MELTHO: Syriac OpenType Fonts for Windows XP/2000™ and Windows 95/98/ME™

User Guide
Version 1.20

Documentation by

George A. Kiraz, Ph.D.

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Preface

MELTHO: Syriac OpenType Fonts for Windows XP/2000™ and Windows 95/98/ME™ is the outcome of Project Meltho from Beth Mardutho: The Syriac Institute (formerly The Syriac Computing Institute). The project began in 1996, while I was completing my doctoral studies in Cambridge, England, and went under a number of drastic design changes to catch up with the growing expansion of operating system and font technologies. Although intended originally to be a set of macros and fonts for Microsoft Word – hence, the name Meltho ܡܠܬܐ – under Windows 3.2/95, Project Meltho has evolved, and now provides fonts, designed under the new OpenType technology, for the entire Windows operating systems. The new fonts allow the user to write Syriac not only in word processing applications, but also in programs for creating web pages, databases, emails, spreadsheets, presentations, graphics, and beyond.

The *MELTHO* fonts support the three Syriac type styles (i.e., scripts): Estrangelo, Serto and East Syriac. Each font was named after a historic city from the Syriac tradition.

The success of this project would not have been possible without Paul Nelson of Microsoft Corporation. Had it not been for his interest in the Syriac language, the outcome of this project may have remained a mere set of macros and fonts for Microsoft Word. Paul, with the much-appreciated support of his managers at Microsoft, programmed Syriac in the Unicode Script Processor (also called Uniscribe), the software that handles the shaping of "complex scripts" under the Windows operating system. He also contributed immensely to the architecture of the fonts. Sargon Hasso was our companion on this project since 1998 when we worked on adding Syriac to Unicode. Sargon's continuous contributions, especially on matters East Syriac, have shaped these fonts.

While we entirely on voluntary basis, we decided to have a professional typographer perfect the designs of the fonts. This proved to be quite costly – especially for a commercially non-viable language like Syriac, but was made possible by generous financial contributions from many institutions and individuals. They all deserve appreciation from each and every user. A list of all contributors appears on the Meltho we page.

Designing these fonts during late evening hours, weekends, and while traveling on airplanes consumed a lot of time that does not belong to me, but which I owe to my wife Christine, and newly born daughter Tabetha Gabriela. Not only was my wife most understanding, but also – feeling pity for me – decided to help me. Christine created and edited most of the fonts' OpenType tables (GPOS and GSUB), the tables that determine the contextual shapes of characters, and the positioning of vowels and diacritic marks on each character, probably the most arduous, time-consuming and tedious stage of the font design process. Indeed, a husband cannot ask for more!

Piscataway, N.J.
Feast of Mor Gewargi
April 23, 2001

George Anton Kiraz

Credits

The current fonts were created with the much-appreciated efforts of many individuals.

Architecture and Design

Much work had to be done before creating the MELTHO fonts, including a proposal to add Syriac to Unicode, and implementing the architecture of the fonts.

- **Unicode** is an international encoding scheme that defines for each letter in every language a specific code. The *Syriac Unicode proposal*, which the current fonts adhere to, is the voluntary work of **Paul Nelson**, **George Kiraz** and **Sargon Hasso**. The proposal was accepted by The Unicode Consortium (Version 3.0) and the International Standard Organization.

- **TrueType fonts** are scalable fonts used in many operating systems including Windows 2000. In order to ensure uniformity in the design of all the Syriac fonts, *TrueType font templates* were created to serve as a model. The templates dictate the set of glyphs required, and the organizational aspects of the font. Three templates were created: one for Estrangelo, another for Serto, and a third for East Syriac. These font templates can be used by font designers to create new Syriac fonts that conform to standards. The templates are the voluntary work of **Paul Nelson** and **George Kiraz**.

- **OpenType fonts** are TrueType fonts with additional tables that determine the contextual shapes of letters and ligatures, the positioning of marks (e.g., vowels) on each letter, and the spacing between letters. Again, to ensure uniformity in the font design, *OpenType template tables* were created to serve as a model. These tables can be used by font designers to create new Syriac fonts that conform to standards. The template tables are the voluntary work of **George Kiraz** and **Paul Nelson**.

Font Design

The process of font design is divided into various stages:

- **Artwork.** The artwork behind a font is basically a drawing of each letter, mark, symbol, and punctuation that appears in that particular font. The artwork can be provided by an artist or a scribe. In most cases, the artwork is based on printed (metal) types or manuscripts.

- **TrueType Font Outlines.** The creation of TrueType fonts begins by copying each glyph from the artwork into a font and designing an outline for that glyph. The outline defines the shape of the glyph in scalable terms (i.e., not at a specific point size). The spacing characteristics of each glyph are also defined at this stage. The result of this process is a TrueType font.

- **OpenType Fonts.** Tables are added to a TrueType font to define the various shapes of letters (initial, medial, final, or stand-alone), the set of ligatures and the contexts in which they occur, the positioning of each mark (e.g., vowels and dots) with respect to each base-letter, and spacing between glyphs. The result of this process is an OpenType font that is ready for distribution.

MELTHO: Syriac OpenType Fonts for Windows XP/2000™ and Windows 95/98/ME™

1 Introduction

1.1   Availability and Usage

The Syriac Computing Center (SyrCOM) of Beth Mardutho provides *MELTHO: Syriac OpenType Fonts for Windows XP/2000* (for short *MELTHO*) free of charge. You may use *MELTHO* to compose and publish all sorts of documents, hard copy and electronic. You may *not* sell or distribute *MELTHO* fonts.

Users who use *MELTHO* fonts to publish books and periodicals, be it in hard copy form or electronic, are kindly requested to acknowledge using SyrCOM's fonts. Such publications may use a statement similar to "The Syriac text is set using the *MELTHO* fonts from Beth Mardutho: The Syriac Institute [www.BethMardutho.org]." In periodicals, the statement may appear on the page on which the periodical's organizational information is mentioned; in books, it may appear on the copyright page and/or in the preface.

While *MELTHO* fonts are available for your use free of charge, producing them professionally proved to be quite costly. Your financial contribution is essential to maintain the current fonts (e.g., updates), and to develop new fonts and tools that will become available freely on the Internet. SyrCOM appreciates any contribution in this regard; all contributors will be acknowledged. Please see the Donation Form at the end of this document.

1.2   SyrCOM Discussion Group and Technical Support

Users are encouraged to join the Syriac Computing Discussion Group at http://groups.yahoo.com/group/syrcom to discuss problems, learn from others, and share their experience with the user community. Please note that Beth Mardutho does *not* have the means to provide technical support. We rely on people from within the user community to help each other.

1.3   Installation

There is a separate text document with the distribution explaining the installation procedure.

1.4   Usage under Windows XP/2000™ and Windows 95/98/ME™

In order to use the Syriac fonts, you must first install at least one of the following programs that support Syriac:

- Office XP

- Windows XP

Under Windows 2000/XP you will be able to create, edit, and view documents: texts, web pages, emails, databases, power point presentations, graphics, etc.

Under Windows 95/98/ME you will be able to only view Syriac documents created by others. You will *not* be able to create documents of your own easily. This is because these platforms still use the old code-page system, rather than Unicode. However, there is a crude way by which you can enter texts under Windows 95/98/ME, which is only recommended for small portions of texts (phrases and a few words). See under Typesetting FAQ towards the end of this document.

1.5   Font Version

To determine the version of a specific font, go to Start | Settings | Control Panel | Fonts, then double click on the font in question.

The font version is in the form of x.xx (e.g., 1.23). The units number (1 in this example) signifies a Meltho major release. All fonts within the same release will have the same number.

The first number to the right of the decimal point (2 in this example) signifies a Meltho minor release. All fonts within the same release will have the same number.

The second number to the right of the decimal point (3 in this example) signifies the version of a specific font. Each font has its own version number.

For example, two fonts with versions 1.10 and 1.11 belong to the same Meltho release as a package. The 1.10 did not go through any revision since the 1.10 release, but 1.11 went through a revision after the 1.10 release.

2 The Font Set

MELTHO consists of a suite of Estrangelo, Serto and East Syriac fonts. The following table gives the font names, samples, and a history[§] of each type.

Note. You must install the fonts before you can see the samples.

Estrangelo Fonts	
Font Name:	Estrangelo Antioch
Sample:	ܟܬܒܐ ܗܘܐ ܠܘܬ ܐܠܗܐ ܒܪܫܝܬ
Designed by:	George and Christine Kiraz
Sponsored by:	Dr. Andreas Juckel, Germany
History:	Based on Ms. 12/21 of the Syriac Orthodox Patriarchal Library, Damascus, dated A.D. 1041/2.
Font Name:	Estrangelo Edessa
	This font ships with Windows XP and is the default system font for Syriac.
Sample:	ܟܬܒܐ ܗܘܐ ܐܝܬܘܗܝ ܒܪܫܝܬ
Designed by:	Paul Nelson and George Kiraz
Sponsored by:	Dr. Sebastian Brock, Reader of Syriac at Oxford University, and Professorial Fellow of Wolfson College.
History:	Based on types from an Ohioan press, probably designed after a 1954 Estrangelo Monotype font. The Monotype font was designed with the assistance of R. Draguet, and in turn is based on an 1851 type used in Estrangelo Talada below. A similar font was designed by George Kiraz in 1986 for Multi-Lingual Scholar™.

[§] Thanks to Dr. Chip Coakley of Harvard University, a historian of Syriac types, for providing the historical information about most of the types used in the Meltho fonts.

Font Name:	Estrangelo Midyat
Sample:	ܟܬܒܬܐ ܗܘܐ ܐܝܬܘܗܝ ܒܪܫܝܬ
Designed by:	George and Christine Kiraz
Sponsored by:	Athanasius Yeshu Samuel Trust Fund
History:	Based on a 13th century manuscript, originally of the Church of Mort Shmoni in Midyat, now at Mor Gabriel Monastery in Tur Abdin.

Font Name:	Estrangelo Nisibin
Sample:	ܡܠܬܐ ܗܘܐ ܐܝܬܘܗܝ ܒܪܫܝܬ
Sample (Outline):	ܡܠܬܐ ܗܘܐ ܐܝܬܘܗܝ ܒܪܫܝܬ
Designed by:	George Kiraz
Sponsored by:	Mr. Tony Thomas, Los Angeles
History:	The type is originally designed by W. Drugulin of Leipzig ca. 1880, and was used in the Dominican and Assyrian Presses in Mosul. It was designed as a font in 1996 by George Kiraz for Multi-Lingual Scholar™ with useful comments from Mar Emanuel Emanuel of the Assyrian Church of the East.

Font Name:	Estrangelo QenNeshrin
Sample:	ܟܬܒܬܐ ܗܘܐ ܐܝܬܘܗܝ ܒܪܫܝܬ
Designed by:	George and Christine Kiraz
Sponsored by:	Mr. Gabriel Malki, Australia
History:	Based on the calligraphy of Mr. Isa Benjamin. It was designed as a font in 1996 by George Kiraz for Multi-Lingual Scholar™.

Font Name:	Estrangelo Talada
Sample:	ܟܬܒܬܐ ܗܘܐ ܐܝܬܘܗܝ ܒܪܫܝܬ
Designed by:	George and Christine Kiraz
Sponsored by:	H.E. Mor Cyril Aphrem Karim, Syriac Orthodox Archbishop of the Eastern United States
History:	The original type was designed by William Morley for the London-based typefoundery of William Watts ca. 1851, based on a 7th century manuscript from the British Library, Add. 14640. It was used by the University of Cambridge Press, among other presses. Books published in this type include Burkitt's *Evangelion Da-Mepharreshe* (Cambridge, 1904).

Font Name:	Estrangelo TurAbdin
Sample:	ܟܬܒܐ ܗܘܐ ܐܘܡܢܘܬܐ ܣܪܛܝܐ
Designed by:	George and Christine Kiraz
Sponsored by:	Athanasius Yeshu Samuel Trust Fund
History:	Based on the calligraphy of Mr. Isa Benjamin. It was designed as a font in 1996 by George Kiraz for Multi-Lingual Scholar™.

Serto (West Syriac) Fonts

Font Name:	Serto Batnan
Sample (normal):	ܟܬܒܐ ܗܘܐ ܐܘܡܢܘܬܐ ܣܪܛܝܐ
Sample (bold):	ܟܬܒܐ ܗܘܐ ܐܘܡܢܘܬܐ ܣܪܛܝܐ
Designed by:	George Kiraz
Sponsored by:	Mr. Abdul Masih Bisseh, Mr. Abraham Bisseh, and Mr. Essa Bisseh, Australia
History:	This type was designed by the London-based typefoundery of William Watts, for Oxford University Press, ca. 1863. It was used in printing Smith's *Thesaurus Syriacus* (Oxford, 1879), and Pusey and Gwilliam's edition of the New Testament (Oxford, 1901) which is still reproduced by the United Bible Society. The first computer font of this type was designed by George Kiraz for the production of his *Computer-Generated Concordance to the Syriac New Testament*, Volumes 1-6 (Brill, 1993) using Multi-Lingual Scholar™.
Font Name:	Serto Jerusalem
Sample (normal):	ܟܬܒܐ ܗܘܐ ܐܘܡܢܘܬܐ ܣܪܛܝܐ
Sample (italic):	ܟܬܒܐ ܗܘܐ ܐܘܡܢܘܬܐ ܣܪܛܝܐ
Sample (bold):	ܟܬܒܐ ܗܘܐ ܐܘܡܢܘܬܐ ܣܪܛܝܐ
Designed by:	George Kiraz
Sponsored by:	Syriac Orthodox Archdiocese of the Western United States (thanks to its Archbishop Mor Clemis Eugene Kaplan)
History:	This is the oldest type in existence that is still used most popularly in fonts. The original design dates back to a type associated with the famous diplomat and printer of Arabic, Savary de Bréves, before 1614. The type was acquired by the Imprimerie Catholique in Beirut from the Imprimerie Nationale in Paris sometime in the 2nd half of the 19th cent. It was also acquired by St. Mark's Syriac Orthodox Press in Jerusalem, from which the font was designed. It was designed as a font first in 1996 by George Kiraz for Multi-Lingual Scholar™.

Font Name:	Serto Jerusalem Outline
Sample:	ܚܙܝܡܝܐ ܐܝܟܘܠܝ ܗܘܐ ܢܘܗܪܐ ܡܠܬܐ
Designed by:	George Kiraz
Sponsored by:	Syriac Federation and Syriac Youth Federation, Sweden.
History:	Same as Serto Jerusalem.

Font Name:	Serto Kharput
Sample:	ܚܙܝܡܝܐ ܐܝܟܘܠܝܢ ܗܘܐ ܡܠܬܐ
Designed by:	George Kiraz and Christine Kiraz
Sponsored by:	The Peshitta Institute, Leiden; Mr. Neil Simon, Australia; Mr. Malak Youna & Mr. Evelyne Younan, USA.
History:	The type was originally designed by the Swedish designer O. Tullberg for Teubner typefoundry. It was first seen in 1853. Bernstein's edition of the Harklean version of St. John's Gospel was published with this type (Leipzig, 1854). This is one of the first Serto types that contained a good deal of ligatures.

Font Name:	Serto Malankara
Sample:	ܚܙܝܡܝܐ ܐܝܟܘܠܝܢ ܗܘܐ ܡܠܬܐ
Designed by:	George Kiraz
Sponsored by:	Athanasius Yeshu Samuel Trust Fund, and Mr. George Poothicote Cherian
History:	The original type goes back to the 19th century and may have been designed for the typefounder William Watts, London. Lee's edition of the Old Testament is still reprinted from this type by the United Bible Society. The type is still used by the Syriac Orthodox and the Syro-Malabar presses of India.

Font Name:	Serto Mardin
Sample:	ܚܙܝܡܝܐ ܐܝܟܘܠܝܢ ܗܘܐ ܡܠܬܐ
Designed by:	George Kiraz
Sponsored by:	The Shirazi Foundation (thanks to Mr. and Mrs. Semir Shirazi)
History:	The original type design was made by W. Drugulin of Leipzig, may be around 1880 (?). The design was overseen by the orientalist P. de Lagarde. A number of books were printed in this type including Bar Ebroyo's *Semhe* (1922), reproduced in Sweden in 1983.

Font Name:	Serto Qezhayya
Sample:	
Designed by:	George and Christine Kiraz
Sponsored by:	Aramaic American Association of New Jersey
History:	This type was originally produced in France by the typefoundery of Deberny and Peignot. It first appeared in *Patrologia Syriaca* and *Patrologia Orientalis*, around 1894. [The font is named after the first Syriac press in the Middle East at the Maronite monastery of Qezhayya, but the type was not used in that press.]
Font Name:	Serto Urhoy
Sample:	ܚܙܡܝܟ ܐܝܠܘܗܝ ܗܘܐ ܡܟܠܐ
Designed by:	Very Rev. Fr. Archpriest Dr. Joseph Tarzi, Los Angeles
Sponsored by:	Fr. Joseph Tarzi and Mr. Albert Tarzi
History:	Derived with changes from Syriac books published in Syria And Lebanon such as R. P. Michel Doumeth's *Anthologie Syriaque*, Paulos Gabriel and Ghattas Maqdesi Elias' translation ܡܟܠܘܗܐ, and Armalah's ܘܡܚܩܐ ܝܗܬܡܐ.

East Syriac Fonts

Font Name:	East Syriac Adiabene
Sample:	ܕܐܝܟܝܐ ܝܐܘܟܝ ܗܘܗ ܡܟܠܐ
Designed by:	George and Christine Kiraz
Sponsored by:	Diocese of California of the Assyrian Church of the East (thanks to Mar Bawai Soro)
History:	This type was used in the Assyrian press in Mosul, and its design is derived from a type that goes back to designer Drugulin ca. 1880. Most computer fonts are derived from this type. This particular font is derived from a bitmap font designed in 1996 by George Kiraz for Multi-Lingual Scholar™ with useful comments from Mar Emanuel Emanuel of the Assyrian Church of the East. [For the history of this East Syriac type, see J. F. Coakley, 'Edward Breath and the Typography of Syriac', *Harvard Library Bulletin*, New Series, Vol. 6, No. 4 (1995), pp. 41-64.]
Font Name:	East Syriac Ctesiphon
Sample:	ܕܐܝܟܝܐ ܝܐܘܟܝ ܗܘܗ ܡܟܠܐ
Designed by:	George and Christine Kiraz
Sponsored by:	Assyrian Association of America (thanks to Mr. Yoel Baaba)
History:	This font is based on the calligraphy of Mr. Isa Benjamin.

3 Keyboard Layouts

Two Syriac keyboard layouts are provided for:

3.1   Syriac 101 Standard Keyboard

This is the standard keyboard. It is modeled, as close as possible, after the Arabic keyboard. Base characters are located on the normal keys.

Figure 1 Syriac Standard Keyboard

3.2   Syriac Phonetic Keyboard

This is an alternative phonetic keyboard. Base characters are located on the normal keys.

Figure 2 Syriac Phonetic Keyboard

3.3   Marks and Vowels

Marks (vowels and diacritic marks) are located on the Shift and Alt+Ctrl. Note that while the location of base characters is different in the two above keyboard layouts, the location of marks is identical in both keyboard layouts.

On some non-U.S. keyboards, there is an *AltGr* key on the right side of the keyboard that can be used instead of the *Alt+Ctrl* combination.

Note. To use the *Alt+Ctrl* keys, you must first press the *Alt* key that is on the right side of the keyboard (not the Alt key on the right side of the keyboard), then the *Ctrl* key on the right side of the keyboard, then the key in question.
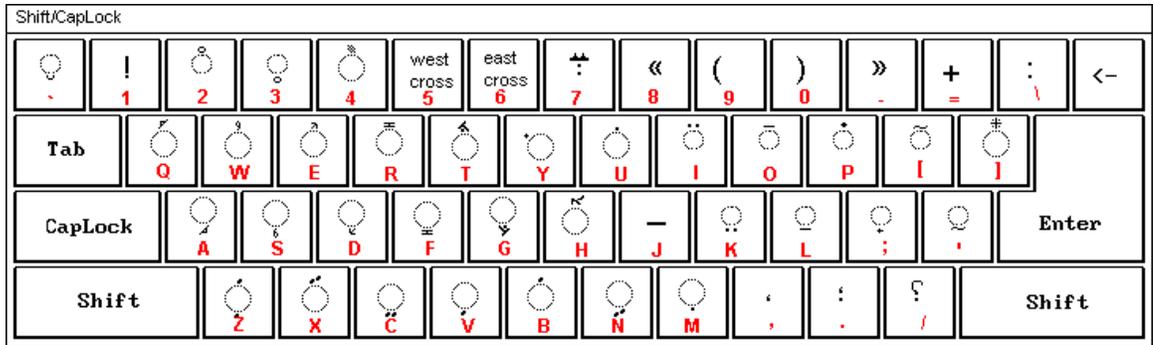
Figure 3 Shift Keys
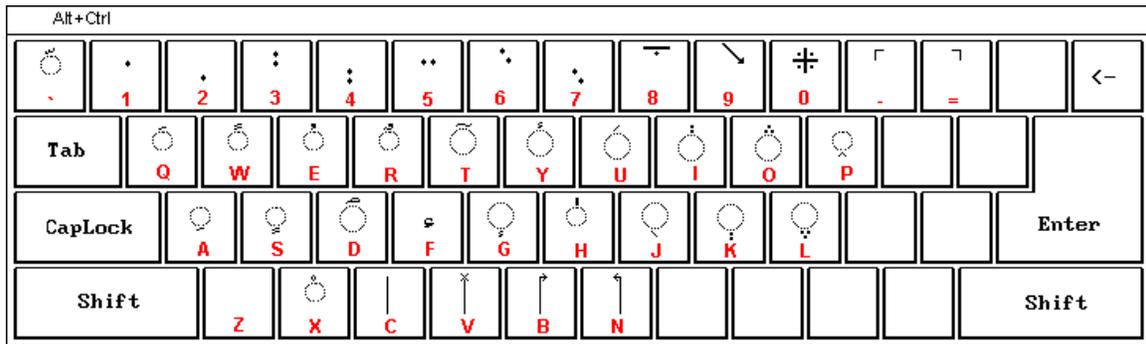
Figure 4 Alt+Ctrl Keys

4 Supported Characters

MELTHO fonts contain characters that support the writing of Classical Syriac, Soorith/Swadaya (Eastern Neo-Aramaic, the dialects of the Assyrians and Chaldeans), Turoyo (Central Neo-Aramaic, the dialects of the Syriac Orthodox of Tur Abdin), Garshuni (Arabic written in Syriac), and Christian Palestinian Aramaic (also called Palestinian Syriac).

4.1 Base Characters

Base characters are the letters of the alphabet: ܝ ܠ ܒ ܐ etc. In addition to the regular Syriac base characters, *MELTHO* fonts include the following letters:

Character	Keyboard Location		Usage
	Syriac 101	**Syriac Phonetic**	
ܓ	q	f	Garshuni ج (*jim*)
ܖ	e	e	ܕ or ܪ without a dot, used in old Syriac texts
ܜ	y	u	Garshuni ظ (*tha*)
ܩ̈ܝ	o	'	The characters for *Yahweh*
ܧ	c	c	A variant form of ܥ with a tail
ܦ	b	o	Christian Palestinian Aramaic *Pe*
ء	Alt+Ctrl+F	Alt+Ctrl+F	Garshuni *hamzah*

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4.2   Punctuation Marks

MELTHO fonts include traditional punctuation marks (dotted forms) as well as modern ones. Additionally, the fonts include very early Syriac punctuation marks. The following table lists the punctuation marks next to the word ܡܠܬܐ:

Punctuation	Keyboard Location	
	Syriac 101	**Syriac Phonetic**
1. TRADITIONAL MARKS		
ܡܠܬܐ܀	n	,
ܡܠܬܐ.	m	.
ܡܠܬܐ݂	/	/
ܡܠܬܐ݀	\	\
ܡܠܬܐ:			
ܡܠܬܐ	Alt+Ctrl 1	
ܡܠܬܐ	Alt+Ctrl 2	
ܡܠܬܐ	Alt+Ctrl 3	
ܡܠܬܐ	Alt+Ctrl 4	
ܡܠܬܐ	Alt+Ctrl5	
ܡܠܬܐ	Alt+Ctrl 6	
ܡܠܬܐ	Alt+Ctrl 7	
2. MODERN MARKS		
ܡܠܬܐ،	<	
ܡܠܬܐ؛	>	
ܡܠܬܐ؟	?	
ܡܠܬܐ!	!	

4.3   Abbreviation Mark

The abbreviation mark in traditional Syriac, and Modern West Syriac, is a line above the last few letters of a word. For example,

$$ܬܫܒܘ \text{ for } ܬܫܒܘܚܬܐ.$$

To enter the line, hit the ` (single left quote) key before typing the letters upon which you want to place the line, then start typing; the line will extend until you type a SPACE, ENTER or a punctuation mark. For instance, in the above example, type ܬ then ` then ܫ then ܒ then ܘ.

In East Syriac, a punctuation mark follows an abbreviated word, ܈, located on the 'Shift 7' key. For example,

$$ܦܬܝܟܘ ܈$$

4.4   Numerals

The MELTHO fonts include both Arabic and Indic numerals.

4.5   Brackets

The *MELTHO* fonts include various brackets to be used in modern texts and in critical editions.

- [ ] square brackets (on the X and Z keys in the Syriac 101 Keyboard Layout).

- ( ) brackets (on their usual location on the keyboard).

- ≪ ≫ double angle brackets (on the '_' and '*' keys).

- ⌐ ¬ Critical edition brackets (on the 'Alt+Ctrl =' and 'Alt+Ctrl –' keys).

4.6   Crosses

The *MELTHO* fonts include two crosses, designated as East and West Syriac:

- ✝ West Syriac Cross (on the % key).

- ✝ East Syriac Cross (on the ^ key).

4.7   Control Characters

Control characters can be used to modify the shapes of characters when needed:

- ZERO WIDTH JOINER character (on the 'Alt+Ctrl+V' key). Use it to force a contextual form. Examples:

    o To get an initial form of *nun*, type *nun* followed by 'Alt+Ctrl+V'. You will get ܢ.

    o To get a final form of *nun*, type 'Alt+Ctrl+V' followed by *nun*. You will get ܢ.

    o To get an medial form of *nun*, type 'Alt+Ctrl+V' followed by *nun* followed by another 'Alt+Ctrl+V'. You will get ܢ.

If you want to place a mark (vowel, points) on the character, make sure that you type the marks directly after your type the base character. Hence, the sequence *nun*, *pthoho*, 'Alt+Ctrl+V' gives the correct rendering:

$$ ܢ ܰ $$

But the sequence *nun*, 'Alt+Ctrl+V', *pthoho*, gives the wrong rendering (the *pthoho* is on the base line):

$$ ܢ $$

This character can be used to place square brackets in critical edition to indicate missing portions of texts, without having to break a word. For example:

$$ ܟ[ܬܒ]ܐ $$

- ZERO WIDTH NON-JOINER character (on the 'Alt+Ctrl B' key): Use to break the connection between letters. For example, type *nun* then *simkath* then *beth*; you will get

$$ܢܣܒ$$

Now, move the curser between the *simkath* and the *beth* and type 'Alt+Ctrl B' to break the joining; you will get

$$ܢܣ ܒ$$

Note. This non-joined *simkath* appears in some early Syriac manuscripts.

- Left-to-right marker. Use to force left-to-right direction.
- Right-to-left marker. Use to force right-to-left direction.

4.8   Diacritic Marks

The *MELTHO* fonts support numerous diacritic marks. It is <u>crucial</u> that the user understands the fine differences between the various marks. For example, each of the following marks is a dot above a character; however, they differ in shape and usage. (In some fonts, the shape of these dots is more distinctive.)

$$ܵܬ \quad ܿܬ \quad ܸܬ \quad ܹܬ$$

Using the correct diacritic is also crucial when converting between type styles. For example, the diacritic used to indicated the third person feminine verb in West Syriac is a dot next to the *taw* as in

$$ܩܛܠܬ݀$$

However, in East Syriac, the diacritic is two dots below the *taw* as in

$$ܩܛܠܬ݇$$

Note that the diacritic for feminine taw in East and West Syriac is located on the same key (Shift y): the *MELTHO* fonts *know* what sort of dots to put depending on the type style: in Serto, the fonts will place a dot to the left of the *taw*; in East Syriac, the fonts will place two dots below the *taw*.

The following table describes all the marks:

Mark Keyboard Location	Notes

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1. WEST SYRIAC 'GREEK' VOWELS					
◌ͦ T	◌ͦ R	◌ͦ E	◌ͦ W	◌ͦ Q	
◌ͦ G	◌ͦ F	◌ͦ D	◌ͦ S	◌ͦ A	

2. EAST SYRIAC 'DOTTED' VOWELS					
◌ N	◌ B	◌ V	◌ C	◌ X	◌ Z	Do *not* use ◌ or ◌ for a general dot below or above a letter. See item 7 below 'Single Dots'.

3. ܪܘܟܟܐ and ܩܘܫܝܐ				
◌ U	◌ @	◌ M	◌ #	Use ◌ for ܩܘܫܝܐ and ◌ for ܪܘܟܟܐ. Some (West Syriac) modern grammars use circles instead.

4. Lines				
ܬ O	ܒ L	ܟ Alt Ctr U	ܒ Alt Ctr J	

5. Feminine Mark	
◌ Y	Use ◌ for the singular feminine perfect (past tense) after a *taw*. In Serto and Estrangelo, this will result in a dot to the left of the *taw*: ܟܬܒܬ 'she wrote'. In East Syriac, this will result in two dots below the *taw*: ܟܬܒ.

6. *Seyome*, *Rebwe*	
◌ I	

7. Single Dots		
◌ P	◌ ꞉	Use ◌ on the feminine *he* ending: ܟܬܒܗ 'her book', to mark present tense: ܟܬܒ 'he is writing', etc. Use ◌ to mark past tense: ܟܬܒ 'he wrote', etc. **Note**: It is not possible to place the dot between two letters to mark present tense, or past tense.

8. Historical Dots					
◌ K	◌ Alt Ctr I	◌ Alt Ctr O	◌ Alt Ctr K	◌ Alt Ctr L	These dots appear in manuscripts and have been added for completion.

9. Miscellaneous Sings				
◌ {	◌ "	◌ ~	◌ Alt Ctr P	Used in modern dialects: Swadaya, Turoyo, etc.

10. Liturgical Symbols	
◌ }	◌ $	

10. East Syriac *Alaph*	
ܐ H	

11. *Garshuni* (all keys with Alt+Ctrl)	

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ܒ	ܒ	ܒ	ܒ	ܐ̃	ܐ�)̃	ܒ	ܒ	ܓ̃	ܝ	ܒ
Q	W	E	R	T	Y	A	S	G	H	X

4.9 Harklean Symbols

These symbols are used in manuscripts of the Harklean version of the Syriac NT: they are ‾

⁎ ⟍, located on Alt+Ctrl 8, Alt+Ctrl 9, and Alt+Ctrl 0.

5 Typesetting FAQ

This section answers some of the common typesetting questions.

5.1 When I type Syriac, the letters are disconnected.

You do not have the appropriate Unicode Script Processor. Make sure that you install a Microsoft product that supports Syriac, e.g. Office XP or Windows XP.

5.2 How do I break a ligature?

Ligatures are defined in two ways: obligatory and optional. It is up to the application (the program that you are using) to ask the user whether optional ligatures should be used or not. In any case, both obligatory and optional ligatures can be broken using the ZERO WIDTH JOINER character (on the 'Alt+Ctrl+V' key). For example, typing *Lomadh* and *Olaph* in Serto, results in the obligatory ligature

$$\text{ܠܐ}$$

However, typing *Lomadh*, then Alt+Ctrl+V, then *Olaph* breaks the ligature, resulting in

$$\text{ܠܐ}$$

When there is no connection between the two letters forming the ligature, then one needs to use the ZERO WIDTH NON-JOINER character (on the 'Alt+Ctrl+B' key). For example, typing *Lomadh*, then SPACE, then *Olaph* results in the optional ligature

$$\text{ܐ ܠ}$$

However, typing *Lomadh*, then SPACE, then Alt+Ctrl+B, then *Olaph* breaks the ligature, resulting in

$$\text{ܐ ܠ}$$

5.3 How do I enter texts under Windows 95/98/ME?

There is a crude way for entering texts under these platforms; it is recommended only if you are entry small portions of texts. For large texts, it is advisable to obtain Windows 2000/XP.

You can enter texts in an HTML document using the Unicode Hex values for characters. For instances, the hex value for Alaph/Olaph is 0710 and you enter it in HTML as "ܐ" (the semicolon is part of the code). You can then cut and paste this text from your web browser to a Word document. The following example gives the text of ܥܠܬܟ ܚܠܡܐ.

```
<html>
<head>
<title>Hello World in Syriac</title>
</head>
<body>
<p><font face="Estrangelo Talada">
&#x072b;&#x0720;&#x0733;&#x0721;&#x0735;&#x0710;
&#x0725;&#x0735;&#x0720;&#x0721;&#x0733;&#x0710;
</font>
</p>
</body>
</html>
```

6 Converting Texts

This section describes how to convert Syriac texts entered in various programs.

6.1   From Multi-Lingual Scholar (MLS) 3.2

You can convert Syriac texts from MLS 3.2 using the CTIU utility that comes with CTIU. You need to copy the following files that are available on the SyrCOM site to the directory where CTIU resides:

- **syr-uni.tbl:** This is the table that converts Syriac texts written in MLS to Unicode.

- **asciiuni:** This is the table that converts an text written in Latin characters that is mixed with the Syriac text.

- **ctiufix:** This is a program that you need to run after your run CTIU on each file that you convert. It adds the Unicode header to the file that CTIU generated and fixes some other problems.

- **ctiu.dat:** This file has some settings for Syriac conversion and will replace your own copy of CTIU.

To convert a file:

1. Run CTIU from DOS by typing CTIU.

2. Enter the name of the file you want to convert in the "Input File" field (e.g. myfile.mls) then hit Enter. The program should say "Export from MLS".

3. Enter the name of a temporary file in the "Output File" field (e.g. output.tmp) then hit Enter.

4. Select the option "Syriac Unicode" by moving the cursor to it and hitting Enter.

5. After CTIU is done, you should be at the DOS prompt.

6. Now you need to do some fixing to the output.tmp file that was generated by CTIU. Type ctiufix output.tmp myfile.txt (where myfile.txt is the file name of the final result).

Now, you should be able to load the file in Notepad or Word. In both cases, if you see the Syriac text represented by boxes, highlight it and chose a Syriac font.

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The Syriac Computing Center (SyrCOM) of Beth Mardutho is a registered non-profit organization. One of its goals is to provide the Syriac-user community with free software. Please help us bring you updates, new fonts, and other applications free of charge.

Yes! I would like to contribute to future development and improvement of the Meltho Project and other projects. I am sending a donation in the amount of:

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☐ $1000   ☐ $1500   ☐ Other: —————

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☐ Bank Transfer
   Bank Name and Address: Summit Bank, 700 Mountain Ave., Murry Hill, NJ 07974.
   Bank Routing No.: 021202162.
   Account Name: The Syriac Computing Institute.
   Account No.: 4139003090

Your Name: ——————————————————————————

Your Address: ——————————————————————————

Your Email: ——————————————————————————

Which font types do you use?	☐ Estrangelo ☐ Serto (West) ☐ East Syriac
Which Languages do you use the fonts for?	☐ Syriac ☐ Surith/Swaday
	☐ Turoyo ☐ Garshuni
	☐ Christian Palestinian Aramaic
What do you mainly use the fonts for?	☐ Books ☐ Journals
	☐ Newsletters ☐ On-line Documents
	☐ Letters ☐ Engravings (tomb stones!)
	☐ Other: —————————
What other products would you like to see?	—————————————

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