Ethernet over Coax with PoE EP2coax-FE

Head End   Camera Side
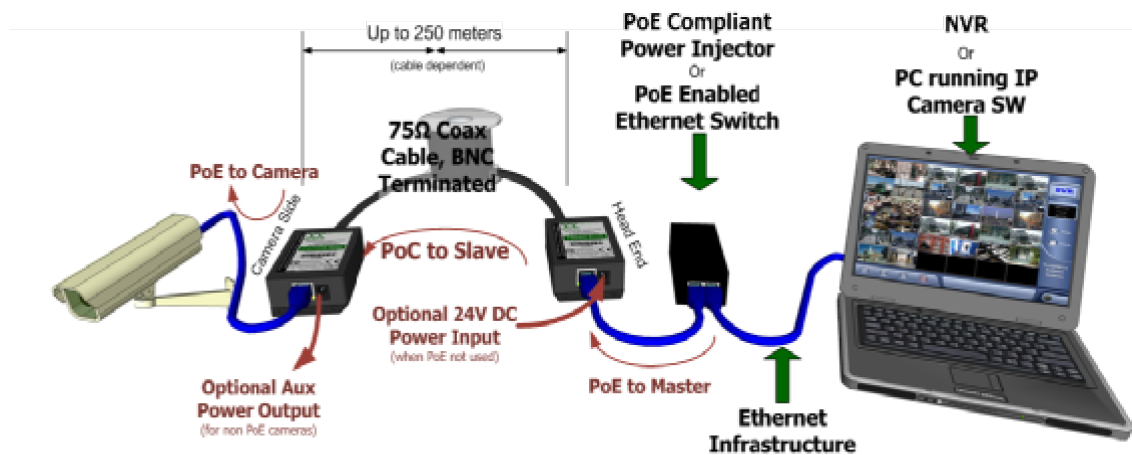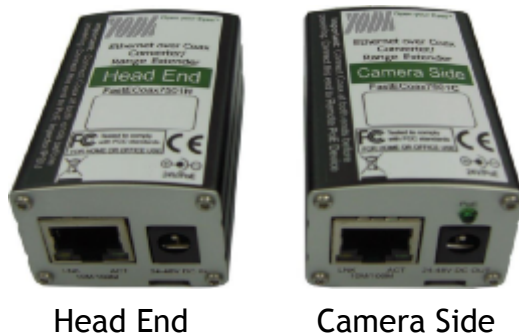

Accelerates IP camera deployment

The IP surveillance camera market is steadily moving from analog to digital.   The reasons are clear: better imaging, intelligent image processing and the benefits of fully networked integrated solutions. Many digital cameras speak "IP" and are designed to connect to NVR's or video servers over Cat 5 or Cat 6 Ethernet cable.

But why waste perfectly functional 75Ω coaxial video cabling simply to go digital?   With Yoda's Ethernet over Coax media convertor 100BaseT Standard Definition & High Definition Megapixel IP cameras can use coax cabling to talk IP to the NVR, servers or switches. Re-using the cable infrastructure also means that the analog to digital transition can be done one camera at a time, as needed.

Yoda's Ethernet over Coax adaptors EP2coax-FE uniquely provide Power over Ethernet (PoE) bridging over the Coax link to provide ample power (PoC) for remote appliances, eliminating the need to bring separate power cables to cameras in remote locations.

Features

♦ Utilizes legacy analog video cabling (75-ohm coax)

♦ Fully transparent 100BaseT Full duplex Ethernet including link status pass through

♦ Full 100Mbps FDX over 250 meter coax runs*

  * Can be concatenated using repeaters for even longer cable runs

♦ Supports 10/100bT Ethernet SD & HD video cameras including PoE powered devices

♦ Optional DC power pass through for remote powering of low voltage cameras

♦ Small 70mm * 37mm enclosure can be wall mounted or the board without enclosure can be placed inside camera enclosure

Yoda's Ethernet over Coax adapters are installed in pairs. The Head End adaptor takes conventional 100BaseT Ethernet & power from a PoE compliant Ethernet switch, a PoE injector or an AC adaptor. Power and bidirectional data is passed over the coax to the Camera side adaptor at the far end which in turn optionally powers the camera.

Technical Specifications

Coax Interface	
Connector	BNC True 75Ω
Cable Impedance	75Ω ± 3Ω
Connector/coax Return Loss	Return Loss > 25 dB @ 1MHz - 200MHz
Data Throughput	200 Mbps (Simultaneous 100Mbps in both directions) for all cable lengths
Ethernet Interface	
Connector (Head End)	RJ45 (PoE Device Compliant)
Connector (Camera Side)	RJ45 (PoE PSE Compatible)
Cable Type	Category 5 or above, Straight through or cross over (Auto MDI/MDIX)
Rates Supported	100 BaseT / 10 BaseT, full / half duplex. Virtual wire operation with Auto negotiation to match best capabilities of network equipment at each end
Power Supply Input (Head End only)	
PoE via RJ45	Fully IEEE 802.3af Power over Ethernet Standard Compliant, nominal 48 V
DC Feed via Aux Power connector	Min 12 V_{DC}, Max 48 V_{DC} (inner positive) PoE on RJ45 is disconnected if DC power applied via Aux Power first Min 24V recommended if camera is to be powered
Power Supply Output (Camera Side only)	

PoE via RJ45	PoE Compatible, V_{IN} @ Head End -2V -Coax DC drop (varies with cable type/length)
DC Feed via Aux Power connector	V_{IN} @ Head End - 2V – Coax DC drop (varies with cable type/length) PoE on RJ45 is disconnected when DC output is used
Environmental	
Operating Temperature	$0^{\circ}C$ to $50^{0}C$
Relative humidity	Up to 85% non-condensing
Storage Temperature	$-20^{\circ}C$ to $70^{0}C$

Performance Specifications

Performance by coax type	Max coax length for error free operation	Camera Power available	
		48V PoE via RJ45	24V DC adaptor
RG6 Sample 1 (5.5dB/100m)	180 meters / 580 feet	18W /	11W
RG6 Sample 2 (5.5dB/100m)	180 meters / 580 feet	13W /	1.8W
5C-HFBT Sample (4.7dB/100m) (Amphenol)	210 meters / 680 feet	18W /	11W
RG59 Sample (8dB/100m)	125 meters / 400 feet	19W /	13W
3C-2V Sample 1 (10dB/100m) (Hangzhou Linan Tongda Cable Co., Ltd)	100 meters / 325 feet	19W /	13W
3C-2V Sample 2 (8dB/100m)	125 meters / 400 feet	19W /	14W
RG11 Sample (3.3dB/100m) (CommCcope F1160BVV)	250 meters / 800 feet	18W	8.7W

19" Rack for EP2coax-FE x 10

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