



IQ2 RECEIVER SIGNAL PROCESSOR

The most innovative integrated receiver/signal processor configuration on the market.



The IQ2-RSP employs cutting edge hardware and software technology to achieve the highest weather radar data resolution and system control accuracy.



PROTECTING PEOPLE AND ASSETS[®]

eecweathertech.com

IQ2-RSP ADVANTAGES

- Digital Automatic Frequency Control (DAFC), IFD supported – No AFC required on Magnetron systems
- All digital IF and signal processing functions hosted on open Linux PC hardware
- 16-bit digital sampling
- Up to 8000 Range Bins - highest resolution in the industry
- High speed serial angle tag bits (Parallel tag bits are optional) – No complex wiring
- Fiber optic interfaces provide real-time I&Q data recording (10 GB/sec)
- Open API allows for customer developed signal processing algorithms.
- Wide-band waveform generation and receiving - Enhance radar flexibility

The IFD supports Digital Automatic Frequency Control (DAFC). The frequency of the IF is no longer controlled by adjusting the STALO frequency, the input frequency of the 4-data channels is now adjusted to match the IF frequency while supporting traditional AFC control.

IQ2 - INTERMEDIATE FREQUENCY DIGITIZER

- Digitizer is encased in a machined aluminum housing - mechanically robust and stable
- Provides high inter-channel isolation and external EMI isolation
- Four signal channel A/D converters with 16-bit sampling up to 100MHZ
- Maximum number of range bins = 8000
- Minimum Range Resolution = 15 meters
- Two Dual-TX channels with independent 16 bit D/A WGs - waveform/TX flexibility
- Dynamic range ≥ 110 dB (± 1.0 dB)
- Receiver bandwidth = 0.5-5 MHz (at IQ2-IF input)
- WG bandwidth = 0.1-10 MHz (at IQ2-IF output)
- RoHS compliant
- IIR clutter filter
- DFT clutter filtering
- DFT processing
- Pulse Repetition Frequency = 10 Hz - 24 KHz
- Number of Pulse widths - 4 with independent configurable matched filters (up to 1280 taps)
- Dual PRF Stagger Modes - None, 2/3, 3/4, and 4/5

IQ2 - DIGITAL SIGNAL PROCESSOR

Minimum Computer Specifications

Processor: intel Xeon quad-core 5520 or superior

Memory: 8GB DD3

Disk: 160GB minimum

Two Gigabit Ethernet ports

Operating System: Linux

OUTPUT DATA

Simultaneous Horizontal / Vertical Transmit

Corrected reflectivity H/V	Zh, Zv [dBZ]
Uncorrected reflectivity H/V	UZh, UZv [dBZ]
Radial Velocity H/V	Vh, Vv [m/s]
Spectral width H/V	Wh, Wv [m/s]
Cross correlation coefficient	RHOHV
Differential phase	PHIDP [°]
Differential reflectivity	ZDR [dB]
Clutter power H/V	CCORh, CCORv [dB]
Signal quality index H/V	SQIh, SQIv
Signal Noise Ratio	SNRh, SNRv [dB]
Inphase / Quadrature signal H/V	Ih, Iv, Qh, Qv
Power spectrum H/V	

Horizontal Transmit

Corrected reflectivity	Zh [dBZ]
Uncorrected reflectivity	UZh [dBZ]
Radial Velocity	Vh [m/s]
Spectral width	Wh [m/s]
Depolarization Ratio	LDR [dB]
Signal Noise Ratio	SNRh [dB]
Signal quality index H	SQIh
Clutter power H	CCORh

Vertical Transmit

Corrected reflectivity	Zv [dBZ]
Uncorrected reflectivity	UZv [dBZ]
Radial Velocity	Vv [m/s]
Spectral width	Wv [m/s]
Depolarization Ratio	LDR [dB]
Signal Noise Ratio	SNRv [dB]
Signal quality index V	SQIv
Clutter power V	CCORv



PROTECTING PEOPLE AND ASSETS®

Enterprise Electronics Corporation

128 S. Industrial Blvd., Enterprise, AL 36330, USA

p: +1 334.347.3478 | f: +1 334.393.4556

sales@eecweathertech.com

EEC is an ISO 9001:2015 company.

This publication is issued to provide limited information regarding the product or model number specified and is supplied without liability for errors or omissions. We reserve the right to modify OR revise all or part of this document without notice. For detailed information regarding the radar model mentioned in this publication, write or e-mail EEC at the address provided.

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).

© 2016, Enterprise Electronics Corporation (EEC)