

8051 Macro Assembler C 5 1 A S M V 1.2
=====

Source File: bubl.asm
Object File(s): bubl.hex
List File: bubl.lst

Line	I	Addr	Code	Source
1:				;-----
2:				; 1.00 08_07_2010 original
3:				;-----
4:				;
5:				; Projekt _____
6:				; Filename _____
7:				; File version ____
8:				; Autor _____
9:				;
10:				;-----
11:	1			\$include (lib\2051.inc) ; общий для 2051\4051 фрагмент
12:	1			;
13:	1			; include heder shablon for AT89C2051/4051
14:	1			;
15:	1			; only c51asm.exe assembler!
16:	1			;
17:	1			\$device (at89c2051)
18:	1			\$pagewidth (255)
19:	1			\$da
20:	1	N	0000	.equ restt = 0x0000
21:	1	N	0003	.equ intr0 = 0x0003
22:	1	N	000B	.equ tfir0 = 0x000B
23:	1	N	0013	.equ intr1 = 0x0013
24:	1	N	001B	.equ tfir1 = 0x001B
25:	1	N	0023	.equ rtirq = 0x0023
26:	1	N	002F	.equ int_vectors_syze = 0x002F
27:	1	N	0030	.equ ram_start = 0x0030
28:	1	N	005F	.equ steck_start = 0x005F
29:	1	N	007F	.equ ramend = 0x007F
30:	1	B	B6	acout bit 0x00b6 ;p3.6
31:	1			;
32:	1			;
33:				;-----
34:				; variable definitions
35:				; (переменные программы определяемые пользователем)
36:				;
37:		N	0010	nums equ 16
38:		D	20	damp00 data 0x20
39:		D	21	damp01 data 0x21
40:		D	22	damp02 data 0x22
41:		D	23	damp03 data 0x23
42:		D	24	damp04 data 0x24
43:		D	25	damp05 data 0x25

Line	I	Addr	Code	Source
44:			D	26 damp06 data 0x26
45:			D	27 damp07 data 0x27
46:			D	28 damp08 data 0x28
47:			D	29 damp09 data 0x29
48:			D	2A damp0a data 0x2a
49:			D	2B damp0b data 0x2b
50:			D	2C damp0c data 0x2c
51:			D	2D damp0d data 0x2d
52:			D	2E damp0e data 0x2e
53:			D	2F damp0f data 0x2f
54:			D	30 damp10 data 0x30
55:			D	31 damp11 data 0x31
56:			D	32 damp12 data 0x32
57:			D	33 damp13 data 0x33
58:			D	34 damp14 data 0x34
59:			D	35 damp15 data 0x35
60:			D	36 damp16 data 0x36
61:			D	37 damp17 data 0x37
62:			D	38 damp18 data 0x38
63:			D	39 damp19 data 0x39
64:			D	3A damp1a data 0x3a
65:			D	3B damp1b data 0x3b
66:			D	3C damp1c data 0x3c
67:			D	3D damp1d data 0x3d
68:			D	3E damp1e data 0x3e
69:			D	3F damp1f data 0x3f
70:				;
71:		N	0000	org restt
72:				irq_res:
73:		0000 01 2F		ajmp init
74:				;
75:				; здесь размещаются вектора прерываний
76:				; или короткие подпрограммы их обслуживания
77:				;
78:				;
79:				;
80:				;
81:		N	002F	org (restt+int_vectors_syze)
82:				;
83:				; основная программа пользователя
84:				; (начинается с модуля инициализации)
85:				;
86:				init:
87:		002F 75 81 5F		mov sp,#steck_start
88:		0032 78 7F		mov r0,#ramend
89:		0034 E4		clr a
90:				cleen:
91:		0035 F6		mov @r0,a
92:		0036 D8 FD		djnz r0,cleen
93:				tests:
94:		R	R0	index0 set R0
95:		R	R1	index1 set R1
96:		R	R3	cntp set r3
97:		R	R4	cntss set r4
98:		0038 78 20		mov index0,#damp00
99:		003A 79 3F		mov index1,#damp1f

Line	I	Addr	Code	Source
100:		003C	7B 10	mov cntp,#nums
101:				transfer:
102:		003E	E6	mov a,@index0
103:		003F	F7	mov @index1,a
104:		0040	08	inc index0
105:		0041	19	dec index1
106:		0042	DB FA	djnz cntp,transfer
107:				sort:
108:		0044	7C 10	mov cntss,#nums
109:				loop:
110:		0046	7B 0F	mov cntp,#nums-1
111:		0048	78 20	mov index0,#damp00
112:		004A	79 21	mov index1,#damp01
113:				loop1:
114:		004C	E6	mov a,@index0
115:		004D	97	subb a,@index1
116:		004E	50 03	jnc step1
117:		0050	E6	mov a,@index0
118:		0051	C7	xch a,@index1
119:		0052	C6	xch a,@index0
120:				step1:
121:		0053	08	inc index0
122:		0054	09	inc index1
123:		0055	DB F5	djnz cntp,loop1
124:		0057	DC ED	djnz cntss,loop
125:		0059	E5 2F	mov a,damp0f
126:		005B	F5 90	mov p1,a
127:				stop:
128:		005D	80 FE	sjmp stop
129:				end

Segment usage:

Code	:	50 bytes
Data	:	0 bytes
Idata	:	0 bytes
Edata	:	0 bytes
Fdata	:	0 bytes
Xdata	:	0 bytes
Bit	:	0 bits

Register banks used: ---

Warnings: 0

Errors: 0

L I S T O F S Y M B O L S
 =====

SYMBOL	TYPE	VALUE	LINE
??C51ASM	NUMBER	8051	
??CODE_SIZE	NUMBER	0800	
??DEVICE	NUMBER	001B	
??ERAM_SIZE	NUMBER	0000	
??FDATA_SIZE	NUMBER	0000	
??RAM_SIZE	NUMBER	0080	
??VERSION	NUMBER	0120	
??_AT89C2051_	NUMBER	001B	
??_AT89C4051_	NUMBER	001C	
??_AT89C51ED2_	NUMBER	0026	
??_AT89C51IC2_	NUMBER	0024	
??_AT89C51ID2_	NUMBER	0025	
??_AT89C51RB2_	NUMBER	0021	
??_AT89C51RC2_	NUMBER	0022	
??_AT89C51RC_	NUMBER	0020	
??_AT89C51RD2_	NUMBER	0023	
??_AT89C51_	NUMBER	001D	
??_AT89C52_	NUMBER	001E	
??_AT89C55WD_	NUMBER	001F	
??_AT89LP2052_	NUMBER	0001	
??_AT89LP213_	NUMBER	0003	
??_AT89LP214_	NUMBER	0004	
??_AT89LP216_	NUMBER	0005	
??_AT89LP3240_	NUMBER	000A	
??_AT89LP4052_	NUMBER	0002	
??_AT89LP428_	NUMBER	0006	
??_AT89LP51ED2_	NUMBER	0011	
??_AT89LP51IC2_	NUMBER	000E	
??_AT89LP51ID2_	NUMBER	0010	
??_AT89LP51RB2_	NUMBER	000C	
??_AT89LP51RC2_	NUMBER	000D	
??_AT89LP51RD2_	NUMBER	000F	
??_AT89LP51_	NUMBER	0007	
??_AT89LP52_	NUMBER	0008	
??_AT89LP6440_	NUMBER	000B	
??_AT89LP828_	NUMBER	0009	
??_AT89LS51_	NUMBER	0019	
??_AT89LS52_	NUMBER	001A	
??_AT89S2051_	NUMBER	0012	
??_AT89S4051_	NUMBER	0013	
??_AT89S51_	NUMBER	0014	
??_AT89S52_	NUMBER	0015	
??_AT89S53_	NUMBER	0016	
??_AT89S8252_	NUMBER	0017	
??_AT89S8253_	NUMBER	0018	
??_DEFAULT_	NUMBER	0000	
AC	BIT	D6	
ACC	DATA	E0	
ACOUT	BIT	B6	30
B	DATA	F0	
CLEEN	CODE	0035	90
CNTP	REGISTER	R3	96
CNTSS	REGISTER	R4	97
CY	BIT	D7	
DAMP00	DATA	20	38

SYMBOL	TYPE	VALUE	LINE

DAMP01	DATA	21	39
DAMP02	DATA	22	40
DAMP03	DATA	23	41
DAMP04	DATA	24	42
DAMP05	DATA	25	43
DAMP06	DATA	26	44
DAMP07	DATA	27	45
DAMP08	DATA	28	46
DAMP09	DATA	29	47
DAMP0A	DATA	2A	48
DAMP0B	DATA	2B	49
DAMP0C	DATA	2C	50
DAMP0D	DATA	2D	51
DAMP0E	DATA	2E	52
DAMP0F	DATA	2F	53
DAMP10	DATA	30	54
DAMP11	DATA	31	55
DAMP12	DATA	32	56
DAMP13	DATA	33	57
DAMP14	DATA	34	58
DAMP15	DATA	35	59
DAMP16	DATA	36	60
DAMP17	DATA	37	61
DAMP18	DATA	38	62
DAMP19	DATA	39	63
DAMP1A	DATA	3A	64
DAMP1B	DATA	3B	65
DAMP1C	DATA	3C	66
DAMP1D	DATA	3D	67
DAMP1E	DATA	3E	68
DAMP1F	DATA	3F	69
DPH	DATA	83	
DPL	DATA	82	
EA	BIT	AF	
ES	BIT	AC	
ET0	BIT	A9	
ET1	BIT	AB	
EX0	BIT	A8	
EX1	BIT	AA	
F0	BIT	D5	
IE	DATA	A8	
IE0	BIT	89	
IE1	BIT	8B	
INDEX0	REGISTER	R0	94
INDEX1	REGISTER	R1	95
INIT	CODE	002F	86
INT0	BIT	B2	
INT1	BIT	B3	
INTR0	NUMBER	0003	21
INTR1	NUMBER	0013	23
INT_VECTORS_SYZE	NUMBER	002F	26
IP	DATA	B8	
IRQ_RES	CODE	0000	72
IT0	BIT	88	
IT1	BIT	8A	
LOOP	CODE	0046	109
LOOP1	CODE	004C	113
NUMS	NUMBER	0010	37
OV	BIT	D2	

SYMBOL	TYPE	VALUE	LINE
P	BIT	D0	
P0	DATA	80	
P1	DATA	90	
P2	DATA	A0	
P3	DATA	B0	
PCON	DATA	87	
PS	BIT	BC	
PSW	DATA	D0	
PT0	BIT	B9	
PT1	BIT	BB	
PX0	BIT	B8	
PX1	BIT	BA	
RAMEND	NUMBER	007F	29
RAM_START	NUMBER	0030	27
RB8	BIT	9A	
RD	BIT	B7	
REN	BIT	9C	
RETT	NUMBER	0000	20
RI	BIT	98	
RS0	BIT	D3	
RS1	BIT	D4	
RTIRQ	NUMBER	0023	25
RXD	BIT	B0	
SBUF	DATA	99	
SCON	DATA	98	
SM0	BIT	9F	
SM1	BIT	9E	
SM2	BIT	9D	
SORT	CODE	0044	107
SP	DATA	81	
STECK_START	NUMBER	005F	28
STEP1	CODE	0053	120
STOP	CODE	005D	127
T0	BIT	B4	
T1	BIT	B5	
TB8	BIT	9B	
TCON	DATA	88	
TESTS	CODE	0038	93
TF0	BIT	8D	
TF1	BIT	8F	
TFIR0	NUMBER	000B	22
TFIR1	NUMBER	001B	24
TH0	DATA	8C	
TH1	DATA	8D	
TI	BIT	99	
TL0	DATA	8A	
TL1	DATA	8B	
TMOD	DATA	89	
TR0	BIT	8C	
TR1	BIT	8E	
TRANSFER	CODE	003E	101
TXD	BIT	B1	
WR	BIT	B6	