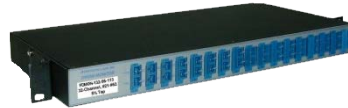**Purpose:**

To describe Fiberdyne's new rack-mount module, which separates and outputs a sample of each DWDM (Dense Wavelength Division Multiplexing) signal, on a link. The sample is a small percentage of the original signal. The output is filtered, providing only the selected DWDM channel. The result is a monitoring capability, which does not interfere with the link.

(32-channel module with SC connectors)

Conceptual Usage:

Add the Monitor Module to an existing, multiplexed link. A small sample, of each signal, is "leaked" to the outputs. Connect measurement/monitoring equipment, such as power meters or network analyzers, to the module outputs. When finished monitoring, disconnect the instruments. The network is left undisturbed.
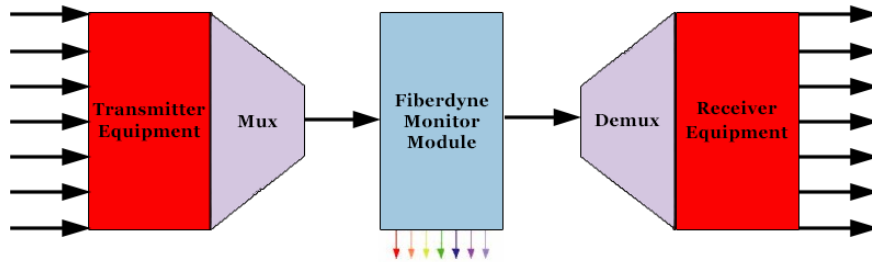
Output low-power samples of each multiplexed signal from the link.
(Uninstrusive monitoring of each and every signal.)

Note: Fiberdyne Monitor Modules can be used with all ITU-compliant, mux/demux modules, including Fiberdyne's mux/demux modules.

Features:

- Channel numbers and wavelength spacing comply with ITU-T G.694.1
- Integrated fiber-optic splitter and DWDM demultiplexer
- Ports clearly labeled with Channel number and with wavelength
- 1U module with reversible brackets, for 19-inch and 23-inch rack frames

Standard Configurations:

- Two standard configurations: (100-GHz/0.8-nm spacing)
    - 32-channel module (ITU channels 21-52) with SC connectors
    - 40-channel module (ITU channels 20-59) with LC connectors
- Standard DWDM channels, according to the *ITU Grid* (ITU-T G.694.1)
- Rack-mount module, 1U high, 19/23-inch rack frames (reversible brackets)

Options:

- Alternate channel configurations are possible
  Note: insertion losses may vary slightly among channels.
- Standard fiber-optic connectors: FC, LC, SC, ST (UPC or APC)
- Pigtail modules also available
- Tap percentage: 10%, 5%, and 1%

Specifications:

Item Description	Unit	Value
Wavelength, Input/output	nm	per ITU-T G.694.1
Channel Spacing	GHz	100
Pass Band, Demux Signal (@ -1 dB)	nm	> 0.3
Optical Power, Input	mW	< 300
Return Loss	dB	>50 UPC, > 60 APC
Polarization Dependent Loss (PDL)	dB	< 0.5
Adjacent Channel Isolation	dB	> 25
Temperature – Operating *	^{O}C	-30 to +70
Temperature – Storage *	^{O}C	-40 to +70
* Humidity (non-condensing)	%	10 to 90
Package dimensions (W x D x H)	inch cm	17 x 6 x 1.72 43.2 x 15.3 x 4.4

Maximum Insertion Loss** (dB) vs. Tap Percentage (for 32/40-channel modules)

Tap (%)	10	5	1
"Common In" to "Common Out"	0.7	0.5	0.3
"Common In" to "Monitor" outputs	17.2	21.7	29.7

** Note: Insertion loss values do not include connector loss.

Part Number Build Matrix

F	D	M	O	N	-	X	X	X	-	X	X	-	X	X	X
1	2	3	4	5		6	7	8		9	10		11	12	13
F	D	M	O	N	-				-			-			

FDMON = Fiberdyne Labs "Dense-WDM Monitor Module

Digit	Description	Options
6th	Channel Spacing	1 = 100 GHz 2 = 200 GHz
7th & 8th	Number of channels	32 = 32-channel, Ch #'s 21-52 (standard) 40 = 40-channel, Ch #'s 20-59 (standard) (Note: for other configurations, list DWDM Channels in "Special Instructions.")
9th & 10th	Tap Percentage	01 = 1% (99/01 split) 05 = 5% (95/05 split) 10 = 10% (90/10 split) 1 = Rack-mount, 1U, 19/23-inch
12th	Connection Type	1 = Adapter, Bulkhead 2 = Pigtail, heavy-duty (e.g. 3-mm or 2-mm)
13th	Connector Style	1 = FC 2 = FC/APC 3 = SC 4 = SC/APC 5 = ST 6 = LC X = other; must list in "Special Instructions"

Note: add "Special Instructions," to list custom configurations.
For example: if 7th & 8th digits are "04", then list the following.
"Special Instructions: 4-channels, Ch #'s 21-24".