



SAFETY INFORMATION

The safety information provides admonishments regarding installing, operating, and maintaining the equipment. To prevent the equipment damages or body injuries, please familiarize yourself with the contents of safety information and other instruction manuals before installing/operating/maintaining the equipment. The indications (Danger, Warning and Caution) shown below are used in the Instruction manuals:

GENERAL

 DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates an imminently hazardous situation which, if not avoided, could result in serious injury or physical damage.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or physical damage. It is also said to alert against inappropriate practice.

This system should be installed, powered on and maintained only by the appropriate service personnel, who is/are skilled enough to be aware of hazards to which the personnel may be exposed during operation, and of measures to minimize the risks to the personnel or others.

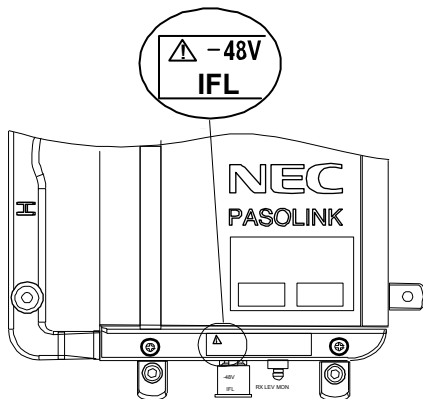
LABELS

Caution and Warning labels attached to the IDU and ODU are as follows:

To prevent IDU and ODU from being damaged, do not disconnect I/F cable between IDU and ODU while in operation .

	-48V OUTPUT	-48V SORTIE	SALIDA DE -48V
	Turn off ODU PWR before disconnection or connection of cable.	Arrêtez ODU PWR avant la déconnexion ou la connexion de câble.	Apague ODU PWR antes de la desconexión ó conexión del cable.

The -48 V DC power is superimposed on the center conductor of the I/F cable between IDU and ODU. Connecting the test equipment directly to this terminal may damage it and touching the coaxial cable core may cause an electrical shock.



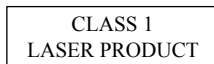
For ODU Type (13-38 GHz)



Ensure not to touch the top surfaces of the IDU and ODU that are heated while in operation.



Caution that the Non-ionizing radiation from the equipment may affect the health.



In a system using the optical modules, do not stare at the laser beams directly.. Laser radiation may be hazardous to eyes and skin.



The electrical and electronic products with this symbol are products to follow WEEE. Disposal of NEC equipment or any part of NEC equipment with this mark should comply with regulations implemented by the local authorities or the agreement with NEC.



The equipment with this symbol is the subject to compliance with China RoHS in terms of the environmental protection applied to the electrical and electronic equipment.

If the caution and warning labels above are out of sight due to the installed condition, please contact NEC.

WARNING



WARNING

The -48 V DC power is superimposed on the center conductor of the coaxial cable between IDU and ODU. Connecting the test set equipment directly to this terminal may damage it, and touching the core of coaxial cable may cause an electrical shock.

The ODU is designed for using -48 V DC at outdoor environment. Pay attention to a risk of electric shock where the wet condition reduces the contact resistance of the body.



WARNING

Do not touch the core of I/F cable jack before turning the power off, or it may cause an electrical shock.



WARNING

In a system using the OPT INTFC modules, do not stare or look at the laser beams directly especially when using the optical instruments, or it may cause damages to eyes and skin. (Class 1 Laser Product).



WARNING

This product uses the Class A Lasers. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.



WARNING

Do not enter in front of antenna when the transmitter is activating, because the power density of the microwave or millimeter-wave becomes high level along antenna beam. For the details, refer to the Safety Guidance for Microwave Radiation Hazard in NOTICE (Placing).

CAUTION



CAUTION

While the equipment is powered on, do not connect or disconnect the power supply plugs, or the DC-DC CONV may be damaged.



CAUTION

Place ODU within the area protected by lightning rod. To avoid surge currents caused by lightning circulating in the equipment earth system, connect the equipment earth system (frame ground) to ground of the lightning rod at ground level.



CAUTION

In the event that is believed to be an emergency, such as smokes, burning smells or strange sounds, quit the operation, and turn the power of IDU off, or it may cause damaging the equipment or generating an electric shock. In this situation, do not attempt to fix or repair the equipment.



CAUTION

If getting water leakage, metallic shards, smokes, corrosive gas and dusts into the equipment, or if birds or animals approach equipment, the equipment may be damaged.



CAUTION

Do not attempt to overhaul, modify or repair the equipment, or it may damage the equipment or may result in giving an electric shock.

NOTICE (PLACING THE EQUIPMENT)

1. *Since ODU generates non-ionizing radiation, if the ODU is installed indoors, it may affect the health, which requires to take the adequate measures.*
2. *Ensure not to block the vents of the equipment. If blocked, the air within the equipment is extremely heated up, which may damage the equipment. Follow the set up and usage rules listed below:*

Do not install the equipment on the floor covered with a carpet, floor panel heating, or on the bare concrete floor.

Do not cover or wrap the equipment with tablecloths, chiffon, rubber or plastic materials.

Do not mount the equipment in the bookshelves, locker or in a stuffy place.

Do not place anything like books or papers on and against the equipment.

3. *The equipment must be installed in the appropriate place. Do not install it sideways or aslant. If it is not properly installed, it may be damaged due to a rise of inner temperature.*
4. *Do not install the equipment in the following locations, or the equipment may be damaged:*

The equipment must be installed and maintained in a clean, and dry place where the temperature and humidity are stable, and no dew condensation, which should be within the ranges specified by the manufacturer.

5. *For the indoor-type equipment, do not install it where it could be affected by the salt-air, sandy dust, sulphuric acid gas, etc.*

If the equipment needs to be installed in such place, the following must be considered:

(a) Construction of the Equipment Room

The room should be airtight or sheltered by external influences mentioned above.

(b) ***Environmental Temperature Impact for the Equipment***

In the airtight room, the heat generated within the equipment raises the temperature.

An air conditioner for the industrial use is needed to be installed according to the on-site condition.

When the air conditioner is installed, do not blow the air directly to the equipment. If the equipment is placed facing the air from the air conditioner, condensation may occur depending on the temperature variation.

(c) ***If installing the equipment in the coastal areas (within 3 km from the seaside), measures to avoid damages by seawater and salt wind are required, for which consult NEC.***

6. ***Places for installing the equipment are restricted to the Telecommunication Center or equivalent.***

(a) ***Use twisted pair cables for the power supply cables to suppress inductive interference signals.***



(b) ***Use shielded cables for the data transmission cables.***

(c) ***Transmission quality degradation may temporarily occur due to the electromagnetic disturbances such as lightning or ESD.***

7. ***The ODU shall be installed at the restricted access location ^{Note #1} by a service personnel.***

Note #1: RESTRICTED ACCESS LOCATION is defined as both the following:

Accessing to the equipment is allowed only by SERVICE PERSONNEL or by USERS who have enough skills and knowledge of these restrictions and precautions regarding installing locations.

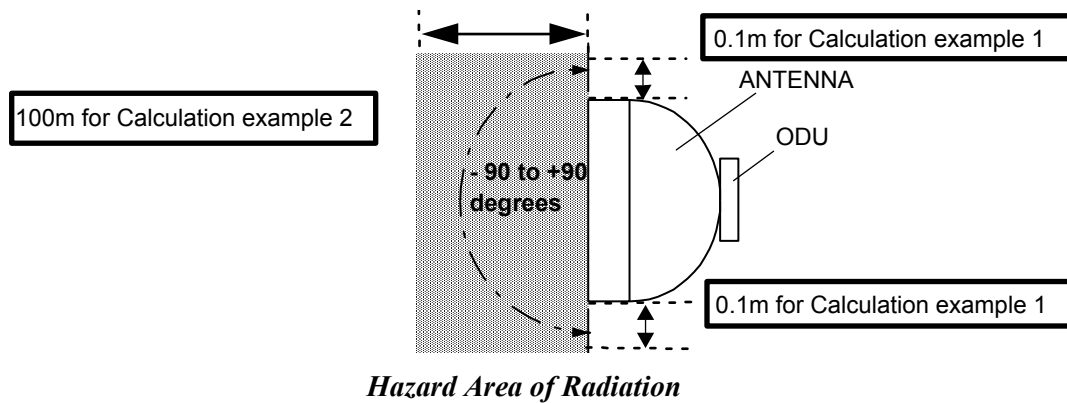
Accessing must be protected using a TOOL, lock and key, or other means of security, and is managed by the authority who is responsible for the installed location.

Frame Ground (FG) should be connected to the station earth point. For details, refer to the Section I, "INSTALLATION, Frame Grounding."

Safety Guideline for Using Hazardous Microwave Radiation

The Microwave and Millimetre-wave that iPASOLINK series use are very low-level radiation and have never been reported to affect the human health. However, advanced countries have started to regulate things regarding the health hazard, including radiation levels. As for EU countries, it is specified by EN50385. In order to comply with the regulation, an operator should not work near the parabolic antenna if transmitter is activating. Especially the area from side to front of the antenna shows higher radiation level. (See the following illustration and Calculation Example 1.)

On the other hand, in front of the antenna, the power density becomes higher level according to the antenna beam. Therefore, the user of this system should pay attention whenever to prevent himself/herself from being radiated. (See the Calculation Example 2 below.)



In addition, the power density and field strength level are calculated by the following formula:

$$\text{Power density } S \text{ (mW/cm}^2\text{)} = \frac{10^{\left(\frac{P+G-30}{10}\right)} \times K}{40 \times \pi \times R^2}$$

Where:

- P = Output power of ODU (dBm),
- G = Antenna Gain (dBi),
(in consideration of the angle of antenna)
- K = Reflection factor = 2.56 (given),
- R = Distance between Human and Antenna (m)

Calculation Example 1 (90 degree side of antenna)

- PASOLINK = 18 GHz/+23 dBm,
- Antenna diameter = 0.6 m,
- 0 degree antenna gain = 39 dBi,
- 90 degrees side antenna gain = -24 dBi, (90 degrees attenuation = -63 dB),
- Distance = 0.1 m

$$\text{Power density } S \text{ (mW/cm}^2\text{)} = 0.0016 \leq 0.01 \text{ (European safety guideline)}$$

Calculation Example 2 (0 degree, front side of antenna)

PASOLINK = 7 GHz/+27 dBm,
Antenna diameter = 1.8 m,
0 degree antenna gain = 40 dBi,
Distance = 100 m

Power density S (mW/cm^2) = 0.01 => Equal to European safety guideline

FAN Unit

1. *If a FAN alarm is detected, immediately replace it with the appropriate FAN Unit. While the fans are dismantled or are failed to run, the temperature within the equipment keeps rising, which may degrade the performances.*
2. *Replace the FAN Unit every three years to guarantee its performance. It is recommended to store several FAN Units for spares.*

FCC Statement

***FCC CAUTION:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.*

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