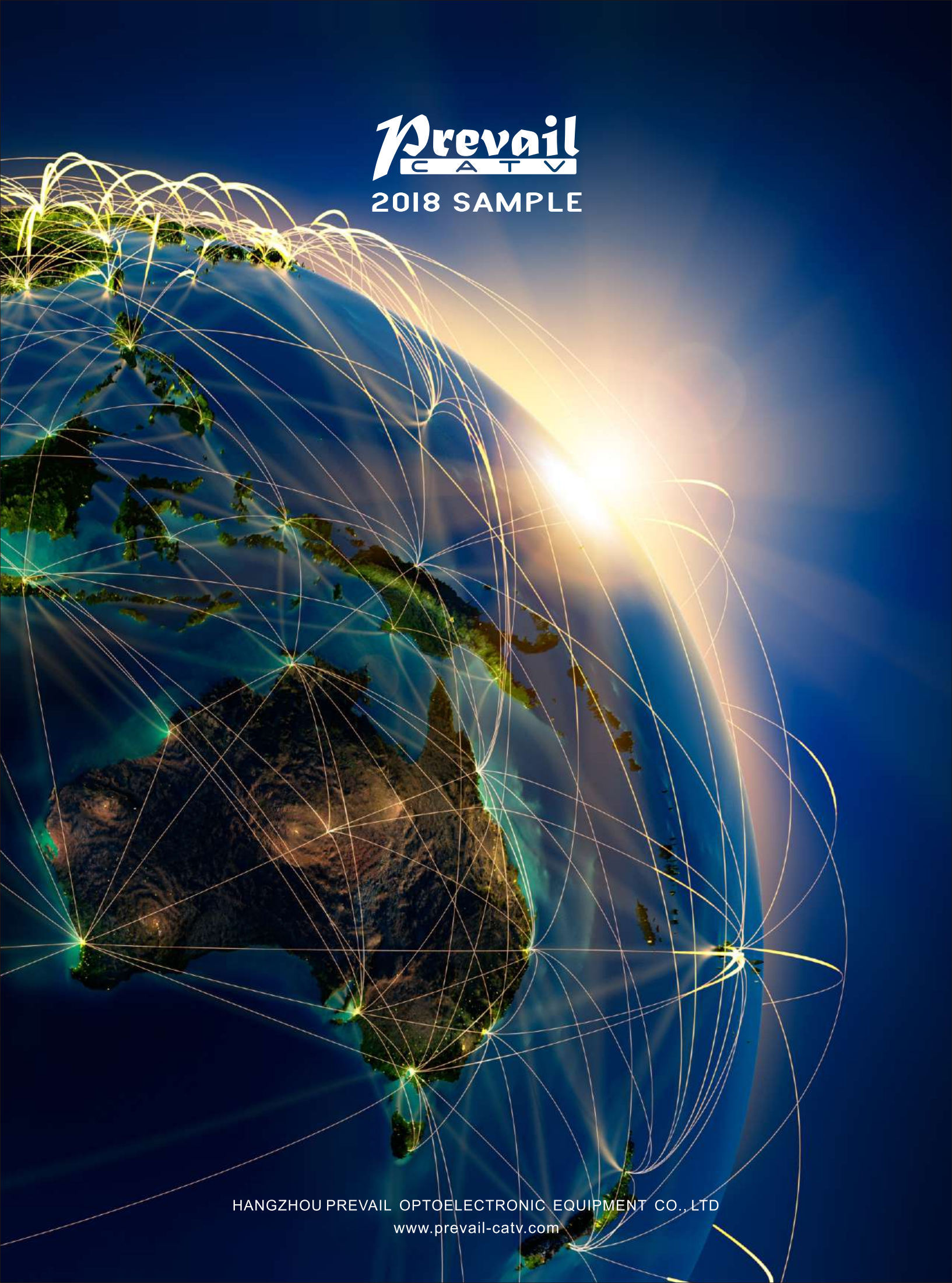

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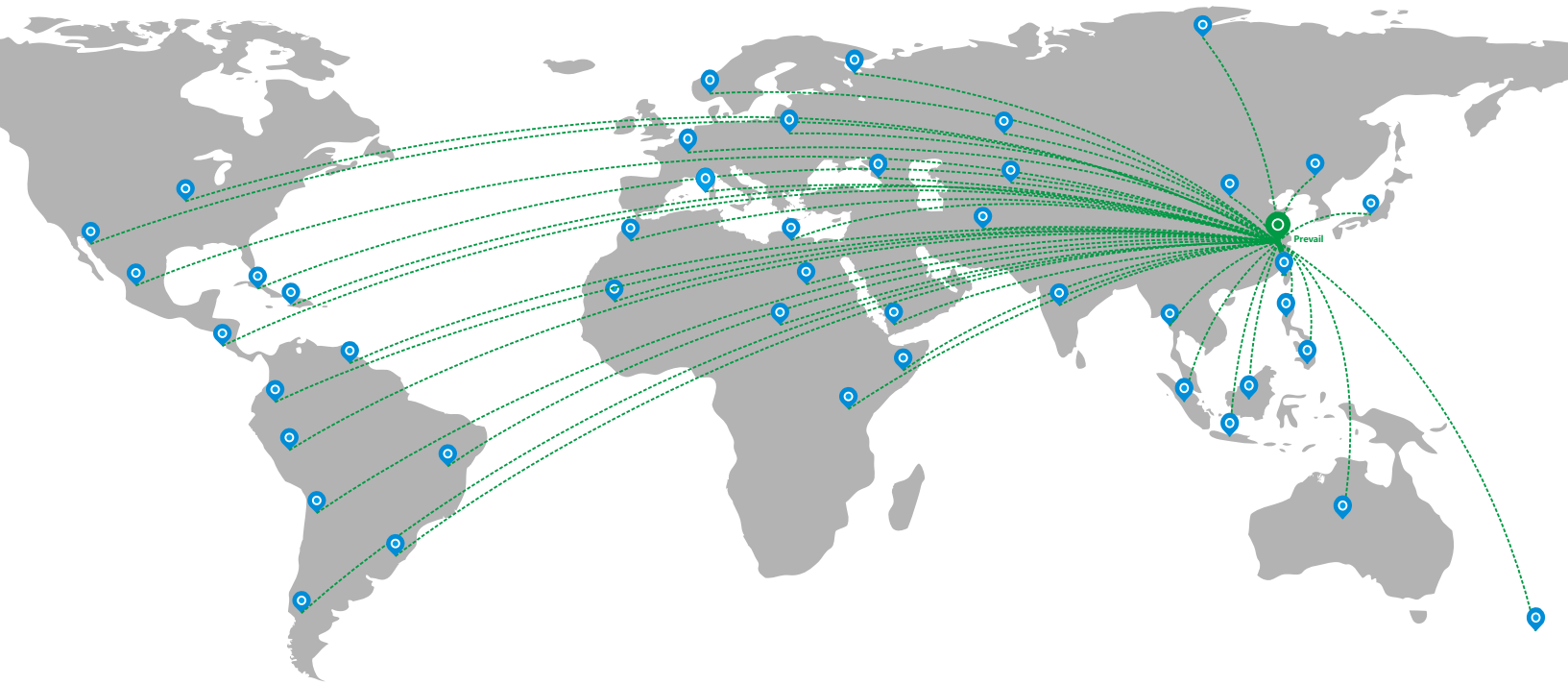

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III CATV Cable Transmission Equipments

IV Digital Front-end Equipments

V Accessories and Related Test Instruments

VI Model of System Application

EPON System OLT(7U Rack-mounted) : WEP5000-08E

1.Description

WEP5000-08E is a super high-density green EPON OLT as well as a distributed high-end routing switch designed on the consideration of energy saving and emission reduction. The device features a unique slot design, T-bit switching network and the industry's first 64-bit multi-core processor based distributed cluster architecture that provides IPv4 / IPv6 service wire-speed forwarding capabilities, incomparable security and performance. The high reliability, scalability and strong service capability of the product can meet the construction requirements of various core layers of the network. It is fully qualified for the multi-service of EPON access, switching and routing by operators, large enterprises, large - scale high-density data center.

2.Features

- Small space occupation with 7U height, 1.6T exchange capacity, low power consumption to reduce business costs.
- L2-L7 content-aware exchange services and intelligent security.
- High reliability and maintenance, support 1+1 host, switch, power supply hot swapping and port loopback detection.
- Comprehensive PON service capability, supports up to 128 accessing, full with 8192 ONU terminals.
- Rich multi-service network support capabilities; high-standard equipment stability and cyber resiliency; powerful and scalable switching performance.

3.Specification

- Backplane Bandwidth: >3.2Tbps
- Maximum Transmission Distance: 20KM
- Packet Forwarding Rate (IPv4/IPv6): 1440Mpps
- PON Port Rate: symmetric 1.25Gbps upstream/downstream

4.General features

- Operating Temperature: 0℃ ~ +40℃
- Full Load Power Consumption: ≤680W
- Dimension: 442mm (L) ×420mm (W) ×310mm (H)
- Operating Voltage: AC 90 ~ 260V, 50 ~ 60Hz; DC -36V ~ -72V

Note: More detailed product introduction and index parameters see the product manual.

EPON System OLT(8U Rack-mounted) : WEP5000-16E

1.Description

WEP5000-16E is the latest modular box-typed EPON OLT design by Prevail. Combined with advanced industrial design, manufacturing technology, the broadband access product is featured as moderate density, high reliability, flexible networking, easy installation and maintenance. The equipment provides IPv4 / IPv6 service wire-speed forwarding capabilities, incomparable security and performance. The high reliability, scalability and strong service capability of the product can meet the construction requirements of various core layers of the network to provide large capacity, high-speed and high-bandwidth for data, voice and video accessing. According to different using scenarios, WEP5000-16E can meet the FTTB, FTTC, FTTH and other access applications.

2.Features

- 8U height, 480G exchange capacity, vertical plug-in board design, good heat dissipation, low power consumption to reduce business costs.
- IPv4 / IPv6 and MPLS hardware wire-speed forwarding capacity, forwarding and control dual-network dual-plane, full-distributed business processing.
- High reliability and maintenance, support 1+1 host, switch, power supply hot swapping and port loopback detection.
- Comprehensive PON service capability, supports up to 48 accessing, full with 3072 ONU terminals.
- Rich multi-service network support capabilities; high-standard equipment stability and cyber resiliency; powerful and scalable switching performance.

3.Specification

- Backplane Bandwidth: >960Gbps
- Maximum Transmission Distance: 20KM
- Packet Forwarding Rate (IPv4/IPv6): 131Mpps
- PON Port Rate: symmetric 1.25Gbps upstream/downstream

4.General features

- Operating Temperature: -10℃ ~ +45℃
- Full Load Power Consumption: ≤216W
- Dimension: 483mm (L) ×364mm (W) ×352mm (H)
- Operating Voltage: AC 100 ~ 240V，50 ~ 60Hz；DC -36V ~ -72V

Note: More detailed product introduction and index parameters see the product manual.

EPON System OLT(Outdoor Rack-mounted with 4 PON Ports) : WEP5000-04Y

1.Description

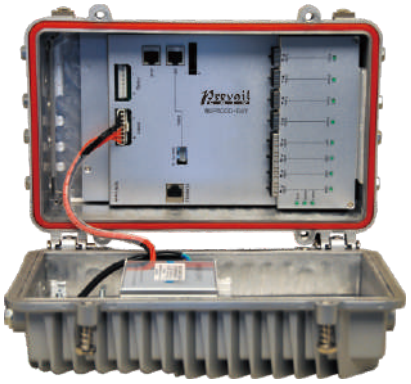
WEP5000-04Y is an outdoor EPON OLT. With cast aluminum waterproof housing, it can work around the clock outside. It provides 4 GE optical ports uplink, 4 GE PON ports, 1 in-band management port and 1 out-band management port downlink. The maximum splitting ratio of each PON port is 1:64 that can support up to 256 ONUs. The cost-effective product is applicable to operator's FTTH accessing, video surveillance network, enterprise LAN, Internet of Things, etc.

2.Features

- Easy to install and maintain; plug and play, flexible deployment.
- Support Layer 2 aggregation switching, rich OAM functions, and complete network management functions.
- Cast aluminum waterproof housing, support dual power modules.

3.Specification

- Maximum Optical Splitting Ratio: 1:64
- PON Port Receiving Sensitivity: -26dBm
- Maximum Transmission Distance: 20KM
- PON Port Rate: symmetric 1.25Gbps upstream/downstream



4.General features

- Operating Temperature: -20℃ ~ +65℃
- Operating Voltage: 90V ~ 240V, 47/63Hz
- Full Load Power Consumption: ≤34W
- Dimension: 350mm（L）X 220mm（W）X 155mm（H）

Note: More detailed product introduction and index parameters see the product manual.

EPON System OLT(Rack-mounted with 8 PON Ports) : WEP5000-08P

1.Description

WEP5000-08P cassette OLT is fully compliant with IEEE802.3ah and native communication industry standard (YD/T 1475-2006). It provides 8 downlink GE PON ports and 8 uplink GE Combo ports based on advanced EPON optical network technology. WEP5000-08P, with powerful function and QoS guarantee, supports SLA and DBA with 1:64 splitting ratio that enables hybrid networking of different types of ONUs to minimize operator's investment.

2.Features

- High-density interfaces, each PON supports up to 64 accessing, full with 512 ONU terminals.
- Support multiple combinations of different network interfaces; optical or electrical port transferring accords with network situation.
- Small space occupation with 1U height, low power consumption to reduce business costs.
- High reliability and maintenance, support 1+1 hot-swap power supply and port loopback detection.

3.Specification

- Exchanging Capacity: 32Gbps
- Maximum Transmission Distance: 20KM
- Packet Forwarding Rate (IPv4/IPv6): 23.81Mpps
- PON Port Rate: symmetric 1.25Gbps upstream/downstream

4.General features

- Operating Temperature: -10℃ ~ 55℃
- Full Load Power Consumption: ≤ 45W
- Dimension: 442mm (L) ×315mm (W) ×44mm (H)
- Operating Voltage: AC 100 ~ 240V, 47/63Hz; DC 36V ~ 75V

Note: More detailed product introduction and index parameters see the product manual.

EPON System OLT(Rack-mounted with 16 PON Ports)：WEP5000-16P

1.Description

WEP5000-16P cassette OLT is fully compliant with IEEE802.3ah and native communication industry standard (YD/T 1475-2006). It provides 16 GE PON ports downlink, 4 GE SFP optical ports, 4 Combo ports and 2 10GE SFP+optical ports uplink based on advanced EPON optical network technology. WEP5000-16P, with powerful function and QoS guarantee, supports SLA and DBA with 1:64 splitting ratio that enables hybrid networking of different types of ONUs to minimize operator's investment.

2.Features

- High-density interfaces, each PON supports up to 64 accessing, full with 1024 ONU terminals.
- Support multiple combinations of different network interfaces; optical or electrical port transferring accords with network situation.
- Small space occupation with 1U height, low power consumption to reduce business costs.
- High reliability and maintenance, support 1+1 power supply hot swapping and port loopback detection.

3.Specification

- Exchanging Capacity: 128Gbps
- Maximum Transmission Distance: 20KM
- Packet Forwarding Rate (IPv4/IPv6): 95.23Mpps
- PON Port Rate: symmetric 1.25Gbps upstream/downstream

4.General features

- Operating Temperature: -10℃ ~ +55℃
- Full Load Power Consumption: ≤ 85W
- Dimension: 442mm (L) ×380mm (W) ×44mm (H)
- Operating Voltage: AC 100 ~ 240V, 47/63Hz; DC 36V ~ 75V

Note: More detailed product introduction and index parameters see the product manual.

GPON System OLT(Rack-mounted with 8 PON Ports)：WGP5000-08P

1.Description

WGP5000-08P is a latest GPON OLT based on ITU-T G.984.x standard. It provides 8 downlink PON ports, 8 uplink GE optical ports, 8 uplink GE electrical ports, 1 expansion slot to access 2 10GE SFP+ ports. WGP5000-08P, with powerful function and QoS guarantee, supports SLA and DBA with 1:128 splitting ratio that enables hybrid networking of different types of ONUs to minimize operator's investment.

2.Features

- Compliant with ITU-T G.984.x technical standard and native communication industry requirements.
- High-density interfaces, each PON port supports up to 128 accessing, full with 1024 ONU terminals.
- Support multiple combinations of different network interfaces; GE or 10GE port transferring accords with network situation.
- Small space occupation with 1U height, low power consumption to reduce business costs.
- Support 1+1 hot-swap power supply and port loopback detection.

3.Specification

- Exchanging Capacity: 102Gbps
- Maximum Optical Splitting Ratio: 1:128
- Maximum Transmission Distance: 20KM
- PON Port Rate: upstream 1.25Gbps, downstream 2.5 Gbps

4.General features

- Operating Temperature: -10℃ ~ +55℃
- Overall Power Consumption: ≤ 85W
- Dimension: 440mm (L) ×380mm (W) ×44mm (H)
- Operating Voltage: AC 100 ~ 240V, 47/63Hz; DC -36V ~ -75V

Note: More detailed product introduction and index parameters see the product manual.

EPON System ONU(4 Ports Pure Data) : WEP3200-S

1.Description

WEP3200-S series ONU has 1 EPON fiber port uplink and 4 FE auto-negotiation ports. It can use cooperatively with our EPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- Pluggable ONU module, 20KM maximum transmission distance.
- EPON part is compliant with IEEE802.3ah standard and native telecommunication EPON technology requirements V2.1/V3.0.
- Various VLAN and multicast function; support data encryption and mutual isolation of different data ports.
- Plug-and-play, integrated with auto detecting, auto configuration and auto firmware upgrade technology; support OAM remote configuration and management.
- Support EMS network management based on SNMP to communicate smoothly with OLT platform.

3.Data Service

- Exchanging Capacity: 32Gbps
- Maximum Transmission Distance: 20KM
- Packet Forwarding Rate (IPv4/IPv6): 23.81Mpps
- PON Port Rate: symmetric 1.25Gbps upstream/downstream

4.Specification

- Maximum Optical Splitting Ratio: 1:64
- Maximum Transmission Distance: 20KM
- PON Port Receiving Sensitivity: -27dBm
- Transmission Rate: symmetric 1.25Gbps upstream/downstream

5.General features

- Operating Temperature: 0℃ ~ +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ⩽ 4.3W
- Dimension: 175mm（L）X 115mm（W）X 33mm（H）； 150mm（L）X 115mm（W）X 35mm（H）

Note: More detailed product introduction and index parameters see the product manual.

EPON System ONU(4 Ports with CATV Optical Receiver) : WEP3200-C

1.Description

WEP3200-C series ONU, with built-in CATV optical receiving unit, can provide optical fiber accessing based on EPON and CATV optical receiving function based on HFC network. It has 1 EPON fiber port and 1 HFC optical port uplink, 4 FE auto-negotiation ports and 1 RF port at user side. WEP3200-C series can use cooperatively with our EPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- Dual fiber accessing, pluggable ONU module, 20KM maximum transmission distance.
- Maximum 1GHz CATV unit working frequency, support AGC function.
- EPON part is compliant with IEEE802.3ah standard and native telecommunication EPON technology requirements V2.1/V3.0.
- Various VLAN and multicast function; support data encryption and mutual isolation of different data ports.
- Plug-and-play, integrated with auto detecting, auto configuration and auto firmware upgrade technology; support OAM remote configuration and management.
- Support EMS network management based on SNMP to communicate smoothly with OLT platform.

3.Data Service

- Full speed non-blocking switching.
- Support port monitoring, port rate limiting, port SLA, etc.
- Support auto polarity detection of Ethernet ports (AUTO MDIX).
- Support IGMP snooping and controllable multicast.
- Support 802.1p priority scheduling.

4.Specification

- CATV Receiving Optical Power Range: -15~ +2dBm
- Maximum Optical Splitting Ratio: 1:64
- Maximum Transmission Distance: 20KM
- Optical AGC Control Range: -12~-2 dBm
- PON Port Receiving Sensitivity: -27dBm
- Transmission Rate: symmetric 1.25Gbps upstream/downstream

5.General features

- Operating Temperature: 0℃ ~ +50℃
- Overall Power Consumption: ⩽ 5.3W
- Operating Voltage: DC+12V
- Dimension: 175mm (L) x 130mm (W) x 33mm (H)

Note: More detailed product introduction and index parameters see the product manual.

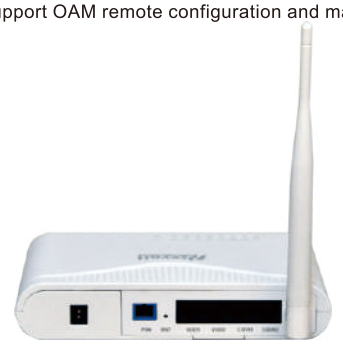
EPON System ONU(4 Ports with WIFI)：WEP3200-W

1.Description

WEP3200-W series ONU, with WIFI function, has 1 uplink EPON fiber port and 4 FE auto-negotiation ports. It can use cooperatively with our EPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- ◆ Pluggable ONU module, 20KM maximum transmission distance.
- ◆ EPON part is compliant with IEEE802.3ah standard and native telecommunication EPON technology requirements V2.1/V3.0.
- ◆ Various VLAN and multicast function; support data encryption and mutual isolation of different data ports.
- ◆ Plug-and-play, integrated with auto detecting, auto configuration and auto firmware upgrade technology; support OAM remote configuration and management.
- ◆ Support EMS network management based on SNMP to communicate smoothly with OLT platform.



3.Data Service

- ◆ Full speed non-blocking switching.
- ◆ Support port monitoring, port rate limiting, port SLA, etc.
- ◆ Support auto polarity detection of Ethernet ports (AUTO MDIX).
- ◆ Support IGMP snooping and controllable multicast.
- ◆ Support 802.1p priority scheduling.

4.Specification

- ◆ Maximum Optical Splitting Ratio: 1:64
- ◆ PON Port Receiving Sensitivity: -27dBm
- ◆ Maximum Transmission Distance: 20KM
- ◆ Transmission Rate: symmetric 1.25Gbps upstream/downstream
- ◆ WIFI Standard: IEEE 802.11b/g/n
- ◆ WIFI Operating Mode: routing and bridge modes

5.General features

- ◆ Operating Temperature: 0℃ ~ +50℃
- ◆ Operating Voltage: DC +12V
- ◆ Overall Power Consumption: ≤ 5W
- ◆ Dimension: 190mm（L）X 140mm（W）X 33mm（H）； 150mm（L）X 115mm（W）X 35mm（H）

Note: More detailed product introduction and index parameters see the product manual.

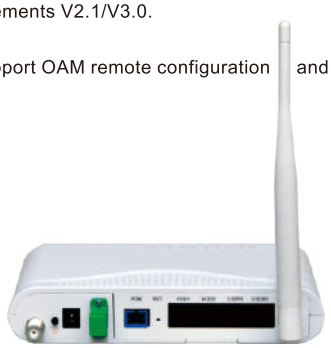
EPON System ONU(4 Ports with CATV Optical Receiver and WIFI)：WEP3200-C-W

1.Description

WEP3200-C-W series ONU, with built-in CATV optical receiving unit and WIFI function, can provide optical fiber accessing based on EPON and CATV optical receiving function based on HFC network. It has 1 EPON fiber port and 1 HFC optical port uplink, 4 FE auto-negotiation ports and 1 RF port at user side. WEP3200-C-W series can use cooperatively with our EPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- ◆ Dual fiber accessing, pluggable ONU module, 20KM maximum transmission distance.
- ◆ Maximum 1GHz CATV unit working frequency, support AGC function.
- ◆ EPON part is compliant with IEEE802.3ah standard and native telecommunication EPON technology requirements V2.1/V3.0.
- ◆ Various VLAN and multicast function; support data encryption and mutual isolation of different data ports.
- ◆ Plug-and-play, integrated with auto detecting, auto configuration and auto firmware upgrade technology; support OAM remote configuration and management.
- ◆ Support EMS network management based on SNMP to communicate smoothly with OLT platform.



3.Data Service

- ◆ Full speed non-blocking switching.
- ◆ Support port monitoring, port rate limiting, port SLA, etc.
- ◆ Support auto polarity detection of Ethernet ports (AUTO MDIX).
- ◆ Support IGMP snooping and controllable multicast.
- ◆ Support 802.1p priority scheduling.

4.Specification

- CATV Receiving Optical Power Range: -15~ +2dBm
- Optical AGC Control Range: -12~-2 dBm
- Maximum Optical Splitting Ratio: 1:64
- PON Port Receiving Sensitivity: -27dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: symmetric 1.25Gbps upstream/downstream
- WIFI Standard: IEEE 802.11b/g/n
- WIFI Operating Mode: routing and bridge modes

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- Operating Temperature: 0℃ ~ +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ⩽ 6W
- Dimension: 190mm (L) x 140mm (W) x 33mm (H)

GPON System ONU(4 Ports Pure Data) : WGP3200-S

1.Description

WGP3200-S series ONU has 1 GPON fiber port uplink and 4 FE auto-negotiation ports. It can use cooperatively with our GPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on GPON technology.

2.Features

- Pluggable ONU module with maximum transmission distance of 20KM;
- Fully compatible with ITU-T G.984x series standard; adopt GPON upstream and downstream;
- Support OMCI+TR069 management;
- Support Ethernet auto-negotiation and MDI/MDIX auto-detection;
- Support loopback detection at user network interface.

3.Data Service

- Support Ethernet interface rate, working mode and Pause flow control configuration;
- Support packet filtering and anti-illegal message protection, forbidding unknown unicast, broadcast and multicast message;
- Support performance statistics of Ethernet lines;
- Support 4KVLAN, VLAN tagged label processing, traffic classification and packet filtering, STP/RSTP etc;
- Support DHCP Option60 reporting the physical location information of the Ethernet interface;
- Support PPPoE+ for accurate user identification;
- Support multicast/ QoS and IGMP Snooping;
- Support AES-128 decryption, key generation and switch;
- Support dual management based on DBA and priority to meet the minimum specified bandwidth needs for users.

4.Specification

- Maximum Optical Splitting Ratio: 1:128
- PON Port Receiving Sensitivity: -28dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: upstream 1.25Gbps, downstream 2.5 Gbps

5.General features

- Operating Temperature: 0℃ ~ +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ⩽ 4.3W
- Dimension: 175mm（L）X 115mm（W）X 33mm（H）； 150mm（L）X 115mm（W）X 35mm（H）

Note: More detailed product introduction and index parameters see the product manual.

GPON System ONU (4 Ports with CATV Optical Receiver) : WGP3200-C

1.Description

WGP3200-C series ONU, with built-in CATV optical receiving unit, can provide optical fiber accessing based on GPON and CATV optical receiving function based on HFC network. It has 1 GPON fiber port and 1 HFC optical port uplink, 4 FE auto-negotiation ports and 1 RF port at user side. WGP3200-C series can use cooperatively with our GPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on GPON technology.

2.Features

- ◆ Pluggable ONU module; dual fiber accessing with maximum transmission distance of 20KM;
- ◆ Maximum 1GHz CATV unit working frequency, support AGC function.
- ◆ Fully compatible with ITU-T G.984x series standard; adopt GPON upstream and downstream;
- ◆ Support OMCI+TR069 management;
- ◆ Support Ethernet auto-negotiation and MDI/MDIX auto-detection;
- ◆ Support loopback detection at user network interface.

3.Data Service

- ◆ Support Ethernet interface rate, working mode and Pause flow control configuration;
- ◆ Support packet filtering and anti-illegal message protection, forbidding unknown unicast, broadcast and multicast message;
- ◆ Support performance statistics of Ethernet lines;
- ◆ Support 4KVLAN, VLAN tagged label processing, traffic classification and packet filtering, STP/RSTP etc;
- ◆ Support DHCP Option60 reporting the physical location information of the Ethernet interface;
- ◆ Support PPPoE+ for accurate user identification;
- ◆ Support multicast/ QoS and IGMP Snooping;
- ◆ Support AES-128 decryption, key generation and switch;
- ◆ Support dual management based on DBA and priority to meet the minimum specified bandwidth needs for users.

4.Specification

- ◆ CATV Receiving Optical Power Range: -15~ +2dBm
- ◆ Optical AGC Control Range: -12~-2 dBm
- ◆ Maximum Optical Splitting Ratio: 1:128
- ◆ PON Port Receiving Sensitivity: -28dBm
- ◆ Maximum Transmission Distance: 20KM
- ◆ Transmission Rate: upstream 1.25Gbps, downstream 2.5 Gbps

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- ◆ Operating Temperature: 0℃ ~ +50℃
- ◆ Operating Voltage: DC +12V
- ◆ Overall Power Consumption: ≤ 5.3W
- ◆ Dimension: 175mm（L）X 130mm（W）X 33mm（H）

GPON System ONU(4 Ports with WIFI)：WGP3200-W

1.Description

WGP3200-W series ONU, with WIFI function, has 1 uplink GPON fiber port and 4 FE auto-negotiation ports. It can use cooperatively with our GPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on GPON technology.

2.Features

- ◆ Pluggable ONU module with maximum transmission distance of 20KM;
- ◆ Fully compatible with ITU-T G.984x series standard; adopt GPON upstream and downstream;
- ◆ Support WIFI and adjustable multicast routing.
- ◆ Support OMCI+TR069 management;
- ◆ Support Ethernet auto-negotiation and MDI/MDIX auto-detection;
- ◆ Support loopback detection at user network interface.

3.Data Service

- ◆ Support Ethernet interface rate, working mode and Pause flow control configuration;
- ◆ Support packet filtering and anti-illegal message protection, forbidding unknown unicast, broadcast and multicast message;
- ◆ Support performance statistics of Ethernet lines;
- ◆ Support 4KVLAN, VLAN tagged label processing, traffic classification and packet filtering, STP/RSTP etc;
- ◆ Support DHCP Option60 reporting the physical location information of the Ethernet interface;
- ◆ Support PPPoE+ for accurate user identification;
- ◆ Support multicast/ QoS and IGMP Snooping;
- ◆ Support AES-128 decryption, key generation and switch;
- ◆ Support dual management based on DBA and priority to meet the minimum specified bandwidth needs for users.

4.Specification

- ◆ Maximum Optical Splitting Ratio: 1:128
- ◆ PON Port Receiving Sensitivity: -28dBm
- ◆ Maximum Transmission Distance: 20KM
- ◆ Transmission Rate: upstream 1.25Gbps, downstream 2.5 Gbps
- ◆ WIFI Standard: IEEE 802.11b/g/n
- ◆ WIFI Operating Mode: routing and bridge modes

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- ◆ Operating Temperature: 0℃ ~ +50℃
- ◆ Operating Voltage: DC+12V
- ◆ Overall Power Consumption: ≤ 5W
- ◆ Dimension: 190mm（L）X 140mm（W）X 33mm（H）；
  150mm（L）X 115mm（W）X 35mm（H）

GPON System ONU(4 Ports with CATV Optical Receiver and WIFI) ：WGP3200-C-W

1.Description

WGP3200-C-W series ONU, with built-in CATV optical receiving unit and WIFI function, can provide optical fiber accessing based on GPON and CATV optical receiving function based on HFC network. It has 1 GPON fiber port and 1 HFC optical port uplink, 4 FE auto-negotiation ports and 1 RF port at user side. WGP3200-C-W series can use cooperatively with our GPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on GPON technology.

2.Features

- Pluggable ONU module; dual fiber accessing with maximum transmission distance of 20KM;
- Maximum 1GHz CATV unit working frequency, support AGC function.
- Fully compatible with ITU-T G.984x series standard; adopt GPON upstream and downstream;
- Support WIFI and adjustable multicast routing.
- Support OMCI+TR069 management;
- Support Ethernet auto-negotiation and MDI/MDIX auto-detection;
- Support loopback detection at user network interface.

3.Data Service

- Support Ethernet interface rate, working mode and Pause flow control configuration;
- Support packet filtering and anti-illegal message protection, forbidding unknown unicast, broadcast and multicast message;
- Support performance statistics of Ethernet lines;
- Support 4KVLAN, VLAN tagged label processing, traffic classification and packet filtering, STP/RSTP etc;
- Support DHCP Option60 reporting the physical location information of the Ethernet interface;
- Support PPPoE+ for accurate user identification;
- Support multicast/ QoS and IGMP Snooping;
- Support AES-128 decryption, key generation and switch;
- Support dual management based on DBA and priority to meet the minimum specified bandwidth needs for users.

4.Specification

- CATV Receiving Optical Power Range: -15~ +2dBm
- Optical AGC Control Range: -12~-2 dBm
- Maximum Optical Splitting Ratio: 1:128
- PON Port Receiving Sensitivity: -28dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: upstream 1.25Gbps, downstream 2.5 Gbps
- WIFI Standard: IEEE 802.11b/g/n
- WIFI Operating Mode: routing and bridge modes

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- Operating Temperature: 0℃ ~ +50℃
- Operating Voltage: DC +12V
- Overall Power Consumption: ≤ 6W
- Dimension: 190mm（L）X 140mm（W）X 33mm（H）

EPON System Triplex ONU：WEP3200-T (Triplex Pure Data)

1.Description

WEP3200-T ONU not only support fiber accessing based on EPON, but also support CATV optical receiving based on HFC structure. It has 1 uplink optical fiber port for EPON and HFC by WDM, 4 FE auto-negotiation ports and 1 RF port. WEP3200-T can use cooperatively with our EPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- Single fiber accessing, support broadband and CATV services.
- EPON part is compliant with IEEE802.3ah standard and ChinaTelecom EPON equipment technical requirements V2.1 / V3.0.
- Various VLAN and multicast function; support data encryption and mutual isolation of different data ports.
- Plug-and-play, integrated with auto detecting, auto configuration and auto firmware upgrade technology; support OAM remote configuration and management.
- Support EMS network management based on SNMP to communicate smoothly with OLT platform.

3.Data Service

- Full speed non-blocking switching.
- Support port monitoring, port rate limiting, port SLA, etc.
- Support auto polarity detection of Ethernet ports (AUTO MDIX).
- Support IGMP snooping and controllable multicast.
- Support 802.1p priority scheduling.

4.Specification

- Maximum Optical Splitting Ratio: 1:64
- PON Port Receiving Sensitivity: -27dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: symmetric 1.25Gbps upstream/downstream

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- Operating Temperature: 0℃ to +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ⩽ 5W
- Dimension: 190mm (L) x 140mm (W) x 33mm (H)

EPON System Triplex ONU : WEP3200-T-W (Triplex Data + WIFI)

1.Description

WEP3200-T-W ONU not only support fiber accessing based on EPON, but also support CATV optical receiving based on HFC structure. It has 1 uplink optical fiber port for EPON and HFC by WDM, 4 FE auto-negotiation ports and supports WIFI. WEP3200-T-W can use cooperatively with our EPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- Single fiber accessing, support broadband and CATV services.
- WIFI supports 802.11b/g/n, the maximum 300Mbps speed rate.
- EPON part is compliant with IEEE802.3ah standard and ChinaTelecom EPON equipment technical requirements V2.1 / V3.0.
- Various VLAN and multicast function; support data encryption and mutual isolation of different data ports.
- Plug-and-play, integrated with auto detecting, auto configuration and auto firmware upgrade technology; support OAM remote configuration and management.
- Support EMS network management based on SNMP to communicate smoothly with OLT platform.

3.Data Service

- Full speed non-blocking switching.
- Support port monitoring, port rate limiting, port SLA, etc.
- Support auto polarity detection of Ethernet ports (AUTO MDIX).
- Support IGMP snooping and controllable multicast.
- Support 802.1p priority scheduling.

4.Specification

- Maximum Optical Splitting Ratio: 1:64
- PON Port Receiving Sensitivity: -27dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: symmetric 1.25Gbps upstream/downstream
- WIFI Standard: IEEE 802.11b/g/n
- WIFI Operating Mode: routing and bridge modes

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- Operating Temperature: 0℃ to +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ⩽ 7W
- Dimension: 190mm (L) x 140mm (W) x 33mm (H)

GPON System Triplex ONU : WGP3200-T (Triplex Pure Data)

1.Description

WGP3200-T ONU not only support fiber accessing based on GPON, but also support CATV optical receiving based on HFC structure. It has 1 uplink optical fiber port for GPON and HFC by WDM, 4 FE auto-negotiation ports and 1 RF port. WGP3200-T can use cooperatively with our GPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on GPON technology.

2.Features

- Single fiber accessing, support broadband and CATV services.
- Maximum 1GHz CATV unit working frequency, support AGC function.
- Fully compatible with ITU-T G.984 standard; adopt GPON upstream and downstream.
- Support OMCI+TR069 management;
- Support Ethernet auto-negotiation and MDI/MDIX auto-detection;
- Support loopback detection at user network interface.
- Support OMCI+TR069 management;

3.Data Service

- Support Ethernet interface rate, working mode and Pause flow control configuration.
- Support packet filtering and anti-illegal message protection, forbidding unknown unicast, broadcast and multicast message.
- Support auto polarity detection of Ethernet ports (AUTO MDIX).
- Support 4KVLAN, VLAN tagged label processing, traffic classification and packet filtering, STP/RSTP etc.
- Support DHCP Option60 reporting the physical location information of the Ethernet interface.
- Support PPPoE+ for accurate user identification.
- Support multicast/ QoS and IGMP Snooping.
- Support AES-128 decryption, key generation and switch.
- Support dual management based on DBA and priority to meet the minimum specified bandwidth needs for users.

4.Specification

- Maximum Optical Splitting Ratio: 1:64
- PON Port Receiving Sensitivity: -27dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: symmetric 1.25Gbps upstream and 2.5 Gbps downstream

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- Operating Temperature: 0℃ to +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ≤ 5W
- Dimension: 190mm（L）X 140mm（W）X 33mm（H）

GPON System Triplex ONU：WGP3200-T-W (Triplex Data + WIFI)

1.Description

WGP3200-T-W ONU not only support fiber accessing based on GPON, but also support CATV optical receiving based on HFC structure and WIFI. It has 1 uplink optical fiber port for GPON and HFC by WDM, 4 FE auto-negotiation ports and 1 RF port. WGP3200-T-W can use cooperatively with our GPON OLT and EMS network management system to provide a complete accessing solution of multiple services like broadband, voice and video for users based on EPON technology.

2.Features

- Single fiber accessing with maximum transmission distance of 20KM;
- Maximum 1GHz CATV unit working frequency, support AGC function.
- Fully compatible with ITU-T G.984 standard; adopt GPON upstream and downstream;
- Support WIFI and adjustable multicast routing.
- Support OMCI+TR069 management;
- Support Ethernet auto-negotiation and MDI/MDIX auto-detection;
- Support loopback detection at user network interface.

3.Data Service

- Support Ethernet interface rate, working mode and Pause flow control configuration.
- Support packet filtering and anti-illegal message protection, forbidding unknown unicast, broadcast and multicast message.
- Support performance statistics of Ethernet lines.
- Support 4KVLAN, VLAN tagged label processing, traffic classification and packet filtering, STP/RSTP etc.
- Support DHCP Option60 reporting the physical location information of the Ethernet interface.
- Support PPPoE+ for accurate user identification.
- Support multicast/ QoS and IGMP Snooping.
- Support AES-128 decryption, key generation and switch.
- Support dual management based on DBA and priority to meet the minimum specified bandwidth needs for users.

4.Specification

- CATV Receiving Optical Power Range: -15~ +2dBm
- Optical AGC Control Range: -12~-2 dBm
- Maximum Optical Splitting Ratio: 1:128
- PON Port Receiving Sensitivity: -28dBm
- Maximum Transmission Distance: 20KM
- Transmission Rate: upstream 1.25Gbps, downstream 2.5 Gbps
- WIFI Standard: IEEE 802.11b/g/n
- WIFI Operating Mode: routing and bridge modes

Note: More detailed product introduction and index parameters see the product manual.

5.General features

- Operating Temperature: 0℃ to +50℃
- Operating Voltage: DC+12V
- Overall Power Consumption: ≤ 7W
- Dimension: 190mm（L）X 140mm（W）X 33mm（H）

CATV Optical Communication Platform : WOS-4000

Features

- 4U standard rack, can be installed with 1 monitoring unit and 16 equipment modules at most.
- Equipment slot can automatically identify the module type; the cooling fan is intelligently temperature controlled.
- Hot backup dual power, support hot plug.
- LCD status display, support Ethernet transponder and provide RS-232 communication interface.

1.1 1550nm EDFA Module: WOS-WE-1550

Features

- Low-noise pump laser, imported high performance Er-doped fiber.
- Low noise figure, high output optical power.
- Full SMT production process, with compact structure and high reliability.

Specification

- Optical Input Power Range: -5 ~ +10 dBm
- Optical Output Power: +13 ~ +24 dBm
- Noise Figure: ≤5dB (Input optical power0dBm, λ=1550nm)
- C/N: ≥50dB;C/CTB: ≥63dB;C/CSO:≥63dB

1.2 1550nm Direct Modulated Optical Transmitter Module: WOS-WT-1550-DM

Features

- Advanced Electronic Dispersion Compensation, the longest compensation distance is up to 50km.
- DWDM system dedicated laser, ITU standard optical wavelength is selectable.
- Multi-frequency pre-distortion technique, the RF drive total power is adaptive.

Specification

- Optical Output Wavelength: 1550±10nm or ITU wavelength
- Optical Output Power: 4~10mW
- Frequency Range: 47~1003MHz
- C/N: ≥50dB @-1dBm;C/CTB: ≥65dB @-1dBm;C/CSO: ≥60dB @-1dBm

1.3 1310nm Optical Transmitter Module: WOS-WT-1310

Features

- Adopt high performance DFB laser to realize good linearity and high output power.
- Multi-frequency pre-distortion technique, the RF drive total power is adaptive.
- Full SMT production process, with compact structure and high reliability.

Specification

- Optical Output Wavelength: 1550±10nm or ITU wavelength
- Optical Output Power: 4~10mW
- Frequency Range: 47~1218MHz
- C/N: ≥50dB @-1dBm;C/CTB: ≥65dB @-1dBm;C/CSO: ≥60dB @-1dBm

1.4 Forward Path Optical Receiver Module: WOS-WR-1002

Features

- Optical AGC function, full-GaAs amplification device.
- Full electrical control the attenuation and equilibrium circuit.

Specification

- Optical AGC Control Range: -8~+2 dBm
- Frequency Range:45 ~1003MHz
- Max Output Level: ≥ 104dBμV
- C/N:≥ 51dB @-1dBm;C/CTB:≥ 67dB @98 dBμV;C/CSO:≥ 62dB @98 dBμV

1.5 Loop Self-healing Optical Receiving Module: WOS-WR-1002-JDS

Features

- Optical AGC function, full-GaAs amplification device.
- Full electrical control the attenuation and equilibrium circuit.
- Self-healing and auto switch functions.

Specification

- Optical AGC Control Range: -8~+2 dBm
- Frequency Range: 45 ~1003MHz
- Max Output Level: ⩾ 104dBμV
- C/N:⩾ 51dB @-1dBm;C/CTB:⩾ 67dB @98 dBμV;C/CSO:⩾ 62dB @98 dBμV

1.6 Return Path Optical Receiving Module: WOS-WR-2004

Features

- Optical AGC function, full-GaAs MMIC amplification circuit.
- Full electrical control the attenuation and equilibrium circuit.
- 4-way independently receive, with independent adjustable output level.

Specification

- Frequency Range: 5 ~200MHz
- Channel Isolation: ⩾65dB
- Input Optical Power Range: JI type: +1 ~ -21dBm; JII type: -5 ~ -26dBm.
- Optical AGC Control Range: JI type: 0 ~ -10dBm; JII type: -5 ~ -10dBm.
- NPR Dynamic Range (NPR⩾30dB): ⩾10dB (FP), ⩾15dB (DFB)

1.7 Return Path Optical Receiving Module: WOS-WR-3004

Features

- Support optical AGC function, the minimum optical receiving power can be -21dBm.
- Working frequency: 5 ~ 300MHz, support DOCSIS 3.1 system.
- Electrically controlled attenuation and equilibrium; full-GaAs MMIC amplification circuit.
- 4-way independently receiving and output, with independent adjustable output level for each way.
- Full SMT production process, with compact structure and high reliability.

Specification

- Working frequency: 5 ~ 300MHz
- Optical Input Power Range: +1 ~ -21dBm
- Optical AGC control range: 0 ~ -10dBm
- NPR Dynamic Range (NPR⩾30dB): ⩾10dB(FP) , ⩾15dB(DFB)
- Maximum output level (@ 0 ~ -10 dBm): 110dBμV (4D-H type); 100dBμV (4D-L type)

1.8 Return Path Optical Transmitter Module: WOS-WT-3000

Features

- Adopt high performance DFB laser, output optical wavelength is CWDM standard wavelength.
- Working frequency: 5 ~ 300MHz, support DOCSIS 3.1 system.
- Full SMT production process, with compact structure and high reliability.

Specification

- Output optical wavelength: CWDM standard wavelength
- Output Optical Power Range: 1 mW ~ 4 mW
- Working frequency: 5 MHZ ~ 300 Mhz
- NPR Dynamic Range (NPR⩾30dB): ⩾10dB

1.9 Optical Switch Module: WOS-WS-1524J

Features

- Low insertion loss, short switching time and high reliability.
- Automatic switch or manual forced switch.

Specification

- Optical Operating Wavelength: 1200~1600nm
- Optical Input Power Range: -15～+24dBm
- Max Switching Time: ≤10ms
- Insertion Loss: ≤1.3dB (Tested at 1310nm, 1490nm, 1550nm points)

2.0 RF Switch Module: WOS-WS-1000RF

Features

- Low insert loss, short switching time and high mutual isolation in-band.
- Automatic switch or manual forced switch.

Specification

- Frequency Range: 5~1003MHz
- Insertion Loss: ≤2dB
- Channel Isolation: ≥70dB
- Max Switching Time: ≤15ms

2.1 Pre-amplifier module: WOS-WA-1200-RP

Features

- Full-GaAs+power amplifying output.
- Full electrical control the attenuation and equilibrium circuit.

Specification

- Frequency Range: 45~862/1003MHz
- Rated Gain: ≥20dB
- C/CTB:≥ 67dB
- Output Attenuation: 0～20dB
- Noise Figure: ≤ 10dB
- C/CSO:≥ 62dB

CATV Optical Communication Platform : WOS-3000

Features

- 3U standard rack, can be installed with 1 monitoring unit, 10 equipment modules and 2 power modules at most.
- Hot backup dual power, support hot plug.
- Equipment slot can automatically identify the module type; the cooling fan is intelligent temperature controlled.
- LCD status display, support Ethernet transponder and provide RS-232 communication interface.
- Its modules indexes are the same with WOS-4000 optical platform.

Outdoor Optical Platform : WOS-5000

1.Description

WOS-5000 series outdoor optical platforms can build an integrated sub-headend C-CMTS system. It is applied to DOCSIS3.0 distributed HFC bi-directional network.

2.Features

- Cast aluminum waterproof shell, full modular design, LED digital display all parameters, which can build integrated sub-headend C-CMTS system.
- It can be equipped with 1 forward path optical receiving module, 1 forward path optical transmitting module,2 four-way reverse path optical receiving modules, 1 CMC master module, 1 ONU module, 1 switching power supply module and 1 Ethernet module.
- The forward optical receiving module supports AGC function, -6~+2dBm receiving optical power and 1GHz operating frequency.
- The reverse optical receiving modules support AGC function, -9~+2dBm receiving optical power and also support ATT adjusting of each independent way and turnoff functions.
- When the platform is equipped with 2 four-way reverse optical receiving modules, 1 CMC can cover 8 bi-directional optical nodes, which can meet the demand of rural network transformation.

3.Specifications

(1) WOS-WT-1310-5K Series 1310nm Transmitting Module

- Optical Output Wavelength: 1310 ±20nm
- Optical Output Power: 4 ~ 30mW
- Frequency Range: 45 ~ 1003MHz
- Input Level Rated: 94±1dBμV
- C/N:≥ 49dB @-1dBm
- C/CTB:≥ 65dB @-1dBm
- C/CSO:≥ 60dB @-1dBm
- MER(64QAM):≥ 40dB @-1dBm

(2) WOS-WR-1002-5K Series Forward Path Optical Receiving Module

- Optical AGC Control Range: +2 ~ -6/-5/-4 dBm(adjustable)
- Frequency Range: 45 ~ 1003MHz
- Output Level Rated: ≥ 94±1dBμV
- Max Output Level: ≥ 102±1dBμV
- C/N:≥ 51dB @-1dBm
- C/CTB:≥ 65dB @-1dBm
- C/CSO:≥ 65dB @-1dBm
- MER(64QAM):≥ 40dB @-1dBm

(3) WOS-WR-2004-5K Series Reverse Path Optical Receiving Module

- Optical AGC Control Range: -9 ~ 2 dBm
- Frequency Range: 5 ~ 250MHz
- Rated Output Level: 80±1 dBμV
- Electronic attenuator: 20dB (1dB stepping)
- NPR Dynamic Range (NPR≥30 dB): ≥10 dB(FP); ≥15 dB(DFB)

(4) WOS-5000-CMC Series CMC Module

- Downstream Frequency Range:87 ~ 1000MHz
- Downstream Modulation Mode: 64QAM, 128QAM, 256QAM
- Downstream Channel Number: 16
- Downstream Max Rate: 800Mbps
- Upstream Frequency Range: 5 ~ 65MHz
- Upstream Modulation Mode: QFSK, 16QAM, 64QAM
- Upstream Channel Number: 4
- Upstream Max Rate: 160Mbps

4.General features

- Consumption: ≤ 62W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage:AC 150～265V or AC 35～90V (50Hz)
- Dimension: 460mm(L)X 270mm(W)X 170mm(H)

Note: More detailed product introduction and index parameters see the product manual.

1550nm External Modulated Optical Transmitter : WT-1550-EM

1.Description

WT-1550-EM series 1550nm external modulation optical transmitters are mainly used in 1550nm optical fiber transmission system. This is the third time improved type and the specifications are as good as the international first brand or better. It can coordinate with multistage EDFA to realize long-distance transmission.

2.Features

- This 1550nm optical transmitter can be used in long-distance transmission.
- Double microwave source SBS control, +13～+19dBm continuously adjustable, 0.5dB stepping.
- Adopt the newest DFB laser and JDSU LiNbO3 external modulator.
- LCD display on the front panel, support Ethernet transponder, support WEB and SNMP network management.
- 19″1U standard rack, can be equipped with hot backup dual power modules (optional).

3.Specifications (standard, can be ODM)

- Optical Output Wavelength: 1545 ~ 1560nm
- Wavelength Adjustable Range: +/- 50GHz
- SBS Threshold Value: +13 ~ +19 dBm (continuously adjustable)
- Frequency Range: 47 ~ 1003MHz
- Input Level Range: 78 ~ 96dBμV
- AGC Control Range: +/-3dB
- MGC Adjustable Range: 0 ~ 15dB
- C/N:⩾ 52dB;C/CTB:⩾ 65dB;C/CSO:⩾ 65dB
- Laser Linewidth: 0.65 MHz (EM10); 0.3 MHZ (EM20&EM30)
- Optical Output Power: 1X3dBm, 1X5dBm and 1X6dBm (EM10);
  2X7dBm, 2X8dBm, 2X9dBm and 2X10dBm (EM20&EM30)

4.General features

- Consumption: ⩽ 60W
- Operating Temperature: -5℃~+45℃
- Operating Voltage: DC 36~72V or AC 90 ~ 265V (50Hz)
- Dimension: 483mm (L) X455mm (W) X 44mm (H)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

1550nm Intelligent Directly Modulated Optical Transmitter : WT-1550-DM

1.Description

WT-1550-DM intelligent directly modulated optical transmitters are mainly used in 1550nm optical fiber transmission system. Adopt advanced Electronic Dispersion Compensation technology, accurately compensate according to the actual transmission distance by 1km stepping. The maximum compensated distance is up to 50km.

2.Features

- High performance DFB laser, output wavelength is ITU standard selectable.
- The maximum working frequency can be up to 1218MHz, support DOCSIS 3.1 system.
- Built-in WDM Wavelength Division Multiplexer and VOA Variable Optical Attenuator.
- LCD display on the front panel, support Ethernet transponder.
- 19″ 1U standard rack, standard equipped with modular hot backup dual power.

3.Specifications (standard, can be ODM)

- Optical Output Wavelength: 1550±10nm or ITU wavelength
- Optical Output Power: 10mW
- Frequency Range: 47 ~ 1218MHz
- Input Level Range:75 ~ 85dBμV
- AGC Control Range: +/- 5dB
- MGC Adjustable Range: 0 ~ 20dB
- Dispersion Compensation Distance: ⩽50KM
- C/N:⩾ 50dB;C/CTB:⩾ 65dB;C/CSO:⩾ 60dB

4. Model Description

Model	Description
WT-1550-DM-I	Standard 1550nm directly modulated optical transmitter, supporting Electric Dispersion Compensation.
WT-1550-DM-II	Enhanced type, support Electric Dispersion Compensation and with built-in WDM (Wavelength Division Multiplex).
WT-1550-DM-III	Enhanced type, support Electric Dispersion Compensation and with built-in electrical VOA (Variable Optical Attenuator).
WT-1550-DM-IV	Enhanced type, support Electric Dispersion Compensation, with built-in WDM (Wavelength Division Multiplex) and electrical VOA (Variable Optical Attenuator).

5.General features

- Consumption: ⩽ 30W
- Operating Voltage: DC -48V or AC 110 ~ 250V (50Hz)
- Operating Temperature: 0℃ ~ +45℃
- Dimension: 483mm(L)X 395mm(W)X 44mm(H)

Note 1: The test conditions of the above link indicators are: the tested optical transmitter+25km standard fiber+ standard optical receiver, the received optical power of optical receiver is -1dBm.
Note 2: More detailed product introduction and index parameters see the product manual.

1550nm Er/Yb Co-doped Multi-output Optical Amplifier : WE-1550-YZ | WE-1550-YZB

1.Description

WE-1550-YZ (B) series 1550nm amplifiers adopt advanced Er-Yb co-doped double-clad fiber technology, the maximum total output power is up to +38dBm, and the maximum output channels are up to 64, which is mainly used for fiber access network of EPON architecture.

2.Features

- Output ports: 4 ~ 64 optional; output optical power: 0 ~ +3dB continuously adjustable.
- LCD display on the front panel, support Ethernet transponder.
- 19″ standard rack, standard equipped with modular hot backup dual power.

3. Model Description

Model	Description
WE-1550-YZ	1U rack Er-Yb co-doped high power optical amplifier, output optical power is 0 ~3dB adjustable, 0.1dB stepping.
WE-1550-YZB	2U rack Er-Yb co-doped high power optical amplifier, output optical power is 0 ~3dB adjustable, 0.1dB stepping.
WE-1550-YZ-CW	1U rack Er-Yb co-doped high power optical amplifier with built-in WDM, output optical power is 0 ~3dB adjustable, 0.1dB stepping.
WE-1550-YZ-SW	1U rack Er-Yb co-doped high power optical amplifier with built-in optical switch, output optical power is 0 ~3dB adjustable, 0.1dB stepping.
WE-1550-YZB-CW	2U rack Er-Yb co-doped high power optical amplifier with built-in WDM, output optical power is 0 ~3dB adjustable, 0.1dB stepping.
WE-1550-YZB-SW	2U rack Er-Yb co-doped high power optical amplifier with built-in optical switch, output optical power is 0 ~3dB adjustable, 0.1dB stepping.
WE-1550-YZB-CS	2U rack Er-Yb co-doped high power optical amplifier with built-in optical switch and WDM, output optical power is 0 ~3dB adjustable, 0.1dB stepping.

4.Specifications (standard, can be ODM)

- Optical Input Power Range: -5~+10 dBm
- Optical Input Wavelength Range: 1545~1565nm
- Noise Figure: ⩽ 5dB(Input optical power 0dBm，λ=1550nm)
- Optical Output Power: +25~+34dBm(YZ); +34~+38dBm(YZB)
- C/N:⩾ 50dB;C/CTB:⩾ 63dB;C/CSO:⩾ 63dB

5.General features

- Operating Temperature: -10℃ ~ +42℃
- Operating Voltage:DC -48V or AC 160 ~ 250V (50Hz)
- Consumption: ⩽ 65W (YZ); ⩽ 70W (YZB)
- Dimension: 483mm(L)X 475mm(W)X 44mm(H) (YZ);
  483mm(L)X 440mm(W)X 88mm(H) (YZB)

Note 1: The technical index test conditions are in accordance with < GY/T 184-2002 Specifications and methods of measurement on analog optical fiber amplifiers used in CATV system>.
Note 2: More detailed product introduction and index parameters see the product manual.

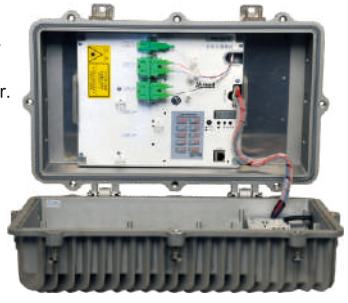
Outdoor 1550nm Er/Yb Co-doped Optical Amplifier : WE-1550-YZ-YW

1.Description

WE-1550-YZ-YW series 1550nm amplifiers adopt advanced Er-Yb co-doped double-clad fiber technology, the maximum total output power is up to +38dBm, and the maximum output channels are up to 64, which is mainly used for fiber access network of EPON architecture.

2.Features

- Adopt Er-Yb co-doped double-clad fiber technology, the maximum overall output power can be +33dBm.
- Output ports: 4 ~ 16 optional; output optical power: 0~ +3dB continuously adjustable.
- Cast aluminum waterproof housing with built-in LED screen for displaying, support Ethernet transponder.



3.Specifications (standard, can be ODM)

- Input Optical Power Range: -5 ~ +10 dBm
- Input Optical Wavelength Range: 1545~1565nm
- Output Optical Power: +13 ~ +24 dBm
- Output Power Stability: ±0.5 dBm
- Noise Figure: ⩽ 5dB @0dBm
- C/N:⩾ 50dB;C/CTB:⩾ 63dB;C/CSO:⩾ 63dB

4.General features

- Consumption: ⩽ 50W
- Operating Temperature: -5℃ ~ +55℃
- Operating Voltage: AC 150 ~ 265V(50Hz) ; -30 ~ +60℃
- Dimension:460mm(L)X 270mm(W)X 170mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 184-2002 Specifications and methods of measurement on analog optical fiber amplifiers used in CATV system>.
Note 2: More detailed product introduction and index parameters see the product manual.

1310nm CATV Optical Transmitter : WT-1310

1.Description

WT-1310 series 1310nm optical transmitters are mainly used in CATV 1310nm optical fiber transmission network. We also developed the outdoor type which adopts cast aluminum waterproof shell to solve the engineering problem that the remote areas cannot build the machine room. The outdoor type can adapt to -40℃~ +50℃ field work environment.

2.Features

- ◆ High-performance DFB laser, full-GaAs amplification device.
- ◆ Adopt multi-frequency pre-distortion technology; the RF drive total power is adaptive.
- ◆ LCD display on the front panel, support Ethernet transponder.
- ◆ 19″1U standard rack, can be equipped with hot backup dual power modules (optional).

3.Specifications (standard, can be ODM)

- ◆ Optical Output Wavelength: 1310±20nm
- ◆ Optical Output Power: 4 ~ 30mW
- ◆ Frequency Range: 47 ~ 1218MHz
- ◆ Rated Input Level: 72 ~ 88dBμV
- ◆ AGC Control Range: +/- 5dB
- ◆ C/N:≥ 51dB @-1dBm;C/CTB:≥ 65dB @-1dBm;C/CSO:≥ 60dB @-1dBm

4.General features

- ◆ Consumption: ≤ 30W (Indoor); ≤ 35W (Outdoor)
- ◆ Operating Temperature: 0℃ ~ +45℃ (Indoor); -40℃ ~ +50℃ (Outdoor)
- ◆ Operating Voltage: AC 150 ~ 265V(50Hz) or DC -48V(Indoor); AC 135 ~ 250V(50Hz) or AC 35 ~ 90V(Outdoor)
- ◆ Dimension: 483mm(L)X 395mm(W)X 44mm(H) (Indoor); 430mm(L)X 250mm(W)X160mm(H) (Outdoor)

Note 1: The technical index test conditions are in accordance with < GY/T 184-2002 Specifications and methods of measurement on analog optical fiber amplifiers used in CATV system>.
Note 2: More detailed product introduction and index parameters see the product manual.

1550nm EDFA (Erbium Doped Fiber Amplifier) : WE-1550-HD

1.Description

WE-1550-HD series 1550nm EDFA are mainly used in CATV 1550nm optical fiber transmission system. We also developed the outdoor type which adopts cast aluminum waterproof shell to solve the engineering problem that the remote areas cannot build the machine room. The outdoor type can adapt to -40℃~ +50℃ field work environment.

2.Features

- ◆ Adopt low noise pump laser and imported high-performance Er-doped fiber.
- ◆ The output optical power is adjustable (0 ~ 4dB,0.1dB stepping).
- ◆ LCD display on the front panel, support Ethernet transponder.
- ◆ 19″1U standard rack, can be equipped with hot backup dual power modules (optional).

3.Specifications (standard, can be ODM)

- ◆ Input Optical Power Range: -5~+10 dBm
- ◆ Input Optical wavelength Range: 1545 ~ 1565nm
- ◆ Output Optical Power: +13~+24 dBm
- ◆ Output Power Stability: ±0.5 dBm
- ◆ Noise Figure: ≤ 5dB @0dBm
- ◆ C/N:≥ 50dB;C/CTB:≥ 63dB;C/CSO:≥ 63dB

4. Model Description

Model	Description
WE-1550-HD	Standard optical amplifier, output power is 0 ~4dB adjustable, 0.1dB stepping.
WE-1550-HD-SW	Specified optical amplifier with built-in optical switch, output power is 0 ~4dB adjustable, 0.1dB stepping.
WE-1550-HD-RF	Specified optical amplifier with RF test, output power is 0 ~4dB adjustable, 0.1dB stepping.
WE-1550-HD-CW	Specified optical amplifier with built-in WDM and inter-cut function, output power is 0 ~4dB adjustable, 0.1dB stepping.

5.General features

- ◆ Consumption: ≤ 40W
- ◆ Operating Temperature: -5℃ ~ +55℃
- ◆ Operating Voltage: AC 150 ~ 265V(50Hz) or DC -48V
- ◆ Dimension: 483mm(L)X 405mm(W)X 44mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 184-2002 Specifications and methods of measurement on analog optical fiber amplifiers used in CATV system>.
Note 2: More detailed product introduction and index parameters see the product manual.

Indoor Optical Receiver : WR-1002-RJL | WR-1004-RJL

1.Description

WR-1002-RJL & WR-1004-RJL series optical receivers are mainly used in CATV front end machine room. WR-1002-RJL is the two-way output type, while WR-1004RJL is the four-way output type.

2.Features

- Optical AGC, GaAs power double output.
- Variable attenuator and equalizer, support Ethernet transponder.
- 19″1U standard rack, LCD display on the front panel, can be equipped with hot backup dual power (optional).

3.Specifications (standard, can be ODM)

- Frequency Range: 5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- Forward Path Optical AGC Control Range: -8 ~ +2 dBm
- Forward Path C/N:⩾ 51dB @-1dBm
- Forward Path C/CTB:⩾ 65dB @-1dBm
- Forward Path C/CSO:⩾ 60dB @-1dBm
- Forward Path Maximum Output Level: ⩾ 112dBμV
- Return Path Optical Output Wavelength: 1310±10nm
- Return Path Optical Output Power: 1 mW
- Return Path Input Level Range: 75 ~ 85dBμV
- NPR Dynamic Range (NPR⩾30 dB): ⩾10dB (FP); ⩾15dB (DFB)

4.General features

- Consumption: ⩽ 25W (WR-1002RJL); ⩽ 30W (WR-1004RJL)
- Operating Temperature: -10℃~+55℃
- Operating Voltage: DC 48V or AC 150～265V(50Hz)
- Dimension: 483mm(L)X 345mm(W)X 44mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 184-2002 Specifications and methods of measurement on analog optical fiber amplifiers used in CATV system>.
Note 2: More detailed product introduction and index parameters see the product manual.

Loop Self-healing Optical Receiver : WR-1002-JDS

1.Description

WR-1002-JDS series loop self-healing optical receivers with built-in two independent optical receiver modules, can simultaneously receive main and backup optical signals. It is mainly used for backup optical signals switching in front end machine room.

2.Features

- Optical AGC function, support automatic switch mode and manual switch mode.
- Variable attenuator and equalizer, GaAs power double output.
- LCD display on the front panel, support Ethernet transponder.
- 19″1U standard rack, can be equipped with hot backup dual power (optional).

3.Specifications (standard, can be ODM)

- Optical AGC Control Range: -7 ~ +2 dBm
- Frequency Range: 45 ~ 1003MHz
- Max Output Level: ⩾ 104dBμV
- C/N: ⩾ 51dB @-1dBm;C/CTB: ⩾ 67dB @-1dBm;C/CSO: ⩾ 63dB @-1dBm

4.General features

- Consumption: ⩽ 20W
- Operating Temperature: -10℃ ~ +55℃
- Operating Voltage:DC 48V or AC 150 ~ 265V (50Hz)
- Dimension: 483mm(L)X 345mm(W)X 44mm(H)

Note 1: The technical index test conditions are in accordance with <GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Return Path Optical Receiver (Four-way) : WR-2004-J

1.Description

WR-2004-J series return path optical receivers are mainly used for the receiving of return path signal in bidirectional HFC network. Built-in 4 independent optical receiver units, each way independently receive, amplify and output.

2.Features

- Optical AGC function, full-GaAs MMIC amplification device.
- Variable attenuator and equalizer, support Ethernet transponder.
- Add RFOG burst mode and single way RF shutdown function.
- 19″1U standard rack, LCD display on the front panel, can be equipped with hot backup dual power (optional).

3.Specifications (standard, can be ODM)

- Frequency Range: 5 ~200MHz
- Channel Isolation: ⩾65dB
- Input Optical Power Range: JI type: +1～-21dBm; JII type: -5～-26dBm.
- Optical AGC Control Range: JI type: 0～-10dBm; JII type: -5～-10dBm.
- NPR Dynamic Range (NPR⩾30dB): ⩾10dB (FP), ⩾15dB (DFB)

4.General features

- Consumption: ⩽ 20W
- Operating Voltage:DC -48V or AC 90 ~ 250V (50Hz)
- Operating Temperature: -20℃~+45℃
- Dimension: 483mm(L)X 365mm(W)X 44mm(H)

Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note2: More detailed product introduction and index parameters see the product manual.

Optical Switch : WS-1524J

1.Description

WS-1524J series optical switches are mainly used for backup optical signals switching in front end or secondary front end machine room. WS-1524J-I is the ordinary type, while WS-1524J-II is the enhanced type that adds RF detection function on the basis of ordinary type.

2.Features

- Automatic switch or manual switch.
- 19″1U standard rack, LCD display on the front panel.
- Support Ethernet transponder.

3.Specifications

- Optical Operating Wavelength: 1200 ~ 1600nm
- Optical Input Power Range: -15 ~ +24dBm
- Max Switching Time: ⩽ 10ms
- Insertion Loss: ⩽1.3dB（tested on points 1310nm, 1490nm and 1550nm）

4.General features

- Consumption: ⩽ 2W
- Operating Temperature: -5℃ ~ +55℃
- Operating Voltage: AC 160 ~ 250V (50Hz)
- Dimension: 483mm(L)X 270mm(W)X 44mm(H)

Note: More detailed product introduction and index parameters see the product manual.

RF Switch : WS-1000RF

1.Description

WS-1000RF RF switch supports automatic switch and manual switch which is mainly used for backup switch of RF signals of the front end or secondary front end machine room.

2.Features

- Low insertion loss, short switching time and high mutual isolation in band.
- LCD display on the front panel, support Ethernet transponder.
- 19″1U standard rack, can be equipped with hot backup dual power modules (optional).

3.Specifications

- Frequency Range:: 5 ~ 1003MHz
- Channel Isolation: ⩾ 70dB
- Insertion Loss: ⩽ 2dB
- Max Switching Time: ⩽ 15ms

4.General features

- Consumption: ⩽ 25W
- Operating Temperature: -20℃ ~ +55℃
- Operating Voltage: AC 150 ~ 265V(50Hz)
- Dimension: 483mm(L)X 345mm(W)X 44mm(H)

Note: More detailed product introduction and index parameters see the product manual.

Indoor Pre-amplifier : WA-1200-RP

1.Description

WA-1200-RP indoor pre-amplifier is a high gain and high output RF amplifier suitable for the amplification of CATV front end RF signal.

2.Features

- Variable attenuator and equalizer,GaAs power double output.
- LCD display on the front panel, support Ethernet transponder.
- 19″1U standard rack, can be equipped with hot backup dual power (optional).

3.Specifications (standard, can be ODM)

- Frequency Range: 45 ~ 1003 MHz
- Rated Gain: 22 dB, 27dB, 30dB
- Carrier composite crosstalk rejection ratio: ⩾72dB
- Carrier to hum ratio: ⩾68 dB
- C/CTB: ⩾75dB;C/CSO: ⩾75 dB.

4.General features

- Consumption: ⩽ 20W
- Operating Temperature: -10℃ ~ +55℃
- Operating Voltage: AC 150 ~ 265V(50Hz)
- Dimension: 483mm(L)X 256mm(W)X 44mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Satellite Optical Transmitter : WT-2G6

1.Description

WT-2G6 satellite optical transmitter is mainly used in the cable-shared transmission system of CATV signal and SAT-IF signal, usually supporting the use of WR-2G6 satellite optical receiver. It contains two model types: 1ch satellite optical transmitter and 6ch satellite optical transmitter.

2.Features

- High performance DFB laser, the output optical wavelength can be ITU standard wavelength.
- Adopt multi-frequency pre-distortion technology; the RF drive total power is adaptive.
- LCD display on the front panel, support Ethernet transponder.
- 19″1U standard rack, can be equipped with hot backup dual power modules (optional).

3.Specifications

- Optical Output Wavelength: 1310±20nm/1550±10nm
- Optical Output Power: 2 ~ 10mW
- Input Range: -25~ -5dBm (RF total power)
- Frequency Range: 45 ~ 862MHz (CATV part); 950 ~ 2600MHz(SAT-IF part)
- CNR:51dB;CTB:63dB;CSO:58dB

4.General features

- Consumption: ⩽ 20W
- Operating Temperature: 0℃ ~ +50℃
- Operating Voltage: AC 110 ~ 265V(50Hz)
- Dimension: 483mm(L)X 395mm(W)X 44mm(H)

Note: More detailed product introduction and index parameters see the product manual.

Satellite Optical Receiver : WR-2G6

1.Description

WR-2G6 satellite optical receiver is mainly used in the cable-shared transmission system of CATV signal and SAT-IF signal. Usually supporting the use of WT-2G6 satellite optical transmitter. It contains two model types: 1ch satellite optical receiver and 6ch satellite optical receiver.

2.Features

- Optical AGC function, full-GaAs MMIC amplification.
- Variable attenuator and equalizer, support Ethernet transponder.
- 19″1U standard rack, LCD display on the front panel, can be equipped with hot backup dual power modules (optional).

3.Specifications

- Optical AGC Control Range: 0~ -10 dBm/-1~ -11 dBm/-2~ -12 dBm/-3~ -13 dBm
- Frequency Range: 50 ~ 2600MHz
- Output Total Power: -20dBm
- C/IM3:⩾ 55dB
- HUM:⩾ -60dB

4.General features

- Consumption: ⩽ 20W
- Operating Temperature: -20℃ ~ +60℃
- Operating Voltage: AC 150 ~ 265V(50Hz)
- Dimension: 483mm(L)X 395mm(W)X 44mm(H)

Note: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-2690M

1.Description

WR-2690M optical receiver is a home use unidirectional optical receiver with compact appearance. It is mainly used in the FTTH network of CATV signal and SAT-IF signal cable-shared transmission.

2.Features

- Optical AGC function, full GaAs MMIC amplification device.
- Aluminum alloy housing, DC external power supply.

3.Specifications

- Optical Input Power Range: -7~+2 dBm
- Frequency Range: 45 ~ 2600MHz
- Max Output Level: ⩾ 90dBμV
- C/N:⩾ 51dB;C/CTB:⩾ 66dB;C/CSO:⩾ 62dB

4.General features

- Consumption: ⩽ 3W
- Operating Voltage: DC +12V
- Operating Temperature: -20℃ ~ +60℃
- Dimension: 105mm(L)X 67mm(W)X 24mm(H)

Note: More detailed product introduction and index parameters see the product manual.

Outdoor Integrated Optical Node : WNC-1004-A-I (CMC+CATV)

1.Description

WNC-1004-A-I outdoor optical node is a “C-CMTS+CATV optical receiver” two-in-one product, which can be configured 1 C-CMTS module, 2 CATV optical receiver modules and 1 power supply module and ONU's reserved installation site. It is suitable for DOCSIS 3.0 distributed HFC bidirectional network.

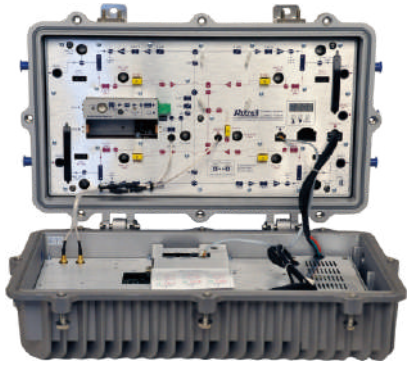
2.Features

- Optical AGC, GaAs power doulble output.
- Variable attenuator and equalizer, nixie tube display, support SNMP network management protocol.
- C-CMTS module is fully compatible with DOCSIS 3.0 technical standard.
- Support 500 CM online simultaneously at most and compatible with CM of DOCSIS 1.0, DOCSIS2.0, 3.0 technical standards.
- Four-way independent output, modular cast aluminium waterproof shell.

3.Specifications (standard, can be ODM)

(1) CATV Forward Part

- Optical AGC Controlling Range: +2 ~ -8/-7/-6/-5 dBm(adjustable)
- Frequency Range: 87 ~ 862/1003MHz
- Max Output Level: ⩾ 114dBμV
- C/N:⩾ 51dB @-1dBm;C/CTB:⩾ 65dB @-1dBm;C/CSO:⩾ 60dB @-1dBm



(2) C-CMTS Part

- Downstream Frequency Range: 87 ~ 1000MHz
- Downstream Modulation Mode: 64QAM, 128QAM, 256QAM
- Downstream Channel Number: 16
- Downstream Max Rate: 800Mbps
- Upstream Frequency Range: 5 ~ 65MHz
- Upstream Modulation Mode: QFSK, 16QAM, 64QAM
- Upstream Channel Number: 4
- Upstream Max Rate: 160Mbps

4.General features

- Consumption: ⩽ 62W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage: AC 150～265V or AC 35～90V (50Hz)
- Dimension: 460mm(L)X 270mm(W)X 170mm(H)

Note: More detailed product introduction and index parameters see the product manual.

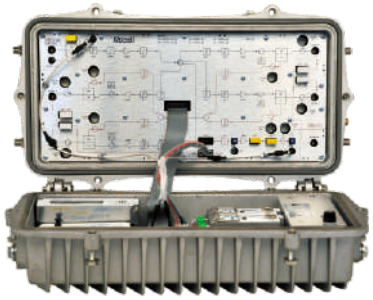
Outdoor Optical Node (Four-way Independent Output) : WR-1004N-HJ (CMTS Standard Type)

1.Description

WR-1004N-HJ series outdoor optical nodes are intelligent optical nodes that can provide four-way high level independent output. The return path adopts professional RF electronic variable attenuation chip instead of traditional tri-state switch and can have optional RFOG burst mode return path components. It can be equipped with 2 forward path optical receiving modules, 1 return path optical transmitting module, 1 Ethernet transponder module and 1 power module at most. It adds external C-CMTS RF signal specified interface, which applies to 1GHz bidirectional HFC network.

2.Features

- ◆ Intelligent optical AGC function, LCD screen status display.
- ◆ Electronic variable attenuator and equalizer, GaAs power double output.
- ◆ Four way independently amplify and equalize; each way's output level is independent and adjustable.
- ◆ Cast aluminum waterproof housing, support Ethernet transponder.



3.Specifications (standard, can be ODM)

- ◆ Frequency Range:5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- ◆ Forward Path Optical AGC Control Range: +2 ~ -9/-8/-7 dBm (adjustable)
- ◆ Forward Path Max Output Level: ⩾ 112dBμV
- ◆ Forward Path C/N:⩾ 51dB @-1dBm
- ◆ Forward Path C/CTB: ⩾ 65dB @-1dBm
- ◆ Forward Path C/CSO:⩾ 60dB @-1dBm
- ◆ Return Path Optical Output Wavelength: 1310±10nm
- ◆ Return Path Optical Output Power: 1 mW
- ◆ Return Path Input Level Range: 75 ~ 85dBμV
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)
- ◆ CMTS_DS Level of Downstream Input Port:⩾102dBμV
- ◆ CMTS_US Gain of Upstream Output Port:0±1dB（Port to CMTS_US Output Port）
- ◆ Isolation from Downstream to CMTS_US Upstream Output Port: ⩾70dB

Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note2: More detailed product introduction and index parameters see the product manual.

4.General features

- ◆ Consumption: ⩽ 70W
- ◆ Operating Voltage: AC 135～250V
  or AC 35～90V (50Hz)
- ◆ Operating Temperature: -30℃ ~ +70℃
- ◆ Dimension: 430mm(L)X 250mm(W)X 170mm(H)

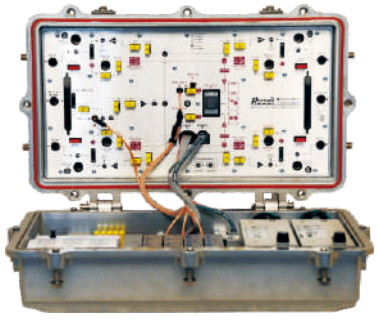
Outdoor Modular Optical Node (Four-way Independent Output) : WR-1004N-MLD-GD (CMTS Standard Type)

1.Description

WR-1004N-MLD-GD outdoor optical node is a four-way independent output and high level optical node, which applies to 1GHz CATV bidirectional HFC network. The return path adopts professional RF variable attenuation chip instead of traditional tri-state switch,and can have optional RFOG burst mode return path components. It can be equipped with 2 forward path optical receiving modules, 2 return path optical transmitting modules, 1 Ethernet transponder module and 2 power modules at most.

2.Features

- ◆ Optical AGC function, LED digital nixie tube display.
- ◆ Fixed attenuator and equalizer, four-way power double independently output.
- ◆ RFOG burst mode is optional in the return path.
- ◆ Reserved specified external C-CMTS RF signal interface.
- ◆ Modular cast aluminum waterproof shell, support Ethernet transponder.



3.Specifications (standard, can be ODM)

- ◆ Frequency Range:5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- ◆ Forward Path Optical AGC Control Range: +2 ~ -8/-7/-6/-5 dBm (adjustable)
- ◆ Forward Path Max Output Level: ⩾ 112dBμV
- ◆ Forward Path C/N:⩾ 51dB @-1dBm
- ◆ Forward Path C/CTB: ⩾ 65dB @-1dBm
- ◆ Forward Path C/CSO:⩾ 60dB @-1dBm
- ◆ Return Path Optical Output Wavelength: 1310±10nm
- ◆ Return Path Optical Output Power: 1 mW
- ◆ Return Path Input Level Range: 75 ~ 85dBμV
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)

Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note2: More detailed product introduction and index parameters see the product manual.

4.General features

- ◆ Consumption: ⩽ 42W
- ◆ Operating Voltage: AC 100~ 240V
  or AC 35 ~ 90V (50Hz)
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Dimension: 460mm(L)X 270mm(W)X 170mm(H)

Outdoor Ultra-thin Modular Optical Node (Four-way Splitter Output) : WR-1004N-SJL(CMTS Standard Type)

1.Description

WR-1004N-SJL series outdoor optical nodes are ultra-thin modular optical nodes that can provide four-way high level output. The return path adopts professional RF electronic variable attenuation chip instead of traditional tri-state switch and can have optional RFOG burst mode return path components. It can be equipped with 2 forward path optical receiving modules, 2 return path optical transmitting modules, 1 Ethernet transponder module and 1 power modules at most. It adds external C-CMTS RF signal specified interface, which is suitable for 1GHz CATV bidirectional HFC network.

2.Features

- ◆ Intelligent optical AGC, GaAs power double output.
- ◆ Variable attenuator and equalizer, LED digital nixie tube display, support Ethernet transponder.
- ◆ Two-way independent output or four-way splitter output, ultra-thin modular cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)

- ◆ Frequency Range: 5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- ◆ Forward Path Optical AGC Control Range: +2 ~ -9/-8/-7 dBm (adjustable)
- ◆ Forward Path Max Output Level: ⩾ 112dBμV
- ◆ Forward Path C/N: ⩾ 51dB @-1dBm
- ◆ Forward Path C/CTB: ⩾ 65dB @-1dBm
- ◆ Forward Path C/CSO: ⩾ 60dB @-1dBm
- ◆ Return Path Optical Output Wavelength: 1310±10nm
- ◆ Return Path Optical Output Power: 1 mW
- ◆ Return Path Input Level Range: 75 ~ 85dBμV
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)
- ◆ CMTS_DS Level of Downstream Input Port:⩾102dBμV
- ◆ CMTS_US Gain of Upstream Output Port:0±1dB (Port to CMTS_US Output Port)
- ◆ Isolation from Downstream to CMTS_US Upstream Output Port: ⩾70dB

4.General features

- ◆ Consumption: ⩽ 37W
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Dimension: 360mm(L)X 330mm(W)X 155mm(H)
- ◆ Operating Voltage: AC 100 ~ 240V or AC 35 ~ 90V (50Hz)

Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note2: More detailed product introduction and index parameters see the product manual.

Outdoor Ultra-thin Modular Optical Node (Four-way Independent Output) : WR-1004N-HJS (CMTS Standard Type)

1.Description

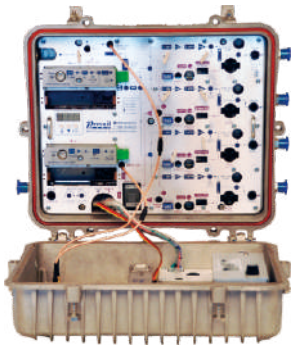
WR-1004N-HJS series outdoor optical nodes are ultra-thin intelligent four-way independent output and high level optical nodes.The return path adopts professional RF electronic variable attenuation chip instead of traditional tri-state switch and can have optional RFOG burst mode return path components. It can be equipped with 2 forward path optical receiving modules, 2 return path optical transmitting modules, 1 Ethernet transponder module and 1 power module at most. It adds external C-CMTS RF signal special interface, which applies to 1GHz CATV bidirectional HFC network.

2.Features

- ◆ Optical AGC function,LED digital nixie tube display.
- ◆ Electronic variable attenuator and equalizer,Ga-As power double output.
- ◆ Four way independently amplify and equalize; each way's output level is independent and adjustable.
- ◆ Cast aluminum waterproof housing, support Ethernet transponder.

3.Specifications (standard, can be ODM)

- ◆ Frequency Range: 5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- ◆ Forward Path Optical AGC Control Range: +2 ~ -9/-8/-7 dBm (adjustable)
- ◆ Forward Path Max Output Level: ⩾ 116dBμV
- ◆ Forward Path C/N:⩾ 51dB @-1dBm
- ◆ Forward Path C/CTB: ⩾ 65dB @-1dBm
- ◆ Forward Path C/CSO:⩾ 60dB @-1dBm
- ◆ Return Path Optical Output Wavelength: 1310±10nm
- ◆ Return Path Optical Output Power: 1 mW
- ◆ Return Path Input Level Range: 75 ~ 85dBμV
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10dB(FP); ⩾15dB(DFB)
- ◆ CMTS_DS Level of Downstream Input Port:⩾102dBμV
- ◆ CMTS_US Gain of Upstream Output Port:0±1dB (Port to CMTS_US Output Port)
- ◆ Isolation from Downstream to CMTS_US Upstream Output Port: ⩾70dB



4.General features

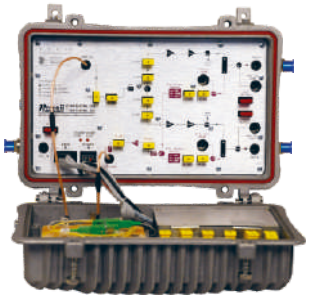
- ◆ Consumption: ⩽ 65W
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Operating Voltage: AC 100 ~ 240V or AC 35 ~ 90V (50Hz)
- ◆ Dimension: 360mm(L)X 330mm(W)X 161mm(H)

Outdoor Optical Node (Two-way Independent Output) : WR-1002-ML-GD | WR-1002-MLD-GD

1.Description

WR-1002-ML-GD series are small optical nodes that can provide high level and independent two-way output. It is suitable for 1GHz CATV bidirectional HFC network.The return path adopts professional electronic RF electronic variable attenuation chip to replace traditional tri-state switch, and can have optional RFOG burst mode return path components.It can be equipped with 1 forward path optical receiving module, 1 return path optical transmitting module and 1 Ethernet transponder module.
WR-1002-MLD-GD is the modular type,The technical performance and index are the same as WR-1002-ML-GD.

2.Features



- Optical AGC function, fixed attenuator and equalizer.
- LED optical power indication, support Ethernet transponder.
- The return path can be equipped with RFOG burst mode components.
- Two-way independently amplifying output, cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)

- Frequency Range:5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- Forward Path Optical AGC Control Range: -7 ~ +2 dBm
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CTB: ⩾ 65dB @-1dBm
- Forward Path C/CSO: ⩾ 60dB @-1dBm
- Forward Path Max Output Level: ⩾ 112dBμV
- Return Path Optical Output Wavelength: 1310±10nm
- Return Path Optical Output Power: 1 mW
- Return Path Input Level Range: 75 ~ 85dBμV
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)

4. General Features

- Consumption: ⩽ 43W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)
- Dimension: 350mm(L)X 240mm(W)X 135mm(H)

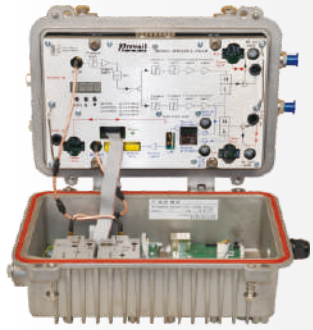
Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Outdoor Modular Optical Node (Two-way Independent Output) : WR-1002-JL-CEAM

1.Description

WR-1002-JL-CEAM series nodes are small modular optical nodes that can provide two-way high level independent output.It is suitable for 1GHz CATV bidirectional HFC network. The return path adopts professional electronic RF electronic variable attenuation chip to replace traditional tri-state switch,and can have optional RFOG burst mode return path components.RF amplifying unit and switching power supply module share one modular frame at the bottom cover. The top cover can be equipped with 1 forward path optical receiving module, 1 return path optical transmitting module and 1 Ethernet transponder module.

2.Features



- Intelligent optical AGC function, GaAs power double output.
- Electronic variable attenuator and equalizer, nixie tube display, support Ethernet transponder.
- Two-way independent output, modular cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)

- Frequency Range: 5 ~ 65/87 ~ 862MHz;5 ~ 65/87 ~ 1003MHz
- Forward Path Optical AGC Control Range: +2 ~ -9/-8/-7 dBm (adjustable)
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CTB: ⩾ 65dB @-1dBm
- Forward Path C/CSOL: ⩾ 60dB @-1dBm
- Forward Path Max Output Level: ⩾ 112dBμV
- Return Path Optical Output Wavelength:1310±10nm
- Return Path Optical Output Power:1 mW
- Return Path Input Level Range: 75 ~ 85dBμV
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)

Note 1: The technical index test conditions are in accordance with < GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note2: More detailed product introduction and index parameters see the product manual.

4.General features

- Consumption: ⩽ 38W
- Operating Temperature: -30℃ ~ +70℃
- Operating Voltage: AC 135 ~ 250V
  or AC 35 ~ 90V (50Hz)
- Dimension: 295mm(L)X 210mm(W)X 150mm(H)

1.2GHz Outdoor Ultra-thin Modular Bidirectional Optical Receiver : WR-1002-JL-ED-1G2

1.Description

WR-1002-JL-ED-1G2 series are ultra-thin modular bidirectional optical receivers that can provide two-way high level output. It is suitable for 1.2GHz CATV network. With the thickness of only75mm, it can be vertically or horizontally mounted on wall, or hanged.

2.Features

- Maximum operating frequency: 1.2GHz; support 204/258 frequency splitting mode.
- Intelligent optical AGC, GaAs power double output.
- Variable attenuator and equalizer, nixie tube display, support Ethernet transponder.
- The forward path optical receiving components and the return path optical transmitting components both adopt independent modular design.
- The upstream channel can be equipped with RFOG burst mode return path components (optional).
- The fiber interface and transponder interface can be external (I type) or internal (II type).
- Two-way splitter or tap output, ultra-thin modular cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)

- Frequency Range:5 ~ 204/258 ~ 1218 MHz;5 ~ 85/110 ~ 1218 MHz
- Forward Path Optical AGC Control Range: +2 ~ -9/-8/-7 dBm (adjustable)
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CTB: ⩾ 65dB @-1dBm
- Forward Path C/CSOL: ⩾ 60dB @-1dBm
- Forward Path Max Output Level: ⩾ 114dBμV
- Return Path Optical Output Wavelength: 1310±10nm
- Return Path Optical Output Power: 1 mW
- Return Path Input Level Range: 75 ~ 85dBμV
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)

Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

4.General features

- Consumption: ⩽ 30W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage: AC 135 ~ 250V or AC 35 ~ 90V (50Hz)
- Dimension: 290mm(L)X 265mm(W)X 75mm(H)

Outdoor Bidirectional Optical Receiver : WR-1004-JL

1.Description

WR-1004-JL series are bidirectional outdoor optical receivers suitable for 1GHz CATV HFC network that can provide four-way high level output and the upstream channel can have optional RFOG burst mode return path components.

2.Features

- Intelligent optical AGC function, GaAs power double output.
- Variable attenuator and equalizer, nixie tube display, support Ethernet transponder.
- Four-way splitter or tap output, cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)

- Frequency Range: 5 ~ 65/87 ~ 862MHz; 5 ~ 65/87 ~ 1003MHz
- Forward Path Optical AGC Control Range: +2 ~ -9/-8/-7dBm (adjustable)
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CTB: ⩾ 65dB @-1dBm
- Forward Path C/CSOL: ⩾ 60dB @-1dBm
- Forward Path Max Output Level: ⩾ 114dBμV
- Return Path Optical Output Wavelength: 1310±10nm
- Return Path Optical Output Power:1 mW
- Return Path Input Level Range: 75 ~ 85dBμV
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)

4.General features

- Consumption: ⩽ 28W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)
- Dimension: 240mm(L)X 240mm(W)X 150mm(H)

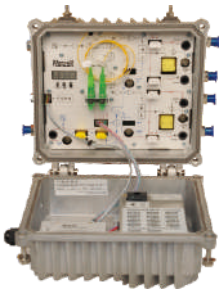
Note 1: The technical index test conditions are in accordance with < GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note2: More detailed product introduction and index parameters see the product manual.

Outdoor Bidirectional Optical Receiver : WR-1004-DJL | WR-1004-DML

1.Description

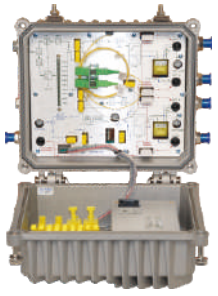
WR-1004-DJL series are bidirectional optical receivers suitable for 1GHz CATV HFC network that support intelligent optical AGC function and can provide four-way high level output. WR-1004-DML series are bidirectional optical receivers suitable for 1GHz CATV HFC network that support common optical AGC function and can provide four-way high level output.

2.Features



- ◆ Optical AGC function, GaAs power double output.
- ◆ The upstream channel can be equipped with RFOG burst mode return path components (optional).
- ◆ Electrical variable attenuator and equalizer, nixie tube display; support Ethernet transponder (DJL type).
- ◆ LED optical power indicators, plug-in attenuator and equalizer without Ethernet transponder (DML type).
- ◆ Four-way splitter or tap output, cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)



- ◆ Frequency Range: 5 ~ 65/87 ~ 862MHz; 5 ~ 65/87 ~ 1003MHz
- ◆ Forward Path Optical AGC Control Range: -9 ~ +2 dBm (DJL type); -7 ~ +2 dBm (DML type)
- ◆ Forward Path C/N: ⩾ 51dB @-1dBm
- ◆ Forward Path C/CTB: ⩾ 65dB @-1dBm
- ◆ Forward Path C/CSOL: ⩾ 60dB @-1dBm
- ◆ Forward Path Max Output Level: ⩾ 112dBμV (DJL type); ⩾ 110dBμV (DML type);
- ◆ Return Path Output Optical Power: 1 mW
- ◆ Return Path Output Optical Wavelength: 1310±10nm
- ◆ Return Path Input Level Range: 75 ~ 85dBμV
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB (FP); ⩾15 dB (DFB)

4.General features

- ◆ Consumption: ⩽ 30W
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)
- ◆ Dimension: 240mm(L)X 240mm(W)X 150mm(H)

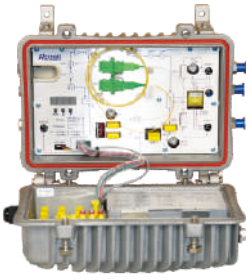
Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Outdoor Bidirectional Optical Receiver : WR-1002-JL | WR-1002-ML

1.Description

WR-1002-DJL series are bidirectional optical receivers suitable for 1GHz CATV HFC network that support intelligent optical AGC function and can provide two-way high level output. WR-1002-DML series are bidirectional optical receivers suitable for 1GHz CATV HFC network that support common optical AGC function and can provide two-way high level output.

2.Features



- ◆ Optical AGC function, GaAs power double output.
- ◆ The upstream channel can be equipped with RFOG burst mode return path components (optional).
- ◆ Electrical variable attenuator and equalizer, nixie tube display; support Ethernet transponder (JL type).
- ◆ LED optical power indicators, plug-in attenuator and equalizer without Ethernet transponder (ML type).
- ◆ Two-way splitter or tap output, cast aluminum waterproof housing.

3.Specifications (standard, can be ODM)

- ◆ Frequency Range: 5 ~ 65/87 ~ 862MHz; 5 ~ 65/87 ~ 1003MHz
- ◆ Forward Path Optical AGC Control Range: -9 ~ +2 dBm (JL type);;-7 ~ +2 dBm (ML type)
- ◆ Forward Path C/N: ⩾ 51dB @-1dBm
- ◆ Forward Path C/CTB: ⩾ 65dB @-1dBm
- ◆ Forward Path C/CSOL: ⩾ 60dB @-1dBm
- ◆ Forward Path Max Output Level: ⩾ 114dBμV (JL type); ⩾ 110dBμV (ML type);
- ◆ Return Path Optical Output Wavelength: 1310±10nm
- ◆ Return Path Optical Output Power: 1 mW
- ◆ Return Path Input Level Range: 75 ~ 85dBμV
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)

4.General features

- ◆ Consumption: ⩽ 25W
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)
- ◆ Dimension: 280mm (L) X 210mm (W) X 140mm (H)

Note 1: The technical index test conditions are in accordance with <GY/T 194-2003 Specifications and methods of measurement on optical node used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Outdoor Ultra-thin Unidirectional Optical Receiver : WR-1002-JE

1.Description

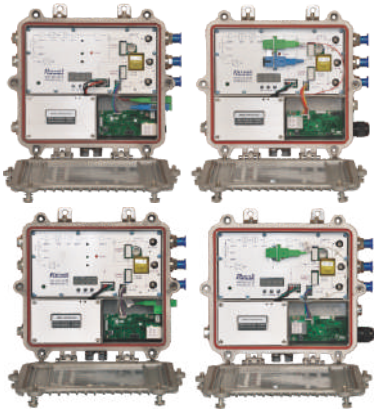
WR-1002-JE series are outdoor ultra-thin optical receivers with high output and low power consumption. Its thickness is only 65mm,can be vertically or horizontally mounted on wall, or hanged.It is suitable for CATV FTTB network.
WR-1002-JSE series add self-healing function on the basis of WR-1002-JE series that can receive two ways signals simultaneously and realize automatic backup switching.

2.Features

- ◆ Intelligent optical AGC, GaAs power double output.
- ◆ Variable attenuator and equalizer, nixie tube display, support Ethernet transponder.
- ◆ Optional built-in CWDM Wavelength Division Multiplexer;satisfy with the “single-fiber, triple-wave” networking mode.
- ◆ The fiber interface and transponder interface can be external or internal.
- ◆ Two-way splitter or tap output, ultra-thin cast aluminum waterproof housing.

3. Model Description

Model	Description
WR-1002-JE-I	Common type, input wavelength range: 1100～1600nm, fiber interface external.
WR-1002-JE-II	Common type, input wavelength range: 1100～1600nm, fiber interface internal.
WR-1002-JE-WD-I	Built-in CWDM Wavelength Division Multiplexer, optical receiving wavelength: 1550±20nm; meanwhile, loop out the 1310/1490nm optical signal to connect with ONU equipment, fiber interface external.
WR-1002-JE-WD-II	Built-in CWDM Wavelength Division Multiplexer, optical receiving wavelength: 1550±20nm; meanwhile, loop out the 1310/1490nm optical signal to connect with ONU equipment, fiber interface internal.
WR-1002-JSE-I	Dual-way self-healing optical receiver, built-in 2 optical receiving modules, with self-healing switching function, fiber interface external.
WR-1002-JSE-II	Dual-way self-healing optical receiver, built-in 2 optical receiving modules, with self-healing switching function, fiber interface internal.



4.Specifications (standard, can be ODM)

- ◆ Frequency Range: 45 ~ 862/1003MHz
- ◆ Max Output Level: ⩾ 112dBμV
- ◆ Optical AGC Control Range: +2 ~ -9/-8/-7 dBm（adjustable）
- ◆ C/N:⩾ 51dB @-1dBm;C/CTB:⩾ 65dB @-1dBm;C/CSO:⩾ 60dB @-1dBm

5.General features

- ◆ Consumption: ⩽ 14W
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Operating Voltage: AC 150～265V or AC 35～90V (50Hz)
- ◆ Dimension: 220mm(L)X 205mm(W)X 65mm(H)

Note 1: The technical index test conditions are in accordance with <GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

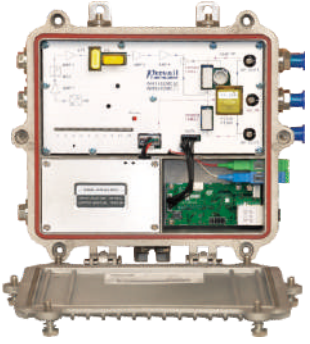
Outdoor Ultra-thin Unidirectional Optical Receiver : WR-1002-ME

1.Description

WR-1002-ME series are outdoor ultra-thin optical receivers with high output and low power consumption. Its thickness is only 65mm, can be vertically or horizontally mounted on wall, or hanged. It is suitable for 1GHz CATV FTTB network.

2.Features

- ◆ Optical AGC function, GaAs power double output.
- ◆ LED optical power indicator, support Ethernet transponder.
- ◆ Optional built-in CWDM Wavelength Division Multiplexer, satisfy with the “single-fiber, triple-wave” networking mode.
- ◆ The fiber interface and transponder interface can be external or internal.
- ◆ Two-way splitter or tap output, ultra-thin cast aluminum waterproof housing.



3.Specifications (standard, can be ODM)

- ◆ Optical AGC Control Range: +2~-7 dBm
- ◆ Frequency Range: 45 ~ 862/1003MHz
- ◆ Max Output Level: ⩾ 116dBμV
- ◆ C/N:⩾ 51dB @-1dBm;C/CTB:⩾ 65dB @-1dBm;C/CSO:⩾ 60dB @-1dBm

4. Model Description

Model	Description
WR-1002-ME-A-I	The pin distance between ATT and EQ insertions is 5mm, fiber interface external.
WR-1002-ME-A-II	The pin distance between ATT and EQ insertions is 5mm, fiber interface internal.
WR-1002-ME-B-I	The pin distance between ATT and EQ insertions is 3.175mm, fiber interface external.
WR-1002-ME-B-II	The pin distance between ATT and EQ insertions is 3.175mm, fiber interface internal.
WR-1002-ME-C-I	Continuous adjustable attenuator and equalizer, fiber interface external.
WR-1002-ME-C-II	Continuous adjustable attenuator and equalizer, fiber interface internal.
WR-1002-ME-WD-A-I	The pin distance between ATT and EQ insertions is 5mm, fiber interface external.
WR-1002-ME-WD-A-II	The pin distance between ATT and EQ insertions is 5mm, fiber interface internal.
WR-1002-ME-WD-B-I	The pin distance between ATT and EQ insertions is 3.175mm, fiber interface external.
WR-1002-ME-WD-B-II	The pin distance between ATT and EQ insertions is 3.175mm, fiber interface internal.
WR-1002-ME-WD-C-I	Continuous adjustable attenuator and equalizer, fiber interface external.
WR-1002-ME-WD-C-II	Continuous adjustable attenuator and equalizer, fiber interface internal.

5.General features

- ◆ Consumption: ⩽ 18W
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)
- ◆ Dimension: 220mm(L)X 205mm(W)X 65mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

FTTB Optical Receiver : WR-1001-J

1.Description

WR-1001-J optical receiver is a building optical receiver with high output and low power consumption. It is mainly used for CATV FTTB network.

2.Features

- ◆ Intelligent optical AGC, full-GaAs MMIC amplification device.
- ◆ Electrical variable attenuator and equalizer, nixie tube display, support Ethernet transponder.
- ◆ Built-in optical filter or CWDM Wavelength Division Multiplexer optional, satisfy with the “single-fiber, triple-wave” networking mode.
- ◆ Cast aluminum housing, AC 220V and DC 12V power supply optional.

3.Specifications

Forward Path

- ◆ Optical AGC Control Range: +2~-9/-8/-7 dBm
- ◆ Frequency Range: 45 ~ 862/1003MHz
- ◆ Max Output Level: ⩾ 112dBμV
- ◆ C/N: ⩾ 51dB
- ◆ C/CTB: ⩾ 60dB
- ◆ C/CSO: ⩾ 60dB

Return Path (WR-1001-JL & WR-1001-JK)

- ◆ Optical Output Wavelength: 1310±10nm (or specified by users)
- ◆ Operating Frequency: 5 ~ 65MHz (or specified by users)
- ◆ NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB (FP); ⩾15 dB (DFB)
- ◆ Output Optical Power: 1 mW (or specified by users)
- ◆ Input Level Range: 72~ 85dBμV (or specified by users)

4. Model Description

Model	Description
WR-1001-J	Unidirectional optical receiver, input wavelength range: 1100～1600nm.
WR-1001-J-WF	Unidirectional optical receiver, built-in optical filter to pass the 1310/1490nm signal, optical receiving wavelength: 1550±20nm.
WR-1001-J-WD	Unidirectional optical receiver, built-in CWDM Wavelength Division Multiplexer, optical receiving wavelength: 1550±20nm; meanwhile, loop out the 1310/1490nm optical signal to connect with ONU equipment.
WR-1001-JS	Dual-way self-healing optical receiver, built-in 2 forward path optical receiver modules, with self-healing switching function.

5.General features

- ◆ Consumption: ⩽ 8W
- ◆ Operating Voltage: AC 150 ~ 265V (50Hz)
- ◆ Operating Temperature: -40℃ ~ +60℃
- ◆ Dimension: 190mm(L)X 110mm(W)X 52mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

FTTB Optical Receiver : WR-1002-RJ-II | WR-1002-RJ-III

1.Description

WR-1002-RJ-II&WR-1002-RJ-III optical receivers adopt aluminum alloy shell and characterize with high output and low power consumption. It is mainly used for CATV FTTB network.

2.Features

- Intelligent optical AGC function, full-GaAs MMIC amplification device.
- Variable attenuator and equalizer,nixie tube display,support Ethernet transponder.
- Optional built-in optical filter or CWDM Wavelength Division Multiplexer, satisfy with the “single-fiber, triple-wave” networking mode.
- Aluminum alloy housing, DC +12V external power supply.

3. Model Description

Model	Description
WR-1002-RJ-II-NC	Common type, input wavelength range: 1100～1600nm.
WR-1002-RJ-II-WF	Built-in optical filter to pass the 1310/1490nm signal, optical receiving wavelength: 1550±20nm.
WR-1002-RJ-II-WD	Built-in CWDM Wavelength Division Multiplexer, optical receiving wavelength: 1550±20nm; meanwhile, loop out the 1310/1490nm optical signal to connect with ONU equipment.
WR-1002-RJ-III-NC	Common type, input wavelength range: 1100～1600nm.
WR-1002-RJ-III-WF	Built-in optical filter to pass the 1310/1490nm signal, optical receiving wavelength: 1550±20nm.
WR-1002-RJ-III-WD	Built-in CWDM Wavelength Division Multiplexer, optical receiving wavelength: 1550±20nm; meanwhile, loop out the 1310/1490nm optical signal to connect with ONU equipment.

4.Specifications (standard, can be ODM)

- Optical AGC Control Range: +2 ~ -9/-8/-7 dBm
- Frequency Range: 45~ 862MHz/1003MHz
- Max Output Level: ⩾ 112dBμV
- C/N: ⩾ 51dB @-1dBm;C/CTB: ⩾ 60dB @-1dBm; C/CSO: ⩾ 60dB @-1dBm

5.General features

- Consumption: ⩽ 7.5W（WR-1002-RJ-II）； ⩽ 8.5W（WR-1002-RJ-III）
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage: DC +12V
- Dimension: 142mm(L)X 98mm(W)X 36mm(H) (WR-1002-RJ-II)
  178mm(L)X 115mm(W)X 40mm(H) (WR-1002-RJ-III)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

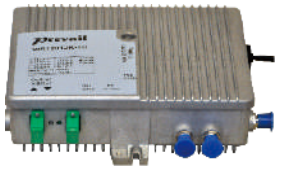
FTTB Optical Receiver : WR-1201-JK-TD (RFOG 1.2G)

1.Description

WR-1201-JK-TD series are bidirectional optical receivers supporting RFOG mode. The upstream output optical wavelength can be set as CWDM standard to realize OBI Free effectively.

2.Features

- Frequency range:5~85/110~1218MHz; support smooth update on the spot (5~204/258~1218MHz).
- Support optical AGC, whose control range is 0 ~ -5/-6/-7dBm adjustable.
- Adopt electric adjusting mode for both EQ and ATT circuit, nixie tube display.
- Support DOCSIS 3.1 system and OBI Free.



3.Specifications (standard, can be ODM)

- Frequency Range: 5 ~ 85/110 ~ 1218MHz;5 ~ 204/258 ~ 1218MHz
- Forward Path Optical AGC Control Range: 0 ~ -5/-6/-7dBm (adjustable)
- Forward Path Max Output Level: ⩾ 108dBμV
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CTB: ⩾ 60dB @-1dBm
- Forward Path C/CSO: ⩾ 60dB @-1dBm
- Return Path Optical Output Wavelength: any CWDM standard wavelength in 1470 ~ 1620 nm
- Return Path Optical Output Power: 2 mW
- Level at Which Laser Turns on:67±1 dBμV
- Level at Which Laser Turns off:58±1 dBμV
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)
- Maximum Time from Application of RF to 90% Optical Power (Ready to Late-side Mask): 1.3 us
- Maximum 10- 90% Optical Power Rise Time (Ready from Late-side Mask 10% to Early-side Mask 90%): 1.0 us
- Minimum 10- 90% Optical Power Rise Time (Ready from Late-side Mask 10% to Early-side Mask 90%): 100 ns
- Maximum Time from Removal of RF to the Time the Optical Carrier Falls to 10% of its Steady-state Amplitude (Ready to Late-side Mask): 1.6 us
- Maximum 90 ~10% Optical Power Fall Time: 1.0 us
- Minimum 90 ~ 10% Optical Power Fall Time: 100 ns

4.General features

- Consumption: ⩽ 15W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage:AC 150～265V (50Hz)
- Dimension: 200mm(L)X 175mm(W)X 60mm(H)

Note: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-1001K | WR-1001L

1.Description

WR-1001K (WR-1001L) series are low consumption bidirectional optical receivers mainly used for CATV FTTH network. WR-1001K-D type is the single fiber for receiving and transmitting; WR-1001K-S type is the dual fiber for receiving and transmitting; WR-1001L-D type is the single fiber for receiving and transmitting; WR-1001L-S type is the dual fiber for receiving and transmitting.

2.Features

- Optical AGC function, full-GaAs MMIC amplification device.
- The upstream channel can be equipped with RFOG burst mode (WR-1001K type).
- Cast aluminum housing, DC external power supply.

3.Specifications (standard, can be ODM)

- Frequency Range: 5 ~ 65/87 ~ 862MHz; 5 ~ 65/87 ~ 1003MHz;
  5 ~ 30/47 ~ 862MHz; 5 ~ 30/47 ~ 1003MHz
- Forward Path Optical AGC Control Range: -7~ +2 dBm
- Forward Path C/CTB: ⩾ 63dB @-1dBm
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CSO: ⩾ 60dB @-1dBm
- Forward Path Max Output Level: ⩾ 92dBμV
- Return Path Input Level Range: 75 ~ 85dBμV
- Return Path Optical Output Wavelength: 1310±10nm
- Return Path Optical Output Power: 1 mW
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB (FP); ⩾15 dB (DFB)
- RFOG Features (WR-1001K type):
- Maximum Time from Application of RF to 90% Optical Power: 1.3 us
- Maximum 10- 90% Optical Power Rise Time: 1.0 us
- Minimum 10- 90% Optical Power Rise Time: 100 ns
- Maximum Time from Removal of RF to the Time the Optical Carrier Falls to 10% of its Steady-state Amplitude: 1.6 us
- Maximum 90- 10% Optical Power Fall Time: 1.0 us
- Minimum 90- 10% Optical Power Fall Time: 100 ns

4.General features

- Consumption: ⩽ 6W
- Operating Voltage: DC +12V
- Operating Temperature: -30℃ ~ +70℃
- Dimension: 155mm (L) X 116mm (W) X 26mm (H)

Note: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-8601-RII

1.Description

WR-8601-RII series optical receivers are home use unidirectional products which are specially designed for FTTH network structure.

2.Features

- 860MHz, the lowest optical receiving power is -15dBm.
- Microwave tube push-pull amplifier and the total power consumption is only 2.5W.
- Engineering plastic housing, AC 220V internal power supply.

3.Specifications (standard, can be ODM)

- Optical Input Power Range: -15~+2 dBm
- Frequency Range: 45 ~ 862MHz
- Max Output Level: ⩾ 85dBμV
- C/N:⩾ 51dB @-1dBm;C/CTB:⩾ 65dB @-1dBm;C/CSO:⩾ 63dB @-1dBm

4.General features

- Consumption: ⩽ 2.5W
- Operating Temperature: -20℃ ~ +55℃
- Operating Voltage: AC 200~240V (50Hz)
- Dimension: 120mm(L)X 95mm(W)X 30mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-1082

1.Description

WR-1082 series are low consumption optical receivers with ABS engineering plastic shells. It is specially designed for FTTH network structure.

2.Features

- 1GHz FTTH optical receiver and the receiving optical power is up to -18dBm.
- Full GaAs MMIC amplification device, the output level is with continuous adjustable attenuator (20dB).
- DC +5V external power supply and the total power consumption is only 1.2W.

3. Model Description

Model	Description
WR-1082-A	Support optical AGC function whose control range is: -8 ~ +2 dBm.
WR-1082-M	Not support optical AGC function; input optical power range: -15 ~ +2 dBm.
WR-1082-JF	Support optical AGC function whose control range is: -12 ~ 0 dBm.

4.Specifications (standard, can be ODM)

- Frequency Range: 45 ~ 1003MHz
- Optical Input Power Range: -15~ +2 dBm (WR-1082-A&WR-1082-M);-18 ~ +2 dBm (WR-1082-JF)
- Max Output Level: ⩾ 82dBμV (WR-1082-A&WR-1082-M); ⩾ 88dBμV (WR-1082-JF)
- C/N:⩾ 47dB @-6dBm;C/CTB:⩾ 65dB @-6dBm;C/CSO:⩾ 60dB @-6dBm

5.General features

- Consumption: ⩽ 1.2W
- Operating Temperature: -20℃ ~ +55℃
- Operating Voltage: DC +5V
- Dimension: 104mm(L)X 85mm(W)X 25mm(H)

Note 1: The technical index test conditions in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-1088-M

1.Description

WR-1088-M series are low consumption optical receivers with aluminium alloy shells which are mainly used for CATV FTTH network.

2.Features

- 1GHz FTTH optical receiver and the receiving optical power is up to -15dBm.
- Optical AGC,full-GaAs MMIC amplification device.
- Aluminum alloy housing, DC +12V external power supply.

3. Model Description

Model	Description
WR-1088-M-I	FZ-110 tap output， the max output level: ⩾ 88 dBμV (main port); ⩾ 78 dBμV (branch port).
WR-1088-M-II	One port output, the max output level: ⩾ 88 dBμV.
WR-1088-M-III	FP-204 splitter output，the max output level: ⩾ 85 dBμV (dual ports).

4.Specifications (standard, can be ODM)

- Optical Input Power Range: -7~+2 dBm
- Max Output Level: ⩾ 88dBμV
- Frequency Range: 45 ~ 1003MHz
- C/N:⩾ 51dB @-1dBm;C/CTB:⩾ 65dB @-1dBm;C/CSO:⩾ 62dB @-1dBm

5.General features

- Consumption: ⩽ 3W
- Operating Voltage:DC +12V
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 105mm(L)X 67mm(W)X 24mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-1075-MB

1.Description

WR-1075-MB series are low consumption optical receivers with aluminium alloy shells which are mainly used for CATV FTTH network.

2.Features

- 1GHz FTTH optical receiver and the receiving optical power is up to -10dBm.
- Full MMIC amplification device and the output level is with continuous adjustable attenuator (20dB).
- Aluminium alloy housing, external DC12V power supply.

3.Specifications (standard, can be ODM)

- Optical Input Power Range: -10 ~ 0 dBm
- Frequency Range: 45 ~ 1003MHz
- Rated Output Level: ⩾ 78dBμV
- C/N:⩾ 46dB@-6dBm;C/CTB:⩾ 62dB@-6dBm;C/CSO:⩾ 62dB@-6dBm

4. Model Description

Model	Description
WR-1075-MB-NC	Common type, input wavelength range: 1100～1600nm.
WR-1075-MB-WF	Built-in optical filter to pass the 1310/1490nm signal, optical receiving wavelength: 1550±20nm.
WR-1075-MB-WD	Built-in CWDM Wavelength Division Multiplexer, optical receiving wavelength: 1550±20nm; meanwhile, loop out the 1310/1490nm optical signal to connect with ONU equipment.

5.General features

- Consumption: ⩽ 3W
- Operating Voltage: DC +12V
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 109mm(L)X 80mm(W)X 26mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 143-2000 Specifications and methods of measurement on AM optical transmitter and receiver used in CATV Systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

FTTH Optical Receiver : WR-1201-JKC-TD (RFOG 1.2G)

1.Description

WR-1201-JKC-TD series are bidirectional optical receivers supporting RFOG mode. The upstream output optical wavelength can be set on the spot to realize OBI Free effectively. It is mainly used in CATV FTTH network.

2.Features

- Optical AGC, control range:0 ~ -5dBm.
- Support DOCSIS 3.1 system and OBI Free.
- Adopt electric adjusting mode for both EQ and ATT circuit.
- Frequency range: 5~85/110 ~1218MHz; support smooth update on the spot (5~204/258~1218MHz).
- The upstream optical output wavelength is 1610nm that can be adjusted by buttons with 0.25mm stepping. In total, it can set 16 wavelengths.

3. Specifications (standard, can be ODM)

- Frequency Range: 5 ~ 85/110 ~ 1218MHz;5~204/258 ~ 1218MHz
- Forward Path Optical AGC Control Range: 0 ~ -5 dBm
- Forward Path Optical Received Wavelength: 1500 ±0.75nm
- Forward Path Max Output Level: ⩾ 96dBμV
- Forward Path C/N: ⩾ 51dB @-1dBm
- Forward Path C/CTB: ⩾ 60dB @-1dBm
- Forward Path C/CSO: ⩾ 60dB @-1dBm
- Return Path Optical Output Power: 1 mW
- Return Path Optical Output Wavelength: 1470 ~ 1620 nm (can be adjusted in 0.25mm stepping, totally 16 wavelengths can be set)
- NPR Dynamic Range (NPR⩾30 dB): ⩾10 dB(FP); ⩾15 dB(DFB)
- Level at Which Laser May Not Turn on:⩽67 dBμV
- Level at Which Laser Turns on:71±2 dBμV
- Level at Which Laser Turns off:56±2 dBμV
- Maximum Time from Application of RF to 90% Optical Power (Ready to Late-side Mask): 1.3 us
- Maximum 10- 90% Optical Power Rise Time (Ready from Late-side Mask 10% to Early-side Mask 90%): 1.0 us
- Minimum 10- 90% Optical Power Rise Time (Ready from Late-side Mask 10% to Early-side Mask 90%): 100 ns
- Maximum Time from Removal of RF to the Time the Optical Carrier Falls to 10% of its Steady-state Amplitude (Ready to Late-side Mask): 1.6 us
- Maximum 90 ~10% Optical Power Fall Time: 1.0 us
- Minimum 90 ~10% Optical Power Fall Time: 100 ns

4. General features

- Consumption: ⩽ 15W
- Operating Temperature: -40℃ ~ +60℃
- Operating Voltage:DC +12V
- Dimension: 180mm(L)X 135mm(W)X 40mm(H)

Note : More detailed product introduction and index parameters see the product manual.

Passive Receiver: WR-1201-W

1.Description

WR-1201-W passive optical receiver is mainly used in CATV FTTH network.

2.Features

- Adopt high sensitivity PIN tube, the minimum optical receiving power can be -15dBm.
- No power feeding, plug and play.

3. Specifications (standard, can be ODM)

- Input Optical Power: +2～-15dBm
- Frequency Range: 45 ~ 1003MHz
- Output Level: ⩾ 65dBμV (@-1dBm)
- MER：⩾30dB；BER：<1.0E-9（@-10dBm）

4. General features

- Operating Temperature: -20℃ ~ +55℃
- Dimension: 50mm(L)X 16mm(W)X 12mm(H)

Note : More detailed product introduction and index parameters see the product manual.

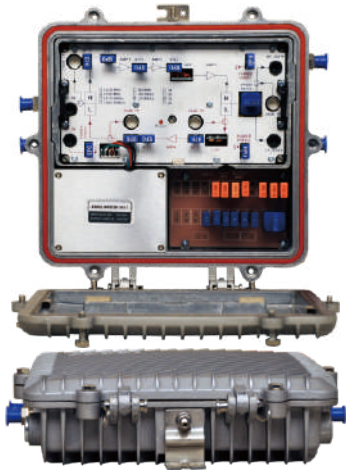
1.2GHz Outdoor Ultra-thin Modular Bidirectional Amplifier : WB-1200-KLED-1G2

1.Description

WB-1200-KLED-1G2 series are high gain high output ultra-thin modular bidirectional amplifiers, only 75mm in thickness, can be vertically or horizontally mounted on wall, or hanged. It is suitable to the 1.2GHz CATV bidirectional cable transmission network.

2.Features

- Maximum operating frequency: 1.2GHz, support 204/258 frequency splitting.
- Maximum downstream gain: ⩾40dB; maximum upstream gain: ⩾28dB.
- Both attenuator and equalizer adopt standard insertion with 3.175mm pin distance.
- Plug-in equalizer and attenuator, two-channel tap or splitter output.
- 75mm ultra-thin modular housing, can be mounted on wall, or hanged.



3.Specifications

- Frequency Range: 5 ~ 204/258 ~ 1218 MHz; 5 ~ 85/110 ~ 1218 MHz
- Forward Path Maximum Full Gain: ⩾ 40 dB
- Forward Path C/CTB: ⩾ 68 dB
- Forward Path C/CSO: ⩾ 65 dB
- Return Path Maximum Full Gain: ⩾ 28 dB
- Carrier Second Order Intermodulation Ratio: ⩾52dB.

Note 1: Tested when the output level is 110dBμV, tested points f1=10MHz, f2=60MHz, f3=f2-f1=50MHz.

4.General features

- Consumption: ⩽ 20W
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 290mm(L)X 265mm(W)X 75mm(H)
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)

Note 2: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 3: More detailed product introduction and index parameters see the product manual.

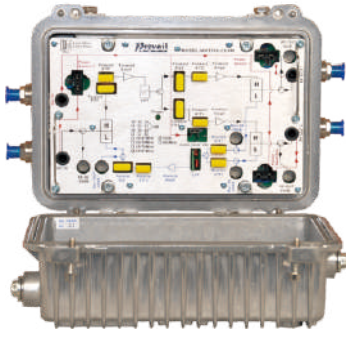
Outdoor Modular Bidirectional Amplifier : WA-1300-CEAM

1.Description

WA-1300-CEAM series are high gain and high output modular bidirectional amplifiers. It is suitable to the 1GHz CATV bidirectional cable transmission network.

2.Features

- Plug-in equalizer and attenuator, GaAs power double output.
- Two-way independent output, modular cast aluminum waterproof housing.



3.Specifications

- Frequency Range: 5 ~ 65/87 ~ 1003 MHz;5 ~ 65/87 ~ 862 MHz
- Forward Path Maximum Full Gain: ⩾ 40 dB
- Forward Path C/CTB: ⩾ 65 dB
- Forward Path C/CSO: ⩾ 63 dB
- Return Path Maximum Full Gain: ⩾ 20 dB
- Carrier Second Order Intermodulation Ratio: ⩾52dB.

Note 1: Tested when the output level is 110dBμV, tested points f1=10MHz, f2=60MHz, f3=f2-f1=50MHz.

4.General features

- Consumption: ⩽ 30W
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 295mm(L)X 210mm(W)X 150mm(H)
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)

Note 2: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 3: More detailed product introduction and index parameters see the product manual.

Outdoor Modular Bidirectional Amplifier : WA-1200-CEAM

1.Description

WA-1200-CEAM series are high gain high output modular bidirectional AGC amplifiers. It is suitable to the 1GHz CATV bidirectional cable transmission network.

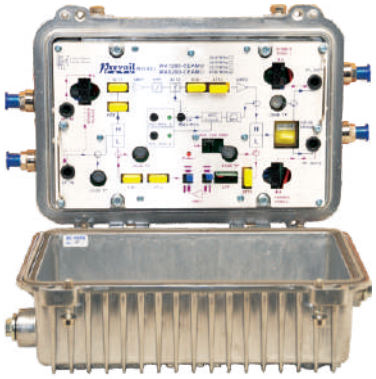
2.Features

- Add RF AGC control for forward path.
- Plug-in equalizer and attenuator, GaAs power double output.
- Two-way splitter or tap output, modular cast aluminum waterproof housing.

3.Specifications

- Operating Frequency: 5 ~ 65/87 ~ 1003 MHz; 5 ~ 65/87 ~ 862 MHz
- Forward Path Maximum Full Gain: ⩾ 38 dB
- Forward Path C/CTB: ⩾ 65 dB
- Forward Path C/CSO: ⩾ 63 dB
- Return Path Maximum Full Gain: ⩾ 22 dB
- Carrier Second Order Intermodulation Ratio: ⩾52dB.
- Forward Path AGC characteristic: ±4dB（input）/±0.5dB（output）

Note 1: Tested when the output level is 110dBμV, tested points f1=10MHz, f2=60MHz, f3=f2-f1=50MHz.



4. General features

- Consumption: ⩽ 22W
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 295mm（L）X 210mm（W）X 150mm（H）
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V（50Hz）

Note 2: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 3: More detailed product introduction and index parameters see the product manual.

Outdoor Bidirectional Amplifier : WA-1300

1.Description

WA-1300 series are high gain high output bidirectional amplifiers. It is suitable to the 1GHz CATV bidirectional cable transmission network.

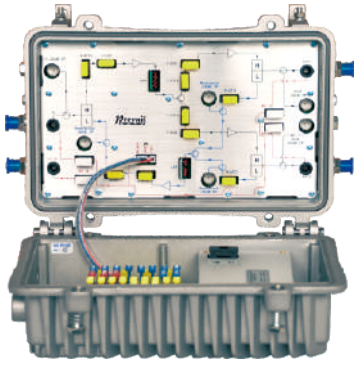
2.Features

- Plug-in equalizer and attenuator, GaAs power double output.
- Two-way independent output, cast aluminum waterproof housing.

3.Specifications

- Frequency Range: 5 ~ 65/87 ~ 1003 MHz;5 ~ 65/87 ~ 862 MHz
- Forward Path Maximum Full Gain: ⩾ 40 dB
- Forward Path C/CTB: ⩾ 65 dB
- Forward Path C/CSO: ⩾ 63 dB
- Return Path Maximum Full Gain: ⩾ 20 dB
- Carrier Second Order Intermodulation Ratio: ⩾52dB

Note 1: Tested when the output level is 110dBμV, tested points f1=10MHz, f2=60MHz, f3=f2-f1=50MHz.



4. General features

- Consumption: ⩽ 30W
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 320mm(L)X 200mm(W)X 140mm(H)
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)

Note 2: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 3: More detailed product introduction and index parameters see the product manual.

Outdoor Bidirectional Amplifier : WA-1200

1.Description

WA-1200 series are high gain high output bidirectional AGC amplifiers. It is suitable to the 1GHz CATV bidirectional cable transmission network.

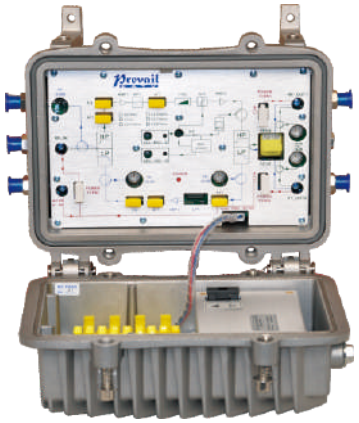
2.Features

- Support downstream RF AGC control function.
- Plug-in equalizer and attenuator, GaAs power double output.
- Two-way splitter or tap output,cast aluminum waterproof housing.

3.Specifications

- Frequency Range: 5 ~ 65/87 ~ 1003 MHz;5 ~ 65/87 ~ 862 MHz
- Forward Path Maximum Full Gain: ⩾ 38 dB
- Forward Path C/CTB: ⩾ 69 dB
- Forward Path C/CSO: ⩾ 67 dB
- Return Path Maximum Full Gain: ⩾ 22 dB
- Carrier Second Order Intermodulation Ratio: ⩾52dB.
- Forward Path AGC characteristic: ±4dB（input）/±0.5dB（output）

Note 1: Tested when the output level is 110dBμV, tested points f1=10MHz, f2=60MHz, f3=f2-f1=50MHz.



4.General features

- Consumption: ⩽ 22W
- Operating Temperature: -20℃ ~ +55℃
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V（50Hz）
- Dimension: 260mm(L)X 200mm(W)X 130mm(H)

Note 2: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 3: More detailed product introduction and index parameters see the product manual.

Outdoor Ultra-thin Bidirectional Amplifier : WB-1200-KLED-1G | WF-1100-KLE

1.Description

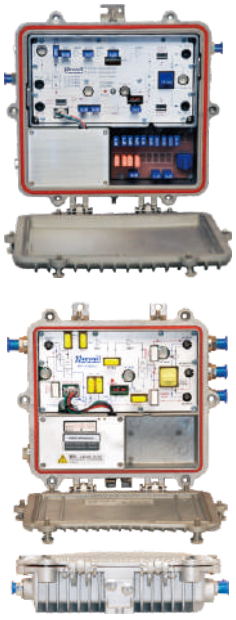
WB-1200KLED-1G series are high gain high output ultra-thin modular bidirectional amplifiers, only 75mm in thickness, can be vertically or horizontally mounted on wall, or hanged. It is suitable to the 1GHz CATV bidirectional cable transmission network.
WF-1100-KLE series are high gain high output bidirectional building amplifiers, only 65mm in thickness, can be vertically or horizontally mounted on wall, or hanged. It is suitable to the 1GHz CATV bidirectional cable transmission network.

2.Features

- Low noise MMIC amplification + GaAs power double output.
- Plug-in equalizer and attenuator.
- Two-way tap or splitter output, cast aluminum waterproof housing.

3.Specifications

- Frequency range: 5 ~ 65/87 ~ 1003 MHz; 5 ~ 65/87 ~ 862 MHz
- Forward path maximum full gain: ⩾ 38 dB
- Forward path C/CTB: ⩾ 68 dB
- Forward path C/CSO: ⩾ 65 dB
- Return path maximum full gain: ⩾ 22 dB (WB-1200KLED-1G); ⩾ 24 dB (WF-1100-KLE)
- Carrier second order intermodulation ratio: ⩾52dB.



4.General features

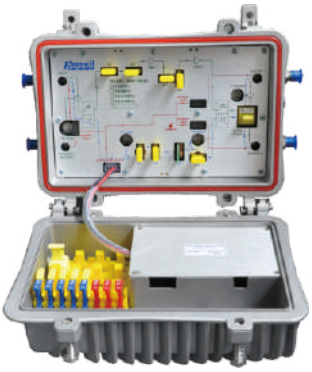
- Consumption: ⩽ 20W
- Operating Temperature: -20℃ ~ +55℃
- Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)
- Dimension: 290mm (L) X 265mm (W) X 75mm (H) (WB-1200-KLED-1G);
  220mm (L) X 205mm (W) X 65mm (H) (WF-1100-KLE)

Note 1: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Outdoor Bidirectional Amplifier : WB-1100-KL

1.Description

WB-1100-KL series are high gain high output bidirectional amplifiers. It is suitable to the 1GHz CATV bidirectional cable transmission network.



2.Features

- ◆ Low noise MMIC amplification + GaAs power double output.
- ◆ Plug-in equalizer and attenuator.
- ◆ Two-way tap or splitter output, cast aluminum waterproof housing.

3.Specifications

- ◆ Frequency Range: 5 ~ 65/87 ~ 1003 MHz;5 ~ 65/87 ~ 862 MHz
- ◆ Forward Path Maximum Full Gain: ⩾ 38 dB
- ◆ Forward Path C/CTB: ⩾ 66 dB
- ◆ Forward Path C/CSO: ⩾ 64 dB
- ◆ Return Path Maximum Full Gain: ⩾ 24 dB
- ◆ Carrier Second Order Intermodulation Ratio: ⩾52dB.

Note 1: Tested when the output level is 110dBμV, tested points f1=10MHz, f2=60MHz, f3=f2-f1=50MHz.

4. General features

- ◆ Consumption: ⩽ 20W
- ◆ Dimension: 270mm(L)X 215mm(W)X 118mm(H)
- ◆ Operating Temperature: -20℃ ~ +55℃
- ◆ Operating Voltage: AC 150 ~ 265V or AC 35 ~ 90V (50Hz)

Note 2: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 3: More detailed product introduction and index parameters see the product manual.

Bidirectional Building Amplifier : WF-1232-KL

1.Description

WF-1232-KL series are high gain, low consumption indoor bidirectional building amplifiers which is suitable for the 1.2GHz CATV bidirectional cable transmission network.

2.Features

- ◆ Frequency Range: 5 ~ 85/110 ~ 1218MHz; support DOCSIS 3.1 system.
- ◆ Downstream path supports RF AGC control; external RF test point.
- ◆ Die cast aluminum housing, only 55mm in thickness, 5W power consumption.

3.Specifications (standard, can be ODM)

- ◆ Frequency Range: 5 ~85/110 ~ 1218MHz
- ◆ Forward Path C/CTB: ⩾ 60dB
- ◆ Return Path C/CSO: ⩾ 60 dB
- ◆ Forward Path Maximum Full Gain: ⩾ 32 dB
- ◆ Return Path Maximum Full Gain: ⩾ 17 dB

4.General features

- ◆ Consumption: ⩽ 5W
- ◆ Operating Voltage: AC 90 ~ 240V (50Hz)
- ◆ Operating Temperature: -20 ℃~ +55℃
- ◆ Dimension: 200mm(L)X 115mm(W)X 55mm(H)

Note 1: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

Uni-directional Amplifier: YB-1030

1.Description

YB-1030 uni-directional amplifier is used in 1GHz CATV transmission network.

2.Features

- ◆ Output level and output slope are continuously adjustable.
- ◆ Aluminum housing, the whole power consumption is only 2W.

3.Specifications

- ◆ Working Frequency: 45 ~ 1003 MHZ
- ◆ Rated Gain: ⩾ 30 dB (@ FZ-110)
- ◆ Flatness in Band: ± 1dB
- ◆ Rated Output Level: 102dBμV

4.General features

- ◆ Overall Power Consumption: ⩽ 5W
- ◆ Working Voltage: AC 90 ~ 240V
- ◆ Working Temperature: -20℃ ~ +55 ℃
- ◆ Dimensions: 108mm (L) X 66mm (W) X 26mm (H)

Outdoor Ultra-thin Bidirectional Amplifier : WF-1100-E

1.Description

WF-1100-E series are high gain high output unidirectional building amplifiers, only 65mm in thickness, can be vertically or horizontally mounted on wall, or hanged. It is suitable to the 1GHz CATV bidirectional cable transmission network.

2.Features

- Low noise MMIC amplification + GaAs power double output.
- Continuous adjustable EQ and ATT.
- Two-way tap or splitter output, ultra-thin cast aluminum waterproof housing.

3.Specifications

- Frequency Range: 45 ~ 862/1003 MHz
- Maximum Full Gain: ⩾ 38 dB
- C/CSO: ⩾ 64 dB
- C/CTB: ⩾ 66dB

4.General features

- Consumption: ⩽ 12W
- Operating Temperature: -20℃ ~ +55℃
- Dimension: 220mm(L)X 205mm(W)X 65mm(H)
- Operating Voltage: AC 150 ~ 250V or AC 35 ~ 90V (50Hz)

Note 1: The technical index test conditions are in accordance with < GY/T 185-2003 Specifications and methods of measurement on two-way amplifiers used in CATV systems >.
Note 2: More detailed product introduction and index parameters see the product manual.

KA-6000 Series Line Centralized Power Supply

1.Description

KA-6000 series are mainly used for the line centralized power supply of CATV transmission network, which effectively improved the lightning protection ability of cable transmission line.

2.Features

- High output power, wide voltage regulation range, strong carries ability, with automatic short-circuit protection and lightning protection function.
- Built-in power inserter, the output interface is 5/8" standard cable interface or through connector.
- Various housing fixed structures, make the line installation easier.

3. Model Description

Model	Description
KA-6000-A-I	Standard magnetic saturation transformer, built-in power inserter, dual gauge outfits.
KA-6000-A-II	Standard magnetic saturation transformer, built-in power inserter, dual gauge outfits, supporting intelligent hot backup switching.
KA-6000-B-I	Ring transformer, built-in power inserter, electronic voltage stabilizing, dual gauge outfits.
KA-6000-B-II	Ring transformer, built-in power inserter, simple short circuit protection, without gauge outfits and voltage stabilizing.
KA-6000-C-I	Outdoor waterproof housing, ring transformer, built-in power inserter, electronic voltage stabilizing, without gauge outfits.
KA-6000-C-II	Outdoor waterproof housing, ring transformer, built-in power inserter, simple short circuit protection, without gauge outfits and electronic voltage stabilizing.

4.Specifications (standard, can be ODM)

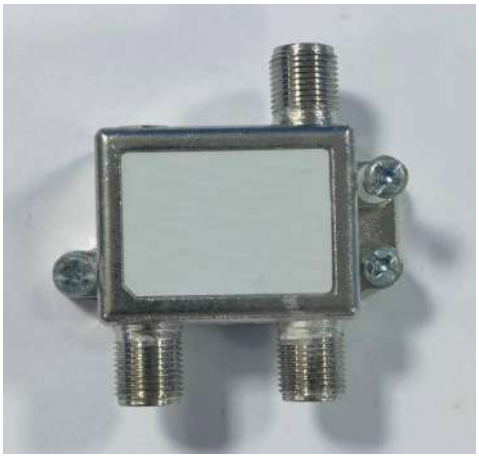
- Rated Output Current: 2 ~ 15A
- RF Insertion Loss: 1.5±0.5 dB
- Operating Temperature: -20℃ ~ +55℃
- Input Voltage Range: AC 180 ~ 240V (50Hz) (Magnetic saturation);
  AC 180 ~ 240V (50Hz) (Electronic voltage stabilizing)
- Output Voltage Range: AC 60V±3V (Magnetic saturation);
  AC 60V±3V (Electronic voltage stabilizing)
- Dimension: 215mm(L)X 215mm(W)X 315mm(H)（KA-6000-A）
  215mm(L)X 160mm(W)X 250mm(H)（KA-6000-B-I）
  176mm(L)X 120mm(W)X 245mm(H)（KA-6000-B-II）
  275mm(L)X 195mm(W)X 135mm(H)（KA-6000-C）

Note: More detailed product introduction and index parameters see the product manual.

Indoor Integrated Taps and Splitters

Features

- Operating Frequency: 5 ~ 1GHz.
- Full Surface Mount Technology (SMT) process.
- Low insertion loss, small deviation and high isolation.
- inc alloy integrated housing, tin sealed the rear cover.
- The exported products can use European standard or American Standard.



WDE Encoder/Transcoder Series (support IP output)

1.Description

WDE encoder/transcoder MUX series is a type of professional bidirectional transcoder which convert video between H.264 and MPEG-2 format. They also can encode/transcode HD to SD programs simultaneously. This series of products can be customized according to user demands. The custom can select 1~8 channel of encode/transcoder chipset. After encoding/transcoding, it outputs with MPTS & SPTS through the IP port or ASI port after multiplexing freely. This series has 12 products: WDE-4220C, WDE-4420C, WDE-8420B, WDE-H230, WDE-H430, WDE-H430_HLS, WDE-H830、WDE-S420C, WDE-S820C, WDE-H220, WDE-H420B, WDE-H820B. They can meet the needs of MPEG-2, MPEG-4/H.264, HD / SD, encoding / transcoding various functional requirements, and be widely used in digital TV head-end system or in IPTV system for signal source collection.

2.Features

- ◆ High-fidelity audio processing technology, support stereo output.
- ◆ Supporting CBR and VBR rate control.
- ◆ Support MPTS and SPTS over IP, support PSI/SI edit.
- ◆ SPTS mode: up to 8 or 32 channels.
- ◆ Adjustable rate output, operation flexibility.

3.Specifications

【**Encoder/Transcoder Series**】:Support HD/SD MPEG2 and MPEG4/H.264 AVC encoding and transcoding. All devices support ASI input to multiplexing or transcoding, Web network management, in SPTS mode，you can select IP module which with 8 or 32 channels.

(1) HD encoder/transcoder with IP output: WDE-H230

- ◆ Video input interface: HDMI, YPbPr, SDI, CVBS, ASI
- ◆ Output rate: each channel 1~20Mbps
- ◆ Video resolution:1920X1080i and below compatible
- ◆ TS over IP output: RJ45 10/100/1000BASE-T (Auto-Negotiation)

(2) 4 in 1 HD encoder/transcoder with IP output: WDE-H430

- ◆ Video input interface: HDMI, SDI, ASI
- ◆ Output rate: each channel 1~20Mbps
- ◆ Video resolution: 1920X1080i and below compatible
- ◆ TS IP output: RJ45 10/100/1000BASE-T (Auto-Negotiation)

(3) 8 in 1 encoder/transcoder with IP output: WDE-H830

- ◆ Video input interface: HDMI, ASI
- ◆ Output rate: each channel 1~20Mbps
- ◆ Video resolution: 1920X1080i and below compatible
- ◆ TS IP output: RJ45 10/100/1000BASE-T (Auto-Negotiation)

(4) 4 in 1 MPEG2/H.264 AVC HD HLS encoder with IP output: WDE-H430_HLS

It is a good realization of the function which transmission the real-time encoded programs to the internet. It is widely used in streaming media services, internet video transmission system, and provide the mainly interface in the time-shift and the VOD system.

- ◆ Video input interface: HDMI, SDI, ASI compatible
- ◆ Output rate: each channel 1~20Mbps
- ◆ Video resolution: 1920X1080i and below
- ◆ TS IP output: RJ45 10/100/1000BASE-T (Auto-Negotiation)

【**SD MPEG2/H.264 encoder Series**】: Support MPEG2 and H.264 SD encoding. All the devices are supported on the radio program for encoding.

(1)MPEG-2 SD encoder with IP output: WDE-4220C

- ◆ Video input interface: CVBS, YPbPr, SDI, ASI
- ◆ Video resolution: compatible with CCIR601
- ◆ Output rate: each channel 1~15Mbps
- ◆ SPTS mode: up to 8 or 32 channels

(2)4 in 1 SD encoder with IP output: WDE-4420C

- ◆ Video input interface: 4 X CVBS (BNC-75Ω), ASI
- ◆ Video resolution: compatible with CCIR601
- ◆ Output rate: each channel 1~15Mbps
- ◆ SPTS mode: up to 8 or 32 channels

(3)8 in 1 SD encoder with IP output: WDE-8420B

- ◆ Video input interface: 8 X CVBS (BNC-75Ω), ASI
- ◆ MPTS/SPTS over IP output
- ◆ Output rate: each channel 1~15Mbps
- ◆ SPTS mode: up to 8 or 32 channels
- ◆ This product can be configured 1~8 encoding chips according to the custom requirements.

(4)4 in 1 MEPG2/H.264 AVC SD encoder with IP output: WDE-S420C

- ◆ Video input interface: 4 X HDMI or 4 X SDI (optional)
- ◆ Output rate: each channel 1~15Mbps
- ◆ Video resolution: 720x480_60i, 720x576_50i
- ◆ TS IP output:RJ45 10/100/1000BASE-T (Auto-Negotiation)

(5)8 in 1 MEPG2/H.264 AVC SD encoder with IP output: WDE-S820C

- ◆ Video input interface: 8 X HDMI, ASI
- ◆ Output rate: each channel 1~15Mbps
- ◆ Video resolution:720x480_60i, 720x576_50i
- ◆ SPTS mode: up to 8 or 32 channels

【HD H.264 encoder Series】:

(1)MPEG-4/H.264 AVC HD encoder with IP output: WDE-H220

- ◆ Video input interface: HDMI, YPbPr, SDI, CVBS
- ◆ Video resolution: 1920X1080Pand below compatible
- ◆ Output rate: each channel 1~20Mbps
- ◆ TS IP output: RJ45 10/100/1000BASE-T(Auto-Negotiation)

(2)4 in 1 MPEG-2/H.264 AVC HD encoder with IP output: WDE-H420B

- ◆ Video input interface: HDMI, SDI
- ◆ Video resolution: 1920X1080i and below compatible
- ◆ Output rate: each channel 1~20Mbps
- ◆ TS IP output:RJ45 10/100/1000BASE-T (Auto-Negotiation)

(3)8 in 1 MPEG-2/H.264 AVC HD encoder with IP output: WDE-H820B

- ◆ Video input interface: HDMI
- ◆ Video resolution: 1920X1080i and below compatible
- ◆ Output rate: each channel 1~20Mbps
- ◆ Support one ASI input, multiplexing
- ◆ MPTS/SPTS over IP output
- ◆ SPTS mode: up to 8 or 32 channels

4.General features

- ◆ Operating temperature: 0℃~+50℃
- ◆ Supply voltage: AC 220±5 %(50Mz)or AC 110V±5 %(60Hz)
- ◆ Power consumption: ≤30W
- ◆ Mechanical dimension: 483(L) x 415(W) x 44(H) mm

Note: More detailed product introduction and index parameters refer to the product manual.

D-Master 9000 Series IPQAM

1.Description

D-Master 9000 series IPQAM modulator support GbE electrical port/optical port. They can support any non adjacent frequency output, also support the multiplexing / scrambling output, and fully meet the needs of broadcast or video-on-demand business.

D-Master 9016B using modular designs which support multiplexing and scrambling, support 4 CA simulcrypt, it is the edge of the IPQAM modulator. 1U chassis supports up to 4 modules (16*4 RF frequencies). Single module can support 16 RF frequencies, up to 512 TS over RTP/UDP inputs,single channel support 480 PID re-mapping, 32 programs to multiplexed output. D-Master 9016B is a device which with high integration, flexible combination, it can meet different needs such as RF output with 16, 32, 48, 64 frequency points.

D-Master 9016C is a type of low-density IPQAM, more powerful than D-Master 9016B, 1U chassis supports up to 6 modules (16*6 RF frequencies).The device supports supply 1+1 backup to power,and subboard backup, support board hot-plug and board state monitoring; support NGOD, ERMI and NGB, support SNMP protocol.

D-Master 9801(RTSP to DVB-C IPQAM) is a new compact chassis and cost-effective QAM modulator, which is designed by Hangzhou Prevail according to the DVB related standards.D-Master 9801 has 1000Mbps IP inputs, the RF output supports 16QAM~256QAM modes. The device which allows IP input signal applied to TV distributions in home entertainment, surveillance control, hotel digital signal, shops etc. The D-Master 9801 has very convenient management interface, the user can complete all operation access through the Ethernet port on device.

2.Features

- ◆ Support 1000base-T/GbE SFP input.
- ◆ Max symbol Rate 7Mbps, Effective output bit rate: ≤51.6 Mbps (SR=7Mbaud, 256QAM).
- ◆ Support 16~256QAM, output frequency and level continuously adjustable.
- ◆ Support PSI/SI edit, PID re-mapping, PID by pass.
- ◆ 1, 16~96 RF output per unit.
- ◆ Support IP based multiplexing/scrambling (D-Master 90xx SERIES only).
- ◆ Support WEB configuration operation and condition monitoring.
- ◆ Support indoor and outdoor types.

3.Specifications

- ◆ Output frequency: 48~863MHz
- ◆ IP input type: 1000Base-T/ GbE SFP
- ◆ Output level: ≥100 dBμV
- ◆ IP Max. bitrate: 1.25 Gbps
- ◆ Modulator method: 16~256QAM
- ◆ Max input UDP/RTP: 512
- ◆ Max output number of programs: 32 per channel
- ◆ Max number of RF: 16 per unit
- ◆ Max number of PID re-mapping: 480 per channel
- ◆ IP Compatible protocol: IP V4, UDP, ARP, RTP, RTSP (unicast and multicast)

4.General features

- ◆ Operating temperature: 0℃~+50℃
- ◆ Supply voltage: AC 220±5 %(50Mz) or AC 110V±5 %(60Hz)
- ◆ Power consumption: ≤55W
- ◆ Mechanical dimension：483mm（L）X 400mm（W）X 44mm（H）（9016B type）;
  483mm（L）X 400mm（W）X 44mm（H）（9016C type）;
  107mm（L）X171mm（W）X 53mm（H）（9801 indoor type）;
  237mm（L）X 177mm（W）X 115mm（H）（9801 outdoor type）

Note: More detailed product introduction and index parameters refer to the product manual.

WDT-1200 TS Receiver Series

1.Description

WDT-1200 TS receiver series using TS receive and demodulation/decoding/descrambling, Compatible with DVB-C/DVB-S/S2/DVB-T/T2. TS receiver series including: WDT-1200B, WDT-1204, WDT-1208, WDT-1200D, WDT-1200H. They can be widely used in the building up of digital TV head-end system or in IPTV system for signal source collection.

2.Features

- Support signal demodulation in all of DVB standard series.
- Support ASI, SPTS/MPTS over IP output
- SPTS mode: up to 8 or 32 channels (optional).
- Support HDMI, CVBS, and SDI etc output port.
- Support MPEG-2/4/H.264 AVC, SD OR HD decoding.
- With CI module, it can receive the encrypted programs.

3.Specifications

(1) TS satellite receiver: WDT-1200B

- Operating frequency range: 950~2150MHz
- Receiving signal level range: -65 ~ -25dBm
- Support A/V and ASI output
- Demodulation mode: QPSK/SCPC/MCPC
- Symbol rate range: 2~45Ms/s

(2) 4 TS satellite receiver: WDT-1204

- Operating frequency range: 950~2150MHz
- Receiving signal level range: -65 ~ -25dBm
- Support four independent outputs
- Demodulation mode: QPSK/SCPC/MCPC
- Symbol rate range: 2~45Ms/s

(3) Multi-functional 8 in 1 TS receiver with IP output: WDT-1208

- Operating frequency range: 950~2150MHz
- Receiving signal level range: -65 ~ -25dBm
- Support MPTS/SPTS over IP
- Support one or independent two outputs
- Demodulation mode: DVB-C/DVB-S/S2/DVB-T/T2 (support mixed mode)
- Symbol rate range: 5~45Ms/s (QPSK)/10~31Ms/s (8PSK)
- SPTS mode: up to 8 or 32 channels (optional)

(4) SD IRD with CI slot and IP input/output: WDT-1200D

- Operating frequency range: 950~2150 MHz/48~860MHz
- CIM slot: two
- Support MPEG-2 SD decoding
- Descramble processing: support for European DVB-CSA
- Demodulation mode: DVB-C/DVB-S/S2 (optional)
- Symbol rate range: 2~45Ms/s (DVB-S/S2) / 1~7Ms/s (DVB-C)
- Support MPTS/SPTS over IP
- Receiving signal level range:-65~-25dBm (DVB-S/S2)/45~75dBμV (DVB-C)

(5) HD IRD with CI slot and IP input/output: WDT-1200H

- Descramble processing: support for European DVB-CSA
- Demodulation mode: DVB-C/DVB-S/S2 (optional)
- CIM slot: one
- Audio decode: MPEG L1/L2, AC3, AAC, DRA, volume control
- Receiving signal level range:-65~-25dBm (DVB-S/S2)/-20~+20dBm (64QAM)
- Operating frequency range: 950~2150MHz /51~860MHz
- Support MPTS/SPTS over IP
- HD video decode: MPEG2, H.264, AVS+
- Symbol rate range: 5~45Ms/s (QPSK) / 10~31Ms/s (8PSK) / 2~7Ms/s (DVB-C)

4.General features

- Operating temperature: 0℃~+50℃
- Supply voltage: AC 220±5 %(50Mz) or AC 110V±5 %(60Hz)
- Power consumption: ⩽25W
- Mechanical dimension: 483(L) x 355(W) x 44(H) mm

Note: More detailed product introduction and index parameters refer to the product manual.

WDM-4100 Multiplexer Series (support IP output)

1.Description

WDM-4100 multiplexer series combines several single-program or multiple-programs, which are compressed, coded, and multiplexed according to customer request by head-end, into single or two-way transport stream. Support max input bit-rate 270Mbps, max output bit-rate 108Mbps. WDM-4100 multiplexer series can be configured IP module to finish ASI to IP function, which support 10/100/1000BASE-T IP output with rate auto-negotiation. Model: WDM-4100B, WDM-4140.

2.Features

- Compatible with ISO13818 and EN300 468.
- Up to eight DVB-ASI inputs (cover both data packets and data burst transmission format).
- 2 x 1 (one group) or 2 x 2 (two groups) independent DVB-ASI outputs with continuous adjustable output bit rate range from 0Mbps to 108Mbps (1Kbps step).
- Support MPTS and SPTS, SPTS mode: up to 8 or 32 channels (optional).
- Memory protection for power-fail, PID filtering and re-mapping up to 256.
- Local keyboard control and LCD display, or access via Ethernet link.

3.Specifications

- Max bit rate of valid: 108Mbps
- TS packet format: 188 or 204
- Output PID range: 0000~1FFF
- PID mapping: any PID direct bypass and PID mapping
- The maximum number of optional PID in every channel: 64
- TS IP output: RJ45 10/100/1000BASE-T Auto-Negotiation (Optional)

4.General features

- Operating temperature: 0℃~+50℃
- Supply voltage: AC 220±5 %(50Mz) or AC 110V±5 %(60Hz)
- Power consumption: ≤30W
- Mechanical dimension: 483(L) x 355(W) x 44(H) mm

Note: More detailed product introduction and index parameters refer to the product manual.

WDQ Modulator Series

1.Description

WDQ modulator series can complete the program multiplexing, PSI / SI editing and management functions, PID mapping and bypass and other functions.
Model: WDQ-3200B, WDQ-3204B, WDQ-3244, WDQ-3180, WDQ-3300.

2.Features

- TS packet format input automatic detection and output configurable (188 or 204 bytes), PCR correction.
- PSI/SI tables regeneration, PSI/ SI information synchronal updating possible.
- PID filtering andre-mapping,Automatic and intelligent data filled and empty packet deleted.
- Local keyboard control and LCD display, or access via Ethernet link.

3. Specifications

(1) QAM modulator: WDQ-3200B

- Output frequency: 47~860 MHz
- Output level: ⩾100 dBμV
- Modulation scheme: 16~256QAM
- MER (Modulation Error Rate): ⩾40 dB (After equalizer, 64QAM)
- BER (Bit Error Rate): ⩽9x10E-9(After FEC, 64QAM
- TS packet format input automatic detection and output configurable (188 or 204 bytes)

(2) QAM modulator with 4 TS input multiplexing: WDQ-3204B

- Output frequency: 47~860 MHz
- Modulation scheme: 16~256QAM
- BER (Bit Error Rate): ⩽9x10E-9(After FEC, 64QAM)
- Output level: ⩾100 dBμV
- MER (Modulation Error Rate): ⩾40 dB (After equalizer, 64QAM)
- TS packet format input automatic detection and output configurable (188 or 204 bytes)

(3) 4 in 1 QAM modulator: WDQ-3244

- Output frequency: 47~860 MHz
- Modulation scheme: 16~256QAM
- BER (Bit Error Rate): ⩽9x10E-9(After FEC, 64QAM)
- Output level: ⩾90~100 dBμV
- MER (Modulation Error Rate): ⩾40 dB (After equalizer, 64QAM)
- TS packet format input automatic detection and output configurable (188 or 204 bytes)

(4) DVB-T modulator: WDQ-3300

- Output frequency:48~860 MHz
- IF output: 36/36.15/35.25 MHz
- Modulation scheme: QPSK, 16QAM, 64QAM
- MER（Modulation Error Rate）:⩾40 dB
- Output level:⩾100～115dBμV
- IF output level: ⩾98dBμV
- SNR: ⩾50dB
- BER（Bit Error Rate）: ⩽1x10E-8

4.General features

- Operating temperature: 0℃~+50℃
- Power consumption: ⩽35W
- Supply voltage: AC 220±5 %(50Mz) or AC 110V±5 %(60Hz)
- Mechanical dimension: 483(L) x 355(W) x 44(H) mm

Note: More detailed product introduction and index parameters refer to the product manual.

Standard Scrambler : WDS-6100B

1.Description

WDS-6100B standard scrambler is applied in the simultcrypt scrambling of input code stream. It can send fixed or agile word scrambling according to transport stream. The built-in simulcrypt synchronization controller transmits the exchange information with ECMG. When integrated with CA, the scrambler adjusts crypto period appropriately in order to make decoder function normally.
This is a highly integrated equipment for digital TV scramble. It adopts RJ45 Ethernet interface, which supported TCP / IP protocol and connected CAS by NMS. Moreover, it can be configured IP module to finish ASI to IP function, which supports 10/100/1000BASE-T IP output with rate auto-negotiation.

2.Features

- Support compliant to DVB scrambling standard; supply open CA interface, cansendfixed or variableCW.
- Support simultcrypt interface, Support 4 CA Simulcrypt, able to re- multiplex and scrambling single or multiple programs.
- Support 2 ASI input interface, and able to re- multiplex, Input valid bit rate for ASI channel: 108Mbps (max).
- NIT and TDT information can be edited and inserted, PID filtering and re-mapping, PSI/SI tables regeneration.
- Support input EMM, ECM, PCR correction, failure alarming.
- Local keyboard control and LCD display, or access via Ethernet link.

3. Specifications

- Input interface: 1×2/ BNC-Female, 75Ω
- Output interface: 2×1/BNC-Female, 75Ω
- Input TS packet format: 188 or 204
- Input maximum bit rate: 108Mbps
- TS IP output: RJ45 10/100/1000BASE-T Auto-Negotiation, ≤1.25Gbps (Optional)

4.General features

- Operating temperature: 0℃~+50℃
- Power consumption: ≤25W
- Supply voltage: AC 220±5 %(50Mz) or AC 110V±5 %(60Hz)
- Mechanical dimension: 483(L) x 355(W) x 44(H) mm

Note: More detailed product introduction and index parameters refer to the product manual.

IP Gateway Series: WDG-5100

1.Description

WDG-5100 series IP gateway is an ASI and IP converter device, this device can be applied in ASI TO IP or IP TO ASI in IP based transmitting networks, or in the building up of IPTV system. This series including three models: WDG-5101, WDG-5108, WDG-5801.

2.Features

- Max bitrate up to 108Mbps for each input/output channel, automatic detection for both 188 and 204 byte input format.
- CustomizableASIinput/output channelnumber, or a singledeviceto supporttwo-way.
- Support SPTS/MPTS input/output, IP unicast or multicast compliant.
- Low latency (less than 10ms), Max throughput of 900Mbps.
- Access via Ethernet link and condition Monitoring.

3.Specifications

- ASI input/output Maximum bit rate: 108Mbps
- TS packet format: 188 or 204
- IP compatible protocol: IP V4, UDP, ARP
- IP Max bitrate:≤1.25 Gbps
- IP Max throughput: 900 Mbps
- IP port: RJ45 10/100/1000BASE-T Auto-negotiation
- Support IP/ASI conversion model: WDG-5101
- Support ASI to IP (SPTS), up to 32 channels model: WDG-5101
- ASI interface:75Ω, one BNC-Female (ASI to IP or IP to ASI gateway, WDG-5101)
  75Ω, eight BNC-Females (IP to ASI gateway, WDG-5108)
  75Ω, one BNC-Female (ASI to IP gateway, WDG-5801)

4.General features

- Operating temperature: 0℃~+50℃
- Power consumption: ≤25W
- Supply voltage: AC 220±5 %(50Mz)orAC 110V±5 %(60Hz)
- Mechanical dimension: 483(L) x 355(W) x 44(H) mm

Note: More detailed product introduction and index parameters refer to the product manual.

IPTV Stream Media Server : D-Master DMM

1.Description

D-Master DMM IPTV streaming media server for IPTV to provide video streaming services in order to meet the OTT STB and UDP STB market demand.
D-Master DMM IPTV streaming media server supports user authorization management, program classification management, etc. It specializes in dealing with IP program processing, well to meet the various needs of different users.

2.Features

- HTTP / RTMP / HLS / UDP / RTP / input/output.
- Support H264/MPEG4 AVC, MPEG2, AAC/MP3.
- Live video streaming / VOD / time-shift system.
- Unicast / Multicast input/output.
- Support HLS MPEG TS output.
- Support RTMP output stream for HTTP/UDP MPEG TS input.
- Support Apple IOS device, Android device, smart TV and PC.
- Channel management / movie management.
- Online user management,group management.
- Traffic statistics, load balancing, concurrent connection limit, and bandwidth limit.
- Stream Protection: Player Filter / IP Blocker / MAC ID Protection / Blacklist Management.
- EGP management and editing.
- System log, ratings statistics, report statistics.
- WEB network configuration operation and status monitoring.

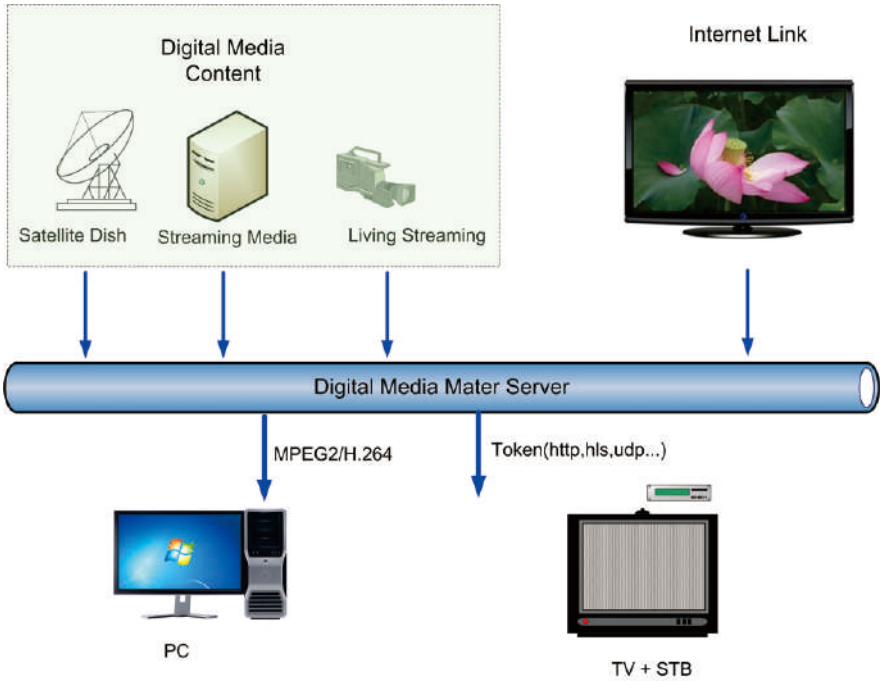
3. Hardware Requirement (Recommend)

- Internet Access: Public Static IP or Domain Name
- Processor: Quad-Core (Intel i7 4970)
- RAM: 16GB
- Network Interface: 1G BASE
- Hard Disk Space: 150MB available space for installation.
- The above specification is for 200 channels and 800 concurrent users.

4. Software Requirement

- Linux : Debian / Ubuntu Server / CentOS / Fedora

5. Application Scenario



To get more information about the technical specifications, please refer to the DATASHEET of the product.

PLC Splitter

Features

- Compact design.
- Low insertion loss and low PDL.
- High reliability.
- High channel range.
- Customized packaging and configuration.

CWDM

Features

- Low Insertion Loss.
- Low PDL(polarization dependent loss).
- High Channel Isolation.
- Ultra Flat Wide Pass band.
- High Stability and Reliability.

Attenuator & filter

Features

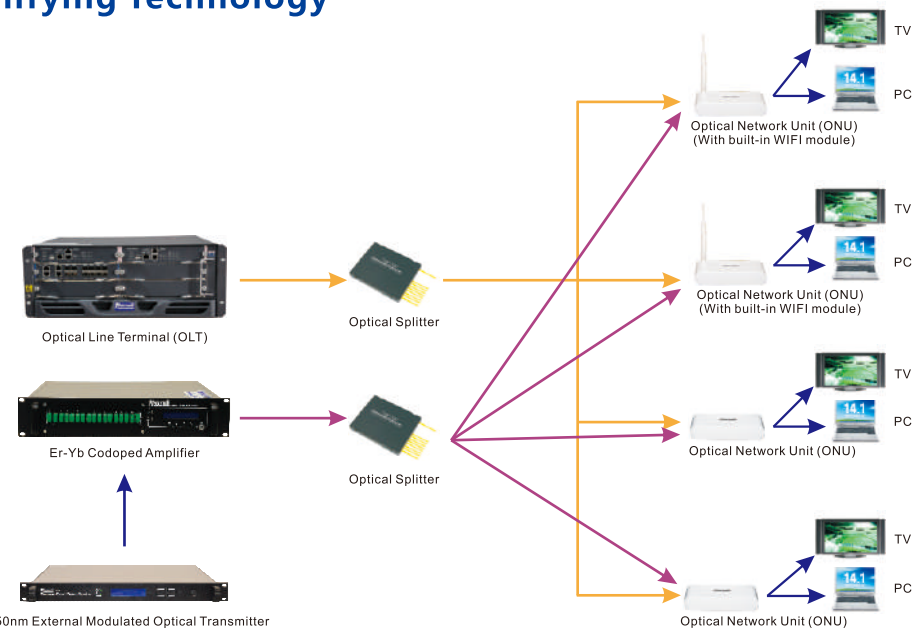
- Good frequency characteristic and reflection index.
- Nickel plated copper shell, strong shielding factor.
- Customized design.

Optical Fiber Fusion Splicer

Features

- LCD display, directly observe optical fiber on X axis and Y axis.
- Automatically detect fiber and face.
- Automatically choose the best welding procedure.
- Automatically calculate fiber fusion loss.
- Simple human-computer operation interface, intuitionistic menu design.

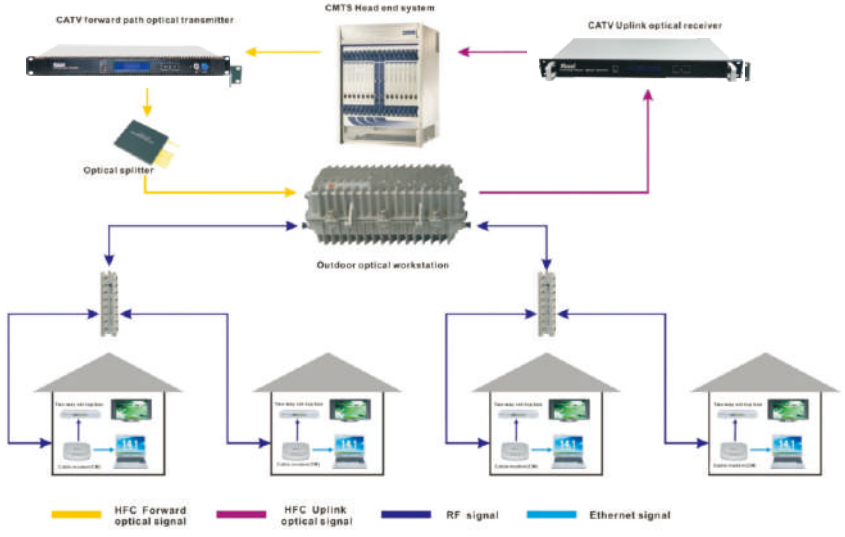
FTTH Accessing Solution Based on "G/EPON + 1550nm High Power Er-Yb Optical Amplifying Technology"



Overview

- PON technology is a mature FTTH network accessing technology that has been applied by radio and television operators and telecommunication operators in large.
- Usually, EPON system can support the maximum splitting ratio of 1:32. In order to save space, we recommend the use of rack-typed OLTs which support backplane switching.
- Er-Yb codoped technology is an advanced optical signal amplifying technology. Our company has mastered this technology and developed the optical amplifiers that the overall output power is up to 8W (maximum 64 output channels, 18dBm each).
- With the implementation of Triple play and Broadband China strategy, the government requires the new communities should all meet Fiber to the Home (FTTH). Radio and television operators began to use "G/EPON +1550nm high-power Er-Yb optical amplification" technical program to deploy the FTTH network. The current major technical scheme is the use of "two-fiber three-wavelength" for home accessing: one fiber used to transmit CATV signal by 1550nm wavelength; the other used to transmit G/EPON network signal (downstream wavelength: 1490nm, upstream wavelength: 1310nm).

CMTS Headend SystemTraditional HFC Bidirectional Network Accessing Solution Based on DOCSIS Technology



Summary of Solution Features

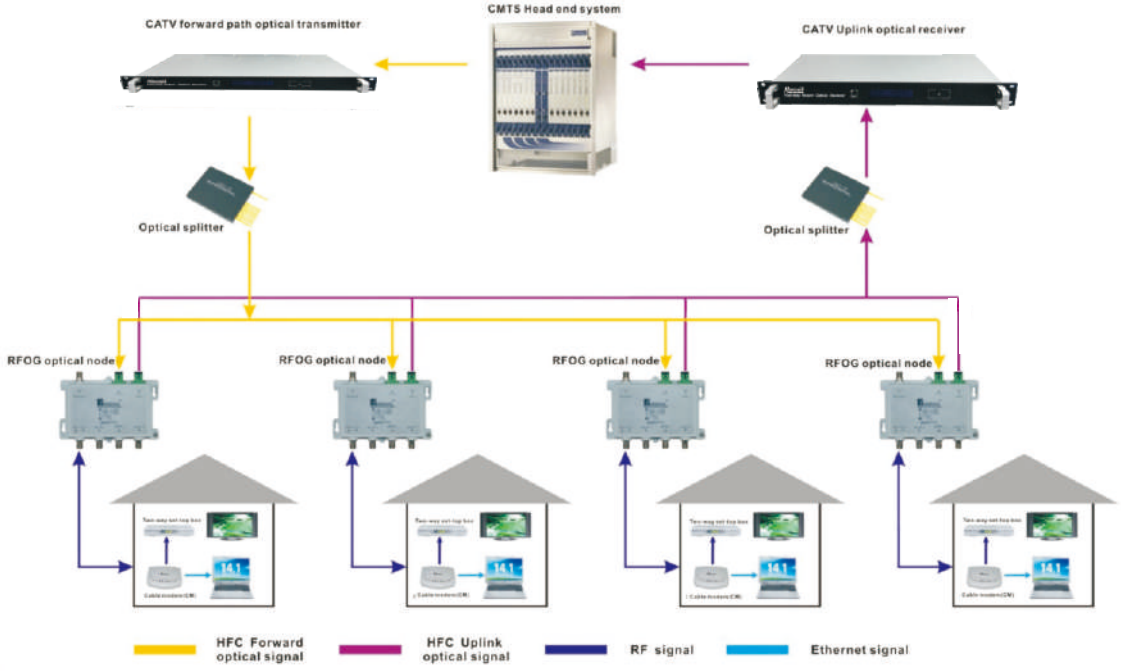
1.Advantages

- The most classic, most traditional technical solutions,has been widely used in North America,Europe and other regions.
- DOCSIS transfer protocol,a mature communication protocol based on the coaxial cable network with high standardization and QoS guaranteed.
- The DOCSIS 3.0 version adopts advanced channel bonding technology,can support a maximum transfer rate downlink 160Mbps and uplink 120Mbps.
- User terminal device technology is mature, high standardization, good forward compatibility,and has achieved large-scale mass production in the Global scope.

2.Disadvantages

- There is no good solution to solve the convergence noise problem,together caused by the intrusive noise and the funnel effect of the tree network structure,so this solution can not large-scale promote in the domestic.
- This solution is sensitive to the intrusive noise from the outside.So this solution's requirements of RF cable connector production process and cable distribution networks engineering quality are higher and day-to-day operation and maintenance workload is relatively large.
- The noise intrusion caused by irregular wiring of users' indoor second decoration blocks the popularization of this solution.
- Because the core technology of CMTS is controlled by foreign companies, the equipment prices are relatively high.

Traditional HFC Bidirectional Network Access Scheme Based on RFOG Technology



Summary of Solution Features

1.Advantages

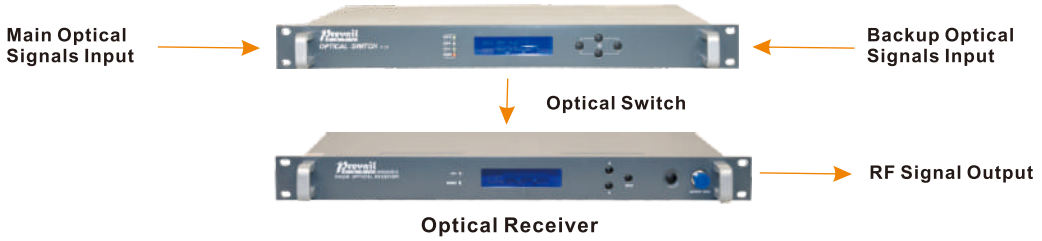
- The integration programme of traditional CMTS+CM solution and passive optical network architecture will save a lot of fiber resources.
- The return laser works on the “burst”mode, can effectively reduce the uplink convergence noise.
- Optical fiber routing adopts the PON network mode, greatly reduces the maintenance workload of the transmission line.
- Existing mature technology standard support (SCET formally promulgated the <RFOG_FTTH specification SCET 174-2010> in 2010).

2.Disadvantages

- This solution was planed refer to the FTTH network model and the definition of the machine output level was relatively low. So to popularize this solution in FTTB network need to do some optimization and improvements.
- The RF detection circuit used to control the return laser burst mode needs to further improve the anti-interference ability.
- As defined in SCET 174-2010 standard, this solution adopts “one-fiber three-wave” transmission scheme. However, the current price of the WDM devices is still quite high, and the minimum core number of fiber optic cable is 2, so dual-fiber transmission scheme will be more in line with the current situation.

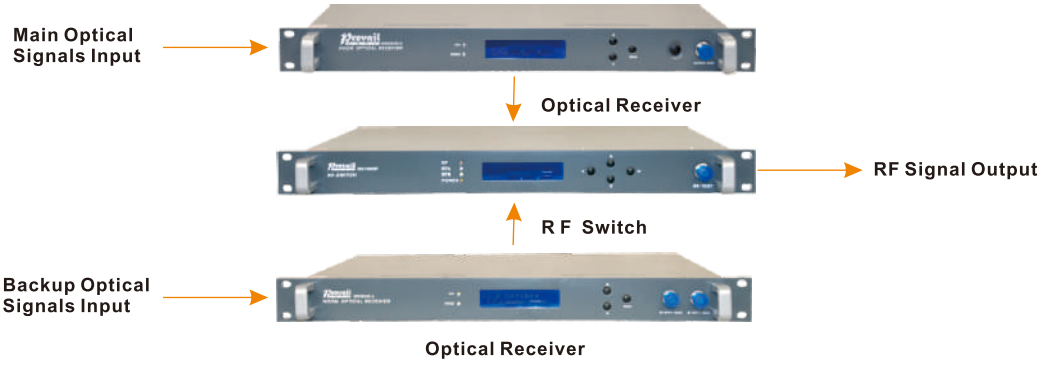
Comparing of the Sub-front-end room Dual-way Optical Signal Backup Switching Program

Program 1: Adopt Optical Switch to Make Backup Switching



◆ As optical switch itself has 1-2dB of insertion loss, adopting it will reduce the input power of the optical receiver and affect the CNR indicators of the system .
◆ If there are differences between the main road optical power and the backup one,the optical receiver output level will fluctuate when it was switched. And it will affect the indicators of lower optical link system.

Program 2: Adopting RF Switch to Conduct The Backup Switch

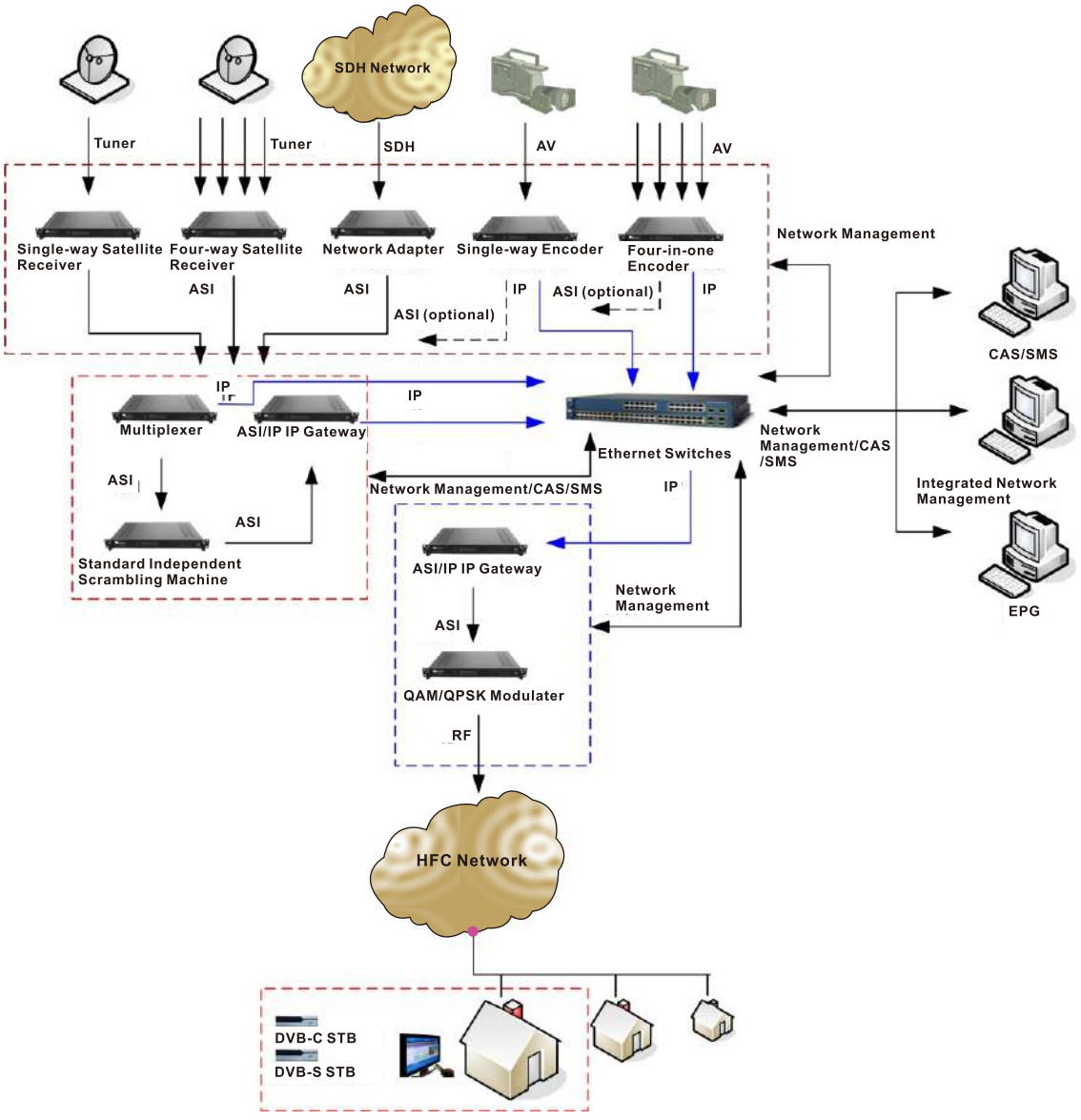


◆ Adopting RF switch may make main road and backup road crosstalk because of the poor channel isolation.

Program 3:Adopt WR8602JDS Self-healing Ring Network Optical Receiver to Conduct Backup Shift

◆ WR8602JDS self-healing ring network optical receiver can receiver the main road and the backup road signals at the same time.
◆ The design of RF shift switch can effectively avoid the crosstalk effects between main and backup road signals in front of the power amplifier . It provides front-end computer room a perfect solution about the signal backup shift

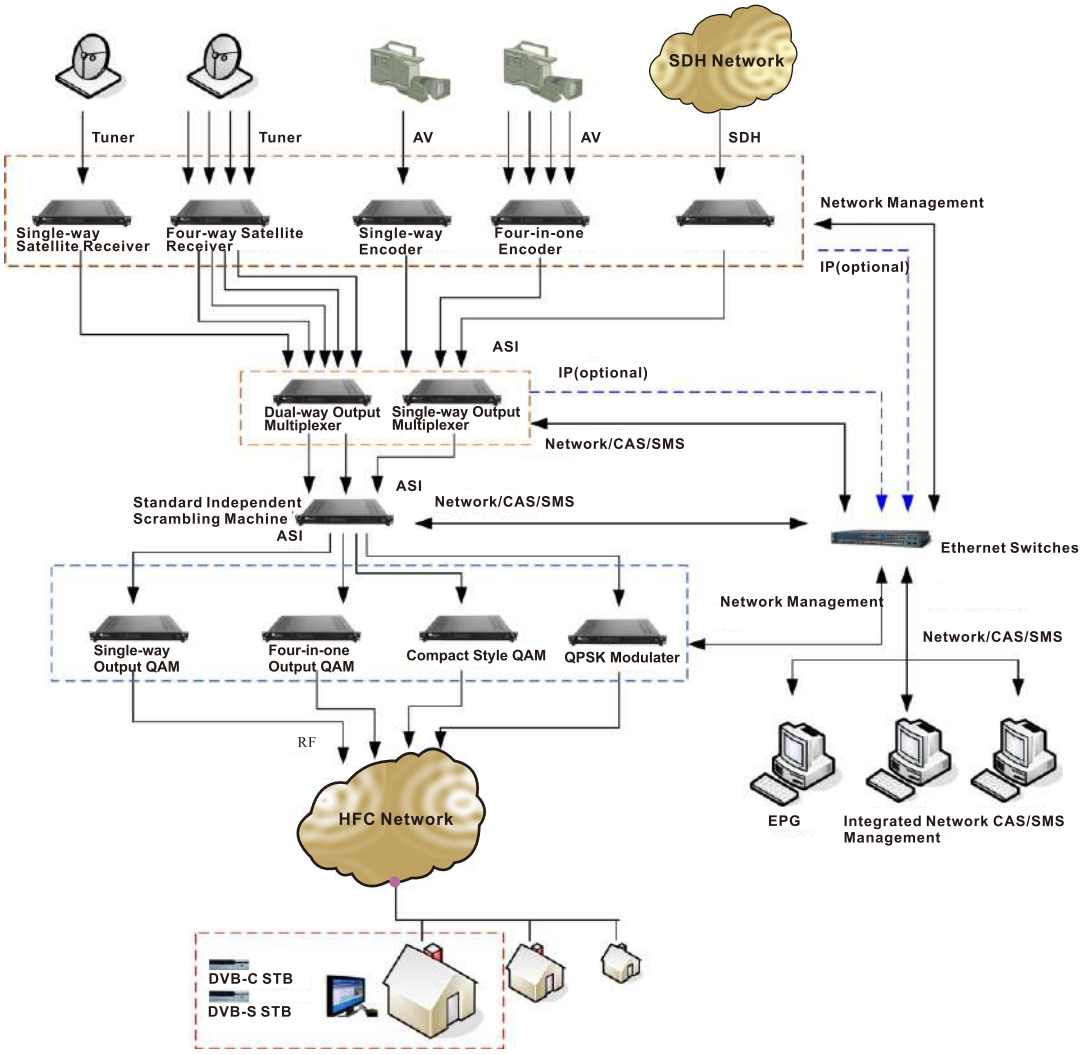
Solution of Digital TV Front-end Which is Based on IP



Features of the program

- Complete program support 10/100/1000Mbps independent adaptive Gigabit Ethernet output.
- Complete program support IP unicast / multicast.
- Support MPEG4 SD SD encoder and H.264/AVS HD HD encoder gigabit IP output.
- Support multiplexer gigabit IP output.
- Complete net support ASI/IP or IP/ASI two-way gateway function, Flexibility to meet all the needs.
- Complete equipment is covered by integrated Network Management, the whole network IP was.
- Multi-screen real-time monitored.

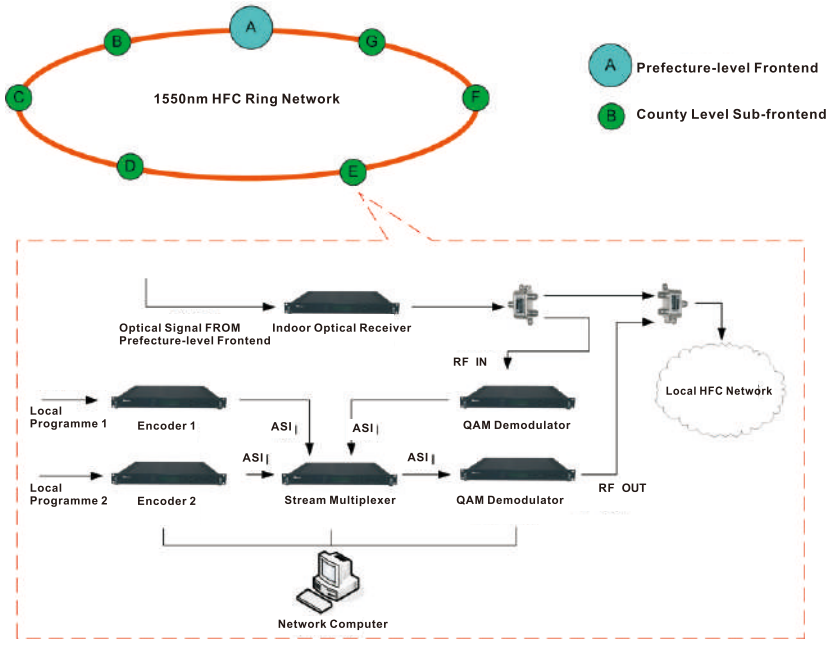
Solution of Digital TV Front-end Which is Based on ASI



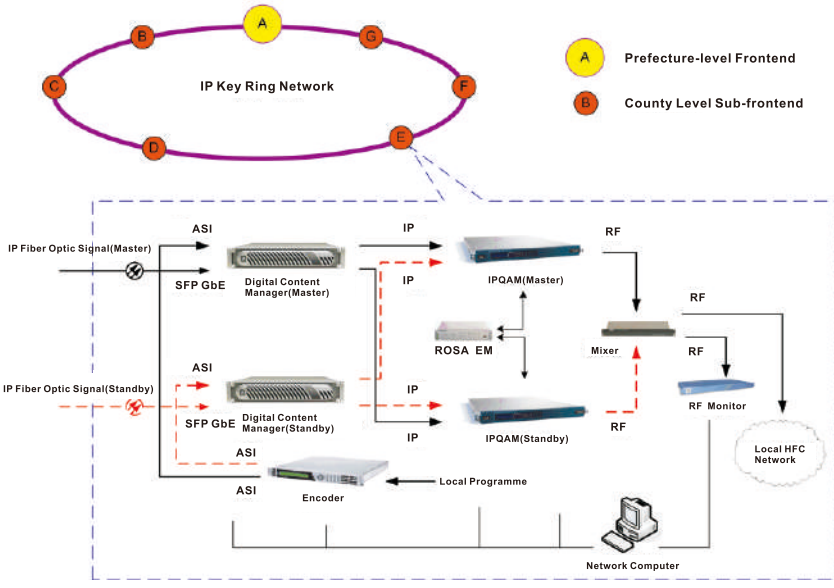
Features of the program

- Complete solution of the “One-stop” ASI.
- Support cost-effective four-way TS satellite receiver.
- Support MPEG2/MPEG4 SD SD encoder.
- Support H.264/AVS HD HD encoder, the maximum resolution can be 1080p.
- Support eight-way output ,two-group independent total four-way ASI output, flexible multiplexing configuration.
- Support “multiple GPSK demodulator input+multiple ASI input + multiplexer+ 4~156QAM output ” compact integratedmodulation design.
- Complete set of equipment supports gigabit IP output(optional).
- All equipment is covered by SNMP Integrated Network Management.

Common County Level DVB-C ASI Sub-frontend Solution



County Level IPQAM Sub-frontend Solution (1:1 Hot Standby)



Condition of Technical Index Test and Explanation of Test Method

1.Condition of Technical Index Test and Explanation of Test Method

As we all know,even if the same device which is in different test conditions,or using different test methods and test equipment,when measured by technical indicator will be different.As a result,our version of the product samples are given the appropriate conditions for the test.And the test methods refer to the State administration of radio,television,film test measures enacted in row.Nevertheless different test apparatus and equipment may lead to a certain degree of testing error. Reminds the user community specially in this: when reading the Excerpts product samples, please take note of the technical parameters which is behind the notes “in particular”.If you have any doubt of equipment technical parameters ,please contact with our technical department.

2.After-sales Service Commitment

The products we made are selected by the strict testing、 the aging of high–quality equipment and materials, ensured by ISO9001–2000 quality management t system that the whole of the excellent quality of the passing rate of the factory, and the majority of users will be given high–quelity after–service and technical support.

In particular:

Our company has commissioned local dealer to be responsible for the product of all the after-sales service .

Item :

1. All the equipment we produced will be free of charge warranty 13 months,except as otherwise agreed , (To paste in the equipment side of the factory serial number by making the start of the factory for the time) and is responsible for the maintenance of lifetime.

For the users,equipment failure caused by Operational errors and irresistible nature factors,we will be responsible for maintenance and collection of appropriate materials costs.

2. As the R F amplification modules is easy to be removed,all of our R F amplification modules in the equipment is not included in the warranty time ,please kindly understand.

3. When the equipment fail to work or cannot be used normally ,please contact with local distributors at once .They will provide you timely technical support maintenance service.When local dealers cannot solve your problem, please call our company’s technical support hotline. our company’s technical support engineer will provide you related technical support and solutions.

4. When the equipment is damaged by user,it will not be concluded in the warranty time. We only provide maintenance services for a fee and o certain amount of material costs.

5. In order to facilitated a wide range of users , we have provided to other brand-related products services for a fee . And we have experienced engineer s to provide you a variety of solutions and related technical support.

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