



GM6DX – 3 PHASED VERTICAL ARRAY SYSTEM

Instruction Manual



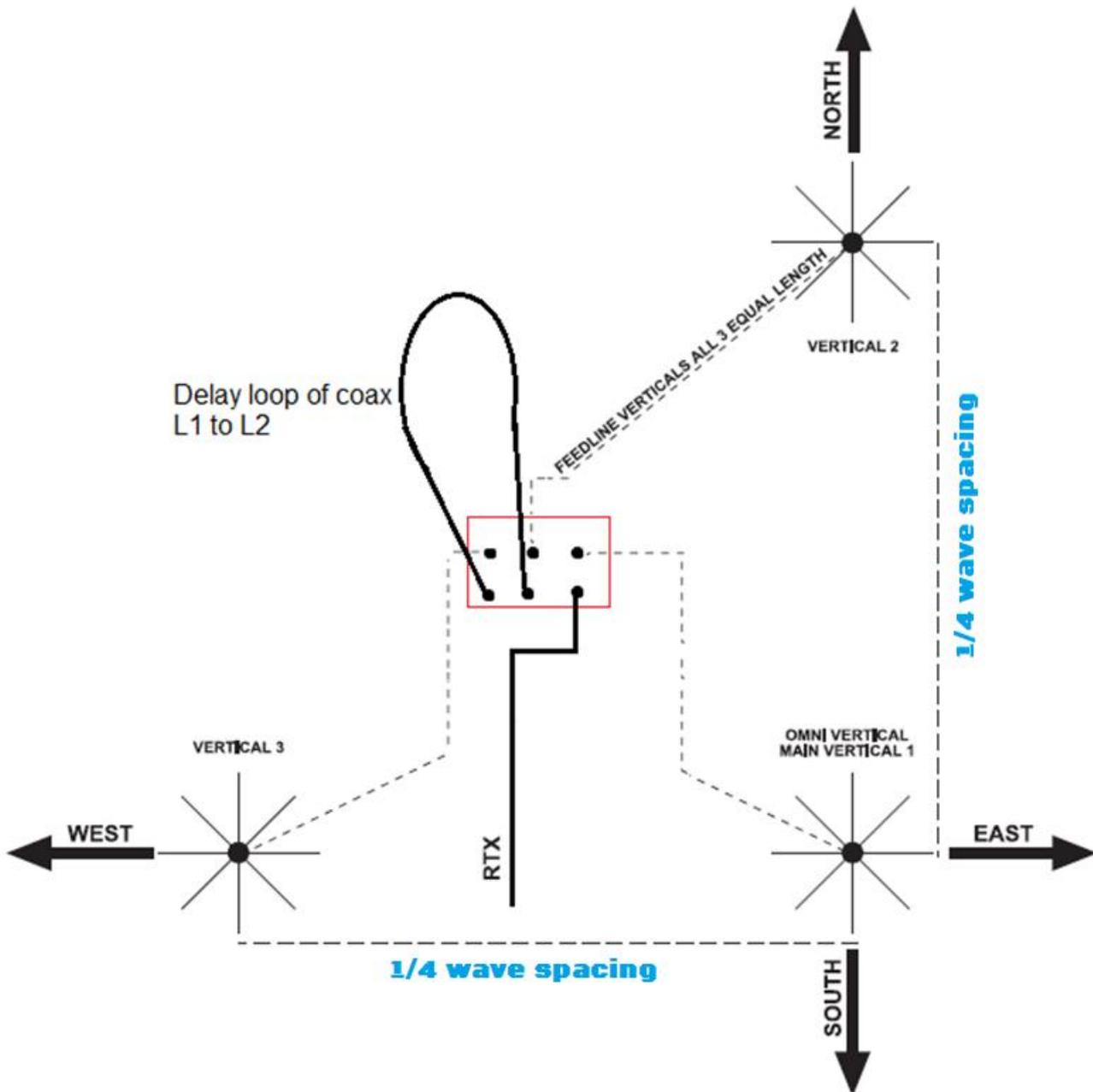
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GM6DX

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Thanks for purchasing the 3 phased vertical array control system. This control switch unit and relay box allows you to use 3 vertical antennas in a phased set up - this is based similar to the *Christman phasing model*. The antenna will switch direction of transmit and receive from WEST, EAST, NORTH AND SOUTH (directional) and also be set to a single vertical antenna.



Above is an image of the basic set up of the antenna system;

Here you have 3 x $\frac{1}{4}$ wave vertical antennas for the band in use - it is recommended that you use a $\frac{1}{4}$ wave vertical antenna with an elevated feed-point and 4 x $\frac{1}{4}$ wave radials.

BAND	PHASED DELAY LOOP LENGTH RG-213u (ANY COAX WITH 0.66 velocity factor)	LENGTH OF COAX FROM THE RELAY UNIT TO THE ACTUAL $\frac{1}{4}$ WAVE ANTENNA FEED
10m	1.98M	IT DOESN'T MATTER WHAT THE LENGTH OF COAX IS FROM THE RELAY UNIT TO THE ACTUAL ANTENNA FEED. JUST ENSURE THAT THE 3 FEEDS ARE THE SAME LENGTH AND FROM SAME TYPE OF COAX.
12m	2.3M	
15m	2.66M	
17m	3.17M	
20m	4.04M	
30m	5.69M	
40m	8.07M	
80m	15.59M	
160m	31.08M	

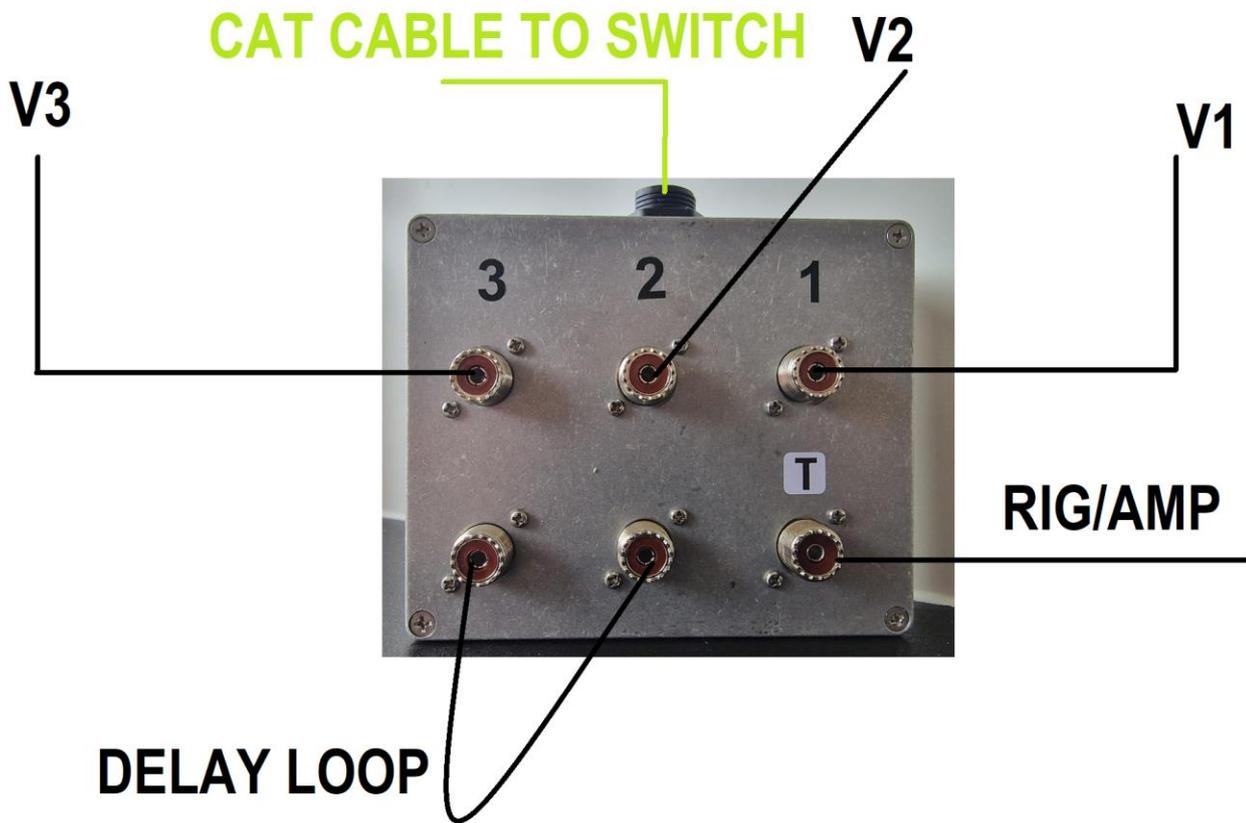
Lengths are from tip of pl259 plug to tip of pl259 plug

So set out the verticals as per the drawing above. You must ensure that it is a 90 degree triangle from V1. The below chart is to help with spacing.

BAND	SPACE BETWEEN V1 - V2/V3	SPACE BETWEEN V2 - V3
10M	2.55M	3.6M
12M	3.0M	4.2M
15M	3.4M	4.8M
17M	4.1M	5.8M
20M	5.1M	7.2M
30M	7.2M	10.2M
40M	10.2M	14.4M
80M	20.5M	28.9M
160M	41.1M	58.1M

Once you have the verticals in position you can cut a cord to loop around the antenna base for future erections. Take the relay unit and connect the coax from each vertical antenna to the correct antenna port on the unit.

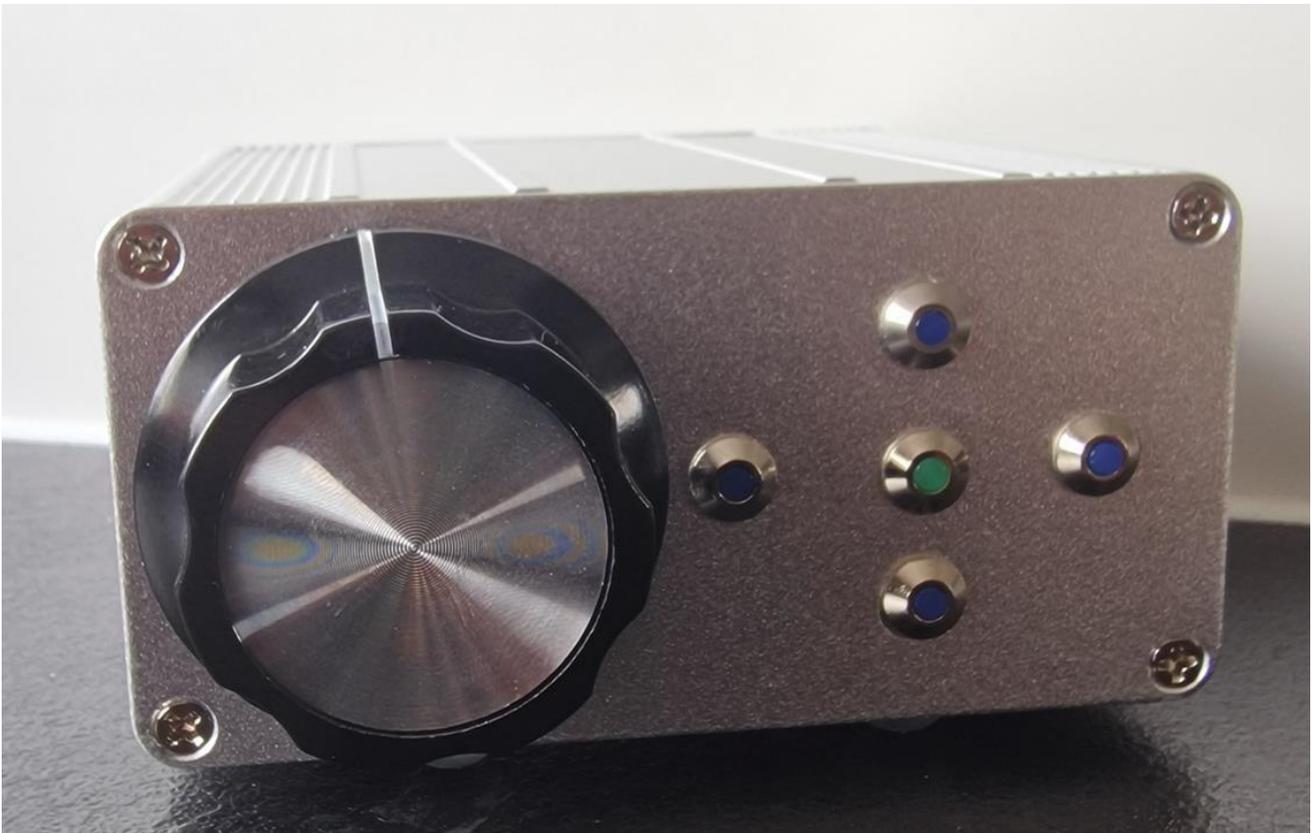
Connect your loop of delay coax (from the chart above) and then connect the coax from the relay unit to your transceiver / amp.



Once all the coax is connected to the relay unit you now need to connect a run of CAT5/6 cable back to the switch unit.



The rear of the switch unit is powered from 12 - 15V DC. The cat cable is connected via the RJ45 socket to the right.



Looking at the front of the switch unit. When the knob at the front is turned the light in which the direction of the antenna is transmitting / receiving in is then lit up. Blue LEDs indicate North, South, East and West. When the antenna is selected as a single vertical mode the Green LED is lit up.

It is recommended that you cover the pl259 plugs with tape as well as the CAT socket in order to prevent water ingress.



Standard CAT cable allows control of the relays from the relay box to the control switch box