Optic Talk Set
User's Manual

Summary

The NK310 optic talk set is a comprehensive instrument that integrates five functions: full duplex fiber optic voice communication,regular optical power meter, visible red light positioning, RJ45 network cable sequenceing and tracking. The fiber optic voice communication using digital modulation technology to ensure low noise and high stability performance under high loss (30dB) or long-distance (≤ 150km) conditions. The intelligent handshake technology eliminates the necessary of distinguish between A and B type at the remote and local ends. After connecting the fiber optic cable, the upstream and downstream wavelengths will be automatically identified and determined.Simplifying the management and usage process of the equipment. Its integrated optical power meter, red light positioning, and network cable testing instrument and greatly reduce the species of equipment that maintenance personnel need to carry.
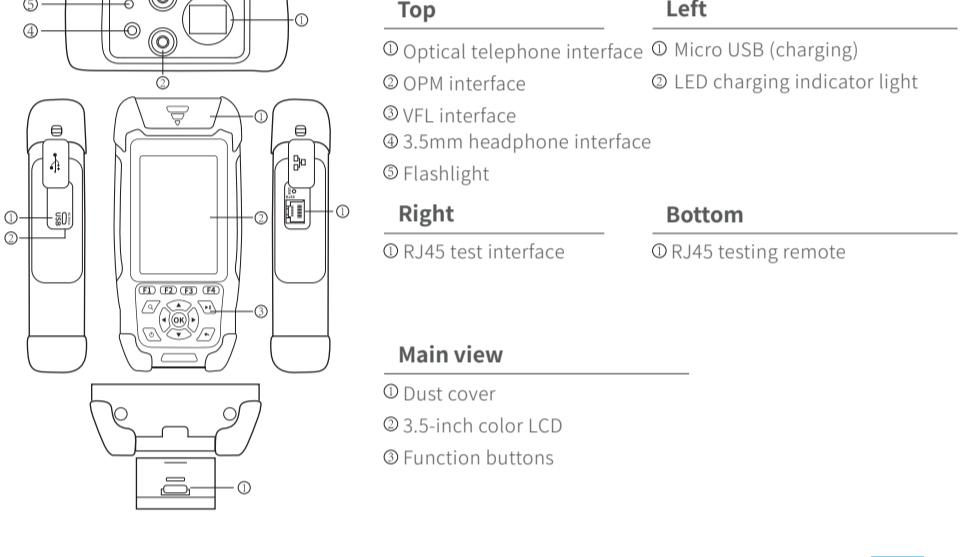
Warning

When using the instrument, any change or modification not explicitly permitted in this manual will deprive you of the right to operate the equipment. To reduce the risk of fire or electric shock, do not expose the equipment to thunderstorm or humid environment. In order to prevent electric shock, please do not open the shell. It must be repaired by qualified personnel designated by the manufacturer.
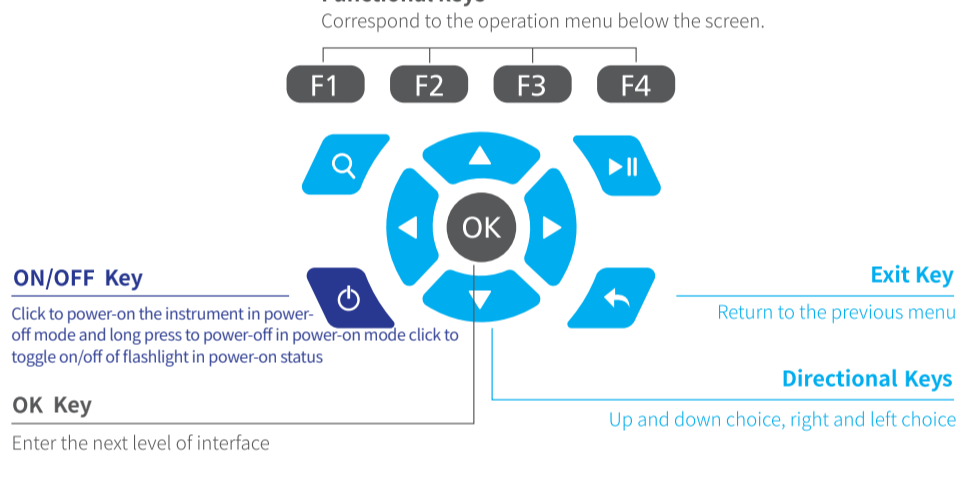
Attentions

Battery: The battery is a special polymer lithium battery, the charging voltage is 5V/2A, and the charging temperature range is 0 °C~ 50 °C. When the ambient temperature is too high, the charging will automatically terminate. The battery should be charged every one month to avoid long storage time and failure of battery due to self discharge. The temperature range of battery during long-term storage is: - 40 °C ~ 50 °C.

Please use the special adapter attached with the instrument box and use the external power supply in strict accordance with the specifications, otherwise the equipment may be damaged.

End Face Cleaning: Before testing, clean the end face of the tested fiber joint with alcohol cotton.

LCD Screen:The display of this series of instruments is 4.3 inch color LCD. In order to maintain good viewing effect, please keep the LCD screen clean. When cleaning, wipe the LCD screen with soft fabric.

Ports Of Host

Top
① Optical telephone interface
② OPM interface
③ VFL interface
④ 3.5mm headphone interface
⑤ Flashlight

Left
⑥ Micro USB (charging)
⑦ LED charging indicator light

Right
⑧ RJ45 test interface

Bottom
⑨ RJ45 testing remote

Main view
⑩ Dust cover
⑪ 3.5-inch color LCD
⑫ Function buttons

Function Keys

Functional keys
Correspond to the operation menu below the screen.

F1 F2 F3 F4

ON/OFF Key
Click to power-on the instrument in power-off mode and long press to power-off in power-on mode click to toggle on/off of flashlight in power-on status

OK Key
Enter the next level of interface

Exit Key
Return to the previous menu

Directional Keys
Up and down choice, right and left choice

Main Interface

After booting up, enter the main interface and press the directional keys to select functions. Press the 【OK】 key to enter the selected functional module. Other buttons do not respond except for the power button.

Date   Time   Battery

2019-04-26   14:00
Auto shutdown icon

2020-02-20   12:40
Optical Talk Set
1090/1550nm
VFL
650nm VFL
OPM
Optical Power Meter
RJ45 SEQUENCE   RJ45 TRACKER
SET

Optical Phone

After entering the optical phone interface, the defaults wavelength mode is automatic identify mode.In this mode,the optical phone whill automatically search for remote signals and this process may last for few seconds. The CALL function is automatically disabled during the search process. After successful pairing, the operating interface will prompt that the wavelength pairing is successful, and both ends can now make a call.

【F1】: Enable/disable call function, after enabling, the remote optical phone buzzer will work
【F2】: Switch between automatic/manual wavelength config mode, default to automatic mode, press【◄/►】to switch up/down stream wavelengths in manual mode
【F3】: The function of turning on or off the working power of the optical phone is enabled by default
【F4】: Microphone mute switching function, disabled by default. When enabled, the local microphone will be disabled and the remote end will not be able to hear local voice
【▲/▼】: Adjust the headphone output volume, default volume is 4, volume range is 1-8
【↩】: Return to the main menu interface from the optical phone interface, and the optical phone function will automatically turn off

2020-02-20   12:40
Wave Length Config
Auto Mode
LOCAL   REMOTE
Volume
CALL   AUTO   APWR   MUTE

OPM

Ordinary optical power meters are used to measure the power level of continuous or modulated optical signals.

【F1】: Wavelength switching
【F2】: Set the current power as the reference power
【F3】: Enter the threshold setting mode, press the directional keys to adjust the threshold, press the【F3】key to save the threshold and exit, press the 【↩】 key not to save the threshold and exit
【F4】: Enter calibration mode, press the up and down arrow keys to adjust the calibration offset, press Press the 【OK】 key to save the calibration value and exit, press 【↩】 to not save the calibration value and exit
Recognizable optical signal frequency:
CW/270Hz/330Hz/1000Hz/2000Hz

2019-04-26   14:00
OPM
WAVE:1300nm   REF:-41.36 THR:-20.00
OPM   -50.00   dBm
-50.00dBm   +26.00dBm
REL POWER:-8.64dB
LIN POWER:10.00nW
FREQUENCY: CW
WAVE   REF   THR   CAL
F1   F2   F3   F4

VFL

Injecting visible red light (650nm) into the optical fiber and observing the leakage position on the measured fiber can conveniently and accurately determine the location of the fiber fault point. Suitable for detecting near end fault points and high loss sections caused by micro bends in bare optical fibers, fiber jumpers, and other optical fibers and cables that can leak red light.

【F1】: Red light is normally on;
【F2】: Red light flashes at a frequency of 1Hz;
【F3】: Red light flashes at a frequency of 2Hz;
【F4】: Turn off the red light;
【↩】: Exit the red light function interface.

2019-04-26   14:00
VFL
✲ VFL —— 650nm
DANGER
Looking directly at the laser output may cause hurt to human eye
OPEN   1Hz   2Hz   CLOSE
F1   F2   F3   F4

Warning

Avoid looking directly at the laser output port, as the laser can cause damage to the retina of the human eye!

RJ45 Cable Sequence

Entering this page automatically starts the line sequence test. The yellow icon on the left represents the current test line number, and the icon on the right represents the connectivity status. If the connectivity is normal, it is green; otherwise, it is red.

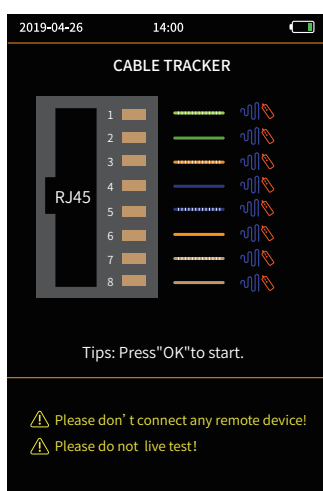【↩】: Stop testing and exit the line sequence testing function.
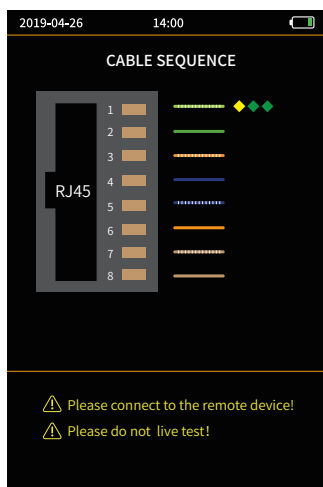
Warn

Please do not perform live testing on this function, as there is a risk of damaging the instrument.


```
2019-04-26        14:00
        CABLE SEQUENCE
              1
              2
              3
      RJ45    4
              5
              6
              7
              8

⚠ Please connect to the remote device!
⚠ Please do not  live test!
```

RJ45 Cable Tracking

After the wire tracing function is activated, it is used to search for the tested cable using the wire tracing remote end. When the wire tracing remote end is close to the tested cable, it will emit a continuous "beep" sound prompt. The closer it is to the tested cable, the more rapid the prompt sound will be.

【OK】: Press to start or stop the test
【↩】: Stop line tracing and exit the line tracing function

Warn

Please do not perform live testing on this function, as there is a risk of damaging the instrument.


```
2019-04-26        14:00
        CABLE TRACKER
              1
              2
              3
      RJ45    4
              5
              6
              7
              8

     Tips: Press"OK"to start.

⚠ Please don't connect any remote device!
⚠ Please do not  live test!
```

SET

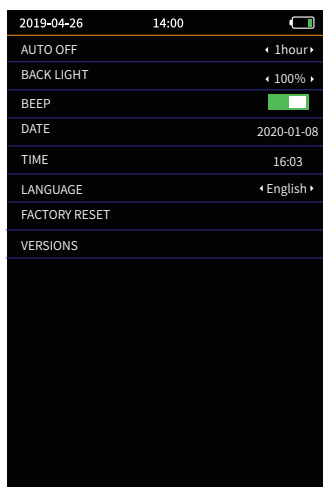**Set automatic shutdown, backlight brightness, time, language and other information.**

【▲/▼】: Switch settings options;
【◀ / ▶】: Switch the current setting parameter;
【OK】: Save all settings;
【↩】: Save all settings and exit. Press the 【OK】 key on the date and time setting item to enter the setting mode, adjust the date and time value by pressing the directional keys, and then press the 【OK】 key to save and exit the setting mode, or press 【↩】 to not save the date and time and exit.
Attention: The "directional keys" refer to up 【▲】, down 【▼】, left 【◀】, and right 【▶】.

Switch settings entries ▲▼
Edit current entry ▶◀

```
2019-04-26        14:00
AUTO OFF              ◀ 1hour ▶
BACK LIGHT           ◀ 100% ▶
BEEP
DATE                  2020-01-08
TIME                      16:03
LANGUAGE            ◀ English ▶
FACTORY RESET
VERSIONS
```

Technical Parameter

Fiber optic telephone	
Working wavelength	1490/1550nm
Output power	0dBm
The farthest communication distance	≤150km
Dynamic range	30dB
Optical connector	UPC(FC/SC)/APC(FC/SC)
VFL	
Working wavelength	650nm±20nm
Working mode	CW/1Hz/2Hz
Optical connector	Universal Joint PC(FC/SC/ST)
OPM	
Working wavelength	850nm/980nm/1300nm/1310nm/ 1490nm/1550nm/1625nm/1650nm
Dynamic range	-50dBm~+26dBm
Measurement unit	Logarithmic dBm/Linear mW
Frequency recognition	CW/270Hz/330Hz/1kHz/2kHz
Optical connector	Universal Joint PC(FC/SC/ST)

RJ45 Cable length/ sequence/Tracking	
Test distance	300m
General specifications	
Display	3.5-inch color LCD screen Resolution 320 * 480
Data interface	Micro USB
Power supply mode	Polymer lithium battery: 3.7V, 4000mAh Power adapter: 5VDC/2A
Battery	Standby time>20 hours, measurement time>12 hours
Working temperature	-10°C+50°C
Storage temperature	-40°C+70°C
Relative humidity	0~95% No condensation
Volume	≤173 mmx82mmx37mm
Whole machine weight	≤350g

Daily Maintenance

1. Always keep the end face of the sensor clean and free of grease and pollution. Do not use unclean and non-standard adapter connector. Do not insert the end face with poor polished surface, otherwise the sensor will be damaged and the error will be detected.

2. Once the optical power meter is not in use, the dust cap shall be immediately covered to protect the end face from being clean, so as to prevent the measurement error caused by dust adhering to the air for a long time.

3. Plug in and out the adapter connector carefully to avoid scratching the port.

4. Use a special cleaning swab to clean the sensor regularly.