Nokia G-240W-B ONT Remote Configuration Protocol Compatibility on Huawei Command Lines - Official Technical Overview & Hardware Datasheet

PRODUCT IDENTIFICATION

Document Type: Technical Specification & Interoperability Datasheet

Product Model: Nokia G-240W-B Optical Network Terminal (ONT)

Subject: Remote Configuration Protocol Compatibility and Command-Line Interface (CLI) Mapping with Huawei Proprietary Command Sets

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Classification: Carrier-Grade Interoperability Standard

The Nokia G-240W-B ONT, traditionally managed via its native BusyBox-based Linux environment, presents a unique challenge for Network Operators who have standardized on Huawei's Command-Line Interface (CLI) syntax for network management . This document provides a comprehensive technical overview of the G-240W-B hardware and defines a structured protocol compatibility framework for remote configuration using Huawei command lines, facilitating seamless integration into brownfield OSS/BSS environments.



CORE INTERNAL TOPOLOGY & PROCESSING ARCHITECTURE

The Nokia G-240W-B is a high-performance GPON residential gateway designed to terminate fiber-to-the-home (FTTH) services and deliver a true gigabit experience across wired and wireless domains .

Underpinning its operation is a Broadcom or similar system-on-chip (SoC) architecture running an embedded Linux environment (BusyBox v1.16), which provides the foundation for network stack processing and device management . The internal topology features:

- GPON MAC Layer: Handles the Physical Layer Operations, Administration and Maintenance (PLOAM) and embedded operations channel (OMCI) for communication with the Optical Line Terminal (OLT).

- Switching Subsystem: A non-blocking Fast Ethernet/Gigabit Ethernet switch

fabric interconnects the PON interface, four (4) 10/100/1000Base-T Ethernet LAN ports, and the 2.4/5 GHz dual-band Wi-Fi radio .

- Management Subsystem: A dedicated CPU core runs the Linux OS and hosts the Telnet/SSH servers (where enabled) and the web GUI, processing configuration commands via a shell interface .

SWITCHING SUBSYSTEM CAPABILITIES

The device supports multiple WAN connection types, including PPPoE and IPoE, with VLAN tagging (e.g., VLAN 881) required for specific ISP configurations . The device supports bridge mode operation for Layer 2 passthrough, as well as routed mode for full gateway functionality .

REMOTE PROTOCOL COMPATIBILITY MATRIX (HUAWEI CLI MAPPING)

To manage the Nokia G-240W-B using Huawei-style command lines, a protocol mapping layer is required. While the G-240W-B does not natively execute Huawei's CLI syntax, this specification defines a translation layer for common management tasks. This mapping is based on the premise that Huawei's CLI interfaces are part of a standardized (though proprietary) framework for device configuration, similar to the logical hierarchy found in Nokia's SR OS or standard Linux utilities .

The table below defines the mapping of Huawei command-line actions to their operational equivalents on the Nokia G-240W-B platform:

Huawei CLI Action / View	**Nokia G-240W-B Equivalent / Purpose**	**Syntax Translation**	**Protocol / Interface**
<HUAWEI> system-view	Transition to configuration mode	telnet/shell access; entering 'enable' or 'config' context.	Telnet / SSH
[HUAWEI] sysname [hostname]	Set device hostname	echo [hostname] > /etc/hostname or hostname [hostname] command.	Linux Shell
[HUAWEI] interface [interface-type] [interface-number]	Modify Ethernet bridge or VLAN interface settings (e.g., br0, eth0.881)	ifconfig [interface] [IP] netmask [mask] up	Linux Shell / brctl

[HUAWEI] display current-configuration	Display running configuration	cat /tmp/current_config or service info via OMCI; relies on SNMP or custom API retrieval, as no native 1:1 command exists.	OMCI / Custom API
[HUAWEI] vlan [vlan-id]	Create or modify VLAN tagging on WAN/Ethernet interface	vconfig add eth0 [vlan-id]; ifconfig eth0.[vlan-id] up. Used for ISP VLAN 881.	Linux Shell / vconfig
[HUAWEI] undo [command]	Revert/disable a configuration	Delete configuration file or kill process (e.g., killall udhcpd to stop DHCP server).	Linux Shell
[HUAWEI] commit	Save configuration to	In non-Huawei environments,	Custom Script / Agent

	persistent memory	this is mapped to a combination of 'write' or saving changes to /etc/config/ via a configuration management agent.	

OPERATIONAL ADVANTAGES

Integrating remote protocol compatibility offers significant advantages:

- Unified Management: Enables operators to manage a mixed fleet of Huawei and Nokia ONTs using a single management command set, reducing training overhead and operational expenditure (OPEX).

- Streamlined Automation: Facilitates the integration of the G-240W-B into existing automation frameworks (e.g., Ansible, Python scripts) built around the Huawei CLI standard.

- Simplified Troubleshooting: The translation layer allows for the use of familiar Huawei "display" commands (e.g., `display interface`, `display current-configuration`) to retrieve operational status from the G-240W-B,

mapping to `ifconfig`, `cat /etc/config/...`, or respective OMCI Managed Entity (ME) queries .

SPECIFICATION MATRIX

CATEGORY	SPECIFICATION
Form Factor	Desktop / Home Gateway
PON Interface	ITU-T G.984 GPON
Downstream/Upstream	2.488 Gbps / 1.244 Gbps
User Interfaces	4 x 10/100/1000Base-T (RJ45), 2.4GHz / 5GHz 802.11 a/b/g/n/ac Wi-Fi
Management Protocols	Native: Telnet, HTTP/HTTPS, OMCI
Remote Protocol Compatibility	Translation layer for Huawei CLI syntax (sysname, interface, display, etc.)
Forwarding Mode	Layer 2 Bridging / Layer 3 Routing
VLAN Support	IEEE 802.1Q, VLAN Tagging (e.g., 881)
Layer 3 Protocols	DHCP Client/Server, PPPoE, Static Routing

REGULATORY COMPLIANCE

The Nokia G-240W-B is certified to meet international telecommunications

standards, including:

- IEEE 802.3 (Ethernet)

- IEEE 802.11 (Wireless LAN)

- ITU-T G.984 (GPON)

- RoHS and WEEE compliance for environmental sustainability .



LIFECYCLE ASSURANCE (MTBF)

The Nokia G-240W-B has a design life tailored for the residential gateway market. With its passive cooling system, the platform is designed for a Mean Time Between Failures (MTBF) in excess of 50,000 hours at an ambient temperature of 25°C, ensuring reliable service life for the customer premise equipment.

TARGET BACKBONE TOPOLOGIES

This protocol compatibility mapping is specifically targeted at:

- FTTH GPON Networks: Where Nokia ONTs are deployed on Huawei OLT infrastructure, requiring CLI parity.

- Enterprise Branch Office: Where the device is used as a managed CPE, controlled via a network operations center (NOC) using a unified command set.

- Data Center Edge: For specialized low-latency connectivity requiring MACsec and standard CLI management .