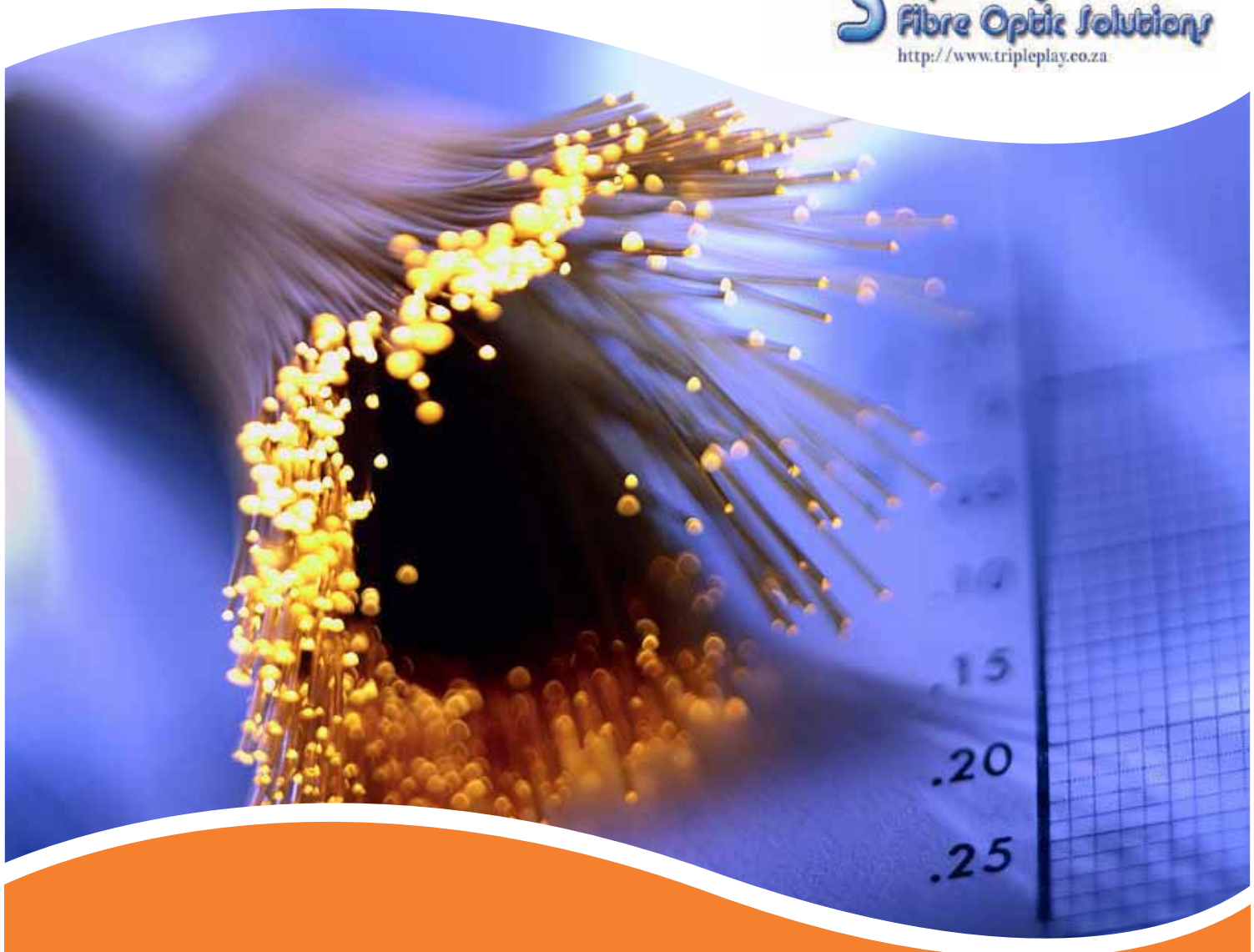


CERTIFIED FIBER OPTIC TECHNICIAN TRAINING

african
e
development
resource centre



3 Triple Play
Fibre Optic Solutions
<http://www.tripleplay.co.za>



eDevelopment House, Nairobi, Kenya

Day 1

Registration and Official opening

Introduction to Fiber Optics

- What is Fiber Optics
- Fiber manufacturing methods(video)
- Fiber Advantages
- Fiber design
- How fiber works
- Fiber types
- Refraction and reflection
- Numerical aperture
- Mode-field diameter
- What is an optical network?
- Optic fiber parameters
- Cable plant hardware
- Frequency
- Wavelength division multiplexing
- Attenuation
- Scattering and absorption
- Dispersion
- Tranceivers
- Amplifiers
- Attenuators
- Cable types
- Loose tube vs tight buffer
- Choosing a cable
- Cable specifications
- NEC ratings
- Cable design criteria

Day 2

Slicing: Fusion, Mechanical and Termination methods

- Choosing a splice type
- Cable preparation techniques
- Fusion splicing featuring time saving techniques
- Splice loss: cause and remedy
- Fusion splicer maintenance and cleaning
- Connectorization
- Connectors types
- Polishing techniques
- Termination Procedures

Hands-on

- Fibre splicing: Using a variety of Fujikura machines:Fujikura 50S, 17S and 20CS
- Connectorization and polish technique

Practical session using the following 3M products

- Fibrlok
- Hot melt connectors
- No polish connectors
- Volition 45
- Patch panel
- 2552 Scotch box

Day 3

Testing and Troubleshooting

- OTDR link characterization and trace basics
- Testing at various wavelengths
- Link distance calculations
- Power budget calculations
- Testing and system certification tips
- Documenting test results
- Testing mid-couplers, patch leaders, and transceivers
- Connector verification
- Troubleshooting procedures
- Types of fiber faults
- Measurement units (dB and watts)
- Cleaning fiber optic connectors
- Emergency restoration procedures

3M Connectors and patch lead cleaning and faultfinding

Hands-on

- Visual fiber tracer
- Visual fault locator
- Visual connector
- Measuring power
- Test loss and OTDR testing

Cable installation and placement techniques

- Installing cables in buildings (trays, conduits, vertical installation etc)
- Pulling practices for installing cables in ducts (centre-pulls & backing)
- Aerial cab erecting techniques
- Installation tools and equipment (support hardware, tension-monitoring, pulling grips etc)
- Handling cable drums/reels
- Working bend radius and tensiles loads for cable installation
- Overhauling fibre optic cable
- Blow fibers
- Floating cables

Day 4

Wrap-up and test issues

Assessment

Closing

