

ATU-HP

FEATURES ISSUE 3.1
www.nautel.com | info@nautel.com



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

Standard Warranty

13 months after shipment

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

ATU-HP

TECHNICAL SUMMARY ISSUE 3.1
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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 series 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.