

Fiber Optic Technician's Reference Guide

<i>EIA/TIA Fiber Optic Color Code</i>
<i>Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua</i>
<i>Operating Wavelengths</i>
<i>850 nm (multimode) source: LED</i>
<i>1300/1310 nm (multimode: LED or singlemode: Laser)</i>
<i>1550 nm singlemode Laser (most CATV)</i>
<i>1625 nm singlemode Laser (test wavelength)</i>
<i>MHz to Wavelength Conversion (DWDM applications)</i>
<i>100 MHz = 0.10 nm</i>

Singlemode Performance Specifications and Applications

<i>Acceptable Return Loss</i>	<i>Acceptable Insertion Loss</i>	<i>Boot Color</i>	<i>Common Connector Types</i>	<i>Application</i>
-60 dB	0.30 dB	Green	Angled SC, Angled FC	Analog CATV
-50 dB	0.50 dB	Blue or White	SC, FC, ST, D4, LC	Telephony, Most digital systems
-40 dB	0.50 dB	White or Red	SC, FC, ST	Low performance systems, temporary restoration

Optical Coupler Specifications

<i>Coupler Ports</i>	<i>Ratio</i>	<i>Loss (dB)</i>	<i>Delta Output (dB)</i>
1x2	50/50	3.6/3.6	0.0
1x2	40/60	4.7/2.7	2.0
1x2	30/70	6.0/1.9	4.1
1x2	20/80	7.9/1.2	6.7
1x2	10/90	11.0/0.6	10.4
1x2	5/95	15.1/0.5	14.6



Metric Conversion Chart:

<i>Millimeter (mm)</i>	<i>0.0394 inches (in)</i>
<i>Centimeter (cm)</i>	<i>0.3940 inches (in)</i>
<i>Meter (m)</i>	<i>3.281 feet (ft)</i>
<i>Kilometer (km)</i>	<i>0.621 miles (mi) Analog</i>

Converting mW to dBm:

<i>MW</i>	<i>dBm</i>	<i>MW</i>	<i>dBm</i>
0.1	-10.0	2.0	3.01
0.2	-6.99	3.0	4.77
0.3	-5.23	4.0	6.02
0.4	-3.97	5.0	6.99
0.5	-3.00	6.0	7.78
0.6	-2.20	7.0	8.45
0.7	-1.55	8.0	9.03
0.8	-0.96	9.0	9.54
0.9	-0.45	10.0	10.00
1.0	0.00	11.0	10.41
1.1	0.41	12.0	10.79
1.2	0.79	13.0	11.14
1.3	1.14	14.0	11.46
1.4	1.46	15.0	11.76
1.5	1.76	16.0	12.04
1.6	2.04	17.0	12.30
1.7	2.30	18.0	12.55
1.8	2.55	19.0	12.79
1.9	2.79	20.0	13.01



Phone: (651) 645-9153
 Toll Free: 1-800-328-6820
 Fax: (651) 645-1298
 Website: www.hfcco.com



**Fiber optic splicing,
 testing, and integration.**

HFC Network Services

Your on-demand source for fiber optic splicing, testing, and integration.

Splicing Services

Inside Plant: Headend, Hub, Central Office

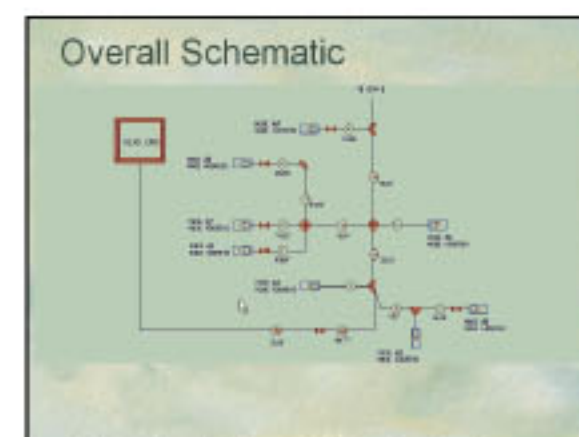
- Installation of fiber management equipment
- Pre-terminated patch panel installation
- Routing of patch cords and IFC cables
- Singlemode and Multimode
- Mechanical Terminations

Outside Plant

- Aerial
- Underground
- Mid-Sheath/Taut Sheath entries
- Node cable installation
- 24-hour emergency restoration
- Field connectorization (SC, FC, ST, APC)

We have the equipment to dispatch to any location.

Testing Services



*Fiber Optic Network Design Software
© copyright Alcoa Fujikura Ltd.*

- **OTDR Testing:**
Singlemode and multimode traces with documentation
- **Pre-Test Fiber Optic Reels:**
Ensure and verify manufacturers specifications before installation
- **PMD (Polarization Mode Dispersion) Testing:**
Verify high-speed fiber optic links before installation
- **OSA (Optical Spectrum Analyzing) Test and proof of WDM/DWDM systems and components before deploying**
- **End to End Light Level Testing:**
*Both singlemode and multimode
Optical Return Loss Testing*

Fiber Optic Network Documentation

Fiber Optic Node

- Installation/Activation
- Proof of Performance
- Node Certification

Integration Services

Fiber Optic Network Design and Layout

- Examine map and design and suggest best applications (1310 nm, 1550 nm, etc.)
- 1310 nm Networks
- 1550 nm Interconnects
- Digital Interconnects

OTN (Optical Transport Node)

- Installation/Activation
- Turnkey Installation
- Electronics Installation and Testing

Get service up fast.

HFC will go into your headend or remote hut, splice, "light up", test, and prepare verification paperwork.

- Add/Drop
- Emergency Restoration
- Remote Locations
- Headend Maintenance
- Taut Sheath/Aerial

When you could use a trained, experienced fiber technician, just call 800-328-6820

