

Internet Draft  
<[draft-demchenko-koi8-ru-00.txt](#)>  
Expires in six months

Yuri Demchenko  
Kiev Polytechnic Institute  
October 1997

Registration of a Ukrainian Cyrillic Character Set KOI8-RU  
(as extension to Russian KOI8-R and ISO-IR-111)

#### Status of this Memo

This document is an Internet-Draft. Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months. Internet-Drafts may be updated, replaced, or obsoleted by other documents at any time. It is not appropriate to use Internet-Drafts as reference material or to cite them other than as a "working draft" or "work in progress".

To learn the current status of any Internet-Draft, please check the `1id-abstracts.txt` listing contained in the Internet-Drafts Shadow Directories on `ds.internic.net` (US East Coast), `nic.nordu.net` (Europe), `ftp.isi.edu` (US West Coast), or `munni.oz.au` (Pacific Rim).

#### Abstract

This document provides information about widely used in Ukrainian Internet community (including Ukraine and worldwide Ukrainian speaking community) character set for mail and news exchange as well as for presentation WWW information resources in Ukrainian language. 'KOI8-RU' (KOI8 Russian and Ukrainian) summarises and completes de-facto standard koi8-u accepted by all Ukrainian community in the Internet and unofficially published at many sites. KOI8-RU is compatible with KOI8-R ([RFC 1489](#)) in all Cyrillic Letters and completes it with four Ukrainian letters which locations are complaint with ISO-IR-111. KOI8-RU should be registered to support and facilitate general and cultural information content development and dissemination. Support of Ukrainian language in new software product is restrained by absent of officially registered and widely published de-facto used Ukrainian charset.

#### Introduction

This document provides information about widely

used in Ukrainian Internet community character set for mail and news exchange as well as for presentation WWW information resources in Ukrainian language.

Though the proposed character set "KOI8-RU" is not currently an international standard, there is large Internet user community

Expires in six months

[Page 1]

(including Ukraine and worldwide Ukrainian speaking community) supporting it.

"KOI8-RU" (KOI8 Russian and Ukrainian) summarises and completes de-facto standard koi8-u accepted by all Ukrainian community in the Internet and unofficially published at many sites (F.E., [ftp://ftp.ua.net/pub/info/encodings/koi8-u/ukr\\_chars\\_in\\_koi8-u\\_and\\_others.txt](ftp://ftp.ua.net/pub/info/encodings/koi8-u/ukr_chars_in_koi8-u_and_others.txt); [ftp://ftp.gu.kiev.ua/pub/koi8-u/ukr\\_chars\\_in\\_koi8-u\\_and\\_others.txt](ftp://ftp.gu.kiev.ua/pub/koi8-u/ukr_chars_in_koi8-u_and_others.txt); <http://cad.ntu-kpi.kiev.ua/multiling/KOI8-U.html>).

Ukrainian language is the 20th among the world's languages (<http://www.isoc.org:8080/langues/iso639.htm>) and supported not only in Ukraine as national state but among Ukrainian communities over the world.

KOI8-RU should be registered to support and facilitate general and cultural information content development and dissemination. Support of Ukrainian language in new software product is restrained by absent of officially registered and widely published de-facto used Ukrainian charset.

One of the problem now is that all old codepages ISO-IR-111, ISO 8859-5 doesn't include new Ukr. letter GHE (with upturn). Now it's registered in UNICODE 2.0.14 as Cyrillic GHE with upturn (0490 - capital, 0491 - small). It is used in more than 25 ukrainian words and carry in some cases specific national features.

#### Compatibility with other character sets

This standard is unpublished but based on several published standards: first of all, [RFC1489](#) (it is fully complaint in all russian letters), ISO 8859-5, ISO-IR-111, UNICODE 2.0.14.

KOI8-RU is compatible with KOI8-R in all Cyrillic Letters and completes it with four Ukrainian (#164, #180 - ukr. ie, #166, #182 - ukr. i, #167, #183 - ukr. yi, #173, #189 - ukr. ghe with upturn) and one Byelorussian (#174, #190 - byelorussian short u) letters which locations are complaint with ISO-IR-111.

All FORMS except positions occupied by Ukrainian and Byelorussian letters and Bullets in positions #148, #149, #158 coincide with KOI8-R.

Positions #147, #150-153, #155-#157, #159 are used for important characters which are currently missing from ISO-IR-111.

Expires in six months

[Page 2]

## KOI8-RU character set description

The description of all characters from the upper half of the table is compliance with ISO 10646 (Unicode). All Russian letters places have been left at their original KOI8-R places. Introduced new ukrainian letters occupy positions where they are used as standard-de-facto in Ukrainian language applications and newsgroups exchange accepted all Ukrainian language community.

<decimal> <hex-code> <Unicode> <description>

|     |    |       |  |
|-----|----|-------|--|
| 128 | 80 | U2500 | FORMS LIGHT HORIZONTAL                     |
| 129 | 81 | U2502 | FORMS LIGHT VERTICAL                       |
| 130 | 82 | U250C | FORMS LIGHT DOWN AND RIGHT                 |
| 131 | 83 | U2510 | FORMS LIGHT DOWN AND LEFT                  |
| 132 | 84 | U2514 | FORMS LIGHT UP AND RIGHT                   |
| 133 | 85 | U2518 | FORMS LIGHT UP AND LEFT                    |
| 134 | 86 | U251C | FORMS LIGHT VERTICAL AND RIGHT             |
| 135 | 87 | U2524 | FORMS LIGHT VERTICAL AND LEFT              |
| 136 | 88 | U252C | FORMS LIGHT DOWN AND HORIZONTAL            |
| 137 | 89 | U2534 | FORMS LIGHT UP AND HORIZONTAL              |
| 138 | 8A | U253C | FORMS LIGHT VERTICAL AND HORIZONTAL        |
| 139 | 8B | U2580 | UPPER HALF BLOCK                           |
| 140 | 8C | U2584 | LOWER HALF BLOCK                           |
| 141 | 8D | U2588 | FULL BLOCK                                 |
| 142 | 8E | U258C | LEFT HALF BLOCK                            |
| 143 | 8F | U2590 | RIGHT HALF BLOCK                           |
| 144 | 90 | U2591 | LIGHT SHADE                                |
| 145 | 91 | U2592 | MEDIUM SHADE                               |
| 146 | 92 | U2593 | DARK SHADE                                 |
| 147 | 93 | U201C | LEFT DOUBLE QUOTATION MARK                 |
| 148 | 94 | U25A0 | BLACK SQUARE                               |
| 149 | 95 | U2219 | BULLET OPERATOR                            |
| 150 | 96 | U201D | RIGHT DOUBLE QUOTATION MARK                |
| 151 | 97 | U2014 | EM DASH                                    |
| 152 | 98 | U2116 | NUMERO SIGN                                |
| 153 | 99 | U2122 | TRADE MARK SIGN                            |
| 154 | 9A | U00A0 | NONBREAKING SPACE                          |
| 155 | 9B | U00BB | RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK |
| 156 | 9C | U00AE | REGISTERED SIGN                            |
| 157 | 9D | U00AB | LEFT-POINTING DOUBLE ANGLE QUOTATION MARK  |
| 158 | 9E | U00B7 | MIDDLE DOT                                 |
| 159 | 9F | U00A4 | CURRENCY SIGN                              |
| 160 | A0 | U2550 | FORMS DOUBLE HORIZONTAL                    |
| 161 | A1 | U2551 | FORMS DOUBLE VERTICAL                      |

|     |    |       |                                    |
|-----|----|-------|------------------------------------|
| 162 | A2 | U2552 | FORMS DOWN SINGLE AND RIGHT DOUBLE |
| 163 | A3 | U0451 | CYRILLIC SMALL LETTER IO           |
| 164 | A4 | U0454 | CYRILLIC SMALL LETTER UKRAINIAN IE |
|     |    |       | UKR                                |
| 165 | A5 | U2554 | FORMS DOUBLE DOWN AND RIGHT        |

Expires in six months

[Page 3]

|     |     |       |   |   |      |
|-----|-----|-------|---|---|------|
| IE  | 166 | A6    | U0456   | CYRILLIC SMALL LETTER BELORUSSIAN-UKRAINIAN I     | UKR  |
|     | 167 | A7    | U0457   | CYRILLIC SMALL LETTER YI (UKRAINIAN)              | UKR  |
|     | 168 | A8    | U2557   | FORMS DOUBLE DOWN AND LEFT                        |      |
|     | 169 | A9    | U2558   | FORMS UP SINGLE AND RIGHT DOUBLE                  |      |
|     | 170 | AA    | U2559   | FORMS UP DOUBLE AND RIGHT SINGLE                  |      |
|     | 171 | AB    | U255A   | FORMS DOUBLE UP AND RIGHT                         |      |
|     | 172 | AC    | U255B   | FORMS UP SINGLE AND LEFT DOUBLE                   |      |
|     | 173 | AD    | U0491   | CYRILLIC SMALL LETTER UKRAINIAN GHE (WITH UPTURN) | UKR  |
|     | 174 | AE    | U045E   | CYRILLIC SMALL LETTER BELORUSSIAN SHORT U         | BYEL |
|     | 175 | AF    | U255E   | FORMS VERTICAL SINGLE AND RIGHT DOUBLE            |      |
|     | 176 | *B0   | U255F   | FORMS VERTICAL DOUBLE AND RIGHT SINGLE            |      |
|     | 177 | B1    | U2560   | FORMS DOUBLE VERTICAL AND RIGHT                   |      |
|     | 178 | B2    | U2561   | FORMS VERTICAL SINGLE AND LEFT DOUBLE             |      |
|     | 179 | B3    | U0401   | CYRILLIC CAPITAL LETTER IO                        |      |
|     | 180 | B4    | U0403   | CYRILLIC CAPITAL LETTER UKRAINIAN                 |      |
|     | 181 | B5    | U2563   | FORMS DOUBLE VERTICAL AND LEFT                    |      |
|     | 182 | B6    | U0406   | CYRILLIC CAPITAL LETTER BELORUSSIAN-UKRAINIAN I   | UKR  |
|     | 183 | B7    | U0407   | CYRILLIC CAPITAL LETTER YI (UKRAINIAN)            | UKR  |
|     | 184 | B8    | U2566   | FORMS DOUBLE DOWN AND HORIZONTAL                  |      |
|     | 185 | B9    | U2567   | FORMS UP SINGLE AND HORIZONTAL DOUBLE             |      |
| 186 | BA  | U2568 | FORMS UP DOUBLE AND HORIZONTAL SINGLE               |   |      |
| 187 | BB  | U2569 | FORMS DOUBLE UP AND HORIZONTAL                      |   |      |
| 188 | BC  | U256A | FORMS VERTICAL SINGLE AND HORIZONTAL DOUBLE         |   |      |
| 189 | BD  | U0490 | CYRILLIC CAPITAL LETTER UKRAINIAN GHE (WITH UPTURN) | UKR   |      |
| 190 | BE  | U040E | CYRILLIC CAPITAL LETTER BELORUSSIAN SHORT U         | BYEL  |      |
| 191 | BF  | U00A9 | COPYRIGHT SIGN                                      |   |      |
| 192 | C0  | U044E | CYRILLIC SMALL LETTER IU                            |   |      |
| 193 | C1  | U0430 | CYRILLIC SMALL LETTER A                             |   |      |
| 194 | C2  | U0431 | CYRILLIC SMALL LETTER BE                            |   |      |
| 195 | C3  | U0446 | CYRILLIC SMALL LETTER TSE                           |   |      |
| 196 | C4  | U0434 | CYRILLIC SMALL LETTER DE                            |   |      |
| 197 | C5  | U0435 | CYRILLIC SMALL LETTER IE                            |   |      |
| 198 | C6  | U0444 | CYRILLIC SMALL LETTER EF                            |   |      |
| 199 | C7  | U0433 | CYRILLIC SMALL LETTER GE                            |   |      |
| 200 | C8  | U0445 | CYRILLIC SMALL LETTER KHA                           |   |      |

|     |    |       |                                |
|-----|----|-------|--------------------------------|
| 201 | C9 | U0438 | CYRILLIC SMALL LETTER II       |
| 202 | CA | U0439 | CYRILLIC SMALL LETTER SHORT II |
| 203 | CB | U043A | CYRILLIC SMALL LETTER KA       |
| 204 | CC | U043B | CYRILLIC SMALL LETTER EL       |
| 205 | CD | U043C | CYRILLIC SMALL LETTER EM       |
| 206 | CE | U043D | CYRILLIC SMALL LETTER EN       |

Expires in six months

[Page 4]



|     |    |       |                                    |
|-----|----|-------|------------------------------------|
| 207 | CF | U043E | CYRILLIC SMALL LETTER O            |
| 208 | D0 | U043F | CYRILLIC SMALL LETTER PE           |
| 209 | D1 | U044F | CYRILLIC SMALL LETTER IA           |
| 210 | D2 | U0440 | CYRILLIC SMALL LETTER ER           |
| 211 | D3 | U0441 | CYRILLIC SMALL LETTER ES           |
| 212 | D4 | U0442 | CYRILLIC SMALL LETTER TE           |
| 213 | D5 | U0443 | CYRILLIC SMALL LETTER U            |
| 214 | D6 | U0436 | CYRILLIC SMALL LETTER ZHE          |
| 215 | D7 | U0432 | CYRILLIC SMALL LETTER VE           |
| 216 | D8 | U044C | CYRILLIC SMALL LETTER SOFT SIGN    |
| 217 | D9 | U044B | CYRILLIC SMALL LETTER YERI         |
| 218 | DA | U0437 | CYRILLIC SMALL LETTER ZE           |
| 219 | DB | U0448 | CYRILLIC SMALL LETTER SHA          |
| 220 | DC | U044D | CYRILLIC SMALL LETTER REVERSED E   |
| 221 | DD | U0449 | CYRILLIC SMALL LETTER SHCHA        |
| 222 | DE | U0447 | CYRILLIC SMALL LETTER CHE          |
| 223 | DF | U044A | CYRILLIC SMALL LETTER HARD SIGN    |
| 224 | E0 | U042E | CYRILLIC CAPITAL LETTER IU         |
| 225 | E1 | U0410 | CYRILLIC CAPITAL LETTER A          |
| 226 | E2 | U0411 | CYRILLIC CAPITAL LETTER BE         |
| 227 | E3 | U0426 | CYRILLIC CAPITAL LETTER TSE        |
| 228 | E4 | U0414 | CYRILLIC CAPITAL LETTER DE         |
| 229 | E5 | U0415 | CYRILLIC CAPITAL LETTER IE         |
| 230 | E6 | U0424 | CYRILLIC CAPITAL LETTER EF         |
| 231 | E7 | U0413 | CYRILLIC CAPITAL LETTER GE         |
| 232 | E8 | U0425 | CYRILLIC CAPITAL LETTER KHA        |
| 233 | E9 | U0418 | CYRILLIC CAPITAL LETTER II         |
| 234 | EA | U0419 | CYRILLIC CAPITAL LETTER SHORT II   |
| 235 | EB | U041A | CYRILLIC CAPITAL LETTER KA         |
| 236 | EC | U041B | CYRILLIC CAPITAL LETTER EL         |
| 237 | ED | U041C | CYRILLIC CAPITAL LETTER EM         |
| 238 | EE | U041D | CYRILLIC CAPITAL LETTER EN         |
| 239 | EF | U041E | CYRILLIC CAPITAL LETTER O          |
| 240 | F0 | U041F | CYRILLIC CAPITAL LETTER PE         |
| 241 | F1 | U042F | CYRILLIC CAPITAL LETTER IA         |
| 242 | F2 | U0420 | CYRILLIC CAPITAL LETTER ER         |
| 243 | F3 | U0421 | CYRILLIC CAPITAL LETTER ES         |
| 244 | F4 | U0422 | CYRILLIC CAPITAL LETTER TE         |
| 245 | F5 | U0423 | CYRILLIC CAPITAL LETTER U          |
| 246 | F6 | U0416 | CYRILLIC CAPITAL LETTER ZHE        |
| 247 | F7 | U0412 | CYRILLIC CAPITAL LETTER VE         |
| 248 | F8 | U042C | CYRILLIC CAPITAL LETTER SOFT SIGN  |
| 249 | F9 | U042B | CYRILLIC CAPITAL LETTER YERI       |
| 250 | FA | U0417 | CYRILLIC CAPITAL LETTER ZE         |
| 251 | FB | U0428 | CYRILLIC CAPITAL LETTER SHA        |
| 252 | FC | U042D | CYRILLIC CAPITAL LETTER REVERSED E |
| 253 | FD | U0429 | CYRILLIC CAPITAL LETTER SHCHA      |
| 254 | FE | U0427 | CYRILLIC CAPITAL LETTER CHE        |

255

FF

U042A

CYRILLIC CAPITAL LETTER HARD SIGN

Expires in six months

[Page 5]

## Legend

UKR - New included Ukrainian letters

BYEL - New included Byelorussian letters

## APPENDIX A

### DIFFERENCE OF KOI8-RU from EXISTING KOI8-R and ISO-IR-111

KOI8-RU is compatible with KOI8-R in all Cyrillic Letters and completes it with Ukrainian letters UKRAINIAN IE #164, #180, CYRILLIC SMALL LETTER BELORUSSIAN-UKRAINIAN I #166, #182, UKRAINIAN YI #167, #183, UKRAINIAN GHE (WITH UPTURN) #173, #189, BELORUSSIAN SHORT U #174, #190.

Positions #147, #150 - #153, #155-#157, #159 are used for important characters which are currently missing from ISO-IR-111. In all other positions FORMS coincide with KOI8-R.

|    |     |    |       |   |
|----|-----|----|-------|---|
| IE | 147 | 93 | U201C | LEFT DOUBLE QUOTATION MARK                            |
|    | 150 | 96 | U201D | RIGHT DOUBLE QUOTATION MARK                           |
|    | 151 | 97 | U2014 | EM DASH   |
|    | 152 | 98 | U2116 | NUMERO SIGN   |
|    | 153 | 99 | U2122 | TRADE MARK SIGN                                       |
|    | 155 | 9B | U00BB | RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK            |
|    | 156 | 9C | U00AE | REGISTERED SIGN                                       |
|    | 157 | 9D | U00AB | LEFT-POINTING DOUBLE ANGLE QUOTATION MARK             |
|    | 159 | 9F | U00A4 | CURRENCY SIGN   |
|    | 164 | A4 | U0454 | CYRILLIC SMALL LETTER UKRAINIAN                       |
|    |     |    |       | UKR   |
|    | 166 | A6 | U0456 | CYRILLIC SMALL LETTER BELORUSSIAN-UKRAINIAN I UKR     |
|    | 167 | A7 | U0457 | CYRILLIC SMALL LETTER YI                              |
|    |     |    |       | UKR   |
|    | 173 | AD | U0491 | CYRILLIC SMALL LETTER UKRAINIAN GHE (WITH UPTURN) UKR |
| IE | 174 | AE | U045E | CYRILLIC SMALL LETTER BELORUSSIAN SHORT U BYEL        |
|    | 180 | B4 | U0403 | CYRILLIC CAPITAL LETTER UKRAINIAN                     |
|    |     |    |       | UKR   |
|    | 182 | B6 | U0406 | CYRILLIC CAPITAL LETTER BELORUSSIAN-                  |

|     |    |       |  |            |
|-----|----|-------|--|------------|
| 183 | B7 | U0407 | UKRAINIAN I<br>CYRILLIC CAPITAL LETTER YI<br>(UKRAINIAN) | UKR<br>UKR |
| 189 | BD | U0490 | CYRILLIC CAPITAL LETTER UKRAINIAN<br>(WITH UPTURN)       | GHE<br>UKR |

Expires in six months

[Page 6]

|     |    |       |  |      |
|-----|----|-------|--|------|
| 190 | BE | U040E | CYRILLIC CAPITAL LETTER BELORUSSIAN<br>SHORT U | BYEL |
| 191 | BF | U00A9 | COPYRIGHT SIGN                                 |      |

KOI8-RU compatible with ISO-IR-111 in all Russian, Ukrainian and Belorussian letters but differs in positions of one additional Ukrainian letter GHE WITH UPTURN, non-specified in ISO-IR-111 positions #128-#159 are used for FORMS elements from KOI8-R and other important characters which are currently missing from ISO-IR-111 and KOI8-R.

|     |    |       |   |
|-----|----|-------|---|
| 128 | 80 | U2500 | FORMS LIGHT HORIZONTAL                        |
| 129 | 81 | U2502 | FORMS LIGHT VERTICAL                          |
| 130 | 82 | U250C | FORMS LIGHT DOWN AND RIGHT                    |
| 131 | 83 | U2510 | FORMS LIGHT DOWN AND LEFT                     |
| 132 | 84 | U2514 | FORMS LIGHT UP AND RIGHT                      |
| 133 | 85 | U2518 | FORMS LIGHT UP AND LEFT                       |
| 134 | 86 | U251C | FORMS LIGHT VERTICAL AND RIGHT                |
| 135 | 87 | U2524 | FORMS LIGHT VERTICAL AND LEFT                 |
| 136 | 88 | U252C | FORMS LIGHT DOWN AND HORIZONTAL               |
| 137 | 89 | U2534 | FORMS LIGHT UP AND HORIZONTAL                 |
| 138 | 8A | U253C | FORMS LIGHT VERTICAL AND HORIZONTAL           |
| 139 | 8B | U2580 | UPPER HALF BLOCK                              |
| 140 | 8C | U2584 | LOWER HALF BLOCK                              |
| 141 | 8D | U2588 | FULL BLOCK                                    |
| 142 | 8E | U258C | LEFT HALF BLOCK                               |
| 143 | 8F | U2590 | RIGHT HALF BLOCK                              |
| 144 | 90 | U2591 | LIGHT SHADE                                   |
| 145 | 91 | U2592 | MEDIUM SHADE                                  |
| 146 | 92 | U2593 | DARK SHADE                                    |
| 147 | 93 | U201C | LEFT DOUBLE QUOTATION MARK                    |
| 148 | 94 | U25A0 | BLACK SQUARE                                  |
| 149 | 95 | U2219 | BULLET OPERATOR                               |
| 150 | 96 | U201D | RIGHT DOUBLE QUOTATION MARK                   |
| 151 | 97 | U2014 | EM DASH                                       |
| 152 | 98 | U2116 | NUMERO SIGN                                   |
| 153 | 99 | U2122 | TRADE MARK SIGN                               |
| 154 | 9A | U00A0 | NONBREAKING SPACE                             |
| 155 | 9B | U00BB | RIGHT-POINTING DOUBLE ANGLE QUOTATION<br>MARK |
| 156 | 9C | U00AE | REGISTERED SIGN                               |
| 157 | 9D | U00AB | LEFT-POINTING DOUBLE ANGLE QUOTATION<br>MARK  |
| 158 | 9E | U00B7 | MIDDLE DOT                                    |
| 159 | 9F | U00A4 | CURRENCY SIGN                                 |
| 160 | A0 | U2550 | FORMS DOUBLE HORIZONTAL                       |
| 161 | A1 | U2551 | FORMS DOUBLE VERTICAL                         |

|     |    |       |  |
|-----|----|-------|--|
| 162 | A2 | U2552 | FORMS DOWN SINGLE AND RIGHT DOUBLE                       |
| 165 | A5 | U2554 | FORMS DOUBLE DOWN AND RIGHT                              |
| 168 | A8 | U2557 | FORMS DOUBLE DOWN AND LEFT                               |
| 169 | A9 | U2558 | FORMS UP SINGLE AND RIGHT DOUBLE                         |
| 170 | AA | U2559 | FORMS UP DOUBLE AND RIGHT SINGLE                         |
| 171 | AB | U255A | FORMS DOUBLE UP AND RIGHT                                |
| 172 | AC | U255B | FORMS UP SINGLE AND LEFT DOUBLE                          |
| 173 | AD | U0491 | CYRILLIC SMALL LETTER UKRAINIAN GHE<br>(WITH UPTURN) UKR |
| 175 | AF | U255E | FORMS VERTICAL SINGLE AND RIGHT<br>DOUBLE                |

Expires in six months

[Page 8]

|     |    |       |  |
|-----|----|-------|--|
| 176 | B0 | U255F | FORMS VERTICAL DOUBLE AND RIGHT<br>SINGLE                  |
| 177 | B1 | U2560 | FORMS DOUBLE VERTICAL AND RIGHT                            |
| 178 | B2 | U2561 | FORMS VERTICAL SINGLE AND LEFT DOUBLE                      |
| 181 | B5 | U2563 | FORMS DOUBLE VERTICAL AND LEFT                             |
| 184 | B8 | U2566 | FORMS DOUBLE DOWN AND HORIZONTAL                           |
| 185 | B9 | U2567 | FORMS UP SINGLE AND HORIZONTAL DOUBLE                      |
| 186 | BA | U2568 | FORMS UP DOUBLE AND HORIZONTAL SINGLE                      |
| 187 | BB | U2569 | FORMS DOUBLE UP AND HORIZONTAL                             |
| 188 | BC | U256A | FORMS VERTICAL SINGLE AND HORIZONTAL<br>DOUBLE             |
| 189 | BD | U0490 | CYRILLIC CAPITAL LETTER UKRAINIAN GHE<br>(WITH UPTURN) UKR |
| 191 | BF | U00A9 | COPYRIGHT SIGN   |

## Security Considerations

Security issues are not discussed in this memo.

## Acknowledgments

The motivation to write this document came from the work with Microsoft International Team and personally from Igor Sinitsyn. Also this work is based on large work provided by Dmitry Kohmanyuk and Igor Sviridov in setting up standard-de-facto koi8-r for Ukrainian

Internet community. Further acknowledgments go to all Ukrainian netizens who participated in discussion of proposed draft in ukr.nodes and ukr.netnews and personally Andrew Stesin from Global Ukraine.

## References

- [1] Chernov, A., "Registration of a Cyrillic Character Set", [RFC 1589](#), Network Working Group, July 1993.
- [2] UNICODE 2.0 CHARACTER DATABASE. - <ftp://unicode.org/pub/2.0-Update/UnicodeData-2.0.14.txt>
- [3] Ukrainian letters in koi8-u and other character sets [ftp://ftp.ua.net/pub/info/encodings/koi8-u/ukr\\_chars\\_in\\_koi8-u\\_and\\_others.txt](ftp://ftp.ua.net/pub/info/encodings/koi8-u/ukr_chars_in_koi8-u_and_others.txt), June 1995.
- [4] ECMA-CYRILLIC. - <ftp://dkuug.dk/i18n/charmaps.all/ECMA-CYRILLIC>

Expires in six months

[Page 9]



Author's Address

Yuri V. Demchenko  
Computer Aided Design Department  
National Technical University of Ukraine  
"Kiev Polytechnic Institute"  
Prospect Pobedy 37  
Kiev-56, 252056  
Ukraine

Tel: +380 44 441 1465  
Fax: +380 44 274 5932  
E-mail: demch@cad.ntu-kpi.kiev.ua