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Application Note

What is Ethernet Extender?

Upgrading an access control and/or surveillance system with new systems that communicate using IP technology can be a monumental task. The system has been communicating between devices using serial communications RS232, RS422 or RS485 and the cameras have been connecting over coaxial cable. New cameras, keypads, badge readers and other devices connect using Ethernet which is connected over Category 5 - Category 6 twisted pair wire. Changing the wiring infrastructure can be more costly and time consuming than upgrading the entire system.

EtherWAN offers a solution to this dilemma. EtherWAN has developed a line of Ethernet extenders that provide Ethernet connectivity over existing coaxial cable or plain old telephone/communications cable. EtherWAN's ED3101, ED3141 and ED3171 Ethernet extenders will work whether your cable is 26 AWG, 19 AWG or somewhere in between twisted or straight wire. Using Ethernet extenders is significantly lower in cost than replacing a cable plant and extends the life of your installed infrastructure.

-Check out the model lineup of Ethernet extension Solutions in following pages-



**Extending Ethernet over One Pair of Wires, Twisted or Straight (24ga to 19ga)
Speed Chart**

Mbps	Distance
50	300 m
40	600 m
30	700 m
25	800 m
20	1000 m
15	1200 m
10	1,400 m
5	1,600 m
3	1,800 m
1	1,900 m

ED3101 Ethernet Extender



1 Ethernet Port 10/100TX RJ45

1 Extension Port 1 Pair Wire RJ11

Industrial Grade -20°C to 60°C Operating Temperature Range

Wall Mount or Chassis Mount using EtherWAN's EMC1600 Chassis

Power Cube Included 100VAC - 240VAC

ED3141 Ethernet Extender (Hardened)



- 1 Ethernet Port 10/100TX RJ45
- 1 Extension Port 1 Pair Wire RJ11 or Terminal Block
- Hardened Grade -40°C to 75°C Operating Temperature
- DIN Rail, Wall or Shelf Mount
- Power 12VDC to 30VDC Terminal Block or DC Jack

ED3171 Ethernet Extender (Managed Hardened)



1 Ethernet Port 10/100TX RJ45
1 Extension Port 1 Pair Wire RJ11 or Terminal Block
Hardened Grade -40°C to 75°C Operating Temperature
DIN Rail, Wall or Shelf Mount
Power 12VDC to 30VDC Terminal Block or DC Jack
Management Functions:

- Set IP Address
- Display Link Status
- Display Transfer Speed
- Set Transfer Speed
- Display Signal to Noise Ration
- Reset to Default
- Upgrade Firm Ware



Extending Ethernet Over Coaxial Cable (RG59)

Speed Chart

Mbps	Distance
75 - 85	200 m
64 - 74	600 m
55 - 63	1,000 m
44 - 54	1,200 m
30 - 43	1,400 m
21 - 29	1,600 m
17 - 20	1,800 m
11 - 16	2,000 m
6 - 10	2,400 m
1 - 5	2,600 m

ED3331 Ethernet Extender



1 Ethernet Port RJ45

1 Coax Port Coaxial Cable BNC

Industrial Grade -10°C to 60°C Operating Temperature

Wall Mount or Chassis Mount using EtherWAN's EMC1600 Chassis

Power Cube included 100VAC - 240VAC

ED3341 Ethernet Extender



- 1 Ethernet Port 10/100TX RJ45
- 1 Extension Port Coaxial Cable BNC
- Hardened Grade -40°C to 75°C Operating Temperature
- DIN Rail, Wall or Shelf Mount
- Power 12VDC to 30VDC Terminal Block or DC Jack

How do these products work?

Plug and play, connect any of the ED3101, ED3141 or ED3171 on one end of the wire and set the selection switch to Local. Then connect another unit, any of the three, to the other end of the wire and set the selection switch to Remote. Apply power and they will sync up in a few seconds and your running with an Ethernet Link.

The same procedure is used for the coaxial units (ED3331 and ED4331). Two of these units communicate with each other providing an Ethernet port at both ends of the cable.

DON'T CHANGE THAT CABLE – USE ETHERNET EXTENDERS.