ECMA
EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

STANDARD ECMA-115

COMMON SECONDARY KEYBOARD
LAYOUT FOR LANGUAGES
USING A LATIN ALPHABET

June 1986

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BRIEF HISTORY

The adoption of Standard ECMA-6 (ISO 646) as the agreed international 7-bit coded character set for information interchange has led to the development of many national, international and application-oriented versions of this code which are in wide use today. The main limitation of these versions, inherent to the size of the character set, is that they do not provide all graphic characters which may be required.

With the advent of 8-bit coding it was possible to increase the number of graphic characters. For example ISO 6937/2, an international standard developed for text transmission and Teletex applications, provides a character set covering the requirements of most languages based on the Latin alphabet. However, the repertoire of ISO 6937 includes a number of graphic characters that are not part of any version of ECMA-6. The repertoire also includes a number of graphic characters that cannot be found on existing keyboard layouts. Other graphic characters of the repertoires of ISO 6937/2 are in some, but not all, versions of ECMA-6 or on some, but not all, existing keyboard layouts.

A set of graphic characters, called Common Secondary Set is specified in this ECMA Standard. It comprises the graphic characters of the repertoire of ISO 6937/2 missing in all or some versions of ECMA-6 or on all or some existing keyboard layouts. This set of graphic characters can be used to supplement any version of ECMA-6 or the character set on any existing keyboard layout to form the graphic character repertoire of ISO 6937/2.

This ECMA Standard specifies how the characters of this Common Secondary Set must be allocated to a keyboard layout so that this layout can be used with any existing national version of a keyboard layout to input the graphic characters of the repertoire of ISO 6937/2, hence the name Common Secondary Keyboard Layout.

The Common Secondary Keyboard Layout, together with any existing national version of a keyboard layout (called Primary Keyboard Layout), permits also to input the graphic character sets of ECMA-94.

Adopted as an ECMA Standard by the General Assembly of June 26, 1986.

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1. SCOPE

This ECMA Standard specifies a keyboard layout for use with national versions of keyboard layouts so that the complete repertoire of ISO 6937/2 or sub-set of it can be input by the combined layout. It also specifies particularities of operation of some keys.

This Standard does not define physical characteristics of the keyboard such as the shape, size or colour of the keys, nor the style of the graphic symbols shown on the keys. Neither does this Standard define the coded representations of the graphic characters of the Common Secondary Set or of the Primary Set.

2. CONFORMANCE

A keyboard is in conformance with this ECMA Standard if:

i)   the allocation of the graphic characters of the Primary Set (4.1) is a Primary Keyboard Layout (4.2),

ii) the allocation of the graphic characters of the Common Secondary Set (4.3) is the Common Secondary Keyboard Layout (4.4) specified by this Standard,

iii) an additional shift facility is provided which gives access to the Common Secondary Set (4.3),

iv) the operation of keys with diacritical marks is as specified in 5.2.

Any statement on conformance shall imply that the complete Common Secondary Set has been implemented, unless a subset such as one of those of Standard ECMA-94 is explicitly declared.

3. REFERENCES

ECMA-6	7-bit Coded Character Set
ECMA-43	8-bit Code Structure and Rules
ECMA-94	8-bit Single-byte Coded Graphic Character Set - Latin Alphabets No 1 to No 4
ISO 1091	Typewriters - Layout of printing and function keys
ISO 2126	Office Machines - Basic arrangement for the alphanumeric section of keyboards operated with both hands
ISO 3243	Keyboards for countries the languages of which have alphabetic extenders - Guidelines for harmonization
ISO 4169	Office Machines - Keyboards - Keyboard numbering system and layout charts
ISO 6937/2	Information processing - Coded characters sets for text communication - Latin alphabetic and non-alphabetic graphic characters.

4. DEFINITIONS

For the purpose of this Standard the following definitions apply.

4.1 Primary Set

A set of graphic characters which may be defined in a national version of ECMA-6, by a national keyboard layout standard or established by common usage in a particular country or a group of countries. Such a set can comprise up to 97 characters, including SPACE.

4.2 Primary Keyboard Layout

The allocation of the graphic characters of a Primary Set on a particular keyboard, whether defined by a national standard or established by common usage in a particular country or a group of countries.

4.3 Common Secondary Set

The set of graphic characters specified by this Standard which are included in the repertoire of ISO 6937/2 but which are not part of all Primary Sets or are not on all Primary Keyboard Layouts.

4.4 Common Secondary Keyboard Layout

The allocation of the graphic characters of the Common Secondary Set on a keyboard layout, as specified by Figure 1 of this Standard.

4.5 Level 1

The level to which those graphic characters (including the small letters and SPACE) of a Primary Set are allocated which can be input from a keyboard without the use of any shift key.

4.6 Level 2

The level to which those graphic characters (including capital letters and SPACE) of a Primary Set are allocated which can be input from a keyboard by using a normal shift key.

4.7 Level 3

The level to which those graphic characters of the Common Secondary Set are allocated which can be input from a keyboard by using an additional shift key and without the use of a normal shift key.

4.8 Level 4

The level to which those graphic characters of the Common Secondary Set are allocated which can be input from a keyboard by using both an additional shift key and a normal shift key.

5. PHYSICAL REQUIREMENTS

5.1 Alphanumeric and Shift Keys

This ECMA Standard is based on the 48-key alphanumeric area according to ISO 3243, with shift keys according to ISO 1091, including an additional shift facility which gives access to the Common Secondary Set. The placement and the function of the shift keys will be formally defined in a future ISO standard for function keys on alphanumeric keyboards.

Note 1:

Until that standard becomes available the placement and function of these keys are defined in Appendix C of this Standard.

5.2 Operation of Keys with Diacritical Marks

The operation of a key to which a diacritical mark is allocated followed by the operation of a key for an appropriate letter indicates that the two graphic characters are intended to be combined.

The operation of a key to which a diacritical mark is allocated followed by the operation of the SPACE bar indicates that the free-standing diacritical mark is intended.

It is recommended that the method used for deleting a graphic character should also be used for the deletion of a partially constructed graphic character, such as a diacritical mark without a following letter or SPACE.

5.3 Key Labelling

It is not mandatory that the graphic symbols of the implemented graphic characters of the Common Secondary Set be shown on the keys. Nor is it necessary to show the graphic symbols of characters of the Common Secondary Set which are also part of a Primary Set. Where there is a capital/small letter pair on a key, the small form need not be shown.

For the graphic symbols shown it is recommended that they appear as specified in Appendix A.

6. LAYOUT OF THE COMMON SECONDARY SET

Figure 1 shows the Common Secondary Keyboard Layout. In this figure:

- the black corners indicate the keys and the levels to which diacritical marks are allocated,

- the squares shown for convenience on some keys are not intended to appear on actual keytops,

- ◁ indicates a location reserved for future standardization,

- where small and capital forms of a letter exist, only the capital form is shown,

- the alternative graphic character which is not in the Primary Set is allocated to key E03 at Level 4,

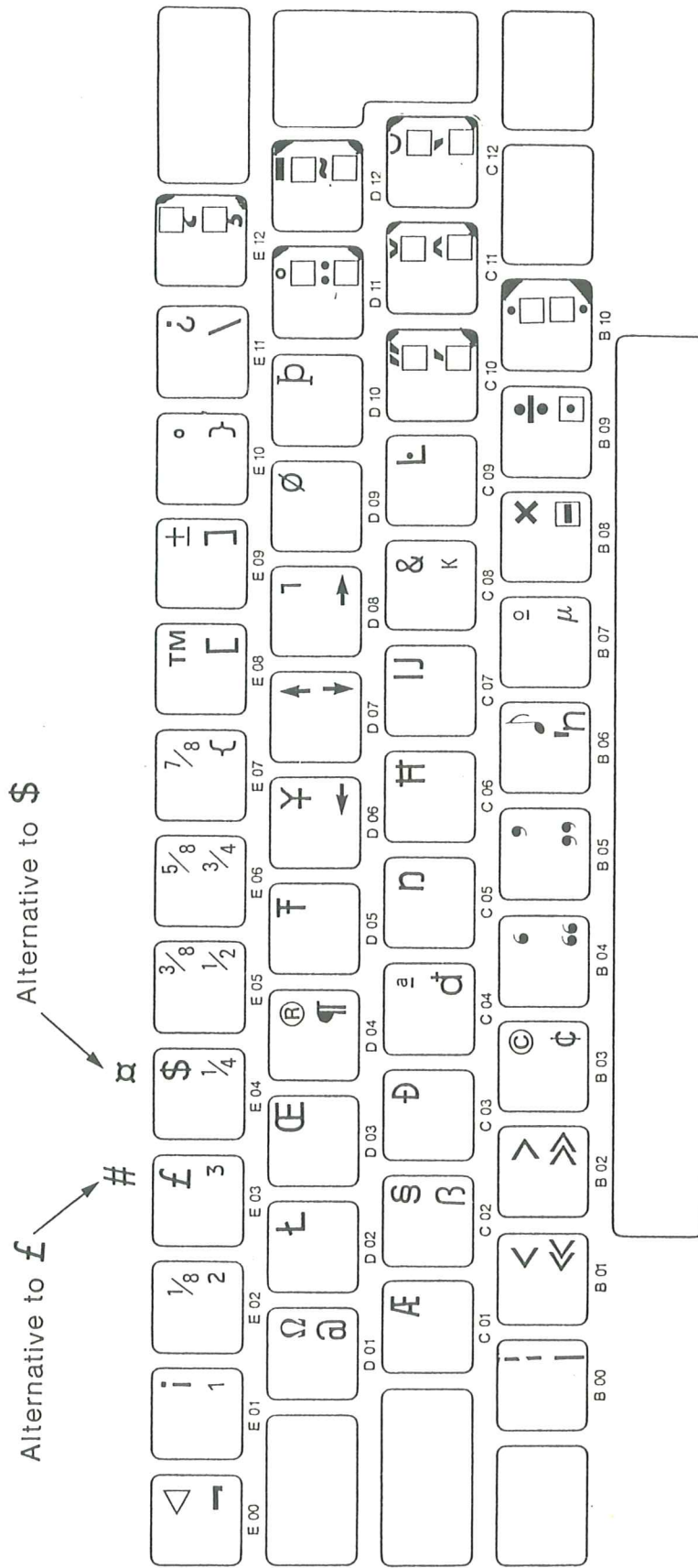- the alternative graphic character which is not in the Primary Set is allocated to key E04 at Level 4.

Figure 1

7. SPECIFICATION OF THE COMMON SECONDARY SET AND ITS ALLOCATION TO KEYS

Key	Name	
	Level 3	Level 4
E00	NOT SIGN	(Reserved)
E01	SUPERSCRIPT ONE	INVERTED EXCLAMATION MARK
E02	SUPERSCRIPT TWO	VULGAR FRACTION ONE EIGHTH
E03	SUPERSCRIPT THREE	POUND SIGN or NUMBER SIGN
E04	VULGAR FRACTION ONE QUARTER	DOLLAR SIGN or CURRENCY SIGN
E05	VULGAR FRACTION ONE HALF	VULGAR FRACTION THREE EIGHTS
E06	VULGAR FRACTION THREE QUARTERS	VULGAR FRACTION FIVE EIGHTHS
E07	LEFT CURLY BRACKET	VULGAR FRACTION SEVEN EIGHTHS
E08	LEFT SQUARE BRACKET	TRADE MARK SIGN
E09	RIGHT SQUARE BRACKET	PLUS-MINUS SIGN
E10	RIGHT CURLY BRACKET	DEGREE SIGN
E11	REVERSE SOLIDUS	INVERTED QUESTION MARK
E12	CEDILLA	OGONEK
D01	COMMERCIAL AT	OHM SIGN
D02	SMALL LETTER l WITH STROKE	CAPITAL LETTER L WITH STROKE
D03	SMALL LIGATURE o WITH e	CAPITAL LIGATURE O WITH E
D04	PILCROW	REGISTERED TRADE MARK SIGN
DO5	SMALL LETTER t WITH STROKE	CAPITAL LETTER T WITH STROKE
D06	LEFTWARD ARROW	YEN SIGN
D07	DOWNWARD ARROW	UPWARD ARROW
D08	RIGHTWARD ARROW	SMALL LETTER i WITHOUT DOT
D09	SMALL LETTER o WITH OBLIQUE STROKE	CAPITAL LETTER O WITH OBLIQUE STROKE
D10	SMALL ICELANDIC LETTER THORN	CAPITAL ICELANDIC LETTER THORN
D11	DIAERESIS	RING ABOVE
D12	TILDE	MACRON
C01	SMALL DIPHTHONG a WITH e	CAPITAL DIPHTHONG A WITH E
C02	SMALL GERMAN LETTER SHARP s	PARAGRAPH SIGN, SECTION SIGN
C03	SMALL ICELANDIC LETTER ETH	CAPITAL ICELANDIC LETTER ETH, CAPITAL LETTER D WITH STROKE
C04	SMALL LETTER d WITH STROKE	FEMININE ORDINAL INDICATOR

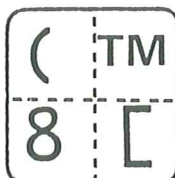|		
C05	SMALL LAPPISH LETTER ENG	CAPITAL LAPPISH LETTER ENG
C06	SMALL LETTER h WITH STROKE	CAPITAL LETTER H WITH STROKE
C07	SMALL LIGATURE i WITH j	CAPITAL LIGATURE I WITH J
C08	SMALL GREENLANDIC LETTER κ	AMPERSAND
C09	SMALL LETTER l WITH MIDDLE DOT	CAPITAL LETTER L WITH MIDDLE DOT
C10	ACUTE ACCENT	DOUBLE ACUTE ACCENT
C11	CIRCUMFLEX ACCENT	CARON
C12	GRAVE ACCENT	BREVE
B00	VERTICAL LINE	BROKEN BAR
B01	LEFT ANGLE QUOTATION MARK	LESS-THAN SIGN
B02	RIGHT ANGLE QUOTATION MARK	GREATER-THAN SIGN
B03	CENT SIGN	COPYRIGHT SIGN
B04	LEFT DOUBLE QUOTATION MARK	LEFT SINGLE QUOTATION MARK
B05	RIGHT DOUBLE QUOTATION MARK	RIGHT SINGLE QUOTATION MARK
B06	SMALL LETTER n PRECEDED BY APOSTROPHE	MUSICAL NOTE
B07	MICRO SIGN	MASCULINE ORDINAL INDICATOR
B08	MIDDLE BAR	MULTIPLICATION SIGN
B09	MIDDLE DOT	DIVISION SIGN
B10	DOT BELOW	DOT ABOVE

APPENDIX A

LABELLING OF KEYS

The graphic symbols of the characters of a Primary Set or of the Common Secondary Set which are shown on the keys should be arranged on the keytops as follows:

Primary   Set (unshifted state) Level 1 : Bottom Left
Primary   Set (shifted state)   Level 2 : Top Left
Secondary Set (unshifted state) Level 3 : Bottom Right
Secondary Set (shifted state)   Level 4 : Top Right

Level 2   Level 4

Level 1   Level 3

Example

If it is necessary to show the graphic symbols of the characters of the Common Secondary Set on the front face of the keys, the graphic symbols of the character of Level 3 should be on the left, and that of the character of Level 4 should be on the right.

APPENDIX B

ALPHABETIC GRAPHIC CHARACTERS

The alphabetic graphic characters of the Common Secondary Set are shown below pairwise.

Æ	æ
Ø	ø
Ł	ł
Ŀ	ŀ
Œ	œ
Ŧ	ŧ
Þ	þ
Đ	ð
Ħ	ħ
IJ	ij
Ŋ	ŋ

Four small alphabetic characters have no capital form or are not paired with their capital form on the same key. These characters are shown below.

ß ĸ đ 'n

APPENDIX C

LOCATION AND FUNCTION OF SHIFT KEYS

C.1 Normal Shift Key

Two Normal Shift Keys shall be provided, located as defined in ISO 1091.

When a Normal Shift Key is operated, the graphic character produced by the operation of a character key shall be from Level 2, instead of Level 1, or, if the Additional Shift Key has been operated, then from Level 4 instead of Level 3.

C.2 Shift Lock Key

A Shift Lock Key shall be provided, located as defined in ISO 1091.

One operation of this key shall make the shifted state effective. It is recommended that a visible indication of the shifted state be provided.

The Shift Lock key may operate in any one of three ways.

i)   The Shift Lock function operates as in conventional typewriters, where an operation of the Shift Lock Key produces a shifted state equivalent in effect to operating the Normal Shift Key, and the unshifted state is restored by operating and releasing the Normal Shift Key.

ii) The Shift Lock function operates as in i) except that the unshifted state is not restored by an operation of the Normal Shift Key but by a second operation of the Shift Lock Key.

iii) The Shift Lock function operates as in ii) except that the shifted state affects only those character keys which carry the small and capital letter pairs, including those listed in Appendix B, providing the so-called Capitals Lock function.

C.3 Additional Shift Key

Access to the Secondary Set of graphic characters (Level 3 and Level 4) shall be by the use of an Additional Shift Key. The preferred arrangement is that there should be two keys, having identical functions, one on either side of the SPACE bar, and below the Normal Shift Keys.

When the Additional Shift Key is operated the graphic character produced by a character key shall be from Level 3 instead of Level 1, or, if the shifted state is in effect, then from Level 4 instead of Level 2.

The Additional Shift Key may operate in any one of three ways:

i)   An operation of the key affects the next single operation of a character key.

ii) The key operates in a manner analogous to that of a Normal Shift Key, affecting the operations of character keys only while it is being operated.

iii) The key may operate both as in i) and as in ii). If the Additional Shift Key is operated and then released before a character key is operated, it affects the next single operation of a character key; if one or more operations of a character key occur while the Additional Shift Key is operated, those operations are affected, but operations of characters keys after the Additional Shift Key is released are not affected.

APPENDIX D

SUPRANATIONAL LATIN KEYBOARD LAYOUT

This Appendix shows a keyboard layout comprising a specific Primary Set (including the 82 invariant graphic characters of ECMA-6) intended for use in an environment in which existing versions of Primary Keyboard Layouts are not appropriate and no single language predominates.

Together with the Common Secondary Keyboard Layout specified by this Standard this Primary Layout forms the so-called Supranational Latin Keyboard Layout shown in Figure D.1.

The diacritical marks (except DOT ABOVE and DOT BELOW) are provided in both the Primary and the Common Secondary Set and are allocated to the same keys so that they can be input from the Primary Layout, i.e. without the need to use the additional shift key(s), thereby reducing the number of keystrokes needed to produce an accented character.

In Fig. D.1:

- the black corners indicate the keys and the levels to which diacritical marks are allocated,

- the squares shown for convenience on some keys are not intended to appear on actual keytops,

- ◁ indicates a location reserved for future standardization,

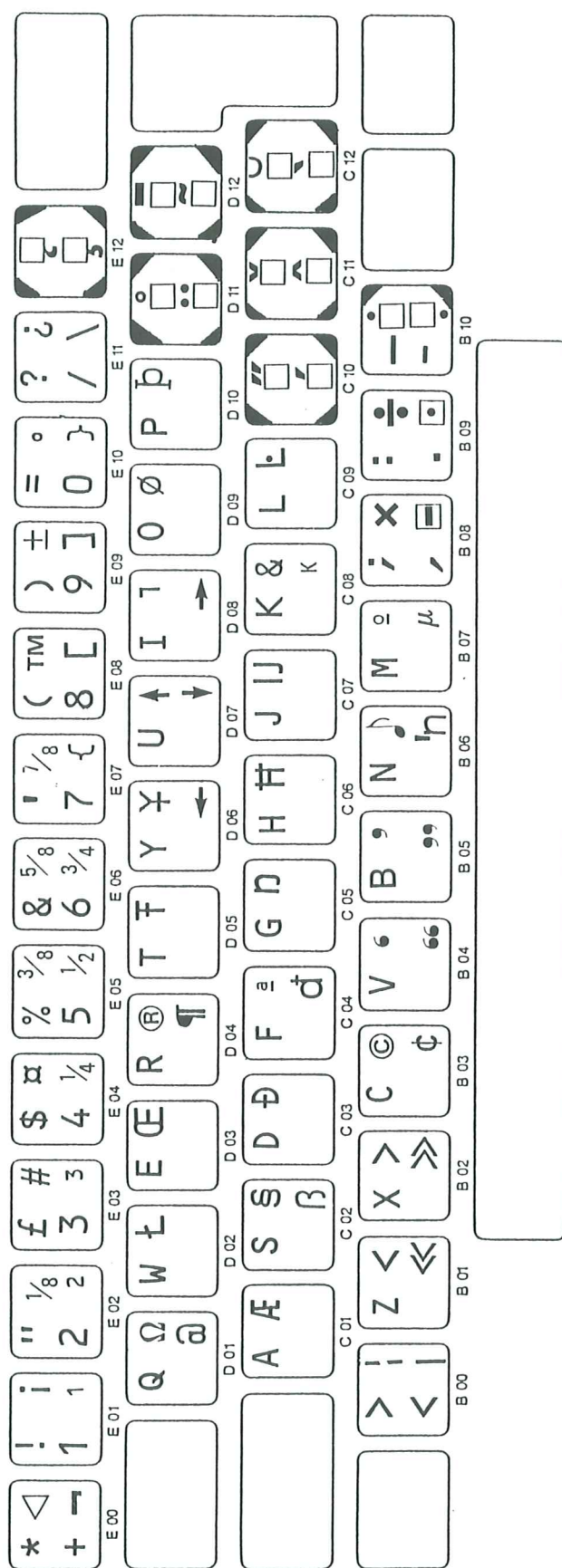- where small and capital forms of a letter exist, only the capital form is shown.

Figure D.1