AX,03B6
03D2 D7          XLAT
03D3 03EC     ADD          BP,SP
03D5 058203   ADD          AX,0382
03D8 F4          HLT
03D9 050606   ADD          AX,0606
03DC 18066C06 SBB          [066C],AL
03E0 7406     JZ          03E8
03E2 1107     ADC          [BX],AX
03E4 5F          POP          DI
03E5 07          POP          ES

03E6 C606770000   MOV          BYTE PTR [0077],00
03EB C606760000   MOV          BYTE PTR [0076],00
03F0 80FC01     CMP          AH,01
03F3 7503     JNZ          03F8
03F5 E9B500     JMP          04AD
03F8 80EA80     SUB          DL,80
03FB 80FA08     CMP          DL,08
03FE 7203     JB          0403
0400 EB7A     JMP          047C
0402 90          NOP
0403 C606740000   MOV          BYTE PTR [0074],00
0408 53          PUSH         BX
0409 8026750003   AND          BYTE PTR [0075],03
040E 8A1E7500   MOV          BL,[0075]
0412 50          PUSH         AX
0413 3ADA     CMP          BL,DL
0415 7703     JA          041A
0417 EB61     JMP          047A
0419 90          NOP
041A BB0500     MOV          BX,0005
041D E8600C     CALL        1080
0420 8BC3     MOV          AX,BX
0422 D1E8     SHR          AX,1
0424 D1E8     SHR          AX,1
0426 A24200   MOV          [0042],AL
0429 58          POP          AX
042A A24300   MOV          [0043],AL
042D 50          PUSH         AX
042E 8AC1     MOV          AL,CL
0430 243F     AND          AL,3F
0432 FEC8     DEC          AL
0434 A24400   MOV          [0044],AL
0437 882E4500   MOV          [0045],CH
043B 8AC1     MOV          AL,CL
043D D0E8     SHR          AL,1
043F D0E8     SHR          AL,1

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bios.asm

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0441 D0E8      SHR      AL,1
0443 D0E8      SHR      AL,1
0445 D0E8      SHR      AL,1
0447 D0E8      SHR      AL,1
0449 A24600    MOV      [0046],AL
044C 8AC2      MOV      AL,DL
044E D0E0      SHL      AL,1
0450 D0E0      SHL      AL,1
0452 D0E0      SHL      AL,1
0454 80E607    AND      DH,07
0457 0AC6      OR       AL,DH
0459 0C20      OR       AL,20
045B A24700    MOV      [0047],AL
045E 800E470080 OR      BYTE PTR [0047],80
0463 58        POP      AX
0464 50        PUSH     AX
0465 8AC4      MOV      AL,AH
0467 32E4      XOR      AH,AH
0469 D1E0      SHL      AX,1
046B 8BF0      MOV      SI,AX
046D 3D2A00    CMP      AX,002A
0470 7308      JNB      047A
0472 58        POP      AX
0473 5B        POP      BX
0474 50        PUSH     AX
0475 2E        CS:
0476 FFA4BC02   JMP      [SI+02BC]
047A 58        POP      AX
047B 5B        POP      BX
047C C606740001 MOV     BYTE PTR [0074],01
0481 C3        RET
;-----

```

```

0482 BA2203    MOV      DX,0322
0485 B0E2      MOV      AL,E2
0487 EE       OUT      DX,AL
0488 B0F3      MOV      AL,F3
048A EE       OUT      DX,AL
048B BA2603    MOV      DX,0326
048E EE       OUT      DX,AL
048F A04700    MOV      AL,[0047]
0492 24E0      AND      AL,E0
0494 A24700    MOV      [0047],AL
0497 E8CE02    CALL     0768
049A A07500    MOV      AL,[0075]
049D 2403      AND      AL,03
049F 3C01      CMP      AL,01
04A1 7608      JBE      04AB
04A3 800E470008 OR      BYTE PTR [0047],08
04A8 E8BD02    CALL     0768
04AB 58        POP      AX
04AC C3        RET
;-----

```

```

04AD A07400    MOV      AL,[0074]
04B0 C606740000 MOV     BYTE PTR [0074],00
04B5 C3        RET
;-----

```

```

04B6 53        PUSH     BX
04B7 BB0800    MOV      BX,0008
04BA E8C30B    CALL     1080
04BD F7C38000   TEST     BX,0080
04C1 5B        POP      BX
04C2 C60648002D MOV     BYTE PTR [0048],2D
04C7 7505      JNZ      04CE
04C9 C60648002C MOV     BYTE PTR [0048],2C
04CE E8F009    CALL     0EC1

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bios.asm

```

04D1 E86300      CALL    0537
04D4 E9220A      JMP     0EF9
04D7 53          PUSH   BX
04D8 BB0800      MOV     BX,0008
04DB E8A20B      CALL   1080
04DE F7C38000     TEST   BX,0080
04E2 5B          POP    BX
04E3 C606480035   MOV     BYTE PTR [0048],35
04E8 7505        JNZ    04EF
04EA C606480034   MOV     BYTE PTR [0048],34
04EF E84500        CALL   0537
04F2 E9040A      JMP     0EF9
04F5 C60648002D   MOV     BYTE PTR [0048],2D
04FA E8C409      CALL   0EC1
04FD E83700      CALL   0537
0500 E9300A      JMP     0F33
0503 58          POP    AX
0504 50          PUSH   AX
0505 80FC07      CMP    AH,07
0508 7505        JNZ    050F
050A C606770001   MOV     BYTE PTR [0077],01
050F 802647007F   AND    BYTE PTR [0047],7F
0514 C606480050   MOV     BYTE PTR [0048],50
0519 C606430011   MOV     BYTE PTR [0043],11
051E C606440023   MOV     BYTE PTR [0044],23
0523 E90D0A      JMP     0F33
0526 000D        ADD    [DI],CL
0528 0905        OR     [DI],AX
052A 010E0A06     ADD    [060A],CX
052E 020F        ADD    CL,[BX]
0530 0B07        OR     AX,[BX]
0532 0310        ADD    DX,[BX+SI]
0534 0C08        OR     AL,08
0536 04A0        ADD    AL,A0
0538 43          INC    BX
0539 008A2644     ADD    [BP+SI+4426],CL
053D 0002        ADD    [BP+SI],AL
053F C42C        LES   BP,[SI]
0541 127211      ADC    DH,[BP+SI+11]
0544 B011        MOV    AL,11
0546 2AC4        SUB    AL,AH
0548 8A264300     MOV    AH,[0043]
054C A24300        MOV    [0043],AL
054F 2AE0        SUB    AH,AL
0551 88267700     MOV    [0077],AH
0555 C3          RET

```

```

-----
0556 06          PUSH   ES
0557 56          PUSH   SI
0558 80EA80      SUB    DL,80
055B 80FA08      CMP    DL,08
055E 7333        JNB    0593
0560 E84000      CALL   05A3
0563 E84D01      CALL   06B3
0566 C606740000   MOV     BYTE PTR [0074],00
056B 26          ES:
056C 8B04        MOV    AX,[SI]
056E 2D0200      SUB    AX,0002
0571 8AE8        MOV    CH,AL
0573 250003      AND    AX,0300
0576 D1E8        SHR    AX,1
0578 D1E8        SHR    AX,1
057A 0C11        OR     AL,11
057C 8AC8        MOV    CL,AL
057E 26          ES:
057F 8A7402      MOV    DH,[SI+02]
0582 FECE        DEC    DH

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bios.asm

```

0584 8A167500      MOV      DL,[0075]
0588 80E203        AND      DL,03
058B 2BC0          SUB      AX,AX
058D 5E              POP      SI
058E 07              POP      ES
058F 1F              POP      DS
0590 CA0200        RETF     0002
;-----

```

```

0593 C606740007     MOV      BYTE PTR [0074],07
0598 B407          MOV      AH,07
059A 2AC0          SUB      AL,AL
059C 2BD2          SUB      DX,DX
059E 2BC9          SUB      CX,CX
05A0 F9              STC
05A1 EBEA          JMP      058D
05A3 F6C201        TEST     DL,01
05A6 C606470000     MOV      BYTE PTR [0047],00
05AB 7405          JZ       05B2
05AD C606470008     MOV      BYTE PTR [0047],08
05B2 C3              RET
;-----

```

Konfigurationstabelle

```

05B3 3403          XOR      AL,03
05B5 06           PUSH     ES
05B6 3403          XOR      AL,03
05B8 3403          XOR      AL,03
05BA 0B05          OR       AX,[DI]
05BC 0CB4          OR       AL,B4
05BE 2800          SUB      [BX+SI],AL
05C0 0000          ADD      [BX+SI],AL
05C2 00B90205     ADD      [BX+DI+0502],BH
05C6 B90200        MOV      CX,0002
05C9 000B          ADD      [BP+DI],CL
05CB 050CB4        ADD      AX,B40C
05CE 2800          SUB      [BX+SI],AL
05D0 0000          ADD      [BX+SI],AL
05D2 006702        ADD      [BX+02],AH
05D5 0467          ADD      AL,67
05D7 026702        ADD      AH,[BX+02]
05DA 0B05          OR       AX,[DI]
05DC 0CB4          OR       AL,B4
05DE 2800          SUB      [BX+SI],AL
05E0 0000          ADD      [BX+SI],AL
05E2 0000          ADD      [BX+SI],AL
05E4 0405          ADD      AL,05
05E6 0004          ADD      [SI],AL
05E8 0004          ADD      [SI],AL
05EA 0B05          OR       AX,[DI]
05EC 0CB4          OR       AL,B4
05EE 2800          SUB      [BX+SI],AL
05F0 0000          ADD      [BX+SI],AL
05F2 00FF          ADD      BH,BH
05F4 FFFF          ???     DI
05F6 FFFF          ???     DI
05F8 FFFF          ???     DI
05FA FFFF          ???     DI
05FC FFFF          ???     DI
05FE FFFF          ???     DI
0600 FFFF          ???     DI
0602 FFFF          ???     DI
0604 FFFF          ???     DI
0606 FFFF          ???     DI
0608 FFFF          ???     DI
060A FFFF          ???     DI
060C FFFF          ???     DI

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bios.asm

060E	FFFF	???	DI
0610	FFFF	???	DI
0612	FFFF	???	DI
0614	FFFF	???	DI
0616	FFFF	???	DI
0618	FFFF	???	DI
061A	FFFF	???	DI
061C	FFFF	???	DI
061E	FFFF	???	DI
0620	FFFF	???	DI
0622	FFFF	???	DI
0624	FFFF	???	DI
0626	FFFF	???	DI
0628	FFFF	???	DI
062A	FFFF	???	DI
062C	FFFF	???	DI
062E	FFFF	???	DI
0630	FFFF	???	DI
0632	FFFF	???	DI
0634	FFFF	???	DI
0636	FFFF	???	DI
0638	FFFF	???	DI
063A	FFFF	???	DI
063C	FFFF	???	DI
063E	FFFF	???	DI
0640	FFFF	???	DI
0642	FFFF	???	DI
0644	FFFF	???	DI
0646	FFFF	???	DI
0648	FFFF	???	DI
064A	FFFF	???	DI
064C	FFFF	???	DI
064E	FFFF	???	DI
0650	FFFF	???	DI
0652	FFFF	???	DI
0654	FFFF	???	DI
0656	FFFF	???	DI
0658	FFFF	???	DI
065A	FFFF	???	DI
065C	FFFF	???	DI
065E	FFFF	???	DI
0660	FFFF	???	DI
0662	FFFF	???	DI
0664	FFFF	???	DI
0666	FFFF	???	DI
0668	FFFF	???	DI
066A	FFFF	???	DI
066C	FFFF	???	DI
066E	FFFF	???	DI
0670	FFFF	???	DI
0672	FFFF	???	DI
0674	FFFF	???	DI
0676	FFFF	???	DI
0678	FFFF	???	DI
067A	FFFF	???	DI
067C	FFFF	???	DI
067E	FFFF	???	DI
0680	FFFF	???	DI
0682	FFFF	???	DI
0684	FFFF	???	DI
0686	FFFF	???	DI
0688	FFFF	???	DI
068A	FFFF	???	DI
068C	FFFF	???	DI
068E	FFFF	???	DI
0690	FFFF	???	DI
0692	FFFF	???	DI
0694	FFFF	???	DI

bios.asm

```

0696 FFFF      ???      DI
0698 FFFF      ???      DI
069A FFFF      ???      DI
069C FFFF      ???      DI
069E FFFF      ???      DI
06A0 FFFF      ???      DI
06A2 FFFF      ???      DI
06A4 FFFF      ???      DI
06A6 FFFF      ???      DI
06A8 FFFF      ???      DI
06AA FFFF      ???      DI
06AC FFFF      ???      DI
06AE FFFF      ???      DI
06B0 FFFF      ???      DI
06B2 FF

```

□weiter mit sinnvollen Code

```

06B3 50        PUSH AX
06b4 51        PUSH CX
06B5 1E        PUSH DS
06B6 52        PUSH DX
06B7 33C0      XOR AX,AX
06B9 8ED8      MOV DS,AX
06BB C4360401   LES SI,[0104]
06BF BA2503    MOV DX,0325
06C2 EC        IN AL,DX
06C3 5A        POP DX
06C4 1F        POP DS
06C5 F606470008 TEST BYTE PTR [0047],08
06CA 7404      JZ 06D0
06CC B104      MOV CL,04
06CE D2C8      ROR AL,CL
06D0 240F      AND AL,0F
06D2 B110      MOV CL,10
06D4 F6E1      MUL CL
06D6 03F0      ADD SI,AX
06D8 26        ES:
06D9 807C01FF   CMP BYTE PTR [SI+01],FF
06DD C606740007 MOV BYTE PTR [0074],07
06E2 7405      JZ 06E9
06E4 C606740000 MOV BYTE PTR [0074],00
06E9 59        POP CX
06EA 58        POP AX
06EB C3        RET
;-----

```

```

06EC C606480070 MOV BYTE PTR [0048],70
06F1 E93F08      JMP 0F33
06F4 E8AD07      CALL 0EA4
06F7 B90002      MOV CX,0200
06FA BA2003      MOV DX,0320
06FD EC        IN AL,DX
06FE 26        ES:
06FF 8807      MOV [BX],AL
0701 43        INC BX
0702 E2F9      LOOP 06FD
0704 58        POP AX
0705 C3        RET
;-----

```

```

0706 E89B07      CALL 0EA4
0709 B90002      MOV CX,0200
070C BA2003      MOV DX,0320
070F 26        ES:
0710 8A07      MOV AL,[BX]
0712 EE      OUT DX,AL
0713 43        INC BX
0714 E2F9      LOOP 070F
0716 58        POP AX

```

bios.asm

```

0717 C3          RET
;-----
0718 B90000     MOV     CX,0000
071B BA2F03     MOV     DX,032F
071E EC         IN      AL,DX
071F D0D0       RCL     AL,1
0721 7309       JNB     072C
0723 E2F9       LOOP    071E
0725 C606740080 MOV     BYTE PTR [0074],80
072A 58         POP     AX
072B C3          RET
;-----
072C F606470008  TEST    BYTE PTR [0047],08
0731 BA8000     MOV     DX,0080
0734 7403       JZ      0739
0736 BA8100     MOV     DX,0081
0739 B80011     MOV     AX,1100
073C CD13       INT     13
073E F606470008  TEST    BYTE PTR [0047],08
0743 BA2103     MOV     DX,0321
0746 A07600     MOV     AL,[0076]
0749 7504       JNZ     074F
074B 0C08       OR      AL,08
074D EB02       JMP     0751
074F 0C10       OR      AL,10
0751 EE         OUT     DX,AL
0752 BA2F03     MOV     DX,032F
0755 EC         IN      AL,DX
0756 D0D0       RCL     AL,1
0758 D0D0       RCL     AL,1
075A C606740003 MOV     BYTE PTR [0074],03
075F 7305       JNB     0766
0761 C606740000 MOV     BYTE PTR [0074],00
0766 58         POP     AX
0767 C3          RET
;-----
0768 B80000     MOV     AX,0000
076B 50         PUSH    AX
076C C606480010  MOV     BYTE PTR [0048],10
0771 E9BF07       JMP     0F33
0774 E82D07       CALL    0EA4
0777 B90004     MOV     CX,0400
077A BA2003     MOV     DX,0320
077D B000       MOV     AL,00
077F EE         OUT     DX,AL
0780 0405       ADD     AL,05
0782 E2FB       LOOP    077F
0784 E81D07       CALL    0EA4
0787 B90004     MOV     CX,0400
078A B400       MOV     AH,00
078C BA2003     MOV     DX,0320
078F EC         IN      AL,DX
0790 3AC4       CMP     AL,AH
0792 7403       JZ      0797
0794 EB74       JMP     080A
0796 90         NOP
0797 80C405     ADD     AH,05
079A E2F3       LOOP    078F
079C BA2103     MOV     DX,0321
079F 800E760080  OR      BYTE PTR [0076],80
07A4 A07600     MOV     AL,[0076]
07A7 EE         OUT     DX,AL
07A8 B000       MOV     AL,00
07AA E682       OUT     82,AL
07AC BA0600     MOV     DX,0006

```

bios.asm

```

07AF B84204      MOV     AX,0442
07B2 E82807      CALL    0EDD
07B5 800EE00008 OR     BYTE PTR [00E0],08
07BA A0E000      MOV     AL,[00E0]
07BD E608        OUT     08,AL
07BF E8E206      CALL    0EA4
07C2 B90380      MOV     CX,8003
07C5 E81F07      CALL    0EE7
07C8 BA0600      MOV     DX,0006
07CB B84504      MOV     AX,0445
07CE E80C07      CALL    0EDD
07D1 E8D006      CALL    0EA4
07D4 B90340      MOV     CX,4003
07D7 E80D07      CALL    0EE7
07DA 8026E000F7 AND    BYTE PTR [00E0],F7
07DF A0E000      MOV     AL,[00E0]
07E2 E608        OUT     08,AL
07E4 BA2103      MOV     DX,0321
07E7 802676007F AND    BYTE PTR [0076],7F
07EC A07600      MOV     AL,[0076]
07EF EE          OUT     DX,AL
07F0 B84000      MOV     AX,0040
07F3 8EC0        MOV     ES,AX
07F5 57          PUSH    DI
07F6 BF4200      MOV     DI,0042
07F9 BE4500      MOV     SI,0045
07FC B90300      MOV     CX,0003
07FF FC          CLD
0800 F3          REPZ
0801 A6          CMPSB
0802 5F          POP     DI
0803 C606740000 MOV    BYTE PTR [0074],00
0808 7405        JZ      080F
080A C606740020 MOV    BYTE PTR [0074],20
080F 58          POP     AX
0810 C3          RET
;-----

```

```

0811 E83F00      CALL    0853
0814 B408        MOV     AH,08
0816 CD13        INT     13
0818 7237        JB      0851
081A 80C501      ADD     CH,01
081D 8BD9        MOV     BX,CX
081F 7308        JNB    0829
0821 B106        MOV     CL,06
0823 D2C3        ROL    BL,CL
0825 FEC3        INC    BL
0827 D2CB        ROR    BL,CL
0829 8BCB        MOV     CX,BX
082B 80E1C0      AND    CL,C0
082E 80C901      OR     CL,01
0831 B011        MOV     AL,11
0833 FEC6        INC    DH
0835 F6E6        MUL    DH
0837 B600        MOV     DH,00
0839 BB0000      MOV     BX,0000
083C 8EC3        MOV     ES,BX
083E E81200      CALL    0853
0841 B407        MOV     AH,07
0843 CD13        INT     13
0845 720A        JB      0851
0847 B403        MOV     AH,03
0849 CD13        INT     13
084B 7204        JB      0851
084D B404        MOV     AH,04
084F CD13        INT     13
0851 58          POP     AX

```

bios.asm

```

0852 C3          RET
;-----
0853 F606470008 TEST      BYTE PTR [0047],08
0858 B280        MOV       DL,80
085A 7402        JZ        085E
085C B281        MOV       DL,81
085E C3          RET
;-----
085F C606740000 MOV       BYTE PTR [0074],00
0864 58          POP       AX
0865 C3          RET
;-----
0866 58          POP       AX
0867 50          PUSH      AX
0868 52          PUSH      DX
0869 51          PUSH      CX
086A 80267500BF AND       BYTE PTR [0075],BF
086F 80FC04      CMP       AH,04
0872 740E        JZ        0882
0874 B90040      MOV       CX,4000
0877 E86A06      CALL     0EE4
087A 80FC0A      CMP       AH,0A
087D 7503        JNZ      0882
087F EB4C        JMP       08CD
0881 90          NOP
0882 BA2203      MOV       DX,0322
0885 B0FD        MOV       AL,FD
0887 EE          OUT      DX,AL
0888 BA2403      MOV       DX,0324
088B EC          IN       AL,DX
088C 50          PUSH      AX
088D B90400      MOV       CX,0004
0890 51          PUSH      CX
0891 B90800      MOV       CX,0008
0894 D1E0        SHL      AX,1
0896 D1D3        RCL      BX,1
0898 E2FA        LOOP     0894
089A EC          IN       AL,DX
089B 0AC0        OR       AL,AL
089D 7405        JZ        08A4
089F 800E750020 OR       BYTE PTR [0075],20
08A4 59          POP       CX
08A5 E2E9        LOOP     0890
08A7 8BC8        MOV       CX,AX
08A9 58          POP       AX
08AA F606750020 TEST     BYTE PTR [0075],20
08AF 741C        JZ        08CD
08B1 80FC04      CMP       AH,04
08B4 7412        JZ        08C8
08B6 E82500      CALL     08DE
08B9 F606750010 TEST     BYTE PTR [0075],10
08BE 7408        JZ        08C8
08C0 C606740011 MOV     BYTE PTR [0074],11
08C5 EB06        JMP       08CD
08C7 90          NOP
08C8 C606740010 MOV     BYTE PTR [0074],10
08CD BA2203      MOV       DX,0322
08D0 B0FF        MOV       AL,FF
08D2 EE          OUT      DX,AL
08D3 E8EB05      CALL     0EC1
08D6 E8D805      CALL     0EB1
08D9 59          POP       CX
08DA 5A          POP       DX
08DB E9EF06      JMP       0FCD
08DE 50          PUSH      AX

```

bios.asm

```

08DF 52          PUSH      DX
08E0 8BC1       MOV       AX,CX
08E2 B90802     MOV       CX,0208
08E5 8BD3       MOV       DX,BX
08E7 8D1E0009  LEA      BX,[0900]
08EB 8AD8       MOV       BL,AL
08ED 2E         CS:
08EE 3227       XOR       AH,[BX]
08F0 8AC4       MOV       AL,AH
08F2 741D       JZ       0911
08F4 FEC7       INC      BH
08F6 2E         CS:
08F7 3217       XOR       DL,[BX]
08F9 8AE2       MOV       AH,DL
08FB FEC7       INC      BH
08FD 2E         CS:
08FE 3237       XOR       DH,[BX]
0900 8AD6       MOV       DL,DH
0902 FEC7       INC      BH
0904 2E         CS:
0905 8A37       MOV       DH,[BX]
0907 E2DE       LOOP    08E7
0909 80267500EF AND     BYTE PTR [0075],EF
090E 5A         POP      DX
090F 58         POP      AX
0910 C3         RET
;-----

```

```

0911 FEC7       INC      BH
0913 2E         CS:
0914 3217       XOR       DL,[BX]
0916 8AE2       MOV       AH,DL
0918 FEC7       INC      BH
091A 2E         CS:
091B 3237       XOR       DH,[BX]
091D 8AD6       MOV       DL,DH
091F FEC7       INC      BH
0921 2E         CS:
0922 8A37       MOV       DH,[BX]
0924 8AC6       MOV       AL,DH
0926 BBFF1F     MOV     BX,1FFF
0929 D0C0       ROL     AL,1
092B 7526       JNZ    0953
092D B70F       MOV     BH,0F
092F D0C0       ROL     AL,1
0931 7520       JNZ    0953
0933 B707       MOV     BH,07
0935 D0C0       ROL     AL,1
0937 751A       JNZ    0953
0939 B703       MOV     BH,03
093B D0C0       ROL     AL,1
093D 7514       JNZ    0953
093F B701       MOV     BH,01
0941 D0C0       ROL     AL,1
0943 750E       JNZ    0953
0945 B700       MOV     BH,00
0947 D0C0       ROL     AL,1
0949 7508       JNZ    0953
094B B37F       MOV     BL,7F
094D D0C0       ROL     AL,1
094F 7502       JNZ    0953
0951 B33F       MOV     BL,3F
0953 8AC2       MOV     AL,DL
0955 22C7       AND     AL,BH
0957 7506       JNZ    095F
0959 8AC4       MOV     AL,AH
095B 22C3       AND     AL,BL
095D 7404       JZ     0963

```

bios.asm

```

095F 32C0      XOR     AL,AL
0961 EBA4      JMP     0907
0963 FA        CLI
0964 E406      IN      AL,06
0966 8AD8      MOV     BL,AL
0968 E406      IN      AL,06
096A 8AF8      MOV     BH,AL
096C FB        STI
096D 81EB0002  SUB     BX,0200
0971 03D9      ADD     BX,CX
0973 81F90002  CMP     CX,0200
0977 720A      JB      0983
0979 740B      JZ      0986
097B 81F90102  CMP     CX,0201
097F 7409      JZ      098A
0981 EB0B      JMP     098E
0983 26         ES:
0984 3027      XOR     [BX],AH
0986 26         ES:
0987 3057FF    XOR     [BX-01],DL
098A 26         ES:
098B 3077FE    XOR     [BX-02],DH
098E 800E750010 OR      BYTE PTR [0075],10
0993 5A        POP     DX
0994 58        POP     AX
0995 C3        RET
;-----

```

```

0E00 58        POP     AX
0E01 50        PUSH    AX
0E02 52        PUSH    DX
0E03 51        PUSH    CX
0E04 802675007F AND     BYTE PTR [0075],7F
0E09 E89800     CALL    0EA4
0E0C 80FC05    CMP     AH,05
0E0F 7227      JB      0E38
0E11 80FC08    CMP     AH,08
0E14 7322      JNB     0E38
0E16 80FC06    CMP     AH,06
0E19 B400      MOV     AH,00
0E1B 7502      JNZ     0E1F
0E1D B480      MOV     AH,80
0E1F BA2003    MOV     DX,0320
0E22 B91100    MOV     CX,0011
0E25 8D362604 LEA     SI,[0426]
0E29 FC        CLD
0E2A 1E        PUSH    DS
0E2B 0E        PUSH    CS
0E2C 1F        POP     DS
0E2D 8AC4      MOV     AL,AH
0E2F EE      OUT     DX,AL
0E30 AC      LODSB
0E31 EE      OUT     DX,AL
0E32 E2F9     LOOP   0E2D
0E34 1F        POP     DS
0E35 EB4F     JMP     0E86
0E37 90        NOP
0E38 E88600     CALL    0EC1
0E3B B90080    MOV     CX,8000
0E3E E8A300     CALL    0EE4
0E41 80FC0B    CMP     AH,0B
0E44 7440      JZ      0E86
0E46 BA2003    MOV     DX,0320
0E49 B90300    MOV     CX,0003
0E4C B000      MOV     AL,00
0E4E EE      OUT     DX,AL
0E4F E2FB     LOOP   0E4C

```

bios.asm

```

0E51 BA2203      MOV     DX,0322
0E54 B0F1       MOV     AL,F1
0E56 EE        OUT     DX,AL
0E57 BA2403     MOV     DX,0324
0E5A EC        IN      AL,DX
0E5B 53        PUSH    BX
0E5C B90400     MOV     CX,0004
0E5F 51        PUSH    CX
0E60 B90800     MOV     CX,0008
0E63 D1E0       SHL     AX,1
0E65 D1D3       RCL     BX,1
0E67 E2FA       LOOP   0E63
0E69 EC        IN      AL,DX
0E6A 59        POP     CX
0E6B E2F2       LOOP   0E5F
0E6D BA2003     MOV     DX,0320
0E70 B90400     MOV     CX,0004
0E73 51        PUSH    CX
0E74 B90800     MOV     CX,0008
0E77 D1C3       ROL     BX,1
0E79 D1CB       ROR     BX,1
0E7B D1D0       RCL     AX,1
0E7D D1D3       RCL     BX,1
0E7F E2F6       LOOP   0E77
0E81 EE        OUT     DX,AL
0E82 59        POP     CX
0E83 E2EE       LOOP   0E73
0E85 5B        POP     BX
0E86 53        PUSH    BX
0E87 BB0500     MOV     BX,0005
0E8A E8F301     CALL   1080
0E8D 391E4500   CMP     [0045],BX
0E91 5B        POP     BX
0E92 B0F3       MOV     AL,F3
0E94 7202       JB      0E98
0E96 B0F7       MOV     AL,F7
0E98 BA2203     MOV     DX,0322
0E9B EE        OUT     DX,AL
0E9C E81200     CALL   0EB1
0E9F 59        POP     CX
0EA0 5A        POP     DX
0EA1 E92901     JMP     0FCD
0EA4 BA2103     MOV     DX,0321
0EA7 A07600     MOV     AL,[0076]
0EAA 0C20       OR      AL,20
0EAC EE        OUT     DX,AL
0EAD 24DF       AND     AL,DF
0EAF EE        OUT     DX,AL
0EB0 C3        RET
;-----

```

```

0EB1 BA2103     MOV     DX,0321
0EB4 A07600     MOV     AL,[0076]
0EB7 24BF       AND     AL,BF
0EB9 EE        OUT     DX,AL
0EBA 0C40       OR      AL,40
0EBC EE        OUT     DX,AL
0EBD A27600     MOV     [0076],AL
0EC0 C3        RET
;-----

```

```

0EC1 BA2203     MOV     DX,0322
0EC4 B0F2       MOV     AL,F2
0EC6 EE        OUT     DX,AL
0EC7 0C01       OR      AL,01
0EC9 EE        OUT     DX,AL
0ECA C3        RET
;-----

```

bios.asm

```

0ECB 81C10402      ADD      CX,0204
0ECF 80FC0A        CMP      AH,0A
0ED2 7408          JZ       0EDC
0ED4 80FC0B        CMP      AH,0B
0ED7 7403          JZ       0EDC
0ED9 83E904        SUB      CX,+04
0EDC C3            RET
;-----

0EDD FA           CLI
0EDE EE           OUT      DX,AL
0EDF 86E0         XCHG    AH,AL
0EE1 EE           OUT      DX,AL
0EE2 FB           STI
0EE3 C3            RET
;-----

0EE4 E8E4FF       CALL     0ECB
0EE7 50           PUSH    AX
0EE8 8BC1         MOV     AX,CX
0EEA 48           DEC     AX
0EEB BA0700       MOV     DX,0007
0EEE E8ECFF       CALL     0EDD
0EF1 BA2303       MOV     DX,0323
0EF4 EE           OUT     DX,AL
0EF5 90           NOP
0EF6 90           NOP
0EF7 58           POP     AX
0EF8 C3            RET
;-----

0EF9 B104         MOV     CL,04
0EFB 8CC0         MOV     AX,ES
0EFD D3C0         ROL     AX,CL
0EFF 50           PUSH    AX
0F00 25F0FF       AND     AX,FFF0
0F03 03D8         ADD     BX,AX
0F05 58           POP     AX
0F06 1400         ADC     AL,00
0F08 E682         OUT     82,AL
0F0A B104         MOV     CL,04
0F0C D3C8         ROR     AX,CL
0F0E 2500F0       AND     AX,F000
0F11 8EC0         MOV     ES,AX
0F13 58           POP     AX
0F14 50           PUSH    AX
0F15 B90000       MOV     CX,0000
0F18 E8B0FF       CALL     0ECB
0F1B B400         MOV     AH,00
0F1D F7E1         MUL     CX
0F1F 48           DEC     AX
0F20 03C3         ADD     AX,BX
0F22 7307         JNB     0F2B
0F24 C606740009   MOV     BYTE PTR [0074],09
0F29 58           POP     AX
0F2A C3            RET
;-----

0F2B BA0600       MOV     DX,0006
0F2E 8BC3         MOV     AX,BX
0F30 E8AAFF       CALL     0EDD
0F33 A04700       MOV     AL,[0047]
0F36 BA2103       MOV     DX,0321
0F39 2407         AND     AL,07
0F3B 08067600     OR      [0076],AL
0F3F A04700       MOV     AL,[0047]
0F42 A808         TEST    AL,08

```

bios.asm

```

0F44 7408      JZ      0F4E
0F46 800E760010 OR     BYTE PTR [0076],10
0F4B EB06      JMP     0F53
0F4D 90        NOP
0F4E 800E760008 OR     BYTE PTR [0076],08
0F53 800E760080 OR     BYTE PTR [0076],80
0F58 A07600     MOV     AL,[0076]
0F5B EE       OUT     DX,AL
0F5C B90000     MOV     CX,0000
0F5F BA2F03     MOV     DX,032F
0F62 EC       IN      AL,DX
0F63 D0D0     RCL     AL,1
0F65 7309     JNB    0F70
0F67 E2F9     LOOP   0F62
0F69 C606740080 MOV     BYTE PTR [0074],80
0F6E 58       POP     AX
0F6F C3       RET
;-----

```

```

0F70 8D364200   LEA     SI,[0042]
0F74 FC       CLD
0F75 AC       LODSB
0F76 BA2903   MOV     DX,0329
0F79 EE       OUT     DX,AL
0F7A 42       INC     DX
0F7B AC       LODSB
0F7C EE       OUT     DX,AL
0F7D 42       INC     DX
0F7E AC       LODSB
0F7F EE       OUT     DX,AL
0F80 42       INC     DX
0F81 AC       LODSB
0F82 EE       OUT     DX,AL
0F83 42       INC     DX
0F84 AC       LODSB
0F85 EE       OUT     DX,AL
0F86 42       INC     DX
0F87 AC       LODSB
0F88 EE       OUT     DX,AL
0F89 42       INC     DX
0F8A AC       LODSB
0F8B EE       OUT     DX,AL
0F8C FA       CLI
0F8D E421     IN      AL,21
0F8F 24DF     AND     AL,DF
0F91 E621     OUT     21,AL
0F93 800EE00008 OR     BYTE PTR [00E0],08
0F98 A0E000   MOV     AL,[00E0]
0F9B E608     OUT     08,AL
0F9D FB       STI
0F9E B90000     MOV     CX,0000
0FA1 EC       IN      AL,DX
0FA2 D0C0     ROL     AL,1
0FA4 7207     JB     0FAD
0FA6 E2F9     LOOP   0FA1
0FA8 E82C00   CALL   0FD7
0FAB EBBC     JMP     0F69
0FAD B90000     MOV     CX,0000
0FB0 BA0600   MOV     DX,0006
0FB3 E421     IN      AL,21
0FB5 2420     AND     AL,20
0FB7 7542     JNZ    0FFB
0FB9 F606750040 TEST   BYTE PTR [0075],40
0FBE 7403     JZ     0FC3
0FC0 E9A3F8     JMP     0866
0FC3 F606750080 TEST   BYTE PTR [0075],80
0FC8 7403     JZ     0FCD
0FCA E933FE     JMP     0E00

```

bios.asm

```

0FCD E2E4      LOOP      0FB3
0FCF 4A        DEC       DX
0FD0 75E1      JNZ      0FB3
0FD2 E80200    CALL     0FD7
0FD5 EB92      JMP      0F69
0FD7 FA        CLI
0FD8 E421      IN       AL,21
0FDA 0C20      OR       AL,20
0FDC E621      OUT     21,AL
0FDE 8026E000F7 AND     BYTE PTR [00E0],F7
0FE3 A0E000    MOV     AL,[00E0]
0FE6 E608      OUT     08,AL
0FE8 FB        STI
0FE9 802676007F AND     BYTE PTR [0076],7F
0FEE 80267600F8 AND     BYTE PTR [0076],F8
0FF3 A07600    MOV     AL,[0076]
0FF6 BA2103    MOV     DX,0321
0FF9 EE        OUT     DX,AL
OFFA C3        RET
;-----

```

```

0FFB E8D9FF    CALL     0FD7
OFFE E88800    CALL     1089
1001 F6067700FF TEST    BYTE PTR [0077],FF
1006 7502      JNZ      100A
1008 58        POP      AX
1009 C3        RET
;-----

```

```

100A 8A267400  MOV     AH,[0074]
100E 0AE4      OR      AH,AH
1010 7407      JZ      1019
1012 80FC11    CMP     AH,11
1015 7402      JZ      1019
1017 58        POP      AX
1018 C3        RET
;-----

```

```

1019 58        POP      AX
101A 50        PUSH     AX
101B 80FC07    CMP     AH,07
101E 741F      JZ      103F
1020 C606440000 MOV    BYTE PTR [0044],00
1025 A07700    MOV     AL,[0077]
1028 8AC8      MOV     CL,AL
102A 2C11      SUB     AL,11
102C C606430011 MOV    BYTE PTR [0043],11
1031 A27700    MOV     [0077],AL
1034 7309      JNB     103F
1036 880E4300 MOV    [0043],CL
103A C606770000 MOV    BYTE PTR [0077],00
103F 53        PUSH     BX
1040 BB0200    MOV     BX,0002
1043 E83A00    CALL     1080
1046 FECB      DEC     BL
1048 8A3E4700 MOV    BH,[0047]
104C 80E707    AND     BH,07
104F 3AFB      CMP     BH,BL
1051 5B        POP     BX
1052 7408      JZ      105C
1054 8006470001 ADD    BYTE PTR [0047],01
1059 EB22      JMP     107D
105B 90        NOP
105C 80264700F8 AND    BYTE PTR [0047],F8
1061 8006450001 ADD    BYTE PTR [0045],01
1066 7305      JNB     106D
1068 8006460001 ADD    BYTE PTR [0046],01
106D 53        PUSH     BX

```

bios.asm

```

106E BB0000      MOV     BX,0000
1071 E80C00      CALL   1080
1074 391E4500    CMP    [0045],BX
1078 5B          POP    BX
1079 7502         JNZ    107D
107B 58          POP    AX
107C C3          RET
;-----

```

```

107D E9B3FE      JMP    0F33
1080 06          PUSH   ES
1081 E82FF6      CALL   06B3
1084 26          ES:
1085 8B18      MOV    BX,[BX+SI]
1087 07          POP    ES
1088 C3          RET
;-----

```

```

1089 BA2F03      MOV    DX,032F
108C EC          IN     AL,DX
108D A820      TEST   AL,20
108F 7406      JZ     1097
1091 C6067400CC MOV    BYTE PTR [0074],CC
1096 C3          RET
;-----

```

```

1097 A840          TEST   AL,40
1099 7506      JNZ    10A1
109B C606740003 MOV    BYTE PTR [0074],03
10A0 C3          RET
;-----

```

```

10A1 D0D8          RCR    AL,1
10A3 7201      JB     10A6
10A5 C3          RET
;-----

```

```

10A6 BA2903      MOV    DX,0329
10A9 EC          IN     AL,DX
10AA D0D8          RCR    AL,1
10AC 7306      JNB   10B4
10AE C606740002 MOV    BYTE PTR [0074],02
10B3 C3          RET
;-----

```

```

10B4 D0D8          RCR    AL,1
10B6 7306      JNB   10BE
10B8 C606740040 MOV    BYTE PTR [0074],40
10BD C3          RET
;-----

```

```

10BE D0D8          RCR    AL,1
10C0 7306      JNB   10C8
10C2 C6067400FF MOV    BYTE PTR [0074],FF
10C7 C3          RET
;-----

```

```

10C8 D0D8          RCR    AL,1
10CA D0D8          RCR    AL,1
10CC 7306      JNB   10D4
10CE C606740004 MOV    BYTE PTR [0074],04
10D3 C3          RET
;-----

```

```

10D4 D0D8          RCR    AL,1
10D6 D0D8          RCR    AL,1
10D8 7306      JNB   10E0
10DA C606740010 MOV    BYTE PTR [0074],10

```

bios.asm

```

10DF C3          RET
;-----
10E0 D0D8        RCR      AL,1
10E2 7306        JNB      10EA
10E4 C60674000A  MOV      BYTE PTR [0074],0A
10E9 C3          RET
;-----
10EA C6067400BB  MOV      BYTE PTR [0074],BB
10EF C3          RET
;-----
10F0 52          PUSH     DX
10F1 50          PUSH     AX
10F2 1E          PUSH     DS
10F3 B84000      MOV      AX,0040
10F6 8ED8        MOV      DS,AX
10F8 B020        MOV      AL,20
10FA E620        OUT      20,AL
10FC FB          STI
10FD BA2F03      MOV      DX,032F
1100 EC          IN       AL,DX
1101 2408        AND      AL,08
1103 7417        JZ       111C
1105 A04800      MOV      AL,[0048]
1108 2410        AND      AL,10
110A 7408        JZ       1114
110C 800E750080  OR       BYTE PTR [0075],80
1111 EB11        JMP      1124
1113 90          NOP
1114 800E750040  OR       BYTE PTR [0075],40
1119 EB09        JMP      1124
111B 90          NOP
111C FA          CLI
111D E421        IN       AL,21
111F 0C20        OR       AL,20
1121 E621        OUT      21,AL
1123 FB          STI
1124 1F          POP      DS
1125 58          POP      AX
1126 5A          POP      DX
1127 CF          IRET
;-----
□
0F4D 90          NOP

```