

SOLiD ALLIANCE™ TR



ALLIANCE-TR is SOLiD's multi-operator, neutral host Distributed Antenna System (DAS) that efficiently delivers wireless RF signals into any indoor or outdoor location difficult to cover with traditional macro networks.

In ALLIANCE-TR, the OEU is an optional fiber MUX device designed to extend the DAS throughout multiple buildings or campus locations while limiting the amount of fiber required.

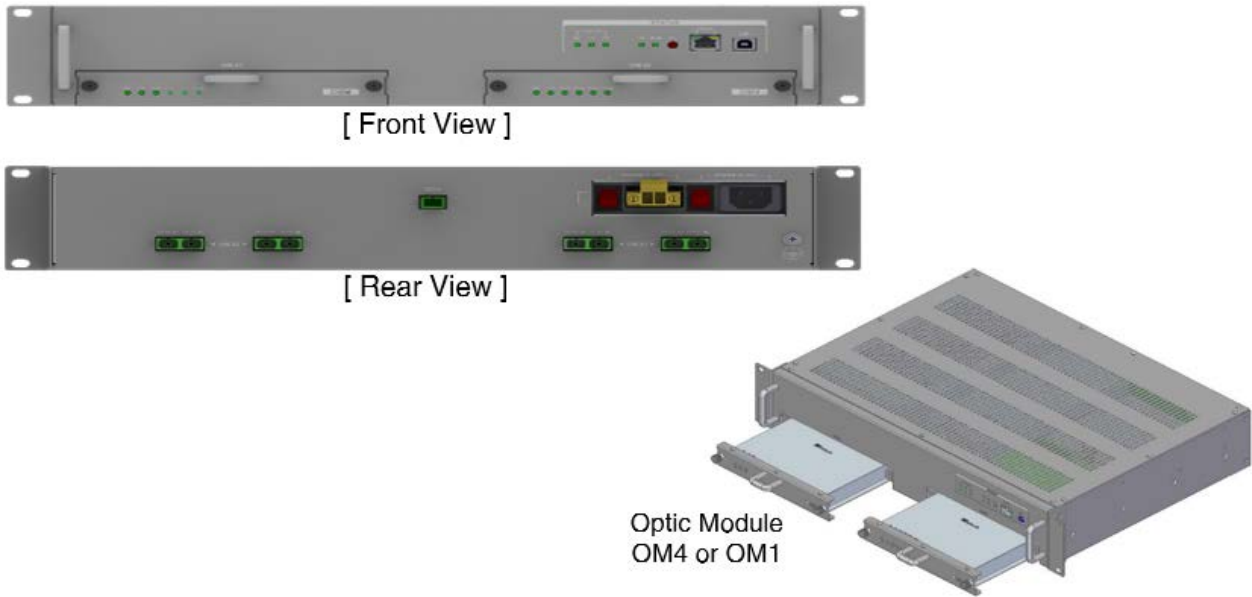
- Wave Division Multiplexing
- Modular design – up to 8 optical ports for connecting remote units
- 5 or 10dB_o link budget to ROUs
- Single fiber strand per ROU
- Single Mode, SC-APC connection
- Compact form factor – rack mountable

Description

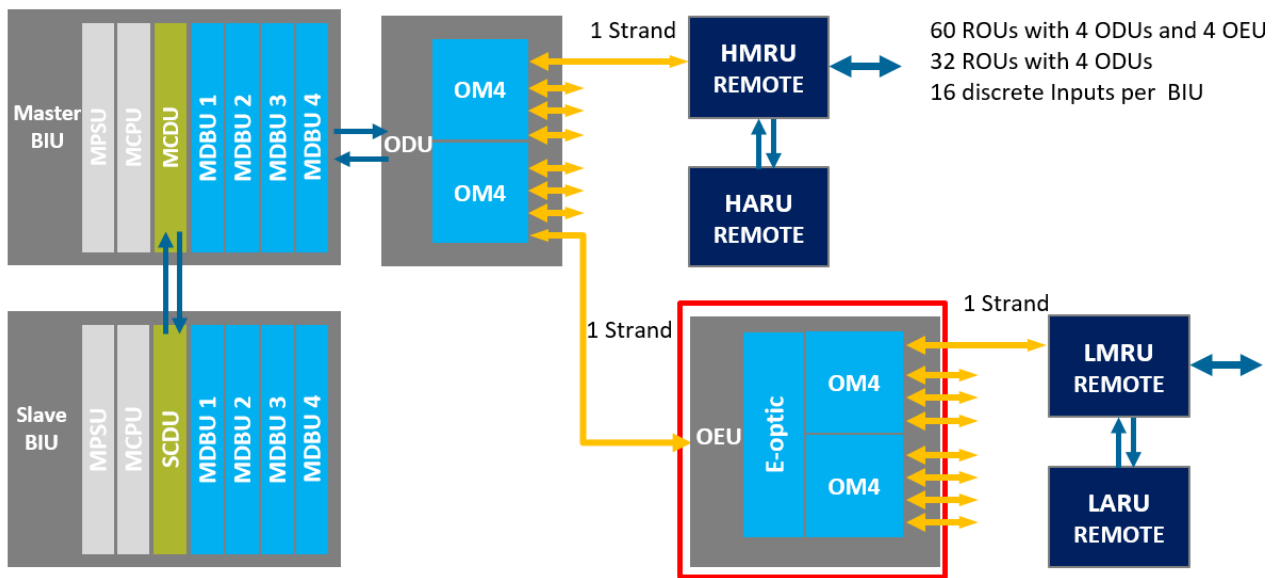
The Optical Expansion Unit (OEU) is an optical multiplexing (MUX) device designed to connect a DAS throughout multiple buildings or structures across a campus environment. The OEU is an optional component, and is primarily used in highly distributed systems or systems with limited fiber links available for connecting remote optic units (ROUs).

For example, when a signal is brought to a building, it utilizes existing fiber. To bring service to eight ROUs in another building would require eight strands of fiber. By utilizing the OEU, only one strand of fiber is needed, thereby simplifying installation and reducing capital costs.

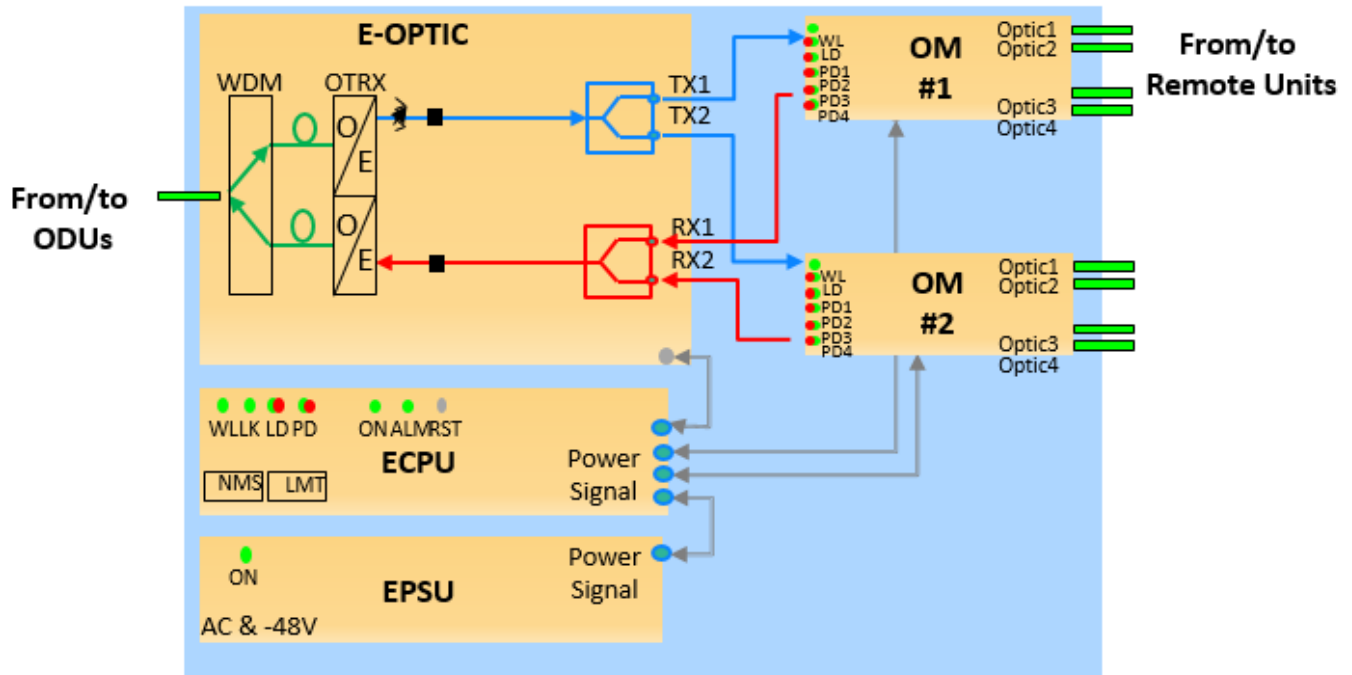
The OEU can support a maximum of two optic modules, either 4-port or 1-port versions, and these are the same modules as used in the Optical Distribution Unit (ODU). When two 4-port modules are used, the OEU can drive up to eight ROUs. The optical link between the OEU and ROU is 5dB_o for the 4-port optic module and 10dB_o for the 1-port module.



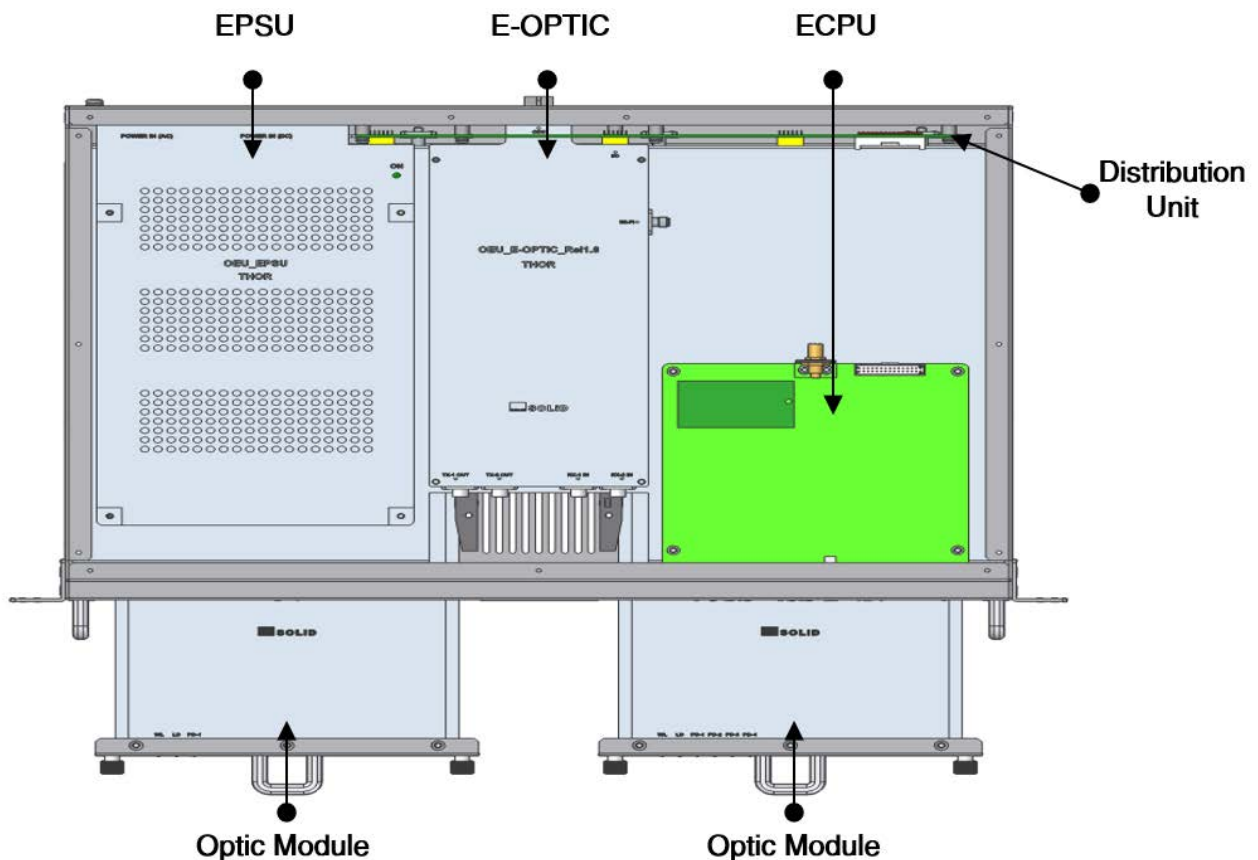
System Configuration



Functional Block Diagram



Parts Assemblies



Parts Description

OEU Common Part


Part	Sub-unit	Description	Remarks
OEU Common Part	E-OPTIC	Expansion Optical Module Converts downlink optical signals to RF signals Converts uplink RF signals to optical signals	
	EPSU	Expansion Power Supply Unit (AC and DC) Input power: DC -48V. AC 110/220V Output power: 12V	
	EPCU	Expansion Central Processor Unit Monitors and controls the system status	
	DU	Distribution Unit Distributes power and signals to optic modules Provides connection port for management PC Provides front LED indicators for alarm conditions	
	Shelf	19" rack, 2U	

Optic Modules

Part	Description	Remarks
ODU/OEU_OM4	4-Port Optic Module Unit Converts TX RF signals into optical signals Converts RX optical signals into RF signals Provides up to 4 optical ports	The same optic modules are used in ODU and OEU. Max 2 per chassis
ODU/OEU_OM1	1-Port Optic Module Unit Converts TX RF signals into optical signals Converts RX optical signals into RF signals Provides 1 optical port	
OM_BLK	Blank card for port termination	

Accessories

The following items ship with the OEU.

Item	Description	Remarks
OEU DC -48 Power cable	OEU DC -48 Power cable, 2m [Terminal Block Connector (20020517M021B01LF, by FCI) at one end, AWG #12 Wire at the other end] For AC Power units, SOLiD recommends AC110/220V power cable [IEC-320, C14 (Plug)]. The AC power cable is not supplied by SOLiD due to different requirements for each country. 	Qty 1
Ground Connection	M4 Screw SOLiD recommends AWG #10 ~ 12 ground cable with lugged end. Ground cable is not included with OEU.	Qty 1

Specifications

Regulatory Conformity at System Level

Category	Specification
Type Approval & Certification	EN 60950-1
EMC	EN 301 489-01 EN 301-489-8 EN 301-489-23

General Data

Category	Specification		
Frequency Range	135MHz ~ 2700MHz		
Mounting Type	19" Rack Mounting		
Optic In / Out Port Type	SC/APC		
Front Panel LED Indicator	ON	Power on: Green	
	ALM	Green: OEU system normal RED: OEU System alarm	
	E-OPTIC	LD	Normal: Green, Alarm: Red
		PD	Normal: Green, Alarm: Red
		WL	Green LED flickering: Communication Status with BIU
	OM	LD	Power on: Green, Alarm: Red
		PD1 ~PD4	Power on: Green, Alarm: Red
WL		Green LED flickering: Communication Status with Remote Optic Unit	
Maximum Power Consumption	65W at full load (Including 2 Optic Modules)		
Total Max Weight	7.2kg at full load (Including 2 Optic Modules)		
Size (W x H x D)	482.6 (19") x 88.1 (2U) x 318.4 mm		

Environmental Data

Category	Specification
Environmental Condition	In-building use (OEU is designed to be installed in the equipment room.)
Operating Temperature (°C)	+5°C ~ +50°C
Operating Humidity	5~ 90% non-condensing

Power Consumption, Weight, Volume, MTBF

Part Name	Power Consumption (W)	Weight (kg)	Dimension W x H x D (mm)	MTBF [Year]
OEU_C	25	4.5	482.6 x 88.1 x 318.4	43
ODU/OEU_OM4	15	1.34	175 x 30.1 x 348.7	43
ODU/OEU_OM1	15	1.34	175 x 30.1 x 348.7	43
OM_BLK	-	0.24	175 x 30.1 x 320.2	-

Optical Data

Part		Specification	Remarks
Connector	RF	PLUG-IN FEMALE / 50ohm	
	Optic	SC / APC, Single mode (STEP FERRULE)	
	Power/Signal	D-SUB 3 Row 26 PIN MALE	
E-OPTIC	Laser Diode	1310nm, 10mW DFB Laser	
	Photo Diode	1550nm, 10mW non-destructive	
OM	Laser Diode	1310nm, 10mW DFB Laser	
	Photo Diode	1550nm, 10mW non-destructive	
BIU ~ OEU Optic Loss		1dBo~ 5dBo @ OM4 1dBo ~ 10dBo @ OM1	BIU ~ OEU ~ROU Max optic loss 15dBo
OEU ~ Remote Unit Optic Loss		1dBo~ 5dBo @ OM4 1dBo ~ 10dBo @ OM1	

OEU Interconnection with ODU and Remote Units

To connect the ODU to the OEU and OEU to Remote Units, SOLiD recommends single mode OS1 type fiber optic cable with SC/APC connectors. If fiber connectors collect dirt, clean them using alcohol.

SOLiD does not provide fiber optic cables with the DAS equipment. When purchasing, installing, and maintaining the optic cables, make sure to follow the manufacturer’s instructions.

Each BIU can drive up to four OEUs: two connected to ODU1 and two to ODU2 (ODU3 and ODU4 do not support OEUs). In ODUs 1 and 2, OEUs must be connected to port 4 of each optic module, when using the 4-port module.



Ordering Information

Optical Expansion Unit (OEU) and Optic Modules

Part Name	Order Description
TR_OEU_C	ALLIANCE-TR Optical Expansion Chassis
TR_ODU/OEU_OM4	ALLIANCE-TR 4 port Optic Module (5dBo)
TR_ODU/OEU_OM1	ALLIANCE-TR 1 port Optic Module (10dBo)
TR_OM_BLK	ALLIANCE-TR OM blank card for port termination

Accessories

Part Name	Order Description
TR_OEU_DC_CA	ALLIANCE-TR OEU DC -48 Power cable, 2m



Brazil: Av. Paulista, 2300, Andar Pilotis, CEP 01310-300, São Paulo – SP, Brazil
Mexico: Av. Juan Vázquez de Mella 481, Edificio CAD, Segundo Piso, Oficina 42
 Col. Los Morales, Del. Miguel Hidalgo, Polanco, C.P 11510, Ciudad de México