WASTED Pins	0	2	0	2
Worst Efficiency*	73.53%	57.35%	73.53%	57.35%
Typical Efficiency*	85.29%	75.00%	85.29%	75.00%
Board Title	40-30 (ALeft)	20-20-30 (A/Left)	30-40 (B/Right)	20-20-30 (B/Right)
	LEFT		RIGHT	
D2 (PWM)	IDC_40A Pin 3	IDC_20A1 Pin 3	IDC_30B Pin 3	IDC_30B Pin 3
D3 (PWM)	IDC_40A Pin 4	IDC_20A1 Pin 4	IDC_30B Pin 4	IDC_30B Pin 4
D4 (PWM)	IDC_40A Pin 5	IDC_20A1 Pin 5	IDC_30B Pin 5	IDC_30B Pin 5
D5 (PWM)	IDC_40A Pin 6	IDC_20A1 Pin 6	IDC_30B Pin 6	IDC_30B Pin 6
D6 (PWM)	IDC_40A Pin 7	IDC_20A1 Pin 7	IDC_30B Pin 7	IDC_30B Pin 7
D7 (PWM)	IDC_40A Pin 8	IDC_20A1 Pin 8	IDC_30B Pin 8	IDC_30B Pin 8
D8 (PWM)	IDC_40A Pin 9	IDC_20A1 Pin 9	IDC_30B Pin 9	IDC_30B Pin 9
D9 (PWM)	IDC_40A Pin 10	IDC_20A1 Pin 10	IDC_30B Pin 10	IDC_30B Pin 10
D10 (PWM)	IDC_40A Pin 11	IDC_20A1 Pin 11	IDC_30B Pin 11	IDC_30B Pin 11
D11 (PWM)	IDC_40A Pin 12	IDC_20A1 Pin 12	IDC_30B Pin 12	IDC_30B Pin 12
D12 (PWM)	IDC_40A Pin 13	IDC_20A1 Pin 13	IDC_30B Pin 13	IDC_30B Pin 13
D13 (PWM)	IDC_40A Pin 14	IDC_20A1 Pin 14	IDC_30B Pin 14	IDC_30B Pin 14
D14 (TX3)	IDC_40A Pin 15	IDC_20A1 Pin 15	IDC_30B Pin 15	IDC_30B Pin 15
D15 (RX3)	IDC_40A Pin 16	IDC_20A1 Pin 16	IDC_30B Pin 16	IDC_30B Pin 16
D16 (TX2)	IDC_40A Pin 17	IDC_20A1 Pin 17	IDC_30B Pin 17	IDC_30B Pin 17
D17 (RX2)	IDC_40A Pin 18	IDC_20A1 Pin 18	IDC_30B Pin 18	IDC_30B Pin 18
D18 (TX1)	IDC_40A Pin 19	IDC_20A1 Pin 19	IDC_30B Pin 19	IDC_30B Pin 19
D19 (RX1)	IDC_40A Pin 20	IDC_20A1 Pin 20	IDC_30B Pin 20	IDC_30B Pin 20
D20 **(SDA)**	IDC_40A Pin 21	IDC_20A2 Pin 3	IDC_30B Pin 21	IDC_30B Pin 21
D21 **(SCL)**	IDC_40A Pin 22	IDC_20A2 Pin 4	IDC_30B Pin 22	IDC_30B Pin 22
D22	IDC_40A Pin 23	IDC_20A2 Pin 5	IDC_30B Pin 23	IDC_30B Pin 23
D23	IDC_40A Pin 24	IDC_20A2 Pin 6	IDC_30B Pin 24	IDC_30B Pin 24
D24	IDC_40A Pin 25	IDC_20A2 Pin 7	IDC_30B Pin 25	IDC_30B Pin 25
D25	IDC_40A Pin 26	IDC_20A2 Pin 8	IDC_30B Pin 26	IDC_30B Pin 26
D26	IDC_40A Pin 27	IDC_20A2 Pin 9	IDC_30B Pin 27	IDC_30B Pin 27
D27	IDC_40A Pin 28	IDC_20A2 Pin 10	IDC_30B Pin 28	IDC_30B Pin 28
D28	IDC_40A Pin 29	IDC_20A2 Pin 11	IDC_30B Pin 29	IDC_30B Pin 29
D29	IDC_40A Pin 30	IDC_20A2 Pin 12	IDC_30B Pin 30	IDC_30B Pin 30
D30	IDC_40A Pin 31	IDC_20A2 Pin 13	IDC_40B Pin 3	IDC_20B1 Pin 3
D31	IDC_40A Pin 32	IDC_20A2 Pin 14	IDC_40B Pin 4	IDC_20B1 Pin 4
D32	IDC_40A Pin 33	IDC_20A2 Pin 15	IDC_40B Pin 5	IDC_20B1 Pin 5
D33	IDC_40A Pin 34	IDC_20A2 Pin 16	IDC_40B Pin 6	IDC_20B1 Pin 6
D34	IDC_40A Pin 35	IDC_20A2 Pin 17	IDC_40B Pin 7	IDC_20B1 Pin 7
D35	IDC_40A Pin 36	IDC_20A2 Pin 18	IDC_40B Pin 8	IDC_20B1 Pin 8
D36	IDC_40A Pin 37	IDC_20A2 Pin 19	IDC_40B Pin 9	IDC_20B1 Pin 9
D37	IDC_40A Pin 38	IDC_20A2 Pin 20	IDC_40B Pin 10	IDC_20B1 Pin 10
D38	IDC_40A Pin 39	WASTED	IDC_40B Pin 11	IDC_20B1 Pin 11
D39	IDC_40A Pin 40	WASTED	IDC_40B Pin 12	IDC_20B1 Pin 12
A14	IDC_40A Pin 37	IDC_20A2 Pin 19	IDC_30B Pin 29	29
A15	IDC_40A Pin 38	IDC_20A2 Pin 20	IDC_30B Pin 30	30
D40	IDC_30A Pin 3	IDC_30A Pin 3	IDC_40B Pin 13	IDC_20B1 Pin 13
D41	IDC_30A Pin 4	IDC_30A Pin 4	IDC_40B Pin 14	IDC_20B1 Pin 14
D42	IDC_30A Pin 5	IDC_30A Pin 5	IDC_40B Pin 15	IDC_20B1 Pin 15
D43	IDC_30A Pin 6	IDC_30A Pin 6	IDC_40B Pin 16	IDC_20B1 Pin 16
D44 (PWM)	IDC_30A Pin 7	IDC_30A Pin 7	IDC_40B Pin 17	IDC_20B1 Pin 17
D45 (PWM)	IDC_30A Pin 8	IDC_30A Pin 8	IDC_40B Pin 18	IDC_20B1 Pin 18
D46 (PWM)	IDC_30A Pin 9	IDC_30A Pin 9	IDC_40B Pin 19	IDC_20B1 Pin 19
D47	IDC_30A Pin 10	IDC_30A Pin 10	IDC_40B Pin 20	IDC_20B1 Pin 20
D48	IDC_30A Pin 11	IDC_30A Pin 11	IDC_40B Pin 21	IDC_20B2 Pin 3
D49	IDC_30A Pin 12	IDC_30A Pin 12	IDC_40B Pin 22	IDC_20B2 Pin 4
D50 (MISO)	IDC_30A Pin 13	IDC_30A Pin 13	IDC_40B Pin 23	IDC_20B2 Pin 5
D51 (MOSI)	IDC_30A Pin 14	IDC_30A Pin 14	IDC_40B Pin 24	IDC_20B2 Pin 6
D52 (SCK)	IDC_30A Pin 15	IDC_30A Pin 15	IDC_40B Pin 25	IDC_20B2 Pin 7
D53 (SS)	IDC_30A Pin 16	IDC_30A Pin 16	IDC_40B Pin 26	IDC_20B2 Pin 8
A0	IDC_30A Pin 17	IDC_30A Pin 17	IDC_40B Pin 27	IDC_20B2 Pin 9
A1	IDC_30A Pin 18	IDC_30A Pin 18	IDC_40B Pin 28	IDC_20B2 Pin 10
A2	IDC_30A Pin 19	IDC_30A Pin 19	IDC_40B Pin 29	IDC_20B2 Pin 11
A3	IDC_30A Pin 20	IDC_30A Pin 20	IDC_40B Pin 30	IDC_20B2 Pin 12
A4	IDC_30A Pin 21	IDC_30A Pin 21	IDC_40B Pin 31	IDC_20B2 Pin 13
A5	IDC_30A Pin 22	IDC_30A Pin 22	IDC_40B Pin 32	IDC_20B2 Pin 14
A6	IDC_30A Pin 23	IDC_30A Pin 23	IDC_40B Pin 33	IDC_20B2 Pin 15
A7	IDC_30A Pin 24	IDC_30A Pin 24	IDC_40B Pin 34	IDC_20B2 Pin 16
A8	IDC_30A Pin 25	IDC_30A Pin 25	IDC_40B Pin 35	IDC_20B2 Pin 17
A9	IDC_30A Pin 26	IDC_30A Pin 26	IDC_40B Pin 36	IDC_20B2 Pin 18
A10	IDC_30A Pin 27	IDC_30A Pin 27	IDC_40B Pin 37	IDC_20B2 Pin 19
A11	IDC_30A Pin 28	IDC_30A Pin 28	IDC_40B Pin 38	IDC_20B2 Pin 20
A12	IDC_30A Pin 29	IDC_30A Pin 29	IDC_40B Pin 39	WASTED
A13	IDC_30A Pin 30	IDC_30A Pin 30	IDC_40B Pin 40	WASTED
A14	Mutual w/ D36	Mutual w/ D36	Mutual w/ D28	Mutual w/ D28
A15	Mutual w/ D37	Mutual w/ D37	Mutual w/ D29	Mutual w/ D29

Pins start at (3) because of GND (1) and 5V (2)

40 has 38 IO	Has up to 22.5% wasted pins
30 has 28 IO	Has up to 30% wasted pins
20 has 18 IO	Has up to 45% wasted pins
10 has 8 IO	Has up to up to 50% wasted pins

***Worst efficiency** means 1 pin over capacity causes jump to next connector, (9 pins blank)

***Typical efficiency** says there will likely be 5 blank pins (which is the theoretical average)

Wasted: pins can never be used - they don't even have a chance of being connected

Blank: on breakout board but unused

40-(20-20)-30

IDC cables should be cut to 250mm

<< What the heck is this? Why are there analog pins in the middle of the digital pins? Why on earth is this welcome!?

The last two analog pins are otherwise wasted so we made them connected to the last pins of each connector

This lets us have analog pins on every connector except 20A1 and 30B (which you could just plug into 20A2 or 30A)