

# OPTICAL TRANSCEIVERS

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*Navigator*



**SIMPLIFICATION** IS OUR INNOVATION



OPTICAL TRANSCEIVERS NAVIGATOR

FAMILY

D-Lightsys® opto-electronic modules are transparent and protocol-independent optical transmitters, receivers and transceivers designed for harsh environments, demanding applications and markets. These products operate in a large temperature range and are available with a variety of options. There are several package options offered, including surface mount, pluggable and specific custom packages that cover data rates up to 12 Gbps.

INDUSTRIES

- AEROSPACE**  
Avionics is a demanding environment where weight and power consumption are critical, especially in cockpit displays or avionic bays.
- DEFENSE**  
Radars and on-board electronic warfare systems use processing capacities that need optical interconnect solutions.

- SPACE**  
Our high quality, reliable solutions offer top performance in mission critical applications. The complete range of space qualified passive products includes a wide range of coaxial connectors, cable assemblies, microwave components and switches.

Qualifications - All active solution packages have been extensively qualified through MIL-STD-810 e/g, MIL-STD-883e and ARINC804.

SERIES



**E-Light**  
Single channel transceiver for harsh environment applications with a tool-less removable optical patch cord based on ARINC801 contact. The product offers a balanced trade off between form factor and cost per channel, while maintaining a high level of performance.



**S-Light**  
Single channel modules for harsh environment applications are available with an optical pigtail output. S-Light is among the world's smallest transceivers for severe environment applications. It is the perfect fit for endpoint equipment and sensors, where low power consumption and small board real estate are key.



**D-Light**  
Multiple channel modules for harsh environment applications are available in transmitter, receiver or transceiver. Available in 4 or 12 channel counts, the D-Light family offers the highest channel integration density. This family has been designed for direct integration with high-speed FPGAs and SERDES to enable state-of-the-art data and signal processing applications. Several package options are offered, from surface mount to pluggable. D-Light is available up to 144 Gbps.

OPTIONS AND CUSTOMIZATION

CHANNELS

- E-Light is a single channel device: either simplex receiver (1 Rx) or full duplex (Tx + 1 Tx)
- S-Light is a single channel device: either simplex or full-duplex (1 Tx or 1 Rx or 1 Tx and Rx)
- D-Light families are available in 4 channels full duplex or 12 channels simplex:
  - 4-ch Transceiver (4 Tx and 4 Rx)
  - 12-ch Transmitter or Receiver (12 Tx or 12 Rx)

DATA RATE

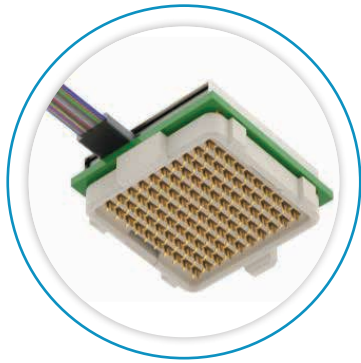
E-Light, S-Light and D-Light families are available in 3 data rate ranges:

- up to 10 Mbps
- up to 5 Gbps
- up to 12 Gbps

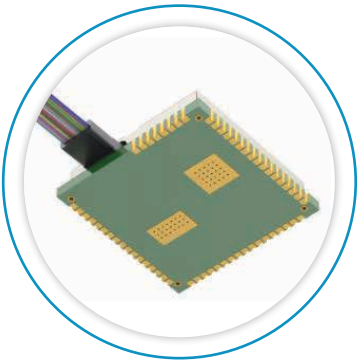
The modules are protocol agnostic and suitable for Fiber Channel, ARINC818, 1000BASE-SR, 10GBASE-SR, etc.

PACKAGING

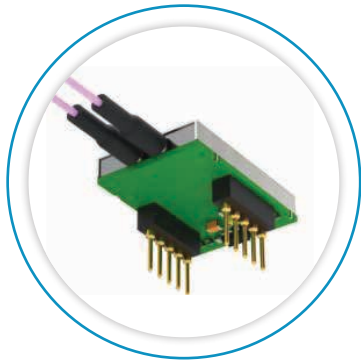
Modules are available in surface mount or pluggable packages. Surface mount packages are ideal for low profile applications. Pluggable packages simplify module integration and handling.



Pluggable GM



Surface Mount - LCC



Through Hole - S SFF Connector



Pluggable & Screw-Mounted - E

OPTICAL TERMINI

A large variety of termini/connectors are available:

- Telecom standards (LC, ST, etc.)
  - MIL-PRF-29504
  - LuxCis® ARINC801, ABS1379
  - Expanded beam solutions
- MT ferrule based connectors (MPO, Q-MTitan™, C-MTitan™) are used for the D-Light family. Single fiber optic termini are used on individual fibers.

FIBER TYPE

Various ruggedized cable options are available:

- S-Light uses single ruggedized optical cable based on multimode 50/125 µm or 62.5/125 µm fiber.
- D-Light uses 12-channel ribbon fibers compatible with high temperatures.
- E-Light is the module that features the LuxCis® disconnect solution. Please refer to our cable assembly offer for more information on our LuxCis® disconnect solution.

OPTICAL CABLE LENGTH <sup>[1]</sup>

The cable length is customized according to customer requirements. The standard length is between 40 and 500 mm. Tolerance is 0/+5 mm. Cable strengthening options and harness integration are available.

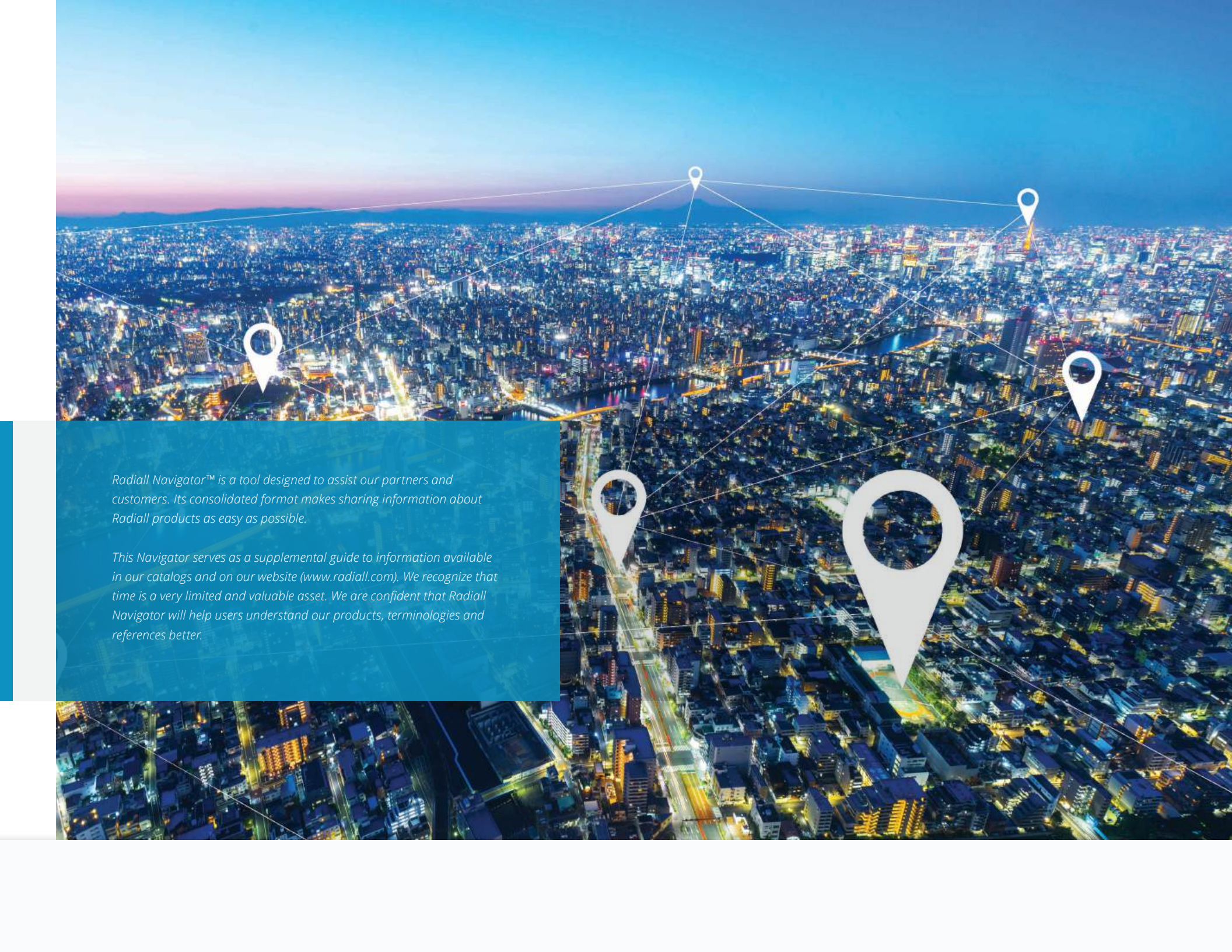


PRODUCT ORDERING

				CHANNELS		PERFORMANCES				PACKAGING				OPTICAL CONTACTS/CONNECTORS <sup>[2]</sup>								FIBER TYPE		
				Tx	Rx	Data Rate	Optical Power Min	Sensitivity Max	Link Budget Min	GM	LCC	S	E	LuxCis®/ ARINC801	ABS1379	LC	29504/4&5	MPO/MT	Q-MTitan	C-Mtitan	50/125	62.5/125		
E-Light	S	M	425	E1XM	1	1	up to 5 Gbps	-4 dBm	-15 dBm	11 dB				■	LuxCis® based disconnect product Please refer to the cable assembly offer									
	S	M	425	E2XM	1	1	up to 5 Gbps	-4 dBm	-15 dBm	11 dB				■										
S-Light	S	M	001	S	1	1	up to 10 Mbps	-5 dBm	-17 dBm	12 dB				■	■	■	■					■	■	
	S	M	255	GM	1	1	up to 4.25 Gbps	-2 dBm	-15 dBm	13 dB	■				■	■	■	■					■	■
	S	M	1001	GM	1	1	up to 10 Gbps	-2 dBm	-10 dBm	8 dB	■				■	■	■	■					■	■
	S	R	255	GM		1	up to 4.25 Gbps	-	-15 dBm	-	■				■	■	■	■					■	■
	S	R	1001	GM		1	up to 10 Gbps	-		-	■				■	■	■	■					■	■
	S	T	255	GM	1		up to 4.25 Gbps	-2 dBm	-	-	■				■	■	■	■					■	■
	S	T	1001	GM	1		up to 10 Gbps	-2 dBm	-	-	■				■	■	■	■					■	■
		D	M4	255	GM	4	4	up to 4.25 Gbps	-2 dBm	-15 dBm	13 dB	■							■	■	■	■	■	■
D-Light	D	M4	1000	GM	4	4	up to 12 Gbps	-2 dBm	-12 dBm	10 dB	■							■	■	■	■	■	■	
	D	R12	255	GM		12	up to 4.25 Gbps	-	-14 dBm	-	■							■	■	■	■	■	■	
	D	R12	1000	GM		12	up to 10 Gbps	-	-10 dBm	-	■							■	■	■	■	■	■	
	D	R12	1000	LL		12	up to 12 Gbps	-	-10 dBm	-		■						■	■	■	■	■	■	
	D	T12	255	GM	12		up to 4.25 Gbps	-2 dBm	-	-	■							■	■	■	■	■	■	
	D	T12	1000	GM	12		up to 10 Gbps	-2 dBm	-	-	■							■	■	■	■	■	■	
	D	T12	1000	LL	12		up to 12 Gbps	-2 dBm	-	-		■						■	■	■	■	■	■	

Notes  
1. D-Light and S-Light pigtailed modules only. Please refer to our cable assembly offer for E-Light disconnect modules  
2. Feel free to contact us for other contact configurations



An aerial night view of a city, likely Tokyo, with a dense grid of illuminated buildings and streets. Overlaid on the image are several white location pins connected by thin white lines, forming a network. The pins are located at various points across the city, including the top center, top right, middle left, middle right, and bottom center. The sky is a deep blue with a hint of purple from the sunset or sunrise.

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*This Navigator serves as a supplemental guide to information available in our catalogs and on our website ([www.radiall.com](http://www.radiall.com)). We recognize that time is a very limited and valuable asset. We are confident that Radiall Navigator will help users understand our products, terminologies and references better.*



## SIMPLIFICATION is our INNOVATION

*We advance the design and engineering process for innovators, groundbreakers and pioneers of technology. We reduce weight, improve durability and streamline installation to provide leading-edge connectors that drive product performance.*

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### GLOBAL PRESENCE

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