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AQ7511

Optical Fiber Chromatic Dispersion Distribution Measuring System

Ando Electric Co.,LTD

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

Optical Fiber Chromatic Dispersion Distribution Measuring System



General Description

Dispersion management becomes the key factor in the high capacity dense Wavelength-Division Multiplexed system. AQ7511 Optical Fiber Dispersion Distribution Measuring System provides convenient measurement of the chromatic dispersion distribution.

The AQ7511 has two DFB lasers and detects the backscatter light which includes Stokes ray of the four wave mixing from the fiber, using OTDR technique.

Applications

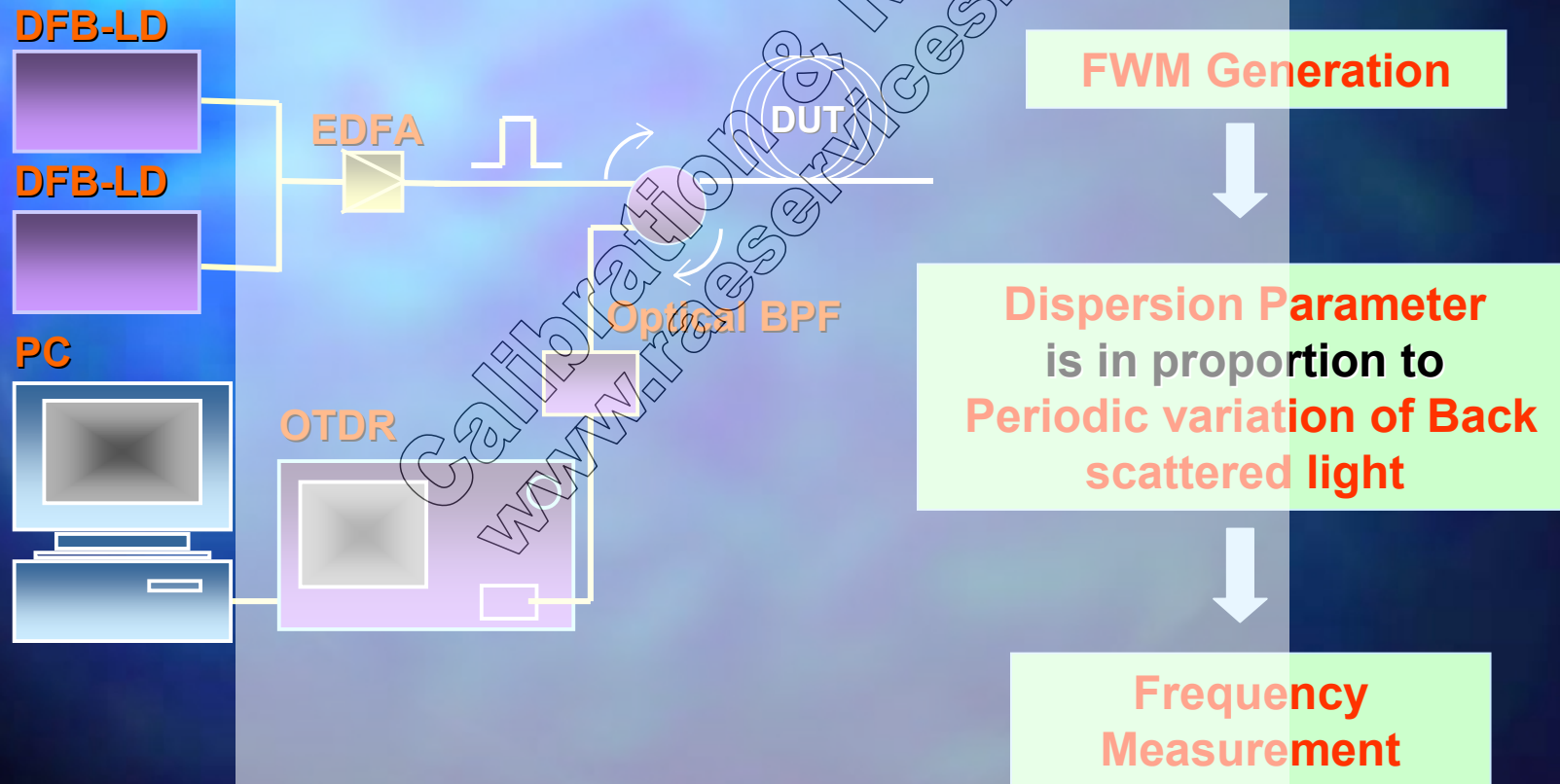
- ◆ Quality appreciation of Dispersion compensating fiber (DCF, RDF).
- ◆ Appreciation of non-linear fiber (DDF).

DDF ; Dispersion Decreasing Fiber

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Block Diagram



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Measurement procedure

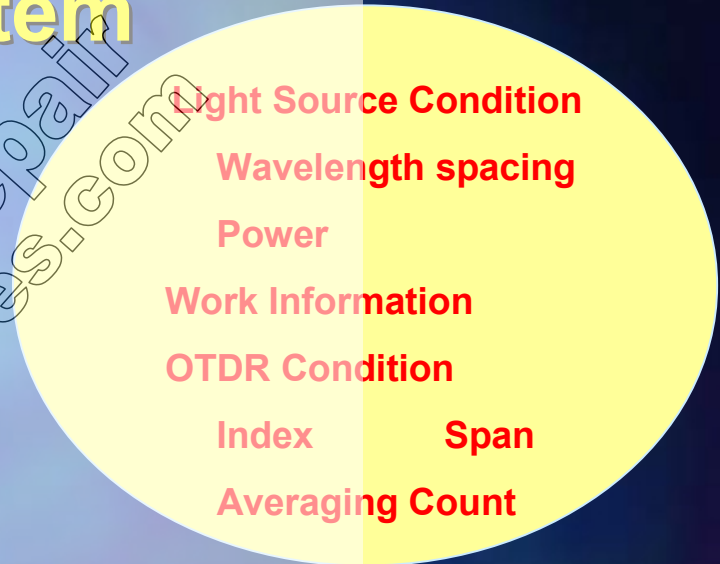
Setting Measurement Condition



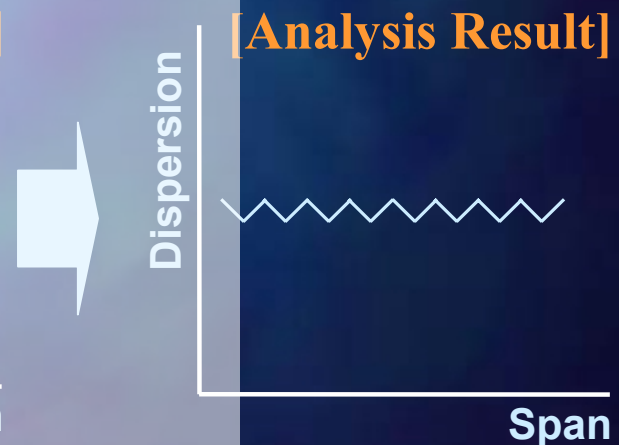
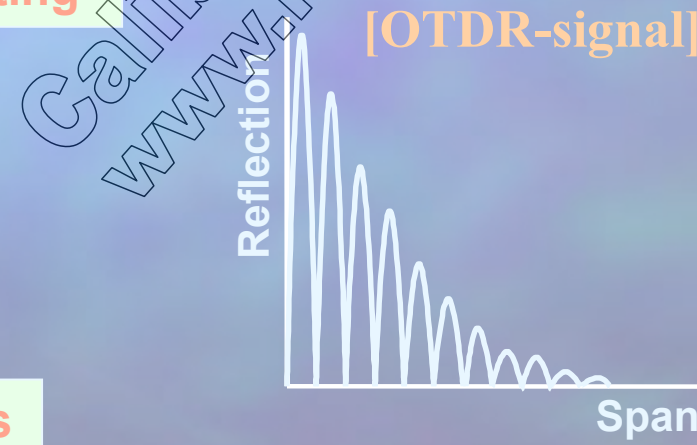
Measurement Starting



Signal analysis



- Light Source Condition
- Wavelength spacing
- Power
- Work Information
- OTDR Condition
 - Index
 - Span
- Averaging Count



Optical Fiber Chromatic Dispersion Distribution Measuring System

Specifications

- ◆ Wavelength C-band
- ◆ Wavelength Spacing 0.4nm to 1.3nm (0.1nm step)
- ◆ Measurement Range 2km / 5km / 10km / 20km / 40km / 80km
- ◆ Dead zoon 300m
- ◆ Measurement repeatability 0.2ps/nm/km
- ◆ Dispersion measurement range Max ± 300 ps / nm / km
- ◆ Measurement time Approx. 3 minutes(The handling time is excluded.)
- ◆ Operating temp 25 ± 5 °C
- ◆ Power requirements Approx. 100 to 240 VAC

Functions

- ◆ Measurement Function Dispersion distribution, Total dispersion
- ◆ Data output External printer
- ◆ Storage Text File
- ◆ File format Measurement data, OTDR Data

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Display

Work Information

Analytical Condition

Measurement Condition

The screenshot displays the main window of the ANDO software. It features a menu bar (File, Parameter, Preview, Measure, Test, Window, Help) and a toolbar. The interface is divided into several sections:

- Work Information:** Fields for Name (ANDO), Kind (SMF20), Serial No. (SMF20), Length 1 (20000 [m]), and Length 2 (0 [m]).
- Analysis Condition:** Fields for Moving Average Count (200), Filter Selection (Auto), Frequency High (400 [nm]), Frequency Low (1500 [nm]), and Loss Adjustment (OFF).
- Measure Condition:** Fields for Wavelength Selection (1), Center Wavelength (1551.39 [nm]), Spacing (1.0 [nm]), Optical Source1 Power (9.30 [dBm]), Optical Source2 Power (13.00 [dBm]), Wavelength (1552.39 [nm]), Range (40 [km]), Index 1 (1.48000), Index 2 (1.50000), Average Count (2*16), Attenuator 1 (dispersion) (0 [dB]), Attenuator 2 (loss) (0 [dB]), and Pulse Width (0.5 [um]).
- OFA:** Field for Current (100 [mA]).
- Control Panel:** Buttons for Edit Work Information, Edit Measure Condition, Edit Analysis Condition, Start Preview, Double Measure (Upper), Double Measure (Lower), Double Measure (Merge), Double Measure (Cancel), Single Measure, Stop Measure, and To 2D Graph Window.

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Analytical functions

Analytical Block

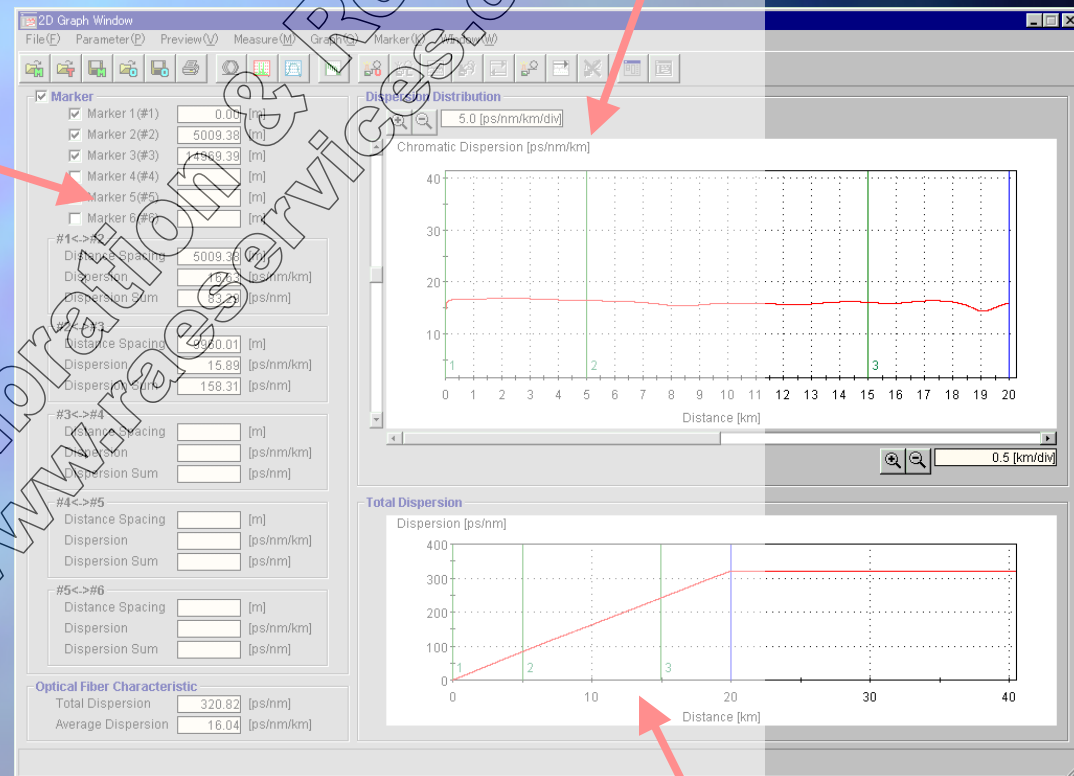
◆ Line Marker (6 places)

◆ Analysis Contents

(Between Line Marker)

- Dispersion Value
- Total Dispersion Value
- Distance

Dispersion Distribution



Total Dispersion

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Measurement Example 20km G.652 (SMF)

