

TLC'S 76.5 GHZ MMIC TRANSCEIVERS

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TLC Manufactures 76.5 GHz Transceivers

TLC Manufactures MMIC Based W-Band modules

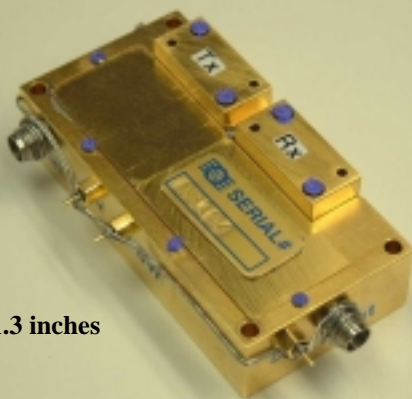
TLC Precision Wafer Technology Inc. Minneapolis MN has been building its operation for millimeter wave design, test and special component production since 1994. This includes several millimeter-wave technology transfers from Lockheed Martin and Honeywell International.

Recently, by combining their capabilities of module assembly with their special MMIC components, such as the TLC O-chip, the company has developed a simple W-band transmit and receive module that operates from 75 to 77 GHz.

TLC developed two versions, the transmit and single channel received transceiver and the multi-channel transceiver with up to three (3) receive channels. Both versions have wave-guide outputs for direct connection to an antenna of choice.

Presently the high precision ultra stable (0.1%) models use an external VCO. However TLC is rapidly enhancing the stability of the all MMIC transceivers.

Figure 1: TLC's MMIC 76.5 GHz Transceiver



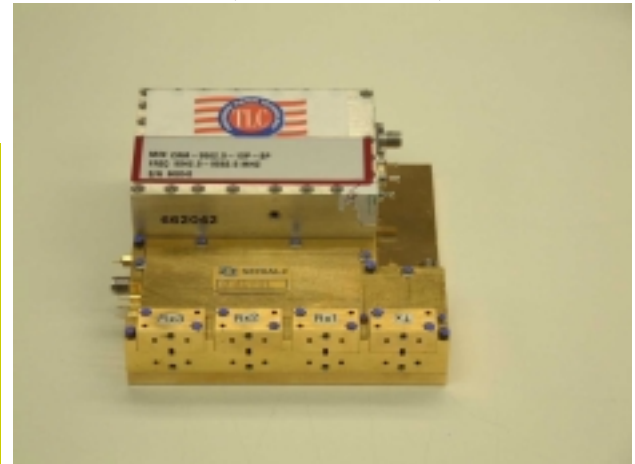
Size: 2.5 x 1.3 inches

Patents Pending

General Specifications

Transmit Specifications	
Operation Range	76.0 to 77.0GHz
Output Power	10.0 to 14.0 dBm
Phase Noise @100kHz	(-105 dBc/Hz)
Wave-guide Type	WR12 or WR10
Receive Specifications	
Receiving Range	76.0 to 77.0 GHz
Receive Power Range	0 to -100 dBm
Switch Control (0n/off)	0V, 5V/ ~60 mA
Rx Conversion Loss	< - 5 dB
Wave-guide Type	WR12 or WR10
Reproducibility	
Frequency Stability	(+/- 0.1%)
Power Stability	< +/- 1dB
Sweep Linearity	< 0.5%

Figure 2. TLC's Multi-channel 76.5 GHz Transceiver with external VCO. (Total size 4in x 4in)



Patents Pending

For additional information on these and other TLC products: www.tlcprecision.com or contact sale@tlcprecision.com, ph 612-314-2795 ,f 612-341-2799