FiberHome AN5506-04-F Dual-Band Wi-Fi ONU Power Adapter Safety Tolerances - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The FiberHome AN5506-04-F is a next-generation Gigabit-capable Passive Optical Network (GPON) Optical Network Unit (ONU) designed for Fiber-to-the-Home (FTTH) and Fiber-to-the-Office (FTTO) deployments. This carrier-grade CPE integrates advanced data, voice, and wireless services into a compact desktop form factor. This document details the power adapter safety tolerances, input/output specifications, and environmental compliance parameters critical for ISP procurement, network engineering, and field deployment. The device strictly adheres to ITU-T G.984 standards and provides a reliable, high-performance gateway for triple-play services (voice, video, and data) .



HARDWARE ARCHITECTURE & POWER SAFETY TOLERANCES

The AN5506-04-F is engineered with a robust power supply subsystem to ensure operational reliability in diverse residential and enterprise environments. The system is exclusively powered by a dedicated external power adapter, which is a critical component for maintaining device safety and performance. The following matrix defines the absolute safety tolerances and compliance standards for the power adapter.

CRITICAL SAFETY DIRECTIVES

- EXCLUSIVE USE OF PROVIDED ADAPTER: Operation of the AN5506-04-F is strictly prohibited with any power adapter other than the one officially provided by FiberHome in the product packaging. Utilization of third-party or alternative

adapters may lead to irreversible hardware damage, electrical fire, or malfunction .

- AC TO DC CONVERSION: The designated power adapter functions as a regulated power supply, converting standard 220V AC mains electricity to a low-voltage, stabilized 12V DC input required by the ONU .

- OVERLOAD & CABLE PROTECTION: The device incorporates protection mechanisms against power socket overload. Administrators are required to conduct regular visual inspections of power supply wires and plugs. Any evidence of damage, fraying, or broken insulation mandates immediate replacement to mitigate the risk of electric shock or fire .

COMPLIANCE & STANDARDS

The FiberHome AN5506-04-F is certified to meet global telecommunications and safety standards, ensuring seamless interoperability with existing network infrastructures.

- GPON STANDARD: Fully compliant with ITU-T G.984 series recommendations, guaranteeing a maximum transmission distance of up to 20 km from the Optical Line Terminal (OLT) .

- ETHERNET STANDARDS: User-side interfaces support IEEE 802.1Q VLAN, 802.1P Quality of Service (QoS), and line-rate L2/L3 forwarding .

- VOICE PROTOCOLS: Supports industry-standard voice protocols including H.248, MGCP, and SIP, with G.711a/u, G.723, and G.729 voice coding .

- WIRELESS STANDARDS: Integrated dual-band Wi-Fi is compliant with 802.11 b/g/n standards, supporting advanced security authentication modes including WPA, WPA2, and WPS .

- ENVIRONMENTAL COMPLIANCE: Designed to operate within strict temperature and humidity thresholds to ensure longevity and stability. The device includes ventilation requirements to prevent overheating .

TECHNICAL SPECIFICATIONS

Parameter	**Specification**
Form Factor	Desktop / Compact CPE (45 mm x 190 mm x 235 mm)
Power Input (Device)	12 V DC (Nominal)
Power Adapter Input	100-240 V AC, 50/60 Hz (Mains Supply)
Maximum Power Consumption	12W (Standard Model)
Weight	Approx. 650 g
Operating Temperature	0°C to 45°C (AN5506-04-F), -5°C to 45°C (Variant Specific)
Storage Temperature	-30°C to 60°C

Operating Humidity	10% to 90% (Non-condensing)
Network Interface (Uplink)	1 x GPON Interface (SC/APC or SC/PC)
User Interfaces	4 x 10/100/1000Base-T Ethernet, 2 x POTS (RJ-11), 1 x USB 2.0
Wireless	Dual-Band Wi-Fi (802.11 b/g/n)
Safety Compliance	ITU-T G.984, RoHS



Note: Technical specifications for the CATV interface are exclusively supported by the AN5506-04-G1 variant .

SAFETY AND HANDLING INSTRUCTIONS

Beyond electrical tolerances, the following operational safety protocols must be observed:

- OPTICAL SAFETY: High optical power outputs can cause severe bodily harm, particularly to eyes. Never look directly into the end of an optical transmitter fiber jumper or active connector .
- FIBER BENDING RADIUS: The fiber bending radius must never be less than 38mm to prevent signal degradation and physical damage to the fiber .
- THERMAL MANAGEMENT: Install the equipment in a well-ventilated environment, avoiding high temperatures and direct sunlight. Exposure to excessive heat can result in component degradation .
- MOISTURE PROTECTION: The equipment must be protected from moisture, dampness, and direct exposure to water to prevent short circuits and operational failure .