Exhibit 6: User's Manual

External Radio Frequency Power Amplifier OM2000A+

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Thank you for purchasing a new model of the power amplifier for the short waves plus 50 MHz amateur bands. You got a real automat with no knobs, no rotary switches on the front panel, just two small switches and one large display.

Smart design, modern conception, high reliability is the result of our own development and many years of our experiences with overall solutions and especially with protection circuits.

This product is covered by 2 years of warranty period except of the tube (1 year).

We wish you many years trouble-free use of this equipment, lot of fun and successful connections in the world of amateur radio.

The OM Power Team

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1. GENERAL INFORMATION

1.1. Introduction

The OM Power model OM2000A+ is designed for all short wave amateur bands from 1.8 to 29.7 MHz (including WARC bands) plus 50 MHZ and all modes. It is equipped with a ceramic tetrode FU-728F.

1.2. Specification

1.2.1. Parameters

Frequency Coverage	Amateur Bands 1.8 – 29.7 MHz including WARC + 50 MHz
Power Output	1500 W in SSB/CW on HF bands, 1500 W in CW/SSB on 6m 1500 W in RTTY
Input Power	Usually 70W for full Output Power
Input Impedance	50 Ohm, VSWR < 1.5 : 1
Power Gain	15 dB
Output Impedance	50 Ohm unbalanced
Maximum Output SWR	3 : 1
SWR protection	Automatic switching to STBY, when reflected power is 350W or higher
Intermodulation distortion	32dB below nominal output
Suppression of harmonics	< -50 dBc ; <-70dBc on 50 MHz
Tubes	FU-728F Ceramic tetrode
Cooler	Centrifugal blower + Axial blower
Power supply	switchable 230V, 240V,250V, 60 Hz
Transformers	One toroidal transformer 3kVA
Dimensions	15,4“ x7,7” x 14,6” (width x height x depth)
Weight	52 lbs

1.2.2 Protection Circuits

There are several 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
- Anode voltage error
- Screen current too high
- Screen voltage error
- Grid current too high
- Grid voltage error
- Heating voltage error
- Mistuning of PA
- Temperature to high
- Soft start for fuses protection
- “switch-on blocking “ at opened amplifier

1.2.2. Features

Manufacturer implemented some of the company’s newest development results with most wanted operating and safety features into this new model:

- High level of protections
- Memory for faults and warnings, easy maintenance
- Automatic set-up anode current (BIAS) – no need to adjust manually after changing the tube
- Three programmable working modes of centrifugal blower (turbine) + axial blower
- Full QSK with silent relay
- Many operational parameters to display
- Easy transport due to detachable HV transformer
- The smallest and lightest 2000 W PA on the market

1.2.3. The Advantages of OM2000A+

- Full compatibility with: ICOM, ELECRAFT, KENWOOD, TEN-TEC ORION, YAESU and Icom transceive protocol using by MicroHAM devices (CI-V output), FLEX Radios and Anan
- Automatic switching between bands
- Automatic tuning within the band according to segments
- Automatic switching of Band Pass Filter
- Automatic switching of Antenna switches
- Remote control possibility (remote software as accessory – no extra price)
- The Power Amplifier is HF sensitive (automatic frequency reading even if no CAT)

2. SAFETY INSTRUCTIONS

DANGEROUS HIGH VOLTAGE INSIDE!

The power amplifier is using high voltage up to 3200V 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!

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!

Never turn the amplifier on without the upper lid in place. DO NOT ATTEMPT TO SHORT OR BYPASS safety switch under upper lid!

The OM2000A+ amplifier is neither to be used in a WET or HUMID environment nor to be exposed to RAINFALL!

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!

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!

Any work inside the PA (internal fuses replacement, tube replacement, etc.) can be carried out only by professionally qualified person!

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.). During long time operation ventilation grid can reach high temperature. Do not touch it!

The amplifier must be properly grounded during operation.

During operation the amplifier must be installed in such a way that the rear side remains accessible.

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.

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!

WARNING! The installation of this device must be compliant with CFR 47. 1.1310 of the Federal Communications Commission rules. Refer to guidance in OET Bulletin 65, Supplement B for more information.

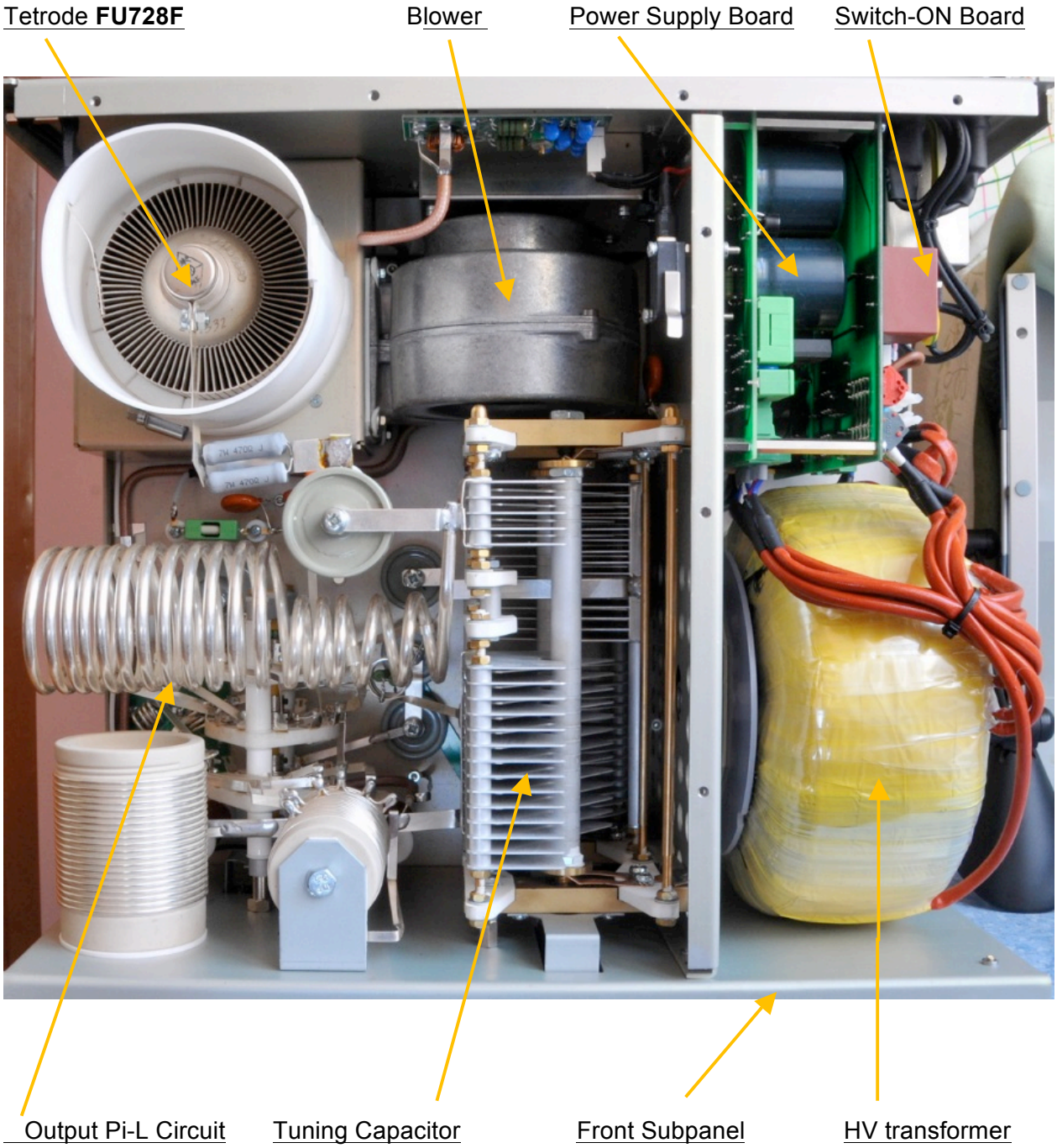
3. GENERAL DESCRIPTION

3.1. HF part

This amplifier is using a **ceramic tetrode FU-728F** in a grounded-cathode circuit (input into control grids). The OM2000A+ 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 grids, 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 OM2000A+



3.2. Power Supply

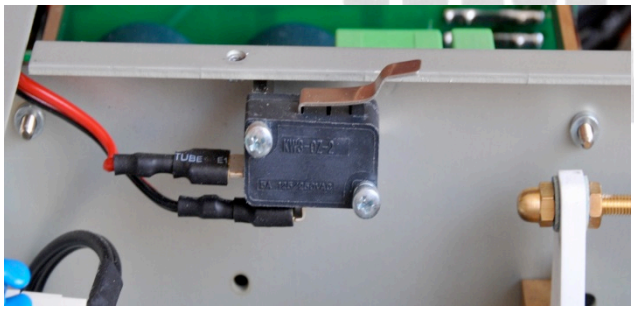
Power amplifier is using one 3 KVA toroidal transformer. A soft start is provided using relays and resistors (placed on the switch-ON board). The high voltage is made by combining 4 x 575V AC (total abt. 3200V DC) @ 1.2A. Each has its own rectifier and filter. In the high voltage circuit, safety resistors are employed to protect the amplifier against overload (placed on the power supply board).

The separated supply for screen grid is regulated by stabilization with MOSFET and delivers abt. 330V DC at 100mA. Control grid voltage is also stabilized (-120V DC). Change of stabilized first grid voltage is controlled by the software (EBS for example).

Primary section of the transformer is adjustable for 230 - 250 VAC. Factory setting is 240VAC. If the AC voltage in your network is 230 or 250 Volts, you need to set the correct value before first starting of the PA. See part 7.1. for more information. Other primary voltage is possible on request (for example 200V 50/60 Hz for Japan).

3.3. Safety Devices

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



One of the important safety element is mechanical switch for AC blocking at opened amplifier.

4. INSTALLATION

Read this chapter carefully prior you will start installation. Before unpacking inspect shipping carton 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 the next parts.

4.1. Grounding

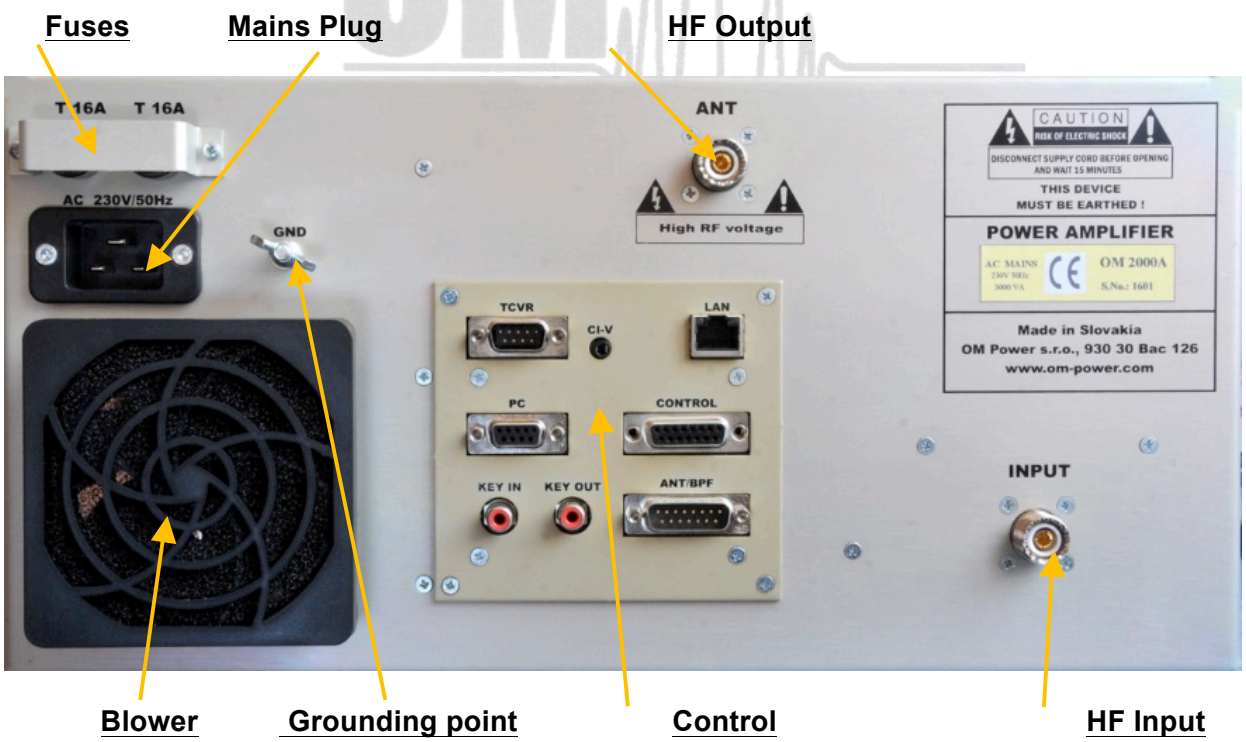
The amplifier has to be grounded properly! Connect the screw on the rear panel of the amplifier to your local grounding system with a copper cable; use a cross-section of 4 mm^2 at least.

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. At the INPUT and OUTPUT SO-239 sockets with Teflon insulation are used.

Rier view of the amplifier OM2000A+



Control Cable

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 OM2000A+ have to be switched earlier than HF is applied (cold switching). Modern transceivers they have a time delay between PTT switching and power output.

If you are using an 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 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 /2mA)
KEY OUT	RCA Phono - Output signal PTT (maximum switching of 30V / 50mA)

See section 7.6. for Control and ANT/BPF connectors PIN-OUT.

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

4.3. Cooling

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 blower provides the necessary cooling of the amplifier, even during long contests. The 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). Blower working mode is programmable (3 modes). See page 19 for more details.

5. OPERATION

Before switching PA on, make sure that amplifier is grounded, antenna or dummy load is connected, and line cord is putted to the outlet. Be sure you selected AC input by 7.1.

Do not turn PA on for at least 2 hours after unpacking it and locating in its operating location. Especially 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.

We do not recommend to change antenna output during a transmission.

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

5.1. OM2000A+ Front Panel

Front panel of the OM2000A+ is almost empty…There is only touch TFT display accessible plus two switches.

ON - Main Switch. After turning ON small 12V APU for logic, protection circuits and the display will be activated. High voltage and RF circuits are still OFF.

OPR/STBY - Short press for switching betwen STBY and OPERATION mode.

ON/OFF - Long press (1 sec.) for switching the PA ON (tube heating first), 2 seconds for PA OFF.

5.2. OM2000A+ control

Turn ON the Main switch and the **home screen** will lights up. In the bottom line touch buttons are visible

Remember that the home screen is active for some information and settings , while PA is still OFF!

BAND

Touch the left side of BAND button to go down, touch the right site to go up with band displayed above the button.

ANTENNA

Transmitting antenna choice. Functional ONLY when the antenna switch is programmed and antennas are defined (see next parts). It allows switching between antennas authorized for the current band.

INFO

Information display shows basic information about the PA: serial number, software version, time ON, tube serial number and nominal Main voltage. Some of them manufacturer can requested in case of any failure, etc.