Overview
The Small Form Factor (SFF) Software-defined Radio (SDR) Evaluation Module is a unique new product that addresses the special portable SDR needs of the public safety and commercial markets. It was designed around the latest DSP and FPGA technology as a low-cost, off-the-shelf, integrated hardware and software development solution.

Potential Applications
The following applications will benefit greatly from using the SFF SDR Evaluation Module.

Public safety
• Such public safety applications as TETRA and APCO band communications, vehicular systems, transponders, and broadband data systems will be greatly enhanced by their use of the SFF SDR Evaluation Module.

Commercial
• RFID readers, WiMAX and Wi-Fi customer-premises equipment (CPE), broadband data systems, vehicular systems, as well as femto and pico base stations are but a few applications that can be developed with the SFF SDR Evaluation Module.

Note: These applications may require conversion and RF modulation.

Key Features
The SFF SDR Evaluation Module includes the following leading-edge features:
• TMS320DM6446 DSP system-on-chip from Texas Instruments
  ◦ TMS320C64x™ DSP core, 594 MHz
  ◦ ARM926 core, 297 MHz
  ◦ Rich set of peripherals including serial ports, USB, EMAC, DDR2 EMIF, as well as video ports
• Virtex-4 SX35 FPGA from Xilinx
• Modular — allows additional boards to be stacked
• Boot loader located in the Flash memory for autonomous use of the platform

Key Benefits
• Small form factor for easy portability
• Self-contained
• Embedded, independent power monitoring for each processor
• Supports model-based design tools, accelerating prototyping
• Integrated troubleshooting and hardware-in-the-loop co-verification capabilities
• The module incorporates GPP, DSP and FPGA, making it easy to implement all protocol layers for a complete radio
• Easy adoption of third-party RF and I/O boards
• Ethernet remote access capabilities
Specifications

**Digital Processing Module**
- TMS320DM6446 DSP system-on-chip from Texas Instruments
  - 297-MHz ARM926EJ-S RISC CPU
  - 594-MHz C64x+™ DSP
- Virtex-4 SX35 FPGA from Xilinx
- MSP430 MCU from Texas Instruments for power management

**Onboard memory**
- 128-GB NAND Flash memory
- 128-GB DDR2 SDRAM

**I/O interfaces**
- RJ-45 10/100-Mbps Ethernet
- JTAG probing access
- Stereo audio codec with audio input and output
- RS-232 connector
- JTAG interfaces for DSP and FPGA
- LYRIO connector as expansion port

**Supported Software Development Tools**
The SFF SDR Evaluation Module supports the following software development tools:
- Texas Instruments Code Composer Studio™ Integrated Development Environment
- Xilinx ISE Foundation for FPGA development
- Xilinx System Generator for DSP
- Green Hills Software MULTI® IDE
- Green Hills Software POSIX-compliant INTEGRITY® real-time operating system
- The MathWorks MATLAB® and Simulink™

**System Requirements**
The following system requirements must be met to use the SFF SDR Development Platform.

**Operating system**
- Windows® XP Professional (service pack 2)

**Hardware**
- IBM-compatible computer
- Processor: Pentium III (or equivalent) or better
- RAM: 1 GB
- Hard disk drive: 40 GB of free space or more
- Display: 800 × 600 pixels or more

**Get Started Today**
For more information and ordering, go to www.ti.com/sdr.