

XDBG – 11

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**1.**

**1.1.**

XDBG-11

M68HC11

MOTOROLA.

XDBG-11

" " " " "

. XDBG-11,

( , )

; / .

XDBG-11 3.0.

,

:

1)

M68HC11;

2)

-

M68HC11D0, M68HC11E9 M68HC11K4

D0, E9, K4

## 1.2.

PC.

IBM

IBM PC.

(RS-232C),

(IRQ),

### 1.3. — XDBG – 11

XDBG – 11  
IBM PC 80386<sup>1</sup>,  
1 4 , 4 2  
DOS. XDBG – 11  
DPMI (Linux/NetBSD DOS emulator, OS/2 DOS box, Windows 9x),  
( DOS) DPMI.

### 1.4.

A“ —  
C“ —  
:

- 1) , A;
- 2) C :  
**c: [ENTER]**
- 3) C , C:\TMP:  
**mkdir \tmp [ENTER]**
- 4) :  
**cd \tmp [ENTER]**
- 5) XDBG11 :  
**copy a:\xdbg11\\*. \* c: [ENTER]**
- 6) XDBG – 11 ( , C:\XDBG11),  
a , 2:  
**.\install.exe [ENTER]**  
**please specify the installation path: c:\xdbg11 [ENTER]**  
**please specify location of the paging space file: c:\tmp [ENTER]**

XDBG – 11 (

C:\XDBG11),  
specs,  
C:\XDBG11  
PATH<sup>3</sup>.

---

<sup>1</sup> IBM PC 80286 XDBG – 11  
<sup>2</sup> ,  
<sup>3</sup> . PATH DOS.

2.

XDBG – 11

XDBG – 11.

2.1.

XDBG – 11 —

1).  
( , -  
, -  
) .  
,  
— .

1) -d < > —  
4000 10000.  
( ) ;

2) -g —  
.  
,  
/ , ( -  
).  
;

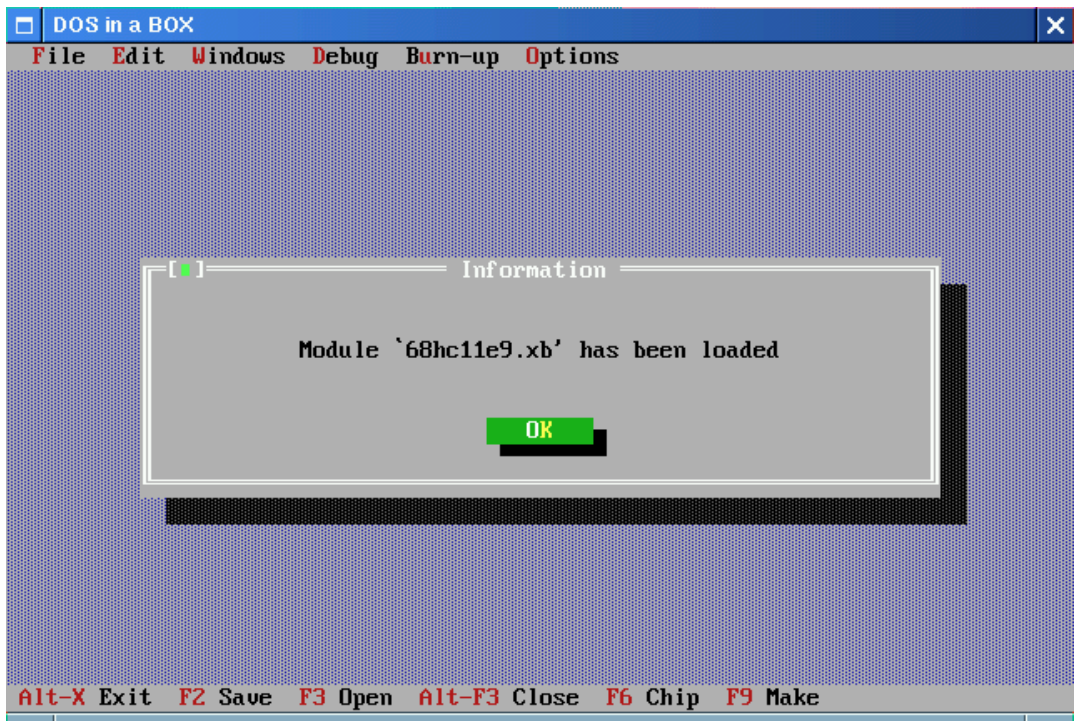
3) -p —  
( , -  
-g);

4) -s < > — specs.

<sup>1</sup>XDBG – 11 ( 16550A ).  
- , -  
-  
.

## 2.2.

( ), . 2.1. , ( , ), XDBG-11 , , .



. 2.1.

## 2.3.

„Error“, :

- 1) , , XDBG-11, specs ;
- 2) , (\*.xb), , - ;

3) , ( RESET bootstrap;

4) -

## 2.4.

1) .xb ( ).

M68HC11, M2;

Ax, Dx, Ex, Fx (x — ).

( )

URL **ftp://motorola.miee.ru/pub/dos/xdbg11/xb,**

e-mail **xdbg11@eed.miee.ru**

[F6]

2) Options

Board<sup>2</sup>, (

), „Plug-n-play bootstrap code“ „Use

internal talker“;

9600 („Talker speed setup“)

XDBG – 11.

„Debug/Connect“ [F4].

# 3.

## 3.1. File

### 3.1.1. Open

— .s —  
„\*.s“  
„\*.lst“ — 256

### 3.1.2. New

„File/Save as“

### 3.1.3. Save

### 3.1.4. Save as

Save,

### 3.1.5. Assembly

### 3.1.6. Change dir

### **3.1.7. Exit**

„Options/Board“

### **3.1.8. About**

## **3.2. Edit**

### **3.2.1. Undo**

### **3.2.2. Cut**

*Shift- ]*, *[Shift- ]* *[Shift- ]* ( *[Shift- ]*,  
(clipboard).

### **3.2.3. Copy**

### **3.2.4. Paste**

### **3.2.5. Show clipboard**

### **3.2.6. Clear**

### **3.2.7. Search**

### **3.2.8. Search again**

### **3.2.9. Replace**

### 3.3. Windows

#### 3.3.1. Size/Move

#### 3.3.2. Zoom

Zoom

„[ ]“ „[ ]“

#### 3.3.3. Tile, Cascade

#### 3.3.4. Close

„[ ]“

#### 3.3.5. Open project

;

„Project“,

( )

„Project“,

1) *[INS]* —

*[ESC]*;

2) *[DEL]* —

#### 3.3.6. Close project

#### 3.3.7. Check project integrity

#### 3.3.8. Make project

## 3.4. Debug

### 3.4.1. Connect

M68HC11.

### 3.4.2. Resynchronize

„RESET“,

### 3.4.3. Download

(  
MOTOROLA s-records (s19),

s-records (s37  
1. s-records

s-records

XDBG – 11.

### 3.4.4. Disassembly

s-records. „Options/Disassembly“

### 3.4.5. Debug window

— . 3.1 . 15.

[Tab] ( ) [Shift-Tab] ( )

1)

[Home]/[End] [Ctrl-PgUp]/[Ctrl-PgDn]  
/ /

[ ][ ]  
([ ]).

- 2) — , [ ]/ [ ]. -
- ;
- :
- ) [c]/ [C] — ;
- ) [d]/ [D] — ( );
- ) [i]/ [I] — ( );
- ) [n]/ [N] — ;
- ) [z]/ [Z] — .
- (
- ) [0]/ [1] -
- .
- 3) ;
- 4) ;
- 5) -
- ;
- 6) :
- ) *DISCONNECTED* — ,
- / ;
- ) *STOPPED* — -
- STOP<sup>2</sup>;
- ) *RUNNING* — „RUN“ -
- ;
- ) *BREAKPOINT HIT* —

### Trace program

PC

### Breakpoint



. 3.1.

### Run program

PC  
„Debug/Stop  
program“

### Run to current address

PC,  
( ),  
„Debug/Breakpoint“ „Debug/Run  
program“.

### Stop program

„Run program“ „Run  
to current address“

### Go to specified address

**Go to origin (PC)****PC.****Set PC to current address***PC***3.4.6. Panes/Update**

„Debug/Watchpoints“).

**3.4.7. Panes/Go to address****3.4.8. Watchpoints**

M68HC11.

**Add**

< > ::= { \* } < > < > [ < > ]  
 < > ::= == | != | >= | <= | > | < | @  
 < > ::= < >  
 < > ::= < >  
 < > ::= { \$ | 0x } 0 | 1 | 2 | 3 |  
 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F  
 \* (  
 )  
 ( , , , , , )  
 ;  
 @,

---

```

        ,
        „$“
        „0x“ —
        $ „0x“.
        /
        :
        *0xd000 != $5
        *$100 >= $1f
        *0xb600 @

```

```

        xdbg11.xw
        ,
        (
        @)
        ,
        , XDBG – 11

```

**xdbg11.xw**

### Browse

- ```

        /
        :
        1) „Add new“ — „Debug/Watchpoints/Add“;
        2) „Delete“ — / ;
        3) „Enable“ — ;
        4) „Disable“ — / ;
        5) „Disable all“ — ;
        6) „Delete all“ — / .

```

### 3.4.9. Registers

#### Inspect

```

        , „Debug/Debug window/ExamReg“.
        [F7],
        , —

```

#### Modify

[Enter]

[ESC]

### 3.4.10. Memory

#### Find

#### Inspect

#### Modify

„Options/Evaluation board“

„Options/Evaluation board“

1) ( , )

) ;

) ;

) CONFIG;

) .

2) CONFIG ( , ),

CONFIG,

3.

„Address“

“ —

„Value“

„ “ —

„ / „ “

[Enter].

CONFIG,

„Value“,

[Enter].

**Move**

„From“ „To“ , „Move to“ —

**Protect**

, -  
.

**Clear/Set**

, -  
.  
,  
,  
, „Debug/Download“, -  
, XDBG – 11 -  
,  
, —  
,  
, 700 ; — 256  
, \$D1F0 \$D1F8, — \$D000,  
( \$D100 \$D1FF) ( \$D000 \$D0FF,

**Display****Set**

„Set to“ .

**3.5. Burn-up**

, , , -  
, -  
, „Debug/Connect“ „Debug/Download“ -  
( ,  
, „Debug/Download“). -  
, „Burn-up“. -  
, **eram.xb** ( , **eprom.xb** **eprom.xb** —  
,  
, „Options/Evaluation board“ „Run program after download“, -

### 3.5.1. EPROM, EEPROM

**eprom.xb,**

„Options/Chip“

**eeeprom.xb**  
[F6].

### 3.5.2. External RAM

up/EPROM“

„Burn-up/EEPROM“

„Burn-  
**eram.xb**

„Options/Evaluation board“ „Run program after download“

## 3.6. Options

### 3.6.1. Communication

IRQ),

„Setup“

### 3.6.2. Evaluation board

CONFIG

(„Plug-n-play bootstrap code“

„Use

internal talker“);

(„Bootstrap speed setup“<sup>4</sup> „Talker speed setup“<sup>5</sup>),

„Run program after download“,

„Burn-up“.

„Bootstrap speed setup“

„Talker speed setup“

„Custom“

[Enter],

115200

1200

— 9600

### 3.6.3. Assembly

XDBG – 11, specs.

### 3.6.4. Translator

specs, 24.  
asl,

### 3.6.5. Disassembly

„Debug/Download“.

# 4.

asl 1.41r5<sup>1</sup> ( ), XDBG – 11  
HC11.  
XDBG11\ASL\DOC  
asl XDBG – 11  
, , , ,  
XDBG – 11.  
• ,  
XDBG – 11  
.

## 4.1.

,  
— BIOS.  
“ „Error messages“  
,  
2, XDBG – 11  
3,  
3,

<sup>1</sup> asl — (Alfred Arnold).  
<sup>2</sup> DOS.  
<sup>3</sup> IASM MOTOROLA.

- , , .
- XDBG – 11:**
- 1) specs;
  - 2) – **XDBG – 11 xredir.exe**,  
;
  - 3) . , -  
;  
4) , DOS 70 (conventional  
memory), (extended) 1-2 ;
  - 5) , , — -  
 , .  
;  
6) .  
„Options/Translator“ -  
.

5.

specs

5.1.

specs — , -  
.  
,  
,  
— , specs.  
:  
1) ;  
2) ;  
3) .

1 ,  
( , — cpp —  
m4. ,  
( , asl p2hex). c  
,  
.

5.2.

;  
„Options/Translator“ . specs  
\*,  
:  
#  
# specs myasm.  
\* myasm

```

,                                     #
,                                     . 'myasm'
„Options/Translator“,
specs
```

### 5.2.1. %a

DOS — **PATH:**

```

#                                     %a
* myasm1
%a: c:\bin\cpp.exe

* myasm2
#                                     :
%a: m4.exe
```

### 5.2.2. %x

```

* myasm1
%x: c:\hc11\myasm\myasm.exe

* my_cool_asm
%x: my_cool_asm.exe
```

### 5.2.3. %z

```

„%Z“:                                     „%a“

* myasm1
%x: myasm.exe
%z: postp.exe

* myasm2
%x: c:\hc11\myasm\myasm.exe
%z: c:\hc11\myasm\postp.exe
```

### 5.2.4. %A

```
* myasm
%a: m4. exe
%A: --include c:/usr/m4/include
%x: myasm. exe
```

### 5.2.5. %X

```
* myasm
%x: myasm. exe
%X: ; b
```

```
file_name. exe < > < 1> < 2> ....
```

```
file_name. exe < 1> .... < N> < > ,
```

```
( ), 'da' 'dz'
; . 28.
```

### 5.2.6. %Z

```
* myasm
%x: myasm. exe
%X: -quiet
%z: postp. exe
%Z: -generate-srec
```

### 5.2.7. %l

```
* myasm1
%x: myasm1. exe
%l: -listing
```

```
# %l ....
```

```
* myasm2
%x: myasm2. exe
```

```
# .....
%l: -listing-to-file persistent-file-name.lst

* myasm3
%x: myasm3.exe
# ..... :
%l: -Lpersistent_file_name.lst
```

### 5.2.8. %c

```
* myasm
%x: myasm.exe
%X: - qui et
%c: - cross-reference-table
```

```
* myasm
%x: myasm.exe
%l: -listing
%c: -listing
```

### 5.2.9. %s

- 1) , ;
- 2) — , ‘%l’ . 26
- 3) — , :

```
* myasm
%x: myasm.exe
%s: -symbol-table
```

### 5.2.10.

( . . ).

'%0X' '%0Z'.

—

```

- 3. - , , cpp — m4),
:

* myasm1
%a: cpp.exe
%A: -P
%oa: >
%x: myasm1.exe
%X: -quiet

* myasm2
%a: prep.exe
%oa: -output-file
%x: myasm2.exe

'0x' '0z'.

. , , ( . . filename.exe
1 N ),
, '0z' ( '0a', '0x' —
) :

# , ASL,
# .
* asl
%x: asl.exe
%X: -quiet -x
%ox: -o
#
# - :
%oz:
%z: p2hex.exe
%Z: +5 -F Moto

```

### 5.2.11. %da, %dz

```

( ) — ('da') ('dz') :

* myasm_a
%x: myasm.exe
%X: -quiet -one-more-option
# ,
# :
%da
# :

```

```
# myasm.exe -quiet -one-more-option processed-file-name.s

* myasm_z
%x: myasm.exe
%X: -quiet -one-more-option -yet-option
%dz
#
# myasm.exe processed-file-name.s -quiet -yet-option :
```

## 6.

# XDBG - 11

XDBG - 11

### 6.1.

#### 6.1.1. Load error: no DPMI

DPMI,  
:

- 1) DOS ( DOS-  
) — cwsdpmi.exe XDBG - 11  
;
- 2) DOS-  
DPMI DOS-

#### 6.1.2. Load error: no DPMI memory

XDBG - 11 DPMI-  
( -DOS), DOS-  
— 4

#### 6.1.3. Load error: no DPMI selectors

Windows NT/95/98. DPMI-  
DOS-

**6.2.****6.2.1. Unable to register an external module**

XDBG – 11,

„Options/Chip“.

**6.2.2. Module is corrupted****6.2.3. Memory bounds are invalid****6.2.4. Illegal communication speed, using default value (1200 baud)**

„Bootstrap speed setup/Custom“ „Talker speed  
setup/Custom“ . 20;

**6.2.5. Forgot to specify external module**

„Options/Evaluation board“

**6.2.6. Not enough memory for this operation**

( . . 6),

**6.2.7. Preprocessing is impossible until you tell me way how to share data between preprocessor and asm**

‘%oa’

**6.2.8. Assembler specified but not found**

‘%x’,

### 6.2.9. Unable to postprocess until you tell me the way how to share the information between asm and postprocessor

‘%0x’.

## 6.3.

## XDBG – 11

„Internal program error

“ „Index out of bounds“

( , ) ,

.

**bugs-xdbg@eed.miee.ru** e-mail,

, ( . ),

:

xredi r -e core -- xdbg11. exe,

**core**

, .

[1] M68HC11 reference manual. MOTOROLA, 1991