Analog Keyboard

a.k.a. Resistive Keyboard

This approach connects several buttons to one pin of microcontroller and functions as voltage divider.

Personal opinion: this is reasonable only, if there is a warranty that simultaneously only one button can be used. Like in 5-way navigation switches.

Uses analog pin (Analog-to-Digital Converter)

# In series

|  |  |
| --- | --- |
| Pull-Up | Pull-Down |
|  |  |
| U1 > U2 > U3 > U4 > U5 > ... > Ux | Ux > ... > U5 > U4 > U3 > U3 >U2 > U1 |

For case, where equal voltage spacing between button is required, resistor values are calculate as:

Where is the index of resistor to calculate, is total number of buttons.

# In parallel

|  |  |
| --- | --- |
| Pull-Up | Pull-Down |
|  |  |
|  |  |

# Combined

Diagram, schematic

Description automatically generated

This schematic can be used for "equilibrating" voltage interval between buttons, but using same values of resistors:

* = 10KΩ
* = = 1KΩ

# Online tutorials

Great tutorial by Виктор Кравченко[[1]](#footnote-1) and his demo[[2]](#footnote-2)

Making the analog keyboard with R-2r dividers: <https://www.youtube.com/watch?v=APwnDlavXlw>

1. http://codius.ru/articles/221 [↑](#footnote-ref-1)
2. https://www.youtube.com/watch?v=D1ePE0Uq0Og [↑](#footnote-ref-2)