BDS 5237-2006
Keyboard layouts for Bulgarian language writing devices

The standard establishes the systems of arrangement of Bulgarian letters on keyboards of electronic devices and typewriters. The standard consists of three parts. The first one applies to the keyboard layouts of electronic devices with 48 letter-number keys (computers and some GSM apparatuses). The second part is for the keyboard layout of electronic devices with 12 letter-number keys (most GSM apparatuses). The third one if the keyboard layout of typewriters (these are the mechanical typewriters, as well as some other typewriters which can support only one keyboard layout since they are not reprogrammable).

1. Keyboard layouts for electronic devices with 48 letter-number keys

There are two standard layouts for the keyboard layouts for electronic devices with 48 letter-number keys – BDS и Phonetic. These layouts are respectively for the cases when the Bulgarian letters are written on the keys and when they are not. The electronic devices (i.e. their operating systems) must support both arrangements and provide to the consumer the opportunity to choose which of the two keyboard arrangements to use.

The Cyrillic letters are written on the keys under the BDS arrangement, while the Phonetic layout is not written on the keys because it correspond to the QWERTY layout of the Latin alphabet.

The following numeration of the keys is used:

a) Row one from the main block of letter-number keys with numbers: 192, 49, 50, 51, 52, 53, 54, 55, 56, 57, 48, 189, 187 (position from E00 to E12).

b) Row two from the main block of letter-number keys under row one bearing numbers: 81, 87, 69, 82, 84, 89, 85, 73, 79, 80, 219, 221 (position D01 to D12), where key 81 is shifted by half a key towards key 49 from the first row.

c) Row three from the main block of letter-number keys under row two bearing numbers: 65, 83, 68, 70, 71, 72, 74, 75, 76, 186, 222 (position C01 to C11), where key 65 is shifted to the left by one quarter of a key towards key 81 from the previous row.

d) Row four from the main block of letter-number keys under row three bearing numbers: 90, 88, 67, 86, 66, 78, 77, 188, 190, 191 (position B01 to B10), where key 90 is shifted to the left by half a key towards key 65 from the previous row.

NOTE 1: Key 220 is located in row four after the second Shift key, where with some keyboards key 220 may be located in row one after key 187 and with others – in row two after key 221.

NOTE 2: Some keyboards may have one additional sign (character) key located in the beginning of row four and the number used for it is 226 (position B00).

NOTE 3: The key located in the numeric keypad in the very far right on most computer keyboards and which serves for the input of decimal separator is given number 110.

1. 1. Keyboard layout after the BDS system

The figure below shows the arrangement of the Bulgarian letters and the symbols € (Euro), № (number), § (paragraph), – (En dash) and the Bulgarian double inverted commas (opening and closing pairs) on the keys. The description is QWERTY based and covers only the keys with which there is difference between the QWERTY and the BDS standard.

Figure 1 – Keyboard layout after the BDS system

The BDS system for keyboard layout is described in Table 1 with the number of the key, its position, the symbols of the QWERTY arrangement, the symbol with pressed and non-pressed Shift key, with the sixteen-bit code of the symbol after Unicode, with pressed and non-pressed Shift key and the symbol in Caps Lock mode.

NOTE 1: Column five shows the action of the Caps Lock mode, where ‘no’ means that the key is non-active and ‘inverts’ means that in the Caps Lock mode without Shift there appears the symbol that would have appeared with Shift and vice versa.

NOTE 2: Column seven shows the action of the Caps Lock mode with the numbers of the respective symbols after Unicode, with or without Shift; here filled-in are only the rows for the keys with position numbers 65 and 81, by which only small letters are defined and in Caps Lock mode only the capital letters are output instead of inverting the two symbols or key 65 with Shift produces ‘И’ grave and Caps Lock mode shifts between small and capital 'И’ grave and for the remaining keys the meaning is the same as in column five – the regular or the inverted.

NOTE 3: On marking the keyboard, the letter ‘И’ grave must be written only once and if the keyboard does not have a 226 key the ‘И’ grave must be positioned on key 65 above ‘Ь’ and if the keyboard has a 226 key, the ‘И’ grave must be on this key only.

NOTE 4: On key 110, which acts like decimal point and is located in the numeric keypad in the very far right on most computer keyboards, this point is changed by a comma in the BDS arrangement.

Table 1

Number	Position	QWERTY	BDS	Caps Lock	Unicode (Shift)	Caps Lock (Shift)
48	E10	0,)	0, №	no	U+0030, U+2116	
50	E02	2, @	2, ?	no	U+0032, U+003F	
51	E03	3, #	3, +	no	U+0033, U+002B	
52	E04	4, $	4, "	no	U+0034, U+0022	
54	E06	6, ^	6, =	no	U+0036, U+003D	
55	E07	7, &	7, :	no	U+0037, U+003A	
56	E08	8, *	8, /	no	U+0038, U+002F	
57	E09	9, (	9, – (En Dash)	no	U+0039, U+2013	
65	C01	a, A	ь, и grave	Ь, И grave	U+044C, U+045D	U+042C, U+040D
66	B05	b, B	ф, Ф	inverts	U+0444, U+0424	
67	B03	c, C	ъ, Ъ	inverts	U+044A, U+042A	
68	C03	d, D	а, А	inverts	U+0430, U+0410	
69	D03	e, E	е, Е	inverts	U+0435, U+0415	
70	C04	f, F	о, О	inverts	U+043E, U+041E	
71	C05	g, G	ж, Ж	inverts	U+0436, U+0416	
72	C06	h, H	г, Г	inverts	U+0433, U+0413	
73	D08	i, I	с, С	inverts	U+0441, U+0421	
74	C07	j, J	т, Т	inverts	U+0442, U+0422	
75	C08	k, K	н, Н	inverts	U+043D, U+041D	
76	C09	l, L	в, В	inverts	U+0432, U+0412	
77	B07	m, M	п, П	inverts	U+043F, U+041F	
78	B06	n, N	х, Х	inverts	U+0445, U+0425	
79	D09	o, O	д, Д	inverts	U+0434, U+0414	
80	D10	p, P	з, З	inverts	U+0437, U+0417	
81	D01	q, Q	, : ы	, : Ы	U+002C, U+044B	U+002C, U+042B

82	D04	r, R	и, И	inverts	U+0438, U+0418	
83	C02	s, S	я, Я	inverts	U+044F, U+042F	
84	D05	t, T	ш, Ш	inverts	U+0448, U+0428	
85	D07	u, U	к, К	inverts	U+043A, U+041A	
86	B04	v, V	э, Э	inverts	U+044D, U+042D	
87	D02	w, W	у, У	inverts	U+0443, U+0423	
88	B02	x, X	й, Й	inverts	U+0439, U+0419	
89	D06	y, Y	щ, Щ	inverts	U+0449, U+0429	
90	B01	z, Z	ю, Ю	inverts	U+044E, U+042E	
110	-	.	,	no	U+002C	
186	C10	;, :	м, М	inverts	U+043C, U+041C	
187	E12	=, +	., €	no	U+002E, U+20AC	
188	B08	, : <	р, Р	inverts	U+0440, U+0420	
189	E11	-, _	-, $	no	U+002D, U+0024	
190	B09	., >	л, Л	inverts	U+043B, U+041B	
191	B10	/, ?	б, Б	inverts	U+0431, U+0411	
192	E00	`, ~	(,)	no	U+0028, U+0029	
219	D11	[, {	ц, Ц	inverts	U+0446, U+0426	
220	-	\, |	„ , “	no	U+201E, U+201C	
221	D12	], }	;, §	no	U+003B, U+00A7	
222	C11	', "	ч, Ч	inverts	U+0447, U+0427	
226	B00	\, |	и grave, И grave	inverts	U+045D, U+040D	

1. 2. Keyboard layout after the Phonetic system

The figure below shows the arrangement of the Bulgarian letters and the symbols € (Euro), № (number), § (paragraph), – (En dash) and the Bulgarian double inverted commas (opening and closing pairs) on the keys. The description is QWERTY based and covers only the keys with which there is difference between the QWERTY and the Phonetic standard.

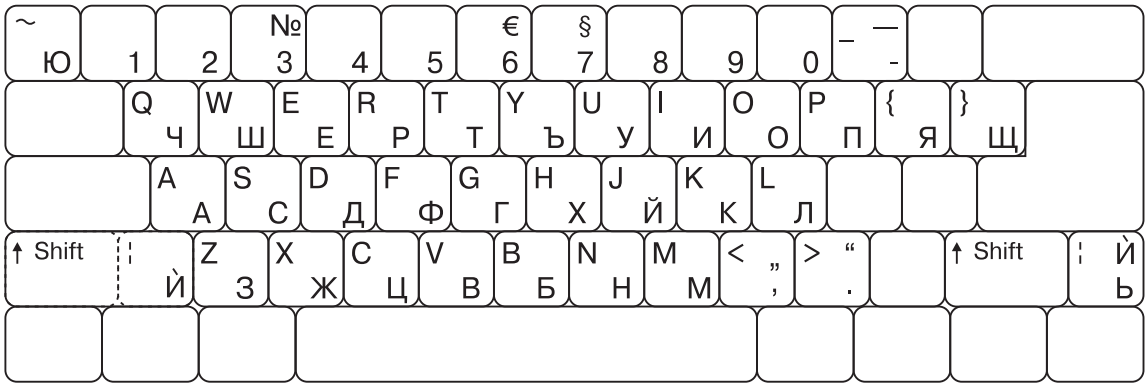

Figure 2 – Keyboard layout after the Phonetic system

The Phonetic system for keyboard layout is described in Table 2 with the number of the key, its position, the symbols of the QWERTY arrangement, the symbol with pressed and non-pressed Shift key, with the sixteen-bit code of the symbol after Unicode, with pressed and non-pressed Shift key and the symbol in Caps Lock mode.

NOTE 1: Column five shows the action of the Caps Lock mode, where ‘no’ means that the key is non-active and ‘inverts’ means that in the Caps Lock mode without Shift there appears the symbol that would have appeared with Shift and vice versa.

NOTE 2: Column seven shows the action of the Caps Lock mode with the numbers of the respective symbols after Unicode, with or without Shift; here filled-in are only the rows for the key with position number 220, by which only small letters are defined and in Caps Lock mode only the capital letters are output instead of inverting the two symbols or key 220 with Shift produces ‘*И*’ grave and Caps Lock mode shifts between small and capital '*И*’ grave and for the remaining keys the meaning is the same as in column five – the regular or the inverted.

NOTE 3: On key 110, which acts like decimal point and is located in the numeric keypad in the very far right on most computer keyboards, this point is changed by a comma in the Phonetic arrangement.

Table 2

Number	Position	QWERTY	Phonetic	Caps Lock	Unicode символи	Unicode - Caps Lock
51	E03	3, #	3, №	no	U+0033, U+2116	
54	E06	6, ^	6, €	no	U+0036, U+20AC	
55	E07	7, &	7, §	no	U+0037, U+00A7	
65	C01	a, A	а, А	inverts	U+0430, U+0410	
66	B05	b, B	б, Б	inverts	U+0431, U+0411	
67	B03	c, C	ц, Ц	inverts	U+0446, U+0426	
68	C03	d, D	д, Д	inverts	U+0434, U+0414	
69	D03	e, E	е, Е	inverts	U+0435, U+0415	
70	C04	f, F	ф, Ф	inverts	U+0444, U+0424	
71	C05	g, G	г, Г	inverts	U+0433, U+0413	
72	C06	h, H	х, Х	inverts	U+0445, U+0425	
73	D08	i, I	и, И	inverts	U+0438, U+0418	
74	C07	j, J	й, Й	inverts	U+0439, U+0419	
75	C08	k, K	к, К	inverts	U+043A, U+041A	
76	C09	l, L	л, Л	inverts	U+043B, U+041B	
77	B07	m, M	м, М	inverts	U+043C, U+041C	
78	B06	n, N	н, Н	inverts	U+043D, U+041D	
79	D09	o, O	о, О	inverts	U+043E, U+041E	
80	D10	p, P	п, П	inverts	U+043F, U+041F	
81	D01	q, Q	ч, Ч	inverts	U+0447, U+0427	
82	D04	r, R	р, Р	inverts	U+0440, U+0420	
83	C02	s, S	с, С	inverts	U+0441, U+0421	
84	D05	t, T	т, Т	inverts	U+0442, U+0422	
85	D07	u, U	у, У	inverts	U+0443, U+0423	
86	B04	v, V	в, В	inverts	U+0432, U+0412	
87	D02	w, W	ш, Ш	inverts	U+0448, U+0428	

88	B02	x, X	ж, Ж	inverts	U+0436, U+0416	
89	D06	y, Y	ъ, Ъ	inverts	U+044A, U+042A	
90	B01	z, Z	з, З	inverts	U+0437, U+0417	
110	-	.	,	no	U+002C	
188	B08	, : <	, : „	inverts	U+002C, U+201E	
189	E11	-, _	-, – (En Dash)	no	U+002D, U+2013	
190	B09	., >	., “	inverts	U+002E, U+201C	
192	E00	`, ~	ю, Ю	inverts	U+044E, U+042E	
219	D11	[, {	я, Я	inverts	U+044F, U+042F	
220	-	\, |	ь, и grave	Ь, И grave	U+044C, U+045D	U+042C, U+040D
221	D12	], }	щ, Щ	inverts	U+0449, U+0429	
226	B00	\, |	и grave, И grave	inverts	U+045D, U+040D	

2. Keyboard layouts for electronic devices with 12 sign (character) keys

There are two standard arrangements for the electronic devices with 12 sign (character) keys, i.e. Alphabetic and Phonetic. These layouts are respectively for the cases when the Bulgarian letters are written on the keys and when they are not. The electronic devices (i.e. their operating systems) must support both arrangements and provide to the consumer the opportunity to choose which of the two keyboard arrangements to use.

The Cyrillic alphabet is written on the keys under the Alphabetic arrangement, while the Phonetic layout is not written on the keys because it is located with the help of the Latin alphabet.

Both layouts are presented in tables, which show how the Bulgarian letters are arranged on the keys 2 to 9. Column three and four of the tables presents the numbers of the respective Bulgarian letters after Unicode. The Latin letters, which are on the respective key, are given in the last column.

There are three or four letters on each key. Their sequence is of material importance since the first appears on the first keystroke of the respective key, the second on the second and so on.

The standard does not apply for the functions of the service keys of the electronic devices but only determines the arrangement of the letters on the sign (character) keys.

Figure 3
Keyboard layout – “Alphabetic”

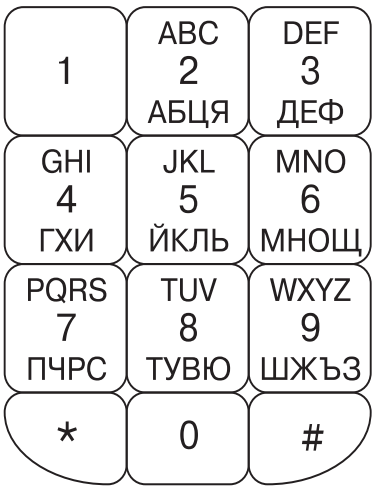

Figure 4
Keyboard layout – “Phonetic”

Table 3 – "Alphabetic"

Key	Position	Bulgarian Letters	Unicode - small	Unicode - capital	Latin Letters
2	D52	абвг	U+0430, U+0431, U+0432, U+0433	U+0410, U+0411, U+0412, U+0413	abc
3	D53	дежз	U+0434, U+0435, U+0436, U+0437	U+0414, U+0415, U+0416, U+0417	def
4	C51	ийкл	U+0438, U+0439, U+043A, U+043B	U+0418, U+0419, U+041A, U+041B	ghi
5	C52	мноп	U+043C, U+043D, U+043E, U+043F	U+041C, U+041D, U+041E, U+041F	jkl
6	C53	рсту	U+0440, U+0441, U+0442, U+0443	U+0420, U+0421, U+0422, U+0423	mno
7	B51	фхцч	U+0444, U+0445, U+0446, U+0447	U+0424, U+0425, U+0426, U+0427	pqrs
8	B52	шщъь	U+0448, U+0449, U+044A, U+044C	U+0428, U+0429, U+042A, U+042C	tuv
9	B53	юя	U+044E, U+044F	U+042E, U+042F	wxyz

Table 4 – "Phonetic"

Key	Position	Bulgarian Letters	Unicode - small	Unicode - capital	Latin Letters
2	D52	абця	U+0430, U+0431, U+0446, U+044F	U+0410, U+0411, U+0426, U+042F	abc
3	D53	деф	U+0434, U+0435, U+0444	U+0414, U+0415, U+0424	def
4	C51	гхи	U+0433, U+0445, U+0438	U+0413, U+0425, U+0418	ghi
5	C52	йкль	U+0439, U+043A, U+043B, U+044C	U+0419, U+041A, U+041B, U+042C	jkl
6	C53	мнощ	U+043C, U+043D, U+043E, U+0449	U+041C, U+041D, U+041E, U+0429	mno
7	B51	пчрс	U+043F, U+0447, U+0440, U+0441	U+041F, U+0427, U+0420, U+0421	pqrs
8	B52	тувю	U+0442, U+0443, U+0432, U+044E	U+0422, U+0423, U+0412, U+042E	tuv
9	B53	шжъз	U+0448, U+0436, U+044A, U+0437	U+0428, U+0416, U+042A, U+0417	wxyz

3. Keyboard layout for typewriters

The arrangement of the letters, numbers and the other signs (characters) on the keyboard is given on the scheme – the auxiliary keys there are marked with dotted line.

With a 44-key keyboard the very far right keys from row 2 and row 3 are removed.

For the machines with a decimal tabulator key the command keys of this tabulator are located above the first key row.

The character above 9 is the symbol for underlining (Unicode U+005F) and not the dash.

The letter ‘Ы’ is lower case only. There is no capital ‘Ы’ in the keyboard layout for typewriters.

References:

1. Unicode: ISO/IEC 10646 (JTC 1/SC 2/WG 2)
2. QWERTY: AS 3590.3-1990