



## Modular Radar Demonstration & Development Platform

### Overview

The iScan Radar Series makes rapid prototyping of high performance radar quick and easy. Utilizing a modular architecture, CEI's iScan processor, expansion, and antenna modules can be mixed and matched to create a customized development platform. Equipped with extensive capability, such as MIMO, steerable beams and digital beam forming, iScan provides superior performance for tasks such as range, speed and RCS measurements, target tracking, collision avoidance, occupancy sensing and much more. iScan Antenna Modules are available in 24, 60 and 77GHz options, making the iScan Radar Series an excellent solution for your next application.

### Modular and Expandable

CEI's iScan Modular Radar Architecture is designed to get your next radar prototype up and running quickly! The interchangeable antennas, processor and enhancement modules make it easy to customize your development platform. Sold as kits or as individual modules, simply choose your preferred combination of iScan modules, connect them together and get started!

Three basic types of boards comprise the iScan architecture:

- The iScan Edge (Processor Module) acts as the control center for the development platform.
- The optional iScan Turbo (Expansion Module) can be added to provide enhanced processing, sensing, and evaluation capability.
- Antenna Modules include the iScan Prizm (77 GHz) or iScan Omega (24 GHz). These contain the RF transmitter/receiver and a variety of antenna options.

All three module types are designed to be combined so feel free to mix, match and stack!

**Custom Solutions Available!**

Contact

[Sales@ColoradoEngineering.com](mailto:Sales@ColoradoEngineering.com)

CEI Is Proud To Be A Preferred Design Partner For:



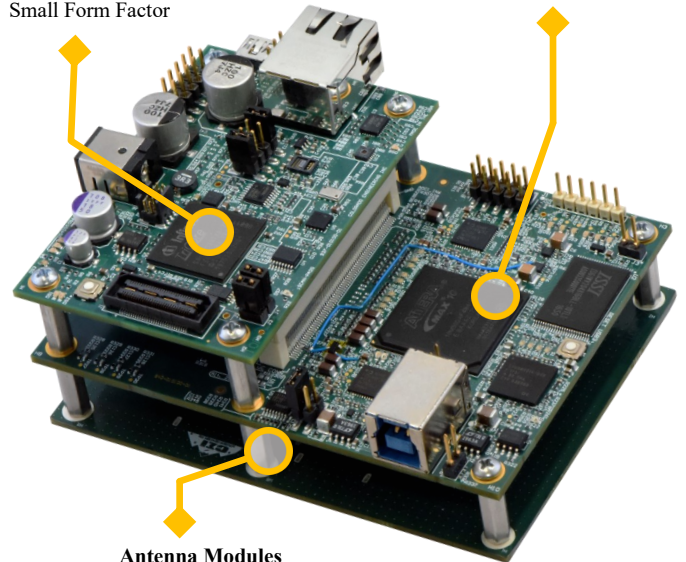
### COMPONENTS

#### Processor Module

- State-of-the-art Radar Processor Options
- I/O: Ethernet, USB, CAN, WiFi, Bluetooth & More!
- On-board Memory
- Small Form Factor

#### Expansion Module

- Extend Processing Capability with FPGAs, GPUs and ASICs
- I/O Expansion
- Data Recording
- Low-Cost/Customizable Options



#### Antenna Modules

- 24GHz, 77GHz
- RF Transmitter/Receiver
- Multiple Antenna Modules to Choose From
- Custom Antenna Module Designs

### FEATURES

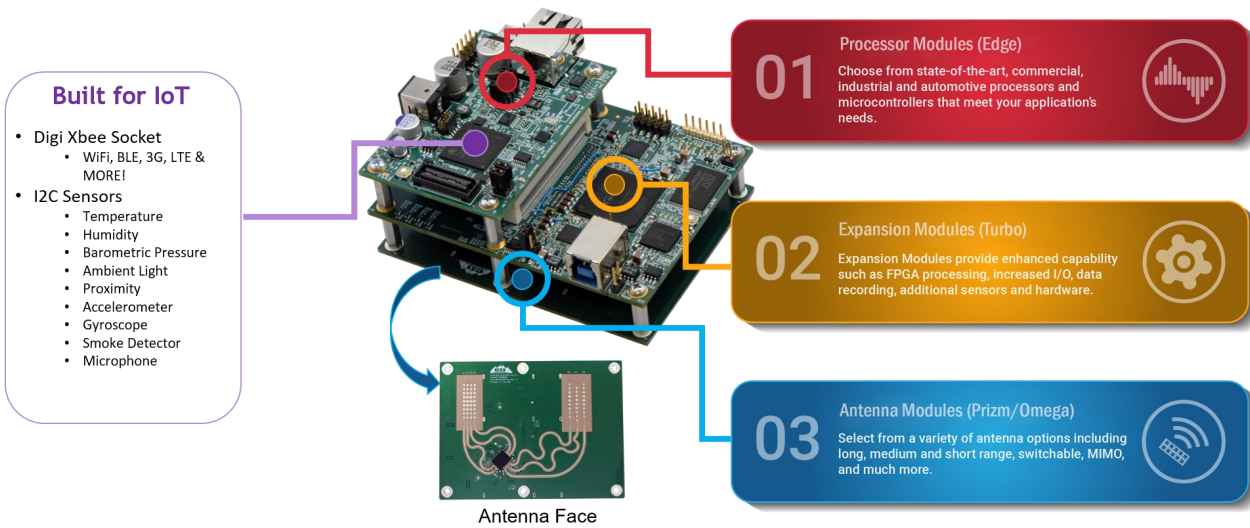
- High Performance Radar Capabilities
- Spatial Measurements
- Multi-modal Sensor Configurations
- Multiple Beam Options
- Advanced Digital Signal Processing
- 24/60/77 GHz Frequencies
- Small Form Factor

### APPLICATIONS

- Smart City, Home & Security
- Aviation & Guidance
- Detection & Search
- Target Acquisition & Tracking
- Speed, Range & Angle Measurements
- Collision Avoidance & Assisted Driving & More!

iScan RADAR SERIES

# MODULAR ARCHITECTURE



## Antenna Modules

Name/Model Number	Features
<b>iScan Prizm 1</b> iScan-A-RXS8160-6610-D	<ul style="list-style-type: none"> <li>• <b>Frequency:</b> 77 GHz</li> <li>• <b>XCVR:</b> Infineon 77GHz Chipset</li> <li>• <b>FoV:</b> ±33° AZ, ±5° EL</li> </ul>
<b>iScan Prizm 2</b> iScan-A-TEF8102-24103610-D	<ul style="list-style-type: none"> <li>• <b>Frequency:</b> 77 GHz</li> <li>• <b>XCVR:</b> NXP TEF 8102 FMCW</li> <li>• <b>FoV:</b> (7x4 Center) ±12° Az, ±5° El (7x3 Outer) ±18° Az, ±5° El</li> </ul>
<b>iScan Omega 1</b> iScan-A-ADF5901-5904-7316-F	<ul style="list-style-type: none"> <li>• <b>Frequency:</b> 24 GHz</li> <li>• <b>XCVR:</b> ADI 5901TX / 5904RX</li> <li>• <b>FoV:</b> ±36.5° AZ, ±8° EL</li> </ul>
<b>iScan Omega 2</b> iScan-A-ADF5901/04-2526-D	<ul style="list-style-type: none"> <li>• <b>Frequency:</b> 24 GHz</li> <li>• <b>XCVR:</b> ADI 5901TX / 5904RX</li> <li>• <b>FoV:</b> ±12.6° AZ, ±13° EL</li> </ul>

## Processor Modules

Name/Model Number	Features
<b>iScan Edge 1</b> iScan-P-A2G	<ul style="list-style-type: none"> <li>• <b>Processor:</b> Aurix™TC39xx</li> <li>• <b>On-board Sensors:</b> IMU, Temperature, Humidity, Pressure, Light, Optical, Smoke Detector</li> </ul>
<b>iScan Edge 2</b> iScan-P-4700	<ul style="list-style-type: none"> <li>• <b>Processor:</b> Infineon XMC4700</li> <li>• <b>On-board Sensors:</b> Temperature, Humidity, Barometric Pressure, Ambient Light/ Proximity, Accelerometer, Gyroscope, Smoke Detection &amp; Microphone</li> <li>• <b>Digi Xbee Socket:</b> WiFi, LTE, Bluetooth</li> </ul>
<b>iScan Edge 3</b> iScan-P-S32R274	<ul style="list-style-type: none"> <li>• <b>Processor:</b> NXP S32R274</li> <li>• <b>On-board Sensors:</b> Temperature, IMU, Light/Proximity, Barometer, Humidity, Smoke, Microphone</li> </ul>
<b>iScan Edge 4</b> iScan-P-STM32F4	<ul style="list-style-type: none"> <li>• <b>Processor:</b> ST Micro STM32F407</li> <li>• <b>On-board Sensors:</b> Humidity, Barometric Pressure, Accelerometer &amp; Gyroscope, Temperature, Smoke Detector, Ambient/Light Proximity</li> </ul>

## Expansion Modules

Name/Model Number	Features
<b>iScan Turbo 1</b> iScan-E-M10	<ul style="list-style-type: none"> <li>• <b>Processor:</b> Intel Max 10 FPGA</li> <li>• <b>I/O:</b> USB 3.0 Type-A</li> <li>• <b>Other:</b> 4-ch ADC</li> </ul>
<b>iScan Turbo 2</b> iScan-E-TK1 (In Development)	<ul style="list-style-type: none"> <li>• <b>Processor:</b> NVIDIA Tegra K1</li> <li>• <b>Features:</b> H.264, HDMI, 1 USB 2.0, USB 3.0, X4 PCIe Gen2, Onboard IMU and much more!</li> </ul>

## iScan Development Kits

Name/Model Number	Configurations
<b>iScan Phantom</b> iScan-K-RXS8160-A2G	<ul style="list-style-type: none"> <li>• <b>Processor Module - iScan Edge 1:</b> Infineon Aurix™TC39xx microcontroller</li> <li>• <b>Antenna Module - iScan Prizm 1:</b> Infineon 77 GHz MMIC RXS8160</li> </ul>
<b>iScan Phantom with Turbo 1 Expansion Module</b> iScan-K-RXS8160-A2G-M10	<ul style="list-style-type: none"> <li>• <b>Processor Module - iScan Edge 1:</b> Infineon Aurix™TC39xx microcontroller</li> <li>• <b>Antenna Module - iScan Prizm 1:</b> Infineon 77 GHz MMIC RXS8160</li> <li>• <b>Expansion Module (optional) - iScan Turbo 1:</b> Intel Max 10 FPGA</li> </ul>
<b>iScan Panther with Turbo 1 Expansion Module</b> iScan-K-ADF5901/04-STM32F4-M10	<ul style="list-style-type: none"> <li>• <b>Processor Module - iScan Edge 4:</b> NXP S32R274 microcontroller</li> <li>• <b>Antenna/XCVR Module - iScan Omega 2:</b> ADI 24 GHz 5901TX / 5904RX</li> <li>• <b>Expansion Module- iScan Turbo 1:</b> Intel Max 10 FPGA</li> </ul>

