

Q7 Camera Board

PRELIMINARY
Available in Q2 2016

Q7

FEATURE HIGHLIGHTS

Flexible Interfacing

Interfaces include:

- 2x Cameralink (2xBase, or 1xMedium, or 1xFull)
- 4x SpaceWire (min 200 Mbps per LVDS pair)
- 1x HDMI ADV7611 Input / ADV7511 Output
- 4x USB2.0 Master Ports (480 Mbps)
- 1x 1-Wire (factory selectable 3.3V or 5V)
- 1x RS232/422/485 interface header

Interfaces cannot all be used concurrently – details of configuration options are available upon request.

Low Mass, Volume, Power

The Q7 measures 78 mm x 43 mm x 9 mm, has a mass of 24 g (excluding connectors) and consumes 1 W for typical applications. The Q7 Camera Board extends the form factor to 110 mm x 110 mm x 15 mm, with a mass of 100 g (TBC)

Integrated Hybrid Environment

The application space in a Q7 is a tight integration of dual ARM Cortex™-A9 MPCore processors and programmable logic, featuring 106,400 flip-flops and 53,200 look-up tables reserved for application-specific use. All of this capacity is available to execute high-performance algorithms.

Camera Power Available

The Q7 Camera Board can provide user-selectable voltage (3-28V) to camera, up to 1.5A per camera. Xiphos supports the PoCL standard or traditional camera power inputs.

Development or Flight

The development board is your flight board. Xiphos has 20 years of spacecraft design experience, and can demonstrate flight heritage for its design process, design standards, and most of the circuits and components on the Q7 Camera Board. Still worried? We can use the Q7 Camera Board as a reference design for a custom daughterboard to meet your specific mission needs – just ask us!

OVERVIEW

The Q7 Camera Board is a daughterboard for Xiphos' Q7 hybrid processor card. The Q7 Camera Board allows the Q7 to be inserted into existing systems with high-bandwidth video or imagery streams. High performance image processing algorithms can then be executed on the Q7 in an optimal combination of tightly-integrated CPU and programmable logic resources.

The Q7 Camera Board is designed to be versatile:

- Supports several different camera interfaces
- Can be used for development or flight applications, with only minor modifications
- Designed in a small form factor to fit most spacecraft and payload volume constraints.

Together, Xiphos' Q7 processor and Q7 Camera Board provide a commercial off-the-shelf solution for demanding embedded video and image processing applications.

Hybrid Processing

Some embedded algorithms implemented on the Q7 include:

- Pose estimation
- Image fusion
- Hyperspectral image compression
- User-designated object tracking
- Feature tracking and motion detection
- Synthetic Aperture Radar (SAR) signal processing
- Quantum key privacy amplification

Ask us how to embed your high-performance algorithm.

