Overview
Traditional satellite modem and receiver designs have been based on the combination of an analog-to-digital front end and a hardware-or firmware-based algorithm processing back-end subsystem. Until recently, hardware based waveform processing was the only way to achieve real time demodulation of satellite waveforms. Today, with increased CPU horsepower and faster network speeds, new approaches for digitizing IF spectrum and distributing that spectrum in standard IP-based packets are enabling flexibility in how modem and receiver functions are implemented.

Kratos RT Logic is leading the development of new “back-end” hardware-agnostic, software-only modems and receivers. RT Logic supports the VITA-49 Digital IF standard, which has been delivered to real customers with applications that separate the front-end digitizer from the back-end modem, demonstrating an interoperable, open architecture.

The software modem (virtualized radio) and receiver products are built using algorithms that have been proven over many years and many installations in our traditional firmware-based modem and receiver products. Leveraging that proven capability, the RT Logic software modem and receiver products bring the benefits of low risk, flexibility, and maintainability that comes from being a cost-effective software-only solution.

Key Features
- Proven DSP algorithms – developed from over 17 years of RT Logic experience delivering modems and receivers
- Pure software implementation runs on Linux
- Hardware-agnostic – runs on commodity COTS server, does not require any non-CPU resources to run
- Supports VITA-49 Digital IF Packet standard
- BER performance comparable to traditional hardware/firmware-based solution
It's All About the Software
Many of the customer-centric benefits of the RT Logic Software Modem and Receiver products stem from the software architecture on which the products are built – the Telemetrix T4 Software Framework (or “T4” for short). T4 provides a modern software framework to satisfy current and future customer requirements. T4 offers modularity, scalability, and built-in security features, while taking a leading edge approach to overcoming limitations in legacy frameworks for code generation, interface coupling, and technology obsolescence.

Get Visibility & Control of Your Software
Getting the RT Logic Software Modem and Receiver products running is easy – load the software, edit the config file, and run. Control and see how the system is running using the included web-based GUI which can be run locally or remotely.

Know How Your Performance Stacks Up
The RT Logic Software Modem and Receiver products achieve analog performance comparable to their hardware- and firmware-based counterparts. The diagram to the right illustrates the BER performance as measured for the receiver function in our lab.

Features
- Pure software implementation – does not require a GPU accelerator or other specific hardware or firmware
- Industry standard packet formats VITA-49
- Leverages field-proven RT Logic waveform and processing algorithms, migrates them to a fully software-based, virtual modem and receiver architecture
- Software is hosted on a COTS server, supplied by RT Logic or the customer
- Built on Kratos RT Logic’s leading-edge Telemetrix T4 Software Framework, bringing the ultimate in modularity, flexibility, extensibility, and maintainability