MP3 player User Manual

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1. Keys and Functions

In this section the integrated functions in the MP3 design are presented as well as the respective keypad keys that make the system work properly. In an initial state, immediately after the bit file is uploaded to the FPGA, the LCD screen in empty and waiting for a turning on action. This is achieved by pressing the next/previous song key, and every time after this, the playing button needs to be pressed in order to listen to the song. Then the first song name appears on the screen, entering the stopped state, and every action after occurs as explained in the following table.

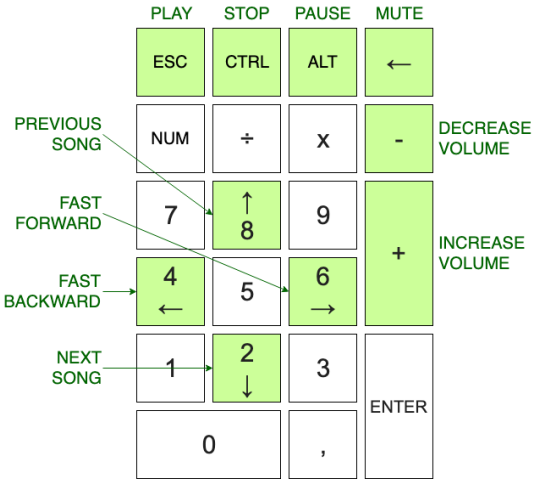

Fig.1 - Keypad map

Function	Key	Description
Play	ESC	▫ The song present on the LCD screen starts to play ▫ The playing percentage starts to count on the display ▫ This key needs to be pressed after changing the song
Stop	CTRL	▫ The song that is playing stops and the system goes back to the idle state
Pause	ALT	▫ When the letter P appears on screen, it means that the song that is playing is paused (decoding and playing are paused) ▫ When pressing the ALT key a second time, the P disappears from the screen and the playing process will continue from the same point on the song
Mute	←	▫ When the letter M appears on screen, it means that the song that is playing is muted (decoding and playing are still running) ▫ When pressing the ← key a second time, the M disappears from the screen and the song is audible again
Previous Song	8	▫ The name of the previous song is displayed on screen and ready to be played
Next Song	2	▫ The name of the next song is displayed on screen and ready to be played
Increase Volume	+	▫ The playing volume increases uniformly on both right and left channels

		▫ The volume percentage blinks in the upper right corner every time the key is pressed
Decrease Volume	-	▫ The playing volume decreases uniformly on both right and left channels ▫ The volume percentage blinks in the upper right corner every time the key is pressed
Fast Forward	6	▫ The song is fast forward roughly 3 seconds ▫ When the key is pressed, a forwards arrow icon appears in the right upper corner of the screen
Fast Backward	4	▫ The song is fast backward roughly 3 seconds ▫ When the key is pressed, a backwards arrow icon appears in the right upper corner of the screen

2. LCD screen

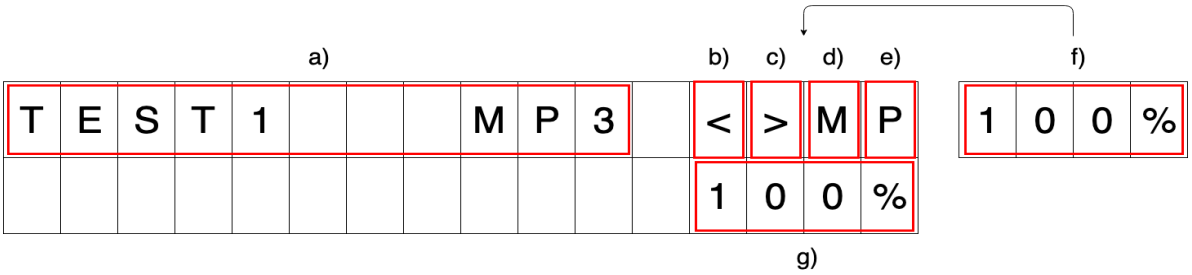

Fig.2 - LCD screen display of information and respective positions

a) Song title (position [1x1, 1x11])
b) Fast backward arrow icon (position [1x13])
c) Fast forward arrow icon (position [1x14])
d) Mute symbol (position [1x15])
e) Pause sybol (position [1x16])
f) Volume percentage (position [1x13, 1x16])
g) Playing percentage (position [2x13, 2x16])