Cisco DigiStar Ethernet over Coax (EoC)
HPNA Aggregation Point (AP) E230

The Cisco DigiStar Ethernet over Coax (EoC) System is designed to combine CATV signal with Ethernet data for transmission to subscriber's home through the existing coaxial access network.

With Ethernet data delivered to the building, the DigiStar EoC system meets the IP interactive service requirement of cable operators for multiple dwelling unit (MDU) applications. The DigiStar EoC system fully supports video-on-demand (VoD) and IPTV services, and also allows for subscriber service differentiation through rate limiting.

The Aggregation Point (AP) of the DigiStar EoC system provides CATV signal pass-through and Ethernet data management to the end-points. Ethernet data is delivered to an AP through an external media card or to an optical line terminal (OLT) with an internal ONU. An ONU with Small Form-Factor Pluggable (SFP) interface is an available AP option.

The AP provides high-speed and reliable data transmission.

Figure 1.   DigiStar Ethernet over Coax AP E230

Features

Standards and Protocol

- Complies with HPNA 3.1 (ITU-T G.9954) standards
- Complies with IEEE 802.1p (QoS/CoS Control) and 802.1q (VLAN Protocol)

Product Configuration

- Contains configurations of 1 or 2 HPNA modules
- Applies flexible RF design to support various RF configurations, with the maximum RF ports configuration up to 4 in/4 out.
- Supports the SFP Interface to connect the ONU module to achieve cost-effectiveness and performance reliability

Data Transportation

- Supports data throughput of 150 Mbps with 1 module and 300 Mbps with 2 modules

Network Management

- Supports snooping (IGMP v1/v2)
- Supports remote management through SNMP
- Supports Ethernet over COAX Network Element Management (ECEM) System
- Supports Telnet and management through remote logon
- Supports Access Control List (ACL) through MAC layer

Other Features

- Complies with IP68 waterproof standard; operable during extreme environment conditions
- Supports power supply of 100-240 VAC and 40-90 VAC

Figure 2. DigiStar Ethernet over Coax AP E230, Ports Overview (1 IN/1 OUT or 2 IN/2 OUT)
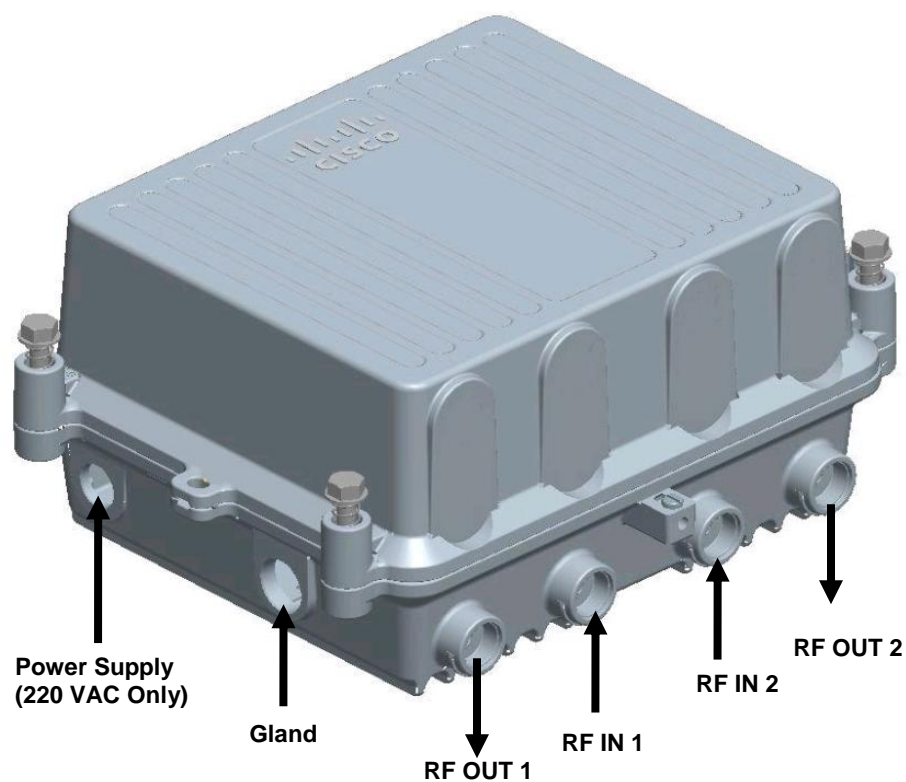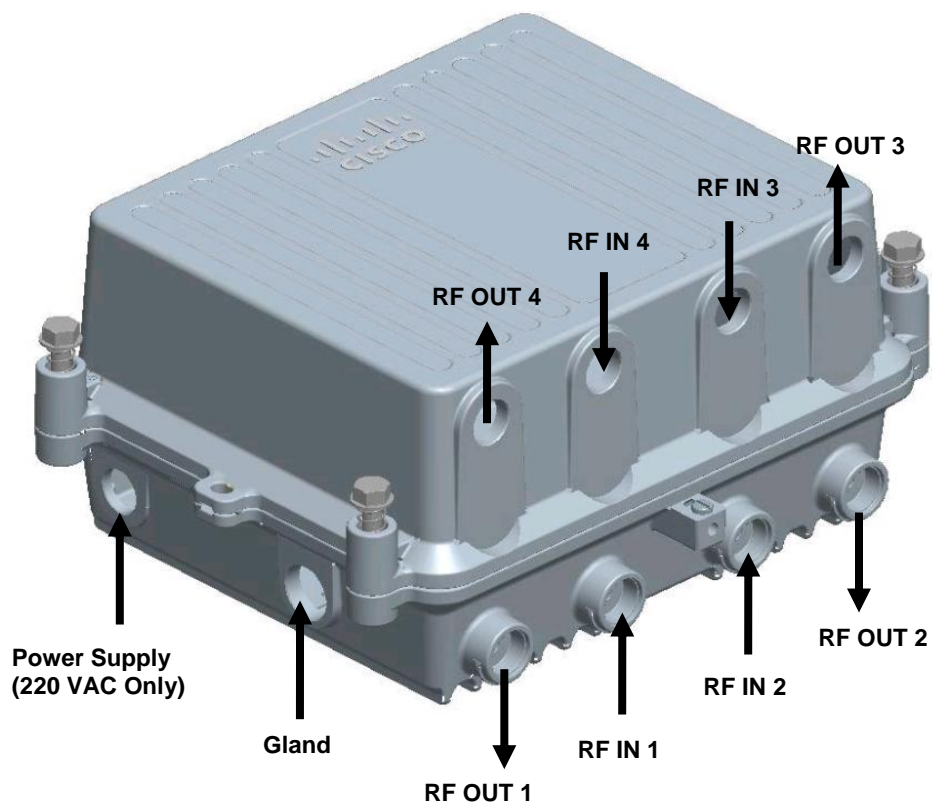

Figure 3. DigiStar Ethernet over Coax AP E230, Ports Overview (4 IN/4 OUT)

Product Specifications

See the tables below for product specifications.

Table 1.   General Performance Specifications

General Performance Specifications	
Item	**Value**
Work Band	12-44 MHz
CATV Band	87-1000 MHz
CATV Band Return Loss	>16 dB
CATV Band Insertion Loss	<2.5 dB
Link Loss (max.)	>72 dB
HPNA Transmit Power	Adaptive FDQAM
Maximum Number of EPs per AP	61 (per HPNA module)
Maximum AC Through Current	7 A @ 60 VAC
Surge Protection	2 KV (Combination Wave) 6 KV (Ring Wave)

Table 2.   Interface Specifications

Interface Specifications				
Item	**Number of Ports by Configuration**			**Value**
	1 IN/1 OUT	**2 IN/2 OUT**	**4 IN/4 OUT**	
Ethernet Port	2	2	2	RJ-45 connector, 10/100/1000 Base-T
RF Input Port	1	2	4	PG11[1]
RF Output Port	1	2	4	PG11[1]
Gland Port	1	1	1	PG16[2]
Fiber Port	-	-	-	PG11[1]
Power Input Port	1	1	1	PG11[1]

Notes:

1. 5/8'' Inserts are available. See section **Ordering Information** for more information.
2. Waterproof glands are available. See section **Ordering Information** for more information.

Table 3.   Power Supply Specifications

Power Supply Specifications		
Item	**Configuration**	**Value**
Voltage (50/60 Hz)	All Configurations	Mains Power Supply 100-240 VAC/ Lines Power 40-90 VAC
Power Consumption	2 Modules	≤15 W
	1 Module	≤12 W

Note: Voltage of power supply also meets 100-242 VAC through mains power supply or 36-90 VAC through lines power.

Table 4.   Environmental Specifications

Environmental Specifications	
Item	**Value**
Operating Temperature	-20 to +60 °C -4 to +140 °F
Storage Temperature	-40 to +85 °C -40 to +185 °F
Relative Humidity (Non-Condensing)	10% to 90%

Table 5.   Mechanical Specifications

Mechanical Specifications		
Item	**Configuration**	**Value**
Dimensions (L x W x H)	All Configurations	.305 x 245 x 133 mm 12.0 x 9.6 x 5.2 in.
Weight	2 Modules	<5.0 kg <11.0 lb
	1 Module	<4.8 kg <10.6 lb
Water/Dust Ingress Rating	All Configurations	IP68

Note: Unless otherwise noted, specifications reflect typical performance when the AP is used with the DigiStar EoC EP and are referenced to 20°C (68°F).

Ordering Information

See the tables below for ordering information.

Table 6. Ordering Information for AP

Description	Available Region	Part Number
DigiStar EoC AP E230, 44/87 MHz Split, 1 Module, 1 IN/1 OUT or 2 IN/2 OUT, without ONU, Lines Power	Global	EAP2300101106000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 2 IN/2 OUT, without ONU, Lines Power	Global	EAP2300102206000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 2 IN/2 OUT, with ONU, Lines Power	Global	EAP2300102216000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 4 IN/4 OUT, without ONU, Lines Power	Global	EAP2300102406000
DigiStar EoC AP E230, 44/87 MHz Split, 1 Module, 1 IN/1 OUT or 2 IN/2 OUT, without ONU, Europe Plug	EMEA	EAP2300231106000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 2 IN/2 OUT, without ONU, Europe Plug	EMEA	EAP2300232206000
DigiStar EoC AP E230, 44/54 MHz Split, 1 Module, 1 IN/1 OUT or 2 IN/2 OUT, without ONU, US Plug	North America	EAP2400221106000
DigiStar EoC AP E230, 44/54 MHz Split, 2 Modules, 2 IN/2 OUT, without ONU, US Plug	North America	EAP2400222206000
DigiStar EoC AP E230, 44/87 MHz Split, 1 Module, 1 IN/1 OUT or 2 IN/2 OUT, without ONU, China Plug	China	EAP2300211106000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 2 IN/2 OUT, without ONU, China Plug	China	EAP2300212206000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 4 IN/4 OUT, without ONU, China Plug	China	EAP2300212406000
DigiStar EoC AP E230, 44/87 MHz Split, 2 Modules, 4 IN/4 OUT, without ONU, US Plug	North America Philippine	EAP2300222406000

Table 7. Ordering Information for Modules

Description	Part Number
DigiStar EoC AP, HPNA 3210 Module II	4035003
DigiStar EoC AP, ONU	4036988

Table 8. Ordering Information for Accessories

Description	Part Number
DigiStar EoC AP, Gland with 2 CAT 5 Cable Plugs	4038460
DigiStar EoC AP, Gland with 1 CAT 5 Cable Plug and 1 Fiber Plug	4038461
DigiStar EoC AP, F-Connector, Metric	4037919
DigiStar EoC AP, F-Connector, Standard	4037920
DigiStar EoC AP, 5/8'' Insert, Short	4037921
DigiStar EoC AP, 5/8'' Insert, Long	4037922
DigiStar EoC AP, 5/8'' Insert, Long, with 6.5 mm Hole	4043325
DigiStar EoC AP, Port Plug	4037907

Note: The DigiStar EoC AP E230 in table 6 does not contain any of the above accessories in table 8. Please order the accessories separately as needed.

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