

# AR0237\_iBGA80\_Demo3Head

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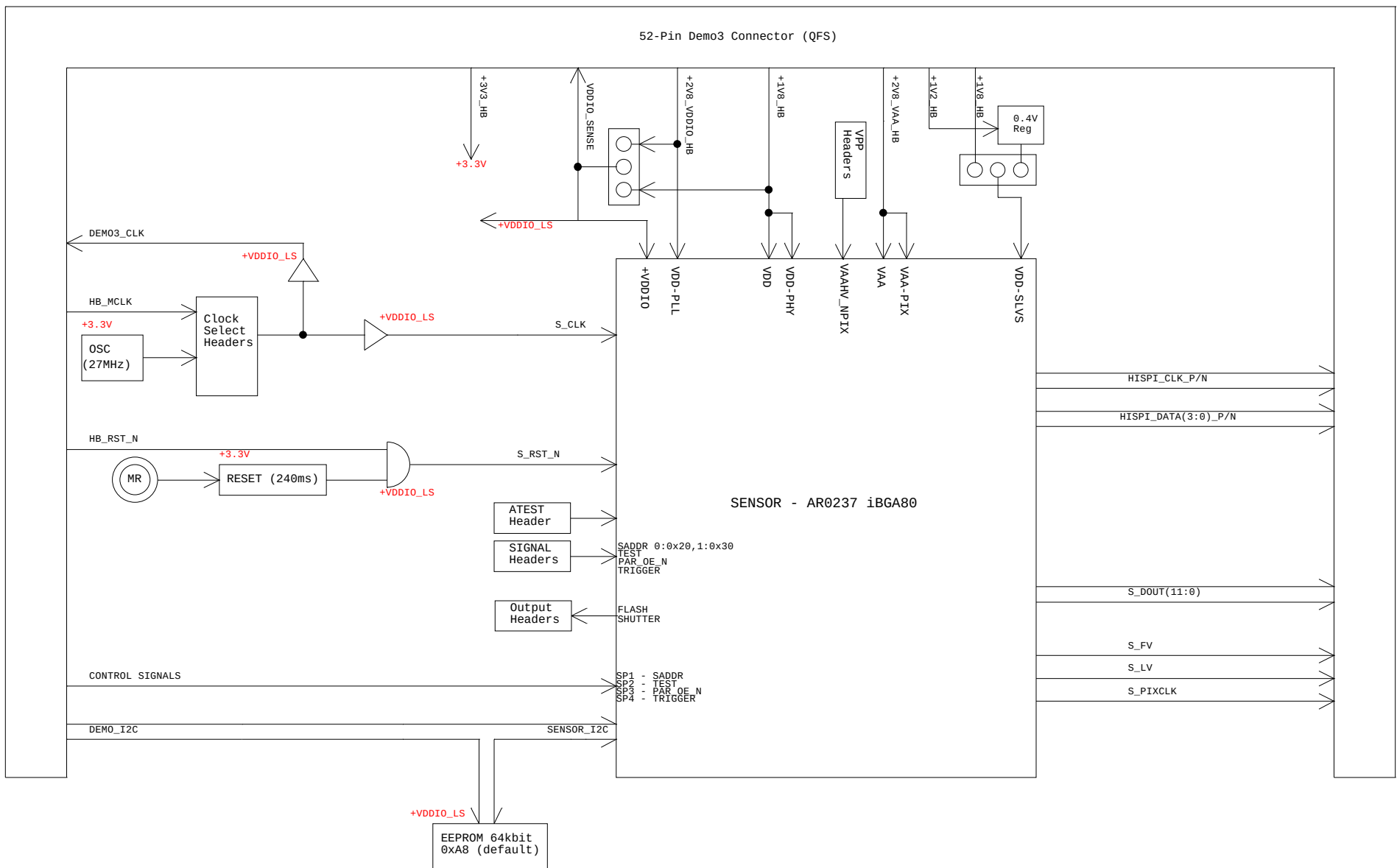
| Rev     | Who    | Date     | Description                                                                                                                                                               |
|---------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rev 0.0 | aralex | 06/10/15 | Initial schematic taken from AR0230 IBGA 80 demo3 HB design because the pinout is the same.<br>Changed P3 from 2 pin header to 3 pin header<br>Added R50, P30; Deleted R8 |
|         |        | 06/12/15 | Updated with the new Sensor part for AR0237                                                                                                                               |



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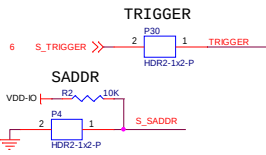
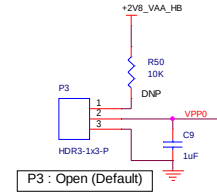
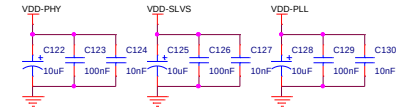
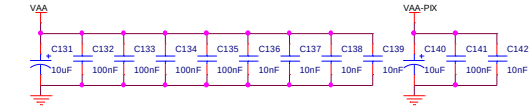
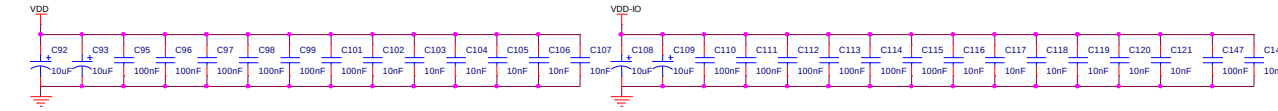
| TITLE PAGE                  |  |              |  |
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# Block Diagram

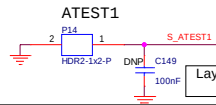
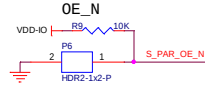
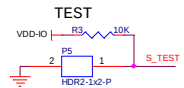


# Sensor

|           |  |           |       |
|-----------|--|-----------|-------|
| +5V0      |  | +5V0      | 4     |
| +3V3      |  | +3V3      | 4.5   |
| +VDDIO_LS |  | +VDDIO_LS | 4,5,6 |
| VDD       |  | VDD       | 4     |
| VDD-ID    |  | VDD-ID    | 4     |
| VDD-PHY   |  | VDD-PHY   | 4     |
| VDD-SLVS  |  | VDD-SLVS  | 4     |
| VDD-PLL   |  | VDD-PLL   | 4     |
| VAA       |  | VAA       | 4     |
| VAA-PIX   |  | VAA-PIX   | 4     |

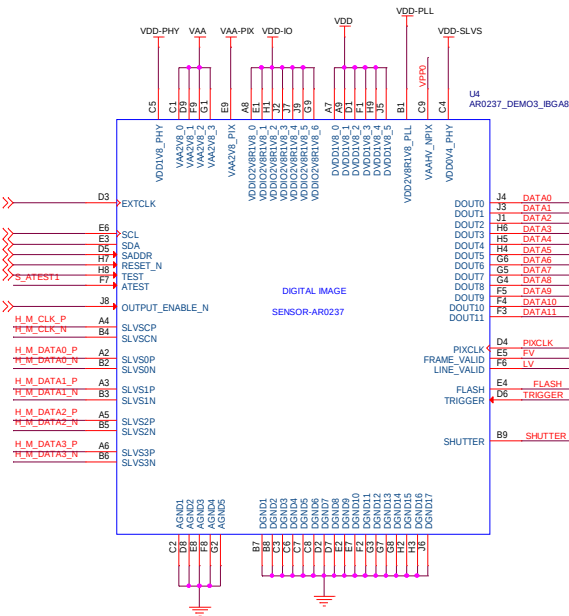
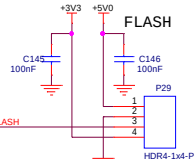
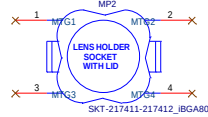
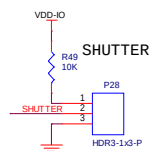


Jumper P4:  
SHORT : SADDR= 0x20  
OPEN : SADDR= 0x30

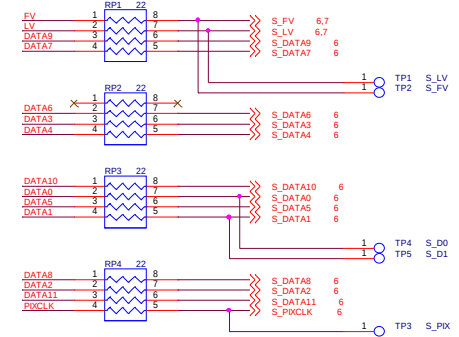
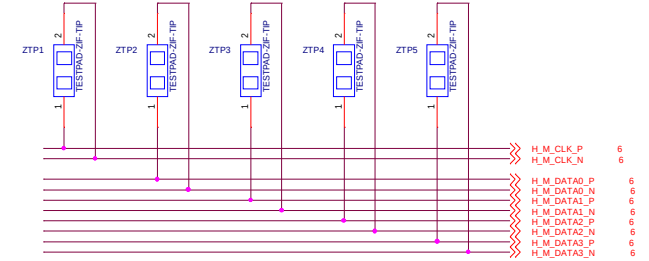


Layout Note: Place capacitor close to BGA ball of ATEST1 pin

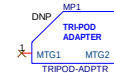
Default Jumper Settings  
P5 : SHORT (S\_TEST->GND)  
P6 : SHORT (Parallel mode Default)  
P14: SHORT (ATEST1->GND)



(Note for layout: - Place these testpads near the Demo3 I/F connector at the top side of PCB)



## TRIPOD MOUNT

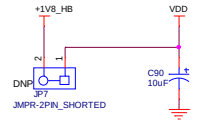


|                   |                        |
|-------------------|------------------------|
|                   |                        |
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| SENSOR            |                        |
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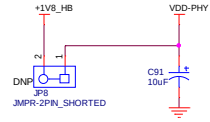
Debug Headers: Cut away the shorted trace and mount header for power debugging

# Power

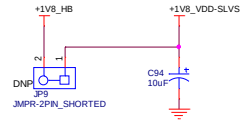
## VDD 1.8V SUPPLY



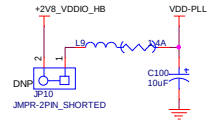
## VDD-PHY 1.8V SUPPLY



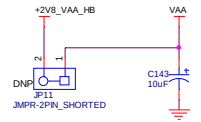
## VDD-SLVS 1.8V SUPPLY



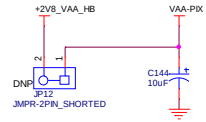
## VDD-PLL 2.8V SUPPLY



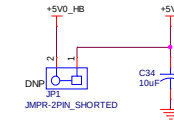
## VAA 2.8V SUPPLY



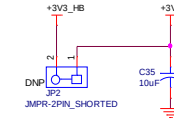
## VAA-PIX 2.8V SUPPLY



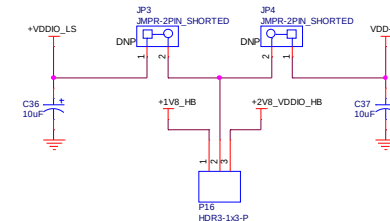
## PERIPHERAL 5V SUPPLY



## PERIPHERAL 3.3V SUPPLY

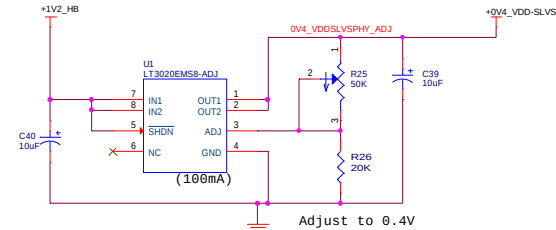


## VDDIO & VDDIO\_LS 1.8V/2.8V SUPPLY



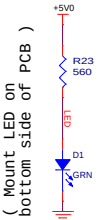
P16 Default Setting: 1-2 Short (1V8 operation)

## VDD\_SLVS 0.4V SUPPLY

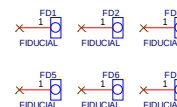


|               |     |     |
|---------------|-----|-----|
| +5V0_HB       | 6   | 6   |
| +3V3_HB       | 6   | 6   |
| +2V8_VAA_HB   | 6   | 6   |
| +2V8_VDDIO_HB | 6   | 6   |
| +1V8_HB       | 6   | 6   |
| +1V2_HB       | 6   | 6   |
| +5V0          | 3   | 5,6 |
| +3V3          | 3,5 |     |
| +VDDIO_LS     | 3   |     |
| VDD           | 3   |     |
| VDD-IO        | 3   |     |
| VDD-PHY       | 3   |     |
| VDD-SLVS      | 3   |     |
| VDD-PLL       | 3   |     |
| VAA           | 3   |     |
| VAA-PIX       | 3   |     |

## 5V LED



## Fiducials



## Ground Testpoints



## Mounting Holes



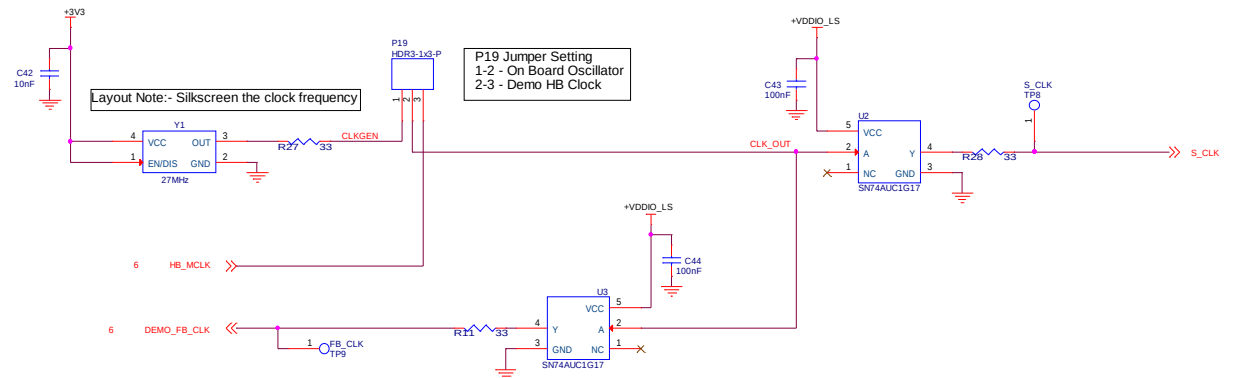
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| POWER |                        |              |
|-------|------------------------|--------------|
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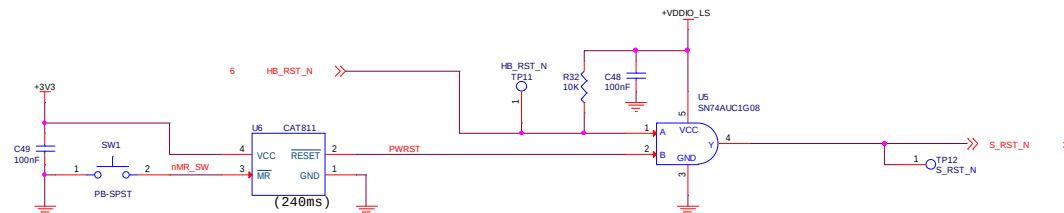
# Clock and Reset

+5V0 3.4  
+3V3 3.4  
+VDDIO\_LS 4.6

## CLOCK CIRCUIT



## RESET CIRCUIT



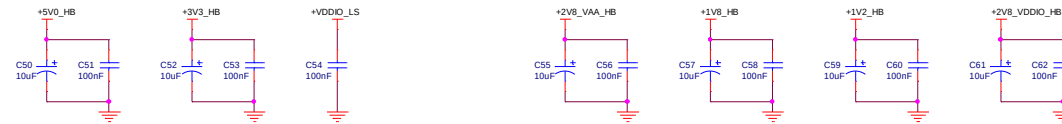
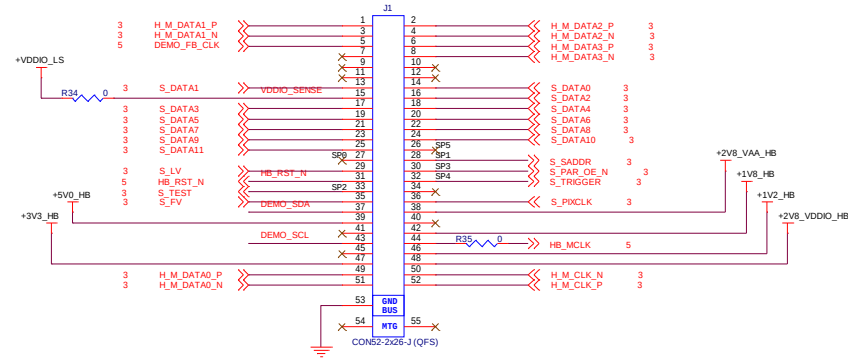
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| Title                       |                        |     |
|-----------------------------|------------------------|-----|
| CLOCK AND RESET             |                        |     |
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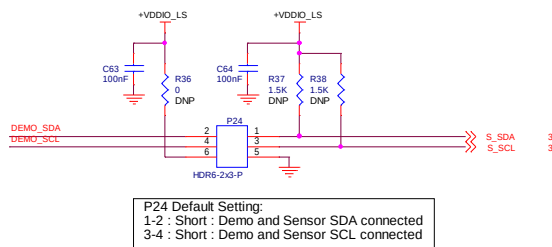
# External Interface

|               |  |               |       |
|---------------|--|---------------|-------|
| +5V0_HB       |  | +5V0_HB       | 4     |
| +3V3_HB       |  | +3V3_HB       | 4     |
| +2V8_VAA_HB   |  | +2V8_VAA_HB   | 4     |
| +2V8_VDDIO_HB |  | +2V8_VDDIO_HB | 4     |
| +1V8_HB       |  | +1V8_HB       | 4     |
| +1V2_HB       |  | +1V2_HB       | 4     |
| +3V3_VDDIO_LS |  | +3V3_VDDIO_LS | 3,4,5 |
|               |  | +3V3_VDDIO_LS | 4,5   |

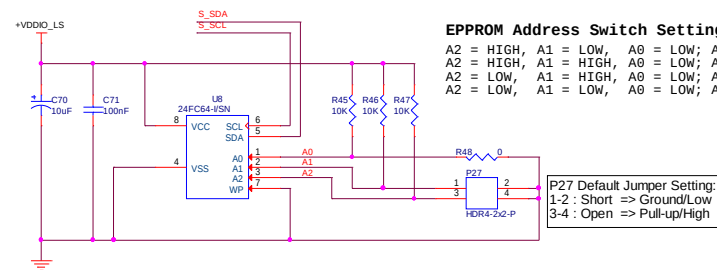
## DEMO3 BASEBOARD I/F



## I2C DEBUG



## LENS CORRECTION EEPROM



### EEPROM Address Switch Settings:

A2 = HIGH, A1 = LOW, A0 = LOW; Address => 0xA8 (default)  
 A2 = HIGH, A1 = HIGH, A0 = LOW; Address => 0xAC  
 A2 = LOW, A1 = HIGH, A0 = LOW; Address => 0xA4  
 A2 = LOW, A1 = LOW, A0 = LOW; Address => 0xA0



|                    |                        |
|--------------------|------------------------|
| ON Semiconductor®  |                        |
| EXTERNAL INTERFACE |                        |
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