PLX-T60

Configurable mmWave Radar Module

Plextek's PLX-T60 platform enables rapid development and deployment of customized mmWave radar solutions at scale and pace.

The PLX-T60 platform combines the Texas Instruments xWR6843 single-chip 60 - 64 GHz mm-wave radar chipset with a novel substrate integrated waveguide antenna designed to deliver enhanced sensing performance. The antenna design enables the full bandwidth of the chip to be realised, providing either greater range resolution or enabling more devices to operate concurrently without mutual interference compared to other designs. Different antenna designs generate different beam patterns to suit a range of applications with optimal performance.

The PLX-T60 platform can output detections, point-cloud data, range-Doppler maps and raw baseband signals. It is also compatible with TI's mmWave studio.

Example Applications:

The PLX-T60 platform can be used for a wide and diverse range of applications, including but not limited to:

Ball tracking in sports
(e.g. tennis, cricket)

Collision avoidance
(vehicles and autonomous platforms)

Activity detection and classification

Perimeter security

Vital signs monitoring

Navigation

Level sensing

About Plextek

We have a 30-year history of providing technology solutions to a variety of organisations.
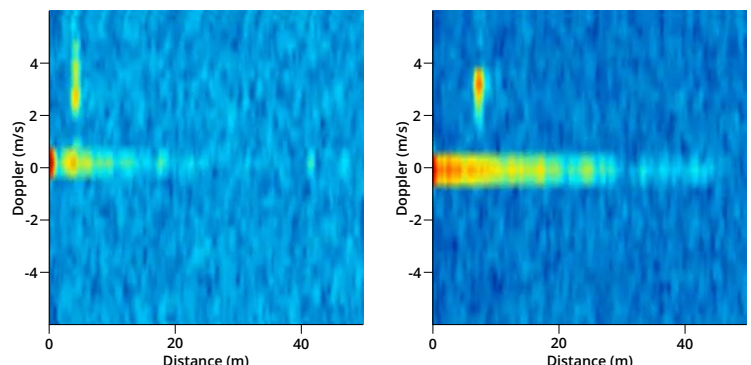
Plextek understands today's key challenges for smarter technology development and can generate both the ideas and deliverable solutions to the assured level of security, performance, resilience and ergonomics that you need.

We are a product development & consulting company that works with clients to achieve results based on their specific requirements. Our engineering experience, supported by our library of IP for key technology elements, aids accelerated time to market and greater cost effectiveness.
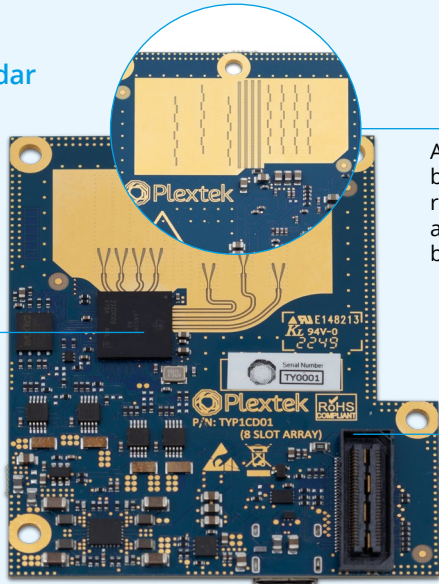
Key Features :

» Up to 150 m detection range against a person

» Higher signal-to-noise ratio*

» Design enables efficient operation over the full bandwidth of the chip to be realised

» More devices to operate concurrently without mutual interference*

» Low Size Weight and Power

» Supports Texas Instruments mmWave studio software

» A range of antenna configurations available

» Better range resolution

Detection of moving target using the xWR6843ISK evaluation board (below left), and a PLX-T60 platform (below right)

*Compared with Texas Instruments xWR6843ISK Evaluation board

PLX-T60 mmWave Radar

Antenna, which can be configured for a range of different applications (see below)

xWR6843 Chipset with bespoke firmware modifications to support non standard antenna configuration

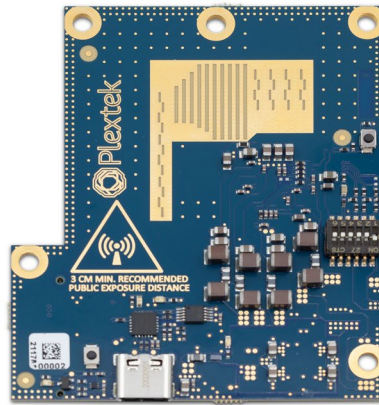Electronic circuitry to power and drive the radar chipset and provide connectivity to external devices

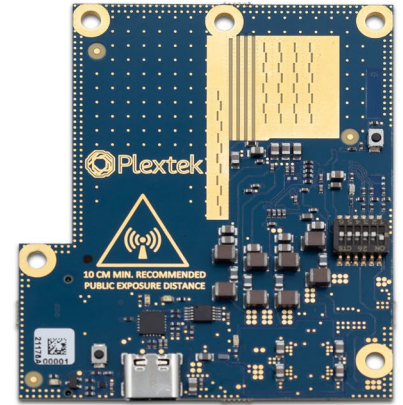The PLX-T60 platform can be integrated into your product through:

» Integrating one of our existing designs as an OEM module within your product (See table below)

» Using an existing PLX-T60 platform as a base, and tasking Plextek to:

   » Design a customized antenna solution to provide the required beam coverage and gain

   » Modify electronic circuitry to provide desired I/O connectivity

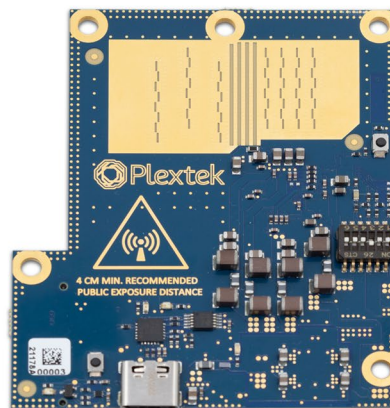|	
Size	70 x 60 x 8mm*
Weight	15g*
Power Consumption	Up to 2.5 W
Frequency Range	60 – 64 GHz Antenna return loss better than 10 dB
Beamwidth Configurations	Azimuth – 36˚ to 110˚ (HPBW) Elevation – 12˚ to 30˚ (HPBW)
Angular Resolution	Azimuth – from 12˚ Elevation – from 3˚
Range Resolution	From 4 cm
Detection Range	Up to 150 m for person
Supply Voltage	5 V, 500 mA
Connectivity	USB

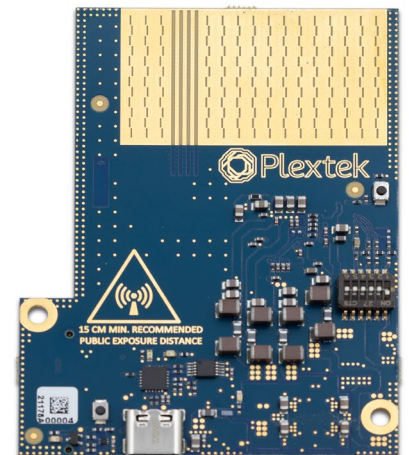*may vary with selected antenna pattern*

PLX-T60A
Very short range wide field of view (3D)

PLX-T60C
Medium range (3D)

PLX-T60B
Short range (3D)

PLX-T60D
Long range detection and tracking (2D)

Plextek
Exceptional Engineering Solutions

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