

Wideband Networking Waveform Starter Kit

WHY START FROM THE GROUND UP?

Developing a Wideband Networking Waveform (WNW) OFDM radio system? Jump start your waveform development with Spectrum's WNW OFDM Starter Kit. The Kit is designed to get you up and running quickly and contains a powerful and robust software defined radio (SDR) transceiver, a suite of SDR development tools, and the WNW OFDM physical layer implementation. As part of this package, you will also receive one day of complementary consultation services with Spectrum and L-3 Communications Nova Engineering (L-3 Nova), an industry leader in waveform development.

WHAT'S IN THE KIT?



WHY WOULD YOU WANT THE KIT?

- Save valuable time setting up and learning how to use an SDR platform
- Convenient, single point of contact for all SDR hardware and software support
- Use the same COTS SDR platform that was used by L-3 Nova to develop WNW for the Joint Tactical Radio System (JTRS) Cluster 1 Ground Mobile Radio (GMR) program
- Save up to 12-18 man-months using an existing WNW OFDM PHY implementation
- Take advantage of the 1 day additional waveform consultation by L-3 Nova

GOING TO DEPLOY?

Spectrum's products are designed with deployment in mind. While your team begins your application development, we can work with you to design a rugged size, weight and power reduced product. When you're ready to go from lab to field, we can assist you to migrate to your field systems.



Wideband Networking Waveform Starter Kit Contents

SDR-4000 Software Defined Radio Integrated Development System

[Hardware]

PRO-4600	SDR processing engine (commercial air-cooled)
XMC-3321	Dual transceiver module (commercial air-cooled)
TM2-4902	Transition module with JTAG, RS232 gigabit ethernet, high speed serial I/O, general purpose I/O, IRIG-B
Chassis	Five slot air-cooled 3U CompactPCI, 250 watt supply
Cable Kit	Analog, JTAG, serial, ethernet switch and cables
Development PC	Laptop pre-configured with SDR development tools and software (IDE)

[Software]

Green Hills INTEGRITY	Real-time embedded OS and integrated development environment. First year annual subscription and maintenance package.
<i>quicComm</i> [™]	Hardware abstraction layer and API library
Xilinx ISE Foundation	FPGA development tools
TI C6X Code Composer Studio	DSP development tools

[SDR Transceiver Specifications]

Analog	2 x IF input, 96 MSPS @ 14-bit ADC, SSMC 2 x IF output, 192 MSPS @ 14-bit ADC, SSMC 4 x 100 KHz, 12-bit ADC for RSSI 2 x 100 KHz, 12-bit DAC for AGC
I/O	Gigabit ethernet (10/100/1000 BaseT) JTAG, RS232 serial port General purpose (LVTTTL, LVCMOS, LVDS) High speed links
FPGA	1 x Xilinx Virtex-4 SX55 1 x Xilinx Virtex-4 LX60
DSP	Texas Instruments TMS320C6416T @ 600 MHz
GPP	Freescale MPC8541E @ 666 MHz

* For detailed specifications, please refer to the individual datasheets for the PRO-4600, XMC-3321, TM2-4902 or the SDR-4000 family.

Wideband Networking Waveform (WNW) OFDM Physical Layer

[About Wideband Networking Waveform]

The Wideband Networking Waveform (WNW) is the next generation high throughput military waveform, developed under the Joint Tactical Radio System (JTRS) Ground Mobile Radio (GMR) program. Spectrum's PHY layer implementation of the WNW waveform was developed by L-3 Communications Nova Engineering and is currently used in several military applications such as the Wideband Networking Waveform (WNW) and the Operational Test - Test and Evaluation (OT-TE) Core Transceiver. The WNW OFDM PHY can achieve data throughputs of more than 10 Mbps with four bandwidths and 38 total modes of operation depending on the modulation order, FEC, spread factor and diversity factor. The WNW OFDM PHY uses a packet-based system developed specifically for mobile ad-hoc networks (MANETs).

WNW OFDM Performance		
Bandwidth	Burst Data Rate	Signal-to-Noise Ratio
1.2 MHz	100 kbps - 2.4 Mbps	1.7 dB - 26.7 dB
3.0 MHz	100 kbps - 6.7 Mbps	0.5 dB - 26.7 dB
5.0 MHz	100 kbps - 11.5 Mbps	-0.5 dB - 26.7 dB
10.0 MHz	100 kbps - 23.0 Mbps	-1.5 dB - 26.7 dB

Source code for API examples are provided as a tool to accelerate development efforts. For detailed specifications, please refer to the datasheet for WNW OFDM PHY implementation on the SDR-4000 Platform. The Wideband Networking Waveform software is supplied under a site license arrangement allowing up to 10 authorized developers to conduct work and/or demonstrations on up to 10 SDR-4000 platforms.

Value Added Services

- Hands-on training course on SDR hardware and development environment
- Advanced software maintenance and support package
- One day of complimentary consultation on waveform development

Optional Equipment/Software

- RF front-end integration
- Software Communication Architecture (SCA) Core Framework Board Support Package
- JTRS Modem Hardware Abstraction Layer (MHAL)

Ordering Information

Contact sales@spectrumsignal.com or call 1.800.663.8986 (toll free in North America) or 604.421.5422