OM Power

Exhibit 6: User's Manual

External Radio Frequency Power Amplifier OM2500A

Model OM2500A

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1. GENERAL INFORMATION

1.1. Introduction

The OM Power model OM2500A is a fully automatic, full legal limit amplifier, designed for heavy duty use on all short wave amateur bands from 1.8 to 29.7 MHz (including WARC bands) and all modes with no time limit. It is equipped with one GU84b ceramic tetrode.

THE ADVANTAGES OF OM2500 A

Full compatibility with: ICOM, ELECRAFT ,KENWOOD, TEN-TEC ORION , Yaesu and CI-V data.
Automatic switching between bands
Automatic tuning with the band according to segments
Automatic switching of band pass filter
Automatic switching of antenna switches
***The possibility to use 2 different antennas* within one band or segment**

1.2. Specification

1.2.1. Parameters

Frequency Coverage	Amateur Bands 1.8 – 29.7 MHz including WARC
Power Output	1500w PEP continuous output all modes - ***no time limit***
Input Power	60 – 80W for full output power
Input Impedance	50 Ohm, VSWR < 1.2 : 1
Power Gain	15 dB
Output impedance	50 Ohm unbalanced
Maximum output SWR	2:1
SWR protection:	automatic switching to STBY , when reflected power is 350Wor higher
Intermodulation distortion	36 dB below nominal output
Suppression of harmonics	< -52 dBc second, < -65 dBc third
Tube	GU84b Ceramic tetrode
Cooler	Centrifugal blower + axial blower
Power supply	240 V - 60 Hz
Transformers	2 pcs of toroidal transformer 2,0 kVA
Parameters	485 mm x 200 mm x 455 mm [19.1” x 7.9” x 17.9”] (width x height x depth)
Weight	41,5 kg (92 lb)

1.2.2. Protection Circuits

There are 8 special protection circuits used in the amplifier. They are activated when one or more of next parameters exceed defined values or some unwanted occasion occurs.

- VSWR too high
- Anode current too high

- Screen current too high
- Grid current too high
- Mistuning of PA
- Hot switching protection
- Soft start for protecting your fuses
- “switch-on blocking “ at opened amplifier

1.2.3. Indicators

There are couples of LED and bar graph indicators visible on the front panel to inform you about value of some parameters or operation status:

Bar graph indicators	Power output - 50 LED Reflected power – 20 LED Current at screen Ig2 – 10 LED Anode voltage, anode current, tuning – 30 LED
LED Indicators	Current at control grid (Ig1 – 2 LED) WAIT – preheating of tube (180 sec) STBY – standby OPR – operation condition FAULT – failure, switching off for abt. 4 sec INHIBIT - operating condition ANT 1 - which ANT is use ANT 2 - which ANT is use ANT - ANT selection
Buttons	UP – DWN - listing in menu MAN - manual operating AUTO - automatic operating TUNE - tuning SET – confirms selected parameter
OSD Indicator	LCD Display 2 x 16 characters

2. SAFETY INSTRUCTIONS

WARNING!
DANGEROUS HIGH VOLTAGE!

The power amplifier is using high voltage up to close 3000V DC, which is very dangerous for human life! Read next safety instructions carefully first, before you will start to install and operate power amplifier! NEVER VIOLATE NEXT RULES!

WARNING! NEVER ALLOW CHILDREN to play around PA or to touch power amplifier or connected cables in working condition, or to push anything into the case holes!

WARNING! The amplifier contains high voltage circuits. Never turn the amplifier on without the upper lid in place. DO NOT ATTEMPT TO SHORT OR BYPASS safety switch under upper lid!

WARNING! The OM2500A amplifier is neither to be used in a WET or HUMID environment nor to be exposed to RAINFALL!

WARNING! Do not turn the amplifier on without having connected the ANTENNA or properly rated DUMMY LOAD! A hazardous HF voltage may build up on the antenna connector after turning the amplifier on with no antenna or dummy load connected!

WARNING! Before opening the upper lid of the amplifier make sure that power supply has been disconnected AT LEAST 10 minutes allowing the electrolytic capacitors to discharge fully. Disconnect power cord from the outlet!

CAUTION! The amplifier must be installed in such a way that free flow of hot air from the tube is allowed. The amplifier must not be installed in a constrained surrounding (i.e. tight shelves etc.)

CAUTION! The amplifier must be properly grounded during operation.

CAUTION! During operation the amplifier must be installed in such a way that the rear power supplies are accessible.

CAUTION! The amplifier is an A category product. In a household it can influence other electric appliances. In such cases the user is to take proper actions to mitigate this disturbance.

CAUTION! Make sure that all screws holding the case together are properly in place and tightened before carrying the amplifier with the handles.

CAUTION! Read this manual carefully. Fallow all of instructions during installation and operation to avoid damage to the amplifier not covered by manufacturer´s warranty! Do not attempt to perform any change of hardware or software!

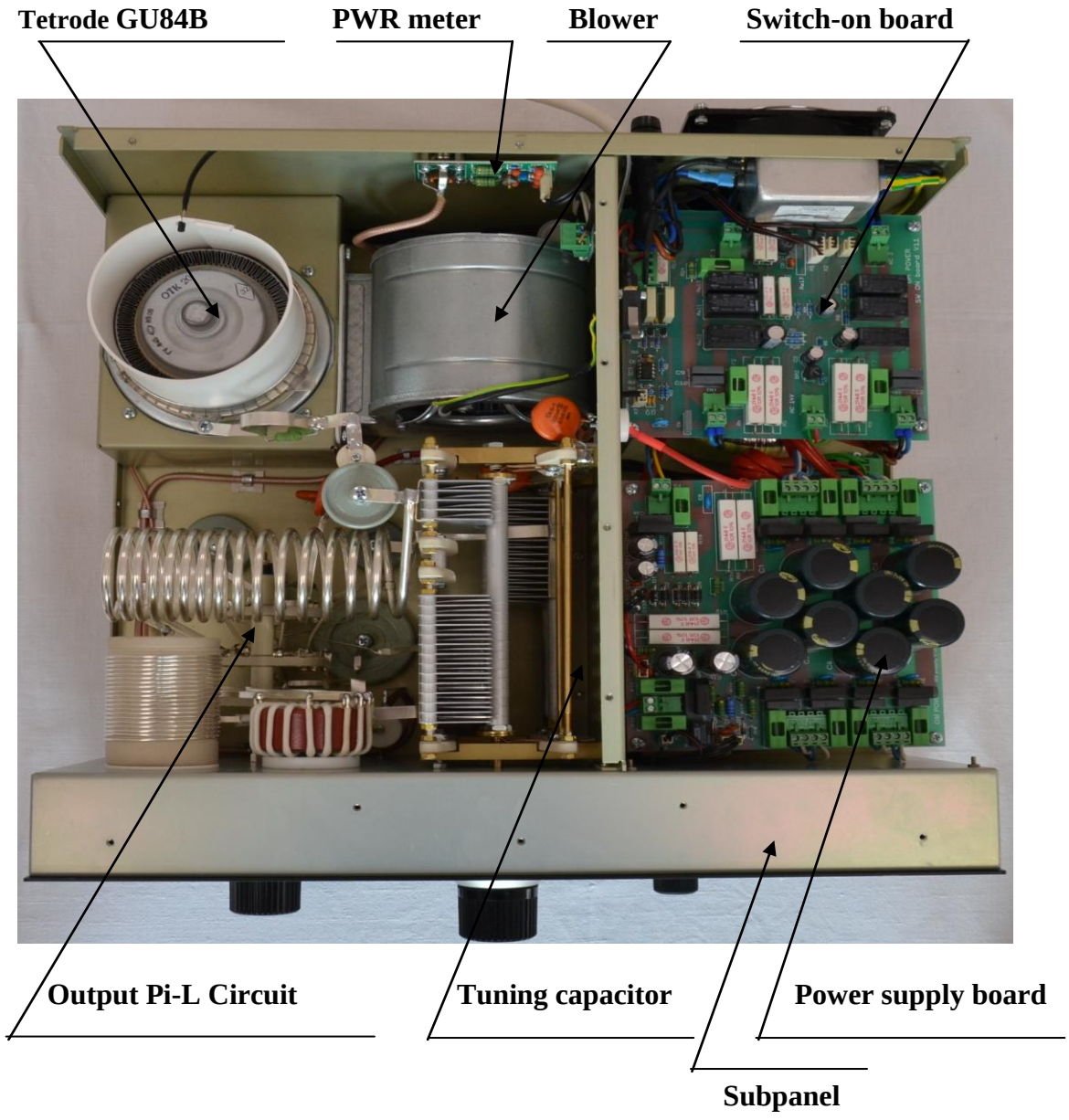
3. GENERAL DESCRIPTION

3.1. HF part

In this amplifier a tetrode GU 84b is used in a grounded-cathode circuit (input into control grid). This amplifier achieves excellent linearity by the voltage stabilization of the control grid bias and the screen voltage. The power input is given to the control grid, using a broadband input circuit with an input impedance of 50 Ohms. This adaptable input circuitry ensures a good input SWR (better than 1.5:1) on all amateur bands.

The output of the amplifier is a Pi-L circuit. The ceramic capacitor for TUNE and LOAD are divided. This enables the amplifier to be tuned exactly and makes it possible to easily return to the previously set positions after band changes.

Top view on the opened OM2500A



3.2. Power Supply

Power supply of the amplifier is comprised of two of 2,0 kVA toroidal transformers. A soft start is provided using relays and resistors.

The high anode voltage is made by combining 8 x 350 V (total 2800V) @ 2A. Each has its own rectifier and filter. In the high voltage circuit, safety resistors are employed to protect the amplifier against overload.

The source for screen grid is regulated by parallel stabilization with BU508 transistors and delivers a voltage of 360V at 100mA.

The -120V for the control grid is regulated with zener diodes.

3.3. Safety Devices

Control and monitoring circuits ensure control and safety during malfunctions of the PA. These are on the Control board, which is located on the chassis subpanel.

4. INSTALLATION

NOTE

Read this chapter carefully prior you will start installation. Before unpacking inspect shipping woody container first, if it is not damaged. Keep all of packing parts for possible future shipment. Check unpacked power amplifier. If you find some damaging, contact your dealer immediately to keep full warranty.

During installation go step by step according to next parts.

4.1. Grounding

CAUTION

The amplifier has to be grounded properly! Connect the screw on the rear panel of the amplifier to your local grounding system with a copper cable, use a cross-section of 4 mm^2 at least.

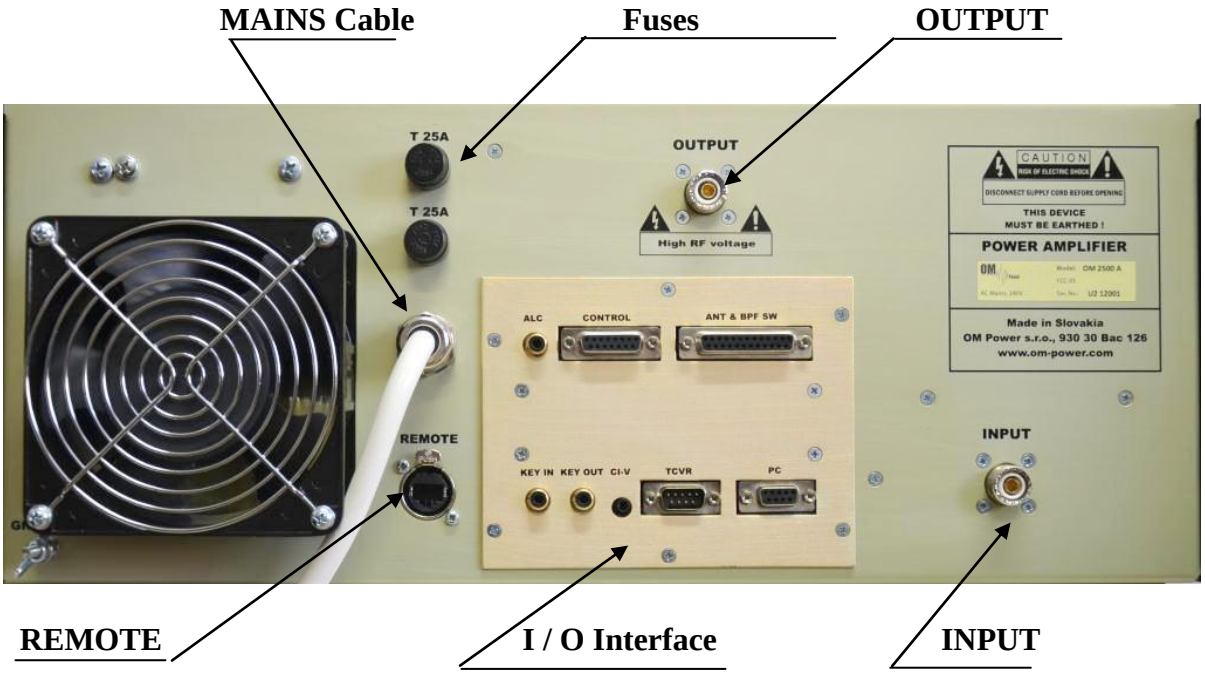
Connect your transceiver to the same grounding system of your shack carefully!

Use minimum length cables and make certain that the connections are both physically and electrically sound. With poor grounding, you may risk damaging your equipment, having problems with TVI/BCI or your transmitted signal may be distorted.

4.2. Coaxial Cable

The output of the transceiver is to be connected to the input of the amplifier via RG58 or similar cable. For the connection between the power amplifier and the antenna, RG213 or similar coaxial cable suited for high power is recommended. Both the INPUT and OUTPUT SO-239 sockets with Teflon insulation is used.

Rear view of the amplifier OM2500A



4.3. I/O Box and Interface

Control of Amplifier and communication with TCVR as well as Antennas / BPF switching can be done via the rear panel I/O Interface.

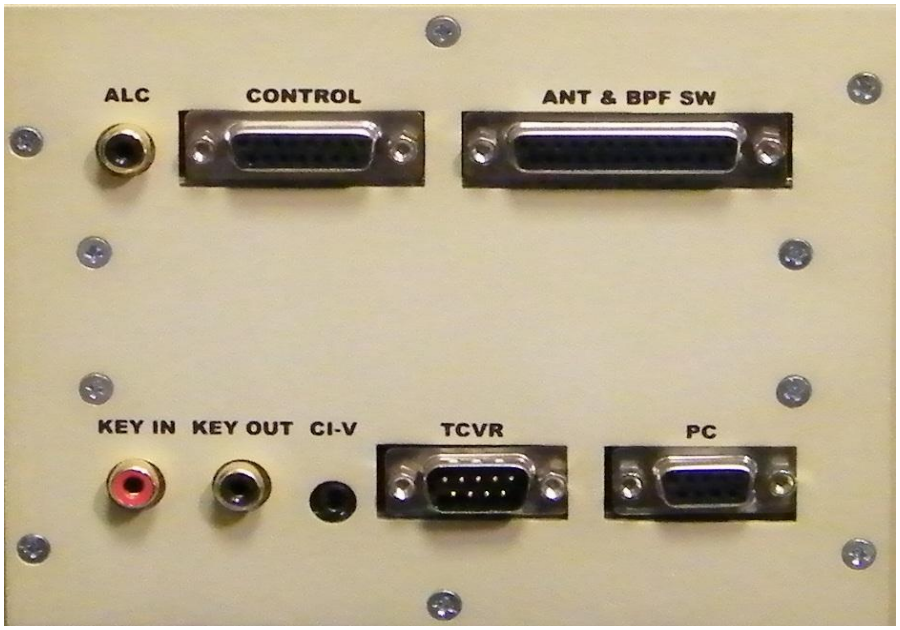
Control cable maintains TX / RX switching of the PA (TX GND). The cable is shielded. On the side of the power amplifier a CINCH-socket is used. On the side of your transceiver you have to use a socket suitable for this transceiver. During transmitting the middle pin is connected to the ground.

The relays of the OM2500A have to be switched earlier than HF is applied (cold switching). Modern transceivers they have a time delay between PTT switching and power output.

CAUTION

If you are using and older transceiver or transmitters without time delay, we recommend to connect the PA in such a way that the transmit/receive switch (foot switch for example) is connected with the KEY IN socket of the amplifier. The KEY OUT socket is to be connected with the PTT socket at the transceiver.

The amplifier is equipped with two safety devices, which ensure that the output relay is not switched under power mistakenly (hot switching).



KEY IN RCA Phono - Input signal PTT switching voltage / current 5V /2 mA)
KEY OUT RCA Phono - Output signal PTT (maximum switching of 30V / 50mA)

CI-V Mono 3.5mm Jack for connection of ICOM TCVRs or devices that provide compatible CI-V protocol. Correct baud rate is important.

TCVR DB9 serial port RS232 for KENWOOD, YAESU and ELECRAFT TCVRs. Correct baud rate and type is required for successful operation. If both CI-V and TCVR cables are connected then CI-V disables RS232. Otherwise selection of interface is done via TCVR type.

PC DB-9 RS232 port is used for communication with your PC. Please use setting you would normally use if using direct TCVR – PC connection.

ALC RCA Phono – Automatic Level Control is used when tuning the PA to block drive level .

WARNING!

We only recommend using ALC feature while operating RTTY, FM and other 100% duty modes.

CONTROL The CONTROL socket is a single DB-15 connector that provides many connections to the amplifier from your transceiver. Use shielded cable for all connections to this connector. You will need to fabricate a cable with the proper connector for your transceiver or use individual connectors as described below.

PIN OUT:

1. ALC Out
2. NC

3. INHIBIT Control voltage
4. TX INHIBIT for Yaesu and Elecraft – this supersedes ALC output
5. NC
6. KEY OUT
7. NC
8. KEY IN
9. –
15. GND

ANT & BPF SW DB-25 is used for switching of external HP BPF or external Antenna Switch. Maximum switching of 30V / 0.5A is possible.
PIN OUT:

1. antenna port 1
2. antenna port 2
3. antenna port 3
4. antenna port 4
5. antenna port 5
6. antenna port 6
7. antenna port 7
8. antenna port 8
9. antenna port 9
10. antenna port 10
11. COMMON port of ANT SW
12. NC
13. GND
14. BPF 160m
15. BPF 80m
16. BPF 40m
17. BPF 30m
18. BPF 20m
19. BPF 17m
20. BPF 15m
21. BPF 12m
22. BPF 10m
23. COMMON BPF port
24. NC
25. GND

4.4. Main Supply

WARNING!

Power Amplifiers OM2500A are manufactured for several different power systems. For US territory only one mains cable is used for two phases (2x120V) system. Cord is not removable from PA. Amplifier is equipped with two mains fuses (see rear panel).

CAUTION

Be sure you got PA with properly terminated line cable, corresponding with your power system's outlet. If not, contact your dealer. In such a case you should make the necessary changes using a licensed electrician.

WARNING!

Be sure that your power system is correctly wired and properly rated! To use adequately sized and connected grounding system is also very important.

4.5. Cooling

CAUTION

The amplifier must be installed in such a way that free flow of hot air from the tube is allowed. Do not obstruct air intake and exhaust areas of the PA.

The centrifugal blowers provide the necessary cooling of the amplifier, even during long contests. The main blower is activated by switching the PA on and it is turned off when cooling is finished (approx. 1-5 min after switching off the PA depending on the temperature of the tube). The supplemental fan is turned on depending on the temperature of the air exiting from the amplifier. It is switched on at 70°C and switched off at 60°C.

4.6. Remote Control

Control of the amplifier is possible remotely by using **REMOTE BOX** (optional).
Connection is done by REMOTE socket, maximum cable length of 10 meters.

5. OPERATION

WARNING!

Before switching PA on, make sure that amplifier is grounded, antenna or dummy load is connected, line cord is putted to the outlet. Do not allow children or unauthorized person to go close to PA, to touch cables or connectors, to push anything into the case holes!

CAUTION

Before switching PA on, check all connections between PA and TCVR.

CAUTION

Do not turn PA on for at least 2 hours after unpacking it and locating in its operating location. Especialy when amplifier is moved from a cold place to a warm one because not visible condensation may develop, and this could result in damage to the high voltage circuits of the PA.

CAUTION

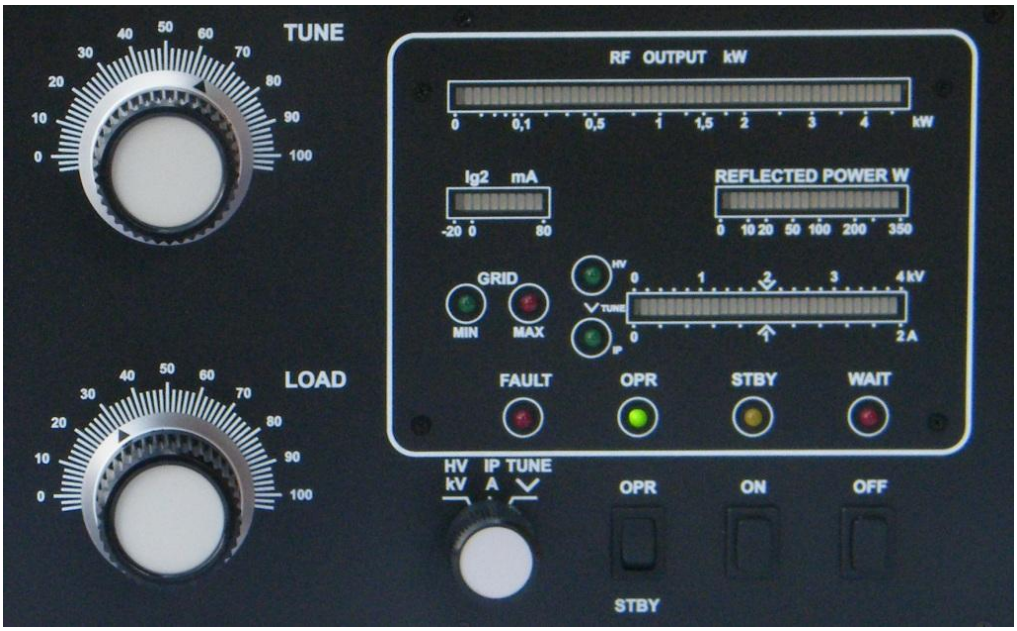
Never try to change antenna output during a transmission to avoid warranty loss.

NOTE

When you decide to have a short operating break, place the amplifier in the standby mode rather than switch it off.

5.1. Operation Elements

There are couple of operational elements accessible or visible on the front panel.



TUNE - Anode capacitor for tuning, tuning of higher frequencies to "0", lower frequencies to „100“.

LOAD - Output capacitor tunes antenna load resistance to amplifier. Capacity is low at „100“ and high at "0" on the scale.

OFF - You switch off the amplifier by pressing this button.

ON - You switch on the amplifier by pressing this button. After 3min of warm-up delay, the amplifier will be ready for operation.

OPR/STBY „OPERATE“ sets the amplifier ready for transmit operation. In STBY, if WAIT-LED is on or the amplifier is OFF, the amplifier is in bypass-mode and your transceiver is directly connected to the antenna. Maximum allowed power in bypass mode is 400 Watts!

RF OUTPUT Bar graph – shows output power .

REFLECTED POWER Bar graph – shows reflected power from the antenna. Maximum level is 350W otherwise amplifier switches to STANDBY mode.

Ig2 Bar graph – measures the current of the second grid from -20mA to +80mA.

HV/IP/TUNE Bar graph – measure the anode voltage, anode currency or tuning of the amplifier.

INHIBIT Indicates interruption of transmission during the tuning process of the PA. If indicated by RED LED then PA is in STBY mode. If during a retune operations within same BAND then the PA will retune according to the frequency of the transceiver. When changing the BAND – INHIBIT will stay lit until the KEY IN is released and the tuning process will start. After that PA is automatically ready for operation.

ANT, ANT1, ANT2 The amplifier is capable of automatic antenna switching (ie. 80m CW and 80m SSB can be split between two antennas). The amplifier will automatically select desired antenna by selecting last used antenna on a given frequency.

SET button for:
- MAIN MENU
- Confirmation of selection
- Saving of selected value
- Saving of tuning parameters
-

TUNE Push button for selection of TUNE mode

AUTO Push button for selection of AUTOmatic mode

MAN Push button for selection of MANUAL mode

DWN / UP Push button for selection of band, segment or parameter

5.2. Configuration of Power Amplifier

When the ON button is pressed the amplifier will start to heat the final amplifier tube. During the warm-up period, the STBY and WAIT LEDs will be illuminated. If a transceiver is connected to the correct port and all communication settings are right, the operating frequency, AUTO: and the type of transceiver will be indicated on the alphanumeric display. After successful heating of the TUBE (3 mins) you can enter operating mode by pressing the OPR button.

Example of Automatic mode with ICOM TCVR.

Type of supported TCVR and working frequency are visible on the display.

AUTO LED is ON.

5.2.1. TCVR Support Settings

Supported transceivers: ICOM, ELECRAFT, KENWOOD, TEN-TEC , ORION, YAESU

Press SET button and scroll using UP / DWN to CHOOSE TCVR

Confirm CHOOSE TCVR by pressing SET again and scroll UP / DWN to your transceiver type. Confirm the selection by pressing SET

Continue by selecting Baud Rate.
Press SET button and scroll using UP / DWN to BAUD RATE. Press SET again.

Baud rate for TCVR – PA communication is shown on the LCD display.

By scrolling UP / DWN select desired Baud Rate which must be the same as baud rate used by your transceiver. (please refer to your transceiver user manual). To confirm your selection press SET.

When using Yaesu TCVR you need to configure the STOP BIT parameter correctly and confirm selection with SET.
The communication settings menu can be left by pressing the AUTO button. The amplifier will enter AUTO mode only if all settings are correct and connection has been established with your transceiver. You can verify that the correct frequency and transceiver type is shown on the LCD display.

5.2.2. Connection with not supported TCVRs

For communication with TCVRs, that are not supported by OM2500A (for example JST-245 and older types of Kenwood), an external IF-232 converter is to be used. You can also use devices from several companies that produce compatible CI-V output which deliver frequency information in ICOM format through the CI-V output. Then the PA will be connected in the following configuration:

JST-245 <> DB37- JST-245 cable <> MKII (or other device which has a CI-V output) <> PC. OM2500A is connected to the CI-V output of the CI-V device (MicroHam for example).

Example of communication

5.2.3. Communication loss

If TCVR is not connected or communication settings are incorrect the message "COMMUNICATION LOST" will be displayed. You can still use PA by entering MANUAL mode (MAN Button) or by correcting the transceiver connection problem.

Example of Communication loss message

5.2.4. Antenna Switching Menu

If you have 3rd party external antenna switch connected to your amplifier (i.e. MicroHAM TEN SWITCH), you need to configure the assignment of each port to a specific band /or antenna.

By pressing SET and scrolling to ANTENNA SETTINGS and confirming by SET you get current band and its antenna selection. By scrolling UP / DWN you can select BAND which you want to assign to current ANTENNA selected.

Then select how many antennas you want per current band (1 or 2) and always confirm your selection by pressing SET. The by scrolling UP / DWN you assign which PORT is used on your external antennas switch for this particular antennas. (ANT 1 ON PORT 01)

Shall you decide to use 2 antennas for this band then after confirming that with SET configuration continue to the other antenna selection / port selection.

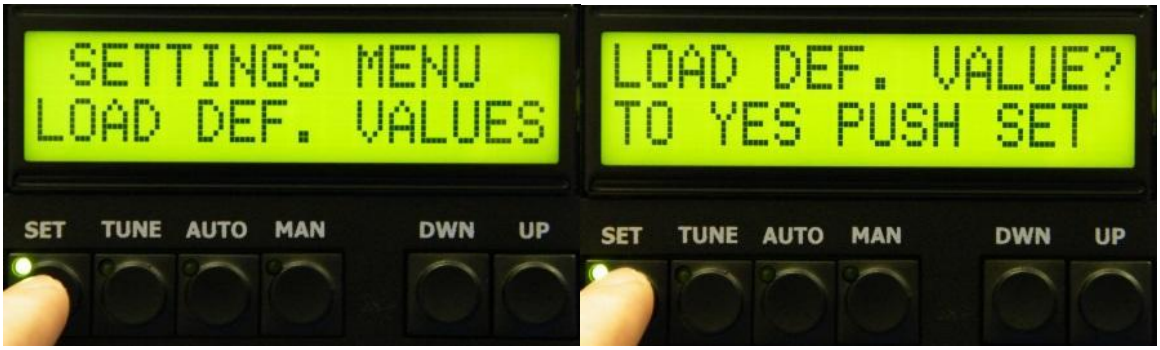
To finish Antennas switch configuration you can either press AUTO or MAN.

5.2.5. Bandpass filter switching

Switching of external band pass filters is automatic and needs to follow pin out of BPF connector. For more details see ***Example of connection with antenna switch and BPF*** in Appendix.

5.2.6. Loading factory default settings

In the rare case of needing to restore factory default settings press SET and scroll using UP / DWN to LOAD DEF VALUES and confirm by SET.



Then select if you want to erase all settings (pressing TUNE) or just one setting value (SET button). In the case of resetting a single parameter use UP / DWN to select which option and confirm by SET.

5.2.7. MUTE option

When operating the OM2500A with an Icom transceiver without TX INHIBIT for disabling TX, we recommend blocking of the TX while tuning using ALC control (mainly while operating FM /RTTY/ AM).

The ALC Input of your transceiver should be connected to the ALC Out of OM2500A.

Using SET and scrolling UP / DWN select SET MUTE and confirm it by SET. Then configure MUTE LEVEL for each band so it results in no power being transmitted by TX when performing TUNE procedure.

5.2.8. LCD Settings Menu

By pressing SET and scrolling UP / DWN and selecting LCD CONTRAST (Confirming by SET) and pressing Up or DWN you can vary the Contrast of the LCD display. Press SET for confirm the setting.

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5.2.9. Operation in MANUAL mode

To enter Manual mode of the PA please press MAN. By pressing MAN repeatedly you select BAND and band segment. You can control the segment or band by scrolling the UP / DWN buttons.

5.3. Tuning of Power Amplifier

The OM2500A amplifier is operated in class AB. Thus it's possible to obtain a maximum output power at excellent linearity. For this purpose the amplifier has to be tuned carefully.

WARNING!

Before starting tuning you have to check if the right antenna or a 50 Ohms load resistance is connected at the antenna output!

CAUTION

The operation of a mistuned PA will cause malfunctions, the increase of grid current (the GRID-MAX-LED will light up) and problems with TVI/BCI.

CAUTION

The grid-current is shown with 2 LED diodes. It's normal if the green LED is flashing or may be shining a little bit during peak operation. If you overload the amplifier the output power increases the grid current at very small rates and the red GRID-MAX-LED is shining and the safety devices switch the PA to STBY. You must decrease the input power.

CAUTION

In SSB mode you will have good output power if the green LED lights up a bit. The current of screen grid is measured and shown in a Bar graph Indicator. The amplifier has to be tuned in such a way that the current is between - 20 mA to +50 mA. At currents beyond these values the operating point will be shifted and IM-products will be rapidly increased. If a value of + 70mA is exceeded, the safety devices will switch the amplifier to STBY mode.

5.3.1. Manual Tuning

1. Set the multimeter switch to the **HV** position
2. Set the OPR/STBY switch to the **STBY** position
3. Press the **ON** button

The amplifier is prepared for operation with the following automatic steps:

- The toroidal transformers are switched on step by step.
- The cooling blower for the final tube is switched on.
- The multi-meter bar graph measures the high voltage; the normal value is **2.8 kV**
- The WAIT LED lights up

CAUTION

After switching on, please confirm that the blower is operating properly. Air must be flowing from the ventilating aperture above the tube. If there is any concern, or no air flow, press the "OFF"-button immediately !

Heating the tube takes about **150 seconds**. After this time the WAIT LED goes out and the amplifier is ready for operation.

OM2500A will tune automatically to either TCVR frequency via CAT interface or by frequency sampled by amplifier´s RF input.

4. Reduce the power output of your transceiver to the **0**
5. Switch OPR/STBY to **OPR** position (OPR LED lights up)
6. Choose the **TUNE** position of multimeter
7. Transmit and increase driver power to **10W** (OUTPUT power will be abt. 500W)

CAUTION

If the input power is higher than 15W and the power amplifier is not correctly tuned, the safety devices will switch to STBY.

After switching the amplifier to STBY, the amplifier will automatically reset and switch back to OPR mode after approximately 2 seconds.

8. Set TUNE knob in such a way, that the TUNE-LED lights up maximum left.
9. Set LOAD in such a way, that the TUNE LED on the TUNE scale lights up under the "**V**" sign. If it is possible to obtain the LOAD in 2 positions, set the position that is father to the right
10. Repeat tuning several times according to 8 and 9
11. Increase the input power until an output power of approximately 1500 W is reached.
12. Repeat steps 8 and 9
13. Set TUNE to maximum output power

After this procedure the amplifier is tuned correctly and ready to give 1500W output power in all operation modes.

At optimal tuning and full output power a positive 50mA current goes through the second grid. On 24 and 28 MHz bands optimal tuning can be achieved when one or two LEDs are lit up to the left from the position "V". If less output is desired you can simply decrease the load of the transceiver.

CAUTION

Should the amplifier demonstrate any malfunctions during tuning or should it not behave in accordance witch the description, interrupt the tuning procedure immediately and check the amplifier! Be sure to have not done any mistakes in choosing bands or TUNE/LOAD values!

NOTE

Be sure that SWR is not higher than 1:2 and input power is LOW!

After excluding possible human mistakes you will be able to work for long time with this amplifier!

5.3.2. Tuning Adjustment

OM2500A has been design to deliver maximum output power at 50 Ohms load. To deliver maximum output to a real load you need to adjust the tuning **according to your real antenna impedance.**

Entering the TUNE mode is done by pressing the TUNE button. The OM2500A then switches the transceiver to RTTY and sets the frequency to corresponding segment. By changing the values of TUNE and LOAD capacitors we tune the PA as per manual tuning instructions. The optimally tuned amplifier will deliver full output without approaching the maximum Screen Current of 30mA!

After tuning the amplifier save the settings by pressing SET and PA will automatically tune frequency of your transceiver to next band segment. Follow the same procedure for all bands and segments if needed.

By pressing MAN or AUTO buttons PA and TCVR will return to standard operating mode.

Deviding of bands into segments

Band (MHz)	1,8	3,5	7	10	14	18	21	24	28
Width of the segments (kHz)	15	30	30	30	30	50	60	60	70

6. MAINTENANCE

6.1. Indication of fault conditions

OM2500A has the following indication LED on the front panel:

GRID MIN	- indication of first gird current
GRID MAX	- max. First grid current exceeded
HV	- measuring of anode voltage by bar graph
IP	- measuring of anode currency by bar graph
FAULT	- fault
OPR	- amplifier in operation mode
STBY	- amplifier in standby mode
WAIT	- heating of tube after switching on the amplifier

NOTE

Should a fault condition appear during the tuning or operation of the amplifier the safety circuits of OM3500A will react. The amplifier will be turned to STBY mode. After approx. 1 sec the control circuits will switch the amplifier back to OPR.

CAUTION

If the fault will repeat 3 times after each other the control circuits will turn the amplifier to STBY. Bringing the amplifier to OPR is enabled by using the OPR/STBY switch only.

After reaction of safety circuits the FAULT LED will be lit up for approx. 5 sec, depending on the nature of the fault.

Flashing LED signalizes:

IP	- anode currency exceeded
HV	- low anode voltage
FAULT	- reflected output exceeded
GRID MAX	- first grid currency exceeded
	- screen grid currency exceeded
GRID MAX + HV	- maximum load power exceeded
GRID MAX + IP	- zero output power during tuning
HV + IP	- tuning fault, incorrect tuning of the Pi-L output circuit

In case your OM2500A amplifier is not working correctly, please contact the manufacturer or your dealer.

Manufacturer's contacts: **OM POWER, s.r.o.**
930 30 Báč 126
SLOVAKIA
Email: ompower@nextra.sk

In USA:

Array Solutions
2611 North Belt Line Road
Suite # 109
Sunnyvale, TX 75182
Tel: (214)954-7140
Email: sales@arraysolutions.com

6.2. Fuse Replacemeent

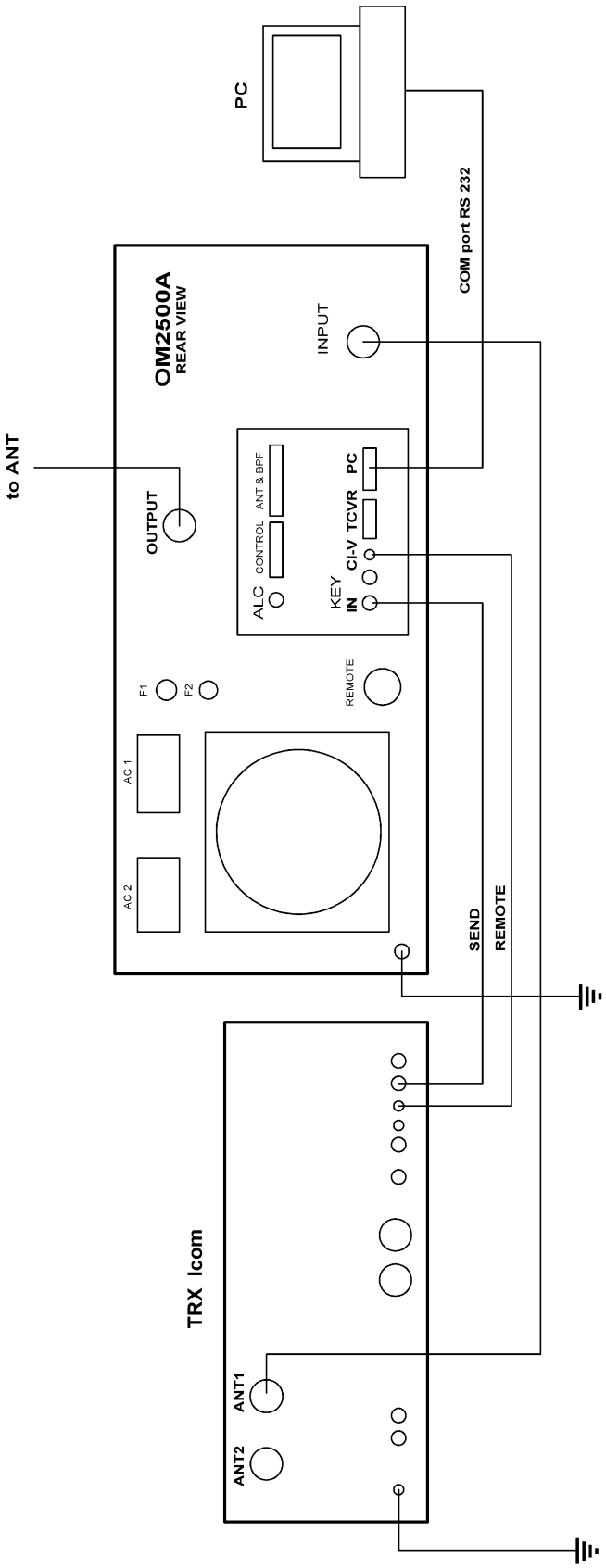
6.3. Tube Replacement

6.4. Cleaning

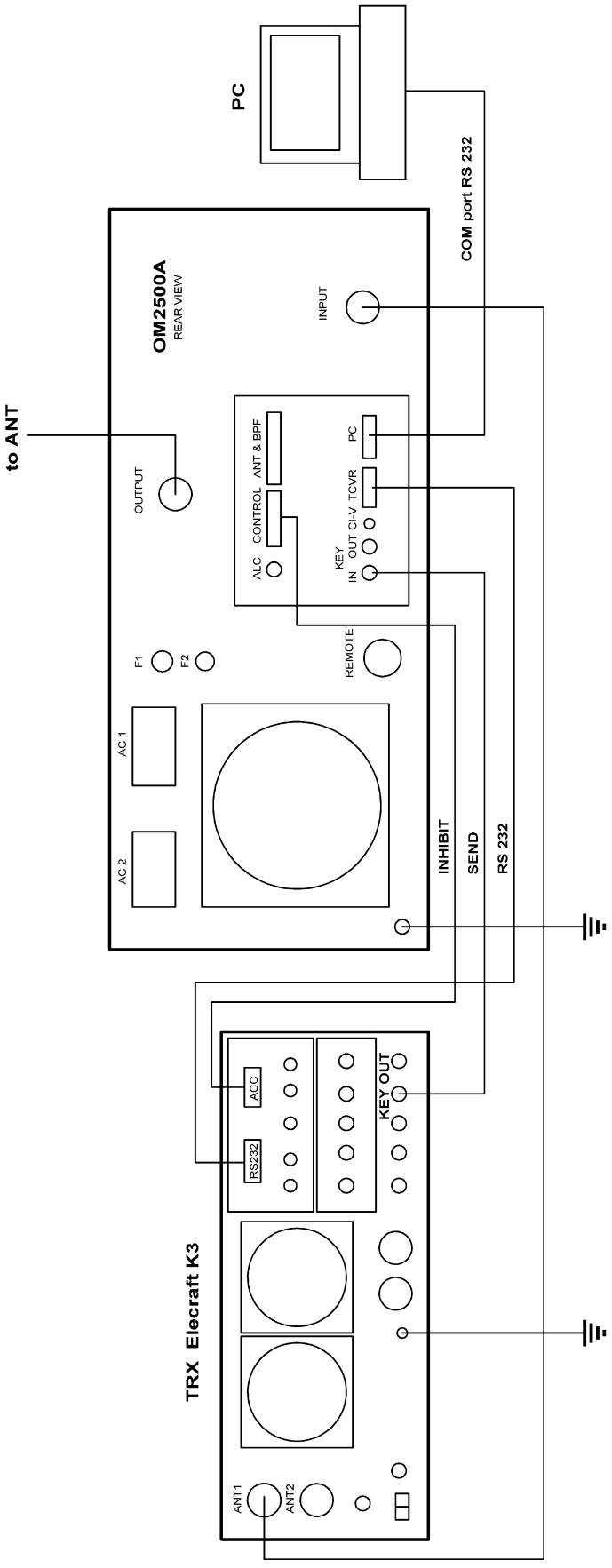
To prevent damage of amplifier surfaces and plastic components do not use aggressive chemicals for cleaning. Do not open the amplifier for cleaning. Outer surface may be safely accomplished by using piece of soft cotton cloth moistured with clean water or window cleaner.

7. APPENDIX

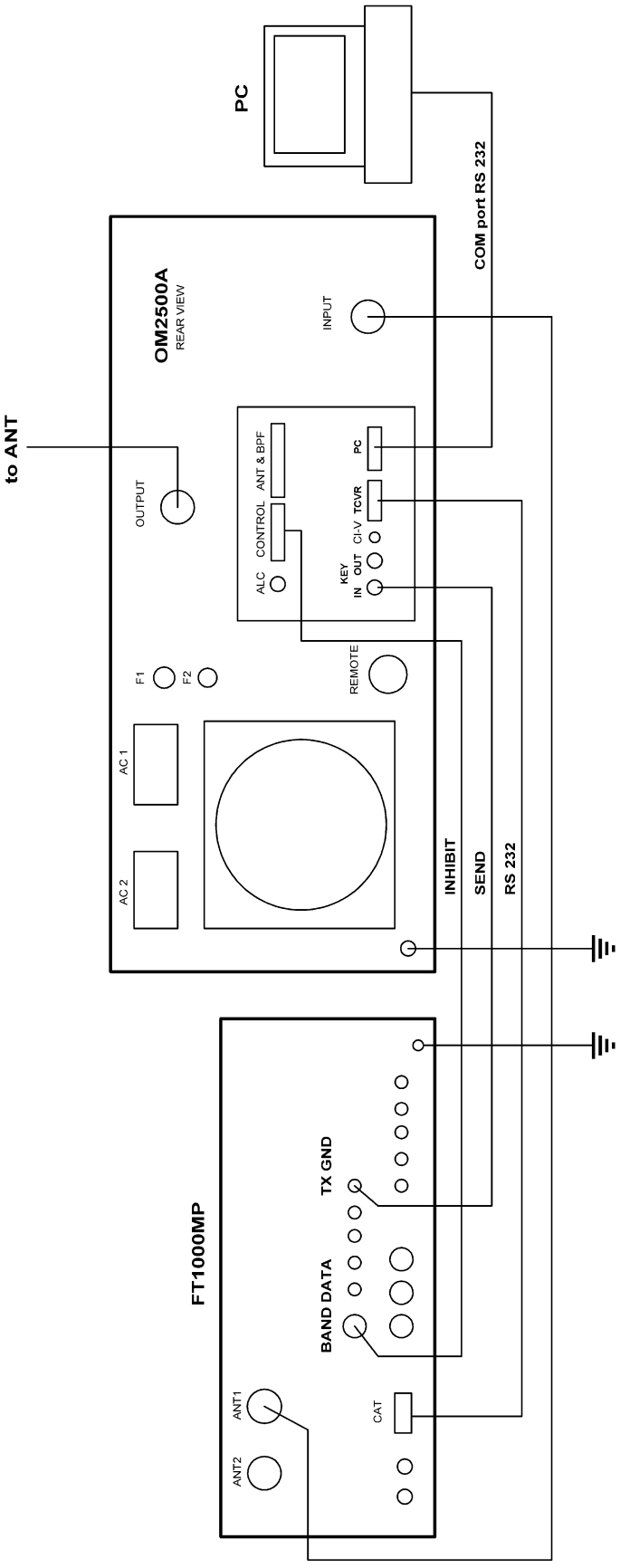
7.1. Example of connection for Icom



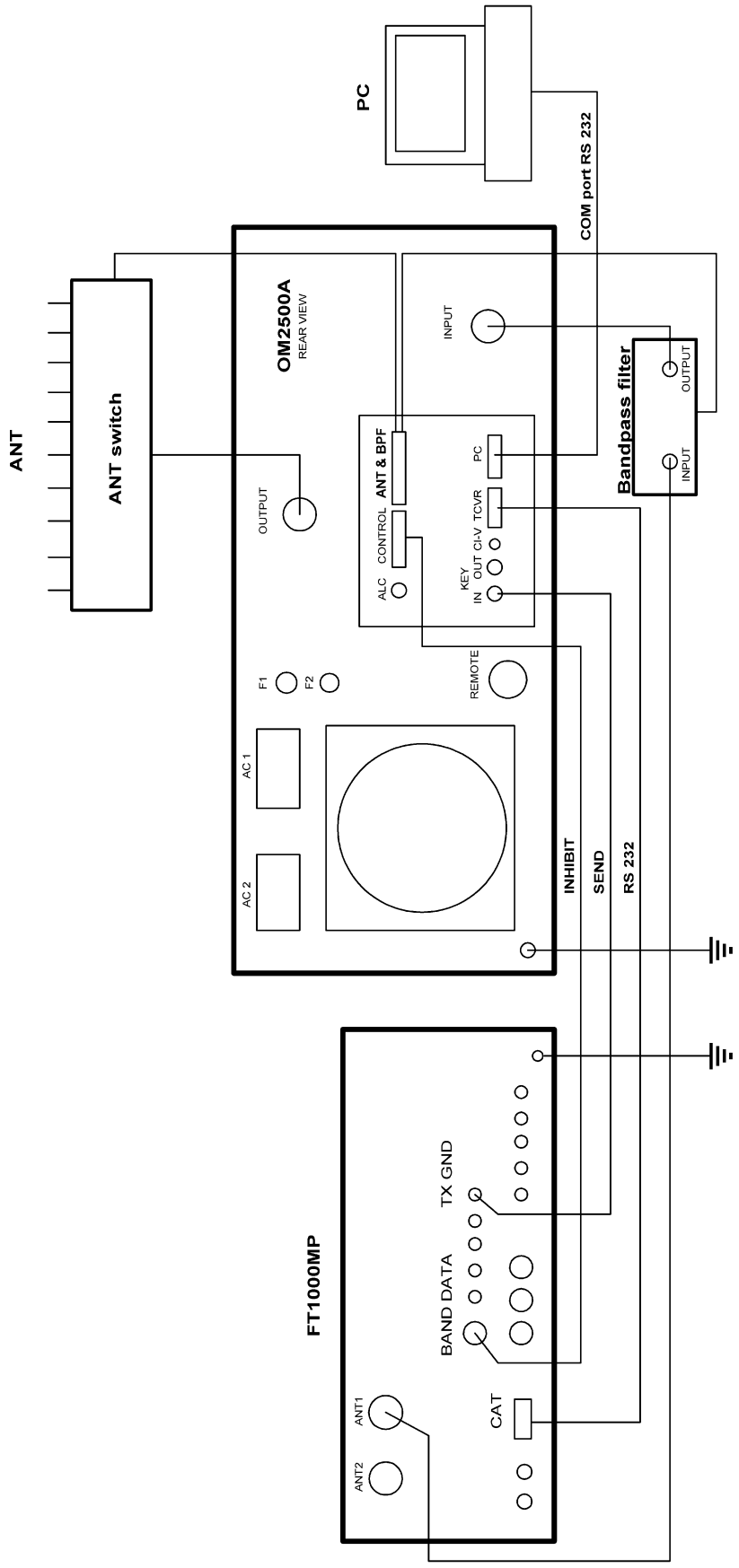
7.2. Example of connection for ELECRAFT



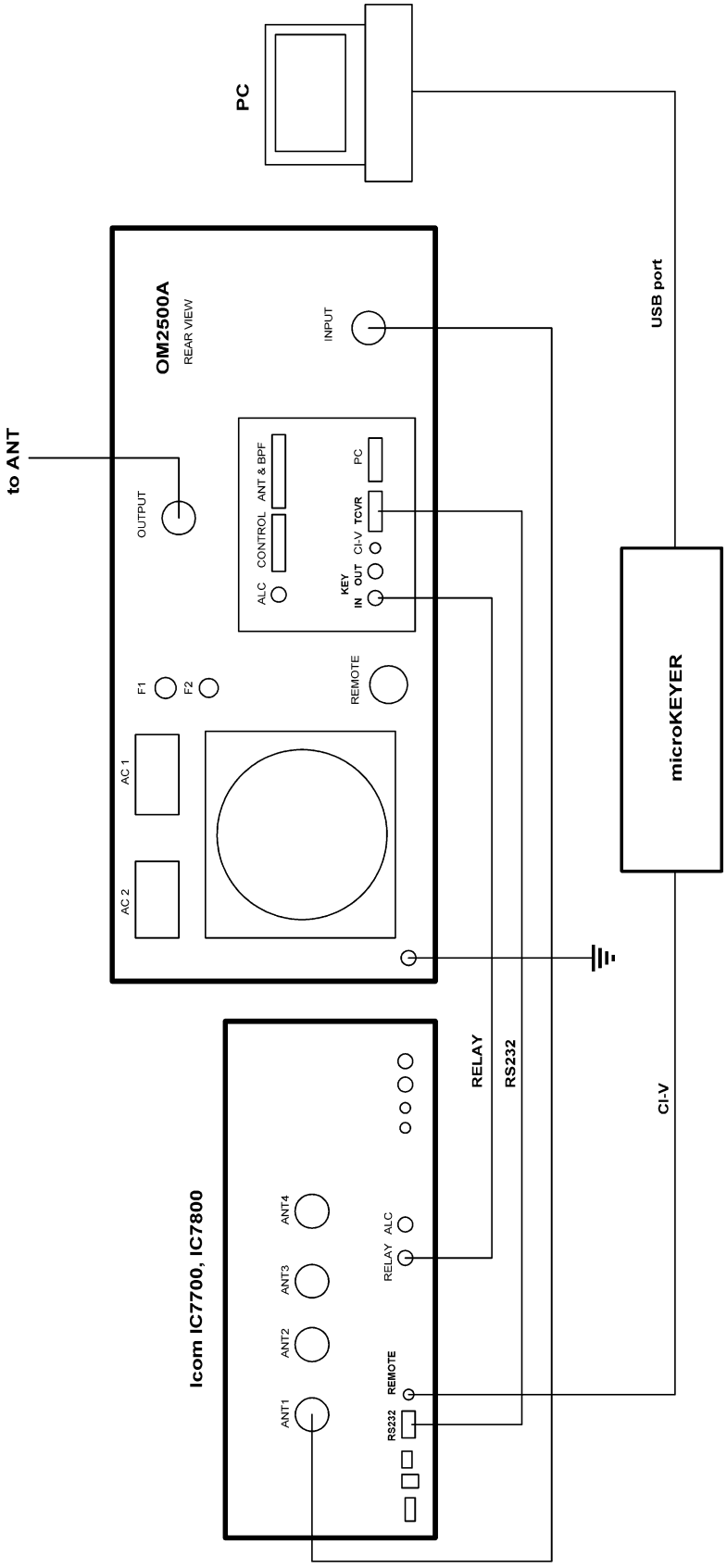
7.3. Example of connection with Yeasu



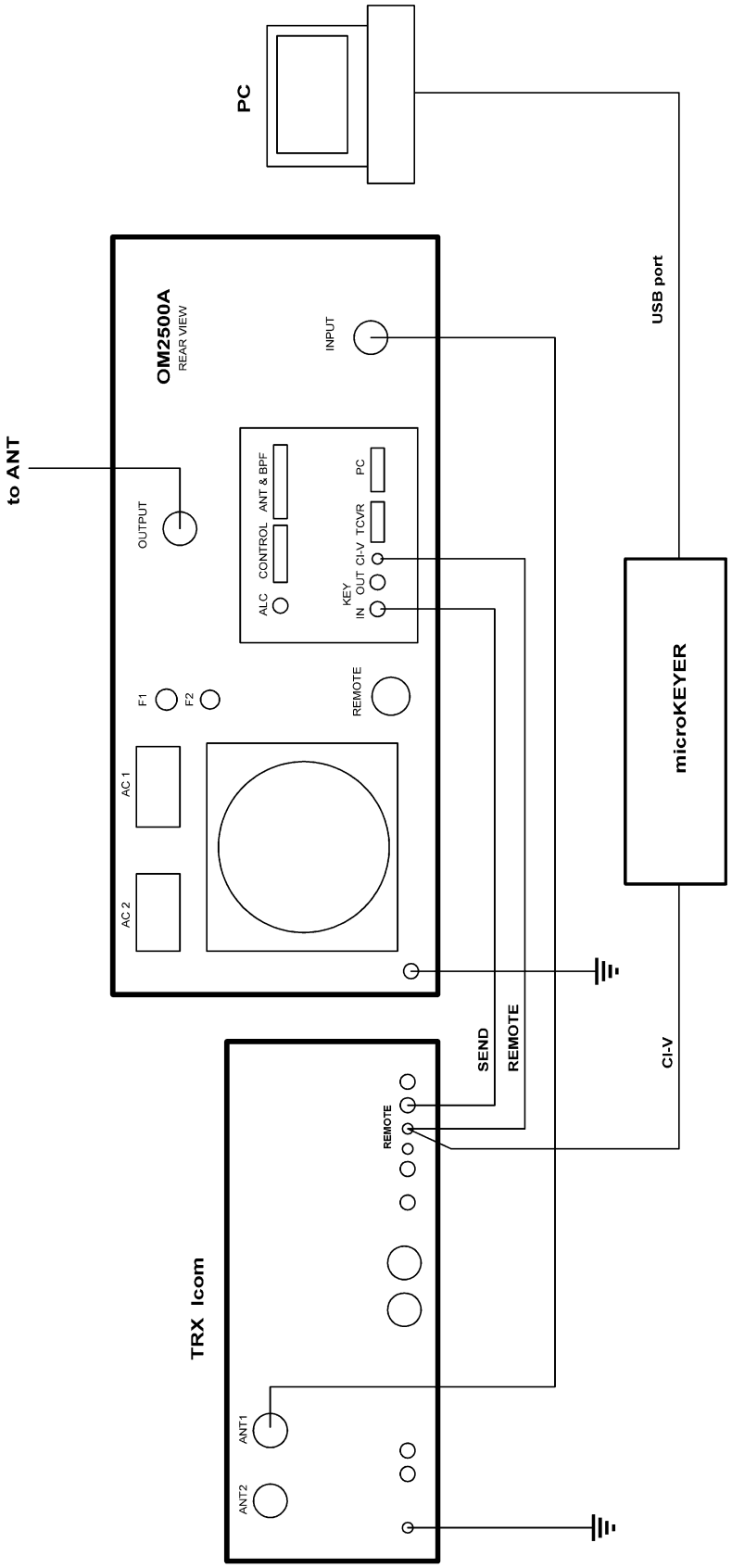
7.4. Example of connection with antenna switch and BPF



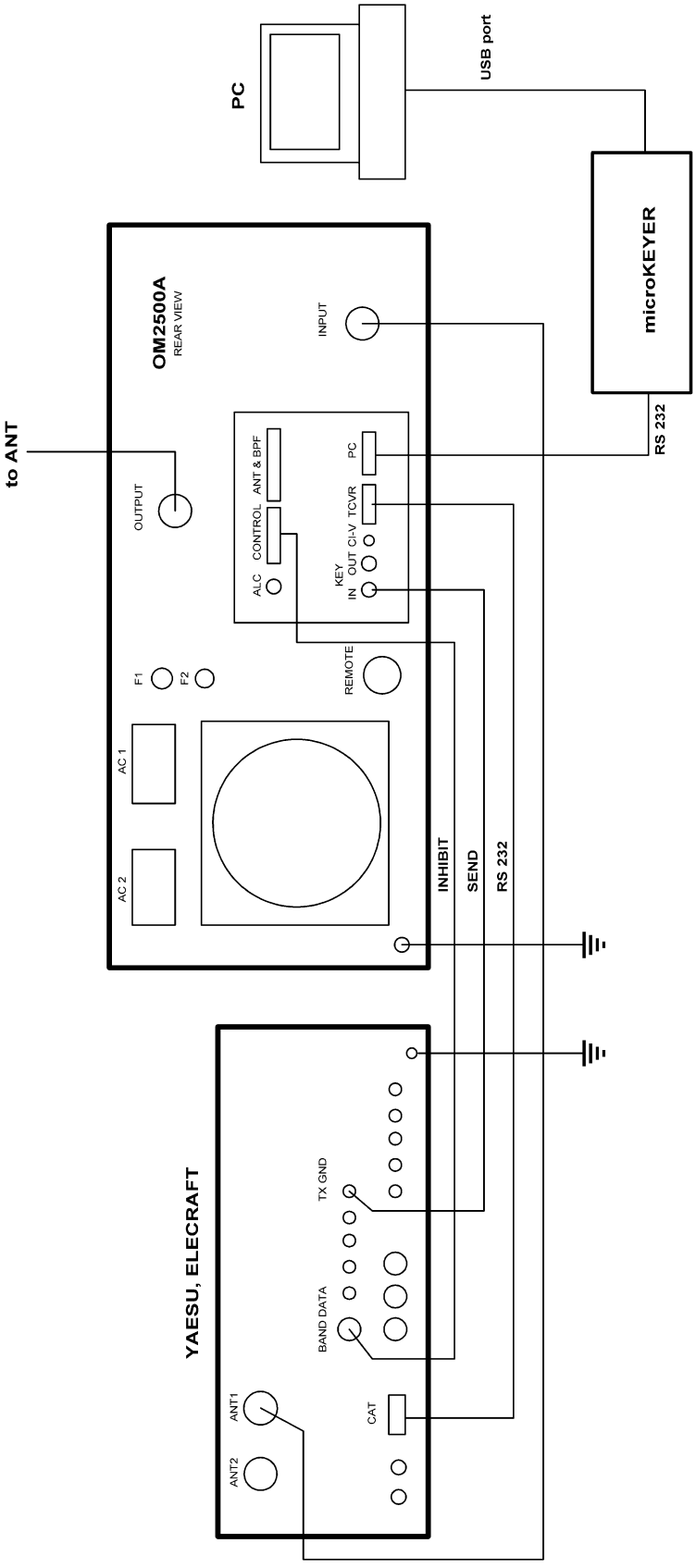
7.5. Example of connection USB micro KEYER II with IC7800 or IC7700



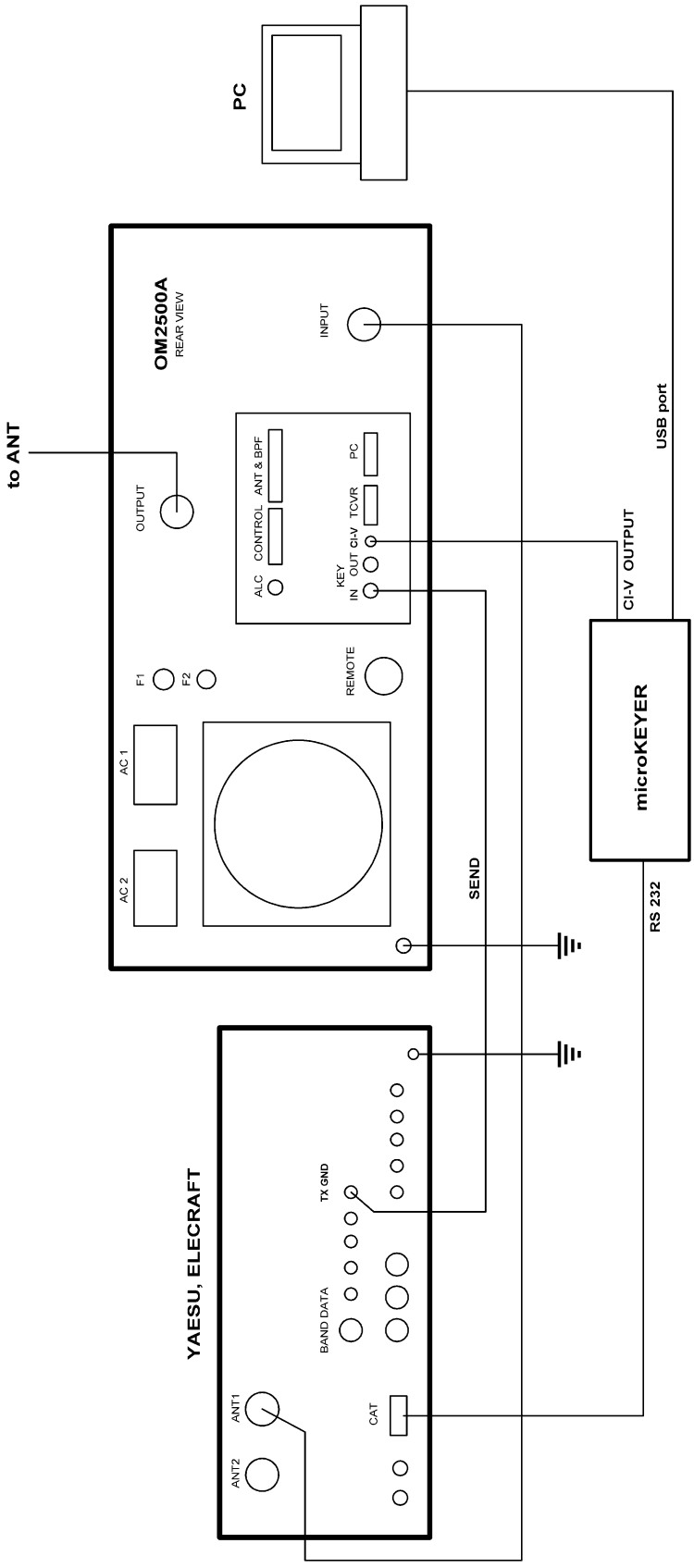
7.6. Example of connection USB micro KEYER II with another Icom



7.7. Example for connection USB micro KEYER II with Yeasu or ELECRAFT



7.8. Example of connection PA with MicroHAM MKII, (MK2R+ etc) with CI-V output



7.9. Block Diagram of OM2500A Power Amplifier (USA version)