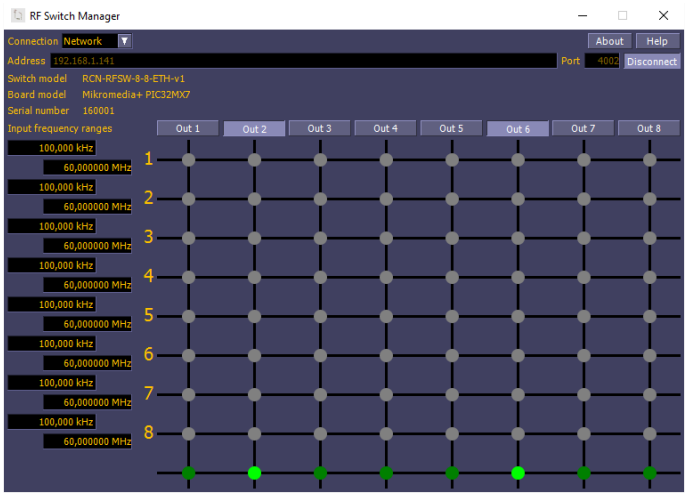
RCN-RFSW-8-8-ETH

Antenna switch

8 inputs, 8 outputs, LAN control



Overview

The RCN-RFSW-8-8-ETH switches allow connecting up to 8 receiving antennas to up to 8 radio receivers or similar equipments. They are built using pre-built modules, with minimum guaranteed performance: cascaded 1:2 and 1:4 power splitters connected on each input and cascaded absorptive electronic 1:2 switches. As the used switches are absorptive, the connectivity is total, the number of outputs simultaneously connected to a given input has no influence on the parameters. Even more, unused outputs can be completely disconnected from inputs for best performance.

Optionally, the inputs can be equipped with lighting protectors based on gas discharge tubes, with a sparkover voltage of 90V. Mechanically, the solution is robust and insures very good radio frequency performance. The metal case can be installed in a 19” rack and has a height of 4U.

The switching matrix control can be done using the touchscreen or through the Ethernet connection, using the provided application. For increased flexibility, the controller in the device supports up to 8 simultaneous TCP/IP connections, one for each output.

Although the overall switching structure is quite complex, the maximum dissipated power by the switch and the control modules is only 5W, with another 2.5W for the control panel. In order to minimise the electrical noises on the outputs as much as possible the device has two separate linear power supplies, one for the switching matrix and the other for the control panel.

The frequency ranges for the 8 inputs can be customized based on the negotiated minimum requirements, considering also the available pre-built modules. There is an upper limit frequency of 3GHz due to the switching modules parameters.

The delivered switches come with complete technical documentation: block diagram of the RF signal distribution and switching structure, schematics for the control modules, interconnections between the switching matrix and the control modules, TCP/IP communication protocol, measured radio frequency performance.

Typical radio frequency performance is detailed for the RCN-RFSW-8-8-ETH-v1 model.

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Using the Control Panel

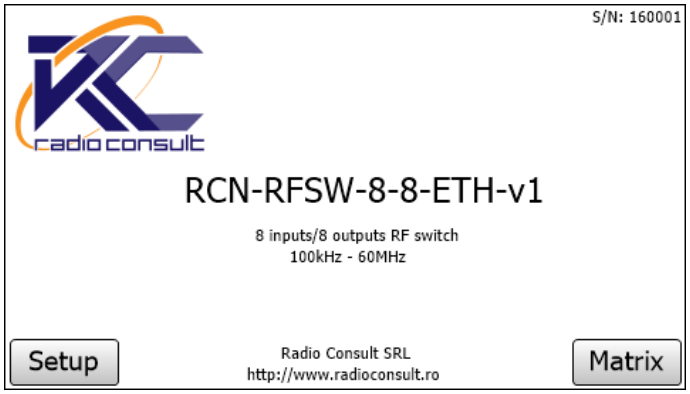
The control panel user interface is organised in three separate pages: general information on the device, switching matrix control and TCP/IP communication settings. Moving between the three pages is done through the ***About***, ***Setup*** and ***Matrix*** buttons, visible depending on the current page.

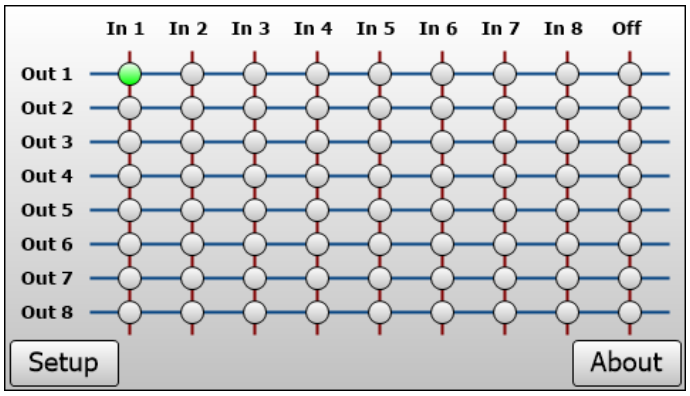
The switching matrix control page allows selecting the input for each output. Each column corresponds to an output and each row corresponds to an input. At any moment, only one input can be selected for any given output. There is no restriction on the number of outputs connected to a given input.

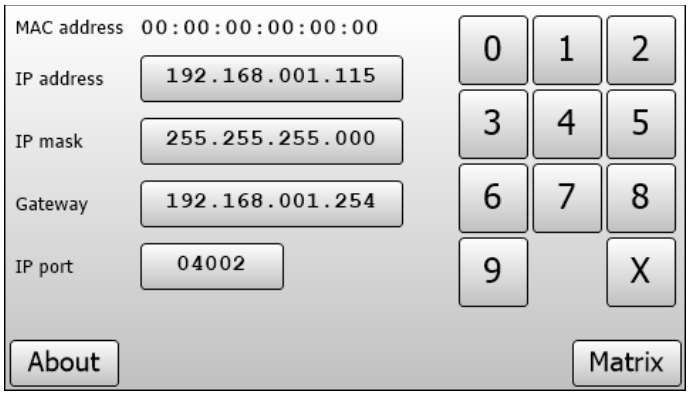
When one or more TCP/IP clients are connected to the device, the changes done through the local control panel are also visible in the client applications and the changes requested by the client applications are also shown on the local control panel.

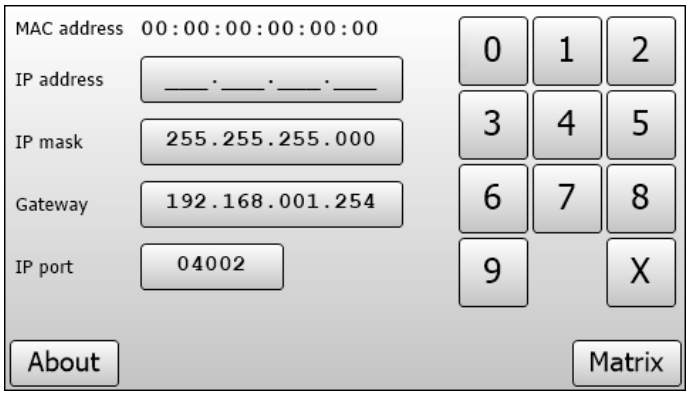
The TCP/IP configuration page allows editing the ***IP address*** and the network ***IP mask*** for the device. Configuring the ***gateway*** address is also recommended, especially when the device can be accessed from outside the local network.

In order to modify one of the values, the button showing the current setting must be pressed. When entering the edit mode, all characters that must be types are replaced with the "_" character. Digits are typed through the keypad on the right side of the panel, with the "X" button cancelling the current editing. When all the required digits are typed the new value is stored. After modifying the TCP/IP parameters, the device must be turned off and on in order to use the new values.









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RCN-RFSW-8-8-ETH-v1

The RCN-RFSW-8-8-ETH-v1 switch has 8 inputs for the 100kHz-60MHz frequency range.

The inputs are protected with gas discharge tubes with a sparkover voltage of 90V.

Typical measured performance for this device is shown in the following graphs.