KI 6171 Optical Fiber Identifier

Operation and Maintenance Guide

General

The KI6171 is a handheld, rugged and easy to use maintenance and installation instrument that identifies optical fibers by detecting the optical signals transmitted through a single mode fibre. The KI6171 utilizes non – destructive macro bend detection, which eliminates the need to identify a fibre by opening it at the splice point.

During installation, maintenance or restoration it is often necessary to identify a specific fiber. By clamping onto the fiber, the KI6171 can detect and indicate presence of the signal, a test tone such as 270, 1000 and 2000 Hz and traffic direction. It also displays relative core power. When KI6171 detects traffic on a fiber being tested, LED illuminates to indicate presence and direction of transmission and intermittent audible tone can be heard. Presence of the test tone is indicated by illumination of LED and continuous audible tone.

There are four types of chucks available: 3mm and 2mm, for pigtail and patchcord, smooth surfaced with foam perimeter for use with ribbon fibre or 250µm coated fiber and foam - covered to accommodate 900µm buffered fiber. The KI 6171 Optical Fiber Identifier is powered by 2x AAA batteries (alkaline or NiMH).

Figure 1: KI 6171 Optical Fiber Identifier

Specifications

Parameters	Value
Tone detection	270 Hz, 1 kHz, 2 kHz
λ detection	800 to 1700 nm
Audible tones	Audible tones depend on traffic / test tone
Fiber types (Bend sensitive fiber only)	SMF: ribbon, 250 µm, 900 µm, 2 mm, 3 mm
Power detection range[1]	-50 ~ 10 dBm
Fiber Slack	12 mm (0.5")
Tone detection range	*900 µm, 2 mm, 3 mm:* -30~0 dBm @ 270Hz & 1KHz, -25~0 dBm @ 2KHz *250µm:* -25~0 dBm @1KHz &2KHz, -20~0 dBm @ 2KHz
Insertion loss (typical)	0.8 dB (1310 nm), 2.5 dB (1550 nm)
Size	196x 30.5 x 27 mm (7.7 x 1.2 x 1.1")
Weight (excluding chuck & battery)	200 gm (7.1 oz.)
Power	2x AAA size batteries (alkaline or NiMH, not included)
Battery life	15 hours (may vary with battery type used)
Display	Traffic direction, Tone frequency, Low battery, Relative core power
Slide-on chuck compartment	Houses 3 standard chucks
Operating / Storage Temperature	-10 ~ 60 °C / -25 ~ 70 °C
Relative humidity	95%
Warranty	1 year

Note1: CW in 0.9mm bare fiber.

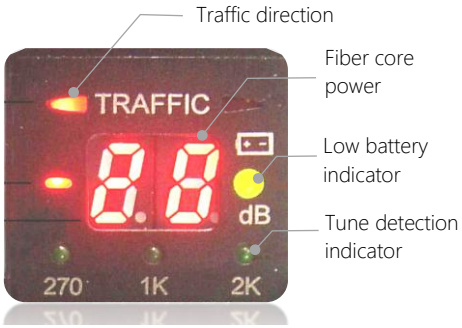

Figure 2: Display of KI 6171

Standard Accessories

Item	Qty	Item	Qty
Chucks (2mm, 3 mm, 25µm, 900 µm)	4	Sun shield	1
Carry pouch	1	Slide-on compartment	1
Wrist strap	1	User Manual	1

Figure 3: Chucks housed in slide-on compartment

Operating KI 6171

1. Choose the correct chuck (according to fiber type) from the 4 chucks supplied with the instrument, see Figure 4. The not-in-used chucks (quantity=3) can be kept and carried along in the compartment of the instrument. The compartment is slid on or off the main body of instrument, Figure 1.

Figure 4: Chucks (2mm, 3 mm, 25µm, 900 µm)

2. Slide chuck onto the instrument as shown in Figure. 5. The chuck should be slid in with its index/marking in upright position.

3. Feed fiber into the groove (see Figure 6) on,

- chuck when 2 mm or 3 mm chuck is used.
- instrument when 900 µm or 250 µm chuck is used.

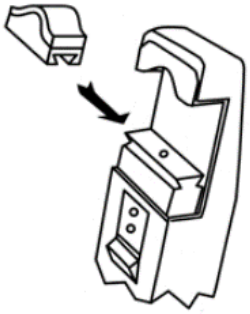

Figure 5: Slide chuck onto instrument

4. Slide thumb switch fully upward to clamp the fiber as shown in Figure 7. This turns the unit ON.

5. Press thumb switch bottom part to retreat chuck or release the clamping mechanism. This turns the unit OFF.

Presence of Traffic: Illumination of either the TRAFFIC LEDs with intermittent audible tone indicates detection and direction of traffic. This is useful in determining whether the fiber is transmitting or receiving at equipment terminal locations. Relative core power is displayed in digital format. In the absence of optical signal, TRAFFIC LED will turn off and "Lo" will be displayed in the relative core power position.

Test Tone Detection: Illumination of any of test tone LEDs and continuous audible tone indicate presence of the test tone of the corresponding frequency.

Low battery indicator: Green indicates operational. To ensure reliable measurement results, replace batteries when the LED turns red.

Slide down and lift battery door (Figure 1) to access batteries in instrument.

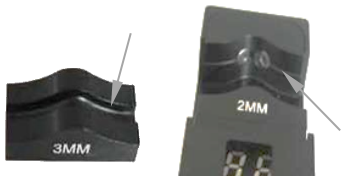

Figure 6: Feed fiber into grooves on chuck or instrument depend on the chuck type used.

Application note

All brands of fiber identifiers are subject to false traffic identification due to external light ingress. To minimize false traffic detection, avoid using instrument under bright or fluorescent lighting. A stable core power meter reading indicates a positive traffic lock. Gently rock the identifier from side to side in the presence of traffic, the indicated direction should not move on a positive traffic lock.

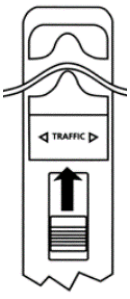

Figure 7: Push thump switch up clamp fiber and turn instrument on.

Maintenance

It is important that the optical ports remain clean and free of dust, dirt, grease, or other foreign matter. Cleaning with lint-free swabs and isopropyl alcohol is recommended for optimum performance. Remove batteries when instrument is not in use for long periods of time.

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