

• • •

• •

-

«

»

9

•
15
2002 .

691.396

2002 . . .

2002.

. . . : . - : . . . ,

- . . , . ;
- . . , . .

()

BORSCHT.

7

2
2001 .

- ,
.
, 10000
, 100000.
-
,
,
» «
-
.
.

1

()
128

().

. 1.1.

()

2048

/

32

(),

().

(-0)

().

-16

().

30

, ...«

»

4:1.

:

–

()

(), ;

–

,

(, ,)

(),

128

BORSCHT:

– *(battery feed)* –

;

– **O** (*overvoltage protection*) –

;

– **R** (*ringing*) –

25+/-5

95+/-5

1

4

;

– **S** (*supervision*) –

–

– **C** (*coding*) –

(-)

;

),

(-)

;

– **H** (*hybrid*) –

();

– **T** (*testing*) –

() . () ,

() ,

32-

(1, 2, 3, 4)

(8x8)

32-

- 0-

() ;

- 1...4-

128 , ;

- 5-

() ;

- 6-

() ;

- 7-

()

() .

8x8

()

() .

()

() ,

25+/-5

()

()

()

()

6

()

DTMF,

. 1.1.

1.1 –

DTMF

	1209	1336	1477	1633
697	1	2	3	
770	4	5	6	
852	7	8	9	
941	*	0	#	

() 32

4 () .

– 6 . 1.2

() -7.

1.2 –

0	425	
1	–	
2	425	(0,3 – 0,3)
3	750 + 600	
4...12	700...1700	«2 6»
13...30	1200...3850	
31	–	

2

128

128

() 16

32-

128

.2.1.

32

-000

-0

-1,

-001

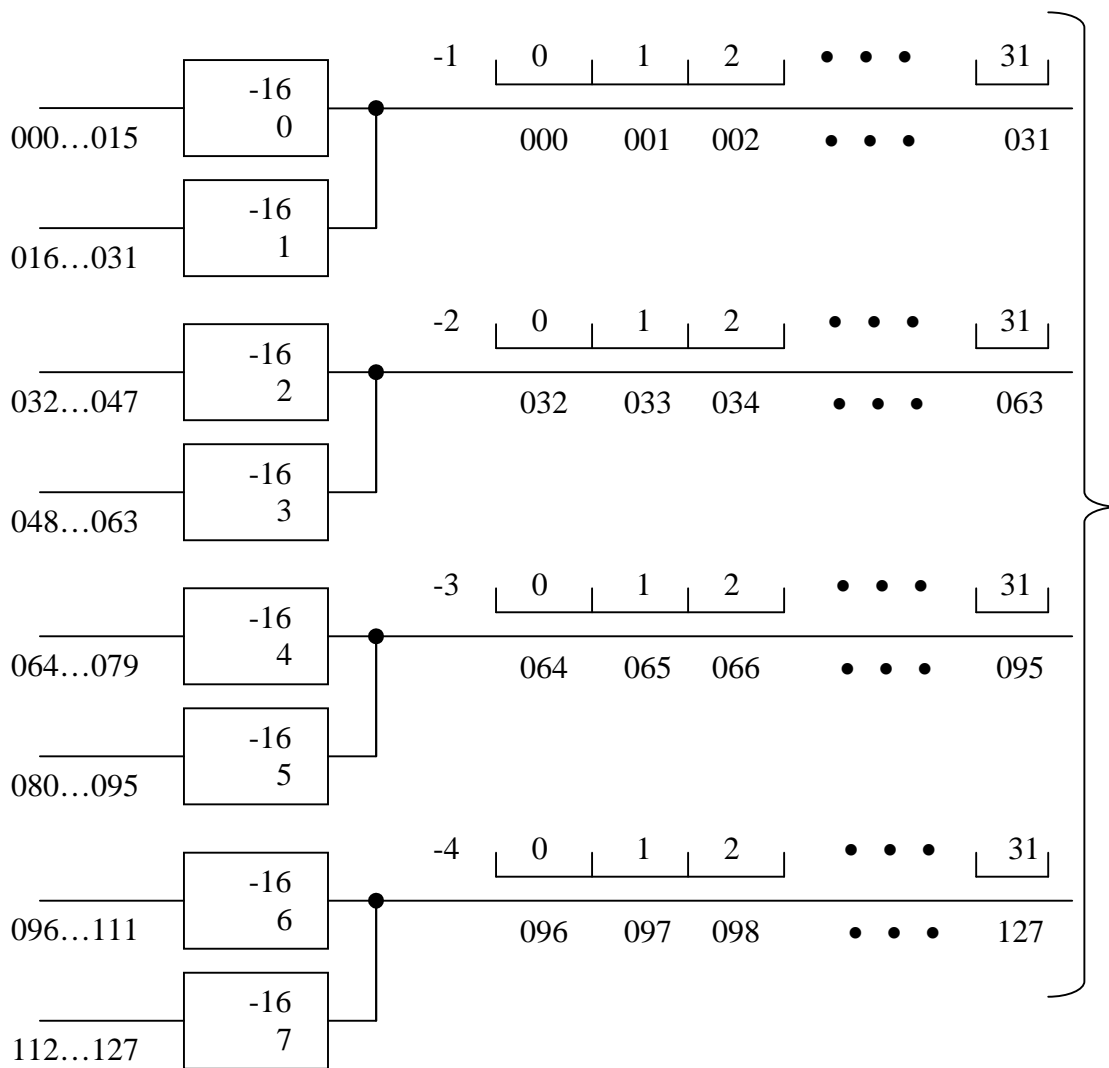
-1

-1

...

1... 4

(8x8).



2.1 -

1...4

3

-32

32

. 3.1

(-32)

1024x1024

32x32

()

. 3.1

(-0)

-2 ... -31
().
-0,
2...31.

(2... 31)

-0

()

()

2...31

(-1)

(),

(),

. 1.2.

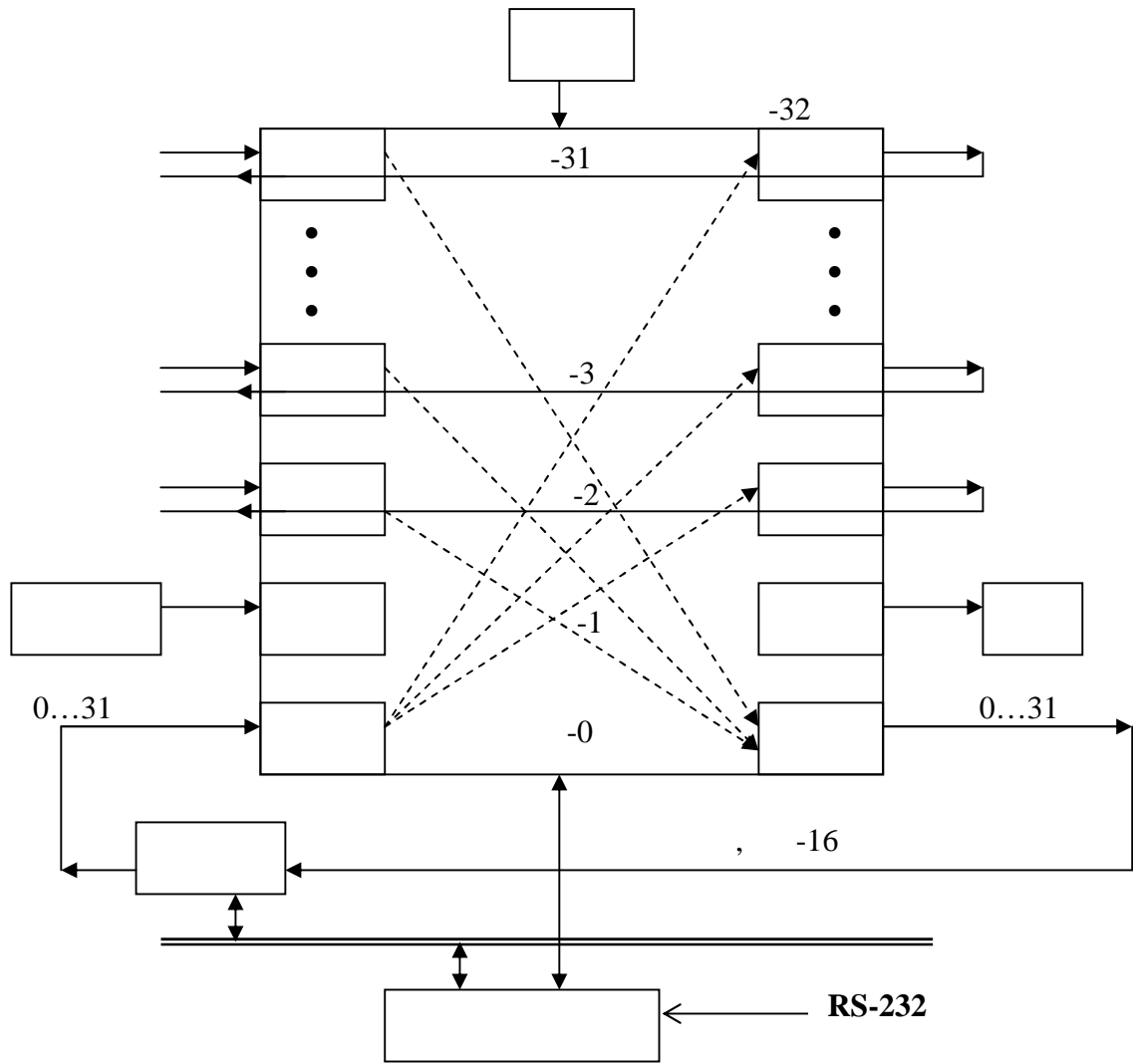
. 3.2

-10

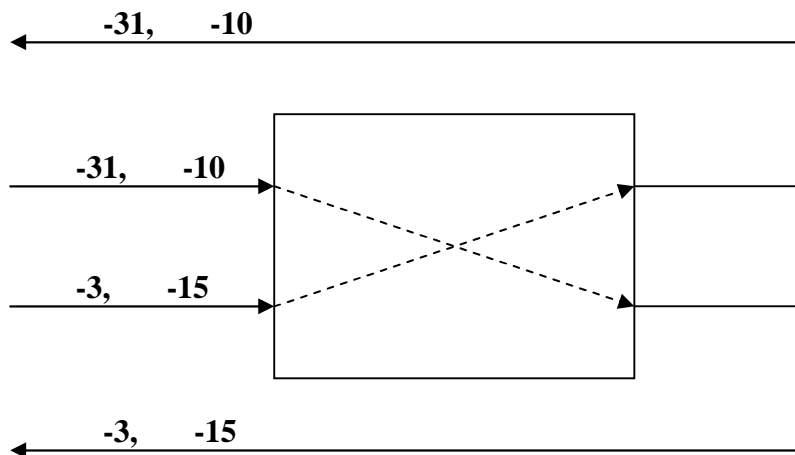
-31

-15

-3.



3.1 - 32

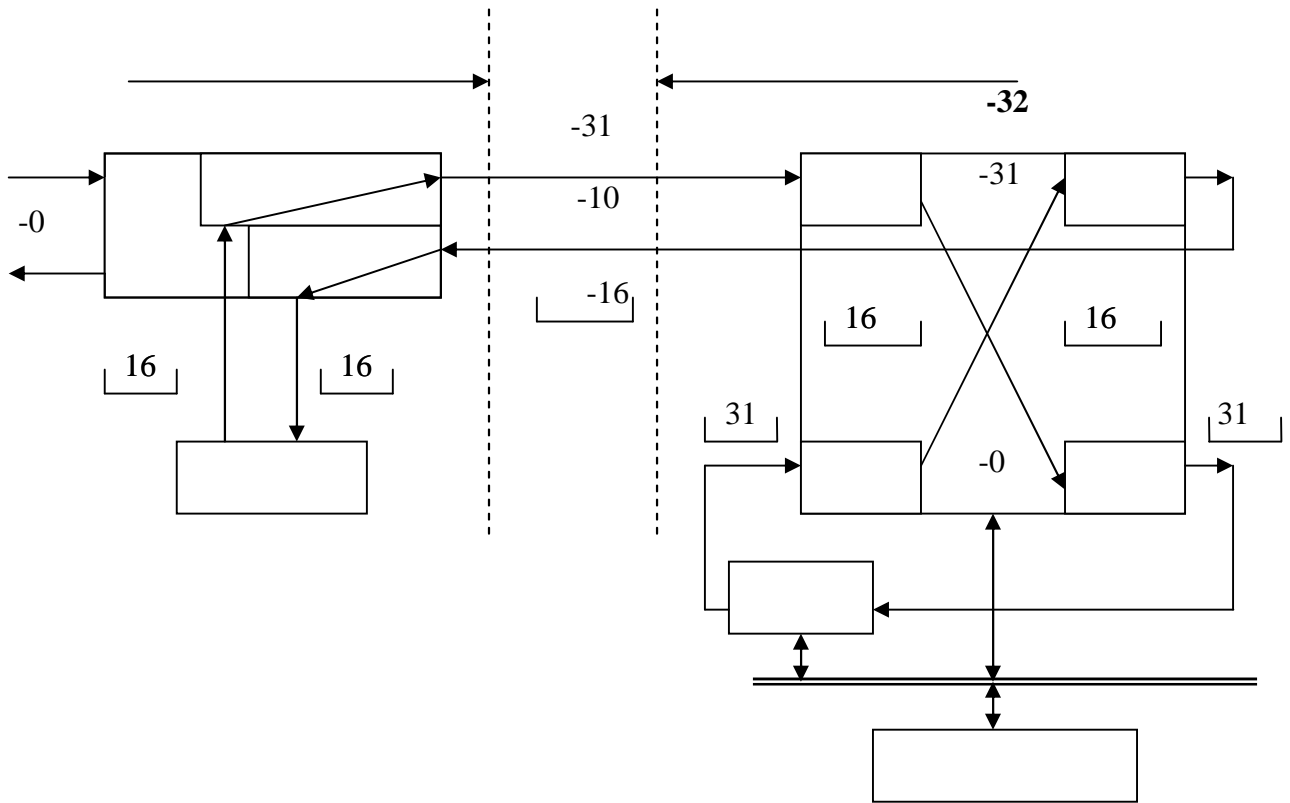


3.2 - 32

4

(()). -32)

(-16) -32. -32 . 4.1.



4.1 -

-16, ...

16

. 4.2.

(00011011),

- (S),

: S = 0,

, S = 1,

; $\alpha, \beta,$ -

, ...

, ...

$\alpha, \beta, = 6$

(101) $\alpha, \beta, = 1$ (001).

-16

		7 6 5 4 3 2 1 0									
0	}	0	0	0	1	1	0	1	1	0	}
				S						1	
		d	c	b	a	*				2	
					5	4	3	2	1	3	
		d	c	b	a	*				4	
					5	4	3	2	1	5	
		d	c	b	a	*				6	
					5	4	3	2	1	7	
1	}	d	c	b	a	*			8		
					5	4	3	2	1	9	
2	}	d	c	b	a	*			10		
					5	4	3	2	1	11	
3	}	d	c	b	a	*			12		
					5	4	3	2	1	13	
4	}								14		
										15	

4.2 -

14 () , 15 - ,
 . 1 6 . 2, 4, 6, 8, 10 12

(4...7), 3, 5, 7, 9, 11 13 -

4.3. -
 (2-31-11) -31 -10. 5
 (=2-31-11 0010, 0011, 0001, 0001, 0001,
 =01010). S = 1 α, β, = 101(5).
 -16 -31 -31 -0 .

0	0 0 0 1 1 0 1 1 1 1 0 1
1	0 0 1 0 * 0 1 0 1 0
2	0 0 1 1 * 0 1 0 1 0
3	0 0 0 1 * 0 1 0 1 0
4	0 0 0 1 * 0 1 0 1 0
5	0 0 0 1 * 0 1 0 1 0
6	*
7	

$$= 2 - 3111$$

$$= 10$$

$$= 31$$

4.3 –

TA 2-31-11

. 5.1

- , - - .

:

- (2-30-66) - -2 -3;

- -16 - -31 -0 -31.

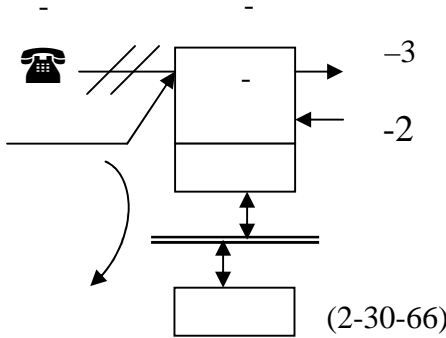
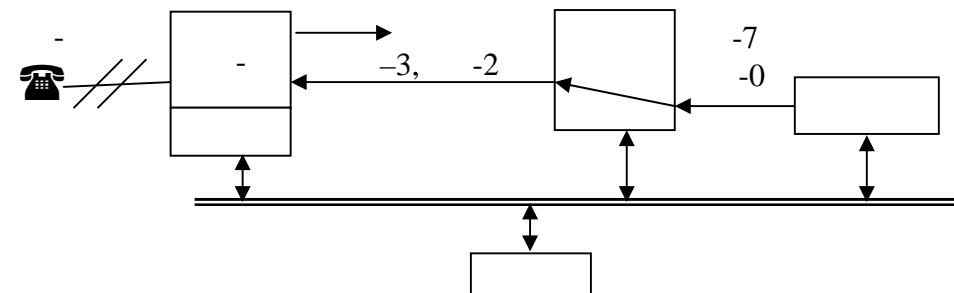
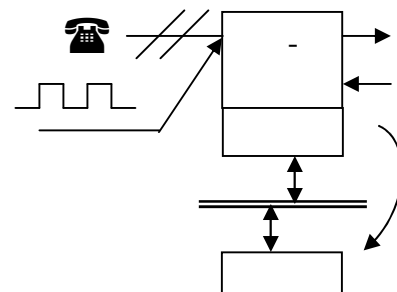
- -10 -31; , -3,

- -15 -3; -16 -

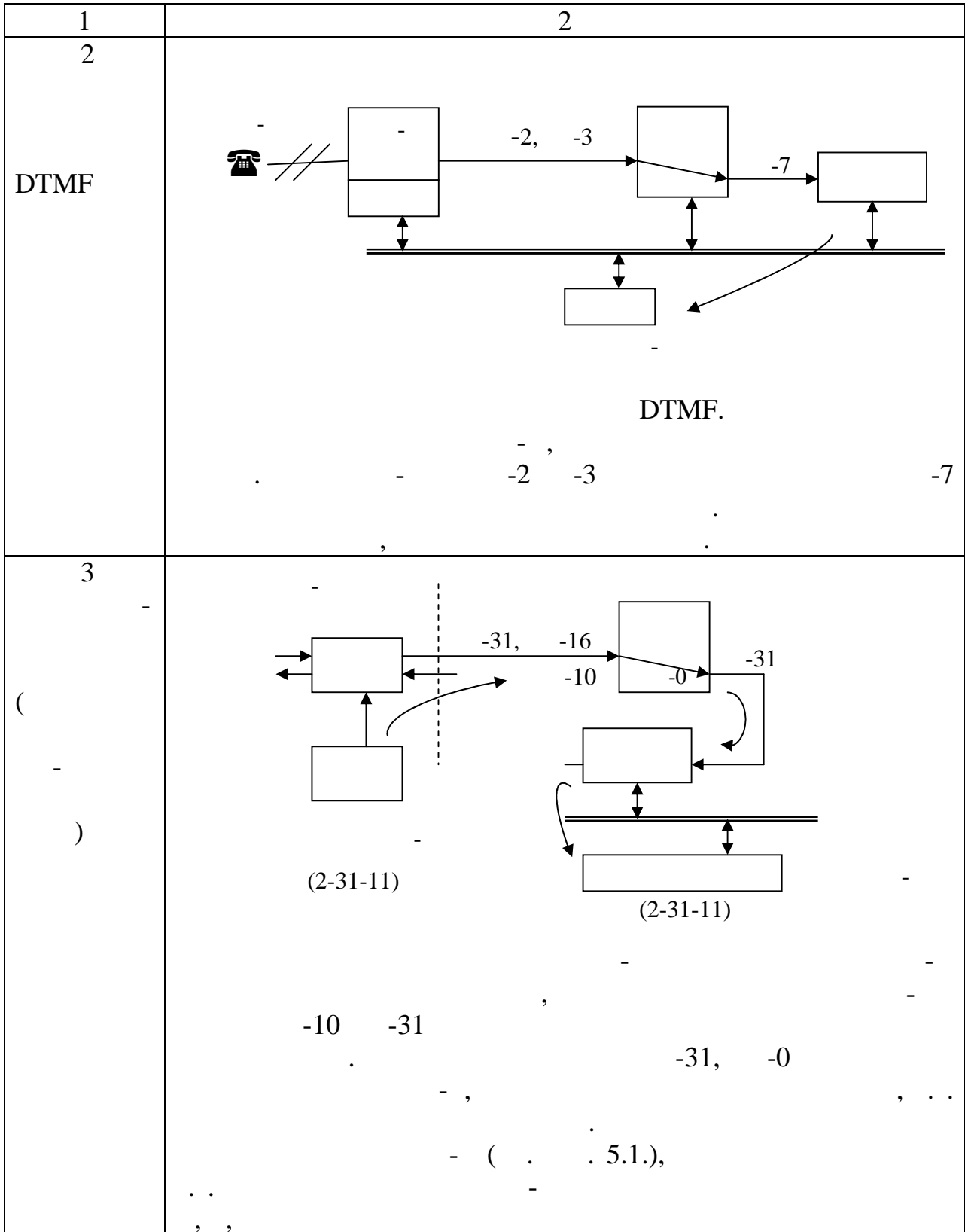
- (2-31-11) - , -15.

. 5.1
. 5.2 -

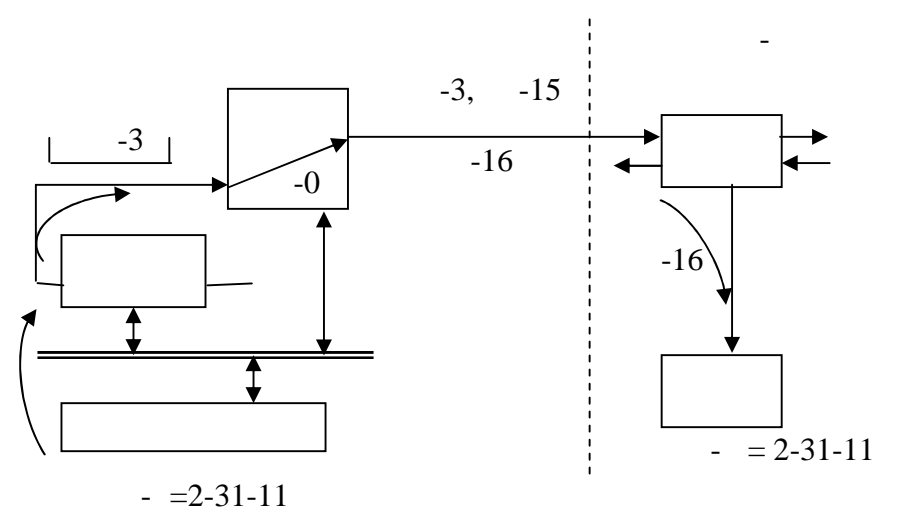
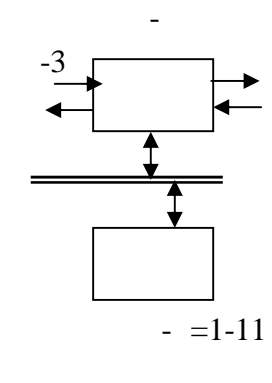
5.1 –

<p>1</p>	<p>2</p>
<p>1, 1 (2-30-66)</p>	
<p>1, 2</p>	 <p>-2, -3</p> <p>-7, -0</p>
<p>2</p>	 <p>(2-31-11)</p>

. 5.1



5.2 –

1	2
<p>4</p> <p>(-)</p>	 <p>- = 2-31-11</p> <p>-3, -15</p> <p>-16</p> <p>-16</p> <p>- = 2-31-11</p> <p>-3, -15</p> <p>-16</p> <p>-3, -15</p> <p>-16</p> <p>- = 2-31-11</p>
<p>5</p>	 <p>- = 1-11</p> <p>-3</p> <p>-0</p> <p>- = 1-11</p>

.5.2

1	2
<p>6</p>	
<p>7</p>	
<p>8</p>	

1	2
9	<p>. 5.1.</p> <p>(- , -)</p>
10	<p>« »</p>
11	<p>« »</p> <p>(231-11)</p> <p>« »</p> <p>(-2, -7) -15, -4</p>

6.1

. 6.1.

() (i i)
) . :
- ;
- ;
- ;
- ;
,). (,

() . 16
() . 6.1
() . ()
() , ()

BORSCHT

VT1 VT2
b. R1, R2, R4, R5
VT3 VT4, R6, R7, R8, R9 1.
RV1
RV2, VD1 VD2,

16
2, R10, R11, ()
2 VU3, ()
VU2, 1:4

()
)

VU1.

(

0,3 ... 3,4
()

(-2).
-0 -0.

()

(),

(1),

1

1, 2 3.

2 3

1

6.2

1, 1.

60 , R2,

VT1 (-), R1

2 1,

RV1,
R 6,

VT3 (-),

60 .

b,

RV2,

1 2,

R1

U_{R1} .

U_{R1} , R3,

VD3,

VU1,

U_{R1} .

()

1, 2.

(. . . 5.1, 1, 2).

(425)
()

(i)

0,3 ... 3,4 .

-2

2.

, . . . 10+/-1 / .
(600).

. 5.1, 1, 2.
VU1

(. 5.1 3).
3.

6.3

6.

2 3,

1 ()

2 3

7.

. 2.4,

7

- ,
-

2

VU2.

:

60 , 2-2,

, R10,

VU2,

3, 2 1,

RU1,

1, 2 3, R11,

60 .

b,

RV2,

VU2,

8.
C

()

2

.

.

-

-

-

.

9.

(. . 5.1).

-

,

-

:

-

-

-

-3,

-2

-10,

-0

-10

-31,

-

-

-10,

-31

-15,

-3,

-

-

-

-15,

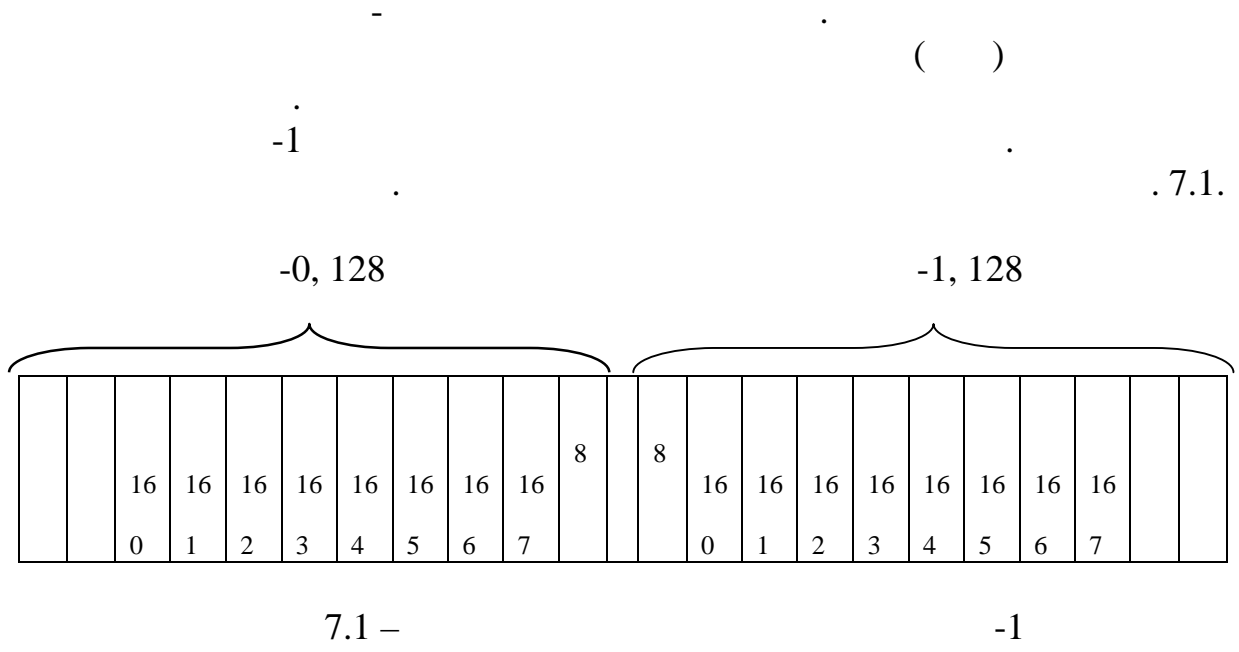
-0

-15,

-4.

,

.



BORSCHT.

128

(. 7.1),

-2 - 8

-5

8

16

16

«2 8»,

(DTMF),

6

-32.

60

5

12

90

25 .

8

- 8.1 .
- 8.2 ?
- 8.3 ?
- 8.4 DTMF?
- 8.5 ,
- 8.6 DTMF?
- 8.7 8x8? ?
- 8.8 ?
- 8.9 000...127 .
- 8.10 -32?
- 8.11 ?
- 8.12 ? ?
- 8.13 ?
- 8.14 .
- 8.15 .
- 8.16 ,
- 8.17 DTMF.
- 8.18 .
- 8.19 .
- 8.20 .
- 8.21 (1... 3)
?
- 8.22 C (VU3) ?

-
-
1. -1. - . - .- , 1999. -
 2. -1. -5 - - . -
 3. -1. -8 . - - . -
 4. . -32. - - .
 5. - .- , 1998. ,
 - “ ”. . .- , , 1996.

	.....	3
1.	.....	4
2.	8×8.....	8
3.	-32.....	9
4.	.....	11
5.	.....	14
6.	.....	21
6.1.	.....	21
6.2.	.....	23
6.3.	.....	24
7.	.....	26
8.	.....	27
	.....	28

