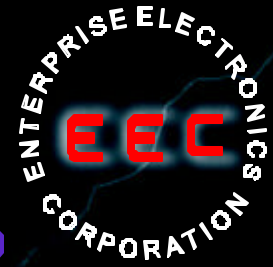


# MiniMax 100C



## LOW COST PORTABLE WEATHER RADAR SOLUTIONS

### Innovation By Design

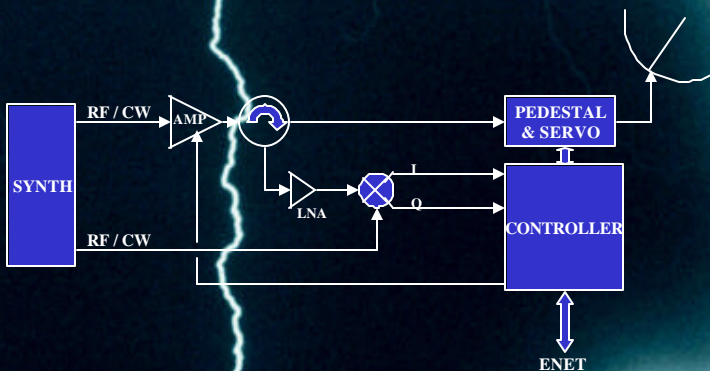
The Mini Max 100 is the most cost effective real-time radar solution available to the international market today. It is fully upgradeable all the way through the system ! The Mini Max 100 weather radar system takes full advantage of recent technological breakthroughs in high power high frequency power amplification. Utilizing this technology, Enterprise Electronics Corporation (EEC) has developed a Doppler radar system for operation in the C-Band (5500-5900 MHz), that is coherent on transmit. This simplified radar system uses time proven components along with the latest in digital receivers and processors.

The transmitter is a solid-state power amplifier capable of approximately 200 watts power output. This is designed for operation at a range extending to 100 KM. The transmit pulse is generated from a master oscillator that provides a stable frequency source. The received waveform is down converted directly to baseband and digitized using the "homodyne" (harmonic radar) technique.

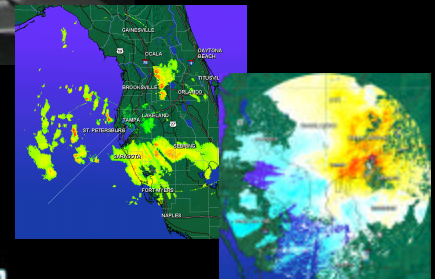
The antenna, pedestal and electronics are designed for exposed outdoor operation. The antenna is 1.2 meters in diameter mounted to an elevation over azimuth design pedestal with integral drives. The entire system can be installed with only AC power and an Ethernet connection in less than two hours making the Mini Max 100 an excellent choice for short range weather detection.



### FUNCTIONAL BLOCK DIAGRAM



RADSYS 3000™ PENTIUM



# Low Cost Radar System Specifications:

## TRANSMITTER/RECEIVER/SERVO UNIT:

Transmitter Amplifier:  
 Transmit Power: 175 watt C-band Solid State Amplifier  
 Control: TTL Pulse-Power Control  
 Physical: 19 inch rack mount

### Homodyne Receiver Assembly:

- Synthesizer/LO
- Environmental
- Stability
- Phase Noise

### FCC Type Acceptance

## ANTENNA:

Diameter 4 ft.  
 Profile Parabolic  
 Beamwidth 3.2 degrees  
 Gain 34 dB minimum  
 Weight Approximately 40 lbs  
 Feed Orthogonal Horn

## PEDESTAL:

Load Capacity:  
 Axial 130 Lbs  
 Wind Load Maximum 45 mph  
 Drive Motors:  
 Voltage 24 Vdc  
 Current 4.5 A  
 Azimuth:  
 Rotational Limits Continuous  
 Velocity 18° per second maximum  
 Elevation:  
 Rotational Limits -2° to + 90°  
 Velocity 12° per second  
 Resolution:  
 Azimuth .25°  
 Elevation .25°  
 Mount Footprint of mount to match an EEC "D" Series Pedestal  
 Electrical Interconnect Connectors compatible with EEC "D" Series Pedestal  
 Servo Control EEC Design and fabricate

## RADAR PERFORMANCE

### Radar Performance:

- Coherent on Transmit Design
- MDS = -100 dBm
- PRF = 250 to 1600
- Linear Dynamic Range = 80dB
- Max Range = 120 km
- Pulse Width = .2µs, 4µs, 8µs, 2.0µs, Software Control
- Minimum Bin Resolution = 30 meters
- Minimum Number of Bins = 4000

### RSP/RCP:

### Minimum Hardware Specifications:

- PC 104+ form factor
- 200+ MHz Pentium Processor
- Two (2) 40 MHz sample rate 12 bit A to D converter

### Interfaces:

- One (1) Ethernet Port
  - Ethernet connection to be programmed to emulate EEC protocol
- Two (2) TTL Output for Pulse Width Control
- One (1) TTL Output for Trigger
- Two (2) RS232 Serial Ports
- Keyboard Interface
- Mouse Interface

### Signal Processor Capabilities:

- Real-Time Operating System (RTOS)
- Signal Processor Modes

Range: in Km	# of Gates	Resolution of Bins	Pulse Width	Moments
480	240	2000m	2.0µs	Uncorrected U
240	240	1000m	2.0µs	Uncorrected U
240	240	1000m	0.8µs	U, Z, and V
120	240	500m	0.8µs	U, Z, and V
60	240	250m	0.8µs	U, Z, and V
30	480	62.5M	0.4µs	U, Z, and V
15	480	31.25M	0.2µs	U, Z, and V

### System Enclosure:

### Outdoor Electronics Mounting Box:

- Large box type, top door, Hermetic mounting
- 19 inch rack width
- Ample depth for amplifier and cables

# EEC

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