**General Description**

The Microburst Software Defined Radio is the 3rd generation platform in the affordable, wideband, high performance SDRs from DataSoft. Microburst is a fieldable, reconfigurable, reprogrammable SDR populated with the latest COTS technology.

Measuring 6” x 6” x 1.75” and covering 30 MHz to 3800 MHz, Microburst offers advanced SDR capability in a small, durable platform. External interfaces include GPS with an accurate 1 PPS output, Wi-Fi, Bluetooth, audio, micro SD Card, USB, external clock, Ethernet, and a Digital Visual Interface (DVI).

The Microburst SDR includes a full-duplex RF transceiver; a digital system with the TI OMAP 37x GPP/DSP and dual Xilinx Spartan-6 FPGAs; and a customizable RF front-end module, all operating in an open source Linux-based environment.

**Benefits**

- Enhanced communication capabilities with high bandwidth and range
- Populated with the latest in low-power components and technologies optimized for size, cost and performance
- Advanced SDR capability on a small, durable platform with GPS, Wi-Fi, and Bluetooth interfaces
- GPP/DSP and FPGA resources for maximum design flexibility
- Enhanced Integrated Development Environment with a pre-integrated, packaged Linux-based OS, with programming examples and software probes for waveform debug
- A companion Microburst Development System (MDS) is available for algorithm and waveform development. Waveforms developed on the MDS run directly on Microburst SDR

**Available:** Q1-2013

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**System Features**

- Full-duplex (FDD, TDD) SDR architecture with programmable signal bandwidths from 1.5 MHz to 28 MHz
- Continuous RF transceiver frequency coverage from 30 MHz to 3800 MHz—(FEM dependent)
- 12-bit Dual-channel DAC and ADC
- Direct Conversion Architecture
- Digital system featuring the TI OMAP 37x GPP/DSP processor and dual Xilinx Spartan-6 FPGAs
- Integrated GPS receiver with accurate 1-PPS output
- Integrated Wi-Fi/Bluetooth Transceiver Module supporting 2.4 GHz IEEE 802.11 b/g/n and Bluetooth 2.1+EDR
- Durable (IP67) packaging
- 768 Mbytes of on-chip memory, 32 GB on SDHC card

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**Microburst SDR**: Enhanced capability in a compact size

Just 6” x 6” x 1.75” and weighing under 3 lb

**Microburst SDR Software Stack**

- Control and Interface Components
- Framework/Communication Components - GNU Radio/Custom
- Device Drivers
- Linux
- DSP/BIOS
- OMAP 37x GPP
- C64x+DSP
- Spartan6 FPGA
- RF System/FEM
- Digital System
- Waveform Application
**Preliminary Specifications**

### Overall
- Full Duplex Symbol Rates: up to 10 Msym/s
- Frequency Stability: ± 2.5 ppm
- Operating Temperature Range: -20° to +70° C
- Storage Temperature Range: -40° to +85° C

### Transmitter
- Output Impedance: 50 ohms
- Output Return Loss: 10 dB
- Frequency Range (FEM dependent): 30 MHz to 3800 MHz
- Frequency Resolution: 2.4 Hz
- TX Variable Output Power: 2 Watts
- Output Power Step Size: 1 dB
- Output Power Accuracy: ± 1 dB
- P1dB: TBD
- Output IP3: TBD
- SSB Phase Noise: (Offset from Fcenter = 1000 MHz)
  - 100 Hz: -95 dBc/Hz
  - 1 kHz: -110 dBc/Hz
  - 10 kHz: -121 dBc/Hz
  - 100 kHz: -115 dBc/Hz
  - 10 MHz: -135 dBc/Hz
- Programmable Signal Bandwidth (RF): 1.5 MHz to 28 MHz
- Carrier Feedthrough: TBD
- Sideband Suppression: TBD
- Max DAC Sample Rate (12-bit): 40 Msps

### Wi-Fi/Bluetooth
- Wireless Standard: 2.4 GHz IEEE 802.11 b/g/n; Bluetooth 2.1 + EDR, Power Class 1.5
- WLAN RF Frequency Range: 2.412 GHz to 2.472 GHz
- Bluetooth RF Frequency Range: 2.402 GHz to 2.480 GHz

### Receiver
- Input Impedance (nominal): 50 ohms
- Input Return Loss: 10 dB
- Frequency Range (FEM dependent): 30 MHz to 3800 MHz
- Frequency Resolution: 2.4 Hz
- Noise Figure: < 10 dB
- Maximum Composite Input Power: + 25 dBm
- Expected Input Power: TBD
- Input IP3: TBD
- SSB Phase Noise: (Offset from Fcenter = 1000 MHz)
  - 100 Hz: -95 dBc/Hz
  - 1 kHz: -110 dBc/Hz
  - 10 kHz: -121 dBc/Hz
  - 100 kHz: -115 dBc/Hz
  - 10 MHz: -135 dBc/Hz
- Programmable Signal Bandwidth (RF): 1.5 MHz to 28 MHz
- Baseband Gain: + 40 dB
- Sensitivity (1.5 MHz): TBD
- Max ADC Sample Rate (12-bit): 40 Msps

### Included Software and Documentation
- Embedded Arago Linux Kernel from TI with Device Drivers for: UART, Sound Device, SD Card and Ethernet
- Software Development Kit (SDK)
  - Source Code for: U-Boot, GNU Radio, RF Device Drivers, GNU Radio RF Blocks, SDR System Control Panel
  - Root File System containing all precompiled source code
- Development environment WF implementations with customization available
- Supported Software Loading Environments:
  - Standalone (NAND+SD Card)
  - Network (NAND+TFTP or NAND+NFS)
- Fast-start templates and example waveforms

The specifications listed are engineering estimates that are believed to be accurate and reliable. The information is subject to change without notice.

DataSoft was founded in 1995 and has operations in Tempe, AZ.

For additional information, visit our web site at [www.datasoft.com](http://www.datasoft.com) or email sales@datasoft.com.