



# **iJRASET**

International Journal For Research in  
Applied Science and Engineering Technology



---

# **INTERNATIONAL JOURNAL FOR RESEARCH**

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

---

**Volume:** 10    **Issue:** VII    **Month of publication:** July 2022

**DOI:** <https://doi.org/10.22214/ijraset.2022.46044>

**[www.ijraset.com](http://www.ijraset.com)**

**Call:** ☎ 08813907089

**E-mail ID:** [ijraset@gmail.com](mailto:ijraset@gmail.com)

# Resistive Ladder Network in Handle Bar Switch Assembly

Ashish Chaudhary<sup>1</sup>, Dinesh singh<sup>2</sup>

<sup>1</sup>Engineer, Research &Development, Napino Auto & Electronics Ltd.

<sup>1</sup>Masters in automobile engineering (2022-2024)

<sup>2</sup>Sr.General Manager, Research &Development, Napino Auto & Electronics Ltd.

**Abstract:** An switching interface of handle bar assembly LH-RH, where it comprise a switching network have a input terminal Coupled with an input voltage supply, an output terminal. The interface network comprises of series of resistance having a predertmined values,i.e each of switches present on handle bar LH as well as in RH are coupled in between input & output terminal which are used to evaluate a particular voltage value band when it get connect with 12 V voltage DC source .

The switching interface further comprising or include a controller which gets input from the output terminal of interface Network when any of the switch is closed.After evaluating the total resistance at output terminal across interface (When any of switch is pressed) comparing the output Voltage with the supplied one .we can evaluate the voltage Ratio which reprints which button is pressed.

**Keywords:** Resistive network, voltage, battery source, controller.

## I. INTRODUCTION

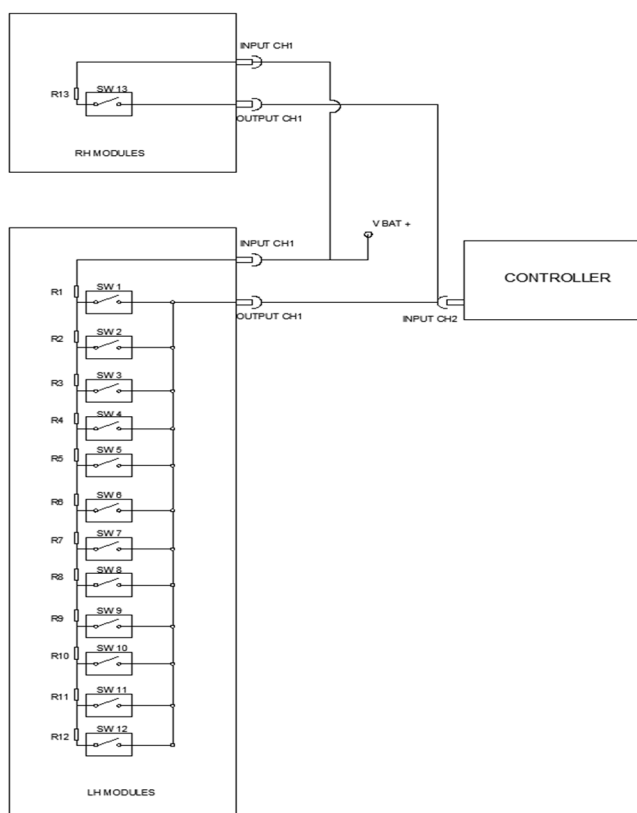


Fig. 1

This pictorial representation of invention indicates the Switch interface of modules comprises of module in LH side

- 1) High –low-pass beam module.
- 2) Selector D-pad module (up , down , left ,right ,ok)
- 3) Winker with hazard module.
- 4) Horn module On the other hand RH side comprises of
- 5) Engine kill with start module.

## II. OVERVIEW OF THE INVENTION

Over the Era, in a vehicle there are lot category of switch Are in field i.e. high current, low current and then specs are freezes then we jumped to mechanism like see saw, hinged, push-to on /off etc. as these are specification are as per the customer requirement , over which the vehicle are built. But the major drawbacks of these each of mechanism will leads to major development of parts which makes the concepts not economical for clients.

Then we need to figure it out what can we conclude to make an optimize solution in terms of development as well as can be kept Common for the rest of mechanism.

This innovation will leads to counter all the major drawbacks which we have faced in above mentioned concepts, Majorly the innovation covers the elimination of internal mechanical parts & the wires which is used in bulk.

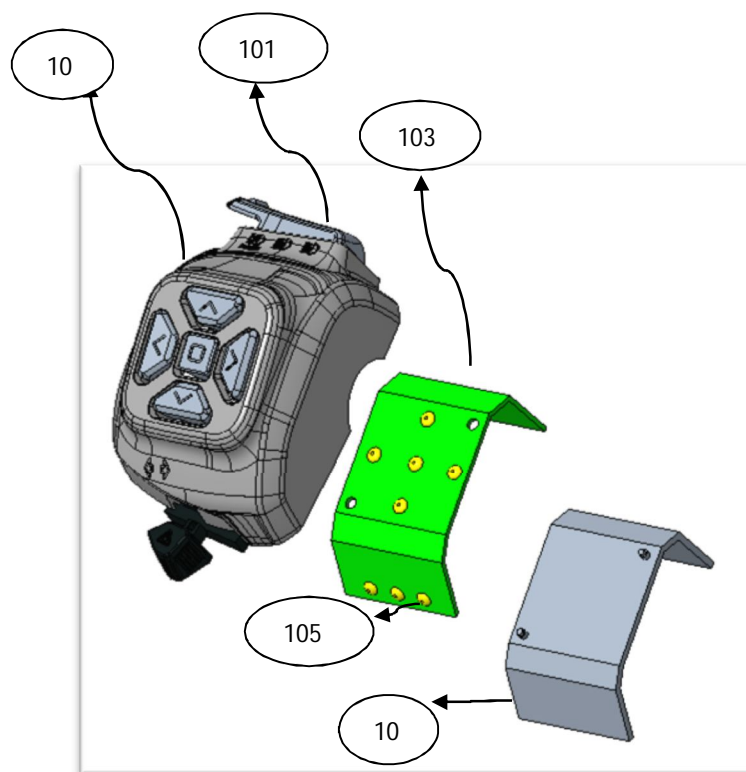


Fig. 2

## III. SUMMARIZATION

Invention of this concepts is applied in the handle bar switch interface working on principle on voltage computation, when a voltage is coupled with input terminal with the flow of voltage in switch resistance network .as the resistance are connected in Series when any of the switch is pressed i.e. pressing of me chanical dome. For a dapped sound. Which is soldered over track over flex PCB having input and output terminals at the end of flex PCB board with the connector. When the mechanical dome is pressed the rest of the resistance connected in series will overcome when supply voltage is applied.

We get a final output in term of voltage .which later on configured with controller. And desired function can be ON.

#### IV. DESCRIPTION OF DRAWINGS

In Fig1

We have illustrated that series of resistance are

Representing no of Switch Bridge, connected with common source  $V_{bat} + 12\text{ V dc}$  source.

And net output is input of controller which turn on the desired function.

Fig.2

We have showcased an generalised view of switches incorporated with flexible PCB over which dome shaped mechanical contact are placed flex PCB is having substantially resistance whose values are already Predetermined .

100 represents: case of handl bar switch assembly.

101: modules

103: flexible PCB with connected track (I/P & O/P)

105: Mechanical Dome.

106: PCB holder.

#### V. CONCLUSION

Handle Bar Switch Assembly Work On Resistive Ladder Switch Interface Network When Connected With A Source (+12 V DC, +5 V DC). Final Output Voltage Which Computed /Evaluated after Overcoming the Series of Rest Resistance .To make the Function On.





10.22214/IJRASET



45.98



IMPACT FACTOR:  
7.129



IMPACT FACTOR:  
7.429



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24\*7 Support on Whatsapp)