

Grandstream Networks, Inc.

**GWN70xx Routers –
Power Consumption Information**



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Introduction

This document summarizes the measured power consumption of **GWN series routers** when powered by either an external PSU or via PoE, covering Idle, typical Operating (Work), and Maximum Power conditions under defined load scenarios (WAN/LAN throughput, VPN processing, FXS usage where applicable, USB peripherals, and PSE output loading). It also presents PoE-specific behavior under IEEE 802.3af and IEEE 802.3at, including idle draw, operating consumption, maximum measured input power, and the corresponding PoE class advertisement, along with model-dependent PSE output capabilities.

The data is intended to support accurate power budgeting, PoE switch capacity planning, and compliance documentation by providing test-based consumption values for each router model and powering method.

Power Dissipation

PSU Model Power Dissipation

The table below lists the power dissipation values for GWN models that require an external PSU, as they do not support PoE powering.

Product	Idle State Power (W)	Work State Power (W)	Max Power Consumption (W)
GWN7062	5.28	11.08	16.65
GWN7052	3.03	5.95	9.36
GWN7062E	4.20	7.50	9.30
GWN7001	2.60	5.10	8.20
GWN7002	3.40	5.40	20.40
GWN7003	4.30	6.80	21.80
GWN7062ET	4.65	10.62	17.43

Table 1

PoE Model Power Dissipation

The below table lists the power dissipation values for GWN models that support Power over Ethernet (PoE) and can be powered via a PoE source.

Product	Idle State Power (W)	Work State 802.3af (W)	Work State 802.3at (W)	Max Power 802.3af (W)	Max Power 802.3at (W)	Class Advertisement (IEEE 802.3bt)
GWN7002	4.20	NA	6.30	NA	22.00	4
GWN7003	4.60	NA	8.00	NA	23.60	4

Table 2

Note

The values below represent the measured **total system input power** of the device under specific PD load and power source conditions.

- **n1) 20.50 W** – PSE port connected to a 6 W PD load with power supplied by the PSU.
- **n2) 11.60 W** – PSE port connected to a 6 W PD load with power supplied by the PSE (PoE source).
- **n3) 20.30 W** – PSE port connected to a 2 W PD load with power supplied by the PSE (PoE source).

PD Power Classification

Class	Usage	Max Power Range used by the PD (phone)
0	Default	0.44 to 12.95W
1	Optional	0.44 to 3.84W
2	Optional	3.84 to 6.49W
3	Optional	6.49 to 12.95W
4	Optional	12.95 to 25.5W
5	Optional	25.5 to 40W
6	Optional	40 to 51W
7	Optional	51 to 62W
8	Optional	62 to 71.3W

Test Condition Terminology

The following test condition terminology was used based on the power dissipation information on Table 1 and Table 2

Idle State

- The device has completed the boot-up process and is in **Idle state**.
- **No wireless clients** are connected.

Operating State

- **Maximum number of clients** connected.
- **2.4 GHz, 5 GHz, and 6 GHz radios:** 50% TX / 50% RX at maximum throughput.
- **Ethernet port:** operating at maximum throughput.
- **FXS port:** connected to **1 US standard REN**, off-hook.
- **PSE output:** half load.

Maximum Power State

- **Maximum number of clients** connected.
- **2.4 GHz, 5 GHz, and 6 GHz radios:** 100% TX at maximum throughput.
- **USB interface:** maximum supported USB dongle connected.
- **Ethernet port:** operating at maximum throughput.
- **FXS port:** connected to **3 US standard REN**, off-hook.
- **PSE output:** full load.
- **Low-temperature operating condition** applied.

Power Supply and PSE Output Capabilities by Model

GWN7002 / GWN7003

- Power input: **DC adapter** or **802.3at PoE+**.
 - Two **PSE OUT** ports with a **maximum combined output of 12.8 W**.
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