I see you are interested in building a custom multi-rotor copter. I have made this guide by myself to help my HobbyKing customers who are interested in building there own multi-rotor machine. Hobby King has all the components you will need to successfully build a custom mult-rotor copter including the control board that will allow the quad to fly with stability. I have a list of all the necessary components that I used to build my custom quad, I will share this list with you below. I would highly recommend you do some initial research on this topic. Here is a short list of links that have the basics of building a quad copter.  
[http://www.rcgroups.com/forums/showthread.php?t=1174262](http://www.rcgroups.com/forums/showthread.php?t=1174262" \t "_blank)  
[http://www.youtube.com/watch?v=csnYH\_eq-Xk](http://www.youtube.com/watch?v=csnYH_eq-Xk" \t "_blank)  
[http://www.rchelicopterfun.com/quadrocopter.html](http://www.rchelicopterfun.com/quadrocopter.html" \t "_blank)  
[http://oddcopter.com/2012/12/12/easy-diy-quadcopter-build-part-1-the-parts-list/](http://oddcopter.com/2012/12/12/easy-diy-quadcopter-build-part-1-the-parts-list/" \t "_blank)  
[http://oddcopter.com/2012/01/27/buy-or-build-a-quadcopter-kit-or-diy/](http://oddcopter.com/2012/01/27/buy-or-build-a-quadcopter-kit-or-diy/" \t "_blank)  
  
to help understand the relationship of thrust to the different motor and prop sizes, here is s great reference:   
[http://quadcopterproject.wordpress.com/static-thrust-calculation/](http://quadcopterproject.wordpress.com/static-thrust-calculation/" \t "_blank)  
  
The HobbyKing KK2.0 Multi-Rotor controller is a flight control board for multi-rotor Aircraft (Tricopters, Quadcopters, Hexcopters etc). Its purpose is to stabilize the aircraft during flight. To do this it takes the signal from the three on board gyros (roll, pitch and yaw) then passes the signal to the Atmega324PA IC. The Atmega324PA IC unit then processes these signals according the users selected firmware and passes control signals to the installed Electronic Speed Controllers (ESCs). These signals instruct the ESCs to make fine adjustments to the motors rotational speed which in turn stabilizes your multi-rotor craft.  
The HobbyKing KK2.0 Multi-Rotor control board also uses signals from your radio systems receiver (Rx) and passes these signals to the Atmega324PA IC via the ail, ele, thr and rud inputs. Once this information has been processed the IC will send varying signals to the ESCs which in turn adjust the rotational speed of each motor to induce controlled flight (up, down, backwards, forwards, left, right, yaw).  
If you are having problems setting the KK2 up, please first see the instruction manual at:[http://www.hobbyking.com/hobbyking/store/uploads/181270330X7478X47.pdf](http://www.hobbyking.com/hobbyking/store/uploads/181270330X7478X47.pdf" \t "_blank)  
  
There are also additional files to download in the "files" section on the INT page: [http://www.hobbyking.com/hobbyking/store/uh\_viewitem.asp?idproduct=24723&aff=140631](http://www.hobbyking.com/hobbyking/store/uh_viewitem.asp?idproduct=24723&aff=140631" \t "_blank)  
  
I would also recommend going to the following YouTube videos that cover various topics about setting up and fix problems with the KK2 board.  
  
[https://www.youtube.com/watch?v=ZB9PAEzwkqo](https://www.youtube.com/watch?v=ZB9PAEzwkqo" \t "_blank)  
[https://www.youtube.com/watch?v=P7yaZ74DSWQ](https://www.youtube.com/watch?v=P7yaZ74DSWQ" \t "_blank)  
[https://www.youtube.com/watch?v=gF-0rgxE9Uw](https://www.youtube.com/watch?v=gF-0rgxE9Uw" \t "_blank)  
[https://www.youtube.com/watch?v=U7pWroCxL38](https://www.youtube.com/watch?v=U7pWroCxL38" \t "_blank)  
  
  
HK has started a new series of help videos on the KK2 board:  
  
[http://www.youtube.com/watch?v=E\_j-d2a-iUM](http://www.youtube.com/watch?v=E_j-d2a-iUM" \t "_blank)  
  
[http://www.youtube.com/watch?v=00PoZ5Xza8k](http://www.youtube.com/watch?v=00PoZ5Xza8k" \t "_blank)  
  
[http://www.youtube.com/watch?v=XnAelgyHdDc&feature=em-uploademail](http://www.youtube.com/watch?v=XnAelgyHdDc&feature=em-uploademail" \t "_blank)  
  
[http://www.youtube.com/watch?v=iC6Gz\_qysxc&feature=c4-overview&list=UUkNMDHVq-\_6aJEh2uRBbRmw](http://www.youtube.com/watch?v=iC6Gz_qysxc&feature=c4-overview&list=UUkNMDHVq-_6aJEh2uRBbRmw" \t "_blank)  
  
[http://www.youtube.com/watch?v=iC6Gz\_qysxc&feature=em-uploademail](http://www.youtube.com/watch?v=iC6Gz_qysxc&feature=em-uploademail" \t "_blank)  
  
[http://www.youtube.com/watch?v=ucjYz0c9AIg&list=PLBfWXKo6sbSlEPwmcIkY5KZFOxyMhSPTC](http://www.youtube.com/watch?v=ucjYz0c9AIg&list=PLBfWXKo6sbSlEPwmcIkY5KZFOxyMhSPTC" \t "_blank)  
  
  
  
  
  
Here is the list with all the ordering links to my custom quad, including a great LIPO charger.  
  
[http://www.hobbyking.com/hobbyking/store/uh\_viewItem.asp?idProduct=25480](http://www.hobbyking.com/hobbyking/store/uh_viewItem.asp?idProduct=25480" \t "_blank)  
  
  
[http://www.hobbyking.com/hobbyking/store/\_\_20432\_\_Turnigy\_nano\_tech\_2200mah\_3S\_25\_50C\_Lipo\_Pack\_USA\_Warehouse\_.html](http://www.hobbyking.com/hobbyking/store/__20432__Turnigy_nano_tech_2200mah_3S_25_50C_Lipo_Pack_USA_Warehouse_.html" \t "_blank)  
  
[http://www.hobbyking.com/hobbyking/store/\_\_24527\_\_NTM\_Prop\_Drive\_28\_Series\_Accessory\_Pack\_USA\_Warehouse\_.html?strSearch=NTM28-ACC](http://www.hobbyking.com/hobbyking/store/__24527__NTM_Prop_Drive_28_Series_Accessory_Pack_USA_Warehouse_.html?strSearch=NTM28-ACC" \t "_blank)

[http://www.hobbyking.com/hobbyking/store/\_\_39708\_\_Afro\_ESC\_30Amp\_Multi\_rotor\_Motor\_Speed\_Controller\_SimonK\_Firmware\_.html?strSearch=9192000124-0](http://www.hobbyking.com/hobbyking/store/__39708__Afro_ESC_30Amp_Multi_rotor_Motor_Speed_Controller_SimonK_Firmware_.html?strSearch=9192000124-0" \t "_blank)  
  
[http://www.hobbyking.com/hobbyking/store/\_\_36713\_\_Slow\_Fly\_Electric\_Prop\_8045SF\_4\_pc\_USA\_Warehouse\_.html?strSearch=9329000018](http://www.hobbyking.com/hobbyking/store/__36713__Slow_Fly_Electric_Prop_8045SF_4_pc_USA_Warehouse_.html?strSearch=9329000018" \t "_blank)  
  
[http://www.hobbyking.com/hobbyking/store/\_\_26820\_\_NTM\_Prop\_Drive\_Series\_28\_26A\_1200kv\_250w\_USA\_Warehouse\_.html?strSearch=NTM2826-1200](http://www.hobbyking.com/hobbyking/store/__26820__NTM_Prop_Drive_Series_28_26A_1200kv_250w_USA_Warehouse_.html?strSearch=NTM2826-1200" \t "_blank)  
  
[http://www.hobbyking.com/hobbyking/store/\_\_21758\_\_10CM\_Male\_to\_Male\_Servo\_Lead\_JR\_26AWG\_10pcs\_set\_.html?strSearch=258000011](http://www.hobbyking.com/hobbyking/store/__21758__10CM_Male_to_Male_Servo_Lead_JR_26AWG_10pcs_set_.html?strSearch=258000011" \t "_blank)  
  
[http://www.hobbyking.com/hobbyking/store/\_\_30917\_\_IMAX\_B6\_AC\_Charger\_Discharger\_1\_6\_Cells\_GENUINE\_US\_Warehouse\_.html?strSearch=B6AC](http://www.hobbyking.com/hobbyking/store/__30917__IMAX_B6_AC_Charger_Discharger_1_6_Cells_GENUINE_US_Warehouse_.html?strSearch=B6AC" \t "_blank)  
  
[http://www.hobbyking.com/hobbyking/store/\_\_18869\_\_XT60\_JST\_Male\_In\_line\_Power\_Adapter.html?gclid=CNOfs8y-j7kCFchaMgodsA8AQQ](http://www.hobbyking.com/hobbyking/store/__18869__XT60_JST_Male_In_line_Power_Adapter.html?gclid=CNOfs8y-j7kCFchaMgodsA8AQQ" \t "_blank)  
  
  
[http://www.hobbyking.com/hobbyking/store/\_\_18869\_\_XT60\_JST\_Male\_In\_line\_Power\_Adapter.html?gclid=CNOfs8y-j7kCFchaMgodsA8AQQ](http://www.hobbyking.com/hobbyking/store/__18869__XT60_JST_Male_In_line_Power_Adapter.html?gclid=CNOfs8y-j7kCFchaMgodsA8AQQ" \t "_blank)  
  
  
  
EMAIL THIS INFO TO YOURSELF (THERE IS A BUTTON TO DO THAT) SO YOU HAVE A REFERENCE TO THIS INFORMATION.