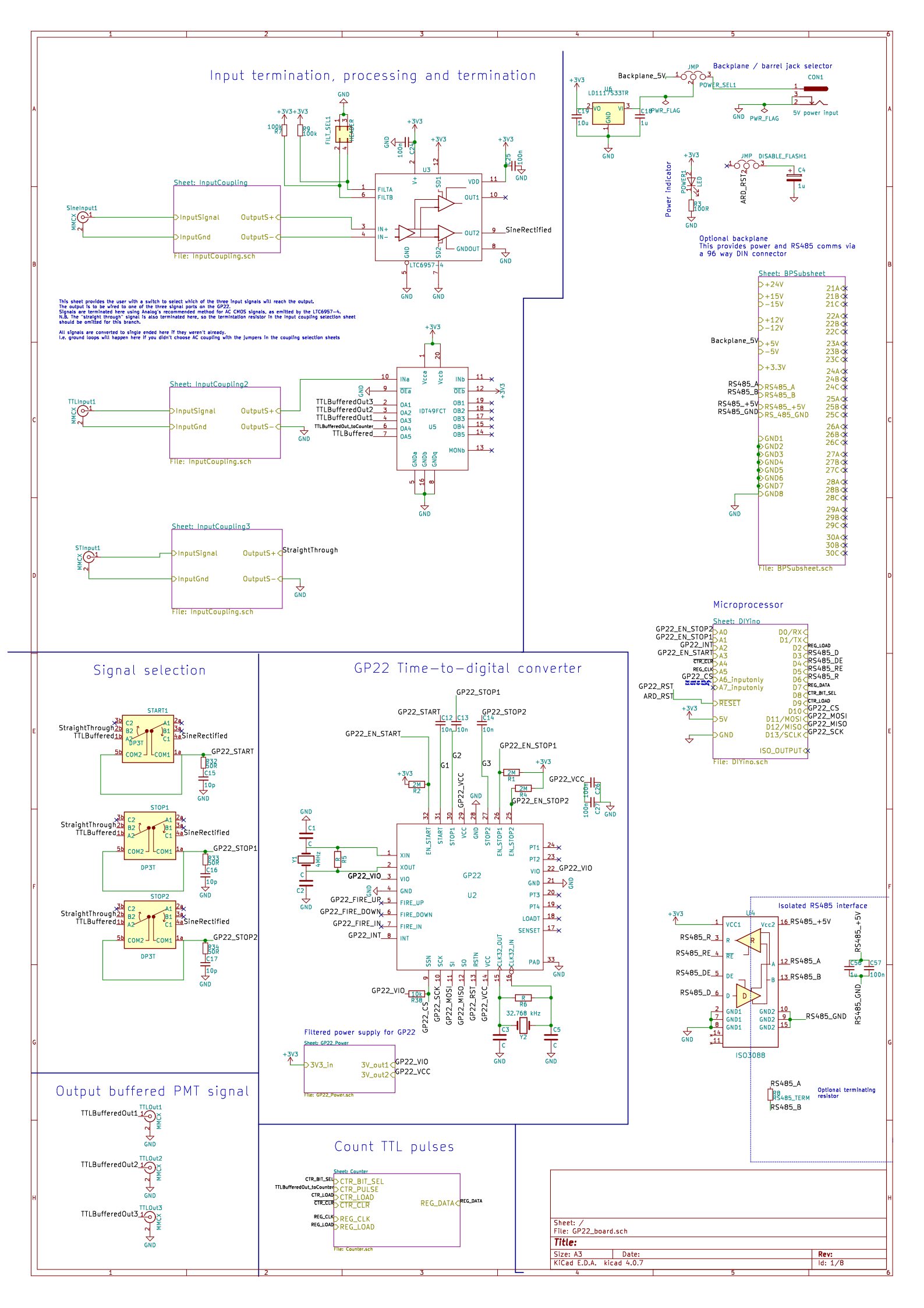
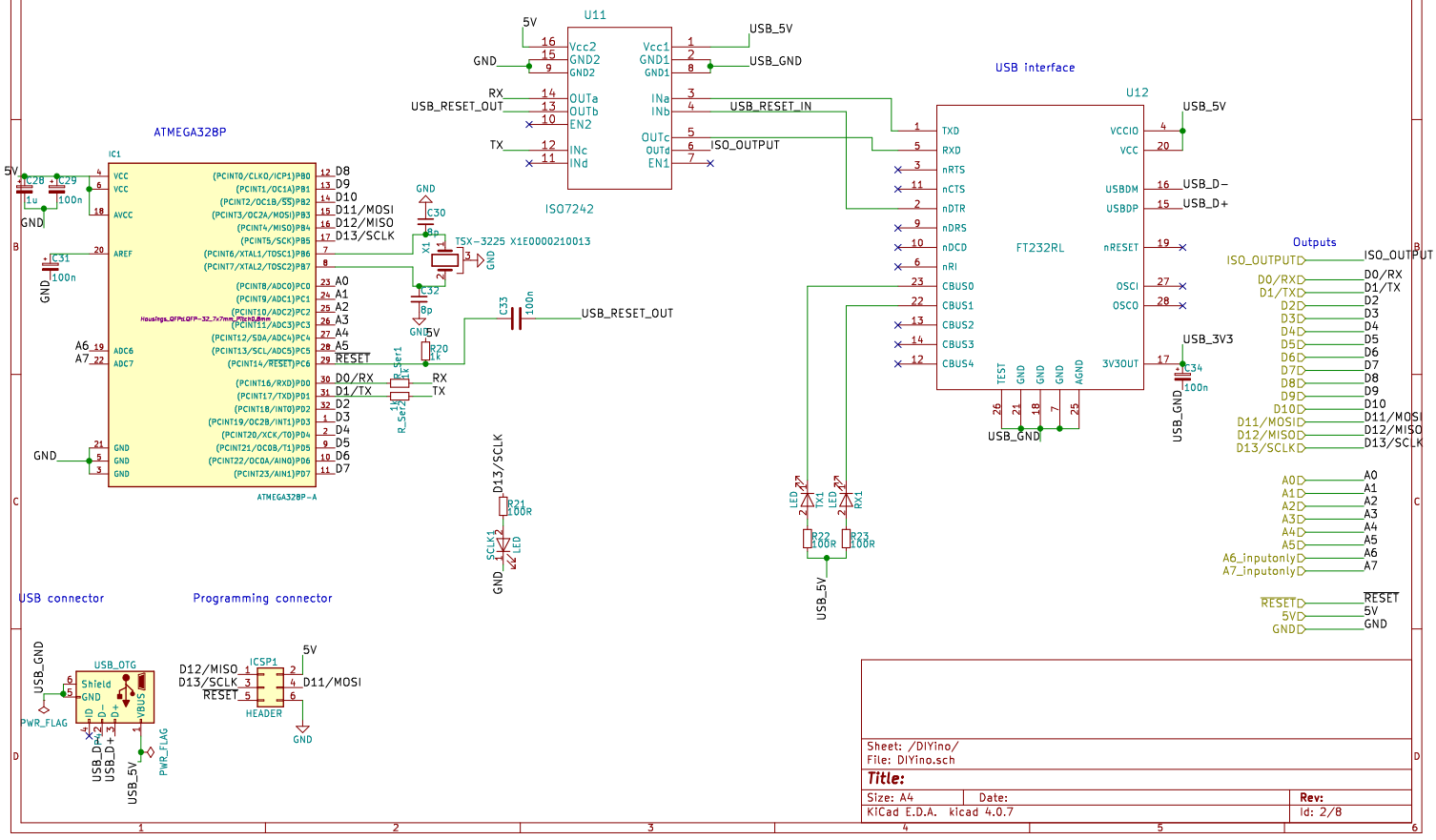
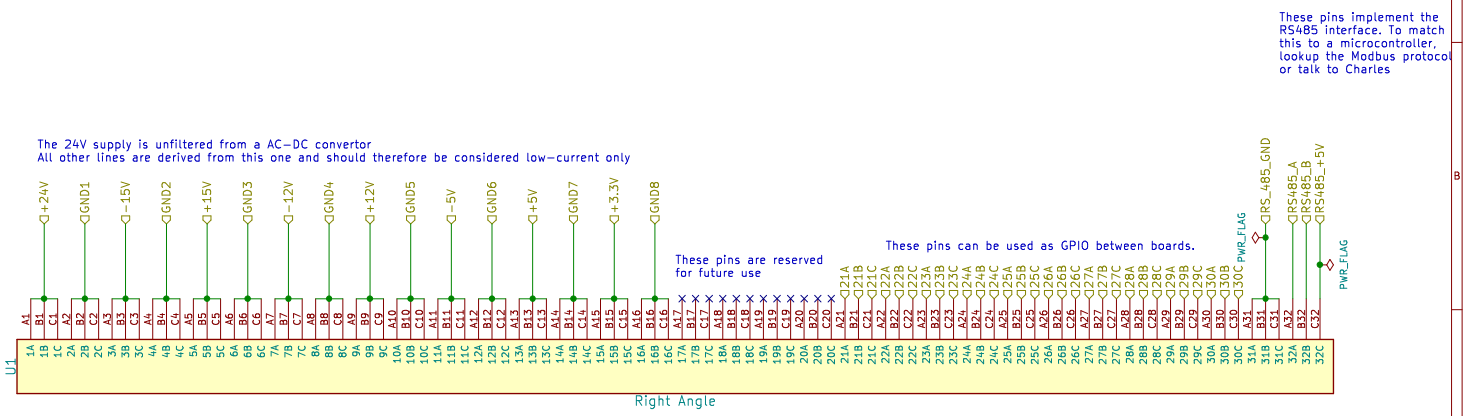

Input termination, processing and termination
Sheet: InputCoupling
File: InputCoupling.sch
SineInput1
SineRectified
LTC6957-4
This sheet provides the user with a switch to select which of the three input signals will reach the output.
The output is to be wired to one of the three signal ports on the GP22.
Signals are terminated here using Analog's recommended method for AC CMOS signals, as emitted by the LTC6957-4.
N.B. The "straight through" signal is also terminated here, so the termination resistor in the input coupling selection sheet should be omitted for this branch.
All signals are converted to single ended here if they weren't already.
I.e. ground loops will happen here if you didn't choose AC coupling with the jumpers in the coupling selection sheets
Sheet: InputCoupling2
File: InputCoupling.sch
TTLInput1
IDT49FCT
Sheet: InputCoupling3
File: InputCoupling.sch
STInput1
StraightThrough
Backplane / barrel jack selector
Backplane_5V
5V power input
Power indicator
Optional backplane
This provides power and RS485 comms via a 96 way DIN connector
Sheet: BPSubsheet
File: BPSubsheet.sch
Microprocessor
Sheet: DIYino
File: DIYino.sch
Signal selection
START1
STOP1
STOP2
DP3T
Output buffered PMT signal
GP22 Time-to-digital converter
GP22
Filtered power supply for GP22
Sheet: GP22_Power
File: GP22_Power.sch
Count TTL pulses
Sheet: Counter
File: Counter.sch
Isolated RS485 interface
ISO3088
Optional terminating resistor
Sheet: /
File: GP22_board.sch
Title:
Size: A3
Date:
Rev:
KiCad E.D.A. kicad 4.0.7
Id: 1/8

Arduino copycat



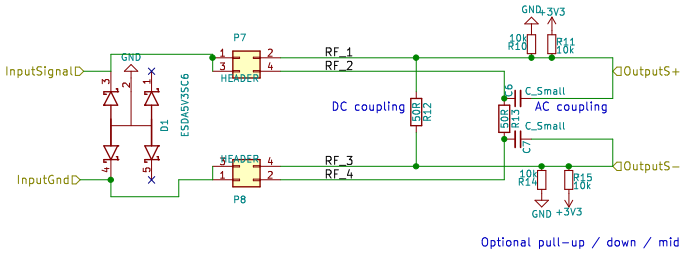


Charles Baynham
NPL

Sheet: /BPSubsheet/
File: BPSubsheet.sch

Title: NPL Backplane

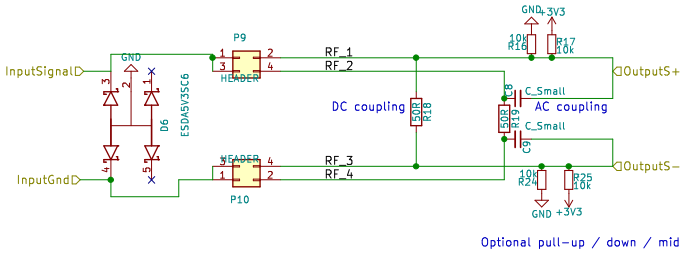
Size: A4	Date: 2016-04-15	**Rev: 0.1**
KiCad E.D.A. kicad 4.0.7		Id: 3/8



N.B. the terminating 50 ohm resistors should not be connected for the "Straight through" option

The pull up / down resistors are optional and should be connected or not as required.
For the ground end of the signal, these resistors will only ever be required if the signal is treated differentially
(e.g. as by the LTC6957)

Sheet: /InputCoupling/ File: InputCoupling.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 4.0.7		Id: 4/8



N.B. the terminating 50 ohm resistors should not be connected for the "Straight through" option

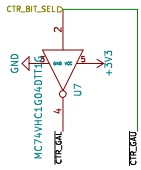
The pull up / down resistors are optional and should be connected or not as required.
For the ground end of the signal, these resistors will only ever be required if the signal is treated differentially
(e.g. as by the LTC6957)

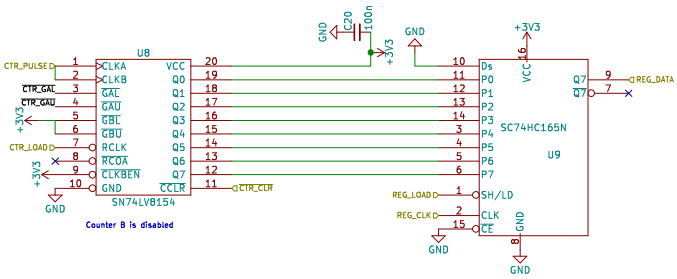
Sheet: /InputCoupling2/ File: InputCoupling.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 4.0.7		Id: 5/8

Pulse counter arrangement

Pulses are counted with the SN74LV8154
The output can be loaded into the shift register which can the be clocked out to the microcontroller

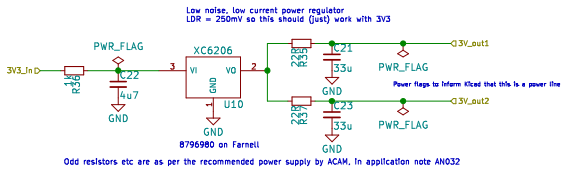
Not gate to select register with only one pin



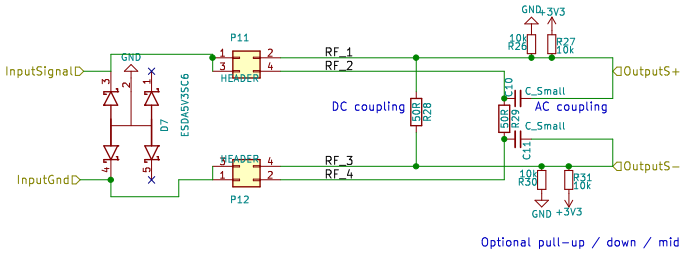


Counter B is disabled

Sheet: /Counter/		
File: Counter.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 4.0.7		Id: 6/8



Sheet: /GP22_Power/		
File: GP22_Power.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 4.0.7		Id: 7/8



N.B. the terminating 50 ohm resistors should not be connected for the "Straight through" option

The pull up / down resistors are optional and should be connected or not as required.
For the ground end of the signal, these resistors will only ever be required if the signal is treated differentially
(e.g. as by the LTC6957)

Sheet: /InputCoupling3/		
File: InputCoupling.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 4.0.7		Id: 8/8