

# Diamond eye sensor

- Diamond eye sensor bar was opened and examined

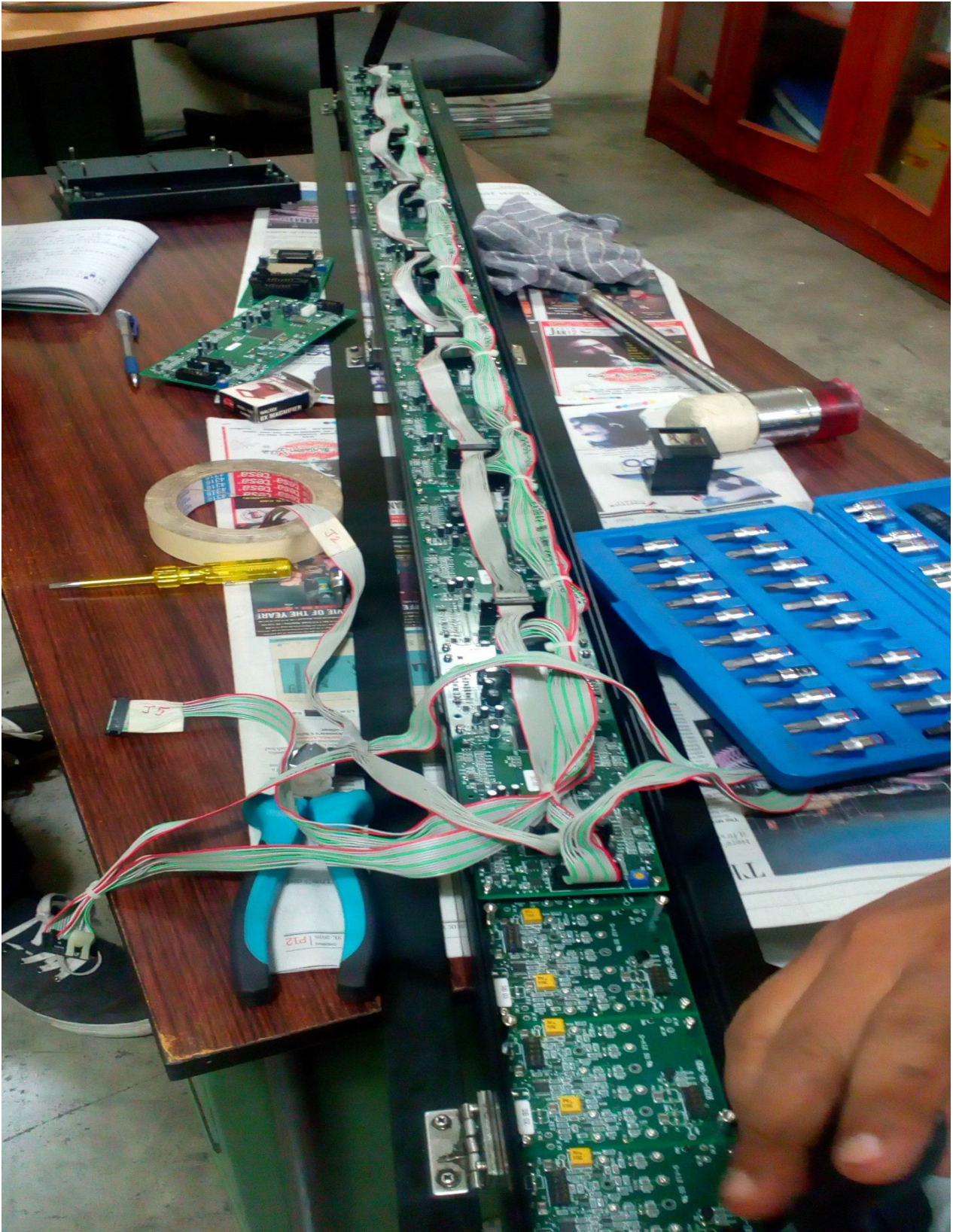


Fig 1.1 Inside view of diamond eye sensor bar



- The circuit board at the backside of the sensor bar consists of five connecting terminals such as J1,J2,J3,J4 and J5.
- J1 connector is used for sensor cable
- J2 is used as control signal connector for all SC boards from SC01 to SC09.
- J3 connector is used as power signal for SC01,SC04 and SC07 boards.
- J4 connector is used as power signal for SC02,SC05 and SC08 boards.
- J5 connector is used as power signal for SC03,SC06 and SC09 boards.

## SC board

- The sensor bar consists of nine SC boards from SC01 to SC09.
- Each SC board controls three SB boards such as SC01 control SB01,SB02 and SB03.

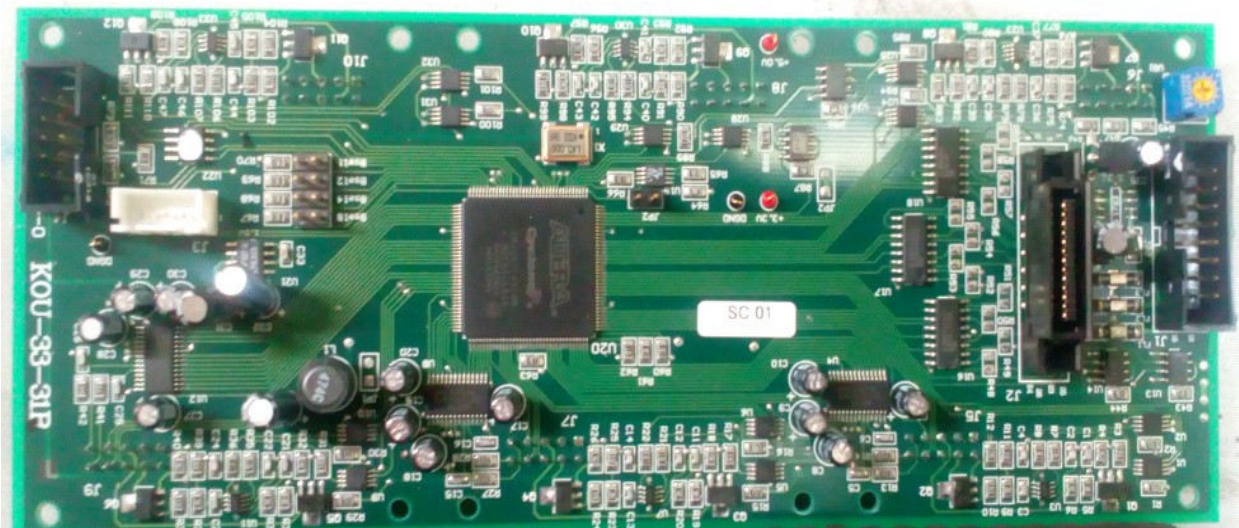


Fig1.2.Front view of SC board

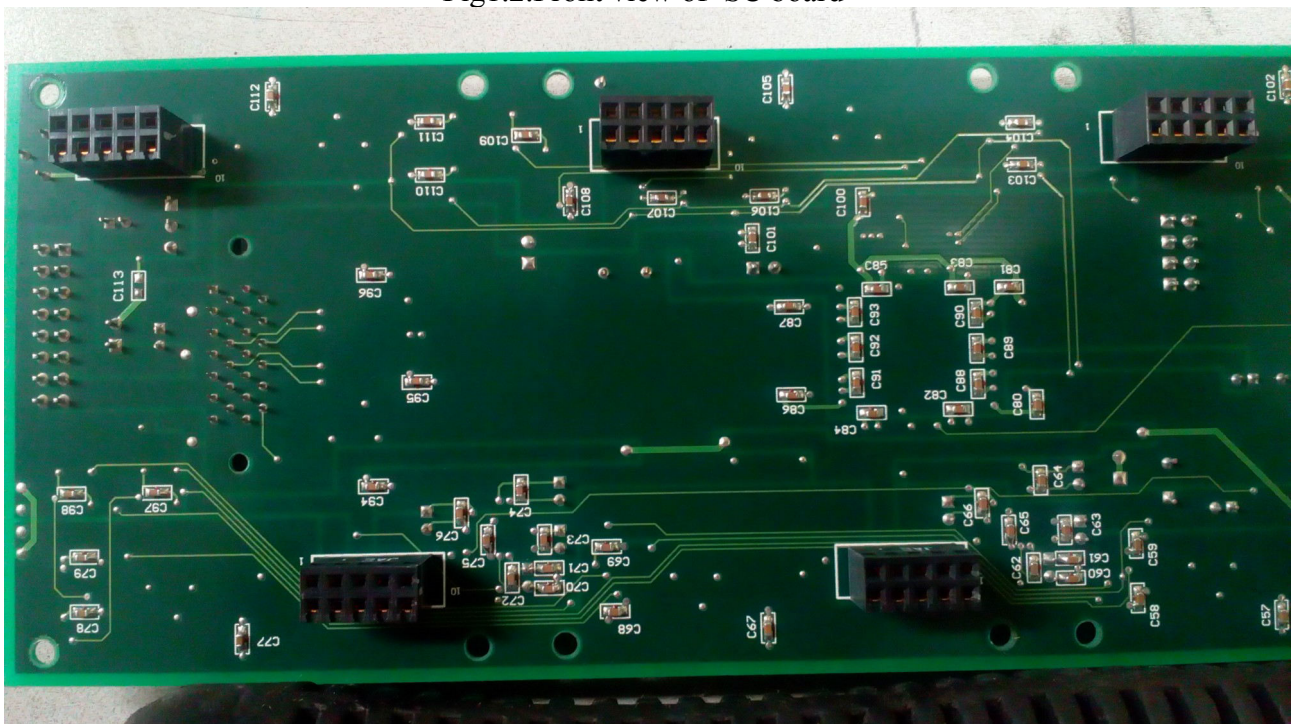


Fig 1.3 Bottom view of SC board

- The following IC's are used in SC board, The corresponding IC datasheets are uploaded to one drive and link is shared at the end of the document.

- Altera cyclone EPIC6T144C8N
- AD9235 BRUZ-20
- JM02AFE3
- 5402 EVA
- AADB
- LQQ
- 7W14F 7A
- JM02AFE3 DS26LV32A TM
- JM01ADE3 D326LV31 TM
- 176315 027
- LTBAE3
- Addressing for SC Board is given by using jumper connections



- In this, when jumper is provided, it is LOGIC 1. Absence of jumper indicates LOGIC 0.
- So If Jumper is provided in Bsel2 alone , it means (Bsel8,Bsel4,Bsel2,Bsel1 = 0010) ie 0010 address is selected.
- Starting address is 0000 ie used for SC01 board. So 0001 goes for SC02 board and so on to 1000 address for SC09.

## SB Board

- The sensor bar consists of 27 SB boards from SB01 to SB27
- Each SB board consists of 6 red,infrared,blue and green led's.
- In the backside six red and six infrared led's are placed on the top side whereas six blue and six green led's are placed on the bottom side.Six receivers are placed on the center.
- 30V power supply is taken from the board for green and blue led's.
- 20V power supply is taken from the board for red and infrared led's.





Fig1.4 Backside view of SB board

- The following IC's are used in SB(KOU-33-30) board .The corresponding IC datasheets are uploaded to one drive and link is shared at the end of the document.
- ADG708 BRUZ #028
- AADB
- 05MXNCETL4-31CT1

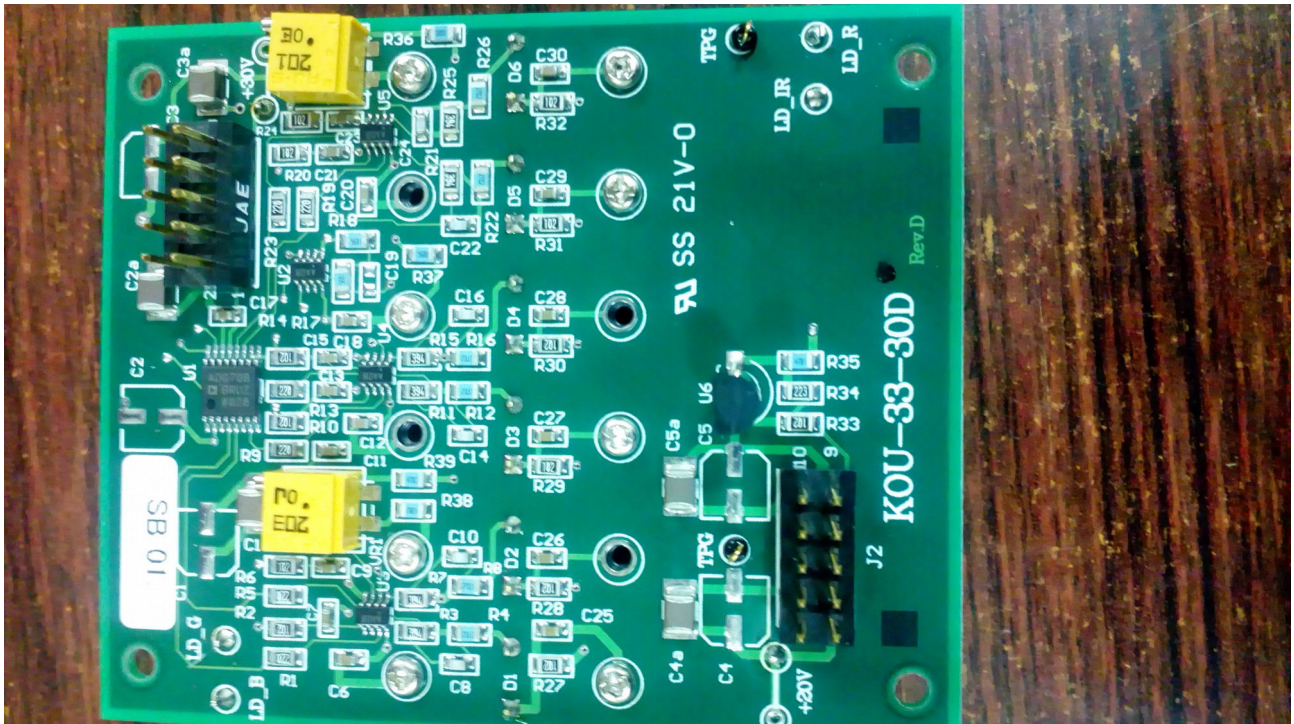


Fig 1.5 Front view of SB board

One drive link : [https://thehindu-my.sharepoint.com/personal/presselec\\_thehindu\\_co\\_in/\\_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fpresselec\\_thehindu\\_co\\_in%2FDocuments%2FDiamond%20eye%20sensor%20bar](https://thehindu-my.sharepoint.com/personal/presselec_thehindu_co_in/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fpresselec_thehindu_co_in%2FDocuments%2FDiamond%20eye%20sensor%20bar)

File location : Diamond eye sensor bar folder in press elec one drive