OTPN-MDN-870 - Fiber Optic <u>M</u>ini <u>D</u>igital <u>N</u>ode

Features/Benefits

Smallest full-featured CATV node on the market!

50 to 870MHz forward bandwidth accommodates up to 110 channels on all models.

Up to +38dBmV RF output signal over the entire optical input range, allowing a greater number of drops or splits.

Excellent CATV performance with CNR up to 54.5dB, CSO of -63dB, and CTB of -66dB.
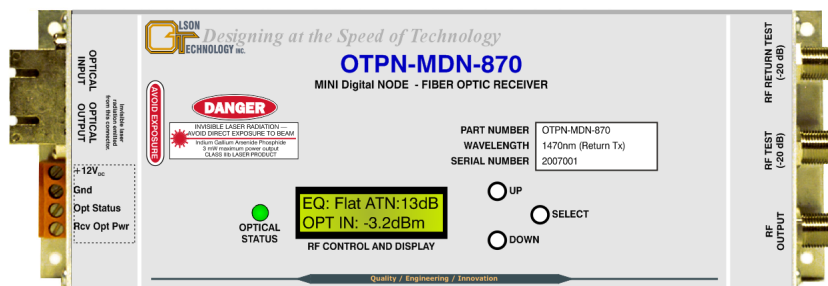
Ultra-wide usable optical input range, -8dBm to +2dBm, permits the use of a lower power transmitter, lowering system cost.

Built-In digital optical power meter for easy setup and maintenance.

Capable of responding to changing system requirements with field-installable return path modules.

Digitally adjustable built-in RF attenuator and equalizer settings allow for accurate adjustment of parameters via front panel buttons and the LCD screen.

SC/APC optical connector standard. FC/APC option available (contact factory).

The Olson OTPN-MDN-870 Fiber Optic Mini Digital Node (MDN) provides CATV headend operators with a unique node with an extensive array of features, small size and low-cost. The MDN is fully compatible with Olson's line of forward path transmitters and return path receivers. The MDN provides an output of +38 dBmV of RF over the entire optical input range, allowing multiple RF splits without the use of an external RF amplifier. The Mini Digital Node is unique because it operates over a ultra-wide optical input range of -8dBm to +2dBm without degrading performance.

A unique built-in LCD display and digital control buttons allow the operator to quickly and easily set the tilt and RF output levels of the unit. There is no need to open the MDN to replace fixed pads and equalizers. The unit remembers specific settings even if power is lost. The OTPN-MDN-870 can be ordered either with or without a return path module.
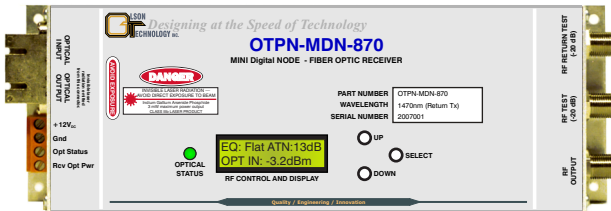
The return path module may also be ordered separately, allowing for a quick factory upgrade or laser replacement. The return path module utilizes a wide variety of laser types including 1310nm DFB, 1550nm DFB and CWDM DFB lasers. The modular design of the MDN offers unparalleled flexibility and performance demanded by today's broadband professional.

The unit includes separate -20dB test points for the forward and reverse RF signals. An alarm signal and an analog signal proportional to the light level are also provided. The node ships with the mating universal AC power supply.

Optical and Electrical Characteristics (with SM 9/125µm Fiber)

Receiver	Min	Typ	Max	Units
Operating Wavelength	1290		1610	nm
Optical Input Power	-8.0		+2.0	dBm
Channel Loading			110	Ch.
Bandwidth	50		870	MHz
Flatness (peak-to-valley)			2	dB
RF Output Level		+38		dBmV
Output Return Loss (No Rtn Tx)		16		dB
Output Return Loss (w/ Rtn Tx)		14		dB
Output Impedance		75		Ohms
Backreflection Tolerance			-50	dB
Composite Second Order (CSO)		-63		dBc
Composite Triple Beat (CTB)		-66		dBc

Return Path Modules	Min	Typ	Max	Units
Operating Wavelength	1290	1310	1330	nm
Operating Wavelength	1470	1550	1610	nm
Optical Output (DFB Laser)		3.0		mW
Optical Output (CWDM Laser)		3.0		mW
Bandwidth	5		42	MHz

Electrical and Environmental Characteristics

	Min	Typ	Max	Units
Power Supply Voltage	+10	+12	+15	V_{DC}
Power Dissipation		10		Watts
Operating Temp. Range	0		+55	°C
Storage Temp. Range	-20		+70	°C
Humidity	5		95	%

Physical Characteristics

	Min	Typ	Max	Units
Weight		10		oz.
		285		g
Dimensions	8.45 x 2.95 x 1.75			in
	215 x 75 x 44.5			mm

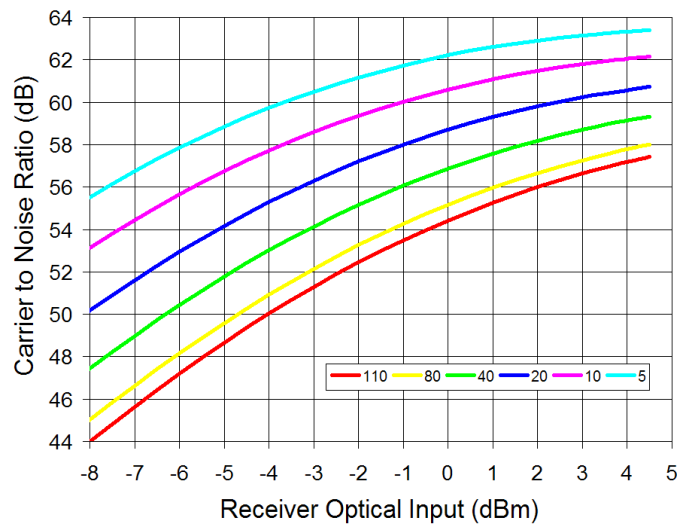Figure 1 - Typical CNR with Six Different Channel Loadings

OTPN-MDN-870 Part Numbers

Configuration	Node with Return Tx	Return Tx Only
No Return Path Tx	OTPN-MDN-870-NN	
1310nm DFB, 3.0mW	OTPN-MDN-870-NB	OTPN-MDN-870-TB
1550nm DFB, 3.0mW	OTPN-MDN-870-NC	OTPN-MDN-870-TC
CWDM DFB, 3.0mW	OTPN-MDN-870-ND/xx	OTPN-MDN-870-TD/xx

xx = CWDM wavelength. e.g. 47 = 1470nm. Valid values are 47, 49, 51, 53, 55, 57, 59 & 61

Note: OTPN-MDN-870 nodes ship with the mating universal AC power supply, Model OTPS-12A-4W