

8649A/PF/SW/RH PICOFLEXOR™ REDHAWK SOFTWARE/FIRMWARE



MEETING TODAY'S CHALLENGES TO PROVIDE A SECURE FUTURE

The 8649A/PF/SW/RH is an embedded software/firmware load for the SI 8649A/PF PicoFlexor™ HF/VHF/UHF subminiature, software-definable radio (SDR) platform. This firmware load provides a plug-in to REDHAWK, one of several free and open standards for the development of applications for software definable radios. The 8649A/PF/SW/RH consists of a toolkit that provides software blocks to implement digital signal processing of communication signals. REDHAWK components are written using Python, a general-purpose programming language with a high level of abstraction that emphasizes code readability, and C++. The 8649A/PF/SW/RH software is delivered on an SD card that can be installed into the PicoFlexor hardware. It contains the REDHAWK core framework and basic components. The



8649A/PF/SW/RH is compatible with PicoFlexor variants that feature the Xilinx ZYNQ 7020 SoC.

The Linux 3.0 Android kernel, the root file system, and associated services and third-party drivers comprise a single component of the software. Software libraries necessary to control the PicoFlexor hardware are also included along with an interface to a standardized DRS application program interface, known as the DRS Unified Basic Radio Interface or DUBRI. DUBRI features software libraries and the API doxygen documentation that allow abstracted command and control as well as data streaming. A VITA 49 Radio Transport (VRT) parser, which formats digitized IF signals into standardized data and context packets, is also provided.

- U-Boot bootloader
- Linux 3.0.X Kernel
- Root File System with complete package dependencies and compiler toolchain
- REDHAWK DUBRI controller component
- REDHAWK DUBRI device
- DUBRI API including example applications and utilities
- Complete REDHAWK signal processing framework including basic components, BULKIO and Front-end Interfaces IDL libraries, and OmniORB
- Linux-supplied IP services to provide end-user access
- Supporting Linux shell scripts, drivers, and packages

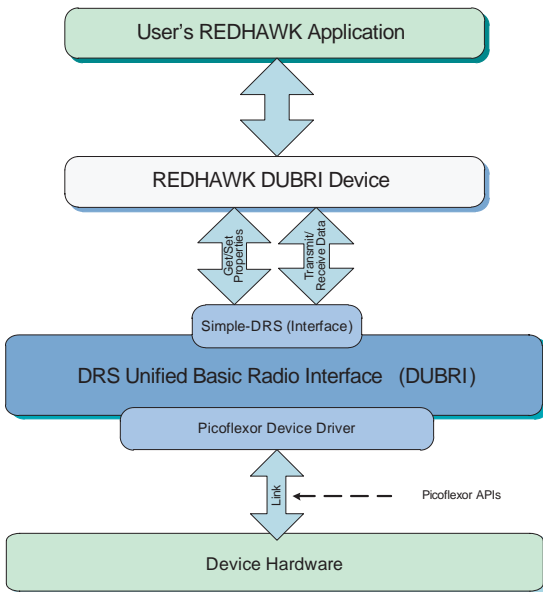
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COMPATIBLE SDR PLATFORMS

SI-8649A/PF/S3B6S1	Single-channel, 6 MHz BW, DSP S1
SI-8649A/PF/D3B6S1	Dual-channel, 6 MHz BW, DSP S1
SI-8649A/PF/S3B25S1	Single-channel, 25 MHz BW, DSP S1
SI-8649A/PF/D3B25S1	Dual-channel, 25 MHz BW, DSP S1

S1 DIGITAL CONFIGURATION

SoC	Xilinx ZYNQ 7020 (85K logic cells) Dual ARM Cortex-A9 CPU
Memory	512 MB LPDDR2 (256 MB CPU, 256 MB FPGA)
Storage	4 GB micro-SD



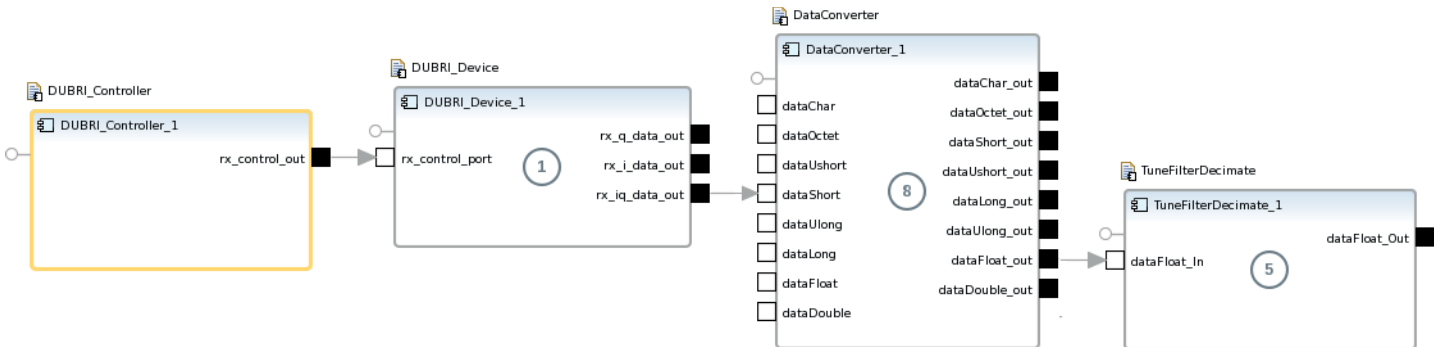
SOFTWARE/FIRMWARE BLOCK DIAGRAM

DRS OFFERS OPEN SOURCE LAB FOR CO-DEVELOPMENT

- Allows co-development with government and industry customers using open source software frameworks;
- Fosters a collegial environment that will serve as an incubator for new approaches to old problems;
- Provides access to the know-how for transforming laboratory prototypes into fielded systems that address real-world solutions;
- A dedicated space to allow customers to experience DRS products and capabilities first hand, taking out the risk of dealing with the unknown;
- A knowledgeable and energetic software team developing both server and embedded applications using Software Definable Radio (SDR) Frameworks such as Velocity IDE, GNU Radio and Redhawk;
- An opportunity for government and industry customers with budget limitations to enter into time-share arrangements that will allow them to experience the benefits of:
 - Working with high-performance RF tuner front ends
 - Recorded and live signal environments
 - Infrastructure support thru 10 Gigabit Ethernet

The OSL is operational and ready for use.

Schedule a visit today!



REDHAWK COMPONENTS ARE WRITTEN IN HIGHLY ABSTRACTED C++ AND PYTHON PROGRAMMING LANGUAGES

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