

BYZANTINE MUSIC FORMULAE

First Mode - Heirmologic

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Key:

1 = accented syllable

0 = unaccented syllable

X = syllable that may be either
accented or unaccented

Variations of the same formula
are indicated in color

* The Byzantine music formulae herein were extracted from heirmologic melodies found in the *Zoe Anastasimatarion* (14th edition, 2002).

A) Medial Cadences on Di

Accented on last syllable:

00 $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 0 \end{array}$

$\begin{array}{c} \overset{\lambda}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \overset{\lambda}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 0 \end{array}$

01 $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 1 \end{array}$

$\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \overset{\lambda}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 1 \end{array}$

001 $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 0 \quad 1 \end{array}$

$\begin{array}{c} \overset{\lambda}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 0 \quad 1 \end{array}$

00101 $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 0 \quad 0 \quad 1 \quad 0 \quad 1 \end{array}$

10001 $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 1 \quad 0 \quad 0 \quad 0 \quad 1 \end{array}$

$\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\lambda}{\underset{\text{di}}{\text{di}}} \\ 1 \quad 0 \quad 0 \quad 0 \quad 1 \end{array}$

$\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 1 \quad 0 \quad 0 \quad 0 \quad 1 \end{array}$

X0001 $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ \text{X} \quad 0 \quad 0 \quad 0 \quad 1 \end{array}$

1000X $\begin{array}{c} \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{ — } \overset{\Delta}{\underset{\text{di}}{\text{di}}} \\ 1 \quad 0 \quad 0 \quad 0 \quad \text{X} \end{array}$

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000001

010001

100001

Accented on second to last syllable:

10

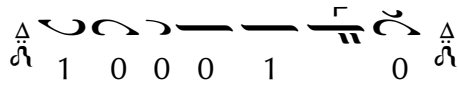
010

0010

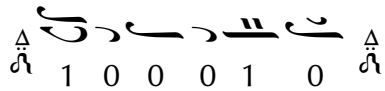
First Mode - Heirmologic

	π		Δ
	η	0 0 1 0	Δ
	π		Δ
	η	0 0 1 0	Δ
00010	Δ		Δ
	η	0 0 0 1 0	Δ
	π		Δ
	η	0 0 0 1 0	Δ
	Δ		Δ
	η	0 0 0 1 0	Δ
10010	Δ		Δ
	η	1 0 0 1 0	Δ
	Δ		Δ
	η	1 0 0 1 0	Δ
	Δ		Δ
	η	1 0 0 1 0	Δ
000010	Δ		Δ
	η	0 0 0 0 1 0	Δ
010010	π		Δ
	η	0 1 0 0 1 0	Δ
	Δ		Δ
	η	0 1 0 0 1 0	Δ
100010	Δ		Δ
	η	1 0 0 0 1 0	Δ
	Δ		Δ
	η	1 0 0 0 1 0	Δ
	Δ		Δ
	η	1 0 0 0 1 0	Δ

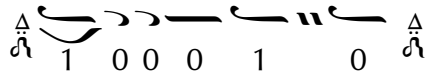
First Mode - Heirmologic



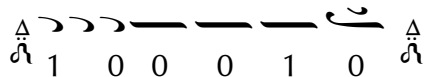
 1 0 0 0 1 0



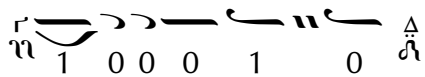
 1 0 0 0 1 0



 1 0 0 0 1 0

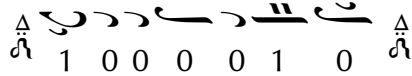


 1 0 0 0 1 0



 1 0 0 0 1 0

1000010



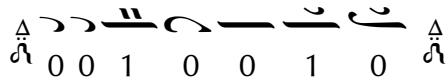
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0010010



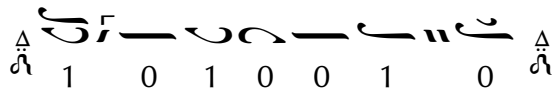
 0 0 1 0 0 1 0

0010010



 0 0 1 0 0 1 0

1010010



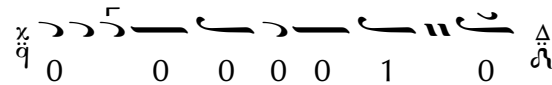
 1 0 1 0 0 1 0

10X0010



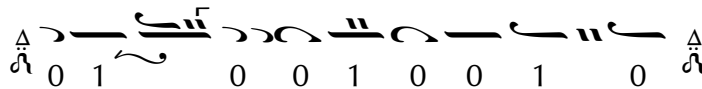
 1 0 X 0 0 1 0

0000010



 0 0 0 0 0 1 0

010010010

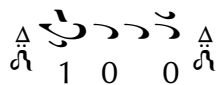


 0 1 0 0 1 0 0 1 0

(The purple notes in this formula are orthographically incorrect, however this combination is frequent in the Zoe Anastasimatarion)

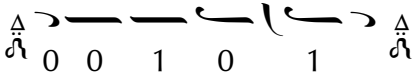
Accented on third to last syllable:

100

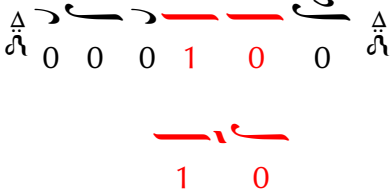


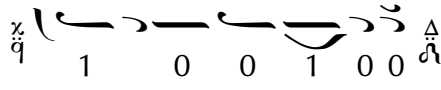
 1 0 0

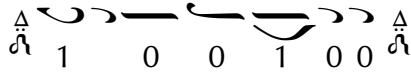
First Mode - Heirmologic

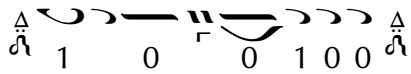
00101 

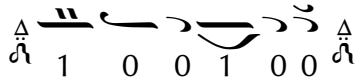
X0100 

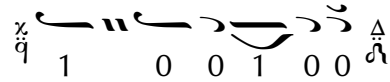
000100 

100100 




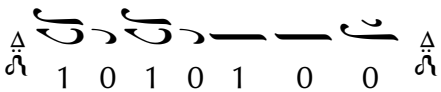


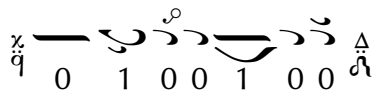


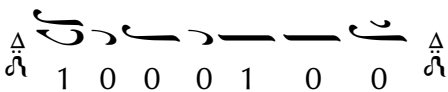




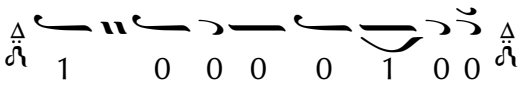


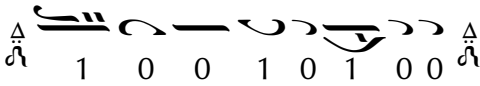
1010100 

0100100 

1000100 

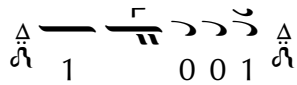
First Mode - Heirmologic

10000100 $\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

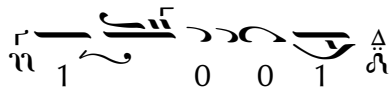
10010100 $\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

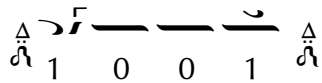
Accented on fourth to last syllable:

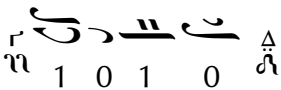
1001 $\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

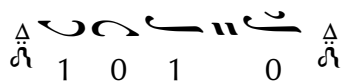
$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

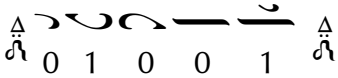
$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

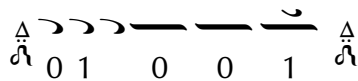
$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

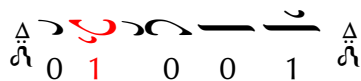
$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

1010 $\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

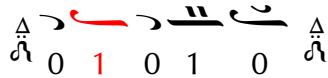
$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

01001 $\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

01010 $\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

$\overset{\Delta}{\underset{\Delta}{\text{A}}}$  $\overset{\Delta}{\underset{\Delta}{\text{A}}}$

 1
 1

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$\overset{\Delta}{\underset{\delta}{\mathcal{A}}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overset{\Delta}{\underset{\delta}{\mathcal{A}}}$

$\overset{\Delta}{\underset{\delta}{\mathcal{A}}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overset{\Delta}{\underset{\delta}{\mathcal{A}}}$

001001

$\overset{\pi}{\underset{\eta}{\mathcal{A}}} \text{ } \overline{\text{0}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overset{\Delta}{\underset{\delta}{\mathcal{A}}}$

001010

$\overset{\Delta}{\underset{\delta}{\mathcal{A}}} \text{ } \overline{\text{0}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overline{\text{1}} \text{ } \overline{\text{0}} \text{ } \overset{\Delta}{\underset{\delta}{\mathcal{A}}}$

B) Medial Cadences on Ke

Accented on last syllable:

001 $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{0} \overline{0} \overline{1} \begin{array}{c} \acute{\alpha} \\ \grave{\alpha} \end{array}$

1001 $\begin{array}{c} \Delta \\ \acute{\alpha} \end{array} \overline{1} \overline{0} \overline{0} \overline{1} \begin{array}{c} \acute{\alpha} \\ \grave{\alpha} \end{array}$

00001 $\begin{array}{c} \Delta \\ \acute{\alpha} \end{array} \overline{0} \overline{0} \overline{0} \overline{0} \overline{1} \begin{array}{c} \acute{\alpha} \\ \grave{\alpha} \end{array}$

Accented on second to last syllable:

10 $\begin{array}{c} \Delta \\ \acute{\alpha} \end{array} \overline{1} \overline{0} \begin{array}{c} \acute{\alpha} \\ \grave{\alpha} \end{array}$

010 $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{0} \overline{1} \overline{0} \begin{array}{c} \acute{\alpha} \\ \grave{\alpha} \end{array}$

0010 $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{0} \overline{0} \overline{1} \overline{0} \begin{array}{c} \acute{\alpha} \\ \grave{\alpha} \end{array}$

D) Medial Cadences on Pa

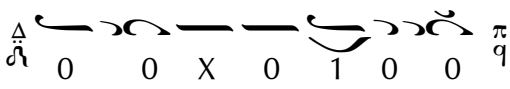
Accented on last syllable:

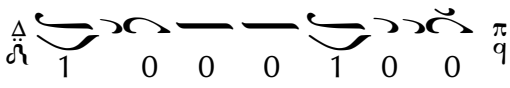
01	$\begin{array}{c} \pi \\ \text{q} \end{array} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{1} \quad \text{q}$
001	$\begin{array}{c} \Delta \\ \text{d} \end{array} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{0} \quad \text{1} \quad \text{q}$
010001	$\begin{array}{c} \Gamma \\ \text{u} \end{array} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{0} \quad \text{0} \quad \text{1} \quad \text{q}$
0010001	$\begin{array}{c} \Delta \\ \text{d} \end{array} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \quad \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{0} \quad \text{0} \quad \text{1} \quad \text{q}$
10010001	$\begin{array}{c} \Delta \\ \text{d} \end{array} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{1} \quad \quad \text{0} \quad \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{0} \quad \text{0} \quad \text{1} \quad \text{q}$

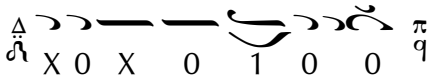
Accented on second to last syllable:

010	$\begin{array}{c} \Delta \\ \text{d} \end{array} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{q}$	
	$\begin{array}{c} \Delta \\ \text{d} \end{array} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{q}$	$\overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{1}$
	$\begin{array}{c} \Gamma \\ \text{u} \end{array} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{q}$	
0010	$\begin{array}{c} \Gamma \\ \text{u} \end{array} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \text{0} \quad \text{1} \quad \quad \text{0} \quad \text{q}$	
00010	$\begin{array}{c} \pi \\ \text{q} \end{array} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \quad \text{0} \quad \text{0} \quad \text{1} \quad \text{0} \quad \text{q}$	
0X010	$\begin{array}{c} \pi \\ \text{q} \end{array} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \overbrace{\quad} \quad \pi \\ \text{0} \quad \quad \text{X} \quad \text{0} \quad \text{1} \quad \text{0} \quad \text{q}$	

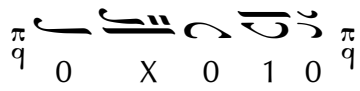
First Mode - Heirmologic

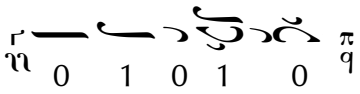
00X0100 $\overset{\Delta}{\underset{\delta}{\text{r}}}$  $\overset{\pi}{\text{q}}$

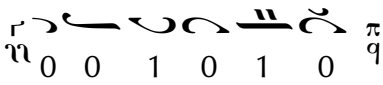
1000100 $\overset{\Delta}{\underset{\delta}{\text{r}}}$  $\overset{\pi}{\text{q}}$

X0X0100 $\overset{\Delta}{\underset{\delta}{\text{r}}}$  $\overset{\pi}{\text{q}}$

Accented on fourth to last syllable:

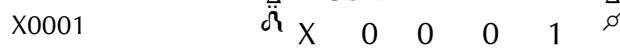
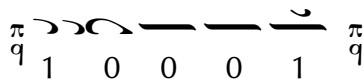
0X010 $\overset{\pi}{\text{q}}$  $\overset{\pi}{\text{q}}$

01010 $\overset{\pi}{\text{q}}$  $\overset{\pi}{\text{q}}$

001010 $\overset{\pi}{\text{q}}$  $\overset{\pi}{\text{q}}$

E) Formulae with Fthores

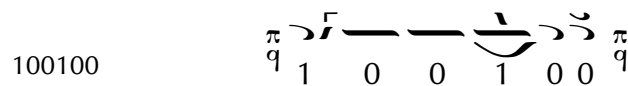
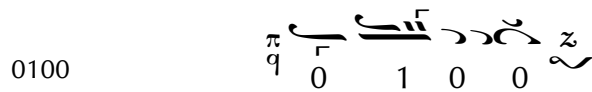
Accented on last syllable:



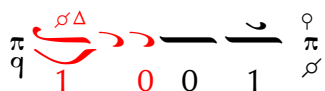
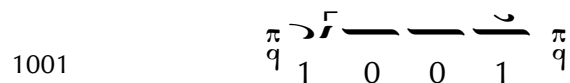
Accented on second to last syllable:



Accented on third to last syllable:

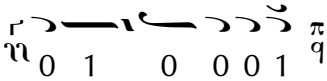
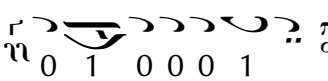


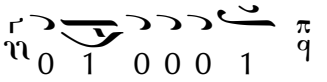
Accented on fourth to last syllable:

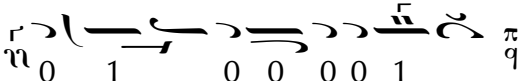


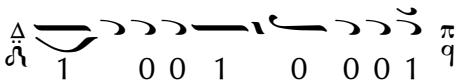
F) Ending Formulae

Accented on last syllable:

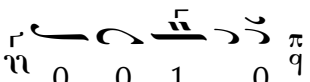
010001  

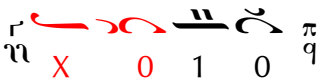
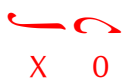


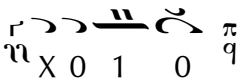
0100001 

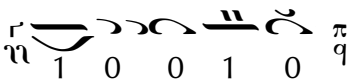
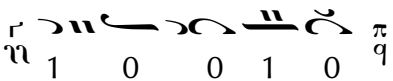
10010001 

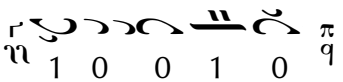
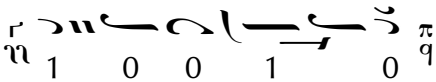
Accented on second to last syllable:

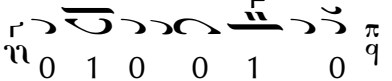
0010 

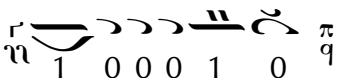
X010  




10010  

010010 

100010 

First Mode - Heirmologic

0100010 

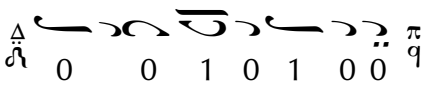
Accented on third to last syllable:


0100 


00100 

100100 

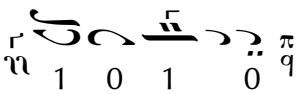



0010100 

1000100 

1010100 

Accented on fourth to last syllable:

1010 

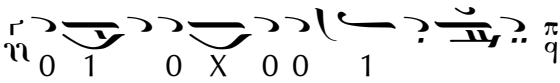
X010 

G) Endings for Theotokia*

Accented on last syllable:


(Also use formulae ending in 100)


From Ga


010X001  Musical notation for 010X001. It consists of a sequence of notes with rhythmic values 0, 1, 0, X, 0, 0, 1. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

Accented on second to last syllable:

From Ga

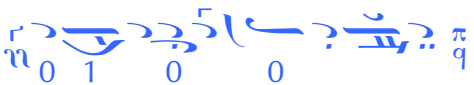
10010  Musical notation for 10010. It consists of a sequence of notes with rhythmic values 1, 0, 0, 1, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.


010010  Musical notation for 010010. It consists of a sequence of notes with rhythmic values 0, 1, 0, 0, 1, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

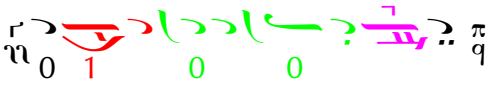
10100010  Musical notation for 10100010. It consists of a sequence of notes with rhythmic values 1, 0, 1, 0, 0, 0, 1, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

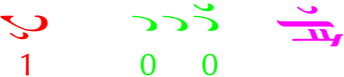
Accented on third to last syllable:

From Ga

0100  Musical notation for 0100. It consists of a sequence of notes with rhythmic values 0, 1, 0, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

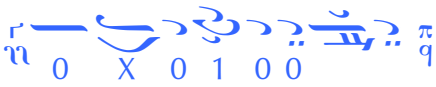
 Musical notation for 0100. It consists of a sequence of notes with rhythmic values 0, 1, 0, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

 Musical notation for 0100. It consists of a sequence of notes with rhythmic values 0, 1, 0, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

 Musical notation for 0100. It consists of a sequence of notes with rhythmic values 1, 0, 0. The notes are connected by lines, and there are various ornaments above them. The sequence ends with a double bar line and the letters π and ρ.

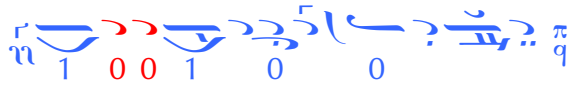
* The formulae in blue in this section are from the Athonite oral tradition, as represented in the book *Παρακλητικῆς, Μουσικὸν Ἐγκόλπιον, Πλάγιοι Ἦχοι, Ἱεροθέου Ἱερομονάχου, ἐκδόσεις Ἱ.Μ. Φιλοθέου, Ἅγιον Ὄρος, 2004.*

First Mode - Heirmologic

0X0100 


100100 








0010100 

0100100 

From Di

100100 

Accented on fourth to last syllable:

From Ga

0101001 