FD702XW-AG-R410 1GE+1FE+CATV+WIFI ONU

Brief Views

FD702XW-AG-R410 is fiber to the home multiple service access GPON ONT. It's based on the mature, stable, high cost performance GPON technology and has gigabit Ethernet switching, WDM and HFC technology. FD702XW-AG-R410 has a higher bandwidth, higher reliability, easy management and good quality of service (QoS) guarantee with technical performance of equipment meet the ITU- T G. 984 requirements and have good compatibility with third party manufacturers OLT.

It adopts single fiber WDM technology with downlink wavelength 1550nm and 1490nm, uplink wavelength 1310nm . It only needs one-core fiber to transmit data and CATV service.

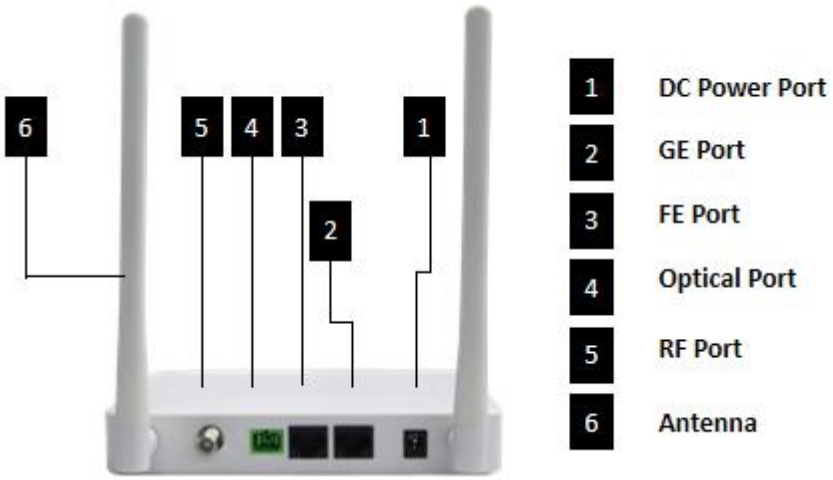
FD702XW-AG-R410 integrate wireless function which meets 802.11 b/g/n technical standards. It has external high gain omnidirectional antennas, the wireless transmission rate up to 300Mbps. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.

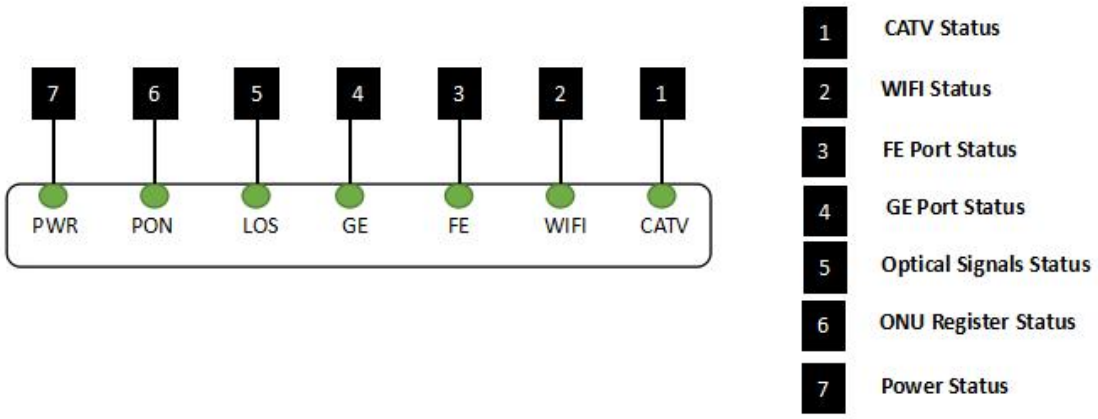
Company Address: Floor 6, Building F, Songbai Road 1008, Sunshine Community，Xili Street, Nanshan District, Shenzhen(518108)
Factory Address: Bldg B, Wentao Industrial zone, Yingrenshiyongxin Village, Shiyan Street, Baoan district, Shenzhen, Guangdong, China (518055)
Tel: +86-755-26014509/4710/4711 Fax:+86-755-26014506 Email: marketing@cdatatec.com
Website: www.cdatatec.com

Functional Feature

- Single-fiber access, provides internet, CATV, WIFI multiple service
- In compliant with ITU - T G. 984 Standard
- Support ONU auto-discovery/Link detection/remote upgrade of software
- Meet 802.11 n/b/g technical standards
- Support VLAN transparent, tag configuration
- Support multicast function
- Support DHCP/Static/PPPOE internet mode
- Support port-binding
- Support OMCI+TR069 remote management
- Support data encryption and decryption function
- Support Dynamic Bandwidth Allocation (DBA)
- Support MAC filter and URL access control
- Support remote CATV port management
- Support power-off alarm function ,easy for link problem detection
- Specialized design for system breakdown prevention to maintain stable system
- EMS network management based on SNMP ,convenient for maintenance

Product interface and LED definitions





Indicator			Description
1	CATV	CATV status	On：CATV optical normal Off：The CATV signals are not received
2	WIFI	WIFI	Blinking：Data is being transmitted On：WIFI function Opens
3	FE	FE port status	On: Ethernet connection is normal Blinking: Data is being transmitted through the Ethernet port Off: Ethernet connection is not set up
4	GE	GE port status	On: Ethernet connection is normal Blinking: Data is being transmitted through the Ethernet port Off: Ethernet connection is not set up
5	LOS	GPON optical signals	On: Optical power lower than receiver sensitivity ; Off: Optical in normal
6	PON	ONU Register	On: Success to register to OLT Blinking: In process of registering to OLT Off: Failed to register to OLT;
7	PWR	Power status	On: The ONU is power on Off: The ONU is Power off

Specification

Item		Parameter
Interface	PON Interface	1*GPON port, FSAN G.984.2 standard, Class B+ Downstream Data Rate：2.488Gbps Upstream Data Rate：1.244Gbps SC/APC single mode fiber 28dB Link loss and 20KM distance with 1:128
	CATV Interface	1 RF output F-Type Connector
	Ethernet Interface	1*10/100/1000M and 1*10/100M auto-negotiation Full/half duplex mode RJ45 connector Auto MDI/MDI-X 100m distance
	Power Interface	12V DC Power supply

Performance Parameters	PON Optical Parameter	Wavelength: Tx 1310nm, Rx1490nm Tx Optical Power: 0.5～5dBm Rx Sensitivity: -28dBm Saturation Optical Power: -8dBm
	Data Transmission Parameter	PON Throughput: Downstream 2.488Gbit/s s; Upstream 1.244Gbit/s Ethernet: 1000Mbps and 100Mbps Packet Loss Ratio: <1*10E-12 latency: <1.5ms
Network Management	Management Mode	OMCI, TR069, WEB, Telnet
	Management Function	Status monitor, Configuration management, Alarm management, Log management
Physical Features	Power	<8.5W, 12V/1A power supply adapter
	Physical Specifications	Item Dimension：160mm(L)*139.5mm(W)*28.5mm(H) Item Net Weight：about 231g
	Environmental Specifications	Operating temperature: 0 to 40ºC Operating humidity: 10% to 90%(Non-condensing)

CATV

Item	Parameter
Wavelength	1550nm
Optical return loss	>45dB
Input optical power	-18dBm～0dBm
RF frequency	47MHz~1000MHz
RF output level	82dBuV (@-12~-2dBm@85MHz)
CNR	>41dB (@-10dBm@DS22 Channel)
CSO	>58dBc (@-10dBm@DS22 Channel)
CTB	>58dBc (@-10dBm@DS22 Channel)
RF output return loss	>12dB
RF impedance	75Ω
AGC function	Support

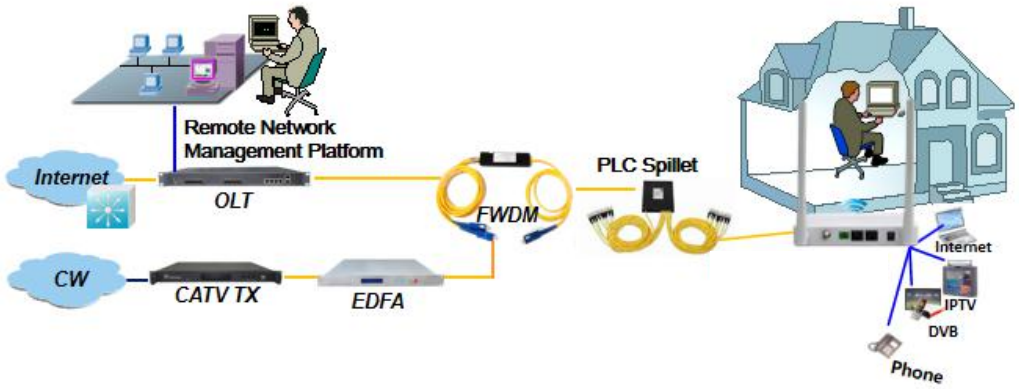
WIFI Specification

Item		Parameter
Performance parameters	Operating mode	Router or bridge
	Technical standard	IEEE802.11b/g/n
	Frequency	2.412 ~ 2.472 GHz
	Antenna gain	5dBi
	Support rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 24, 36, 48, 54Mbps 802.11n: max rate 300Mbps
	Channel	2.4GHz Channel：1,2,3,4,5,6,7,8,9,10,11,12,13
	Modulation mode	11b：DSSS： DBPSK(1Mbps),DQPSK(2Mbps),CCK(5.5/11Mbps) 11g：OFDM:BPSK(6/9Mbps), QPSK(12/18Mbps),16QAM(24/36Mbps) Q64QAM(48/54Mbps) 11n：MIMO-OFDM:BPSK,QPSK,16QAM,64QAM
	Receive sensitivity	11Mbps:≤-90dBm 54 Mbps:≤-76dBm HT20 MCS7:≤-73dBm HT40 MCS7:≤-70dBm
	Transmit power	802.11n: 17dBm
	Encryption mode	AES, TKIP, WPA, WPA2, WPA-PSK/WPA2-PSK

Network Application

Typical Solution：FTTH

Typical Business：INTERNET, WIFI, CATV



Ordering Information

Product Name	Product Model	Descriptions
1GE+1FE+CATV+WIFI Single fiber	FD702XW-AG-R410	1*10/100/1000M and 1*10/100M Ethernet interface,1 GPON interface, built-in FWDM, 1 RF interface, support AGC function, support WIFI function, plastic casing, external power supply adapter

XPON ONU

1GE+1FE+CATV+WIFI

FD702XW-AX-R410

High Speed CPU

Low Power Consumption

Optional Shell Supply

Software Customization

Brief Views

FD702XW-AX-R410 dual-mode ONU supports EPON and GPON two modes access. The ONU automatically switches into the corresponding PON mode by identifying the local OLT mode to complete GPON or EPON adaptive access.

It adopts single fiber WDM technology with downlink wavelength 1550nm and 1490nm, uplink wavelength 1310nm . It only needs one-core fiber to transmit data and CATV service.

FD702XW-AX-R410 integrates wireless function which meets 802.11 b/g/n technical standards. It has two external high gain omnidirectional antennas, the wireless transmission rate up to 300Mbps. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.

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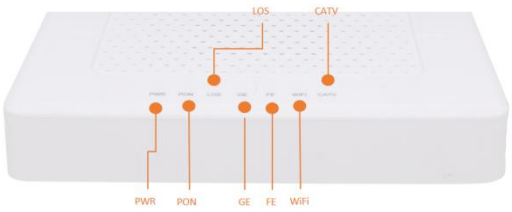
Functional Feature

- Single-fiber access, provides internet, CATV, WIFI multiple service
- In compliant with ITU - T G. 984 and IEEE802.3ah standard
- Support ONU auto-discovery/Link detection/remote upgrade of software
- Meet 802.11 b/g/n WIFI technical standard
- Support VLAN transparent, tag configuration
- Support multicast function
- Support DHCP/Static/PPPOE internet mode
- Support port-binding
- Support data encryption and decryption function
- Support Dynamic Bandwidth Allocation (DBA)
- Support MAC filter and URL access control
- Support remote CATV port management
- Support power-off alarm function ,easy for link problem detection
- Specialized design for system breakdown prevention to maintain stable system
- EMS network management based on SNMP ,convenient for maintenance
- Support OAM/OMCI+TR069 remote management

Product Interface and LED



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LED Definitions

Indicator		Description
PWR	Power status	On: The ONT is power on; Off: The ONT is Power off;
PON	ONT Register	On: Success to register to OLT; Blinking: In process of registering to OLT; Off:Failed to register to OLT or no normal optical signal input;
LOS	XPON optical signals	On: Optical power lower than receiver sensitivity; Off: Optical in normal;
GE	LAN port status	On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;
FE	LAN port status	On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;
WIFI	WIFI	Blinking： Data is being transmitted On： WIFI function Opens
CATV	CATV status	On： CATV optical normal Off： The CATV signals are not received

Hardware

- **GPON/EPON Port**
  - Single mode single fiber
  - GPON： FSAN G.984.2 standard, Class B+
  - EPON： 1000BASE-PX20+ symmetric
  - GPON： 2.488Gbps/1.244Gbps downstream/upstream
  - EPON： 1.25Gbps downstream/upstream
  - Wavelength :
    Transmit: 1310nm Receiver: 1490nm
  - Receiving sensitivity :
    GPON： -28dBm EPON： -27dBm
  - Saturated power :
    GPON： -8dBm EPON： -3dBm
  - Transmitting power :

GPON： 0.5～5dBm EPON:0～4dBm

- **User Port(LAN)**
  - RJ-45 connector
  - 1*10/100 and10/100/1000Mbps adaptive Ethernet port
  - Full/half duplex
  - Auto MDI/MDI-X
- **User Port(WIFI)**
  - IEEE802.11b/g/n(2.4G)
  - Max rate: 300M(2.4G)
  - Antenna gain： 5dBi
  - Max TX power: 2.4G： 17dBm

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- **CATV（Input /Output port）**
  - Wavelength: 1550nm
  - Input optical power: -18dBm～0dBm(with AGC)
  - RF frequency: 47MHz~1000MHz
  - RF output level: 78dBuV (@-12~-2dBm@85MHz) (with AGC)
  - RF output return loss: >12dB(with AGC)
  - RF impedance: 75 Ω
- **Indicators**
  - PWR / PON / LOS / GE / FE / CATV / WIFI
- **Power**
  - External 12VDC/1A power supply adapter
  - Power consumption: <8.5W
- **Dimension and Weight**
  - Item Dimension：
  - 160mm(L) x 139.5mm(W) x 28.5mm (H)
  - Item weight：0.23kg
- **Environmental Specifications**
  - Operating temperature: 0 to 50° C
  - Storage temperature: -40 to 85° C
  - Operating humidity: 10% to 90%(Non-condensing)

Software

- **Management**
  - EPON :OAM / WEB / TR069 / Telnet
  - GPON:OMCI / WEB / TR069 / Telnet
- **Register**
  - Auto-discovery/Link detection/Remote upgrade software
  - Auto/MAC/SN/LOID+Password authentication
- **L3**
  - IPv4/IPv6 Dual Stack
  - NAT
  - DHCP client/server
  - PPPOE client/ Passthrough
  - Static and dynamic routing
- **Switch**
  - MAC address learning
  - MAC address learning account limit
  - Port isolation
  - Port flow control
  - Broadcast storm suppression
  - VLAN transparent/tag/translate/trunk
- **Multicast**
  - IGMP V2
  - IGMP VLAN
  - IGMP transparent/Snooping/Proxy
- **Wireless**
  - 2.4G: 4*SSID
  - 2*2 MIMO
  - SSID broadcast/ hide
  - Choose channel automatically
- **Security**
  - Firewall
  - MAC address/URL filter
  - Remote WEB/Telnet access control

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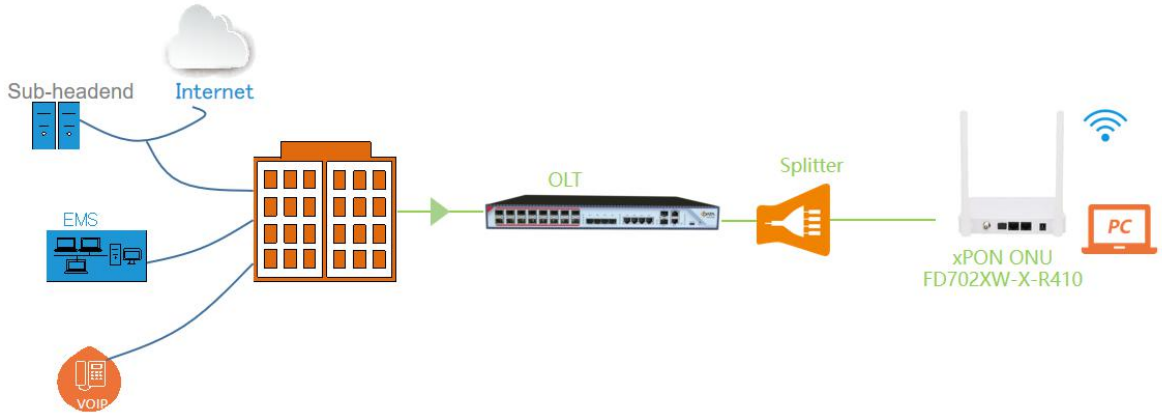
Application

- Typical Solution：FTTH
- Typical Business：Internet, CATV, Wi-Fi



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EOC Slave With 4FE & WIFI

CD5204W series is the EOC slave based on HomePlug AV solution for Ethernet access over coax. It works together with EOC master which is based on HomePlug AV solution as well to construct a two-layer Ethernet data transmission channel on CATV coax cable, provide the Ethernet access service based on the existing coax cable networking.

CD5204W series is the slave with 4 Ethernet ports and WIFI.

CD5204W series is based the Qualcomm chipset solution， with high anti jamming capability OFDM technology. The 7.5-65MHz low frequency band is used for EOC signals. Built in high isolation filter as CATV RF and EOC signal mixer, the EOC signal and CATV signal in 87~862MHz can run on one cable without interference. The PHY Layer speed is 600Mbps,the MAC Layer throughput is up to 320Mpbs.

Features:

- Based on HomePlug AV solution and Qualcomm chipset
- 7.5-65Mhz frequency for EOC signals., no influence on CATV Service
- PHY Layer speed 600Mbps
- Support data encryption
- 4*100M auto-negotiation Ethernet port
- Support the isolation of slave under one master
- Support Port-based VLAN and 802.1q VLAN
- Support bandwidth limited
- Support QOS configuration based on slave port or VLAN.
- Support broadcast storm control.
- Support data packages count
- Automatically get configurations from EOC Master when Newly connected with powered on
- Support WEB,CLI and SNMP management
- Support on-line upgrading

EOC Specification

Item	Parameters	CD5204W
Interface & indicator	RF interface	1*TV(RF signal) OUTPUT, metric/inch F connector 1*CABLE(MIX)INPUT, metric/inch F connector
	Ethernet interface	4*10/100M auto-negotiation, RJ45
	Power interface	1*DC12V power supply interface
	LED indicators	1 x power indicator 1 x system indicator 1 x CABLE indicator 1 x WIFI indicator LAN indicator(each Ethernet port has 1 indicator)
Performance parameters	RF parameters	Frequency:7.5-65MHz Output level:110±5dBuv
		Receive sensibility:-65dB Return loss:>16dB Output impedance:75Ω
	Transmission	PHY Layer:600Mbps Throughput on MAC Layer:320Mbps
	Modulation Mode	OFDM– 2690-carriers 4096/1024/256/64/16/8-QAM, QPSK, BPSK, ROBO
	Working Mode	TDMA/CSMA
	Encryption Mode	AES-128
Standard	EOC Standard	IEEE P1901(Draft) HomePlug AV
	Ethernet Standard	IEEE 802.3, IEEE 802.3x, IEEE 802.3u IEEE802.1P, IEEE802.1Q
Software	Network Management	WEB, CLI, SNMP
	Software Features	VLAN, QOS, Bandwidth Control, Broadcast storm limitation
Physical Features	Power supply & Consumption	Power adapter:12VDC 1A Power consumption：<8W
	Dimension	160×120×32mm
	Weight	0.5kg
	Environment Attribute	Work temperature：0～50℃ Stock temperature：-40～85℃ Work humidity：10%～90%, non-condensation Stock humidity：10%～90%, non-condensation

WIFI Specification

Item		Parameter
Performance parameters	Operating Mode	Router or bridge
	WIFI antenna	1 external antennas, 1 built in antennas
	Throughput	IEEE 802.11b: 11Mbps IEEE 802.11g: 54 Mbps IEEE 802.11n: 300Mbps
	Frequency	2.412 ~ 2.472 GHz
	Channel	13*Channel, configurable to meet the standard of USA, CCanada, Japan and China
	Modulation	DSSS , CCK and OFDM
	Coding	BPSK, QPSK, 16QAM and 64QAM
	RF receive sensitivity	802.11b: -83dBm @ 1 Mbps; -80dBm @ 2 Mbps; -79dBm @ 5.5 Mbps; -76dBm @ 11 Mbps 802.11g: -85dBm @ 6 Mbps; -84dBm @ 9 Mbps; -82dBm @ 12 Mbps; -80dBm @ 18 Mbps; -77dBm @ 24 Mbps; -73dBm @ 36 Mbps; -69dBm @ 48 Mbps; -68dBm @ 54 Mbps 802.11n 20MHz: -74dBm @ 65 Mbps; -70dBm @ 130 Mbps; 802.11n 40MHz: -70dBm @ 135 Mbps; -67dBm @ 300 Mbps;
	RF output lever	802.11b: 17 ±0.5dBm @11Mbps 802.11g: 15 ±0.5dBm @ 54 Mbps; 16 ±0.5dBm @ 48 Mbps; 17 ± 1dBm @ 6 ~ 36 Mbps 802.11n 20MHz: 14 ± 0.5dBm @ 130 Mbps; 15 ± 0.5dBm @ 78 Mbps; 18 ± 0.5dBm @ 6.5 Mbps 802.11n 40MHz: 14 ± 0.5dBm @ 300 Mbps; 15 ± 0.5dBm @ 162 Mbps; 18 ± 0.5dBm @ 13.5 Mbps
	Encryption Mode	802.11i security: WEP-64/128, TKIP (WPA-PSK) and AES (WPA2-PSK)

Ordering Information

Product Name	Product Model	Descriptions
CD5204W scheme wifi EOC Slave	CD5204W2-R1	4 LAN user ports, support wifi, plastic casing, external power supply adapter
	CD5204WL-R1	2*10/100M Ethernet interface, 2 LAN user ports, support wifi, plastic casing, external power supply adapter

EOC Slave With 4FE & WIFI

Overview

CD5204W series is the EOC slave based on HomePlug AV solution for Ethernet access over coax. It works together with EOC master which is based on HomePlug AV solution as well to construct a two-layer Ethernet data transmission channel on CATV coax cable, provide the Ethernet access service based on the existing coax cable networking.

CD5204W series is based the Mstar chipset solution， with high anti jamming capability OFDM technology. The 7.5-65MHz low frequency band is used for EOC signals. Built in high isolation filter as CATV RF and EOC signal mixer, the EOC signal and CATV signal in 87Mhz~1Ghz can run on one cable without interference. The PHY Layer speed is 600Mbps,the MAC Layer throughput is up to 320Mpbs.

CD5204W series WIFI is based the MTK chipset solution.It meets 802.11 b/g/n technical standards. It has two external antenna, and can support 2.4GHz wireless signal. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.

Features

- Based on HomePlug AV solution and Mstar chipset
- 7.5-65Mhz frequency for EOC signals., no influence on CATV Service
- PHY Layer speed 600Mbps
- Support data encryption
- 4*100M auto-negotiation Ethernet port
- Support the isolation of slave under one master
- Support Port-based VLAN and 802.1q VLAN
- Support bandwidth limited
- Support QOS configuration based on slave port or VLAN.
- Support broadcast storm control.
- Support data packages count
- Automatically get configurations from EOC Master when Newly connected with powered on
- Support WEB,CLI and SNMP management
- Support on-line upgrading

EOC Specification

Item	Parameters	CD5204W
Interface & indicator	RF interface	1*TV(RF signal) OUTPUT, metric/inch F connector 1*CABLE(MIX)INPUT, metric/inch F connector
	Ethernet interface	4*10/100M auto-negotiation, RJ45
	Power interface	1*DC12V power supply interface
	LED indicators	1*power indicator 1*system indicator 1*CABLE indicator 1*WIFI indicator LAN indicator(each Ethernet port has 1 indicator)
Performance parameters	RF parameters	Frequency:7.5-65MHz Output level:110±5dBuv

		Receive sensibility:-65dB Return loss:>16dB Output impedance:75Ω
	Transmission	PHY Layer:600Mbps Throughput on MAC Layer:320Mbps
	Modulation Mode	OFDM– 2690-carriers 4096/1024/256/64/16/8-QAM, QPSK, BPSK, ROBO
	Working Mode	TDMA/CSMA
	Encryption Mode	AES-128
Standard	EOC Standard	IEEE P1901(Draft) HomePlug AV
	Ethernet Standard	IEEE 802.3, IEEE 802.3x, IEEE 802.3u IEEE802.1P, IEEE802.1Q
Software	Network Management	WEB, CLI, SNMP
	Software Features	VLAN, QOS, Bandwidth Control, Broadcast storm limitation
Physical Features	Power supply & Consumption	Power adapter:12VDC 0.5A Power consumption：<5W
	Dimension	160mm(L) x139.5mm(W) x 28.5mm (H)
	Weight	0.3kg
	Environment Attribute	Work temperature：0～55℃ Stock temperature：-30～60℃ Work humidity：10%～90%, non-condensation Stock humidity：5%～95%, non-condensation

WIFI Specification

Item		Parameter
Performance parameters	Operating Mode	Router or bridge
	WIFI antenna	2 external antennas, 1 built in antennas
	Throughput	IEEE 802.11b: 11Mbps IEEE 802.11g: 54 Mbps IEEE 802.11n: 300Mbps
	Frequency	2.412 ~ 2.472 GHz
	Channel	13*Channel, 1,2,3,4,5,6,7,8,9,10,11,12,13
	Modulation	11b：DSSS：DBPSK(1Mbps),DQPSK(2Mbps),CCK(5.5/11Mbps) 11g:OFDM:BPSK(6/9Mbps),QPSK(12/18Mbps),16QAM(24/36M

		bps),Q64QAM(48/54Mbps) 11n：MIMO-OFDM:BPSK,QPSK,16QAM,64QAM.
	Receive sensitivity	11Mbps:≤-89dBm 54 Mbps:≤-76dBm HT20 MCS7:≤-72dBm HT40 MCS7:≤-68dBm
	RF output lever	802.11n: 16.5dBm
	Encryption Mode	AES, TKIP, WPA, WPA2, WPA-PSK/WPA2-PSK

Ordering Information

Product Name	Product Model	Descriptions
CD5204W	CD5204W-B35S-M410	1* mixed input port, 4*FE ports(2ETH+2LAN), 1*TV output port, support wifi, 35/47 type high/low filter, external power supply adapter, plastic casing
	CD5204W-B35N-M410	1* mixed input port, 4*FE ports(4LAN), 1*TV output port, support wifi, 35/47 type high/low filter, external power supply adapter, plastic casing
	CD5204W-B42S-M410	1* mixed input port, 4*FE ports(2ETH+2LAN), 1*TV output port, support wifi, 42/54 type high/low filter, external power supply adapter, plastic casing
	CD5204W-B42N-M410	1* mixed input port, 4*FE ports(4LAN), 1*TV output port, support wifi, 42/54 type high/low filter, external power supply adapter, plastic casing
	CD5204W-B65S-M410	1* mixed input port, 4*FE ports(2ETH+2LAN), 1*TV output port, support wifi, 65/87 type high/low filter, external power supply adapter, plastic casing
	CD5204W-B65N-M410	1* mixed input port, 4*FE ports(4LAN), 1*TV output port, support wifi, 65/87 type high/low filter, external power supply adapter, plastic casing