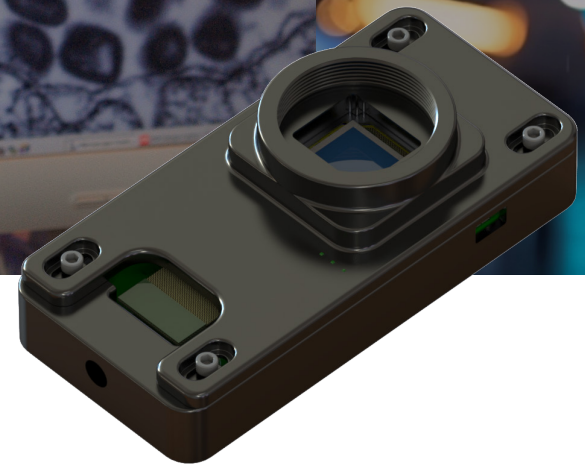


SIONYX

R3

CAMERA SENSOR EVALUATION KIT



MONOCHROME OR COLOR PRODUCT DEVELOPMENT KIT

MODEL | MONOCHROME XRB-1350-PDK (ORDER PART NUMBERS XRB-PDK-001 + XRB-1350S)
NUMBERS | COLOR XRB-1351-PDK (ORDER PART NUMBERS XRB-PDK-001 + XRB-1351S)

The SIONYX XRB-1350 / XRB-1351 product development kit provides engineers and scientists a fully integrated camera module with flexible lens options to evaluate 2nd generation Black Silicon CMOS extreme low light technology. In addition to providing best-in-class near infrared sensitivity, the sensor delivers unassisted 0.5 mLux moonless night performance with high resolution. The image signal processor (ISP) executes a real-time image pipeline with auto exposure, contrast, gain and tone mapping/gamma algorithms. The kit is designed to facilitate all elements of OEM component integration for end applications that demand the smallest size, weight, and power requirements (SWAP) for leading edge digital night vision. The SIONYX XRB-1350 / XRB-1351 sensor is field-proven and reliable in extreme-use environments where reliability is mission critical.

APPLICATIONS

- INDUSTRIAL VISION
- FLUORESCENCE MICROSCOPY
- MEDICAL DIAGNOSTICS
- SILICON CHARACTERIZATION
- DAY / NIGHT SURVEILLANCE
- WEAPON SITES + TARGETING
- SEE SPOT
- VEHICLE SITUATION AWARENESS
- ROBOTIC + UAV NAVIGATION
- NIGHT VISION

FEATURES + BENEFITS

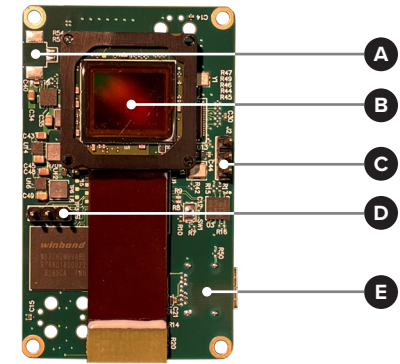
- Operates with utest software (provided) and interfaces to host PC by USB for ease of use.
- Features UART and JTAG connectivity to simplify direct communication with camera module.
- MIPI to USB 3.0 interface for streaming to PC and i2C interface via MIPI for command and control.
- Optional MIPI output on a standard connector for breadboarding into other designs.
- Interface supports up to 120FPS over MIPI or 60FPS over USB for a broad range of evaluations.
- COTS C/CS mount lens options from 8mm to 75mm and other lens accessories available for simplicity.
- Monochrome or color output and daytime safe operation.
- Powered by external 5v DC supply.

KEY SPECIFICATIONS + PARAMETERS

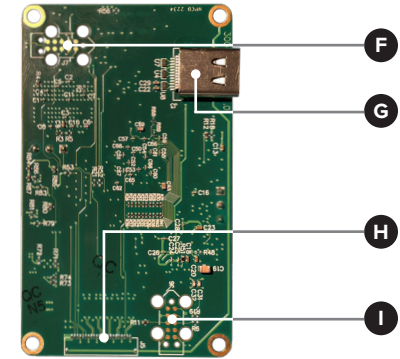
SENSOR	1.3MP CMOS XQE-1350 MONOCHROME OR XQE-1351 COLOR
MINIMUM ILLUMINATION	0.5MLUX @ 30 FPS + F1.28
OPTICAL FORMAT	1-INCH (15.6MM), 9.5 μM PIXEL SIZE
SHUTTER SPEED	14 μSEC TO 120 SEC
VIDEO OUTPUT	MIPI CSI2 - 4 LANE - 400MHZ / 250MHZ
VIDEO TYPE	UNCOMPRESSED 12 BIT
IMAGE LATENCY	< 120 μSEC
SHUTTER TYPE	PROGRESSIVE, ROLLING
VIDEO RESOLUTION	1280 X 1024
FRAME RATE	MIPI 30 FPS - 120 FPS USB-C 60 FPS MAX
CONNECTOR: DEBUGGING	JTAG VIA PLUG-OF-NAILS INTERFACE CABLE
CONNECTOR: UART + i2C	2.5MM HEADERS
COMMUNICATION PORT	UART SERIAL + i2C, USB-C
LENS MOUNT	C / CS MOUNT LENSES
POWER SUPPLY	3.3 VDC
POWER CONSUMPTION	FW/FPGA + AMBIENT TEMPERATURE DEPENDENT, TYPICALLY 1.2W
OPERATING TEMPERATURE	-20°C TO 65°C NON-CONDENSING
REFERENCE DIMENSIONS	89MM (L) X 41MM (W) X 28MM (H)
WEIGHT (EXCLUDES LENS)	<150 G

All product specifications, and data, are subject to change without notice due to continuous quality improvement initiatives. Visit SIONYX.com for the most current data documentation.

DEVELOPER KIT BASEBOARD FRONT



BASEBOARD BACKSIDE



A	EXTERNAL POWER INTERFACE
B	CAMERA CORE WITH XQE-1350 CMOS SENSOR + ISP
C	LIVE PROBES
D	DEVELOPER KIT UART
E	DEVELOPER KIT BASEBOARD
F	XRB CAMERA JTAG INTERFACE
G	USB-3 SENSOR INTERFACE
H	MIPI INTERFACE
I	DEVELOPER KIT JTAG INTERFACE

PIN LIST CAN BE FOUND ON FOLLOWING PAGE

FPGA EXERCISER PIN LIST

CONNECTOR	INTERFACE	PINOUT	SIGNAL
J1	ON-BOARD FPGA UART	1	RX
		2	TX
		3	GND
J2	ON-BOARD FPGA LIVE PROBES	1	GPIO16NB2-DDR_S_3_DQ-LPRB_B
		2	GPIO16PB2-DDR_S_3_DQ-LPRB_A
		3	GND
J3	USB-C PLUG INTERFACE	-	-
J4	XRБ CAMERA INTERFACE	-	-
J5	MIPI INTERFACE	1	5V IN
		2	I2C SDA
		3	I2C SCL
		4	GND
		5	HOST SPARE
		6	HOST SHUTDOWN
		7	GND
		8	MIPI LANE 3 +
		9	MIPI LANE 3 -
		10	GND
		11	MIPI LANE 2 +
		12	MIPI LANE 2 -
		13	GND
		14	CLOCK +
		15	CLOCK -
		16	GND
		17	MIPI LANE 1 +
		18	MIPI LANE 1 -

CONNECTOR	INTERFACE	PINOUT	SIGNAL	
J5	MIPI INTERFACE	19	GND	
		CONTINUED	20	MIPI LANE 0 +
			21	MIPI LANE 0 -
			22	GND
			S1	EARTH
			S2	EARTH
J6	ON-BOARD FPGA JTAG	1	TCK	
		2	GND	
		3	TDO	
		4	NC	
		5	TMS	
		6	1.8V OUT	
		7	NC	
		8	RST	
		9	NC	
		10	GND	
J6	XRБ FPGA JTAG	1	TCK	
		2	GND	
		3	TDO	
		4	NC	
		5	TMS	
		6	1.8V OUT	
		7	NC	
		8	RST	
		9	NC	
		10	GND	