



### WSS-420 HRPT/CHRPT Weather Satellite System

#### Overview

- Fully-integrated hardware/software solution
- Compact stand-alone system
- Robust rotator and tripod
- Easy installation, calibration and configuration
- Automatic satellite dish positioning
- Automatic real time orbital satellite tracking
- Automatic reception scheduling
- Full support for multi-spectral AVHRR data
- Full support for NOAA (HRPT) and Feng Yun-1D (CHRPT)
- Advanced image processing software
- Automatic updating of satellite prediction data from internet
- Automatic application clock synchronization from internet
- AVHRR data export in NOAA Level 1B (HRPT) file format

The WiNRADiO WSS-420 Weather Satellite System is a complete and fully integrated hardware/software system for capturing and processing data streams from polar orbiting satellites in real time.

The system supports HRPT data streams with 5 multi-spectral channels from NOAA satellites and CHRPT data with 10 channels from the Feng Yun-1D satellite. Data is available immediately after a satellite pass and it can be exported to NOAA Level 1B (HRPT) file format.

The system hardware consists of high-quality components: The dual-axis rotator is a robust unit designed with steel gears for heavy-duty work and extended life, while offering considerable turning and breaking torque. The rotator is driven by a digital control unit, which interfaces with the application software via the computer USB port. The control unit can position the rotator to the desired target position with an accuracy of  $\pm 0.5^\circ$ .

The tripod carrying the rotator and the dish antenna is made from high-quality steel, with telescopic legs independently adjustable for course levelling against inclined mounting surfaces, while the articulated levelling feet allow for fine levelling, even at uneven mounting points. A bull's eye

bubble mounted on an upper bracket eases the installation process.

The antenna consists of a 120 cm diameter parabolic steel dish with a tightly integrated prime focussed patch feeder and an attached low-noise downconverter, which translates the 1.7 GHz L-Band frequencies down to 140 MHz.

The receiver is designed to have a compact form factor and fits onto a 2/3 length PCI plug-in card. The front-end employs digital synthesis for frequency control, while data decoding and frame synchronization are done in DSP firmware.

Installation and configuration is made easy by means of a user-friendly software setup wizard which will automatically detect installed and connected hardware. The setup software will also assist with rotator and receiver calibration during initial installation.

Resulting images can be printed or saved in common image formats. In addition to basic image manipulation, the software provides advanced image processing functions such as RGB false-colour editing of spectral channels, noise reduction and contrast enhancement. Data output can be exported in NOAA Level 1B (HRPT) format.

The optional WR-WSDA-420 Weather Satellite Data Analyser software provides additional sophisticated features and tools, including NOAA Standard Products, Sea Surface Temperature, Land Surface Temperature, map overlays, many types of projections, advanced colour palettes and more.

#### System Specifications

Satellite Systems Supported	NOAA (HRPT) and FengYun (CHRPT) Polar Orbiters
Operating Frequency Range	L-Band, 1680 - 1712 MHz
Receiver Demodulation	Coherent BPSK
Receiver Form Factor	PCI Plug-in Card

Decoding Data Rates	Up to 1400 kb/s
Data Output	NOAA Level 1B (HRPT) and WiNRADiO proprietary file format
Image Output	Display, Print, or save as BMP, JPG, GIF, TIF, PNG
Antenna Type	120 cm Parabolic Dish
Antenna Polarization	Right Hand Circular Polarization
Antenna (-3dB) Beam Width	11 degrees
Rotator Accuracy	±0.5 degree
Rotation Speed	4-5 degrees/s
Rotator Power Supply	24V DC @ 4A
Rotator Weight	13.5 kg (29.7 lbs)
Tripod Height	1.5 m (4 ft 11")
Tripod Weight	35 kg (77 lbs)

*Specifications are subject to change without notice due to continuous product development and improvement.*



1131 Rockingham Dr. Suite 110 Richardson, TX 75080  
**Dallas** – 972.231.7337 **Austin** – 512.832.1070 **Houston** – 713.228.5400  
Toll Free – 800.460.9653 Fax – 972.231.5973  
[www.aventasinc.com](http://www.aventasinc.com) [info@aventasinc.com](mailto:info@aventasinc.com)