

VersaPHY Remote Image Sensor IC

Features:

- **VersaPHY Remote Sensor Interface**
- **No software in Camera**
- **Zero configuration mode**
 - **Easy as analog video**
- **Small 138 pin csBGA package**
- **Minimal circuitry required to connect IEEE-1394b PHY to Image Sensor**
- **VersaPHY™ connectivity to**
 - **Discover camera**
 - **Provide static address**
 - **Control video stream**
 - **Provide unique PHY identification**
- **Supports IIDC format 7 isochronous stream format**
- **Maybe used in mixed Data/Strobe and Beta topologies**
- **Applications**
 - **Automotive**
 - **Military**
 - **Attended and unattended surveillance**
 - **Machine vision**

The QPVPC11 VersaPHY™¹ Remote Image Sensor IC takes full advantage of IEEE-1394's isochronous stream capability and VersaPHY Technology² simplicity to create an analog like connection experience with the flexibility of a networked interface.

VersaPHY

The QPVPC11 is compliant with the 1394 Trade Association's "VersaPHY Additions to IEEE-1394" specification and uses Quantum Parametrics (QP) patent pending technology. The QPVPC11 VersaPHY implementation allows the sensor's control registers to be accessed from a remote device(s), camera controller, allowing the camera to be implemented with NO 1394 software. Additionally, QPVPC11 allows both manual, through input pins, and remote configuration of VersaPHY labels. This allows the camera to retain a

fixed address and isochronous channel across power cycles and 1394 bus resets thus easing installation and maintenance tasks.

IEEE-1394B PHY

The QPVPC11 interfaces with the IEEE-1394-2008 Beta PHY device through the standard defined PHY/Link interface. The Beta PHY/Link interface provides mechanisms to support communication between a discrete PHY and the QPVPC11 at speeds of S100, S200, S400, and S800 with a data path that is 8-bits wide.

CMOS Digital Image Sensor Interface

The QPVPC11 was designed to work with variety of Image Sensors that utilize a 10-bit parallel image interface and two-wire serial bus sensor configuration interface, such as the Micron MT9V032 1/3-Inch Wide-VGA Digital Image Sensor. The QPVPC11 supports both zero configuration and remote configuration implementations. When implementing a zero configuration camera the sensor is configured with a default set of values that the QPVPC11 loads into the sensor at power up. The QPVPC11 starts streaming video to the isochronous channel selected through configuration pins or previously through remote configuration immediately after power up (and cycle starts are detected). Remote configuration allows the application to have full control of the camera sensor from anywhere on the 1394 network. While many sensors have features like auto gain control it is still important to have low level control for increased flexibility.

General Purpose I/O

The QPVPC11 supports up to 8 general purpose I/Os. These 8 signals can be configured as inputs or outputs. Changes to the GPI can initiate transmission of unsolicited response packets allowing remote notification of events without polling.

Development Kit

The QPVPC11 development platform uses the Micron MT9V032 1/3-Inch Wide-VGA Digital Image Sensor. It has two bilingual S800 capable IEEE-1394b ports. The

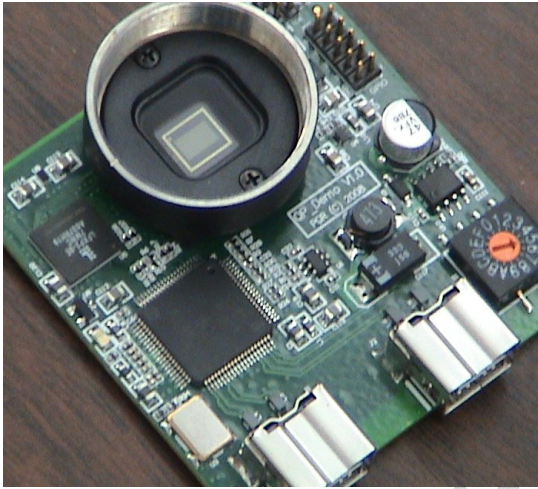
¹ VersaPHY is a trademark of Quantum Parametrics.

² Patent Pending VersaPHY Technology

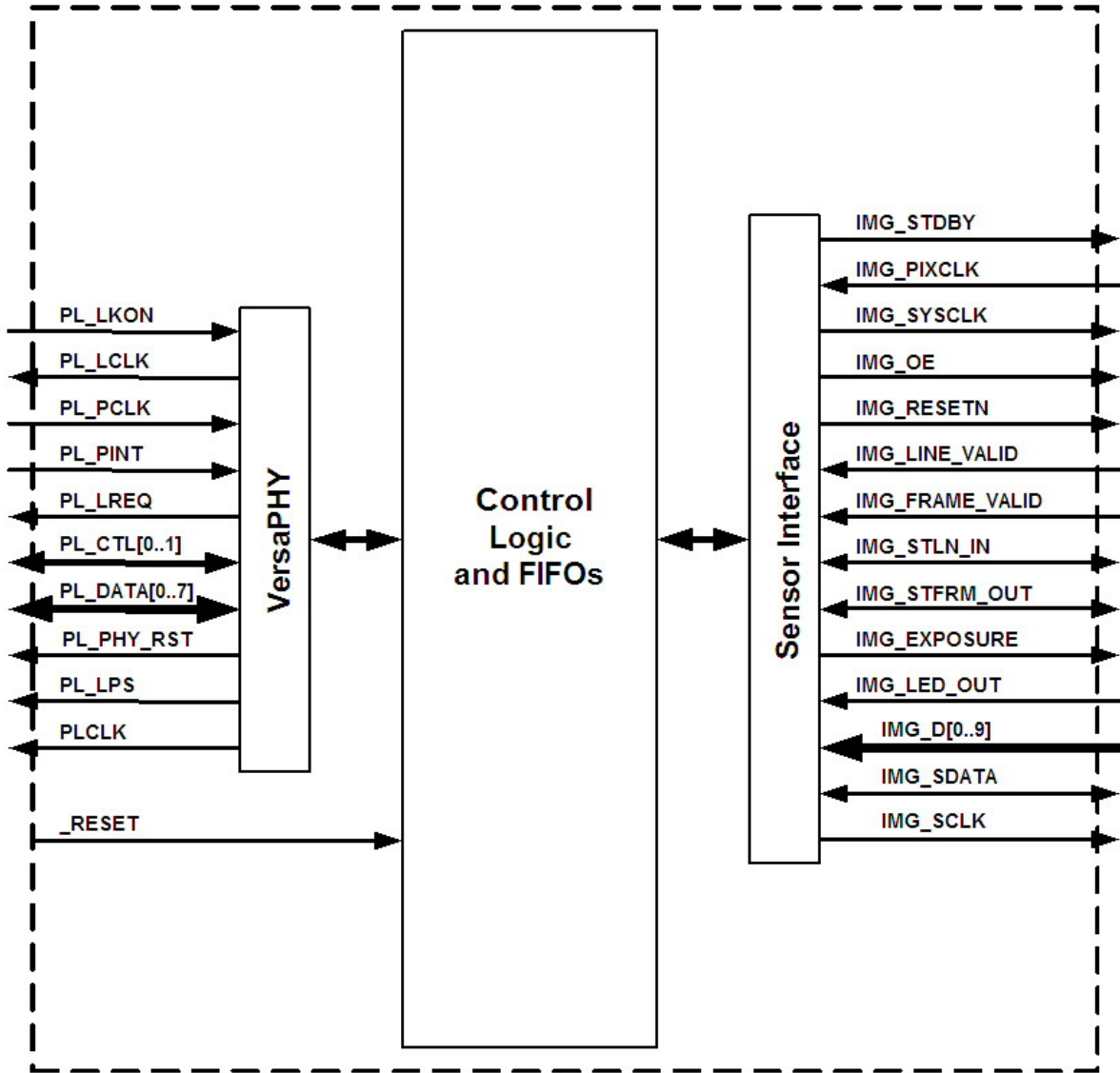
www.quantumparametrics.com

development platform is cable powered and provides a user settable switch to configure the VPLabel and isochronous channel for zero configuration operation.

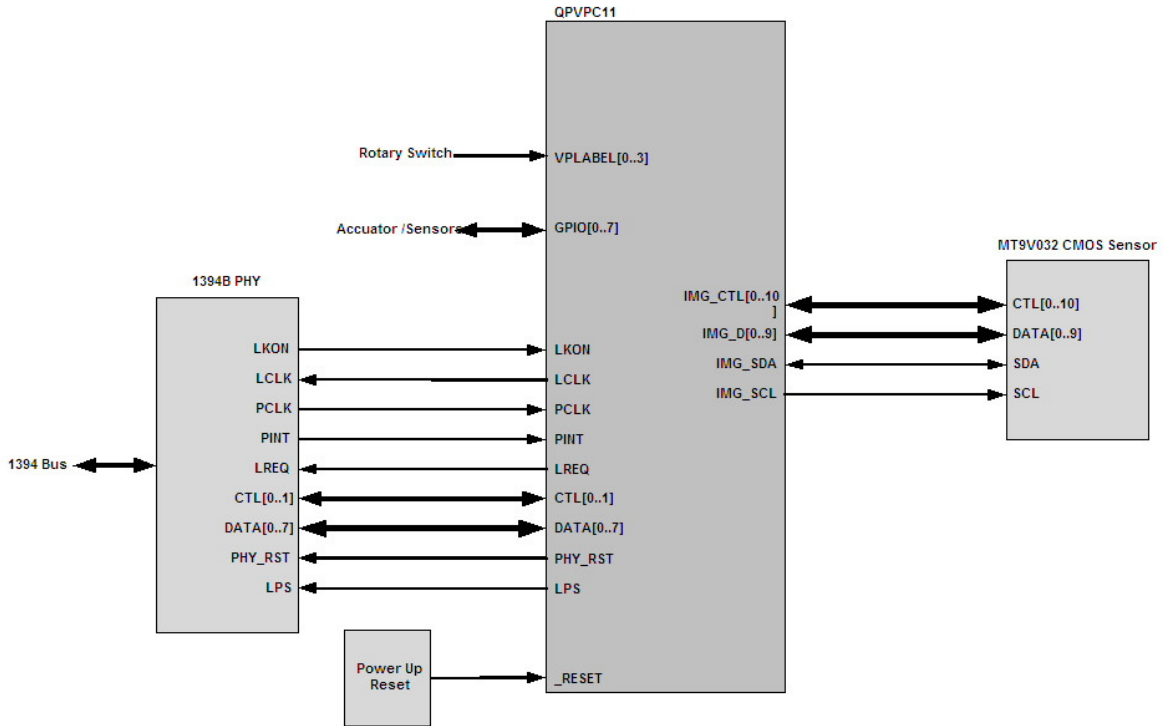
Included with the development kit is the VersaPHY Framework (VP-Framework™) software developer kit. VP-Framework, like VersaPHY itself, supports very simple applications only wanting to have register access through a full VersaPHY controller implementations. Currently the VP-Framework is only available for Windows XP and Vista.

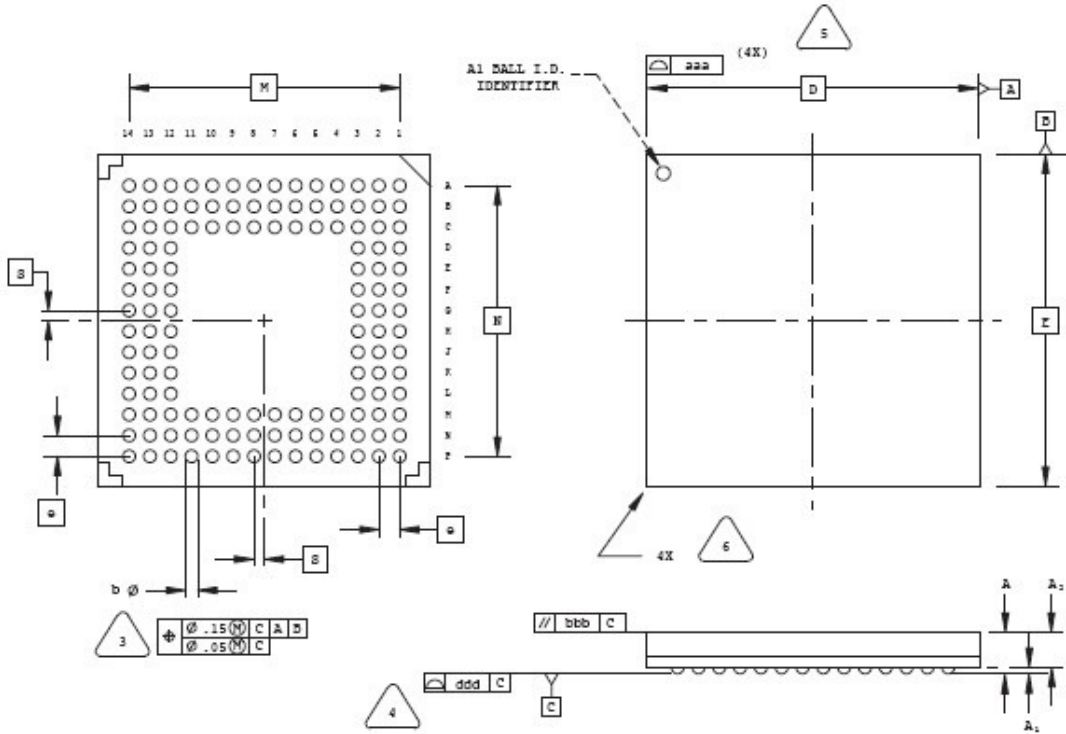


Functional Block Diagram



Application Information





NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
2. ALL DIMENSIONS ARE IN MILLIMETERS.

- 3. DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM [C].
- 4. PRIMARY DATUM [C] AND SEATING PLANE ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
- 5. BILATERAL TOLERANCE ZONE IS APPLIED TO EACH SIDE OF THE PACKAGE BODY.
- 6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.

SYMBOL	MIN.	NOM.	MAX.
A	0.90	1.23	1.35
A1	0.15	-	-
A2	-	-	1.10
D/E	8.00 BSC		
M/N	6.50 BSC		
s	0.25 BSC		
b	0.25	0.30	0.35
e	0.50 BSC		
aaa	-	-	0.10
bbb	-	-	0.10
ddd	-	-	0.08

138 pin csBGA Package