

# ATU-HP

FEATURES ISSUE 3.3  
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## High Power Automatic Antenna Tuning Unit

### Automatic Resistive Matching Range

0.5 R-2 R where R equals antenna system series resistance (including ATU).

### Remote Monitoring (when used in conjunction with a Nautel Vector series transmitter)

RF Antenna Current  
Resistive match servo inhibited  
Inductive tune servo inhibited  
Resistive match status/ limit  
Inductive tune status/ limit  
Set-up mode  
Local/remote  
ATU temperature  
Fan fail

### Remote Control (when used in conjunction with a Nautel Vector series transmitter)

Resistive match servo inhibit  
Inductive tune servo inhibit  
Increase/decrease resistive match  
Increase/decrease inductive tune

### Metering

Forward power  
Reflected power  
Antenna current

### Local Control

Resistive match servo inhibit  
Inductive tune servo inhibit  
Increase/decrease resistive match  
Increase/decrease inductive tune  
Set-up mode  
Transmitter On/Off

### Local Monitoring

Resistive match servo inhibited  
Inductive tune servo inhibited  
Resistive match status/limit  
Inductive tune status/limit  
Set-up mode  
Transmitter Off  
Local/Remote  
Fan fail  
CPU ok  
DC supply status

### Equipment Interface

Remote control/monitoring with RS485 serial communication (DB-9 connector with 5 connections used and additionally available on terminal block).  
AC Input - (Terminal Block)  
RF Input - (N Connector)  
Antenna feeder connection (Mechanical Bolt)  
Antenna system ground (Mechanical Bolt)

### Shipping

Export packed in wooden crate  
All assemblies to remain in ATU for shipment  
ISTA Procedure 1B compliant

### Standards

Finish meets AAMA 603.8 and CGSB-1-GP-300 specifications

### Options

Frequency change kit  
Sunshield to reduce thermal load  
Extended warranty  
Adjustable external series resistance provides additional antenna bandwidth adjustment (this option includes the sunshield).  
CSA inspection

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TECHNICAL SUMMARY ISSUE 3.3  
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## High Power Automatic Antenna Tuning Unit

### Maximum Carrier Power

Product	Maximum Carrier Power
ATU-HP (DGPS)	3,000 W
ATU-HP (NDB) for 500 W	500 W
ATU-HP (NDB) for 1,000 W and 2,000 W	2,000 W

### Maximum Peak Envelope Power

Product	Maximum P.E.P
ATU-HP (DGPS)	N/A
ATU-HP (NDB) for 500 W	2,000 W
ATU-HP (NDB) for 1,000 W and 2,000 W	8,000 W

### Maximum Reflected Power after Auto Resistive Match and Reactive Tune

<3 W at carrier frequency

### Frequency Range

Product	Range (in kHz)
ATU-HP (DGPS)	282 - 326 or 435 - 495
ATU-HP (NDB)	190 - 535

### Automatic Tuning Range

±5% antenna capacity variation

### Input Impedance

50 ohms nominal

### Power Requirements

115 V/230 V ac single phase ± 15%, 50 Hz/  
60 Hz, 35 VA maximum

### Maximum Series Loss Resistance

Not greater than 1/1000 x antenna reactance

### Antenna System Resistance

2 to 39 ohms.

*Minimum series resistance limited to that which provides an adequate bandwidth to produce at least 70% mod depth of radiated signal when using a modulation tone of 400 Hz.*

### Antenna Capacitance

Product	Capacity (pF)
ATU-HP (DGPS)	635 - 3,500
ATU-HP (NDB) for 500 W	250 - 1,250
ATU-HP (NDB) for 1,000 W and 2,000 W	600 - 3,500

*Capable of tuning larger and smaller capacities dependent on frequency Consult factory.*

### MTBF

Greater than or equal to 56,405 hours using MIL HDBK 217E calculation methods.

Field data for Nautel NDB/DGPS systems indicate MTBF in excess of 3,000,000 hours

### MTTR

Less than or equal to 30 minutes at PWB/module level

### Cooling and Heat Flushing

Cooled by radiation from the enclosure until internal ATU temperature reaches 60°C.

Internally circulated air at approximately 220 cu. ft. / min when internal ATU temperature is greater than 60°C.

### Altitude

Up to 3048 m (10,000 ft.)

### Environmental Limits

Operating:

-50°C to +55°C

0% to 100% Relative Humidity

Storage:

-50°C to +100°C

0% to 100% relative Humidity

### Climate

Any – including tropical

### Dimensions (without external resistor and/or sunshield)

Wall Mount

97.64 cm H x 123.83 cm W x 67.8 cm D  
(38.44 H x 48.75 W x 26.69 D in.)

Base Mount

103.35 cm H x 123.83 cm W x 62.4 cm D  
(40.69 H x 48.75 W x 24.56 D in.)

### Dimensions (with external series resistor and/or sunshield)

Wall Mount

112.78 cm H x 139.9 cm W x 83 cm D  
(44.44 H x 53.5 W x 32.69 D in.)

Base Mount

118.6 cm H x 135.9 cm W x 81.9 cm D  
(46.69 H x 53.5 W x 32.25 D in.)

### Weight (without external series resistor and/or sunshield)

50.3 kg (111 lbs) unpacked

93 kg (205 lbs) packed

### Weight (with external series resistor and/or sunshield)

65.4 kg (144 lbs) unpacked

138 kg (304 lbs) packed

Notes: Specifications established at rated power unless otherwise noted. All measurements at standard antenna load; AC input at nominal voltage.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.