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# Optical Fiber System Solution

**FTTx PON System  
Security and Monitoring System**

*Catalogue 2019*

KOC provides FTTx solution, which is new generation passive fiber network product solution based on PON system network and meets relative national and international standards of GPON and EPON, and also meets the transmission requirement of high speed internet, voice and video services. This solution not only can provide the last kilometer access with fiber for all kinds of network operators, but also can be applied on customer professional network for various industries like broadcast and television access network, video monitoring network, enterprise local area network, and servers in customer private network of different industries such as radio and television, transportation, energy sources, electric power, finance and government.

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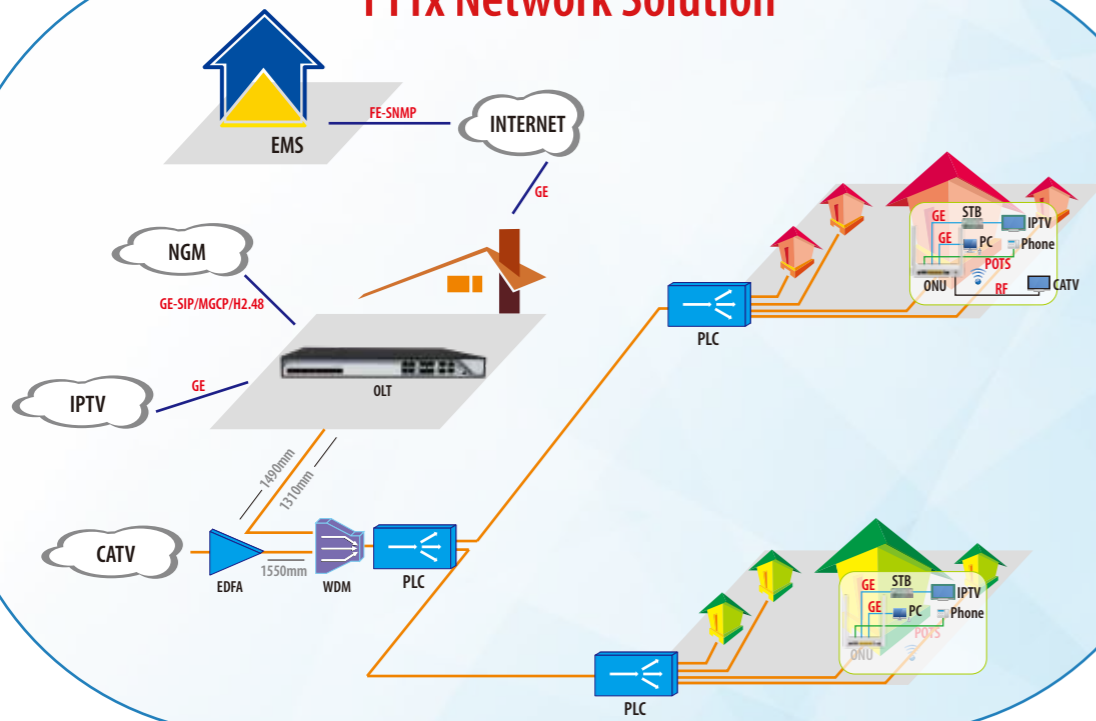
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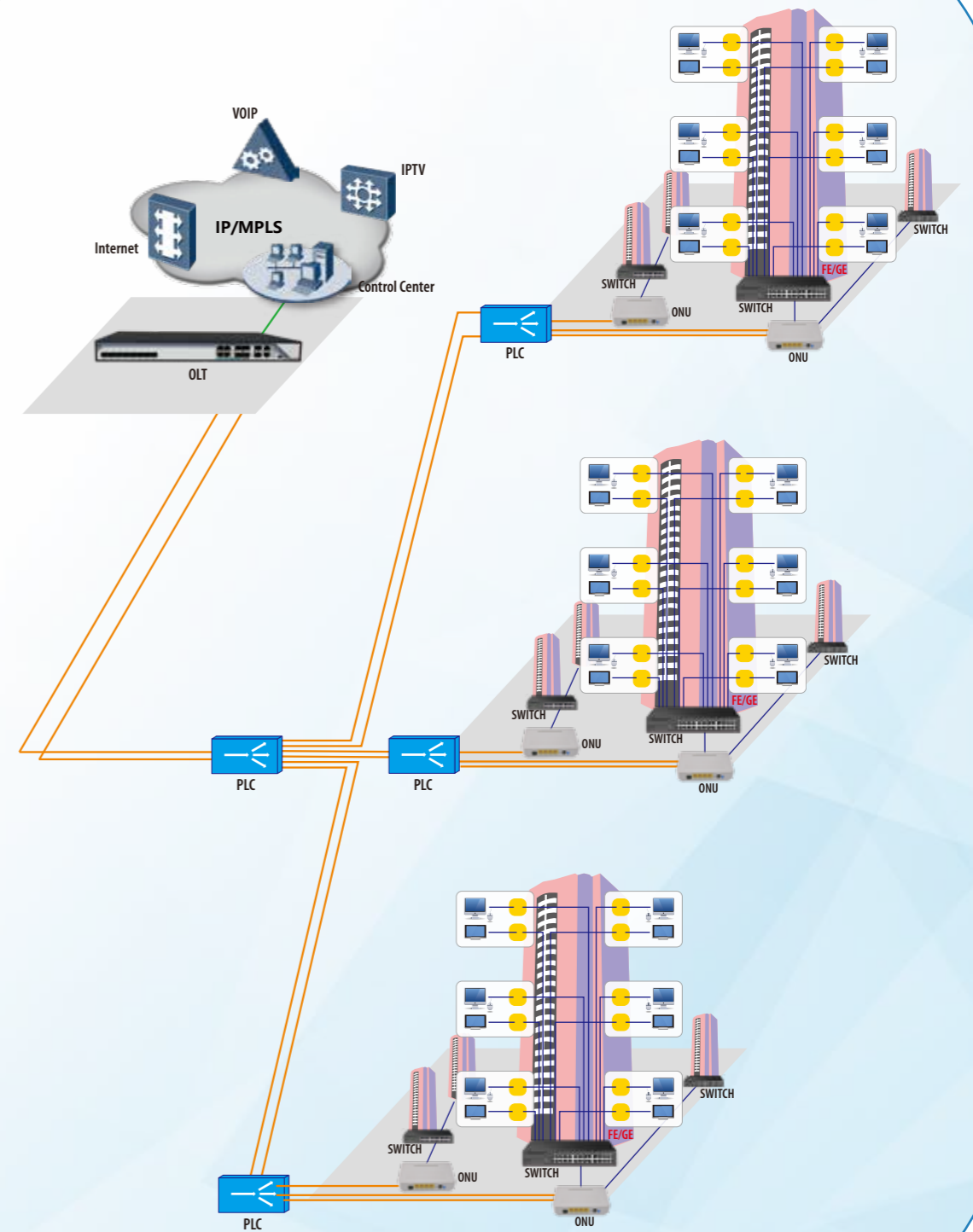
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# FTTx PON System

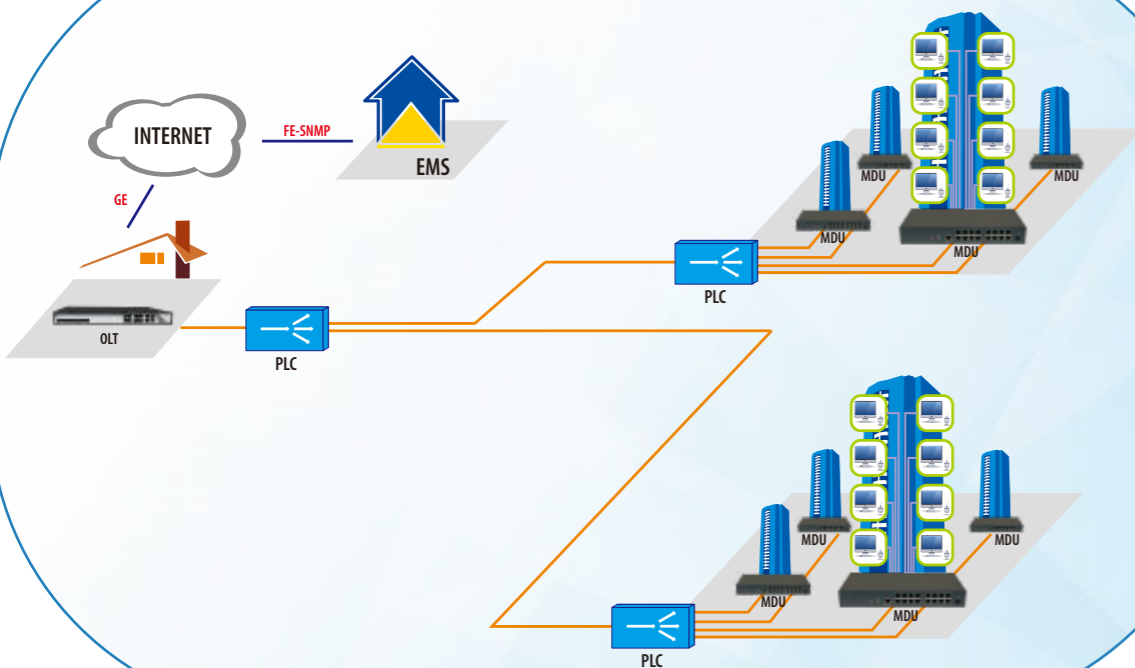
## FTTx Network Solution



## PON+LAN Network Solution



## FTTB Network Solution



## KOC-ET8004

KOC-ET8004 is 1U high 19 inch rack mount product. The features of the OLT are small, convenient, flexible, easy to deploy, high performance. It is appropriate to deploy in an compact room environment.

The OLT can use for "Triple-Play", CPN, IP Camera, Enterprise LAN and IOT applications. It is a high performance products.

KOC-ET8004 provides 1 USB port, 4GE and 4 SFP slots interface for uplink, and 4 EPON ports for downstream. It can support 256 ONU under 1:64 splitter ratio.



| Item                     | Parameter             | Specification  |
|--------------------------|-----------------------|--|
| <b>KOC-ET8004</b>        |                       |  |
| Uplink Port              | QTY                   | 8  |
|                          | Copper                | 10/100/1000M auto-negotiable, RJ45:4pcs                          |
|                          | SFP                   | 4 SFP slots  |
| PON Port                 | QTY                   | 4  |
|                          | Physical Interface    | SFP Slots  |
|                          | Connector Type        | 1000BASE-PX20+   |
|                          | Max splitting ratio   | 1:64   |
|                          | USB Port              | 1 Type-C interface   |
|                          |                       | Similar to the CONSOLE port function, used for serial port login |
|                          | Management Ports      | 1*10/100/1000M auto-negotiable outband port                      |
|                          |                       | 1CONSOLE port  |
| PON Port Specification   | Transmission Distance | 20KM   |
|                          | PON port speed        | Symmetrical 1.25Gbps   |
|                          | Wavelength            | 1490nm TX, 1310nm RX   |
|                          | Connector             | SC/PC  |
|                          | Fiber Type            | 9/125μm SMF  |
|                          | TX Power              | +2.5~+7dBm   |
|                          | Rx Sensitivity        | -27dBm   |
| Saturation Optical Power | -6dBm                 |  |
|                          | Management Mode       | SNMP, Telnet, CLI management mode.                               |

## KOC-ET8008

KOC-ET8008 is 1U high 19 inch rack mount product. The features of the OLT are small, convenient, flexible, easy to deploy, high performance. It is appropriate to deploy in an compact room environment.

The OLT can use for "Triple-Play", CPN, IP Camera, Enterprise LAN and IOT applications. It is a high performance products.

KOC-ET8008 provides 8GE(copper)and 8SFP slots Combo interface for uplink, and 8 EPON ports for downstream. It can support 512 ONU under 1:64 splitter ratio.



| Item                     | Parameter             | Specification                           |
|--------------------------|-----------------------|---|
| <b>KOC-ET8008</b>        |                       |   |
| Chassis                  | Rack                  | 1U 19 inch standard box                 |
|                          | Slots                 | NA                                      |
| Uplink Port              | QTY                   | 16                                      |
|                          | Copper                | 10/100/1000M auto-negotiable, RJ45:8pcs |
|                          | SFP                   | 8SFP slots(Combo)                       |
| PON Port                 | QTY                   | 8                                       |
|                          | Physical Interface    | SFP Slots                               |
|                          | Connector Type        | 1000BASE-PX20+                          |
|                          | Max splitting ratio   | 1:64                                    |
|                          | Management Ports      | 1*100BASE-TX outband port               |
|                          |                       | 1CONSOLE port                           |
| PON Port Specification   | Transmission Distance | 20KM                                    |
|                          | PON port speed        | Symmetrical 1.25Gbps                    |
|                          | Wavelength            | 1490nm TX,1310nm RX                     |
|                          | Connector             | SC/PC                                   |
|                          | Fiber Type            | 9/125μm SMF                             |
|                          | TX Power              | +2.5~+7dBm                              |
|                          | Rx Sensitivity        | -27dBm                                  |
| Saturation Optical Power | -6dBm                 |   |
|                          | Management Mode       | SNMP, Telnet, CLI management mode.      |

## KOC-ET8016

KOC-ET8016 is 1U high 19 inch rack mount product. The features of the OLT are small, convenient, flexible, easy to deploy, high performance. It is appropriate to deploy in a compact room environment.

The OLT can use for "Triple-Play", CPN, IP Camera, Enterprise LAN and IOT applications. It is a high performance products.

KOC-ET8016 provides 1 USB interface, 4GE(copper) and 4GE optical interface, 2\*10Gb uplink interface, and 16 EPON ports for downstream. It can support 1024 ONUs under 1:64 splitter ratio.



| Item  | Parameter                | Specification                            |
|---|--------------------------|--|
| <b>KOC-ET8016</b>   |                          |  |
| Chassis   | Rack                     | 1U 19 inch standard box                  |
|   | QTY                      | 10                                       |
| Uplink Port   | Copper                   | 10/100/1000M auto-negotiable,RJ45:4pcs   |
|   | Optical interface        | 4 GE                                     |
|   | 10Gb uplink interface    | 2*10Gb                                   |
| PON Port  | QTY                      | 16                                       |
|   | Physical Interface       | SFP Slots                                |
|   | Connector Type           | 1000BASE-PX20+                           |
|   | Max splitting ratio      | 1:64                                     |
| USB Port  | QTY                      | 1  |
|   | Connector Type           | Type-C                                   |
| Management Ports  |                          | 1*100BASE-TX outband port; 1CONSOLE port |
| PON Port Specification  | Transmission Distance    | 20KM                                     |
|   | PON port speed           | Symmetrical 1.25Gbps                     |
|   | Wavelength               | 1490nm TX,1310nm RX                      |
|   | Connector                | SC/PC                                    |
|   | Fiber Type               | 9/125μm SMF                              |
|   | TX Power                 | +2.5~+7dBm                               |
| 10Gb SFP+ Port Specification<br>(Apply to C-Data 10Gb module) | Rx Sensitivity           | -27dBm                                   |
|   | Saturation Optical Power | -6dBm                                    |
|   | Transmission Distance    | 10KM                                     |
|   | PON port speed           | 8.5-10.51875Gbps                         |
| 10Gb SFP+ Port Specification<br>(Apply to C-Data 10Gb module) | Wavelength               | 1310nmTX, 1310nmRX                       |
|   | Connector                | LC                                       |
|   | Fiber Type               | Single mode with dual fiber              |
|   | TX Power                 | -8.2~+0.5 dBm                            |
|   | Rx Sensitivity           | -12.6dBm                                 |
| Management Mode   |                          | SNMP, Telnet, CLI management mode.       |

## KOC-GT8008

GPON OLT KOC-GT8008 completely meet relative standard of ITU G.984.x and FSAN, which is 1U rack-mounted device with 1 USB interface, 4 uplink GE ports, 4 uplink optical ports, 2 10-gigabit uplink ports and 8 GPON ports, each GPON port supports the splitting ratio of 1:128 and provides downstream bandwidth of 2.5Gbps and upstream bandwidth of 1.25Gbps, system support 1024 GPON terminals accessing in for the most. This product meets the requirements in device performance and size of compact server room as the product has high performance and compact size, is convenient and flexible to use, and is easy to deploy as well. Moreover, the product meets the requirements of promoting network performance, improving reliability and reducing power consumption in the perspective of access network and enterprise network and is applicable to three-in-one broadcast television network, FTTP (Fiber to the premise), video monitoring network, enterprise LAN (Local Area Network), internet of things and other network applications with a very high price/performance ratio.



| Item                      | Parameter                | Specification  |
|---------------------------|--------------------------|--|
| <b>KOC-GT8008</b>         |                          |  |
| Management Rack           | Type                     | 1U 19-inch standard box  |
|                           | Slot                     | 2 power module slot  |
| Uplink Port               | COMBO port               | 4 10/100/1000M auto-negotiation Ethernet ports   |
|                           |                          | 4 SFP interfaces   |
|                           | 10-Gigabit               | 2 SFP+ interfaces  |
| PON Port                  | Quantity                 | 8  |
|                           | Physical interface       | SFP slot   |
|                           | Interface type           | ITU-TG.984.2 Class B+/Class C+   |
|                           | Max splitting ratio      | 1:128  |
| Management Port           |                          | 1 100/1000BASE-Tx out-band Ethernet port<br>1 CONSOLE local management port            |
| USB Port                  |                          | 1 Type-C interface<br>Similar to the CONSOLE port function, used for serial port login |
| PON Port attribute        | Transmission distance    | 20KM   |
|                           | Port rate                | Downstream: 2.5Gbps Upstream: 1.25Gbps   |
|                           | Wavelength               | Forwarding: 1490nm Receiving: 1310nm   |
|                           | Interface type           | SC/UPC   |
|                           | Fiber type               | 9/125μm SMF (Single Mode Fiber)  |
|                           | Light transmission power | Class B+ +1.5~+5dBm Class C+ +3~+7dBm  |
| PON Port attribute        | Receiving sensitivity    | Class B+ -28dBm Class C+ -30dBm  |
|                           | Saturation power         | Class B+ -8dBm Class C+ -12dBm   |
| Network management method |                          | Support CLI, SNMP, TELNET, SSH, WEB  |
| Backplane Bandwidth       |                          | 78G  |
| Size                      |                          | 440mm(L)*391mm(W)*44mm(H)  |
| Weight                    |                          | 4kg  |
| Power supply              | 220VAC                   | AC: 90V~240V,47/63Hz   |
|                           | -48DC                    | DC:-36V~-72V   |
| Maximum power             |                          | 70W  |
| Working environment       | Working temperature      | 0~50 °C  |
|                           | Storage temperature      | -40~85 °C  |
|                           | Relative humidity        | 5~90% (Non-condensing)   |

## KOC-GT8016

GPON OLT KOC-GT8016 completely meet relative standard of ITU G.984.x and FSAN, which is 1U rack-mounted device with 1 USB interface, 4 uplink GE ports, 4 uplink optical ports, 2 10-gigabit uplink ports and 16 GPON ports, each GPON port supports the splitting ratio of 1:128 and provides downstream bandwidth of 2.5Gbps and upstream bandwidth of 1.25Gbps, system support 2048 GPON terminals accessing in for the most. This product meets the requirements in device performance and size of compact server room as the product has high performance and compact size, is convenient and flexible to use, and is easy to deploy as well. Moreover, the product meets the requirements of promoting network performance, improving reliability and reducing power consumption in the perspective of access network and enterprise network and is applicable to three-in-one broadcast television network, FTTP (Fiber to the premise), video monitoring network, enterprise LAN (Local Area Network), internet of things and other network applications with a very high price/performance ratio.



| Item                      | Parameter                | Specification   |
|---------------------------|--------------------------|---|
| <b>KOC-GT8016</b>         |                          |   |
| Management Rack           | Type                     | 1U 19-inch standard box   |
|                           | Slot                     | 2 power module slot   |
| Uplink Port               | COMBO port               | 4 10/100/1000M auto-negotiation Ethernet ports                              |
|                           | 10-Gigabit               | 4 SFP interfaces  |
|                           | Quantity                 | 2 SFP+ interfaces   |
| PON Port                  | Physical interface       | 16  |
|                           | Interface type           | SFP slot  |
|                           | Max splitting ratio      | ITU-TG.984.2 Class B+/Class C+  |
| Management Port           |                          | 1:128   |
|                           |                          | 1 100/1000BASE-Tx out-band Ethernet port<br>1 CONSOLE local management port |
| USB Port                  |                          | 1 Type-C interface  |
|                           |                          | Similar to the CONSOLE port function, used for serial port login            |
| PON Port attribute        | Transmission distance    | 20KM  |
|                           | Port rate                | Downstream: 2.5Gbps Upstream: 1.25Gbps                                      |
|                           | Wavelength               | Forwarding: 1490nm Receiving: 1310nm  |
|                           | Interface type           | SC/UPC  |
|                           | Fiber type               | 9/125μm SMF (Single Mode Fiber)   |
|                           | Light transmission power | Class B+ +1.5~+5dBm Class C+ +3~+7dBm                                       |
| PON Port attribute        | Receiving sensitivity    | Class B+ -28dBm Class C+ -30dBm   |
|                           | Saturation power         | Class B+ -8dBm Class C+ -12dBm  |
| Network management method |                          | Support CLI, SNMP, TELNET, SSH, WEB   |
| Backplane Bandwidth       |                          | 108G  |
| Size                      |                          | 440mm(L)*391mm(W)*44mm(H)   |
| Weight                    |                          | 4kg   |
| Power supply              | 220VAC                   | AC: 90V~240V, 47/63Hz   |
|                           | -48DC                    | DC: -36V~-72V   |
| Maximum power             |                          | 70W   |
| Working environment       | Working temperature      | 0~50 ℃  |
|                           | Storage temperature      | -40~85 ℃  |
|                           | Relative humidity        | 5~90% (Non-condensing)  |

## KOC-E600-100U

KOC-E600-100U data type ONU is one of the EPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH to provide the data and video service based on the EPON network. provide one GE auto-adapting Ethernet ports. features high-performance forwarding capabilities to ensure excellent experience with Internet and HD video services. Therefore, provides a perfect terminal solution and future-oriented service supporting capabilities for FTTH deployment. It has good third-party compatibility to work with the third party OLT, such as Huawei/ZTE/Fiberhome/Alcatel-Lucent.



| Item                         | Parameters            | Specification                               |
|------------------------------|-----------------------|---|
| <b>KOC-E600-100U</b>         |                       |   |
| Interface                    | PON Interface         | 1 EPON optical interface                    |
|                              |                       | Meet 1000BASE-PX20+ standard                |
|                              |                       | Symmetric 1.25Gbps upstream/downstream      |
|                              |                       | SC/PC single-mode fiber                     |
| Interface                    | Ethernet Interface    | split ratio: 1:64                           |
|                              |                       | Transmission distance 20KM                  |
|                              |                       | 1*10/100/1000M auto-negotiation             |
|                              |                       | Full Duplex / Half-Duplex                   |
| Performance Parameters       | Power Interface       | RJ45 connector                              |
|                              |                       | Auto MDI/MDI-X                              |
|                              |                       | Transmission Distance 100 Meter             |
|                              |                       | 12V DC supply power                         |
| Performance Parameters       | PON Optical Parameter | Wavelength: Tx 1310nm, Rx1490nm             |
|                              |                       | Tx Optical Power: 0~4dBm                    |
|                              |                       | Rx Sensitivity: -27dBm                      |
|                              |                       | Saturation Optical Power: -3dBm             |
| Environmental Specifications | Dimension             | Item Dimension: 78mm(L) x78mm(W) x25mm (H)  |
|                              |                       | Weight                                      |
| Environmental Specifications | Environment           | Item weight: 0.1kg                          |
|                              |                       | Operating Temperature: 0~50 ℃               |
|                              |                       | Storage Temperature: -40~85 ℃               |
|                              |                       | Operating Humidity: 10%~90%(Non-condensing) |
|                              |                       | Storage Humidity: 10%~90%(Non-condensing)   |

## KOC-E600-100W

KOC-E600-100W is for broadband access market based on the introduction of EPON technology passive optical network terminal products. It's with EPON OLT are used together to provide a complete broadband access solution. can integration wireless function with meet 802.11 n/b/g technical standards, It has two external antenna, 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.



| Item                      | Parameters                   | Specification   |
|---------------------------|------------------------------|---|
| <b>KOC-E600-100W</b>      |                              |   |
| Interface                 | PON Interface                | 1 EPON optical interface<br>Meet 1000BASE-PX20+standard<br>Symmetric 1.25Gbps upstream/downstream<br>SC/PC single-mode fiber<br>split ratio: 1:64<br>Transmission distance 20KM   |
|                           | Ethernet Interface           | 1*10/100/1000M auto-negotiation<br>Full/half duplex mode<br>RJ45 connector<br>Auto MDI/MDI-X<br>100m distance   |
|                           | Power Interface              | An external 12V DC 0.5A power supply adapter  |
| Performance Parameters    | PON Optical Parameter        | Wavelength: Tx:1310nm, Rx: 1490nm<br>Tx Optical Power: 0~4dBm<br>Rx Sensitivity: -27dBm<br>Saturation Optical Power: -3dBm  |
|                           | Physical Specifications      | Item Dimension: 125mm(L) x80mm(W) x 28mm (H)<br>Item weight: 0.2kg  |
|                           | Environmental Specifications | Operating temperature: 0 to 50°C<br>Storage temperature: -40 to 85°C<br>Operating humidity: 10% to 90%(Non-condensing)<br>Storage humidity: 10% to 90%(Non-condensing)  |
| <b>WIFI Specification</b> |                              |   |
| 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<br>802.11n: max rate 300Mbps  |
|                           | Channel                      | 2.4GHz Channel: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13<br>11b: DSSS: DBPSK(1Mbps),DQPSK(2Mbps),CCK(5.5/11Mbps)<br>11g: OFDM: BPSK(6/9Mbps),QPSK(12/18Mbps),<br>16QAM(24/36Mbps),Q64QAM(48/54Mbps)<br>11n: MIMO-OFDM: BPSK,QPSK,16QAM,64QAM |
|                           | Receive sensitivity          | 11Mbps: ≤-90dBm    54 Mbps: ≤-76dBm<br>HT20 MCS7: ≤-73dBm    HT40 MCS7: ≤-70dBm   |
|                           | Transmit power               | 802.11n: 17dBm  |
|                           | Encryption mode              | AES, TKIP, WPA, WPA2, WPA-PSK/WPA2-PSK  |

## KOC-E600-200T

KOC-E600-200T is fiber to the home multi service access EPON ONU. It's based on the mature, stable, high cost performance EPON technology and has gigabit Ethernet switching, WDM and HFC technology. KOC-E600-200T has a higher bandwidth, higher reliability, easy management and good quality of service (QoS) guarantee with technical performance of equipment meet the IEEE802.3ah requirements and have good compatibility with third party manufacturers OLT.



| Item                    | Specification  |
|-------------------------|--|
| <b>KOC-E600-200T</b>    |  |
| PON Interface           | 1 EPON optical interface<br>Meet 1000BASE-PX20+standard<br>Symmetric 1.25Gbps upstream/downstream<br>SC single-mode fiber<br>split ratio: 1:64<br>Transmission distance 20KM                                     |
|                         | 1*10/100/1000M auto-negotiation<br>Full/half duplex mode<br>RJ45 connector<br>Auto MDI/MDI-X<br>100m distance  |
|                         | 1 RF output<br>Female F-Type Connector   |
| User Ethernet Interface | 12V DC Power supply  |
| Power Interface         | Wavelength: Tx 1310nm, Rx1490nm<br>Item weight: 0.2kg<br>Tx Optical Power: 0~4dBm<br>Rx Sensitivity: -27dBm<br>Saturation Optical Power: -3dBm<br>Connector Type: SC<br>Optical Fiber: 9/125μm single-mode fiber |
| <b>CATV</b>             |  |
| Wavelength              | 1550nm   |
| Optical return loss     | >45dB  |
| Input optical power     | -15dBm~+2dBm   |
| RF frequency            | 47MHz~1000MHz  |
| RF output lever         | ≥65dBuV (@-12dBm@85MHz)  |
| Flatness                | <±1.5db  |
| CNR                     | ≥42dB (@-10dBm@DS22 Channel)   |
| CSO                     | ≤-60dBc (@-10dBm@DS22 Channel)   |
| CTB                     | ≤-65dBc (@-10dBm@DS22 Channel)   |
| RF output return loss   | >10dB  |
| RF impedance            | 75Ω  |

## KOC-E600-400PW

KOC-E600-400PW EPON HGU ONU is one of the EPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH/FTTO to provide the data, voice and video service based on the EPON network. provides a perfect terminal solution and future-oriented service supporting capabilities for FTTH deployment. It has good third-party compatibility to work with the third party OLT, such as Huawei/ZTE/Fiberhome/Alcatel-Lucent.



| Item                      | Parameters                   | Specification  |
|---------------------------|------------------------------|--|
| <b>KOC-E600-400PW</b>     |                              |  |
|                           |                              | 1 EPON optical interface<br>Meet 1000BASE-PX20+ standard   |
|                           | Uplink Interface             | Symmetric 1.25Gbps upstream/downstream<br>SC single-mode fiber<br>split ratio: 1:64<br>Transmission distance 20KM  |
|                           | POTS Port                    | 2*RJ11 with 3REN<br>Max 1km distance<br>Balanced Ring, 50V RMS   |
| Interface                 | Ethernet Interface           | 4*10/100/1000M auto-negotiation<br>Full/half duplex mode<br>RJ45 connector<br>Auto MDI/MDI-X<br>100m distance  |
|                           | USB interface                | 1*USB 2.0 interface<br>Transmission Rate: 480Mbps  |
|                           | Power                        | External 12VDC/1A power supply adapter<br>Power consumption: <7W   |
|                           | Dimension                    | Item Dimension : 170mm(L) x 130mm(W) x 30mm (H)  |
|                           | Weight                       | Item weight : 0.3kg  |
| Physical Features         | Environmental Specifications | Operating temperature: 0 to 50°C<br>Storage temperature: -40 to 85°C<br>Operating humidity: 10% to 90%(Non-condensing)<br>Storage humidity: 10% to 90%(Non-condensing) |
| <b>WIFI Specification</b> |                              |  |
|                           | Operating Mode               | Router or bridge   |
|                           | Antenna gain                 | 5dBi   |
|                           | WIFI antenna                 | 2 external antennas  |
| Performance parameters    | Throughput                   | IEEE 802.11b: 11Mbps<br>IEEE 802.11g: 54 Mbps<br>IEEE 802.11n: 300Mbps   |
|                           | Frequency                    | 2.412~2.472 GHz  |
|                           | Channel                      | 13*Channel, configurable to meet the standard of USA, Canada, Japan and China  |

## KOC-E600-400U

EPON technology is a kind of emerging technology which takes advantage of PON technology and Ethernet technology also is a kind of point to multi-point network technology. OLT through the passive optical network to connect multiple ONU with single fiber bidirectional .KOC-E600-400U series fully meet IEE802.3ah and CTC3.0 standard protocol. It has good third-party compatibility to work with the third party OLT, It supports 1Gbps transmission rate up and down and provides users with good QOS, flexible bandwidth allocation of Ethernet services and IP integrated service.



| Item                         | Specification  |
|------------------------------|--|
| <b>KOC-E600-400U</b>         |  |
|                              | 1 EPON optical interface<br>Meet 1000BASE-PX20+ standard   |
| PON Interface                | Symmetric 1.25Gbps upstream/downstream<br>SC/UPC single-mode fiber<br>split ratio: 1:64<br>Transmission distance 20KM  |
|                              | 4*10/100M or 4*10/100/1000M auto-negotiation<br>Full/half duplex mode  |
| User Ethernet Interface      | RJ45 connector<br>Auto MDI/MDI-X<br>100m distance  |
| Power Interface              | An external 12V DC 0.5A power supply adapter   |
| PON Optical Parameter        | Wavelength: Tx 1310nm, Rx1490nm<br>Tx Optical Power: 0~4dBm<br>Rx Sensitivity: -27dBm<br>Saturation Optical Power: -3dBm   |
| Physical Specifications      | Item Dimension : 160mm(L) x 120mm(W) x 32.5mm (H)<br>Item weight : 0.2kg   |
| Environmental Specifications | Operating temperature: 0 to 50 °C<br>Storage temperature: -40 to 85 °C<br>Operating humidity: 10% to 90%(Non-condensing)<br>Storage humidity: 10% to 90%(Non-condensing) |



## KOC-E600-400W

KOC-E600-400W dual-frequency data type ONU for broadband access market based on the introduction of EPON technology passive optical network terminal products. It's with EPON OLT are used together to provide a complete broadband access solution. can integrate wireless function with meet 802.11 a/b/g/n/ac technical standards. At the same time, it also supports 2.4GHz/5GHz dual-band wireless signal. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.



| Item                   | Parameters            | Specification  |  |
|------------------------|-----------------------|--|--|
| <b>KOC-E600-400W</b>   |                       |  |  |
| Interface              | PON Interface         | 1 EPON optical interface   |  |
|                        |                       | Meet 1000BASE-PX20+standard  |  |
|                        |                       | Symmetric 1.25Gbps upstream/downstream<br>SC/PC single-mode fiber<br>split ratio: 1:64<br>Transmission distance 20KM |  |
| Ethernet Interface     | Ethernet Interface    | 4*10/100/1000M auto-negotiation<br>Full/half duplex mode<br>RJ45 connector<br>Auto MDI/MDI-X<br>100m distance        |  |
|                        |                       | Power Interface  | An external 12V DC power supply adapter                                |
|                        |                       |  | Wavelength: Tx 1310nm, Rx1490nm  |
| Performance Parameters | PON Optical Parameter | Tx Optical Power: 0~4dBm<br>Rx Sensitivity: -27dBm<br>Saturation Optical Power: -3dBm                                |  |
|                        |                       | Physical Specifications  | Item Dimension: 160mm(L) x 120mm(W) x 32.5mm (H)<br>Item weight: 0.2kg |
|                        |                       |  | Environmental Specifications   |

### WiFi Specification

- Comply with IEEE 802.11a/b/g/n/ac protocol standard, support 2.4GHz and 5GHz
- There are four antennas, two built-in, two external
- 5dBi antenna gain
- Maximum ideal rate up to 1.2Gbps
- 2.4GHz supports 2\*2 MIMO (Multiple-Input Multiple-Output) technology
- 5GHz supports 2\*2 MIMO (Multiple-Input Multiple-Output) technology
- Support 8 SSIDs
- Support wider RF bandwidth, up to 80MHz
- Support higher 256-QAM modulation mode
- Support MIMO-OFDM encoding mode
- Support wireless security of 64/128 bit WEP, 802.1x, WPA and WPA2

## KOC-G600-100U

KOC-G600-100U GPON is the latest generations of access network technology. ITU-T G.984 is the standard protocol of GPON. The GPON standard differs from other PON standards in that it achieves higher bandwidth and higher efficiency using larger, variable-length packets. GPON offers efficient packaging of user traffic, with frame segmentation allowing higher quality of service (QOS) for delay-sensitive voice and video communications traffic. GPON networks provides the reliability and performance expected for business services and provides an attractive way to deliver residential services. GPON enables Fiber To The Home (FTTH) deployments economically resulting to accelerated growth worldwide. It has good third-party compatibility to work with the third party OLT, such as Huawei/ZTE/Fiberhome/Alcatel-Lucent.



| Item                   | Parameter  | Specification  |   |
|------------------------|--|--|---|
| <b>KOC-G600-100U</b>   |  |  |   |
| Interface              | PON Interface  | 1*GPON port, FSAN G.984.2 standard, Class B+<br>Downstream Data Rate: 2.488Gbps<br>Upstream Data Rate: 1.244Gbps<br>SC/PC single mode fiber<br>28dB Link loss and 20KM distance with 1:128 |   |
|                        |  | Ethernet Interface   | 1*10/100/1000M auto-negotiation<br>Full Duplex/Half-Duplex<br>RJ45 Connector<br>Auto MDI/MDI-X<br>Transmission Distance 100 Meter |
|                        |  |  | Wavelength: Tx 1310nm, Rx1490nm   |
| Performance Parameters | PON Optical Parameter  | Tx Optical Power: 0.5~5dBm<br>Rx Sensitivity: -28dBm<br>Saturation Optical Power: -8dBm  |   |
|                        |  | Power  | External 12V/0.5A DC power supply adapter<br>Power consumption: <3W   |
|                        |  |  | Environmental Specifications  |
| Environment            | Operating Temperature: 0~50 °C<br>Storage Temperature: -40~85 °C<br>Operating Humidity: 10%~90% (Non-condensing)<br>Storage Humidity: 10%~90% (Non-condensing) |  |   |

## KOC-G600-100W

KOC-G600-100W GPON ONT is one of the GPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH to provide the data service based on the GPON network. have a high reliability and provide quality of service guarantee- easy management, flexible expansion and networking. It's fully meet the ITU-T technical standards and have good compatibility with third party manufacturers OLT. can integration wireless function with meet 802.11 n/b/g technical standards, It has built-in high gain directional antenna, 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.



| Item                      | Parameter                    | Specification  |
|---------------------------|------------------------------|--|
| <b>KOC-G600-100W</b>      |                              |  |
| Interface                 | PON Interface                | 1*GPON port, FSAN G.984.2 standard, Class B+<br>Downstream Data Rate: 2.488Gbps<br>Upstream Data Rate: 1.244Gbps<br>SC/PC single mode fiber<br>28dB Link loss and 20KM distance with 1:128 |
|                           | Ethernet Interface           | 1*10/100/1000M auto-negotiation<br>Full/half duplex mode<br>RJ45 connector<br>Auto MDI/MDI-X<br>100m distance  |
| Performance Parameters    | PON Optical Parameter        | Wavelength: Tx 1310nm, Rx1490nm<br>Tx Optical Power: 0.5~5dBm<br>Rx Sensitivity: -28dBm<br>Saturation Optical Power: -8dBm   |
|                           | Power                        | <4W, 12V/0.5A power supply adapter   |
| Physical Features         | Physical Specifications      | Item Dimension: 125mm (L) x80mm (W) x 28mm (H)<br>Item weight: 0.2kg   |
|                           | Environmental Specifications | Operating temperature: 0 to 50°C<br>Storage temperature: -40 to 85°C<br>Operating humidity: 10% to 90% (Non-condensing)<br>Storage humidity: 10% to 90% (Non-condensing)                   |
| <b>WIFI Specification</b> |                              |  |
| 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<br>802.11g: 6, 9, 12, 24, 36, 48, 54Mbps<br>802.11n: max rate 300Mbps   |
|                           | Channel                      | 2.4GHz Channel: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13  |
|                           | Encryption mode              | AES, TKIP, WPA, WPA2, WPA-PSK/WPA2-PSK   |

## KOC-G600-200T

KOC-G600-200T is fiber to the home multi 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. KOC-G600-200T has a higher bandwidth, higher reliability, easy management and good quality of service (QoS) guarantee with technical performance of equipment meet the ITU G. 984 requirements and have good compatibility with third party manufacturers OLT.



| Item                         | Specification   |
|------------------------------|---|
| <b>KOC-G600-200T</b>         |   |
| PON Interface                | 1*GPON port, FSAN G.984.2 standard, Class B+<br>Downstream Data Rate: 2.488Gbps<br>Upstream Data Rate: 1.25Gbps<br>SC/PC single mode fiber<br>28dB Link loss and 20KM distance with 1:128 |
|                              | 1*10/100/1000M auto-negotiation<br>Full/half duplex mode<br>RJ45 connector<br>Auto MDI/MDI-X<br>100m distance   |
| User Ethernet Interface      | 1 RF output<br>Female F-Type Connector<br>Wavelength: Tx 1310nm, Rx1490nm<br>Tx Optical Power: 0.5~5dBm<br>Rx Sensitivity: -28dBm<br>Saturation Optical Power: -8dBm                      |
| PON Optical Parameter        | <5W, 12V/0.5A power supply adapter  |
| Power                        | Item Dimension: 130mm (L)*90mm (W)*30mm (H)<br>Item weight: 0.2kg   |
| Physical Specifications      | Operating temperature: 0 to 50°C<br>Storage temperature: -30 to 60°C<br>Operating humidity: 10% to 90% (Non-condensing)<br>Storage humidity: 5% to 95% (Non-condensing)                   |
| Environmental Specifications |   |
| <b>CATV</b>                  |   |
| Wavelength                   | 1550nm  |
| Optical return loss          | >45dB   |
| Input optical power          | -15dBm~+2dBm  |
| RF frequency                 | 47MHz~1000MHz   |
| RF output lever              | ≥65dBuV (@-12dBm@85MHz)   |
| Flatness                     | <±1.5db   |
| CNR                          | ≥42dB (@-10dBm@DS22 Channel)  |
| CSO                          | ≤-60dBc (@-10dBm@DS22 Channel)  |
| CTB                          | ≤-65dBc (@-10dBm@DS22 Channel)  |
| RF output return loss        | >10dB   |
| RF impedance                 | 75Ω   |

## KOC-G600-400PTW

KOC-G600-400PTW triple play ONU is fiber to the home multi service access GPON ONU. It's based on the mature, stable, high cost performance GPON technology and has gigabit Ethernet switching, WDM and HFC technology. KOC-G600-400PTW has a higher bandwidth, higher reliability, easy management and good quality of service (QoS) guarantee with technical performance of equipment meet the ITU G. 984 requirements and have good compatibility with third party manufacturers OLT.



| Item                   | Parameter                    | Specification  |        |
|------------------------|------------------------------|--|--------|
| <b>KOC-G600-400PTW</b> |                              |  |        |
| Interface              | PON Interface                | 1*GPON port, FSAN G.984.2 standard, Class B+<br>Downstream Data Rate: 2.488Gbps<br>Upstream Data Rate: 1.244Gbps<br>SC/PC single mode fiber<br>28dB Link loss and 20KM distance with 1:128 |        |
|                        | CATV Interface               | 1 RF output<br>F-Type Connector  |        |
|                        | POTS Interface               | 2*RJ11<br>Max 1km distance<br>Balanced Ring, 50V RMS<br>4*10/100/1000M auto-negotiation<br>Full/half duplex mode   |        |
|                        | Ethernet Interface           | RJ45 connector<br>Auto MDI/MDI-X<br>100m distance  |        |
|                        | USB interface                | 1*USB 2.0 interface<br>Transmission Rate: 480Mbps  |        |
|                        | Power                        | External 12VDC/1A power supply adapter<br>Power consumption: <7W   |        |
|                        | Dimension and Weight         | Item Dimension: 200mm (L) x 140mm (W) x 32mm (H)<br>Item weight: 0.3kg   |        |
|                        | Environmental Specifications | Operating temperature: 0 to 50°C<br>Storage temperature: -40 to 85°C<br>Operating humidity: 10% to 90% (Non-condensing)<br>Storage humidity: 10% to 90% (Non-condensing)                   |        |
|                        | <b>CATV</b>                  |  |        |
|                        | Performance parameters       | Wavelength   | 1550nm |
| Optical return loss    |                              | >45dB  |        |
| Input optical power    |                              | -15dBm~+2dBm   |        |
| RF frequency           |                              | 47MHz~1000MHz  |        |
| RF output lever        |                              | ≥65dBuV (@-12dBm@85MHz)  |        |
| Flatness               |                              | <±1.5db  |        |
| CNR                    |                              | ≥42dB (@-10dBm@DS22 Channel)   |        |
| CSO                    |                              | ≤-60dBc (@-10dBm@DS22 Channel)   |        |
| CTB                    |                              | ≤-65dBc (@-10dBm@DS22 Channel)   |        |
| RF output return loss  |                              | >10dB  |        |
| RF impedance           | 75Ω                          |  |        |

## KOC-G600-400U

KOC-G600-400U series GPON ONT is one of the GPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH to provide the data, video service based on the GPON network. have a high reliability and provide quality of service guarantee、easy management, flexible expansion and networking. It's fully meet the ITU-T technical standards and have good compatibility with third party manufacturers OLT.



| Item                 | Specification  |  |
|----------------------|--|--|
| <b>KOC-G600-400U</b> |  |  |
| Interface            | 1*GPON port, FSAN G.984.2 standard, Class B+<br>Downstream Data Rate: 2.488Gbps<br>Upstream Data Rate: 1.244Gbps<br>SC/UPC single mode fiber<br>28dB Link loss and 20KM distance with 1:128<br>4*10/100M or 4*10/100/1000M auto-negotiation<br>Full/half duplex mode |  |
|                      | User Ethernet Interface  | RJ45 connector<br>Auto MDI/MDI-X<br>100m distance  |
|                      | PON Optical Parameter  | Wavelength: Tx 1310nm, Rx1490nm<br>Tx Optical Power: 0.5~5dBm<br>Rx Sensitivity: -28dBm<br>Saturation Optical Power: -8dBm   |
|                      | Power  | 4FE: <3W, 12V/0.5A power supply adapter<br>4GE: <4W, 12V/0.5A power supply adapter   |
|                      | Physical Specifications  | Item Dimension: 160mm (L) x 120mm (W) x 32.5mm (H)<br>Item weight: 0.2kg   |
|                      | Environmental Specifications   | Operating temperature: 0 to 50°C<br>Storage temperature: -40 to 85°C<br>Operating humidity: 10% to 90% (Non-condensing)<br>Storage humidity: 10% to 90% (Non-condensing) |

## KOC-G600-400W

KOC-G600-400W dual-frequency data type ONU is one of the GPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH to provide the data, video service based on the GPON network. have a high reliability and provide quality of service guarantee. easy management, flexible expansion and networking. It's fully meet the ITU-T technical standards and have good compatibility with third party manufacturers OLT. can integration wireless function with meet 802.11 a/b/g/n/ac technical standards. At the same time, it also supports 2.4GHz/5GHz dual-band wireless signal. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.



| Item                   | Parameter                    | Specification                                      |
|------------------------|------------------------------|--|
| <b>KOC-G600-400W</b>   |                              |  |
| Interface              | PON Interface                | 1*GPON port, FSAN G.984.2 standard, Class B+       |
|                        |                              | Downstream Data Rate: 2.488Gbps                    |
|                        |                              | Upstream Data Rate: 1.244Gbps                      |
|                        |                              | SC/UPC single mode fiber                           |
| Interface              | Ethernet Interface           | 28dB Link loss and 20KM distance with 1:128        |
|                        |                              | 4*10/100/1000M auto-negotiation                    |
|                        |                              | Full/half duplex mode                              |
|                        |                              | RJ45 connector                                     |
| Performance Parameters | PON Optical Parameter        | Auto MDI/MDI-X                                     |
|                        |                              | 100m distance                                      |
|                        |                              | Wavelength: Tx 1310nm, Rx1490nm                    |
|                        |                              | Tx Optical Power: 0.5~5dBm                         |
| Physical Features      | Power                        | Rx Sensitivity: -28dBm                             |
|                        |                              | Saturation Optical Power: -8dBm                    |
|                        |                              | External 12V DC/1A power supply adapter            |
|                        |                              | Power consumption: <7.5W                           |
| Physical Features      | Physical Specifications      | Item Dimension: 160mm (L) x 120mm (W) x 32.5mm (H) |
|                        |                              | Item weight: 0.2kg                                 |
|                        |                              | Operating temperature: 0 to 50°C                   |
|                        |                              | Storage temperature: -40 to 85°C                   |
| Physical Features      | Environmental Specifications | Operating humidity: 10% to 90% (Non-condensing)    |
|                        |                              | Storage humidity: 10% to 90% (Non-condensing)      |

### WIFI Specification

- Comply with IEEE 802.11a/b/g/n/ac protocol standard, support 2.4GHz and 5GHz
- There are four antennas, two built-in, two external
- 5dBi antenna gain
- Maximum ideal rate up to 1.2Gbps
- 2.4GHz supports 2\*2 MIMO (Multiple-Input Multiple-Output) technology
- 5GHz supports 2\*2 MIMO (Multiple-Input Multiple-Output) technology
- Support 8 SSIDs
- Support wider RF bandwidth, up to 80MHz
- Support higher 256-QAM modulation mode
- Support MIMO-OFDM encoding mode
- Support wireless security of 64/128 bit WEP, 802.1x, WPA and WPA2

## KOC-G600-400PW

KOC-G600-400PW GPON HGU ONT is one of the GPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH/FTTO to provide the data, voice and video service based on the GPON network. provide two POTS ports, four 10/100/1000M adaptive Ethernet ports, one USB port, and 802.11 b/g/n Wi-Fi access. The KOC-G600-400PW features high-performance forwarding capabilities to ensure excellent experience with VoIP, Internet and HD video services. Therefore, the KOC-G600-400PW provides a perfect terminal solution and future-oriented service supporting capabilities for FTTH deployment. It has good third-party compatibility to work with the third party OLT, such as Huawei/ZTE/Fiberhome/Alcatel-Lucent.



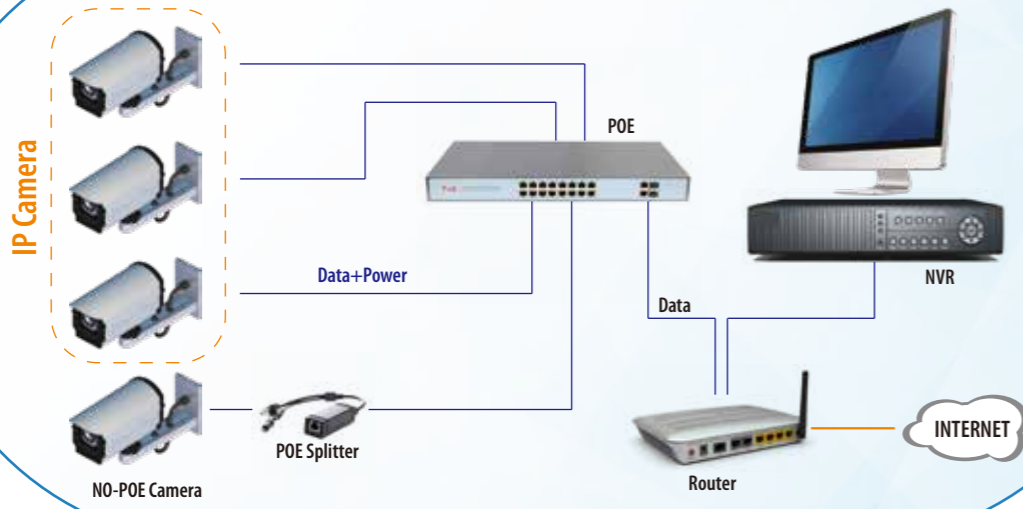
| Item                   | Parameter                    | Specification   |
|------------------------|------------------------------|---|
| <b>KOC-G600-400PW</b>  |                              |   |
| Interface              | Uplink Interface             | 1*GPON port, FSAN G.984.2 standard, Class B+                  |
|                        |                              | Downstream Data Rate : 2.488Gbps                              |
|                        |                              | Upstream Data Rate : 1.244Gbps                                |
|                        |                              | SC/PC single mode fiber                                       |
| Interface              | POTS Port                    | 28dB Link loss and 20KM distance with 1:128                   |
|                        |                              | 2*RJ11 with 3REN  |
|                        |                              | Max 1km distance  |
|                        |                              | Balanced Ring, 50V RMS  |
| Performance Parameters | Ethernet Interface           | 4*10/100/1000M auto-negotiation                               |
|                        |                              | Full/half duplex mode   |
|                        |                              | RJ45 connector  |
|                        |                              | Auto MDI/MDI-X  |
| Physical Features      | USB interface                | 100m distance   |
|                        |                              | 1*USB 2.0 interface   |
|                        |                              | Transmission Rate: 480Mbps                                    |
|                        |                              | 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                               |
| Network Management     | Management Mode              | Connector Type: SC  |
|                        |                              | Standard compliant OMCI interface as defined by ITU-T G.984.4 |
|                        |                              | Support TR069 and WEB management                              |
|                        |                              | Support TR069 and WEB management                              |
| Network Management     | Dimension and Weight         | Item Dimension : 170mm(L) x 130mm(W) x 30mm (H)               |
|                        |                              | Item weight : 0.3kg   |
|                        |                              | Operating temperature: 0 to 50°C                              |
|                        |                              | Storage temperature: -40 to 85°C                              |
| Network Management     | Environmental Specifications | Operating humidity: 10% to 90%(Non-condensing)                |
|                        |                              | Storage humidity: 10% to 90%(Non-condensing)                  |

### WIFI Specification

- IEEE 802.11n compliant, 2.4 GHz
- Full IEEE 802.11b/g legacy compatibility with enhanced performance
- Two-stream spatial multiplexing up to 300 Mbps PHY data rates
- Support multi-SSID (Maximum 4 SSID)
- Support automatic channel selection
- Support hide SSID
- Support wireless security of 64/128 bit WEP、802.1x、WPA and WPA2

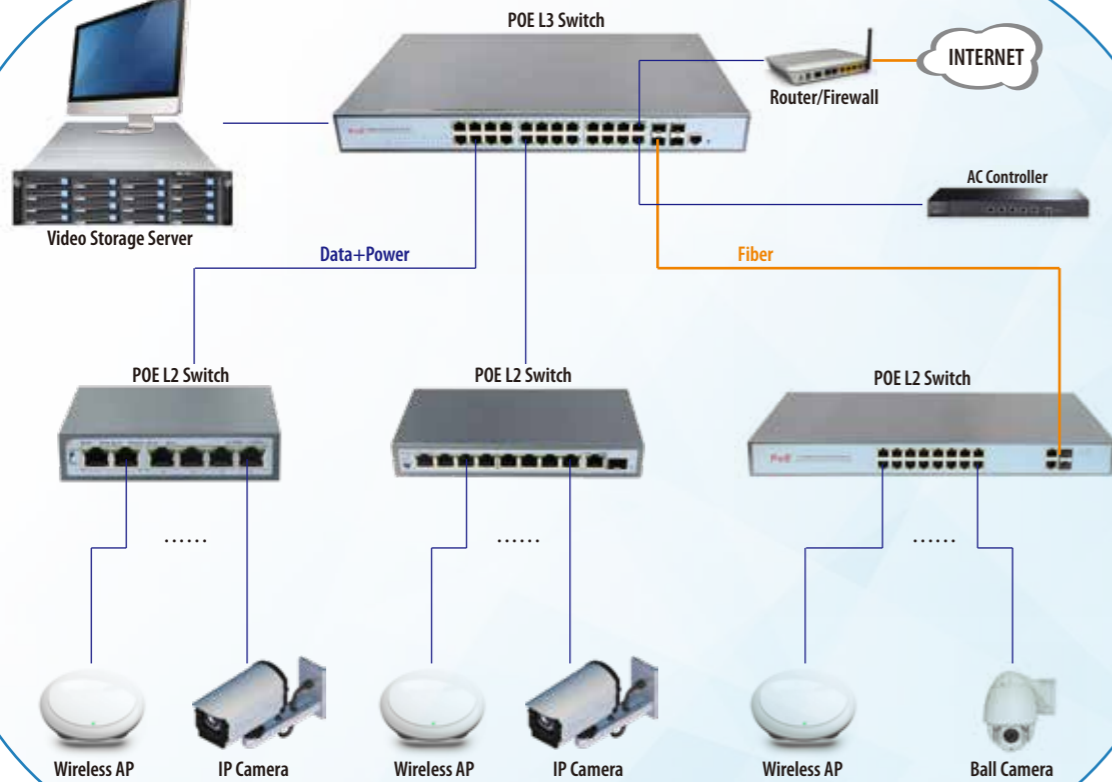
# Monitor System Solutions

Applicable for environment such as home, small scale company and supermarket.



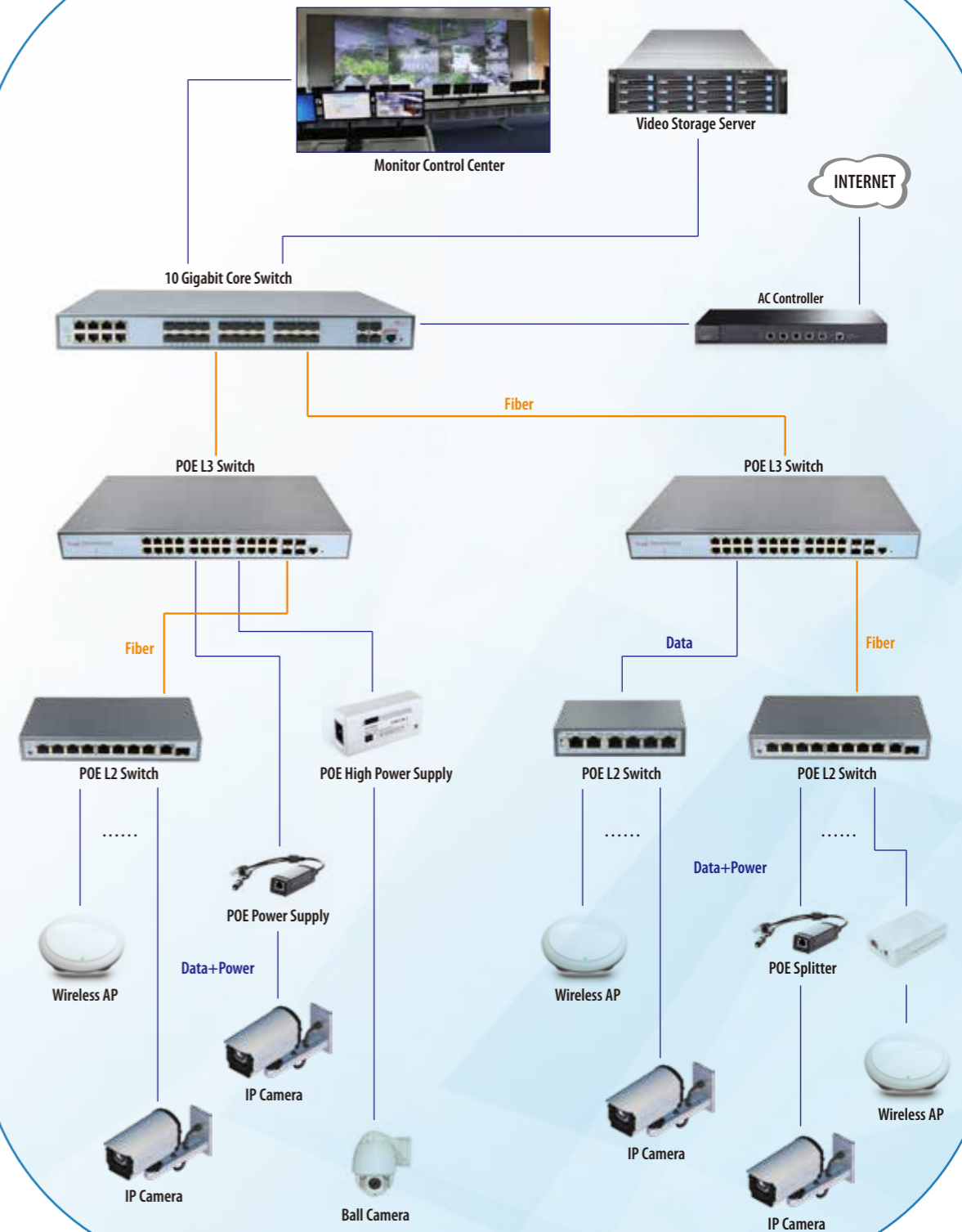
- 100/1000Mbps POE switch
- IP Camera
- Wifi Router
- NVR(video decoder) and LED monitor
- POE Splitter

Applicable for medium scale company and commercial building.



- 100/1000Mbps POE switch
- IP Camera
- Wifi Router
- NVR(video decoder) and LED monitor
- Wifi AC/AP
- Video storage server

Applicable for big group company, shopping mall and densely inhabited area.



- 100/1000Mbps POE switch
- IP Camera
- Wifi Router
- NVR(video decoder) and LED monitor
- Wifi AC/AP
- Video storage server
- POE high power supply/POE splitter

## KOC-P1008FE-2GF 10-Port 10/100Mbps PoE Switch

The KOC-P1008FE-2GF series is a 10/100M unmanaged PoE switch. It has 8\*10/100M PoE ports and 1\*10/100/1000M uplink RJ45 ports and 1\*1000M uplink SFP ports. Port 1-8 can support IEEE 802.3af/at standard PoE power supply, and single port PoE power reaches 30W. The maximum PoE output power is 110W. As a PoE power supply device, it can automatically detect and recognize the power receiving equipment that meets the standard and supply power through the network cable. It can supply power to POE terminal equipment such as wireless AP, webcam, VoIP, visual intelligent building intercom through network cable, and meet the network environment that needs high-density PoE power supply. It is suitable for hotel, campus, factory dormitory and small and medium-sized enterprises. Unmanaged model, plug and play, no configuration, easy to use.



| Item                         | Specification  |
|------------------------------|--|
| <b>KOC-P1008FE-2GF</b>       |  |
| Interface                    | 8*10/100Base-TX PoE ports (Data/Power)<br>1*10/1000Base-TX Uplink RJ45 port (Data)<br>1 *1000M SFP optical port (Data)             |
| POE Port                     | Port 1-8 support PoE @ IEEE802.3af/at  |
| Functional Switch            | 1*(S,E,V)<br><b>Note:</b> When the switch status changes, the PoE switch must be restarted for the switch function to take effect. |
| Network Protocol             | IEEE802.3 10BASE-T; IEEE802.3i 10Base-T;<br>IEEE802.3u 100Base-TX;<br>IEEE802.3x   |
| PoE Standard                 | IEEE802.3af/at   |
| Ethernet Port Feature        | Port 1-9 support 10/100Base-T(X) automatic detection, full/half Duplex MDI/MDI-X adaptive  |
| Fiber Port Feature           | Store and Forward(Full Wire Speed)   |
| Backplane bandwidth          | 3.6Gbps(non-blocking)  |
| Forwarding Rate@64byte       | 4.17Mpps   |
| MAC                          | 2K   |
| Buffer Memory                | 2M   |
| Twisted Pair Transmission    | 10BASE-T:Cat3,4,5 UTP(≤250 meter)<br>100BASE-TX:Cat5 or later UTP(≤100 meter)  |
| Power Supply Pin             | Default 1/2(+), 3/6(-);Optional 4/5(+), 7/8(-)   |
| MAX / AVERAGE Power Per Port | 15.4W@IEEE802.3af;30W@ IEEE802.3at   |
| Total PWR / Input Voltage    | 110W (DC 52V)  |
| Power Consumption            | Standby:<5W;Full load:<110W  |
| LED Indicator                | Power Indicator: P (green); Network : Link (yellow); POE Indicator : PoE (green)   |
| Power Supply                 | External power adaptor AC100~240V 50-60Hz 2A   |
| Operation TEMP / Humidity    | -20~+55°C;5%~90% RH non condensing   |
| Storage TEMP / Humidity      | -40~+75°C;5%~95% RH non condensing   |
| Dimension                    | 191*108*29mm   |
| Net /Gross Weight            | <0.5kg / <1kg  |
| Installation Method          | desktop type ,wall mounted   |
| Port lightning protection    | 4KV 8/20us;  |
| protection level             | IP30   |
| Certification                | CCC;CE mark, commercial;CE/LVD EN60950; FCC Part 15 Class B;RoHS   |
| Warranty                     | 1years, lifetime maintenance.  |

## KOC-P1016FE-2GF 18-Port Gigabit Uplink PoE Fiber Switch

The KOC-P1016FE-2GFseries is an unmanaged PoE fiber switch. It has 16\*10/100M PoE ports and 2\*10/100/1000M uplink RJ45 ports and 2\*1000M uplink TP/SFP combo ports . Port 1-16 can support IEEE 802.3af/at standard PoE power supply, and single port PoE power reaches 30W. The maximum PoE output power is 250W. As a PoE power supply device, it can automatically detect and recognize the power receiving equipment that meets the standard and supply power through the network cable. It can supply power to POE terminal equipment such as wireless AP, webcam, VoIP, visual intelligent building intercom through network cable, and meet the network environment that needs high-density PoE power supply. It is suitable for hotel, campus, factory dormitory and small and medium-sized enterprises. Unmanaged model, plug and play, no configuration, easy to use.



| Item                         | Specification  |
|------------------------------|--|
| <b>KOC-P1016FE-2GF</b>       |  |
| Interface                    | 16*10/100Base-TX PoE ports (Data/Power)<br>2*10/100/1000M uplink RJ45 ports (Data)<br>2*1000M uplink SFP slot ports (combo port)           |
| POE Port                     | Port 1-16 support PoE standard @ IEEE802.3af/at<br>IEEE802.3 10BASE-T; IEEE802.3i 10Base-T;<br>IEEE802.3u 100Base-TX;                      |
| Network Protocol             | IEEE802.3ab 1000Base-T;<br>IEEE802.3z 1000Base-X;<br>IEEE802.3x  |
| PoE Standard                 | IEEE802.3af/at   |
| Ethernet Port Feature        | 10/100Base-T(X) 10/100/1000Base-T automatic detection, full/half Duplex MDI/MDI-X adaptive   |
| Fiber Port Feature           | Gigabit SFP Port (Fiber module is not included, need to order separately, module options include single/multi mode, single/dual fiber, LC) |
| Forwarding Mode              | Store and Forward(Full Wire Speed)   |
| Switching Capacity           | 14.8Gbps (Non-blocking)  |
| Forwarding Rate@64byte       | 5.36Mpps   |
| MAC                          | 4K   |
| Buffer Memory                | 4M   |
| Jumbo frames                 | 10K  |
| Twisted Pair Transmission    | 10BASE-T: Cat3,4,5 UTP(≤100 meter); 100BASE-TX: Cat5 or later UTP(≤100 meter)<br>1000BASE-T: Cat5e or later UTP(≤100 meter)                |
| Optical Cable                | Multi mode: 850nm 0~550M,Single mode:1310nm 0~40KM , 1550nm 0~120KM  |
| Power Supply Pin             | Default: 1/2(+), 3/6(-); Optional: 4/5(+), 7/8(-)  |
| MAX / AVERAGE Power Per Port | 15.4W@IEEE802.3af; 30W@ IEEE802.3at  |
| Total PWR / Input Voltage    | 250W(AC100-240V)   |
| Power Consumption            | Standby: <15W; Full load: <250W  |
| LED Indicator                | Power indicator: PWR(green) network indicator: Link, Link/Act(yellow),<br>PoE indicator: PoE (green); Speed indicator:1000M (green)        |
| Power Supply                 | Built in switching power supply. AC100~240V 50-60Hz 4.1A   |
| Operation TEMP / Humidity    | -20~+55°C, 5%~90% RH Non condensing  |
| Storage TEMP / Humidity      | -40~+75°C, 5%~95% RH Non condensing  |
| Dimension                    | 440*225*44mm   |
| Net /Gross Weight            | <2.8kg/<3.4kg  |
| Installation Method          | desktop type ,wall mounted,19 inch 1U cabinet installation   |
| Port lightning protection    | 4KV 8/20us;  |
| protection level             | IP30   |
| Certification                | CCC;CE mark, commercial;CE/LVD EN60950; FCC Part 15 Class B;RoHS   |
| Warranty                     | 1 years, lifetime maintenance.   |

## KOC-PM1024GE-4GF 28-port Full Gigabit Managed PoE Switch

The KOC-PM1024GE-4GF series is layer two plus full gigabit managed fiber PoE switch. It has 24\*10/100/1000Base-T RJ45 ports and 4\*100/1000Base-X SFP fiber slot ports. Port 1-24 can support IEEE 802.3af standard PoE power supply. the maximum power for each port is 30W, and the maximum PoE output power is 400W (at-600W). As a PoE power supply device, it can automatically detect and recognize the power receiving equipment that meets the standard and supply power through the network cable. It can supply power to POE terminal equipment such as wireless AP, webcam, VoIP phone, building visual access control intercom through network cable, to meet the network environment that needs high-density PoE power supply, suitable for hotels, campuses, parks, supermarkets, scenic spots, Factory quarters and SMB small and medium-sized enterprises form a cost-effective network.



| Item                         | Specification  |
|------------------------------|--|
| <b>KOC-PM1024GE-4GF</b>      |  |
| Interface                    | 24*10/100/1000Base-T PoE ports (Data /Power);<br>4*100/1000Base-X Uplink SFP ports (Data)<br>1*Console RS232 port (115200,N,8,1)   |
| POE Port                     | Port 1 - 24 can support IEEE802.3af PoE standard<br>IEEE802.3 10BASE-T; IEEE802.3i 10Base-T;<br>IEEE802.3u 100Base-TX  |
| Network Protocol             | IEEE802.3ab 1000Base-T<br>IEEE802.3z 1000Base-X<br>IEEE802.3x  |
| PoE Standard                 | IEEE802.3af/at International Standard  |
| Ethernet Port                | 10/100/1000Base-T,Auto-sensing,Full/half duplex MDI/MDI-X self-adaption  |
| Fiber Port Feature           | Gigabit SFP fiber interface (Fiber module is not included, need to order separately, module options include single/multi mode, single/dual fiber, LC)  |
| Forwarding Mode              | Store and Forward (Full wire speed)  |
| Switching Capacity           | 56Gbps (Non-blocking)  |
| Forwarding Rate@64byte       | 38.69Mpps  |
| MAC                          | 8K   |
| Buffer Memory                | 4M   |
| Jumbo Frames                 | 9.6K   |
| Twisted Pair Transmission    | 10BASE-T: Cat3,4,5 UTP(≤100 meter) ;<br>100BASE-TX: Cat5 or later UTP(≤100 meter) ;<br>1000BASE-X: Cat5e or later UTP(≤100 meter)  |
| Optical Fiber Cable          | Multi Mode: 850nm 0-550M;Single Mode: 1310nm 0-40KM,1550nm 0-120KM.  |
| Power Supply Pin             | Default: 1/2(+), 3/6(-);   |
| MAX / Average Power Per Port | 15.4W@IEEE802.3af ;30W@ IEEE802.3at  |
| Total PWR / Input Voltage    | 400W (AC100-240V)  |
| Power Consumption            | Standby:<18W; Full Load:<380W  |
| LED Indicator                | Power indicator : PWR (yellow); system indicator : SYS (yellow); network indicator: Link (yellow);<br>POE indicator : PoE (green); Rate indicator: speed: ( green) ; SFP fiber port :L/A (green) |
| Power Supply                 | Built in power supply, AC100~240V 50-60Hz 5.0A   |
| Operation TEMP/Humidity      | -20~+55°C; 5%~90% RH Non-condensing  |
| Storage TEMP/Humidity        | -40~+75°C; 5%~95% RH Non-condensing  |
| Dimension                    | 440*290*44.5mm   |
| Net/Gross Weight             | <4.4kg / <5.0kg  |
| Installation Method          | desktop type ,19 inch 1U cabinet installation  |
| Port lightning protection    | 4KV 8/20us;  |
| protection level             | IP30   |
| Certification                | CCC;CE mark, commercial; CE/LVD EN60950; FCC Part 15 Class B; RoHS;  |
| Warranty                     | 1 years ,lifelong maintenance.   |

## KOC-M1008GE-24GF-4XG 36-Port 10G Uplink Layer Three Managed Ethernet Fiber Switch

The KOC-M1008GE-24GF-4XG series is a managed 10G uplink Ethernet fiber switch. It has 8\*10/100/1000Base-T RJ45 ports and 24\*100/1000Base-X SFP fiber slot ports and 4\*1/10G SFP+ fiber slot ports. Each port can support wire-speed forwarding. The KOC-M1008GE-24GF-4XG has the layer three full network management function, supports IPV4/IPV6 management, supports static route full line rate forwarding, supports complete security protection mechanism, complete ACL/QoS policy and rich VLAN functions, and is easy to manage and maintain. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-T G.8032) ERPS to improve link backup and network reliability. When one-way network fails, communication can be quickly restored to ensure important Uninterrupted communication for applications. According to the actual application requirements, you can configure multiple application services such as port traffic control, VLAN division, and SNMP through the Web network management mode. It satisfies high-density network application environment and is suitable for medium, large-scale scenes such as hotels, campuses, parks, shopping malls, scenic spots, hospitals, banks to form an economical, efficient and reliable communication network.



| Item                          | Specification  |
|-------------------------------|--|
| <b>KOC-M1008GE-24GF-4XG</b>   |  |
| Interface                     | 8*10/100/1000Base-T RJ45 ports (Data)<br>24*100/1000Base-X SFP ports (Data)<br>4*1/10G SFP+ uplink fiber ports (Data)<br>1*Console RS232 port (115200,N,8,1)                     |
| Managed Type                  | L3   |
| Network Protocol              | IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX<br>IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-LX/SX/CX<br>IEEE802.3ae 10GBase-SR/LR;IEEE802.3x                   |
| Ethernet Port Feature         | Port1-8 10/100/1000Base-T,auto-sensing,full/half duplex MDI/MDI-X self-adaption  |
| SFP Port Characteristic       | Gigabit SFP /10 Gigabit SFP+ fiber interface, default matching fiber modules,<br>need to buy separately, (optional single-mode/multi-mode, single fiber / dual fiber module, LC) |
| Forwarding Mode               | Store and Forward(Full Wire Speed)   |
| Switching Capacity            | 598Gbps  |
| Forwarding Rate@64byte        | 107.14Mpps   |
| MAC Address Table             | 32K  |
| Buffer Memory                 | 32M  |
| Twisted Pair Transmission     | 10BASE-T: Cat3,4,5 UTP(≤100 meter) ; 100BASE-TX: Cat5 or later UTP(≤100 meter) ;<br>1000BASE-T: Cat5e or later UTP(≤100 meter)   |
| Optical cable                 | Multi-mode: 850nm 0~300M(10G), 850nm 0~550M(1.25G)<br>Single-mode: 1310nm 0~40KM, 1550nm 0~120KM .   |
| Total PWR / Input Voltage     | 60W/(AC100-240V)   |
| Power Consumption             | Standby:<20W, full load:<40W   |
| LED                           | Power: PWR (yellow), system: SYS(yellow), network: Link(yellow), fiber port: L/A(green)  |
| Reset switch                  | Support one key to restore factory settings  |
| Power Supply                  | Built-in power supply, AC: 100 ~240V 50-60Hz 1A  |
| Operation TEMP / Humidity     | -20~+55°C, 5%~90% RH Non condensing  |
| Storage TEMP / Humidity       | -40~+80°C, 5%~95% RH Non condensing  |
| Dimension(L*W*H)              | 440*290*44.5mm   |
| Net /Gross Weight             | <3.5kg /<4.3kg   |
| Installation Method           | Desktop.19 inch 1U cabinet installation  |
| Anti-surge / Protection Level | Anti-surge: 4KV 8/20us, Protection Level, IP30   |
| Certification                 | CCC, CE mark, commercial, CE/LVD EN60950, FCC Part 15 Class B, RoHS  |
| Warranty                      | 1 years, lifetime maintenance  |

# Application Scenarios

High-rise Monitor



Supermarket



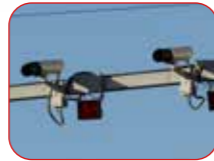
Bank



Banned area



Traffic Monitor



Alley



Car Parking



Indoor Monitor



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