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Although our products have been manufactured under strict quality control, please contact the stores where you purchased them as soon as possible if you find troubles such as damages caused by an accident during transport.

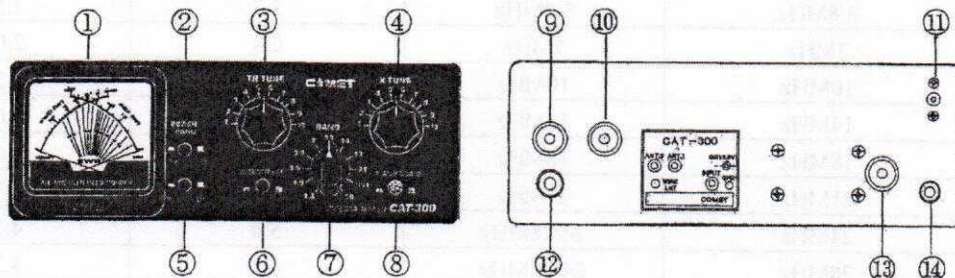
To deliver the performance of CAT-300 fully, please read this instruction manual through so that you can use this product correctly for a long period.

### Features

- CAT-300 is an antenna tuner capable of inputting transmission power up to 300W and it can be used to tune to dipole, vertical, automotive whip, long wire and other various types of antenna in all bands between 1.8MHz and 60MHz.
- The meter adopts the cross method and is capable of measuring the traveling wave, the reflected wave and SWR value concurrently.
- The meter scale board is equipped with a lamp and makes it esier to read by lighting the lamp at night (when an external power is connected).

### Precautions for use

- Although CAT-300 is designed to sufficiently endure 300W input, please set up the transmission output during tuning to 10W or lower to protect the transmitter since extremely high voltage may occur in the tuning circuit and the impedance seen from the transmitter may fluctuate dramatically.
- Do not operate the BAND switch while the transmitter is transmitting. It may temporarily increase the load SWR to infinite size and cause failure in the transmitter or CAT-300. Furthermore, do not apply transmission power of 300W or larger on CAT-300. to avoid a failure. Failure to observe this precaution may result in malfunction
- Although CAT-300 is capable of tuning in the range of  $10\Omega - 600\Omega$  (SWR approximately 2.5 : 1), adjust the antenna system instead of turning by force when the SWR for the connected antenna system is outside the range.
- Never apply 15V or higher as the external power supply voltage for meter scale board lamp to avoid a failure. Failure to observe this precaution may result in malfunction.



### Parts names and descriptions

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| <p>(1) Indication meter<br/>This meter indicates the FWD (traveling wave), REF (reflected wave) and SWR.</p> <p>(2) Measurement range switching button<br/>This is the button to switch the maximum value for FWD (traveling wave) power indication.</p> <p>(3) TR TUNE<br/>A variable capacitor that changes the impedance on the input side (transmitter side).</p> <p>(4) X TUNE<br/>A variable capacitor that changes the impedance on the output side (antenna side).</p> <p>(5) AVG/PEP switch<br/>Indicates the average power when it is set to AVG and the PEP monitor when set to PEP during power measurement.</p> <p>(6) TUNER switch<br/>Tuning operation can be executed by turning this switch ON and turning operation cannot be executed but it works as a SWR meter by turning it OFF.</p> <p>(7) BAND switch<br/>This is the switch to select the 1.8MHz - 50MHz band.</p> | <p>(8) ANTENNA switch<br/>This is the switch to select ANT1 or ANT2.</p> <p>(9) ANT.2 (M-type connector)<br/>Connects an antenna, dummy load, and so forth.</p> <p>(10) ANT.1 (M-type connector)<br/>Connects an antenna, dummy load and so forth.</p> <p>(11) Power input terminal<br/>Terminal for external power input for the meter lighting.</p> <p>(12) ANT.2 (Terminal)<br/>Connects a long wire antenna and so forth. It cannot be used simultaneously with ANT2 Connector. To use the terminal, do not connect any antenna, etc. to the ANT2 connector.</p> <p>(13) INPUT (M-type connector)<br/>This is the connector to connect the radio output.</p> <p>(14) GND<br/>Use this to connect the ground wire. TVI and BCI can be reduced by connecting this terminal to the GND terminal for the radio and grounding this terminal.</p> |
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#### Rating

Frequency range : 1.8 – 60MHz  
Input impedance : 50 Ω  
Tolerable transit power : 300W or lower (SSB)  
Lighting power supply : DC11V – 15V, Approx. 250mA  
Dimensions : 250 (W) x 93 (98) (H) x 200 (242) (D)  
Band : 11 bands  
Output impedance : 10 – 600 Ω  
Minimum SWR measurement power : 6W or higher  
Weight : Approx. 2.7Kg

#### Connection procedures

CAT-300 shall be connected between the radio and the antenna or among the radio, the SWR meter and the antenna using a 50 Ω coaxial cable of type 3D2V, 5D2V and so forth.

If the antenna is a long wire type, connect via [ANT2] (terminal). Connect the ground wire to [GND] (terminal).

#### Operation procedures

To use CAT-300 exclusively for reception such as BCL, press and turn [ON] the “TUNER” switch to enable tuning operation. Then adjust the [BAND] switch, “TR TUNE” and “X TUNE” so that the S meter of the receiver or the reception signal level is maximized. Use the tuning table below for reference.

To use CAT-300 for transmission, operate according to the procedures below:

1. Set the “ANTENNA” switch to the [ANT1] or [ANT2] of the connector connecting to the antenna. Set to [ANT2] when a long wire antenna is connected to the terminal.
2. Lower the power control for the transmitter completely (set the transmitter power to 10W or lower).
3. Set the [BAND] switch to the transmission frequency band and set the “TR TUNE” and “X TUNE” scales to the values specified in the tuning table below:

Tuning table

Frequency (MHz)	BAND	TR TUNE	X TUNE
1.8MHz	1.8MHz	5.4	3.6
1.9MHz	1.9MHz	4.9	3.2
3.5MHz	3.5MHz	4.4	3.0
3.8MHz	3.8MHz	3.7	2.5
7MHz	7MHz	2.8	2.0
10MHz	10MHz	2.0	1.3
14MHz	14MHz	1.5	1.0
18MHz	18MHz	9.5	9.6
21MHz	21MHz	7.0	6.3
24MHz	24/28MHz	5.0	4.1
28MHz	24/28MHz	4.8	3.3
50MHz	50MHz	1.5	1.2

Note: This is the data for input impedance 50 Ω load. These values are strictly for reference.

4. Input the transmission power until the needle of the reflection power meter of the connected SWR meter deflects with CW, AM or FM modulation.
5. Turn the “TR TUNE” dial while transmitting to match the point where meter deflection is minimized.
6. Then turn the “X TUNE” dial to match the point where meter deflection is smaller than the degree in previous Section 4.
7. Repeat the procedures 4 – 5 to find the point where the meter jumping (deflecting?) is minimized. This point is the turning point (best SWR value)
8. If low SWR cannot be obtained, stop transmission immediately and set the [BAND] switch one step lower to resume the tuning operation again from previous Section 4.
9. Operation at the maximum transmission output 300W is possible when a low SWR is obtained.

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Product appearance and specifications are subject to change without notice for improvement of the product.