

## Extended Scala format for Misha

See Setup/Scales for information on the Scala format.

Any scala-formatted file can be read by Misha. However, an extended version of the format must be used in order to bring in information about modes.

The scala format document states that all commented lines should be ignored, with the exception of the first line. It states, “put the filename on the first line behind an exclamation mark.” We will be using information within the comments to load information into Misha, so any scala file you create for Misha should be readable by any scala reader.

The standard format is going to be:

! Tag: data

! Index: data

A Misha block definition will start with the following comment.

! Misha: Start

It will end the block definition with this comment.

! Misha: End

- Everything between these block definitions should be relevant data to Misha.
- There shouldn't be empty lines within a block definition.
- It will ignore spaces after a '!'. There doesn't need to be a space.
- It will ignore spaces before and after a ':'. There doesn't need to be a space.
- It will ignore a commented line that it doesn't recognize as a tag.
- With the exception of the Start/End tags, all other tags can be left out and are not required.
- The Misha comment block definition can technically happen anywhere in the file except the first line, which is reserved for the filename. We are currently choosing to put it at the end of the file, but you could put it at the top of the file after the first line.

## Tag List

This is a list of supported tags.

Tag	Data	Description
Misha	Start	Starts a Misha block definition.
Misha	End	Ends a Misha block definition.
Name	<name>	<p>&lt;name&gt;: Name for the Scala scale defined in this file. This is the name Misha will display on the LCD for this file. If this is not defined, it will use the first 10 characters of the filename defined on the first commented line of the file.</p> <p>Max Length: 10 characters</p>
CStep	<chromatic step>	<p>&lt;chromatic step&gt;: 0 - 127</p> <p>Plus/Minus chromatic step when either a chromatic or shift button is pressed.</p>
PBStep	<pitch bend step>	<p>&lt;pitch bend step&gt;: 0 - 4095</p> <p>Plus/Minus pitch bend step when either a chromatic or shift button is pressed.</p>
Modes	<number>	<p>&lt;number&gt;: 0 - Number Of Notes</p> <p>This starts a definition for the modes of the scale. It specifies how many modes are to follow with the maximum being the number of notes to the scale. The number of modes specified should immediately follow this tagline. In the form:</p> <p>Index: Name (See Mode List below)</p>

## Mode List

A scale can have as many modes as there are notes in the scale. This describes how to assign a list of modes for the scale.

A mode list is started by using the following tag.

! Modes: 7

The modes will be listed after this with the following comment tag.

! Index: Name

- Index - The zero based index of the scale degree to start the mode on.
- Name - A 10 character limit alphanumeric name for the mode.

Example:

! Modes: 7

! 0:Ionian

! 1:Dorian

! 2:Phrygian

! 3:Lydian

! 4:Mixolydian

! 5:Aeolian

! 6:Locrian

### **File Examples**

#### *Major Scale*

This example shows all the tag information possible.

! Major.scl

!

Major Scale

7

!

200.0

400.0

500.0

700.0

900.0

1100.0

1200.0

! Misha: Start

! Name: Major

! CStep: 1

! PBStep: 0

! Modes: 7

! 0: Ionian

! 1: Dorian

! 2: Phrygian  
! 3: Lydian  
! 4: Mixolydian  
! 5: Aeolian  
! 6: Locrian  
! Misha: End

### *Blues Scale*

In this example:

- Shows that extra comments can be placed around a Misha block.
- Shows that you don't have to list all the tags or have a mode for every degree.

```
! blues.scl
!  
Blues Scale
6
!  
200.0
300.0
400.0
700.0
900.0
1200.0
!  
!  
!scale number 2741 interval sequence: 2212221
!  
! Misha: Start
! Name: BLUES
! Modes: 2
! 0: MAJOR/BLU
! 5: MINOR/BLU
! Misha: End
```

### *Octatonic Scale*

In this example:

- "Name" is not specified.
- The name will be "Octatonic" taken from the first 10 characters not including ".scl" from the first line of the file.

! Octatonic.scl

!

Octatonic Scale

8

!

200.0

300.0

500.0

600.0

800.0

900.0

1100.0

1200.0

!

! Misha: Start

! Modes: 2

! 0: OCT/WHOLE

! 1: OCT/HALF

! Misha: End

### *20 note equal tempered scale*

In this example:

- The filename is completely different from the name given in the Misha block.
- No modes are defined in the Misha block.
- There are no spaces in the Misha block, with the exception of the name.

```
! twenty_equal_temp.scl
```

```
!
```

```
20 note equal tempered scale
```

```
20
```

```
!
```

```
60.0
```

```
120.0
```

```
180.0
```

```
240.0
```

```
300.0
```

```
360.0
```

```
420.0
```

```
480.0
```

```
540.0
```

```
600.0
```

```
660.0
```

```
720.0
```

```
780.0
```

```
840.0
```

```
900.0
```

```
960.0
```

```
1020.0
```

```
1080.0
```

```
1140.0
```

```
1200.0
```

```
!
```

```
!Misha:Start
```

```
!Name:20 Note
```

```
!CStep:0
```

```
!PBStep:1229
```

```
!Misha:End
```

## 11 Note chromatic scale

In this example:

- Scale number and Interval sequence lines added before Misha:Start line
- Scala pitch lines also contain text showing the scale step ("b2", etc.)
- Mixed case text for "Modes"
- Spacing after index number corrected

```
!E2matic.scl
```

```
!
```

```
Chromatic Undecatonic scale
```

```
11
```

```
!
```

```
100.00  b2
```

```
200.00  2
```

```
300.00  b3
```

```
400.00  3
```

```
500.00  4
```

```
600.00  b5
```

```
700.00  5
```

```
800.00  b6
```

```
900.00  6
```

```
1000.00 b7
```

```
1200.00 8va root
```

```
! Scale number: 2047
```

```
! Interval sequence 1: 11111111112
```

```
! Misha: Start
```

```
! Name: E2matic
```

```
! Modes: 11
```

```
! 0: E2matic 1
```

```
! 1: E2matic 2
```

```
! 2: E2matic 3
```

```
! 3: E2matic 4
```

```
! 4: E2matic 5
```

```
! 5: E2matic 6
```

```
! 6: E2matic 7
```

```
! 7: E2matic 8
```

```
! 8: E2matic 9
```

```
! 9: E2matic 10
```

! 10: E2matic 11

! Misha: End

*Scale with no modes*

In this example:

- When a scale has no modes, no Misha lines are generated

!Whole.scl

!

test of scale with no modes

6

!

200.00 2

400.00 3

600.00 b5

800.00 b6

1000.00 b7

1200.00 8va root

! Scale number: 1365

! Interval sequence 1: 222222

*Scale with fewer modes than steps*

In this example:

- Within the Misha section of the file, only the lines corresponding to valid modes are filled.
- The valid modes are listed in consecutive order starting at index zero.
- The lines for the steps without modes are left blank
- The “! Misha: End” line follows the last blank line. (This will run on Misha with the blank lines in the file. It is a simple manual edit to remove the blank lines if that is desirable.)
- Note that this example also includes the name, “Messian 7” which is at the max character count (10) for display on Misha

!Messiaen 7.scl

!

test of scale with more steps than modes (custom names)

10

!



100.00 b2  
200.00 2  
300.00 b3  
500.00 4  
600.00 b5  
700.00 5  
800.00 b6  
900.00 6  
1100.00 7  
1200.00 8va root  
! Scale number: 3055  
! Interval sequence 1: 1112111121  
! Misha: Start  
! Name: Messiaen 7  
! Modes: 5  
! 0: Messian 7  
! 1: Mess 7 R1  
! 2: Mess 7 R2  
! 3: Mess 7 R3  
! 4: Mess 7 R4

! Misha: End

Note: If a scala file has a Misha block that is corrupt in some way, then it will not load.