- **What is CircuitSeed™?**
  This is a patented technology that approaches analog designs using only digital components and converts analog signals to digital, upfront. This includes a new CMOS Field Effect Transistor (iFET) with unique properties.

- **What is the size of the digital chipset?**
  CircuitSeed™ will process analog signals using digital components at a deep-submicron technology which operates at 40 nanometer (40nm) and below.

- **What is the input voltage required for the digital chipset?**
  The power supply required is significantly below 0.5 volts (as much as 70% less power consumption).

- **Can I increase the battery life if I implement this design on a smart device?**
  Yes. This design allows us to reduce the heat dissipation on the system and, thus, increase the product life.

- **What are the main components for this design?**
  Only digital parts/components are required for this design, allowing us to operate with extremely high precision without precision parts or matched pairs; no current mirrors are employed.

- **What is the system resolution?**
  Analog accuracy can be greater than 20 bits of digital resolution, i.e. 1 million to 1.

- **Does it operate at high speed?**
  Yes. Analog functions are as compact as logic and can operate at logic speeds.

- **Do I need to calibrate it before using it on my system?**
  No. The circuit auto-calibrates with constant measurements before every cycle.

- **Can I implement these designs to different devices?**
  Yes. CircuitSeed™ can easily be ported to other platforms.

- **Is it possible to replace analog components using digital parts?**
  Yes. Fewer analog parts are required, which is reflected in cost and real estate (PCB) reduction (20% or more smaller).

- **In what kind of applications can I use CircuitSeed™?**
  This technology is scalable to a wide range of applications such as Modulators, Demodulators, Phase-Locked Loop, Low Noise Amplifier, Analog-to-Digital converter, Digital-to-Analog converter - and more.

- **What are the main building blocks of this design?**
  A precision Voltage reference, a precision Comparator, a precision 2x Amplifier, and a Low-Z Full-Differential Low Noise Amplifier, PLL all created using a digital design flow.

- **What is the maximum gain that can be achieved?**
  This is a high gain amplifier with no oscillation, and it varies from 1 up to 1,000,000.

- **Is this a new high precision circuit design?**
  Yes. This is a new and revolutionary design where all analog components are made with digital parts, allowing us to achieve high precision without precision parts or matched components for a total scalable and stable response.

- **What is the main linearity property and system's response time?**
  This design presents an excellent linearity even though the input's operating range goes outside the power rails (100mV below ground at the negative extreme) for progressively increased input amplitude steps. Additionally, it operates at logic speeds, providing a fast, stable and linear response (500pS).

- **Can I operate outside the power rails with differential inputs (+&-)?**
  Yes. The inputs can operate from rail-to-rail and outside the power rails by a significant amount.

- **What is necessary in order to calibrate the circuit?**
  No calibration is required. The circuit auto-calibrates before each measurement, eliminating discrepancies caused by the aforementioned and offset errors.

- **Is this an ultra-deep submicron (sub-µm) CMOS technology?**
  Yes. This is the introduction of a new and novel device structure, enabling a charge-based approach that takes advantage of sub-threshold operation for designing analog CMOS circuits. These analog functions are portable into ultra-deep sub-µm integrated circuit process nodes and across vendors, without re-design.