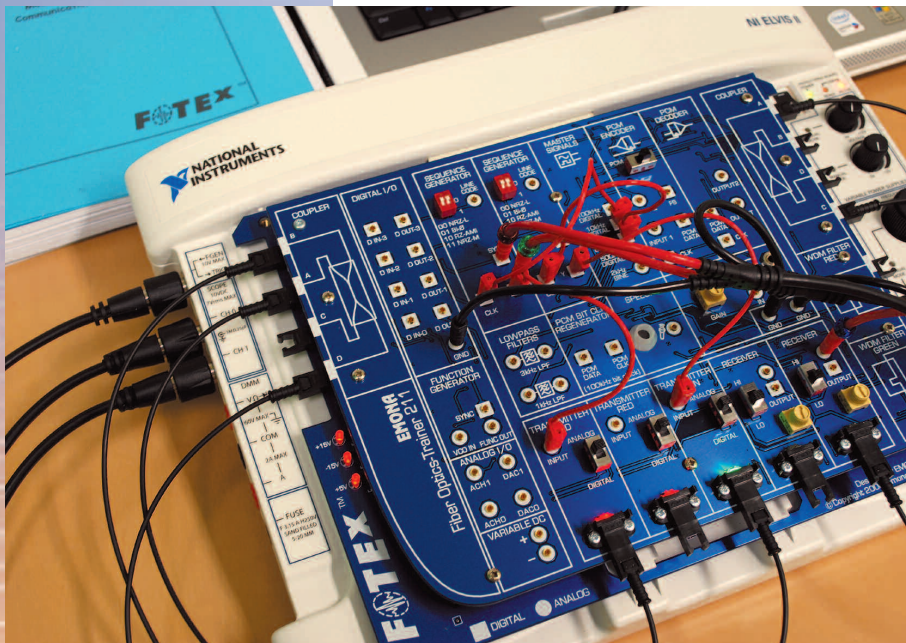


NEW

Complete Course in Modern Fiber Optic Communications with NI ELVIS™

Emona Fiber Optics Trainer ETT-211



**A new, 19 chapter
Lab Manual which
covers:**

-  **Electrical
Communications**
-  **Introduction to Optics
& Fiber Optics**
-  **Fiber Optic
Communications**

FOTEx : Fiber Optics Communications Experimenter

- “Hands-on” experimenting using TIMS™ modeling approach
- Fully integrated with NI ELVIS™ utilizing ELVIS virtual instruments
- Fully self contained with all required optical components, including optical signal sources, couplers, WDM optical filters & receivers
- Includes voice and digital sources, PCM and TDM electronic blocks

FOTEX™

EMONA INSTRUMENTS
www.emona-tims.com



NEW

FOTEx Series II Lab Manual

SECTION 1 – Introduction to the TIMS Hardware

- 1 - An introduction to the NI ELVIS test equipment
- 2 - An introduction to the FOTEx electronics modules

SECTION 2 – Electrical Communications

- 1 - PCM encoding
- 2 - PCM decoding
- 3 - Sampling and Nyquist in PCM
- 4 - Time division multiplexing (TDM)
- 5 - Line coding and bit clock regeneration

* SECTION 3 – Introduction to Fiber Optics

- 1 - An introduction to the FOTEx fibre optics components
- 2 - Guiding light using total internal reflection

- 3 - Losses in fiber optic networks
- 4 - Polarization
- 5 - Bending losses in fiber optic systems
- 6 - Connectors
- 7 - Couplers
- 8 - Wavelength filters

SECTION 4 – Fiber Optic Communications

- 1 - Analog fiber optic communications
- 2 - PCM-TDM 'T1' implementation
- 3 - Fiber optic bi-directional communication
- 4 - Wavelength division multiplexing (WDM)

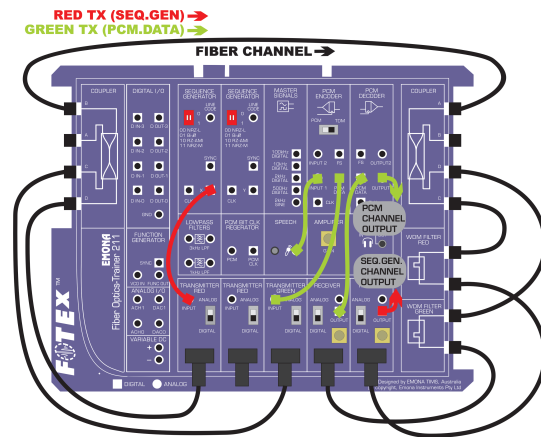
* NOTE: The experiments in Section 3 of the FOTEx Lab Manual require the complete FOTEx-Series-II Kit of fiber optic components to complete all of the experiments.

FULL DUPLEX & WDM FIBER OPTIC EXPERIMENTS - examples



WDM EXPERIMENT

- 2 FOTEx digital signals can be multiplexed using the Red transmitter, Green transmitter & FOTEx Coupler.
- Demultiplexing is performed by the FOTEx Coupler and FOTEx WDM Optical Filters.



FULL DUPLEX EXPERIMENT

- Demonstrating the optical principle that light travelling in one direction is unaffected by light travelling in the opposite direction.

