1. Product Overview

The Nokia Optical Network Terminal (ONT) U-880XP-P is designed to deliver gigabit speeds in an Optical LAN environment via Gigabit Passive Optical Network (GPON) and 10G symmetrical Passive Optical Network (XGS-PON) Ethernet interface. The device provides one 10G Ethernet, seven 2.5G Ethernet user interfaces and 8 voice interfaces, and delivers a premium service experience for all services, including data and video.

The ONT is compliant with ITU-T G.9807.1 and with standard OMCI definition. The device can be managed from a remote site.

Figure 1 Nokia ONT U-880XP-P

A. Technical Specifications

- Height: 75 mm (3.0 in)
- Width: 235 mm (9.3 in)
- Depth: 159 mm (6.3 in)
- Weight: 2.15 kg (4.7 lb)

Desk, rack or din rail mount

Power consumption:

- Maximum power: 271.35 W

- Minimum power: 9.81 W

B. Manufacturer Information

For Products Purchased in EU/EAA Countries

The products are manufactured and imported by Nokia Solutions and Networks Oy. Karakaari 7, 02160 Espoo, Finland.

Nokia is a registered trademark of Nokia Corporation.

For Products Purchased in the United States

The products are imported by Nokia of America Corporation.

- Offices: https://www.nokia.com/contact-us/worldwide-offices/north-america/
- Support: https://www.nokia.com/support/
- Other contacts: https://www.nokia.com/contact-us/

Please contact your Internet Services Provider in case of questions on the product.

2. Safety Guidelines

ALWAYS READ THE PRODUCT GUIDE BEFORE SET UP OR USE OF THE PRODUCT. IT IS YOUR RESPONSIBILITY TO FAMILIARIZE YOURSELF WITH THE PRODUCT GUIDE AND WARNINGS, AND TO USE A PRODUCT PROPERLY. CONTACT YOUR INTERNET SERVICES PROVIDER FOR FURTHER QUESTIONS.

Warning - Risk of electric shock or fire

Connect the Product power adaptor or cord to the right supply voltage (for example, 230V in Europe, Australia, South Africa and 120V in US).

The socket-outlet shall be easily accessible.

Pay attention to the power load of the electrical outlet and possible extension cord. An overburdened power outlet or damaged cords and plugs may cause electric shock or fire. Check the power cords regularly. If you find any damage, replace the cord immediately.

Do not connect the plug into an extension cord, receptacle, or other outlet unless the plug can be fully inserted with no part of the blades exposed.

Leave adequate space for heat dissipation to avoid any damage caused by overheating the Product. Do not cover the Product or its ventilation holes. Blocking the ventilation holes may cause fire.

Use the power adapter provided with your Product and do not fasten the power cable to building surfaces. Ensure the cable can move freely. Do not place heavy objects on the cable.

Do not install, use, or service this Product during a thunderstorm. There is a remote risk of electric shock from lightning.

Caution - Potential equipment damage

Follow these recommendations to protect yourself and the Product from harm:

• Do not look directly at the optical port without protection.
• Do not insert any sharp object into the openings of a Product.
• Do not put the Product near a heat source. Avoid placing the Product in direct sunlight.
• Do not put the Product in damp or wet locations; for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Do not spill any liquid on the Product.
• Do not touch the Product or its power adapter or cord with wet hands.
• Do not place the Product on an unstable surface or support.
• Do not place heavy objects on top of the Products.
• Do not use liquid or aerosol cleaners; unplug the Product and use a soft, dry cloth for cleaning.
• When connecting a PC or other electronic device to a Product, make sure you use the right cables and connect the device to the right port of the Product. Incorrect connections may damage the device and/or the Product.
• Do not open or try to open the Product. Opening or removing covers can expose you to dangerous high voltage points or other risks.

It is recommended that users and other individuals maintain a distance of at least 10 cm between themselves and the Product to avoid exposure. The Product contains components that emit an electromagnetic field and could interfere with pacemakers or other electronic medical devices. If you have a pacemaker or other implantable or personal medical device, please consult your physician or medical device manufacturer about the required minimum safe distance between the Product and your medical device.

Keep your product and accessories out of reach of pets. They could damage it and cause injury or electrocution.

If the Product malfunctions or fails to perform as expected, stop using it immediately.

The product is expected to operate at a temperature of -40 to 70 degrees Celsius for a relative humidity between 5% and 95%.

3. Install the ONT

The ONT is normally installed by a professional installer.
1. Plug the power cable to the ONT into power input jack.
2. Plug the power socket to the wall socket.
3. Remove the protective cap on the optical port of the ONT.
4. Remove the protective cap from the optical fiber.
5. Plug the optical fiber to the optical port of the ONT.
6. Connect the ONT to the home router via an Ethernet cable into the Ethernet port.
7. Push the power button to be "ON". ("ON" = recessed stated, "OFF" = non-recessed state)

4. LED description

The following table describes the LEDs of the device:

LED indicator	LED color and behavior	LED behavior description
PWR1	Solid green	Power active.
PWR1	Off	No power supply.
PWR2	Solid green	Power active.
PWR2	Solid orange	Power standby.
PWR2	Off	No power supply.
PON	Solid green	Full communication between the OLT and the ONT in XGS PON mode. This indicates that the ONT is ranged, and the password is authenticated.
PON	Flashing green	The ONT is synchronizing, and communication is being activated in XGS PON mode. This indicates that the ONT is ranged and synchronized but not authenticated.
PON	Solid blue	Full communication between the OLT and the ONT in GPON mode. This indicates that the ONT is ranged, and the password is authenticated.
PON	Flashing blue	The ONT is synchronizing, and communication is being activated in GPON mode. This indicates that the ONT is ranged and synchronized but not authenticated.
PON	Solid red	O7 ranging status.
PON	Flashing red	No full communication between OLT and ONT (O5 without OMCI messages are downloaded), ONT is attempting to range with OLT. Mapping to O2/O3/O4/O6 ranging status.
PON	Off	The PON is down, or no link is connected between the OLT and the ONT. This indicates that the fiber is not connected, or the link has failed (LOS/LOF).
POE	Solid green	At least 1 ethernet port is doing Power feeding to PD.
POE	Off	No ethernet port provides power for PD.
SWDL	Flashing green	ONT software download in progress.
SWDL	Off	No SW download in progress.

LED indicator	LED color and behavior	LED behavior description
Voice	Flashing green	At least 1 phone is in "call in" or "talking" condition.
Voice	Solid green	At least 1 phone is off hook and VoIP service is built up.
Voice	Solid red	VoIP service is out of service.
Voice	Off	All phones are on hook, and VoIP service is not built up.
2.5GE 1-7 LAN Left	Orange blinking	10M/100M/1000M data transmitting.
2.5GE 1-7 LAN Left	Orange on	10M/100M/1000M link active.
2.5GE 1-7 LAN Left	Green blinking	2.5GE data transmitting.
2.5GE 1-7 LAN Left	Green on	2.5GE link active.
2.5GE 1-7 LAN Left	Off	LAN link if OFF or LOS.
2.5GE 1-7 LAN Right	Solid green	Ethernet port is doing Power feeding to PD.
2.5GE 1-7 LAN Right	Off	No POE power feeding to PD device.
10G Ethernet Left	Orange blinking	100M/1G/2.5G/5G data transmitting.
10G Ethernet Left	Orange on	100M/1G/2.5G/5G link active.
10G Ethernet Left	Green blinking	10GE data transmitting.
10G Ethernet Left	Green on	10GE link active.
10G Ethernet Left	Off	LAN link if OFF or LOS.
10G Ethernet right	Solid green	Ethernet port is power feeding to PD.
10G Ethernet right	Off	No POE power feeding to PD device.
10 GE OPT	Solid green	10GE link active.
10 GE OPT	Off	LAN link if OFF or LOS.

5. EU Declaration of Conformity

Hereby, Nokia Solutions and Networks Oy declares that the Product is in compliance with Low Voltage Directive 2014/35/EU; EMC Directive 2014/30/EU, Directive RoHS 2011/65/EU and 2015/863/EU, Directive Eco-design 2009/125/EC, and European Accessibility Act Directive 2019/882/EU. The full text of the EU declaration of conformity, as well as additional compliance information, is available at www.nokia.com/notices/declaration-of-conformity/.

Products are for outdoor use.

Specific precautions for EMC Warning

The Products are compliant with Class B of EN 55032. In a residential environment, this equipment may cause radio interference. The Products are tested to the requirements of EN 55032 (Emissions) and EN 55024 (immunity). There are no specific precautions which must be taken in order to comply with the requirements of Directive 2014/30/EU Essential Requirements in Section 1 of Annex I. In addition, the Products are further

tested to ensure spurious emissions are within the specified limits, as well as meeting the requirements for adaptivity, which mitigates against problems caused by co-location with other wireless products. The Products are not subject to the requirements in Section 2 of Annex I of Directive 2014/30/EU for fixed installations.

End of Life Collection and Treatment

In the European Union and European Economic Area, this label indicates that this product should not be disposed of with household waste. It should be deposited in an appropriate facility to enable recovery and recycling.

The Product is marked with this symbol, which is known as the WEEE mark. WEEE stands for Waste Electronics and Electrical Equipment. Electronic products bearing or referencing the WEEE mark shown above, when put on the market within the European Union (EU) and European Economic Area (EEA), shall be collected and treated at the end of their useful life, in compliance with applicable EU and local legislation. They shall not be disposed of as part of unsorted municipal waste. Due to materials that may be contained in the Product, such as heavy metals or batteries, the environment and human health may be negatively impacted as a result of inappropriate disposal.

At the end of their life, the Products are subject to the applicable local legislations that implement the European Directive 2012/19EU on WEEE. There can be different requirements for collection and treatment in different member states of the European Union.

In compliance with legal requirements and contractual agreements, where applicable, Nokia will offer to provide for the collection and treatment of Products bearing the logo above at the end of their useful life, or Products displaced by Nokia equipment offers. The equipment can be disposed at electronic waste collection points or to stores that sell electronics.

For information regarding take-back of equipment by Nokia, or for more information regarding the requirements for recycling/disposal of the Product, contact your service provider. Regulatory compliance information, including EU Declaration of Conformity, can be found at www.nokia.com/notices/declaration-of-conformity/.

6. FCC Declaration of Conformity

This device complies with part 15 of the U.S. FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

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 in radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to the 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.

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