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Je účinnost magnetických smyčkových antén, které bezmála sto let, není zejména na frekvencích nízkých pásmů velký poměr D/λ , začínají MLA v současné době pomýšlením „reálnějších návrhů“ na scénu je ovlivněn řadou faktorů.

The first of them is the reduction of the construction of the KV antenna from copper in the cities. The second advantage of MLA is its space-saving ("invisibility") and the easy/quick installation of the antenna, for example on a balcony in a party, Fig. 4 in the previous article (page 35)

Magnetic loop antenna with long tuning and with integrated rotator is the latest model in the numerous MLA series from OK2ER. Their overview has been published in Monography [1], which has five updated versions to date. The MLA-S (RT/R) antenna, see Fig. 1, 2, builds on the MLA-S (RT) model, which was



Fig. 3 ML A- S (RT/R), balcony installation, control cabinet detail. The jumper is used in all MLA- S to switch the band segment. Here the red jumper switches the antenna to the 60 m band.

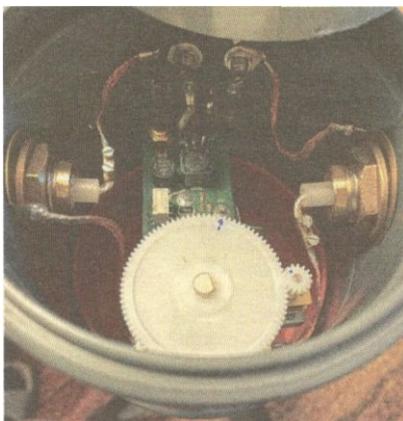


Fig. 4. Ported to the inside of the MLA cabinet. The MLA-S principle was described in PE-AR 5 and 6/2020.

OK1LO in PE-AR 09/2022, p. 34. This new model has the optional integration of the remote tuner and rotator when the antenna is in the cabinet. The use of both of these functions significantly increases the useful value of the antenna and user comfort in practical operation on the current guaranteed bands. The MLA-S (RT/R) antenna operates on the HAM bands from 60 m to 10 m at an effective power of up to 100 W.

The new MLA-SMART range is formed by four subtypes:

1. MLA-S (RT/R)- k-top/balcony/ automobile fasteners,
2. MLA-S (RT/R-) tripod mount .
3. MLA-S (RT/R) light desk-top/balcony/ automobile fasteners ,
4. MLA-S (RT/R) light - tripod mount

The difference between the standard and light versions is a slight reduction in efficiency of the light version. The difference in efficiency is not a difference in construction. The advantages of the standard version - apart from the small difference in efficiency - is its greater robustness. The MLA-S (RT/R) type is not intended for use as a stable base antenna, especially because these types are not protected against heavy rain. Their messages are not intended for use as a stable base antenna. (e.g. as a puddle antenna, balcony antenna (fig. 3, 8), portable antenna)

For the described MLA'S model (RT/R) is an unusual analogue design of two

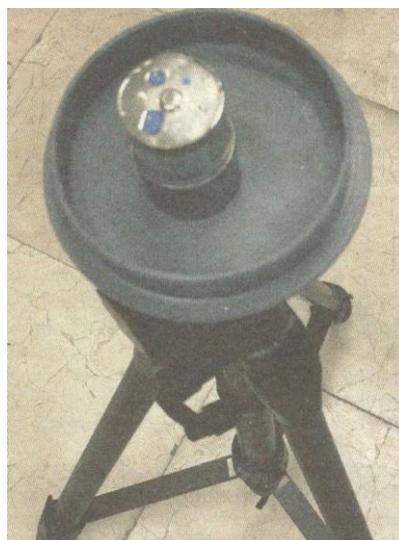


Fig 5. Principle of the integrated rotator. See text to the right of this photo.



Fig 1 MLA-S (RT/R) antenna test, insertion(s) on the car's s/hexagon

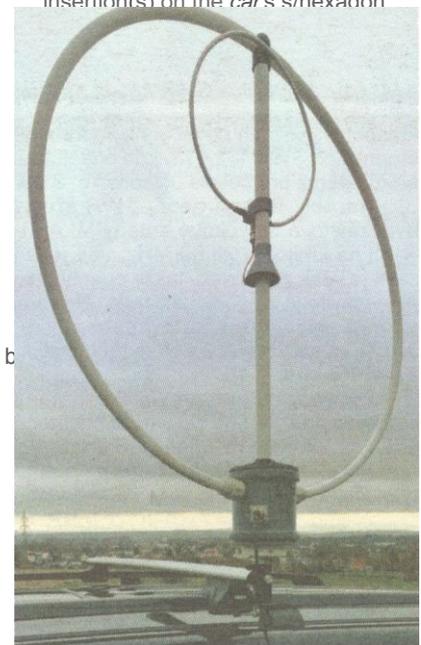


Fig 2. Detail of MLA- S antenna (PT/R)

DC motors (tuning and rotation) by one cable. Another recipe. no additional control/data cable is needed. It is also interesting that the control of both motors is not digital but analogue, which unifies the driving electronics on both sides of the power supply and the energy consumption in the case of battery power, see below.

Rotator I used a DC motor with a pre-wire of 1600 so that the motor is attached to the bottom of the cabinet. the axis is guided and firmly connected to the tripod. This means that the motor is firmly connected to the cabinet. The rotation or antenna (Figs. 4, 5). Simple, cheap, elegant. The rotator/latch interconnect is also my original one. The problem was how to control two DC motors in analogue mode over one coax. Digitally this is easy to solve, but it makes it unnecessarily complicated to control the electronics on both sides of the cable.

For the remote control of the MLA-S (RT/R) tuning and rotation an innovative control box CB4M (fig. 6, 7) is used, which was developed especially for the remote tuning of magnetic loop antennas with PWM. The original gate for the MLA-T is designed with a microprocessor and the FW has been optimized for the specific needs of the remote IAD and MLA.

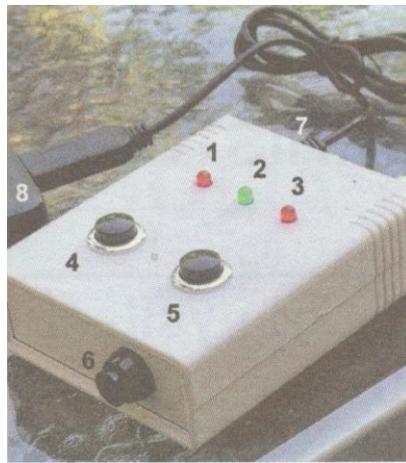
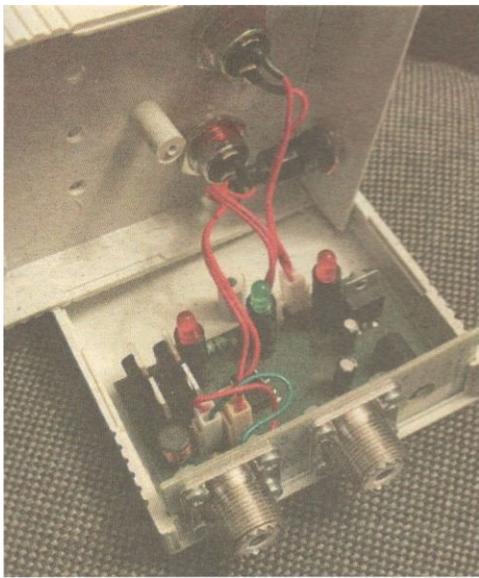


Fig 6. Control box CB4M DUO

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MLA-S (RT/R) to the required frequency The motor speed in the direction of the tuning is changed in four speed steps thanks to the PW M and thanks to the sophisticated SW control of the script without using another speed switch by pressing the control button in both polarities In the rotator function the speed is invariable/constant in both directions

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to the current development of this new product (in the narrow segment of antenna technology for radio amateurs) which probably has no current commercial equivalent

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densifier) , which is used, for example, in army radio communication systems, is not economically viable for civilian use The validity of the method developed over a decade ago has been confirmed by the experience of several hundred users of the la- The power supply to the CB4M DUO is 12 V DC plus the pole is on the middle pin of the connector It is not acceptable to use the same power supply for both the TRX and the C B4M, but will result in damage to the CB4M

At the time of the development of the original C B4M, power adapters using in-line transformer-based rectifiers were already on the market, but within a decade they were pushed out of the market and replaced by larger and smaller pulse power supplies.

A smaller 12 V source can thus cause a significant improvement in the S/N ratio The solution to the situation comes from the acquisition of the ACU power supply, which (in comparison with the classical charger) has a completely different problem If the battery is forgotten, the batteries are discharged and the CB4M DUO also consumes something up to zero and the charging cells are destroyed. After ten minutes of inactivity, the car's battery will shut down and the processor will shut down. This reduces the current (without the motor current control) by about 90 %. In this way, the other way of inevitably disconnecting the battery on the soldering iron is elegantly solved (A KU pack with fully charged batteries lasts for about one month with the processor switched on.)

Control box 0 B4M DUO allows for as a result of the training to tune quickly and accurately

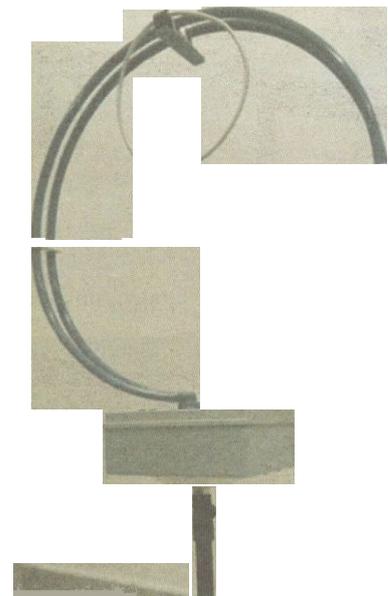
One coaxial cable can control two functions, both tuning and rotation of the antenna During practical tests on the system I found the tuning and rotator control easy, By turning up the antenna, the otherwise all-important interference is significantly reduced. We do not need to carry additional cables for power supply and the like with us to the office or to the cottage. Everything is solved by the CB4M DUO controller The operation of the CB4M DUO is very easy and I can fully recommend the MLA-M (RT/R)

Lev, OK2PLL

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Obi 2. MLA-M antenna control box (IT/R)



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ML A- M (RT/R) is a similar concept based on the water/seeded MLA-M, while the antennas are shown here in Figure 36 and Figure 3.7, and MLA -S (RT/R) is based on the MLA-

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Ad: Magnetická smyčková anténa MLA-S (R1)

It has a magnetic antenna M LA-M (RT/R), which is a prototype from the OK2ER 0 workshop, but the classic MLA-M does not have the same coupling capacity, so it is a waste of another knob to In this type, the coupling loop (FCC) is used, which achieves both an edgier SWH setting and a slightly higher efficiency of the Navi c. The rotator is also very wittily integrated here. This significantly increases the usable value of the standard MLA- M Most MLA users do not use the rotator to their own detriment. It is important to note that the magnetic loop antennas are directional, also the rotator allows you to take full advantage of the MLA features.

In this case, the MLA-M was tested to control the new OK2ER system, which is still unknown in the amateur radio world, using the single GB^M DUO controller when only the