ATU-500SR

FEATURES ISSUE 1.3
www.nautel.com | info@nautel.com

125 W Automatic Antenna Tuning Unit

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

RF antenna current

Inductive tune status

Local/remote

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

Inductive tune servo inhibit

Increase/decrease inductive tune

Metering

Forward power: 0W - 200W

Reflected power: 0W - 200W

Antenna current: 0A-10A

Local Control

Inductive tune servo inhibit

Increase/decrease inductive tune

Transmitter On/Off when used in conjunction with the Nautel Vector series transmitter

Local Monitoring

Inductive tune servo inhibited

Inductive tune status/limit

Transmitter OFF

Local/remote

CPU ok

DC supply status

Equipment Interface

Remote control/monitoring with RS485 serial communication (DB-9 connector with 5 connections and additionally available on terminal block).

DC Input (terminal block)

RF input - (N connector)

Antenna feeder connection (mechanical bolt)

Antenna system ground (mechanical bolt)

Lightning Protection

Adjustable Spark Gap

Static Discharge

Direct DC Ground at Antenna Feeder to assist with static discharge requirements

Shipping

Export packed in wooden crate
All assemblies to remain in ATU for shipment

Options

Sunshield to reduce thermal load
Extended warranty

Maximum Carrier Power

200 W

Maximum Peak Envelope Power

500 W

Maximum VSWR after fixed resistive match and Auto Reactive Tune

<1.25:1 at carrier frequency

Frequency Range

Standard band: 190 kHz to 1800 kHz

Automatic Tuning Range

±5% antenna capacity variation

Input Impedance

50 ohms nominal

Power Requirements

24 V dc ± 5% at 1 A dc, supplied from transmitter

Maximum Series Loss Resistance

Not greater than 1/200 x antenna reactance

Antenna System Resistance

2 to 60 ohms

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TECHNICAL SUMMARY ISSUE 1.3
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125 W Automatic Antenna Tuning Unit

Dimensions

Wall Mount
72.4 cm H x 63.5 cm W x 31.1 cm D
(28 1/2" H x 25" W x 12 1/4" D)

Base Mount
74.6 cm H x 60.4 cm W x 25.9 cm D
(29 3/8" H x 23 3/4" W x 10 3/16" D)

Weight

18 kg (40 lbs) unpacked

29 kg (86 lbs) packed

Standards

IP66 rated

Exceeds performance of FAA9782/1

Finish meets AAMA 603.8 an CGSB-1-GP-300 specification

Compliant with Green Passport requirements

MTBF

Greater or equal to 99,844 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 sealed enclosure

Altitude

Up to 3048 M (10,000 ft)

Environmental Limits

Operating:
-50° C to +55° C
0%-100% relative humidity

Climate
Any - including tropical

Finish meets AAMA 603.8 an CGSB-1-GP-300 specification

Typical Antenna Capacitance

Height	35 ft	70 ft	100 ft
Fiberglass Whip with no coil loading	130 pF	270 pF	-
Insulated Tower without top loading guys	190 pF	370 pF	500 pF
Insulated Tower with top loading guys	250 pF	480 pF	650 pF
"T" Antenna (Note: span is twice height)	470 pF	700 pF	900 pF
Helipad Antenna	230 pF to 690 pF		

Loading Coil Selection Matrix

pF \ kHz	190	300	450	700	1000	1250	1800
125	-	A	A	A,B	A,B	B	B
250	A	A	A,B	A,B	B	B	B
500	A	A	A,B	B	B	B	-
1000	A	A,B	B	B	-	-	-
2000	A,B	B	B	-	-	-	-
3000	B	B	B	-	-	-	-

A - High Inductance set of coils with ferrite slugs

B - Low Inductance Set of coils with ferrite slugs