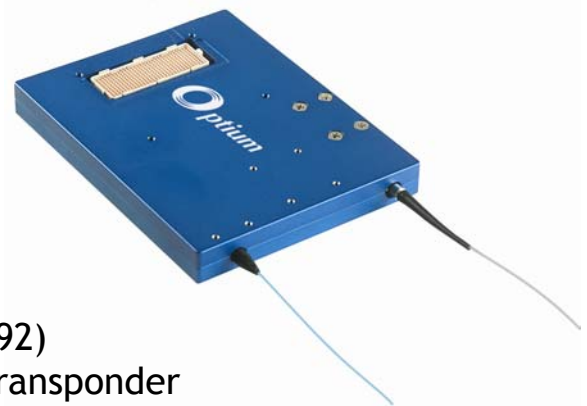
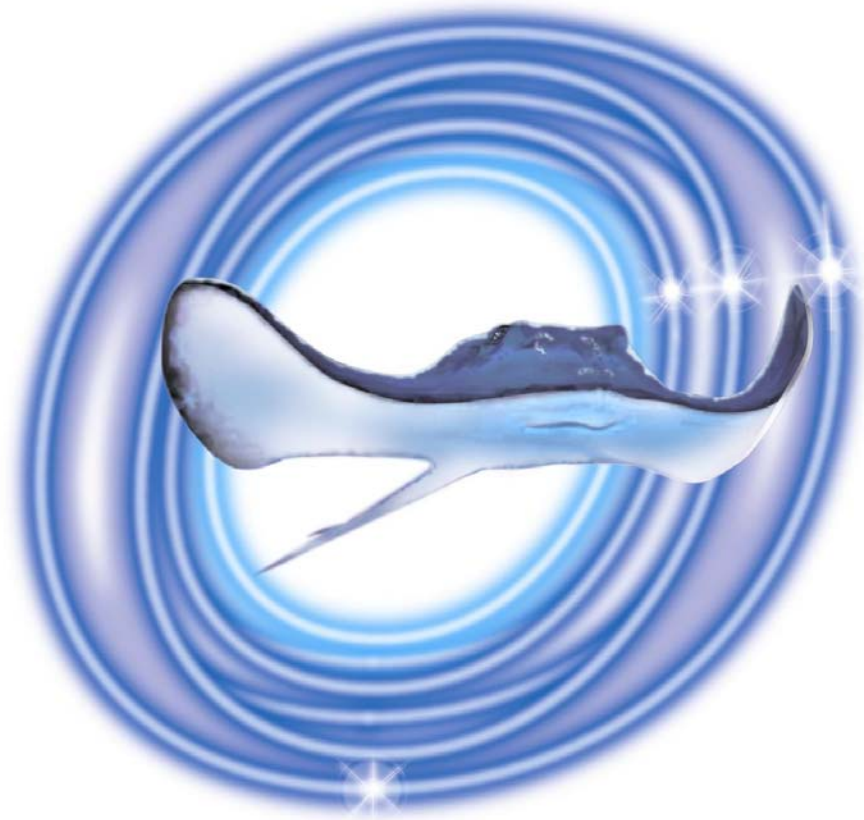
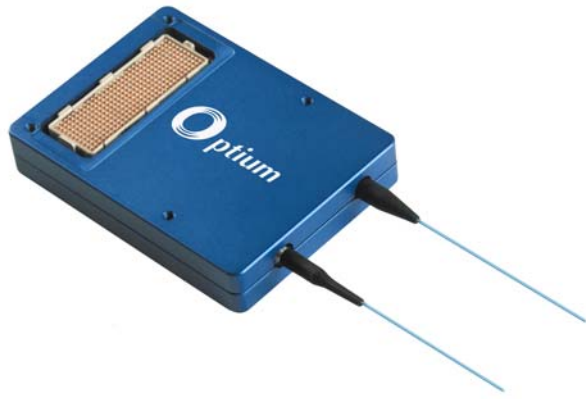


Optium



10Gb/s (OC-192)
Optical Transceiver/Transponder
300 pin Multi-Source Agreement (MSA)
1310nm and 1550nm
SONET/WAN/LAN/FEC

Stingray Series



Optium has developed a line of serial 10Gb/s (OC-192) transponders that incorporate all of the features required by the 300 pin Multi-Source Agreement (MSA) and serial Optical Internetworking Forum (OIF99.102.8) specification. The 1310nm transponders are designed for typical applications with optical links up to 40 kilometers. The 1550nm transponders are designed for long reach and back-haul applications.

Optium's products include all of the necessary components to cost effectively transmit and receive high-speed serial (10Gb/s) optical data. The receiver converts the optical input to 16 parallel electrical outputs and the transmitter combines 16 parallel electrical inputs into 10Gb/s serial optical outputs. These inputs may be SONET, Ethernet, or SONET with FEC rate.

The optical receiver is based on a high Sensitivity PIN Diode with a Sensitivity of -18dBm at a Bit Error Rate (BER) of 10^{-12} . It is also available with an Avalanche Photodiode (APD) receiver providing a receiver Sensitivity of -25dBm at a BER of 10^{-12} .

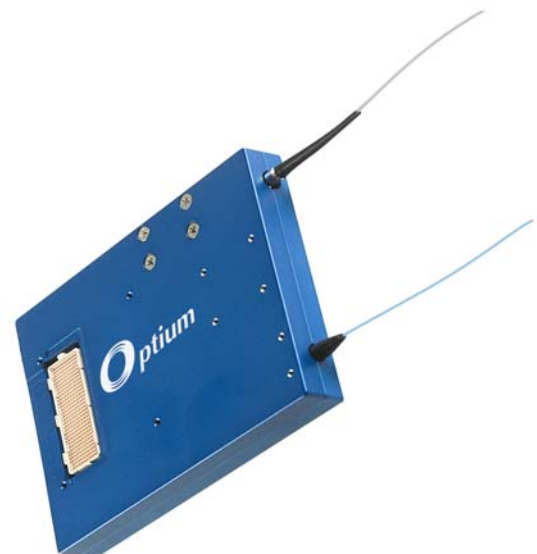
The optical transmitter employs Optium's proprietary and patented designs, giving the highest performance levels at the lowest cost. With this technical approach, Optium achieves Electro-Absorptive Modulated LASER performance (eye performance) at a price comparable to that of an un-cooled Directly Modulated LASER based transponder.

KEY FEATURES

- Compliant with the 300 pin MSA
 - Small Form Factor 2.2" X 3.0" X 0.53"
 - Operating Temperature 0° to 70°C (case)
 - Multi-Rate Product Applications Supporting SONET, Ethernet, and FEC Data Rates
 - 10Gb/s optical serial in/out with 622/644/669 by 16 electrical SERDES
 - Internally Microprocessor controlled
 - Low Power Dissipation (as low as 6.0 watts)
 - OIF99.102.8 Compliant
- Note: The 1550nm 40km module is available on the ITU grid and in APD.

APPLICATIONS

- Telecommunications
 - Optical-Electrical-Optical (OEO)
 - Subscriber Loop
 - Intra-Office SONET/SDH
 - Metropolitan Area Networks
 - Signal Regeneration
- High Bit-Rate Data Communications
 - High-speed Ethernet (XSBI)



Optical Performance Specifications

1310nm Transponders

Module	Parameter	12km			24km			40km			Unit
		Minimum	Typical	Maximum	Minimum	Typical	Maximum	Minimum	Typical	Maximum	
Receiver	Sensitivity {BER = 10 ⁻¹² }	-	-18	-15	-	-18	-16	-	-24	-22	dBm
	Maximum Overload {BER = 10 ⁻¹⁰ }	-1	0	-	-1	0	-	-7	-5	-	dBm
	RX Spectral Range	1290	-	1600	1290	-	1600	1290	-	1600	nm
	Optical Return Loss	27	-	-	27	-	-	27	-	-	dB
	Jitter Tolerance	Compliant with GR 253			Compliant with GR 253			Compliant with GR 253			
Transmitter	Output Power	-4	-	-1	-2	-	1	-2	-	1	dBm
	Extinction Ratio	8.2	11	-	8.2	11	-	8.2	11	-	dB
	TX Spectral Range	1290	-	1330	1290	-	1330	1290	-	1330	nm
	Sidemode Suppression Ratio	30	-	-	30	-	-	30	-	-	dB
	Jitter Generation & Jitter Transfer	Compliant with GR 253			Compliant with GR 253			Compliant with GR 253			
Optical Path	Optical Path Penalty	-	-	1	-	-	1	-	-	1	dB
	Optical Budget	0	-	10	2	-	13	8	-	19	dB
	Chromatic Dispersion Tolerance 1290nm - 1340nm	-	-	40	-	-	70	-	-	140	ps/nm

1550nm Transponders

Module	Parameter	40km			80km			Unit
		Minimum	Typical	Maximum	Minimum	Typical	Maximum	
Receiver	Sensitivity {BER = 10 ⁻¹² }	-	-19	-16	-	-26	-23	dBm
	Maximum Overload {BER = 10 ⁻¹⁰ }	-1	0	-	-7	-5	-	dBm
	RX Spectral Range	1290	-	1600	1290	-	1600	nm
	Optical Return Loss	27	-	-	27	-	-	dB
	Jitter Tolerance	Compliant with GR 253			Compliant with GR 253			
Transmitter	Output Power	-1	-	2	0	-	2	dBm
	Extinction Ratio	8.2	11	-	10	11	-	dB
	TX Spectral Range	1530	-	1565	1530	-	1565	nm
	Sidemode Suppression Ratio	30	-	-	30	-	-	dB
	Jitter Generation & Jitter Transfer	Compliant with GR 253			Compliant with GR 253			
Optical Path	Optical Path Penalty	-	-	2	-	-	2	dB
	Optical Budget	3	-	13	9	-	21	dB
	Chromatic Dispersion Tolerance 1525nm - 1575nm	-	-	800	-	-	1600	ps/nm

High Performance 1550nm Transponder (LiNbO₃)

High Performance 1550nm transponder mechanical size is 3.5" X 4.5" X .53" and available on the ITU grid with integrated wavelocker. Performance Specifications are listed as APD/PIN.

Module	Parameter	Minimum	Typical	Maximum	Unit
Receiver	Sensitivity {BER = 10 ⁻¹² }	-	-26 / -20	-23 / -17	dBm
	Maximum Overload {BER = 10 ⁻¹⁰ }	-5 / -1	-3 / 0	-	dBm
	RX Spectral Range	1290	-	1600	nm
	Optical Return Loss	27	-	-	dB
	Jitter Tolerance	Compliant with GR 253			
Transmitter	Output Power	4	-	7	dBm
	Extinction Ratio	12	13.5	-	dB
	TX Spectral Range	1528	-	1570	nm
	Sidemode Suppression Ratio	30	-	-	dB
	Jitter Generation & Jitter Transfer	Compliant with GR 253			
Optical Path	Optical Path Penalty	-	-	2	dB
	Optical Budget	12 / 8	-	25 / 19	dB
	Chromatic Dispersion Tolerance 1525nm - 1575nm	- / -800	-	1600 / 800	ps/nm

* Performance Specifications are stated for end of life.



Our Commitment to Excellence!

Agility

The telecommunications industry is becoming increasingly complex and unpredictable. To survive in this atmosphere, a company must be fast on its feet. Optium's Leadership Team thrives in this type of environment. We emphasize rapid product development and flexible high-volume manufacturing based on lean manufacturing principles. Minimizing cycle times, both in product development and manufacturing, is one of our focal points. We believe that a strategic plan is a working document that needs to be frequently reviewed based on market input and competitive threats.

Ingenuity

Optium has assembled some of the most creative leaders and engineers in the fiber-optics industry. We anticipate a continuous flow of new, highly differentiated products, with two to three new products being introduced each quarter. We expect our Operations Team and Human Resources Team to apply concepts that are novel to the industry in order to achieve an edge over our competition. We expect our Leadership Team and our Board members to explore all avenues for growth and value enhancement, including creative deal making such as acquisitions and partnerships.

Dependability

Optium believes that it is important to meet all commitments to all stakeholders. Our **CUSTOMERS** expect world-class products at competitive prices, 100% on-time delivery, short lead times, no returns, and no field failures. Our **EMPLOYEES** expect to be treated and compensated fairly, to be informed, to be challenged, and to be provided opportunities for professional and financial growth. Our **VENDORS** expect to be compensated fairly and on time, to be informed, and to be provided with opportunities for growth.

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