GSMWIN32, GX and 8-bit Characters

1. Introduction

In order to support non-English language characters GSM must be configured to use an 8-bit TAP. An 8-bit TAP must also be used for English-language sites to allow both the hash and the pound symbol to be displayed; and also to display the euro character.

This document describes the use of 8-bit TAP's when used with GSMWIN32.EXE, GLOBAL.EXE and GX.EXE.

Resellers familiar with 8-bit characters on GSM (DOS) and GSM (Novell) will be relieved that the customisation for GSM (Windows) is considerably simpler.

2. 8-bit GSM and Speedbase

Support for 8-bit characters in GSM was introduced in GSM V6.0. Support for 8-bit characters in Speedbase was introduced in V8.0. Both GSM and Speedbase assume an 8-bit character set that conforms to the ISO-8859 standard. For more information on the ISO-8859 standard please refer to http://czyborra.com/charsets/iso8859.html.

3. GSMWIN32.EXE, GLOBAL.EXE, GX.EXE and 8-bit TAP's

In order to enable 8-bit mode for GSMWIN32.EXE you must use an 8-bit TAP (e.g. $.811 or $.816) **AND** set the **Enable8BitMode** in the [miscellaneous] section of the GSMWIN32.INI file. See Appendix N of the Global Windows Workstation Notes for the full range of 8-bit TAP's; and section A.7.67 of the Global Windows Workstation Notes for more details of the Enable8BitMode option.

In order to enable 8-bit mode for GLOBAL.EXE you must use an 8-bit TAP (e.g. $.811 or $.816) **AND** set the **Enable8BitMode** option in the following registry key:

HKEY_LOCAL_MACHINE\Software\Global\Clients\Screens\GUI\Miscellaneous

There is no need to enable 8-bit mode for GX. By default, GX and the GX TAP (i.e. $.911) assume 8-bit mode.

4. ISO-8859 Compatible fonts

4.1 ISO-8859 Compatible fonts with GUI-1 TAP's (e.g. 811)

Most of the fonts used for Speedbase windows and menus by GSMWIN32.EXE (e.g. "MS Sans Serif" and "FixedSys") are compatible with the ISO-8859 standard. These fonts are configured by the **VariableFont** and **FixedFont** settings in the [miscellaneous] section of the GSMWIN32.INI file. See sections A.7.34 and A.7.33 of the Global Windows Workstation Notes for more details of these options. A small utility, fontview.exe, is available from ftp://www.tissoft.co.uk/pub/gsm/fonts/fontview.zip to display the character sets of the fonts installed on a PC. Thus, in order to run a 16-bit or 32-bit Speedbase application with 8-bit characters on GSMWIN32.EXE only the steps described in section 3 need to be implemented.

A Speedbase utility, $ISOSET, is available to display the character set available for Speedbase applications.

Most of the fonts used for Speedbase windows and menus by GLOBAL.EXE (e.g. "MS Sans Serif" and "FixedSys") are compatible with the ISO-8859 standard. These fonts are configured by the **VariableFont** and **FixedFont** settings in the following registry key:

HKEY_LOCAL_MACHINE\Software\Global\Clients\Screens\GUI\Miscellaneous

Thus, in order to run a 16-bit or 32-bit Speedbase application with 8-bit characters on GLOBAL.EXE only the steps described in section 3 need to be implemented.

4.2 ISO-8859 Compatible fonts with GX

Most of the fonts used for Speedbase windows and menus by GX.EXE (e.g. "MS Sans Serif" and "FixedSys") are compatible with the ISO-8859 standard. These fonts are configured from the Settings drop-down menu option in GX.

A Speedbase utility, $ISOSET, is available to display the character set available for Speedbase applications on GX.

5. Non-ISO-8859 Compatible fonts

5.1 Non-ISO-8859 Compatible fonts and GUI-1 TAP's (e.g. 811)

NONE of the fixed-pitch fonts used for text-mode 80*24 and 132*24 screens by GSMWIN32.EXE (e.g. "Terminal" and "SystemPC" etc.) are compatible with the ISO-8859 standard. These fonts are configured by the **TextModeFont** and **TextModeFontWide** settings in the [miscellaneous] section of the GSMWIN32.INI file. See sections A.7.46 and A.7.64 of the Global Windows Workstation Notes for more details of these options. In

general, those fixed pitch fonts that **are** compatible with the ISO-8859 character set do **not** contain the required line and box drawing characters.

To display the "text mode" character set run $T and key "DIAG" to the following prompt:

Key P to print, <CR> to page, <ESC> to exit:

Select option 9 (Display Character Range) from the Diagnostic Menu; and select a character range from 80 to FF.

In order to display the 8-bit ISO-8859 characters held internally within GSM on those fixed-pitch, text-mode fonts that are not ISO-8859 compatible some character translation is necessary. This translation (i.e. character mapping) is performed using entries in the [isotranslation] section of the GSMWIN32.INI file. Each entry is of the form:

ISOChar#*xx*=#*yy*

where *xx* is an ISO character and *yy* is the equivalent character in the fixed-pitch, text-mode font. Both *xx* and *yy* must be in the range 80 to FF.

For example, the following entry maps the “pound” character from the ISO value of #A3 to the character value #9C required for the Terminal font.

ISOChar#A3=#9C

See section A.15 of the Global Windows Workstation Notes for more details.

NONE of the fixed-pitch fonts used for text-mode 80*24 and 132*24 screens by GLOBAL.EXE (e.g. "Terminal" and "SystemPC" etc.) are compatible with the ISO-8859 standard. These fonts are configured by the **TextModeFont** and **TextModeFontWide** settings in the following registry key:

HKEY_LOCAL_MACHINE\Software\Global\Clients\Screens\GUI\Miscellaneous

In general, those fixed pitch fonts that **are** compatible with the ISO-8859 character set do **not** contain the required line and box drawing characters.

In order to display the 8-bit ISO-8859 characters that are held internally within GSM on those fixed-pitch, text-mode fonts that are not ISO-8859 compatible some character

translation is necessary. This translation (i.e. character mapping) is performed using entries in the following registry key:

HKEY_LOCAL_MACHINE\Software\Global\Clients\Screens\GUI\IsoTranslations

Each entry in this registry key is of the form:

ISOChar#*xx*=#*yy*

where *xx* is an ISO character and *yy* is the equivalent character in the fixed-pitch, text-mode font. Both *xx* and *yy* must be in the range 80 to FF.

5.2 Non-ISO-8859 Compatible fonts and GX

NONE of the fixed-pitch fonts used for legacy applications in "Window Zero" GX.EXE are compatible with the ISO-8859 standard. In general, those fixed pitch fonts that **are** compatible with the ISO-8859 character set do **not** contain the required line and box drawing characters.

To display the Window Zero character set on GX use the $T DIAG option as described above.

In order to display the 8-bit ISO-8859 characters that are held internally within GSM on those fixed-pitch, text-mode fonts that are not ISO-8859 compatible some character translation is necessary. This translation (i.e. character mapping) is performed using entries in the [isotranslation] section of the GX.INI file. See section 16 of the gx25inifile.doc for further details.

6. The euro character

6.1 The euro character and GUI-1 TAP's (e.g. 811)

The euro character is defined as hexadecimal value #A4 in the standard ISO-8859-15 (Latin9) character set. However, on a standard Windows PC keyboard the euro character (normally Alt-Graphic 4) appears to generate the hex value #80 (which is a non ISO character value). Furthermore, on **most** Windows fonts the euro character appears at character position #80 (which is a non ISO-compatible character value). This section describes the options that are available to map the euro character to the internal, ISO-compatible byte value #A4.

The EuroCharacterInput setting in GSMWIN32.INI allows the value #80 generated by the keyboard to be mapped to the ISO standard #A4 for GSMWIN32.EXE. The EuroCharacterInput setting in the Global registry allows the value #80 generated by the keyboard to be mapped to the ISO standard #A4 for GLOBAL.EXE.

For example:

EuroCharacterInput=#80

See section A.11.17 of the Global Windows Workstation Notes for further details

Note that the EuroCharacterInput setting is in the [keymappings] section of the GSMWIN32.INI file/registry.

To check that the keyboard generates a #80 value for the euro character run $T and key "DIAG" to the following prompt:

Key P to print, <CR> to page, <ESC> to exit

Select option 2 from the DIAGNOSTICS MENU. Generate the euro character on the keyboard and note the hexadecimal value that is echoed back. To quit the $T test-mode key "QWERTY" to return the DIAGNOSTICS MENU.

Although the euro character keyboard input translation is relatively simple the output translation requires a suitable ISO-compatible font to be available. The fontview.exe utility, mentioned above, can be used to check if a font contains the euro character.

As described in the Global Windows Workstation Notes (particularly Appendix A and Appendix S) GSMWIN32.EXE uses 4 fonts depending on the "display mode":

Fixed Font	Used when displaying Speedbase Windows and menus. See section A.7.33 of the Global Windows Workstation Notes;
Variable Font	Used when displaying Speedbase Windows and menus. See section A.7.34 of the Global Windows Workstation Notes;
Narrow Mode Font	Used when displaying a 80 * 24 text mode screen. See sections A.7.17, A.7.46 and A.7.65 of the Global Windows Workstation Notes

Wide Mode Font	Used when displaying a 132 * 24 text mode screen. See sections A.7.18, A.7.64 and A.7.66 of the Global Windows Workstation Notes

In our experience finding a suitable "Variable Font" that supports the euro character is relatively simple. However, finding a fixed pitch font that supports the euro character may be more difficult. The Global Windows Workstation V3.5 has been enhanced to allow the true type Courier New font, some versions of which support the euro character, to be used as the "Fixed Font". The syntax of the FixedFont setting in the GSMWIN32.INI file has been extended to allow a point size to be specified instead of the normal pixel width and pixel height. For example:

```
FixedFont=Courier,8x13
```

can be replaced by:

```
FixedFont=Courier New, 10
```

Important Note: The FixedFont and VariableFont fonts that you have selected **MUST** contain the euro character in the **same** character position. If the character position is #A4 (i.e. the ISO standard) then no further action is required. However, if the euro character is at a position in the font other than #A4 (e.g. #80) then the EuroOutputCharacter option must be used to map the internal value of #A4 to the character position in the font. For example:

```
EuroCharacterOutput=#80
```

See section A.11.17 of the Global Windows Workstation Notes for further details

Note that the EuroCharacterOutput setting is in the [keymappings] section of the GSMWIN32.INI file/registry.

Unfortunately, in our experience, finding a fixed pitch font that supports both the euro character **AND THE LINE-DRAWING CHARACTERS REQUIRED BY GSM TEXT SCREENS**, is very difficult. Consequently, until such a font can be found, the euro character is not supported for Global 2000 and other legacy applications when running on the Global Windows Workstation.

6.2 The euro character and GX

At the time of writing, euro character translation is not **currently** supported on GX V2.5.