



PROTECTING PEOPLE AND ASSETS™



**S-BAND**

**DWSR-8501S, DWSR-8501S/K**

Magnetron and Klystron models / Single and dual-polarity configurations  
850kW of radiated power

[eecradar.com](http://eecradar.com)



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# S-BAND SYSTEMS FROM EEC

## The power to predict

With the ultimate long-range view, the EEC S-Band radar gives you the ability to plan, predict, and protect – before severe weather strikes. This massive power makes our S-Band systems ideal for covering huge expanses of land and water, analyzing multiple fronts of heavy precipitation.



## Big weather needs a big radar

Monsoons. Hurricanes. Cyclones. Blizzards. To make the best long-range predictions of the biggest weather makers, you need to have the biggest radar with the lowest attenuation. Both the Magnetron-powered DWSR-8501S and the Klystron-powered DWSR-8501S/K are designed and engineered with an output of 850kW - more radiated power than any other commercially available S-Band weather radar!

Coupled with our super-sensitive IQ2 digital receiver and signal processor for precise data processing, these towering S-Band systems are the best choice for a clean and true picture of multiple, long-range, intense weather phenomena.

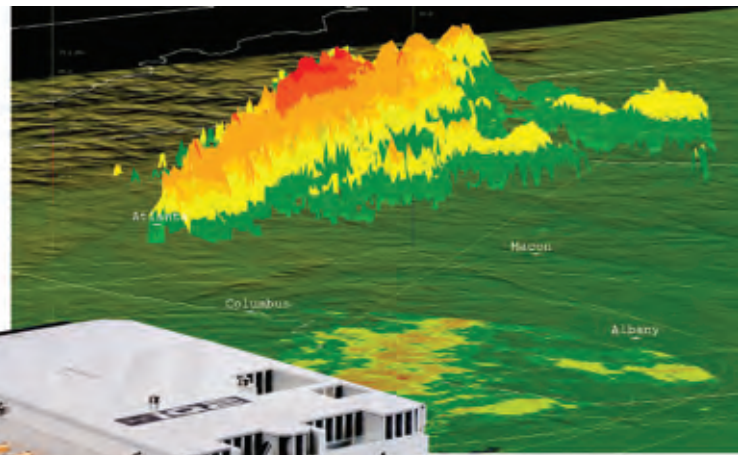
Additionally, our turn-key design, manufacturing, and installation processes allow us to configure your S-Band radars to meet your specifications. Among the many options are single or dual-polarity transmitters and a variety of full-featured control and display systems. You can even choose the type of installation and radome that best fits your environmental needs.

## Dual-polarization – The future is here today

Over 15 years ago, EEC pioneered dual-polarity radar. Today, both of our S-Band models are available with either EEC's industry-standard single-polarization or with our new, highly advanced dual-polarization system, incorporating features that are years ahead of anything else on the market.

Working with world-renowned experts and the University of Oklahoma, we have developed better algorithms and end-to-end dual-polarization measurements. This not only results in more accurate estimates of rainfall, but also provides better discrimination between different types of precipitation and non-meteorological signals, such as birds, insects, dust storms, or even an approaching tornado's debris field.

We have also developed proprietary technology to significantly improve clutter suppression performance in our popular and dependable magnetron systems. The final result is obvious – EEC dual-polarity systems provide the highest resolution data available in the industry.



### **IQ2 Digital Receiver Signal Processor**

*The latest design available in the weather radar market today employs cutting-edge hardware and software technology to achieve the highest data resolution in the industry.*

## **EEC S-BAND SYSTEM ADVANTAGES**

- Systems are available in magnetron, klystron and solid-state transmitter configurations
- Algorithms developed and specifically tuned for performance at S-Band
- Superior performance designed for long range weather detection
- Innovative architecture provides highest receiver sensitivity
- Advanced radar motion control system provides better spatial resolution resulting in more accurate data
- Industry leading clutter suppression technology
- Patented fiber-optic technology provides noise free, ultra-high speed data throughput
- Adaptive spectrum-based clutter mitigation algorithms
- Improved data quality achieved through advanced continuous calibration techniques
- Advanced Polarimetric rainfall estimation and attenuation correction techniques
- Over 500 configurable diagnostic points monitored in real-time

SYSTEM	DWSR-8501S	DWSR-8501S/K
Operating Frequency	2700-3000 MHz	2700-3000 MHz
Pulse Width	0.2 - 2.0 usec	0.4 - 4.5 usec
Range Resolution	Minimum 16m	Minimum 16m
Pulse Repetition Frequency	200-2400 Hz, user selectable	200-2400 Hz, user selectable
Range	Minimum 600km	Minimum 600km
Maximum Velocity (unambiguous)	up to 256 m/s	up to 256 m/s
Sensitivity-reflectivity	- 20 dBz at 30 km	- 20 dBz at 30 km
Clutter Suppression Capability	≥ 46 dB	≥ 55 dB
Data Output	UZ, Z, V, SW (dual-polarization moments Zdr, Phv, Φdp, KDP, LDR)	UZ, Z, V, SW (dual-polarization moments Zdr, Phv, Φdp, KDP, LDR)

ANTENNA/PEDESTAL		
Type	Parabolic, Prime Focus Reflector	Parabolic, Prime Focus Reflector
Reflector Diameter	8.5m (typical) - other sizes available	8.5m (typical) - other sizes available
Gain-Minimum	> 45.0 dB	> 45.0 dB
Half Power Beam Width (typical)	0.95°	0.95°
Polarization	Linear Horizontal/Vertical	Linear Horizontal/Vertical
Angular Positioning Accuracy	≤ 0.05°	≤ 0.05°
Scanning Speed	Up to 10 rpm	Up to 10 rpm

TRANSMITTER		
Type	High-Power Coaxial Magnetron	Klystron
Peak Power	850kW	850kW

RECEIVER		
Type	Superheterodyne, Single or Dual Down Conversion with Image Reject Mixing	Superheterodyne, Single or Dual Down Conversion with Image Reject Mixing
Minimum Discernible Signal	- 114 dBm typical	- 114 dBm typical
Linear Dynamic Range	Up to 105 dB	Up to 105 dB

DIGITAL RECEIVER/ SIGNAL PROCESSOR		
Type	16-bit Modular, multi-channel Digital Receiver, Signal Processor	16-bit Modular, multi-channel Digital Receiver, Signal Processor
Maximum No. of Processed Range Bins	up to 8192	up to 8192
Minimum Processing Resolution	as low as 16m	as low as 16m
Clutter Filters	Time Domain or Spectrum-Based Time Estimation and Processing (STEP) - An advanced adaptive clutter identification, mitigation and noise reduction algorithm	Time Domain or Spectrum-Based Time Estimation and Processing (STEP) - An advanced adaptive clutter identification, mitigation and noise reduction algorithm

METEOROLOGICAL USER SOFTWARE		
Meteorological User Software	EDGE	EDGE
Computer System	Commercial off-the-Shelf PC	Commercial off-the-Shelf PC
Meteorological Products	See EDGE Data Sheet for additional details.	See EDGE Data Sheet for additional details.



**EEC'S S-BAND IS BRAZIL'S CHOICE TO MONITOR SEVERE WEATHER SPANNING THE AMAZON BASIN.**

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SIDPOL™ Radar is patented technology, covered by U.S. Patent No. 6,859,163 B2, U.S. Patent No. 7,049,997, U.S. Patent No. 7,439,899, U.S. Patent No. 7,551,123, U.S. Patent No. 7,683,828, U.S. Patent No. 7,750,573, U.S. Patent No. 7,760,129, U.S. Patent No. 7,880,665, U.S. Patent No. 7,450,693, U.S. Patent No. 7,369,082, 13041 (OAPI Region), 009250 (Eurasia) and 009249 (Eurasia).

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