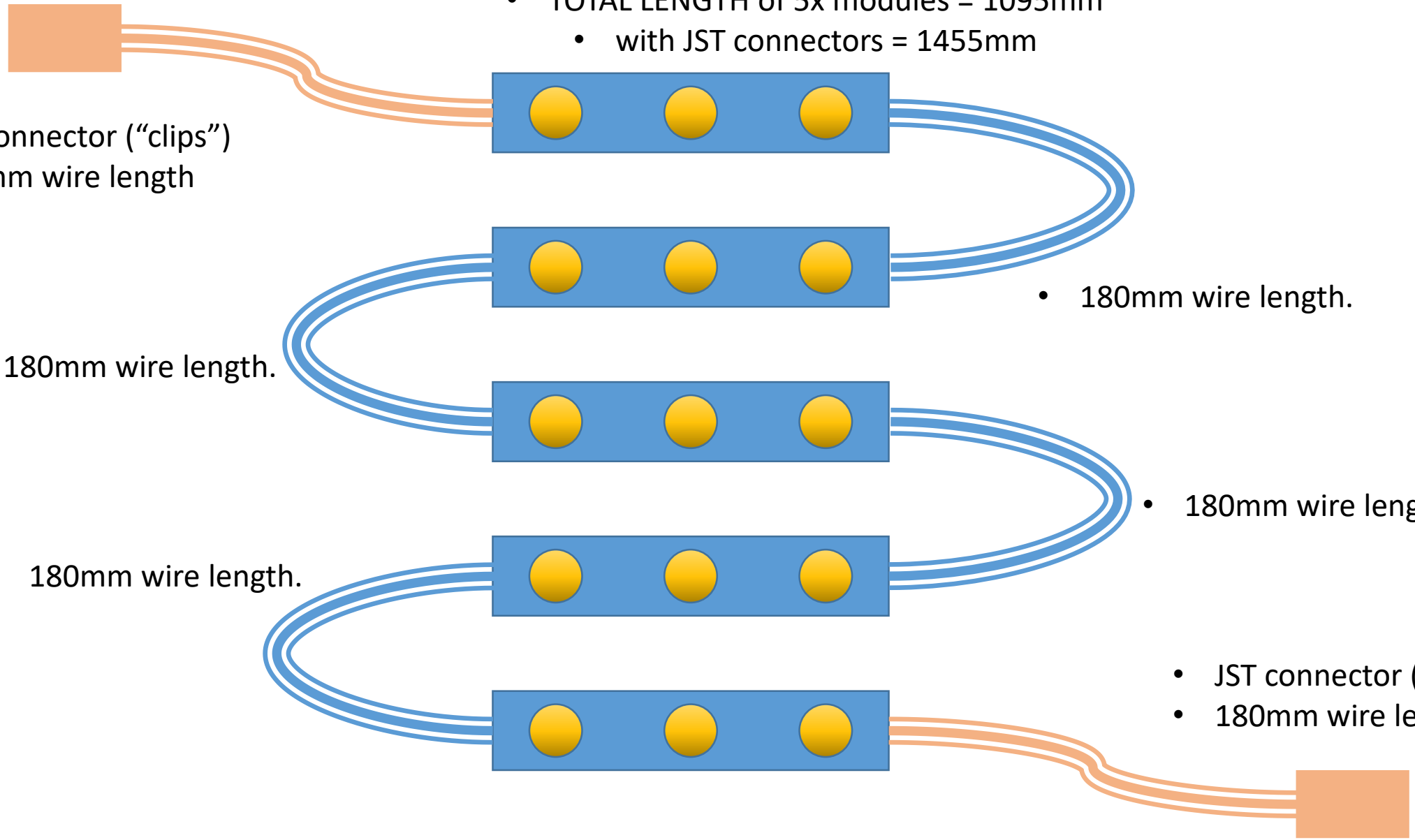
LED Modules for Pentaphilia

- 75mm by 15mm LED module
- 3x SMD505 RGB LEDs per module

- Acceptable protocol table

Chipset	Supported	Wires	Color Bits	Data Rate	PWM Rate	Chipset Power Draw
APA102/DOTSTAR	√	4	8	~24Mbps	20khz	0.9ma@5v
WS2811	√	3	8	800kbps	400Hz	5mw / 1ma@5v
WS2812B/NEOPIXEL	√	3	8	800kbps	400Hz	5mw / 1ma@5v
TM1809/TM1812	√	3	8	800kbps	400Hz	7.2mw / 0.6ma@12v
~~TM1803~~	~~√~~	~~3~~	~~8~~	~~400kbps~~	~~400Hz~~	~~7.2mw / 0.6ma@12v~~
TM1804	√	3	8	800kbps	400Hz	7.2mw / 0.6ma@12v
WS2801	√	4	8	1Mbps	2.5kHz	60mw / 5ma@12v
~~UCS1903~~	~~√~~	~~3~~	~~8~~	~~400kbps~~	~~unknown~~	~~?~~
UCS2903	√	3	8	800kbps	unknown	?
LPD8806	√	4	7	1-20Mbps	4kHz	?
P9813	√	4	8	1-15Mbps	4.5kHz	?
SM16716	√	4	8	?	?	?
~~TM1829~~	~~X~~	~~3~~	~~8~~	~~1.6Mbps/800kbps~~	~~7kHz~~	~~6ma@12v~~
~~TLS3001~~	~~X~~	~~?~~	~~12~~	~~?~~	~~?~~	~~?~~
~~TLC5940~~	~~X~~	~~4~~	~~12~~	~~?~~	~~?~~	~~?~~
~~TLC5947~~	~~X~~	~~4~~	~~12~~	~~?~~	~~?~~	~~?~~
~~LPD1886~~	~~X~~	~~3~~	~~12~~	~~?~~	~~?~~	~~?~~

- 5x modules with 180mm wire length.
- TOTAL LENGTH of 5x modules = 1095mm
  - with JST connectors = 1455mm



- JST connector (“clips”)
- 180mm wire length

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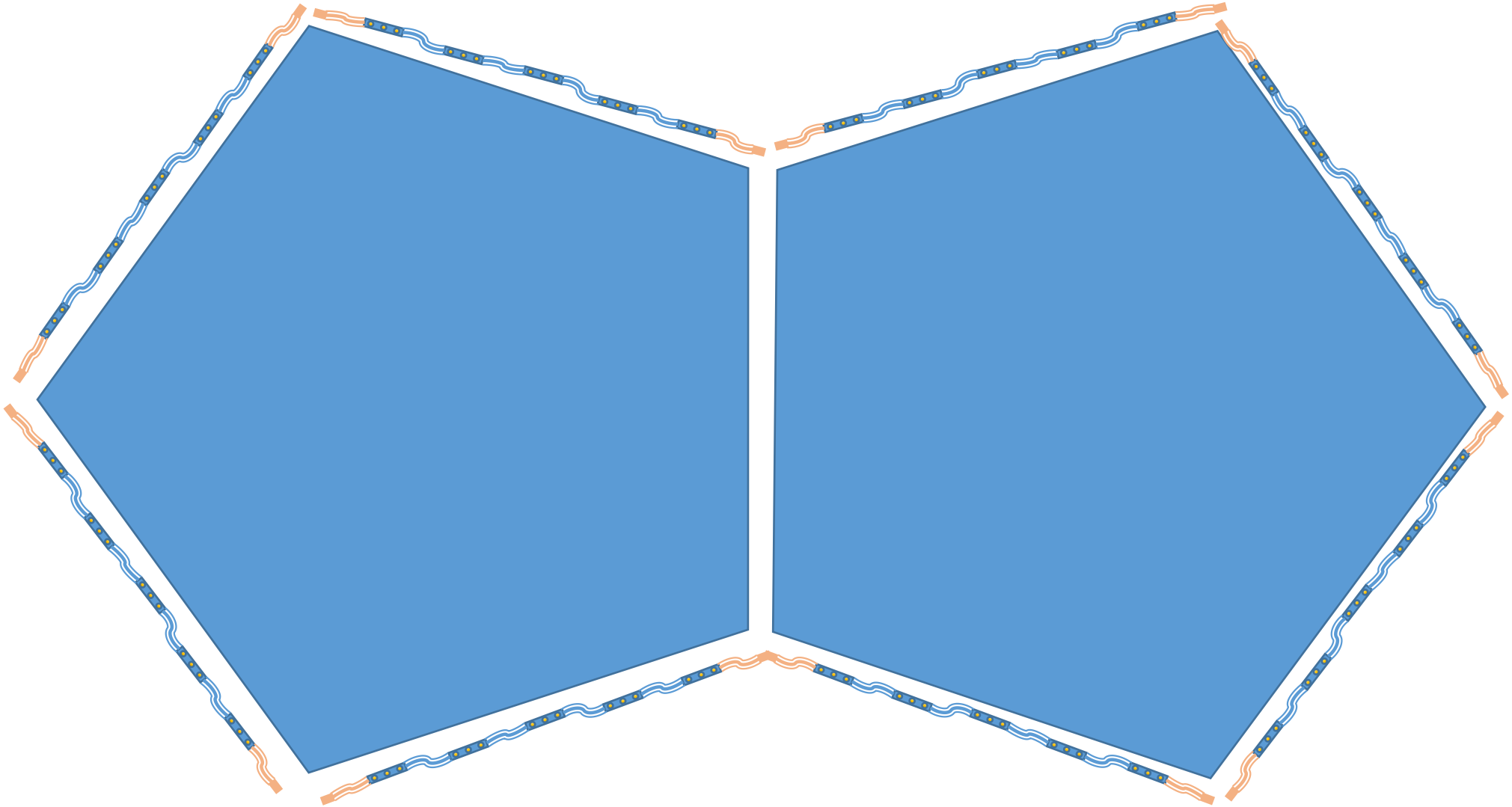
- (5 LED modules / edge) * (8 edge / P) * (2 P / DP) * (25 DP / build) = 1750 LED modules / build
- ***Assuming*** 0.5 $/module = 875 $/build



- We’ll need 3-wire or 4-wire JST “Y Splitter” to bridge between P’s and to provide a 12VDC power drop and GND.
- ***Can’t really specify these currently*** without knowing how the inter-DP wiring situation is going to work out.
- Ideally, we’d specify and order these from the same supplier as the LED modules, so we know everything fits together.

- JST connector (“clips”)
- 180mm wire length

Female

Male

- JST connector (“clips”)
- 180mm wire length