



PUP_EN24C_T1R2

PUP_EN24C_T1R2 (Figure 1) is a K Band radar development platform with one transmitting and two receiving channels.

Only the platform and power adapter are included when PUP_EN24C_T1R2 is purchased. Users need to purchase separate antennas and connecting RF cables to use the platform.



Figure 1. PUP_EN24C_T1R2

Besides range, velocity, and DOA measurements, PUP_EN24C_T1R2 can be configured as interferometric radar using longer RF cables (0.5-1m) for vibration estimation and detection.

The RF front-end frequency sweep is implemented with a phase-locked loop (PLL) to achieve linearity of frequency modulations. The FPGA-based controller connects the front end with a four-channel LVDS (low-voltage differential signaling) 50MSPS pipeline ADC module and connects the user's computer with a high speed (up to 480Mb/s) USB interface.

This device requires a licensed installation of MATLAB, which must be provided by the user. The platform includes user-friendly MATLAB GUI (Graphical User Interface) source code. The GUI serves not only as an operating interface but also as a reference implementation demonstrating the system workflow, data formats, and signal processing methods. The provided source code can be readily adapted and integrated into your own projects, helping to accelerate development.

This platform works between 24GHz and 25GHz and is expandable to 24GHz-26GHz. The detectable range is approximately 15 meters for people and 40 meters for medium-sized vehicles.

Luswave Technology LLC

Sales: +1-703-338-8380 **Technical:** +1-571-296-6435 **Fax:** +1-571-223-5483 **Email:** service@luswave.com

Raw data can be recorded for post-processing.

SPECIFICATIONS

Specification	Minimum	Typical	Maximum
Channels		1x Transmitters, 2x Receivers	
Antennas		Not included	
Modulations		FMCW, CW	
Typical Frequency Range	24GHz		25GHz
Expandable Frequency Range	24GHz		26GHz
Sweep Time		0.5ms, 1ms, 2ms, 4ms, 8ms	
Sample Per Sweep		128,256,512,1024,2048,4096	
Tuning Voltage	0		4V
Tuning Sensitivity		0.8GHz/V	
Transmitting Power (9.6-10.2GHz)	18dBm	20dBm	22dBm
SSB Phase Noise @1MHz offset		-99dBc	
Noise Figure		10dB	
Maximum Input power		5dBm	
IIP_1dB		-12dBm	
Supply Voltage	5.75V	6V	6.25V
Supply Current		1200mA	
Operation Temperature	-40°C		85°C
Dimensions		L:160mm, W:125mm, H:32mm	
Weight		20oz/16oz with/without mounting brackets	

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