DEFENDER SERIES

C-BAND

Magnetron & Klystron C-Band
Single and dual-polarity configurations • 250kW to 1000kW of radiated power

PROTECTING PEOPLE AND ASSETS®

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SYSTEM	DEFENDER C250 / C350	DEFENDER C500
Operating Frequency	5200 - 5700 MHz	5400 - 5900 MHz
Pulse Width	0.2 - 2.0 usec	0.2 - 3.0 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 128 m/s	up to 128 m/s
Sensitivity-reflectivity	- 18 dBz at 30 km	- 22 dBz at 30 km
Clutter Suppression Capability	≥ 46 dB	≥ 46 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	4.2m (typical) - other sizes available	4.2m (typical) - other sizes available
Gain-Minimum	> 45.0 dB	> 45.0 dB
Half Power Beam Width (typical)	0.95º	0.95º
Polarization	Single Polarization - Linear Horizontal Dual-Polarization - Linear Horizontal/Vertical	Single Polarization - Linear Horizontal Dual-Polarization - Linear Horizontal/Vertical
Angular Positioning Accuracy	≤ 0.05º	≤ 0.05º
Scanning Speed	Up to 10 rpm	Up to 10 rpm

TRANSMITTER

Type	High-Power Coaxial Magnetron	High-Power Coaxial Magnetron
Peak Power	250kW and 350kW	500kW

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	PULSE	PULSE
Computer System	Commercial off-the-Shelf PC	Commercial off-the-Shelf PC
Meteorological Products	See PULSE Data Sheet for additional details.	See PULSE Data Sheet for additional details.

SYSTEM	DEFENDER C1000	DEFENDER CK250
Operating Frequency	5400 - 5900 MHz	5600 - 5650 MHz
Pulse Width	0.2 - 3.0 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 128 m/s	up to 128 m/s
Sensitivity-reflectivity	- 24 dBz at 30 km	- 18 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	4.2m (typical) - other sizes available	4.2m (typical) - other sizes available
Gain-minimum	> 45.0 dB	> 45.0 dB
Half Power Beam Width (typical)	0.95º	0.95º
Polarization	Single Polarization - Linear Horizontal Dual-Polarization - Linear Horizontal/Vertical	Single Polarization - Linear Horizontal Dual-Polarization - Linear Horizontal/Vertical
Angular Positioning Accuracy	≤ 0.05º	≤ 0.05º
Scanning Speed	Up to 10 rpm	Up to 10 rpm

TRANSMITTER

Type	High-Power Coaxial Magnetron	Klystron
Peak Power	1000kW	250kW

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
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Computer System	Commercial off-the-Shelf PC	Commercial off-the-Shelf PC
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