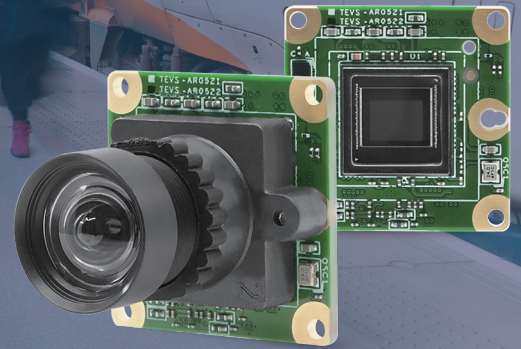


TEVS-AR0522

- onsemi AR0522 5MP rolling shutter camera sensor with ISP.
- Designed for low light and high dynamic range performance.
- Convenient S-Mount (M12) interchangeable lens.
- Driver integration support for :
 - NXP i.MX8 / i.MX9 Family
 - Nvidia Jetson Nano / Xavier NX / Orin
 - TI Sitara™ AM62x / Jacinto™ TDA4 Family
- Comes with VizionViewer™ Configuration Utility and VizionSDK



Distributed by:



Specifications

Camera Information

| | |
|---------------------------|---|
| CMOS Sensor | onsemi AR0522 |
| Active Pixels | 2592 (H) x 1944 (V) = 5MP |
| Pixel Size | 2.2 μm x 2.2 μm |
| Optical Format | 1/2.5" (Diagonal 7.13 mm) |
| Shutter Type | Rolling Shutter |
| Chromaticity | Color / Mono |
| Illuminated type | Back Side Illuminated (BSI) |
| Maximum Frame Rate (YUY2) | 2592 x 1944 @ 24 fps 2560 x 1440 @ 32 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 120 fps |
| Maximum S/N Ratio | 40 dB |
| Input Clock Range | 48 MHz |
| Output Format | YUY2 |

Camera Interface

| | |
|--------------------------|--------------------------------------|
| Module Data Transmission | MIPI CSI-2, up to 4 lanes |
| Communication Interface | I ² C |
| Connector | 70 Pin Standardized Camera Connector |

Power

| | |
|-------------------|--|
| Supply Voltage | I/O: 1.8V Analog: 2.8V Digital: 1.15V & 3.3V |
| Power Consumption | 2592 x 1944 @ 30 fps \leq 762mW |
| Standby Power | \leq 27 mW Standby |

Software Support

| | |
|------------------|--|
| Platform Support | NXP i.MX8M Nano / Mini / Plus NXP i.MX93 TI Sitara™ AM62x / AM62A TI Jacinto™ TDA4VM / TDA4VA / TDA4VH NVIDIA Jetson Nano NVIDIA Xavier NX NVIDIA Orin Nano/NX |
| Operation System | Linux Yocto Android |
| Software | VizionViewer™ |
| Development SDK | VizionSDK |

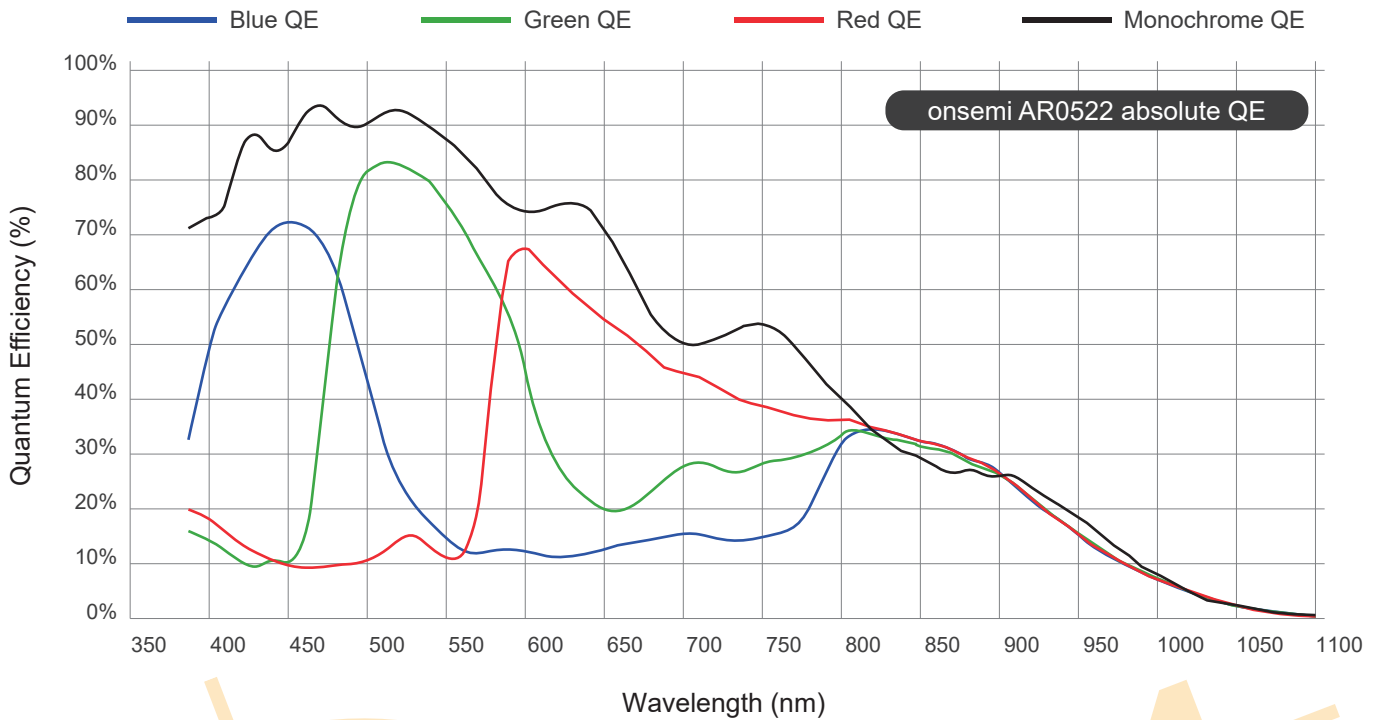
Environmental and Mechanical

| | |
|-----------------------|--------------------------------|
| Dimensions | 24.5(W) x 24.5(H) x 4.36(D) mm |
| Weight | \leq 3 grams |
| Operating Temperature | -30°C to +70°C |

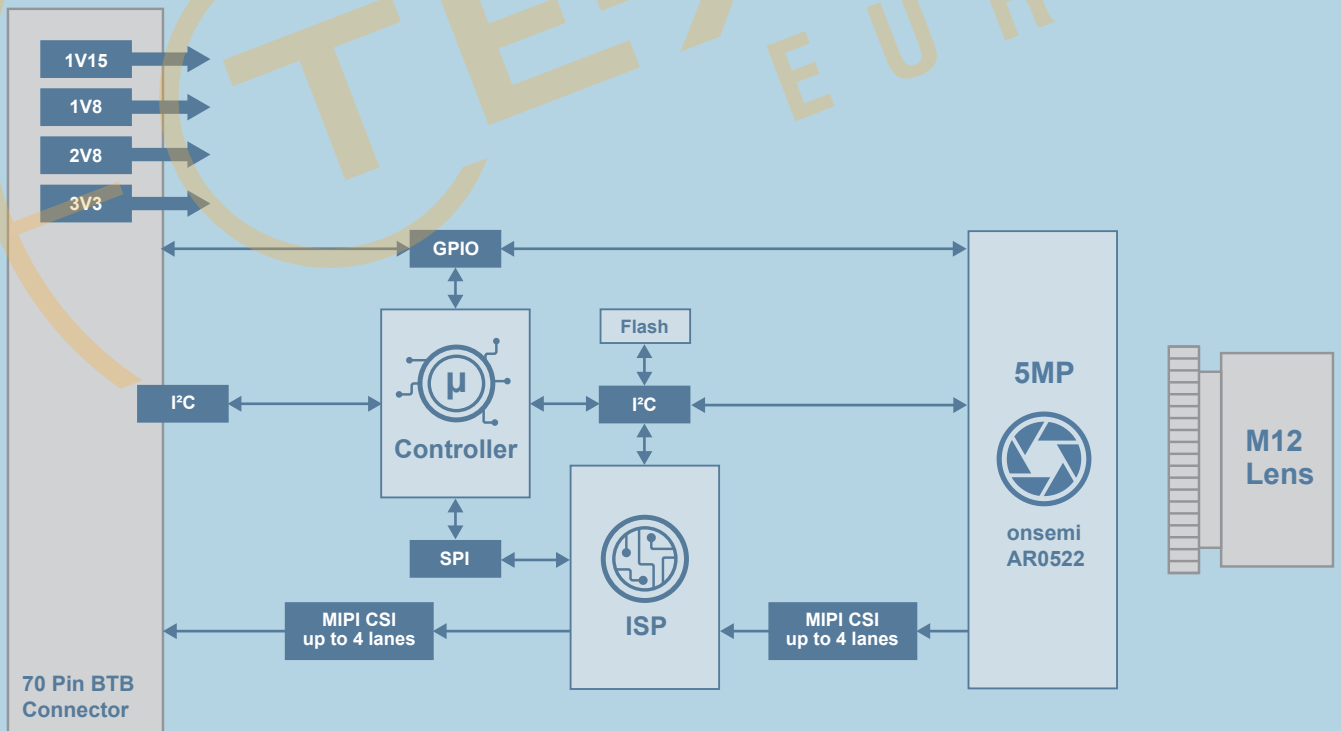
Certification and Compliance

| | |
|---------------|---|
| Certification | Compliant with CE / FCC / RoHS / REACH directives |
|---------------|---|

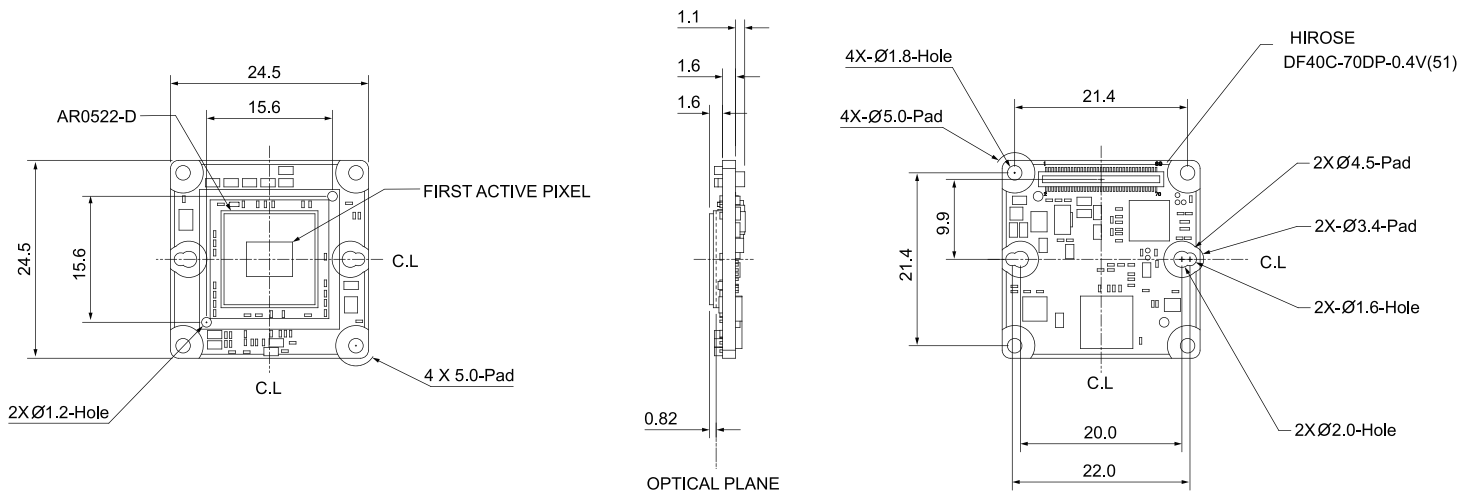
Spectral Characteristics



Block Diagram

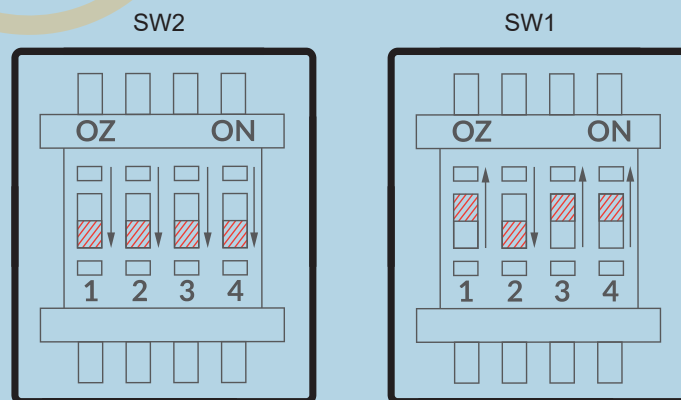


Dimensions (units in mm)



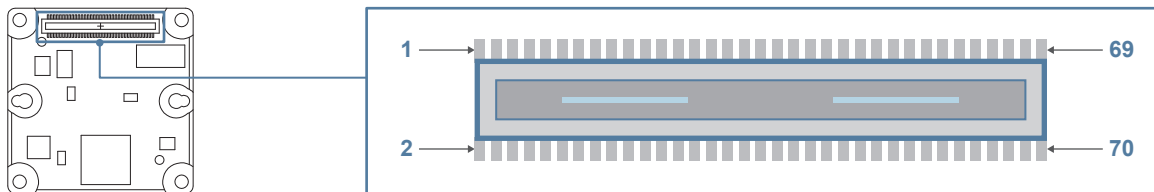
Switch Configuration

TechNexion EVK



Power Sequence Setting

Connector Pin Definition



| No. | Pin Define | Level | No. | Pin Define | Level |
|-----|---------------|-------|-----|----------------------|-------|
| 01 | 3V3D | 3.3V | 02 | 3V3D | 3.3V |
| 03 | 3V3D | 3.3V | 04 | 3V3D | 3.3V |
| 05 | GND | GND | 06 | GND | GND |
| 07 | NC | | 08 | NC | |
| 09 | GND | GND | 10 | GND | GND |
| 11 | 2V8A | 2.8V | 12 | 2V8A | 2.8V |
| 13 | GND | GND | 14 | GND | GND |
| 15 | 1V8D | 1.8V | 16 | 1V8D | 1.8V |
| 17 | GND | GND | 18 | GND | GND |
| 19 | 1V15D | 1.15V | 20 | 1V15D | 1.15V |
| 21 | GND | GND | 22 | GND | GND |
| 23 | NC | | 24 | NC | |
| 25 | NC | | 26 | NC | |
| 27 | NC | | 28 | NC | |
| 29 | NC | | 30 | NC | |
| 31 | NC | | 32 | NC | |
| 33 | MCU_INT_IV8_N | 1.8V | 34 | NC | |
| 35 | GND | GND | 36 | GND | GND |
| 37 | H_CAM_DN0 | | 38 | CSI_FRAME_SYNC | 1.8V |
| 39 | H_CAM_DP0 | | 40 | CSI_nRST | 1.8V |
| 41 | GND | GND | 42 | GND | GND |
| 43 | H_CAM_DN1 | | 44 | CSI_EXPOSURE_TRIG_IN | 1.8V |
| 45 | H_CAM_DP1 | | 46 | CSI_FLASH_OUT | 1.8V |
| 47 | GND | GND | 48 | GND | GND |
| 49 | H_CAM_DN2 | | 50 | STANDBY | 1.8V |
| 51 | H_CAM_DP2 | | 52 | CSI_SHUTTER | 1.8V |
| 53 | GND | GND | 54 | GND | GND |
| 55 | H_CAM_DN3 | | 56 | H_I2C_SCL | 1.8V |
| 57 | H_CAM_DP3 | | 58 | H_I2C_SDA | 1.8V |
| 59 | GND | GND | 60 | GND | GND |
| 61 | H_CAM_CKN | | 62 | NC | |
| 63 | H_CAM_CKP | | 64 | NC | |
| 65 | GND | GND | 66 | NC | |
| 67 | NC | | 68 | NC | |
| 69 | GND | GND | 70 | GND | GND |

Lens Information

| |  TEVS-AR0522-C-S34-IR |  TEVS-AR0522-C-S85-IR |  TEVS-AR0522-C-S140-IR |
|--------------|---|--|--|
| Focus Type | Fixed Focus | Fixed Focus | Fixed Focus |
| Focal Length | 12 mm | 3.9 mm | 2.87 mm |
| Aperture | F1.8 | F2.8 | F2.6 |
| Lens D-FOV | 34.0° | 96.0° | 146.0° |
| Lens H-FOV | 27.0° | 80.0° | 112.0° |
| Lens V-FOV | 20.3° | 60.0° | 82.0° |
| Module D-FOV | 33.6° ± 5% | 85.2° ± 5% | 140.0° ± 5% |
| Module H-FOV | 26.8° ± 5% | 73.0° ± 5% | 110.5° ± 5% |
| Module V-FOV | 20.1° ± 5% | 58.1° ± 5% | 81.4° ± 5% |
| TTL | 20.43 mm | 22 mm | 21 mm |
| BFL | 6.64 mm | 4.54 mm | 5.27 mm |
| MOD | 0.2 m | 0.3 m | 0.3 m |
| Distortion | <-3.31% | <1.26% | <-20.0% |
| IR-Filter | 650 nm | 650 nm | 650 nm |

Order Information

TEVS-AR0522-x-Sxx-xx-xxx

Part Number Rules

| Option | Code | Description |
|----------------|-------|---|
| Chromaticity | C | Color |
| | M | Monochrome |
| Lens | S34 | S-Mount Module D-FOV 34° |
| | S85 | S-Mount Module D-FOV 85° |
| | S140 | S-Mount Module D-FOV 140° |
| Filter | - | - |
| | IR | IR Cut Filter 650nm |
| Evaluation Kit | - | 70 pin Standardized Camera Connector |
| | EVK | 70 pin Standardized Camera Connector with FPC cable |
| | RPI15 | 15 pin Standardized ZIF Connector with FFC cable |
| | RPI22 | 22 pin Standardized ZIF Connector with FFC cable |
| | NXP | Mini-SAS connection cable for NXP Evaluation Board |

For further customization or questions about orders, contact your TechNexion sales representative.

TEVS-AR0522-x-Sxx-IR-EVK

onsemi AR0522 5MP rolling shutter with ISP camera module + S-Mount (M12) lens with IR-cut filter + FPC connection cable for TechNexion SOM EVK



Package Content

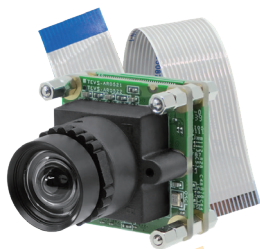
- TEVS-AR0522
- S-Mount lens
- 20cm flexible PCB for TechNexion EVK

TechNexion



TEVS-AR0522-x-Sxx-IR-RPI15

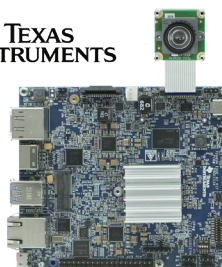
onsemi AR0522 5MP rolling shutter with ISP camera module + S-Mount (M12) lens with IR-cut filter + RPI 15 Pin converter and FFC



Package Content

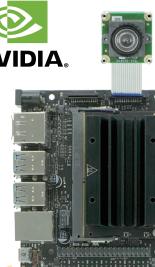
- TEVS-AR0522
- S-Mount lens
- RPI 15 Pin compatible converter PCB
- 20cm 15 Pin FPC cable

TEXAS INSTRUMENTS



SK-TDA4VM

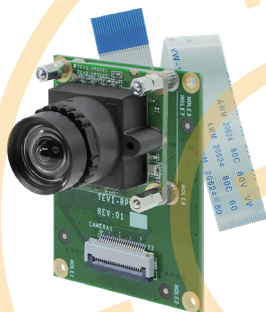
VIDIA



JETSON NANO XAVIER NX

TEVS-AR0522-x-Sxx-IR-RPI22

onsemi AR0522 5MP rolling shutter with ISP camera module + S-Mount (M12) lens with IR-cut filter + RPI 22 Pin converter and FFC



Package Content

- TEVS-AR0522
- S-Mount lens
- RPI 22 Pin compatible converter PCB
- 10cm 22 Pin FPC cable

VIDIA



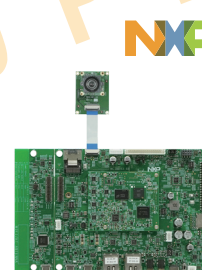
ORIN NANO ORIN NX

TEXAS INSTRUMENTS



SK-AM62A

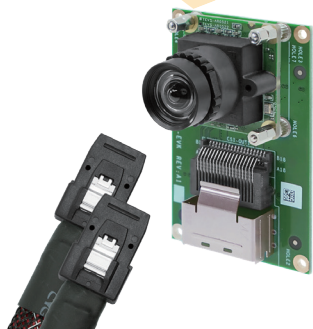
NXP



NXP i.MX93 EVK

TEVS-AR0522-x-Sxx-IR-NXP

onsemi AR0522 5MP rolling shutter with ISP camera module + S-Mount (M12) lens with IR-cut filter + Mini-SAS Connection Cable for NXP i.MX8 Evaluation Board



Package Content

- TEVS-AR0522
- S-Mount lens
- 20cm Mini-SAS cable for NXP i.MX8 Family EVK

NXP

- NXP i.MX8M NANO EVK
- NXP i.MX8M MINI EVK
- NXP i.MX8M PLUS EVK



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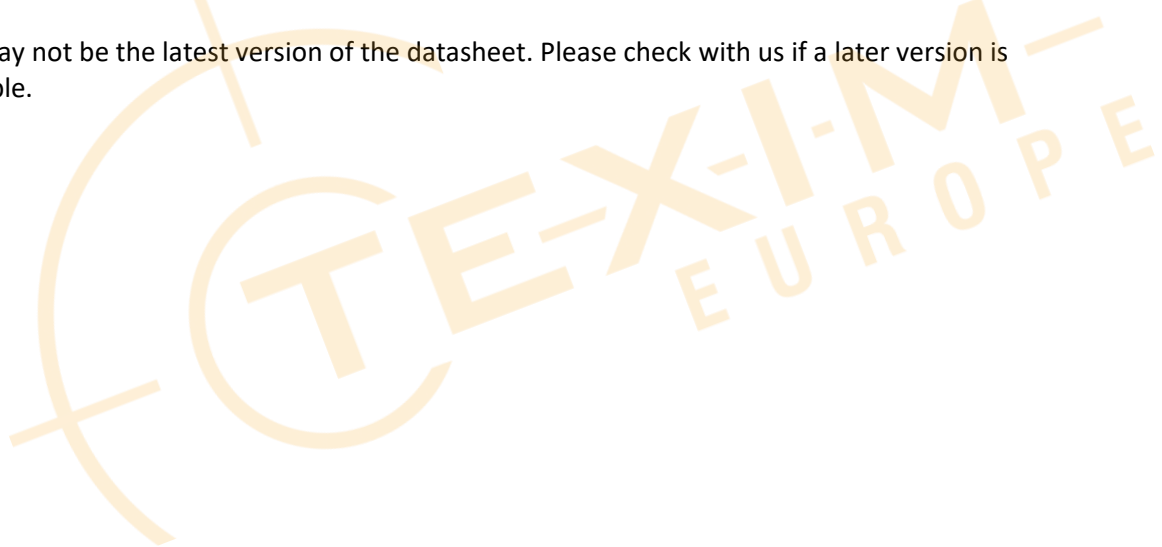
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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