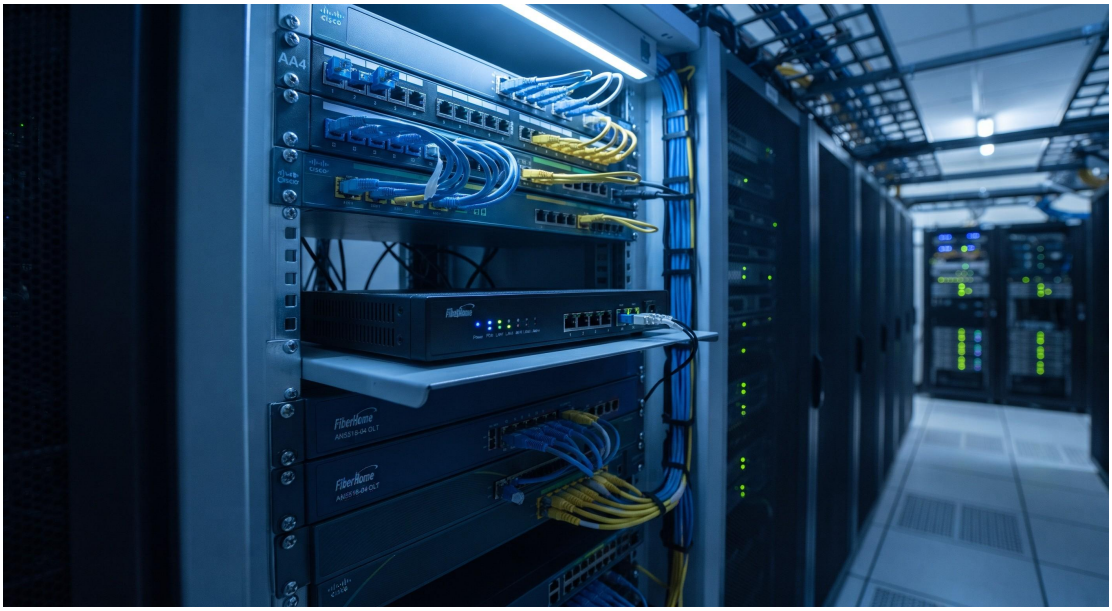
Ruggedized Telecom Infrastructure Application Note: FiberHome HG6143D Wi-Fi 6 ONT Power Consumption and Voltage Tolerance

RUGGEDIZED DESIGN PHILOSOPHY

The FiberHome HG6143D is engineered as a carrier-class GPON optical network terminal for FTTH deployments where electrical stability and thermal resilience are paramount. While marketed widely as a compact Wi-Fi ONT, its design philosophy prioritizes deterministic power behavior across the voltage envelope encountered in outdoor cabinets, remote DSLAMs, and customer premises with unstable mains supply. This application note isolates the power consumption profile and voltage tolerance thresholds that matter most to network planners and field engineers.



THERMAL & ELECTRICAL TOLERANCE

The HG6143D operates from an external 12 VDC adapter with a rated output of 1.5 A . The adapter itself accepts 100–240 VAC, 50/60 Hz input, accommodating global utility variations . At the system level, the ONT’ s DC input is specified within an operational window of 11 V to 14 VDC, providing margin against adapter droop, line loss on long low-voltage runs, and transient sags during upstream grid switching . This tolerance is critical in FTTB scenarios where the ONT may share a DC bus with other access equipment.

Power consumption figures vary by source and test condition. Typical operational draw is cited at 7 W in several commercial listings, while maximum consumption is bounded at ≤17 W under full load with Wi-Fi and all Ethernet ports active . A separate manual entry references <10 W for baseline operation . For capacity planning, the conservative design figure should be 17 W per ONT; for average thermal load in a sealed enclosure, 7–10 W provides a more realistic steady-state estimate.

OPERATIONAL ADVANTAGES

The HG6143D’ s power architecture supports several deployment advantages. First, the 12 VDC/1.5 A input is compatible with a broad range of third-party adapters and DC plant feeds, reducing sparing complexity for operators

managing mixed-vendor CPE fleets. Second, the device’ s maximum draw of 17 W places it within the thermal envelope of passively cooled outdoor enclosures when ambient temperatures do not exceed the rated 45°C operating ceiling . Third, the voltage tolerance down to 11 VDC ensures continued service during the low-voltage excursions that accompany generator changeover or battery discharge cycles in remote cabinets.

CERTIFICATIONS MATRIX

The HG6143D carries CE and RoHS certifications, with Anatel approval cited for Brazilian market variants . These certifications confirm compliance with the essential safety and electromagnetic compatibility directives applicable to customer premises equipment in the European Economic Area, and with the Brazilian telecommunications regulatory framework. Operators deploying the ONT in other jurisdictions should verify local type approval status independently.

EXACT SPECS



FIELD DEPLOYMENT SCHEMATIC

The HG6143D is best deployed in FTTH drop architectures where the ONT terminates a single-fiber GPON link and distributes services via four Gigabit Ethernet ports, one POTS port, and dual-band Wi-Fi . In field cabinets with shared DC power, the 11–14 VDC input window and 17 W maximum draw should be used as the design basis for fuse sizing and thermal budgeting. For residential installations with standard AC adapters, the 7 W typical figure supports energy-cost estimates and UPS runtime calculations. The device’ s operating temperature range of −5°C to 45°C and humidity tolerance of 10%–90% non-condensing define the environmental boundary for enclosure specification .