

C604GR

■ Installation Guide



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GPON Solution >> C604GR

GPON ONT 4-Port Gigabit Ethernet + RF Port

Overview

C604GR is an optical video overlay GPON ONT for advanced IP service delivery in a single fiber environment to provide bandwidth intensive applications such as video signal, broadband Internet, and various multimedia services. It supports 4-port Gigabit Ethernet interface, 1-port RF video overlay interface and 1 port GPON uplink over single optical fiber. It is designed as an indoor residential device and provides connectivity for internet, CATV and IP-based phone. The functionality of ONT is configured and managed by OLT through OMCI so that OLT monitors ONT status and manage QoS policy, alarm, and software upgrade and so on.

C604GR features VLAN translation, VLAN trunking and VLAN tagging/untagging per Ethernet port which will give network operator versatility to construct network per its own requirements. Besides, the OAM features are based on standard compliant OMCI to facilitate more convenient and effective network operation.

Features

- ITU-T G.984 GPON compliant
- 4 Ethernet LAN ports supported 10/100/1000Base-T ports
- RF video port (Coaxial F-Connector) for CATV
- OMCI
- QoS, CoS
- Dying Gasp support
- 0°C~50°C Operating Temperature
- 5% ~ 95% Humidity(Non-Condensing)

Contents of the Package



C604GR



Power Adaptor



RJ45 Cable



Installation Guide

Precautions



Warning Before you install the C604GR, read this section. This section contains important safety information you should know before working with the system.

Power Considerations

- Be careful when connecting the system to the supply circuit so that wiring is not overloaded.
- When plugging in a power socket or handling any power source, avoid ring, necklace, metal watch for better safety. If these materials touch the power socket or ground of the product, the parts can be burnt out.
- Always make sure if there is any possible danger in the workshop. Wet floor, ungrounded extension, rubbed-off power code, or unsafe (or ungrounded) floor might be dangerous.

Installing and Servicing the System

- Before installation, disconnect all power and external cables.
- Remove all jewelry (including rings and chains) or other items that could get caught in the system or heat up and cause serious burns.
- Do not work alone under potentially hazardous conditions.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

Disconnecting Power

When disconnecting power, note the following guidelines.

- To completely turn off the system, disconnect the power connection to all power supplies.
- For DC power supplies, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the off position, and tape the switch handle of the circuit breaker in the off position.
- Do not touch the power supply when the power cord is connected. Line voltages are present within the power supply even when the power cord is connected.

Connecting Cables

When you connect cables, note the following guidelines.

- Do not work on the system or connect or disconnect cables during periods of lightning activity.

Working with Lasers

- If your system includes a fiber-optic port, note the following guidelines.

- To avoid exposure to radiation, do not stare into the aperture of a fiber-optic port. Invisible radiation might be emitted from the aperture of the port when no fiber cable is connected.
- Always keep unused fiber-optic ports capped with a clean dust cap.

Preventing EMI

- When you run wires for any significant distance in an electromagnetic field, electro magnetic interference (EMI) can occur between the field and the signals on the wires.
- Bad plant wiring can result in radio frequency interference (RFI).
- Strong EMI, especially when it is caused by lightning or radio transmitters, can destroy the signal drivers and receivers in the system, and can even create an electrical hazard by conducting power surges through lines and into the system.
- If Strong EMI occurs in the installation place, consult RFI experts to get rid of it.

Disposing of the System

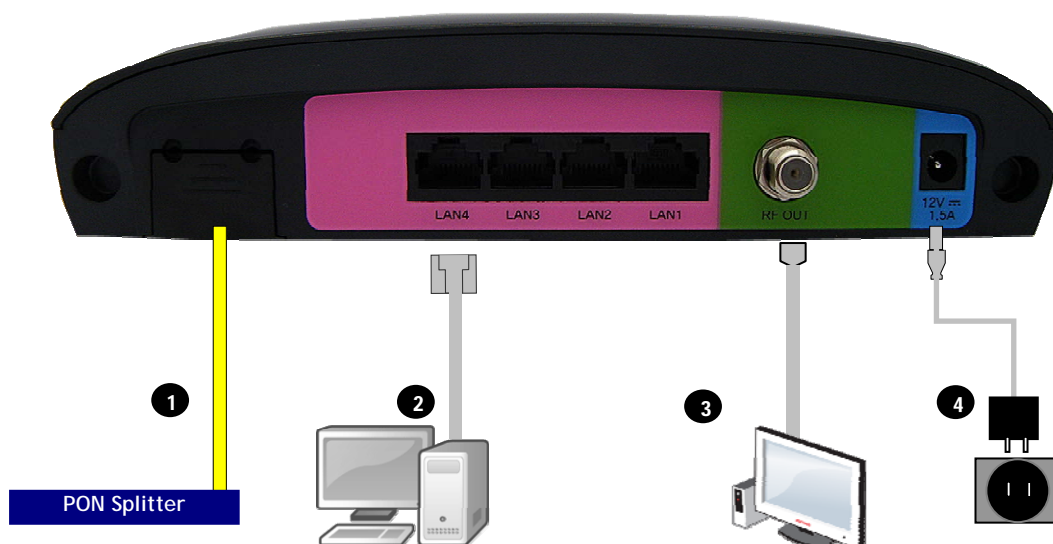
Dispose of the system and its components (including batteries) as specified by all national laws and regulations.

Installation

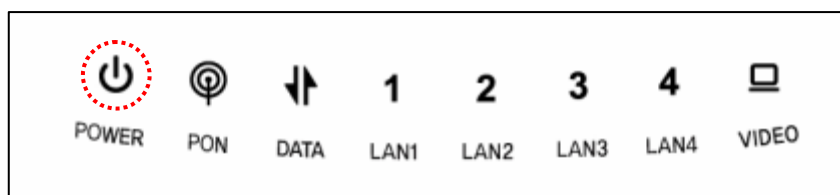
**Warning**

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

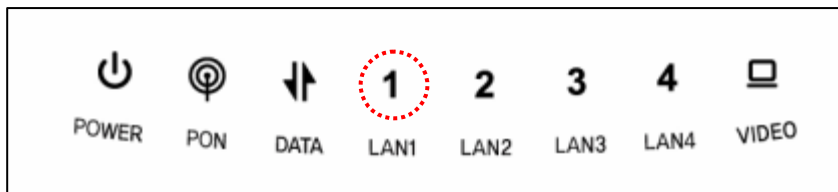
1. Connect the SC/APC connector on the side of a yellow single-mode optical fiber into the optical terminal of the optical outlet and the other connector into the PON port of C604GR by pushing them until you hear a clicking sound.
2. Connect C604GR and PC with Ethernet cable.
3. Connect C604GR and television with Coaxial cable.
4. Connect the rated power adaptor (12V 1.5A) provided together with C604GR.



5. Make sure that the POWER LED is ON.

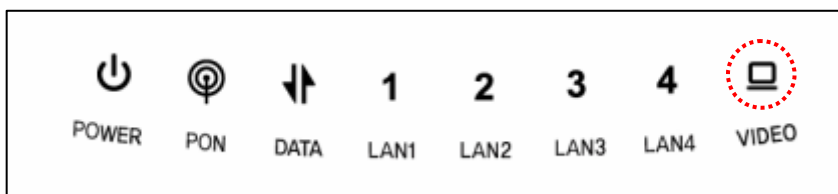


6. Make sure that LAN LED is ON.



7. Make sure that the PON LED is ON in several seconds or minutes. If PON LED is red, the optical signal is very low, so please contact the carrier.

8. If everything is installed properly, the user can see the DATA LED blink while Internet data is sent / received.



9. If you connect coaxial F-connector to RF OUT port for CATV, the user can see the VIDEO LED comes to BLUE light while video data is received.

ONT Shape

C604GR consists of Front panel and Real panel. Front panel has ONT status LED. Real panel has ONT ports.

Front Panel





LED

Name	Color	Status	Function	Actions to take
PWR	BLUE	ON	Power ON	
		OFF	Power OFF	Check to connect Power adapter & power outlet
PON	BLUE	ON	Link Up (Normal)	Normal Operation
		BLINK (Every 1 sec)	Link Down. Optic signal ON	Call Service Provider
	RED	ON	Optical signal has been lost	Call Service Provider
DATA	BLUE	OFF	No Data transmitting/receiving	Call Service Provider
		BLINK	Transmitting/receiving Data	Normal Operation
LAN 1~4	BLUE	ON	1000Base-T Ethernet Link Up	Normal Operation
		BLINK	1000Base-T Transmitting/Receiving Ethernet data	Normal Operation
		OFF	Link Down	Check Connection with PCs
	RED	ON	100Base-TX Ethernet Link Up	Normal Operation
		BLINK	100Base-TX Transmitting/Receiving Ethernet data	Normal Operation
		OFF	Link Down	Check Connection with PCs
VIDEO	BLUE	ON	ON VIDEO Signal Receiving	Normal Operation
	RED	ON	RF Optic Power Error	Call Service Provider
		OFF	No VIDEO Signal	Call Service Provider

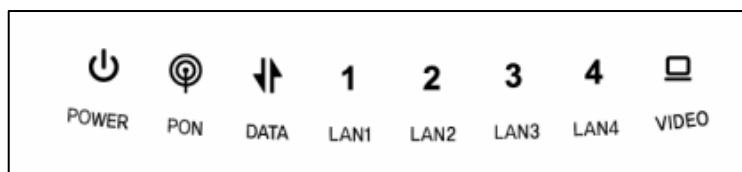
Rear Panel



The following table describes the ports of ONT.

Port	
Indication	Description
	GPON Port
LAN 1~4	Gigabit Ethernet Ports
RF OUT	RF Video Port
12V  1.5 A	Power Terminal

Troubleshooting



Symptom: Can not access to the Internet;

- Step 1** Make sure that the ONT is turned on. Once you turn on the power, the POWER LED on the front panel of C604GR should be turned on. If the POWER LED is turned OFF, please check if the power cable is connected to the power inlet of ONT properly. If the problem persists, please call Service Provider.
- Step 2** Make sure that the optical line is connected properly. Once the optic fiber is connected, the PON LED on the front panel of C604GR should be turned on within few seconds. If the PON LED blinks, call Service Provider to check the optical line connection.
- Step 3** Make sure that the LAN cable is connected properly. Once the LAN cable is connected and user PC is turned on, LAN LED should be turned on. If the LED is not turned on, check the cable connection.
- Step 4** Make sure that network setting of your PC is correct. Select "set to 'Obtain IP address automatically'".

Symptom: All the cables are connected, but still can not obtain IP address

- Step 1** Look for the Network Neighborhood or My Network Places icon in your desktop. If it is not there, try your Start Menu.
- Step 2** Right-click the Network Neighborhood/My Network Places icon. A drop-down menu will appear.
- Step 3** Choose the "Properties" option, generally found at the bottom of the menu.
- Step 4** Look for an icon named "Local Area Connection". The icon looks like a pair of computer connected by a link. Double-click this icon.
- Step 5** Click the "General" tab, if it is not already selected. You will see a list of protocols to choose from.
- Step 6** Scroll down and choose Internet Protocol (TCP/IP), and then click the button that is labeled "Properties".
- Step 7** Again, click the "General" tab, if it is not already selected. You will see two choices:
1) "Obtain an IP address Automatically"
2) "Use the following IP address..."
- Step 8** Choose 1) option
- Step 9** Click OK

Specification

The following table shows the specification of C604GR.

Specification

Item	Description
SYSTEM HW ARCHITECTURE	<ul style="list-style-type: none"> • 4 Port 10/100/1000 Base-T Ethernet data interfaces • Ethernet port auto negotiation or manual configuration • MDI/MDIX automatic sensing • One coaxial interface (54Mhz~1GHz Frequency Range) • AC Adapter input 100 ~ 240 volts, 50/60 Hz • Power Input 12V, 1.5A (feed via external AC/DC adapter) • 180mm(W) x 135mm(D) x 40mm(H) SFU-Type Dimension • -0℃~50℃ Operating Temperature • Dying Gasp support
NETWORK FEATURES	<ul style="list-style-type: none"> • 256 MAC addresses and 16 VLAN groups • VLAN translation, VLAN trunking • Customer VLAN tagged (802.1p), priority, tagged and untagged frames • IGMP v2/v3 snooping
PON FEATURES	<ul style="list-style-type: none"> • ITU-T G.984 GPON compliant (984.1/.2/.3/.4) • Single fiber, integrated triplexer transceiver • Compliant to FSAN G.984.2 specifications • Data/Video FTTx ONT/ONU applications • 1310nm Tx, 1490nm Rx, 1555nm video Rx • 1244Mbps Tx / 2488Mbps Rx asymmetric data rate • Received Optical Power Min: -28dBm ~ -8dBm • Burst mode upstream transmission • Extinction Ratio: Min 10dB • Average Optical Output Power: Min 0.5dBm ~ 5dBm • 870MHz video bandwidth • 20km reach • GR-468-CORE compliant SC/APC connector • Multiple T-CONTs, Multiple Port-IDs • NSR/SR DBA • Upstream and Downstream FEC • AES-128 decryption • 512 Port-Ids • 8 Transmission Container • Maximum 2.488 Gbps Downlink/1.244 Gbps Uplink
Video Overlay Specification	<ul style="list-style-type: none"> • Frequency Range: Min 54MHz – Max 870MHz • Receiver Wavelength: Min 1540nm – Max 1560nm • Received Average Optical Power: Min -8dBm – Max 2dBm • RF Output Level : Min 18dBmV/ch • RF Output Impedance : 75 Ohm
QoS / Security FEATURES	<ul style="list-style-type: none"> • IP ToS/DSCP to 802.1p mapping • CoS based on VLAN-ID, 802.1p bit, ToS/DSCP • Marking/remarking of 802.1p • QoS Support with 4-traffic classed based on arrival port, IEEE802.1p, Ipv4 TOS • Mac Address Limit for Mac Spoofing Attack • Static Mac Address
OAM	<ul style="list-style-type: none"> • Standards-compliant OMCI as defined in ITU-T G.984.4 and G.983.2

	<ul style="list-style-type: none">• Management Information Base (MIB) manipulation over OMCI by Create, Delete, Set, Get and Get Next commands• Provisioning for all services including Ethernet, IPTV, etc.• Alarming and AVC report, performance monitoring• Remote image download over OMCI, as well as activation and rebooting• Holds two F/W banks for image integrity and rollback
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