Model HIJACKER DAB VHF 5 KW

- **RF Power HIJACKER**
- **FM Band 170 ÷240 MHz**
- **Band III VHF**

Presentation

RF Power Hijacker is a passive device that is inserted between a DAB VHF broadcast radio transmitter and its main antenna. Its main function is to shunt a part of the available power on to an auxiliary antenna.
RF Power Hijacker is designed for indoor placement, preferably in the transmitter's shelter.

Possible applications

- Diminution of the signal strength in a specific direction to reduce the interference against other broadcasters, or to avoid transmitting in other countries
- Signal enhancement in the direction where the preferred audience reside
- Adjustable horizontal radiation pattern rotation, to move the signal power to zones having variable population density
- Adjustment of the vertical radiation pattern, to modify the reached audience area
- RF power switching between two antennas without transmission interruption
- Removal of intermodulation for transmitters with near antennas
- Elimination with electrical uncoupling of interference for a receiving system.

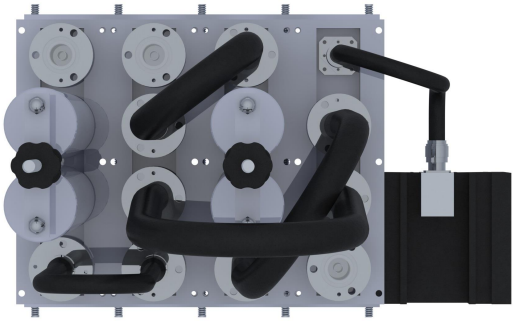
In all the cases in that it is desirable to have signal power branching with adjustable power and phase.

TYPICAL SPECIFICATIONS

Model	HIJACKERDABVHF5KW
Frequency Range	170-240 MHz
VSWR	≤ 1.1:1 Max
Return Loss	≤ -26dB
Connectors	Input/Output 7/8"or1+5/8"
Max Power	5 KW

GENERAL SPECIFICATIONS

Working Temperature	-20°C ÷ +50°C
Colour	Enamel Gray Ral 7001
Materials	Aluminium, Brass, Copper, PTFE, Stainless Steel, Silvering (min 12μm thickness)



Description

RF Power Hijacker features 4 connectors and 2 regulators. The connectors are used to join the device to:
1. DAB VHF transmitter
2. Main antenna
3. Auxiliary antenna
4. Dummy Load

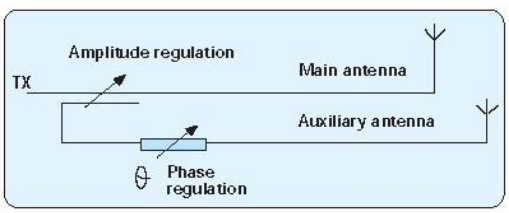
The first regulator adjusts the power distribution among the antennas, while the second one regulates the phase shift between the output signals.
The role of the dummy load is to dissipate possible reflected power in the system, this avoiding the transmitter being affected by it. The dummy load should not be needed for a well tuned and working system, but its presence guarantees better stability in the behaviour of the device.

Working principle

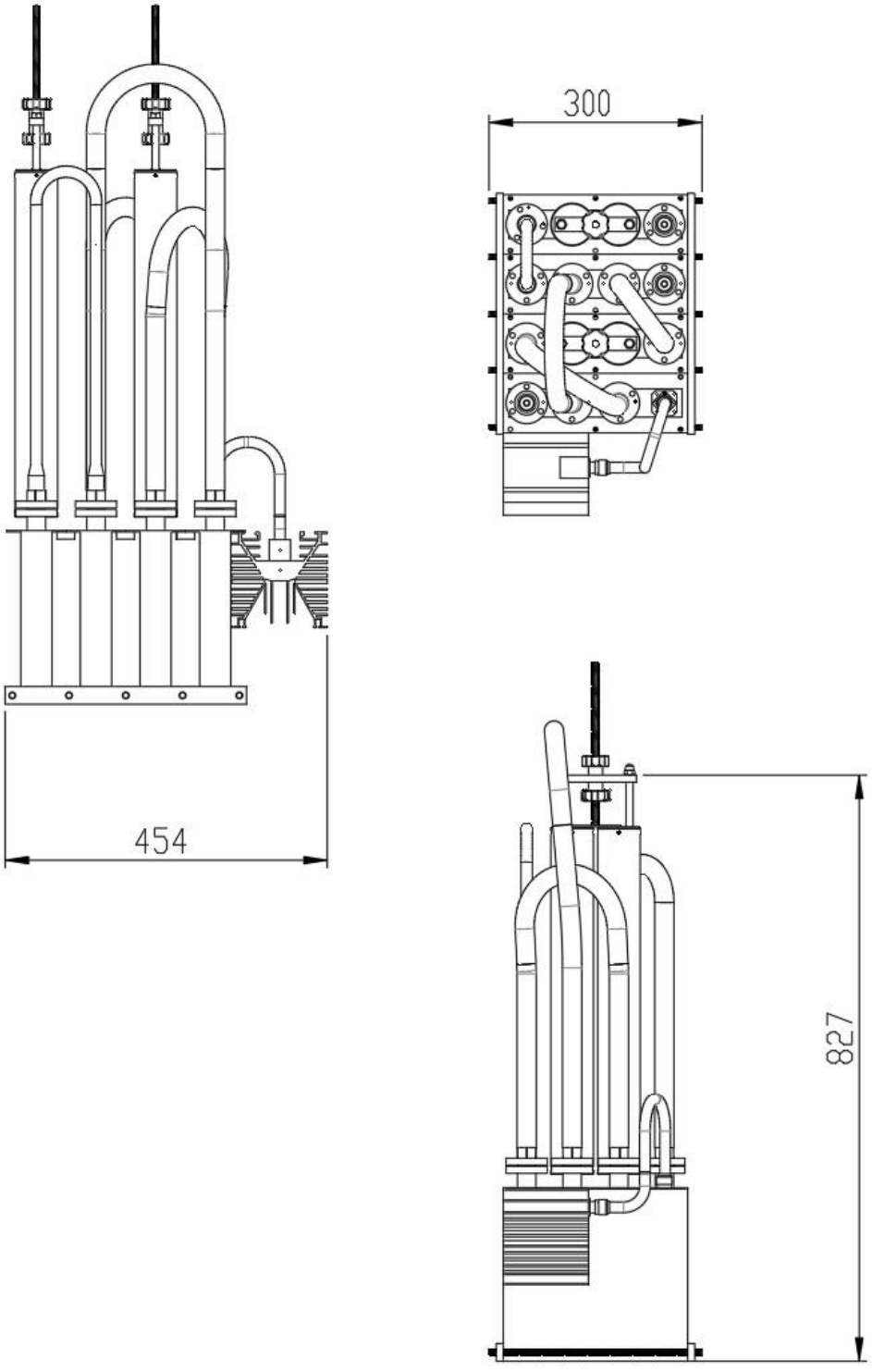
RF Power Hijacker consists of four functional parts:
1. Input signal splitter with fixed power ratio
2. A variable phase shifter
3. A signal combiner with fixed power ratio
4. A second variable phase shifter

The transmitted RF power is first divided by the power splitter. One of the outputs of the splitter is connected to one of the inputs of the combiner with a 50 Ohm transmission line. The other output is routed via the first phase shifter to the second input of the combiner. The last output of the input splitter is closed on a dummy load. The combiner has two output connectors: one is connected to the main antenna, while the other goes through the second phase adjuster to the auxiliary antenna. The phase shift between the signals at the combiner input determines the power ratio at the combiner output. The transmission line joining the splitter output with the combiner input determines the maximum range of the power ratio. The role of the dummy load is to dissipate possible reflected power in the system. The total loss of RF Power Hijacker is restricted to the insertion losses of the single components, as the total energy in the system is conserved and just divided in a determined way.

Scheme of principle

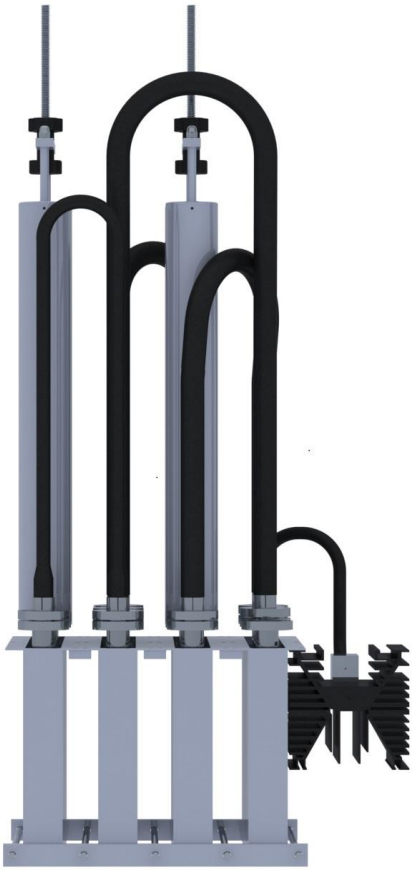


DIMENSIONS



WEIGHT 25 KG. APROX.

VARIOUS VIEW



LAYOUT