PJ2T Antenna Switching System Description and Programming

The following document is a condensed version of the information given in the "PJ2T Antenna Matrix Technical Description" written by N0YY. With this information a team leader or other responsible person should be able to recover the system from miss-programming of one or more of the controllers.

Three 4x8 antenna switch matrices are operated by 12 ShackLan DX-8 Deluxe Antenna Switch Controllers. The four "input" ports of each switch matrix are controlled by four different DX-8 controllers. These controllers chose which of the eight "output" ports (antennas) are connected to its associated "input" port (radios).

Two of the matrices are used to chose high band and low band antennas. The input ports on these two matrices are assigned to a specific "station" number on the PJ2T operating desk. The current configuration is numbered with "Station 1" nearest the antenna switch panel and then sequentially counterclockwise around the room. The third switch matrix is used to chose triband antennas. The inputs to this matrix are one port on eash of the 20, 15 and 10 meter Stackmatch boxes and one of the antenna ports on the High Band Select matrix. The "Tribander" selection on the high band switch uses a separate Tribanders Direct controller located between stations 1 and 2.

Each 4x8 antenna switch matrix must have a unique address. These are set by DIP switches on the matrix enclosure. The address assigments for our system are:

Triband Select   1

High Band Select   2

Low Band Select   3

To control the system each of the DX-8 controllers is hard-wired to a specific antenna switch. The switch address and input port number must be programmed into the corresponding controller. Programming is accomplished by holding down the red AUTO button and then pressing one of the antenna pushbuttons. To chose the input (station) number press and hold the AUTO button and then press the antenna number 1 through 4 pushbutton that corresponds to the station number. Release both pushbuttons and the controller will flash the current configuration. To chose the antenna switch address press and hold the AUTO button and then press the antenna number 5 through 8 (switch address 1 through 4) pushbutton that corresponds to the switch address. Release both pushbuttons and the controller will again flash the current configuration.

Each DX-8 controller is labelled with its function, however obtusely: High Band Select, Low Band Select and Triband Select. These labels may be associated with the auxillary switches and Stackmatch controllers attached to each DX-8 or set of controllers. The values for input number and switch address for each station and the 20, 15 and 10 meter System and Tribander Direct controllers are given in the following table. Under certain conditions Station 3 is dedicated to 40 meters and its High Band/Low Band controller pair is moved to the Station 5 position on the desk extension next to Station 4. Similarly Station 1 can be dedicated to 160 meters and its controller pair moved to the Station 6 position on the kitchen table. No reprogramming of the controllers is required when this is done, as indicated in the table.

Controller Position and Function	Input (Radio) Number	Antenna Switch Address
Station 1(6) High Band Select	1	2
Station 1(6) Low Band Select	1	3
Station 2 High Band Select	2	2
Station 2 Low Band Select	2	3
Station 3(5) High Band Select	3	2
Station 3(5) Low Band Select	3	3
Station 4 High Band Select	4	2
Station 4 Low Band Select	4	3
10 Meter System Triband Select	1	1
15 Meter System Triband Select	2	1
20 Meter System Triband Select	3	1
Tribanders Direct Select	4	1