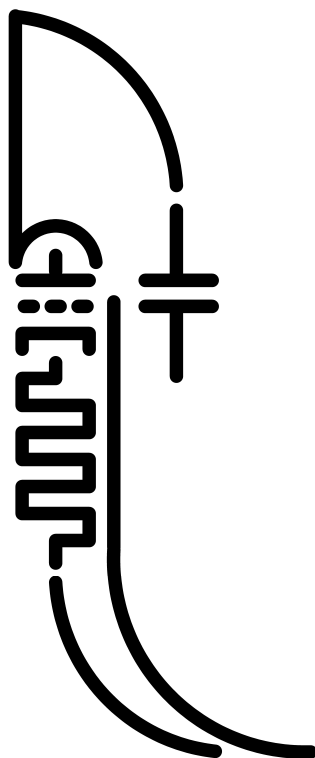


AmpDiVa



Vu-METRO-N VOLI Collector's Special Edition with FIVRE NOS Tube

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ITALY

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DISCLAIMER NOTICE

ELECTROMAGNETIC COMPLIANCE

This electronic unit is a prototype for evaluation purposes.

The user recognizes this evaluation prototype is not FCC or other Regulatory Bodies approved for resale and in some circumstances can produce interference to radio communications.

The user can avoid this interference moving away the unit from the involved radio system.

DANGER – HIGH VOLTAGE

This electronic unit uses 200..300V to power the Magic Eye electron tube.

Do not open, disassemble, remove the cabinet cover panels.

Do not use in humid environments, close to flammable substances or in explosive atmosphere !

DO NOT USE IN CASE OF BROKEN GLASS

Inner high voltage electrodes became accessible !

End of Life Disposal

Dispose the unit according the local laws about the recycling of electronic equipments by taking it to the appropriate collection centers.

The *VuMETRON-VOLI* is proudly designed, assembled and tested in Italy.

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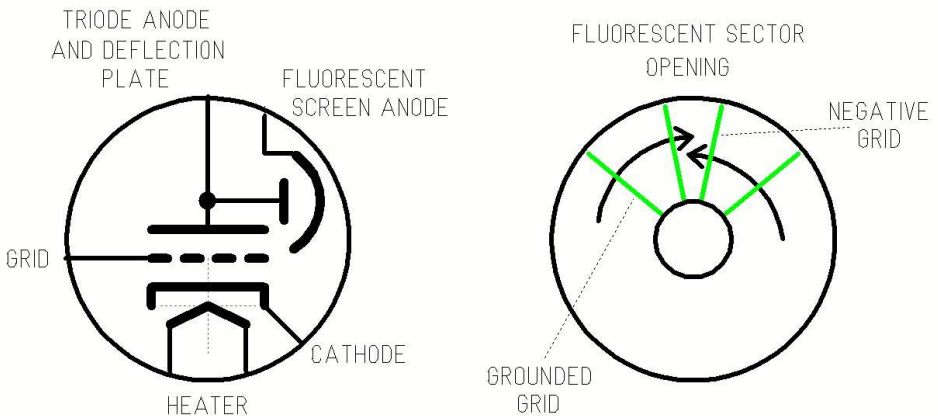
Vu-METRO-N VOLI Special Edition Kit

Magic Eye Environmental Vu-Meter

The Magic Eye is an electron tube developed during the thirties of the '900. Thanks to a small fluorescent screen, it allows the viewing of an electrical quantity replacing the moving needle of an electromechanical instrument. It's a real electrostatic deflection Cathode Ray Tube similar to those used on the oscilloscopes, even if in a minimal simplified version with one single deflection plate and without the electrons beam focusing electrodes.

The tube used on this *Vu-METRO-N VOLI*⁽¹⁾ Special Edition Kit is a 1629 manufactured in Italy by FIVRE under license of some US manufacturer. It comprises an amplifying triode with its anode directly controlling the deflection electrode.

VT-138

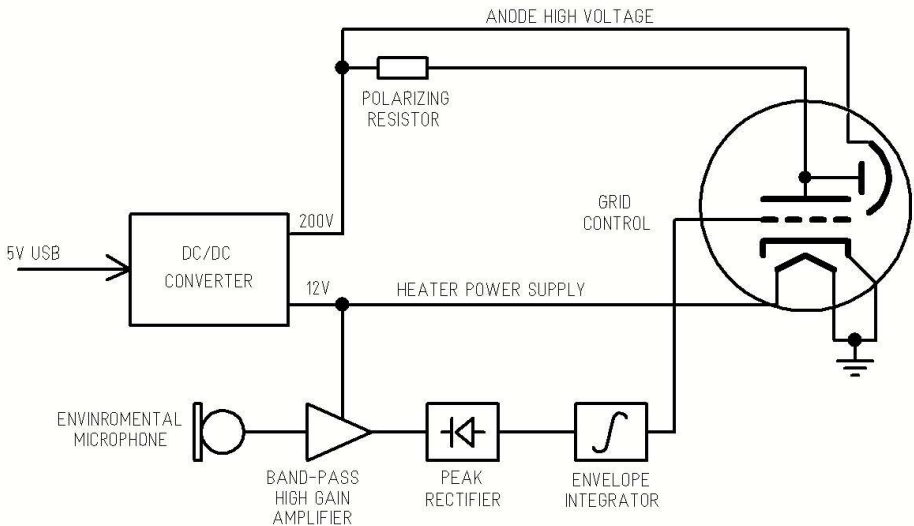


⁽¹⁾ "Voli" means "eye" in Friulano, the language spoken in the Italian region Friuli

The circuit that turns on the unit is powered by 5Vdc from a common USB mobile phone charger; a DC/DC switching converter steps up this voltage to 12V for the tube heater and by a diodes doubler to approx. 200V for the triode anode and the fluorescent screen.

The 12V voltage is used also to power a multiple feedback band-pass (100Hz to 10KHz) amplifier that apply a x1000 gain to the signal coming from the environmental microphone.

The audio signal from the amp output is fed to a diodes voltage doubler that clamps to GND the positive peaks of the signal and then filtered by a low-pass integrator to obtain the audio signal envelope with negative values suitable to control the triode grid.



The 5Vdc power supply requires approx. 700mA and is short-circuit protected by a PTC self-recovery fuse.

The 1629 FIVRE Magic Eye Tube, a collector's delight.

The 1629 Magic Eye electron tube made by FIVRE shares the same pinout and operating characteristics as the 1629 (also known as VT-138) tubes manufactured in the USA by prominent makers such as Ken-Rad, RCA and Sylvania.

However, two distinct differences distinguish the FIVRE version: the first is the shorter glass envelope length (approximately 45 mm versus the 60.65 mm of the American tubes).

The second is the orientation of the dark fan, the mobile shadow segment displayed on the fluorescent screen: in the FIVRE tube, the fan is rotated by 90° relative to the reference key on the socket base, whereas, in the USA-made tubes, the shadow segment is typically aligned with this key.

FIVRE is the acronym for Fabbrica Italiana Valvole Radio Elettriche (Italian Factory of Electric Radio Tubes). The specific tube included in this kit originates from a NOS - New Old Stock batch, which we believe was sourced from an Aeronautica Militare (the Italian Air Force) spare parts depot, likely dating back to the 1950s.

The tube features an official label bearing the inscription: "Ministero Delle Finanze - Esonero Tassa Radio - Nota N." (Ministry of Finance - Radio Tax Exemption - Note N.). Printed on this label are the numbers 150268 (potentially the tax exemption file number) and 4 9 53, which is plausibly the date September 4th, 1953.

The full-color logo displayed on the label is that of the Kingdom of Italy. However, on some tubes, this logo appears to be overprinted with a black ink stamp bearing the inscription "U.T.I.F. di Milano - Repubblica Italiana" (Ufficio Territoriale delle Imposte e Finanze -Territorial Office of Taxes and Finance - Republic of Italy).

This suggests that the Territorial Tax and Finance Office may have repurposed these labels for continued use following the transition from Kingdom to Republic in 1948.

During that period in Italy, every single vacuum tube was subject to a specific tax, which was only waived if the tube was intended for use in equipment dedicated to government entities.

Engraved on the glass of this tube there is also the acronym AM, meaning Aeronautica Militare. Furthermore, the cardboard box bears the stamp "1^a Z.A.T." (Prima Zona Aerea Territoriale – First Territorial Air Zone), which designated the Italian Air Command for the North-West region.

We do not currently know if these Magic Eye tubes were utilized in ground-based ATC (Air Traffic Control), telecommunications or air defense equipments, or if they were installed aboard aircrafts. It would be highly interesting to ascertain the exact apparatus in which they were originally employed.

The tube is provided in the kit already inserted into the socket on the electronic circuit board.

Insertion, especially into a new socket, requires considerable force and particular care. If not performed with the necessary precautions, improper insertion can potentially damage the circuit board (which must never be flexed, so as not to compromise the solder joints between components and the integrity of the copper traces) or scratch the tube's historic label.

We therefore prefer to supply the tube pre-installed in the kit, which also allows us to fully test the tube alongside the circuit prior to shipping to the customer.

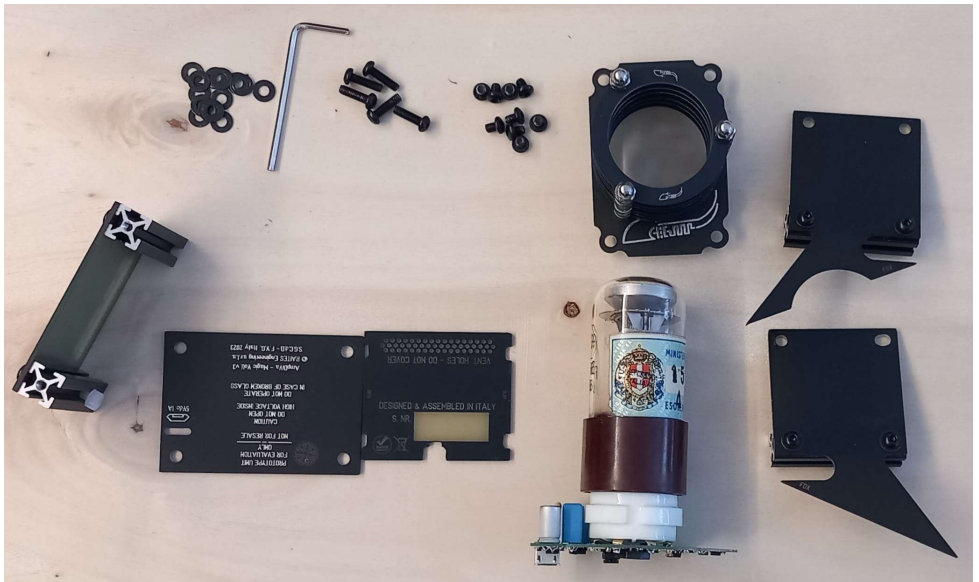
Kit Assembly Instruction

Kit Content:

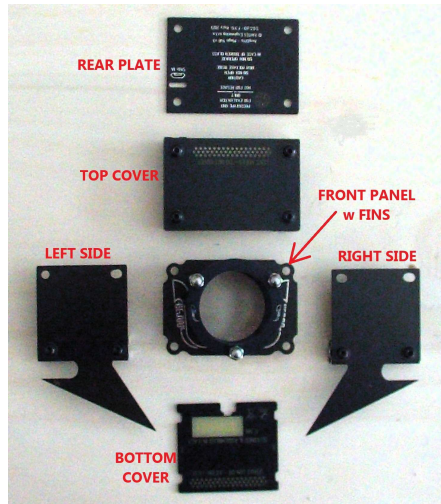
- tested electronic board fitted with the 1629 FIVRE NOS electron tube
- original tube carton box
- 2 mt long USB power cord, vintage style
- pre-assembled cabinet top cover
- pre-assembled cabinet lateral side panels
- pre-assembled cabinet front panel with tube protector fins
- cabinet back panel
- cabinet bottom cover
- black M3 x8 and x4 mm hex bolt head screws and washers
- 2 mm Allen key

Assembly instructions

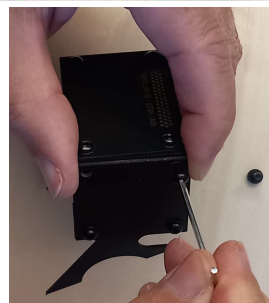
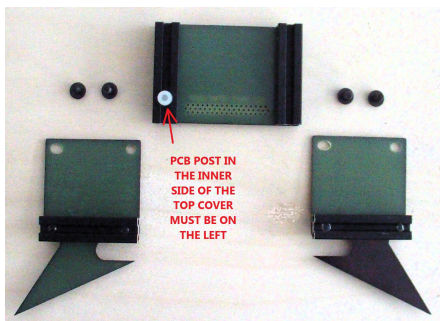
- 1) unpack and deploy on a stable clean surface all the kit content



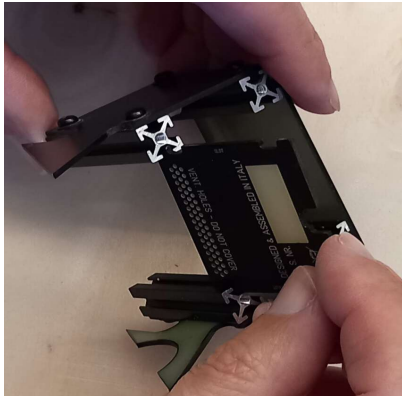
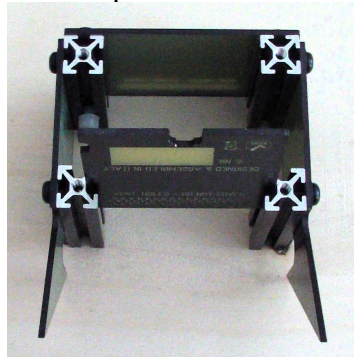
2) consider the cabinet parts



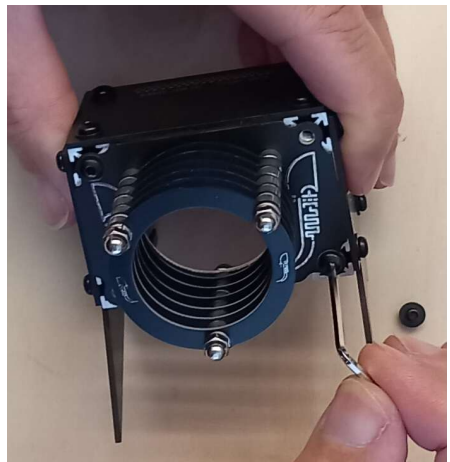
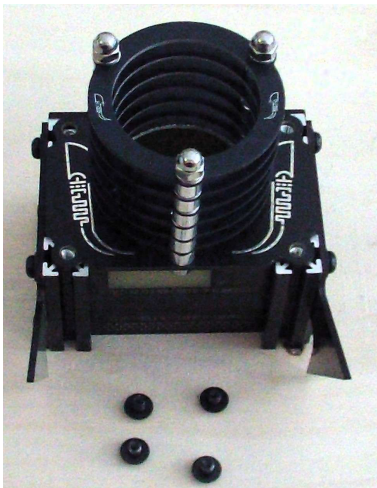
3) join the side panels to the top cover using two M3x8 screws for each side. Do not unscrew the cabinet top cover from the pre-assembled v-slotted profiles, or it could be a challenge to re-fix the cover on the v-nuts inserted into the profiles



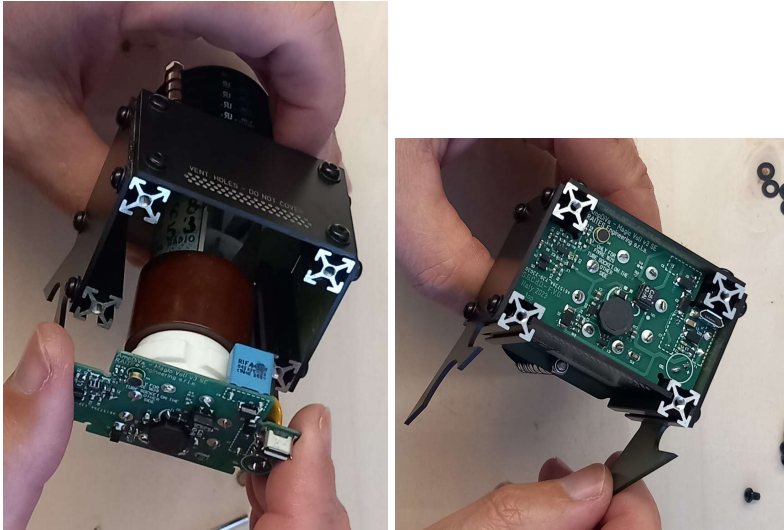
4) slide the bottom cover between the side panels



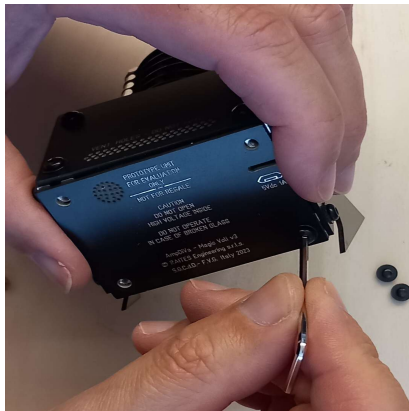
5) add the front panel with the pre-assembled fins using four M3x4 screws



- 6) carefully slide the pcb inside the cabinet avoiding to scratch the historic label on the tube. The pcb stops against the white nylon post of the top cover, that falls beyond the place of the USB 5V power supply socket



- 7) complete the assembly adding the rear plate by four M3x4 screws. Check the slot marked “5Vdc 1A” appears aligned to the USB socket.



The Vu-METRO-N is ready. Plug it to a 5V 1A phone charger using the provided USB cable. Allow about one minute to warm up the heater of the tube in order to see the fluorescent fan on the screen.

Don't forget to visit www.ampdiva.com to find more amazing audio devices including:

-AmpDiVa true Class-D tubes audio amplifiers far beyond any other esoteric high-end gear

-the Switchinglow Project, the AmpDiVa Evaluation Board that cannot be missing on the workbench of the practicing audiophile

-Real Time Digital Audio Amplitude Analyzer, that is an USB DAC with audio samples real time display

-the gorgeous Electraglow's GLOWSTAR Class-D tubes electric guitar head amp and its Hot Cool Rainbow Box for the effects

-news about our research on our novel Bipolar Diaphragm Electrostatic Loudspeaker

Feel free to send your inquiry to info@studio-rts-ing-rampin.it
We will appreciate your interest and feedbacks. Thank you.

