

Introducing the:

# Evolution Series

U.S. Military Transformation through Creative SCI Solutions

Sensor Concepts, Inc.



**Evolution Series Radar**

**“E-Series”**

**FEATURES BLAZING SPEED**

**4096 Frequencies in 82 microseconds**

**Versatile  
Multimode  
Radar  
for  
Instrumentation,  
Airborne,  
or Ground Based  
Applications**



- Digital Topology
- Modular Design
- Robust Operation
- Comprehensive Software

Applications Variants:

- RCS Measurements
- Imaging
- Airborne Radar
- Synthetic Aperture Radar
- Doppler Data Collection
- UAV's

Sensor Concepts, Inc.  
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# Collect Data with Precision and Speed



## "E-Series" Radar

Flexible in Design to Meet Changing Radar Needs

Sensor Concepts, Inc.

The SCI Evolution (E) Series of Radar Systems is a revolutionary design that allows the customer an extremely flexible, expandable and affordable solution to their measurement needs. The E-Series family currently consists of the Linear Frequency Modulated Homodyne (LFMH) variant and the De-Chirp On Receive (DCOR) variant. These models currently share common Computers, Controllers and DC Power Supply Units. A different Transceiver Unit is required for each variant.

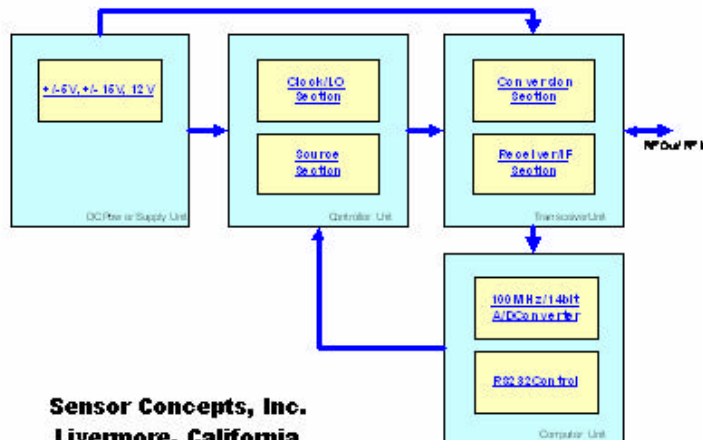
Other developments are underway that will provide single band, highly compact solutions for onboard avionic subsystems applicable to aircraft, missiles and Unmanned Aerial Vehicles (UAVs).

Sensor Concepts, Incorporated (SCI) developed a proprietary source technology based on a state of the art Direct Digital Synthesizer (DDS) chip and a controller using a Field Programmable Gate Array (FPGA). A 5"x7" custom 12 layer board integrates these components together to produce a core subsystem that is highly optimized for radar applications.

The system uses a high speed Analog to Digital (A/D) converter that is tightly coupled to high speed Digital Signal Processors (DSPs).

The E-Series is positioned to provide highly optimized solutions to a wide variety of high speed measurement needs.

**Precision Processing Opportunities**  
**Range-Doppler Discrimination**  
**Blazing Data Acquisition Speed**  
**1000 times faster than previous systems**



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### Operational Radar Configurations:

Variants include:

- Linear Frequency Modulation Homodyne (LFMH) for *Short Range*
- Dechirp-on-Receive (DCOR) for *Long Range*
- Experimental Modulation Options
- Ground Based Configurations
- Airborne Pod Integration Configurations
- Limited Band/Reduced Hardware Variants for *Unmanned Aerial Vehicles (UAV)* or *Missile Seeker Applications*
- Interleaved Logical Radar Modes

### Data Reduction Software:

**Flexible User Options:** RCS vs. Aspect, Frequency, Downrange/Crossrange, Global RCS, Global Downrange.

**Plots:** Real Time, X-Y Rectangular, Polar, Multiple Traces.

**Imaging:** Polar Reformating, Data Windowing, Image Comparison, Image Overlay.

**Data Manipulation:** Motion Compensation, Near to Far Field, Auto Registration.

### System Specifications:

**Frequency coverage:**

0.100-18 GHz (4 bands)

**Number of Raw frequencies:** 32 to 16384

**A/D Converter:** Presently 14 Bits; 100 MHz

**Hardware Gating:** 500 KHz to 2.9 MHz LFMH

**Modulation types:** Homodyne DDS Generated with support for DCOR option.



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