

# EQCO-FastECoax7501.2 Ethernet Over Coax Demonstration using Microchip's EQC0875SC.3 Device

## Summary

The surveillance camera market is transitioning from analog to digital. The reasons for this conversion are clear. Digital technology offers better imaging, intelligent image processing and the benefits of fully networked integrated solutions. Many digital cameras support IP-based communication and are designed to connect to network video recorders (NVRs) or video servers over Cat 5 or Cat 6 Ethernet cables. But why waste perfectly functional 75Ω coaxial video cabling just to go digital?

Microchip's Ethernet Over Coax Demonstration shows how IP (10/100Base-T Ethernet) signals can be sent up to 250 meters in distance over standard, already-installed 75Ω coaxial cable. Microchip's Ethernet over coax media adapter allows 100Base-T standard-definition and high-definition megapixel IP cameras to use coax cabling to transmit IP-based communications to the NVR, servers or switches. Reusing the cable infrastructure also allows the analog-to-digital transition to be done one camera at a time as needed. Microchip's Ethernet over coax adapters uniquely provide Power over Ethernet (PoE) bridging over the coax link to provide ample power (PoC) for remote devices, eliminating the need for separate power cables to cameras in remote locations.

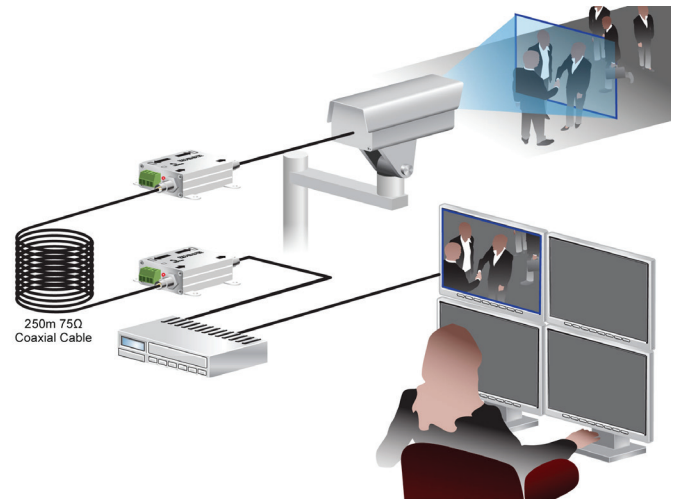
## Applications

This solution is useful and economical for many markets and applications, including the following:

- Camera networks: home security, surveillance, industrial/inspection, medical cameras
- Home networking over coax infrastructure: when Cat5 or Cat6 cabling is not available and existing 75Ω coax is not used for analog TV signals
- TV, STB, PVR connections including inter-room links
- Traffic monitoring with IP cameras
- Crowd monitoring with IP cameras
- Sending IP traffic over coax for video or data to any host or receiver device
- Bank and casino security surveillance
- License plate tracking and monitoring

## Demonstration

The demonstration consists of an IP camera with an EQCO-FastECoax7501.2 module set (camera-side and DVR-side) for sending 100Base-T Ethernet over 75Ω coaxial cable. The IP camera sends video over the coax to the PC and monitor on the opposite end. A Power over Ethernet (PoE) injector is attached to the PC. This enables power to be sent from PC to the IP camera with PoE+ support over the coaxial cable. The PoE injector also provides power to the two EQCO-FastECoax7501.2 modules over the coax.



## Features

### EQC0875SC.3 Device

Each EQCO-FastECoax7501.2 module uses the EQC0875SC.3 device, which is a combined transmitter and receiver with an integrated equalizer to form a full-duplex bidirectional connection over a Single 75Ω coaxial cable (EQC0875SC.3) or 50Ω coaxial cable (EQC0850SC.3)

- Compatible with FX version of Fast Ethernet
- Low power: 205 mW from a single 3.3V supply
- Integrated termination resistors for low external discrete count
- Fully supports PoE-based power and data signal distribution over coax

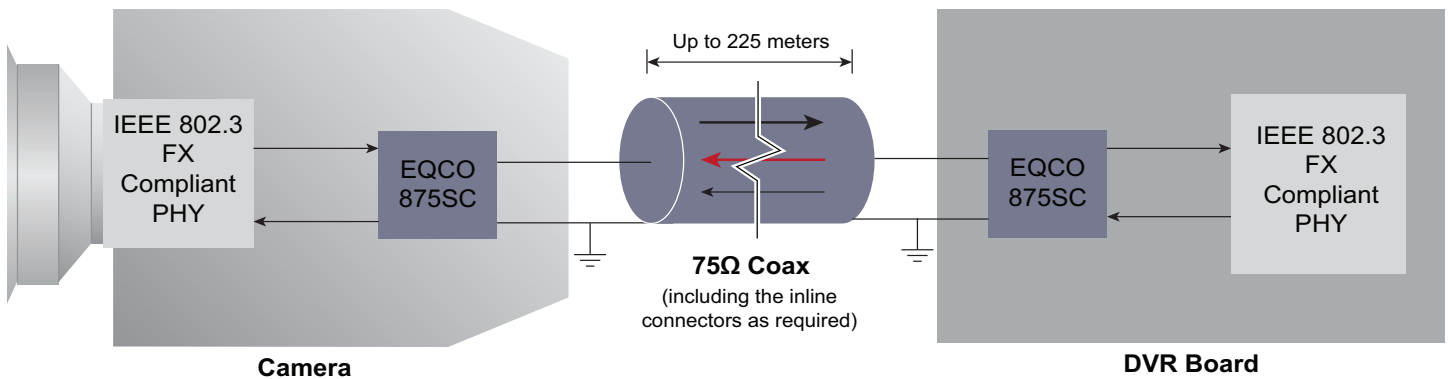
### EQCO-FastECoax7501.2 Ethernet over Coax Module

- Uses legacy analog video cabling (75Ω coax)
- Fully transparent 100Base-T full-duplex Ethernet including link status pass-through
- Full 100 Mbps FDX over 250 meter coax runs (470 meter solution also available)
- Can be concatenated using repeaters for even longer cable runs
- Supports 10/100Base-T Ethernet standard-definition and high-definition video camera including PoE devices
- Optional DC power pass-through for remote powering of low-voltage cameras
- Small 70 × 37 mm enclosure can be wall mounted or the board—without enclosure—can be placed inside the camera enclosure



**MICROCHIP**

## Diagram



**Note:** Microchip also has a 470 meter solution available using a different chipset.

## Featured Products

Product	Description	Function	Download Speed (Video)	Uplink Speed (Camera Control)	Distance over 75Ω Coax	Temperature Range	Protocols Supported	Package
EQCO875SC.3	Ethernet over coax chip	10/100Base-T Ethernet with PoE+	100 Mbps	100 Mbps	250m	-40 to 85°C	10/100Base-T Ethernet	16-pin QFN
EQCO-FastECoax7501.2	Ethernet over coax module	10/100Base-T Ethernet with PoE+	100 Mbps	100 Mbps	250m	0 to 50°C	10/100Base-T Ethernet	Module



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[www.microchip.com/data-video-transceivers](http://www.microchip.com/data-video-transceivers)

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