

MILLIMETER-WAVE DUAL INPUT DOWN CONVERTER



Wide Band Coverage: 18 to 40 GHz

IF Frequency Range: 2 to 16.5 GHz

High Input Dynamic Range

High Power Protection

Internal mmW BIT Generators

Internal mmW LO Multipliers

Supports Two Receiving Antennas

Extremely Compact Housing

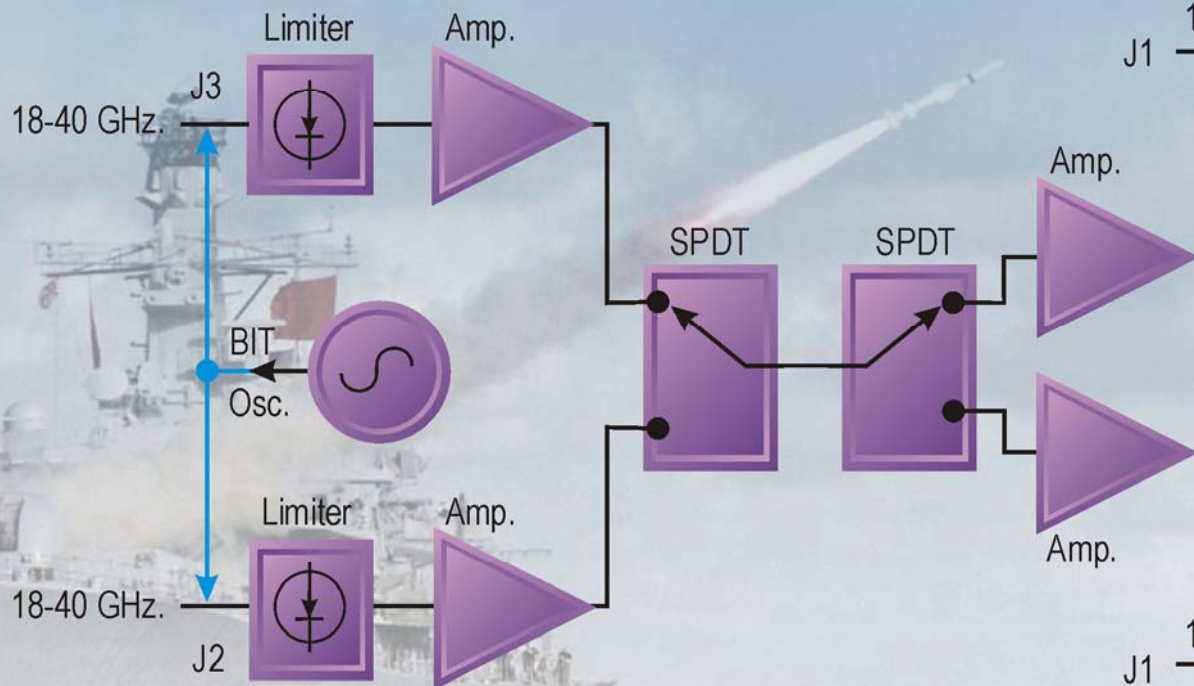


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PRODUCT DESCRIPTION

The mmW DC is an essential building block for any future EW system. The DC has two input connections to two millimeter-wave antennas. The DC is protected from high input signals by a limiter. After one antenna is selected, the received signal is split into two bands: 18 to 26 GHz and 25.5 GHz to 40 GHz. The overlapping bands allow receiving of wide bandwidth signals. The signals received are down-converted into the frequency range of 2 to 16.5 GHz.

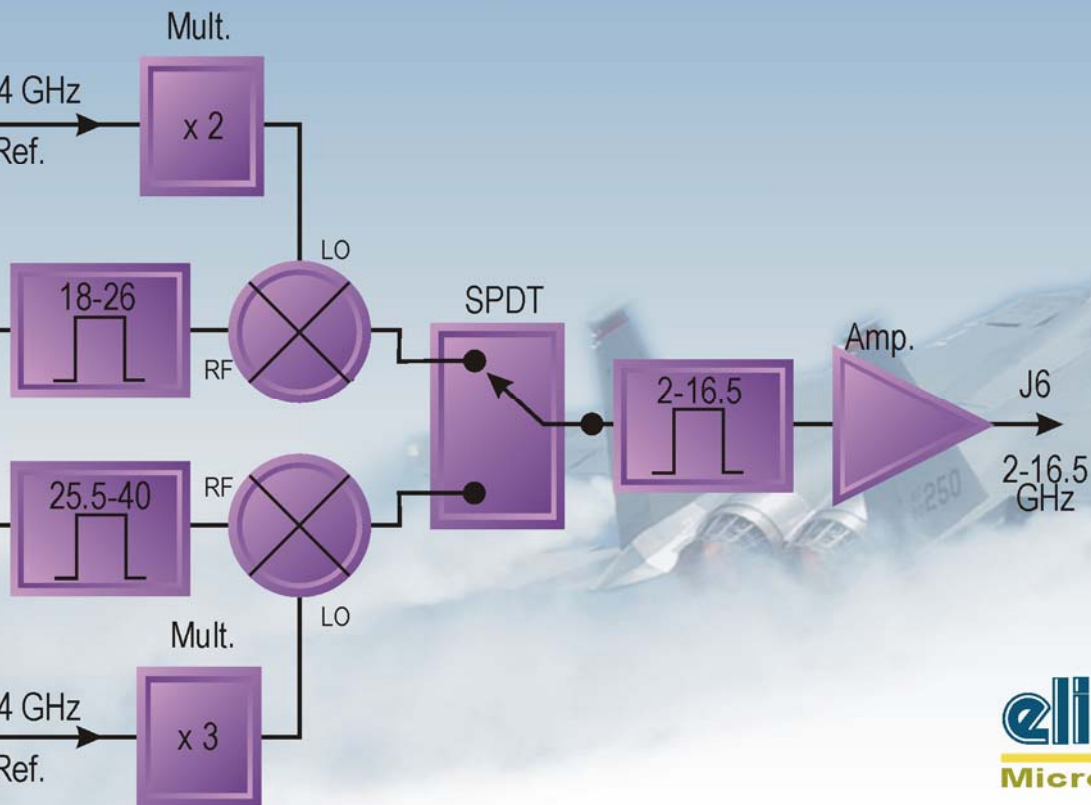
The mmW DC includes internal millimeter-wave multipliers, which generate the necessary LO signals. One external 14 GHz signal is used to drive the two multipliers, thus generating 28 and 42 GHz LO signals. By supplying the same 14 GHz signal for two mmW DC, the DC becomes coherent and may be used for Direction Finding (DF) applications. When Bit Mode is selected, self testing occurs by injection of test signals into the antennas. The test signals are at 19 GHz and 38 GHz, one for each sub-band.



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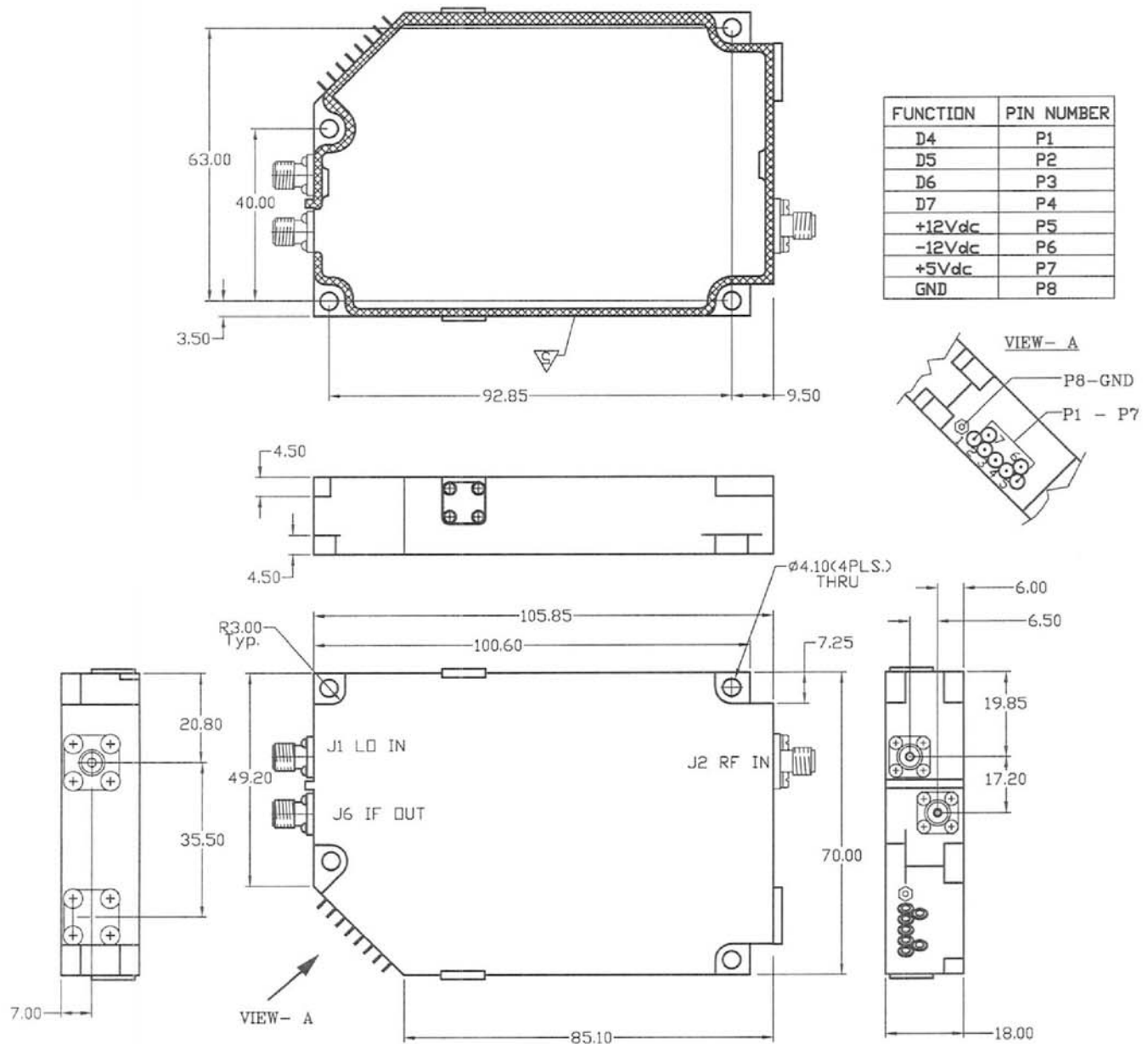
TYPICAL SPECIFICATIONS

Input Frequency Range (J2, J3)	18 to 40 GHz.		
mmW Sub-Bands	18 to 26.0 GHz & 25.5 to 40 GHz		
Output Frequency Range (J6)	2 to 16.5 GHz.		
Input One dB Compression Point	-5 dBm		
Input Third Order Intercept Point	+5 dBm		
Noise Figure	20 dB		
Power Handling	25 dBm CW, 30dBm Pused		
Typical Local Oscillator Phase Noise (With External Reference)	@10 KHz	-88	dBc/Hz
	@ 100 KHz	-92	dBc/Hz
	@ 1 MHz	-116	dBc/Hz
	@ 10MHz	-122	dBc/Hz
Inputs/Outputs VSWR	2.5:1		
RF to IF Gain	16.5 dB		
Test Generators Frequencies	19 GHz & 38 GHz		
Down Converter Image Rejection	45 dB		
Isolation Between Input Channels	40 dB		
Antennas Selection Switching Speed	350 nsec.		
Turn On Time	5 sec.		
Supply DC Voltages	+12V, -12V, +5V		
Total Power Consumption	21 Watt		
mmW Input Connectors (J2, J3)	2.4 mm Female Connector		
RF Connectors (J1, J6)	SMA Female		
DC and Control Connectors	Soldered Pins		
Operating Temperature Range	-20°C to + 70°C @ Base Plate		



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OUTLINE DRAWING



Elisra Microwave Company Division is a technology company with over 30 years of proven experience in supplying best-of-class components and subassemblies of wide range of RF, microwave and millimetres - wave applications.

elisra electronic systems ltd.

Microwave Division

48 Mivtza Kadash St., Bene Beraq 51203 Israel
 Tel. 972-3-6175655 Fax. 972-3-6175299
 Website: www.mw-elisra.com
 e-mail: trm1@elisra.com

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