

# Datasheet

## PG1830CR (GPON)

Sept, 2024

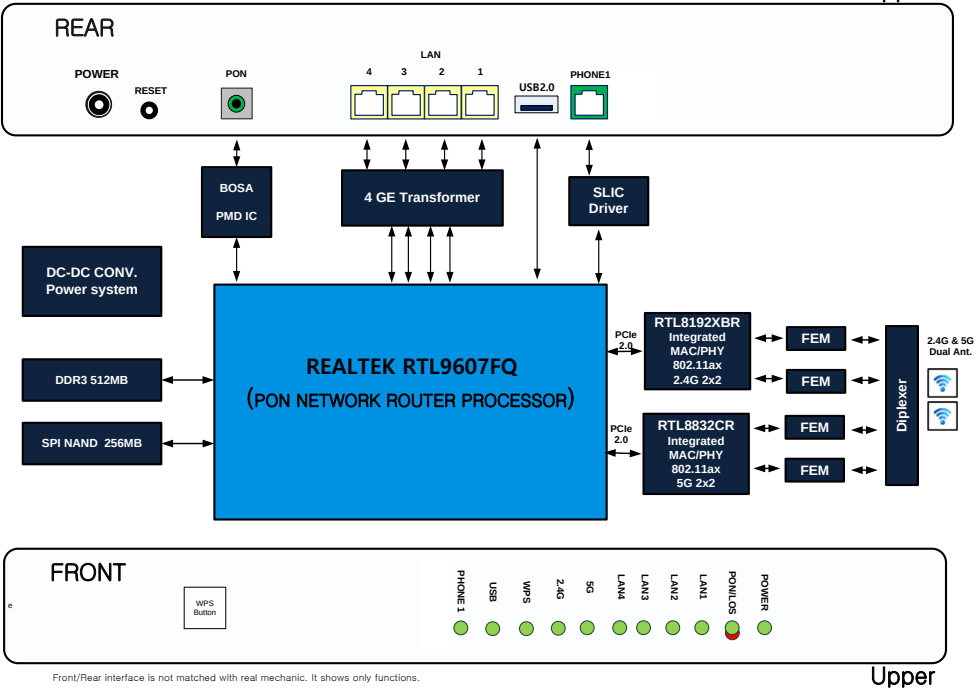


# GPON – PG1830CR Wi-Fi 6 Spec

## H/W Specification

|                     |                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model               | Model #1. PG1830CR                                                                                                                                                                                        |
| Main Chipset        | <ul style="list-style-type: none"><li>(GPON) <a href="#">RTL9607FQ</a></li><li>(Wi-Fi) <a href="#">RTL8192XBR (2x2 11ax)</a><br/><a href="#">RTL8832CR (2x2 11ax)</a></li></ul>                           |
| Memory              | <ul style="list-style-type: none"><li>DDR3 SDRAM : 512MB</li><li>NAND : 256MB</li></ul>                                                                                                                   |
| Wi-Fi               | <ul style="list-style-type: none"><li>802.11 a/b/g/n/ac/ax</li><li>2.4 GHz 2x2 + 5 GHz 2x2 Dual-band</li></ul>                                                                                            |
| Antenna, FEM Type   | <ul style="list-style-type: none"><li>Internal Antennas</li><li>2.4GHz/5GHz Dual-band antenna</li><li>External FEM</li></ul>                                                                              |
| Transmission Rate   | <ul style="list-style-type: none"><li>GPON: DS 2.488Gbps, US 1.244Gbps</li><li>Wi-Fi 2.4GHz : 600 Mbps (802.11ax , 40MHz)</li><li>Wi-Fi 5GHz : 2.4 Gbps (802.11ax, 160MHz)</li></ul>                      |
| Physical Interfaces | <ul style="list-style-type: none"><li>Front Panel<br/>LEDs, WPS Button</li><li>Back Panel<br/>Power input, Reset pin-hole<br/>1 x PON(SC/APC)<br/>4 x GbE LAN Ports<br/>1 x USB2.0<br/>1 x VoIP</li></ul> |
| Power               | <ul style="list-style-type: none"><li>DC 12V / 1.5A</li></ul>                                                                                                                                             |

## Design and Block Diagram



Upper

# GPON (PG1830CR) - Platform Specification

| PON Main Features              |                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------|
| Transmission rate              | <a href="#">RX: 2.488 Gbps</a><br><a href="#">TX: 1.244 Gbps</a>                   |
| Connector                      | <a href="#">SC/APC connector</a><br><a href="#">BOSA on board optical solution</a> |
| Maximum Reach                  | 20km                                                                               |
| Standard Compliance            | ITU-T G.984.2 Class B+<br>G.984.3 / G.984.4 / G.984.5 / G.988                      |
| Center wavelength              | TX: 1310 nm<br>RX: 1490 nm                                                         |
| TX optical power               | 0.5 dBm to 5.0 dBm                                                                 |
| Extinction ratio               | > 10 dB                                                                            |
| Minimum receiver sensitivity   | - 27 dBm                                                                           |
| Maximum overload optical power | - 8 dBm                                                                            |

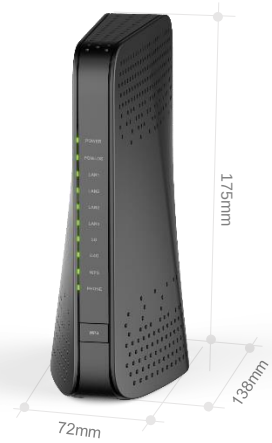
| OAM                                                                                           |
|-----------------------------------------------------------------------------------------------|
| Standard compliant OMCI (the embedded operations channel) interface as defined by ITU-T G.988 |
| Alarming and performance monitoring                                                           |
| Remotely software image download over OMCI, as well as activation and rebooting               |
| Hold two software sets with software image integrity checking and automatic rollback          |

| GPON Features                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.5dBm ~+5dBm launch power, -27dBm sensitivity, and -8dBm overload                                                                                                                                     |
| Wavelengths: US 1310nm, DS 1490nm                                                                                                                                                                      |
| Laser compliant with FCC 47 CFR Part 15, Class B, and FDA 21 CFR 1040.10 and 1040.11, Class I<br>ONT support Class C or Class C+ optics as an option (it's need re-design PCB , we suggest delete it.) |
| Support G.984.5 Blocking Filter as an option                                                                                                                                                           |
| Multiple T-CONTs per device                                                                                                                                                                            |
| Multiple GEM Ports per device                                                                                                                                                                          |
| Flexible mapping between GEM Ports and T-CONT                                                                                                                                                          |
| Activation with automatic discovered SN and password in conformance with ITU-T G.984.3                                                                                                                 |
| AES-128 Decryption with key generation and switching                                                                                                                                                   |
| FEC (Forward Error Correction) in both directions                                                                                                                                                      |
| DBA reporting by piggyback reports in the DBRu (mode 0 and mode 1)                                                                                                                                     |
| 802.1p mapper service profile on U/S                                                                                                                                                                   |
| Mapping of GEM Ports into a T-CONT with priority queues based s cheduling                                                                                                                              |
| Support Multicast GEM port and incidental broadcast GEM port.                                                                                                                                          |

| Ethernet Interface                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethernet port auto negotiation or manual configuration                                                                                                                                                                       |
| MDI/MDIX automatically sense                                                                                                                                                                                                 |
| 802.1D bridging                                                                                                                                                                                                              |
| <ul style="list-style-type: none"><li>- Virtual switch based on 802.1q VLAN</li><li>- VLAN stacking (Q-in-Q) and VLAN Translation</li><li>- Hardware priority queues on the downstream direction in support of CoS</li></ul> |
| <ul style="list-style-type: none"><li>- Marking/remarking of 802.1p</li><li>- IP ToS/DSCP to 802.1p mapping</li><li>- Class of Service based on VLAN-ID, 802.1p bit, ToS/</li><li>- DSCP</li></ul>                           |
| IGMP v2/v3snooping                                                                                                                                                                                                           |
| Broadcast/Multicast rate limiting                                                                                                                                                                                            |
| Wi-Fi Interface                                                                                                                                                                                                              |
| <a href="#">EasyMesh™ R1, R2, R4</a><br><a href="#">Band Steering,</a><br><a href="#">Beamforming</a>                                                                                                                        |
| WEP/WPA/WPA2 Security                                                                                                                                                                                                        |
| MU-MIMO (2.4 GHz, 5 GHz)                                                                                                                                                                                                     |
| <a href="#">802.11 a/b/g/n/ac/ax</a><br><a href="#">2.4 GHz 2x2 + 5 GHz 2x2 Dual-band</a><br><a href="#">Wi-Fi 2.4GHz : 600 Mbps (802.11ax , 40MHz)</a><br><a href="#">Wi-Fi 5GHz : 2.400 Gbps (802.11ax, 160MHz)</a>        |

# GPON – Industrial Design

## ■ Perspective view



# GPON – Industrial Design

## ■ Front & Rear view





# End of Document

- Thank you -

**FCC Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party.

Responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**FCC Radiation Exposure Statement:**

The equipment complies with FCC Radiation exposure limits set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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