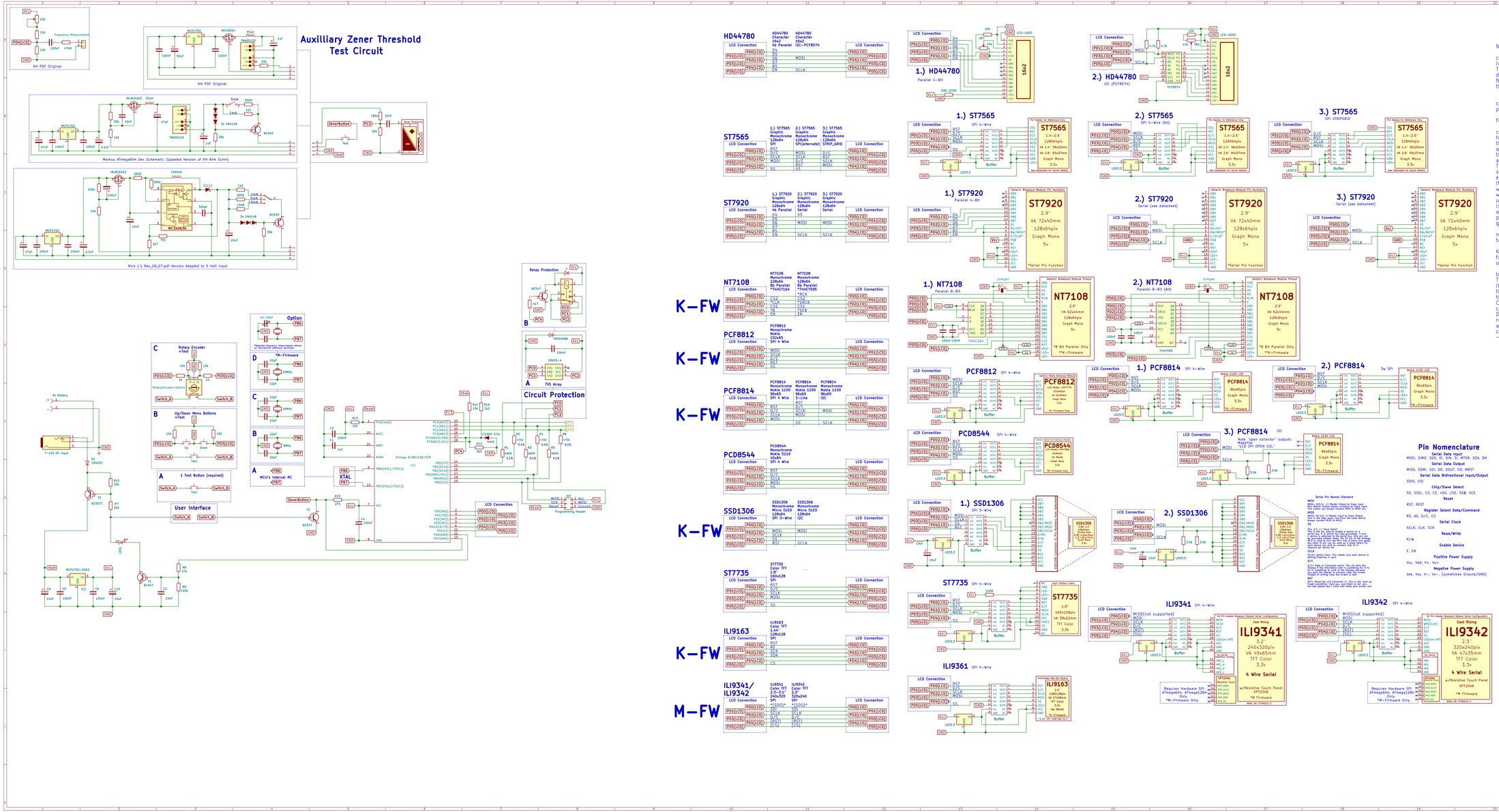
Auxilliary Zener Threshold Test Circuit
Frequency Measurement
KH PDF Original
Markus ATmega64A Dev Schematic (Updated Version of KH 64A Schm)
Nick L's Rev_09_07.pdf Version Adapted to 5 Volt Input
HD44780
ST7565
ST7920
K-FW
NT7108
PCF8812
PCF8814
PCD8544
SSD1306
ST7735
ILI9163
ILI9341/ ILI9342
M-FW
Relay Protection
TVS Array
Circuit Protection
Rotary Encoder +Test
Option
Up/Down Menu Buttons +Test
1 Test Button (required)
User Interface
9v Battery
7-12V DC Input
MCU's Internal RC
XTAL
Programming Header
LCD Connection
Pin Nomenclature
Serial Data Input
MOSI, SIMO, SDO, DI, DIN, SI, MTSR, SDA, DN
Serial Data Output
MISO, SOMI, SDI, DO, DOUT, SO, MRST
Serial Data Bidirectional Input/Output
SDIO, SIO
Chip/Slave Select
SS, SSEL, CS, CE, +SS, /SS, SSF, SCE
Reset
RST, RESET
Register Select Data/Command
RS, A0, D/C, CS
Serial Clock
SCLK, CLK, SCK
Read/Write
R/W
Enable Device
E, EN
Positive Power Supply
Vcc, Vdd, V+, Vs+
Negative Power Supply
Vee, Vss, V-, Vs-, (sometimes Ground/GND)
Notes:
Pin names have been standardized to aid in comparing different project options side by side. Most of the individual pin assignments of the MCU can be changed in software. The TT project is using software SPI/I2C (AKA bitbanging) for the display on this version of the project (ATmega328). Use the 'Pin Nomenclature' guide to figure out how to translate/connect the different pin names used on your hardware/datasheets.
"Buffer" can be CD4050/74HC4050 or others. This is used to connect the 5 volt I/O pins of the ATmega MCU to the 3.3V pins of the LCD.
The I2C connections require additional changes in the firmware. See Karl-Heinz's PDF guide.
Some Serial pins are not used in this application the conversation is one sided. We don't care what the LCD has to say. This means we don't connect MISO even though there may be a pin or a datasheet goes on and on about it for pages. We are also bitbanging the serial protocol to the LCD (the hardware SPI pins are needed for other tasks). Bitbanging is slow. This means we are not going to use a bunch of other stuff on this bus. Infact, we are not going to use anything else on this bus. Why does this matter?
If we have a real (hardware) bus and different devices on it we must use a pin for each device to let everyone know who we are talking to. This is what the Slave Select pin is used for, to let the device know we are talking to it. If there is only one device to talk to... it's kinda pointless to use an I/O pin for this. Use the datasheet to determine if this pin is active high or low and connect it to power or ground.
Sometimes we don't need the reset pin either, but you need to look into the project code/controller IC datasheet to be sure about this one.
This circuit list includes the same connections listed in Karl-Heinz PDF documentation. I have also used the pinouts from Markus R's Read Me 1.29m documentation for all options that are unique to his firmware version.
I have tried to show what each LCD pinout is from but every device is unique, especially breakout modules. This means the pin numbers are largely useless. However, if you know the pin names, what they do, and all the different things they are called in different places, you can figure out the connections yourself using the pin names.
Connecting LCD's to projects is usually a bit more complicated than the "buy this'/" plug in that" type of DIY project. I have done my best to give you the references needed to understand what you are doing and why, so that you can build your own device or customize/repair a project clone more easily.
-Jake
OSHW AVR Transistor Tester Project www.mikrocontroller.net/articles/AVR_Transistortester
Sheet: /
File: Master Transistor Tester.sch
Title: DRAFT AVR Transistor Tester Options Master
Size: User Date: 2017-10-03 Rev: .Rb1
KiCad E.D.A. kicad \v2.7-rc2-6370~58\bzr\bzr16.04-1 Id: 1/1