Spectra ORB SCA 4 Edition

Low Latency, Ultra-Low Footprint, SCA Compliant Middleware

Spectra ORB SCA 4 Edition represents a major product evolution and is a member of ADLINK's growing family of Wireless Software Infrastructure products that comprises a suite of Software Communications Architecture (SCA) compliant, high-performance, low-footprint CORBA ORBs and related Common Object Services.

With Spectra ORB SCA 4 Edition, ADLINK sets the standard for lightweight, high performance middleware. In low latency environments such as military radios, Spectra ORB's optimized ORB core and marshalling engine enables wireless devices to support multiple waveforms that can be configured and reconfigured quickly and efficiently.

Spectra ORB SCA 4 Edition has been designed and optimized for use in software defined radio and other low profile, resource-constrained environments. The Spectra family of middleware technologies is unique in offering a fully interoperable SCA 4 compliant solution for GPPs, DSPs and FPGAs.

Spectra ORB SCA 4 Edition Benefits

Multi Profile CORBA Support – Providing pluggable support for different CORBA Profiles, including MinimumCORBA, CORBA/e and SCA 4 CORBA Profiles allows a developer to choose a set of functional capabilities best tuned to their specific needs.

Multi Language Support – Based on a common design and sharing many reusable components, Spectra ORB is available in both C and C++ language implementations.

Interoperable Solution for GPPs and DSPs – By supporting the SCA 4's Full and Lightweight CORBA profiles, Spectra ORB SCA 4 Edition can be used efficiently in both GPP (C and C++ implementations) and DSP (C implementation only) processing environments.

Fast – Extensive testing has shown Spectra ORB to be as fast or faster than other public domain and commercial ORBs. It has been highly optimized to minimize invocation latency and maximise data throughput.

Small Footprint – The smallest, memory footprint of any CORBA-compliant ORB available today, Spectra ORB SCA 4 Edition's configurable, modular pluggable architecture enables you to use only the functionality you need and no more.

Scalable – Spectra ORB is at its best in a high-performance environment. As the number of clients, servers, and messages increases, performance degradation is minimal. This allows users to utilize it in rapidly growing, rapidly changing applications, confident that the ORB will not constrain performance as the number of objects and connections increases.

Portable – Spectra ORB SCA 4 Edition provides platform independent frameworks for exceptions, memory management, mutexes, and threading so you can develop on one platform (such as Windows NT) and deploy on another (such as VxWorks). Available on an extensive set of platforms from hand held devices up to high performance multi-card packages, Spectra ORB SCA 4 Edition supports application developers across an unusually wide range of architectures.

Flexible – Small size does not have to mean limited functionality. With Spectra ORB SCA 4 Edition, it means selecting the capabilities YOUR application needs.

Reliable – Spectra ORB SCA 4 Edition is optimized to meet end-to-end scheduling and timing requirements. The client side ORB includes support for automatic fail over and configurable timeouts. The client will automatically attempt to retransmit failed requests to any available servers.

Predictable Real-Time Behaviour Optional Real-time CORBA v1.0 API plug-in support and proven internal real-time engine ensures predictability in real-time applications

Proven Spectra ORB is field proven over many years of use in commercial deployments in mission critical environments.

Extensible Transport Framework (ETF) – Enables integration of a variety of messaging and transport protocols without arduous re-programming or reverse engineering.

Spectra ORB SCA 4 Edition Features

Fully compliant with the SCA v2.2.2 and v4.0 specifications, including pluggable support for:

- SCA 2.2.2 MiniumumCORBA Profile (C and C++ ORBs)
- SCA 4 Full Profile (C and C++ ORBs)
- SCA Lightweight Profile (C ORB)
- IDL compiler (C and C++)
- GIOP 1.1
- Extensible Transport Framework (ETF) providing multi-transport plug-in support, for transports such as TCP/IP, UDP and Compact PCI
- Multi-thread safe
- Extensible server-side threading framework
- Pluggable POA framework
- Pluggable ANY data type support
- Request timeouts
- Pluggable Real-Time CORBA support
- Bundled Lightweight Naming, Event and Log Services (both C and C++)

Standard Supported Platforms

- VxWorks
- Integrity
- Windows
- Linux
- Solaris
- DSP BIOS

Spectra ORB SCA 4 Edition can be made available on many other target RTOSs. Please contact ADLINK for details.

SCA Everywhere

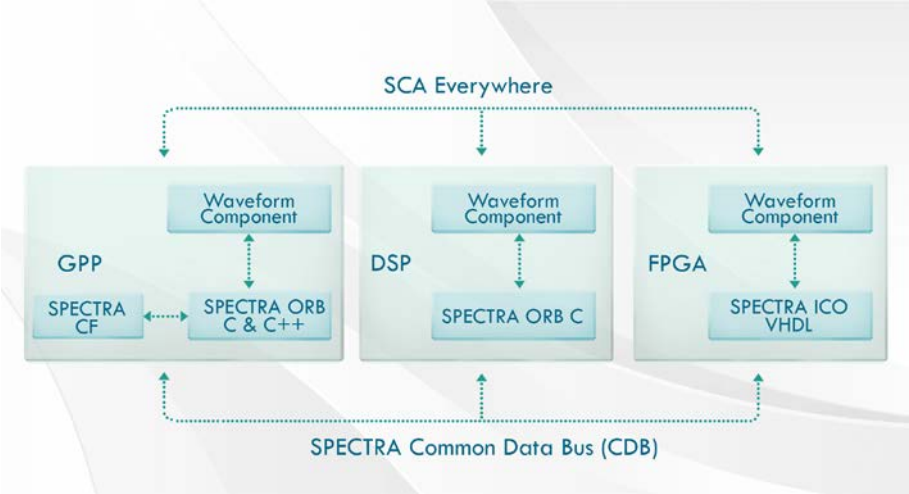
Spectra ORB SCA 4 Edition is part of ADLINK's Spectra Common Data Bus (CDB), a fully integrated and optimized SDR SCA middleware stack. Spectra CDB runs across a wide range of General Purpose Processor (GPP), Digital Signal Processor (DSP) and Field Programmable Gate Array (FPGA) processing elements.

Spectra CDB embedded software solutions are specifically optimized for high performance with minimal footprint on any processor choice and offer the following radio software infrastructure components:

- Spectra ORB
  - C++ ORB (for GPP and DSP)
  - C ORB (for GPP and DSP)
- Spectra Lightweight Services
  - Spectra Lightweight Naming Service
  - Spectra Lightweight Event Service
  - Spectra Lightweight Log Service
- Spectra IP Core ORB (ICO) for FPGAs and ASICs

Spectra CDB embedded middleware and Spectra Core Framework (CF) provide the only SCA-compliant solution that is available across not only GPP, but also DSP and FPGA processing environments. This complete processor coverage has been made possible through the development of specialized CORBA middleware technology designed to support DSPs and FPGAs. ADLINK has pioneered the use of lightweight ORB technology for DSPs and advanced hardware ORB technology for FPGAs. The Spectra SCA Everywhere approach helps decouple SDR applications from the underlying hardware, making hardware upgrades much more straightforward as well as maximizing waveform application portability.

ADLINK Leading EDGE COMPUTING



Expert Professional Services

ADLINK offers a range of training courses on the SCA, SDR technologies and their implementation using ADLINK's Spectra SDR products. We also offer professional services conducted by leading industry experts in all skill areas required for FPGA design and SCA radio development. ADLINK is also renowned for the quality and responsiveness of our Support and Maintenance Services that are available on a worldwide 24x7 basis where required.

Summary: The Spectra ORB SCA 4 Edition Advantage

- Lower memory footprint and more efficient use of resources
- Designed and optimized for low latency high data throughput systems
- An ORB specifically designed for SDR and other resource constrained embedded and real-time applications
- The best ORB for SCA-compliant development
- The most open and configurable architecture
- A DSP and GPP solution in the same ORB family
- Complementary SDR products and wireless software solutions
- Support from a flexible, responsive and supportive middleware partner

For More Information

For further information regarding Spectra ORB SCA 4 Edition please e-mail: ist_info@adlinktech.com or visit: ist.adlinktech.com

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