

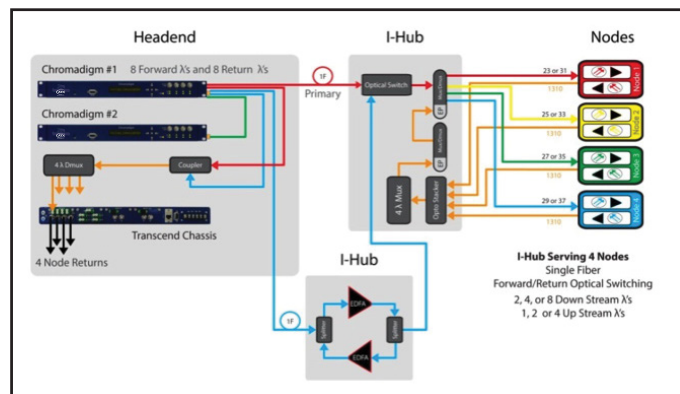
# I-HUB

## Opto-Stacker Modules

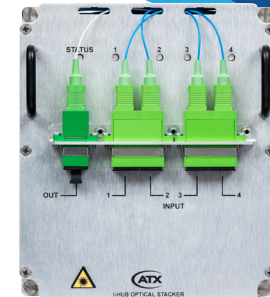
ATX's IHUB-OPSTKM-XX-C opto-stacker is a high density, high performance frequency stacker for return path applications which enables quadrupling of return path bandwidth. Four optical return signals (1270-1620nm) are frequency stacked onto a single 1550nm ITU channel at the I-HUB & transported back to the headend where it is destacked into the original 5-42/85 MHz return path RF streams.

### Features

- Five compact modules in a single I-HUB chassis
- Quadruples return path bandwidth
- SNMP remote monitoring
- -40°C to +65°C operating temperature
- Wide input optical range of 1270-1620nm
- Auto adjusts for optical input over a 15 dB range



Block Diagram



Opto-Stacker  
(front view)

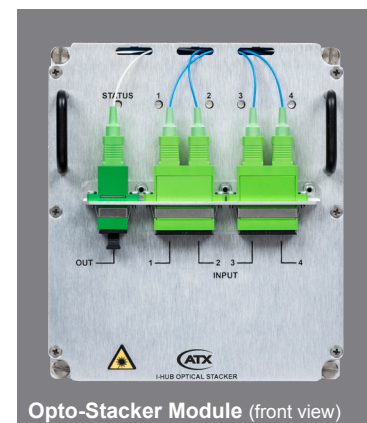
### Applications

ATX's opto-stacker modules have been deployed for numerous applications to transport return signals to the headend.

- Node segmentation
- Distribution networks
- RFoG applications
- FTTx networks

### Key Benefits

- Ideal for networks with limited available optical fibers
- Handles any optical input from 1270-1620nm making it insensitive to existing node returns
- Frequency stacking between 1 GHz & 2 GHz for second order free performance
- Up to 60 km transmission without EDFAs
- Capable of bringing back 40 ITU channels or 160 streams on a single fiber, making it ideal for RFoG
- A fully segmented node's four 5-85 MHz returns can be transported back to the headend on the same downstream fiber
- Can operate without a dedicated DWDM Mux/DMux



Opto-Stacker Module (front view)

# Specifications

## Opto-Stacker

IHUB-OPSTKM-***	IHUB-OPSTKM1-***	IHUB-OPSTKM2-***
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LINK PERFORMANCE				
NPR/DYNAMIC RANGE	5-42 MHz <sup>(1)</sup>	40/15 dB		
	5-85 MHz <sup>(1)</sup>	40/10 dB		
CAPACITY	5-42/85 MHz	4 Return Segments		
	5-204 MHz	2 Return Segments		
OPTICAL INPUT				
BANDWIDTH <sup>(2)</sup>	1270-1620nm			
INPUT POWER	MINIMUM	-10 dBm	-15 dBm	-22 dBm
	TYPICAL	-3 dBm	-6 dBm	-18 dBm
	MAXIMUM	+3 dBm	0 dBm	-14 dBm
CHANNEL GAIN ADJUSTMENT	0 to +30 dB			
OPTICAL OUTPUT POWER				
OPTICAL OUTPUT POWER	MINIMUM	+7.5 dBm		
	TYPICAL	+8 dBm		
	MAXIMUM	+8.5 dBm		
WAVELENGTH	ITU Channel 53 to 23 on 200 GHz Grid			
OUTPUT POWER VARIATION OVER TEMPERATURE	± 0.2 dB			
CONNECTOR TYPE WITHOUT EXPRESS PORT OPTION	SC/APC			
EXPRESS PORT OPTION				
AVAILABILITY	Optional			
CONNECTOR TYPE ON INPUT & EXPRESS PORTS	LC/APC			
OPTICAL BANDWIDTH	1545-1562nm			
REFLECT BAND	1300-1620nm			
INSERTION LOSS	< 0.6 dB			
POWERING				
POWER CONSUMPTION	18W			
ENVIRONMENTAL				
OPERATING TEMPERATURE	-40°C to +65°C (-40°F to +149°F)			
STORAGE TEMPERATURE	-40°C to +85°C (-40°F to +185°F)			
HUMIDITY	Max. 85% Non-condensing			
PHYSICAL				
DIMENSIONS	5.77"H x 5.03"W x 2.07"D (14.66H x 12.78W x 5.26D cm)			
WEIGHT	2.0 lbs (0.91 kg)			

**NOTES:**

- (1) Total link performance measured from RF input to Opto-stacker to RF output of TSH-REM-RX4-C TranScend Destacker over 15 dB optical link with 25 km fiber with pseudo-random noise loading.
- (2) Without express port option.

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