

Linwave FMCW 77GHz Radar Module

LW28-797644

Linwave Technology manufactures a miniature 77GHz FMCW radar front end for accurate range measurement and surveillance applications.



The module utilizes in-house chip and wire technology based on a commercial GaAs chip set to provide high performance in a compact outline. The LO input is a x8 multiplier chain to generate the required mm wave transmit output and also acts as the LO for the receiver allowing ease of RF drive. The module is housed in a common footprint to allow interchangeability with alternative modules.

Features:

- Small footprint compact module
- Wide IF bandwidth
- Separate TX and RX ports (bi-static architecture)
- Custom solutions available

Applications:

- Accurate distance measurement
- High resolution area surveillance
- Collision avoidance
- Transport management
- General FMCW Radar front end

Linwave reserves the right to make changes, without notice, in the products, including circuits, standard cells, and/or software, described or contained herein in order to improve design and/or performance.

Data sheet Iss A Draft

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Parameter	Limits	Units	Comments														
Centre Frequency	76.5	GHz															
Operating bandwidth	1	GHz	typical														
TX Output Power	+13	dBm	(over operating B/W)														
Transmit spurious and harmonically related outputs	-85	dBc	max														
RX Gain (RF to IF)	20 min / 25 max	dB															
Max RX input power no damage	-15	dBm															
VSWR at TX port	2.5:1		max														
VSWR at RX port	2.0:1		typical														
VSWR at LO port	1.5:1		typical														
Receiver Noise Figure	<table border="0"> <tr> <td></td> <td>max</td> </tr> <tr> <td>100kHz</td> <td>17</td> </tr> <tr> <td>900kHz</td> <td>11</td> </tr> <tr> <td>1.35MHz</td> <td>9</td> </tr> <tr> <td>2.0MHz</td> <td>8</td> </tr> <tr> <td>3.0MHz</td> <td>8</td> </tr> <tr> <td>5.0MHz</td> <td>8</td> </tr> </table>		max	100kHz	17	900kHz	11	1.35MHz	9	2.0MHz	8	3.0MHz	8	5.0MHz	8	dB	IF frequency noise figure. Note: LO drive phase noise, -82dBc/Hz@10kHz, -100dBc/Hz@100kHz using Agilent 83712B
	max																
100kHz	17																
900kHz	11																
1.35MHz	9																
2.0MHz	8																
3.0MHz	8																
5.0MHz	8																
IF bandwidth	0.05 to 10	MHz	Operation to 20kHz by design but not tested														
TX to RX Isolation	>45	dB	Typically 49dBc. Measured by applying RF signal to TX port and measuring level at RX port														
LO drive level	+4 to +10	dBm	x8 multiplier														
Size	67.2 x 28 x 19	mm	Excludes protrusions from main body														
RF connections (TX o/p and RX i/p)	WR12		Flange UG387/U														
LO input connector	SMA female																
IF output connector	SMA female																
DC supply voltage	+5 -5	V	via filtercons														
DC supply current	420 (+5V) 40 (-5V)	mA	typical														
Ground connection	Solder turret																
Operating temperature range	-28 to +65	°C															
Storage temperature range	-40 to +80	°C															

Note: Electrical parameters applicable over the full operating temperature range

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