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New! Eight Pak Antenna Switch and Smart Controller

Thank you for purchasing our Eight Pak remote and smart antenna switch. This switch was designed for the amateur and commercial customer that requires high performance and reliability. (The new indoor unit is depicted below.)



The 8-Pak includes the following features:

- 8 antennas switched between 2 radios
- High Isolation between all ports means safe reliable operation without risk to radio front ends.
- Single 4-wire control cable, makes wiring easy and minimizes expense.
- Inexpensive CAT-5 cable can be used for control cable.
- Can be used stand-alone with the manual controller or control with PC via RS-232 or USB interface. Control software can be downloaded from our web page.
- Includes mechanical and electronic lockouts so two radios will never be connected together
- Made in USA
- 3kW CW rated at 3:1 VSWR.
- Micro Strip traces, low VWSR to 55 MHz.
- All unused inputs are grounded.
- Weather proof relay box. (outdoor unit)
- Backed by the Array Solutions Lifetime Warranty!

Installation

Wiring the units

A cable with at least 4 conductors is required (not supplied) to connect the Controller to the Relay unit. One recommended cable is CAT-5 network cable. This is an 8 conductor cable with 4 twisted pairs and is inexpensive and readily available. If using this type of cable, use one twisted pair for the A and B signals and the remaining 6 wires are divided evenly between the +12 and GND connections. Connections are made to the 4 position screw terminal connectors. The signal order from left to right is: +12 / B / A / GND. The Controller also requires a 12 volt DC power connection. Connect the power supply to the +12 and GND pins on the same connector as the control cable.

Connecting Antennas

In order to provide the highest degree of isolation between antenna at a reasonable cost the Eight Pak antenna outputs are arranged as two groups of four each. The two groups are antennas 1 to 4 and antennas 5 to 8. It is recommended that antennas for adjacent bands be connected to separate groups for maximum isolation. As an example:

160m port 1	15m port 3
80m port 5	10m port 7
40m port 2	6m port 4
20m port 6	

The bottom of the new 8-Pak cabinet is fitted with two large PVC fittings to allow easy entry of your coaxial and control cables. The fittings are installed inside the cabinet for shipping only. Please move them to the outside of the cabinet as shown in the photos below. You may cut or drill additional holes in the cabinet as you wish, but keep in mind that the cabinet is fibreglas and has the normal "itch-factor" associated with that material. Keep the holes on the bottom of the cabinet so that water cannot get in from above.

If you have "critters", you may want to block up the remaining space between the cables with expanding foam or some other material. This is entirely up to you.

Indoor Unit

The indoor version of the 8-Pak is not suitable for outdoor installation unless you enclose it in a weatherproof cabinet. Otherwise you may install the indoor unit anywhere it is convenient for you to do so. Mounting holes are provided in the flanges along the side of the cabinet. Mounting is not required, so you can just wire it up and go!

Initial Testing

When power is first applied to the Controller you should see each LED briefly turn on in sequence. If this does not occur, double check your power supply and connections. After the LED test scan you may see the four corner LEDs blink. This is the "No Connection" condition indicating no communications with the Relay unit. If the Controller remains in this condition double check your control cable wiring and switch settings. If everything is working correctly the LEDs will indicate the currently selected antenna. The LEDs are controlled by the Relay unit, not the rotary switches, so a short delay between selecting an antenna and the LED updating is normal.

Operation

Band Decoder Control

The most elegant solution is to use one of our Bandmaster band decoders for each radio interfaced with the 8-Pak so that as you change bands with your radio, the correct antenna is selected. The Bandmaster is a very sophisticated and powerful device. It can control your 8-Pak along with bandpass filters like our FilterMax unit as well as any other switching you might need to do that requires sourcing or sinking drivers. Check on the Array Solutions web page or give us a call for more details.

Computer Control

The Eight Pak may also be controlled directly from a computer. Computer control allows antennas to be selected by band instead of antenna thus greatly simplifying antenna selection.

Manual Control

In Basic mode antennas are selected by the rotary switches on the Controller unit. Switch positions 1 thru 8 correspond to antennas 1 thru 8. Remember that the indicator LEDs are controlled from the Relay unit so a short delay of the corresponding LED illuminating on the controller is normal. Provisions are included to prevent both radios from accessing the same antenna at the same time. If both switches are set to the same position the radio that selected that antenna first will keep it and the LED for the other radio will blink indicating a conflict.

Manual control is accomplished through either a dual controller which has one knob for each radio on a single console or a single knob controller located at each radio. A dual controller is perfect for SO2R or for side-by-side multi-2 or multi-single stations. For those with two stations not next to each other, or in different rooms, you may want to use individual controls at each position.

Dual and Single controllers

We now offer both the dual controller as well as single knob controllers for the 8-Pak. Both knobs have an "EXT" position which is selected if you are using computer control or using a Bandmaster Band Decoder.



The single controller comes in two versions. The standard unit has two rows of 4 buttons. The "Deluxe" Single controller is larger, and has one row of 8 buttons.



The key difference aside from the size is that the deluxe controller has dual color LEDs – green for active antenna and red for remote active antenna – remote being the "other" radio.



The last controller option is the Integrated Controller which adds a band decoder. This enables you to automatically select your 8-Pak's antennas as you change bands with your radio. The integrated controller is based on the deluxe controller and it also has the dual color LED's Call us with any questions.



The
new
Indoor
8-Pak



Outdoor 8-Pak Mounting

The new outdoor 8-Pak enclosure has flanges at the top and bottom that allow mounting to any flat surface.

(You can remove the two PVC fittings from the bottom of the cabinet while installing your 8-Pak.)



Tower Leg Mounting

We have designed a very simple bracket that allows mounting to a tower leg or other pipe. It is constructed of two aluminum plates, and one U-bolt as shown here. Two of these brackets are required (one on top and one on the bottom) to secure your 8-Pak to a tower leg or pipe. These are available from our web page.



To mount the brackets on your tower (or pipe), remove the two nuts from the U-bolts, and position them on your tower leg at the point where you want the 8-Pak to be placed. Leave the nuts loose enough to separate the two plates a bit to fit the top and bottom flanges of the 8 pak cabinet.



Position the 8-Pak between the two bracket plates, tighten the u-bolt nuts and the 8-Pak should be held in place securely.

