Introducing the Wolf RS-998 SDR Transceiver



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Technical Overview & Architecture

- **Direct Sampling Technology:** Features a true software-defined radio (SDR) utilizing Direct Down Conversion (DDC) and Direct Up Conversion (DUC) architecture.
- **Open-Source Origins:** Built upon the open-source hardware and software ecosystem developed by UA3REO and the global developer community.
- **Form Factor:** Compact, space-saving design with a rugged anodized aluminum housing and an efficient rear-panel heatsink. [1, 2]

Frequency Range & Power Specifications

- **Receive (RX) Coverage:**
  - Coverage from 0.5 MHz up to 750 MHz (HF, VHF, and UHF bands). [1]
- **Transmit (TX) Coverage:**
  - Full coverage on all amateur bands from 160m through 2m (0.5 MHz–30 MHz and 144 MHz–148 MHz). [1]
- **Modes:** AM, FM, SSB, CW, FT8
- **Power Output:** Delivers up to 100W on HF/Shortwave bands.
  - Delivers up to 50W–60W on the 2-meter VHF band. [1, 2]
- **Antenna Management:** Has dual antenna input ports and a built-in automatic antenna tuner. [1, 2]

Display & User Interface

- **Touch Interface:**
  - 7-inch multi-point capacitive color LCD touch screen
- **Visual Tools:**
  - Real-time, customizable 3D waterfall spectrum display
  - standard 2D band scope.
- **Multi-Function Metering:**
  - Integrated on-screen S-meter that simultaneously tracks power output and SWR during transmission.
- **Audio Channels:**
  - Supports dual-channel hybrid stereo processing (A+B or A&B modes). [1, 2, 3, 4]

Native Digital Modes & Recording

- **Standalone FT8:**
  - Fully supports FT8 encoding and decoding directly on the transceiver without requiring a computer or external interface. [1, 2]
- **CW & RTTY Decoding:**
  - Built-in Morse code (CW) and RTTY decoders display text directly on the screen. [1, 2]
- **On-Board Audio Recording:**
  - Supports digital voice recording via an integrated Micro SD (TF) card slot for quick playback and voice CQ macros. [1, 2]

DSP, Filtering & Noise Reduction

- **Noise Mitigation:**
  - Built-in Digital Noise Reduction (DNR)
  - Adjustable Pulse Noise Reduction (Blanker / NB) to clean up noisy bands.
- **Advanced Notching:**
  - Automatic notch filtering
  - Visual manual notch filter to precisely isolate and eliminate heterodyne interference.
- **Adjustable Bandwidth:**
  - High-Pass Filter (HPF) variable from 0 Hz to 2700 Hz,
  - Low-Pass Filter (LPF) variable from 100 Hz to 20 kHz. [1, 2, 3]

Connectivity & Station Control

- **Built-in Wi-Fi:**
  - Connects to local networks for firmware updates, cluster monitoring, or standalone network radio operations. [1, 2]
- **Integrated Sound Card:**
  - Native USB port that acts as a built-in audio codec, allowing simple, single-cable digital mode operations with external logging software. [1]
- **CAT Rig Control:**
  - Emulates standard protocols like the Yaesu FT-450 and Kenwood TS-2000 for seamless integration with third-party software. [1]

Basic Operation & Navigation

- **Flipping Bands & Modes:**
  - Touch the top on-screen ribbon or use physical front-panel buttons to toggle between CW, SSB, AM, FM, and DIGI modes.
- **Tuning Options:**
  - Adjust frequencies via the weighted main optical encoder knob, or use the "free tune" touchscreen cursor feature.
- **Configuration Profiles:**
  - Save up to three independent setting and calibration files onto the Micro SD card to instantly switch between configurations (such as DXing, regular rag-chews, or driving an external amplifier). [1, 2, 3, 4, 5]

Summary & Resources

- **Key Takeaway:** An incredibly versatile, standalone 100W SDR that balances open-source flexibility with the punch of a full-sized base station.
- **Community Resources:** Project updates, alternative firmware variations, and schematics are actively maintained on the
- **More information:**
  - https://github.com/XGudron/UA3REO-DDC-Transceiver/
  - There are several videos about this rig on YouTube.
  - Check out the links on this presentation.

Thanks for Listening

- Let's twiddle some knobs and look at some buttons



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