

10Gbps 300-pin Long Reach SFF Wideband Tunable Transponder – Zero Chirp TL9000ZACA*-J57

The Bookham TL9000 module is a 300-pin MSA compatible, 10Gbps, long reach, wideband tunable transponder module suitable for 50GHz channel spaced C-band applications requiring a zero chirp transmitter. The module supports data rates from 9.9Gbps to 11.3Gbps and is provided in a low profile (11.4mm high) Small Form Factor (SFF) industry standard mechanical outline.

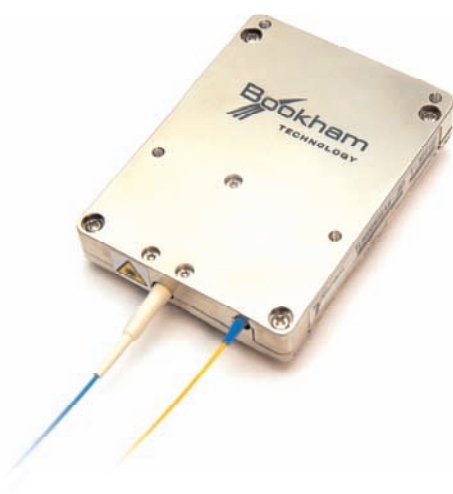
The module supports bi-directional conversion of high speed optical signals to / from low speed electrical signals. The electrical interface provides a 16-bit parallel LVDS interface as defined in OIF-SFI4-01.0.

The transmit path comprises a 16-bit multiplexer, high speed modulator driver and optical transmitter. The optical transmitter utilizes the Bookham LambdaFLEX™ Tunable InP MZ to provide a co-packaged, high performance, low cost solution. Channel tuning is supported on the ITU-T 50GHz grid across full C-band with ± 20 pm stability.


A dual rate, reference clock independent jitter filter is available to support an external clock clean up function to ensure optimum jitter compliance. The jitter filter is available in both source and line timing modes.

The receive path comprises an APD receiver with linear amplifier, CDR and 16-bit demultiplexer. For optimum system performance in noise loaded applications support is provided for external control of the receiver decision threshold.

An external 2-wire serial interface (I²C) is provided to support extensive control, monitor and diagnostic functions in accordance with I²C MSA Ed 4.1



Features

- 300-pin MSA compliant 10Gbps wideband tunable SFF transponder suitable for zero chirp applications (negative chirp variant also available)
- Rate selectable applications including SONET/ 10GbE with or without FEC encoding (9.9Gbps up to 11.3Gbps)
- OIF-SFI4-01.0 compliant low speed electrical interface
- Co-packaged full band tunable laser source and integrated InP MZ optical transmitter
- Up to +4.0dBm nom output power with ± 1 dB power stability over operating range
- ± 2.5 GHz wavelength stability on 50GHz ITU-T channel spacing (C band)
- APD receiver with support for decision threshold control adjust and optical damage protection to +12dBm typical
- FM and AM tone insertion supported
- Software configurable, dual line rate, reference clock independent jitter filter available
- Source/line timing modes and loopback diagnostics
- MSA Ed 4 I²C compliant interface for control/ alarm and monitor diagnostics
- Low profile SFF mechanical outline 76 x 56 x 11.4 mm
- Low power dissipation 7W typical
- Wide operating case temp range -5°C to +70°C
- RoHS 5/6 compliant 

Applications

- Long Reach applications based on Telcordia GR-253-CORE, ITU-T G.691 and IEEE 802.3ae system architectures
- Regional Metro

Product Brief

Power Supply Requirements

The TL9000 transponder module operates from the supply rails detailed below. The use of an APS supply is not supported by this product.

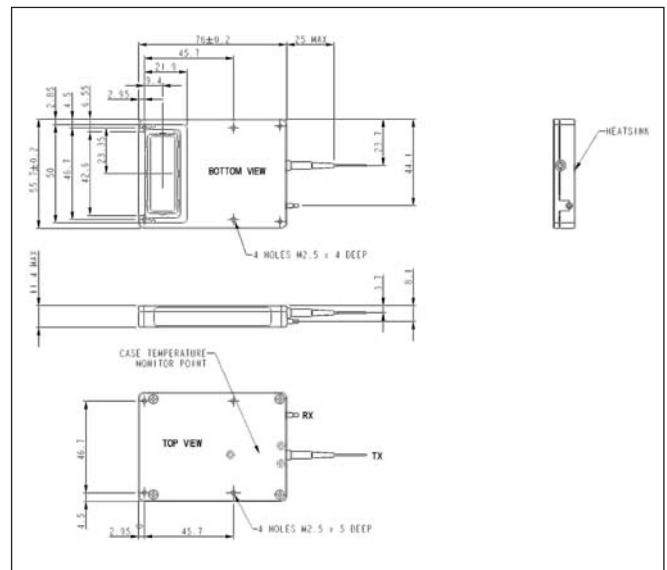
Supply rail	Rail	Min	Nom	Max	Unit
+1.8V Current (note 1)	P1V8		850	1000	mA
+3.3V Current	P3V3		1000	1800	mA
+5.0V Current	P5V0		80	120	mA
-5.2V Current	M5V2		300	375	mA
Supply Noise (6kHz – 2MHz)	All Rails			50	mVpp
Total Power Consumption			7	9	W

Note 1: APS not supported

Configuration Information

Option	Configurations	Notes
Transmitter Type	Zero Chirp	0dBm to +4dBm mean modulated NRZ. Negative chirp and higher power variants also available
Channel Spacing	50GHz	
Jitter Filter	None, Single or Dual Rate	
Receiver Type	APD	PIN also available
Mechanical Height	11.4 mm	
Optical Connector	LC (J57)	Others available on request

Mechanical Details



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