



ECLIPSE™ PACKET NODE

MANAGE EXPLOSIVE NETWORK GROWTH

Eclipse™ Packet Node is the industry-leading wireless backhaul solution for 4G/LTE/WiMAX network evolution. Eclipse Packet Node delivers a unique combination of scalable high capacity packet transport, intelligent IP networking and key convergence features.



TRANSFORMING BACKHAUL NETWORKS TO ALL-IP

HIGH SPEED PACKET TRANSPORT

Eclipse Packet Node represents the very latest generation of microwave transmission, with a combination of advanced features to enable link speeds up to 2 Gbit/s from a single compact and modular unit.

HIGHEST NODAL PACKET CAPACITY

New Data Packet Plane accelerates nodal networking with 5 Gbit/s of packet-handling capacity. Ethernet/IP data is processed independently of TDM traffic in Hybrid node configurations.

ENHANCING FREQUENCY EFFICIENCY

Adaptive Coding and Modulation, co-channel operation with XPIC, and optimized packet transmission drives more throughput than ever before, while also preserving valuable frequency resources.

ADVANCED IP INTELLIGENCE

The latest generation embedded Layer 2/3 Ethernet switch provides sophisticated prioritization, QoS controls and traffic monitoring, in addition to link and network resiliency options.

ESSENTIAL CONVERGENCE FEATURES

Enabling network migration through comprehensive Hybrid TDM+IP architecture, support for legacy TDM natively or via embedded Pseudowire functionality, combined with Distributed Sync feature.

HIGH SPEED ALL-IP TRANSPORT

Eclipse Packet Node incorporates all the necessary features required to support a high speed all-packet Ethernet/IP backhaul network, all in the most compact nodal architecture available on the market.

This includes native IP transmission for maximum throughput efficiency with lowest possible latency. A built-in Ethernet switch enables the radio to intelligently adapt to radio link conditions and manage priority traffic for highest availability.

For operators who want to migrate their networks to IP sooner, Eclipse Packet Node enables TDM transport over an all-packet network, through an integrated Pseudowire functionality, removing the need to use additional external devices.

To bridge the synchronization gap, Eclipse Packet Node also supports unique Distributed Sync functionality that enables operators to retain their trusted TDM sync capability, even in an all-IP backhaul network. Integrated packet-based network synchronization, including IEEE 1588v2 and Synchronous Ethernet, is also supported.



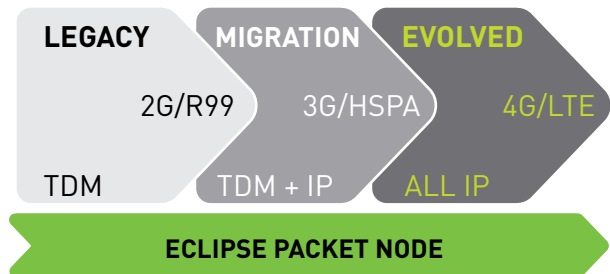
NETWORK CONVERGENCE

Eclipse Packet Node enables a smooth evolutionary path without forklift upgrades, to lower operational costs and reduce the risk of stranded investments or from taking the wrong technology path.

Hybrid native mixed-mode operation supports both new IP and existing TDM services, side by side over the same backhaul infrastructure. Aviat's Super-PDH™ technology provides the most comprehensive networking support for legacy TDM traffic.

Our Eclipse Adaptive Optimization™ enables bandwidth recovery and frees existing link capacity to make way for the introduction of new packet data, without requiring additional backhaul frequency spectrum.

Build upon your existing investments with Eclipse Packet Node for an evolved approach to deploying and migrating to all-IP.



SYSTEM PARAMETERS

GENERAL																	
Operating Frequency Range		6 to 38 GHz															
Throughput/Capacity Range Options		Native Carrier		8 - 366 Mbit/s													
		Ethernet/IP															
		Native TDM		1 - 100x E1													
Modulation Options		Fixed or Adaptive		QPSK, 16, 32, 64, 128, 256 QAM													
Error Correction		Fixed or Adaptive		LDPC													
				24 tap T/2 equalizer													
STANDARDS COMPLIANCE																	
EMC		Indoor Equipment		EN 301 489-1, EN 301 489-4 (EN 55022 Class A)													
Operation		Outdoor Equipment		ETS 300 019, Class 4.1													
Operation		Indoor Equipment		ETS 300 019, Class 3.1E													
Safety		IEC 60950-1/EN 60950-1															
Radio Frequency		EN 302 217-2-2															
ENVIRONMENTAL																	
Operating Temperature		Indoor Equipment		Guaranteed		-5° to +45° C [23° to +113° F]											
				Extended [1]		-5° to +55° C [23° to +131° F]											
		Outdoor Equipment		Guaranteed		-33° to +55° C [-27° to +131° F]											
				Extended [1]		-50° to +65° C [-58° to +149° F]											
Humidity		Indoor Equipment		Guaranteed		0 to 93%, non-condensing											
		Outdoor Equipment		Guaranteed		0 to 100%											
Altitude				Guaranteed		4,500 meters (15,000 ft)											
FAULT AND CONFIGURATION MANAGEMENT																	
Protocol		SNMP v2 & v3															
Interface, electrical		Ethernet 10/100 Base-T or RS232															
Interface, physical		RJ-45															
Performance Monitoring		To ITU-T Rec. G.826															
Routing Protocols supported		Static and dynamic routing, RIP I, RIP II, OSPF															
Local/remote Configuration Tool		Eclipse Portal															
Element Management		Aviat Networks ProVision®															
Network Management		Aviat Networks NetBoss®															
Engineering Orderwire		Via optional VoIP handset or external RS-422 Digital Orderwire Unit															
EMISSION DESIGNATOR																	
Bandwidth		7MHz		13.75MHz		14MHz		27.5MHz		28MHz		55MHz		56MHz			
Emission Designator		QPSK		7M00G7W		13M75G7W		14M0G7W		27M5G7W		28M0G7W		55M0G7W		56M0G7W	
		QAM		7M00D7W		13M75D7W		14M0D7W		27M5D7W		28M0D7W		55M0D7W		56M0D7W	
DISPERSIVE FADE MARGIN (DFM)	CAPACITY	CHANNEL BW	MODULATION	SYMBOL RATE (MBAUD)	GROSS BIT RATE (MBIT/S)	DFM (DB)											
	8-10Mbit/s	7 MHz	QPSK	6.2	12.4	57											
	18-21 Mbit/s	7 MHz	16 QAM	6.2	24.8	51											
	29-31 Mbit/s	7 MHz	64 QAM	6.2	37.2	52											
	41-44 Mbit/s	7 MHz	256 QAM	6.2	49.6	65											
	17-21 Mbit/s	14 MHz	QPSK	12.1	24.2	71											
	35-43 Mbit/s	14 MHz	16 QAM	12.1	48.4	65											
	58-64 Mbit/s	14 MHz	64 QAM	12.1	72.6	61											
	82-88 Mbit/s	14 MHz	256 QAM	12.1	96.8	55											
	36-44 Mbit/s	28 MHz	QPSK	24.7	49.4	67											
	73-89 Mbit/s	28 MHz	16 QAM	24.7	98.8	56											
	105 Mbit/s	28 MHz	32 QAM	24.7	123.5	54											
	121-133 Mbit/s	28 MHz	64 QAM	24.7	148.2	52											
	155 Mbit/s	28 MHz	128 QAM	24.7	172.9	49											
	170-181 Mbit/s	28 MHz	256 QAM	24.7	197.6	46											
	74-90 Mbit/s	56 MHz	QPSK	49.85	99.7	53											
	147-182 Mbit/s	56 MHz	16 QAM	49.85	199.4	50											
	246-268 Mbit/s	56 MHz	64 QAM	49.85	299.1	43											
	344-366 Mbit/s	56 MHz	256 QAM	49.85	398.8	37											

All specifications are typical values unless otherwise stated, and are subject to change without notice.

[1] Over full Extended Operating Temperature Eclipse may be subject to reduced performance. Contact Aviat Networks for more details.

ECLIPSE NODE, INTELLIGENT NODE UNIT (INU) COMMON UNITS

IDC, INDOOR CHASSIS 1RU		
Dedicated plug-in card slots		2 (NCC, FAN)
Universal plug-in card slots		4
Maximum number of ODUs supported		3
Dimensions (including mounting brackets)		44mm (1RU) x 482mm (19in) x 282.5mm (11.1in)
Weight	Empty	2.6 kg (5.8 lb)
IDCE, EXTENDED INDOOR CHASSIS 2RU		
Dedicated plug-in card slots		3 (NCC, NPC, 2RU FAN)
Universal plug-in card slots		9
Maximum number of ODUs supported	Combination of RAC 60/6X and RAC 30/3X/40/4X	6
	RAC 60 only	5
	RAC 6X only	4
Dimensions (including mounting brackets)		88mm (2RU) x 482mm (19in) x 282.5mm (11.1in)
Weight	Empty	4.8 kg (10.6 lb)
NCC, NODE CONTROLLER CARD		
NMS LAN interface	Type	4-port 10/100baseT Hub
	Connector	4x 8-pin RJ45
Serial Maintenance Interface	Standard	Complies to TIA/EIA-561
	Speed	1200 bit/s to 115.2 kbit/s
	Connector	8-pin RJ45
Configuration memory, removable		Up to 128 Mbyte CompactFlash card (on-board)
Electrical	DC Supply input range	-40.5 to -60 VDC
	DC Fuse type and rating	25A fast-acting ceramic body cartridge
	Over voltage protection	< -70 VDC
	Under voltage protection	-32 VDC
	DC connector	2-pin DSUB power type
Power consumption (including DC/DC efficiency)		< 4 W
LED Indicators		2x Tri-state ['Test', 'Status']
Dimensions (including front panel and rear connector)		22mm (0.5RU) x 260mm (10.2in) x 268mm (10.6in)
Weight		0.6 kg (1.35 lb)
NPC, NODE PROTECTION CARD		
Electrical	DC Supply input range	-40.5 to -60 VDC
	DC Fuse type and rating	25A fast-acting ceramic body cartridge
	Over voltage protection	< -70 VDC
	Under voltage protection	-32 VDC
	DC connector type	2-pin DSUB power type
Power consumption (including DC/DC efficiency)		< 4 W
LED Indicators		2x Tri-state ['Protect', 'Status']
Dimensions (including front panel and rear connector)		22mm (0.5RU) x 130mm (5.1in) x 268mm (10.6in)
Weight		0.4 kg (0.88 lb)
FAN, FAN CARD 1RU		
Fans		2
LED Indicators		1x Red LED ('Fault')
Power consumption		< 2 W
Dimensions (including front panel and rear connector)		44mm (1RU) x 40mm (1.6in) x 264mm (10.4in)
Weight		0.23 kg (0.5 lb)
FAN, FAN CARD 2RU		
Fans		2
LED Indicators		1x Red LED ('Fault')
Power consumption		< 4 W
Dimensions (including front panel and rear connector)		88mm (2RU) x 40mm (1.6in) x 264mm (10.4in)
Weight		0.46 kg (1.0 lb)
AUX, AUXILIARY SERVICES CARD		
Aux Data Channels		3
Interface		RS232 or RS422
Line Rate	Asynchronous	1.2 to 19.2 kbit/s
	Synchronous	64 kbit/s
Aux Data Connector		High Density DSUB26
External Alarm Inputs	TTL Inputs	Up to 6 ⁽¹⁾
	TTL input thresholds	0.8V min low, 2.0V min high
External Alarm Outputs	Form C Relays (NC)	Up to 4 ⁽¹⁾
Alarms Connector		High Density DSUB15
LED Indicators		1x Tri-state ('Status')
Power consumption		< 3 W
Dimensions (including front panel and rear connector)		22mm (0.5RU) x 130mm (5.1in) x 268mm (10.6in)
Weight		0.35 kg (0.77 lb)

RADIO ACCESS CARDS (RAC)

RAC 60/RAC 6X		
IF connector		SMA ^[1]
IF interface	Transmit	311 MHz, -8.0 to -12.0 dBm
	Receive	126 MHz, -8 to -27 dBm
Packet Plane Interface, electrical	Interface	1x 1000baseT
	Connector	RJ45
LED Indicators		2x Tri-state ('Online', 'Status')
RFUs supported		ODU300hp
Capacities supported		8 - 366 Mbit/s (Nx E1 + Ethernet)
Modulations supported	Fixed and Adaptive Coding & Modulation	QPSK, 16, 32, 64, 128, 256QAM
XPD Improvement	RAC 6X only	20 dB
XPIC connectors	RAC 6X only	2x SMB
Power consumption	RAC 60 / RAC 6X	12 W / 14 W
Dimensions (including front panel and rear connector)		22mm (0.5RU) x 130mm (5.1in) x 268mm (10.6in)
Weight		< 0.38 kg (0.84 lb)

All specifications are typical values unless otherwise stated, and are subject to change without notice.

[1] For applications requiring additional alarm inputs or outputs, multiple AUX cards can be installed if free INU/INUe slots are available.

DATA ACCESS CARDS (DAC)

GENERAL				
LED Indicators				1x Tri-state ('Status')
Power consumption (nominal)				< 3 W
Dimensions (including front panel and rear connector)				22mm (0.5RU) x 130mm (5.1in) x 268mm (10.6in)
Weight (nominal)				< 0.34 kg (0.74 lb)
DAC 6E - CARRIER ETHERNET/IP				
Backplane Throughput				200 Mbit/s
Maximum Capacity				
Packet Plane Throughput				2 Gbit/s
Maximum Capacity				
Interface Parameters		Standard	Option	Option
Ethernet Interface, fixed electrical	Interfaces	3x 10/100/1000BaseT		
	Connectors	3x 8-pin RJ45		
Ethernet Interface, SFP electrical	Interfaces		1x 1000BaseT	1x 1000BaseT
	Connectors		LOS enabled 1x RJ-45 (SFP)	LOS disabled 1x RJ-45 (SFP)
Ethernet Interface, SFP optical	Interfaces	1x 1000BaseLX 1300nm singlemode	1x 1000BaseLX 1300nm multimode	1x 1000BaseSX 850nm multimode
	Connectors	1x LC (SFP)	1x LC (SFP)	1x LC (SFP)
	Tx Output Center Wavelength	1310 nm	1310 nm	850 nm
	Tx Optical Output Power	-9.5 to -3 dBm	-9 to -1 dBm	-9.5 to 0 dBm
	Rx Sensitivity	-20 dBm	-19 dBm	-18 dBm
	Rx Input Power Saturation	-3 dBm	-1 dBm	0 dBm
Ethernet Standards Compliance	Ethernet			IEEE 802.3
	Framing			IPv4 and IPv6, IEEE 802.3d
	Flow Control			IEEE 802.3x
	VLAN			IEEE 802.1Q, QinQ
	QoS			Port based, IEEE 802.1p, Diffserv (RFC 2474)
	RMON			RFC 1757
Frame sizes supported	Bi-directional			64 - 7000 bytes
	Uni-directional			7001 - 9600 bytes
Throughput Acceleration	Improvement dependent upon Frame Size			IFG & preamble suppression
Link Aggregation	Layer 1			Physical layer
	Layer 2			IEEE 802.1AX
RSTP	Aviat Network Patent Pending			Resilient Wireless Packet Ring (RWPR™)
MAC address register size				8000 entries

DATA ACCESS CARDS (DAC)

DAC 4X, DAC 16X V2 - TDM (E1)				
Interface, configurable	DAC 4x	Electrical	1 to 4x 2.048 Mbit/s (E1)	
	DAC 16x v2	Electrical	1 to 16x 2.048 Mbit/s (E1)	
Electrical interface parameters	Standards Compliance	E1	Compliant to ITU-T Rec. G.703, G.823	
	Line code	E1	HDB3	
	Connectors	DAC 4x	RJ45	
		DAC 16x v2	50 pin HDR	
Impedance	E1	75Ω unbalanced or 120Ω balanced, configurable		
Redundancy	DAC 16x v2	Hot-standby tributary protection		
Ethernet over unframed E1	DAC 16x v2	2 Mbit/s per trib; 32 Mbit/s per DAC		
DAC 3XE3M - TDM (INXE3)				
Interface				1 to 3x 34.368 Mbit/s (E3)
Functionality				2x E3 (Interface) to 2x16x E1 (TDM Bus) Mux, channelized
				2x E3 (Interface) to 17xE1 (TDM Bus) Mux, unchannelized
				3x E3 (Interface) to 3x E3 (TDM Bus) Transparent
Electrical interface parameters	Standards Compliance			Compliant to ITU-T Rec. G.703, G.823
	Line code			HDB3
	Connectors			Slimline BNC
	Impedance			75Ω unbalanced
DAC 1550M SONET MULTIPLEXER (1XSTM1)				
Interface	SFP Optical	1x 155.52 Mbit/s (STM1)		
Functionality				1x STM1 (Interface) to 63x E1 (Bus) Mux
Connectors				LC
Optical interface parameters		Single Mode Long Range L1.1	Single Mode Short Range S1.1	Multi Mode Multi Mode
	Tx Output Center Wavelength	1310 nm	1310 nm	1310 nm 850 nm
	Tx Optical Output Power	-5 to 0 dBm	-15 to -8 dBm	-9 to -1 dBm -10 to -4 dBm
	Rx Sensitivity	-35 dBm	-34 dBm	-19 dBm -24 dBm
	Rx Input Power Saturation	0 dBm	0 dBm	-1 dBm 0 dBm
Timing modes, configurable				Loop Time (Clock recovered from received OC3)
				Local Reference Clock (XO)

All specifications are typical values unless otherwise stated, and are subject to change without notice.

[1] RAC Installation Kit includes 3 meter jumper cable, SMA to N-type.

GENERAL ODU SPECIFICATIONS

GENERAL			
Frequency Band options	L6, U6, 7, 8, 10, 11, 13, 15, 18, 23, 26, 28, 32, 38 GHz		
Capacity support	4 to 100x E1		
Modulation support	8 - 366 Mbit/s Ethernet		
Lightning Protection	QPSK to 256 QAM		
	standard internal		
IF SPECIFICATIONS			
Intermediate Frequency	Transmit	311 MHz	
	Receive	126 MHz	
INU to ODU IF Cable, recommended	CNT-300 Type	0.3 inch/copper braid/solid copper centre conductor, 50Ω	
		Maximum IF Cable length 150 meters (500 ft)	
	CNT-400 Type	0.4 inch/copper braid/copper clad aluminum centre conductor, 50Ω	
		Maximum IF Cable length 300 meters (1,000 ft)	
ODU INTERFACES			
IF cable connector	N-Type		
AGC monitor point	BNC		
Antenna port Interface	6-38 GHz	Standard EIA rectangular waveguide, refer to ODU System specifications	
Polarisation, field selectable	Vertical (standard) or Horizontal		
Antenna Mounting	6-38 GHz, standard	Proprietary direct mount for antenna diameters 0.3 to 1.8m (1 to 6ft)	
	6-38 GHz, optional	Remote mount via flex/elliptical waveguide	
GENERAL TRANSMITTER SPECIFICATIONS			
Transmit Power Tolerance	6 to 26 GHz	± 2 dB	
	28 to 38 GHz	± 3 dB	
Transmitter Source	Synthesized		
Frequency Stability	± 10 ppm		
Manual Transmitter Power Control range	QPSK	20 dB	
	16QAM	18 dB	
	32QAM	17.5 dB	
	64QAM	17 dB	
	128QAM	16 dB	
	256QAM	14 dB	
	Resolution	0.1 dB steps	
	Accuracy	± 2 dB	
Automatic Transmitter Power Control	Range	Configurable over full available manual attenuation range	
	Resolution / Speed	0.1 dB steps / 6 dB per second	
Transmitter Mute	> 50 dB		
Channel Selection	By software control within tuning range of ODU		
Synthesizer Resolution	0.25 MHz		
GENERAL RECEIVER SPECIFICATIONS			
Receiver Source	Synthesized		
Frequency Stability	± 10 ppm		
Receiver Overload	BER = 1x10 ⁻⁶	-22 dBm	
	BER = 1x10 ⁻³	-20 dBm	
Residual (Background) Bit Error Rate	Better than 10 ⁻¹³		
RSSI Accuracy ^[1]	-40 to -70 dBm, 0 to +35°C	± 2 dB	
	-25 to -85 dBm, -33 to +55°C	± 4 dB	
ADDITIONAL PROTECTION LOSSES			
	FREQUENCY BAND	MAIN CHANNEL	PROTECTION CHANNEL
Coupler option	6 to 18 GHz / 21 to 32 GHz / 38 GHz	3.6 dB / 3.8 dB / 4 dB	3.6 dB / 3.8 dB / 4 dB
	6 to 18 GHz / 21 to 32 GHz / 38 GHz	1.6 dB / 1.8 dB / 2 dB	6.6 dB / 6.8 dB / 7 dB
ELECTRICAL			
Power Consumption, nominal	6-11 GHz	40 W	
	13-38 GHz	30 W	
MECHANICAL			
		SIZE (HXWXD)	WEIGHT
ODU300hp		287mm [11.3 in] x 287mm [11.3 in] x 119mm [4.7 in]	6.4 kg [14 lb]
ODU Protection Coupler	086-523221 Top/Bottom	600mm [23.6 in] x 250mm [9.8 in] x 105mm [4.1 in]	6.5 kg [14.3 lb]
	086-523321 Back-to-Back	250mm [9.8 in] x 370mm [14.6 in] x 180mm [7.1 in]	6.0 kg [13.2 lb]
	086-523341 Back-to-Back	290mm [11.4 in] x 365mm [14.4 in] x 160mm [6.3 in]	3.9 kg [8.6 lb]
	086-523341 Back-to-Back (XPOL)	290mm [11.4 in] x 365mm [14.4 in] x 160mm [6.3 in]	4.0 kg [8.8 lb]

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[1] RSSI accuracy is only valid when there is no unwanted signal or potential interferer present within ±28MHz of the RX frequency.

ODU 300 RF SPECIFICATIONS - 6 TO 13 GHZ TRANSMITTER AND RECEIVER PERFORMANCE

SYSTEM	L6/U6 GHZ	7/8 GHZ	10 GHZ ^[1]	11 GHZ	13 GHZ			
Frequency Range, GHz	5.925 - 6.425 6.425 - 7.11	7.125 - 7.9 7.725 - 8.5	10.0 - 10.68	10.7 - 11.7	12.75 - 13.25			
T-R Spacings supported, MHz	252.04 340	150, 154, 161, 168, 175, 196, 245 119, 126, 151.614, 195, 208, 266, 300, 310, 311.32, 305.56, 360	91, 230, 143.5, 350	490, 530	266			
Maximum Tuning Range (dependent upon T-R spacing), MHz	56	56/140	165	165	84			
ANTENNA INTERFACE								
Waveguide Type	R70 (WR137)	R84 (WR112)	R100 (WR90)	R100 (WR90)	R120 (WR75)			
Flange Type	UDR70	UDR84	UDR100	UDR100	UBR120			
Mating Flange Type	PDR70 or CDR70	PDR84 or CDR84	PDR100 or CDR100	PDR100 or CDR100	PBR120 or CDR120			
TRANSMITTER POWER OUTPUT SPECIFICATIONS								
	QPSK	28.5 dBm	28.5 dBm	26.0 dBm	24.0 dBm	23.0 dBm		
	16 QAM	26.5 dBm	26.5 dBm	24.0 dBm	22.0 dBm	21.0 dBm		
	32 QAM	26.0 dBm	26.0 dBm	23.5 dBm	21.5 dBm	20.5 dBm		
	64 QAM	25.5 dBm	25.5 dBm	23.0 dBm	21.0 dBm	20.0 dBm		
	128 QAM	24.5 dBm	24.5 dBm	22.0 dBm	20.0 dBm	19.0 dBm		
	256 QAM	22.5 dBm	22.5 dBm	20.0 dBm	18.0 dBm	17.0 dBm		
RECEIVER THRESHOLD SPECIFICATIONS (10⁻⁶ BER)^[2]								
7 MHz Channel	Airlink Capacity^[3]	Max E1s^[4]						
ACM - Maximum System Gain	8 Mbit/s	4xE1	QPSK	-96.00 dBm	-96.00 dBm	-95.50 dBm	-95.75 dBm	-95.75 dBm
ACM - Maximum System Gain	18 Mbit/s	8xE1	16 QAM	-88.25 dBm	-88.25 dBm	-87.75 dBm	-88.00 dBm	-88.00 dBm
ACM - Maximum System Gain	29 Mbit/s	14xE1	64 QAM	-82.00 dBm	-82.00 dBm	-81.50 dBm	-81.75 dBm	-81.75 dBm
ACM - Maximum System Gain	41 Mbit/s	20xE1	256 QAM	-76.00 dBm	-76.00 dBm	-75.50 dBm	-75.75 dBm	-75.75 dBm
ACM - Maximum Throughput	10 Mbit/s	5xE1	QPSK	-91.75 dBm	-91.75 dBm	-91.25 dBm	-91.50 dBm	-91.50 dBm
ACM - Maximum Throughput	21 Mbit/s	10xE1	16 QAM	-86.00 dBm	-86.00 dBm	-85.50 dBm	-85.75 dBm	-85.75 dBm
ACM - Maximum Throughput	31 Mbit/s	15xE1	64 QAM	-81.00 dBm	-81.00 dBm	-80.50 dBm	-80.75 dBm	-80.75 dBm
ACM - Maximum Throughput	44 Mbit/s	21xE1	256 QAM	-74.50 dBm	-74.50 dBm	-74.00 dBm	-74.25 dBm	-74.25 dBm
13.75 / 14 MHz Channel								
ACM - Maximum System Gain	17 Mbit/s	8xE1	QPSK	-93.00 dBm	-93.00 dBm	-92.50 dBm	-92.75 dBm	-92.75 dBm
ACM - Maximum System Gain	35 Mbit/s	16xE1	16 QAM	-85.25 dBm	-85.25 dBm	-84.75 dBm	-85.00 dBm	-85.00 dBm
ACM - Maximum System Gain	58 Mbit/s	28xE1	64 QAM	-78.75 dBm	-78.75 dBm	-78.25 dBm	-78.50 dBm	-78.50 dBm
ACM - Maximum System Gain	82 Mbit/s	39xE1	256 QAM	-73.00 dBm	-73.00 dBm	-72.50 dBm	-72.75 dBm	-72.75 dBm
ACM - Maximum Throughput	21 Mbit/s	10xE1	QPSK	-88.75 dBm	-88.75 dBm	-88.25 dBm	-88.50 dBm	-88.50 dBm
ACM - Maximum Throughput	43 Mbit/s	20xE1	16 QAM	-83.00 dBm	-83.00 dBm	-82.50 dBm	-82.75 dBm	-82.75 dBm
ACM - Maximum Throughput	64 Mbit/s	31xE1	64 QAM	-77.50 dBm	-77.50 dBm	-77.00 dBm	-77.25 dBm	-77.25 dBm
ACM - Maximum Throughput	88 Mbit/s	42xE1	256 QAM	-71.50 dBm	-71.50 dBm	-71.00 dBm	-71.25 dBm	-71.25 dBm
27.5 / 28 MHz Channel								
ACM - Maximum System Gain	36 Mbit/s	17xE1	QPSK	-89.75 dBm	-89.75 dBm	-89.25 dBm	-89.50 dBm	-89.50 dBm
ACM - Maximum System Gain	73 Mbit/s	35xE1	16 QAM	-82.00 dBm	-82.00 dBm	-81.50 dBm	-81.75 dBm	-81.75 dBm
ACM - Maximum System Gain	121 Mbit/s	58xE1	64 QAM	-75.75 dBm	-75.75 dBm	-75.25 dBm	-75.50 dBm	-75.50 dBm
ACM - Maximum System Gain	170 Mbit/s	82xE1	256 QAM	-69.75 dBm	-69.75 dBm	-69.25 dBm	-69.50 dBm	-69.50 dBm
ACM - Maximum Throughput	44 Mbit/s	21xE1	QPSK	-85.75 dBm	-85.75 dBm	-85.25 dBm	-85.50 dBm	-85.50 dBm
ACM - Maximum Throughput	89 Mbit/s	43xE1	16 QAM	-79.25 dBm	-79.25 dBm	-78.75 dBm	-79.00 dBm	-79.00 dBm
ACM - Maximum Throughput	133 Mbit/s	64xE1	64 QAM	-74.00 dBm	-74.00 dBm	-73.50 dBm	-73.75 dBm	-73.75 dBm
ACM - Maximum Throughput	181 Mbit/s	88xE1	256 QAM	-67.75 dBm	-67.75 dBm	-67.25 dBm	-67.50 dBm	-67.50 dBm
Non-ACM	105 Mbit/s	51xE1	32 QAM	-78.25 dBm	-78.25 dBm	-77.75 dBm	-78.00 dBm	-78.00 dBm
Non-ACM	155 Mbit/s	75xE1	128 QAM	-72.75 dBm	-72.75 dBm	-72.25 dBm	-72.50 dBm	-72.50 dBm
55 / 56 MHz Channel								
ACM - Maximum System Gain	74 Mbit/s	36xE1	QPSK	-86.75 dBm	-86.75 dBm	-86.25 dBm	-86.50 dBm	-86.50 dBm
ACM - Maximum System Gain	147 Mbit/s	71xE1	16 QAM	-79.25 dBm	-79.25 dBm	-78.75 dBm	-79.00 dBm	-79.00 dBm
ACM - Maximum System Gain	246 Mbit/s	100xE1	64 QAM	-72.25 dBm	-72.25 dBm	-71.75 dBm	-72.00 dBm	-72.00 dBm
ACM - Maximum System Gain	344 Mbit/s	100xE1	256 QAM	-66.75 dBm	-66.75 dBm	-66.25 dBm	-66.50 dBm	-66.50 dBm
ACM - Maximum Throughput	90 Mbit/s	44xE1	QPSK	-82.75 dBm	-82.75 dBm	-82.25 dBm	-82.50 dBm	-82.50 dBm
ACM - Maximum Throughput	182 Mbit/s	88xE1	16 QAM	-76.50 dBm	-76.50 dBm	-76.00 dBm	-76.25 dBm	-76.25 dBm
ACM - Maximum Throughput	268 Mbit/s	100xE1	64 QAM	-71.25 dBm	-71.25 dBm	-70.75 dBm	-71.00 dBm	-71.00 dBm
ACM - Maximum Throughput	366 Mbit/s	100xE1	256 QAM	-65.00 dBm	-65.00 dBm	-64.50 dBm	-64.75 dBm	-64.75 dBm

All specifications are referenced to the ODU antenna flange, and are typical values unless otherwise stated, and are subject to change without notice.

For Guaranteed values (over time and operational range) subtract 2 dB from Power Output, add 2dB to Threshold values.

[1] 10GHz Power Output and Rx Threshold are reduced by 0.5dB and 0.5dB respectively for 91MHz T-R option.

[2] Rx Threshold values indicated are typically improved by 0.5 dB for BER=10⁻³.

[3] Airlink Capacities are shown. Ethernet/IP throughput will vary based on frame sizes.

[4] Enabling TDM transport will subtract equivalent capacity from available Ethernet Throughput.

ODU 300 RF SPECIFICATIONS - 15 TO 38 GHZ TRANSMITTER AND RECEIVER PERFORMANCE

SYSTEM	15 GHZ	18 GHZ	23 GHZ	26 GHZ	28 GHZ	32 GHZ	38 GHZ			
Frequency Range, GHz	14.4 - 15.35	17.7 - 19.7	21.2 - 23.632	24.52 - 26.483	27.5 - 29.5	31.8 - 33.4	37.0 - 39.46			
T-R Spacings supported, MHz	315, 420, 490, 640, 644, 728	1010, 1092.5, 1120	1008, 1200, 1232	1008	1008	812	1260			
Maximum Tuning Range (dependent upon T-R spacing), MHz	245	380	370	360	360	370	340			
ANTENNA INTERFACE										
Waveguide Type	R140 (WR62)	R220 (WR42)	R220 (WR42)	R220 (WR42)	R320 (WR28)	R320 (WR28)	R320 (WR28)			
Flange Type	UBR140	UBR220	UBR220	UBR220	UBR320	UBR320	UBR320			
Mating Flange Type	PBR140 or CBR140	PBR220	PBR220	PBR220	PBR320	PBR320	PBR320			
TRANSMITTER POWER OUTPUT SPECIFICATIONS										
	QPSK	22.0 dBm	19.5 dBm	19.5 dBm	15.5 dBm	18.0 dBm	18.0 dBm	17.5 dBm		
	16 QAM	20.0 dBm	17.5 dBm	17.5 dBm	13.5 dBm	16.0 dBm	16.0 dBm	15.5 dBm		
	32 QAM	19.5 dBm	17.0 dBm	17.0 dBm	13.0 dBm	15.5 dBm	15.5 dBm	15.0 dBm		
	64 QAM	19.0 dBm	16.5 dBm	16.5 dBm	12.5 dBm	15.0 dBm	15.0 dBm	14.5 dBm		
	128 QAM	18.0 dBm	15.5 dBm	15.5 dBm	11.5 dBm	14.0 dBm	14.0 dBm	13.5 dBm		
	256 QAM	16.0 dBm	13.5 dBm	13.5 dBm	9.5 dBm	12.0 dBm	12.0 dBm	11.5 dBm		
RECEIVER THRESHOLD SPECIFICATIONS (10 ⁻⁶ BER) ⁽¹⁾										
7 MHz Channel	Airlink Capacity ⁽²⁾	Max E1s ⁽³⁾								
ACM - Maximum System Gain	8 Mbit/s	4xE1	QPSK	-95.50 dBm	-95.25 dBm	-95.00 dBm	-94.00 dBm	-93.25 dBm	-93.00 dBm	-92.75 dBm
ACM - Maximum System Gain	18 Mbit/s	8xE1	16 QAM	-87.75 dBm	-87.50 dBm	-87.25 dBm	-86.00 dBm	-85.25 dBm	-85.00 dBm	-84.75 dBm
ACM - Maximum System Gain	29 Mbit/s	14xE1	64 QAM	-81.50 dBm	-81.25 dBm	-81.00 dBm	-79.50 dBm	-78.75 dBm	-78.50 dBm	-78.25 dBm
ACM - Maximum System Gain	41 Mbit/s	20xE1	256 QAM	-75.50 dBm	-75.25 dBm	-75.00 dBm	-73.00 dBm	-72.25 dBm	-72.00 dBm	-71.75 dBm
ACM - Maximum Throughput	10 Mbit/s	5xE1	QPSK	-91.25 dBm	-91.00 dBm	-90.75 dBm	-89.75 dBm	-89.00 dBm	-88.75 dBm	-88.50 dBm
ACM - Maximum Throughput	21 Mbit/s	10xE1	16 QAM	-85.50 dBm	-85.25 dBm	-85.00 dBm	-83.75 dBm	-83.00 dBm	-82.75 dBm	-82.50 dBm
ACM - Maximum Throughput	31 Mbit/s	15xE1	64 QAM	-80.50 dBm	-80.25 dBm	-80.00 dBm	-78.50 dBm	-77.75 dBm	-77.50 dBm	-77.25 dBm
ACM - Maximum Throughput	44 Mbit/s	21xE1	256 QAM	-74.00 dBm	-73.75 dBm	-73.50 dBm	-71.50 dBm	-70.75 dBm	-70.50 dBm	-70.25 dBm
13.75 / 14 MHz Channel										
ACM - Maximum System Gain	17 Mbit/s	8xE1	QPSK	-92.50 dBm	-92.25 dBm	-92.00 dBm	-91.00 dBm	-90.25 dBm	-90.00 dBm	-89.75 dBm
ACM - Maximum System Gain	35 Mbit/s	16xE1	16 QAM	-84.75 dBm	-84.50 dBm	-84.25 dBm	-83.00 dBm	-82.25 dBm	-82.00 dBm	-81.75 dBm
ACM - Maximum System Gain	58 Mbit/s	28xE1	64 QAM	-78.25 dBm	-78.00 dBm	-77.75 dBm	-76.25 dBm	-75.50 dBm	-75.25 dBm	-75.00 dBm
ACM - Maximum System Gain	82 Mbit/s	39xE1	256 QAM	-72.50 dBm	-72.25 dBm	-72.00 dBm	-70.00 dBm	-69.25 dBm	-69.00 dBm	-68.75 dBm
ACM - Maximum Throughput	21 Mbit/s	10xE1	QPSK	-88.25 dBm	-88.00 dBm	-87.75 dBm	-86.75 dBm	-86.00 dBm	-85.75 dBm	-85.50 dBm
ACM - Maximum Throughput	43 Mbit/s	20xE1	16 QAM	-82.50 dBm	-82.25 dBm	-82.00 dBm	-80.75 dBm	-80.00 dBm	-79.75 dBm	-79.50 dBm
ACM - Maximum Throughput	64 Mbit/s	31xE1	64 QAM	-77.00 dBm	-76.75 dBm	-76.50 dBm	-75.00 dBm	-74.25 dBm	-74.00 dBm	-73.75 dBm
ACM - Maximum Throughput	88 Mbit/s	42xE1	256 QAM	-71.00 dBm	-70.75 dBm	-70.50 dBm	-68.50 dBm	-67.75 dBm	-67.50 dBm	-67.25 dBm
27.5 / 28 MHz Channel										
ACM - Maximum System Gain	36 Mbit/s	17xE1	QPSK	-89.25 dBm	-89.00 dBm	-88.75 dBm	-87.75 dBm	-87.00 dBm	-86.75 dBm	-86.50 dBm
ACM - Maximum System Gain	73 Mbit/s	35xE1	16 QAM	-81.50 dBm	-81.25 dBm	-81.00 dBm	-79.75 dBm	-79.00 dBm	-78.75 dBm	-78.50 dBm
ACM - Maximum System Gain	121 Mbit/s	58xE1	64 QAM	-75.25 dBm	-75.00 dBm	-74.75 dBm	-73.25 dBm	-72.50 dBm	-72.25 dBm	-72.00 dBm
ACM - Maximum System Gain	170 Mbit/s	82xE1	256 QAM	-69.25 dBm	-69.00 dBm	-68.75 dBm	-66.75 dBm	-66.00 dBm	-65.75 dBm	-65.50 dBm
ACM - Maximum Throughput	44 Mbit/s	21xE1	QPSK	-85.25 dBm	-85.00 dBm	-84.75 dBm	-83.75 dBm	-83.00 dBm	-82.75 dBm	-82.50 dBm
ACM - Maximum Throughput	89 Mbit/s	43xE1	16 QAM	-78.75 dBm	-78.50 dBm	-78.25 dBm	-77.00 dBm	-76.25 dBm	-76.00 dBm	-75.75 dBm
ACM - Maximum Throughput	133 Mbit/s	64xE1	64 QAM	-73.50 dBm	-73.25 dBm	-73.00 dBm	-71.50 dBm	-70.75 dBm	-70.50 dBm	-70.25 dBm
ACM - Maximum Throughput	181 Mbit/s	88xE1	256 QAM	-67.25 dBm	-67.00 dBm	-66.75 dBm	-64.75 dBm	-64.00 dBm	-63.75 dBm	-63.50 dBm
Non-ACM	105 Mbit/s	51xE1	32 QAM	-77.75 dBm	-77.50 dBm	-77.25 dBm	-76.00 dBm	-75.25 dBm	-75.00 dBm	-74.75 dBm
Non-ACM	155 Mbit/s	75xE1	128 QAM	-72.25 dBm	-72.00 dBm	-71.75 dBm	-69.75 dBm	-69.00 dBm	-68.75 dBm	-68.50 dBm
55 / 56 MHz Channel										
ACM - Maximum System Gain	74 Mbit/s	36xE1	QPSK	-86.25 dBm	-86.00 dBm	-85.75 dBm	-84.75 dBm	-84.00 dBm	-83.75 dBm	-83.50 dBm
ACM - Maximum System Gain	147 Mbit/s	71xE1	16 QAM	-78.75 dBm	-78.50 dBm	-78.25 dBm	-77.00 dBm	-76.25 dBm	-76.00 dBm	-75.75 dBm
ACM - Maximum System Gain	246 Mbit/s	100xE1	64 QAM	-71.75 dBm	-71.50 dBm	-71.25 dBm	-69.75 dBm	-69.00 dBm	-68.75 dBm	-68.50 dBm
ACM - Maximum System Gain	344 Mbit/s	100xE1	256 QAM	-66.25 dBm	-66.00 dBm	-65.75 dBm	-63.75 dBm	-63.00 dBm	-62.75 dBm	-62.50 dBm
ACM - Maximum Throughput	90 Mbit/s	44xE1	QPSK	-82.25 dBm	-82.00 dBm	-81.75 dBm	-80.75 dBm	-80.00 dBm	-79.75 dBm	-79.50 dBm
ACM - Maximum Throughput	182 Mbit/s	88xE1	16 QAM	-76.00 dBm	-75.75 dBm	-75.50 dBm	-74.25 dBm	-73.50 dBm	-73.25 dBm	-73.00 dBm
ACM - Maximum Throughput	268 Mbit/s	100xE1	64 QAM	-70.75 dBm	-70.50 dBm	-70.25 dBm	-68.75 dBm	-68.00 dBm	-67.75 dBm	-67.50 dBm
ACM - Maximum Throughput	366 Mbit/s	100xE1	256 QAM	-64.50 dBm	-64.25 dBm	-64.00 dBm	-62.00 dBm	-61.25 dBm	-61.00 dBm	-60.75 dBm

All specifications are referenced to the ODU antenna flange, and are typical values unless otherwise stated, and are subject to change without notice.

⁽¹⁾ For Guaranteed values (lower time and operational range) subtract 2 dB from Power Output, add 2dB to Threshold values.

⁽²⁾ Rx Threshold values indicated are typically improved by 0.5 dB for BER=10⁻³.

⁽³⁾ Airlink Capacities are shown. Ethernet/IP throughput will vary based on frame sizes.

⁽⁴⁾ Enabling TDM transport will subtract equivalent capacity from available Ethernet Throughput.

ODU 300 RF SPECIFICATIONS - 6 TO 13 GHZ SYSTEM GAIN PERFORMANCE

SYSTEM			L6/U6 GHZ	7/8 GHZ	10 GHZ ^[1]	11 GHZ	13 GHZ	
Frequency Range, GHz			5.925 - 6.425 6.425 - 7.11	7.125 - 7.9 7.725 - 8.5	10.0 - 10.68	10.7 - 11.7	12.75 - 13.25	
SYSTEM GAIN SPECIFICATIONS (10-6 BER) ^[1]								
7 MHz Channel		Airlink Capacity ^[2]	Max E1s^[3]					
ACM - Maximum System Gain	8 Mbit/s	4xE1	QPSK	124.50 dB	124.50 dB	121.50 dB	119.75 dB	118.75 dB
ACM - Maximum System Gain	18 Mbit/s	8xE1	16 QAM	114.75 dB	114.75 dB	111.75 dB	110.00 dB	109.00 dB
ACM - Maximum System Gain	29 Mbit/s	14xE1	64 QAM	107.50 dB	107.50 dB	104.50 dB	102.75 dB	101.75 dB
ACM - Maximum System Gain	41 Mbit/s	20xE1	256 QAM	98.50 dB	98.50 dB	95.50 dB	93.75 dB	92.75 dB
ACM - Maximum Throughput	10 Mbit/s	5xE1	QPSK	120.25 dB	120.25 dB	117.25 dB	115.50 dB	114.50 dB
ACM - Maximum Throughput	21 Mbit/s	10xE1	16 QAM	112.50 dB	112.50 dB	109.50 dB	107.75 dB	106.75 dB
ACM - Maximum Throughput	31 Mbit/s	15xE1	64 QAM	106.50 dB	106.50 dB	103.50 dB	101.75 dB	100.75 dB
ACM - Maximum Throughput	44 Mbit/s	21xE1	256 QAM	97.00 dB	97.00 dB	94.00 dB	92.25 dB	91.25 dB
13.75 / 14 MHz Channel								
ACM - Maximum System Gain	17 Mbit/s	8xE1	QPSK	121.50 dB	121.50 dB	118.50 dB	116.75 dB	115.75 dB
ACM - Maximum System Gain	35 Mbit/s	16xE1	16 QAM	111.75 dB	111.75 dB	108.75 dB	107.00 dB	106.00 dB
ACM - Maximum System Gain	58 Mbit/s	28xE1	64 QAM	104.25 dB	104.25 dB	101.25 dB	99.50 dB	98.50 dB
ACM - Maximum System Gain	82 Mbit/s	39xE1	256 QAM	95.50 dB	95.50 dB	92.50 dB	90.75 dB	89.75 dB
ACM - Maximum Throughput	21 Mbit/s	10xE1	QPSK	117.25 dB	117.25 dB	114.25 dB	112.50 dB	111.50 dB
ACM - Maximum Throughput	43 Mbit/s	20xE1	16 QAM	109.50 dB	109.50 dB	106.50 dB	104.75 dB	103.75 dB
ACM - Maximum Throughput	64 Mbit/s	31xE1	64 QAM	103.00 dB	103.00 dB	100.00 dB	98.25 dB	97.25 dB
ACM - Maximum Throughput	88 Mbit/s	42xE1	256 QAM	94.00 dB	94.00 dB	91.00 dB	89.25 dB	88.25 dB
27.5 / 28 MHz Channel								
ACM - Maximum System Gain	36 Mbit/s	17xE1	QPSK	118.25 dB	118.25 dB	115.25 dB	113.50 dB	112.50 dB
ACM - Maximum System Gain	73 Mbit/s	35xE1	16 QAM	108.50 dB	108.50 dB	105.50 dB	103.75 dB	102.75 dB
ACM - Maximum System Gain	121 Mbit/s	58xE1	64 QAM	101.25 dB	101.25 dB	98.25 dB	96.50 dB	95.50 dB
ACM - Maximum System Gain	170 Mbit/s	82xE1	256 QAM	92.25 dB	92.25 dB	89.25 dB	87.50 dB	86.50 dB
ACM - Maximum Throughput	44 Mbit/s	21xE1	QPSK	114.25 dB	114.25 dB	111.25 dB	109.50 dB	108.50 dB
ACM - Maximum Throughput	89 Mbit/s	43xE1	16 QAM	105.75 dB	105.75 dB	102.75 dB	101.00 dB	100.00 dB
ACM - Maximum Throughput	133 Mbit/s	64xE1	64 QAM	99.50 dB	99.50 dB	96.50 dB	94.75 dB	93.75 dB
ACM - Maximum Throughput	181 Mbit/s	88xE1	256 QAM	90.25 dB	90.25 dB	87.25 dB	85.50 dB	84.50 dB
Non-ACM	105 Mbit/s	51xE1	32 QAM	104.25 dB	104.25 dB	101.25 dB	99.50 dB	98.50 dB
Non-ACM	155 Mbit/s	75xE1	128 QAM	97.25 dB	97.25 dB	94.25 dB	92.50 dB	91.50 dB
55 / 56 MHz Channel								
ACM - Maximum System Gain	74 Mbit/s	36xE1	QPSK	115.25 dB	115.25 dB	112.25 dB	110.50 dB	109.50 dB
ACM - Maximum System Gain	147 Mbit/s	71xE1	16 QAM	105.75 dB	105.75 dB	102.75 dB	101.00 dB	100.00 dB
ACM - Maximum System Gain	246 Mbit/s	100xE1	64 QAM	97.75 dB	97.75 dB	94.75 dB	93.00 dB	92.00 dB
ACM - Maximum System Gain	344 Mbit/s	100xE1	256 QAM	89.25 dB	89.25 dB	86.25 dB	84.50 dB	83.50 dB
ACM - Maximum Throughput	90 Mbit/s	44xE1	QPSK	111.25 dB	111.25 dB	108.25 dB	106.50 dB	105.50 dB
ACM - Maximum Throughput	182 Mbit/s	88xE1	16 QAM	103.00 dB	103.00 dB	100.00 dB	98.25 dB	97.25 dB
ACM - Maximum Throughput	268 Mbit/s	100xE1	64 QAM	96.75 dB	96.75 dB	93.75 dB	92.00 dB	91.00 dB
ACM - Maximum Throughput	366 Mbit/s	100xE1	256 QAM	87.50 dB	87.50 dB	84.50 dB	82.75 dB	81.75 dB

All specifications are referenced to the ODU antenna flange, and are typical values unless otherwise stated, and are subject to change without notice.

For Guaranteed values (over time and operational range) subtract 4dB from System Gain values.

[1] 10GHz System Gain is reduced by 1.0dB for 91MHz T-R option.

[2] Airlink Capacities are shown. Ethernet/IP throughput will vary based on frame sizes.

[3] Enabling TDM transport will subtract equivalent capacity from available Ethernet Throughput.

ODU 300 RF SPECIFICATIONS - 15 TO 38 GHZ SYSTEM GAIN PERFORMANCE

SYSTEM	15 GHZ	18 GHZ	23 GHZ	26 GHZ	28 GHZ	32 GHZ	38 GHZ			
Frequency Range, GHz	14.4 - 15.35	17.7 - 19.7	21.2 - 23.632	24.52 - 26.483	27.5 - 29.5	31.8 - 33.4	37.0 - 39.46			
SYSTEM GAIN SPECIFICATIONS (10⁻⁶ BER)										
7 MHz Channel										
	Airlink Capacity^[1]	Max E1s^[2]								
ACM - Maximum System Gain	8 Mbit/s	4xE1	QPSK	117.5 dB	114.8 dB	114.5 dB	109.5 dB	111.3 dB	111.0 dB	110.3 dB
ACM - Maximum System Gain	18 Mbit/s	8xE1	16 QAM	107.8 dB	105.0 dB	104.8 dB	99.5 dB	101.3 dB	101.0 dB	100.3 dB
ACM - Maximum System Gain	29 Mbit/s	14xE1	64 QAM	100.5 dB	97.8 dB	97.5 dB	92.0 dB	93.8 dB	93.5 dB	92.8 dB
ACM - Maximum System Gain	41 Mbit/s	20xE1	256 QAM	91.5 dB	88.8 dB	88.5 dB	82.5 dB	84.3 dB	84.0 dB	83.3 dB
ACM - Maximum Throughput	10 Mbit/s	5xE1	QPSK	113.3 dB	110.5 dB	110.3 dB	105.3 dB	107.0 dB	106.8 dB	106.0 dB
ACM - Maximum Throughput	21 Mbit/s	10xE1	16 QAM	105.5 dB	102.8 dB	102.5 dB	97.3 dB	99.0 dB	98.8 dB	98.0 dB
ACM - Maximum Throughput	31 Mbit/s	15xE1	64 QAM	99.5 dB	96.8 dB	96.5 dB	91.0 dB	92.8 dB	92.5 dB	91.8 dB
ACM - Maximum Throughput	44 Mbit/s	21xE1	256 QAM	90.0 dB	87.3 dB	87.0 dB	81.0 dB	82.8 dB	82.5 dB	81.8 dB
13.75 / 14 MHz Channel										
ACM - Maximum System Gain	17 Mbit/s	8xE1	QPSK	114.5 dB	111.8 dB	111.5 dB	106.5 dB	108.3 dB	108.0 dB	107.3 dB
ACM - Maximum System Gain	35 Mbit/s	16xE1	16 QAM	104.8 dB	102.0 dB	101.8 dB	96.5 dB	98.3 dB	98.0 dB	97.3 dB
ACM - Maximum System Gain	58 Mbit/s	28xE1	64 QAM	97.3 dB	94.5 dB	94.3 dB	88.8 dB	90.5 dB	90.3 dB	89.5 dB
ACM - Maximum System Gain	82 Mbit/s	39xE1	256 QAM	88.5 dB	85.8 dB	85.5 dB	79.5 dB	81.3 dB	81.0 dB	80.3 dB
ACM - Maximum Throughput	21 Mbit/s	10xE1	QPSK	110.3 dB	107.5 dB	107.3 dB	102.3 dB	104.0 dB	103.8 dB	103.0 dB
ACM - Maximum Throughput	43 Mbit/s	20xE1	16 QAM	102.5 dB	99.8 dB	99.5 dB	94.3 dB	96.0 dB	95.8 dB	95.0 dB
ACM - Maximum Throughput	64 Mbit/s	31xE1	64 QAM	96.0 dB	93.3 dB	93.0 dB	87.5 dB	89.3 dB	89.0 dB	88.3 dB
ACM - Maximum Throughput	88 Mbit/s	42xE1	256 QAM	87.0 dB	84.3 dB	84.0 dB	78.0 dB	79.8 dB	79.5 dB	78.8 dB
27.5 / 28 MHz Channel										
ACM - Maximum System Gain	36 Mbit/s	17xE1	QPSK	111.3 dB	108.5 dB	108.3 dB	103.3 dB	105.0 dB	104.8 dB	104.0 dB
ACM - Maximum System Gain	73 Mbit/s	35xE1	16 QAM	101.5 dB	98.8 dB	98.5 dB	93.3 dB	95.0 dB	94.8 dB	94.0 dB
ACM - Maximum System Gain	121 Mbit/s	58xE1	64 QAM	94.3 dB	91.5 dB	91.3 dB	85.8 dB	87.5 dB	87.3 dB	86.5 dB
ACM - Maximum System Gain	170 Mbit/s	82xE1	256 QAM	85.3 dB	82.5 dB	82.3 dB	76.3 dB	78.0 dB	77.8 dB	77.0 dB
ACM - Maximum Throughput	44 Mbit/s	21xE1	QPSK	107.3 dB	104.5 dB	104.3 dB	99.3 dB	101.0 dB	100.8 dB	100.0 dB
ACM - Maximum Throughput	89 Mbit/s	43xE1	16 QAM	98.8 dB	96.0 dB	95.8 dB	90.5 dB	92.3 dB	92.0 dB	91.3 dB
ACM - Maximum Throughput	133 Mbit/s	64xE1	64 QAM	92.5 dB	89.8 dB	89.5 dB	84.0 dB	85.8 dB	85.5 dB	84.8 dB
ACM - Maximum Throughput	181 Mbit/s	88xE1	256 QAM	83.3 dB	80.5 dB	80.3 dB	74.3 dB	76.0 dB	75.8 dB	75.0 dB
Non-ACM	105 Mbit/s	51xE1	32 QAM	97.3 dB	94.5 dB	94.3 dB	89.0 dB	90.8 dB	90.5 dB	89.8 dB
Non-ACM	155 Mbit/s	75xE1	128 QAM	91.3 dB	88.5 dB	88.3 dB	82.3 dB	84.0 dB	83.8 dB	83.0 dB
55 / 56 MHz Channel										
ACM - Maximum System Gain	74 Mbit/s	36xE1	QPSK	108.3 dB	105.5 dB	105.3 dB	100.3 dB	102.0 dB	101.8 dB	101.0 dB
ACM - Maximum System Gain	147 Mbit/s	71xE1	16 QAM	98.8 dB	96.0 dB	95.8 dB	90.5 dB	92.3 dB	92.0 dB	91.3 dB
ACM - Maximum System Gain	246 Mbit/s	100xE1	64 QAM	90.8 dB	88.0 dB	87.8 dB	82.3 dB	84.0 dB	83.8 dB	83.0 dB
ACM - Maximum System Gain	344 Mbit/s	100xE1	256 QAM	82.3 dB	79.5 dB	79.3 dB	73.3 dB	75.0 dB	74.8 dB	74.0 dB
ACM - Maximum Throughput	90 Mbit/s	44xE1	QPSK	104.3 dB	101.5 dB	101.3 dB	96.3 dB	98.0 dB	97.8 dB	97.0 dB
ACM - Maximum Throughput	182 Mbit/s	88xE1	16 QAM	96.0 dB	93.3 dB	93.0 dB	87.8 dB	89.5 dB	89.3 dB	88.5 dB
ACM - Maximum Throughput	268 Mbit/s	100xE1	64 QAM	89.8 dB	87.0 dB	86.8 dB	81.3 dB	83.0 dB	82.8 dB	82.0 dB
ACM - Maximum Throughput	366 Mbit/s	100xE1	256 QAM	80.5 dB	77.8 dB	77.5 dB	71.5 dB	73.3 dB	73.0 dB	72.3 dB

All specifications are referenced to the ODU antenna flange, and are typical values unless otherwise stated, and are subject to change without notice.

For Guaranteed values (over time and operational range) subtract 4dB from System Gain values.

[1] Airlink Capacities are shown. Ethernet/IP throughput will vary based on frame sizes.

[2] Enabling TDM transport will subtract equivalent capacity from available Ethernet Throughput.

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